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BRITISH MUSEUM
NATURAL HISTORY

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OBSERVATIONS

IN

MAGNETISM AND METEOROLOGY,

MADE AT

MAKERSTOUN IN SCOTLAND,

IN THE OBSERVATORY OF

GENERAL SIR THOMAS MAKDOUGALL BRISBANE, BART.,
G.C.B., G.C.H., D.C.L., LL.D., F.R.S., F.R.A.S., H.M.R.I.A., PRESIDENT OF THE ROYAL SOCIETY OF EDINBURGH,
AND CORRESPONDING MEMBER OF THE INSTITUTE OF FRANCE,

IN 1845 AND 1846.

FORMING VOL. XIX. PART I. OF THE TRANSACTIONS OF THE ROYAL SOCIETY OF EDINBURGH.

EDITED BY
JOHN ALLAN BROUN, Esq.,
DIRECTOR OF THE OBSERVATORY.

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CONTENTS.

CORRIGENDA IN THIS VOLUME OF OBSERVATIONS FOR 1845 AND 1846.

Introduction, page xx., lines 9 and 10, substitute P for p and Q for q

— xxi., line 5 from foot, *for* termination. *read* termination,

— xxi., line 3 from foot, *for* seconds, *read* seconds :

— xxii., line 6, make the correction given below for 1844, Introd., p. xxii., line 11

— xxvii., line 4 from foot, and p. xxviii., lines 2, 7, and 16, substitute P for p and Q for q

— xli, heading of page, *for* Bifilar or Horizontal *read* Balance or Vertical

Page 25, 9^d 1^h, column " Balance Corrected," *for* 416·3 *read* 516·3

— 39, 24^d 18^h, column " Bifilar Corrected," *for* 552·8 *read* 512·8

— 51, 24^d 10^h, column " Balance Corrected," *for* 457·8 *read* 437·8

— 58, 5^d 8^h, column " Balance Corrected," *for* 478·6 *read* 578·6

— 59, 11^d 22^h, column " Declination," *for* 18·93 *read* 08·93

— 148, 1^d 23^h, column " Gött. M. T." *for* 1^d 23^h *read* 1^d $23\frac{1}{4}^h$

— 182, line 6 from foot, column " Gött. M. T.," *for* 5^d 0^h *read* 6^d 0^h

— 312, line 1, 2d column, " Gött. Mean Time," *for* 2^d 2^h 0^m *read* 5^h 2^h 0^m

— 312, „ „ " Balance Corrected," *for* 387·7 *read* 479·7

— 316, 22^d 10^h, column " Balance Corrected," *for* 372·1 *read* 266·1

— 320, 26^d 10^h, column " Balance Corrected," *for* 131·0 *read* 231·0

— 322, 23^d 10^h, column " Balance Corrected," *for* 272·1 *read* 143·3

CORRIGENDA IN THE VOLUME OF OBSERVATIONS FOR 1844.

Introduction, page xiv., line 13, *for* $\Phi\, n$ *read* $(1+\Phi)\, n$

— xx., lines 9, 10, and 13, substitute P for p and Q for q

— xxii., line 11, *for* $\left\{1+k\,(b_0-b_1)-q\,(t_0-t_1)\right\}$ *read* $\left\{1-k\,(b_0-b_1)+q\,(t_0-t_1)\right\}^{\frac{1}{2}}$

(This accidental error does not extend to the reductions which were performed by the latter form.)

— xxix, lines 10, 15, 20, and 29, substitute P for p and Q for q

— xli., heading of page, *for* Bifilar or Horizontal *read* Balance or Vertical

Page 202, 20^d 10^h, column " Wind. Force in 10^m," *for* 6·0 *read* 0·0

— 235, 18^d 22^h, column " Wind. Force in 10^m," *for* 2·2 *read* 0·2

CORRIGENDUM IN THE VOLUME FOR 1843.

Introduction, page xlii., line 21, *for* $X \tan (u-\delta)$ *read* $C\, X \tan (u-\delta)$; C being a constant

INTRODUCTION.

Position and Description of the Observatory.

1. The Magnetical and Meteorological Observatory at Makerstoun, in Roxburghshire, was erected by General Sir Thomas Makdougall Brisbane, Bart., in the year 1841. The geographical co-ordinates are as follow :—

Latitude, ...	55° 34′ 45″ N.[*]
Longitude, ...	$0^{h}\ 10^{m}\ 3{\cdot}5^{s}$ W. of Greenwich.[†]

Height of the barometer cistern above mean water at Berwick, 213 feet.[‡]

2. The Magnetical Observatory is situate nearly on the summit of a ridge, which occupies the left or northern bank of the Tweed, being 540 feet distant from, and 80 feet above, that river. The Astronomical Observatory is upon the highest part of the ridge, 140 feet due west of the Magnetic Observatory. A fair horizon is seen from the Observatory hill, being bounded about 10 miles to the east by a slightly-swelling ground, which, to the east-south-east, seems to join the Cheviot Hills. The view is bounded about a mile to south and south-west by a ridge, forming the right bank of the Tweed; about 500 feet to the south-west and north-west by masses of trees in the Makerstoun grounds;[§] and from 1 to 3 miles to north-west, north, and

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[*] Ast. Nach., vol. x., p. 214.

[†] Deduced from the longitude of the Astronomical Observatory, Mem. Roy. Ast. Soc., vol. xi., p. 171.

[‡] Obtained from levels for a railway, and from barometric comparisons.—See Makerstoun Observations for 1843, Introduction, p. ix.

[§] The above view, taken from a point about fifty yards to the NE. of the Magnetic Observatory, shews the trees in the grounds at their most unfavourable elevation.

north-east, by an elevated ridge, which forms, to some extent, the northern boundary of the valley of the Tweed. From north, by the east, to the south, the elevation of the horizon, with a slight exception, is under 2°; from the north to the north-west, increasing from 2° to 4°; from the north-west to the south-west, the tops of the trees are elevated from 5° to 8°; and from the south-west to the south the elevation is under 4°. The highest point of the Cheviots, which is 2656 feet above the level of the sea, is about 18 miles to the east-south-east; it is occasionally referred to in the meteorological remarks on clouds.

3. The Observatory hill, it is believed, is composed of felspathic trap. The Tweed, immediately to the south, and for a mile to the east and west, flows more or less through this rock, which does not appear upon any part of the hill. The opening for a foundation to the Observatory shewed only masses of rolled pebbles, and boulders of greywacke and trap.

4. The Observatory is rectangular in its plan, 40 feet by 20 feet internally. It is formed of wood; copper nails were used; and iron carefully excluded from every part of the structure. The pillars for the magnetometers and telescopes are of stone, from 22 inches to 19 inches in diameter, and are placed upon excellent stone foundations, completely unconnected with the floor, and every part of the building. By a reference to the plan and elevation, the following details will be understood. (Plate I.)

There are two windows to the south, with the door between; and three to the north, which open like folding doors. The dimensions of the principal apartment are, 40 feet long, 12 feet broad, and 12 feet high. The two ante-rooms are each 15 feet long, $7\frac{1}{2}$ feet broad, and 12 feet high. The instruments are indicated in the plan as follow:—

D, The Declinometer.
  t, Its Reading Telescope.
A, The Azimuth Circle and Transit.
H, The Bifilar or Horizontal Force Magnetometer.
  t′, Its Reading Telescope.
P, A Pillar for a Collimator (not used).
V, The Balance or Vertical Force Magnetometer.
I, Pillar for the Inclinometer (not used here).
B, The Standard Barometer.
W, The Anemometer.
W′, The Wind-Vane Dial-Plate.
T, The Thermometer Case.
C, The Mean Time Clock.
  n s, The Astronomical Meridian.
D *t*, The Magnetical Meridian.

The vane farthest to the right in the elevation, Plate I., belongs to the anemometer; the others give the direction of the wind.

SYSTEM OF OBSERVATION, AND STAFF OF OBSERVERS.

5. In the beginning of 1843, the number of daily observations was increased to nine, at two-hourly intervals, commencing with 18^h Göttingen mean time (5^h 10^m A.M. Makerstoun mean time); these, together with all the other daily observations, were made by Mr WELSH and myself. In the end of 1843, I recommended to Sir THOMAS BRISBANE to add Mr ALEXANDER HOGG, who had been previously employed in the term-day observations, to the establishment, for the purpose of obtaining a complete diurnal series of observations. Sir THOMAS, with his usual anxiety to render the Observatory in every respect useful to science, at once complied with my recommendation; and, in the beginning of the year 1844, hourly observations were commenced, which were continued till the end of the year 1845. In 1846, the number of daily observations was diminished to nine at two-hourly intervals, as in 1843; three additional observations of the magnetical instruments were made daily, namely, at 23^h, 1^h, and 7^h Göttingen mean time. The other observations in the magnetical observatory, consisted of term-day observations once a-month (discontinued in 1846); extra magnetical observations during magnetic disturbances; observations of magnetic dip; observations of absolute horizontal intensity; and extra observations of various meteorological phenomena. All the observations have been made by Mr JOHN WELSH, Mr ALEXANDER HOGG, and myself; Mr DODS assisting in the term-day observations, and on a few occasions during disturbances. The more difficult observations for the magnetic dip, absolute horizontal intensity, and the determinations of constants were made by Mr WELSH and myself.

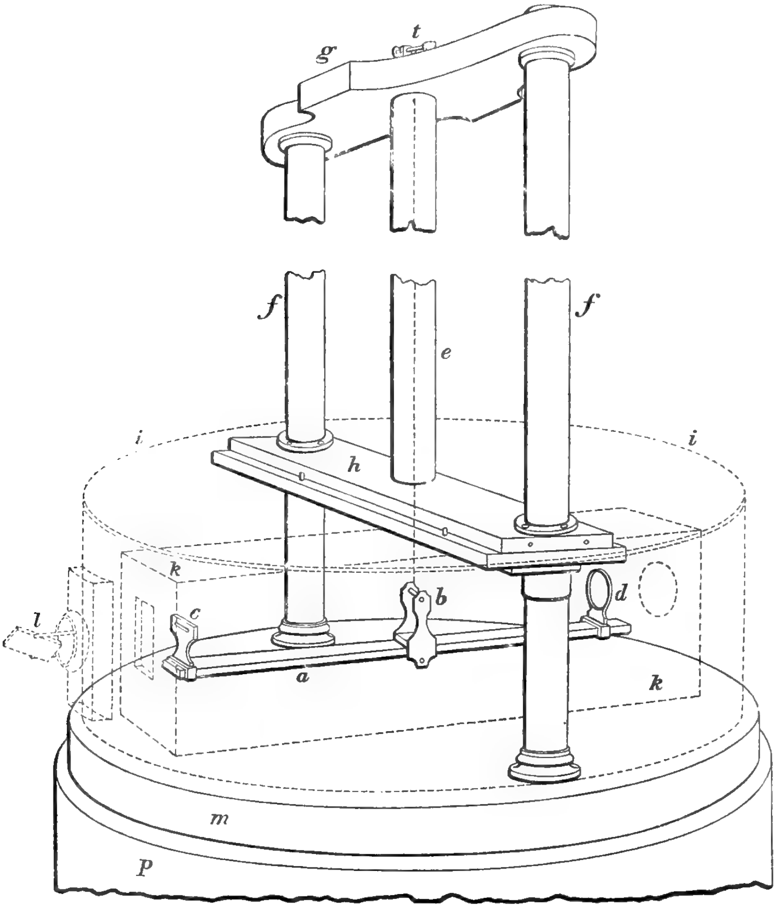
I beg again to express here how much I am indebted to Sir THOMAS BRISBANE, in every matter connected with the conduct of the Observatory. Without his willing co-operation, unceasing kindness, and the confidence which he has placed in my labours from the commencement, it would have been irksome for so small a staff to have performed conscientiously so large a mass of work. Science is not only indebted to Sir THOMAS BRISBANE for the foundation and support of the Observatory, but also for the manner in which his expenditure has been made fruitful.

I owe my best thanks to my principal assistant Mr JOHN WELSH, for the care and assiduity with which he has assisted me on all occasions, whether connected with the making or reducing of the observations. Mr HOGG also has been of much use, especially in observing, and in many matters of handicraft, which his previous experience and inventive skill have rendered available to the purposes of the Observatory.

Every care was taken by the observers to examine the observations made by those immediately preceding them; in this way it is believed that few errors have escaped detection. Accidental errors in the times of observation have always been noted, and generally the director of the Observatory believes that he has an easy task in bearing the responsibility connected with the honest discharge of the duties of his assistants.

DECLINOMETER.

6. The declination magnetometer was obtained from GRUBB of Dublin. The magnet *a* is 15 inches long, $\frac{7}{8}$ inch broad, and $\frac{1}{4}$ inch thick; it fits into a stirrup *b*, whose two eyes receive an axle to which the suspension thread is attached; near the north extremity it carries a scale divided on glass, *c*; near the other, at a distance from the scale of about 12 inches, the focal length, it carries a lens of $1\frac{1}{4}$ inch diameter, *d*. A marble slab *m*, cemented to the top of the stone pillar *p*, carries two copper tubes *f f*, 35 inches long, which are connected at the top by a mahogany tie *g*, bearing the torsion-circle and suspension apparatus *t*, and, about 7 inches from the slab, by another wooden cross-piece *h*, which supports a glass tube *e* enclosing the suspension thread. The magnet is enclosed by a rectangular wooden box *k*, formed of two pieces fitting into each other in the middle by a groove and tongue, glazed at the extremities, and having only a small aperture in the centre for the



suspension thread: this box also enclosed a copper ring for checking the vibrations of the magnet; it was removed October 15, 1844, and is not shewn in the figure: a cylindrical wooden drum *i*, together with two lids (not shewn in the figure), fitting by pegs upon the cross-piece *h*, enclose the box and magnet. There are two glazed apertures also in the wooden drum, opposite those in the rectangular box; one to the north, where a small mirror *l* throws light upon the glass scale; the other to the south, between the lens and reading telescope. All the joints of the boxes, including those in contact with the marble slab, are covered with velvet, and both boxes are pressed firmly against the marble slab by means of leaden weights, which were previously determined to have no effect upon the position of the magnet. In order to destroy any effect of radiation, both boxes were covered with gilt paper, externally and internally. The suspension apparatus is covered by a wooden cap (not shewn in the figure). In order to prevent the variation of humidity within the boxes as much as possible, the whole apparatus was covered, February 14, 1844, by a thick double cotton hood, tied round the stone pillar, and having only small openings at the glazed apertures of the boxes. The reading telescope is fixed to a stone pillar; the object glass is 8 feet to the magnetic south of the magnet lens.

7. The pillar of the azimuth circle, used for determinations of the absolute declination, is between the pillars of the magnetometer and its reading telescope. This theodolite is by TROUGHTON; the circle is 15 inches in diameter, is divided to 5 minutes, and is read to 5 seconds with three verniers. The lines of collimation of the theodolite and reading telescopes coincide when the middle wire of the former is seen, in either telescope, coinciding with the vertical wire of the latter. The circle is retained in the same position on its pillar, but the transit telescope is removed, excepting when required for observations of absolute declination.

8. The following are the data used in reducing the observations of the declinometer:—

Values of the declinometer scale divisions in angular measure.

The adopted mean value of one division of the long scale of 500 divisions = 0′·6725*

During the observations of absolute horizontal intensity, the magnet with the long scale, usually in the declination box, was removed to the unifilar box in the intensity house, and a magnet with a short scale was substituted.

The adopted mean value of one division of the short scale of 300 divisions = 0′·7500*

From the adopted values of the long and short scale divisions, the coefficient for reducing the divisions of the short scale to the same value as the divisions of the long scale = 1·115; the reciprocal = 0·897.

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* For details, see Introduction to the Observations for 1843, pp. xiii. and xiv.

The adopted zeros of the declinometer scales are as follow :—

Reading of the long scale at the magnetic axis, ...	257·14*
Correction for the effect of the bifilar and balance magnets, ...	+ 0·16
Adopted zero for the long scale in 1845 and 1846, ...	257·30
Reading of the short scale at the magnetic axis, ...	147·11*
Correction for the effect of the bifilar and balance magnets, ...	+ 0·14
Adopted zero for the long scale in 1845 and 1846, ...	147·25

9. The determinations for the effects of the different magnets upon each other are given in the previous volumes. The plate-glass in the declinometer boxes was found to have no effect upon the reading of the magnet. The determinations of the corrections are given in the volume for 1843.

10. Correction for the torsion force of the suspension thread.

The errors due to the torsion force of the suspension thread are produced, first, by the magnet moving out of the plane of detorsion; secondly, by the variation of this plane (due generally to the varying humidity of the atmosphere). The error due to the former, even in the most marked cases, is less than the probable error of the observations, and it is altogether inappreciable, compared with the error due to the second.

If the plane of detorsion be that of the magnetic meridian, and the magnet be deflected through an arc u by turning the arms of the torsion circle w, the torsion is $w-u$, and the equation of equilibrium is

$$m \, \mathrm{X} \, u = (w-u) \, \mathrm{H}$$

where m is the magnetic moment of the bar, X is the horizontal component of the earth's magnetic force, and H is the torsion force for an arc equal to radius, whence, if $m \, \mathrm{X} = \mathrm{F}$,

$$\frac{u}{w-u} = \frac{\mathrm{H}}{\mathrm{F}} = \Phi$$

is the quantity by which the deviations of the magnet from the plane of detorsion should be multiplied to obtain the decrements due to torsion. If n be the observed deviation, $(1 + \Phi) \, n =$ the true deviation. The following observation for the value of Φ for the suspension thread placed in the instrument, June 22, 1843, and for the long scale magnet will serve for the observations in 1845 and 1846 :—

Dec. 26^{d} 23^{h}, 1844. $\mathrm{Arc}^{-1} \, w = \begin{cases} +90^\circ \\ -90^\circ \end{cases}$; $\mathrm{arc}^{-1} \, u = \begin{cases} 7' \cdot 47 \\ 7' \cdot 59 \end{cases}$; mean value of $\Phi = 0 \cdot 00140$.

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* For details, see Introduction to the Observations for 1843, pp. xv. and xvi.

This value has not been used for this correction; it has been employed in the observations of absolute horizontal intensity made in 1845 and 1846.

11. The second and most important error due to the torsion force is that produced by the variation of the plane of detorsion. Unless when the period and extent of change is known, this can only be corrected by removing it; this is done occasionally in the following manner:—The magnet, with its stirrup, being removed, a brass bar and stirrup of nearly the same weight and dimensions is suspended; the rectangular box being removed, the cylindrical box being completely closed, and the shutters removed from the glazed lid, the extremities of the arc of vibration are observed through the latter; the marble slab beneath having radii drawn for every 5° on each side of the magnetic meridian, the positions of rest at the extremities of the arcs are estimated to ½°; the deviation of the mean position from the magnetic meridian is known, and the arms of the torsion circle are turned through an equal angle in the opposite direction; the position of rest is then in the magnetic meridian. Much time and care were bestowed upon these observations, as the error due to this cause is by far the most serious that occurs in connection with the declinometer.

12. The following are all the observations for the elimination of torsion made in 1845 and 1846, together with all the occasions on which the magnet was touched or removed from its box. When the mean position of rest for the north end of the brass bar was found to the east of the magnetic north, the torsion existing is considered positive, and the effect of + 10° of torsion = −0′·84 (from the previous observation for the value of Φ.) In the first case below, the north end of the brass bar was found to rest 7½° west of the magnetic north; and the brass bar was thereafter made to coincide with the magnetic meridian.

Feb. 5^d $3\frac{1}{2}^h$ 1845. Torsion removed, − 7½°. The torsion could not have been more than 3° at first, but the north end of the brass bar moved slowly westward as if affected by currents, or as if the suspension thread were affected by moisture.

March 23^d $23\frac{1}{2}^h$ 1845. Torsion removed, − 18½°.

April 2^d $2\frac{1}{2}^h$, 1845. Torsion removed, − 3½°. The line of detorsion of the supension thread varied during the observation; at first it was about N. 3° E. and S. 3° W.; ultimately it was N. 5° E. and S. 5° W. The torsion circle was turned 3½°.

May 8^d $3\frac{1}{2}^h$, 1845. Torsion removed, − ½°. June 18^d $2\frac{1}{2}^h$, 1845. Torsion removed, + 1½°.

Sept. 21^d $22\frac{1}{2}^h$, 1845. Torsion removed, + 19°. This amount of torsion may possibly be due to the dampness arising from washing the floor of the Observatory. September 20^d, the brass bar was suspended, with some difficulty in the manipulation, but it is not conceived that much torsion could have been thus introduced.

Dec. 29^d $0\frac{1}{2}^h$, 1845. Torsion removed, 0°. The magnet with the short scale was placed in the declinometer box after this examination of torsion, the long scale magnet being removed to the intensity house for an observation of absolute horizontal intensity. Dec. 29^{d} $19\frac{1}{2}^{h}$, 1845. Torsion removed, $-11°$. Dec. 30^{d} 7^{h} 40^{m}, 1845. The deflecting bar was vibrated in the declinometer box after which the torsion was removed, $+7\frac{1}{2}°$. Dec. 31^{d} 0^{h}. Torsion removed, 0°. The suspension thread found slightly stretched; it was wound up about $\frac{1}{4}$ inch, and torsion removed, $+12°$. The readings of the declinometer before and after the removal of the torsion were compared with the readings of the unifilar in the intensity house; allowance being made for the torsion removed, both comparisons gave the same difference of readings.

Feb. 15^{d} $23\frac{1}{2}^{h}$, 1846. Torsion removed, $-9°$. Feb. 16^{d} 0^{h}—2^{h}, magnet with short scale in declinometer box; 3^{h}—5^{h} deflecting bar vibrated in declinometer box.

Feb. 16^{d} $5\frac{1}{2}^{h}$, 1846. Torsion removed, $+5°$.

April 13^{d} $22\frac{1}{2}^{h}$, 1846. Torsion removed, $+3°$. At 23^{h} the magnet with short scale was placed in the declinometer box. April 14^{d} $7\frac{1}{2}^{h}$, the deflecting bar vibrated in the declinometer box; at $8\frac{1}{2}^{h}$, torsion removed, $+8\frac{1}{2}°$.

April 14^{d} 20^{h}, 1846. Torsion removed, $+3\frac{1}{4}°$. Comparisons of the unifilar and declinometer readings were made before and after removing the torsion, the differences of the readings agreed when allowance was made for the torsion removed: these comparisons shew that no torsion is introduced during the manipulations connected with the exchange of magnets, and the suspension of the brass bar.

The declination magnet remained untouched from April 14^{d} 20^{h}, 1846, till May 12^{d} 5^{h}, 1847, when the torsion removed was $-14\frac{1}{4}°$.

13. The times of vibration of the declination magnets are as follow :—

The time of one vibration of the declination long scale magnet $= \overset{s.}{17{\cdot}8}$*
.... short scale ...... $=17{\cdot}0$

14. The observations of the declinometer were made in the following manner:— The points of the scale which coincided with the vertical wire of the reading telescope were noted at the extremity of the magnet's vibration occurring between 27 seconds and 9 seconds before the minute of observation, and at the extremities of the two following vibrations: the scale readings at these periods being a, b, and c, the mean position is deduced by the formula $\frac{a+2\,b+c}{4}$. The arc of vibration is seldom above $3'$, and is generally less than $2'$; during disturbances, however, the arc is often considerable, and frequently in these cases only two observations are made, the mean position being obtained at once from the mean of the two readings at the extremities of the vibration which occur between 18^{s} and 0^{s} before, and between 0^{s} and 18^{s} after, the minute of observation.

15. All the observations of declination in this volume are absolute. They are rendered so as follows :—

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* See Introduction, 1843, p. xxi.

The middle wire of the theodolite telescope is brought to coincide with the vertical wire of the fixed reading telescope (7.); the three verniers of the horizontal circle are then read; the theodolite telescope is turned (on the vertical axis of the circle) until its middle wire coincides with the vertical line on the north meridian mark of Sir THOMAS BRISBANE's (the western) transit in the Astronomical Observatory, and the verniers are again read. In order to obtain the reading of the horizontal circle for the astronomical meridian, the theodolite telescope was placed as nearly as possible in the meridian, and being accurately levelled, the time of the sun's transit was observed by the Magnetic Observatory clock. The sun's meridian passage was also observed by Sir THOMAS BRISBANE with his western transit in the Astronomical Observatory, and the clocks in the two observatories being immediately compared, the true time of transit by the clock in the Magnetic Observatory was obtained. The difference, if any, between the true and observed times, was due to error of azimuth; the latter, being very small, was obtained from the former in multiplying by the factor,

$$\frac{\text{cosine sun's declination}}{\text{cosine sun's altitude}}.$$

16. If A′ be the difference of the horizontal circle readings for the wire of the fixed telescope and for the north mark, Z be the azimuth of the north mark, and D be the angle at any instant contained by the line of collimation of the reading telescope and the adopted zero scale reading, the true westerly declination at that time will be

$$180° - A' + Z \pm D.$$

The values of $180° - A' = A$, obtained in 1844, 1845, and 1846, are given in the following Table :—

TABLE 1.—Determinations of the Value of Angle A.

Date.	Readings of Horizontal Circle								Angle A.
	For Wire of Declination Telescope.				For North Mark.				
	Verniers			Mean.	Verniers			Mean.	
	A.	B.	C.		A.	B.	C.		
1844.	′ ″	′ ″	′ ″	° ′ ″	′ ″	′ ″	′ ″	° ′ ″	° ′ ″
Feb. 7	53 17·5	53 21·5	53 57·5	233 53 32·2	44 12·5	43 52·5	43 57·5	77 44 0·8	23 50 28·6
May 11	52 2·5	51 52·5	52 8·7	53 52 1·2	42 2·5	42 22·5	42 42·5	257 42 22·5	23 50 21·3
July 4	52 23·0	52 8·0	52 43·0	53 52 24·7	42 35·0	42 52·5	43 10·0	257 42 52·5	23 50 27·8
July 22	52 10·0	52 0·0	52 25·0	53 52 11·7	42 27·5	42 51·2	43 2·5	257 42 47·1	23 50 35·4
Aug. 14	52 40·0	52 18·7	52 46·2	53 52 35·0	42 40·0	43 0·0	43 20·0	257 43 0·0	23 50 25·0
Aug. 14	52 35·0	52 7·5	52 47·5	53 52 30·0	42 40·0	43 1·2	43 25·0	257 43 2·1	23 50 32·1
Aug. 14	53 15·0	52 57·5	53 20·0	53 53 10·8	43 23·7	43 52·5	44 5·0	257 43 47·1	23 50 36·3
Aug. 14	52 55·0	52 51·2	53 37·5	233 53 7·9	43 15·0	43 2·5	43 10·0	77 43 9·2	23 50 1·3
Aug. 14	53 5·0	52 54·0	53 17·5	53 53 5·5	43 22·5	43 51·0	44 2·5	257 43 45·3	23 50 39·8
Oct. 14	52 25·0	52 28·7	53 15·0	233 52 42·9	43 10·0	42 47·5	43 5·0	77 43 0·8	23 50 17·9
Oct. 14	52 27·5	52 28·7	53 12·5	233 52 42·9	43 7·5	42 40·0	42 57·5	77 42 55·0	23 50 12·1
Oct. 14	52 38·7	52 17·5	53 0·0	53 52 38·7	42 37·5	42 57·5	43 25·0	257 43 0·0	23 50 21·3
Oct. 14	52 46·2	52 22·5	52 58·8	53 52 42·5	42 43·7	43 0·0	43 25·0	257 43 2·9	23 50 20·4
Oct. 19	52 11·2	52 13·7	52 58·8	233 52 27·9	42 57·5	42 36·2	42 55·0	77 42 49·6	23 50 21·7
Oct. 19	52 32·5	52 7·5	52 43·6	53 52 27·9	42 52·5	42 56·2	43 16·3	257 53 1·7	23 50 23·8
Oct. 19	52 45·0	52 16·2	52 52·5	53 52 37·9	42 40·0	42 57·5	43 25·0	257 43 0·8	23 50 22·9
Oct. 19	52 41·2	52 35·0	53 20·0	233 52 52·1	43 25·0	42 57·5	43 10·0	77 43 10·8	23 50 18·7
Dec. 31	52 43·7	52 22·5	52 52·5	53 52 39·6	42 52·5	43 13·7	43 35·0	257 43 13·7	23 50 34·1
Dec. 31	52 17·5	52 20·0	53 5·0	233 52 34·2	43 12·5	42 47·5	43 3·7	77 43 1·2	23 50 27·0
1845.									
Jan. 17	52 13·7	52 18·8	52 55·0	233 52 29·2	42 52·5	42 35·0	42 52·5	77 42 46·7	23 50 17·5
Jan. 17	52 15·0	52 18·7	52 59·0	233 52 30·9	42 58·1	42 35·0	42 53·7	77 42 48·9	23 50 18·0
Jan. 17	52 42·5	52 20·0	52 57·5	53 52 40·0	42 55·0	43 17·5	43 37·5	257 43 16·7	23 50 36·7
Jan. 17	52 8·7	52 10·0	52 52·5	233 52 23·4	43 0·0	42 40·0	42 57·5	77 42 52·5	23 50 29·1
Jan. 17	52 25·0	52 2·5	52 37·5	233 52 21·7	42 25·0	42 42·5	43 2·5	77 42 43·3	23 50 21·6
Jan. 17	52 23·7	52 2·5	52 43·1	53 52 23·1	42 38·7	42 55·0	43 15·5	257 42 56·4	23 50 33·3
May 8	52 7·5	52 5·0	52 57·5	233 52 23·3	43 7·5	42 42·5	43 10·0	77 43 0·0	23 50 36·7
1846.									
Apr. 13	48 5·0	47 43·7	47 32·5	53 47 47·1	37 57·5	38 20·0	38 2·5	257 38 6·7	23 50 19·6
Apr. 13	47 28·7	47 8·8	47 32·5	233 47 23·3	38 12·5	37 40·0	37 25·0	77 37 35·8	23 50 12·5
May 7	48 5·0	47 33·7	47 27·5	53 47 42·1	38 2·5	38 22·5	38 5·0	257 38 10·0	23 50 27·9
May 9	47 53·7	47 41·2	48 5·0	233 47 53·3	38 43·7	38 5·0	37 45·0	77 38 11·2	23 50 17·9
May 9	48 17·5	47 20·0	47 20·0	53 47 39·2	37 55·0	38 10·0	37 57·5	257 38 0·8	23 50 21·6

17. The mean value of angle A from all the observations in 1844, 1845, and 1846, ... $=23^{\circ}\ 50'\ 24''\cdot 5$

The mean value of angle A from all the observations in 1844, ... $=23^{\circ}\ 50'\ 23''\cdot 9$

The value of angle Z (Table 8, Introduction, 1841–2), $=\ 1^{\circ}\ 37'\ 38''\cdot 8$

Whence angle A + Z, ... $=25^{\circ}\ 28'\ \ 2''\cdot 7$

The absolute westerly declination, therefore, corresponding to the zeros of the scales, No. 8, $=25^{\circ}\ 28'\cdot 04$. This value has also been employed for the observations in 1845 and 1846. For other scale readings differing from the zero by the angular quantity ± D, the declination is obtained from the formula, declination $= 25^{\circ}\ 28'\cdot 04 \pm D$.

UNIFILAR MAGNETOMETER AND OBSERVATIONS OF THE ABSOLUTE HORIZONTAL INTENSITY OF THE EARTH'S MAGNETISM.

18. In the beginning of April 1843 two small wooden houses were erected about 19 yards to the north of the Magnetic Observatory; the larger of the houses contains the unifilar magnetometer and the dip circle, and the smaller, which is 10 feet to SSE. of the larger, contains a reading telescope for the magnetometer.

The unifilar magnetometer rests on a strongly-braced wooden stand, which is fixed by copper battens and plaster of paris to a stone slab, resting on a stone foundation separated from the floor; the top block of the stand, a solid piece of mahogany, carries a vertical box enclosing the suspension thread and supporting the torsion circle, this box is open on two opposite sides near the stand top; a horizontal box slides on the vertical one, and when close to the stand top the magnet is completely enclosed; an internal box was afterwards added, and all the precautions already indicated (6.) for the declinometer were taken. The magnet used when observations of absolute horizontal intensity were made was that usually in the declinometer, a spare magnet being fitted with a short scale (8.) was substituted for it; the telescope (that intended for a collimator to the bifilar) was placed in the smaller wooden house, on a stand in all respects similar to that for the unifilar: the two houses were connected, during observations, in the line of collimation of the telescope and magnet by a wooden tube blackened within. A beam of straight well-seasoned fir, 11 feet long, 3¾ inches broad, and 1¾ inches thick, was placed on each side (outside) of the larger wooden house, in the line passing through the centre of the suspended magnet, and at right angles to the magnetic meridian; each beam was let into the tops of two strongly-braced wooden trestles, 7 feet apart, which rested on wooden posts driven into the ground, and which were fixed to the latter by catch-pins, allowing a slight adjustment for the distance of the beams from the magnet; the trestles and beams being removed after each observation. The beams were carefully divided with the aid of a brass standard yard made by Messrs TROUGHTON and SIMMS; the graduations were adjusted to their distance from the suspended magnet in the following manner :—a well-seasoned fir rod, shod with brass at one extremity, and terminated at the other by a capstan-headed screw, by which the rod was accurately adjusted to a length of six feet, was passed through holes in the sides of the wooden house and unifilar box; the middle of the rod coinciding with the suspension thread, the catch pins of the trestles were then loosened or forced in till the extremities of the six-feet rod coincided accurately with the division 3 feet on each beam. The deflecting magnet was adjusted to the graduations on the beams with the aid of a lens; in 1844 the graduations were marked on brass pin-heads placed in the beams. The fixidity of the trestles was verified in general after each observation, and the accuracy of the graduations on the beams was verified usually before each observation.

19. The value of the absolute horizontal intensity is determined from the observations as follows :—If r be the distance from the centre of the suspended magnet, at which the centre of the deflecting bar is placed on the wooden beam, its axis being in the line at right angles to the magnetic meridian passing through the centre of the suspended magnet; and if u be the resulting angle, through which the suspended magnet is deflected, then since, by GAUSS's theory, the ratio of the magnetic moment m of the deflecting bar to X, the horizontal component of the earth's magnetic force, is given by the following formula

$$\frac{m}{X}=\frac{1}{2}r^3 \tan u \quad \frac{1}{1+\frac{p}{r^2}+\frac{q}{r^4}+\&c.}$$

where p and q are quantities depending on the mode of distribution of the magnetism in the magnetic bars, the value of the ratio may be determined from observations at three distances; tan u is obtained from the formula

$$\tan u=\tan\left[\frac{a}{4}\left\{\left(\overline{u_1+{}_1u}-\overline{u_0+{}_0u}\right)-f\left(\overline{d_1+{}_1d}-\overline{d_0+{}_0d}\right)\right\}(1+\Phi)\right].\ \frac{1+k\,(b_d-b_v)}{1-q\,(t_d-t_v)}$$

where a is the angular value of one division of the long scale, f is the coefficient for reducing the divisions of the short scale to the value of divisions of the long scale; u_1 and ${}_1u$ are the observed mean scale readings of the unifilar magnetometer, the deflecting bar, with its north pole towards the east, being at a given distance to the east and west respectively of the suspended magnet; similarly, u_0 and ${}_0u$ are the mean scale readings when the deflecting bar, at the same distance, has its north pole towards the west: d_1, ${}_1d$, &c., are the simultaneous mean scale readings of the declinometer corresponding to u_1, ${}_1u$, &c.: $(1 + \Phi)$ is the torsion factor. [The quantity within brackets is given for each distance in the column of the observations, "Deflection corrected for Torsion."] The last factor reduces the value of the tangent to the value of X and m at the time of vibration, k being the coefficient for reducing the scale divisions of the bifilar magnetometer to parts of horizontal force, b_d and b_v are the mean scale readings of the bifilar at the times of deflection and vibration respectively; q is the temperature coefficient for the deflecting bar, t_d and t_v are the mean temperatures of the bar during deflection and vibration respectively.

The values of log $\frac{1}{2} r^3$ tan u are given for each distance, pages 166 and 167.

20. The following are the values of the constants used in the previous formula:—

$a = 40''{\cdot}35$ (No. 8.) $\qquad f = 1{\cdot}115$ (No. 8.) $\qquad q = 0{\cdot}000288.$*
In 1845, $k = 0{\cdot}000140$. $\qquad$ In 1846, $k = 0{\cdot}000135$.
For the thread in the unifilar box and long scale magnet, $\Phi = 0{\cdot}00212$.

21. The comparative observations for u and d were rendered simultaneous thus:

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* See Introduction, 1843, p. xliii.

The times of vibration of the unifilar and declination magnets being nearly the same, the time at which the unifilar magnet attained one extremity of its arc of vibration was instantly indicated by me to Mr WELSH, who could observe my motions through one of the north windows of the Observatory. He immediately commenced counting the beats of the mean time clock, and at the end of the 18th second (the time of one vibration) both observers commenced making readings of the magnetometers; those by Mr WELSH being made at the end of the 18th, 36th, 54th, &c., seconds, and those by myself at the extremities of the arcs of vibration. From 7 to 12 consecutive readings were made thus at every position of the deflecting bar, and from these the mean readings are deduced. In order to render the arcs of vibration of the unifilar as small as possible, the deflecting bar was at first moved gradually up to its nearest distance (5 feet); in placing it at the next distance, it was moved rapidly *nearly* half way, and 18 seconds counted, when it was immediately shifted the other half. When the farthest distance was attained, it was placed vertically, and after 18 seconds, laid down in the reverse position; it was then moved as before, by half-shifts, to its next position, and so up to the nearest. After comparative readings for that position, the magnet was again placed vertically, and carried to the beam on the opposite side of the suspended magnet; at the end of 36 seconds it was laid down at the same distance, and with the north pole in the same direction as before. In general, the vibrations were small, seldom above 10′; when larger, the magnet was checked by slightly approaching or removing the deflecting bar at proper times, with reference to the directions in which the suspended magnet was moving. Mr WELSH observed the bifilar magnetometer before and after each comparison, and after each comparison I observed the temperature of the deflecting bar by means of a thermometer lying beside it.

22. The value of the product m X is obtained from the formula

$$m\,\mathrm{X} = \frac{\mathrm{K}\,\pi^2}{\mathrm{T}^2}$$

where π is the ratio of the circumference to the diameter, T is the *true* time of one vibration of the deflecting bar deduced from the *observed* time T′ by the formula

$$\mathrm{T} = \mathrm{T}'\left(1 - \frac{\alpha\,\alpha'}{16}\right)(1+\Phi)^{\frac{1}{2}}\left(1 - \frac{s}{86400}\right)$$

where α and α' are the semiarcs of vibration in parts of radius at commencement and termination. Φ is the ratio of the torsion force to the horizontal component of magnetic force for the declinometer thread with the deflecting bar suspended, s is the daily rate of the clock in seconds, K is the moment of inertia of the deflecting bar obtained from the formula

$$\mathrm{K} = \tfrac{1}{2}\,(r_i^2 + r_e^2)\,\mathrm{M}\,.\,\frac{\mathrm{T}_0^2}{\mathrm{T}_0^2 - \mathrm{T}_1^2}$$

where r_i and r_e are the internal and external radii of a regular metallic ring, M is the mass of the ring in grains, T_0 is the *true* time of one vibration without the ring (obtained by the above formula for T), T_1 is the *true* time of one vibration with the ring placed horizontally on the magnet, and is obtained from the observed time T_1' by the formula

$$T_1 = T_1'\left(1 - \frac{\alpha\,\alpha'}{16}\right)(1 + \Phi)^{\frac{1}{2}}\left(1 - \frac{s}{86400}\right)\left\{1 + k\,(b_0 - b_1) - q\,(t_0 - t_1)\right\}$$

where the symbols in the first four factors have the same meaning as given above for T, it being remembered that Φ is the ratio of the torsion force to the horizontal force for the declinometer thread when carrying *both* the deflecting bar and ring. The last factor contains the reduction of the time of vibration to the value of the horizontal component for which T_0 was the time of vibration without the ring; k, therefore, is the bifilar coefficient, given previously, b_0 and b_1 are the mean bifilar readings when the times of vibration T_0 and T_1 were observed, q is the temperature coefficient for the deflecting bar, given above, t_0 and t_1 are the mean temperatures of the bar corresponding to the observations T_0 and T_1. As the observations for deflection are corrected for temperature to the temperature at the time of vibration, the value of m at the time of vibration is taken as the standard value for the series, as far as temperature is concerned, but it requires a correction for the inductive action of the earth, due to the position of the magnet during vibration in the plane of maximum magnetic force; during deflections the magnet is placed at right angles to the magnetic meridian, and is therefore unaffected by induction: the first equation, No. 22, therefore becomes

$$m\,X = \frac{K\,\pi^2}{T^2\left(1 + \frac{\delta\,m}{m}\right)}$$

$\frac{\delta\,m}{m}$ is the induction coefficient, and is obtained from the formula

$$\frac{\delta\,m}{m} = \frac{n + s - 2\,b}{n - s}$$

where n and s are the mean scale readings of the bifilar magnetometer when the deflecting bar is placed in the magnetic meridian with its north end towards the north and south respectively, its centre being in the prolongation of the bifilar magnet, b is the bifilar reading with the deflecting bar away.

The deflecting bar was vibrated in the declinometer box after the observations of deflection; it was suspended in a stirrup of silk fibres of the same thickness as the suspension thread, and a small thread of paper being gummed to the extremity next the reading telescope, the times of transits of the paper at the wire of the reading telescope towards right and left were observed for every 5 vibrations each way up to the 96th vibration. A moveable object-glass fits upon the object-glass of the reading telescope, in order to bring the paper slip into view without altering the adjustment of the telescope.

23. The following are the values of the constants used in the preceding formulæ. Φ for the declinometer thread, with the deflecting bar suspended, is obtained from the value when the long scale magnet is suspended by multiplying the latter by the ratio of the moments of the two magnets; thus, moment of long scale magnet is to moment of deflecting bar, as 1·000 is to 0·942, whence, from the values of Φ for the long scale magnet (No. 10), we have for the deflecting bar and declinometer thread,

During 1845 and 1846, $\Phi = 0{\cdot}001482$.

The rate of the Observatory clock was generally less then 2 seconds a-day. No correction for rate was therefore employed in the determination of T.

24. The following are the details for the determination of K.

The deflecting bar is 1·25 feet ($= a$) in length; 0·0719 feet ($= b$) in breadth; 6216·7 grains in weight ($=$ W). The value of K had been previously determined from the formula $\frac{a^2 + b^2}{12} \times W$. In January 1848, it was thought desirable to determine it by the more accurate formula given previously; as it was doubtful whether the declinometer thread could sustain the deflecting bar and an additional weight, a stronger thread was substituted, for which Φ was determined.

The deflecting bar was vibrated in a stirrup of silk without any appendages, the results are:

Jan. 11^{d} 1848. Observations made by chronometer, DENT, No. 1665, rate $-5^{s}{\cdot}0$.
Semiarcs of vibration, $\text{arc}^{-1}\,\alpha = 10\tfrac{1}{2}^{\circ}$ $\text{arc}^{-1}\,\alpha' = 6^{\circ}$. Temperature of bar 38°·4 Fahr.
Mean observed time of one vibration from 160 vibrations, $T_0' = 15^{s}{\cdot}9037$.
Bifilar magnetometer observed every 5^{m} during vibration, mean during vibration corrected for temperature $= 553{\cdot}9$ sc. div.
Deflecting bar with scale and lens suspended in a stirrup of silk as during vibration, $\Phi = 0{\cdot}00200$.
Deflecting bar with scale and lens suspended in brass stirrup, $\Phi = 0{\cdot}00193$.
The true value of one vibration, $T_0 = 15^{s}{\cdot}9014$.

The deflecting bar having been placed in a stirrup of silk fibres, of the thickness of the suspension thread, it was vibrated with the vertical circle of the inclinometer balanced horizontally upon it; the results are:

Internal radius of ring = 0·39541 feet. External radius of ring = 0·43779 feet.
Weight of ring = 9628·6 grains.
Semiarcs of vibration, $\text{arc}^{-1}\,\alpha = 12^{\circ}$, $\text{arc}^{-1}\,\alpha' = 7\tfrac{3}{4}^{\circ}$, temperature of bar = 38°·0 Fahr.
Rate of chronometer, DENT, No. 1665, $s = -5^{s}{\cdot}0$.
Mean observed time of one vibration from 120 vibrations, $T_1' = 27^{s}{\cdot}8006$.

Bifilar magnetometer, observed every 5^m during vibration; mean during vibration corrected for temperature = 569·3 sc. div.

Deflecting bar with scale and lens suspended in brass stirrup, $\Phi = 0·003966$.

As all the observations for the time of vibration of the deflecting bar had been made previously with the bar suspended in a stirrup of silk fibres, in order to employ the second formula for K, given above, depending on the dimensions and weight of the bar, it was necessary in the present case, to determine the value of K for the same mode of suspension. The two values of Φ given above for the bar suspended in a brass and in a silk fibre stirrup, *without* the ring, give Φ with brass stirrup suspension, to Φ with silk stirrup suspension, as, 193 : 200, whence, from the value of Φ above for brass stirrup suspension and magnet *with* the ring, = 0·003966, we find Φ for silk stirrup suspension and magnet with ring = 0·004109.

Since $b_0 - b_1 = - 15·4$ sc. div., $k = 0·000135$, $t_0 - t_1 = + 0°·4$, $q = 0·000288$.
The true time of one vibration with the ring (reduced to the value of X for T_0) $T_1 = 27^s·8403$.

25. From the above, therefore, we find for the deflecting bar without appendages,

$$\text{Log } K_0 = 2·9091359 \text{ at the temperature of } 38°·4 \text{ Fahr.}$$

The value of K used in the reductions in the present volume has been obtained from K_0 by the formula

$$K = K_0 \{1 + e\,(t_v - 38)\}^2$$

where e is the dilatation of steel for 1° Fahr. = 0·0000068, and t_v is the temperature of the bar during vibration.

From the formula $K = \frac{a^2 + b^2}{12} W$, log K = 2·9096331.

26. The following are the observations for the value of the induction coefficient $\frac{\delta m}{m}$. Nov 15, 1847. A strong wooden beam having been fixed horizontally in the prolongation of the magnetic axis of the bifilar magnet which lies at right angles to the magnetic meridian, the deflecting bar was mounted in a wooden block having a groove cut to contain the bar; when the deflecting bar was in its place, it was in the same horizontal plane with, its axis was at right angles to, and its centre was in the prolongation of, the axis of the bifilar magnet. The block was fixed to the wooden beam: the deflecting bar when removed and replaced, was carried with a thick cloth glove or silk handkerchief, to prevent variation of temperature in handling. In reversing the magnet, the same side was always kept next the bifilar magnet.*

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* It will in general be preferable to place the deflecting bar to the east or west (as in the present observations), rather than to the north or south of the bifilar magnet, since I have found that the centre of figure may differ considerably from the centre of magnetism; perhaps, for the same reason, when observations are made only on one side of the bifilar magnet, the deflecting bar should be inverted when it is reversed, since the magnetic axis may be nearer one side of the bar than the other.

TABLE 2.—Determination of the Induction Coefficient for the large Deflecting Bar.

Göttingen Mean Time.	Position of Deflector.	Bifilar Reading.	Interpolated Reading, Deflector Away.	Deflection.	Sum of Deflections.	Difference of Deflections.	Value of $\frac{\delta m}{m}$
d. h. m.		Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	
1847.							
Nov. 5 0 11	Away	157·12					
15	N. Pole S.	265·35	156·05	109·30	221·70	3·10	0·0140
19	N. Pole N.	42·57	154·97	112·40			
23	Away	153·90					
0 24	Away	154·22					
27½	N. Pole S.	263·60	154·95	108·65	220·65	3·35	0·0152
30	N. Pole N.	43·47	155·47	112·00			
33	Away	156·10					
0 36	Away	156·75					
40¾	N. Pole S.	266·90	157·32	109·58	220·55	1·39	0·0063
44	N. Pole N.	46·75	157·72	110·97			
48	Away	158·20					
Nov. 6 1 12	Away	150·50					
15	N. Pole S.	259·12	150·42	108·70	219·48	2·08	0·0095
18	N. Pole N.	39·57	150·35	110·78			
21	Away	150·27					
1 23	Away	150·75					
26	N. Pole S.	259·46	150·97	108·49	220·00	3·02	0·0138
29	N. Pole N.	39·67	151·18	111·51			
33	Away	151·47					
1 34	Away	151·27					
37	N. Pole S.	261·10	151·44	109·66	220·66	1·34	0·0061
40	N. Pole N.	40·60	151·60	111·00			
43	Away	151·77					
1 45	Away	152·17					
48	N. Pole S.	260·97	151·98	108·99	220·87	2·89	0·0131
50	N. Pole N.	39·97	151·85	111·88			
54	Away	151·60					

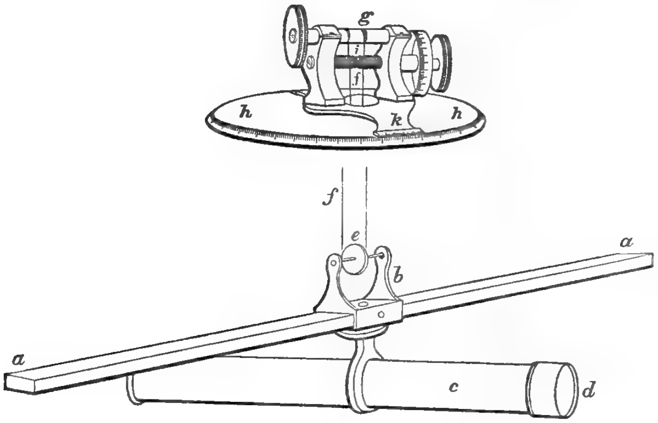
27. The adopted value of $\frac{\delta m}{m} = 0{\cdot}0112$.

This value is very large, more than twice as great as that obtained for small 4-inch bars, and is evidently not to be neglected in the rudest mode of observation for the horizontal intensity. [For the final results, see the addendum to the Introduction.]

BIFILAR OR HORIZONTAL FORCE MAGNETOMETER.

28. This instrument was made by GRUBB of Dublin, and is similar in its general construction to the declinometer, having two boxes, gilt internally and externally as in the latter instrument. The magnet *a a*, whose dimensions are 15 inches, $\frac{7}{8}$ inch, and $\frac{1}{4}$ inch, is placed in a stirrup *b*, which carries below it a tube *c*, having a lens *d*

at the extremity next the reading telescope, and a glass scale at the other : the scale has 280 divisions, and the graduation at the 300th division ; increasing readings of the scale indicate increasing magnetic force ; the axle of a grooved wheel *e* fits into the suspension eyes of the stirrup *b* ; the magnet, with these appendages, is borne by a silver wire *f*, passing round the grooved wheel, and having its two extremities pegged into a suspension roller *g* : the roller is supported by the torsion circle *h*, which also bears, beneath the roller, a micrometer-headed screw *i*, right-handed where it meets one extremity of the wire, left-handed where it meets the other. The screw serves to render the distance of the extremities of the wire equal to the diameter of the grooved wheel ; the screw and suspension roller turn with the verniers *k*. A copper ring encircles the magnet, in order to check the vibrations. A thermometer by ADIE and SON is enclosed by a glass tube passing through both boxes, the stem of the thermometer, with the graduations, being above the lid of the outer box ; the bulb of the thermometer rests in a cup, formed in a brass bar of the same dimensions as the bifilar magnet ; the brass bar is supported on a wooden stand, and lies parallel to the magnet ; the bulb of the thermometer is also covered loosely by a small brass cap. It was found from comparative observations (p. xxx., Introduction, 1843) that a thermometer, with its bulb free, would differ 1° from the thermometer resting in the brass bar in the course of a daily change of 10° of temperature. The whole instrument was covered with a double thick cotton cover Jan. 31^{d} 6^{h} 1844. The reading telescope is fixed to a stone pier, 8 feet south of the magnet.



29. In the adjustment of the instrument, the magnet is forced to a position at right angles to the magnetic meridian, by turning the arms of the torsion circle. As, in forcing the magnet from the meridian, the upper extremities of the wire will move through a greater angle than the lower extremities, the wires will be no longer vertical, and the magnet and appendages will be raised ; the forces producing equilibrium will, therefore, be the weight suspended endeavouring to attain the lowest point, and the horizontal component of the earth's magnetic intensity acting on the free magnetism of the bar.

30. If v be the excess of the angular motion of the arms of the torsion circle, or upper extremities of the wire, over u, that of the lower extremity or magnetic bar in moving the latter from the meridian, the equation of equilibrium will be

$$m \mathrm{X} \sin u = \mathrm{W} \frac{a^2}{l} \sin v$$

m, X, W, a, and l being respectively the magnetic moment of the bar, the horizontal component of the earth's magnetic force, the weight suspended, the interval, and the length of the wires. The differential of this equation ($u = 90°$) divided by it, gives

$$\frac{\Delta \mathrm{X}}{\mathrm{X}} = n\, a \cot v + t\,(\mathrm{Q} + 2\,e - e')$$

n being the number of scale divisions from the zero, or scale reading when $u=90°$, a the arc value in parts of radius of one scale division, t the number of degrees Fahrenheit which the temperature of the magnet is above the adopted zero, Q the coefficient of the temperature correction for the varying magnetic moment of the bar or the value of $\frac{\Delta m}{m}$ for 1° Fahr., e and e' the coefficients of expansion for the brass of the grooved wheel and silver of the wires.

31. It is assumed, in the previous investigation, that the suspending wire does not act by any inherent elastic force; that the torsion force depends wholly on the length and interval of the two portions of the wire and the angle of twist: it seems extremely probable that this condition will not be rigorously sustained, and it is very possible that there may be considerable twist in the suspending wire or thread; for this reason, the following methods, which are independent of the angle of torsion, were employed to determine the coefficient:—

32. If the equation of equilibrium for the bifilar magnet at right angles to the magnetic meridian be

$$m \mathrm{X} = \mathrm{F}, \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad (1.)$$

and if a magnet whose magnetic moment is M be placed with its axis in the magnetic meridian passing through the centre of the bifilar bar, the centres of the two bars being at a distance r, and the resulting angle of deflection be n scale divisions $= \Delta v$, the equation of equilibrium will be

$$m \left\{ \mathrm{X} + \frac{2\,\mathrm{M}}{r^3} \left(1 + \frac{p}{r^2} + \frac{q}{r^4} \right) \right\} \cos \Delta v = \mathrm{F}'.$$

For a value of the earth's horizontal force $\mathrm{X} + \Delta \mathrm{X}$, which would alone have produced the deviation Δv, we have

$$m \left(\mathrm{X} + \Delta \mathrm{X} \right) \cos \Delta v = \mathrm{F}';$$

whence

$$\frac{\Delta X}{X}=\frac{2 M}{X}\left(\frac{1}{r^3}+\frac{p}{r^5}+\frac{q}{r^7}\right) \quad . \; . \; . \; . \; . \; . \; . \quad (2.)$$

If the deflecting bar be now employed to deflect a freely-suspended unifilar magnet, in order to determine the value of $\frac{M}{X}$, as in the ordinary observations for absolute horizontal intensity; u being the angle of deflection for a distance r_1 we have

$$\frac{2 M}{X}=r_1^{\,3} \tan u \frac{1}{1+\frac{p_1}{r_1^{\,2}}+\frac{q_1}{r_1^{\,4}}}$$

If the bifilar and unifilar bars are of the same dimensions p and q, which are quantities depending upon the distribution of the magnetism in the bars, may be considered equal to p_1 and q_1, and if the deflections for both bars be made at the same distances, or $r=r_1$ then

$$\frac{\Delta X}{X}=\tan u,$$

and

$$k=\frac{\tan u}{n} \quad . \; . \; . \; . \; . \; . \; . \; . \; . \quad (3.)$$

If, however, the bifilar and unifilar magnets are of different dimensions, the value of $\frac{2 M}{X}$ should be obtained from the deflections of the unifilar at different distances, p_1 and q_1 being eliminated; that value being substituted in equation (2.), and deflections of the bifilar being obtained for different values of r, p and q also may be eliminated.

33. Wooden beams having been placed in the prolongations of the bifilar magnet, and at right angles to these, lines were drawn upon them, passing through the centre of the magnet,—one in the magnetic meridian, the other at right angles to it; several distances from the centre of the suspended magnet were marked off on each side with a beam compass; a similar structure was erected for the declinometer. The following observations were then made:—

34. 1*st*, A cylindrical magnet, 3·65 inches long, was employed to deflect the bifilar and declinometer magnets; these two magnets are of the same dimensions, 15 inches long, and were obtained at the same time from the same maker. The short deflecting bar was placed at different distances to the east, and at the same distances to the west, of the bifilar bar, and the deflections of the bifilar were observed in scale divisions. Observations of deflection of the declinometer magnet were then obtained with the same deflector—the deflector, however, being placed at the same distances, as in the other case, to the north and south of the declinometer magnet: in both cases, the prolongation of the suspended bar, in its normal position, passes through the centre of the deflector. The results are obtained in the 1st portion of Table 3.

2d, The same deflecting bar was placed to the north and south of the bifilar magnet, and to the east and west of the declinometer magnet, the prolongation of the axis of the deflector in both cases passing through the centre of the suspended bar. The results are given in the 2d portion of Table 3.

35. *3d*, A large deflecting bar (15 inches long) was employed in the same manner as the small bar in the 1st instance.

4th, The large deflecting bar was employed in the same manner as the small bar in the 2d case.

36. In the 3d case, deflections of the bifilar could only be obtained to the E, and, in the 4th case, to the S of the bifilar magnet, owing to the proximity of the bifilar to the walls of the Observatory. It was easy, however, from the observations with the small bar to make the requisite corrections for the difference of deflection on the opposite sides: the correction is small. The results for the 3d and 4th cases are contained in the 3d and 4th portions of Table 3.

TABLE 3.—Observations of Deflection for the Determination of the Coefficient of the Bifilar Magnetometer.

No. of Series.	Deflections of Bifilar Magnet.					Deflections of Declination Magnet.					Resulting Value of *k*.
	Date.	Distance.	Deflection.	Mean.	Therm.	Date.	Distance.	Deflection.	Mean.	Therm.	
	1847.	Feet.	Sc. Div.	Sc. Div.	°	1847.	Feet.	Sc. Div.	′ ″		
1	May 11	2·2 {E W	133·4 138·5	136·0	53·6	May 14	2·2 {N S	94·30 92·25	62 43	62·6	0·0001345
	May 13	2·7 {E W	64·4 66·4	65·4	61·9	May 14	2·7 {N S	45·85 45·00	30 33	62·6	0·0001359
	May 12	3·267 {E W	34·3 35·4	34·9	58·5	May 14	3·267 {N S	24·20 23·70	16 6	62·6	0·0001342
2	May 11	2·5 {N S	118·4 119·6	119·0	53·9	May 15	2·5 {E W	81·60 82·40	55 9	60·0	0·0001350
	May 13	3·167 {N S	60·9 60·7	60·8	60·9	May 15	3·167 {E W	42·05 42·75	28 31	60·0	0·0001364
	May 12	4·583 {N S	21·0 21·0	21·0	56·4	May 15	4·583 {E W	14·34 14·58	9 43	60·0	0·0001346
3	May 15	6·917 {N S	...... 119·8	119·8	......	May 15	6·917 {E W	82·56 82·84	55 37	61·5	0·0001351
	May 15	8·209 {N S	...... 71·4	71·4	......	May 15	8·209 {E W	50·13 49·88	33 38	61·5	0·0001370
4	May 19	5·5 {E W	125·1	126·0	55·2	May 15	5·2 {N S	102·48 103·28	69 11	61·8	0·0001350
	May 19	7·792 {E W	42·9	43·0	55·2	May 15	6·833 {N S	...... 44·23	29 45	61·8	0·0001357

37. *5th*, In May and August 1847, a theodolite magnetometer by Mr JONES of London was converted into a unifilar horizontal force magnetometer, the suspended

bar having been deflected through an angle $(u - \delta)$ as in Dr LAMONT's method, the variations of horizontal force were deduced from the scale readings, reduced to angular measure by the formula

$$\frac{\Delta X}{X} = - \cot (u - \Delta) \; (\Delta u - \Delta \delta) + q (t - t_0)$$

where u is the angle which the deflected magnet makes with the *astronomical* meridian (negative when to the east) and δ is the westerly declination, Δu being the arc value of the change of reading, and $\Delta \delta$ the arc value of the simultaneous change of declination obtained from the declinometer : q being the temperature coefficient of the deflecting bar $(=0{\cdot}00021)$, t_0 the standard temperature of the deflecting bar, and t the temperature of observation.

In May 1847, only three comparisons of the two instruments were obtained during a moderate magnetic disturbance ; the results are given as a specimen of the accuracy that may be expected from this method.

Date.	Bifilar Corrected.	u	δ	$(\Delta u - \Delta \delta) \times \cot 39° 40'$	t	$q (t - t_0)$	k
	Sc. Div.	° ′	° ′				
May 7d 22h 0m	479·9	−14 42·88	25 16·82		48·4		
				+0·007114		−0·000063	0·0001328
23 30	533·0	−14 29·56	25 9·86		48·7		
				+0·005331		−0·000084	0·0001344
8 1 32	571·9	−14 20·28	25 4·00		49·1		

The mean of the two values of $k = 0{\cdot}0001336$.

In August 1847, a series of comparative observations were made of the bifilar and a unifilar horizontal force magnetometer : these observations were made every hour for three days ; the results were grouped so as to obtain the greatest differences of readings for comparisons ; the mean angle of deflection of the unifilar $(u - \delta)$ was equal to 65°. The final result of the whole groups was, that the changes of the unifilar scale readings were to those of the bifilar scale readings as 1 to 0·974, the value of k for the unifilar being 0·0001389, therefore that of k for the bifilar = 0·0001353. The changes of horizontal force from which this result was deduced were small.

38. The following, then, are the values of k, deduced by the five different processes above :—

Short deflector, E. and W. of bifilar magnet, and N. and S. of declination magnet, $k = 0{\cdot}0001349$
.... N. and S. .... E. and W. .... $k = 0{\cdot}0001353$
Large deflector, E. .... N. and S. .... $k = 0{\cdot}0001360$
.... S. .... E. and W. .... $k = 0{\cdot}0001353$
Comparisons of unifilar and bifilar horizontal force magnetometers, $k = 0{\cdot}0001353$

The mean of all the results gives $k = 0{\cdot}0001354$
The adopted value of $k = 0{\cdot}000135$

39. The value of the coefficient deduced from the angle of torsion of the suspending wire is

$$1847. \quad k = a \cot v = 0{\cdot}00032675 \times \cot 69^\circ{\cdot}3' = 0{\cdot}0001251.$$

The ratio of the true value of k to that determined by the angle of torsion $= \frac{135}{125} = 1{\cdot}08$.

40. The true values of k from 1841, obtained from the formula $1{\cdot}08 \times a \cot v$ are given below :—

July $11^d\ 20^h$ 1841	—July $23^d\ 5^h$ 1841, ...	$k = 0{\cdot}000128$
Aug. 4 20 1841	—Sept. 7 5 1841, ...	$k = 0{\cdot}000164$
Sept. 7 20 1841	—Sept. 30 5 1841, ...	$k = 0{\cdot}000158$
Oct. 6 20 1841	—Oct. 19 28 1841, ...	$k = 0{\cdot}000141$
Oct. 19 23 1841	—April 27 4 1843, ...	$k = 0{\cdot}000135$
April 28 2 1843	—Nov. 8 22 1843, ...	$k = 0{\cdot}000130$
Nov. 10 8 1843	—Dec. 31 12 1845, ...	$k = 0{\cdot}000140$
Jan. 0 12 1846, and afterwards,	. . . .	$k = 0{\cdot}000135$

In order to reduce the variations of the horizontal component given, pages 229 to 238, in the volume for 1843, to their true values in parts of the whole horizontal component, they must be multiplied by the factor 1·316.

41. The bifilar magnet was adjusted November 10^d 1843, when the angle v was found = 68° 18′, the bifilar scale reading 173. The angle v remained unaltered, excepting for short periods during disturbances, till January 1, 1846. (See No. 43.)

42. During considerable disturbances the collimator scale, which contains too small an angle, goes out of the field of the reading telescope, it was found necessary in these cases to turn the arms of the torsion circle until it reappeared; afterwards the arms of the torsion circle were turned to their original position: experiments were made in the end of 1842, during periods of slight change, which shewed, after turning the arms of the torsion circle a few degrees in either direction, that on recurring to the original value of v, the scale readings were unaltered. If β be the small angle through which the arms of the torsion circle are turned, n be the scale reading *minus* 170 (the adopted scale zero), then N, the number of scale divisions from the zero (corrected for temperature) for the same force when $\beta = 0$, is obtained from the formula,*

$$\begin{aligned} \mathrm{N} &= \frac{2 \sin \frac{\beta}{2}}{a \cos v} \cos \left(v + \frac{\beta}{2}\right) + n \frac{\cos (v + \beta)}{\cos v} + t\, q' \\ &= \qquad \mathrm{A} \qquad\qquad\quad + n\, \mathrm{B} \qquad\quad + t\, q' \end{aligned}$$

β is considered negative when v is diminished, n is negative when the reading is below the zero (170), t is the temperature of the magnet minus 26°, and q' is the temperature coefficient in scale divisions.

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* Introduction, 1843, p. xxxiii.

43. The arms of the torsion circle were turned during disturbances,* as follows :

Sc. Div.
1845. Apr. 13^d 15^h 0^m— 46^m $\beta = -1^\circ 12'$ A = $-65{\cdot}8$ B = 1·052.
1845. Apr. 13^h 15^h 46^m—21^h 30^m $\beta = -0^\circ 9'{\cdot}5$ A = $-$ 8·5.

The arms of the torsion circle were turned to their original position at April 13^d 21^h 30^m.

Sc. Div.
1845. Dec. 3^d 7^h 2^m— 49^m $\beta = +3^\circ 13'{\cdot}5$ A = $+160{\cdot}0$ B = 0·857.
1845. Dec. 3^d 7^h 49^m—4^d $2\frac{1}{2}^h$ $\beta = -0^\circ 6'{\cdot}5$ A = $-$ 5·5.

The arms of the torsion circle were turned at Dec. 4^d $2\frac{1}{2}^h$, to within 1′ of the original reading ; the observations from that time till January 1, 1846, have been corrected by − 1·0 sc. div. for this error of torsion circle reading.

1846, January 1^d $3\frac{1}{2}^h$. On account of the readings of the bifilar approaching too near the top of the scale, the arms of the torsion circle were turned from 110° 16′·5 to 109° 31′, or through 45′·5, the angle v being changed from 68° 18′ to 69° 3′·5. The constants for reducing the observations after January 1, 1846, to scale divisions of the same value as in 1844 and 1845, are

1846. $\beta = +0^\circ 45'{\cdot}5$ A = + 39·7 sc. div. B = 0·967.

These reductions have not been made, but the observations from January 0^d 13^h, 1846 to 1^d 3^h have been reduced by the quantities

A = − 39·7 sc. div. B = 1·033

to the same scale values as the other observations in 1846, and in the abstracts the observations for 1846 have been rendered comparable with those for 1845 by the following process :—The scale reading immediately before turning the arms of the torsion circle was 218·7, therefore $n = 48{\cdot}7$ sc. div.; and from the constants A and B and the previous formula, N = 9·3 sc. div., whence the readings after the adjustment, the horizontal force remaining constant, should have been 179·3, the temperature of the magnet being 40°·9, the tabular reading before adjustment (corrected for temperature + 300) = 547·0, and the reading after adjustment (corrected for temperature + 300) = 508·7 ; since these two readings are for the same value of the horizontal force and the zero for 1845 is taken in the abstracts of the results as 500, z the zero for 1846 will be obtained from the equation

$$(547{\cdot}0 - 500{\cdot}0)\ 0{\cdot}000140 = (508{\cdot}7 - z)\ 0{\cdot}000135$$

whence $z = 460{\cdot}0$.

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* In 1847, it was found more convenient during disturbances, to bring the scale of the bifilar magnet into the field of the reading telescope, by means of a small deflecting magnet placed on a beam of wood at known distances from the centre of the bifilar magnet. The effect of the deflecting magnet was afterwards determined with the aid of a second deflecting bar.

300 sc. div. being added to all the readings for 1845, 340 has been added to all those for 1846, and the same zero, 500, is applicable to both.

44. The mean time of one vibration of the bifilar magnet, is between 26^s and 27^s: the natural arc of vibration is generally very small, and when considerable, the time of vibration was found less than from large artificial vibrations.* 25^s or 26^s has been used in the observations for 1845 and 1846.

45. The observations of the bifilar were made as follows: The point of the scale coinciding with the vertical wire of the fixed telescope is estimated to the tenth of a scale division at 25^s before the minute of observation, at the minute, and 25^s after it; the three readings being a, b, and c, the mean is deduced from the formula $\frac{a+2b+c}{4}$. The mean thus obtained is corrected to the temperature of 26° Fahr., a constant quantity has been added to all the corrected means. If N be the observed mean, and t be the observed temperature of the bifilar bar, the corrected means n, given in this volume, are obtained from the formulæ

$$1845.\quad n = \text{N} + 300{\cdot}0 + (t-26^\circ)\,1{\cdot}90$$
$$1846.\quad n = \text{N} + 340{\cdot}0 + (t-26^\circ)\,1{\cdot}975$$

1·90 and 1·975 being the temperature coefficients in scale divisions in 1845 and 1846 respectively.

The means f in parts of the whole horizontal force given in the abstracts of results, are obtained by the formulæ

$$1845.\quad f = (n - 500)\,0{\cdot}000140$$
$$1846.\quad f = (n - 500)\,0{\cdot}000135$$

0·000140 and 0·000135 being the values of k for 1845 and 1846 respectively.

No correction has been applied for the effect of the balance magnet, which is constant.

BALANCE OR VERTICAL FORCE MAGNETOMETER.

46. The balance magnetometer was made by ROBINSON of London; it is composed of a magnetic needle $c\,f\,c$, 12 inches long, about $\frac{3}{4}$ inch broad, and about $\frac{1}{16}$ inch thick, with knife-edged axle f, which rests upon agate planes; brass rings c c are attached to the extremities of the needle, each ring carrying a cross of spider threads. The needle is placed at right angles to the plane of the magnetic meridian, it is accurately adjusted to horizontality by a screw e which balances the needle, another screw d working vertically, regulates its sensibility. The apparatus, and a thermometer h which gives the temperature of the needle, is covered by a rectangular box k having glazed openings on both sides opposite the spider crosses; those on one side allowing light to be thrown on the crosses from two small mirrors, (one of which

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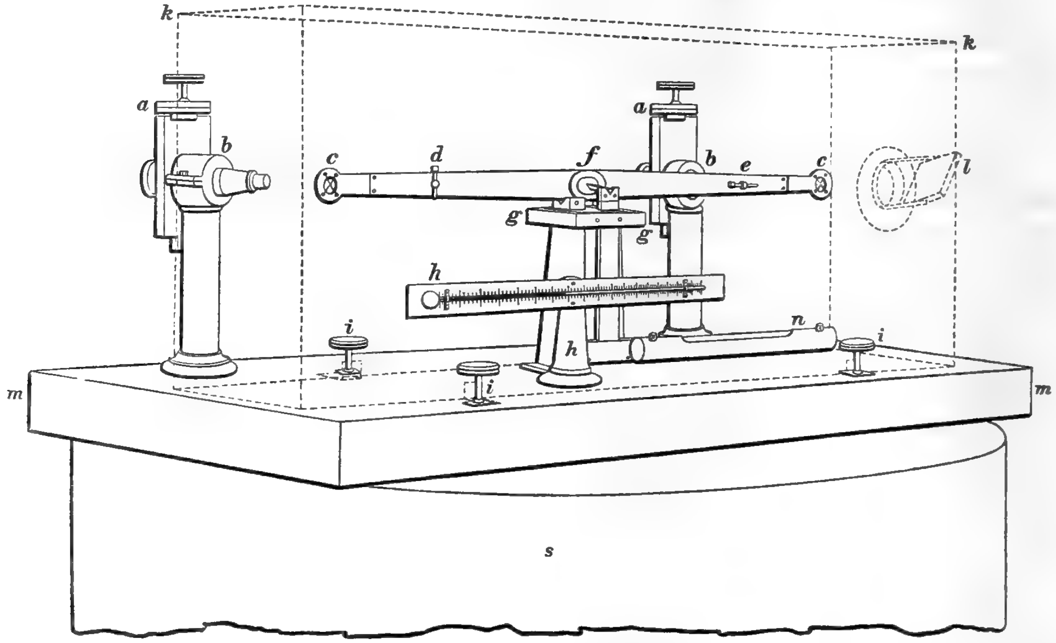
* Introduction, 1841–2, pp. xxviii., xxix.

l is indicated in the figure); those on the other, for viewing them and determining their position, which is done accurately by the microscopes *b b* carrying micrometers; the micrometer heads *a a* are divided into 50 divisions. The supports *g* of the needle are fixed to a marble slab *m*, cemented to the stone pillar *s*; the horizontality of the slab is indicated by a level *n*, the lower edge of the rectangular box is covered with velvet, and it is screwed hard to the slab by the screws *i i*. A four-fold cover of thick cotton cloth was placed over the rectangular box, July 18^d 12^h 1844, in order to keep the temperature as uniform as possible; the box itself is covered with gilt-paper internally and externally.



47. If m be the moment of free magnetism of the needle, Y the vertical component of the earth's magnetic force, G the weight of the needle into the distance of its centre of gravity from its centre of motion, and ϵ the angle contained by the line joining these two centres and the magnetic axis of the needle, the latter being horizontal, the equation of equilibrium is

$$m\,\mathrm{Y} = \mathrm{G} \cos \epsilon$$

differentiating this equation, dividing by it, and having regard to the sign of $\Delta\,\epsilon$

$$\frac{\Delta\,\mathrm{Y}}{\mathrm{Y}} = \tan \epsilon\,\Delta\,\epsilon - \frac{\Delta\,m}{m}$$

where

$$\tan \epsilon = \cot \theta\,\frac{\mathrm{T}'^2}{\mathrm{T}^2}$$

where θ is the magnetic dip, T′ is the time of one vibration of the needle in a horizontal plane, and T is the time of one vibration in a vertical plane.* $\Delta \epsilon$ is obtained from the observations in micrometer divisions, one division being $= 0' \cdot 1003$.†

The time of one vibration in the horizontal plane, $T' = 12^{s} \cdot 00$.‡

Time of vibration in the vertical plane.

The needle being in its usual position on the agate planes, the moveable wire of the left micrometer is made to bisect the spider-cross; the needle is then vibrated by means of a small piece of steel, through an angle of about 40 micrometer divisions or 4′, and the periods of the cross passing the wire, are estimated to a tenth of a second (See Table 12, Introd. 1843, p. xxxix.) The arc of vibration at the commencement was measured by means of the right micrometer, it was usually taken very small on account of the difference in the times of vibration with difference of arc (afterwards noticed, 54), although it is now certain that large arcs of vibration give a time which satisfies better the previous equation and the true coefficient of the instrument.

The following Table contains the observations for the value of T made in 1845 and 1846.

The number of vibrations observed, is given in the column after that containing the arc of vibration at commencement.

TABLE 4.—Values of T, the Time of Vibration of the Balance Needle in a Vertical Plane, with the Temperature of the Needle, in 1845 and 1846.

Göttingen Mean Time.	Arc at Commencement.	Number of Vibrations.	Time of one Vibration.	Temperature of Needle.	Göttingen Mean Time.	Arc at Commencement.	Number of Vibrations.	Time of one Vibration.	Temperature of Needle.
d. h.	′		s.	°	d. h.	′		s.	°
1845.					1845.				
Jan. 1 22	3·8	25	7·14	34·4	Mar. 13 22	3·2	8	7·08	31·9
Jan. 3 22	4·5	20	7·01	35·8	Mar. 16 22	3·8	15	6·82	31·1
Jan. 5 22	3·6	25	8·05	46·3	Mar. 23 23	3·9	15	8·07	45·6
Jan. 8 22	3·3	20	7·33	35·9	Apr. 1 11	4·7	15	8·10	48·8
Jan. 13 22	3·8	20	7·53	38·2	Apr. 7 0	4·3	15	7·90	47·8
Jan. 16 22	3·2	15	7·21	34·9	Apr. 13 22	4·3	25	7·30	42·7
Jan. 21 0	3·1	25	7·21	35·4	Apr. 21 8	5·1	20	8·84	58·8
Jan. 23 23	4·2	20	8·38	46·2	Apr. 21 23	3·5	25	8·04	50·6
Jan. 26 22	3·3	25	7·42	36·0	Apr. 29 0	4·1	25	7·89	52·7
Jan. 30 2	3·1	25	6·72	27·2	Apr. 30 23	4·0	15	8·02	54·5
Jan. 31 2	3·7	40	6·47	21·5	May 4 21	3·0	15	7·31	46·8
Feb. 4 22	3·7	15	7·64	38·7	May 7 23	4·0	15	7·06	44·7
Feb. 12 2	4·1	15	6·93	32·6	May 13 0	4·6	20	7·56	50·7
Feb. 16 23	3·7	20	7·49	38·8	May 15 8	4·0	15	8·34	58·5
Feb. 24 0	3·5	20	7·72	38·6	May 18 22	5·0	20	7·56	50·0
Mar. 2 22	3·9	20	7·40	39·5	May 19 21	5·0	20	7·37	48·3
Mar. 9 22	3·9	20	7·43	41·0	May 28 0	3·8	20	7·11	47·6
Mar. 12 23	3·6	20	6·87	31·6	June 2 22	4·0	25	7·91	56·3

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* See Dr LLOYD's Account of the Magnetical Observatory of Dublin, p. 38.

† Introduction, 1843, p. xxxviii.

‡ Introduction, 1841–2, Table 15, p. xxxv.

TABLE 4.—*continued.*

Göttingen Mean Time.	Arc at Commencement.	Number of Vibrations.	Time of one Vibration.	Temperature of Needle.	Göttingen Mean Time.	Arc at Commencement.	Number of Vibrations.	Time of one Vibration.	Temperature of Needle.
d. h.	′		s.	°	d. h.	′		s.	°
1845.					1846.				
June 10 10	4·3	30	8·27	63·0	Feb. 4 23	4·3	18	6·63	41·7
June 12 8	3·7	25	9·17	74·3	Feb. 22 23	3·9	20	7·01	50·4
June 13 9	3·7	20	9·22	74·9	Mar. 18 22	3·7	25	6·00	30·9
June 17 1	4·2	20	7·90	64·0	Mar. 25 1	4·1	30	6·59	43·0
June 27 22	3·5	20	7·33	54·0	Apr. 26 22	3·5	25	6·37	42·2
July 7 17	3·6	20	8·05	64·3	May 1 23	4·6	20	6·91	54·2
July 11 23	2·9	15	7·48	57·4	May 18 22	4·2	25	6·74	51·9
July 14 21	3·8	20	7·35	55·2	May 21 9	4·5	25	7·39	60·5
July 20 22	3·6	20	7·17	56·0	May 25 8	4·1	20	7·58	63·5
July 29 22	3·6	20	7·36	56·3	May 26 22	4·0	15	6·94	54·8
Aug. 10 22	4·0	20	7·43	57·8	May 27 22	3·7	25	6·85	52·5
Aug. 19 19	4·3	25	7·20	53·7	May 29 9	3·7	20	7·65	65·4
Aug. 20 1	3·4	20	7·01	53·9	May 30 8	3·1	20	7·62	66·0
Aug. 28 22	4·4	20	7·96	61·9	June 17 20	3·1	20	8·10	72·0
Sept. 9 22	4·3	20	7·41	57·8	June 23 20	3·5	10	6·95	56·6
Sept. 19 23	4·0	10	7·01	50·3	June 23 23	4·0	10	6·95	56·5
Sept. 22 21	4·6	20	6·74	43·8					
Sept. 23 22	3·6	10	6·56	43·2	July 2 23	6·0	30	10·54	64·7
Oct. 1 23	4·2	15	6·89	51·5	July 3 22	5·2	30	10·43	63·3
Oct. 5 22	4·4	30	6·49	41·7	July 5 23	3·8	30	10·47	63·2
Oct. 13 21	3·5	15	6·98	54·5	July 8 22	4·6	25	10·16	56·1
Oct. 21 23	3·1	20	6·58	49·2	July 13 22	5·0	30	10·40	63·5
Oct. 30 22	3·9	20	6·76	47·5	July 19 23	4·5	30	10·15	60·7
Nov. 3 23	4·4	15	6·35	39·1	July 26 20		30	10·38	62·3
Nov. 17 22	4·5	20	6·43	42·5	Aug. 13 22	4·2	30	10·26	59·0
Nov. 23 22	3·6	15	6·06	36·2	Sept. 14 22	4·0	26	10·16	61·8
Nov. 26 22	4·0	20	6·71	49·7	Oct. 5 20	5·0	26	9·74	56·7
Dec. 11 23	3·6	18	6·32	40·2	Oct. 23 22	3·8	15	9·48	46·1
Dec. 12 23	4·1	20	6·03	33·5	Nov. 6 22	4·8	15	9·68	49·5
Dec. 14 22	4·1	20	6·36	42·5	Nov. 9 23	4·0	17	9·37	42·2
1846.					Dec. 1 23	3·6	15	9·14	33·3
Jan. 8 23	4·0	20	6·84	47·5	Dec. 2 22	4·4	10	8·95	27·5
Jan. 25 22	4·0	18	6·75	47·3					

48. 1*st*, It has been concluded from Table 5, Introduction 1844, that after the needle has been vibrated by any means through a large arc, its time of vibration has been increased; this will be apparent from the observations of vibration before and after April 30^d 7^h, July 24^d 18^h, July 26^d 3^h, November 5^d, and November 8^d 21^h, 1844. On all these occasions the needle was vibrated through large arcs, either from the accidental approach of iron, or from the removal of the box for a short period.*

49. 2*d*, It is obvious, from the observations for 1844, 1845, and 1846, that the time of vibration depends upon the temperature of the needle, a change of +1° of temperature causing a change of from $+0^{s}{\cdot}05$ to $0^{s}{\cdot}10$ in the time of one vibration.

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* See Transactions of the Royal Society, Edinburgh, vol. xvi., p. 69, Table I.

The amount of change in the time of vibration, for 1° of temperature can only be determined from the changes within short periods, since,

50. 3*d*, The time of vibration diminishes with time. The balance needle was adjusted, Jan. 27^{d} 1844, the times of vibration after the adjustment were

Feb. 1^{d}— 6^{d}, 1844,	Mean time of one vibration,	9^{s}·24	Temperature of needle,	33°·9
Feb. 19^{d}—27^{d} ...		8^{s}·65		32°·0
Dec. 9^{d}—20^{d} ...		6^{s}·90		33°·7
Dec. 12^{d}— 1845,		6^{s}·03		33°·5

The temperature of the needle is nearly the same in these cases; it appears, therefore, that the time of vibration has diminished fully two seconds in the first ten months. This diminution is altogether independent of any variation in the magnetic moment of the needle, since the time of vibration in a horizontal plane remains nearly constant. From the beginning of 1844, to the end of 1845, the mean position of the needle had varied about 300 micrometer divisions. Since the position of the needle also varies with temperature, it does not at first appear improbable that the variation in the time of vibration is due to the varying position alone. Increasing temperature at the same time raises the north end of the needle and increases the time of vibration; from the beginning of 1844 till 1846, however, the north end of the needle has been rising, while the time of vibration has been diminishing. It is probable from this, and certain from other observations, that the time of vibration is nearly constant for any angle which the magnetic axis of the balance needle makes with the horizontal. During a considerable magnetic disturbance, April 17^{d} 1844, observations of vibration were obtained for positions of the balance needle varying 400 micrometer divisions, yet the observed time of vibration only varied four-tenths of a second, and that not directly with the inclination of the needle, but from errors of observation and variation of temperature. Such a variation of position, if due to temperature alone, would have required a change of 50° Fahr., which would have produced a change of about 3^{s}·8, in the time of vibration.*

51. In order to determine more distinctly whether change of inclination of the magnetic axis affected the time of vibration to any considerable extent, the following observations were made during an adjustment of the instrument.

January 18, 1848. The balance needle with its magnetic axis *in* the magnetic meridian, nearly horizontal, mean position + 160 mic. div.

Arc of vibration at commencement, 32′. Time of one vibration, 8^{s}·05.

After this observation, turned *out* the horizontal screw one revolution, which changed the reading from + 160 mic. div. to − 818 mic. div.

Arc of vibration at commencement, 32′. Time of one vibration, 8^{s}·12.

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* Transactions of the Royal Society, Edinburgh, vol. xvi., p. 72, Table IV.

The horizontal screw was now turned *in* two revolutions, or one revolution farther in than at first, when the reading was changed from – 818 mic. div. to + 1120 mic. div.

Arc of vibration at commencement, 21′. Time of one vibration, $8^{s}\cdot 00$.

Finally, the horizontal screw was turned *out* one revolution, as at first, the mean reading becoming as at first + 160 mic. div., when

Arc of vibration at commencement, 32′. Time of one vibration, $8^{s}\cdot 12$.

52. These results are very consistent, and speak much in favour of the excellence of the knife edges of the axle. It is quite certain, therefore, that the variations in the time of vibration observed in 1844, 1845, and 1846, were not due to the varying position of the needle, since all the observations from 1844 till 1846 were obtained from the needle when in positions varying less than 400 micrometer divisions.

53. As it was believed, that during considerable disturbances when the horizontal component of the earth's magnetism increased considerably, the north end of the needle might be drawn slightly out of its position at right angles to the magnetic meridian, the following observations were made to determine whether such a result would affect the time of vibration.

January 14d 1848. The balance needle being placed on its agate planes with its magnetic axis at right angles to the magnetic meridian, the following observation was made; position of needle, micrometer reading + 180.

Arc of vibration at commencement 8′·4. Time of one vibration $11^{s}\cdot 27$.

Needle vibrated excessively by a pair of magnetic scissors.

Arc of vibration at commencement 4′·8. Time of one vibration $11^{s}\cdot 28$.

Brought a 4-inch deflecting magnet close to the *side* of the balance box near the west extremity, in order to draw the needle out of the plane at right angles to the magnetic meridian; after considerable vibration, always checked by changing the position of the deflector, the following observation was made:

Arc of vibration at commencement 3′·0. Time of one vibration $11^{s}\cdot 28$.

Performed the same operation with the deflector, and again observed,

Arc of vibration at commencement 8′·0. Time of one vibration $11^{s}\cdot 12$.

Now lifted the needle by the Y*s*, lowered it, and observed the time of vibration with a large arc.

Arc of vibration at commencement 100′·0. Time of one vibration $11^{s}\cdot 27$.

Again vibrated the needle by means of the deflector placed at the side of the needle near its east extremity, so as to displace the needle from the plane at right angles to the magnetic meridian, and observed time of vibration,

Arc of vibration at commencement 90′·0. Time of one vibration 11ˢ·29.

None of these operations seemed to alter the time of vibration to any distinct amount; the box was accordingly lifted off, and the needle was placed about 3° out of the plane at right angles to the magnetic meridian, the north pole (*i.e.* west extremity) being moved towards the north, the following observation was then made :

Arc of vibration at commencement 9′·0. Time of one vibration 10ˢ·58.

Although the time of vibration in this position differs somewhat from that in the normal position, the previous observations prove that any deviations due to natural changes of force, would be insufficient to cause the differences evident in the Tables for 1844, 1845, and 1846.

54. 4*th*, It was found in 1844 and 1845, that the time of vibration depended greatly upon the arc of vibration, the time being greatest for large arcs. (See Trans. Roy. Soc. Ed., vol. xvi., p. 70, Table II.)

55. It is difficult, if not impossible, to offer any explanation of the anomalies in the time of vibration noted above, the knife-edged axle is a fruitful resource in instruments of this class, for the explanation of all difficulties. In this case, the needle is by the best maker (ROBINSON); when examined by a lens, the knife edge appears perfect, and finally, the anomalies disappear at certain times without any apparent difference in the state of the instrument; thus, in the observations already given, Jan. 14, 1848, the time of vibration for an arc of 3′ is exactly the same as for an arc of 100′; the observations also for the time of vibration with the needle differently inclined to the horizontal (Jan. 18, 1848), speak distinctly in favour of the excellence of the knife edges. It should also be remarked, that previously to the adjustment, Jan. 27, 1844, the curious effect of temperature upon the time of vibration was scarcely exhibited; and it may be added, that in eight months since the needle has been adjusted with its axis *in* the magnetic meridian, the time of vibration appears to remain nearly constant and equally independent of temperature and arc of vibration.

56. It appears certain from these results, obtained from an instrument of the best character, treated with the greatest care, that the time of vibration in a vertical plane cannot be depended on as an element in the reduction of the observations of the balance magnetometer.

57. The question still remains, to what extent these anomalies in the time of vibration affect the observations for the varying vertical component of the magnetic force? The following fact appears to render it certain that they have no effect whatever. In determining, by the method of comparisons (see pages xlviii. and xlix.), the effect of a change of 1° Fahr. upon the position of the needle, it has been found

that this effect is nearly constant, while the time of vibration in the vertical plane has varied from upwards of 11 seconds in 1843, to less than 6 seconds in 1846 (No. 77, 3*d*); the differences of the results for the temperature coefficient being in all probability due to considerable changes of vertical force in the periods selected for the determinations, and certainly having no relation whatever to the varying time of vibration. Since the temperature coefficient in micrometer divisions (q') has remained constant, it follows that the coefficient of reduction (k) must also be constant. This conclusion renders it the more desirable that the value of the angular motion of the needle in parts of the vertical component should be determined by another method which does not involve the time of vibration; the statical method already described for the bifilar magnetometer, has been employed for this purpose with some modification.

58. January 6, 1848. Wooden beams having been placed horizontally at right angles to the magnetic meridian, and a line having been drawn upon them, which was a projection of the prolongations of the balance needle, a small deflecting bar (3·65 inch long, and having a temperature coefficient = 0·000285), was placed vertically at different distances on the beam, and the angles of deflection of the needle were observed; the centre of the deflecting bar was in the prolongation of the axis of the balance needle when horizontal, and the distances were measured from the knife edges of the axle, which, however, was found not to be the centre of magnetism of the needle. The resulting deflections and values of k for each distance will be found Table 5.

January 10, 1848, the balance needle was taken out of its box, and attached to the brass detorsion bar of the declinometer; the brass bar was mounted with a glass scale and lens, and was suspended in the declinometer box; the balance needle was then deflected by the bar used for the previous deflections, which was placed to the north and south of the suspended needle, so that in both series of deflections the prolongation of the balance needle in its normal position passed through the centre of the deflecting bar. The deflections for three distances are given, Table 6.

TABLE 5.—Observations of Deflection of the Balance Magnet resting upon the Agate Planes, January 6, 1848.

Distance of Bar.	Order of Observation.	Bar E. N. end up. Balance.	Order of Observation.	Bar W. N. end up. Balance.	Order of Observation.	Bar E. N. end down. Balance.	Order of Observation.	Bar W. N. end down. Balance.	Deflection at 37°.	Deflection at 32°.	Log. tan. *u*.	Value of *k*.
Feet.		Mic. Div.		Mic. Div.		Mic. Div.		Mic. Div.	Mic. Div.	Mic. Div.		
Away	1	+ 36·7	14	+ 69·5			27	− 49·0				
2·6	2	+ 267·0	13	+ 383·5	15	− 201·5	26	− 382·2	308·5	309·0	7·94533	0·0000099
2·4	3	+ 333·5	12	+ 471·5	16	− 282·0	25	− 479·7	391·7	392·3	8·06003	·0000099
2·2	4	+ 444·1	11	+ 632·0	17	− 401·2	24	− 625·5	525·7	506·5	8·18828	·0000099
2·0	5	+ 612·2	10	+ 875·5	18	− 583·5	23	− 850·5	730·4	731·5	8·33067	·0000099
1·8	6	+ 907·5	9	+ 1238·2	19	− 890·0	22	− 1227·0	1065·7	1067·4	8·49577	·0000099
1·7	7	+ 1184·5	8	+ 1500·5	20	− 1125·0	21	− 1505·5	1328·9	1331·0	8·58925	·0000096
Away	6	− 66·5	11	+ 28·5	1	− 44·5						
2·6	7	+ 190·2	10	+ 338·0	2	− 280·7	5	− 349·5	289·6	290·1	7·94533	0·0000101
1·8	8	+ 899·0	9	+ 1172·0	3	− 912·5	4	− 1188·0	1045·4	1047·5	8·49577	·0000103

TABLE 6.—Observations of Deflection of the Balance Magnet suspended horizontally by the Declinometer Thread, January 10, 1848.

Distance of Deflecting Bar.	Observed Deflection.	Mean Observed Deflection.	Value of 1 + Φ.	Deflection Corrected for Torsion.	Value of One Sc. Div.	Resulting Deflection.	Temp. of Deflecting Bar.
Feet.	Sc. Div.	Sc. Div.		Sc. Div.	′	′ ″	°
3·0 S.	26·96	25·37	1·00851	25·59	0·746	19 5	32·0
N.	23·78						
2·4 S.	56·83	52·46		52·91		39 28	
N.	48·09						
1·9 S.	129·88	117·43		118·43		88 21	
N.	104·98						

From the deflections, Table 6, and the formula

$$\frac{\mathrm{M}}{\mathrm{X}} = r^3 \tan u \left(1 + \frac{p_1}{r^2} + \frac{q_1}{r^4}\right),$$

we find

$$\log \frac{\mathrm{M}}{\mathrm{X}} = 9{\cdot}13614 \qquad - \log p_1 = 9{\cdot}88791 \qquad - \log q_1 = 9{\cdot}11654$$

From the previous equation,

$$\tan u = \frac{\mathrm{M}}{\mathrm{X}} \frac{1}{r^3 \left(1 + \frac{p_1}{r^2} + \frac{q_1}{r^4}\right)};$$

the values of $\frac{\mathrm{M}}{\mathrm{X}}$, p_1, and q_1, given above, and the values of r from the first column of Table 5, being substituted in this equation, the values of log tan u, column 12, have been obtained.

59. If Y, the vertical component, be substituted for X, in equation (2.), No. 34, we shall have, since $\mathrm{Y} = \mathrm{X} \tan \theta$

$$\frac{\Delta \mathrm{Y}}{\mathrm{Y}} = \frac{\mathrm{M}}{r^3 \mathrm{X} \tan \theta} \left(1 + \frac{p_1}{r^2} + \frac{q_1}{r^4}\right),$$

whence

$$k = \frac{\tan u}{n \tan \theta}$$

where k is the value of $\frac{\Delta \mathrm{Y}}{\mathrm{Y}}$ for one micrometer division, u and n are the corrected horizontal and vertical deflections for the same distance r; the former in angular measure, its logarithmic tangent being given, column 12, Table 5; and the latter in micrometer divisions, reduced to the temperature of the deflecting bar during horizontal deflections; θ is the magnetic dip, the adopted value being 71° 20′. The temperature coefficient of the deflecting bar = 0·000285.

The mean of all the values of k, 13th column, Table 5 = 0·00000994.

60. When the vertical deflections of the balance needle made July 1^{d} and 2^{d} 1846, are compared by the previous method, with the horizontal deflections of the same needle, given Table 6, allowance being made for the loss of magnetism of the deflecting bar between July 1846 and January 1848, k is found = 0·00001025.

The adopted value of k for the balance magnet = 0·0000100

This value of one micrometer division in parts of the whole vertical component may be considered applicable to all the observations of the balance magnet since 1841: it has been used in the abstracts of results for the present volume.

61. The balance needle was deflected July 1 and 2, 1846, for the purpose of determining the value of k, it was readjusted on July 2^{d}.

As the readings of the micrometer had become previously too much negative, the horizontal screw was turned in a little, the following comparisons of observations before and after the adjustment were made for the purpose of connecting the two series.

Mic. Div.
Mean balance reading corrected for temperature, June 29^{d} and 30^{d}, . = 383·0
.... July 3^{d} and 4^{d}, . = 957·0
Difference of readings before and after adjustment, ... = 574·0

Mean balance reading corrected for temperature, June 1^{d}—13^{d}, . . . = 396·5
.... June 15^{d}—27^{d}, . . . = 396·0
Mean change of reading for 14 days, ... = − 0·5
Mean reading, therefore, before adjustment, corresponding to July $1\frac{1}{2}^{d}$, . . . = 395·6

Mic. Div.
Mean balance reading corrected for temperature July 6^{d}— 18^{d}, = 966·4
.... July 20^{d}—Aug. 1^{d}, = 957·5
Mean change of reading for 14 days, ... = − 8·9
Mean reading, therefore, after adjustment, corresponding to July $1\frac{1}{2}^{d}$, . . . = 973·1
The readings after adjustment are therefore greater than before adjustment, by 577·5

A comparison of the mean for the fortnight before adjustment, with that for the fortnight after adjustment, rejecting days of disturbance, and allowing for secular change, gave 577.

Mic. Div.
The readings after adjustment, are therefore considered greater than those before adjustment, by.. 576·0.

The observations after July 2^d are reduced to those before that date by the above quantity.

62. The observations of the balance magnetometer are made in the following manner:—The moveable wire of the right micrometer is made to bisect the spider-cross half the time of vibration in the vertical plane before the minute of observation, and that of the left micrometer as long after the minute; the mean of the two readings gives the position of the needle at the minute. The readings increase positively when the north pole of the needle moves below the horizontal. The tabular observations given, in this column, are obtained thus: n being the observed reading of the needle (generally negative), t that of the thermometer, giving the temperature of the needle, q' the temperature coefficient in micrometer divisions $= 7\cdot 90$, and R the quantity in the column, " Balance Corrected"

Jan. 1^d 1845—July 1^d 1846. $R = 700 + q'(t - 26) + n$;
July 3^d 1846—Dec. 31^d 1846. $R = 124 + q'(t - 26) + n$;

increasing tabular values, therefore, indicate increasing vertical force.

THE TEMPERATURE COEFFICIENTS OF THE DEFLECTING, BALANCE, AND BIFILAR MAGNETS.

Deflecting Magnet.

63. The temperature coefficient of the large deflecting bar (15 inches long), used in the observations for the absolute horizontal intensity, was determined November 11, 1843, by hot and cold water experiments, see pages xlii. and xliii., Introduction 1843, for the details: the mean of all the observations gave

The correction for 1° of Fahr., $q = 0\cdot 000288$

64. The observations from which this result was obtained were very good, considering that the whole angle of deflection was less than 3°, and it may therefore be worth examining the individual results for the highest and lowest temperature. The whole number of results was 15, the mean difference, from the final result given above, $=0\cdot 000025$, and the probable error of a *single* result was therefore about 0·000021.

The mean of 9 results for the mean temperature 49°·7 gave $q = 0\cdot 000289$
The mean of 6 .... 68°·7 ...... $q = 0\cdot 000286$

so that the temperature coefficient for this bar is constant within the *ordinary* temperatures occurring during the observations in which it was employed.

Bifilar Magnet.

65. The temperature coefficient for this magnet was also determined by means of hot and cold water experiments, Nov. 9 and 10, 1843. See page xli., Introduction, 1841–2, for the details. The whole number of results was 30: the mean gave

The correction for 1° Fahr., Q = 0·000294.

66. If the 27th and 28th results (counting from the top of the last column of Table 19, p. xli., Introduction, 1841–2) be rejected, as it is believed that the great difference of both from the mean was probably due to one error in reading, we find the average difference of the 28 results from the mean = 0·000021, and the probable error of a single result was therefore about 0·000017. Combining the results from high temperatures together, and similarly for those from low temperatures, we find

The mean of 15 results for the mean temperature 48°·0 gave Q = 0·000292
The mean of 13 .... 68°·7 ...... Q = 0·000295

so that for the bifilar magnet, also, the temperature coefficient is constant within the ordinary temperatures of 32° to 80° Fahr.

67. The correction for the expansion of the silver wires and brass grooved wheel, =0·000010, being added to the value of Q above, we have

The temperature correction for 1° Fahr., *from hot and cold water experiments*, q = 0·000304.

68. As the observations in connection with the balance needle had shewn that there might exist variations due to temperature, other than those due to the variation of the magnetic moment of the magnet, such as the varying elasticity of the suspending wire of the bifilar magnet, the temperature coefficient was determined in the following manner, which had at first been found to give consistent results for the balance needle.

69. A series of days being selected in which the magnetic irregularities are small, and in which the variations of temperature are as considerable as possible, if we compare the mean instrumental readings for any two days, and if Δ R be the difference in scale divisions, this difference is due to change of temperature of the magnet, and to change of the horizontal component of the earth's magnetism, let the portion of change of reading due to the former = A, and to the latter = Δ X, so that

$$\Delta \mathrm{R} = \mathrm{A} + \Delta \mathrm{X}.$$

If the difference of the mean temperatures of the magnet for the same two days be Δt, then the correction for 1° of temperature in scale divisions

$$q' = \frac{A}{\Delta t}$$

whence

$$q' = \frac{\Delta R}{\Delta t} - \frac{\Delta X}{\Delta t}$$

Let a series of such values be obtained by comparing the mean scale reading, and mean temperature of the magnet for each day with those for each day following in the period selected: if we consider the differences Δt positive, when the succeeding day's mean temperature is less than that for the preceding day, and sum the whole number of differences for which Δt is positive,* then

$$q' = \frac{\Sigma \Delta R}{\Sigma \Delta t} - \frac{\Sigma \Delta X}{\Sigma \Delta t}$$

If we neglect the last member, the whole error of the determination of q' will depend on the sum of variations of the mean horizontal force $\Sigma \Delta X$; as in a sufficient number of determinations, it is probable that these variations will be as much positive as negative, and, therefore that the numerator will nearly vanish, the last member may be neglected in the determination of q', and this with the more accuracy the larger the sum of the differences of temperature $\Sigma \Delta t$. Again, if the differences for which Δt is negative are summed, we shall have

$$q' = \frac{\Sigma \Delta R}{\Sigma \Delta t} + \frac{\Sigma \Delta X}{\Sigma \Delta t}.$$

The sign of the first member on the right remains as before, since ΔR also changes sign. Reasoning as in the previous case, $\Sigma \Delta X$ may be supposed nearly zero, and the last member of the equation negligible. If, however, the supposition that the sign of ΔX varies positively and negatively with reference to the sign of Δt be inaccurate, it must be supposed either that the horizontal component remains constant, and therefore, that $\Delta X = 0$, or that it varies in one direction only, increasing continuously, or diminishing continuously, throughout the period selected, and, therefore, that the sign of ΔX is the same for both equations. In the latter case, it is evident that by taking the mean of the values of q' from the two equations, the last members will nearly destroy each other. It has been supposed that the variations of X are altogether independent of the variations of the temperature, a supposition which is borne out by every method of examination of the results. The details of a series of comparisons are given, pages li., lii., and liii., Introduction, 1843, from these it appears:

70. 1*st*, That the value of q' is the same, when a sufficient number of compari-

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* If the scale readings increase with increasing horizontal force, ΔR will generally be negative when Δt is positive, and *vice versa*. The sign of Δt is used as the argument, so that if ΔR be positive when Δt is positive, that value of ΔR will be subtracted from the sum of differences $\Sigma \Delta R$.

sons have been obtained, whether it has been obtained from comparisons of daily means, at 1, or 2, or 3, ... or 14 days' interval.

71. *2d*, That the value of q' is the same, whether the differences of temperature have been due to natural or artificial causes, and when the differences of temperature of the magnet have had an opposite sign from those for the temperature of the external air.

72. From the second result, it follows, that the variations of the horizontal component of the earth's magnetism are wholly independent of the temperature of the air, and from both results it appears probable that they are independent of the temperature of the soil.*

73. The following Table contains the sums of differences of the daily mean temperature of the bifilar magnet, and the value of q' which has resulted from each series of comparisons. The series of comparisons for 1845 have been made since the publication of the series for 1844, for the purpose of verifying the constancy of the result.

TABLE 7.—Determinations of the Temperature Coefficient of the Bifilar Magnet.

Period.	Sum of Diff. Temp.	Value of q'.	Period.	Sum of Diff. Temp.	Value of q'.
1844.	°	Sc. Div.	1845.	°	Sc. Div.
May 9—May 24	320·6	2·22	Jan. 13—Feb. 12	1809·0	1·81
May 29—June 28	1610·7	1·83	Feb. 26—Mar. 28	1608·1	2·06
July 17—July 30	270·0	1·77	June 2—July 2	1725·0	2·13
Sept. 2—Sept. 25	1164·4	1·96	Dec. 8—Dec. 31	757·7	1·65
Nov. 26—Dec. 13	833·3	1·99			

The series of observations for 1844, giving each result an equal weight, give $q' = 1·95$ sc. div.
.... 1845, ... $q' = 1·91$ ...
.... 1844, giving the results the weights $\Sigma \Delta t$, give $q' = 1·92$ ...
.... 1845, ... $q' = 1·95$ ...

Whether the results for each year have equal weights, or have weights depending on the sums of differences of the daily mean temperatures ($\Sigma \Delta t$), we find

$$q' = 1·93 \text{ sc. div.}$$

The adopted value of the temperature coefficient of the bifilar magnet, $q' = 1·90$ sc. div.

The value of one scale division in parts of force for the period of comparisons (1844 and 1845), being $k = 0·000140$.

Whence, the correction for 1° Fahr., from comparisons of observations, is $q = 0·000266$.

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* See foot-note, p. 395 of the volume for 1844.

74. The result from hot and cold water experiments is nearly $\frac{1}{7}$ more. It appears, therefore, that the determination of the temperature coefficient, by removing the magnet from its position in the instrument and varying its temperature by means of hot and cold water, cannot be depended on. It appears also, that when a sufficient number of observations is included, the method of comparison previously described gives, under very different conditions, consistent, and, therefore, it is probable, accurate results.*

Balance Magnet.

75. The temperature coefficient of the balance magnet was determined by means of hot and cold water experiments August 24, September 1 and 2, and November 13, 1843, and January 27, 1844. See pages xlii., xliii., and xliv., Introduction, 1841–2, for the details. The mean of the whole observations, properly weighted, gave

$$q = 0{\cdot}000073.$$

76. The only good series was that obtained January 27, 1844, which included changes of temperature from 35° to 65° only; the other series are too inaccurate to be employed for the determination of the value of q for high and low temperatures; from series of comparisons of the usual observations of the balance it has been found, however, that the value of q', the temperature correction for 1° Fahr. in micrometer divisions, is the same for high and low temperatures, thus—

		Mic. Div.
From 7 series of comparisons in 1844 and 1845, about the mean temperature	40°,	$q'=8{\cdot}33$
From 8	60°,	$q'=8{\cdot}30$

As the first result is the mean of 7 values of q', obtained from comparisons of the mean readings of the balance magnetometer for about 170 days, in the months of January, February, November, and December 1844 and 1845; and as the second result is the mean of 8 values of q', obtained from comparisons of the mean readings of the balance magnetometer upon about 190 days in the months of May, June, July, August, and September 1844 and 1845; it is extremely probable that the temperature coefficient for the balance magnetometer is constant for the ordinary temperatures of observation.

77. As it was found impossible to determine k the value of one micrometer division in parts of the whole vertical component, by means of the vertical vibrations, the value of q obtained from hot and cold water experiments could not be employed, since the observations could not be reduced to parts of vertical force, nor could the value of q be reduced to micrometer divisions. In consequence of this

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* It should be remarked, that these conclusions do not depend wholly upon the results for the Makerstoun instruments, their accuracy has been verified by an examination of the observations made in other places.

difficulty, the method already described for the bifilar magnetometer was first employed for the determination of q' the temperature coefficient in micrometer divisions: the details of several of these comparisons will be found, pages xlv., xlvi., xlvii., xlviii., and xlix., Introduction, 1843. It was found from these comparisons,

1*st*, That the value of q', when a sufficient number of comparisons had been obtained, was independent of the interval between the days compared.

2*d*, That the value of q' remained the same after various adjustments of the needle; the vertical screw for adjusting the sensibility never having been touched.

3*d*, That the value of q' has remained constant while the time of vibration in a vertical plane has varied from upwards of 11^s to less than 6^s; from which result it has been concluded that the value of k also has been constant.

4*th*, That the value of q' is the same, whether the differences of temperature of the magnet have been due to natural or artificial causes, and whether the differences of temperature of the magnet have had the same sign or an opposite sign from those of the temperature of the air.

78. From the 1st and 4th conclusions, it follows that the variations of the vertical component of the earth's magnetism are independent of the temperature of the air and of the temperature of the soil.*

79. The mean of all the results in the volume for 1843, Introduction, pages xlvii. and xlviii., gave

$$q' = 7{\cdot}90 \text{ micrometer divisions};$$

and adopting the value of k, obtained from deflections, No. 59,

$$q = 0{\cdot}000079.$$

Which result is only $\frac{1}{12}$ more than that obtained from the hot and cold water experiments: it appears in the case of the Makerstoun instrument that the errors of the usual methods are found chiefly in the determination of k; this, however, is not always the case.

The observations for 1843, 1844, 1845, and 1846, in micrometer divisions, have been corrected by the value

$$q' = 7{\cdot}90 \text{ micrometer divisions.}$$

80. Since this value was obtained, several other determinations have been made, by comparisons of observations in 1844, 1845, and 1846; all the results obtained are given in the Table below; several of the results obtained more lately have been deduced from periods ill fitted to give a good value; the whole, however, have been given in order to shew the amount of error that may be expected in using bad series. In one or two of these cases the amount of disturbance has not been very considerable, but the greatest variations of the daily mean vertical force have *happened* to

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* See foot-note, p. 395 of the volume for 1844.

occur at the same time with the greatest variations of mean temperature; it is believed that it is to this cause chiefly that the differences of the results are to be attributed.

TABLE 8.—Determinations of the Temperature Coefficient of the Balance Magnet.

Period.	Sum of Diff. Temp.	Value of q'.	Period.	Sum of Diff. Temp.	Value of q'.
1843.	°	Mic. Div.	1844.	°	Mic. Div.
Jan. 16—Jan. 21	58·4	8·21	Nov. 4—Nov. 30	1066·2	6·92
Jan. 23—Jan. 28	90·9	6·99	Dec. 2—Dec. 28	939·0	7·20
Jan. 30—Feb. 4	64·0	7·21	1845.		
Feb. 6—Feb. 11	67·8	6·69	Jan. 6—Feb. 8	2086·3	7·57
June 1—June 30	1885·8	7·82	Feb. 26—Mar. 28	1830·1	8·00
Sept. 6—Sept. 16	120·4	8·04	Apr. 10—May 10	1279·1	9·08
1844.			June 2—June 30	1551·6	8·47
Jan. 1—Jan. 26	971·4	9·27	July 7—Aug. 6	1069·8	10·01
Feb. 5—Mar. 6	1392·5	9·30	Sept. 9—Oct. 13	1580·6	7·81
May 9—May 24	350·6	7·93	Dec. 11—Jan. 10	1585·2	10·17
May 29—June 29	1693·1	7·43	1846.		
July 4—Aug. 3	1360·9	7·74	Nov. 30—Dec. 26	1190·2	7·72
Aug. 4—Sept. 6	904·0	7·90			

Giving the differences for all the series equal values, and dividing the sums of differences of the daily means in micrometer divisions by the sums of differences of the daily mean temperatures of the needle, we have

$$q' = 8{\cdot}23 \text{ mic. div.};$$

but if the results from the bad series for July 7—August 6, 1845, and December 10, 1845—January 10, 1846, be rejected, the value would be

$$q' = 7{\cdot}99 \text{ mic. div.}$$

If the *whole* series were properly weighted, it is believed that the resulting value of q' would be less than 8·00 mic. div. The excellent series, November 30—December 26, 1846 (after an adjustment July 1846) gives

$$q' = 7{\cdot}72 \text{ mic. div.}$$

The adopted value of the temperature coefficient for the balance magnet = 7·90 mic. div.

It is believed that this value, which has been used in correcting all the observations since the commencement of 1843, is within one-tenth of a division of the truth.

81. The following matters should be attended to in determining the temperature coefficient by the previous method.

1*st*, The period selected should be free from considerable magnetic irregularities.

2*d*, There should be a considerable change of daily mean temperature, the temperature at the beginning and end of the period being nearly the same.

3*d*, The smaller the duration of the period consistently with the 2d the better.

4*th*, It will be found best, in general, to correct the daily means at first by an approximate coefficient, and

5th, To eliminate the secular change approximately, if it be considerable.

Both the latter methods were employed in many of the determinations given in Table 9.

INCLINOMETER.

82. The dip instrument was made by the late Mr ROBINSON of London. The vertical circle is 9½ inches in diameter; it is divided to 10′, the graduations counting from 0° on the horizontal to 90° on the vertical; 1′ is estimated with the aid of lenses attached to a glazed case; the vertical circle turns with a copper framework on a vertical axis, centred in a horizontal circle; the latter is 6 inches in diameter, is divided to 30′ and is read to 1′ by means of a vernier. A sliding framework carrying Y*s* moves within that bearing the agate planes on which the axle of the needle rests; the Y*s* serve to lift and lower the needle on the agates, but they have been found to act very irregularly, at times giving the needle a pitch in a certain direction. A level screwed to the basement plate indicates the horizontality of the agates; this was, however, also verified occasionally by means of a small level placed upon them; it was found that the level varied according as the door of the case inclosing the instrument was shut or open; it was, therefore, always tested with the door shut, as it is during observations. The reading of the horizontal circle, when the vertical circle is in the magnetic meridian, was obtained with the aid of a horizontal needle, carried on a pivot whose arms rest on the agate planes. There are two dipping needles, numbered 1 and 2, and one end of each needle is marked A, the other end is marked B; all the marks are on one face of each needle. The needle is observed in four positions with one end dipping, namely, with the marked face of the needle on the same side as, and opposite to, the graduated face of the circle, the latter being in the meridian, first to the east, and then to the west; as each extremity of the needle is observed, there are thus eight readings obtained. The poles being changed, and the other end dipping, other eight readings are similarly obtained. The means of the two readings for each position are given in this volume. In changing the poles, the needle was placed on a small wooden block having a hole to receive the axle; it then received eight strokes on each face (as in the method of double touch) from two magnets, each 9 inches long, ¾ inch broad.

The inclinometer occupied a strong wooden pillar in the intensity house unconnected with the floor.

83. Observations were made on April 18 and May 2, 1843, in different azimuths, in order to determine the correction due to the irregularity of the needle's axle, or perhaps to the presence of iron in the vertical circle; these observations have been already given (Table 21 and Table 22, Introduction, 1841-2.) The correction deduced was about − 11′ for needle No. 1. A short series of similar observations was made, May 10, 1845, the details of which will be found among the other observations; the following values of the magnetic dip are deduced from the inclinations η and η' of needle No. 2, observed in two planes at right angles to each other, by the formula

$$\text{Cot}\ ^2\theta = \cot\ ^2\eta + \cot\ ^2\eta'$$

Azimuth, 0° η = 71° 26′·75	Azimuth, 90° η' = 89° 57′·25	θ = 71° 26′·75
.... 30° η = 73° 25′·50	.... 120° η' = 80° 27′·56	θ = 71° 7′·73
.... 60° η = 80° 22′·25	.... 150° η' = 73° 30′·62	θ = 71° 9′·65

The dip from the observations in the magnetic meridian differs considerably from the values of θ obtained from the observations in other planes; the latter agree pretty well with those deduced from needle No. 1, April 18, 1843 (Introduction, 1841–42, Table 22, first series.) This coincidence of the results from two needles seems to place the source of error in the metal of the instrument, rather than in the axles of the needles.

March 31, 1846. The vertical circle of the inclinometer was removed from the instrument and placed horizontally, the dip needle, No. 1, was suspended by a silk fibre within the circle, the needle and circle being in the same plane, the needle was then vibrated horizontally, the zero of the graduations being placed in different azimuths; taking the zero on the right of the horizontal diameter (the circle being in its usual vertical position) as the commencement of the graduations, and counting downwards and onwards to 360, the following are the means for different positions of about 80 vibrations (commencing with a semiarc of 18°, and ending with a semiarc of 6°):—

		s.
N. end of needle at graduation, 50°	Mean time of one vibration, corrected for arc,	6·257
.... 20°	....	6·282
.... 350°	....	6·275
.... 320°	....	6·278
.... 290°	....	6·278
.... 260°	....	6·278

The time of vibration varies little with the exception of that for the first position; the last two means are for positions occupied by the needle in the observations of inclination, given above.

84. The true dip, and the cause of the differences in different azimuths, is still a question. No correction has been applied to the observations in this volume. The difficulties noticed in connection with the lifter in the Introduction for 1843 were experienced more or less in 1845 and 1846, but considerably less than in 1844.*

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* Observations were made in the following manner for the determination of the magnetic dip in February 1846. The dipping needle having been placed on its supports in the inclinometer, it was deflected by a magnet placed at known distances, in order to determine the ratio of the magnetic moment of the deflecting bar to the vertical component of the earth's magnetism; the moment of the bar was obtained from observations of deflection and vibration for the absolute horizontal intensity, whence the vertical component could be determined, and the dip from the ratio of the two components. The advantage of this method over others, consists in the capability of using a powerful deflecting bar whose moment can be determined with the accuracy of the observations for the horizontal intensity.

BAROMETER.

85. The barometer is by **NEWMAN**. The tube is 0·552 inch in diameter; the scale is attached to a brass rod, terminating in an ivory point, which at each observation is moved by means of an endless screw till it meets its image in the mercury of the cistern; the cistern is about 3 inches in diameter; the vernier professes to read to 0·002 inch, and that 0·001 inch may be estimated, but the graduation is so inexact as to give changes in error from 0·002 to 0·003 inch, when the reading is made alternately at the two extremities of the vernier.

86. In 1841, the barometer was compared indirectly with the standard barometers of the Royal Society of London, by means of one made by **NEWMAN** for the **DUKE** of **ARGYLE**. The comparisons of the **DUKE** of **ARGYLE**'s barometer with the readings from the flint and crown glass tubes of the Royal Society (both tubes being connected with the same cistern) are given, Table 23, Introduction, 1841–2. They are not consistent. A consistent series of comparisons of the Makerstoun barometer with the **DUKE** of **ARGYLE**'s is given, Table 24, Introduction, 1841–2. The results of these comparisons are

	in.
DUKE of **ARGYLE**'s barometer *minus* Royal Society's crown and flint glass,	= + 0·009
Makerstoun barometer *minus* **DUKE** of **ARGYLE**'s, ...	= + 0·003
Makerstoun barometer *minus* Royal Society's crown and flint glass, . .	= + 0·012

87. In July 1847, a series of comparisons was made by myself of a barometer by **TROUGHTON**, marked B, belonging to Sir **THOMAS BRISBANE**, with the flint-glass barometer of the Royal Society of London. The same barometer (**TROUGHTON** B) was a few days afterwards compared by myself with the Makerstoun standard barometer: these comparisons are given, Tables 10 and 11.

TABLE 9.—Comparisons of the Barometer **TROUGHTON** "B" with the Flint-Glass Standard Barometer of the Royal Society of London, July 2, 1847.

Royal Society's *Flint-Glass* Standard.		Troughton "B."			Royal Society Standard *minus* Troughton "B."
Height.	Temperature.	Height.	Temperature.	Corrected to Temp. of Royal Society Standard.	
in.	°	in.	°	in.	in.
30·302	63·6	30·262	66·0	30·256	+0·046
·304	63·9	·267	66·4	·261	·043
·300	64·2	·266	66·8	·259	·041
·291	64·8	·254	65·8	·251	·040
·292	64·8	·255	66·2	·251	·041
·268	64·5	·232	65·7	·229	·039

TABLE 10.—Comparisons of the Makerstoun Standard Barometer with the Barometer TROUGHTON "B," July 8^d—10^d, 1847.

Makerstoun Standard.		Troughton "B."			Troughton "B" *minus* Makerstoun Standard.
Height.	Temperature.	Height.	Temperature.	Corrected to Temp. of Makerstoun Standard.	
in.	°	in.	°	in.	in.
29·722	68·7	29·682	73·0	29·671	− 0·051
29·717	66·4	29·667	66·8	29·666	·051
29·924	71·3	29·882	74·9	29·873	·051
30·061	61·5	30·020	65·2	30·010	·051
29·987	67·0	29·946	71·3	29·935	·052

From these comparisons we find

in.
TROUGHTON B *minus* Royal Society's flint-glass, ... = − 0·0417
Makerstoun standard *minus* Troughton B, ... = + 0·0512

Makerstoun standard *minus* Royal Society's flint-glass, . . = + 0·0095

In the comparisons made in 1841, the mean of both the crown and flint glass tubes has been employed: making use of Tables 23 and 24, Introduction, 1841–2, we find

in.
DUKE of ARGYLE'S barometer *minus* Royal Society's flint-glass, . . = + 0·0055
Makerstoun standard barometer *minus* DUKE of ARGYLE'S, . . . = + 0·0029

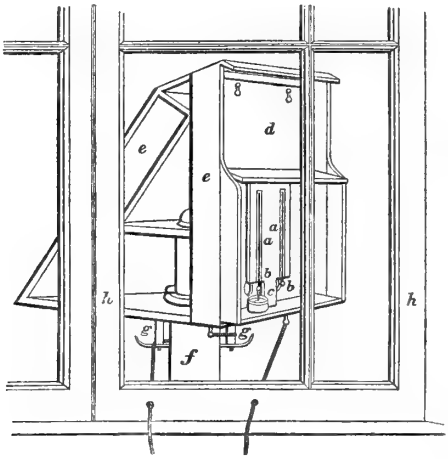
Makerstoun standard barometer *minus* Royal Society's flint-glass, . = + 0·0084

The comparisons in 1841 and 1847, therefore, differ only one-thousandth of an inch.

88. All the observations of the Makerstoun standard barometer are corrected by − 0·012 inch to the mean of the Royal Society's flint and crown glass barometers; they are also corrected for temperature to 32° Fahr., by SCHUMACHER'S Tables, given in the Report of the Committee of Physics of the Royal Society of London. The cistern of the barometer is 213 feet above the mean level of the sea at Berwick-upon-Tweed.

THERMOMETERS.

89. The dry and wet bulb thermometers *a a* are by ADIE and SON. The bulbs *b b* are 0·3 inch in diameter, and tenths of a degree can be estimated with accuracy on the scales *a a*; the thermometers are attached to a wooden slab *c*, fixed to the



moveable front *d* of the wooden case, 4 feet above the soil; the bulbs project below the wooden slab *c*, and as holes are cut in the wooden case behind them, they are exposed to freely-circulating air. The wooden case, which has slightly-projecting top and sides at the front, and a double sloping back, revolves on a post *f*, and can be turned from within the Observatory by means of cords and pulleys *g g*. When an observation is made, the case is turned till the thermometers face the window *h*, being 9 inches distant from it; after reading, which is done through the glass (thus avoiding any error due to proximity of the observer, or the light at night), the case is again turned with the back towards the window, or towards the wind if it rain. It was found early in the summer of 1843, that in spite of the precaution of turning the back of the case towards the sun before 7^h A.M. and after 5^h P.M., if the sun shined brightly, the temperature indicated by the thermometer was visibly increased. In all such cases, therefore, the moveable front *d* was lifted off the case and suspended in the shade, at an equal height from the soil, on the west or east wall of the Observatory, being kept apart from it by projecting knobs. Observations at different times shewed, that, all other things being equal, the temperature was the same in all the three positions, but when the sun shined on the case, it might be one or two degrees less to the east or west than to the north. The observations made to the east or west are indicated in the column of differences by a cross, thus †, for the first observation after removal from the case, and by a cross, thus ⸸, for the last observation before replacing the thermometers on the case.

90. It sometimes happens, when the air is very humid, during frost, and on clear nights, especially when the temperature is falling, that the dry bulb thermometer reads less than the wet bulb;* when such is the case, the *difference* of the readings of the two thermometers has not been given, and in the summations for

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* This apparent anomaly in frosty nights, it is conceived, is due to the deposition of moisture on the silk cover of the wet bulb, which is frozen as it is deposited, till it becomes a thickish coat of silk and ice; the dry bulb receives, at the same time, a thin coat of moisture, and becomes a more facile wet bulb. In clear, humid nights, without frost, nearly the same explanation will apply; the dry bulb will radiate its heat into space with more facility than the wet bulb. It might be preferable, therefore, on these occasions, to make use of the readings of the wet bulb for the temperature of the air, and of the readings of the dry bulb for the temperature of evaporation during frosty nights; where, however, the differences of the readings may be considered due chiefly to the different radiating powers of the two bulbs, the readings, perhaps, should be considered the same; this has been done in all cases in the present volume.

the abstracts of results, the reading of the wet bulb has been considered the same as that of the dry bulb.

91. In January 1843, a series of comparisons of different thermometers, in water of different temperatures, was made with a standard thermometer by NEWMAN: the results are given in the Introduction for 1843, Table 23, p. lvii. The readings of the standard, and the dry and wet bulb thermometers, in a mixture of pounded ice and water, at the time of the comparisons in 1843, and in 1845 and 1846, are as follow:—

Jan. 7, 1843.	NEWMAN'S standard, 32°·00.	Dry bulb, 32°·7.	Wet bulb, 32°·6
Feb. 8, 1845.	.... 32°·05.	.... 32°·8.	.... 32°·65
Feb. 13, 1846.	.... 32°·12.	.... 32°·9.	.... 32°·7
Dec. 18, 1846.		.... 32°·9.	.... 32°·7

It appears, therefore, that the index errors of the dry bulb thermometer were about two-tenths of a degree greater in 1845 and 1846 than in 1843, and the index errors of the wet bulb, about one-tenth of a degree greater; making allowance for this change in Table 23, Introduction for 1843, we obtain

TABLE 11.—Corrections of the Dry and Wet Bulb Thermometers to the Temperature by NEWMAN'S Standard, in 1845 and 1846.

Temperature.	Corrections.		Temperature.	Corrections.	
	Dry.	Wet.		Dry.	Wet.
°	°	°	°	°	°
32	−0·9	−0·7	60	−0·6	−0·4
36	−0·8	−0·6	63	−0·5	−0·3
40	−0·8	−0·6	67	−0·3	−0·1
45	−0·7	−0·5	70	−0·1	+0·2
50	−0·6	−0·4	76	0·0	+0·2
55	−0·6	−0·4	79	−0·1	+0·2

On December 18, 1846, the standard and dry and wet bulb thermometers were compared in water:—

Standard, 58°·8. Dry bulb, 59°·3. Wet bulb, 59°·1.

Correcting the standard reading for its index error of 0°·1, the corrections for the other thermometers near 60° are

Dry bulb − 0°·6. Wet bulb − 0°·4.

The following corrections were obtained from comparisons with the standard in the external atmosphere:—

1845. Jan. 30. The correction for the dry bulb thermometer at a temperature of 1°·5 = −0°·3.
1846. June 3. The correction for the dry bulb thermometer at a temperature of 82·5 = −0·15.

The observations of the dry and wet bulb thermometers, given in this volume are *not* corrected for the errors of the thermometers; but the corrections have been applied to the abstracts of results.

92. The maximum and minimum self-registering thermometers, on RUTHERFORD'S construction, were made by ADIE and SON; they were attached to a frame fixed to the north side of the Observatory, about three feet from the ground, and near the dry and wet bulb thermometers. A self-registering mercurial thermometer, with a black bulb, by R. ADIE, of Liverpool, was placed, in the end of May 1844, within the enclosed space occupied by the Observatory rain-gauge, exposed to the sun, for the purpose of obtaining the maximum amount of solar radiation; another self-registering alcohol thermometer, with black bulb, by the same maker, was placed near the other in September 1844, with its bulb in the focus of a parabolic metallic reflector, for the purpose of obtaining the minimum of terrestrial radiation. The observations of the self-registering thermometers have all been corrected for the scale errors of the thermometers. The observations of the minimum thermometer for the temperature in the shade are apparently in all cases from 1° to 2° less than the lowest temperature indicated by the dry bulb thermometer; the difference, it is believed, is due to the greater exposure of the minimum thermometer to radiation and deposition of dew.

93. Another thermometer was employed for the determination of the temperature of the water in two pump-wells, which are within about 200 yards of each other; the pumps are nearly on the same surface-level, the depth of the cottage-well being 10 feet,—that of the garden-well 21 feet. On one occasion, it was found that there was one foot of water in the cottage-well, and two feet of water in the garden-well. In obtaining the temperature, the water was pumped till the reading of the thermometer remained constant. All the observations have been corrected for the scale error of the thermometer used.

ACTINOMETER.

94. The actinometer was made by STEVENSON of Edinburgh; it consists of a hollow cylinder of glass filled with ammonio-sulphate of copper. One extremity of the cylinder is joined to a thermometer tube, terminating in a hollow bulb; the other extremity is cemented to a metallic cap, through which a screw, working in a collar of leather, passes into the cylinder; a scale of 100 divisions is attached to the thermometer tube; the cylinder and thermometer tube were inclosed in a mahogany box, open at one side; the compartment containing the cylinder filled with the blue liquid is lined with black velvet, and is covered by a slip of plate-glass. The dimensions were as follow:—Glass cylinder, 5½ inches long; mean external diameter, about 1·05 inch; the mercury, filling four inches of the thermometer tube, weighed 16·7 grains; the length of 100 divisions of the scale are equal

to 5·51 inches. The cylinder of this instrument was destroyed in the winter of 1846–7, by the freezing of the liquid. The previous dimensions of the cylinder belonging to the actinometer, from June 1844 till February 1847, are considered to be very near the truth; they are, however, only given from the dimensions of the cylinder in the actinometer at present, which is of the same size. The actinometer was placed in a small revolving frame during observations after June 1844, by means of which the face of the actinometer was always presented to the perpendicular incidence of the sun's rays; at the end of the same table upon which the revolving frame was placed, a double wooden screen was hung by cords passing over pulleys; the instrument could be shaded or exposed to the sun by the observer instantaneously.

95. In making an observation, the cylinder was exposed to the sun's rays at a perpendicular incidence for 60 seconds, the scale readings of the fluid in the tube being observed at the beginning and end of the minute. A screen was then interposed for one minute, or for one minute and a half; if for one minute only, the last observation in the sun was also noted as the first in the shade; if for one minute and a half, the first reading in the shade was not made till the instrument was shaded half a minute. At the end of 60 seconds the scale reading was again observed, and the screen was removed, that reading being also noted as the first in the sun. When the liquid mounted near the top of the thermometer tube, the screw was withdrawn nearly half a revolution, when the liquid fell to near the bottom of the tube. The times were noted from a box-chronometer by DENT, No. 1665.

96. The following are the results of series of observations for the amount of heat stopped by the plate-glass, marked A, used in the instrument after June 1844:—

			Sc. Div.
1846. June 1^{d}	$10^{h}\,16^{m}$ A.M.	Mean time. Glass plate A on; mean effect of sun in 60^{s}	= 9·47
	10 37	off	=12·04
	10 56	on	= 9·70
	Mean effect of sun in 60^{s}, glass plate A on		= 9·58

Proportion of whole heat stopped by the glass plate A, =0·204.

			Sc. Div.
1846. June 3^{d}	$9^{h}\,51^{m}$ A.M.	Mean time. Glass plate A on; mean effect of sun in 60^{s}	= 9·29
	10 12	off	=12·83
	10 33	on	= 9·82
	10 51	off	=12·88
	11 10	on	=10·33
	Mean effect of sun in 60^{s}, glass plate A off		=12·85
	Mean	on	= 9·81

Proportion of whole heat stopped by glass plate A, = 0·237.

Giving the last result two values, we find, from both determinations,

Proportion of whole heat stopped by glass plate A, $=0{\cdot}226$.

97. Besides the breaking of the cylinders by the freezing of the liquid, the instrument has been rendered useless for good experiments several times by the deposition of a brownish oily sediment, which finds its way into the thermometer tube, and this though the liquid had been long prepared by the maker. When this deposition of sediment occurred, the instrument was sent to the maker to be cleaned; the observations, therefore, in this volume, are nearly unaffected by it.

RAIN-GAUGES.

98. The Observatory rain-guage is placed in a space, enclosed by a paling on the top of the Observatory hill, with a good exposure on all sides. The funnel-mouth is 6·1 inches in diameter, 8 inches above the soil, and 218 feet above the level of the sea. The quantity of rain is measured at noon by pouring it into a glass tube, graduated with reference to the aperture of the funnel.

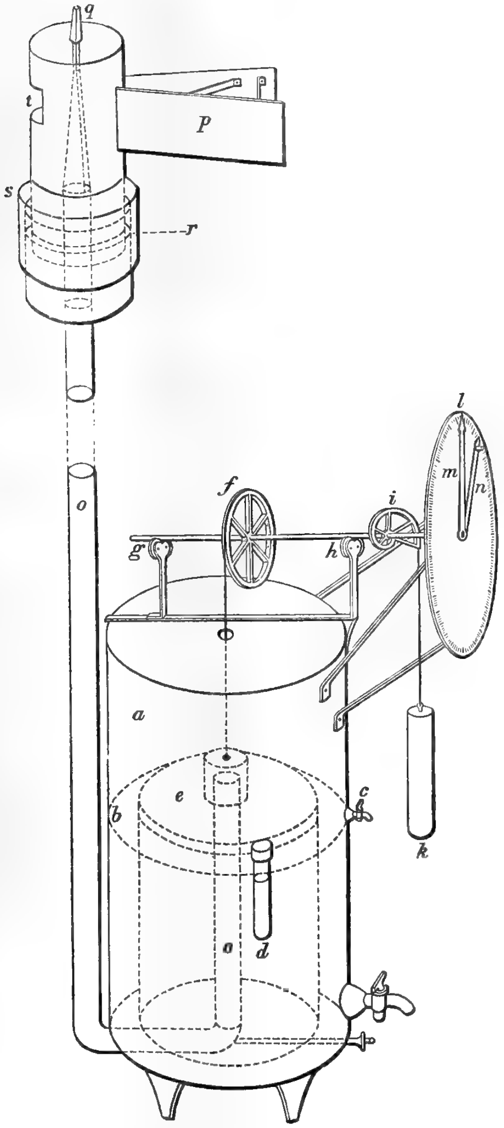
99. The monthly results of two other gauges are given in the abstracts. One is placed on the top of the greenhouse roof, 680 feet NNE. of the Observatory gauge; the funnel-mouth is 6·7 inches in diameter, it is connected with a graduated tube within the greenhouse, it is 18 feet from the ground, and 192 feet above the level of the sea. This gauge is sheltered to the E. and NE. by trees, and its indications are therefore less trustworthy, especially during easterly winds; the amount of rain received in the funnel is also affected by the gusts of wind deflected from the sloping roof. The other gauge is in the middle of the Makerstoun garden, with a good exposure; the funnel-mouth is 6·7 inches in diameter, is 6½ feet above the soil, 171 feet above the level of the sea, and about 620 feet N by E. of the Observatory gauge. The funnel is connected with a graduated tube. The greenhouse and garden gauges were observed by Mr MACGALL, the head gardener, the former daily, the latter monthly.

VANES AND ANEMOMETER.

100. The vane is placed on the north wall of the Observatory, and by means of a rod and geering-wheels it indicates the direction of the wind on a dial-plate within the building; this vane (occupying the position W′ in the plan, Plate I.) was found too heavy for light winds, and the directions of these were estimated for some time from a ribbon-vane. On November 13, 1844, a vane was formed of four large feathers from a turkey's tail, this vane was mounted on a long and light fir-rod, which passed through the roof of the Observatory, and had an index attached to its lower extremity, which indicated the direction of the wind on a compass fixed to the ceil-

ing of the Observatory. This vane indicated the direction of the lightest winds, and the direction of the wind was generally taken from it after November 13, 1844. On December 4, 1846, a light frame covered with oiled silk was substituted for the turkey feathers. The direction of the wind is indicated in this volume by the *number* of the point of the compass, reckoning N = 0, E = 8, S = 16, W = 24.

101. The anemometer, the invention of Mr R. Adie, of Liverpool, was made by Messrs Adie and Son, of Edinburgh; it occupies the north-east corner of the Observatory. This instrument will be best understood by a reference to the annexed figure: *a* is a cistern containing water to the level *b*, *c* being a turn-cock for letting the water off to the exact level, and *d* a glass-gauge to shew when the water becomes too low, from evaporation or otherwise; an inverted vessel *e* is suspended in the water by a cord passing over the wheel *f*, whose axle rests on friction-rollers at *g* and *h*; *i* is a spiral, which has a cord wrapped on it carrying a weight *k*, which balances the vessel *e*; *l* is a dial, graduated on the face near the circumference; *m* an index, attached to the common axle of the wheel and spiral; *n* a loose index under the index *m*, which the latter carries forward by means of a projecting pin near the extremity; *o* a tube passing under the cistern *a*, which, entering the bottom, proceeds upwards within the vessel *e* till its open extremity is above the level of the water in a neck of the vessel *e*; the other end of the tube *o* is six feet above the outer wall of the Observatory, where it is capped by a vane *p*; at the top of the tube *o* three brass rods are joined, which carry a small tube in which a pin within the top piece *q* rests or turns; the tube *o* is double at the top, containing between the tubes a quantity of mercury to the level *r*, the continuation of the cylindrical body of the vane enters the mercury, and a double portion *s* acts as an outer cover to the mercury cistern; *t* is an aperture, 2 inches square. When the wind blows, this aperture is presented to it, the wind then presses on the column of air within the tube *o* (being prevented from escaping under the vane by the mercury), and ultimately on the top



surface of the vessel *e*, forcing the latter up, turning the axle carrying the index *m*, which carries before it the index *n*, leaving it at its farthest excursion. The dial is graduated as follows:—The surface of the top of the vessel *e* on which the wind presses is 78 square inches, therefore a pressure of 1 lb. on this surface is equivalent to $\frac{144}{78}$ lb. on a square foot. Different weights are suspended on the wheel *f*, acting oppositely to the vessel *e*, and the position of the index for each weight shews the pressure on a square foot of surface equal to the weight suspended multiplied by the above ratio. The spiral, on which the weight *k* acts, is the involute of a circle whose radius $r = \frac{R}{2\,\pi}$ where R is the radius of the wheel *f*, and $2\,\pi$ is the circumference to radius of one, if the vessel *e* were homogeneous throughout its depth, the equal increments of motion in the index would correspond to equal increments of pressure.*

102. The instrument is observed in the following manner:—About 2^m before the observation hour the pressure shewn by the index *n* is registered as the maximum pressure; this index is then put back to zero, and from 7^m to 10^m afterwards, the position to which it has again been carried by the index *m* is noted as the present pressure; the index *n* is then set to zero, and a similar double observation made at the next observation hour. It is conceived that this instrument can be depended on for the purpose of determining the laws of variation of the pressure of wind; for absolute results, an integrating instrument is essential.

STATE OF THE SKY.

103. The extent of sky clouded is estimated; the whole sky covered with clouds being noted as 10, and the complete absence of clouds as zero. The motions of the clouds are determined as follows:—A well-marked portion of cloud which passes, or has passed, through the zenith, is watched till the direction is found in which it seems to run down, or parallel to, one corner of the Observatory; the walls of the Observatory are in the meridian and prime vertical, and the points of the compass, reckoning from each corner as a centre, are marked upon the paling surrounding the Observatory; the observer, therefore, sees at once the direction of motion of the cloud on the paling; when a portion of cloud cannot be seen which has passed, or is

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* The application of the involute of the circle as the spiral is due, I believe, to Professor FORBES. It is easily shewn that if the vessel *e* be homogeneous, *w* being the weight of a ring whose depth is one inch, P the pressure which the wind exerts on the top of *e* diminishing its weight, β the corresponding arc through which the circumference of the wheel *f* moves (or the length of cord wrapped on the wheel), W the weight of the counterpoise *k*, and σ the specific gravity of the material (zinc) of which *e* is formed, then

$$\frac{P}{\beta} = \frac{W}{2\,\pi} + \frac{w}{\sigma}$$

a constant ratio.

about to pass, through the zenith, it is generally easy to determine very nearly the vanishing point of the motion of any portion of cloud, by watching its progress for a short period; there can be no hesitation in saying, that the motions of the upper currents of air thus observed, are better determined than the motion of the lower or surface current observed from the vane. The directions of motion of the clouds in three strata (scud, including cumuli; cirro-stratus, including cirro-cumuli; and cirri), are given in numbers of points of the compass, reckoning N = 0, E = 8, S = 16, W = 24. The nomenclature adopted is that of Mr HOWARD, with certain combinations, which are, in general, sufficiently descriptive.

104. Full sunshine is indicated in the column of meteorological remarks by the symbol ⊙; when the sun shone through a cloud so as to project a distinct shadow, it is indicated by the symbol ⊖; when the cloud was very thin, this is indicated occasionally by the symbol ⦶; and when the sun's disc only was visible, the symbol ● is used; similar symbols are used for the moon. The heaviness of the rain falling at the time of observation has been estimated, and is noted in the column of meteorological remarks, upon the supposition that the heaviest fall is 10: thus, rain^3, is rather heavy rain; rain^7, is the heaviest observed in 1844; rain$^{0.1}$, is just perceptible; and rain$^{0.5}$, is a light, spitting, Scotch mist.

CLOCK, &c.

105. The mean time clock is by DENT of London; it is kept at Göttingen mean time by comparisons with the transit clocks in the Astronomical Observatory, the errors of which are determined by Sir THOMAS BRISBANE, by myself, or by Mr WELSH. The rate of the clock is kept small.

106. A fire-place was formed in the space marked F (Plate I.), in October 1845, the east anteroom being employed afterwards as a computing room; the chimney was formed of fire-brick tubing (which it was found could not appreciably affect the positions of the magnets), the grate and fire-*irons* were of *copper*.

DESCRIPTION OF THE TABLES OF OBSERVATIONS.

107. *Hourly and Daily Observations of Magnetometers*, 1845 and 1846, pages 1–68 and 288–323.

The first column contains the Göttingen mean solar time, astronomical reckoning, of the observations of the declination magnetometer. Göttingen time is 49^m 50^s in advance of Makerstoun time. The second column gives the absolute westerly declination in degrees, minutes, and decimals of a minute, deduced as described, No. 17.

The third column contains the observations of the bifilar magnetometer in scale divisions, corrected for temperature to 26° Fahr. (see Nos. 69 and 73); increasing numbers indicate increasing force. The bifilar is observed 2^m after the declination.

The fourth column contains the temperature of the bifilar magnet in degrees of Fahrenheit.

The fifth column gives the readings of the balance magnetometer in micrometer divisions, corrected for temperature to 26° Fahr. (see No. 79); increasing numbers indicate increasing force. The balance is observed 3^m after the declination.

The sixth column contains the temperature of the balance magnet in degrees of Fahrenheit.

The seventh column contains the observer's initial (see No. 5).

At the foot of each page the time is given during which the declination magnet has remained untouched, or the amount of torsion found in the suspension thread when that has been determined (see No. 12). The value, k, of one scale division of the bifilar magnetometer, the whole horizontal component being unity (see No. 40), and the value, k, of one micrometer division of the balance magnetometer, the whole vertical component being unity (see No. 60), are also given.

108. *Term-Day Observations of Magnetometers*, 1845, pages 72–87.

The first column contains the minute of Göttingen mean time of the declination observations, the hour being given in the middle of each triplet of columns. The first column of each triplet contains the absolute westerly declination; the second and third columns contain the bifilar and balance magnetometer readings, reduced to the temperature of 26° Fahr., as in the hourly observations. The temperatures of the magnets at the commencement of each hour will be found with the hourly observations, and the observer's initial for each hour are in the same place. The corrections for temperature are applied to the observations in the following manner:—The correction to the first observation of each hour being applied for the known temperature of each magnet, the temperature is supposed to change uniformly throughout the hour, and the corrections for the intermediate observations are interpolated between the initial corrections.

109. *Extra Observations of Magnetometers*, 1845 and 1846, pages 90–117 and 326–341.

These observations are made generally during magnetic disturbances. The same remarks apply with reference to temperature corrections, &c., as for the term-day observations, excepting that the Göttingen day and hour are given in the first column, and the minute is given for the observations of each instrument. Notes upon the Auroræ boreales observed are given, with the times of the phenomena in Göttingen mean time, pages 118–127 and 342–343.

110. *Observations of Magnetic Dip*, and *for the Absolute Horizontal Intensity.* See Nos. 19, &c., 82, and *Addendum to Introduction.*

111. *Hourly and Daily Meteorological Observations*, 1845 and 1846, pages 136–272 and 354–409.

The first column contains the day and hour, Göttingen mean time, of the observations, all of which are made within a few minutes of the hour, and generally in the order noted below. When the observation has been made more than 4^{m} too late, the minute of observation is noted at the foot of the page; when less than 4^{m} too late, the true minute (for the declination observation) will be found in the first column of the hourly and daily magnetical observations. The Göttingen mean time is 49^{m} 50^{s} in advance of the Makerstoun time. The second column gives the height of the barometer, corrected to 32° Fahr. (see No. 88). The barometer is generally observed between the observations of the declination and bifilar magnetometers, that is, about 70^{s} after the hour.

The third and fourth columns give the *observed* readings of the dry and wet bulb thermometers in degrees of Fahrenheit, *uncorrected* for scale errors (see No. 91), and the fifth column gives the difference of the observed readings of the two thermometers. The dry and wet bulb thermometers are generally read about $1\frac{1}{2}^{m}$ before the hour. The sixth column contains the maximum pressure of wind on a square foot of surface which has occurred since the previous observation (see No. 102); this maximum is generally noted, and the index set back 2^{m} or 1^{m} before the hour.

The seventh column contains the maximum pressure of wind on a square foot of surface within from 8^{m} to 10^{m} at the time of observation, namely, from 2^{m} or 1^{m} before the hour till 6^{m} or 9^{m} after the hour.

The eighth column contains the direction of the wind read from the dial-plate of the vane, and given in numbers of points of the compass, reckoning N = 0, E = 8, S = 16, W = 24.

The ninth column gives the directions of motion of three strata of clouds in numbers of points of the compass, namely, of scud, cirro-stratus, and cirrus; thus, June 13^{d} 20^{h} 1845, the surface wind, by the vane, blowing from 8 (E.), the scud was moving from 4 (NE.), the cirro-cumulo-stratus was moving from 20 (SW.), and the cirri were moving from 21 (SW by W.) (see No. 103).

The tenth column contains the estimated extent of sky clouded, the whole hemisphere covered being 10.

The eleventh column contains the species of clouds observed, with other meteorological notes (see Nos. 103 and 104).

The observer's initial will be found at the corresponding hour of hourly magnetical observations.

112. *Daily Meteorological Observations*, 1845 and 1846, pages 274–276 and 412–413.

The first column contains the civil day of observation, and the first column of each division of columns thereafter contains the minimum temperature noted from the self-registering thermometer about 10^{h} A.M.; the second column contains the maximum temperature noted from the self-registering thermometer at 5^{h} P.M., the third and fourth columns contain the minimum and maximum of radiation (see No. 92); and the fifth column contains the amount of rain found at noon in the Observatory rain-gauge. In pages 276 and 420, the temperature of water in two pump-wells is given (see No. 93.)

113. *Extra Meteorological Observations,* 1845 and 1846, pages 277–286 and 414–420.

The first column of observations of the actinometer contains the Makerstoun mean time of the first reading given in the third column, the reading in the fourth column being made 60 seconds after; the second column tells whether both of these observations have been made with the actinometer in the sun or in the shade; the fifth column gives the change of reading in 60^s; the sixth column contains the effect of the sun in changing the reading; the seventh column contains the mean effect for a group; and the eighth column contains the sun's altitude for the mean time corresponding to the middle of each group.

The readings of the barometer (corrected to 32° Fahr.) and of the dry and wet bulb thermometers, together with meteorological remarks, are given in the foot-notes; other observations will be found in their proper places among the hourly observations.

114. Additional meteorological notes are given after the observations of the actinometer; these consist of observations of shooting stars, thunder-storms, dates of flowering of plants, times of the commencement of the morning-song of birds, &c.

115. *The Abstracts of Results,* will be found in the next volume forming Part II. of Vol. XIX. of the *Edinburgh Transactions.*

These Tables have appended or prefixed to them all requisite explanations, together with remarks on the conclusions deduced. In all cases where any of the ordinary hourly or daily observations had been omitted, the mean of the previous and succeeding observations has been substituted in the summations.

116. *Curves of Term-Day Observations.*

The term-day observations, as corrected, pages 72–89, having been projected and drawn with the greatest accuracy by Mr WELSH on lithographed curve paper, they have been transferred by the anastatic process, in 12 Plates, given at the end of the volume.

ADDENDUM.

117. The process of making and reducing the observations for the absolute horizontal intensity made according to the method of Gauss with a 15-inch deflecting bar, has been already described (Introduction, *Unifilar Magnetometer*), and the observations of deflection and vibration will be found, p. 133–4, 347–8. The results are as follows :—

Table 12.—Results of the Observations for the Absolute Horizontal Intensity, made with the 15-inch deflecting bar, in 1845 and 1846.

Date.	Pairs of Distances.	Log. $\frac{m}{X}$	Log. *m* X.	X.	Mean of Group.	Bifilar Reading.	X Reduced to mean Bifilar for 1845.
1845.	Feet. Feet.					Sc. div.	
Dec. 29	5·08$\dot{3}$ and 9·708$\dot{3}$	0·454510	1·515975	3·3942	3·3921	548·9	3·3869
	5·250 ... 9·8$\dot{3}$	0·454094		3·3958			
	5·5 ... 10·25	0·456497		3·3864			
Dec. 30	5·0 ... 6·5	0·455291	1·513839	3·3828	3·3812	539·1	3·3807
	5·0 ... 7·0	0·455826		3·3807			
	5·5 ... 7·0	0·455640		3·3815			
	5·5 ... 7·5	0·455766		3·3809			
	6·0 ... 7·5	0·456009		3·3800			
1846.							
Feb. 16	5·0 ... 6·5	0·455309	1·516163	3·3918	3·3929	553·2	3·3866
	5·0 ... 7·0	0·454785		3·3938			
	5·5 ... 7·0	0·454664		3·3943			
	5·5 ... 7·5	0·455078		3·3927			
	6·0 ... 8·0	0·455281		3·3919			
April 14	5·0 ... 6·5	0·453826	1·514334	3·3904	3·3904	562·3	3·3800
	5·0 ... 6·0	0·453431		3·3920			
	5·5 ... 6·5	0·454274		3·3887			

118. The value of *m* X, for December 30, is deduced from the 2d series of vibrations made upon that day, as there was obviously some error involved in the 1st series; for a similar reason, the deflection at the distance of 8 feet has not been employed.

The mean value of X from the previous Table reduced to the mean bifilar reading for 1845, ... = 3·38355
The mean value of X from the observations for 1844, reduced to the mean bifilar reading for 1844, ... = 3·38005
Whence the secular change from 1844 to 1845 in parts of X, ... = 0·00104
From the readings of the bifilar magnetometer the secular change 1844 to 1845, ... = 0·00142

The observations, therefore, for the absolute value of X in 1844 and 1845–6, shew rather less secular change than is indicated by the bifilar magnetometer. See *Introduction for* 1844, p. xxvii.

119. In addition to these observations, others were made in 1846 and 1847, according to Dr LAMONT's modification, with small magnets and instruments constructed by Mr JONES of London. The observations of deflections will be found, p. 349-351; and the results for the observations of vibration, p. 352.

120. The determinations of the torsion, induction, and temperature coefficients, were performed in a similar manner to those for the large bar. As the observations for the induction and temperature coefficients may have some value independently of their direct application, they will be given somewhat at length.

121. Observations of deflection were made June 23, 1846 and January 2, 1847, with a six-inch circle magnetometer (belonging to Professor FORBES), and May 31, June 15, September 11, and September 13, 1847, with a nine-inch circle magnetometer belonging to Sir THOMAS BRISBANE. The observations for the induction coefficients were made with the nine-inch circle, fitted with a bifilar torsion circle and magnet with mirror parallel to its axis (lent by Mr JONES), and in a manner precisely similar to those for the large bar described, Introduction, No. 26. The following table contains a specimen of the results:—

TABLE 13.—Fifth series of Observations for the Induction Coefficient at Makerstoun, of the Makerstoun Collimator Deflection Magnet, September 15, 1847.

Position of Deflector.	Bifilar Reading.	Interpolated Reading, Deflector Away.	Deflection.	Sum of Deflections.	Difference of Deflections.	Value of $\frac{\delta m}{m}$
	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	
Away.	188·35					
N. Pole N.	10·67	188·11	177·44	353·22	1·66	0·00470
N. Pole S.	363·65	187·87	175·78			
Away.	187·62					
N. Pole N.	10·32	187·43	177·11	352·77	1·45	0·00411
N. Pole S.	362·90	187·24	175·66			
Away.	187·05					
N. Pole N.	9·80	187·02	177·22	352·80	1·64	0·00465
N. Pole S.	362·57	186·99	175·58			
Away.	186·95					
N. Pole N.	9·65	186·80	177·15	352·92	1·38	0·00391
N. Pole S.	362·42	186·65	175·77			
Away.	186·50					
N. Pole N.	9·25	186·43	177·18	352·72	1·64	0·00465
N. Pole S.	361·90	186·36	175·54			
Away.	186·30					
N. Pole N.	9·25	186·33	177·08	352·72	1·44	0·00408
N. Pole S.	362·00	186·36	175·64			
Away.	186·40					

The angle of torsion of the bifilar was, $v = 53° 45'$.

The arc value of one scale division, = 1′·025.

122. The following are the final results for all the bars operated on*:—

Makerstoun 3·65-inch collimator named M, unmarked,	1st series, 6 determinations,	0·00390
	2d series, 4	0·00465
	3d series, 4	0·00403
	4th series, 4	0·00397
	5th series, 6	0·00435
	Mean of all determinations,	0·00417
Prof. BACHE's 3·65-inch collimator, named B, marked 4,	series of 4 determinations,	0·00627
Prof. FORBES's 3·65-inch solid bar, named F, unmarked,		0·00569

123. In the observations for the temperature coefficients, the water was contained in a small wooden vessel fixed upon the deflecting rod of the Makerstoun theodolite (unifilar, or nine-inch circle) magnetometer; the temperature was obtained from two thermometers with bulbs of different dimensions, one placed at each end of the immersed magnet, the mean of both indications being employed. The following table contains the results for 5 bars:—

TABLE 14.—Observations for the Temperature Coefficients of different Magnets, September 8, 1847.

Gött. Mean Time.	Magnet.	THERMOMETERS.		Unifilar Scale Reading.	Declination Scale Reading.	Bifilar Corrected.	Unifilar Circle Reading Reduced.	Temperature Coefficient.
		Jones.	Ross.					
h. m.		°	°	Sc. Div.	Sc. Div.	Sc. Div.	° ′	
0 1	Away.	......	......	182·42	6·30	......	236 54·79	....
1 25	B. 4.	89·6	89·9	200·20	1·95	557·7	192 54·47	0·000088
1 33		64·1	64·2	193·65	1·55	560·1	48·03	·000088
1 39		39·6	37·4	185·52	2·22	557·2	39·25	·000089
1 46		63·1	63·3	192·47	2·55	556·4	46·15	....
2 3		89·0	89·0	204·85	2·60	558·6	58·80	·000098
2 8		67·7	67·4	198·20	2·67	558·8	51·93	·000090
2 14		39·0	36·6	190·10	3·02	559·7	43·40	·000087
2 19		61·1	60·4	196·95	3·00	560·6	50·43	·000098
2 25		92·2	92·2	207·05	3·25	560·9	60·63	
5 6	B. —	90·9	90·7	227·87	9·52	567·8	193 17·75	0·000094
5 11		67·0	67·3	221·00	9·77	568·0	10·53	·000080
5 18		40·6	39·4	214·05	10·02	567·6	3·25	·000083
5 24		62·0	61·4	220·25	9·97	568·6	9·63	·000100
5 28		88·7	88·9	229·30	10·05	569·3	18·86	·000095
5 35		67·6	67·3	222·97	10·22	569·4	12·25	·000088
5 42		40·5	38·7	215·00	10·45	568·8	3·93	
6 0	M.	40·5	39·9	296·00	10·77	569·7	194 26·73	0·000098
6 5		65·1	64·6	304·15	11·22	570·8	34·79	·000110
6 10		89·6	89·6	311·55	11·12	568·8	42·45	·000103
6 16		65·1	63·9	304·00	11·20	569·4	34·65	·000094
6 22		38·4	37·2	297·50	11·67	571·4	27·67	
6 34	F.	40·2	38·8	171·47	12·17	570·8	192 18·15	0·000295
6 39		64·9	64·7	195·75	12·25	570·5	42·99	·000316
6 44		88·0	88·5	220·40	12·20	571·6	68·29	
7 6	I. 23.	94·0	94·3	336·00	11·87	571·2	194 66·99	0·000200
7 11		67·9	67·8	320·05	11·67	571·4	50·78	·000184
7 16		39·7	38·0	303·90	11·62	571·4	34·26	

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* Each determination, it will be seen from Table 13, commences with the deflecting bar having the same end to the north; this should have been avoided, since, in the event of increase of tempe-

124. From these we find for

Professor Bache's bar, named B, marked 4,	63°·9 to 90°·3 $q=0·000095$ 38°·1 to 63°·9 $q=0·000089$	Variation of q for 25° Fahr. $=\frac{q}{14}$
Professor Bache's bar, named B—, unmarked,	65°·4 to 89°·8 $q=0·000096$ 39°·8 to 65°·4 $q=0·000084$	$=\frac{q}{8}$
Sir Thomas Brisbane's bar, named M, unmarked,	64°·7 to 89°·6 $q=0·000106$ 39°·8 to 64°·7 $q=0·000096$	$=\frac{q}{10}$
Professor Forbes's bar, named F, unmarked,	64°·8 to 88°·2 $q=0·000295$ 39°·5 to 64°·8 $q=0·000316$	$=\frac{q}{14}$
Sir Thomas Brisbane's bar, marked I. 23,	67°·8 to 94°·1 $q=0·000200$ 38°·8 to 67°·8 $q=0·000184$	$=\frac{q}{13}$

125. For these magnets, therefore, the temperature coefficient varies from $\frac{1}{8}$ to $\frac{1}{14}$ of its mean value from the mean temperature of 50° to that of 75°, the coefficient being greater at high temperatures than at low temperatures. A similar result was obtained by Mr Christie long ago,* and lately by Mr Airy and Colonel Sabine. This difference has not been found to exist for the large variation magnets (see *Introduction*, p. xliv.).

126. The following are the results of series of observations for the temperature coefficients of different magnets.

Table 15.—Results of Observations for the Temperature Coefficients of different Magnets, the Temperature Rising and Falling, made 1843–7.

Date.	Description of Magnet.	Whole Number of Results.	Temperature Falling. q.	Temperature Rising. q.	Difference Rising *minus* Falling.
Nov. 9, 1843	Bifilar Magnet (15-inch)	17	0·000290	0·000298	+0·000008
11, 1843	Deflection Magnet (15-inch)	9	0·000278	0·000296	+0·000018
Jan. 27, 1844	Balance Magnet (12-inch, very thin)	16	0·000067	0·000079	+0·000012
June 30, 1846	3·65-inch Magnet, named F.	6	0·000280	0·000289	+0·000009
May 21, 1847	3·65-inch Magnet, unmarked	7	0·000311	0·000301	−0·000010
”	3-inch Magnet, marked S. 43	8	0·000408	0·000395	−0·000013
”	3-inch Magnet, marked S. 29	5	0·000747	0·000745	−0·000002
”	3-inch Magnet, hollow, marked B. 6.	6	0·000264	0·000278	+0·000014
”	5-inch Magnet, hollow, marked I. 23.	6	0·000210	0·000212	+0·000002
”	3·65-inch Magnet, named F.	2	0·000323	0·000333	+0·000010
May 28, 1847	3·65-inch Collimator, named M.	6	0·000100	0·000121	+0·000021
Sept. 8, 1847	3·65 Collimator Magnet, marked 4, named B.	4	0·000091	0·000091	0·000000
”	3·65 Collimator Magnet, unmarked, named B.—	3	0·000089	0·000092	+0·000003
”	3·65 Collimator Magnet, named M.	2	0·000098	0·000104	+0·000006

The observations in some instances are too few, and with too large probable errors to be sufficient for the determination of the difference of the coefficient, for

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rature in handling during the removal of the bar, an error would be introduced always of the same sign if the north end has always the same position at the beginning.

* Philosophical Transactions, 1825, p. 63.

ascending and for descending temperatures; on the whole, however, they indicate that the coefficient deduced from such rapid changes is greater for the same mean temperature (about 65°), when the temperature is increasing than when it is diminishing. The greater part of the observations were made without any intermediate temperature, so that there are not sufficient data to determine whether the difference is greater at high mean temperatures than at low mean temperatures.

Mr S. H. CHRISTIE found that the temperature coefficient increases with the temperature, the increase becoming more rapid for temperatures above 80°; and that beyond 100°, a portion of the magnetism is permanently lost.* The previous results seem to indicate that (in such experiments at least), a portion of the magnetism is lost even at the lower temperatures for certain kinds of steel.†

The observations of deflection with the circle magnetometers have been reduced by the formula (see *Introduction*, p. xx.)

$$\frac{m}{X} = \tfrac{1}{2} r^3 \sin u \frac{1}{1 + \frac{P}{r^2} + \frac{Q}{r^4}}$$

where

$$\sin u = \frac{\sin u_0}{1 - \frac{\delta m}{m} \sin u_0} \; \frac{1 + k\,(b_d - b_v)}{1 - q\,(t_d - t\,)}$$

u_0 being the observed deflection corrected for declination change (see column 9, Deflection, p. 349-351).

The observations of June 23, 1846, and of January 2, 1847, were made with Professor FORBES' 6-inch circle magnetometer; the remaining observations were made with Sir THOMAS BRISBANE'S instrument, the dimensions of the magnets employed will be found, p. 351: the values of one scale division for the suspended magnets are as follow:—

June 23, 1846.	Jan. 2, 1847.	May 31 and June 15, 1847.	Sept. 11 and 13, 1847.
0′·995	0′·995	1′·025	2′·017

The solid bars are about 0·3 inch diameter, and the collimator bars about 0·4 inch diameter.

All the observations, excepting those of September 11 and 13, were reduced by the method of least squares, the equations of condition having the form

$$1 + \frac{1}{r^2} P + \frac{1}{r^4} Q - \tfrac{1}{2} r^3 \sin u \frac{X}{m} = 0$$

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* Philosophical Transactions, 1825, p. 63.

† The previous results seem to indicate that while it will always be necessary to determine the temperature coefficient for the magnetometers from the observations with the magnet in its box, yet it will be desirable to determine it also by the usual method of hot and cold water experiments.

The observations of September 11 and 13, made at three distances only, were reduced by the formula

$$\frac{m}{X} = \frac{A_1\,\alpha + A_2\,\beta + A_3\,\gamma}{\alpha + \beta + \gamma}$$

where

$$\alpha = \frac{\varrho_2^{\,2} - \varrho_3^{\,2}}{\varrho_1^{\,2}}, \quad \beta = \frac{\varrho_3^{\,2} - \varrho_1^{\,2}}{\varrho_2^{\,2}}, \quad \gamma = \frac{\varrho_1^{\,2} - \varrho_2^{\,2}}{\varrho_3^{\,2}}; \quad \varrho_1 = \frac{1}{r_1}, \quad \varrho_2 = \frac{1}{r_2}, \quad \varrho_3 = \frac{1}{r_3}$$

$$A_1 = \tfrac{1}{2}\,r_1^{\,3} \sin u_1, \qquad A_2 = \tfrac{1}{2}\,r_2^{\,3} \sin u_2, \qquad A_3 = \tfrac{1}{2}\,r_3^{\,3} \sin u_3$$

The observations of vibration were made in the usual manner, the following is a specimen of the details :—

Table 16. Observations for the Time of Vibration of the Collimating Deflector M, June 15, 1847.

North End of Magnet moving East.					North End of Magnet moving West.				
No. of Vib.	Time of Transit.	No. of Vib.	Time of Transit.	Time of 300 Vibrations.	No. of Vib.	Time of Transit.	No. of Vib.	Time of Transit.	Time of 300 Vibrations.
	h. m. s.		h. m. s.	m. s.		h. m. s.		h. m. s.	m. s.
0	6 21 41·5	300	6 47 6·2	25 24·7	3	6 21 56·8	303	6 47 21·7	25 24·9
6	22 12·0	306	47 36·8	24·8	9	22 27·3	309	47 52·0	24·7
12	22 42·4	312	48 7·1	24·7	15	22 57·8	315	48 22·5	24·7
18	23 13·1	318	48 37·7	24·6	21	23 28·3	321	48 53·0	24·7
24	23 43·5	324	49 8·2	24·7	27	23 58·8	327	49 23·3	24·5
30	24 14·0	330	49 38·7	24·7	33	24 29·3	333	49 54·0	24·7
36	24 44·5	336	50 9·1	24·6	39	24 59·6	339	50 24·4	24·8
42	25 15·0	342	50 39·6	24·6	45	25 30·3	345	50 55·0	24·7
48	25 45·5	348	51 10·1	24·6	51	26 0·7	351	51 25·5	24·8
54	26 16·1	354	51 40·6	24·5	57	26 31·4	357	51 56·0	24·6

The observations of vibration were reduced by the formula already given (*Introduction*, p. xxi). The formula for the time of vibration with the ring (*Introduction*, p. xxii*), having the more convenient form

$$T_1^{\,2} = T'^{\,2}_1 \left(1 - \frac{\alpha\,\alpha'}{16} - \frac{s}{86400}\right)^2 \left(1 - k\,\overline{/b_0 - b_1} + q\,\overline{/t_0 - t_1} + \Phi\right)$$

The values of K the moment of inertia have been deduced by the formulæ already given, pages xxi and xxiv. The times of vibration and the dimensions of the rings are given, page 352.

The following are the results of the observations with the circle magnetometers :—

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* See Corrigenda.

Table 17. Results of Observations for the Absolute Horizontal Intensity made with Circle Magnetometers in 1846 and 1847.

Date.	Magnetometer.	Magnet		$\text{Log}\ \frac{m}{X}$	P.	Q.	Log *m* X.	Result.		X at the Mean Bifilar for 1845.
		Suspended.	Deflecting.					X.	Bifilar Reading.	
1846.										
June 23	6-in. Circle.	1	F	9·1603750	+0·016708	−0·003344	0·2146240	3·3661	568·7	3·3528
1847.										
Jan. 2	6-in. Circle.	2	F	9·1564802	−0·005080	+0·002391	0·2107538	3·3662	560·9	3·3564
May 31	9-in. Circle.	3	M	9·1810278	+0·000655	−0·000600	0·2420858	3·3926	574·8	3·3764
June 15	9-in. Circle.	3	M	9·1731457	+0·000172	−0·000526	0·2344397	3·3935	576·7	3·3765
Sept. 11	9-in. Circle.	4	M	9·1732756	+0·000899	−0·000729	0·2310949	3·3799	545·0	3·3774
Sept. 13	9-in. Circle.	4	B	9·0952645	−0·002388	+0·000387	0·1518040	3·3750	524·9	3·3816

The resulting values of X, by Professor FORBES' instrument, differ considerably from those by Sir THOMAS BRISBANE'S, while the latter agree much better with the results obtained with the 15-inch bars, see Table 12.

MAKERSTOUN, *March* 1849.

HOURLY OBSERVATIONS

OF

MAGNETOMETERS.

MAKERSTOUN OBSERVATORY,

1845.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
0	13	0	25	11·51	528·6	37·9	616·3	38·0	B
	14	0		12·93	529·9	37·7	616·9	37·7	B
	15	0		11·17	532·8	37·4	615·3	37·3	B
	16	0†		08·05	526·3	37·1	603·4	37·1	B
	17	0		11·91	533·1	36·9	610·4	36·8	B
	18	0		12·40	533·6	36·7	613·8	35·6	B
	19	0		13·36	533·1	36·3	617·0	36·2	W
	20	0		12·76	533·2	36·0	615·9	35·8	W
	21	0		12·48	535·0	35·7	617·5	35·3	H
	22	0		13·36	533·5	35·4	614·0	34·9	W
	23	0		14·06	531·4	35·1	612·7	34·7	W
1	0	0		14·91	529·8	34·9	611·7	34·4	W
	1	0		16·10	526·9	34·7	612·1	34·4	H
	2	0		17·76	528·6	34·6	621·1	34·4	W
	3	0		16·97	526·2	34·5	633·1	34·4	W
	4	0		12·08	528·7	34·4	643·2	34·3	W
	5	0		12·20	537·1	34·3	640·3	34·3	W
	6	0		14·44	533·7	34·3	633·8	34·5	B
	7	0†		12·67	531·9	34·3	631·9	34·5	H
	8	0		11·34	536·2	34·3	626·5	34·6	H
	9	0		12·96	536·2	34·3	621·2	34·7	H
	10	0		08·19	537·4	34·3	620·7	34·7	B
	11	0		11·61	532·9	34·3	619·1	34·7	H
	12	0		11·39	531·2	34·3	614·6	34·7	H
	13	0	25	14·41	529·7	34·3	614·5	34·7	H
	14	0		13·59	531·2	34·3	611·1	34·6	H
	15	0		12·92	530·9	34·3	610·8	34·6	H
	16	0		15·07	533·0	34·3	611·8	34·7	H
	17	0		17·33	532·3	34·3	610·6	34·7	H
	18	0		14·30	535·3	34·3	609·2	34·7	H
	19	0		13·74	539·8	34·3	608·5	34·7	B
	20	0		13·14	537·9	34·2	610·4	34·6	B
	21	5		14·26	532·4	34·1	612·2	34·5	W
	22	0		12·42	537·6	34·1	610·8	34·4	B
	23	0		13·91	536·1	34·0	610·4	34·3	W
2	0	0		15·20	533·0	34·0	609·2	34·3	W
	1	0		16·21	531·8	34·0	608·2	34·4	W
	2	0		16·60	532·6	34·0	612·8	34·4	W
	3	0		15·86	539·1	34·1	617·5	34·5	W
	4	0		14·71	532·8	34·3	620·4	34·7	W
	5	0		13·17	531·1	34·4	621·9	34·9	B
	6	0		10·43	535·4	34·5	620·4	35·0	H
	7	0		13·49	540·4	34·6	619·6	35·1	H
	8	0		13·94	538·7	34·7	617·3	35·2	H
	9	0		13·16	535·7	34·7	620·5	35·2	H
	10	0		06·68	529·6	34·7	632·5	35·2	H
	11	0		13·05	536·0	34·7	621·5	35·1	W
	12	0		13·09	535·8	34·7	617·6	35·1	W
	13	0	25	15·76	534·5	34·7	610·2	35·0	W
	14	0		14·58	534·1	34·6	607·4	35·0	W
	15	0		13·27	534·3	34·6	608·0	34·9	W
	16	0		13·43	536·1	34·5	607·0	34·8	W
	17	0		13·19	536·1	34·4	607·0	34·7	W
	18	0		13·49	537·3	34·3	606·9	34·6	W
	19	0		13·16	537·8	34·2	607·9	34·6	H
	20	0		13·10	536·9	34·1	610·5	34·5	H
2	21	0	25	13·05	539·9	34·1	607·7	34·5	B
	22	0		14·23	538·7	34·1	605·2	34·5	H
	23	0		14·80	538·0	34·1	606·0	34·4	H
3	0	0		16·73	534·7	34·1	605·8	34·5	H
	1	0		16·86	535·6	34·2	604·1	34·7	H
	2	0		16·12	538·1	34·3	607·7	34·8	H
	3	0		15·31	536·1	34·4	609·4	34·9	H
	4	0		15·05	536·2	34·6	610·9	35·1	H
	5	0		14·13	537·8	34·8	613·0	35·4	H
	6	0		14·03	539·1	35·0	610·9	35·7	W
	7	0		13·59	539·9	35·2	611·4	36·0	W
	8	0		13·76	538·8	35·4	611·2	36·1	W
	9	0		13·72	537·9	35·6	612·2	36·3	W
	10	0		13·25	538·1	35·7	611·9	36·4	W
	11	0		13·17	536·0	35·8	611·7	36·4	B
	12	0		13·12	536·7	35·8	609·2	36·4	B
	13	0	25	12·82	534·9	35·9	607·7	36·4	B
	14	0		11·69	535·2	35·9	605·8	36·4	B
	15	0		11·37	539·9	35·9	593·5	36·3	B
	16	0		12·02	535·6	35·8	598·8	36·3	B
	17	0		12·69	537·2	35·8	598·5	36·2	B
	18	0		13·12	537·6	35·8	599·1	36·2	B
	19	0		13·03	537·3	35·7	600·0	36·1	W
	20	0		13·74	536·5	35·7	600·4	36·0	W
	21	0		13·27	537·9	35·6	598·1	35·9	H
	22	0		13·02	538·2	35·5	596·4	35·8	W
	23	0		13·64	538·7	35·5	594·0	35·8	W
4	0	0		14·37	539·3	35·5	594·2	35·9	W
	1	0		15·11	539·1	35·5	592·5	35·9	H
	2	0		14·57	538·9	35·6	599·0	36·0	W
	3	0		13·72	536·5	35·7	600·2	36·2	H
	4	0		14·35	537·2	35·8	606·3	36·4	W
	5	0		14·06	537·3	35·9	604·7	36·6	W
	6	0		14·06	538·0	36·1	605·4	36·8	B
	7	0		13·99	539·6	36·3	605·1	37·0	B
	8	0		14·20	540·1	36·6	605·5	37·2	B
	9	0		13·47	539·0	36·8	605·8	37·5	B
	10	0		13·23	540·1	37·0	606·1	37·8	B
	11	0		13·97	537·5	37·3	607·5	38·1	H
	12	0		13·66	538·2	37·7	609·0	38·5	H
5	13	0	25	14·17	537·7	44·8	609·2	45·4	B
	14	0		14·03	539·1	44·9	604·4	45·5	B
	15	0		14·33	539·6	44·9	601·7	45·6	B
	16	0		14·17	539·9	45·0	598·7	45·7	B
	17	0		13·86	540·1	45·1	596·7	45·8	B
	18	0		13·37	540·9	45·3	594·9	45·9	B
	19	0		13·12	539·7	45·4	594·4	46·0	H
	20	0		13·32	539·2	45·6	595·3	46·2	H
	21	0		13·77	538·3	45·7	595·4	46·3	W
	22	0		14·38	540·6	45·8	590·7	46·3	H
	23	0		15·38	541·5	45·8	590·7	46·3	H
6	0	0		15·74	541·7	45·8	592·5	46·3	H
	1	0		15·44	543·7	45·8	595·7	46·3	H
	2	0		13·93	541·9	45·8	599·3	46·2	H
	3	0		13·99	540·8	45·8	600·4	46·2	H
	4	0		14·57	539·1	45·7	600·7	46·1	H

DECLINATION. Magnet untouched, Dec. 30d 1844—Feb. 5d 1845.

BIFILAR. Observed 2m after the Declination, $k=0·000140$. BALANCE. Observed 3m after the Declination, $k=0·000010$.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
6	5	0	25	14·73	539·4	45·6	599·1	46·0	H
	6	0		14·46	540·7	45·5	597·2	45·7	B
	7	0		14·46	541·2	45·3	595·1	45·4	B
	8	0		14·55	538·4	45·0	598·0	45·0	B
	9	0		14·53	536·9	44·8	602·2	44·6	B
	10	0		13·84	538·3	44·4	602·0	44·0	B
	11	0		13·93	538·2	44·0	602·3	43·5	W
	12	0		14·30	538·6	43·6	602·7	43·0	W
	13	0	25	13·34	537·9	43·2	603·1	42·5	W
	14	0		13·88	537·0	42·7	598·1	42·0	W
	15	0		13·43	536·9	42·3	595·3	41·5	W
	16	0		12·16	540·2	41·9	589·1	41·1	W
	17	0		11·66	539·6	41·5	590·0	40·7	W
	18	0		12·78	539·7	41·0	589·1	40·4	W
	19	0		13·14	540·3	40·7	589·4	40·0	B
	20	0		13·46	539·8	40·5	590·9	39·8	B
	21	0		13·83	539·7	40·2	588·7	39·5	H
	22	0		14·92	542·3	39·9	586·7	39·2	H
	23	0		15·79	544·9	39·7	592·3	39·1	H
7	0	0		16·15	546·2	39·4	595·7	39·1	H
	1	0		15·51	547·6	39·3	595·0	39·0	H
	2	0		14·33	546·1	39·2	597·7	39·0	B
	3	0		14·87	546·1	39·2	598·9	39·1	H
	4	0		15·41	543·9	39·1	599·8	39·2	H
	5	0		16·65	544·1	39·2	600·7	39·4	H
	6	0		16·10	541·0	39·3	599·1	39·4	W
	7	0		14·44	537·3	39·3	602·6	39·2	W
	8	0		13·19	532·0	39·2	608·8	39·0	W
	9	0		14·15	531·6	39·0	614·6	38·8	W
	10	0		13·96	531·5	38·9	615·7	38·7	W
	11	0		08·92	541·2	38·7	607·5	38·5	H
	12	0		13·96	540·9	38·5	596·9	38·4	H
	13	0	25	14·50	538·9	38·4	599·7	38·3	H
	14	0		14·62	538·5	38·2	604·4	38·2	H
	15	0		14·77	539·8	38·0	602·4	38·1	H
	16	0		14·85	541·0	38·0	600·5	38·0	H
	17	0		14·48	542·4	37·9	598·1	38·0	H
	18	0		14·17	542·1	37·9	597·4	37·9	H
	19	0		13·66	543·3	37·8	596·6	37·9	W
	20	0		14·33	542·4	37·8	596·5	37·9	W
	21	0		17·60	540·0	37·8	597·2	37·9	B
	22	0		17·54	541·8	37·7	593·1	37·8	W
	23	0		17·61	540·6	37·7	598·6	38·0	W
8	0	0		15·12	539·2	37·9	604·2	38·3	W
	1	0		14·71	541·1	38·1	603·2	38·7	B
	2	0		14·68	543·2	38·5	605·9	39·2	W
	3	0		13·66	540·3	38·9	607·8	39·6	W
	4	0		14·50	540·4	39·2	607·2	40·0	W
	5	0		15·09	539·6	39·5	605·5	40·2	W
	6	0		14·46	541·2	39·7	603·1	40·3	H
	7	0		14·40	539·3	39·7	601·1	40·3	H
	8	0		14·44	539·6	39·7	599·0	40·2	H
	9	0		13·86	540·8	39·6	596·2	40·0	H
	10	0		13·79	540·3	39·4	593·7	39·7	H
	11	0		14·06	539·0	39·0	593·9	39·1	B
	12	0		12·72	537·0	38·8	596·1	38·8	B
8	13	0	25	09·77	535·0	38·6	600·3	38·5	B
	14	0		11·66	536·7	38·3	596·2	38·1	B
	15	0		11·71	538·7	38·0	596·7	37·8	B
	16	0		12·75	541·5	37·7	592·3	37·5	B
	17	0		12·45	545·7	37·4	584·4	37·2	B
	18	0		11·93	542·3	37·1	583·8	36·8	B
	19	0		13·81	541·7	36·9	581·9	36·6	H
	20	0		14·41	542·0	36·7	584·1	36·5	H
	21	0		14·77	539·5	36·5	588·0	36·3	W
	22	0		15·67	540·3	36·3	587·8	35·9	H
	23	0		17·98	538·7	36·1	590·3	35·8	H
9	0	0		16·46	538·1	35·9	599·3	35·7	H
	1	0		19·89	546·9	35·9	598·8	36·0	H
	2	0†		22·37	533·0	36·1	607·0	36·5	H
	3	0		21·90	532·7	36·5	614·6	37·2	H
	4	0		20·42	534·5	37·2	626·0	37·8	H
	5	0†		15·47	536·9	37·7	647·9	38·3	H
	6	0		16·43	537·6	38·0	653·4	38·8	B
	7	0†		12·93	535·4	38·3	663·0	39·6	B
	8	0†		06·59	525·0	38·3	688·4	39·2	B
	9	0†		00·27	558·8	38·3	766·6	38·9	B
	10	0†	25	04·14	499·7	38·1	682·3	38·7	B
	11	0†	24	56·61	443·0	38·0	375·6	38·5	B
	12	0†	24	44·54	438·3	37·8	335·3	38·4	B
	13	0†	25	06·70	543·6	37·7	594·3	38·3	W
	14	0†	24	45·27	479·2	37·5	570·4	38·0	W
	15	0†	25	04·95	445·4	37·3	603·5	37·8	W
	16	0†	24	55·47	500·3	37·2	631·1	37·7	W
	17	0†	25	06·09	524·1	37·0	647·1	37·6	W
	18	0		10·90	522·9	37·0	629·4	37·5	W
	19	0		12·48	531·5	36·9	614·0	37·5	B
	20	0		14·46	529·7	36·9	611·3	37·5	B
	21	0		14·50	532·7	36·8	604·5	37·4	H
	22	0		15·85	535·1	36·8	595·0	37·3	H
	23	0		16·08	534·5	36·8	592·9	37·4	H
10	0	0		15·92	534·1	37·0	595·4	37·6	H
	1	0		16·41	538·5	37·3	594·8	38·0	H
	2	0		15·45	538·8	37·7	602·6	38·4	B
	3	0		13·59	534·8	37·9	603·3	38·6	H
	4	0		14·67	535·8	38·0	604·6	38·8	H
	5	0		14·46	536·2	38·2	605·4	39·2	H
	6	0		14·94	535·7	38·5	603·1	39·4	W
	7	0		16·06	537·2	38·7	602·0	39·6	W
	8	0†		10·92	518·7	38·9	648·5	39·9	W
	9	0†		09·74	537·3	39·2	604·6	40·2	W
	10	0		13·61	527·6	39·5	601·1	40·6	W
	11	0		13·66	531·4	39·8	605·3	41·0	H
	12	0		12·73	532·8	40·0	599·2	41·3	H
	13	0	25	15·71	537·9	40·3	581·2	41·6	H
	14	0		12·69	527·6	40·7	589·6	41·9	H
	15	0		12·01	528·3	41·0	597·5	42·2	H
	16	0		14·33	532·7	41·2	597·6	42·5	H
	17	0		14·46	535·7	41·6	591·3	42·7	H
	18	0		15·85	535·8	41·9	597·1	43·1	H
	19	0		15·29	539·0	42·1	603·8	43·3	W
	20	0		15·79	539·7	42·3	598·9	43·4	W

DECLINATION. Magnet untouched, Dec. 30d 1844—Feb. 5d 1845.

BIFILAR. Observed 2m after the Declination, $k=0·000140$. BALANCE. Observed 3m after the Declination, $k=0·000010$.

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† Extra Observations made.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
10	21	0	25	15·14	538·2	42·6	599·8	43·5	B
	22	0		16·62	536·6	42·7	599·2	43·5	W
	23	0		17·10	536·7	42·7	599·0	43·5	W
11	0	0		16·66	534·9	42·7	601·3	43·5	W
	1	0		16·60	534·1	42·8	601·2	43·7	W
	2	0		16·13	538·2	43·0	605·9	44·0	W
	3	0		14·78	535·3	43·4	614·8	44·5	W
	4	0		14·73	536·5	43·7	617·0	44·7	W
	5	0		13·86	534·6	43·8	621·9	44·7	W
	6	0		14·78	535·2	43·8	620·2	44·7	H
	7	0†		07·24	538·4	43·7	619·3	44·4	H
	8	0		14·53	531·7	43·6	613·2	44·2	H
	9	0		14·17	538·0	43·3	603·0	43·8	H
	10	0		14·35	536·7	43·1	600·3	43·4	H
	11	0		14·11	535·9	42·8	601·2	43·0	B
	12	0		13·56	534·4	42·6	603·3	42·5	B
12	13	0	25	17·20	535·4	37·9	577·5	37·5	W
	14	0		14·80	531·3	37·7	591·5	37·2	W
	15	0		13·05	530·8	37·3	595·9	36·8	W
	16	0		15·61	528·8	36·9	600·2	36·4	W
	17	0†		21·91	522·3	36·6	595·8	36·1	W
	18	0		17·26	533·9	36·3	580·4	35·9	W
	19	0		14·71	536·3	36·1	595·1	35·7	B
	20	0		15·61	538·0	35·9	598·5	35·4	B
	21	0		16·05	536·6	35·7	601·6	35·2	H
	22	0		16·92	534·3	35·4	603·0	34·8	H
	23	0		16·68	528·5	35·2	608·0	34·8	H
13	0	0		17·53	530·1	35·1	606·0	34·8	H
	1	0		18·13	532·0	35·0	608·3	35·0	B
	2	0		17·15	535·9	35·0	610·9	35·0	H
	3	0		15·24	530·6	35·0	618·2	35·2	B
	4	0		15·61	538·5	35·1	611·0	35·3	H
	5	0		14·77	538·7	35·2	611·1	35·7	B
	6	0		13·83	538·6	35·4	609·7	35·9	W
	7	0		13·96	538·1	35·6	608·9	36·2	W
	8	0		12·95	535·6	35·8	609·2	36·4	W
	9	0		14·24	535·7	35·9	604·9	36·5	W
	10	0		13·36	538·4	36·1	600·7	36·6	W
	11	0		12·53	537·9	36·2	599·4	36·8	H
	12	0		13·52	538·5	36·3	596·8	37·1	H
	13	0	25	14·15	538·1	36·5	596·4	37·2	H
	14	0		14·06	537·5	36·7	597·1	37·4	H
	15	0		14·33	538·7	36·8	595·5	37·4	H
	16	0		14·24	539·5	36·8	595·4	37·5	H
	17	0		15·17	539·1	36·9	594·4	37·6	H
	18	0		14·24	540·5	37·0	593·9	37·7	H
	19	0		13·79	541·7	37·1	593·1	37·8	W
	20	0		14·28	539·8	37·2	593·6	37·9	W
	21	0		14·50	537·8	37·4	596·7	38·1	B
	22	0		15·62	532·1	37·6	599·2	38·2	W
	23	0		18·43	527·1	37·7	598·8	38·3	W
14	0	0		18·45	535·0	37·8	598·1	38·5	W
	1	0		19·58	533·7	38·0	597·1	38·7	W
	2	0		18·03	539·9	38·2	593·2	38·9	W
	3	0		15·17	539·4	38·4	593·3	39·0	W
	4	0		14·58	542·4	38·6	596·3	39·2	W
14	5	0	25	15·49	534·4	38·8	601·8	39·5	W
	6	0		14·84	534·1	38·9	607·3	39·7	H
	7	0		14·75	539·3	39·0	605·7	39·9	H
	8	0		14·38	539·7	39·1	602·5	40·0	H
	9	0		12·72	540·3	39·2	601·8	40·1	H
	10	0		12·75	540·6	39·2	598·1	40·1	H
	11	0†		11·17	544·9	39·3	576·4	40·1	B
	12	0†		09·76	534·5	39·3	572·1	40·1	B
	13	0	25	16·48	537·2	39·3	570·3	40·1	B
	14	0		12·98	533·5	39·4	577·7	40·1	B
	15	0		12·18	534·5	39·4	582·2	40·0	B
	16	0		11·72	536·0	39·4	586·9	40·0	B
	17	0		12·65	542·5	39·3	583·9	39·9	B
	18	0		13·07	541·3	39·3	583·1	39·8	B
	19	0		14·24	539·9	39·2	587·0	39·7	H
	20	0		14·64	542·4	39·1	585·3	39·7	H
	21	0		14·80	539·5	39·0	588·2	39·5	W
	22	0		14·57	534·2	39·0	590·8	39·4	H
	23	0		14·94	527·9	39·0	595·1	39·3	H
15	0	0		16·39	534·1	38·9	593·0	39·4	H
	1	0		17·42	534·6	39·0	588·4	39·5	W
	2	0		17·19	536·7	39·2	588·8	39·9	H
	3	0		16·06	539·2	39·5	589·1	40·2	H
	4	0		14·57	539·4	39·9	591·4	40·7	B
	5	0		14·64	540·4	40·1	589·7	40·9	H
	6	0		13·90	540·3	40·2	593·0	41·0	B
	7	0		14·17	540·1	40·3	593·1	41·1	B
	8	0		12·09	540·8	40·2	592·0	40·9	B
	9	0		13·91	539·2	40·2	593·2	40·7	B
	10	0		14·20	539·7	40·0	591·0	40·3	B
	11	0†		02·77	546·4	39·8	582·8	40·0	W
	12	0†		12·62	533·4	39·6	576·2	39·6	W
	13	0	25	14·64	535·4	39·3	566·6	39·3	W
	14	0		14·60	534·0	39·0	574·2	38·9	W
	15	0		14·55	535·1	38·7	580·5	38·4	W
	16	0		14·11	535·7	38·3	583·1	37·9	W
	17	0		14·20	539·2	37·9	583·3	37·3	W
	18	0		14·53	540·3	37·5	584·5	36·8	W
	19	0		14·87	539·0	37·0	587·1	36·5	B
	20	0		14·10	539·8	36·7	588·4	36·2	B
	21	0		13·47	536·8	36·3	592·7	35·8	H
	22	0		13·49	537·5	36·2	596·1	35·6	H
	23	0		15·01	535·5	35·8	595·6	35·4	H
16	0	0		17·20	536·5	35·7	592·6	35·3	B
	1	0		16·68	531·3	35·5	593·5	35·3	H
	2	0		19·17	535·2	35·4	593·6	35·3	H
	3	0		17·67	535·4	35·4	598·5	35·3	B
	4	0		17·33	535·9	35·3	596·8	35·2	H
	5	0		15·81	538·0	35·2	597·4	35·2	H
	6	0		14·60	539·4	35·1	597·5	35·0	W
	7	0		13·83	539·9	35·0	597·3	34·8	W
	8	0		13·49	539·5	34·8	597·6	34·6	W
	9	0		13·37	539·8	34·6	596·2	34·3	W
	10	0		13·39	538·2	34·3	596·1	34·0	W
	11	0		13·47	534·1	34·0	598·8	33·7	H
	12	0		13·46	534·2	33·8	600·1	33·7	H

DECLINATION. Magnet untouched, Dec. 30^{d} 1844—Feb. 5^{d} 1845.

BIFILAR. Observed 2^{m} after the Declination, $k=0·000140$. BALANCE. Observed 3^{m} after the Declination, $k=0·000010$.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
16	13	0	25	13·36	529·7	33·7	603·5	33·7	H
	14	0		13·83	534·6	33·5	589·1	33·7	H
	15	0		13·36	536·2	33·4	594·7	33·7	H
	16	0		13·94	541·1	33·4	593·6	33·7	H
	17	0		14·10	541·6	33·4	594·2	33·8	H
	18	0		13·39	544·0	33·5	593·6	34·0	H
	19	0†		18·30	540·8	33·7	596·5	34·2	W
	20	0		15·31	544·2	33·8	583·1	34·5	W
	21	0		14·71	541·2	34·0	592·5	34·8	B
	22	0		15·41	540·9	34·3	593·2	34·9	W
	23	0		16·05	537·2	34·5	596·1	35·1	W
17	0	0		16·55	535·6	34·7	596·3	35·3	W
	1	0		17·17	535·4	34·9	599·3	35·6	B
	2	0		16·99	537·3	35·2	599·3	36·0	W
	3	0		16·25	540·7	35·7	598·8	36·6	W
	4	0		15·25	537·7	36·2	597·9	37·2	W
	5	0		15·39	543·2	36·7	592·1	37·6	W
	6	0		14·85	543·1	37·1	590·6	38·0	H
	7	0		14·91	540·8	37·3	592·0	38·2	H
	8	0		12·02	530·5	37·6	605·1	38·6	H
	9	0		11·54	530·8	37·7	608·2	38·6	H
	10	0		12·38	537·1	37·8	601·1	38·6	H
	11	0		13·49	540·8	37·9	593·4	38·7	B
	12	12		13·17	538·4	38·0	588·3	38·7	B
	13	0	25	13·79	537·3	38·0	587·4	38·7	B
	14	0		14·06	537·7	38·0	585·1	38·7	B
	15	0		16·55	536·9	38·0	584·8	38·7	B
	16	0		14·33	534·1	38·0	580·4	38·7	B
	17	0		15·78	537·8	38·0	578·1	38·6	B
	18	0		14·46	542·2	38·0	578·2	38·6	B
	19	0		14·10	536·4	38·0	583·0	38·6	H
	20	0		14·57	540·9	38·0	582·0	38·6	H
	21	0		13·67	543·3	38·0	582·1	38·6	W
	22	0		15·11	532·9	38·0	583·3	38·6	H
	23	0		17·06	532·3	38·0	588·3	38·6	H
18	0	0		20·35	532·3	38·1	584·8	38·6	H
	1	0		18·50	533·5	38·2	584·4	38·8	W
	2	0		18·88	527·7	38·4	585·3	39·0	H
	3	0		17·34	537·1	38·7	589·6	39·6	H
	4	0		16·15	536·5	39·0	591·6	40·0	H
	5	0		15·11	538·1	39·3	592·6	40·3	H
	6	0		14·33	539·5	39·6	591·9	40·5	B
	7	0		14·11	540·2	39·8	590·7	40·6	B
	8	0		13·64	541·0	39·8	588·4	40·6	B
	9	0		13·63	540·4	39·9	585·5	40·5	B
	10	0		13·43	539·3	39·9	586·7	40·5	B
	11	0		13·70	539·4	39·8	586·1	40·4	W
	12	0	25	13·69	539·9	39·7	584·4	40·3	W
19	13	0†	24	44·83	493·5	36·7	399·8	36·3	H
	14	0†	24	54·79	512·4	36·4	363·2	36·3	H
	15	0†	25	03·50	423·4	36·2	198·8	36·3	H
	16	0†		04·31	537·8	36·1	305·3	36·2	H
	17	0		06·88	539·8	35·8	330·0	35·8	H
	18	0		13·72	543·6	35·7	385·3	35·4	H
	19	0		17·22	545·9	35·3	436·4	34·9	W
	20	0		19·59	535·7	35·0	476·1	34·6	W

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
19	21	3	25	15·83	531·5	34·8	504·1	34·3	B
	22	0		17·49	530·2	34·6	522·4	34·0	W
	23	0		20·00	522·7	34·2	542·0	33·8	W
20	0	0		22·25	529·1	34·0	555·2	33·7	W
	1	0		22·25	530·0	33·9	564·6	33·9	W
	2	0†		24·99	535·4	34·0	585·9	34·4	W
	3	0†		23·65	531·4	34·5	621·3	35·1	W
	4	0†		18·52	530·8	35·0	675·7	35·8	W
	5	0		16·68	531·6	35·4	642·7	36·2	W
	6	0		17·70	530·8	35·6	624·2	36·4	H
	7	0		16·01	535·6	35·7	606·1	36·1	H
	8	0		11·19	522·5	35·7	621·1	36·4	H
	9	0		13·12	521·7	35·7	607·0	36·3	H
	10	0		09·12	532·4	35·7	586·6	36·2	H
	11	0		12·06	531·9	35·6	584·8	36·1	B
	12	0		13·83	537·8	35·6	575·8	36·0	B
	13	0	25	15·44	536·7	35·6	574·6	36·0	B
	14	0		15·01	535·9	35·6	579·6	36·0	B
	15	0		14·13	536·3	35·5	581·3	36·0	B
	16	0		14·78	537·4	35·5	580·0	35·9	B
	17	0		14·53	539·0	35·4	576·6	35·8	B
	18	0†		19·69	539·3	35·3	569·3	35·7	B
	19	0		13·67	538·6	35·3	555·1	35·7	H
	20	0		14·53	538·8	35·3	567·7	35·7	H
	21	0		15·52	537·1	35·3	571·4	35·7	W
	22	0		16·65	541·3	35·2	572·8	35·5	H
	23	0		16·38	539·2	35·1	579·3	35·4	H
21	0	0		16·10	536·1	35·1	587·9	35·4	H
	1	0		18·20	540·7	35·2	588·0	35·6	H
	2	0		18·52	535·4	35·3	588·1	35·7	H
	3	0		15·15	535·1	35·4	596·3	36·1	H
	4	0		15·78	535·4	35·7	591·6	36·3	H
	5	0		15·20	536·9	36·0	593·0	36·6	H
	6	0		13·96	538·9	36·1	590·0	36·9	B
	7	0		14·26	535·4	36·2	590·6	36·9	B
	8	0†		03·34	533·7	36·3	602·2	36·9	B
	9	0		13·67	534·8	36·4	589·6	37·1	B
	10	0		14·11	534·1	36·5	588·4	37·2	B
	11	0		09·39	537·2	36·6	580·4	37·1	W
	12	0		11·93	537·9	36·7	563·3	37·3	W
	13	0	25	12·70	531·4	36·8	572·9	37·4	W
	14	0		14·78	535·1	36·9	574·5	37·6	W
	15	0		10·87	534·2	37·0	572·9	37·7	W
	16	0		13·83	535·7	37·0	571·7	37·8	W
	17	0		11·24	538·1	37·1	572·1	37·9	W
	18	0		13·90	539·2	37·3	571·3	38·0	W
	19	0		14·50	539·6	37·5	574·0	38·2	B
	20	0		14·43	543·0	37·7	573·7	38·4	B
	21	0		14·13	522·4	37·8	571·5	38·5	H
	22	0		16·30	523·0	38·0	574·5	38·6	H
	23	0		16·95	522·9	38·2	579·7	38·7	H
22	0	0		16·86	538·3	38·4	585·4	39·0	B
	1	0		16·63	542·3	38·7	583·7	39·6	B
	2	0		17·07	544·5	39·1	580·7	40·2	B
	3	0		16·01	535·1	39·8	592·9	40·9	H
	4	0		15·85	537·8	40·5	596·1	41·8	B

DECLINATION. Magnet untouched, Dec. 30^d 1844—Feb. 5^d 1845.

BIFILAR. Observed 2^m after the Declination, k=0·000140. BALANCE. Observed 3^m after the Declination, k=0·000010.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
22	5	0	25	16·72	540·3	41·1	590·6	42·2	H
	6	0		16·16	541·2	41·3	591·1	42·4	W
	7	0		16·86	539·4	41·6	592·4	42·5	W
	8	0		15·67	541·4	41·7	594·4	42·4	W
	9	0		11·44	540·8	41·7	604·8	42·4	W
	10	0		14·77	536·0	41·7	604·9	42·5	B
	11	0		13·84	539·3	41·8	602·9	42·8	B
	12	0		14·18	558·4	41·9	573·8	43·0	B
	13	0	25	12·29	532·6	42·0	579·9	43·2	D
	14	0		12·90	535·6	42·2	580·3	43·3	D
	15	0		11·03	532·8	42·3	583·3	43·5	D
	16	0		11·69	533·6	42·5	586·0	43·6	D
	17	0		11·37	537·5	42·6	583·3	43·8	D
	18	0		12·72	539·7	42·8	578·2	44·2	H
	19	0		15·04	540·5	43·0	575·8	44·5	H
	20	0		13·32	543·9	43·2	571·1	44·9	H
	21	0		14·68	546·4	43·7	569·0	45·4	H
	22	0		16·68	542·7	44·0	570·3	45·6	W
	23	0		19·37	536·0	44·3	579·1	45·7	W
23	0	0		21·81	541·8	44·7	582·6	45·8	W
	1	0		16·60	540·6	44·9	579·5	46·0	W
	2	0		19·75	538·4	45·1	591·9	46·2	B
	3	0		17·12	525·2	45·4	616·6	46·4	B
	4	0		18·68	538·2	45·6	611·1	46·6	W
	5	0		17·20	531·0	45·8	620·4	46·8	W
	6	0		16·18	539·3	45·9	605·4	47·0	D
	7	0		14·50	540·4	46·2	594·1	47·3	D
	8	0		14·77	535·8	46·4	593·9	47·7	D
	9	0		10·74	522·5	46·6	619·2	48·2	H
	10	0†		11·99	527·2	46·8	594·2	48·3	H
	11	0†		12·92	529·0	46·9	588·9	48·2	B
	12	0†		01·83	529·6	46·9	574·4	48·0	B
	13	0	25	10·20	528·1	46·9	589·6	48·0	B
	14	0†		09·89	529·2	46·9	586·0	47·8	B
	15	0†		12·36	522·1	46·9	520·5	47·7	B
	16	0†		02·86	536·4	46·8	480·0	47·7	B
	17	0†		11·81	530·0	46·8	506·0	47·6	B
	18	0		11·68	532·2	46·7	531·2	47·4	B
	19	0		13·02	534·7	46·7	551·7	47·2	H
	20	0		15·58	539·9	46·5	555·0	47·0	H
	21	0		19·51	531·2	46·3	561·2	46·8	W
	22	0		14·91	537·4	46·2	559·4	46·5	H
	23	0		18·34	536·1	46·0	564·0	46·2	H
24	0	0		17·22	526·6	45·7	579·7	45·8	H
	1	0		20·42	533·7	45·4	580·9	45·5	H
	2	0		16·43	537·0	45·1	579·8	45·2	H
	3	0		16·10	535·2	45·0	585·2	45·3	H
	4	0		16·15	537·7	44·9	591·6	45·0	H
	5	0		17·39	541·7	44·8	601·9	45·0	H
	6	0†		11·74	519·6	44·8	644·6	45·0	B
	7	0†		16·80	524·6	44·7	653·2	44·9	B
	8	0†		15·34	547·3	44·5	629·4	44·6	B
	9	0†		15·47	539·0	44·3	618·9	44·3	B
	10	0†		14·20	534·8	44·0	612·4	43·8	B
	11	0†		14·15	545·3	43·7	571·8	43·4	W
	12	0†		09·42	515·0	43·3	562·6	43·2	W
24	13	0†	25	07·49	519·9	43·0	600·7	42·8	W
	14	0†		15·34	529·1	42·7	572·5	42·5	W
	15	0†		04·29	530·4	42·5	549·6	42·2	W
	16	0		13·59	531·9	42·1	583·6	41·9	W
	17	0		12·36	532·3	41·8	593·6	41·5	W
	18	0		13·02	536·7	41·6	591·9	41·0	W
	19	0		12·89	538·8	41·2	587·6	40·8	B
	20	0		18·03	538·5	40·9	584·7	40·7	B
	21	0		17·09	538·1	40·8	581·1	40·6	H
	22	0		18·90	542·7	40·6	578·0	40·5	H
	23	0		17·09	532·5	40·6	590·6	40·5	H
25	0	0		18·27	540·8	40·7	597·4	41·0	B
	1	0†		20·27	521·7	40·8	609·3	41·4	H
	2	0†		19·29	542·4	41·3	628·4	42·0	B
	3	0		22·13	537·9	41·8	626·2	42·5	H
	4	0		13·86	536·4	42·2	648·8	42·9	H
	5	0†		21·06	533·4	42·6	646·7	43·5	H
	6	0†		13·16	542·5	43·0	641·7	44·0	W
	7	0†		12·16	534·2	43·5	642·4	44·6	W
	8	0		14·03	536·2	43·9	620·9	45·1	W
	9	0†		09·05	529·1	44·4	610·7	45·6	W
	10	0†		10·16	530·0	44·9	589·3	46·0	W
	11	0†		11·37	534·7	45·3	586·2	46·6	H
	12	0†		10·20	546·9	45·8	577·2	47·0	H
26	13	0†	25	14·18	530·0	39·5	524·7	38·4	B
	14	0†		12·49	537·3	39·0	558·2	38·2	B
	15	0†		07·11	520·8	38·6	558·4	37·9	B
	16	0†		05·00	526·8	38·2	569·0	37·5	B
	17	0		08·48	529·7	37·8	583·8	37·2	B
	18	0†		07·62	533·1	37·5	580·0	36·8	B
	19	0†		12·85	536·2	37·2	579·9	36·7	H
	20	0		12·69	539·6	36·9	587·5	36·5	H
	21	0		15·94	538·3	36·7	582·4	36·3	W
	22	0		16·77	533·6	36·5	580·6	36·0	H
	23	0		18·88	531·1	36·3	583·1	35·8	H
27	0	0		15·92	527·0	36·1	597·0	35·7	H
	1	0		17·51	537·8	36·0	601·4	35·8	H
	2	3		19·75	531·4	36·1	605·0	36·0	H
	3	0		15·56	546·2	36·2	616·3	36·2	H
	4	0		17·96	534·7	36·2	617·0	36·5	H
	5	0		14·87	539·6	36·3	612·1	36·6	H
	6	0		15·27	537·5	36·3	606·4	36·4	B
	7	0		14·04	540·4	36·2	597·8	36·4	B
	8	0		14·23	539·8	36·1	595·9	36·2	B
	9	0		12·55	535·6	36·0	600·2	36·0	B
	10	0†		01·41	555·0	35·9	578·5	35·9	B
	11	0†		15·05	543·4	35·8	567·3	35·9	W
	12	0		10·97	538·8	35·7	563·6	36·0	W
	13	0	25	12·11	534·6	35·7	572·0	36·0	W
	14	0		14·75	536·5	35·6	575·5	35·9	W
	15	0		12·75	534·8	35·6	577·3	35·8	W
	16	0		13·86	535·0	35·5	580·3	35·7	W
	17	0		13·50	537·5	35·4	580·9	35·5	W
	18	0		13·47	539·6	35·3	580·8	35·4	W
	19	0		13·86	538·7	35·1	582·5	35·3	B
	20	0		14·06	540·0	35·0	580·0	35·1	B

DECLINATION. Magnet untouched, Dec. 30d 1844—Feb. 5d 1845.

BIFILAR. Observed 2m after the Declination, $k=0·000140$. BALANCE. Observed 3m after the Declination, $k=0·000010$.

† Extra Observations made.

Jan. 22d 10h—23d 10h. Term-Day Observations made.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
27	21	0	25	14·38	538·1	34·9	572·1	34·9	H
	22	0		15·47	537·2	34·8	570·8	34·6	H
	23	0		16·23	535·5	34·7	572·5	34·6	H
28	0	0		16·86	538·6	34·6	572·9	34·6	H
	1	0		15·01	532·6	34·6	572·0	34·7	H
	2	0		15·71	546·5	34·6	567·2	34·9	H
	3	0		18·20	548·9	34·8	578·1	35·3	H
	4	0		19·34	540·1	35·0	603·0	35·5	H
	5	0†		15·38	524·9	35·1	623·1	35·6	H
	6	0†		13·05	528·1	35·1	638·6	35·7	W
	7	0		16·26	528·0	35·1	633·4	35·7	W
	8	0†		09·10	540·4	35·1	641·4	35·7	W
	9	0†		12·15	531·0	35·1	632·5	35·7	W
	10	0†		13·12	524·3	35·1	632·3	35·7	W
	11	0†	25	06·19	523·1	35·1	600·5	35·7	H
	12	0†	24	59·66	548·8	35·0	542·8	35·7	H
	13	0	25	13·25	528·3	35·0	550·9	35·7	H
	14	0		21·56	533·7	35·0	541·0	35·7	H
	15	0		12·92	529·8	34·9	537·7	35·4	H
	16	0		14·15	533·8	34·8	560·0	35·2	H
	17	0		11·44	534·3	34·6	566·4	34·7	H
	18	0		13·16	536·3	34·3	567·3	34·3	H
	19	0†		23·45	534·8	34·0	558·6	34·0	W
	20	0†		25·11	539·6	33·7	534·5	33·6	W
	21	5†		24·84	536·5	33·4	529·2	33·3	B
	22	0		21·73	539·0	33·1	524·8	32·8	W
	23	0		16·03	539·6	32·7	541·2	32·4	W
29	0	0		14·75	541·4	32·6	563·9	32·4	W
	1	0		17·09	539·4	32·5	565·1	32·4	H
	2	0		18·87	541·4	32·4	567·8	32·5	W
	3	0		17·46	535·2	32·5	572·2	32·7	W
	4	0		18·03	534·9	32·6	578·0	32·8	W
	5	0	25	17·80	540·9	32·7	581·0	32·9	W
	6	0†	24	59·63	532·5	32·7	622·2	32·7	H
	7	0†	25	05·29	524·7	32·6	645·0	32·7	H
	8	0†		16·68	531·2	32·4	656·3	32·6	H
	9	0†		14·43	527·0	32·1	616·8	32·2	H
	10	0†		03·60	584·2	31·8	544·8	31·5	H
	11	0†		12·80	533·3	31·4	516·0	30·9	B
	12	0†		09·69	526·2	31·0	529·5	30·5	B
	13	0†	25	12·73	521·9	30·6	547·4	30·1	B
	14	0		14·87	528·9	30·1	564·1	29·7	B
	15	0		16·26	528·0	29·7	570·3	29·2	B
	16	0		12·01	532·2	29·3	567·7	28·7	B
	17	0		12·29	530·4	28·9	575·5	28·3	B
	18	0		12·01	533·9	28·6	576·9	28·0	B
	19	0		15·91	533·3	28·3	576·1	27·3	H
	20	0		13·83	522·5	27·9	574·4	26·8	H
	21	0		13·96	533·2	27·6	564·2	26·4	W
	22	0		15·81	534·1	27·3	564·1	26·2	H
	23	0		16·89	533·0	27·0	565·8	26·0	H
30	0	0		17·70	535·0	26·8	570·4	26·2	H
	1	0		17·89	533·3	26·8	569·1	26·6	H
	2	0		17·65	535·0	27·0	578·3	27·2	H
	3	0		16·48	537·9	27·3	582·6	28·1	H
	4	0		18·48	541·7	27·8	591·3	28·5	H
30	5	0	25	16·62	529·6	28·3	591·6	29·0	H
	6	0		14·53	538·9	28·6	598·9	29·2	B
	7	0		16·68	536·1	28·8	600·9	29·4	B
	8	0†		02·89	523·7	28·8	608·3	29·1	B
	9	0†		07·74	535·1	28·7	583·1	28·9	B
	10	0†		12·01	529·9	28·5	582·2	28·5	B
	11	0		14·03	535·9	28·2	570·6	27·8	W
	12	0		13·84	535·1	27·8	564·7	27·0	W
	13	0	25	13·32	534·5	27·3	562·2	26·3	W
	14	0		12·96	533·4	26·7	559·9	25·4	W
	15	0		14·03	533·6	26·2	560·0	24·6	W
	16	0		13·79	533·7	25·6	559·3	23·9	W
	17	0		13·37	533·1	25·0	557·6	23·1	W
	18	0		13·56	533·9	24·3	556·3	22·3	W
	19	0		13·59	534·0	23·7	555·8	21·5	B
	20	0		12·58	536·9	23·0	555·8	21·0	B
	21	0		13·93	534·4	22·4	557·3	20·3	H
	22	0		15·74	526·6	21·8	557·2	19·5	H
	23	0		16·72	521·3	21·4	558·3	19·0	B
31	0	0		18·43	522·5	21·1	570·3	19·0	B
	1	0		16·89	526·6	20·8	575·6	19·5	B
	2	0		18·54	531·3	20·9	586·6	21·4	B
	3	0		17·09	532·4	21·3	585·4	22·3	B
	4	0		15·91	533·6	22·0	589·2	23·3	B
	5	0		15·32	537·8	22·9	598·4	24·3	B
	6	0		15·41	535·5	23·6	587·9	24·6	W
	7	0		15·07	535·8	24·0	583·9	24·7	W
	8	0		15·01	535·2	24·2	580·6	24·5	W
	9	0		14·65	535·5	24·1	580·2	24·3	W
	10	0		13·43	532·6	24·0	578·1	24·0	W
	11	0		13·25	533·3	23·8	574·6	24·0	H
	12	0		13·43	533·7	23·7	575·5	24·2	H
	13	0	25	14·15	535·7	23·7	570·5	24·2	H
	14	0		19·55	535·3	23·7	567·5	24·3	H
	15	0		13·72	529·0	23·9	564·6	24·5	H
	16	0		14·15	532·5	24·1	569·1	24·8	H
	17	0		14·77	535·1	24·4	572·6	25·2	H
	18	0		13·76	535·4	24·5	572·6	25·3	H
	19	0		14·62	533·8	24·7	574·9	25·4	W
	20	0		13·17	535·2	24·9	574·0	25·5	W
	21	0		12·87	534·9	25·1	576·8	25·8	B
	22	0		13·77	533·4	25·3	574·2	25·9	W
	23	0		15·72	534·0	25·5	575·0	26·3	W
1	0	0		17·26	532·3	25·9	574·3	26·8	W
	1	0		17·46	529·4	26·4	576·9	27·8	W
	2	0		16·92	532·9	27·1	574·4	28·6	W
	3	0		18·18	535·8	27·9	574·6	29·7	W
	4	0		17·26	534·1	28·8	583·2	30·7	W
	5	0		15·67	536·4	29·6	587·7	31·4	W
	6	0		16·18	536·1	30·3	586·9	32·0	H
	7	0		15·04	534·9	30·7	584·6	32·1	H
	8	0		13·81	538·9	30·9	582·8	32·2	H
	9	0		13·59	538·4	31·0	580·9	32·1	H
	10	0		13·72	535·9	31·0	581·1	32·0	H
	11	0		13·46	535·5	30·9	579·3	31·7	B
	12	0†		14·06	543·5	30·8	565·2	31·5	B

DECLINATION. Magnet untouched, Dec. 30d 1844—Feb. 5d 1845.

BIFILAR. Observed 2m after the Declination, k=0·000140. BALANCE. Observed 3m after the Declination, k=0·000010.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
2	13	0	25	14·33	537·3	31·1	572·3	32·0	W
	14	0		13·81	536·5	31·4	574·1	32·4	W
	15	0		14·50	536·9	31·7	572·9	32·6	W
	16	0		14·68	537·3	31·9	571·6	32·8	W
	17	0		14·48	535·6	32·1	572·0	33·1	W
	18	0		13·44	537·4	32·3	571·3	33·3	W
	19	0		13·90	540·1	32·5	571·4	33·5	B
	20	0		12·65	540·6	32·7	573·1	33·7	B
	21	0		13·07	537·7	32·8	577·6	33·8	H
	22	0		14·46	535·2	32·9	576·2	33·8	H
	23	0		15·49	533·3	33·2	580·6	34·2	H
3	0	0		17·36	527·5	33·6	585·0	35·0	B
	1	0		18·63	532·1	34·2	585·6	36·2	H
	2	0		17·54	535·1	35·0	586·0	37·3	B
	3	0		16·79	537·2	36·0	582·1	38·0	H
	4	0		15·14	537·6	37·2	579·4	39·0	H
	5	0		14·60	538·4	38·2	580·9	39·8	H
	6	0		14·30	540·4	38·8	580·8	40·2	W
	7	0		14·04	540·0	39·0	578·9	40·3	W
	8	0		14·03	539·1	39·2	578·0	40·3	W
	9	0		13·76	538·4	39·2	576·9	40·0	W
	10	0		13·83	537·0	39·0	576·4	39·7	W
	11	0		13·43	536·5	38·8	577·3	39·4	H
	12	0		10·90	534·1	38·6	577·5	39·1	H
	13	0	25	11·89	541·4	38·3	565·5	38·8	H
	14	0		13·97	529·7	38·0	570·7	38·4	H
	15	0		07·94	535·3	37·7	558·6	38·0	H
	16	0		12·11	535·5	37·4	562·1	37·5	H
	17	0		13·52	537·6	37·1	562·6	37·0	H
	18	0		12·15	537·7	36·8	567·8	36·5	H
	19	0		12·31	538·6	36·4	569·4	36·1	W
	20	0		12·85	538·9	36·0	567·6	35·6	W
	21	0		13·97	538·4	35·6	564·3	35·1	B
	22	0		15·42	537·2	35·2	557·7	34·7	W
	23	0		17·40	533·6	34·9	561·7	34·5	W
4	0	0		19·64	535·3	34·7	561·5	34·7	W
	1	0		19·48	535·5	34·8	574·5	35·3	W
	2	0		19·37	537·7	35·3	580·9	36·1	W
	3	0		16·84	536·0	36·1	584·7	37·2	W
	4	0		16·16	535·7	36·9	585·2	38·0	W
	5	0		15·67	535·5	37·7	581·4	38·7	W
	6	0		14·73	537·0	38·2	575·6	39·2	H
	7	0		14·33	537·7	38·5	572·6	39·4	H
	8	0		13·23	531·0	38·7	575·4	39·6	H
	9	0		13·14	537·1	38·8	580·2	39·7	H
	10	0		13·52	536·9	39·0	577·0	39·8	H
	11	0		12·92	536·5	39·1	577·8	39·9	B
	12	0		12·45	537·8	39·2	574·7	40·0	B
	13	0	25	13·59	536·3	39·3	572·9	40·0	B
	14	0		14·92	538·8	39·3	571·8	40·1	B
	15	0		15·18	537·9	39·3	569·8	40·0	B
	16	0		13·94	539·4	39·3	567·4	39·9	B
	17	0		13·64	539·6	39·3	567·5	39·8	B
	18	0		13·69	539·8	39·1	566·8	39·6	B
	19	0		13·29	539·5	39·0	563·9	39·4	H
	20	0		13·12	538·5	38·8	564·2	39·2	H
4	21	0	25	13·07	538·4	38·7	565·9	38·9	W
	22	0		13·96	536·1	38·6	566·5	38·7	H
	23	0		15·98	534·6	38·4	568·1	38·7	H
5	0	0		17·65	535·6	38·4	573·5	38·7	H
	1	0		18·72	538·7	38·5	579·7	39·2	H
	2	0		19·26	543·1	38·9	578·8	39·8	H
	3	0		19·05	538·3	39·4	582·6	40·4	W
	4	0		21·50	546·9	39·9	597·1	40·8	W
	5	0†		27·42	535·5	40·2	640·1	41·2	W
	6	0†		24·77	530·8	40·6	746·0	41·4	B
	7	0†		15·22	528·9	40·7	717·3	41·5	B
	8	0		16·10	532·7	40·8	645·3	41·5	B
	9	0		15·24	536·9	40·7	630·5	41·3	B
	10	0		12·89	534·4	40·4	626·5	40·8	B
	11	0		13·16	535·9	40·1	612·7	40·4	W
	12	0†		11·88	533·6	39·8	609·4	40·0	W
	13	0†	25	09·46	528·6	39·6	599·0	39·7	W
	14	0†		08·88	531·8	39·3	585·1	39·4	W
	15	0		11·77	530·7	39·0	592·3	39·0	W
	16	0		13·47	531·0	38·6	590·0	38·4	W
	17	0		12·60	537·3	38·2	587·3	37·9	W
	18	0		12·73	537·3	37·8	584·2	37·4	W
	19	0		18·63	530·0	37·4	583·8	36·9	B
	20	0		13·77	534·7	37·0	570·8	36·5	B
	21	0		15·34	531·1	36·7	566·1	36·0	H
	22	0		19·21	510·9	36·3	579·9	35·6	H
	23	0		23·72	520·2	35·9	583·7	35·3	B
6	0	0		22·01	528·3	35·6	585·3	35·3	H
	1	0		20·02	532·3	35·5	583·8	35·3	H
	2	0		17·40	533·3	35·5	587·8	35·4	B
	3	0		15·98	533·6	35·4	586·3	35·5	H
	4	0		15·15	533·3	35·4	589·2	35·6	H
	5	0		13·86	533·1	35·5	587·5	35·7	H
	6	0		13·66	532·4	35·6	583·6	35·7	W
	7	0		13·29	533·7	35·5	580·3	35·5	W
	8	0		12·83	534·5	35·3	573·0	35·0	W
	9	0		12·58	532·5	35·0	573·5	34·6	W
	10	0		12·69	533·7	34·7	574·9	34·3	W
	11	0		12·51	533·5	34·4	575·8	33·9	H
	12	0		11·98	533·8	34·0	573·2	33·5	H
	13	0	25	13·12	532·6	33·6	574·4	33·1	H
	14	0		13·52	532·9	33·2	574·0	32·7	H
	15	0		13·86	533·1	32·9	574·3	32·3	H
	16	0		14·57	535·0	32·6	571·8	32·1	H
	17	0		13·74	535·1	32·3	569·3	31·9	H
	18	0		13·00	537·8	32·1	564·9	31·6	H
	19	0		11·74	540·2	31·9	561·4	31·3	W
	20	0		13·03	540·1	31·6	559·6	31·1	W
	21	0		13·69	536·9	31·4	562·0	30·9	B
	22	0		13·81	535·6	31·2	561·5	30·7	W
	23	0		15·98	534·4	31·1	563·6	30·7	W
7	0	0		18·13	534·2	31·0	561·5	30·7	W
	1	0		18·40	536·7	31·0	564·6	31·0	W
	2	0		17·56	540·2	31·2	568·5	31·4	W
	3	0		16·79	535·7	31·5	575·1	31·9	W
	4	0		16·89	536·4	31·7	583·4	32·3	W

DECLINATION. Torsion removed,—Feb. 5^{d} $3\frac{1}{2}^{h}$, $-7\frac{1}{2}^{\circ}$.* Effect of + 10° of torsion $= -0'{\cdot}84$.

BIFILAR. Observed 2^{m} after the declination, $k=0{\cdot}000140$. BALANCE. Observed 3^{m} after the declination, $k=0{\cdot}000010$.

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† Extra Observations made.

* Feb. 5^{d} $3\frac{1}{2}^{h}$. The torsion could not have been more than 3° at first, but the north end of the brass bar moved slowly towards the west, as if affected by currents, or as if the torsion of the thread were affected by moisture.

Göttingen Mean Time of Declination Obs.			Declination.	Bifilar.		Balance.		Observer's Initial.
				Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	° ′	Sc. Div.	°	Mic. Div.	°	
7	5	0	25 15·89	533·7	31·9	582·3	32·4	W
	6	0	14·70	537·9	32·0	576·3	32·5	H
	7	0	14·43	538·6	32·1	574·1	32·6	H
	8	0	13·46	537·6	32·0	573·4	32·6	H
	9	0	13·49	535·5	32·0	576·2	32·5	H
	10	0†	05·29	527·2	32·0	587·8	32·5	H
	11	0	11·57	531·6	32·0	575·4	32·5	B
	12	0	13·47	535·5	31·9	574·6	32·5	B
	13	0	25 12·80	534·8	31·9	571·6	32·3	B
	14	0	13·47	536·3	31·8	570·9	32·2	B
	15	0	13·07	535·8	31·7	570·5	32·0	B
	16	0	14·95	538·0	31·6	566·6	31·7	B
	17	0	12·15	535·2	31·4	568·3	31·4	B
	18	0	12·11	534·2	31·2	568·4	31·2	B
	19	0	12·22	535·6	31·0	568·0	30·9	H
	20	0	12·18	538·8	30·8	565·3	30·6	H
	21	0	11·82	532·9	30·7	563·0	30·3	W
	22	0	13·39	536·4	30·5	561·7	30·2	H
	23	0	15·24	530·0	30·4	565·9	30·2	H
8	0	0	17·19	529·2	30·2	562·5	30·2	H
	1	0	17·51	533·3	30·3	568·3	30·3	H
	2	0	17·29	537·5	30·5	572·9	30·5	H
	3	0	15·98	536·4	30·8	577·8	31·3	H
	4	0	14·98	538·6	31·3	582·4	32·0	H
	5	0	14·20	537·4	31·9	583·1	32·7	H
	6	0	13·69	538·4	32·4	580·5	33·3	B
	7	0	13·12	536·5	32·7	577·8	33·4	B
	8	0	13·27	535·7	32·8	576·8	33·4	B
	9	0	12·62	535·0	32·8	573·3	33·3	B
	10	0	12·35	536·3	32·8	571·8	33·2	B
	11	0	11·98	535·8	32·7	569·8	33·1	W
	12	0	12·98	536·7	32·6	562·1	32·9	W
9	13	0	25 09·42	539·5	31·8	561·1	32·4	H
	14	0†	04·68	532·3	32·0	556·5	32·5	H
	15	0	08·56	535·3	32·2	545·7	32·7	H
	16	0	13·17	533·9	32·3	547·5	32·9	H
	17	0	12·04	539·0	32·4	550·9	33·1	H
	18	0	15·49	527·7	32·5	556·5	33·2	H
	19	0	14·70	536·8	32·6	548·2	33·2	W
	20	0	12·29	541·4	32·7	557·0	33·4	W
	21	3	14·46	541·8	32·9	558·0	33·4	B
	22	0	15·67	536·3	32·9	562·0	33·5	W
	23	0	16·10	527·6	33·0	571·8	33·7	W
10	0	0	17·15	526·0	33·3	568·1	33·9	W
	1	0	17·73	533·6	33·7	564·4	34·3	W
	2	0	18·01	533·0	34·1	567·5	34·8	W
	3	0	16·95	537·2	34·6	575·9	35·3	W
	4	0	14·80	537·5	34·9	579·3	35·7	W
	5	0	13·10	537·5	35·2	579·6	36·0	W
	6	0	13·19	538·7	35·5	576·8	36·3	H
	7	0	12·98	539·2	35·7	574·2	36·6	H
	8	0	13·25	538·4	35·7	571·6	36·5	H
	9	0	11·03	534·6	35·8	571·0	36·5	H
	10	0	11·32	536·7	35·7	568·9	36·3	H
	11	0	11·77	536·9	35·6	566·7	36·1	B
	12	0	12·48	537·1	35·5	564·7	35·8	B

Göttingen Mean Time of Declination Obs.			Declination.	Bifilar.		Balance.		Observer's Initial.
				Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	° ′	Sc. Div.	°	Mic. Div.	°	
10	13	0	25 12·43	535·5	35·3	562·7	35·5	B
	14	0	14·11	535·1	35·1	556·3	35·3	B
	15	0	16·55	539·8	34·9	556·2	35·0	B
	16	0	13·69	531·4	34·7	559·0	34·7	B
	17	0	12·85	535·4	34·5	560·2	34·4	B
	18	0	12·92	537·2	34·3	562·2	34·2	B
	19	0	12·95	537·7	34·0	560·2	34·0	H
	20	0	13·20	536·9	33·8	560·1	33·7	H
	21	0	13·17	536·9	33·6	562·9	33·4	W
	22	0	13·49	534·1	33·4	568·2	33·2	H
	23	0	14·50	532·8	33·2	567·1	33·0	H
11	0	0	15·51	531·8	33·2	564·4	32·9	H
	1	0	16·48	532·5	33·1	562·7	32·8	H
	2	0	17·61	536·6	33·0	567·2	33·0	H
	3	2	15·71	535·5	33·1	573·3	33·2	H
	4	0	14·70	540·5	33·1	577·6	33·3	H
	5	0	14·33	541·5	33·1	575·8	33·4	H
	6	0	13·94	540·2	33·1	579·0	33·4	B
	7	0	12·26	531·3	33·1	582·1	33·4	B
	8	0	12·13	538·2	33·0	577·5	33·3	B
	9	0	12·45	536·1	33·0	577·7	33·3	B
	10	0	11·46	536·2	33·0	577·6	33·3	B
	11	0	10·85	537·4	33·0	570·7	33·2	W
	12	0	13·79	541·3	32·9	563·7	33·2	W
	13	0	25 12·80	537·5	32·9	559·4	33·1	W
	14	0	13·22	537·1	32·8	563·1	33·0	W
	15	0	13·16	537·6	32·8	566·0	33·0	W
	16	0	13·05	539·4	32·7	566·0	32·9	W
	17	0	13·02	540·8	32·7	566·0	32·8	W
	18	0	13·19	539·5	32·6	565·1	32·7	W
	19	0	13·02	540·7	32·5	563·1	32·6	B
	20	0	13·25	539·3	32·4	563·8	32·5	B
	21	0	13·59	540·3	32·3	562·4	32·4	H
	22	0	14·68	536·8	32·2	565·8	32·3	H
	23	0	15·18	534·4	32·1	566·0	32·3	H
12	0	0	17·20	533·6	32·0	569·8	32·3	B
	1	0	17·86	523·6	32·0	578·8	32·5	B
	2	0	17·60	527·7	32·1	576·8	32·6	B
	3	0	17·33	535·9	32·1	576·3	32·6	H
	4	0	15·67	535·6	32·2	582·2	32·7	H
	5	0	14·33	538·0	32·2	580·6	32·7	H
	6	0	13·61	538·3	32·2	578·7	32·7	W
	7	0	13·03	538·6	32·2	575·3	32·7	H
	8	0	12·98	538·8	32·2	573·6	32·7	W
	9	0	12·08	537·9	32·2	572·4	32·7	W
	10	0	12·80	538·5	32·2	569·9	32·7	W
	11	0	12·65	539·0	32·2	568·0	32·7	H
	12	0	11·81	538·8	32·3	566·4	32·7	H
	13	0	25 09·26	538·2	32·4	559·3	32·8	H
	14	0†	14·43	554·6	32·4	536·2	32·9	H
	15	0	11·44	534·4	32·6	521·7	33·2	H
	16	0	10·21	537·3	32·8	536·7	33·5	H
	17	0	10·83	534·9	33·1	548·4	33·8	H
	18	0	11·44	541·2	33·4	551·8	34·1	H
	19	0	11·69	542·4	53·7	552·5	34·4	W
	20	0	12·48	542·6	33·9	553·3	34·7	W

DECLINATION. Magnet untouched, Feb. 5^{d}—March 23^{d}.

BIFILAR. Observed 2^{m} after the Declination, k=0·000140. BALANCE. Observed 2^{m} after the Declination, k=0·000010.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
12	21	0	25	13·94	539·5	34·1	558·1	34·9	B
	22	0		13·96	535·3	34·4	559·3	35·2	W
	23	0		14·18	532·4	34·7	558·6	35·4	W
13	0	0		16·05	532·8	35·0	558·7	35·7	W
	1	0		17·33	533·1	35·3	560·5	36·1	W
	2	0		17·33	531·4	35·7	561·7	36·5	W
	3	0		16·36	540·3	36·2	563·8	37·2	W
	4	0		15·39	541·2	36·8	570·7	37·8	W
	5	0		13·29	536·3	37·3	570·4	38·2	W
	6	0		13·86	540·0	37·6	571·0	38·6	H
	7	0		13·63	539·3	37·9	565·5	38·9	H
	8	0		13·44	538·9	38·2	567·4	39·2	H
	9	0		13·12	538·5	38·5	569·3	39·5	H
	10	0		13·19	539·0	38·6	568·9	39·6	H
	11	0		12·04	538·3	38·7	566·6	39·6	B
	12	0		12·56	538·1	38·8	565·6	39·5	B
	13	0	25	12·87	538·2	38·7	560·9	39·3	B
	14	0		16·50	541·9	38·6	553·1	39·1	B
	15	0		13·90	537·9	38·4	551·1	38·8	B
	16	0		12·35	536·7	38·2	554·5	38·6	B
	17	0		12·06	539·0	38·0	555·8	38·3	B
	18	0		12·22	539·6	37·8	555·8	38·0	B
	19	0		12·58	540·7	37·6	554·5	37·7	H
	20	0		13·00	540·0	37·4	557·7	37·5	H
	21	0		14·84	536·9	37·2	558·7	37·3	W
	22	0		15·54	537·0	37·1	556·3	37·2	H
	23	0		15·61	535·0	36·9	556·8	37·1	H
14	0	0		15·72	532·8	36·8	562·1	37·1	H
	1	0		17·06	535·3	36·9	557·3	37·3	H
	2	0		16·32	534·9	37·0	555·2	37·5	H
	3	0		16·05	536·8	37·0	560·9	37 6	H
	4	0		15·14	538·0	37·2	565·9	37·7	H
	5	0		13·67	538·9	37·4	567·6	37·8	H
	6	0		13·69	538·5	37·6	566·3	38·0	B
	7	0		13·76	539·1	37·6	563·5	38·0	B
	8	0		13·29	539·8	37·5	563·1	37·9	B
	9	0		12·98	538·2	37·4	562·1	37·7	B
	10	0		12·25	539·4	37·3	561·3	37·5	B
	11	0		12·78	538·7	37·1	556·0	37·2	W
	12	0		12·85	537·7	36·9	555·2	37·0	W
	13	0	25	12·93	538·0	36·7	554·6	36·7	W
	14	0		13·12	537·7	36·5	555·4	36·4	W
	15	0		12·92	537·4	36·2	556·1	36·1	W
	16	0		12·89	537·3	35·9	555·8	35·7	W
	17	0		13·02	538·2	35·6	555·2	35·4	W
	18	0		12·76	537·6	35·3	556·6	35·1	W
	19	0		12·72	538·3	35·1	558·9	35·0	B
	20	0		12·82	538·6	34·9	559·1	34·9	B
	21	0		13·05	537·9	34·8	559·7	34·8	H
	22	0		12·95	536·7	34·7	559·1	34·7	H
	23	0		14·37	535·1	34·7	559·7	34·7	H
15	0	0		15·14	536·0	34·8	561·7	34·9	B
	1	0		15·34	535·1	34·8	554·9	35·2	H
	2	0		15·71	538·1	35·1	555·6	35·6	H
	3	0		15·61	539·1	35·5	560·5	36·1	B
	4	0		13·83	535·7	35·8	564·6	36·5	H
15	5	0	25	13·69	535·1	36·2	566·3	36·8	H
	6	0		13·54	538·5	36·4	564·5	37·0	W
	7	0		13·93	539·0	36·6	564·7	37·3	W
	8	0		13·59	539·5	36·8	561·8	37·5	W
	9	0		12·90	539·5	36·9	561·6	37·6	W
	10	0		13·46	540·5	37·0	560·1	37·6	W
	11	0		12·45	542·6	37·1	558·9	37·7	H
	12	0		13·02	540·1	37·2	557·0	37·7	H
16	13	0	25	12·72	539·4	39·2	560·2	39·7	B
	14	0		11·39	542·1	39·1	554·0	39·6	B
	15	0		11·61	540·2	39·0	554·7	39·6	B
	16	0		12·11	538·8	39·0	555·0	39·5	B
	17	0		12·09	540·7	38·9	554·5	39·4	B
	18	0		12·08	541·6	38·9	554·2	39·3	B
	19	0		13·90	540·5	38·8	552·4	39·2	H
	20	0		12·95	541·0	38·7	551·2	39·1	H
	21	0		12·85	540·1	38·7	552·7	39·0	W
	22	0		12·73	537·1	38·6	555·1	38·9	H
	23	0		12·69	535·9	38·6	554·3	38·8	H
17	0	0		13·86	536·5	38·7	550·1	39·0	H
	1	0		16·26	539·2	38·7	548·9	39·3	H
	2	0		16·32	538·1	38·9	548·2	39·5	H
	3	0		17·19	539·3	39·1	549·9	39·7	H
	4	0		16·99	538·8	39·3	558·3	39·9	H
	5	0		15·58	535·6	39·5	570·5	40·1	H
	6	0†		09·33	526·8	39·7	584·3	40·3	B
	7	0		16·06	533·2	39·8	583·5	40·5	B
	8	0		14·21	536·8	39·8	573·8	40·6	B
	9	0		13·34	540·9	39·9	565·7	40·5	B
	10	0		12·67	541·3	39·9	561·3	40·4	B
	11	0		12·85	539·3	39·8	560·0	40·3	W
	12	0		12·80	539·5	39·7	557·0	40·0	W
	13	0	25	12·70	539·0	39·5	555·1	39·7	W
	14	0		12·78	538·6	39·3	553·2	39·4	W
	15	0		12·82	538·5	39·0	551·6	38·9	W
	16	0		12·75	539·3	38·7	550·9	38·6	W
	17	0		12·65	539·9	38·4	550·2	38·2	W
	18	0		12·48	540·6	38·1	550·4	37·8	W
	19	0		12·72	539·2	37·8	552·9	37·5	B
	20	0		13·36	538·1	37·6	553·9	37·3	B
	21	0		12·69	540·3	37·4	551·3	37·1	H
	22	0		12·75	535·2	37·2	554·1	37·0	H
	23	0		14·06	533·7	37·1	553·4	37·0	H
18	0	0		15·81	533·0	37·0	551·7	37·0	H
	1	0		17·02	533·6	36·9	555·1	37·0	H
	2	0		16·97	536·7	36·9	554·5	37·2	B
	3	0		16·25	539·2	37·1	557·6	37·5	B
	4	0		14·64	539·4	37·3	557·8	38·0	H
	5	0		13·72	538·7	37·8	560·7	38·5	H
	6	0		13·66	539·4	38·2	557·7	38·9	W
	7	0		13·49	540·6	38·6	556·7	39·1	W
	8	0		13·09	540·4	38·8	555·5	39·1	W
	9	0		12·87	541·4	38·7	554·1	38·9	W
	10	0		12·73	539·6	38·5	554·9	38·5	W
	11	0		12·72	538·4	38·2	553·4	38·2	H
	12	0		11·48	536·8	38·0	555·0	37·8	H

DECLINATION. Magnet untouched, Feb. 5ᵈ—March 23ᵈ.

BIFILAR. Observed 2ᵐ after the Declination, k=0·000140. BALANCE. Observed 2ᵐ after the Declination, k=0·000010.

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† Extra Observations made.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
18	13	0	25	11·08	536·2	37·7	555·8	37·5	H
	14	0		12·55	536·9	37·3	556·0	37·1	H
	15	0		12·85	537·9	37·0	555·0	36·6	H
	16	0		12·25	536·9	36·6	555·0	36·2	H
	17	0		13·02	537·3	36·2	552·8	35·7	H
	18	0		12·89	537·8	35·8	548·0	35·2	H
	19	0		12·65	536·9	35·4	546·9	34·7	W
	20	0		12·01	537·1	35·0	546·6	34·3	W
	21	0		12·42	536·5	34·6	548·3	33·8	B
	22	0		12·80	534·3	34·2	547·3	33·4	W
	23	0		14·10	534·1	33·9	542·9	33·2	W
19	0	0		16·06	535·4	33·7	542·5	33·3	W
	1	0		16·62	537·7	33·6	539·4	33·4	W
	2	0		16·75	541·8	33·7	540·6	33·8	W
	3	0		15·83	540·9	34·1	542·1	34·5	W
	4	0		15·12	542·5	34·7	548·9	35·4	W
	5	0		14·20	543·0	35·3	549·6	36·1	W
	6	0		13·90	543·1	36·0	546·2	36·6	H
	7	0		13·64	542·0	36·3	547·6	36·9	H
	8	0		14·08	540·5	36·5	546·1	36·9	H
	9	0		13·86	540·7	36·6	547·7	37·0	H
	10	0		13·59	546·0	36·7	544·4	37·1	H
	11	0		11·21	539·8	36·6	549·0	37·0	W
	12	0		12·75	540·1	36·6	548·6	36·9	W
	13	0	25	12·33	547.6	36·5	528·5	36·8	W
	14	0		11·22	541·3	36·4	529·4	36·8	W
	15	0		11·59	538·8	36·4	534·2	36·8	W
	16	0		11·93	537·8	36·3	539·9	36·7	W
	17	0		10·83	539·7	36·2	538·6	36·5	W
	18	0		11·19	542·8	36·1	536·3	36·4	W
	19	0		11·35	546·2	36·0	534·3	36·3	B
	20	0		12·35	543·3	35·9	536·2	36·2	B
	21	0		12·75	540·5	35·8	534·8	36·0	H
	22	0		13·49	541·2	35·7	533·3	35·9	H
	23	0		15·04	542·0	35·6	527·2	35·9	H
20	0	0		17·49	541·4	35·7	525·0	36·0	H
	1	0		21·91	555·1	35·8	525·4	36·5	H
	2	0		19·39	538·4	36·5	541·8	37·4	B
	3	0		22·03	544·1	37·2	547·1	38·4	H
	4	0		16·21	537·8	38·0	555·7	39·3	H
	5	0		15·67	542·1	38·7	563·0	40·0	H
	6	0		15·17	542·0	39·1	560·1	40·3	W
	7	0		14·85	544·8	39·4	555·4	40·4	W
	8	0		14·24	542·5	39·6	558·7	40·5	W
	9	0		14·67	543·9	39·7	560·0	40·5	W
	10	0†		12·31	550·0	39·7	565·1	40·4	W
	11	0†		07·92	528·3	39·7	578·5	40·5	H
	12	0		06·77	540·6	39·7	571·0	40·5	H
	13	0	25	08·85	542·9	39·6	564·6	40·4	H
	14	0		09·42	533·7	39·4	572·3	40·3	H
	15	0		09·82	536·0	39·3	564·2	40·1	H
	16	0†		14·40	525·6	39·2	555·8	39·9	H
	17	0†		18·13	534·7	39·1	511·3	39·8	H
	18	0		08·34	534·5	39·1	514·0	39·8	H
	19	0		09·84	533·4	39·1	524·8	39·8	W
	20	0†		18·75	529·2	39·0	527·9	39·5	W

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
20	21	0	25	19·44	535·2	38·9	527·7	39·2	B
	22	0		16·72	534·6	38·8	532·9	39·0	W
	23	0		18·01	528·1	38·7	542·4	38·9	W
21	0	0		20·60	520·6	38·6	552·4	39·0	W
	1	0†		22·15	526·7	38·7	554·3	39·1	W
	2	0†		20·63	534·8	38·7	554·8	39·3	W
	3	0		17·70	530·2	38·8	578·2	39·4	W
	4	0		17·00	541·6	38·9	576·5	39·5	W
	5	0		15·34	540·4	39·0	578·4	39·7	W
	6	0†	25	11·37	529·7	39·1	596·6	39·9	H
	7	0	24	59·41	526·5	39·2	610·0	40·0	H
	8	0	25	14·68	539·1	39·3	588·5	40·0	H
	9	0		03·23	546·3	39·4	577·7	39·9	H
	10	0		14·53	537·0	39·3	554·1	39·7	W
	11	0		08·11	540·6	39·1	548·9	39·6	W
	12	0		08·82	527·3	39·0	540·5	39·5	W
	13	0	25	16·79	531·4	38·8	509·4	39·3	D
	14	0		13·81	534·6	38·7	508·7	39·0	D
	15	0		12·28	533·3	38·5	533·4	38·8	D
	16	0		10·68	533·7	38·2	540·4	38·6	D
	17	0		11·93	527·2	37·9	540·5	38·4	D
	18	0		13·22	533·9	37·7	543·6	38·2	B
	19	0		13·47	535·1	37·6	540·8	38·0	B
	20	0		12·62	537·6	37·4	537·9	37·7	B
	21	0		13·52	524·4	37·2	537·0	37·4	H
	22	0		16·59	518·4	36·9	548·2	37·0	H
	23	0		16·35	529·5	36·7	549·4	37·0	H
22	0	0		18·60	527·3	36·7	552·2	37·0	H
	1	0		17·20	532·2	36·8	556·6	37·4	W
	2	0		21·44	533·3	37·0	564·9	37·8	W
	3	0		19·19	532·5	37·3	573·6	38·2	W
	4	0		19·29	536·9	37·7	586·3	38·5	W
	5	0		09·98	527·5	37·9	617·0	38·8	D
	6	0		16·25	533·7	38·1	605·8	39·0	D
	7	0		15·92	538·8	38·2	581·8	39·0	H
	8	0		14·33	541·8	38·2	573·0	39·0	H
	9	0		12·09	541·8	38·2	575·9	39·0	H
	10	0		06·63	545·4	38·1	576·2	38·9	B
	11	0		10·36	533·0	38·0	571·5	38·6	B
	12	0	25	13·63	536·1	37·9	567·4	38·3	B
23	13	0†	24	52·87	528·1	38·7	505·4	38·8	W
	14	0†	25	09·30	528·0	38·6	525·1	38·8	W
	15	0†		15·72	519·0	38·5	518·6	38·8	W
	16	0†		17·36	513·4	38·4	476·7	38·7	W
	17	0†		18·61	529·7	38·3	458·2	38·6	W
	18	0†		11·71	528·7	38·3	484·7	38·6	W
	19	0†		14·57	533·8	38·1	498·0	38·6	B
	20	0		14·04	529·3	38·0	507·5	38·4	B
	21	0		15·41	532·6	37·9	518·6	38·2	H
	22	0		15·81	524·5	37·9	526·7	38·1	H
	23	0		13·88	531·1	37·9	540·7	38·3	H
24	0	0		19·31	528·7	38·0	548·7	38·6	B
	1	0		21·93	538·0	38·3	557·5	39·1	H
	2	0		17·56	539·1	38·7	569·0	39·4	B
	3	0		18·14	537·4	38·8	576·5	39·4	B
	4	0†		06·06	547·1	38·8	617·0	39·4	B

DECLINATION. Magnet untouched, Feb. 5d—March 23d.

BIFILAR. Observed 2m after the Declination, k=0·000140. BALANCE. Observed 3m after the Declination, k=0·000010.

† Extra Observations made.
Feb. 21d 10h—22d 10h. Term-Day Observations made.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
24	5	0	25	13·46	542·1	38·9	595·3	39·5	H
	6	0	25	14·15	538·1	39·1	581·6	39·6	W
	7	0†	24	48·81	558·2	39·3	587·9	39·7	W
	8	0†	24	50·73	534·3	39·3	575·9	39·6	W
	9	0†	25	09·33	515·5	39·1	553·6	39·3	W
	10	0†		19·66	521·2	38·9	480·9	39·0	W
	11	0†		05·79	516·8	38·6	492·8	38·5	H
	12	0†		08·73	524·5	38·2	471·1	37·9	H
	13	0†	25	11·66	520·9	37·8	444·6	37·5	H
	14	0†		04·61	529·2	37·3	465·8	36·9	H
	15	0†		10·20	520·3	36·8	478·8	36·3	H
	16	0		12·35	533·1	36·3	487·6	35·6	H
	17	0		09·03	518·4	35·8	513·7	34·8	H
	18	0		16·28	527·9	35·2	471·3	34·1	H
	19	2		10·31	532·3	34·6	474·8	33·4	W
	20	0		14·18	523·0	34·0	511·1	32·7	W
	21	0		17·89	528·7	33·4	518·3	32·1	B
	22	0		15·05	521·0	32·8	531·1	31·5	W
	23	0		14·99	526·0	32·4	543·4	31·2	W
25	0	0		15·05	527·2	32·2	548·8	31·3	W
	1	0		20·25	535·8	32·2	555·1	31·9	W
	2	0		22·45	534·1	32·5	581·2	32·9	W
	3	0†		15·72	547·4	33·1	616·6	33·9	W
	4	0†		21·10	532·3	34·1	616·0	35·1	W
	5	0†		15·64	544·9	35·0	607·9	36·0	B
	6	0†		05·05	543·5	35·6	609·0	36·5	H
	7	0†		06·97	528·3	36·0	613·8	37·0	H
	8	0		07·31	538·1	36·4	603·8	37·3	H
	9	0		13·02	540·4	36·7	593·3	37·4	H
	10	0		12·69	539·9	36·7	566·0	37·4	H
	11	0†		13·22	530·4	36·7	527·0	37·2	B
	12	0†		14·84	544·6	36·7	450·5	37·3	B
	13	0†	25	06·97	528·3	36·8	467·9	37·5	B
	14	0†		09·82	520·0	36·9	479·3	37·7	B
	15	0		14·94	522·7	36·9	483·6	37·7	B
	16	0		14·51	528·8	36·9	500·5	37·7	B
	17	0		11·07	534·0	36·9	523·9	37·7	B
	18	0		08·72	524·8	36·9	527·5	37·6	B
	19	0		17·93	534·5	37·0	509·7	37·7	H
	20	0		13·19	537·9	37·0	507·0	37·7	H
	21	0		12·42	533·6	37·1	525·6	37·8	W
	22	0		16·73	539·6	37·2	541·6	38·0	H
	23	0		15·81	525·2	37·4	542·9	38·2	H
26	0	0		20·56	533·8	37·6	539·1	38·4	H
	1	0†		17·46	511·6	37·8	563·8	38·6	H
	2	0		22·89	523·0	38·0	582·3	38·9	H
	3	0†		23·54	541·8	38·2	591·3	39·2	H
	4	0†		03·34	546·6	38·3	668·4	39·2	H
	5	0		17·33	539·9	38·5	618·6	39·3	H
	6	0		14·71	536·1	38·7	603·5	39·3	B
	7	0		13·58	535·3	38·7	591·1	39·4	B
	8	0		14·80	535·6	38·8	578·7	39·4	B
	9	0		11·52	537·5	38·7	571·9	39·4	B
	10	0		11·64	541·8	38·7	550·8	39·3	B
	11	0		09·19	533·3	38·7	554·3	39·2	W
	12	0†		12·89	525·4	38·7	538·6	39·3	W
26	13	0	25	12·72	533·2	38·7	512·8	39·3	W
	14	0		11·42	529·4	38·7	533·1	39·3	W
	15	0†		18·47	530·2	38·7	506·8	39·1	W
	16	0		12·62	534·5	38·6	522·3	38·9	W
	17	0		12·38	535·5	38·4	539·0	38·6	W
	18	0		12·28	534·5	38·1	542·6	38·2	W
	19	0		12·72	536·6	37·8	547·6	37·9	B
	20	0		12·38	535·9	37·6	549·3	37·6	B
	21	0		11·52	531·4	37·4	554·7	37·4	H
	22	0		15·07	523·5	37·2	553·7	37·2	H
	23	0		15·14	527·1	37·1	551·9	37·4	H
27	0	0		18·82	533·9	37·3	552·2	38·0	H
	1	0		19·71	537·5	37·8	550·5	38·9	H
	2	0		22·03	541·2	38·7	560·8	39·8	B
	3	0		17·81	535·0	39·4	567·2	40·6	B
	4	0		17·02	538·1	40·0	572·3	41·2	B
	5	2		14·80	537·1	40·6	574·2	41·6	B
	6	0		14·80	539·1	40·9	580·4	41·8	W
	7	0		13·49	537·9	41·0	576·6	41·8	W
	8	0†	25	01·59	549·2	41·0	575·1	41·5	W
	9	0†	24	52·40	544·3	40·9	574·4	41·4	W
	10	0†	25	04·32	526·5	40·7	565·6	41·3	W
	11	0		10·25	531·4	40·5	560·8	41·2	H
	12	0		08·95	534·5	40·3	550·3	40·8	H
	13	0	25	14·13	529·0	40·0	543·8	40·6	H
	14	0		19·48	524·1	39·8	502·4	40·3	H
	15	0		11·41	534·8	39·6	518·0	40·0	H
	16	0		15·18	528·2	39·4	543·8	39·7	H
	17	0		13·32	535·3	39·2	543·6	39·5	H
	18	0		12·65	535·2	39·0	551·6	39·2	H
	19	0		12·15	540·2	38·8	554·7	38·9	W
	20	0		13·83	537·3	38·7	558·5	38·7	W
	21	0		12·11	535·0	38·6	560·7	38·5	B
	22	0		12·09	529·7	38·4	564·3	38·3	W
	23	0		13·91	527·3	38·3	558·3	38·3	W
28	0	0		19·66	533·1	38·3	551·5	38·3	W
	1	0		20·92	523·8	38·3	554·6	38·5	W
	2	0		23·01	530·6	38·5	561·5	38·8	W
	3	0		19·84	530·6	38·7	563·9	39·2	W
	4	0		19·35	538·1	39·0	567·6	39·6	W
	5	0		16·72	532·9	39·4	585·6	39·9	W
	6	0		07·47	539·6	39·4	596·4	40·0	H
	7	0		12·95	542·4	39·4	582·0	39·6	H
	8	0		13·19	534·8	39·2	580·8	39·1	H
	9	0		12·11	536·5	38·8	567·1	38·5	H
	10	0†		01·95	543·0	38·5	568·9	38·1	H
	11	0†		09·40	531·2	38·1	566·5	37·7	B
	12	0		11·99	534·4	37·8	565·3	37·3	B
	13	0	25	10·94	529·4	37·4	561·8	36·8	B
	14	0†		05·60	533·0	37·0	504·2	36·4	B
	15	0		08·82	528·0	36·7	527·2	36·0	B
	16	0		11·08	528·8	36·3	542·0	35·5	B
	17	0		11·30	530·8	35·9	551·2	35·1	B
	18	0		13·07	532·2	35·6	558·1	34·8	B
	19	0		13·05	534·7	35·3	558·6	34·4	H
	20	0		12·98	533·3	35·0	562·9	34·1	H

DECLINATION. Magnet untouched, Feb. 5^{d}—March 23^{d}.

BIFILAR. Observed 2^{m} after the Declination, k=0·000140. BALANCE. Observed 3^{m} after the Declination, k=0·000010.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.	Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.							Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°		d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
28	21	0	25	13·05	531·8	34·7	566·8	33·9	W	4	5	0	25	14·48	539·5	36·5	555·8	37·0	H
	22	0		12·65	528·5	34·4	567·5	33·8	H		6	20		13·99	540·2	36·6	555·9	36·9	B
	23	0		13·66	528·1	34·2	561·2	33·8	H		7	0		14·40	542·1	36·6	554·3	36·8	B
1	0	0		16·92	528·1	34·2	558·1	34·0	H		8	0		13·72	541·9	36·5	553·7	36·6	B
	1	0		17·80	531·1	34·2	558·8	34·1	H		9	0		13·84	541·8	36·2	554·7	36·3	B
	2	0		19·68	534·9	34·2	558·5	34·3	H		10	0		10·83	541·3	35·9	550·3	35·9	B
	3	0		19·24	538·0	34·3	562·2	34·5	H		11	0		13·37	540·9	35·6	550·0	35·5	W
	4	0		17·15	538·3	34·5	571·0	34·7	H		12	0		11·24	540·6	35·3	540·3	35·1	W
	5	0		14·73	537·7	34·7	575·7	35·0	H										
	6	0		14·51	538·4	34·8	576·6	35·0	B		13	0	25	12·48	540·8	35·0	534·6	34·8	W
	7	0		14·01	538·3	34·8	573·5	35·0	B		14	0		11·66	536·2	34·8	545·1	34·5	W
	8	0		12·16	540·4	34·8	572·5	35·0	B		15	0		12·78	537·4	34·6	549·8	34·3	W
	9	0		13·32	537·0	34·8	570·9	35·0	B		16	0		12·35	537·9	34·3	551·7	34·0	W
	10	0		12·43	538·8	34·7	568·9	35·0	B		17	0		12·51	537·2	34·0	551·4	33·7	W
	11	0		12·80	537·3	34·7	568·1	34·9	W		18	0		12·04	538·9	33·7	552·5	33·4	W
	12	0		12·63	538·4	34·7	565·6	35·0	W		19	0		11·86	538·1	33·5	555·4	33·2	B
											20	0		11·42	537·0	33·3	559·2	32·9	B
2	13	0	25	12·82	537·3	39·2	560·0	40·0	H		21	0		10·61	535·1	33·0	557·2	32·7	H
	14	0		12·28	537·9	39·2	557·6	40·0	H		22	0		11·27	533·5	32·9	555·0	32·7	H
	15	0		12·28	537·1	39·2	558·4	40·0	H		23	0		13·12	531·1	32·8	558·7	33·1	B
	16	0		12·80	537·6	39·2	552·8	40·0	H	5	0	0		15·54	534·8	33·0	555·9	33·5	H
	17	0		10·54	539·2	39·2	547·9	40·0	H		1	0		17·15	536·5	33·5	555·0	34·3	H
	18	0		09·59	536·8	39·2	552·0	39·8	H		2	0		17·19	537·7	34·2	555·0	35·2	H
	19	0		11·77	537·7	39·1	548·6	39·7	W		3	0		16·63	539·8	34·9	554·7	35·8	B
	20	0		12·22	540·2	39·0	548·2	39·7	W		4	0		15·36	538·8	35·6	558·4	36·4	W
	21	3		11·46	534·9	39·0	557·0	39·6	B		5	0		14·13	539·1	36·2	560·0	36·9	B
	22	0		11·75	531·9	39·0	558·3	39·5	W		6	0		13·69	539·1	36·6	555·7	37·1	W
	23	0		13·64	525·9	39·0	557·3	39·4	W		7	0		13·91	539·6	36·7	551·8	37·1	W
3	0	0		15·83	528·3	39·0	550·9	39·3	W		8	0		13·59	540·2	36·7	550·4	36·8	W
	1	0		17·19	532·8	38·9	547·0	39·3	W		9	0		13·30	540·6	36·4	549·5	36·4	W
	2	0		18·88	537·8	38·9	548·3	39·3	W		10	1		10·70	543·4	36·0	545·8	36·0	W
	3	0		17·42	538·6	38·9	553·3	39·3	W		11	0		12·23	541·1	35·7	546·1	35·6	H
	4	0		15·69	538·0	38·9	556·3	39·2	W		12	0		13·32	539·1	35·3	548·0	35·2	H
	5	0		14·26	541·6	38·8	557·5	39·1	W										
	6	0		14·18	536·0	38·8	561·3	39·0	H		13	0	25	13·19	539·7	35·0	548·9	34·8	H
	7	0		12·78	539·8	38·7	561·9	38·8	H		14	0		12·82	538·4	34·7	550·4	34·5	H
	8	0		14·85	540·2	38·5	560·5	38·7	H		15	0		12·62	538·6	34·4	550·4	34·1	H
	9	0†		09·35	540·1	38·4	571·7	38·5	H		16	0		12·51	538·3	34·0	548·3	33·8	H
	10	0		12·33	536·1	38·2	562·5	38·5	H		17	0		12·38	537·9	33·7	549·4	33·5	H
	11	0		12·98	537·9	38·1	558·7	38·3	B		18	0		12·13	537·7	33·4	549·2	33·2	H
	12	0		13·27	540·4	37·9	555·1	38·0	B		19	0		11·84	537·7	33·2	549·0	32·9	W
											20	0		11·62	537·8	33·0	547·6	32·7	W
	13	0	25	12·90	540·6	37·7	551·2	37·7	B		21	0		10·56	536·1	32·8	553·2	32·6	B
	14	0		12·36	538·1	37·5	549·2	37·5	B		22	0		11·30	531·0	32·7	554·0	32·5	W
	15	0		11·44	536·3	37·3	550.1	37·2	B		23	0		11·77	529·3	32·7	554·1	32·6	W
	16	0		11·15	535·3	37·1	551·7	36·9	B	6	0	0		13·83	530·3	32·7	549·8	33·0	W
	17	0		11·71	536·9	36·8	552·8	36·7	B		1	0		16·18	533·2	33·0	547·2	33·5	W
	18	0		12·08	537·9	36·6	554·0	36·5	B		2	0		17·42	536·1	33·5	540·6	34·1	W
	19	0		12·04	537·8	36·4	555·2	36·3	H		3	0		17·96	536·9	34·0	542·2	34·7	W
	20	0		13·39	538·5	36·2	555·0	36·1	H		4	0		16.79	539·7	34·6	546·1	35·3	W
	21	0		13·79	534·1	36·0	558·5	35·9	W		5	0		15·11	540·1	34·8	546·8	35·4	W
	22	0		12·82	535·0	35·9	558·1	35·9	H		6	0		14·23	540·4	35·0	548·3	35·5	H
	23	0		13·99	534·1	35·9	558·6	36·0	H		7	0		14·33	540·8	35·0	544·3	35·5	H
4	0	0		15·51	532·4	35·9	550·7	36·2	H		8	0		13·54	542·1	35·0	545·3	35·5	H
	1	0		18·07	537·7	36·0	549·9	36·5	H		9	0		13·19	543·1	34·9	544·6	35·4	H
	2	0		16·38	537·1	36·2	548·3	36·7	H		10	0		13·12	543·0	34·8	545.4	35·3	H
	3	0		15·89	538·6	36·3	550·3	36·8	H		11	0		13·16	542·3	34·8	546·9	35·2	B
	4	0		15·04	538·8	36·5	552·5	37·0	H		12	0		12·92	542·6	34·7	546·4	35·1	B

DECLINATION. Magnet untouched, Feb. 5d—March 23d.

BIFILAR. Observed 2m after the Declination, k=0·000140. BALANCE. Observed 3m after the Declination, k=0·000010.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
6	13	0	25	13·07	542·0	34·6	546·8	35·0	B
	14	0		12·92	541·4	34·6	546·8	34·9	B
	15	0		12·87	542·2	34·5	546·5	34·9	B
	16	0		12·85	541·3	34·5	545·8	34·9	B
	17	0		12·80	541·4	34·5	545·1	34·9	B
	18	0		12·28	541·7	34·5	545·2	34·9	B
	19	0		12·01	542·0	34·5	543·3	34·9	H
	20	0		11·48	540·4	34·5	545·1	34·9	H
	21	0		10·16	536·6	34·6	551·7	34·9	W
	22	0		09·96	529·8	34·7	550·1	35·2	H
	23	0		12·18	529·5	34·8	546·0	35·5	H
7	0	0		16·32	529·1	35·0	539·3	35·8	H
	1	0		20·85	534·4	35·3	529·4	36·2	H
	2	0		20·00	531·8	35·9	535·5	36·7	H
	3	0		20·58	540·0	36·4	539·3	37·3	H
	4	0		16·73	544·5	36·9	544·0	37·7	H
	5	0		15·54	545·3	37·3	548·5	38·1	H
	6	0		15·41	545·0	37·6	547·5	38·3	B
	7	0		14·84	544·3	37·7	551·5	38·5	B
	8	0		13·64	545·0	37·8	560·3	38·5	B
	9	0		12·11	538·7	37·8	570·5	38·5	B
	10	0†		09·49	540·6	37·8	571·5	38·5	B
	11	0		10·30	539·6	37·8	560·4	38·4	W
	12	0		13·61	540·2	37·8	558·4	38·4	W
	13	0	25	14.35	543·7	37·8	552·2	38·4	W
	14	0		13·37	538·9	37·7	553·5	38·3	W
	15	0		12·85	538·3	37·7	552·3	38·2	W
	16	0		12·38	539·3	37·6	550·8	38·1	W
	17	0		11·37	541·0	37·6	547·7	38·0	W
	18	0		11·86	539·6	37·5	547·1	38·0	W
	19	0		12·36	538·7	37·5	546·3	38·0	B
	20	0		12·38	538·8	37·5	545·6	38·0	B
	21	0		11·10	535·5	37·5	543·5	38·0	H
	22	0		12·95	532·0	37·5	546·2	38·2	H
	23	0		13·86	525·2	37·7	547·7	38·4	H
8	0	5		17·91	524·5	38·0	545·5	38·7	H
	1	0		19·88	529·5	38·4	542·1	39·3	H
	2	0		20·16	532·0	38·9	546·1	39·9	B
	3	0		18·48	538·6	39·4	555·1	40·5	H
	4	0		16·97	540·8	40·0	564·8	41·0	H
	5	0		13·39	538·1	40·4	573·5	41·5	H
	6	0		13·19	540·3	40·8	566·9	41·7	W
	7	0		13·74	540·7	41·0	558·3	41·8	W
	8	0		12·93	542·5	41·0	557·2	41·8	W
	9	0		12·76	539·2	41·0	558·5	41·7	W
	10	0		13·37	542·3	41·0	554·2	41·6	W
	11	0		13·52	543·2	41·0	551·9	41·5	H
	12	0		13·22	542·4	40·9	553·8	41·6	H
9	13	0	25	12·25	539·9	41·1	550·5	41·4	B
	14	0†		14·75	536·6	40·9	552·6	41·3	B
	15	0†		12·55	533·6	40·9	540·2	41·4	B
	16	0†		14·53	538·3	40·9	513·6	41·5	B
	17	0		08·99	534·8	40·9	538·0	41·5	B
	18	0		09·47	539·5	40·8	542·0	41·3	B
	19	0		11·27	538·1	40·8	545·1	41·2	H
	20	0		11·74	535·4	40·7	545·8	41·0	H
9	21	0	25	11·46	536·0	40·7	549.3	41·0	W
	22	0		12·78	527·3	40·6	551·5	41·0	H
	23	2		15·39	524·6	40·5	551·8	41·0	H
10	0	0		17·47	521·0	40·6	552·6	41·2	H
	1	0		18·63	527·6	40·8	551·8	41·5	H
	2	0		19·37	530·0	41·0	557·6	41·9	H
	3	0		17·67	537·4	41·3	563·6	42.2	H
	4	0		16·53	540·5	41·7	568·1	42·5	H
	5	0		15·34	543·5	42·0	569·1	42·8	W
	6	0		14·04	538·7	42·3	567·3	43·0	B
	7	0		13·12	540·4	42·4	564·6	43·1	B
	8	0		09·69	538·9	42·5	565·2	43·2	B
	9	0		11·98	539·3	42·5	561·4	43·0	B
	10	0		09·87	538·8	42·4	557·0	42·7	B
	11	0		12·06	539·6	42·1	553·6	42·3	W
	12	0		10·97	542·6	41·8	548·5	41·8	W
	13	0	25	11·96	537·7	41·5	552·2	41·3	W
	14	0		13·05	536·8	41·1	552·6	40·8	W
	15	0		13·12	536·4	40·7	555·0	40·3	W
	16	0		14·06	537·8	40·3	549·5	39·6	W
	17	0		12·09	538·0	39·8	551·4	39·0	W
	18	0		11·77	536·2	39·3	554·4	38·4	W
	19	0		11·42	536·2	38·7	555·0	37·8	B
	20	0		11·27	534·9	38·2	553·1	37·3	B
	21	0		10·70	531·1	37·8	554·6	37·0	H
	22	0		11·77	528·7	37·4	558·9	36·8	H
	23	0		13·07	526·1	37·3	557·7	36·8	H
11	0	0		15·52	528·6	37·4	560·4	37·3	B
	1	0		18·35	534·3	37·5	553·2	37·7	H
	2	0		19·21	537·3	37·7	554·1	38·1	B
	3	0		19·41	534·6	38·0	552·0	38·6	H
	4	0		18·14	540·0	38·5	559·5	39·1	B
	5	0		15·05	537·1	38·9	569·1	39·5	H
	6	0		13·86	538·7	39·2	567·6	39·7	W
	7	0†		07·57	536·2	39·3	573·9	39·6	W
	8	0		11·21	541·4	39·3	565·8	39·5	W
	9	0		12·60	538·7	39·0	559·1	39·1	W
	10	0†		06·07	535·7	38·7	556·1	38·6	W
	11	0		11·10	536·4	38·3	551·9	38·3	H
	12	0		12·53	539·0	38·0	548·6	37·8	H
	13	0	25	13·91	537·7	37·7	547·1	37·3	H
	14	0		14·41	538·7	37·3	543·4	36·9	H
	15	0		12·92	536·3	36·9	551·2	36·6	H
	16	0		12·75	537·2	36·6	556·7	36·2	H
	17	0		12·78	537·8	36·3	557·8	35·9	H
	18	0		12·55	539·4	35·9	557·5	35.5	H
	19	0		12·11	538·9	35·6	555·4	35·1	W
	20	0		11·69	538·6	35·3	557·7	34·6	W
	21	0		10·77	536·0	35·0	562·6	34·4	B
	22	0		11·17	532·2	34·7	558·4	34·3	W
	23	0		12·11	530·0	34·7	555·5	34·5	W
12	0	0		13·66	532·4	34·8	551·7	35·0	W
	1	0		16·68	533·2	35·2	552·0	35·8	W
	2	0		17·98	534·8	35·8	551·8	36·8	W
	3	0		18·25	539·6	36·7	558·4	37·7	W
	4	0		17·15	542·1	37·5	564·1	38·4	W

DECLINATION. Magnet untouched, Feb. 5^{d}—March 23^{d}.

BIFILAR. Observed 2^{m} after the Declination, k=0·000140. BALANCE. Observed 3^{m} after the Declination, k=0·000010.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			Declination.		Bifilar.		Balance.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
12	5	0	25	15·11	541·5	38·3	563·2	39·0	W
	6	0		13·81	539·9	38·7	560·4	39·4	H
	7	0		13·69	541·2	38·9	554·5	39·3	H
	8	0		13·39	542·3	38·8	550·6	39·1	H
	9	0		13·22	541·0	38·4	548·4	38·6	H
	10	0		12·85	540·5	38·0	544·0	38·0	H
	11	0		12·46	541·2	37·6	542·3	37·2	H
	12	0		12·38	540·2	37·1	542·2	36·5	B
	13	0	25	12·06	539·8	36·5	541·9	35·8	B
	14	0		12·11	537·7	35·9	544·2	35·1	B
	15	0		11·21	540·4	35·4	538·6	34·4	B
	16	0		11·44	538·6	34·8	543·0	33·8	B
	17	0		12·09	540·3	34·3	542·2	33·2	B
	18	0		11·86	540·8	33·7	543·6	32·7	B
	19	0		12·15	538·9	33·2	546·4	32·3	H
	20	0		12·65	535·9	32·8	554·4	31·9	H
	21	0		15·04	528·1	32·5	558·3	31·6	W
	22	0		15·52	530·1	32·2	551·5	31·5	H
	23	0		16·48	526·2	32·1	547·2	31·6	H
13	0	0		19·71	526·1	32·1	552·8	32·1	H
	1	0		22·74	526·7	32·4	551·3	32·8	W
	2	0		23·45	531·1	33·0	552·2	33·7	H
	3	0		21·98	534·7	33·8	554·0	35·0	H
	4	0		18·85	538·5	34·8	569·8	36·1	H
	5	0		15·79	540·5	35·8	573·7	37·0	H
	6	0		13·36	543·5	36·7	574·7	37·7	B
	7	0		13·81	539·6	37·4	568·2	38·0	B
	8	0		13·23	542·8	37·6	560·7	38·0	B
	9	0		11·68	539·3	37·5	557·9	37·7	B
	10	0		12·63	542·3	37·3	550·7	37·3	B
	11	0		13·32	542·0	36·8	546·9	36·8	W
	12	0		12·92	541·1	36·4	543·9	36·3	W
	13	0	25	12·60	541·5	35·9	543·4	35·7	W
	14	0		12·11	541·6	35·5	542·6	35·2	W
	15	0		11·19	541·4	35·0	540·6	34·7	W
	16	0		13·25	545·2	34·6	536·9	34·3	W
	17	0		08·45	543·6	34·3	535·3	33·8	W
	18	0		11·14	543·6	33·9	536·6	33·4	W
	19	0		09·93	539·2	33·6	541·5	33·0	B
	20	0†		11·21	530·0	33·2	545·4	32·5	B
	21	0†		19·31	520·5	32·8	543·4	32·1	H
	22	5†		20·94	532·9	32·4	532·8	31·9	B
	23	0†		13·52	526·3	32·2	538·5	31·8	H
14	0	0		18·38	527·6	32·0	534·3	31·8	H
	1	0		18·60	532·7	32·0	535·5	32·2	H
	2	0		21·19	535·1	32·3	541·1	32·8	H
	3	0		21·79	535·7	32·9	552·3	33·6	H
	4	0		20·18	543·1	33·4	558·2	34·4	H
	5	0		15·81	539·2	34·0	568·2	35·0	H
	6	0		15·72	541·3	34·6	571·7	35·1	W
	7	0		04·55	528·8	34·6	604·3	34·9	W
	8	0		09·93	534·0	34·4	593·1	34·7	W
	9	0		07·04	532·3	34·1	581·5	34·3	W
	10	0		02·08	542·8	33·8	556·7	33·8	W
	11	0		10·67	539·8	33·5	544·5	33·4	H
	12	0		06·66	533·1	33·2	539·2	33·0	H
14	13	0	25	11·49	535·2	32·8	531·6	32·5	H
	14	0		10·16	530·4	32·4	537·5	32·1	H
	15	0		13·76	530·6	32·1	542·0	31·7	H
	16	0		16·68	532·4	31·7	529·6	31·2	H
	17	0		10·97	532·4	31·4	527·7	30·8	H
	18	0		13·22	532·7	31·1	528·1	30·5	H
	19	0		12·02	533·5	30·7	535·1	30·2	W
	20	0		11·44	533·4	30·4	536·3	29·9	W
	21	6		11·12	527·3	30·2	541·5	29·7	B
	22	0		14·06	523·3	30·0	540·8	29·6	W
	23	0		14·57	527·4	29·9	540·0	29·8	W
15	0	0		18·16	527·3	30·1	536·9	30·6	W
	1	0		20·40	533·5	30·9	535·5	31·8	W
	2	0		19·81	531·0	31·9	537·0	33·0	W
	3	2		19·62	541·7	32·9	542·2	34·0	W
	4	0		17·34	543·0	33·8	545·6	34·7	W
	5	0		16·90	546·8	34·8	553·9	35·8	W
	6	0		05·02	540·4	35·6	577·9	36·3	H
	7	0		10·81	540·3	35·9	592·8	36·5	H
	8	0		12·04	542·9	35·9	583·1	36·4	H
	9	0		12·80	531·6	35·7	581·2	35·9	H
	10	0		12·46	544·8	35·4	562·8	35·4	H
	11	0		15·07	548·4	34·9	525·6	34·9	B
	12	0		11·91	539·5	34·3	527·6	34·3	H
16	13	0	25	04·71	527·7	32·7	482·0	32·7	H
	14	0		12·93	531·7	32·6	487·7	32·6	H
	15	0		16·05	534·2	32·4	503·3	32·5	H
	16	0†		08·21	525·3	32·2	515·3	32·3	H
	17	0		15·88	524·4	32·0	513·1	32·0	H
	18	0		14·50	532·5	31·8	508·5	31·7	H
	19	0		11·12	533·1	31·6	527·7	31·4	W
	20	0		11·91	533·1	31·3	536·6	31·1	W
	21	0		13·05	530·4	31·1	544·7	31·1	B
	22	0		14·08	523·9	31·0	546·5	31·1	B
	23	0		14·92	528·5	31·2	543·5	31·7	W
17	0	0		17·46	526·0	31·7	540·0	32·4	W
	1	0		20·30	530·9	32·3	541·2	33·3	W
	2	0		19·51	533·1	33·0	541·5	33·9	B
	3	0		18·20	537·8	33·7	549·7	34·8	W
	4	0		15·52	535·5	34·6	558·8	35·7	W
	5	0		12·78	544·8	35·2	569·6	36·2	W
	6	0		13·12	542·2	35·7	563·8	36·7	H
	7	0		13·34	540·7	36·0	563·9	36·9	H
	8	0		12·72	541·7	36·1	559·4	36·9	H
	9	0		10·90	547·0	36·0	551·7	36·8	H
	10	0		13·36	539·0	36·0	545·1	36·7	H
	11	0		07·13	543·7	35·9	539·4	36·6	B
	12	0		11·79	541·3	35·8	521·9	36·4	B
	13	0	25	12·31	534·2	35·6	525·8	36·1	B
	14	0		13·69	536·0	35·4	533·3	35·8	B
	15	0		12·72	535·2	35·2	538·3	35·5	B
	16	0		12·15	535·1	35·0	538·6	35·2	B
	17	0		12·18	535·5	34·8	540·3	35·0	B
	18	0		12·25	536·2	34·6	541·0	34·8	B
	19	0		11·95	533·1	34·4	546·2	34·6	H
	20	0		10·47	536·8	34·2	546·5	34·4	H

DECLINATION. Magnet untouched, Feb. 5ᵈ—March 23ᵈ.

BIFILAR. Observed 2ᵐ after the declination, k=0·000140. BALANCE. Observed 3ᵐ after the declination, k=0·000010.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
17	21	0	25	11·49	532·1	34·0	550·8	34·3	W
	22	0		12·56	530·2	34·0	550·9	34·2	H
	23	0		15·25	526·3	34·2	548·3	34·5	H
18	0	0		16·99	530·7	34·4	543·0	35·2	H
	1	0		19·10	530·6	35·0	536·4	35·8	H
	2	0		19·62	535·2	35·6	536·9	36·6	H
	3	0		19·10	538·9	36·4	542·5	37·7	H
	4	0		17·33	538·8	37·5	551·4	38·8	H
	5	0		12·31	534·2	38·7	580·4	40·2	H
	6	0		12·80	538·4	39·8	587·8	41·1	B
	7	0		13·39	543·0	40·6	572·7	41·6	B
	8	0		14·06	538·6	41·0	574·3	41·9	B
	9	0		11·71	542·7	41·2	570·7	41·9	B
	10	0†		03·37	558·2	41·1	534·3	41·7	B
	11	0		06·19	541·9	40·9	518·4	41·4	W
	12	0		13·23	534·6	40·7	529·1	41·2	W
	13	0	25	13·76	538·0	40·3	535·5	40·7	W
	14	0		13·03	537·7	39·9	537·6	40·0	W
	15	0		11·48	535·2	39·4	541·2	39·3	W
	16	0		13·99	536.5	38·9	534·9	38·6	W
	17	0		11·08	536·7	38·4	536·9	38·0	W
	18	0		10·21	535·7	37·9	540·2	37·5	W
	19	0		10·65	534·0	37·5	542·2	36·8	B
	20	0		10·56	536·9	37·0	543·7	36·3	B
	21	0		10·23	528·0	36·6	550·5	36·0	H
	22	0		11·10	527·6	36·3	552·4	35·9	H
	23	0		13·91	524·7	36·1	546·4	36·0	H
19	0	0		16·59	528·0	36·1	545·9	36·3	B
	1	0		18·88	530·8	36·2	544·8	36·5	H
	2	0		19·44	533·7	36·2	551·9	36·7	H
	3	0		18·81	542·0	36·4	554·0	37·0	H
	4	0		16·57	542·7	36·8	555·5	37·4	W
	5	0		15·54	548·4	37·1	561·9	37·6	H
	6	0		12·23	537·6	37·3	581·3	37·6	W
	7	0		03·41	530·0	37·1	609·2	37·3	W
	8	0		09·79	526·5	36·9	607·8	37·0	W
	9	0†		16·28	528·1	36·7	542·8	36·7	W
	10	0		06·51	527·7	36·4	570·1	36·5	B
	11	0		21·46	536·4	36·2	533·2	36·3	B
	12	0		09·69	530·0	35·9	506·3	36·0	B
	13	0	25	10·60	527·6	35·6	481·1	35·6	D
	14	0		03·21	535·5	35·3	467·5	35·2	D
	15	0		13·77	515·0	34·9	468·7	34·8	D
	16	0		07·34	535·5	34·6	447·4	34·5	D
	17	0		04·95	534·4	34·2	469·1	34·0	D
	18	0		06·91	529·4	33·8	474·9	33·6	H
	19	0		12·26	537·4	33·4	485·6	33·0	H
	20	0		09·46	533·9	33·1	503·1	32·5	H
	21	0		09·39	532·0	32·7	519·9	32·1	W
	22	0		11·84	526·4	32·4	523·4	32·1	W
	23	0		15·47	514·9	32·3	534·4	32·3	W
20	0	0		17·94	524·6	32·3	538·1	32·8	W
	1	0		21·23	525·9	32·8	532·6	33·6	H
	2	0		22·33	535·3	33·5	531·4	34·7	B
	3	0		20·36	545·0	34·4	531·4	35·7	B
	4	0		18·41	547·5	35·4	545·9	36·7	W
20	5	0	25	17·78	562·6	36·5	575·6	37·7	W
	6	0		06·46	545·5	37·4	783·5	38·5	D
	7	0		15·51	533·7	38·2	699·0	39·3	D
	8	0		14·55	535·1	38·7	616·2	39·6	D
	9	0		13·14	536·7	38·8	586·7	39·9	H
	10	0		13·72	536·6	38·8	569·7	39·6	H
	11	0		13·29	536·2	38·5	566·6	39·1	B
	12	0		12·53	536·8	38·1	564·9	38·5	B
	13	0	25	10·43	535·5	37·7	562·8	37·9	B
	14	0		10·56	535·3	37·2	556·2	37·2	B
	15	0†		18·37	532·2	36·7	538·3	36·6	B
	16	0†		14·68	536·9	36·2	471·2	36·0	B
	17	0†		09·24	533·3	35·8	517·5	35·5	B
	18	0		10·67	532.8	35·4	539·2	34·9	B
	19	0		11·71	536·3	34·9	546·3	34·3	H
	20	0		10·68	533·9	34·4	552·3	33·8	H
	21	0		10·90	528·2	34·1	560·0	33·7	W
	22	0		11·08	526·8	33·9	557·8	33·7	H
	23	0		14·08	520·0	33·8	563·7	33·9	H
21	0	0		16·03	527·4	34·0	552·4	34·4	H
	1	0		19·08	534·1	34·3	546·1	34·9	H
	2	0		19·68	534·2	34·6	550·2	35·4	H
	3	0		18·41	538·3	35·0	553·3	35·8	H
	4	0		16·53	537·9	35·4	557·7	36·2	H
	5	0		14·67	539·3	35·7	559·8	36·5	H
	6	0		13·12	538·8	36·0	559·1	36·7	B
	7	0		12·87	540·5	36·3	553·9	36·9	H
	8	0		12·76	547·0	36·6	556·0	37·3	H
	9	0†		09·26	532·2	36·9	565·6	37·7	H
	10	0†		13·96	547·8	37·2	505·9	38·4	H
	11	0		08·36	530·7	37·7	482·5	38·9	W
	12	0		10·78	531·6	38·3	495·9	39·4	W
	13	0†	25	12·29	537·0	38·7	500·3	39·8	W
	14	0		15·49	533·8	39·1	494·2	40.4	W
	15	0		09·42	529·8	39·5	505·4	40·7	W
	16	0†		10·92	519·5	39·9	497·1	41·0	W
	17	0		06·90	536.4	40·2	492·5	41·3	W
	18	0		07·27	541·4	40·6	506·4	41·6	W
	19	0		12·45	534·9	40·9	518·6	41·9	B
	20	0		14·03	533·1	41·2	525·4	42·2	B
	21	0		11·07	532·2	41·4	532·5	42·4	H
	22	0		12·62	528·4	41·7	537·8	42·6	H
	23	0		13·49	523·0	41·9	540·7	43·0	H
22	0	0		17·13	526·8	42·4	529·5	43·5	B
	1	0		19·17	525·9	42·8	526·9	44·0	H
	2	0		21·39	532·1	43·3	529·7	44·7	H
	3	0		19·71	533·6	44·0	547·5	45·4	B
	4	0		16·77	537·7	44·8	560·0	46·1	H
	5	0		14·35	541·3	45·4	568·3	46·6	B
	6	0		12·38	539·1	45·8	562·1	46·9	W
	7	0		11·66	538·4	46·2	557·4	47·2	W
	8	0		12·01	539·8	46·4	551·1	47·3	W
	9	0		12·08	539·7	46·6	550·0	47·3	W
	10	0		10·92	541·2	46·6	549·2	47·4	W
	11	0		11·35	538·8	46·7	545·3	47·4	H
	12	0		12·56	539·5	46·8	544·7	47·5	H

DECLINATION. Magnet untouched, Feb. 5d—March 23d.

BIFILAR. Observed 2m after the Declination, k=0·000140. BALANCE. Observed 3m after the Declination, k=0·000010.

† Extra Observations made.
March 19d 10h—20d 10h. Term-Day Observations made.

Göttingen Mean Time of Declination Obs.			Declination.		Bifilar.		Balance.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
23	13	0†	25	08·06	538·8	50·1	507·0	49·8	B
	14	0†		17·53	535·3	49·7	406·5	49·4	B
	15	0†		04·37	532·2	49·3	407·0	49·0	B
	16	0†		04·01	529·6	48·8	461·9	48·5	B
	17	0†		05·65	508·6	48·4	461·8	47·9	B
	18	0†		13·39	537·3	47·9	475·6	47·3	B
	19	0		09·30	537·2	47·4	521·8	47·7	H
	20	0		09·91	539·0	47·0	523·3	46·1	H
	21	0		11·08	526·1	46·6	540·4	45·7	W
	22	0		13·10	521·7	46·2	544·2	45·5	H
	23	0		16·62	519·5	45·9	540·3	45·6	H
24	0	0		18·30	525·6	45·8	533·0	46·0	H
	1	0		22·57	525·7	46·2	536·1	46·6	W
	2	0		23·54	540·7	46·6	541·4	47·3	H
	3	0		24·69	548·5	47·0	558·7	48·0	H
	4	0		24·32	538·8	47·6	589·0	48·5	H
	5	2		23·01	544·9	48·1	616·3	49·0	H
	6	0†		15·51	540·4	48·6	644·8	49·3	B
	7	0†		08·58	548·1	48·9	631·3	49·4	B
	8	0†		07·17	532·6	49·0	611·2	49·5	B
	9	0		07·54	532·5	49·0	602·6	49·4	B
	10	0		10·83	533·5	48·8	582·0	49·0	B
	11	2†		09·33	535·8	48·4	558·4	48·3	W
	12	0†		16·25	536·7	48·0	544·2	47·7	W
	13	0†	25	05·96	543·5	47·6	439·8	47·1	W
	14	0†	24	53·72	512·6	47·1	430·0	46·5	W
	15	0†	25	04·14	505·8	46·6	418·2	45·9	W
	16	0†		00·71	533·8	46·0	352·7	45·3	W
	17	0†		05·11	511·3	45·4	421·2	44·7	W
	18	0		10·03	532·2	44·9	483·7	44·0	W
	19	0		09·98	529·4	44·3	521·9	43·2	B
	20	0		10·53	517·2	43·6	543·9	42·4	B
	21	0		10·90	520·9	43·0	555·4	41·9	H
	22	0		12·04	518·4	42·6	553·7	41·7	H
	23	0		15·04	511·0	42·2	550·7	41·7	H
25	0	0		16·45	517·4	42·2	548·6	42·2	H
	1	0		19·51	530·8	42·4	548·6	42·7	H
	2	0		20·35	533·6	42·7	560·1	43·3	H
	3	0		18·16	542·3	43·2	573·4	44·0	H
	4	0		17·40	540·8	43·8	577·1	44·5	H
	5	0		15·12	533·1	44·2	601·9	45·0	H
	6	0†		10·30	542·1	44·6	615·6	45·2	W
	7	0		13·66	541·5	44·8	583·5	45·3	W
	8	0		12·55	539·1	44·8	570·0	45·3	W
	9	0		11·77	540·3	44·8	565·3	45·2	W
	10	0		10·43	541·2	44·7	561·5	45·0	W
	11	0		09·80	536·3	44·6	556·5	45·0	H
	12	0		11·30	543·0	44·4	543·7	44·8	H
	13	0†	25	04·89	550·9	44·3	498·9	44·7	H
	14	0†		04·86	532·4	44·1	508·1	44·5	H
	15	0		11·91	527·1	44·0	504·6	44·2	H
	16	0		08·29	531·2	43·7	517·6	44·0	H
	17	0		10·58	532·0	43·5	534·9	43·6	H
	18	0		12·29	534·6	43·2	539·9	43·2	H
	19	0		08·83	528·6	42·9	548·9	42·7	W
	20	0		10·67	527·7	42·6	557·4	42·3	W
25	21	0	25	11·14	526·6	42·3	555·8	42·0	B
	22	0		10·94	526·8	42·1	555·2	42·0	W
	23	0		11·57	519·3	42·1	557·6	42·2	W
26	0	0		16·93	530·8	42·3	548·3	42·7	W
	1	0		20·30	534·6	42·6	540·2	43·4	W
	2	0		23·78	532·5	43·3	554·6	44·3	W
	3	0		21·41	539·7	44·0	570·1	45·2	W
	4	0		21·84	538·3	44·9	582·8	46·0	W
	5	0†		12·67	542·1	45·7	594·4	46·7	W
	6	0†		08·11	536·7	46·2	626·0	46·8	H
	7	0		05·06	544·9	46·3	618·5	46·9	H
	8	0†		04·19	553·2	46·2	549·8	46·8	H
	9	0		12·02	534·9	46·2	568·5	46·8	H
	10	0†		16·93	527·9	46·0	539·2	46·7	H
	11	0†		08·82	540·7	46·0	496·8	46·7	B
	12	0†		09·06	544·1	46·0	502·0	46·7	B
	13	0†	25	09·84	535·1	45·9	499·3	46·6	B
	14	0†		11·64	516·3	45·9	507·4	46·4	B
	15	0†		20·87	513·0	45·8	447·7	46·3	B
	16	0†		09·22	537·5	45·7	477·8	46·2	B
	17	0†		08·01	530·0	45·6	513·0	46·0	B
	18	0		14·92	524·1	45·4	532·9	45·7	B
	19	0		11·62	536·3	45·1	534·3	45·4	H
	20	0		09·91	535·7	45·0	545·6	45·3	H
	21	0		08·72	533·6	44·9	550·2	45·2	W
	22	0		08·55	528·6	44·8	553·2	45·3	H
	23	0		11·21	528·5	45·1	556·8	45·7	H
27	0	0		14·15	529·4	45·4	550·0	46·3	H
	1	0		18·81	532·3	45·9	544·9	47·0	H
	2	0		19·91	522·5	46·7	548·2	47·7	H
	3	0		17·34	539·1	47·3	558·9	48·5	H
	4	0		17·54	547·8	47·8	562·9	48·7	H
	5	0†		15·18	518·8	48·0	600·4	49·0	H
	6	0		13·05	539·6	48·3	605·5	49·0	B
	7	0		12·58	542·3	48·4	611·5	49·0	B
	8	0†		06·03	540·3	48·4	603·5	49·0	B
	9	0†		09·29	527·4	48·5	531·1	49·3	B
	10	0		08·79	533·3	48·7	546·6	49·5	B
	11	0		09·67	530·8	48·7	537·1	49·5	W
	12	0		09·13	534·7	48·7	532·7	49·4	W
	13	0	25	12·28	534·7	48·7	537·7	49·3	W
	14	0		14·80	534·2	48·7	532·5	49·1	W
	15	0		12·69	528·0	48·6	535·9	49·0	W
	16	0		12·56	538·7	48·5	531·4	48·9	W
	17	0		10·20	537·2	48·4	537·9	48·7	W
	18	0		10·75	538·6	48·2	535·9	48·4	W
	19	0		10·47	537·2	48·0	539·3	48·0	B
	20	0		09·30	535·2	47·8	544·5	47·8	B
	21	0		09·37	532·9	47·6	541·9	47·6	H
	22	0		09·89	528·8	47·5	539·4	47·6	H
	23	0		11·00	525·1	47·4	532·9	47·7	H
28	0	0		15·99	530·6	47·7	524·8	48·0	B
	1	0		18·52	533·1	47·8	523·0	48·5	H
	2	0		18·16	536·4	48·1	535·8	49·0	H
	3	0		17·60	535·6	48·4	543·7	49·4	H
	4	0		16·05	540·0	48·9	550·2	49·7	H

DECLINATION. Torsion removed, March 23^d 23½^h, –18½°. Effect of + 10° of torsion = –0′·84.

BIFILAR. Observed 2^m after the Declination, k=0·000140. BALANCE. Observed 3^m after the Declination, k=0·000010.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.	DECLINATION.	BIFILAR.		BALANCE.		Observer's Initial.	Göttingen Mean Time of Declination Obs.	DECLINATION.	BIFILAR.		BALANCE.		Observer's Initial.
		Corrected.	Thermometer.	Corrected.	Thermometer.				Corrected.	Thermometer.	Corrected.	Thermometer.	
d. h. m.	° ′	Sc. Div.	°	Mic. Div.	°		d. h. m.	° ′	Sc. Div.	°	Mic. Div.	°	
28 5 0	25 14·20	544·7	49·4	558·9	50·0	B	31 13 0	25 10·13	540·2	48·3	535·2	48·3	H
6 0	12·51	542·3	49·7	565·0	50·2	W	14 0	09·98	539·0	47·8	540·0	47·7	H
7 0	12·11	542·2	49·8	562·2	50·2	W	15 0	09·24	537·4	47·3	542·1	47·1	H
8 0	12·11	540·9	49·8	556·7	50·0	W	16 0	07·74	535·2	46·8	545·6	46·5	H
9 1†	25 08·68	540·4	49·6	551·4	49·5	W	17 0	08·82	535·6	46·3	544·5	45·8	H
10 0†	24 56·27	541·6	49·2	547·5	49·1	W	18 0	08·63	535·4	45·8	546·2	45·2	H
11 0†	25 04·91	525·6	48·8	545·4	48·7	H	19 0	10·43	533·9	45·3	546·7	44·6	W
12 0	10·13	533·7	48·4	539·7	48·5	H	20 0	08·39	532·4	44·8	547·0	44·1	W
							21 4	07·67	529·3	44·4	553·7	43·7	B
13 0	25 11·71	535·7	48·0	542·9	47·9	H	22 0	08·53	524·4	44·0	554·3	43·6	W
14 0	11·21	533·9	47·7	547·4	47·3	H	23 0	11·07	522·6	44·0	556·1	44·0	W
15 0	11·64	533·9	47·3	548·9	46·7	H	1 0 0	14·04	522·3	44·1	548·1	44·5	W
16 0	10·16	534·6	46·9	549·3	46·2	H	1 0	17·26	526·8	44·6	544·5	45·1	W
17 0	09·96	532·2	46·4	551·9	45·7	H	2 0	17·98	530·9	45·1	545·1	45·9	W
18 0	10·53	533·9	46·0	549·1	45·3	H	3 0	17·29	533·4	45·8	550·2	46·6	W
19 0	09·12	532·9	45·7	547·4	45·0	W	4 0	15·61	538·5	46·5	546·7	47·3	W
20 0	10·94	533·1	45·3	547·0	44·6	W	5 0	13·90	542·0	47·1	549·1	47·9	W
21 0	13·14	526·3	45·0	550·1	44·4	W	6 0	12·42	545·5	47·7	550·2	48·6	H
22 0	14·71	522·9	44·8	552·9	44·5	W	7 0	12·02	543·4	48·3	550·0	49·1	H
23 0	15·98	521·4	44·8	555·0	44·8	W	8 0	11·98	546·3	48·7	549·3	49·2	H
29 0 0	13·36	528·3	44·9	548·0	45·3	W	9 0	07·64	541·6	48·7	551·0	49·2	H
1 0	18·23	537·9	45·4	535·3	46·0	W	10 0	10·50	543·3	48·7	544·0	49·1	H
2 0	21·41	533·9	46·0	536·6	46·7	W	11 0	12·18	542·1	48·6	540·5	48·8	B
3 3	21·14	542·8	46·7	548·7	47·4	W	12 0	12·08	540·8	48·4	542·7	48·5	B
4 0	18·60	535·9	47·4	565·5	48·2	W							
5 0	16·79	543·8	48·0	567·9	48·8	W	13 0	25 11·41	540·7	48·1	539·3	48·0	B
6 0	12·89	541·1	48·6	575·9	49·2	W	14 0	10·87	540·0	47·7	535·3	47·6	B
7 0	07·37	548·8	49·0	582·7	49·4	H	15 0	09·56	536·2	47·3	538·7	47·1	B
8 0	10·33	541·9	49·1	577·4	49·5	H	16 0	11·91	539·7	46·9	528·6	46·5	B
9 0	09·30	543·9	49·0	575·2	49·3	H	17 0	10·01	536·8	46·4	528·9	45·9	B
10 0†	05·69	539·3	48·9	541·1	49·0	H	18 0	08·32	537·9	45·9	532·9	45·3	B
11 0†	03·90	530·7	48·6	518·7	48·7	B	19 0	08·52	536·6	45·4	538·3	44·7	H
12 0	07·85	533·7	48·3	506·8	48·4	B	20 0	08·56	536·7	44·9	543·5	44·2	H
							21 0	08·01	532·6	44·5	547·9	43·8	W
30 13 0	25 11·35	538·9	43·0	539·9	43·2	W	22 0	08·41	528·4	44·1	545·8	43·6	H
14 0	10·95	536·9	42·9	547·6	43·1	W	23 0	11·98	526·0	43·9	540·0	43·7	H
15 0	11·12	537·1	42·8	550·8	43·0	W	2 0 0	15·29	525·2	43·8	535·4	44·0	H
16 0	09·74	536·1	42·7	554·3	42·8	W	1 0	18·55	527·6	44·1	522·0	44·6	H
17 0	09·82	534·7	42·6	554·8	42·5	W	2 0	20·99	531·4	44·8	529·1	45·7	H
18 0	10·01	536·6	42·4	554·1	42·2	W	3 0	21·00	537·0	45·9	539·4	47·2	H
19 0	09·66	534·8	42·1	558·5	41·9	B	4 0	18·03	539·3	47·3	542·5	48·7	H
20 0	09·02	533·1	41·9	560·8	41·8	B	5 0	15·34	541·5	48·6	544·2	50·0	H
21 0	09·44	531·0	41·8	560·1	41·7	H	6 0	13·49	544·2	49·8	540·8	50·9	B
22 0	10·00	527·0	41·8	562·6	42·0	H	7 0	12·15	545·5	50·6	551·5	51·5	B
23 0	11·95	524·2	41·9	561·0	42·5	H	8 0	08·18	545·9	50·9	555·8	51·5	B
31 0 0	14·60	525·3	42·4	545·5	43·4	H	9 0	09·35	543·9	50·8	556·3	51·3	B
1 0	17·93	528·7	43·2	541·9	44·4	H	10 0	11·00	545·8	50·7	549·6	51·0	B
2 0	19·04	532·7	44·2	538·1	45·5	H	11 0	11·07	545·7	50·4	541·7	50·5	W
3 0	18·84	537·0	45·4	542·3	46·7	B	12 0	09·74	545·1	50·0	536·1	49·9	W
4 0	16·48	539·0	46·6	546·9	48·2	H							
5 0	13·70	539·6	47·9	551·4	49·4	B	13 0	25 09·76	541·8	49·5	532·9	49·3	W
6 0	12·46	542·8	49·1	554·7	50·2	W	14 0	10·36	542·3	48·8	535·7	48·5	W
7 0	12·28	543·5	49·8	553·5	50·7	W	15 0	09·79	540·2	48·2	540·2	47·7	W
8 0	12·35	545·1	50·0	549·6	50·7	W	16 0	09·51	539·4	47·6	541·5	46·8	W
9 0	12·09	545·9	50·0	546·8	50·4	W	17 0	08·79	539·4	46·9	542·2	46·0	W
10 0	12·15	545·1	49·7	544·1	50·0	W	18 0	08·14	539·4	46·3	535·4	45·3	W
11 0	11·61	542·5	49·3	545·2	49·5	H	19 0	06·76	539·3	45·6	540·9	44·6	B
12 0	12·35	546·4	48·8	541·1	49·0	H	20 0	06·41	535·3	45·0	547·4	43·9	B

DECLINATION. Torsion removed, April 2d $2\frac{1}{2}^{h}$, $-3\frac{1}{2}^{\circ}$.* Effect of + 10° of torsion $= -0'{\cdot}84$.

BIFILAR. Observed 2^{m} after the Declination, $k=0{\cdot}000140$. BALANCE. Observed 3^{m} after the Declination, $k=0{\cdot}000010$.

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* April 2d $2\frac{1}{2}^{h}$. The line of detorsion of the suspension thread varied during the observation; at first it was about N. 3° E. to S. 3° W.; it was ultimately N. 5° E. to S. 5° W.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
2	21	0	25	07·13	530·2	44·4	550·7	43·5	H
	22	0		07·67	524·3	43·9	554·3	43·2	H
	23	0		13·17	515·9	43·7	553·4	43·1	H
3	0	0		16·75	521·3	43·5	541·9	43·0	B
	1	0		21·71	530·3	43·4	535·7	43·4	H
	2	0		23·27	529·5	43·6	536·0	43·9	W
	3	0		19·22	531·0	44·1	548·9	45·0	H
	4	0		16·90	542·4	45·2	554·2	46·2	B
	5	0		14·64	540·6	46·4	554·6	47·6	H
	6	0		13·43	546·3	47·8	565·5	49·0	W
	7	0		14·13	545·8	49·0	586·8	49·8	W
	8	0		08·59	546·2	49·7	602·1	50·2	W
	9	0†		06·59	539·0	49·9	570·2	50·2	W
	10	0†		06·43	538·3	49·9	568·4	50·0	W
	11	0		09·93	537·7	49·7	557·0	49·7	H
	12	0		13·49	540·8	49·2	545·8	49·2	H
	13	0	25	12·18	539·8	48·7	540·6	48·5	H
	14	0		11·49	538·6	48·2	541·5	47·8	H
	15	0		10·23	538·4	47·7	542·0	47·2	H
	16	0		10·06	541·0	47·2	542·4	46·6	H
	17	0		12·62	541·0	46·7	541·4	46·1	H
	18	0		12·31	544·7	46·2	537·6	45·6	H
	19	0		10·40	543·1	45·8	539·3	45·1	W
	20	0		09·93	538·1	45·4	549·2	44·7	W
	21	0		06·26	532·9	45·0	548·3	44·3	B
	22	0		08·01	529·6	44·7	551·6	44·0	W
	23	0		11·15	521·8	44·4	553·3	43·8	W
4	0	0		15·96	515·5	44·1	548·1	43·8	W
	1	0		19·91	514·9	44·0	540·9	43·8	W
	2	0		20·49	520·4	44·0	542·2	43·9	W
	3	0		18·81	535·4	44·0	546·1	44·0	W
	4	0		16·28	538·0	44·0	552·8	44·2	W
	5	0		13·74	538·1	44·1	559·8	44·3	W
	6	0		11·57	539·4	44·2	561·4	44·5	H
	7	0		10·09	542·1	44·1	561·6	44·5	H
	8	7		09·76	541·0	44·0	561·3	44·5	H
	9	0		09·94	542·1	44·0	559·6	44·3	H
	10	0		10·20	539·6	44·0	559·9	44·1	H
	11	0		10·77	541·7	43·9	557·3	44·0	B
	12	0		09·82	544·2	43·8	542·8	43·9	B
	13	0	25	09·96	538·8	43·7	540·8	43·7	B
	14	0		11·17	538·1	43·6	546·9	43·5	B
	15	0		10·70	539·0	43·4	551·0	43·4	B
	16	0		11·17	540·7	43·3	552·1	43·2	B
	17	0		09·69	536·8	43·1	553·8	43·0	B
	18	0		09·06	538·2	42·9	555·0	42·9	B
	19	0		07·94	536·8	42·8	556·6	42·7	H
	20	0		05·82	535·3	42·7	562·0	42·5	H
	21	0		06·41	528·0	42·5	565·9	42·4	W
	22	0		07·10	522·4	42·3	563·3	42·4	H
	23	0		10·47	519·2	42·4	559·6	42·5	H
5	0	0		14·33	515·7	42·4	54[illegible]·2	42·7	H
	1	0		19·53	524·8	42·8	532·8	43·4	H
	2	0		19·76	529·8	43·4	533·5	44·5	H
	3	0		18·08	535·6	44·4	541·0	45·7	H
	4	0		15·56	537·6	45·7	549·4	47·0	H

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
5	5	0	25	14·20	541·6	46·9	544·4	48·2	H
	6	0		12·20	544·0	48·1	544·7	49·1	B
	7	4		11·37	546·5	48·9	539·1	49·5	B
	8	0		10·48	545·4	49·3	541·6	49·5	B
	9	0		10·38	543·9	49·3	543·0	49·5	B
	10	0		10·65	541·7	48·9	540·1	49·0	B
	11	0		10·85	542·7	48·5	538·6	48·4	W
	12	0		09·54	540·5	48·0	539·2	47·8	W
6	13	0	25	09·86	540·6	49·7	537·0	49·5	H
	14	0		10·75	538·8	49·2	537·2	49·0	H
	15	0		10·61	538·2	48·8	540·9	48·6	H
	16	0		10·47	538·8	48·3	540·5	48·2	H
	17	0		12·15	537·5	48·0	541·3	47·8	H
	18	0		10·80	538·8	47·7	539·4	47·4	H
	19	0		09·69	535·9	47·4	542·8	47·1	W
	20	0		07·51	533·7	47·1	547·8	46·8	W
	21	0		08·46	527·9	47·0	550·5	46·8	B
	22	0		09·74	522·5	46·9	553·0	46·8	W
	23	0		12·63	515·2	47·0	553·0	47·3	W
7	0	0		15·45	526·4	47·3	541·8	47·8	W
	1	0		16·21	529·4	47·7	536·1	48·4	W
	2	0		20·65	534·3	48·4	540·5	49·3	W
	3	0		20·25	542·6	49·2	544·5	50·0	W
	4	0		15·69	543·7	50·0	554·8	51·0	W
	5	0		14·77	544·5	50·8	560·3	51·8	W
	6	0		12·72	547·7	51·4	558·0	52·2	H
	7	0		10·78	547·2	51·8	560·6	52·5	H
	8	0		06·76	549·0	51·7	561·3	52·5	H
	9	0		12·11	542·3	51·6	546·8	52·0	H
	10	0		11·61	541·3	51·3	541·9	51·5	H
	11	0		11·54	542·2	51·0	538·0	50·9	B
	12	0		10·92	541·3	50·6	536·3	50·3	B
	13	0	25	11·62	546·1	50·1	529·5	49·7	B
	14	0		11·69	544·1	49·6	512·7	49·2	B
	15	0		10·87	536·7	49·1	526·9	48·6	B
	16	0		10·47	537·5	48·7	535·9	48·0	B
	17	0		10·47	537·5	48·2	541·0	47·5	B
	18	0		10·60	538·6	47·8	543·1	47·1	B
	19	0		09·64	537·9	47·4	549·6	46·9	H
	20	0		07·40	535·3	47·1	555·2	46·6	H
	21	0		06·63	530·2	47·0	548·9	46·5	W
	22	0		08·01	524·5	46·8	544·5	46·6	H
	23	0		10·60	518·5	46·9	548·9	46·7	H
8	0	0		12·95	521·5	47·0	537·5	47·2	H
	1	0		17·15	524·0	47·0	523·6	47·3	H
	2	0		19·02	529·6	47·3	525·9	47·5	H
	3	0		17·93	535·4	47·3	533·5	47·7	H
	4	0		19·81	539·0	47·7	542·7	48·0	H
	5	0		14·13	538·0	47·9	554·5	48·3	H
	6	0		12·26	541·8	48·1	557·1	48·4	B
	7	0		11·32	543·1	48·2	555·6	48·3	B
	8	0		11·12	543·0	48·1	548·6	48·1	B
	9	0		10·94	542·6	47·9	544·0	47·7	B
	10	0		11·12	543·1	47·6	542·2	47·3	B
	11	0		07·69	540·6	47·3	542·8	46·8	W
	12	0		08·92	539·9	46·9	544·1	46·3	W

DECLINATION. Magnet untouched, April 2^d—May 8^d.

BIFILAR. Observed 2^m after the Declination, $k=0·000140$. BALANCE. Observed 3^m after the Declination, $k=0·000010$.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
8	13	0	25	11·00	537·7	46·4	546·3	45·7	W
	14	0		10·94	538·5	45·9	549·2	45·2	W
	15	0		10·70	538·5	45·4	552·9	44·6	W
	16	0		10·70	539·4	44·9	554·2	44·0	W
	17	0		10·27	539·4	44·3	556·0	43·3	W
	18	0		10·00	540·4	43·7	559·4	42·7	W
	19	0		08·65	538·6	43·1	564·0	42·0	B
	20	0		06·83	536·4	42·7	568·6	41·6	B
	21	0		05·67	528·6	42·3	570·7	41·4	H
	22	0		07·58	521·0	42·0	566·9	41·4	H
	23	0		10·97	518·9	42·0	562·1	41·9	H
9	0	0		14·71	522·7	42·3	558·1	42·9	B
	1	0		17·98	529·0	43·0	548·8	44·2	H
	2	0		19·64	537·5	44·3	549·5	45·5	B
	3	0		17·76	541·7	45·4	552·8	46·7	H
	4	0		15·64	541·7	46·4	543·6	47·4	B
	5	0		13·96	548·3	47·1	555·7	48·3	H
	6	0		11·27	545·1	47·8	562·3	48·7	W
	7	0		08·95	544·8	48·3	564·8	48·9	W
	8	0		08·01	548·8	48·5	552·6	48·9	W
	9	0		10·21	543·7	48·4	546·8	48·5	W
	10	0		10·21	543·7	48·1	540·8	48·1	W
	11	0		10·40	544·2	47·8	537·7	47·7	H
	12	0		11·14	552·6	47·4	516·5	47·3	H
	13	0	25	10·43	542·4	47·0	516·6	47·0	H
	14	0		10·16	540·1	46·7	525·0	46·6	H
	15	0		10·23	539·7	46·4	533·3	46·2	H
	16	0		10·07	540·4	46·0	532·1	45·8	H
	17	0		10·16	540·6	45·7	540·9	45·4	H
	18	0		09·62	541·5	45·4	543·1	45·0	H
	19	0		08·79	539·1	45·0	544·9	44·5	W
	20	0		08·06	536·7	44·7	549·0	44·1	W
	21	0		06·88	532·5	44·4	549·4	43·8	B
	22	0		07·65	526·7	44·1	545·4	43·7	W
	23	0		10·68	523·4	44·0	534·1	43·8	W
10	0	0		14·55	526·8	43·9	526·4	43·9	W
	1	0		18·25	530·8	43·9	521·1	43·9	W
	2	0		19·22	535·9	43·9	522·7	44·0	W
	3	0		18·01	543·3	44·0	528·9	44·1	W
	4	0		15·69	543·0	44·0	536·1	44·2	W
	5	0		14·68	540·9	44·0	545·2	44·2	W
	6	0		12·31	543·2	44·0	550·2	44·2	H
	7	0		11·81	544·1	44·0	547·0	44·0	H
	8	0		11·68	545·3	43·9	543·6	43·7	H
	9	0		11·52	543·6	43·7	544·0	43·5	H
	10	0		11·34	543·2	43·5	543·9	43·3	H
	11	0		11·57	543·9	43·3	542·0	43·1	B
	12	0		10·77	544·3	43·1	542·9	42·9	B
	13	0	25	11·17	542·5	42·9	541·9	42·7	B
	14	0		11·03	541·1	42·7	543·9	42·5	B
	15	0		10·88	540·8	42·5	545·0	42·2	B
	16	0		10·70	540·6	42·3	546·8	42·0	B
	17	0		10·09	539·9	42·1	548·4	41·7	B
	18	0		09·44	540·3	41·9	551·4	41·5	B
	19	0		08·16	539·8	41·7	553·5	41·3	H
	20	0		06·37	537·2	41·5	557·9	41·1	H
10	21	0	25	04·86	531·1	41·3	557·9	41·0	W
	22	0		06·07	524·9	41·2	554·0	41·1	H
	23	0		09·79	521·9	41·2	553·2	41·4	H
11	0	0		14·15	522·1	41·4	540·9	41·7	H
	1	0		18·10	525·8	41·7	533·8	42·1	H
	2	0		19·81	532·6	42·0	536·0	42·5	H
	3	0		19·08	534·2	42·4	542·6	42·9	H
	4	0		17·09	536·3	42·8	547·0	43·3	H
	5	0		14·46	543·1	43·0	552·0	43·6	H
	6	0		12·62	541·6	43·2	557·1	43·7	B
	7	0		11·37	546·5	43·3	551·4	43·7	B
	8	0		11·17	545·3	43·3	549·4	43·7	B
	9	0		12·08	544·8	43·2	550·1	43·5	B
	10	0		07·13	545·6	43·0	549·6	43·2	B
	11	0		09·27	541·3	42·7	547·7	42·8	W
	12	0		10·09	542·3	42·4	543·5	42·3	W
	13	0	25	11·03	541·6	42·0	542·4	41·8	W
	14	0		11·00	541·6	41·6	544·2	41·3	W
	15	0		10·87	540·1	41·2	546·8	40·8	W
	16	0		10·20	540·4	40·8	547·1	40·3	W
	17	0		09·79	540·2	40·4	549·6	39·8	W
	18	0		09·08	541·8	40·0	551·2	39·3	W
	19	0		08·14	541·3	39·6	555·6	38·8	B
	20	0		05·77	538·7	39·3	558·2	38·5	B
	21	0		05·32	532·1	39·0	561·1	38·5	H
	22	0		06·86	526·0	38·8	559·6	38·5	H
	23	0		10·67	523·3	38·8	557·0	38·7	H
12	0	0		14·35	543·2	39·0	555·3	39·5	B
	1	0		18·45	529·0	39·4	548·3	40·3	H
	2	0		20·67	535·9	40·1	544·2	40·8	B
	3	0		18·77	536·9	40·7	549·6	41·5	H
	4	0		16·53	539·9	41·2	552·0	42·2	H
	5	0		14·20	544·2	42·1	556·9	43·1	H
	6	0		12·15	542·8	42·7	561·3	43·5	W
	7	0		10·68	545·2	43·0	560·0	43·8	W
	8	0		10·70	545·2	43·3	559·2	44·0	W
	9	0		09·27	548·1	43·4	552·2	44·0	W
	10	0		10·36	543·0	43·4	552·0	44·0	W
	11	0		10·90	542·2	43·3	547·9	44·0	H
	12	0		10·88	541·3	43·2	543·9	43·7	H
13	13	3†	24	52·40	453·0	43·2	180·2	43·3	B
	14	0†	24	59·59	427·5	42·9	216·0	43·0	B
	15	0†	24	13·32	291· ?	42·6	−4·5	42·9	B
	16	0†	24	47·20	528·0	42·4	288·6	42·8	B
	17	0†	25	06·46	524·5	42·3	448·2	42·7	B
	18	0†		03·00	537·0	42·2	499·9	42·6	B
	19	0		07·38	531·0	42·1	518·5	42·5	H
	20	0		03·23	539·8	42·1	509·6	42·5	H
	21	0		06·59	522·7	42·0	523·7	42·4	W
	22	0		08·14	526·2	42·1	530·8	42·7	H
	23	0		10·74	531·2	42·3	525·0	42·9	H
14	0	0		15·78	517·8	42·5	531·8	43·2	H
	1	0		20·42	525·2	42·7	532·9	43·3	H
	2	0		20·69	517·6	42·9	560·8	43·5	H
	3	0		20·50	533·1	43·0	569·1	43·6	H
	4	0†		14·50	538·6	43·2	650·6	43·7	H

DECLINATION. Magnet untouched, April 2^{d}—May 8^{d}.

BIFILAR. Observed 2^{m} after the Declination, $k=0·000140$. BALANCE. Observed 3^{m} after the Declination, $k=0·000010$.

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† Extra Observations made.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
14	5	0†	25	16·87	541·8	43·4	603·5	44·0	H
	6	0†		11·59	543·5	43·6	619·8	44·2	B
	7	0†		00·57	543·8	43·7	633·7	44·3	B
	8	0		06·74	536·7	43·8	593·3	44·2	B
	9	0		11·64	531·7	43·6	570·8	44·0	B
	10	5		11·98	541·0	43·4	550·4	43·7	B
	11	0		12·36	530·3	43·2	512·1	43·5	W
	12	0†		16·43	531·1	43·0	470·5	43·4	W
	13	0	25	12·55	535·2	42·9	483·5	43·3	W
	14	0		09·67	527·7	42·8	499·4	43·2	W
	15	0		11·37	529·9	42·7	504·6	43·0	W
	16	0		10·30	530·3	42·6	521·5	42·9	W
	17	0		11·54	533·3	42·5	524·6	42·8	W
	18	0		11·15	525·7	42·4	528·3	42·7	W
	19	0		10·75	533·1	42·4	531·6	42·6	B
	20	0		07·87	532·0	42·4	541·4	42·7	B
	21	0		07·29	527·7	42·4	545·0	42·9	H
	22	0		09·19	524·4	42·6	550·9	43·2	H
	23	0		11·34	525·7	42·9	530·4	43·6	H
15	0	0		15·01	521·5	43·5	528·8	44·3	H
	1	0		15·74	522·4	44·1	520·6	45·0	H
	2	0		18·10	530·2	44·7	531·7	45·5	H
	3	0		17·94	526·1	45·4	543·7	46·2	H
	4	0		14·91	535·9	46·2	555·7	46·7	H
	5	0		12·92	546·3	46·8	561·0	47·2	H
	6	0		11·49	545·8	47·2	560·7	47·4	W
	7	0		12·72	547·4	47·4	546·3	47·5	W
	8	0		09·67	543·5	47·4	545·9	47·4	W
	9	0		02·99	549·9	47·3	540·2	47·2	W
	10	0		07·57	539·9	47·0	532·9	46·9	W
	11	0		10·97	535·4	46·6	529·3	46·5	H
	12	0		10·13	538·9	46·2	521·6	46·1	H
	13	0	25	10·98	539·3	45·8	514·6	45·7	H
	14	0		10·90	537·9	45·4	512·9	45·3	H
	15	0		08·63	532·6	45·0	517·3	44·9	H
	16	0		11·07	525·6	44·6	524·4	44·5	H
	17	0		10·36	532·9	44·2	525·6	44·1	H
	18	0		09·02	535·1	43·8	528·2	43·7	H
	19	0		07·72	533·5	43·4	536·2	43·2	W
	20	0		07·92	531·6	43·0	541·0	42·8	W
	21	0		07·38	530·4	42·7	544·1	42·6	B
	22	0		07·87	527·0	42·7	545·7	42·8	W
	23	0		10·48	523·7	42·7	548·0	43·4	W
16	0	0		13·91	525·5	43·6	542·9	44·5	W
	1	0		16·45	523·3	44·8	539·6	45·7	H
	2	0		17·15	531·8	46·3	537·4	47·1	W
	3	0		16·23	535·4	47·7	537·3	48·5	W
	4	0		15·67	......	......	......	......	W
	5	0		15·18	538·4	50·7	537·6	51·2	W
	6	0		13·22	541·6	52·0	549·6	52·2	H
	7	0		10·67	544·5	52·8	557·7	52·8	H
	8	0		09·29	543·9	53·3	561·2	53·0	W
	9	0		09·12	539·9	53·2	557·2	53·0	H
	10	0		10·61	539·9	52·9	548·3	52·7	H
	11	0		10·53	538·4	52·5	544·4	52·3	B
	12	0		10·95	538·6	52·0	540·6	51·7	B
16	13	0	25	11·12	538·1	51·5	537·1	51·0	B
	14	0		11·10	536·7	51·0	523·2	50·4	B
	15	0		10·18	535·2	50·5	529·7	49·8	B
	16	0		09·19	533·3	50·0	537·8	49·3	B
	17	0		09·44	533·3	49·5	544·2	48·9	B
	18	0		08·95	533·4	49·0	549·3	48·4	B
	19	0		08·48	531·4	48·7	553·4	48·0	H
	20	0		07·55	527·8	48·3	558·6	47·8	H
	21	0		06·56	525·6	48·1	559·1	47·6	W
	22	0		08·38	522·6	48·0	555·1	47·6	H
	23	0		11·41	521·1	47·9	545·8	47·6	H
17	0	0		13·69	522·8	48·0	538·6	48·2	H
	1	0		14·85	522·0	48·2	535·3	48·8	H
	2	0		16·66	530·3	48·8	540·1	49·7	H
	3	0		15·47	536·0	49·8	540·2	50·7	H
	4	0		14·01	537·3	50·7	540·8	51·7	H
	5	0		13·74	540·6	51·6	541·5	52·7	H
	6	0		12·16	542·9	52·5	541·3	53·6	W
	7	0		11·66	544·2	53·1	540·5	54·2	H
	8	0		10·70	542·0	53·7	546·1	54·5	H
	9	0		07·87	546·2	53·9	547·4	54·6	H
	10	0		10·14	540·4	54·0	546·4	54·5	H
	11	0		09·96	538·5	53·9	543·9	54·3	W
	12	0		10·74	538·5	53·7	537·9	54·1	W
	13	0	25	10·53	538·4	53·4	537·3	53·8	W
	14	0		10·54	537·7	53·1	536·5	53·4	W
	15	0		10·33	537·2	52·9	536·5	53·0	W
	16	0		09·40	537·3	52·6	537·2	52·7	W
	17	0		08·79	536·4	52·4	537·0	52·4	W
	18	0		08·08	535·0	52·2	540·0	52·2	W
	19	0		06·73	533·3	52·0	540·6	52·0	H
	20	0		06·06	531·8	51·8	539·9	51·7	H
	21	0		06·53	529·2	51·7	538·3	51·7	H
	22	0		08·92	525·4	51·6	537·4	51·7	H
	23	0		11·07	523·6	51·6	537·5	51·9	H
18	0	0		15·11	526·1	51·8	531·2	52·2	H
	1	0		16·68	531·1	52·0	520·9	52·5	H
	2	0		18·07	538·0	52·3	524·2	52·8	B
	3	0		19·89	551·5	52·7	529·2	53·3	H
	4	0		18·47	541·1	53·0	552·3	53·7	H
	5	0		17·96	536·6	53·3	570·0	54·0	B
	6	0		16·33	553·1	53·5	564·6	54·2	W
	7	0		13·23	550·6	53·7	579·5	54·3	W
	8	0†		08·32	543·9	53·6	593·6	54·1	W
	9	0†		03·50	531·7	53·5	574·2	54·0	W
	10	0†		01·59	533·1	53·3	546·6	53·7	W
	11	0		08·80	538·0	53·0	550·6	53·2	H
	12	0		10·20	538·3	52·8	544·7	52·7	H
	13	0†	25	10·16	539·7	52·4	539·1	52·2	H
	14	0†		07·89	536·2	52·0	477·7	51·7	H
	15	0†		00·94	525·1	51·7	482·0	51·4	H
	16	0		08·41	521·3	51·4	500·7	51·0	H
	17	0		08·05	536·5	51·0	485·3	50·6	H
	18	0		05·60	534·1	50·7	507·9	50·2	H
	19	0		04·04	535·0	50·3	521·8	49·7	W
	20	0		04·48	530·0	50·0	526·2	49·3	W

DECLINATION. Magnet untouched, April 2^d—May 8^d.

BIFILAR. Observed 2^m after the Declination, $k=0·000140$. BALANCE. Observed 3^m after the Declination, $k=0000100$..

† Extra Observations made.

April 16^d $9\frac{1}{2}^h$. The cotton cover of the bifilar magnetometer was replaced, having been removed at 13^d 15^h.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
18	21	0	25	06·98	527·4	49·8	533·1	49·2	B
	22	0		09·29	526·1	49·7	531·0	49·2	W
	23	3		11·46	524·3	49·6	534·4	49·5	W
19	0	0		14·23	525·8	49·7	527·1	49·8	W
	1	0		17·56	529·6	50·1	513·8	50·4	W
	2	0		18·50	536·1	50·6	515·3	51·1	W
	3	0		17·27	541·2	51·2	523·9	51·9	W
	4	0		15·98	546·9	51·9	527·9	52·7	W
	5	0†		16·28	570·1	52·6	539·1	53·2	W
	6	0		12·72	547·6	53·1	541·2	53·7	H
	7	0		11·51	549·0	53·4	555·7	54·0	H
	8	0		11·37	549·4	53·7	557·4	54·0	H
	9	0†		01·11	538·4	53·6	534·2	53·5	H
	10	0		07·82	534·5	53·3	540·2	53·0	H
	11	0		06·77	525·9	52·9	543·4	52·5	B
	12	0		03·54	530·2	52·4	529·9	51·8	B
20	13	0†	25	15·17	519·6	54·2	434·0	54·1	W
	14	0†		04·32	530·5	53·6	467·2	53·5	W
	15	0		08·75	530·5	53·1	514·8	52·7	W
	16	0		08·26	533·7	52·5	524·9	51·9	W
	17	0		09·56	530·0	51·9	525·4	51·0	W
	18	0		13·54	524·4	51·3	522·6	50·2	W
	19	8		08·05	530·2	50·7	529·1	49·4	B
	20	0		06·19	525·3	50·2	547·1	49·1	B
	21	0		04·41	518·9	49·8	552·7	49·0	H
	22	0		07·64	509·8	49·4	558·2	49·0	H
	23	0		09·87	511·6	49·6	557·1	49·4	H
21	0	0		13·44	512·5	49·8	550·3	50·2	B
	1	3		16·19	524·1	50·5	538·8	51·7	H
	2	0		17·76	526·7	51·7	542·0	53·2	H
	3	0		16·57	537·4	53·0	546·3	54·7	H
	4	0		15·24	540·2	54·5	540·3	56·0	B
	5	0		14·51	548·4	55·7	534·5	57·2	H
	6	0		13·97	547·6	56·8	534·1	58·2	H
	7	0		12·49	545·3	57·7	544·0	58·7	W
	8	0		10·43	545·5	58·1	552·0	58·9	W
	9	3		07·52	537·8	58·4	552·5	58·8	W
	10	0		10·09	536·6	58·1	549·2	58·5	W
	11	0		10·56	540·5	57·8	540·7	58·2	H
	12	0		14·33	535·5	57·3	533·5	57·3	H
	13	0	25	12·62	538·1	56·7	512·5	56·5	H
	14	0		10·01	534·7	55·9	523·8	55·6	H
	15	0		09·69	534·0	55·2	533·4	54·7	H
	16	0		11·49	527·4	54·5	540·4	53·6	H
	17	0		12·82	529·9	53·7	531·5	52·5	H
	18	0		10·21	534·1	53·0	533·3	51·7	H
	19	0		08·38	529·4	52·4	537·9	50·8	W
	20	2		05·96	525·6	51·8	551·3	50·2	W
	21	0		05·40	517·5	51·2	559·2	49·9	B
	22	0		06·88	516·2	50·9	554·0	50·0	W
	23	0		10·36	517·8	50·8	546·2	50·4	W
22	0	0		14·82	519·2	51·0	539·2	51·3	W
	1	0		17·54	523·4	51·6	535·6	52·4	B
	2	0		18·03	529·5	52·5	540·2	53·5	W
	3	0		17·09	537·0	53·5	547·7	54·7	H
	4	0		15·51	537·3	54·6	549·7	55·9	H
22	5	0	25	13·69	540·3	55·7	543·8	56·8	W
	6	0		12·42	545·9	56·7	539·5	57·4	H
	7	0		11·08	544·0	57·2	541·9	57·9	H
	8	0		09·51	544·6	57·4	541·7	58·0	H
	9	0		10·33	540·2	57·4	539·0	57·7	H
	10	0		09·82	538·8	57·2	534·9	57·3	H
	11	0		11·21	542·4	56·8	526·5	56·7	B
	12	0		08·53	535·6	56·3	517·5	56·0	B
	13	0	25	09·32	538·0	55·7	521·3	55·3	B
	14	0		09·96	535·8	55·0	529·7	54·4	B
	15	0		09·51	534·9	54·3	534·5	53·4	B
	16	0		09·32	534·6	53·6	537·5	52·4	B
	17	0		10·54	534·1	52·8	535·3	51·5	B
	18	0		07·74	533·3	52·1	534·5	50·5	B
	19	0		06·56	532·7	51·4	531·2	49·7	H
	20	0		05·62	530·6	50·8	531·6	49·2	H
	21	0		05·20	525·6	50·4	533·2	49·0	W
	22	0		08·08	523·7	50·1	534·1	49·0	H
	23	0		11·44	521·2	49·9	536·4	49·4	H
23	0	0		17·15	524·7	50·1	534·9	50·2	H
	1	0		19·28	527·0	50·7	532·5	51·4	H
	2	0		20·67	536·2	51·6	533·5	52·6	H
	3	0		19·93	536·5	52·6	537·1	54·0	H
	4	0		18·23	539·4	53·6	537·2	55·0	H
	5	0		16·41	543·1	54·5	537·5	55·7	H
	6	0		14·64	547·4	55·3	543·2	56·2	B
	7	0		12·49	550·4	55·8	551·4	56·5	B
	8	0		11·84	550·3	56·0	549·1	56·5	B
	9	0		09·73	549·3	55·9	541·8	56·0	B
	10	0		09·47	544·5	55·4	540·8	55·6	H
	11	0		10·13	546·5	54·9	533·5	55·0	H
	12	0		10·97	544·4	54·5	528·9	54·6	H
	13	0	25	10·56	540·5	54·1	531·9	54·2	D
	14	0		10·50	542·6	53·7	523·5	53·7	D
	15	0		08·88	542·4	53·3	523·5	53·2	D
	16	0		09·02	540·3	52·9	521·4	52·6	D
	17	0		07·40	536·0	52·5	526·7	52·1	D
	18	0		07·13	536·5	52·1	534·3	51·5	W
	19	0		08·56	535·6	51·6	537·0	50·8	W
	20	0		07·81	534·1	51·0	539·6	50·2	W
	21	0		09·69	530·6	50·6	540·0	49·7	W
	22	0		08·95	522·7	50·1	542·8	49·3	B
	23	0		11·34	523·4	49·8	537·1	49·2	H
24	0	0		14·91	523·7	49·7	530·6	49·3	B
	1	0		18·30	525·1	49·7	525·9	49·6	B
	2	0		22·24	537·4	50·1	521·5	50·5	H
	3	0		21·19	528·4	50·8	537·2	51·7	H
	4	0		22·11	565·5	51·5	535·1	52·6	H
	5	0		19·31	547·1	52·5	556·2	53·5	B
	6	0		18·85	560·7	53·2	571·1	54·1	D
	7	0		15·85	545·6	53·7	593·5	54·4	D
	8	0		14·50	544·5	54·0	572·9	54·6	D
	9	0		12·65	543·4	54·0	555·4	54·5	W
	10	0		11·34	542·0	53·8	545·6	54·2	W
	11	0		10·90	540·1	53·4	538·9	53·5	H
	12	0		10·09	538·6	53·0	534·4	52·9	H

DECLINATION. Magnet untouched, April 2ᵈ—May 8ᵈ.

BIFILAR. Observed 2ᵐ after the Declination, k=0·000140. BALANCE. Observed 3ᵐ after the Declination, k=0·000010.

† Extra Observations made.
April 23ᵈ 10ʰ—24ᵈ 10ʰ. Term-Day Observations made.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
24	13	0	25	09·82	540·9	52·6	529·9	52·4	H
	14	0		09·05	536·6	52·2	532·7	51·8	H
	15	0		10·06	535·9	51·8	535·6	51·2	H
	16	0		10·31	535·8	51·3	539·8	50·6	H
	17	0		10·43	534·4	50·9	540·6	50·2	H
	18	0		09·46	531·3	50·4	543·0	49·7	H
	19	0		10·53	531·9	50·0	539·8	49·3	W
	20	0		12·25	534·1	49·7	513·1	48·8	W
	21	0		06·46	534·4	49·3	516·2	48·5	B
	22	0		07·54	525·7	49·0	514·2	48·4	W
	23	0		13·22	518·0	48·9	523·2	48·5	W
25	0	0		15·34	508·9	48·9	531·8	48·8	W
	1	0		19·37	526·3	49·1	554·9	49·3	W
	2	0		24·12	524·8	49·7	566·5	50·2	W
	3	0		24·80	536·6	50·5	567·3	51·5	W
	4	0		21·86	535·8	51·6	573·7	52·7	W
	5	0		19·62	547·1	52·4	585·7	53·6	W
	6	0		08·85	546·5	53·0	605·4	54·2	H
	7	0		08·92	548·0	53·4	592·2	54·7	H
	8	0		09·42	543·3	53·8	571·5	55·0	H
	9	0		10·50	540·2	53·9	570·4	55·0	H
	10	0		06·93	544·3	54·0	545·7	55·0	H
	11	0		10·16	553·1	54·0	517·7	55·0	B
	12	0		09·62	536·4	54·0	498·0	55·0	B
	13	0	25	10·38	537·3	54·0	504·1	55·0	B
	14	0		11·41	533·9	54·0	513·5	54·9	B
	15	0		14·04	535·1	54·0	509·2	54·7	B
	16	0		10·80	535·0	53·9	516·4	54·6	B
	17	0		09·77	535·9	53·8	521·5	54·5	B
	18	0		08·01	535·6	53·7	527·8	54·3	B
	19	0		08·97	531·9	53·5	529·4	54·2	H
	20	0		07·07	529·8	53·5	530·7	54·2	H
	21	0		07·60	525·6	53·5	534·1	54·1	W
	22	0		09·42	517·4	53·5	529·1	54·1	H
	23	0		12·51	513·8	53·5	525·8	54·2	H
26	0	0		16·57	519·0	53·6	526·7	54·4	H
	1	0		21·34	521·1	53·9	523·7	54·7	H
	2	0		21·97	531·0	54·2	516·3	55·0	H
	3	0		20·18	540·1	54·5	519·6	55·5	H
	4	0		17·34	547·8	55·0	522·3	56·0	H
	5	0		15·52	550·0	55·5	531·2	56·4	H
	6	0		13·66	545·1	56·0	538·3	56·7	B
	7	0		11·79	552·3	56·4	535·1	56·9	B
	8	0		10·28	554·6	56·6	533·4	56·9	B
	9	0		10·58	547·4	56·5	537·1	56·5	B
	10	0		10·04	546·4	56·1	531·7	56·0	B
	11	0		10·54	541·0	55·7	524·0	55·5	W
	12	0	25	10·56	539·3	55·3	523·7	55·2	W
27	13	0†	24	59·73	529·5	52·3	265·5	52·2	H
	14	0†	24	59·37	545·4	52·2	426·3	52·2	H
	15	0†	25	01·01	535·4	52·1	483·4	52·1	H
	16	0†	24	57·53	529·0	52·0	465·8	52·0	H
	17	0†	25	21·32	487·6	51·9	231·3	51·9	H
	18	0†		05·49	524·8	51·7	359·2	51·7	H
	19	0		02·50	523·6	51·6	476·3	51·5	W
	20	0		04·19	528·1	51·5	504·2	51·3	W
27	21	0	25	04·79	520·4	51·4	513·1	51·2	B
	22	0		09·93	510·7	51·3	514·4	51·3	W
	23	0		13·88	509·1	51·4	518·5	51·5	W
28	0	0		16·39	516·6	51·6	518·9	51·9	W
	1	6		19·71	518·0	51·9	533·8	52·3	W
	2	0		19·46	530·1	52·2	557·9	52·7	B
	3	0		17·10	542·2	52·6	572·3	53·2	W
	4	4		13·99	548·2	53·0	591·5	53·8	W
	5	0		13·23	550·1	53·5	581·6	54·3	W
	6	0		12·58	548·8	53·8	567·6	54·5	H
	7	0		08·79	541·0	54·0	559·4	54·6	H
	8	0		08·01	544·4	54·0	555·3	54·6	H
	9	0		06·98	540·8	53·9	545·5	54·5	H
	10	0		11·89	536·9	53·8	532·5	54·3	H
	11	0		11·52	538·5	53·6	525·3	54·0	B
	12	0		10·20	538·8	53·4	519·2	53·6	B
	13	0	25	11·41	543·5	53·2	497·9	53·2	B
	14	0		06·97	536·0	52·9	492·8	52·9	B
	15	0		09·10	532·4	52·6	495·1	52·5	B
	16	0		08·61	529·8	52·3	498·7	52·2	B
	17	0		08·48	530·7	52·0	502·1	51·8	B
	18	0		06·66	528·7	51·8	513·7	51·4	B
	19	0		06·73	525·0	51·7	522·9	51·3	H
	20	0		05·45	526·6	51·6	521·9	51·2	H
	21	0		05·97	522·6	51·6	515·4	51·3	W
	22	0		09·17	519·4	51·5	508·7	51·7	H
	23	0		12·25	522·8	51·7	506·4	52·2	H
29	0	0		15·89	526·0	52·2	496·8	52·7	H
	1	0		19·32	526·8	52·7	500·8	53·7	H
	2	0		19·84	525·4	53·4	504·3	54·7	H
	3	0		17·91	524·1	54·1	509·1	55·3	H
	4	0		15·65	526·6	54·8	514·4	56·0	H
	5	0		13·54	534·5	55·4	516·7	56·5	H
	6	0		12·78	540·6	55·8	521·7	56·6	B
	7	0		11·30	546·8	55·9	534·0	56·6	B
	8	4		09·26	541·9	55·8	544·0	56·5	B
	9	0		10·25	540·4	55·7	539·8	56·2	B
	10	0		11·57	538·7	55·5	532·5	55·9	B
	11	0		11·52	537·3	55·2	526·4	55·5	W
	12	0		11·10	536·6	54·9	525·7	55·2	W
	13	0	25	10·95	537·0	54·6	525·7	54·8	W
	14	0		10·90	536·1	54·3	525·4	54·4	W
	15	0		10·60	534·8	54·0	527·9	54·1	W
	16	0		10·47	534·7	53·8	529·9	53·8	W
	17	0		10·18	534·8	53·6	530·9	53·5	W
	18	0		09·49	534·0	53·3	533·9	53·2	W
	19	0		08·21	535·7	53·1	536·6	52·9	B
	20	0		06·76	531·9	52·9	539·4	52·7	B
	21	0		07·79	526·2	52·8	534·6	52·7	H
	22	0		10·50	519·7	52·8	528·7	53·0	H
	23	0		13·39	519·4	53·0	523·6	53·5	H
30	0	0		15·01	521·5	53·2	516·5	53·7	H
	1	0		17·70	523·7	53·4	511·5	54·0	H
	2	0		17·22	532·2	53·7	508·5	54·4	B
	3	0		16·89	529·9	54·0	522·9	54·7	B
	4	0		14·17	532·1	54·3	529·5	55·0	B

DECLINATION. Magnet untouched, April 2^{d}—May 8^{d}.

BIFILAR. Observed 2^{m} after the Declination, k=0·000140. BALANCE. Observed 3^{m} after the Declination, k=0·000010.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			Declination.		Bifilar.		Balance.		Observer's Initial.	Göttingen Mean Time of Declination Obs.			Declination.		Bifilar.		Balance.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.							Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°		d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
30	5	0	25	12·31	536·7	54·7	531·7	55·4	B	2	13	0	25	10·63	536·6	53·3	525·9	52·8	W
	6	0		11·62	541·7	55·0	536·8	55·7	W		14	0		10·70	536·9	52·8	527·3	52·3	W
	7	0		11·01	552·2	55·2	534·6	55·8	W		15	0		10·36	533·9	52·4	529·4	51·8	W
	8	0		13·50	551·5	55·3	529·8	55·8	W		16	0		09·87	535·4	52·0	529·5	51·3	W
	9	0		11·75	553·7	55·3	528·7	55·8	W		17	0		08·70	534·6	51·7	530·9	50·8	W
	10	0		10·45	550·6	55·2	529·4	55·7	W		18	0		06·74	531·9	51·3	536·8	50·4	W
	11	5		03·54	552·8	55·1	483·7	55·4	H		19	0		05·05	531·3	50·9	541·3	50·1	B
	12	0†	25	07·76	538·1	55·0	483·0	55·5	H		20	0		03·50	528·2	50·7	537·1	50·0	B
											21	0		04·75	527·6	50·5	524·8	49·9	H
	13	0†	24	57·35	518·1	54·8	409·1	55·4	H		22	0		07·47	526·5	50·4	522·2	50·0	H
	14	0†	24	56·90	533·2	54·7	255·5	55·2	H		23	0		10·78	523·7	50·4	520·1	50·2	H
	15	0†	25	09·08	507·9	54·5	256·1	55·0	H	3	0	0		13·37	520·3	50·5	521·0	50·4	B
	16	0†		08·52	516·1	54·4	153·6	54·8	H		1	0		15·01	524·5	50·8	518·9	50·8	H
	17	0		07·47	534·8	54·2	367·4	54·6	H		2	0		15·67	530·1	51·1	527·0	51·4	B
	18	0		14·37	524·9	54·0	442·5	54·3	H		3	0		13·90	532·2	51·5	526·3	52·0	H
	19	0		09·00	529·8	53·9	447·0	54·1	W		4	0		11·91	536·5	51·9	528·2	52·5	H
	20	0		09·17	532·4	53·8	475·6	54·0	W		5	0		10·18	541·0	52·3	527·5	53·0	H
	21	0		15·29	522·1	53·8	483·3	53·9	B		6	0		10·43	544·4	52·8	532·3	53·5	W
	22	0		13·83	522·2	53·8	491·5	54·2	W		7	0		10·30	545·9	53·3	532·8	54·0	W
	23	0		16·90	526·8	53·9	500·6	54·5	W		8	0		10·54	545·6	53·7	529·3	54·2	W
1	0	0		18·00	530·0	54·3	504·8	54·8	W		9	0		10·77	541·6	53·7	525·3	54·0	W
	1	13		17·63	529·9	54·6	519·6	55·2	W		10	0		11·08	543·3	53·6	523·1	53·7	W
	2	0		18·11	537·1	54·7	534·7	55·3	W		11	0		11·25	541·7	53·2	521·7	53·1	H
	3	0		16·92	534·5	54·8	549·3	55·4	W		12	0		11·08	543·1	52·8	520·2	52·5	H
	4	0		12·55	534·2	55·1	567·5	55·9	W										
	5	0		11·10	542·2	55·4	571·3	56·3	W	4	13	0	25	11·10	539·8	50·5	530·4	49·9	B
	6	0		10·60	546·7	55·7	561·5	56·4	H		14	0		10·74	540·7	50·1	532·4	49·5	B
	7	0		09·05	550·9	55·9	558·5	56·5	H		15	0		10·63	540·0	49·7	534·2	49·0	B
	8	0		10·61	543·0	56·0	548·9	56·5	H		16	0		10·90	540·0	49·2	535·7	48·5	B
	9	0		11·17	538·6	55·8	537·4	56·1	H		17	0		08·18	537·3	48·8	538·5	48·0	B
	10	0		11·34	538·4	55·4	530·9	55·5	H		18	10		07·54	535·3	48·3	545·1	47·4	B
	11	0		11·77	537·7	55·0	527·5	54·9	B		19	0		06·14	531·3	47·9	548·4	47·2	H
	12	0		11·84	536·3	54·6	526·6	54·3	B		20	0		05·96	527·5	47·7	548·7	47·0	H
											21	0		06·57	523·5	47·5	543·3	46·8	W
	13	0	25	11·71	533·9	54·1	527·6	53·7	B		22	0		10·06	521·0	47·4	544·7	47·0	H
	14	0		11·14	533·2	53·7	529·4	53·2	B		23	0		11·81	521·6	47·4	545·2	47·2	H
	15	0		10·74	533·0	53·3	530·9	52·7	B	5	0	0		14·30	524·4	47·5	541·9	47·5	H
	16	0		09·86	533·0	52·9	533·3	52·2	B		1	0		15·89	528·4	47·7	534·3	48·0	H
	17	0		09·03	533·2	52·5	536·0	51·8	B		2	0		15·76	535·0	48·1	533·6	48·6	H
	18	0		07·54	531·8	52·2	537·7	51·3	B		3	0		14·77	536·8	48·5	535·7	49·2	H
	19	0		06·63	532·7	52·0	536·9	51·2	H		4	0		13·46	541·7	48·9	539·4	49·6	H
	20	0		05·52	531·3	51·8	540·1	51·2	H		5	0		12·13	543·6	49·3	546·2	50·0	H
	21	0		07·20	529·9	51·7	538·0	51·2	W		6	0		10·28	548·4	49·9	555·5	50·3	B
	22	0		09·24	528·3	51·6	537·1	51·4	H		7	0		09·76	550·2	50·2	558·6	50·4	B
	23	0		10·85	526·2	51·6	529·6	51·6	H		8	0		09·80	547·5	50·4	556·0	50·5	B
2	0	0		12·83	525·8	51·8	521·5	52·0	H		9	0		09·80	543·8	50·5	553·9	50·5	B
	1	0		14·57	526·7	52·1	521·1	52·5	H		10	0		11·71	542·1	50·3	543·1	50·1	B
	2	0		15·05	530·1	52·5	526·1	53·2	H		11	0		12·22	540·9	50·0	538·2	49·7	W
	3	0		14·50	534·1	53·0	529·2	54·0	H		12	0		12·08	539·2	49·6	537·5	49·3	W
	4	0		13·22	540·3	53·5	530·4	54·6	H										
	5	0		12·01	541·4	54·0	533·4	55·0	H		13	0	25	12·25	539·1	49·3	538·0	48·9	W
	6	0		10·94	543·8	54·5	533·6	55·2	B		14	0		11·46	537·6	49·0	540·0	48·5	W
	7	0		10·01	542·7	54·8	532·5	55·4	B		15	0		11·27	536·6	48·7	542·0	48·2	W
	8	0		09·86	543·1	54·9	529·7	55·3	B		16	0		10·51	536·7	48·4	544·6	47·9	W
	9	0		11·03	539·9	54·8	525·6	55·0	B		17	0		08·97	535·9	48·1	548·7	47·6	W
	10	0		11·03	539·1	54·5	522·8	54·5	B		18	0		06·19	532·1	47·9	554·7	47·4	W
	11	0		10·63	537·7	54·1	522·7	54·0	W		19	0		04·55	529·7	47·7	552·5	47·2	B
	12	0		10·56	536·3	53·7	526·5	53·4	W		20	0		04·51	527·7	47·6	548·7	47·2	B

DECLINATION. Magnet untouched, April 2^d—May 8^d.

BIFILAR. Observed 2^m after the Declination. k=0·000140. BALANCE. Observed 3^m after the Declination, k=0·000010.

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† Extra Observations made.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
5	21	0	25	06·50	525·1	47·5	539·1	47·3	H
	22	0		10·36	522·9	47·5	546·7	47·4	B
	23	0		13·72	519·5	47·6	541·9	47·7	H
6	0	0		16·72	521·1	47·8	538·5	48·0	B
	1	0		17·70	528·5	48·0	531·2	48·5	H
	2	0		15·52	537·4	48·6	538·2	49·0	B
	3	0		13·59	542·6	49·0	538·6	49·5	H
	4	0		11·79	545·0	49·5	544·8	49·9	B
	5	0		10·50	544·1	49·9	548·3	50·3	B
	6	0		10·45	545·5	50·1	547·2	50·5	W
	7	0		11·42	548·1	50·3	542·9	50·5	W
	8	0		10·67	544·4	50·2	542·7	50·3	W
	9	0		10·47	546·0	50·0	540·1	50·0	W
	10	0		08·97	544·4	49·9	536·0	49·8	W
	11	0		10·07	541·2	49·7	529·1	49·5	H
	12	0		11·21	540·3	49·3	531·0	49·2	H
	13	0	25	11·55	540·1	49·0	532·1	49·0	H
	14	0		10·56	538·5	48·8	536·7	48·7	H
	15	0		11·03	539·7	48·5	536·8	48·2	H
	16	0		10·95	539·2	48·2	538·6	47·7	H
	17	0		10·63	539·9	47·9	542·4	47·4	H
	18	0		08·21	535·8	47·7	543·6	47·1	H
	19	0		06·50	533·0	47·5	549·4	46·9	W
	20	0		04·68	528·7	47·3	549·1	46·7	W
	21	0		06·83	520·7	47·1	541·6	46·7	B
	22	0		10·01	519·4	47·1	538·5	46·8	W
	23	0		13·59	520·4	47·1	531·4	47·0	W
7	0	0		17·02	520·0	47·2	531·2	47·2	W
	1	0		18·82	528·9	47·3	533·7	47·5	W
	2	0		18·70	533·3	47·6	536·6	47·7	W
	3	0		15·85	537·8	47·7	545·2	47·8	W
	4	0		14·03	551·4	47·7	549·8	47·8	W
	5	0		11·98	541·4	47·7	561·0	47·7	W
	6	0		10·54	549·2	47·5	553·6	47·3	W
	7	0		10·67	544·1	47·3	554·2	47·0	W
	8	0		10·83	545·9	47·1	549·6	46·7	W
	9	0		11·37	546·3	46·8	543·8	46·3	H
	10	0		11·55	545·5	46·5	544·5	46·0	H
	11	0		10·74	543·4	46·3	546·2	45·7	B
	12	0		11·00	541·0	46·0	547·8	45·5	B
	13	0	25	11·17	540·6	45·8	550·0	45·3	B
	14	0		10·74	539·9	45·6	551·0	45·0	B
	15	0		10·90	539·6	45·3	551·6	44·7	B
	16	0		10·27	539·2	45·0	554·6	44·5	B
	17	0		09·42	538·6	44·8	557·4	44·2	B
	18	0		07·00	535·4	44·6	561·2	43·9	B
	19	0		05·83	533·1	44·4	560·6	43·7	H
	20	0		05·22	528·8	44·2	561·5	43·7	H
	21	0		06·37	524·5	44·1	557·9	44·0	H
	22	0		09·29	521·8	44·2	546·1	44·3	W
	23	0		13·25	522·5	44·6	539·5	44·7	W
8	0	0		16·38	525·8	44·8	530·5	45·3	W
	1	0		17·56	531·3	45·4	526·0	45·8	W
	2	0		17·58	538·2	45·8	528·5	46·3	W
	3	0		17·10	543·7	46·3	531·5	46·8	W
	4	0		16·36	543·6	46·8	548·1	47·5	W
8	5	0	25	14·33	549·6	47·4	554·0	48·2	H
	6	0		12·82	549·9	47·9	558·6	48·7	B
	7	0		10·81	551·2	48·4	556·0	49·0	B
	8	0		10·56	550·8	48·7	547·4	49·0	B
	9	0		11·77	547·3	48·6	541·5	48·8	B
	10	0		11·51	547·7	48·4	534·0	48·5	B
	11	0		10·98	544·6	48·1	531·9	48·2	W
	12	0		11·05	543·1	47·8	529·6	47·7	W
	13	0	25	10·18	544·8	47·5	526·6	47·2	W
	14	0		10·01	543·1	47·1	531·3	46·8	W
	15	0		09·69	542·5	46·7	535·4	46·4	W
	16	0		09·46	542·1	46·4	536·8	46·0	W
	17	0		08·85	539·8	46·1	540·6	45·6	W
	18	0		07·76	535·8	45·8	540·6	45·3	W
	19	0		05·09	532·8	45·6	539·5	45·0	B
	20	0		04·78	519·1	45·3	539·1	44·9	H
	21	0		06·88	525·2	45·0	534·4	44·8	H
	22	0		10·78	523·2	44·8	526·2	44·7	H
	23	0		14·30	526·5	44·8	514·5	44·7	H
9	0	0		17·70	528·0	44·8	514·6	45·0	H
	1	0		19·21	533·0	45·0	416·3	45·4	H
	2	0		19·34	538·6	45·3	521·1	45·8	H
	3	0		16·60	537·3	45·8	536·4	46·8	H
	4	0		15·14	543·6	46·6	539·7	47·2	H
	5	0		13·10	549·2	47·1	540·9	47·7	H
	6	0		11·34	549·8	47·6	543·7	48·0	W
	7	0		10·70	551·0	47·8	543·1	48·2	W
	8	0		10·13	549·9	47·9	540·4	48·2	W
	9	0		10·51	547·6	47·9	537·9	48·2	W
	10	0		11·07	545·1	47·7	532·6	48·0	W
	11	0		10·94	543·0	47·5	530·8	47·7	H
	12	0		10·77	546·4	47·3	526·2	47·5	H
	13	0	25	10·43	541·1	47·1	527·3	47·3	H
	14	0		11·10	542·1	47·0	524·0	47·1	H
	15	0		08·72	539·5	46·9	528·2	47·0	H
	16	0		09·02	539·8	46·7	530·7	46·8	H
	17	0		09·05	538·4	46·5	534·0	46·5	H
	18	0		06·98	539·1	46·4	534·4	46·2	H
	19	0		05·56	538·8	46·3	534·9	46·2	W
	20	0		05·55	536·0	46·2	531·8	46·2	W
	21	0		06·36	531·9	46·2	521·5	46·3	W
	22	0		09·12	528·2	46·4	519·1	46·6	W
	23	0		12·78	524·8	46·7	520·9	47·1	W
10	0	0		16·19	523·7	47·0	517·3	47·5	W
	1	0		16·72	526·6	47·5	519·8	48·0	W
	2	0		16·57	531·4	47·9	522·2	48·5	W
	3	0		15·32	535·4	48·3	526·2	48·9	W
	4	0		13·67	544·6	48·7	547·1	49·3	W
	5	0		12·96	548·8	48·9	531·2	49·5	W
	6	0		11·77	550·1	49·1	536·6	49·7	H
	7	0		11·46	552·6	49·2	533·2	49·8	H
	8	0		11·21	547·5	49·4	531·1	49·9	H
	9	0		11·64	545·2	49·6	528·9	50·0	H
	10	0		10·90	544·6	49·6	521·6	49·8	H
	11	0		11·12	541·2	49·4	524·0	49·6	W
	12	0		10·70	540·6	49·2	522·8	49·3	W

DECLINATION. Torsion removed,—May 8d $3\frac{1}{2}^h$, $-\frac{1}{2}°$. Effect of + 10° of torsion = − 0′·84.

BIFILAR. Observed 2^m after the Declination, k=0·000140. BALANCE. Observed 3^m after the Declination, k=0·000010.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
11	13	0	25	04·31	533·7	52·3	482·9	52·5	W
	14	0		06·59	535·6	52·0	495·1	52·3	W
	15	0		08·75	538·9	51·7	497·4	51·9	W
	16	0		09·08	538·2	51·5	499·6	51·5	W
	17	0		07·40	535·9	51·2	505·2	51·0	W
	18	0		08·18	534·4	50·9	500·9	50·6	W
	19	0		06·19	535·2	50·8	522·5	50·5	H
	20	0		05·45	535·6	50·7	508·9	50·5	H
	21	0		06·86	531·1	50·7	497·6	50·5	H
	22	0		08·82	530·4	50·6	477·4	50·7	H
	23	0		14·31	531·6	50·7	483·9	51·2	H
12	0	0		17·22	530·1	51·0	482·7	51·8	H
	1	0		18·72	531·8	51·5	483·0	52·4	H
	2	0		18·16	538·8	52·2	493·0	53·0	H
	3	0		17·51	537·0	52·7	498·6	53·7	H
	4	0		15·24	541·2	53·0	509·0	54·0	H
	5	0		14·46	549·0	53·3	518·4	54·2	H
	6	0		13·43	554·2	53·5	516·2	54·3	W
	7	0		12·08	554·3	53·7	510·3	54·5	W
	8	0		12·40	552·8	53·7	508·1	54·4	W
	9	0		12·29	553·8	53·7	505·5	54·1	W
	10	0		11·66	550·3	53·4	503·6	53·8	W
	11	0		11·48	545·2	53·1	503·5	53·4	H
	12	0		10·94	542·7	52·8	500·0	53·0	H
	13	0	25	10·77	542·2	52·5	501·8	52·6	H
	14	0		10·48	541·2	52·3	503·1	52·2	H
	15	0		10·18	540·6	52·0	503·6	51·7	H
	16	0		10·03	541·3	51·5	504·8	51·0	H
	17	0		08·80	540·0	51·0	511·6	50·5	H
	18	0		07·85	540·4	50·7	514·0	50·0	H
	19	0		07·34	537·4	50·4	516·6	49·7	W
	20	0		07·18	532·9	50·2	518·4	49·6	W
	21	0		08·29	525·8	50·1	517·6	49·7	W
	22	0		10·11	527·7	50·0	508·2	49·9	W
	23	0		12·48	524·3	50·2	494·6	50·3	W
13	0	0		15·39	528·5	50·4	484·7	50·7	W
	1	0		18·67	543·1	50·8	475·4	51·2	W
	2	0		19·89	541·9	51·2	485·6	51·7	W
	3	0		19·39	540·7	51·6	498·0	52·2	W
	4	0		16·21	542·9	52·0	507·7	52·7	W
	5	0		14·82	547·6	52·4	509·6	53·2	W
	6	0		10·92	553·6	52·8	516·2	53·8	H
	7	0		12·11	554·8	53·2	518·5	54·2	H
	8	0		12·65	551·4	53·6	516·0	54·5	H
	9	0		12·62	550·3	53·7	511·8	54·3	H
	10	0		08·66	540·9	53·7	511·2	54·0	H
	11	0		08·85	539·9	53·3	506·0	53·4	D
	12	0		07·24	534·9	52·8	502·1	52·8	D
	13	0	25	09·30	535·2	52·4	499·2	52·4	D
	14	0		07·71	533·3	52·0	491·6	51·9	D
	15	0		11·10	539·7	51·5	449·8	51·1	D
	16	0		06·73	548·6	50·9	450·2	50·2	D
	17	0		07·15	536·2	50·5	474·5	49·3	D
	18	0		06·48	529·6	50·0	500·1	48·8	D
	19	0		06·66	532·2	49·5	516·4	48·5	H
	20	0		07·35	528·8	49·0	515·5	48·3	H

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
13	21	0	25	06·84	526·3	48·9	518·7	48·4	W
	22	0		10·33	523·8	48·8	512·6	48·7	H
	23	0		14·38	524·9	49·0	506·2	49·5	H
14	0	0		18·23	523·6	49·6	503·8	50·3	H
	1	0		20·62	529·5	50·1	504·1	51·0	H
	2	0		19·95	536·6	50·7	503·9	51·5	H
	3	0		19·51	557·1	51·2	505·9	52·0	H
	4	0		17·96	549·5	51·5	521·0	52·5	H
	5	0		16·75	548·5	51·8	527·8	52·6	H
	6	0		10·77	553·5	51·9	549·8	52·5	B
	7	0		11·27	547·4	51·9	545·8	52·5	B
	8	0		12·02	551·3	51·9	529·0	52·4	B
	9	0		12·11	545·4	51·9	521·1	52·3	B
	10	0		11·88	550·2	51·8	514·4	52·2	B
	11	0		13·41	550·2	51·7	511·1	52·2	W
	12	0†		11·71	550·4	51·6	492·9	52·0	W
	13	0†	25	13·16	549·7	51·5	461·1	51·9	W
	14	0		09·20	539·9	51·3	465·0	51·7	W
	15	0		09·20	536·5	51·2	483·1	51·4	W
	16	0		07·58	537·7	51·0	495·6	51·1	W
	17	0		06·46	538·3	50·8	505·1	50·8	W
	18	0		04·24	536·9	50·7	510·8	50·5	W
	19	0		05·97	535·6	50·5	507·6	50·3	B
	20	0		06·90	535·4	50·4	500·3	50·3	B
	21	0		10·77	531·0	50·3	497·6	50·4	H
	22	0		11·03	528·4	50·3	491·4	50·6	H
	23	0		14·18	519·5	50·7	489·7	51·3	H
15	0	0		18·63	519·9	51·3	490·5	52·2	B
	1	0		21·50	526·1	52·0	492·6	53·2	H
	2	0		20·96	529·3	52·9	502·5	54·2	B
	3	0		19·51	541·7	53·8	501·2	55·2	H
	4	0		17·76	546·9	54·8	519·7	56·2	H
	5	0		15·51	554·7	55·7	538·1	57·1	B
	6	0		12·22	558·3	56·4	563·8	58·0	W
	7	0		09·96	553·7	57·1	584·8	58·5	W
	8	0		09·49	553·8	57·6	570·8	58·5	W
	9	0		07·54	544·3	57·6	556·5	58·5	W
	10	0		05·82	540·5	57·5	526·3	58·3	W
	11	0		07·55	538·7	57·3	516·2	58·0	H
	12	0		10·30	539·1	57·1	514·8	57·8	H
	13	0	25	10·13	540·9	57·0	513·0	57·6	H
	14	0		11·27	539·7	56·9	511·0	57·4	H
	15	0		10·11	537·0	56·7	509·6	57·2	H
	16	0		09·89	538·3	56·4	510·4	56·8	H
	17	0		08·48	537·0	56·2	519·3	56·4	H
	18	0		07·64	538·0	56·0	524·4	56·2	H
	19	0		04·59	540·1	56·0	526·4	56·1	W
	20	0		05·35	539·1	55·9	520·4	56·0	W
	21	0		05·82	534·0	55·9	510·7	56·2	B
	22	0		06·30	521·3	56·0	503·5	56·4	W
	23	0		13·86	522·3	56·2	499·5	56·8	W
16	0	0		15·20	530·9	56·6	495·3	57·6	W
	1	0		17·06	528·7	57·4	497·9	58·5	W
	2	0		20·65	538·8	58·2	492·9	59·5	W
	3	0		21·51	531·7	59·0	494·3	60·3	W
	4	0		16·97	535·3	59·8	501·8	61·1	W

DECLINATION. Magnet untouched, May 8^{d}—June 18^{d}.

BIFILAR. Observed 2^{m} after the Declination, k=0·000140. BALANCE. Observed 3^{m} after the Declination, k=0·000010.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Cor-rected.	Thermo-meter.	Cor-rected.	Thermo-meter.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
16	5	0†	25	22·03	578·4	60·7	495·7	62·0	W
	6	0†		15.47	528·6	61·2	565·9	62·5	B
	7	0†		13·49	543·3	61·5	567·5	62·7	H
	8	0		11·84	548·2	61·7	545·6	62·7	H
	9	0		11·79	548·5	61·7	529·7	62·4	H
	10	0		10·41	545·9	61·3	518·5	61·7	H
	11	0		11·39	543·9	60·9	512·5	61·0	B
	12	0		11·41	541·2	60·5	512·5	60·4	B
	13	0	25	11·00	541·4	60·0	511·9	59·8	B
	14	0		10·80	539·1	59·5	516·8	59·3	B
	15	0		10·87	536·8	59·1	520·6	58·8	B
	16	0		10·60	537·2	58·7	522·2	58·3	B
	17	0		09·73	535·1	58·3	530·0	57·9	B
	18	0		08·92	533·9	57·9	532·8	57·5	B
	19	0		08·70	530·5	57·6	536·4	57·1	H
	20	0		08·18	526·3	57·3	535·3	56·8	H
	21	0		08·99	522·4	57·1	529·0	56·5	W
	22	0		09·82	521·6	56·9	520·4	56·5	H
	23	0		11·24	523·0	56·9	503·7	56·7	H
17	0	0		13·93	525·8	56·9	491·8	57·0	H
	1	0		16·39	533·7	57·0	495·3	57·3	H
	2	0		16·97	541·8	57·3	501·8	57·7	H
	3	0		16·75	548·4	57·7	507·3	58·2	H
	4	0		15·58	565·1	57·9	505·0	58·5	H
	5	0		13·19	552·7	58·1	517·8	58·7	H
	6	0		12·46	553·1	58·3	522·5	58·7	B
	7	0		11·93	552·5	58·4	526·8	58·7	B
	8	0		12·33	551·8	58·4	524·7	58·7	H
	9	0		09·08	546·5	58·4	529·2	58·3	B
	10	0		10·50	541·8	58·0	527·2	57·8	B
	11	0		11·17	540·2	57·6	524·0	57·1	W
	12	0		05·77	533·5	57·1	532·1	56·5	W
18	13	0†	25	02·70	540·9	52·3	445·1	52·0	H
	14	0†		03·60	522·7	52·1	372·8	51·7	H
	15	0†		09·32	533·4	51·9	403·5	51·5	H
	16	0†		20·62	508·3	51·6	363·7	51·2	H
	17	0†		10·11	526·7	51·3	379·0	50·7	H
	18	0†		08·14	527·7	51·0	451·1	50·4	H
	19	8		08·39	522·6	50·8	495·7	50·1	W
	20	0		08·19	525·6	50·7	505·1	50·0	W
	21	0		11·37	529·7	50·6	505·7	50·0	B
	22	0		11·69	530·7	50·5	497·9	50·0	W
	23	0		15·22	521·8	50·4	496·7	50·1	W
19	0	0		21·01	524·2	50·4	498·4	50·4	W
	1	0		20·99	522·5	50·5	506·4	50·4	W
	2	0		19·81	534·7	50·5	518·2	50·5	W
	3	0		17·46	541·0	50·6	517·0	50·7	W
	4	0		17·56	547·3	50·8	528·7	50·9	W
	5	0		15·47	544·4	51·0	536·5	51·2	W
	6	0		14·30	547·5	51·0	537·3	51·3	H
	7	0		13·02	549·0	51·0	537·6	51·2	H
	8	0		11·74	551·1	51·0	537·2	50·9	H
	9	0		11·51	543·5	50·8	537·2	50·6	H
	10	0		10·09	541·9	50·5	537·6	50·3	H
	11	0		12·11	541·4	50·3	533·1	50·0	B
	12	0		12·38	542·4	50·0	531·2	49·7	B
19	13	0	25	11·27	539·3	49·8	529·6	49·5	B
	14	0		11·30	537·6	49·6	530·5	49·2	B
	15	0		13·02	538·5	49·4	527·3	49·0	B
	16	0		10·65	538·1	49·2	523·5	48·8	B
	17	0		08·29	537·7	49·0	532·2	48·5	B
	18	0		07·00	535·0	48·8	537·7	48·4	B
	19	0		05·69	531·7	48·7	543·4	48·4	H
	20	0		05·63	526·2	48·6	547·7	48·3	H
	21	0		06·64	521·3	48·5	550·9	48·3	W
	22	0		08·66	520·4	48·4	539·5	48·4	H
	23	0		12·82	525·4	48·5	527·3	48·7	H
20	0	0		16·48	529·2	48·7	520·6	49·0	H
	1	0		19·35	536·1	49·0	518·9	49·4	H
	2	0		21·29	542·3	49·4	526·4	49·7	H
	3	0		21·39	543·7	49·8	532·5	50·3	H
	4	0		17·67	545·7	50·2	536·6	50·8	H
	5	0		15·12	545·6	50·7	541·8	51·5	H
	6	0		12·98	552·0	51·1	544·5	51·9	B
	7	0		11·81	554·3	51·5	536·4	52·1	B
	8	0		11·35	551·0	51·7	529·6	52·1	B
	9	0		11·68	552·5	51·6	527·4	52·0	B
	10	0		11·66	552·4	51·4	519·6	51·6	B
	11	0		10·87	545·3	51·2	523·7	51·3	W
	12	0		10·68	549·8	50·9	516·3	50·9	W
	13	0	25	07·67	535·7	50·6	495·6	50·6	W
	14	0		07·67	534·4	50·4	482·3	50·3	W
	15	0		05·32	536·8	50·1	490·4	50·0	W
	16	0		06·46	538·1	49·9	500·9	49·6	W
	17	0		08·26	524·1	49·6	516·5	49·3	W
	18	0		09·69	530·2	49·4	511·5	49·1	W
	19	0		05·97	535·8	49·2	512·5	48·9	B
	20	0		06·29	528·6	49·0	524·3	48·7	B
	21	0		06·83	522·2	48·8	522·8	48·7	H
	22	0		09·37	521·1	48·8	517·1	48·7	H
	23	0		12·98	526·4	48·8	516·1	49·0	H
21	0	0		16·12	529·5	49·0	519·0	49·4	B
	1	0		18·23	529·5	49·5	527·5	50·0	H
	2	0		17·73	536·0	50·1	533·8	50·8	B
	3	0		17·29	542·7	50·8	535·4	51·7	H
	4	0		16·35	545·6	51·5	542·3	52·4	B
	5	0		13·86	552·6	52·1	545·1	53·1	B
	6	0		12·18	550·8	52·7	547·4	53·8	W
	7	0		10·09	551·9	53·1	548·2	54·1	W
	8	0		10·75	550·5	53·3	539·4	54·1	W
	9	0		11·25	546·6	53·2	530·6	53·9	W
	10	0		08·85	548·5	53·0	518·1	53·5	W
	11	0		09·96	541·4	52·7	509·5	53·1	H
	12	0		08·12	540·1	52·5	499·0	52·7	H
	13	0	25	09·76	536·0	52·2	488·4	52·3	H
	14	0		06·73	530·6	51·9	486·4	51·9	H
	15	0		10·30	536·6	51·6	484·7	51·5	H
	16	0		07·37	537·2	51·3	497·5	51·1	H
	17	0		06·56	535·6	51·0	513·6	50·6	H
	18	0		04·55	534·9	50·7	519·6	50·2	H
	19	0		03·57	534·8	50·4	522·8	49·9	W
	20	0		02·62	524·5	50·1	523·7	49·6	W

DECLINATION. Magnet untouched, May 8^d—June 18^d.

BIFILAR. Observed 2^m after the Declination, $k=0·000140$. BALANCE. Observed 3^m after the Declination, $k=0·000010$.

† Extra Observations made.

May 16^d 19^h. The reading of the Balance is doubtful, to the extent of 5 mic. div., owing to an error in reading one of the micrometers.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
21	21	5	25	05·06	528·7	49·9	521·6	49·5	B
	22	0		08·36	524·8	49·9	521·9	49·6	W
	23	0		13·16	522·8	49·9	513·9	49·9	W
22	0	0		15·71	527·8	50·0	505·0	50·2	W
	1	0		18·75	528·8	50·2	507·1	50·4	W
	2	0		20·69	527·8	50·4	516·0	50·6	W
	3	0		20·02	542·3	50·7	516·0	51·0	W
	4	0		17·86	555·3	51·0	527·4	51·5	W
	5	0		16·13	557·6	51·5	548·8	52·1	W
	6	0		12·25	558·0	51·9	572·5	52·5	W
	7	0		11·49	556·5	52·2	571·4	52·7	H
	8	0		10·98	554·8	52·2	561·5	52·7	H
	9	0		09·96	549·8	52·1	549·3	52·5	H
	10	0		02·99	538·6	52·0	534·8	52·1	H
	11	0		10·43	540·0	51·8	522·0	51·7	B
	12	0		10·97	542·7	51·5	518·7	51·3	B
	13	0	25	11·24	541·5	51·2	521·0	50·9	B
	14	0		11·59	541·0	50·9	523·9	50·5	B
	15	0		10·81	539·6	50·6	523·2	50·1	B
	16	0		10·78	537·0	50·3	523·9	49·8	B
	17	0		09·56	538·1	50·0	520·2	49·5	B
	18	10		06·53	532·6	49·7	521·7	49·2	H
	19	0		07·27	531·2	49·4	518·6	49·0	H
	20	0		05·52	530·0	49·2	515·6	48·8	W
	21	0		05·70	525·6	49·1	517·3	48·7	H
	22	0		10·07	523·6	49·0	506·8	48·7	H
	23	0		14·13	528·2	49·0	497·3	49·1	H
23	0	0		17·76	531·9	49·2	494·7	49·6	H
	1	0		17·96	537·1	49·6	489·0	50·0	H
	2	0		17·76	541·0	50·0	498·9	50·5	H
	3	4		16·89	545·8	50·5	512·3	51·1	H
	4	0		15·38	544·2	51·9	523·0	51·5	H
	5	0		12·45	549·9	51·1	530·0	51·7	B
	6	0		11·41	549·8	51·3	534·4	51·7	B
	7	0		10·74	551·2	51·3	531·0	51·6	B
	8	0		10·60	548·5	51·2	516·9	51·4	B
	9	0		10·47	547·8	51·1	523·3	51·2	B
	10	0		11·07	548·8	50·9	517·4	50·9	W
	11	0		10·00	547·1	50·7	513·6	50·6	W
	12	0		11·41	543·3	50·5	513·9	50·3	W
	13	0	25	11·34	542·3	50·3	515·4	50·0	W
	14	0		10·92	539·5	50·0	519·5	49·7	W
	15	0		10·74	538·5	49·8	522·5	49·5	W
	16	0		09·89	538·8	49·6	526·1	49·3	W
	17	0		08·53	539·2	49·3	528·4	49·0	W
	18	0		07·64	537·1	49·1	529·9	48·8	W
	19	0		06·03	533·4	48·9	528·9	48·5	B
	20	0		04·02	520·8	48·7	536·0	48·4	B
	21	0		11·30	511·3	48·6	532·0	48·4	H
	22	0		14·46	514·8	48·5	528·0	48·4	H
	23	0		14·96	522·4	48·5	521·6	48·4	B
24	0	0		17·17	530·1	48·6	505·5	48·6	H
	1	0		18·40	532·1	48·8	498·5	48·9	H
	2	0		17·74	538·3	48·9	498·2	49·2	H
	3	0		16·15	534·6	49·0	507·6	49·5	H
	4	0		15·41	537·4	49·4	525·1	49·8	B
24	5	0	25	14·26	543·7	49·7	527·0	49·9	B
	6	0		12·25	549·2	49·8	527·7	50·0	H
	7	0		11·05	552·2	49·7	525·6	49·9	W
	8	0		09·66	545·1	49·6	530·1	49·7	W
	9	0		10·16	543·7	49·5	529·5	49·5	W
	10	0		11·48	539·3	49·3	525·0	49·3	W
	11	0		11·88	539·7	49·1	521·1	49·2	H
	12	0		11·77	538·6	49·0	520·0	49·0	H
25	13	0	25	10·67	541·7	48·6	522·1	48·5	B
	14	0		10·28	541·6	48·4	522·0	48·2	B
	15	0		10·01	540·8	48·2	523·1	48·0	B
	16	0		09·73	541·5	48·0	527·2	47·8	B
	17	0		08·82	540·8	47·8	532·5	47·6	B
	18	0		07·81	539·4	47·7	532·3	47·3	B
	19	0		07·76	538·7	47·5	531·5	47·2	H
	20	0		07·57	535·4	47·4	534·2	47·2	H
	21	0		07·22	529·8	47·4	526·9	47·3	W
	22	0		07·67	524·3	47·4	518·9	47·4	W
	23	0		10·23	524·8	47·4	516·6	47·4	H
26	0	0		14·73	528·4	47·4	514·8	47·4	H
	1	0		15·14	532·7	47·4	513·8	47·4	H
	2	0		15·41	536·9	47·4	517·9	47·5	H
	3	0		15·07	539·6	47·5	521·9	47·6	H
	4	0		14·26	543·4	47·5	517·5	47·6	H
	5	0		12·95	543·6	47·5	531·6	47·6	H
	6	0		12·28	546·1	47·6	532·8	47·6	B
	7	0		11·93	546·4	47·5	533·7	47·5	B
	8	0		11·79	546·6	47·4	533·1	47·4	B
	9	0		11·41	545·6	47·3	531·7	47·3	B
	10	0		10·74	544·3	47·2	530·0	47·2	B
	11	0		10·48	542·8	47·1	528·4	47·1	W
	12	0		10·30	542·5	47·0	526·8	47·0	W
	13	0	25	10·48	543·4	47·0	527·5	47·0	W
	14	0		10·60	542·8	46·9	527·2	46·9	W
	15	0		10·54	543·1	46·9	528·6	46·9	W
	16	0		09·96	542·2	46·8	529·8	46·8	W
	17	0		09·32	541·8	46·8	531·5	46·8	W
	18	0		08·26	541·6	46·7	534·6	46·7	W
	19	0		07·72	541·3	46·7	534·9	46·7	B
	20	0		07·31	537·6	46·7	533·8	46·7	B
	21	0		07·82	532·3	46·7	528·5	46·7	H
	22	0		08·38	529·2	46·7	529·6	46·9	H
	23	0		11·49	526·6	46·9	524·5	47·2	H
27	0	0		13·69	530·6	47·1	512·5	47·5	B
	1	0		14·84	533·1	47·3	503·9	47·7	H
	2	0		15·94	536·3	47·6	512·8	48·0	B
	3	0		16·32	540·7	47·8	520·1	48·3	H
	4	0		15·45	543·1	48·0	531·2	48·5	H
	5	0		14·50	545·0	48·1	531·7	48·5	B
	6	0		12·72	549·7	48·3	531·5	48·6	W
	7	0		11·28	550·7	48·3	535·1	48·7	W
	8	0		10·70	549·6	48·3	537·2	48·6	W
	9	0		10·67	547·5	48·2	532·2	48·4	W
	10	0		11·05	544·8	48·0	528·3	48·2	W
	11	0		10·85	543·7	47·9	526·2	48·0	H
	12	0		10·56	542·9	47·8	523·9	47·8	H

DECLINATION. Magnet untouched, May 8^{d}—June 18^{d}.

BIFILAR. Observed 2^{m} after the Declination, k=0·000140. BALANCE. Observed 3^{m} after the Declination, k=0·000010.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
27	13	0	25	10·16	541·6	47·6	524·0	47·6	H
	14	0		10·58	542·8	47·4	523·8	47·4	H
	15	0		09·89	542·1	47·2	525·4	47·2	H
	16	0		09·47	542·8	47·0	526·6	47·0	H
	17	0		08·52	542·9	46·9	530·3	46·8	H
	18	0		07·40	542·4	46·7	528·4	46·6	H
	19	0		06·98	542·8	46·6	527·4	46·4	W
	20	0		06·91	537·6	46·5	531·5	46·3	W
	21	0		07·31	534·6	46·5	529·2	46·4	B
	22	0		08·68	530·1	46·6	525·9	46·7	W
	23	0		11·71	528·9	46·8	518·4	47·1	W
28	0	0		13·77	529·6	47·2	506·2	47·6	W
	1	0		14·98	536·6	47·7	504·5	48·3	W
	2	0		15·29	539·0	48·3	513·7	49·0	W
	3	0		15·09	541·8	48·9	516·2	49·7	W
	4	0		14·06	545·4	49·6	522·2	50·3	W
	5	0		12·51	548·3	50·2	524·2	51·0	W
	6	0		10·53	551·8	50·8	527·4	51·6	H
	7	0		09·35	551·7	51·2	528·6	51·7	H
	8	0		10·09	551·5	51·3	525·6	51·7	H
	9	0		10·54	551·2	51·2	521·9	51·5	H
	10	0		10·53	548·3	51·0	517·9	51·1	H
	11	0		11·17	546·9	50·7	514·0	50·6	B
	12	0		11·46	546·5	50·4	509·5	50·2	B
	13	0	25	10·63	544·4	50·0	508·4	49·8	B
	14	0		10·54	542·8	49·7	509·7	49·4	B
	15	0		10·20	541·5	49·4	511·7	49·0	B
	16	0		09·67	541·6	49·1	514·8	48·6	B
	17	0		07·94	542·1	48·8	519·6	48·3	B
	18	0		07·49	542·7	48·5	519·8	48·0	B
	19	0		07·32	542·0	48·2	518·4	47·7	H
	20	0		07·07	538·4	48·0	518·5	47·5	H
	21	0		07·24	532·8	47·9	516·7	47·5	W
	22	0		08·45	529·7	47·8	507·0	47·5	H
	23	0		10·25	532·8	47·8	497·7	47·7	H
29	0	0		13·52	531·5	47·9	492·6	48·0	H
	1	0		16·12	533·4	48·2	490·0	48·5	H
	2	0		17·94	536·1	48·6	492·4	49·1	H
	3	0		17·39	541·5	49·1	499·9	49·7	H
	4	0		15·12	545·4	49·8	515·1	50·5	H
	5	0		13·25	549·5	50·3	523·3	51·0	H
	6	0		11·17	551·2	50·8	526·5	51·5	B
	7	0		10·16	551·4	51·1	522·8	51·8	B
	8	0		10·83	552·1	51·3	517·2	51·8	B
	9	0		11·24	550·1	51·3	514·9	51·6	B
	10	0		10·21	550·5	51·1	511·3	51·3	B
	11	0		11·14	544·4	50·9	511·5	51·0	W
	12	0		10·98	543·9	50·7	507·4	50·6	W
	13	0	25	13·56	544·8	50·4	497·3	50·3	W
	14	0		09·89	544·5	50·1	491·8	50·0	W
	15	0		05·89	535·9	49·9	487·2	49·7	W
	16	0		04·34	538·4	49·7	497·2	49·4	W
	17	0		04·35	540·6	49·4	506·6	49·1	W
	18	0		03·87	540·0	49·2	509·7	49·0	W
	19	0		04·19	539·9	49·1	510·0	48·9	B
	20	0		05·82	537·0	49·0	523·7	48·8	B
29	21	0	25	08·18	531·5	49·0	507·5	48·9	H
	22	0		08·75	525·0	49·0	504·8	49·2	H
	23	0		10·33	523·4	49·2	497·9	49·7	H
30	0	0		13·30	529·4	49·8	500·6	50·5	H
	1	0		16·25	537·4	50·4	499·4	51·3	H
	2	0		18·10	542·9	51·2	496·2	52·2	H
	3	0		18·00	540·6	52·0	496·8	53·0	H
	4	0		16·08	542·3	52·7	502·3	54·0	H
	5	0		13·90	541·8	53·3	509·8	54·5	H
	6	0		13·07	554·1	53·7	511·3	54·8	W
	7	0		12·02	565·2	53·9	513·1	54·8	W
	8	0		07·60	557·2	54·0	537·7	54·8	W
	9	0		07·62	547·6	54·0	540·2	54·6	W
	10	0		10·36	542·0	53·8	530·4	54·2	W
	11	0		07·13	534·3	53·5	522·4	54·0	B
	12	0		03·70	530·8	53·3	508·4	53·7	B
	13	0	25	05·27	533·0	53·0	490·2	53·5	D
	14	0		05·45	536·6	52·8	461·6	53·3	D
	15	0		02·82	535·7	52·6	444·4	53·0	D
	16	0		03·81	534·2	52·4	455·0	52·6	D
	17	0		10·53	530·3	52·2	472·8	52·3	D
	18	0		03·87	540·8	52·0	458·0	52·0	H
	19	0		04·14	540·9	51·9	479·9	52·0	H
	20	0		04·91	524·6	51·8	488·5	52·0	H
	21	0		13·57	516·5	51·8	491·1	52·2	H
	22	0		14·98	523·6	51·9	476·8	52·4	W
	23	0		18·14	527·7	52·2	471·6	52·9	W
31	0	0		20·09	517·7	52·7	481·1	53·6	W
	1	0		24·55	523·7	53·2	486·3	54·5	H
	2	0		29·93	531·5	54·0	500·6	55·5	H
	3	0		31·52	534·6	55·0	520·8	56·6	H
	4	0		24·73	539·1	56·1	546·1	57·7	B
	5	0		17·06	545·7	57·0	548·4	58·5	B
	6	0		14·40	544·2	57·7	544·0	59·0	D
	7	0		11·96	539·6	58·3	543·2	59·5	D
	8	0		11·39	544·4	58·6	524·7	59·7	W
	9	0		09·66	546·3	58·8	525·5	59·8	B
	10	0		10·92	544·8	58·7	524·9	59·7	W
	11	0		11·44	547·0	58·3	511·9	59·0	B
	12	0		10·25	537·4	57·9	480·6	58·3	B
1	13	0	25	11·64	541·6	58·0	505·7	58·3	W
	14	0		11·14	540·4	57·8	505·8	58·0	W
	15	0		10·09	538·8	57·6	507·6	57·8	W
	16	0		10·23	536·9	57·4	509·7	57·6	W
	17	0		08·79	537·2	57·2	515·2	57·3	W
	18	0		08·66	538·1	57·0	506·7	57·1	W
	19	0		09·96	537·6	56·9	508·9	57·0	B
	20	0		06·06	536·9	56·8	506·8	56·8	B
	21	0		07·81	534·3	56·7	506·7	56·9	H
	22	0		09·67	531·5	56·8	505·8	57·3	H
	23	0		11·64	530·6	57·2	505·0	57·7	H
2	0	0		14·94	537·4	57·7	498·0	58·3	H
	1	0		16·82	543·3	58·2	488·6	59·0	H
	2	0		16·18	543·6	58·7	494·0	59·4	B
	3	0		15·47	543·0	59·1	500·3	59·9	B
	4	0		14·20	547·9	59·5	503·3	60·4	H

DECLINATION. Magnet untouched, May 8d—June 18d.

BIFILAR. Observed 2m after the Declination, k=0·000140. BALANCE. Observed 3m after the Declination, k=0·000010.

May 30d 10h—31d 10h. Term-Day Observations made.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
2	5	0	25	13·03	541·7	59·9	515·3	60·6	B
	6	0		11·77	541·8	60·0	517·8	60·8	W
	7	0		10·54	546·6	60·1	519·9	60·8	W
	8	0		10·83	545·3	60·2	518·0	60·9	W
	9	0		10·65	543·3	60·2	518·6	61·0	W
	10	0		10·58	542·0	60·1	516·4	60·6	W
	11	0		10·03	543·8	59·8	508·1	60·0	H
	12	0		11·03	541·5	59·4	514·1	59·5	H
	13	0	25	10·03	540·7	58·9	506·6	58·9	H
	14	0		10·50	537·7	58·4	509·1	58·3	H
	15	0		11·19	537·9	58·0	510·4	57·7	H
	16	0		09·98	536·6	57·6	513·2	57·1	H
	17	0		09·35	536·3	57·2	518·6	56·5	H
	18	0		08·31	535·5	56·8	521·5	56·2	H
	19	0		06·48	536·5	56·5	525·0	56·0	W
	20	0		07·07	532·4	56·3	523·9	55·8	W
	21	5		08·45	530·1	56·1	520·4	55·9	B
	22	0		09·84	529·9	56·1	510·3	56·3	W
	23	0		11·00	525·6	56·3	492·0	56·7	W
3	0	0		14·01	528·4	56·7	485·5	57·2	W
	1	0		17·24	536·7	57·2	491·3	57·8	W
	2	2		16·95	545·2	57·7	499·1	58·3	W
	3	0		15·98	550·7	58·2	507·0	58·8	W
	4	0		14·71	547·4	58·7	521·4	59·3	W
	5	0		12·73	544·2	59·0	526·2	59·7	W
	6	0		10·83	543·3	59·2	519·2	59·8	H
	7	0		10·45	543·8	59·3	513·7	59·8	H
	8	0		10·90	543·1	59·2	504·2	59·7	H
	9	0		10·83	543·5	59·0	502·2	59·5	H
	10	0		11·10	545·1	58·7	497·2	58·9	H
	11	0		11·22	544·0	58·4	497·9	58·3	B
	12	0		11·03	543·3	58·0	500·0	57·7	B
	13	0	25	10·74	542·1	57·6	502·9	57·1	B
	14	0		11·10	540·7	57·1	506·1	56·5	B
	15	0		10·95	540·8	56·6	507·2	55·8	B
	16	0		11·03	540·0	56·1	512·2	55·2	B
	17	0		12·51	536·7	55·6	512·2	54·6	B
	18	0		10·98	537·6	55·2	506·4	54·3	B
	19	30		04·61	537·9	54·9	515·2	54·2	H
	20	0		04·71	537·9	54·8	517·6	54·2	H
	21	0		06·06	534·8	54·7	526·9	54·2	W
	22	0		09·06	534·1	54·7	525·9	54·4	H
	23	0		15·25	535·7	54·7	512·4	54·7	H
4	0	0		20·15	534·7	54·8	501·3	55·2	H
	1	0		22·15	550·3	55·0	497·4	55·7	H
	2	0		15·12	535·4	55·4	511·1	56·2	H
	3	0		19·24	558·3	55·8	520·8	56·5	H
	4	0†		19·51	533·7	56·0	553·1	56·6	H
	5	0†		17·12	547·9	56·2	571·8	56·7	H
	6	0		15·31	554·4	56·2	580·0	56·7	B
	7	0		12·35	543·5	56·3	578·1	56·7	B
	8	0		12·26	546·3	56·4	565·6	56·8	B
	9	0		12·11	547·8	56·4	549·5	56·8	B
	10	0		08·32	541·6	56·2	538·2	56·4	B
	11	0		09·46	547·0	56·0	516·6	56·0	W
	12	0		08·99	533·6	55·6	500·7	55·5	W

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
4	13	0	25	11·49	538·7	55·2	484·9	55·1	W
	14	0		08·53	536·2	54·9	492·7	54·7	W
	15	0		10·16	535·4	54·6	505·9	54·2	W
	16	0		11·84	538·2	54·2	512·5	53·8	W
	17	0		07·82	538·0	53·9	525·0	53·5	W
	18	0		04·71	537·4	53·7	535·0	53·2	W
	19	0		05·70	535·8	53·4	536·2	52·8	B
	20	0		06·61	533·4	53·1	536·6	52·7	B
	21	0		05·92	521·4	52·9	527·4	52·7	H
	22	0		12·33	524·0	52·8	520·4	52·7	H
	23	0		13·32	528·9	52·8	514·3	52·9	H
5	0	0		15·34	534·0	53·0	506·0	53·2	H
	1	0		17·93	539·6	53·3	507·8	53·7	B
	2	0		17·12	545·3	53·7	511·4	54·5	H
	3	0		17·49	547·0	54·4	512·0	55·5	H
	4	0		16·35	544·1	55·2	516·8	56·2	H
	5	0		14·46	552·7	55·8	522·9	56·6	H
	6	0		13·70	550·6	56·3	531·0	57·0	W
	7	0		12·01	545·6	56·6	528·7	57·4	W
	8	0		11·68	546·7	56·8	522·3	57·7	W
	9	0		10·67	546·6	57·0	514·0	57·9	W
	10	0		10·18	549·7	57·2	508·1	58·0	W
	11	0		09·22	544·6	57·2	510·3	58·0	H
	12	0		09·76	544·9	57·3	510·8	58·1	H
	13	0	25	09·73	546·6	57·3	500·8	58·0	H
	14	0		09·86	546·3	57·2	503·0	57·6	H
	15	0		09·19	543·9	57·0	492·4	57·2	H
	16	0		07·74	534·1	56·7	502·0	56·7	H
	17	0		05·65	541·8	56·4	501·4	56·3	H
	18	0		05·45	539·7	56·1	507·8	56·0	H
	19	0		05·43	539·3	56·0	514·2	55·9	W
	20	0		05·35	535·3	56·0	519·3	56·1	W
	21	0		05·60	527·6	56·0	523·4	56·4	B
	22	0		07·07	525·3	56·2	517·9	56·7	W
	23	0		10·67	526·0	56·5	512·2	57·0	W
6	0	0		15·20	528·3	56·8	501·1	57·4	W
	1	0		17·51	530·1	57·1	492·3	57·8	W
	2	0		18·01	535·7	57·4	493·6	58·0	W
	3	0		18·74	539·3	57·6	495·4	58·2	W
	4	0		17·60	548·3	57·8	495·1	58·4	W
	5	0		15·32	546·2	58·0	507·9	58·6	W
	6	0		12·65	552·2	58·2	513·8	58·8	H
	7	0		11·27	550·3	58·2	515·7	58·7	H
	8	0		10·83	552·7	58·1	514·4	58·5	H
	9	0		10·27	548·6	58·0	513·5	58·4	H
	10	0		10·28	551·1	57·8	505·6	58·2	H
	11	0		10·80	545·9	57·6	503·8	57·8	B
	12	0		10·45	550·8	57·4	499·7	57·4	B
	13	0	25	09·02	548·6	57·1	500·5	57·0	B
	14	0		08·46	545·9	56·9	504·3	56·7	B
	15	0		08·03	545·0	56·6	506·1	56·4	B
	16	0		06·83	544·4	56·3	511·0	56·0	B
	17	0		06·39	543·2	56·0	515·6	55·7	B
	18	0		04·42	539·3	55·8	519·4	55·5	B
	19	0		04·37	533·8	55·6	525·1	55·4	H
	20	0		04·41	530·9	55·4	529·9	55·3	H

DECLINATION. Magnet untouched, May 8^{d}—June 18^{d}.

BIFILAR. Observed 2^{m} after the Declination, k=0·000140. BALANCE. Observed 3^{m} after the Declination, k=0·000010.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			Declination.	Bifilar.		Balance.		Observer's Initial.
				Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	° ′	Sc. Div.	°	Mic. Div.	°	
6	21	0	25 05·42	525·9	55·4	524·5	55·5	W
	22	0	08·72	523·6	55·5	515·3	55·8	H
	23	0	14·24	523·5	55·7	505·9	56·2	H
7	0	0	17·54	528·1	56·2	491·6	56·8	H
	1	0	19·95	537·1	56·8	483·0	57·7	H
	2	0	20·83	540·9	57·6	486·4	58·7	H
	3	2	20·33	547·3	58·4	485·3	59·7	H
	4	0	18·13	548·7	59·2	491·0	60·5	H
	5	0	15·98	548·7	59·8	498·2	61·0	H
	6	0	13·74	551·2	60·2	502·7	61·2	B
	7	0	12·26	554·0	60·6	510·1	61·4	B
	8	0	11·37	553·9	60·7	510·2	61·4	B
	9	0	10·92	550·9	60·7	511·2	61·3	B
	10	0	11·82	546·0	60·6	504·1	61·0	B
	11	0	08·88	543·3	60·4	502·1	60·8	W
	12	0	09·46	541·6	60·1	501·1	60·5	W
8	13	0†	25 07·78	539·9	57·2	479·5	56·8	H
	14	0	05·22	531·0	56·8	475·6	56·3	H
	15	0	05·89	537·4	56·3	482·8	55·8	H
	16	0	05·25	538·5	55·9	480·7	55·3	H
	17	0	03·65	538·4	55·6	490·1	55·1	H
	18	0	02·66	537·2	55·4	494·6	55·0	H
	19	0	03·16	536·9	55·4	498·0	55·0	W
	20	0	04·10	537·2	55·3	495·8	55·0	W
	21	0	07·05	530·3	55·4	487·2	55·2	B
	22	0	08·92	523·9	55·4	486·9	55·5	W
	23	0	13·52	522·5	55·6	487·4	55·8	W
9	0	0	16·21	528·7	55·8	486·1	56·2	W
	1	0	20·22	533·0	56·0	484·6	56·5	W
	2	0	21·97	538·1	56·4	486·5	56·8	W
	3	0	19·86	543·3	56·7	493·7	57·1	W
	4	0	16·97	544·4	56·8	511·0	57·2	W
	5	0	16·15	553·7	56·9	531·2	57·2	W
	6	0	13·83	558·6	56·9	539·9	57·2	H
	7	0	14·06	560·1	56·8	535·3	57·2	H
	8	0	12·72	554·6	56·8	535·5	57·2	H
	9	0	12·63	552·6	56·8	534·5	57·1	H
	10	0	12·18	546·6	56·7	525·7	57·0	H
	11	0	11·30	545·0	56·7	519·1	56·9	B
	12	0	08·85	545·1	56·6	503·8	56·8	B
	13	0	25 08·39	541·9	56·5	505·6	56·7	B
	14	0	08·68	546·1	56·4	504·8	56·5	B
	15	0	09·44	547·2	56·3	504·2	56·4	B
	16	0	07·64	545·8	56·2	508·9	56·3	B
	17	0	07·84	547·3	56·1	509·6	56·2	B
	18	0	05·76	543·0	56·0	509·6	56·2	B
	19	0	03·95	540·3	56·0	509·5	56·3	H
	20	0	05·29	536·2	56·1	507·7	56·5	H
	21	0	05·69	534·0	56·4	505·6	56·9	W
	22	0	07·64	528·7	56·7	502·1	57·3	H
	23	0	12·06	530·4	57·1	493·5	57·8	H
10	0	0	15·27	532·4	57·6	490·0	58·3	H
	1	0	18·03	537·1	58·1	485·6	59·0	H
	2	0	19·71	537·4	58·8	470·7	59·7	H
	3	0	19·31	544·4	59·5	458·8	60·5	H
	4	0	17·06	545·7	60·2	467·7	61·2	H
10	5	0	25 15·58	552·3	60·8	481·0	61·9	H
	6	0	13·63	553·6	61·4	496·3	62·5	B
	7	0	12·01	565·4	61·9	506·7	62·8	B
	8	0†	07·05	560·1	62·2	536·6	63·0	B
	9	0	11·34	547·9	62·3	536·8	63·0	B
	10	0	11·61	549·8	62·3	522·0	63·0	B
	11	0	11·48	549·7	62·3	508·2	62·9	W
	12	0	09·73	546·0	62·2	504·1	62·7	W
	13	0	25 10·36	542·1	62·0	501·6	62·4	W
	14	0	10·25	541·2	61·7	505·6	62·0	W
	15	0	09·79	540·3	61·5	502·8	61·7	W
	16	0	08·21	541·3	61·2	504·3	61·4	W
	17	0	07·42	543·2	61·0	509·8	61·1	W
	18	4	07·89	539·7	60·7	513·1	60·8	W
	19	0	08·48	538·0	60·7	515·2	60·7	B
	20	5	09·54	532·1	60·7	513·0	60·9	B
	21	0	12·15	529·3	60·8	508·3	61·2	H
	22	0	16·43	527·7	61·0	504·9	61·5	H
	23	0	13·29	526·8	61·5	502·3	62·2	H
11	0	0	16·16	528·4	62·0	484·3	62·8	B
	1	0	15·94	533·7	62·6	473·1	63·5	H
	2	0	17·53	538·5	63·3	481·2	64·3	B
	3	0	18·58	541·4	64·0	487·5	65·2	B
	4	0	17·29	554·3	64·9	497·6	66·2	B
	5	0	18·10	544·2	65·8	525·5	67·0	B
	6	0	15·94	542·0	66·6	534·3	67·7	W
	7	0	12·48	549·2	67·0	533·5	67·9	W
	8	0	11·82	548·7	67·6	527·2	68·3	W
	9	3	10·80	546·8	68·1	521·8	69·5	W
	10	0	10·74	543·9	68·4	516·6	69·5	W
	11	0	11·10	543·0	68·4	499·6	68·7	H
	12	0	11·08	541·8	68·2	496·0	68·2	H
	13	0	25 10·61	539·9	67·8	494·6	67·9	H
	14	0	11·64	540·5	67·2	493·7	67·5	H
	15	0	11·51	538·4	66·7	494·9	66·7	H
	16	0	08·50	536·1	66·1	504·8	66·0	H
	17	0	06·23	534·5	65·7	514·7	65·2	H
	18	0	05·42	532·7	65·2	520·7	64·7	H
	19	0	04·81	530·9	64·9	523·1	64·3	W
	20	0	04·86	529·3	64·6	522·6	64·0	W
	21	5	05·50	529·0	64·3	514·7	63·8	B
	22	0	08·06	527·3	64·3	499·5	64·0	W
	23	0	12·67	517·7	64·3	497·4	64·5	W
12	0	0	18·47	516·7	64·7	495·2	65·3	W
	1	0	18·84	527·2	65·5	487·9	66·6	W
	2	0	17·80	530·8	66·6	483·5	67·9	W
	3	0	16·79	543·1	67·8	479·8	69·3	W
	4	0	17·37	546·0	69·0	483·6	70·5	W
	5	0	14·91	539·2	70·2	483·7	71·6	W
	6	0	13·05	543·3	71·1	484·6	72·3	H
	7	0	11·52	548·2	71·8	485·0	73·0	H
	8	0	11·44	547·8	72·3	496·3	73·5	H
	9	0	10·83	549·1	73·0	501·4	74·4	H
	10	0	10·98	544·4	73·0	500·5	74·0	H
	11	0	10·97	542·2	72·8	494·8	73·4	B
	12	0	10·54	540·1	72·4	495·3	72·7	B

Declination. Magnet untouched, May 8^d—June 18^d.

Bifilar. Observed 2^m after the Declination, $k=0·000140$. Balance. Observed 3^m after the Declination, $k=0·000010$.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
12	13	0	25	10·68	538·7	71·8	491·6	71·8	B
	14	0		11·86	538·2	71·1	479·2	70·9	B
	15	0		08·14	531·7	70·5	489·8	70·0	B
	16	0		07·94	533·1	69·9	501·0	69·1	B
	17	0		06·73	533·9	69·3	512·4	68·5	B
	18	0		05·74	534·3	68·8	522·4	68·0	B
	19	0		04·78	533·1	68·6	525·4	67·8	H
	20	0		03·43	530·4	68·4	529·7	67·7	H
	21	0		03·97	528·2	68·2	538·3	67·7	W
	22	0		05·20	524·5	68·0	530·1	67·9	H
	23	0		08·85	522·1	68·2	521·4	68·7	H
13	0	0		11·98	522·0	68·6	493·0	69·2	H
	1	0		16·55	528·7	69·0	484·3	69·8	H
	2	0		15·54	532·5	69·7	490·8	70·8	H
	3	0		15·71	534·7	70·5	487·1	71·7	H
	4	0		15·52	538·7	71·4	485·4	72·6	H
	5	0		14·23	542·1	72·2	487·9	73·2	H
	6	0		12·28	546·3	72·9	491·0	73·6	H
	7	0		11·71	545·5	73·4	493·9	73·9	B
	8	0		11·74	546·1	73·7	491·7	74·2	B
	9	0		12·22	544·8	74·0	487·6	75·0	B
	10	0		11·98	543·4	73·9	487·6	74·4	B
	11	0		11·61	542·5	73·7	486·1	74·0	W
	12	5		11·14	541·5	73·2	483·5	73·2	W
	13	0	25	10·88	539·6	72·6	485·1	72·5	W
	14	0		10·54	537·6	72·0	489·1	71·5	W
	15	0		09·96	536·4	71·3	495·5	70·6	W
	16	0		08·90	535·5	70·7	502·7	69·7	W
	17	0		07·00	534·3	70·0	510·2	69·0	W
	18	0		04·64	532·6	69·4	518·7	68·2	W
	19	0		04·12	531·3	68·8	517·9	67·4	B
	20	0		04·64	529·5	68·4	518·5	67·4	B
	21	0		06·77	528·3	68·1	511·2	67·5	H
	22	0		09·08	527·1	68·0	509·9	67·7	H
	23	0		14·46	526·4	68·2	495·2	68·2	H
14	0	5		19·17	533·8	68·4	474·1	68·6	H
	1	0		19·98	538·5	68·8	479·5	69·2	H
	2	0		17·83	545·7	69·3	487·6	69·8	H
	3	0		15·18	543·5	69·9	494·0	70·5	H
	4	0		09·54	545·1	70·5	489·4	71·2	H
	5	0		11·03	544·0	71·1	488·8	71·6	H
	6	0		11·10	546·3	71·5	488·5	71·8	W
	7	0		11·54	548·5	71·7	488·9	72·0	W
	8	0		11·55	552·6	71·8	487·1	71·9	W
	9	0		10·33	552·2	71·7	492·4	71·4	W
	10	0		08·79	546·7	71·3	497·2	70·8	W
	11	0		09·62	539·7	70·8	491·7	70·2	H
	12	0		11·59	538·8	70·4	484·4	69·6	H
15	13	0	25	10·75	540·4	65·7	510·8	65·3	D
	14	0		10·72	540·1	65·4	510·5	65·0	D
	15	0		09·42	539·0	65·1	517·7	64·7	D
	16	0		08·99	538·7	64·7	521·9	64·4	D
	17	0		08·38	537·8	64·4	524·4	64·0	D
	18	0		07·17	537·2	64·1	528·2	63·6	D
	19	0		05·99	533·8	63·8	533·7	63·2	H
	20	0		05·08	531·4	63·6	532·4	63·0	H
15	21	10	25	06·03	529·1	63·4	528·8	63·0	W
	22	0		08·01	529·7	63·2	520·2	63·0	H
	23	0		12·49	528·5	63·3	513·5	63·3	H
16	0	0		15·92	533·9	63·4	509·8	63·5	H
	1	0		17·53	537·2	63·5	491·3	63·7	H
	2	0		17·91	537·9	63·7	496·5	64·0	H
	3	0		17·54	540·2	64·0	507·0	64·2	H
	4	0		14·67	542·0	64·2	512·4	64·5	H
	5	0		13·36	543·8	64·3	521·4	64·7	H
	6	0		11·64	546·5	64·6	526·6	65·0	B
	7	0		10·53	548·8	64·7	519·4	65·0	B
	8	0		11·10	548·2	64·7	519·4	65·0	B
	9	0		11·17	548·6	64·7	519·0	64·9	B
	10	0		11·71	551·1	64·6	516·5	64·7	B
	11	0		11·37	547·3	64·4	515·4	64·5	W
	12	0		12·16	546·4	64·2	514·0	64·3	W
	13	0	25	10·40	544·5	64·0	512·1	64·0	W
	14	0		11·25	544·9	63·8	505·3	63·7	W
	15	0		08·18	539·1	63·6	511·6	63·4	W
	16	0		08·77	538·3	63·4	518·4	63·1	W
	17	0		07·24	537·4	63·1	523·2	62·8	W
	18	0		07·27	536·1	62·8	525·2	62·5	W
	19	0		07·81	533·3	62·6	527·1	62·2	B
	20	0		08·05	527·9	62·4	526·2	62·0	B
	21	0		08·92	527·2	62·3	525·2	62·2	H
	22	0		09·46	523·2	62·3	519·4	62·5	H
	23	0		12·92	528·7	62·7	517·1	63·1	H
17	0	0		15·54	534·4	63·0	505·6	63·6	H
	1	0		16·48	538·7	63·5	502·6	64·0	H
	2	0		16·48	539·8	63·9	509·9	64·5	B
	3	0		15·14	540·5	64·0	504·0	64·6	H
	4	0		13·79	541·0	64·2	509·3	64·7	H
	5	0		12·20	545·0	64·3	517·1	64·7	H
	6	0		10·80	543·8	64·5	526·6	65·0	W
	7	0		10·13	546·1	64·6	528·7	65·0	W
	8	0		09·76	549·9	64·6	532·3	65·0	W
	9	0		11·00	548·6	64·6	530·0	64·8	W
	10	0		10·41	545·3	64·4	527·2	64·7	W
	11	0		11·51	541·6	64·2	523·5	64·5	H
	12	0		11·19	540·0	64·0	520·1	64·0	H
	13	0	25	10·83	539·4	63·7	519·7	63·6	H
	14	0		10·60	538·5	63·4	520·0	63·2	H
	15	0		09·94	538·4	63·1	520·7	62·8	H
	16	0		08·45	535·4	62·8	527·4	62·5	H
	17	0		08·06	536·0	62·4	528·7	62·0	H
	18	0		05·45	533·4	62·0	534·2	61·5	H
	19	0		04·31	531·5	61·8	536·9	61·2	W
	20	0		04·48	528·8	61·6	542·7	61·0	W
	21	0		04·78	525·4	61·3	542·0	60·7	B
	22	0		07·54	521·1	61·0	536·4	60·5	W
	23	0		10·31	522·8	60·8	524·6	60·3	W
18	0	0		13·86	525·9	60·7	517·5	60·3	W
	1	0		15·31	534·7	60·6	513·3	60·3	W
	2	0		15·45	540·5	60·6	501·0	60·5	W
	3	0		15·31	540·8	60·7	505·7	61·0	W
	4	0		13·44	542·9	61·2	515·5	61·7	W

DECLINATION. Torsion removed, June 18^d $2\frac{1}{2}^h$, $+1\frac{1}{2}°$. Effect of + 10° of torsion $= -0'·84$.

BIFILAR. Observed 2^m after the Declination, k=0·000140. BALANCE. Observed 3^m after the Declination, k=0·000010.

June 13^d 9^h. The Sun shining on the case of the balance magnetometer.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
18	5	0	25	11·74	543·1	61·7	527·3	62·2	W
	6	0		11·21	546·6	62·0	527·0	62·7	H
	7	0		11·05	549·2	62·3	524·4	63·0	H
	8	0		10·92	550·7	62·3	520·2	63·0	H
	9	0		10·63	549·4	62·5	520·0	63·0	H
	10	0		10·63	547·9	62·6	502·4	62·9	W
	11	0		10·14	546·9	62·6	499·1	62·9	W
	12	0		10·11	546·1	62·5	497·6	62·9	W
	13	0	25	10·23	545·3	62·3	495·2	62·7	D
	14	0		10·16	546·0	62·2	490·3	62·5	D
	15	0		09·87	543·6	62·1	489·5	62·4	D
	16	0		09·49	544·0	61·8	489·0	62·0	D
	17	0		08·14	543·1	61·5	492·0	61·7	H
	18	0		05·89	537·9	61·2	494·9	61·2	H
	19	0		04·89	536·2	61·0	497·0	60·9	H
	20	0		05·32	533·7	60·8	495·4	60·7	H
	21	0		06·37	528·0	60·6	491·9	60·5	H
	22	0		08·79	526·0	60·6	488·8	60·7	W
	23	0		12·33	524·1	60·6	486·5	61·0	W
19	0	0		16·75	529·7	60·8	478·7	61·5	W
	1	0		17·61	537·8	61·0	471·6	61·8	H
	2	0		19·05	543·0	61·3	468·6	62·3	H
	3	0		18·52	543·0	61·8	473·7	62·8	H
	4	0		16·33	544·5	62·3	483·3	63·4	C
	5	0		14·55	547·8	62·8	492·6	63·9	C
	6	0		11·35	548·5	63·0	493·2	64·0	C
	7	0		10·65	549·5	63·1	501·0	64·1	C
	8	0		11·17	549·0	63·3	489·6	63·9	D
	9	0		10·63	546·9	63·3	494·1	64·6	C
	10	0		10·47	545·8	63·3	488·1	64·3	H
	11	0		10·33	545·7	63·3	485·1	63·8	W
	12	0		10·25	545·7	62·9	483·7	63·3	W
	13	0	25	09·91	546·4	62·5	483·5	62·6	W
	14	0		09·89	543·9	62·0	486·8	61·8	W
	15	0		12·43	544·9	61·5	487·8	61·0	W
	16	0		08·61	543·1	61·0	487·7	60·5	W
	17	0		07·38	541·0	60·5	488·3	60·0	W
	18	0		03·94	540·1	60·1	486·9	59·5	W
	19	0		02·97	533·9	59·8	493·1	59·3	H
	20	0		06·32	531·4	59·6	492·6	59·2	H
	21	0		06·61	530·7	59·5	500·7	59·2	H
	22	0		10·14	523·6	59·5	498·0	59·7	H
	23	0		12·58	521·3	59·8	491·4	60·2	H
20	0	0		15·20	524·0	60·3	484·4	61·0	H
	1	0		18·13	532·7	61·0	491·4	62·0	H
	2	0		18·18	542·1	61·8	492·4	63·0	H
	3	0		15·58	545·4	62·8	497·9	64·2	H
	4	0		13·41	552·3	64·3	502·7	65·5	H
	5	0		11·81	551·9	65·0	502·6	66·2	H
	6	0		10·87	552·0	65·6	498·7	66·8	W
	7	0		10·97	555·1	66·2	488·0	67·2	W
	8	0		10·95	552·2	66·6	486·1	67·7	W
	9	0		11·44	552·5	67·0	481·8	68·0	W
	10	0		11·66	548·4	67·2	479·8	67·8	W
	11	0		11·95	549·2	66·8	476·9	67·2	H
	12	0		11·37	545·4	66·3	467·9	66·5	H

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
20	13	0	25	09·80	543·3	65·8	472·8	65·8	H
	14	0		09·62	541·7	65·3	475·0	65·2	H
	15	0		11·22	540·8	64·9	476·8	64·5	H
	16	0		07·27	540·9	64·4	481·6	64·0	H
	17	0		05·32	539·1	63·9	488·5	63·5	H
	18	0		03·65	538·9	63·5	490·9	63·0	H
	19	0		02·84	536·7	63·2	491·1	62·8	W
	20	0		04·22	530·8	63·0	490·7	62·7	W
	21	0		04·76	523·8	62·9	486·7	62·7	W
	22	0		08·72	521·8	62·9	481·6	62·7	W
	23	0		16·38	524·8	62·8	469·9	62·7	W
21	0	0		19·84	529·2	62·8	462·7	62·8	W
	1	0		21·26	535·8	62·9	470·0	63·0	W
	2	0		20·62	539·7	63·1	469·5	63·5	W
	3	0		20·58	546·8	63·6	475·6	64·2	W
	4	0		19·10	549·2	64·3	485·1	65·0	W
	5	0		16·06	547·1	65·0	493·1	65·8	W
	6	0		14·08	553·5	65·7	492·8	66·5	H
	7	0		09·60	552·8	66·3	492·9	67·0	H
	8	0		12·11	552·9	66·8	491·9	67·5	H
	9	0		11·61	549·3	67·2	486·1	67·7	H
	10	0		12·04	547·1	67·2	480·3	67·5	H
	11	0		09·77	544·1	67·0	475·1	67·0	W
	12	0		08·92	540·6	66·6	477·2	66·5	W
22	13	0	25	09·42	540·4	62·9	487·0	62·2	W
	14	0		10·47	539·8	62·3	491·5	61·4	W
	15	0		09·05	538·5	61·7	495·7	60·6	W
	16	0		08·95	539·0	61·0	502·2	59·8	W
	17	4		07·14	539·3	60·3	509·7	59·0	W
	18	0		05·53	536·2	59·8	518·0	58·5	W
	19	0		04·98	532·8	59·5	525·1	58·3	H
	20	0		05·89	529·2	59·2	515·2	58·2	H
	21	0		07·24	526·3	59·0	518·7	58·3	H
	22	0		10·11	523·3	58·9	510·1	58·5	H
	23	0		11·22	524·1	59·0	492·9	59·0	H
23	0	0		15·64	529·2	59·2	488·1	59·5	H
	1	0		18·01	539·0	59·7	495·0	60·3	H
	2	0		18·37	542·0	60·3	489·5	61·2	H
	3	0		18·03	550·5	61·0	502·6	62·2	H
	4	0		16·52	554·6	61·8	502·2	62·8	H
	5	0		15·58	553·9	62·4	508·1	63·5	H
	6	0		14·21	550·8	62·9	513·2	63·8	W
	7	0		12·72	546·0	63·2	523·2	64·0	W
	8	0		12·58	551·1	63·4	520·9	64·1	W
	9	0		11·91	550·2	63·5	517·7	64·3	W
	10	0		11·62	547·8	63·4	508·2	64·0	W
	11	0		11·77	548·5	63·2	498·6	63·5	H
	12	0		07·10	547·8	62·8	488·5	63·0	H
	13	0	25	08·99	540·9	62·4	485·2	62·5	H
	14	0		08·23	540·0	62·0	490·6	62·0	H
	15	0		08·39	539·9	61·5	479·9	61·3	H
	16	0		09·39	539·3	61·0	481·7	60·7	H
	17	0		09·32	541·5	60·6	482·7	60·0	H
	18	0		05·18	539·6	60·2	489·3	59·7	H
	19	0		04·24	537·3	59·9	491·9	59·4	W
	20	0		04·10	533·2	59·7	503·0	59·2	W

DECLINATION. Magnet untouched, June 18^d—Sept. 21^d.

BIFILAR. Observed 2^m after the Declination, k=0·000140. BALANCE. Observed 3^m after the Declination, k=0·000010.

June 18^d 10^h—19^d 10^h. Term-Day Observations made.
Observer C. Mr CHISHOLM.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
23	21	0	25	05·63	530·6	59·5	503·3	59·2	W
	22	0		08·25	527·7	59·4	501·6	59·2	W
	23	0		10·13	525·0	59·4	501·8	59·4	W
24	0	0		12·28	527·9	59·5	485·0	59·5	W
	1	0		14·99	532·4	59·5	483·8	59·7	W
	2	0		16·92	538·8	59·6	496·8	59·8	W
	3	0		17·98	545·3	59·8	500·8	60·0	W
	4	0		16·38	550·5	59·9	503·7	60·3	W
	5	0		14·23	554·3	60·0	512·4	60·4	W
	6	0		12·62	555·8	60·1	518·3	60·5	H
	7	0		12·04	552·8	60·1	519·2	60·2	H
	8	0		11·66	551·6	60·0	515·5	60·0	H
	9	0		12·15	551·1	59·8	511·1	59·5	H
	10	0		11·51	544·6	59·4	508·6	59·0	H
	11	0		11·37	543·0	59·0	504·7	58·5	D
	12	0		11·08	544·2	58·7	500·3	58·3	D
	13	0	25	08·82	543·0	58·5	492·8	58·0	D
	14	0		09·69	539·8	58·2	499·4	57·7	D
	15	0		09·42	540·6	57·8	503·0	57·3	D
	16	0		12·78	540·5	57·4	508·1	56·9	D
	17	0		07·69	540·5	57·1	515·4	56·5	D
	18	0		06·98	539·1	56·9	520·1	56·3	D
	19	9		07·40	537·2	56·7	522·4	56·2	H
	20	0		07·13	536·2	56·5	521·6	56·2	H
	21	0		07·52	536·7	56·5	513·7	56·3	W
	22	0		08·29	534·5	56·5	506·8	56·5	H
	23	0		10·40	533·3	56·7	504·5	57·0	H
25	0	0		13·72	535·4	57·0	501·0	57·5	H
	1	0		16·35	538·8	57·4	497·5	58·4	H
	2	0		16·21	542·2	58·2	503·5	59·5	H
	3	0		17·15	543·9	59·1	507·9	60·5	W
	4	0		16·59	548·5	60·1	504·8	61·5	H
	5	0		14·33	547·6	60·8	504·2	62·0	H
	6	0		12·04	552·3	61·3	502·0	62·3	W
	7	0		11·82	550·2	61·4	505·0	62·5	H
	8	0		11·44	548·8	61·4	508·5	62·2	H
	9	0		10·70	546·3	61·3	503·8	61·8	H
	10	0		10·70	544·8	61·0	500·4	61·5	H
	11	0		11·66	546·4	60·7	493·0	61·0	W
	12	0		11·91	545·8	60·3	491·5	60·5	W
	13	0	25	11·42	543·5	60·0	492·3	59·9	W
	14	0		10·36	540·1	59·6	494·8	59·3	W
	15	0		09·17	539·7	59·2	498·7	58·8	W
	16	0		09·33	538·9	58·7	504·2	58·3	W
	17	0		06·77	539·1	58·2	510·0	57·8	W
	18	0		06·19	536·1	57·8	517·0	57·3	W
	19	0		05·30	534·5	57·6	516·4	57·0	H
	20	0		05·90	532·0	57·4	516·0	57·0	H
	21	0		06·14	527·0	57·2	519·7	57·0	H
	22	0		08·05	523·7	57·1	513·4	57·0	H
	23	0		11·10	521·6	57·0	498·7	57·2	H
26	0	0		16·05	525·5	57·2	485·5	57·4	H
	1	0		16·62	529·6	57·3	479·8	57·7	H
	2	0		17·09	533·9	57·7	487·2	58·2	H
	3	0		16·75	529·1	58·0	490·2	58·7	H
	4	0		17·22	542·5	58·3	496·8	59·1	H
26	5	0	25	14·82	549·9	58·7	498·0	59·5	H
	6	0		11·54	547·7	59·0	501·1	59·8	W
	7	0		10·80	551·6	59·3	501·3	59·8	W
	8	0		10·70	552·2	59·3	497·0	59·7	W
	9	0		10·40	549·4	59·2	494·2	59·5	W
	10	0		10·30	548·2	58·9	489·7	59·0	W
	11	0		10·67	545·1	58·6	488·3	58·6	H
	12	0		10·65	545·0	58·3	487·7	58·4	H
	13	0	25	10·09	544·0	58·0	486·3	57·9	H
	14	0		09·53	543·3	57·7	492·1	57·3	H
	15	0		09·02	541·8	57·3	491·5	56·8	H
	16	0		08·55	540·7	56·8	496·6	56·3	H
	17	0		06·84	539·4	56·3	501·8	55·7	H
	18	0		05·49	537·8	55·9	506·9	55·2	H
	19	0		05·69	537·0	55·7	509·9	55·0	W
	20	0		05·15	536·5	55·4	512·0	54·9	W
	21	0		05·55	536·4	55·3	517·9	55·0	W
	22	0		08·16	532·8	55·3	509·6	55·4	W
	23	0		12·82	530·7	55·6	497·5	56·0	W
27	0	0		15·22	534·3	56·0	484·7	56·6	W
	1	0		17·36	536·9	56·5	483·7	57·2	W
	2	0		19·01	541·8	57·0	479·6	57·8	W
	3	0		18·43	541·9	57·4	482·3	58·1	W
	4	0		16·72	544·2	57·7	488·4	58·3	W
	5	0		14·11	545·6	57·9	499·4	58·5	W
	6	0		11·98	548·2	58·0	501·9	58·5	W
	7	0		12·15	553·3	57·8	507·9	58·2	W
	8	0		11·77	555·6	57·6	507·0	57·8	W
	9	0		11·34	554·1	57·3	505·2	57·3	H
	10	0		11·00	554·5	57·0	504·4	56·7	H
	11	0		11·57	549·5	56·6	504·5	56·4	D
	12	0		09·05	545·9	56·3	495·0	56·1	D
	13	0	25	08·80	542·6	56·0	493·3	55·8	D
	14	0		07·64	542·3	55·7	493·8	55·5	D
	15	0		07·62	541·4	55·4	497·2	55·2	D
	16	0		08·72	547·8	55·1	498·8	54·8	D
	17	0		04·39	544·5	54·8	502·9	54·5	D
	18	0		07·49	544·6	54·6	503·4	54·3	D
	19	0		06·06	539·9	54·3	506·9	54·1	H
	20	0		08·65	538·0	54·2	508·8	54·0	H
	21	0		07·87	531·4	54·1	506·6	54·0	W
	22	0		07·78	527·5	54·0	494·6	54·0	H
	23	0		11·86	517·0	53·8	482·9	53·5	H
28	0	0		22·67	519·7	53·7	476·9	53·2	H
	1	0		18·11	525·2	53·3	470·1	52·8	H
	2	0		22·40	544·8	53·1	490·3	52·7	W
	3	0		19·04	539·6	53·0	502·6	52·5	W
	4	0		12·90	550·3	52·9	514·3	52·6	W
	5	3		11·62	548·1	52·9	528·4	52·8	H
	6	0		11·66	550·1	53·0	526·2	53·0	H
	7	0		11·30	550·8	53·0	530·3	53·0	H
	8	0		12·16	546·7	52·9	521·8	53·0	H
	9	0		12·42	547·1	52·8	520·4	52·8	H
	10	0		10·80	547·8	52·8	517·9	52·6	H
	11	0		11·55	545·5	52·6	511·8	52·5	W
	12	0		10·65	545·3	52·4	512·5	52·1	W

DECLINATION. Magnet untouched, June 18ᵈ — Sept. 21ᵈ.

BIFILAR. Observed 2ᵐ after the Declination, $h = 0·000140$. BALANCE. Observed 3ᵐ after the Declination, $k = 0·000010$.

June 26ᵈ 2ʰ—4ʰ. Observatory being swept.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
29	13	0	25	12·45	542·7	55·5	486·8	56·0	H
	14	0		13·02	537·4	55·2	478·1	55·7	H
	15	0		10·23	537·9	55·0	478·3	55·5	H
	16	0		07·18	542·2	55·0	479·9	55·5	H
	17	0		04·81	543·8	54·8	487·9	55·3	H
	18	0		04·15	538·0	54·8	493·3	55·4	H
	19	0		06·16	537·5	55·3	497·7	55·7	W
	20	0		09·47	532·0	55·5	496·6	55·9	W
	21	0		13·29	524·1	55·6	498·5	56·1	W
	22	0		13·59	529·9	55·9	488·7	56·5	W
	23	0		13·72	530·5	56·4	489·0	57·1	W
30	0	0		14·94	532·2	56·9	472·6	57·9	W
	1	0		14·53	540·4	57·5	458·8	58·6	W
	2	0		15·12	545·2	58·2	460·9	59·4	W
	3	0		15·44	550·4	59·0	472·0	60·3	W
	4	0		15·25	550·4	59·8	481·2	61·1	W
	5	0		13·02	553·8	60·4	490·2	61·5	W
	6	0		10·53	553·6	60·8	507·5	61·7	H
	7	0		12·75	551·1	60·8	507·2	61·7	H
	8	0		13·39	559·1	60·7	491·2	61·5	H
	9	0		12·04	548·5	60·5	491·3	61·5	H
	10	0		11·44	548·5	60·3	486·0	61·0	H
	11	0		09·54	550·0	60·1	470·0	60·4	D
	12	0		09·73	534·4	59·8	444·1	60·2	D
	13	0	25	01·41	533·8	59·6	415·0	59·9	D
	14	0		05·55	535·7	59·4	409·2	59·6	D
	15	0		06·93	537·6	59·2	392·8	59·3	D
	16	0		15·27	521·5	58·9	403·4	58·9	D
	17	0		06·59	537·4	58·7	383·6	58·5	D
	18	0		07·51	539·4	58·4	422·3	58·3	D
	19	0		08·26	531·0	58·0	446·5	58·0	H
	20	0		06·77	530·4	57·7	461·0	57·7	H
	21	0		07·54	523·8	57·6	472·6	57·5	W
	22	0		09·19	526·8	57·4	473·2	57·2	H
	23	0		11·34	530·1	57·2	471·0	57·2	H
1	0	0		14·06	537·0	57·1	463·5	57·1	H
	1	0		15·44	545·2	57·1	453·4	57·3	H
	2	0		14·99	532·6	57·2	468·0	58·0	H
	3	0		15·41	552·5	57·7	470·0	58·3	H
	4	0		15·04	550·6	57·9	477·7	58·4	H
	5	0		13·93	549·8	58·0	480·8	58·4	H
	6	0		13·00	552·6	57·9	484·5	58·2	W
	7	0		12·63	550·5	57·7	486·1	57·9	W
	8	0		13·22	548·4	57·5	486·2	57·5	H
	9	0		11·62	548·5	57·2	484·6	57·2	H
	10	0		11·48	546·4	57·0	491·1	56·8	H
	11	0		09·87	541·4	56·8	490·3	56·5	W
	12	0		09·64	540·5	56·5	488·0	56·3	W
	13	0	25	09·86	539·8	56·3	485·2	56·0	W
	14	0		08·97	539·3	56·0	486·7	55·8	W
	15	0		09·35	539·9	55·8	488·0	55·5	W
	16	0		11·19	540·7	55·6	484·8	55·3	W
	17	0		06·61	542·5	55·4	485·2	55·1	W
	18	3		06·21	536·4	55·3	493·6	55·1	W
	19	0		06·03	533·1	55·4	497·2	55·3	H
	20	0		08·01	531·4	55·4	492·7	55·5	H
1	21	0	25	08·34	530·9	55·6	488·0	55·7	H
	22	0		08·41	525·4	55·7	488·1	56·0	H
	23	0		10·53	523·2	55·8	487·5	56·4	H
2	0	0		09·00	531·4	56·2	483·2	56·8	H
	1	0		12·65	536·1	56·7	482·2	57·7	H
	2	0		13·16	549·2	57·3	490·5	58·6	H
	3	0		12·85	547·8	58·2	497·8	59·5	H
	4	0		13·66	556·9	59·1	498·4	60·5	H
	5	0		13·86	553·3	60·0	514·2	61·5	H
	6	0		14·73	546·3	60·8	516·8	62·2	W
	7	30		12·60	550·6	61·7	502·0	62·8	W
	8	0		12·45	547·5	61·9	499·9	62·8	W
	9	0		11·68	546·1	62·1	489·8	63·0	W
	10	0		11·41	545·4	62·1	482·1	62·8	W
	11	0		10·77	531·8	62·0	477·6	62·5	H
	12	0		10·77	541·6	61·6	476·3	62·0	H
	13	0	25	09·71	540·4	61·3	475·2	61·5	H
	14	0		10·50	539·7	60·9	474·8	61·0	H
	15	0		08·14	538·3	60·4	476·0	60·5	H
	16	0		09·46	541·2	60·0	475·2	60·0	H
	17	0		08·08	539·4	59·7	481·5	59·5	H
	18	0		06·06	533·3	59·3	481·0	59·0	H
	19	0		10·28	535·8	59·0	477·0	58·7	W
	20	0		07·17	535·0	58·7	461·0	58·4	W
	21	0		08·63	528·5	58·4	462·5	58·2	W
	22	0		11·14	527·7	58·3	468·8	58·0	W
	23	0		12·28	528·6	58·0	478·9	57·8	W
3	0	0		15·17	529·9	57·9	461·2	57·8	W
	1	0		15·78	537·7	57·8	463·6	57·8	W
	2	0		15·59	539·2	57·8	467·3	57·8	W
	3	0		15·69	542·4	57·8	481·8	57·8	W
	4	0		16·93	547·4	57·8	492·2	57·8	W
	5	0		15·14	546·6	57·8	498·4	58·0	W
	6	0		14·64	551·1	57·8	501·7	58·2	H
	7	0		12·82	553·0	58·0	504·0	58·3	H
	8	0		12·95	548·6	58·0	500·1	58·4	H
	9	0		12·75	547·9	58·0	495·5	58·4	H
	10	0		11·64	545·3	58·1	494·4	58·4	H
	11	0		10·97	543·2	58·2	489·6	58·4	D
	12	0	25	10·65	541·0	58·2	488·6	58·3	D
	13	0		11·48	543·7	58·1	485·7	58·3	D
	14	0		08·50	542·1	58·1	485·2	58·3	D
	15	0		07·38	540·0	58·0	486·7	58·2	D
	16	0		07·34	538·5	57·9	487·2	58·1	D
	17	0		07·31	540·5	57·7	487·7	57·7	D
	18	0		05·72	538·7	57·4	485·5	57·4	D
	19	0		05·32	536·0	57·4	488·8	57·4	H
	20	0		05·56	534·0	57·4	491·3	57·3	H
	21	0		07·35	531·6	57·4	493·5	57·3	W
	22	0		10·23	529·6	57·4	491·0	57·3	H
	23	0		13·02	528·7	57·4	491·3	57·5	H
4	0	0		16·19	530·9	57·6	493·8	58·2	H
	1	0		19·34	536·0	57·9	491·2	58·7	H
	2	0		19·41	543·8	58·7	482·1	59·5	H
	3	0		18·07	546·7	59·2	481·2	60·2	H
	4	0		16·86	552·7	59·8	488·4	61·0	H

DECLINATION. Magnet untouched, June 18d—Sept. 21d.

BIFILAR. Observed 2m after the Declination, $k=0·000140$. BALANCE. Observed 3m after the Declination, $k=0·000010$.

July 3d 2h. A small insect seen on the south cross-plate of the balance magnet.

Göttingen Mean Time of Declination Obs.			DECLINATION.	BIFILAR.		BALANCE.		Observer's Initial.
				Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	° ′	Sc. Div.	°	Mic. Div.	°	
4	5	0	25 15·74	549·3	60·5	498·7	61·5	H
	6	0	13·72	555·0	61·1	502·4	62·0	W
	7	3	12·49	552·0	61·2	489·9	61·6	H
	8	0	12·63	550·4	61·3	491·3	61·7	H
	9	0	11·54	549·2	61·5	493·6	62·7	H
	10	0	12·22	549·8	61·7	482·6	62·5	H
	11	0	09·86	543·7	61·3	479·4	61·7	W
	12	0†	04·82	548·0	60·9	471·1	61·0	W
	13	0	25 09·46	541·1	60·5	469·7	60·3	W
	14	0	09·30	541·6	60·0	472·7	59·6	W
	15	0	08·70	539·8	59·4	479·2	58·9	W
	16	0	08·29	539·7	58·9	484·6	58·2	W
	17	0	09·44	538·4	58·4	487·9	57·6	W
	18	0	07·91	538·6	57·9	484·5	57·3	W
	19	0	06·29	537·3	57·9	494·2	57·2	H
	20	0	06·97	534·3	57·8	490·2	57·2	H
	21	0	07·20	532·6	57·7	490·9	57·3	D
	22	0	10·53	532·4	57·7	482·0	57·7	H
	23	0	11·03	536·3	57·8	480·8	58·3	H
5	0	0	15·85	542·0	58·2	471·4	59·0	H
	1	0	16·16	532·4	58·9	457·0	60·2	H
	2	0	15·71	533·5	60·0	464·6	61·2	H
	3	0	14·84	539·5	61·0	474·3	62·5	H
	4	0	14·37	543·4	62·0	471·3	63·4	H
	5	0	13·91	545·3	62·9	475·0	64·2	H
	6	0	13·34	551·4	63·9	471·4	65·1	W
	7	0	11·41	555·5	64·6	466·8	65·3	W
	8	0	10·90	554·1	65·0	466·9	65·7	W
	9	0	10·61	553·1	65·4	467·0	66·7	W
	10	0	11·07	551·4	65·6	457·2	66·5	W
	11	0	10·16	546·3	65·3	457·2	66·0	H
	12	0	10·33	548·0	65·0	452·2	65·3	H
6	13	0	25 10·94	546·5	63·3	455·8	62·9	D
	14	0	08·95	548·0	63·1	448·4	62·7	D
	15	0	04·98	542·1	62·8	434·3	62·4	D
	16	0	11·82	535·1	62·5	429·7	62·1	D
	17	0	05·33	541·6	62·2	429·0	61·7	D
	18	0	02·82	539·8	61·9	457·7	61·5	D
	19	0	02·77	546·8	61·8	471·2	61·2	H
	20	0	03·85	533·1	61·5	477·6	60·9	H
	21	0	07·69	531·5	61·4	480·2	61·0	W
	22	0	11·91	532·0	61·2	468·2	61·2	H
	23	0	13·07	529·7	61·3	463·4	61·5	H
7	0	0	13·66	532·2	61·7	468·4	62·2	H
	1	0	17·70	538·4	62·3	466·0	63·0	H
	2	0	17·56	544·2	63·0	467·8	63·8	H
	3	0	17·83	542·9	63·8	476·0	64·6	H
	4	0	17·36	548·9	64·3	487·7	65·4	H
	5	0	16·01	544·1	65·1	504·6	66·0	H
	6	0	13·14	545·0	65·7	507·1	66·7	W
	7	0	11·32	548·7	66·3	499·8	67·0	W
	8	0	10·20	547·5	66·7	489·6	67·4	H
	9	0	09·93	547·9	67·1	480·3	68·3	H
	10	0	09·08	543·3	67·3	466·0	68·0	H
	11	0	10·36	543·1	67·3	460·0	67·7	W
	12	0†	11·14	546·0	66·9	454·5	67·2	W
7	13	0†	25 18·50	540·0	66·5	412·8	66·7	W
	14	0	08·66	539·4	66·1	419·7	66·2	W
	15	0	09·15	538·0	65·7	442·2	65·5	W
	16	0	07·89	537·8	65·2	459·8	64·9	W
	17	0	07·08	536·9	64·7	468·4	64·3	W
	18	0	06·03	534·5	64·4	472·0	63·7	W
	19	0	05·32	536·6	64·0	475·1	63·5	H
	20	0	05·72	535·1	63·8	478·1	63·5	H
	21	0	07·37	528·6	63·7	473·6	63·5	B
	22	0	10·87	524·7	63·7	467·9	63·6	H
	23	0	13·41	522·6	63·8	466·2	64·0	H
8	0	0	16·59	527·6	63·9	465·2	64·3	H
	1	0	18·58	531·0	64·3	459·6	64·6	B
	2	0	20·08	544·5	64·6	461·3	64·9	B
	3	0	19·82	546·7	64·8	468·0	65·3	B
	4	0	18·90	551·3	65·2	475·1	65·7	H
	5	0	16·23	548·2	65·6	488·5	66·1	B
	6	0	14·23	551·6	65·9	486·8	66·4	W
	7	0	12·82	564·2	66·1	480·6	66·4	W
	8	0†	11·46	552·8	66·1	496·2	66·2	W
	9	0	09·51	552·3	66·0	500·1	66·0	W
	10	0	08·88	543·4	65·7	492·5	65·5	W
	11	0	09·66	543·4	65·3	485·0	65·1	H
	12	0	10·36	542·1	65·0	470·7	64·5	H
	13	0	25 11·00	542·5	64·7	467·0	64·1	H
	14	0	10·09	539·5	64·2	464·9	63·7	H
	15	0	09·82	537·6	63·9	471·9	63·3	H
	16	0	08·92	539·6	63·6	471·6	62·8	H
	17	0†	16·82	526·3	63·2	472·1	62·5	H
	18	0	15·34	536·7	62·7	418·3	62·0	H
	19	0	05·99	539·5	62·5	436·1	61·7	W
	20	0	06·74	533·9	62·3	448·5	61·5	W
	21	0	07·34	529·4	62·1	460·1	61·5	B
	22	0	08·95	525·2	62·0	467·6	61·7	W
	23	0	09·00	525·1	62·0	466·5	61·9	W
9	0	0	11·98	526·9	62·2	456·9	62·3	W
	1	0	14·15	528·0	62·6	456·8	62·9	W
	2	0	15·85	531·1	62·9	458·9	63·3	W
	3	0	16·38	536·6	63·3	462·5	63·9	W
	4	0	15·01	542·5	63·6	468·8	64·1	W
	5	0	13·56	544·0	63·8	481·9	64·3	W
	6	0	11·54	548·0	64·0	483·3	64·4	H
	7	0	09·87	549·0	64·0	484·7	64·2	H
	8	0	09·10	551·4	63·8	484·7	64·0	H
	9	0	09·69	548·2	63·5	482·4	63·5	H
	10	0	10·16	544·0	63·2	479·3	63·0	H
	11	0	09·67	541·8	62·9	475·3	62·5	B
	12	0	09·57	545·1	62·5	468·6	62·0	B
	13	0	25 07·72	542·6	62·1	455·0	61·5	B
	14	0	08·93	537·4	61·7	460·2	61·0	B
	15	0	10·74	538·8	61·3	449·5	60·6	B
	16	0	09·64	538·1	60·9	437·7	60·2	B
	17	0	07·11	536·8	60·6	464·6	59·8	B
	18	0	04·88	536·5	60·3	481·8	59·5	B
	19	0	03·65	534·7	60·0	490·9	59·5	H
	20	0	04·22	533·6	59·9	497·0	59·5	H

DECLINATION. Magnet untouched, June 18ᵈ—Sept. 21ᵈ.

BIFILAR. Observed 2ᵐ after the Declination, $k=0{\cdot}000140$. BALANCE. Observed 3ᵐ after the Declination, $k=0{\cdot}000010$.

† Extra Observations made.

July 5ᵈ 9ʰ. The sun shining on the case of the balance magnetometer.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
9	21	0	25	04·73	528·4	59·9	498·5	59·8	W
	22	0		04·68	524·4	60·0	498·6	60·2	H
	23	0		09·60	522·1	60·4	496·5	61·0	H
10	0	0		13·93	524·1	61·2	484·2	62·2	H
	1	0		16·05	531·9	62·2	478·5	63·4	H
	2	20		18·34	537·9	63·7	473·5	64·9	H
	3	0		17·51	540·6	64·2	465·5	65·6	H
	4	0		17·06	548·5	65·2	462·7	66·6	H
	5	0		16·41	550·9	66·0	467·8	67·2	H
	6	0		14·94	549·5	66·6	483·2	67·8	B
	7	0		13·63	552·2	67·0	480·2	68·0	B
	8	0		12·45	549·2	67·2	480·4	68·0	B
	9	0		10·70	547·5	67·2	480·3	68·0	B
	10	0		11·64	543·8	67·0	470·5	67·6	B
	11	0		10·21	544·2	66·8	464·2	67·3	W
	12	0		11·57	545·2	66·5	460·8	66·8	W
	13	0	25	10·53	543·5	66·0	457·7	66·2	W
	14	0		10·36	543·0	65·5	459·8	65·6	W
	15	0		09·37	539·5	65·1	463·8	65·0	W
	16	0		12·01	537·1	64·6	470·0	64·3	W
	17	0		08·34	535·8	64·0	471·3	63·4	W
	18	0		05·02	537·6	63·4	475·0	62·7	W
	19	0		03·90	535·4	62·9	479·9	62·0	B
	20	0		03·99	531·1	62·4	479·2	61·5	B
	21	0		04·37	524·4	62·0	479·9	61·2	H
	22	0		07·98	520·0	61·7	478·3	61·2	H
	23	0		11·08	521·2	61·7	474·5	61·5	H
11	0	0		14·03	525·7	61·7	469·7	61·5	B
	1	0		15·20	533·7	61·8	465·0	61·5	H
	2	0		17·76	533·4	61·8	469·5	61·7	H
	3	0		17·49	545·5	61·9	473·2	62·0	H
	4	0		17·53	546·8	62·0	482·6	62·5	H
	5	0		15·24	547·2	62·4	492·4	62·7	H
	6	0		12·75	548·3	62·5	493·6	62·7	W
	7	0		11·24	547·4	62·5	492·5	62·6	W
	8	0		11·10	552·2	62·4	489·7	62·4	W
	9	0		11·72	549·1	62·2	485·9	62·1	W
	10	0		11·66	545·8	61·9	481·4	61·7	W
	11	0		11·51	545·7	61·6	477·8	61·2	H
	12	0		10·74	542·7	61·2	476·5	60·7	H
	13	0	25	11·84	543·3	60·9	477·6	60·4	H
	14	0		10·20	541·9	60·6	475·1	60·0	H
	15	0		10·18	541·2	60·2	479·9	59·5	H
	16	0		09·19	541·2	59·8	487·2	59·0	H
	17	0		08·66	541·1	59·4	496·7	58·5	H
	18	0		09·47	536·6	59·0	492·0	58·0	H
	19	0		07·64	535·3	58·6	485·9	57·6	W
	20	0		08·59	535·5	58·2	486·7	57·3	W
	21	0		09·98	534·6	57·9	486·9	57·0	B
	22	0		10·90	531·1	57·7	486·8	57·1	W
	23	0		12·87	528·9	57·7	491·9	57·4	W
12	0	0		15·96	536·2	57·8	485·5	58·0	W
	1	0		16·93	529·1	58·2	481·9	58·5	W
	2	0		16·16	541·8	58·7	481·9	59·3	W
	3	0		17·02	540·9	59·4	494·6	60·1	W
	4	0		15·31	549·2	60·0	504·5	60·9	W
12	5	0	25	14·94	546·0	60·7	514·8	61·5	B
	6	0		13·12	557·3	61·1	516·2	61·7	H
	7	0		12·04	555·7	61·1	520·9	61·7	H
	8	0		12·06	541·7	61·1	512·2	61·7	H
	9	0		11·51	551·0	61·0	502·1	61·4	H
	10	0		10·45	543·0	60·7	501·0	60·8	H
	11	0		12·04	543·6	60·4	494·0	60·4	B
	12	0		11·51	542·6	60·0	489·3	60·0	B
13	13	0	25	10·54	541·5	57·3	494·9	57·3	W
	14	0		10·18	541·9	57·1	494·3	57·1	W
	15	0		09·47	540·8	56·9	493·7	56·9	W
	16	0		08·38	541·0	56·7	495·7	56·7	W
	17	0		07·00	541·1	56·6	499·5	56·5	W
	18	0		05·30	538·0	56·4	503·1	56·3	W
	19	0		04·95	536·3	56·2	504·3	56·1	B
	20	0		04·84	531·1	56·0	504·3	56·0	B
	21	0		05·74	526·5	55·9	500·7	55·9	H
	22	0		08·34	524·6	55·9	491·6	56·0	H
	23	0		11·30	525·7	56·0	493·9	56·2	H
14	0	0		14·06	530·7	56·1	484·7	56·5	B
	1	0		16·52	531·5	56·5	479·6	57·2	H
	2	0		17·36	535·2	57·1	477·4	58·0	B
	3	0		15·91	539·1	57·7	477·4	58·7	H
	4	0		14·10	546·8	58·4	481·5	59·3	H
	5	0		13·36	551·2	59·0	485·7	59·8	B
	6	0		14·68	558·7	59·4	489·9	60·3	W
	7	0		13·05	553·2	59·7	487·6	60·5	W
	8	0		13·43	556·5	60·0	484·8	60·6	W
	9	0		12·75	552·9	60·1	482·6	60·5	W
	10	0		11·77	552·6	60·0	480·6	60·2	W
	11	0		10·60	550·5	59·7	482·8	59·8	H
	12	0		09·54	545·3	59·4	482·7	59·4	H
	13	0	25	09·19	544·9	59·0	477·6	59·0	H
	14	0		08·70	543·5	58·6	480·0	58·5	H
	15	0		08·21	540·1	58·2	483·4	57·9	H
	16	0		08·41	540·8	57·8	483·0	57·2	H
	17	0		06·24	539·3	57·2	488·4	56·5	H
	18	0		04·61	536·0	56·8	491·9	55·9	H
	19	0		04·78	534·7	56·4	492·9	55·6	W
	20	0		05·03	531·3	56·0	492·0	55·3	W
	21	0		07·98	529·7	55·7	495·2	55·2	B
	22	0		11·49	531·0	55·5	484·8	55·2	W
	23	0		13·56	533·2	55·5	492·3	55·4	W
15	0	0		15·88	533·0	55·6	485·8	55·7	W
	1	0		17·63	535·1	55·7	483·5	56·0	W
	2	0		18·21	535·9	56·1	484·3	56·6	W
	3	0		16·41	541·8	56·7	485·4	57·3	W
	4	0		14·60	548·0	57·4	491·9	58·2	W
	5	0		13·16	554·1	58·0	491·7	58·8	W
	6	0		12·02	555·2	58·6	497·2	59·5	H
	7	0		12·51	554·3	59·2	501·8	60·0	H
	8	0		12·51	555·5	59·7	501·1	60·5	H
	9	0		12·45	552·7	60·1	498·8	61·1	H
	10	0		12·02	547·2	60·3	491·5	61·0	H
	11	0		11·46	546·3	60·1	485·6	60·4	B
	12	0		10·83	544·3	59·8	480·6	59·9	B

DECLINATION. Magnet untouched, June 18^{d}—Sept. 21^{d}.

BIFILAR. Observed 2^{m} after the Declination, k=0·000140. BALANCE. Observed 3^{m} after the Declination, k=0·000010.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
15	13	0	25	10·83	544·5	59·4	478·7	59·5	B
	14	0		09·98	542·7	59·0	477·8	59·0	B
	15	0		09·87	541·0	58·7	478·2	58·5	B
	16	0		09·47	540·4	58·3	479·3	58·0	B
	17	0		06·73	537·2	57·9	484·0	57·5	B
	18	0		05·02	533·5	57·6	485·5	57·0	B
	19	0		05·56	532·8	57·5	487·7	57·0	H
	20	0		04·64	531·6	57·4	494·4	57·0	H
	21	0		07·65	531·2	57·4	498·4	57·1	W
	22	0		09·96	529·5	57·3	485·8	57·3	H
	23	0		12·02	532·5	57·4	476·6	57·9	H
16	0	0		14·73	538·6	58·0	473·4	58·8	H
	1	0		16·55	537·4	58·6	472·9	59·7	H
	2	0		16·79	542·3	59·3	467·8	60·6	H
	3	0		15·38	544·1	60·4	478·9	61·9	H
	4	0		15·22	544·4	61·5	469·5	63·0	H
	5	0		14·20	546·0	62·4	463·3	63·7	H
	6	0		13·19	544·5	63·0	457·8	64·0	B
	7	0		11·98	547·0	63·3	459·3	64·0	B
	8	0		11·77	550·8	63·3	461·5	63·8	B
	9	0		11·55	551·7	63·2	462·8	63·6	B
	10	0		10·63	548·3	62·9	462·7	63·1	B
	11	0		10·50	547·0	62·5	459·0	62·6	W
	12	0		09·76	544·7	62·0	459·4	62·0	W
	13	0	25	09·24	543·3	61·5	460·0	61·2	W
	14	0		09·56	542·9	60·9	459·3	60·3	W
	15	0		08·92	541·4	60·3	462·0	59·5	W
	16	0		08·58	539·6	59·7	468·6	58·8	W
	17	0		08·06	539·6	59·1	473·5	58·2	W
	18	0		06·09	536·8	58·6	478·6	57·7	W
	19	0		07·32	533·7	58·2	480·6	57·2	B
	20	5		07·20	534·5	57·8	476·7	56·8	B
	21	0		07·24	533·5	57·4	474·3	56·6	H
	22	0		07·72	529·3	57·2	461·1	56·6	H
	23	0		09·35	528·0	57·1	467·7	56·9	H
17	0	0		14·82	527·8	57·3	470·2	57·3	B
	1	0		18·79	532·6	57·4	467·8	57·5	H
	2	0		21·23	540·6	57·7	467·2	58·0	H
	3	0		20·89	543·0	57·8	467·7	58·2	H
	4	0		17·49	544·0	58·0	473·9	58·5	H
	5	0		13·90	548·7	58·4	481·8	59·0	B
	6	0		11·54	549·1	58·8	482·2	59·3	W
	7	0		10·58	554·7	59·0	482·5	59·5	W
	8	0		11·12	554·2	59·1	484·2	59·7	W
	9	0		08·80	553·7	59·3	486·2	59·7	W
	10	0		10·13	547·6	59·3	482·4	59·7	W
	11	0		10·14	546·1	59·2	478·6	59·5	H
	12	0		07·00	544·5	59·0	469·0	59·5	H
	13	0	25	08·32	542·7	58·9	469·8	59·2	H
	14	0		08·59	541·7	58·8	470·6	59·0	H
	15	0		08·21	542·6	58·5	469·9	58·7	H
	16	0		08·79	543·4	58·3	470·6	58·5	H
	17	0		07·51	541·5	58·2	475·0	58·2	H
	18	0		05·62	537·8	58·0	477·8	57·9	H
	19	0		08·14	536·3	57·7	472·3	57·6	W
	20	0		07·05	532·5	57·6	472·3	57·6	W
17	21	0	25	07·45	527·6	57·5	467·7	57·6	B
	22	0		06·76	524·3	57·5	463·7	57·7	W
	23	0		09·19	524·3	57·6	460·6	57·9	W
18	0	0		13·36	524·7	57·7	465·0	58·1	W
	1	0		17·84	536·4	57·9	453·0	58·5	W
	2	0		19·61	539·9	58·4	456·5	59·2	W
	3	0		18·77	539·4	59·0	454·4	60·0	W
	4	0		17·54	539·6	59·5	457·3	60·6	W
	5	0		15·51	547·6	60·0	457·7	61·0	B
	6	0		13·52	548·4	60·5	463·1	61·5	H
	7	0		11·55	548·9	61·0	466·6	62·0	H
	8	0		11·57	543·7	61·4	457·1	62·5	H
	9	0		10·47	548·7	61·7	463·9	62·6	H
	10	0		10·74	550·3	61·7	463·4	62·5	H
	11	0		10·14	546·2	61·7	464·1	62·2	B
	12	0		10·80	545·7	61·4	462·0	61·8	B
	13	0	25	08·38	543·2	61·1	439·2	61·4	B
	14	0		07·38	537·5	60·8	452·3	61·0	B
	15	0		06·36	539·9	60·5	445·8	60·5	B
	16	0		07·58	539·9	60·1	453·0	60·0	B
	17	0		07·98	541·6	59·8	459·8	59·6	B
	18	0		05·85	540·4	59·5	463·3	59·2	B
	19	0		07·38	538·9	59·1	462·3	58·9	H
	20	0		04·61	533·8	58·8	464·1	58·7	H
	21	3		12·04	529·2	58·7	470·5	58·5	W
	22	0		11·03	529·4	58·7	457·1	58·7	H
	23	0		12·42	530·1	58·7	460·3	58·9	H
19	0	0		15·39	537·1	58·8	450·5	59·2	H
	1	0		18·90	540·7	59·1	450·5	59·7	H
	2	0		20·76	542·8	59·5	457·0	60·2	H
	3	0		19·14	541·7	59·9	461·5	60·6	H
	4	0		17·89	540·0	60·4	466·3	61·0	H
	5	0		16·08	544·0	60·7	470·0	61·4	H
	6	0		13·36	547·8	61·0	477·4	61·8	B
	7	3		11·07	556·1	61·2	476·1	61·7	B
	8	0		10·09	553·9	61·2	477·0	61·5	B
	9	0		10·00	554·5	61·0	471·7	61·3	B
	10	0		08·48	550·0	60·8	472·3	61·0	W
	11	0		08·99	546·1	60·6	465·7	60·8	W
	12	0		09·66	544·8	60·4	465·1	60·5	W
20	13	0	25	10·40	543·6	57·3	466·8	57·0	H
	14	0		10·40	539·8	57·0	467·7	56·9	H
	15	0		08·79	539·0	56·9	469·5	56·7	H
	16	0		12·25	536·7	56·7	476·2	56·6	H
	17	0		10·23	539·5	56·6	475·0	56·5	H
	18	0		06·91	540·1	56·5	477·4	56·3	H
	19	30		08·61	535·3	56·3	478·5	56·1	W
	20	0		08·09	536·7	56·3	476·8	56·1	W
	21	0		08·16	529·4	56·2	478·2	56·0	B
	22	0		09·19	522·5	56·1	466·8	56·0	W
	23	0		10·06	517·6	56·0	465·1	56·0	W
21	0	0		11·99	526·1	56·0	463·2	56·1	W
	1	0		16·01	525·0	56·1	467·8	56·3	W
	2	0		17·56	525·0	56·3	466·5	56·5	W
	3	0		17·46	541·2	56·4	475·5	56·7	W
	4	0		17·94	552·8	56·6	479·9	56·8	W

DECLINATION. Magnet untouched, June 18^d—Sept. 21^d.

BIFILAR. Observed 2^m after the Declination, $k = 0·000140$. BALANCE. Observed 3^m after the Declination, $k = 0·000010$.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
21	5	0	25	15·79	547·3	56·7	485·9	57·0	W
	6	0		13·05	548·7	56·8	487·7	57·2	H
	7	0		12·18	548·2	56·9	492·5	57·2	W
	8	0		11·10	548·7	56·9	488·1	57·1	W
	9	0		09·86	548·6	56·8	484·3	57·0	H
	10	0		09·87	544·3	56·7	483·3	56·8	H
	11	0		09·77	542·4	56·6	480·6	56·6	B
	12	0		09·22	542·6	56·4	479·5	56·4	B
	13	0	25	09·53	540·9	56·2	479·4	56·2	B
	14	0		09·42	540·3	56·0	479·6	56·0	B
	15	0		10·27	539·3	55·9	481·0	55·8	B
	16	0		09·74	540·7	55·7	479·8	55·6	B
	17	0		07·84	541·0	55·6	484·3	55·4	B
	18	0		06·23	538·8	55·4	481·7	55·2	B
	19	0		07·22	536·7	55·2	481·1	55·0	H
	20	0		06·36	533·3	55·0	484·1	54·9	H
	21	0		07·35	528·7	54·9	486·0	54·8	W
	22	0		09·06	523·8	54·8	481·9	54·7	H
	23	0		12·31	521·0	54·8	476·5	54·6	H
22	0	0		14·10	525·0	54·7	463·2	54·7	H
	1	0		17·61	530·4	54·8	448·6	54·9	H
	2	0		19·28	537·5	54·8	439·9	55·0	H
	3	0		17·93	545·7	54·9	442·2	55·2	H
	4	0		16·01	546·2	55·0	457·2	55·4	H
	5	0		14·46	546·3	55·0	473·6	55·5	H
	6	0		13·23	551·4	55·1	482·9	55·5	B
	7	0		12·06	552·0	55·1	489·0	55·5	B
	8	0		10·74	551·3	55·1	489·1	55·3	B
	9	0		10·74	547·7	55·0	488·2	55·1	B
	10	0		10·50	542·3	54·9	486·5	54·9	B
	11	0		10·21	542·2	54·7	482·8	54·7	W
	12	0		09·47	540·8	54·5	483·1	54·5	W
	13	0	25	09·44	541·4	54·3	482·6	54·3	W
	14	0		09·33	540·3	54·1	483·7	54·0	W
	15	0		08·95	540·3	54·0	487·4	53·8	W
	16	0		08·56	540·2	53·8	491·5	53·6	W
	17	0		07·08	540·7	53·6	494·2	53·3	W
	18	0		05·92	538·2	53·4	496·7	53·1	W
	19	0		03·54	537·2	53·3	494·1	53·0	B
	20	0		03·65	542·3	53·1	486·9	52·8	B
	21	0		03·02	541·2	53·0	483·1	52·8	H
	22	0		03·70	527·8	53·0	481·0	53·0	H
	23	0		09·64	526·3	53·0	473·5	53·2	H
23	0	0		14·13	529·0	53·0	459·3	53·4	H
	1	0		17·80	532·0	53·3	456·1	53·7	H
	2	0		18·50	536·4	53·6	458·1	54·1	B
	3	0		18·11	549·2	53·9	460·1	54·5	H
	4	0		17·29	541·6	54·2	477·5	55·0	H
	5	0		15·02	549·5	54·5	487·3	55·2	B
	6	0		13·07	545·7	54·8	494·9	55·4	W
	7	0		13·50	554·6	55·0	497·4	55·5	W
	8	0		11·57	559·3	55·0	503·9	55·5	W
	9	0		11·33	557·0	55·0	501·1	55·5	W
	10	0		10·54	549·6	55·0	499·3	55·5	B
	11	0		09·76	550·8	54·9	493·7	55·5	B
	12	0		09·84	549·0	54·9	485·0	55·5	B

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
23	13	0	25	08·18	547·1	54·9	477·0	55·5	D
	14	0		09·59	542·8	55·0	481·1	55·6	D
	15	0		10·58	545·0	55·0	481·2	55·6	D
	16	0		11·91	541·8	55·0	478·6	55·6	D
	17	0		09·69	545·0	55·0	467·1	55·6	D
	18	0		11·48	536·6	55·0	468·4	55·5	H
	19	0		10·47	539·8	54·8	461·7	55·3	H
	20	0		05·18	540·1	54·7	473·4	55·1	H
	21	0		04·51	537·0	54·6	476·0	55·0	H
	22	0		06·39	532·7	54·6	476·5	55·0	W
	23	0		08·61	529·0	54·7	466·0	55·3	W
24	0	0		10·43	529·0	54·8	470·4	55·5	W
	1	0		13·32	530·8	55·0	473·9	55·8	B
	2	0		14·40	526·9	55·4	488·7	56·2	H
	3	0		16·53	542·5	55·8	488·4	56·6	B
	4	0		15·76	557·4	56·3	501·3	57·1	B
	5	0		15·67	561·1	56·7	530·0	57·6	W
	6	0		13·91	555·2	57·1	552·9	58·0	D
	7	0		11·55	559·1	57·4	556·8	58·3	D
	8	0		11·00	548·9	57·5	547·1	58·5	H
	9	0		06·68	543·5	57·6	532·3	58·6	H
	10	0		05·55	542·3	57·7	498·4	58·6	H
	11	0		08·93	534·5	57·8	481·1	58·5	B
	12	0		07·55	538·1	57·7	476·0	58·4	B
	13	0	25	03·30	536·0	57·7	459·4	58·2	B
	14	0†	24	54·26	523·5	57·6	405·0	58·0	B
	15	0†	24	55·78	527·2	57·5	328·1	58·0	B
	16	0†	25	08·90	546·4	57·4	280·6	58·0	B
	17	0†		21·56	512·3	57·3	304·2	58·0	B
	18	0†		22·87	552·8	57·3	285·7	57·8	B
	19	0†		19·07	518·1	57·1	320·2	57·6	H
	20	0†		16·82	518·9	57·0	350·9	57·4	H
	21	0†		16·53	514·3	57·1	382·2	57·6	W
	22	0†		20·33	516·9	57·1	398·8	57·7	H
	23	0†		18·60	500·4	57·2	437·3	58·0	H
25	0	0†		18·81	505·7	57·6	451·2	58·4	H
	1	0		17·65	529·8	58·0	466·8	59·0	H
	2	0		17·19	538·2	58·5	482·9	59·6	H
	3	2		16·57	540·0	59·1	487·0	60·4	H
	4	0		15·02	538·9	60·0	496·3	61·3	H
	5	0		14·17	546·2	60·8	499·1	62·2	H
	6	0		13·27	558·5	61·6	497·7	62·8	B
	7	0		11·28	546·3	62·2	512·5	63·4	B
	8	0		10·30	546·2	62·5	511·3	63·5	H
	9	0		08·72	555·4	62·7	488·7	63·5	B
	10	0†		03·13	539·6	62·7	453·0	63·2	B
	11	0		08·58	534·7	62·5	446·1	63·0	W
	12	0		06·51	535·2	62·1	453·7	62·4	W
	13	0	25	09·20	534·6	61·7	456·3	61·7	W
	14	0		08·38	535·7	61·2	455·3	61·0	W
	15	0		08·08	535·0	60·7	456·5	60·5	W
	16	0		07·89	534·4	60·3	456·7	60·0	W
	17	0		08·79	533·8	59·8	454·2	59·5	W
	18	0		06·36	533·9	59·4	460·7	59·0	W
	19	0		07·35	529·2	59·0	467·6	58·5	B
	20	0		08·83	528·0	58·7	465·8	58·3	B

DECLINATION. Magnet untouched. June 18^{d}—Sept. 21^{d}.

BIFILAR. Observed 2^{m} after the Declination, k=0·000140. BALANCE. Observed 3^{m} after the Declination, k=0·000010.

† Extra Observations made.

July 23^{d} 10^{h}—24^{d} 10^{h}. Term-Day Observations made.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
25	21	0	25	10·03	528·5	58·4	468·8	58·2	H
	22	0		10·09	525·8	58·3	469·6	58·2	H
	23	0		09·89	527·8	58·2	470·8	58·3	H
26	0	0		11·24	529·3	58·3	466·8	58·5	H
	1	0		14·77	535·5	58·5	469·5	58·9	H
	2	0		17·36	539·8	58·9	471·0	59·5	H
	3	0		16·30	532·5	59·3	466·6	60·0	H
	4	0		15·47	538·5	59·8	474·2	60·4	H
	5	0		14·77	541·9	60·1	471·5	60·7	H
	6	0		14·20	545·7	60·5	483·3	61·1	W
	7	0		12·38	550·4	60·7	484·9	61·3	W
	8	0		11·59	547·1	60·8	483·2	61·3	W
	9	0		11·41	545·1	60·8	477·7	61·2	W
	10	0		10·92	545·6	60·6	472·3	61·0	W
	11	0		08·34	539·4	60·4	471·8	60·7	H
	12	0		08·61	538·2	60·3	459·8	60·5	H
27	13	0	25	09·15	536·9	61·2	441·8	60·5	B
	14	0		10·41	536·5	60·6	447·3	59·7	B
	15	0		09·86	534·4	59·9	457·5	58·9	B
	16	0		09·32	535·4	59·3	460·1	58·2	B
	17	0		08·85	535·3	58·7	463·3	57·5	B
	18	0		10·33	532·6	58·0	467·7	56·8	B
	19	0		06·79	532·1	57·7	465·2	56·5	H
	20	0		06·41	530·4	57·4	470·1	56·4	H
	21	0		08·28	525·5	57·3	475·0	56·4	W
	22	0		09·94	526·2	57·1	473·9	56·5	H
	23	0		13·02	523·9	57·1	469·6	56·8	H
28	0	0		14·46	528·2	57·2	466·3	57·5	H
	1	0		15·27	530·5	57·8	463·7	58·5	H
	2	0		15·47	537·5	58·4	476·9	59·5	H
	3	0		15·41	541·1	59·2	483·5	60·2	H
	4	0		13·32	541·7	59·9	487·7	61·1	H
	5	0		11·52	549·2	60·5	483·5	61·5	H
	6	0		10·67	548·7	61·1	486·2	62·2	B
	7	0		11·37	551·7	61·5	482·4	62·2	B
	8	0		10·28	547·7	61·7	491·5	62·2	B
	9	0		10·54	544·7	61·9	488·9	62·2	B
	10	0		11·10	543·3	61·8	477·7	62·0	B
	11	0		11·25	541·6	61·5	470·9	61·5	W
	12	0		11·24	540·0	61·1	465·8	60·9	W
	13	0	25	10·60	538·4	60·6	464·5	60·3	W
	14	0		10·54	538·9	60·0	463·6	59·5	W
	15	0		10·23	537·1	59·4	464·2	58·6	W
	16	0		09·37	535·8	58·7	467·4	57·8	W
	17	0		08·59	534·4	58·0	477·2	57·0	W
	18	0		06·44	536·1	57·4	479·9	56·2	W
	19	0		06·74	533·2	56·7	487·9	55·4	B
	20	0		06·66	528·8	56·1	488·4	54·9	B
	21	0		07·10	524·4	55·7	492·2	54·8	H
	22	0		09·57	523·7	55·5	490·5	55·0	H
	23	0		13·39	524·8	55·4	485·8	55·4	H
29	0	0		15·49	527·5	55·8	481·8	56·0	B
	1	0		17·34	529·1	56·2	476·9	56·9	H
	2	0		17·12	535·2	57·0	475·9	58·0	B
	3	0		16·12	539·0	57·9	480·4	58·8	B
	4	0		14·11	543·5	58·7	482·1	59·7	W

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
29	5	0	25	11·75	546·5	59·4	484·7	60·5	H
	6	0		09·26	546·6	60·0	473·2	61·0	W
	7	0		09·71	547·8	60·5	477·6	61·3	W
	8	0		10·77	545·9	60·8	474·3	61·4	W
	9	0		10·60	545·2	60·8	473·3	61·3	W
	10	0		11·14	543·7	60·8	471·3	61·2	W
	11	0		11·00	543·2	60·5	467·2	61·0	H
	12	0		09·57	542·7	60·2	465·1	60·5	H
	13	0	25	09·94	542·6	59·9	462·9	60·0	H
	14	0		09·79	541·5	59·5	459·6	59·5	H
	15	0		08·41	538·7	59·0	462·1	59·0	H
	16	0		08·63	538·0	58·5	465·5	58·4	H
	17	0		07·74	537·4	58·0	471·4	57·7	H
	18	0		06·73	537·8	57·5	469·3	56·9	H
	19	0		07·07	536·2	57·3	473·2	56·5	W
	20	0		07·37	535·1	57·0	473·6	56·2	W
	21	0		07·81	531·0	56·7	472·4	56·1	B
	22	0		08·28	529·6	56·5	475·3	56·3	W
	23	0		11·41	529·8	56·7	471·9	56·9	W
30	0	0		13·94	533·0	57·0	465·9	57·7	W
	1	0		16·75	533·5	57·7	464·7	58·6	W
	2	0		17·96	542·0	58·4	460·3	59·5	W
	3	0		15·99	547·7	59·2	452·1	60·3	W
	4	0		13·79	545·8	59·9	464·5	61·0	W
	5	0		12·92	547·8	60·5	470·2	61·6	W
	6	0		12·42	538·3	60·8	477·3	61·8	H
	7	0		10·06	553·1	61·0	490·4	61·8	H
	8	0		08·77	548·8	61·0	496·1	61·5	H
	9	0		08·80	543·9	60·7	495·1	61·2	H
	10	0		07·81	542·6	60·5	483·0	61·0	H
	11	0		09·29	541·1	60·3	474·2	60·5	B
	12	0		09·02	544·9	60·0	467·7	60·3	B
	13	0	25	08·88	544·0	59·8	465·8	60·0	B
	14	0		08·03	540·7	59·5	465·4	59·6	B
	15	0		07·57	540·4	59·2	462·5	59·3	B
	16	0		09·10	543·8	58·9	456·2	59·0	B
	17	0		03·60	538·3	58·6	465·4	58·6	B
	18	0		06·27	536·5	58·3	473·8	58·2	B
	19	0		05·92	533·0	58·2	481·4	58·0	H
	20	0		07·00	530·4	58·0	478·0	58·0	H
	21	0		08·08	521·1	58·0	477·5	58·0	W
	22	0		10·43	523·9	58·0	468·7	58·2	H
	23	0		12·69	532·1	58·1	457·3	58·7	H
31	0	0		15·41	538·1	58·7	439·0	59·5	H
	1	0		16·68	541·0	59·2	435·5	60·3	H
	2	0		17·15	544·9	59·9	445·4	61·0	H
	3	0		15·89	547·1	60·2	448·5	61·0	H
	4	0		14·30	546·1	60·3	462·0	61·0	H
	5	0		12·62	547·3	60·3	466·5	61·0	H
	6	0		12·09	548·3	60·2	472·2	60·8	B
	7	0		07·99	551·0	60·1	473·6	60·5	B
	8	0		10·68	546·9	60·0	471·4	60·2	B
	9	0		10·70	547·3	59·7	465·1	59·8	B
	10	0		10·25	545·6	59·4	464·6	59·5	B
	11	0		09·96	543·9	59·1	464·3	59·0	W
	12	0		09·39	542·5	58·9	465·7	58·8	W

DECLINATION. Magnet untouched, June 18^d—Sept. 21^d.

BIFILAR. Observed 2^m after the Declination, k=0·000140. BALANCE. Observed 3^m after the Declination, k=0·000010.

Göttingen Mean Time of Declination Obs.			Declination.	Bifilar.		Balance.		Observer's Initial.
				Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	° ′	Sc. Div.	°	Mic. Div.	°	
31	13	0	25 09·73	540·7	58·6	466·6	58·4	W
	14	0	09·15	540·4	58·3	468·1	58·1	W
	15	0	08·99	539·8	58·0	468·6	57·8	W
	16	0	08·95	539·4	57·7	469·2	57·4	W
	17	0	07·98	540·6	57·5	469·2	57·1	W
	18	0	06·23	538·0	57·2	470·3	56·8	W
	19	0	05·32	534·4	57·0	476·3	56·6	B
	20	0	04·84	530·3	56·8	480·3	56·4	B
	21	0	04·81	528·7	56·7	480·3	56·5	H
	22	0	06·97	529·7	56·7	471·5	56·7	H
	23	0	09·26	533·8	56·7	458·6	56·8	H
1	0	0	13·57	540·4	56·9	451·0	57·2	B
	1	0	17·76	551·6	57·3	447·5	58·0	H
	2	0†	23·88	558·7	57·9	458·7	58·7	B
	3	0†	22·99	539·8	58·7	468·6	59·5	B
	4	0†	20·55	555·5	59·3	488·1	60·4	H
	5	0†	19·91	546·9	59·9	560·7	60·8	B
	6	0†	19·41	552·5	60·4	569·4	61·3	W
	7	0	13·25	549·1	60·7	537·2	61·3	W
	8	0	10·88	554·3	60·7	506·9	61·1	W
	9	0	11·27	549·2	60·6	489·0	61·0	W
	10	0	25 12·02	547·4	60·4	481·6	60·7	W
	11	5†	24 54·01	551·8	60·0	408·9	60·3	H
	12	0†	25 06·16	535·3	59·8	404·4	60·1	H
	13	0†	25 02·28	534·5	59·7	417·8	60·0	H
	14	0†	18·35	535·6	59·5	419·5	59·8	H
	15	0†	10·00	531·0	59·2	375·6	59·5	H
	16	0†	03·77	541·5	59·0	374·0	59·0	H
	17	0	08·05	541·6	58·7	374·0	58·6	H
	18	0	03·23	539·6	58·3	370·0	58·2	H
	19	0	08·12	533·9	58·1	388·6	57·9	W
	20	0	10·65	529·8	57·8	404·7	57·6	W
	21	0	10·68	524·3	57·8	411·6	57·7	B
	22	0	12·70	522·8	57·7	423·8	57·8	W
	23	0	13·69	529·9	57·8	435·2	58·2	W
2	0	0	19·10	531·3	58·0	448·8	58·6	W
	1	0	21·81	539·5	58·7	460·8	59·4	W
	2	0	22·15	530·8	59·4	469·5	60·3	W
	3	0	17·53	540·6	60·1	464·9	61·0	W
	4	0	14·64	541·5	60·6	492·3	61·5	W
	5	0	13·44	545·0	61·0	473·6	61·9	W
	6	0	11·37	548·9	61·4	483·5	62·2	W
	7	0	11·77	550·4	61·6	478·8	62·5	H
	8	0	10·50	550·2	61·8	476·1	62·7	H
	9	0	10·45	543·5	62·0	478·2	62·7	H
	10	0	09·86	546·3	61·9	476·0	62·4	H
	11	0†	06·26	534·6	61·8	462·2	62·1	B
	12	0	05·92	540·9	61·5	426·4	61·8	B
3	13	0	25 (11·00)	(540·0)	……	(423·7)	……	
	14	0†	11·52	530·3	59·0	423·7	58·5	W
	15	0†	14·82	544·2	58·7	410·3	58·4	W
	16	0	07·49	540·6	58·5	438·3	58·2	W
	17	0	04·41	537·2	58·2	458·5	57·9	W
	18	0	05·60	534·6	57·9	469·4	57·6	W
	19	0	04·71	532·6	57·8	481·5	57·5	B
	20	0	09·57	517·2	57·8	472·1	57·5	B
3	21	0	25 12·11	509·8	57·8	459·6	57·9	H
	22	0	13·69	507·2	57·9	461·4	58·2	H
	23	0	18·13	505·3	58·2	463·8	58·7	H
4	0	0	18·37	511·9	58·7	467·9	59·3	H
	1	0	21·29	527·5	59·2	462·3	60·0	H
	2	0	20·77	531·8	59·9	473·8	60·7	B
	3	0	15·17	558·5	60·4	506·7	61·4	W
	4	0	16·25	538·7	61·0	517·9	62·0	W
	5	0	14·96	556·9	61·7	517·1	62·6	B
	6	0	12·51	547·0	61·9	519·4	62·8	W
	7	0	12·76	552·7	62·0	497·3	62·7	W
	8	0	12·90	547·1	61·9	482·5	62·5	W
	9	0	10·97	548·1	61·7	475·5	62·2	W
	10	0	10·81	543·7	61·6	472·3	62·0	W
	11	0	08·41	546·0	61·3	460·2	61·5	H
	12	0	07·64	544·0	61·0	447·4	61·2	H
	13	0	25 09·76	540·9	60·7	440·8	60·8	H
	14	0	05·83	537·7	60·3	435·3	60·3	H
	15	0	06·12	535·3	59·8	444·9	59·7	H
	16	0	16·08	531·9	59·4	432·7	59·0	H
	17	0	13·36	534·8	59·0	425·9	58·5	H
	18	0	07·91	527·3	58·7	436·7	58·1	H
	19	0	04·88	525·3	58·3	461·8	57·8	W
	20	0	05·56	529·4	58·0	469·8	57·6	W
	21	0	07·82	530·3	57·9	479·7	57·7	B
	22	0	08·28	523·9	57·9	467·6	58·0	W
	23	0	10·51	521·3	58·1	473·0	58·7	W
5	0	0	14·48	523·2	58·7	482·4	59·7	W
	1	0	15·85	531·0	59·7	476·6	61·0	W
	2	0	13·81	537·9	60·9	488·3	62·5	W
	3	0	15·20	546·5	62·2	490·2	63·7	W
	4	0	14·50	553·3	63·3	483·7	64·8	W
	5	0	12·11	547·4	64·0	475·5	65·3	W
	6	0	11·10	547·0	64·3	472·6	65·4	H
	7	0	10·01	541·5	64·5	467·8	65·5	H
	8	0	10·04	545·6	64·4	466·4	65·4	H
	9	0	09·69	545·5	64·3	463·5	65·1	H
	10	0	10·01	541·2	64·0	463·4	64·7	H
	11	0	07·78	537·8	63·7	465·8	64·2	B
	12	0	09·86	539·5	63·4	459·6	63·7	B
	13	0	25 09·84	539·2	63·1	459·0	63·1	B
	14	0	09·39	537·5	62·7	462·9	62·5	B
	15	0	08·11	535·9	62·2	466·4	61·9	B
	16	0	10·41	534·6	61·7	465·5	61·3	B
	17	0	09·22	533·7	61·2	466·2	60·7	B
	18	0	06·46	530·4	60·8	465·9	60·2	B
	19	0	07·10	527·4	60·4	465·9	59·9	H
	20	0	06·14	527·3	60·0	467·5	59·6	H
	21	0	08·19	527·7	59·8	466·9	59·4	W
	22	0	11·35	523·7	59·7	466·0	59·5	H
	23	0	14·10	522·0	59·7	467·6	59·7	H
6	0	0	17·20	520·9	59·8	460·9	60·4	H
	1	0	19·17	530·9	60·3	450·2	61·5	H
	2	0	19·12	538·7	61·2	458·8	62·6	H
	3	0	17·36	535·1	62·3	470·0	63·7	H
	4	0	13·97	532·4	63·2	463·9	64·5	H

DECLINATION. Magnet untouched, June 18ᵈ—Sept. 21ᵈ.

BIFILAR. Observed 2ᵐ after the Declination, $k=0·000140$. BALANCE. Observed 3ᵐ after the Declination, $k=0·000010$.

† Extra Observations made.

Aug. 3ᵈ 13ʰ. The quantities in parentheses are approximate, and have been used in summations.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
6	5	0	25	12·85	543·7	63·8	486·5	65·3	H
	6	0		12·01	552·7	64·5	484·5	65·9	B
	7	0		10·47	548·9	64·8	477·8	66·0	B
	8	0		10·25	551·8	64·9	469·8	65·6	B
	9	7		10·77	548·2	64·7	466·0	65·4	B
	10	0		11·00	545·9	64·5	461·1	65·2	B
	11	0		09·02	542·5	64·3	458·7	65·0	W
	12	0		09·19	546·7	64·0	434·1	64·5	W
	13	0	25	08·88	542·4	63·7	443·0	64·0	W
	14	0		08·01	539·7	63·4	453·6	63·7	W
	15	0		09·57	541·7	63·1	455·5	63·3	W
	16	0		09·98	538·3	62·8	461·8	62·9	W
	17	0		07·84	542·5	62·5	460·0	62·5	W
	18	0		06·88	540·6	62·2	465·7	62·1	W
	19	0		07·74	534·0	61·9	466·6	61·6	B
	20	0		13·32	524·5	61·7	470·3	61·4	B
	21	0		11·64	533·7	61·4	462·1	61·3	H
	22	0		08·65	523·0	61·3	465·9	61·3	H
	23	0		10·67	524·7	61·3	461·3	61·6	H
7	0	0		14·33	525·3	61·6	452·2	62·2	B
	1	0		18·30	530·1	62·0	459·5	62·9	H
	2	0		15·14	536·3	62·6	466·4	63·2	H
	3	0		14·68	539·2	63·0	486·1	64·0	B
	4	0		16·18	546·5	63·5	490·4	64·4	B
	5	0		11·17	543·0	63·9	492·9	64·6	B
	6	0		10·80	545·8	64·0	489·1	64·8	W
	7	0		09·82	545·0	64·0	479·3	64·7	H
	8	0		10·43	547·2	64·0	467·3	64·7	H
	9	0		10·53	547·3	64·0	464·5	64·5	H
	10	0		08·79	545·4	63·9	463·6	64·3	W
	11	0		07·84	542·5	63·6	460·0	63·9	H
	12	0		10·04	544·0	63·3	451·9	63·5	H
	13	0	25	12·83	542·3	63·0	444·3	63·1	H
	14	0†		04·56	529·8	62·6	407·9	62·6	H
	15	0†		26·16	532·9	62·3	390·8	62·2	H
	16	0†		07·20	540·6	62·0	402·8	61·8	H
	17	0		06·26	537·5	61·6	432·4	61·2	H
	18	0		06·53	531·8	61·2	455·3	60·5	H
	19	0		05·56	530·5	60·9	465·0	60·3	W
	20	0		06·34	525·8	60·6	470·4	60·0	W
	21	0		14·94	516·1	60·3	471·5	59·9	B
	22	0		14·89	517·7	60·3	464·1	60·0	W
	23	0		16·38	517·5	60·3	464·1	60·3	W
8	0	0		18·74	524·0	60·5	456·0	61·0	W
	1	0		20·79	525·2	61·0	451·8	61·9	W
	2	0		20·32	532·5	61·7	455·5	62·8	W
	3	0		19·02	537·7	62·6	461·2	63·8	W
	4	0		17·06	549·4	63·5	464·1	64·7	W
	5	0		14·13	552·4	64·4	467·7	65·5	W
	6	0		11·68	547·9	65·1	479·7	66·7	H
	7	0		10·09	548·0	65·5	476·1	66·5	H
	8	0		10·43	547·2	65·8	463·3	66·5	H
	9	0		10·13	545·3	65·8	463·2	66·5	H
	10	0		11·28	550·0	65·7	457·6	66·2	H
	11	0		06·93	547·6	65·2	451·4	65·5	B
	12	0		09·53	545·1	64·9	444·4	65·0	B
8	13	0	25	15·44	544·0	64·6	440·2	64·5	B
	14	0		10·45	540·4	64·2	424·5	64·1	B
	15	0		10·21	535·0	63·8	429·9	63·6	B
	16	0		17·33	533·6	63·4	409·8	63·1	B
	17	0		07·11	535·3	63·0	434·0	62·6	B
	18	0		04·64	536·4	62·7	458·5	62·2	B
	19	0		(06·00)	(533·4)	……	(466·5)	……	
	20	0		07·51	530·4	61·9	474·5	61·7	H
	21	0		10·36	528·9	61·6	471·7	61·0	W
	22	0		11·10	526·4	61·3	481·5	61·0	H
	23	0		14·06	523·0	61·2	471·4	61·0	H
9	0	0		16·15	525·5	61·0	459·3	61·0	H
	1	0		18·90	527·0	61·0	445·5	61·0	H
	2	0		19·48	542·8	61·0	447·8	61·0	H
	3	0		18·63	537·6	60·9	467·8	60·8	H
	4	0		16·50	543·3	60·8	474·8	60·7	H
	5	0		15·36	553·5	60·7	488·6	60·4	H
	6	0		12·72	544·2	60·5	506·5	60·0	B
	7	0		10·03	541·5	60·2	516·9	59·7	B
	8	0		09·69	546·6	59·9	504·5	59·3	B
	9	0		10·50	543·4	59·6	492·4	59·0	B
	10	0		10·53	542·2	59·3	484·2	58·7	B
	11	0		10·21	543·7	59·0	479·8	58·5	W
	12	0†		00·69	550·6	58·8	438·1	58·3	W
10	13	0	25	09·10	542·3	58·1	468·1	58·1	H
	14	0		07·40	538·0	58·0	458·2	58·0	H
	15	0		09·12	537·2	57·8	466·5	57·8	H
	16	0		08·82	538·0	57·7	476·6	57·7	H
	17	0		07·54	540·3	57·6	480·8	57·5	H
	18	0		06·26	539·6	57·5	485·4	57·4	H
	19	0		05·23	538·0	57·4	490·4	57·3	W
	20	0		05·42	531·0	57·4	499·9	57·3	W
	21	0		07·00	531·4	57·4	495·8	57·5	B
	22	0		08·11	528·4	57·4	496·8	57·8	W
	23	0		09·93	525·3	57·7	481·4	58·2	W
11	0	0		11·99	522·7	58·1	475·5	58·7	W
	1	0		14·99	531·2	58·5	471·9	59·2	W
	2	0		16·86	535·9	59·0	480·0	59·7	W
	3	0		16·72	537·9	59·5	483·0	60·3	W
	4	0		15·83	542·1	60·0	483·4	60·8	W
	5	0		13·23	543·2	60·5	492·7	61·3	W
	6	0		10·53	545·0	60·9	495·9	61·7	H
	7	0		08·21	549·1	61·1	495·0	61·7	H
	8	0		08·52	547·6	61·0	483·8	61·5	H
	9	0		09·42	545·0	60·7	477·8	61·0	H
	10	0		09·91	544·6	60·4	473·2	60·6	H
	11	0		10·03	542·3	60·1	470·2	60·2	B
	12	0		09·66	541·4	59·9	467·0	59·8	B
	13	0	25	09·64	540·4	59·6	467·2	59·4	B
	14	0		09·02	538·3	59·3	470·1	59·0	B
	15	0		09·39	538·7	59·0	471·2	58·7	B
	16	0		08·95	538·6	58·8	471·9	58·5	B
	17	0		07·69	537·9	58·5	477·3	58·2	B
	18	0		06·23	537·6	58·2	483·6	58·0	B
	19	0		05·05	535·8	58·0	487·0	57·7	H
	20	0		03·99	532·9	57·8	486·0	57·5	H

DECLINATION. Magnet untouched, June 18^{d}—Sept. 21^{d}.

BIFILAR. Observed 2^{m} after the Declination, k=0·000140. BALANCE. Observed 3^{m} after the Declination, k=0·000010.

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† Extra Observations made.

Aug. 8^{d} 19^{h}. The quantities in parentheses are approximate, and have been used in summations.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
11	21	0	25	04·42	529·4	57·7	480·5	57·4	W
	22	0		06·50	525·8	57·7	472·4	57·3	H
	23	0		09·15	526·5	57·6	473·1	57·5	H
12	0	0		13·19	526·5	57·7	472·4	57·7	H
	1	0		15·44	525·1	57·7	468·0	58·0	H
	2	0		15·41	532·1	57·7	466·9	58·0	H
	3	0		14·13	537·8	57·8	468·1	58·0	H
	4	0		12·58	541·6	57·8	475·0	58·2	H
	5	0		10·33	541·2	57·9	481·0	58·2	H
	6	0		09·30	544·4	57·9	484·7	58·1	B
	7	0		08·99	549·4	57·9	481·7	58·0	B
	8	0		09·35	550·3	57·8	475·5	57·9	B
	9	0		09·87	547·9	57·7	481·2	57·8	B
	10	0		10·09	546·9	57·6	477·6	57·6	B
	11	0		10·21	545·4	57·4	476·3	57·3	W
	12	0		10·06	545·2	57·2	474·9	57·0	W
	13	0	25	09·82	543·9	56·9	475·9	56·7	W
	14	0		08·97	544·9	56·6	472·2	56·3	W
	15	0		07·71	542·8	56·3	472·4	55·9	W
	16	4		08·63	539·7	55·9	475·7	55·5	W
	17	0		08·66	541·3	55·5	482·8	55·0	W
	18	0		07·02	541·3	55·2	482·6	54·6	W
	19	0		06·23	539·8	54·9	493·0	54·3	B
	20	0		05·77	536·2	54·6	500·0	54·2	B
	21	0		04·14	533·8	54·4	496·6	54·2	H
	22	0		06·76	527·8	54·3	494·0	54·4	H
	23	0		11·41	532·3	54·7	490·8	55·2	H
13	0	0		13·96	535·0	55·1	475·2	56·0	B
	1	0		16·41	540·6	55·9	461·7	56·9	H
	2	0		17·17	544·1	56·9	472·1	58·0	B
	3	7		16·41	549·2	57·9	475·5	59·2	B
	4	0		13·74	549·3	58·8	481·6	60·2	H
	5	0		11·86	545·7	59·6	485·3	60·7	B
	6	0		09·96	547·4	60·0	489·8	61·1	W
	7	0		09·60	551·4	60·3	485·1	61·2	W
	8	0		10·07	554·5	60·3	475·3	61·0	W
	9	0		11·00	551·4	60·2	469·8	60·8	W
	10	0		11·00	550·9	60·0	467·9	60·7	W
	11	0		10·13	546·5	59·9	468·6	60·5	H
	12	0		08·11	549·6	59·6	460·0	60·0	H
	13	0	25	07·94	546·5	59·3	460·8	59·6	H
	14	0		08·18	544·7	59·0	460·6	59·2	H
	15	0		07·45	541·2	58·7	462·9	58·8	H
	16	0		07·67	540·8	58·4	465·2	58·4	H
	17	0		07·32	541·1	58·1	473·0	58·0	H
	18	0		06·01	538·2	57·8	478·6	57·7	H
	19	0		05·90	535·2	57·6	478·5	57·3	W
	20	0		05·97	532·6	57·3	480·5	57·0	W
	21	0		06·57	527·8	57·0	479·7	57·0	B
	22	0		07·72	525·8	56·9	477·3	56·9	W
	23	0		10·30	527·2	56·9	472·0	56·9	W
14	0	0		12·45	531·6	56·9	461·9	57·2	W
	1	0		14·17	538·1	57·1	454·8	57·6	W
	2	0		15·27	542·3	57·5	454·7	58·2	W
	3	0		14·13	546·6	57·9	463·2	58·7	W
	4	0		11·57	549·1	58·3	463·9	59·0	W

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
14	5	0	25	10·23	551·8	58·5	472·8	59·1	W
	6	0		09·35	548·9	58·7	473·4	59·2	H
	7	0		08·82	547·0	58·6	471·8	59·2	H
	8	0		10·13	549·6	58·5	470·5	59·0	H
	9	0		09·05	551·7	58·4	468·7	58·7	H
	10	0		07·17	553·8	58·3	468·5	58·5	H
	11	0		08·53	549·0	58·1	469·6	58·3	B
	12	0		09·20	548·4	57·9	467·0	58·0	B
	13	0	25	08·82	551·2	57·7	466·3	57·8	B
	14	0		07·78	548·7	57·5	462·1	57·5	B
	15	0		06·86	546·0	57·3	467·8	57·2	B
	16	0		07·58	545·1	57·1	466·6	56·9	B
	17	0		06·76	536·9	56·8	477·1	56·5	B
	18	0		06·79	541·4	56·5	474·3	56·0	B
	19	0		04·37	540·3	56·1	471·9	55·7	H
	20	0		05·99	534·5	55·8	476·5	55·5	H
	21	0		05·58	528·6	55·6	473·3	55·3	W
	22	0		14·67	525·5	55·4	464·9	55·3	H
	23	0		11·96	525·0	55·4	458·0	55·4	H
15	0	0		17·06	530·4	55·4	445·5	55·5	H
	1	0		18·77	532·3	55·6	443·9	55·9	H
	2	0		24·12	549·5	55·9	453·6	56·5	H
	3	0†		22·80	513·7	56·2	483·3	56·9	H
	4	0†		19·86	563·6	56·7	502·3	57·3	H
	5	0		15·94	550·8	57·1	537·8	58·0	H
	6	0		10·75	543·0	57·5	548·1	58·1	B
	7	0		07·24	546·2	57·7	535·6	58·2	B
	8	0		09·42	549·1	57·7	501·7	58·0	B
	9	0		10·47	542·1	57·6	485·7	57·8	B
	10	0		10·48	545·7	57·3	476·2	57·3	B
	11	0		10·16	543·5	57·0	474·0	57·0	W
	12	0		10·13	541·6	56·7	473·0	56·6	W
	13	0	25	10·67	544·1	56·4	470·7	56·2	W
	14	0		08·96	542·4	56·1	470·7	55·8	W
	15	0		09·42	540·3	55·8	471·9	55·5	W
	16	0		08·25	538·8	55·4	474·9	55·1	W
	17	0		07·79	538·0	55·1	481·5	54·7	W
	18	0		05·96	535·5	54·8	485·7	54·3	W
	19	0		04·76	531·9	54·5	489·7	54·0	B
	20	0		05·38	525·7	54·2	494·9	53·8	B
	21	0		06·01	520·3	54·0	497·4	53·7	H
	22	0		08·08	518·7	53·9	502·8	53·9	H
	23	0		11·81	521·4	53·9	492·7	54·1	B
16	0	0		15·78	529·4	54·0	487·8	54·5	B
	1	0		18·94	539·6	54·3	488·0	55·0	H
	2	0		20·25	545·4	54·8	496·8	55·4	B
	3	0		17·83	547·0	55·2	501·3	56·0	H
	4	0		12·55	555·9	55·7	515·2	56·5	H
	5	0		10·00	544·4	56·0	514·0	56·9	H
	6	0		08·83	542·0	56·4	501·7	57·2	W
	7	0		09·53	543·7	56·7	488·1	57·3	W
	8	0		10·03	545·6	56·8	485·5	57·3	W
	9	0		10·80	542·2	56·7	484·2	57·2	W
	10	0		10·20	544·6	56·6	478·9	57·0	W
	11	0		10·41	543·7	56·4	477·7	56·8	H
	12	0		10·04	543·4	56·3	477·4	56·6	H

DECLINATION. Magnet untouched, June 18^d—Sept. 21^d.

BIFILAR. Observed 2^m after the Declination, $k=0·000140$. BALANCE. Observed 3^m after the Declination, $k=0·000010$.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			Declination.		Bifilar.		Balance.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
17	13	0	25	01·34	531·8	56·2	421·8	56·4	B
	14	0		04·91	537·8	56·0	434·0	56·2	B
	15	0†		16·15	529·5	55·9	423·3	56·1	B
	16	0†		08·25	548·2	55·8	366·3	56·0	B
	17	0†		01·95	538·4	55·7	404·0	55·9	B
	18	0		11·10	525·6	55·6	425·2	55·8	B
	19	0		10·33	527·9	55·4	428·6	55·7	H
	20	0		13·22	530·4	55·3	440·7	55·6	H
	21	0		11·69	528·7	55·4	444·7	55·8	W
	22	0		11·79	518·1	55·4	449·4	56·0	H
	23	0		13·17	518·5	55·8	438·8	56·4	H
18	0	0		16·15	516·4	56·3	446·8	57·2	H
	1	0		19·86	523·6	57·0	471·8	58·2	H
	2	0		19·51	535·7	57·8	489·6	59·2	H
	3	0		19·61	542·7	58·5	494·0	59·7	H
	4	0		18·13	548·0	59·0	497·6	60·2	H
	5	0		12·55	539·5	59·4	496·6	60·7	H
	6	0		08·90	544·2	59·9	492·4	60·8	B
	7	0		07·98	543·4	60·0	488·5	60·9	B
	8	0		08·99	542·5	60·1	477·1	60·9	B
	9	0		09·39	546·4	60·2	466·9	60·7	B
	10	0		09·42	545·0	60·0	464·3	60·5	B
	11	0		09·27	543·5	59·8	462·7	60·2	W
	12	2		09·60	539·8	59·5	463·4	59·8	W
	13	0	25	09·69	538·4	59·3	464·1	59·5	W
	14	0		09·49	539·1	59·0	465·5	59·1	W
	15	0		09·56	539·9	58·7	466·0	58·7	W
	16	0		09·02	538·9	58·4	467·3	58·4	W
	17	0		08·45	538·4	58·1	471·1	58·0	W
	18	0		07·37	537·6	57·8	476·3	57·7	W
	19	25		05·92	531·8	57·5	482·9	57·2	B
	20	0		06·53	529·3	57·3	484·8	57·1	B
	21	0		05·92	521·4	57·1	480·5	57·0	H
	22	0		09·79	517·4	57·0	478·3	57·0	H
	23	0		14·13	516·1	57·0	474·7	57·2	H
19	0	0		16·06	533·4	57·0	460·8	57·3	B
	1	0		17·70	536·4	57·1	458·9	57·3	B
	2	0		18·43	535·6	57·1	462·5	57·3	B
	3	0		19·28	542·8	57·1	469·4	57·3	B
	4	0		17·02	540·2	57·0	483·5	57·2	B
	5	0		14·33	552·0	57·0	476·1	57·1	H
	6	0		10·94	549·2	56·9	476·2	56·9	W
	7	0		09·59	547·2	56·8	478·9	56·7	W
	8	0		10·04	550·9	56·6	474·6	56·4	W
	9	0		09·71	549·2	56·4	472·2	56·2	W
	10	0		09·73	547·3	56·1	470·2	55·9	W
	11	0		09·35	546·6	55·8	470·6	55·7	H
	12	0		09·08	545·0	55·6	471·6	55·4	H
	13	0	25	08·45	544·5	55·3	470·7	55·2	H
	14	0		09·02	543·5	55·1	471·7	55·0	H
	15	0		09·76	543·0	54·9	468·9	54·6	H
	16	0		09·19	541·6	54·7	467·0	54·3	H
	17	0		09·02	542·1	54·4	464·8	54·0	H
	18	0		06·77	537·6	54·2	470·4	53·8	H
	19	0		06·88	534·4	54·0	473·4	53·7	W
	20	0		05·72	534·0	53·8	476·7	53·5	W
19	21	0	25	05·67	528·7	53·7	472·5	53·5	B
	22	0		09·29	520·1	53·6	474·9	53·5	W
	23	0		14·41	516·0	53·6	477·6	53·5	W
20	0	0		16·75	521·6	53·6	476·0	53·7	W
	1	0		17·67	527·4	53·7	474·9	53·9	B
	2	0		18·32	535·2	53·7	475·1	54·2	W
	3	0		17·13	541·4	53·9	479·4	54·4	W
	4	0		14·80	550·3	54·0	482·2	54·6	W
	5	0		11·96	553·1	54·3	488·9	54·8	W
	6	0		10·09	553·0	54·4	489·2	55·0	H
	7	0		08·46	547·5	54·5	486·4	55·2	H
	8	0		08·83	545·8	54·5	480·1	55·2	H
	9	0		08·79	550·5	54·5	474·7	55·0	H
	10	0		09·56	546·1	54·4	475·1	55·0	H
	11	0		09·35	545·0	54·3	472·0	54·7	B
	12	0		09·13	543·4	54·1	472·2	54·5	B
	13	0	25	08·82	543·0	54·0	472·0	54·2	B
	14	0		08·68	543·4	53·8	472·4	54·0	B
	15	0		09·30	545·0	53·7	472·4	53·7	B
	16	0		07·64	544·3	53·5	472·6	53·5	B
	17	0		06·79	542·8	53·3	478·3	53·3	B
	18	0		05·15	539·8	53·1	482·4	53·0	B
	19	0		04·37	536·2	53·0	482·7	52·9	H
	20	0		03·99	530·0	52·8	485·6	52·9	H
	21	0		04·55	520·6	52·8	485·6	52·9	W
	22	0		07·37	513·9	52·8	483·2	53·2	H
	23	0		11·44	514·4	53·0	474·5	53·4	H
21	0	0		15·91	520·8	53·3	466·3	54·3	H
	1	0		18·70	529·8	53·9	464·4	55·0	H
	2	0		18·77	539·4	54·3	459·8	55·5	H
	3	0		16·68	543·0	54·8	466·3	55·8	H
	4	0		14·28	546·0	55·0	476·4	56·2	H
	5	0		11·51	547·1	55·5	480·3	56·5	H
	6	0		09·96	546·2	55·9	481·2	56·7	B
	7	0		09·86	547·8	56·1	476·8	57·0	B
	8	0		10·41	547·5	56·3	470·5	57·0	B
	9	0		10·23	547·7	56·3	468·9	57·0	B
	10	0		10·00	545·6	56·2	467·0	56·7	B
	11	0		10·20	543·8	56·0	466·2	56·5	W
	12	0		09·19	543·2	55·7	463·6	56·0	W
	13	0	25	08·82	542·9	55·4	464·4	55·6	W
	14	0		07·87	548·0	55·1	463·3	55·1	W
	15	0		08·14	547·2	54·7	464·7	54·5	W
	16	0		07·37	544·7	54·2	467·5	53·8	W
	17	0		06·90	543·8	53·7	470·0	53·1	W
	18	0		05·36	539·0	53·2	476·8	52·5	W
	19	0		05·52	537·2	52·8	482·3	52·0	B
	20	0		04·37	533·6	52·5	484·3	51·8	B
	21	0		05·80	527·1	52·2	483·4	51·7	H
	22	0		09·79	522·8	52·2	485·9	52·1	H
	23	0		13·77	522·9	52·3	474·8	52·7	H
22	0	0		17·70	529·9	52·8	475·7	53·6	B
	1	0		18·84	534·8	53·5	477·1	54·8	H
	2	0		20·08	544·1	54·6	471·6	55·8	B
	3	0		18·77	541·6	55·6	479·3	57·0	B
	4	0		17·15	544·0	56·6	483·8	58·0	H

DECLINATION. Magnet untouched, June 18^d—Sept. 21^d.

BIFILAR. Observed 2^m after the Declination, k=0·000140. BALANCE. Observed 3^m after the Declination, k=0·000010.

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† Extra Observations made.

Aug. 19^d 19^h—22^h. Workmen engaged with scythes outside the Observatory; the iron removed to a distance during observations.

Göttingen Mean Time of Declination Obs.			Declination.		Bifilar.		Balance.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
22	5	0	25	14·35	551·5	57·4	490·2	58·6	B
	6	0		11·88	548·1	57·9	491·0	59·0	W
	7	0		11·00	548·6	58·3	486·5	59·1	W
	8	0		05·82	550·8	58·3	483·3	59·1	W
	9	0		09·89	550·0	58·3	472·5	58·8	W
	10	0		09·74	547·9	58·1	468·3	58·7	W
	11	0		08·97	545·8	57·9	464·4	58·5	H
	12	0		08·21	549·1	57·7	458·1	58·3	H
	13	0	25	07·20	549·9	57·6	450·9	58·2	H
	14	0†		02·01	538·1	57·4	447·5	58·1	H
	15	0		04·98	536·4	57·3	455·2	58·0	H
	16	0		05·80	537·2	57·2	459·7	57·9	H
	17	0		08·61	535·0	57·2	463·4	57·7	H
	18	0		08·16	541·9	57·1	449·8	57·5	H
	19	0		09·06	542·6	57·1	449·5	57·5	W
	20	0		07·55	535·4	57·0	447·3	57·5	W
	21	0		10·50	536·1	57·0	440·5	57·5	B
	22	0		11·24	529·6	57·1	445·3	57·7	W
	23	0		13·07	527·2	57·4	442·3	58·0	W
23	0	0		15·94	528·0	57·6	448·3	58·3	W
	1	0		19·78	534·2	58·0	452·0	58·8	B
	2	0		20·50	535·0	58·5	456·0	59·5	W
	3	0		19·53	539·6	59·0	455·7	60·0	W
	4	0		17·98	541·7	59·6	464·1	60·8	W
	5	0		12·98	539·3	60·3	483·0	61·3	W
	6	0		10·90	546·1	60·7	479·5	61·5	H
	7	0		10·27	547·6	60·8	473·1	61·5	H
	8	0		10·03	551·3	60·8	464·9	61·5	H
	9	0		09·59	548·4	60·6	461·7	61·0	H
	10	0		06·29	541·3	60·3	465·4	60·7	H
	11	0		06·44	538·4	60·0	455·2	60·2	B
	12	0		07·37	545·3	59·7	450·0	59·7	B
24	13	0	25	07·42	543·3	58·9	431·6	58·9	W
	14	0		05·16	540·2	58·6	429·0	58·5	W
	15	0		07·42	542·1	58·3	435·8	58·3	W
	16	0†		14·21	539·4	58·0	430·7	58·0	W
	17	0		03·40	543·5	57·7	418·1	57·7	W
	18	0		04·42	542·7	57·5	428·8	57·3	W
	19	0		05·38	543·8	57·3	439·5	57·0	B
	20	0		05·38	540·8	57·1	449·0	56·8	B
	21	0		06·79	530·4	56·9	452·8	56·7	H
	22	0		10·18	524·5	56·7	450·6	56·6	H
	23	0		13·61	524·5	56·7	454·3	56·7	H
25	0	0		16·99	528·8	56·7	446·0	56·8	H
	1	0		18·37	538·0	56·7	444·9	57·0	H
	2	0		19·55	536·9	56·9	446·3	57·2	B
	3	0		17·89	536·7	57·2	463·8	57·8	H
	4	0		16·26	537·8	57·8	472·8	58·6	B
	5	0		12·22	548·0	58·4	477·2	59·2	B
	6	0		10·20	547·5	58·8	476·9	59·5	W
	7	0		09·59	548·5	59·0	468·8	59·8	W
	8	0		09·22	547·4	59·3	468·6	59·8	W
	9	0		09·32	545·0	59·3	470·0	59·8	W
	10	0		07·60	550·1	59·3	462·1	59·8	W
	11	0		09·22	546·5	59·2	453·4	59·5	H
	12	0		09·49	545·6	59·0	448·7	59·2	H

Göttingen Mean Time of Declination Obs.			Declination.		Bifilar.		Balance.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
25	13	0	25	09·05	542·2	58·8	451·1	59·0	H
	14	0		09·47	542·5	58·4	451·1	58·5	H
	15	0		09·05	541·8	58·0	451·3	58·0	H
	16	0		07·74	542·9	57·7	452·8	57·5	H
	17	0		07·47	542·7	57·4	455·6	57·2	H
	18	0		05·72	544·4	57·1	461·4	56·9	H
	19	0		02·66	540·2	56·9	465·3	56·5	W
	20	0		02·35	534·0	56·7	467·4	56·3	W
	21	0		03·06	530·3	56·5	464·2	56·3	W
	22	0		05·25	532·4	56·4	455·5	56·3	W
	23	0		09·73	532·1	56·4	449·8	56·5	W
26	0	0		15·34	532·3	56·6	446·3	57·0	W
	1	0		17·84	535·1	57·1	438·5	57·9	W
	2	0		19·12	547·8	57·7	434·7	58·7	W
	3	0		19·07	560·6	58·4	437·2	59·4	W
	4	0		16·62	562·0	59·0	466·1	60·0	W
	5	0		17·76	552·1	59·6	503·4	60·7	W
	6	0		11·74	550·6	60·2	528·4	61·2	H
	7	0		10·72	545·6	60·7	526·7	61·6	H
	8	0		09·59	543·2	61·0	501·5	61·7	H
	9	0		09·15	547·0	61·0	474·1	61·5	H
	10	0		06·76	538·2	60·7	459·3	61·0	H
	11	0		07·71	541·2	60·3	456·4	60·6	D
	12	0		07·67	538·4	60·1	453·0	60·2	D
	13	0	25	07·07	534·5	59·8	454·2	59·8	D
	14	0		08·50	535·2	59·3	456·7	59·0	D
	15	0		09·66	532·9	59·1	459·8	58·8	D
	16	0		07·60	534·3	58·7	456·9	58·4	D
	17	0		07·99	536·5	58·4	464·8	58·2	D
	18	0		07·13	534·3	58·1	465·6	57·8	D
	19	0		06·09	532·0	57·8	469·7	57·6	H
	20	0		07·24	524·9	57·7	476·1	57·5	H
	21	0		06·83	525·9	57·5	474·8	57·3	W
	22	0		08·82	524·5	57·3	475·4	57·3	H
	23	0		09·94	524·7	57·3	477·2	57·6	H
27	0	0		14·80	528·2	57·5	467·6	58·0	H
	1	0		17·02	531·7	57·8	468·7	58·3	H
	2	0		18·00	534·1	58·0	470·4	58·7	H
	3	0		16·75	533·8	58·4	471·8	59·2	H
	4	0		14·73	535·5	59·0	471·2	59·7	H
	5	0		14·26	537·7	59·4	470·6	60·2	H
	6	0		10·50	542·7	59·9	471·6	60·5	W
	7	0		09·76	545·4	60·2	466·9	60·8	H
	8	0		09·69	546·5	60·5	466·0	61·0	H
	9	0		10·11	546·3	60·6	462·5	60·7	H
	10	0		10·40	539·8	60·3	458·8	60·5	H
	11	0		08·70	541·9	60·1	458·6	60·0	W
	12	0		07·81	543·9	59·8	452·5	59·7	W
	13	0	25	09·05	544·0	59·5	448·7	59·3	W
	14	0		08·06	538·0	59·2	451·2	59·0	W
	15	0		07·82	537·4	58·9	455·2	58·5	W
	16	0		07·74	538·3	58·5	457·5	58·0	W
	17	0		07·74	537·5	58·0	460·0	57·5	W
	18	0		07·24	536·5	57·6	463·9	57·0	W
	19	0		06·10	535·1	57·2	467·2	56·5	B
	20	0		06·16	533·8	56·9	468·9	56·2	B

DECLINATION. Magnet untouched, June 18^d—Sept. 21^d.

BIFILAR. Observed 2^m after the Declination, $k=0·000140$. BALANCE. Observed 3^m after the Declination, $k=0·000010$.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
27	21	0	25	07·57	528·4	56·6	469·3	56·0	H
	22	0		08·95	526·7	56·3	459·9	56·2	H
	23	0		11·39	526·8	56·5	469·1	56·6	H
28	0	0		14·28	531·0	56·9	459·9	57·6	H
	1	0		16·25	536·9	57·8	449·9	58·9	H
	2	0		16·15	538·0	58·9	449·1	60·4	B
	3	0		14·40	539·1	60·4	447·9	62·0	B
	4	0		12·78	538·6	61·9	440·2	63·5	B
	5	0		12·06	543·2	63·3	436·4	65·0	B
	6	0		10·65	544·8	64·7	435·4	66·2	W
	7	0		09·13	548·0	65·7	453·6	66·8	W
	8	0		09·35	553·4	66·3	455·7	67·1	W
	9	0		08·95	541·8	66·6	467·3	67·3	W
	10	0		09·89	544·9	66·6	461·2	67·3	W
	11	0		07·87	543·8	66·4	458·2	67·0	H
	12	0†		03·84	540·2	66·0	446·0	66·5	H
	13	0	25	05·72	542·9	65·7	432·3	65·7	H
	14	0		06·73	539·8	65·0	426·0	65·1	H
	15	0		04·71	536·9	64·5	435·8	64·5	H
	16	0		07·13	538·2	64·0	439·8	63·9	H
	17	0		06·76	539·3	63·5	444·1	63·2	H
	18	0		08·34	540·6	63·0	450·6	62·7	H
	19	0		06·74	540·6	62·7	456·3	62·3	W
	20	0		09·20	537·0	62·4	457·1	62·0	W
	21	0		17·73	521·6	62·1	454·4	61·7	B
	22	0		16·65	536·7	62·0	445·1	61·9	W
	23	0		15·47	539·0	62·2	447·2	62·8	W
29	0	0		16·12	538·3	62·7	447·3	63·4	W
	1	0		18·13	536·2	63·3	450·6	64·3	W
	2	0		21·95	557·7	64·0	452·5	65·1	W
	3	0†		22·98	560·9	64·9	462·5	66·0	W
	4	0		14·87	553·3	65·6	477·4	66·8	W
	5	0		12·95	560·2	66·5	466·4	67·6	B
	6	0	25	11·51	563·5	67·2	460·5	68·3	H
	7	0†	24	51·17	549·9	68·0	493·4	68·7	H
	8	0†	25	01·78	548·1	68·2	490·6	68·8	H
	9	0†	25	04·08	531·9	68·4	461·0	69·0	H
	10	0	24	45·87	508·5	68·4	224·5	68·8	H
	11	0	25	00·99	538·7	68·2	348·7	68·5	W
	12	0		09·96	541·7	67·9	258·3	68·1	W
	13	0	25	02·08	531·1	67·5	224·0	67·6	W
	14	0	24	57·75	529·5	67·0	272·6	67·1	D
	15	0	25	08·45	511·0	66·5	328·2	66·5	D
	16	0		10·58	520·5	66·0	342·5	65·9	D
	17	0		04·10	534·1	65·5	353·5	65·2	D
	18	0		08·28	535·5	64·9	379·1	64·5	B
	19	0		11·71	526·5	64·3	414·3	63·7	B
	20	0		15·11	509·9	63·8	417·2	63·0	B
	21	0		15·94	506·4	63·4	443·5	62·6	H
	22	0		13·43	521·4	63·0	452·0	62·6	H
	23	0		12·38	528·9	63·0	466·9	63·0	H
30	0	0		16·65	523·4	63·2	469·1	63·7	H
	1	0		16·41	527·1	63·8	471·5	64·7	H
	2	0		16·93	536·6	64·6	479·8	65·8	W
	3	0		17·33	525·9	65·7	493·9	66·9	W
	4	0		09·89	539·7	66·7	497·7	68·0	H
30	5	0	25	11·84	540·3	67·7	469·5	69·1	H
	6	0	25	10·09	548·4	68·6	456·9	69·6	C
	7	0	24	55·33	544·0	69·0	482·6	69·9	D
	8	0	25	04·88	543·8	69·1	485·8	69·8	C
	9	0		07·47	534·1	69·0	479·2	69·9	B
	10	0		04·24	540·6	68·9	464·2	69·7	B
	11	0		09·15	537·8	68·7	460·1	69·3	W
	12	0		12·35	531·4	68·4	402·9	68·5	W
31	13	0	25	08·58	535·4	65·8	430·9	65·5	H
	14	0		08·48	532·8	65·4	429·8	65·0	H
	15	0†		17·12	525·4	65·0	418·1	64·5	H
	16	0		08·92	533·4	64·7	385·3	64·2	H
	17	0		10·00	535·3	64·4	424·2	63·9	H
	18	0		06·73	531·8	64·0	448·0	63·5	H
	19	0		06·95	532·3	63·8	469·5	63·2	W
	20	0		06·23	526·6	63·5	471·1	62·9	W
	21	0		06·70	521·4	63·2	473·8	62·8	B
	22	0		09·12	525·4	63·1	469·4	62·9	W
	23	0		13·36	516·0	63·2	466·5	63·3	W
1	0	0		14·78	529·4	63·6	450·1	63·9	W
	1	0		16·99	534·5	64·0	448·1	64·7	B
	2	0		17·29	542·5	64·7	446·4	65·7	W
	3	0		17·10	548·2	65·6	453·2	66·7	W
	4	0		14·38	549·4	66·6	466·9	67·7	W
	5	0		09·94	537·3	67·7	479·8	68·8	W
	6	0		09·46	541·3	68·7	466·4	69·5	H
	7	0		08·01	550·0	69·0	459·7	70·0	H
	8	0†		01·85	550·0	69·2	472·6	69·7	H
	9	0		05·11	542·8	69·0	445·9	69·5	H
	10	0		07·84	539·1	68·8	455·5	69·0	H
	11	10		04·28	539·3	68·3	419·4	68·3	B
	12	0		06·16	536·9	67·9	423·2	67·8	B
	13	0	25	06·56	536·1	67·5	417·5	67·2	B
	14	0		05·45	532·9	67·1	415·6	66·8	B
	15	0†		17·06	525·3	66·7	410·4	66·3	B
	16	0		09·66	540·3	66·3	376·6	65·9	B
	17	0†		12·18	528·8	65·9	387·0	65·5	B
	18	0		16·41	533·3	65·5	370·4	65·0	B
	19	0		12·58	532·6	65·0	395·2	64·5	H
	20	0		10·43	526·8	64·8	417·8	64·2	H
	21	0		13·22	520·3	64·5	428·4	63·8	W
	22	0		14·55	513·3	64·0	433·3	63·4	H
	23	0		15·67	509·8	63·8	445·3	63·2	H
2	0	0		17·06	515·6	63·5	457·5	63·0	H
	1	0		20·22	529·6	63·3	456·6	62·7	H
	2	0		20·47	529·5	63·0	476·6	62·6	H
	3	0		19·02	524·9	63·0	520·6	62·6	H
	4	0		16·32	542·0	62·9	537·5	62·6	H
	5	0†		08·82	537·1	62·9	553·9	62·7	H
	6	0		10·60	535·5	62·9	520·7	62·5	B
	7	0		08·19	544·6	62·7	512·3	62·3	B
	8	0		05·06	538·0	62·5	518·8	62·0	B
	9	0†		00·47	536·1	62·3	486·9	61·7	B
	10	0†		04·17	541·6	62·0	421 8	61·4	B
	11	0		05·43	532·4	61·7	451·8	60·9	W
	12	0		09·46	551·8	61·3	400·7	60·2	W

DECLINATION. Magnet untouched, June 18^{d}—Sept. 21^{d}.

BIFILAR. Observed 2^{m} after the Declination, k=0·000140. BALANCE. Observed 3^{m} after the Declination, k=0·000010.

† Extra Observations made.
Aug. 29^{d} 10^{h}—30^{d} 10^{h}. Term-Day Observations made.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR. Corrected.	BIFILAR. Thermometer.	BALANCE. Corrected.	BALANCE. Thermometer.	Observer's Initial.
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
2	13	0	25	07·20	534·0	60·7	405·7	59·5	W
	14	0		04·07	533·4	60·0	411·6	58·7	W
	15	0		11·72	534·3	59·3	433·1	57·9	W
	16	0		04·32	529·7	58·6	443·8	57·0	W
	17	0		06·06	536·1	57·8	461·6	56·1	W
	18	0		05·23	537·2	57·2	473·3	55·4	W
	19	0		05·32	531·2	56·5	490·0	54·8	B
	20	0		08·05	527·9	55·8	491·6	54·2	B
	21	0		07·38	521·0	55·2	497·1	54·0	H
	22	0		09·29	519·3	55·0	488·9	53·8	H
	23	0		15·24	515·8	54·8	492·4	54·2	H
3	0	0		15·91	523·0	54·9	496·4	54·8	H
	1	0		19·84	530·8	55·2	502·6	55·5	H
	2	0		20·11	538·1	55·9	512·4	56·4	B
	3	0		21·19	550·6	56·7	530·7	57·4	B
	4	0†		10·47	542·2	57·6	584·0	58·4	B
	5	0		14·98	549·7	58·4	573·7	59·2	B
	6	0		12·49	540·9	59·0	544·5	59·8	W
	7	0		12·31	546·9	59·4	503·7	60·0	W
	8	0		10·72	539·9	59·6	502·0	59·9	W
	9	0†		01·45	534·0	59·5	503·3	59·8	W
	10	0†		04·51	541·3	59·4	485·2	59·7	W
	11	0		08·43	539·3	59·1	474·3	59·3	H
	12	0		09·66	539·3	58·8	469·9	58·9	H
	13	0	25	08·86	538·7	58·4	467·1	58·5	H
	14	0		07·40	538·8	58·0	454·3	58·2	H
	15	0		09·57	537·0	57·8	463·4	57·8	H
	16	0		08·95	536·0	57·5	469·6	57·5	H
	17	0		07·47	532·3	57·3	474·3	57·1	H
	18	0		10·67	526·2	57·0	476·5	56·8	H
	19	0		12·31	528·1	56·8	468·8	56·5	W
	20	0		11·49	526·6	56·5	469·1	56·2	W
	21	0		09·49	524·0	56·3	467·5	56·0	B
	22	0		12·53	512·2	56·2	470·1	56·2	W
	23	0		16·41	500·9	56·3	484·1	56·4	W
4	0	0		18·67	520·6	56·4	483·3	56·8	W
	1	0		18·50	530·6	56·7	483·1	57·3	W
	2	0		17·26	539·0	57·0	496·6	57·6	W
	3	0		14·78	543·3	57·3	513·5	57·9	W
	4	0		06·93	564·4	57·5	529·3	58·1	W
	5	0		11·55	535·7	57·7	539·0	58·3	W
	6	0		09·44	536·8	57·9	526·9	58·4	H
	7	0		11·03	540·8	58·0	502·9	58·4	H
	8	0		10·72	541·4	57·8	488·1	58·2	H
	9	0		10·11	543·2	57·7	483·0	58·0	H
	10	0		07·99	540·5	57·6	481·7	57·8	H
	11	0		03·47	542·2	57·4	472·2	57·5	B
	12	0		04·78	536·4	57·2	456·2	57·2	B
	13	0	25	13·39	536·8	57·0	424·6	57·0	B
	14	0		07·71	538·2	56·8	441·0	56·7	B
	15	0		06·32	542·5	56·6	456·6	56·5	B
	16	0		11·71	539·4	56·3	454·1	56·2	B
	17	0		08·12	534·7	56·1	466·9	56·0	B
	18	0		06·71	534·3	55·9	481·0	55·7	B
	19	0		06·86	534·3	55·7	482·7	55·5	H
	20	0		07·07	527·4	55·5	489·0	55·4	H
4	21	0	25	08·03	521·8	55·3	490·1	55·3	W
	22	0		10·74	518·6	55·3	484·1	55·6	H
	23	0		13·67	519·3	55·5	472·9	56·0	H
5	0	0		16·82	533·4	55·8	469·0	56·4	H
	1	0		18·54	534·2	56·1	474·1	56·8	H
	2	0		17·80	541·2	56·6	482·5	57·4	H
	3	0		14·62	543·9	57·2	490·6	58·0	H
	4	0		12·15	547·7	57·8	494·7	58·6	H
	5	0		07·81	541·7	58·3	500·4	59·2	H
	6	0		06·32	543·0	58·8	502·1	59·5	B
	7	0		09·19	543·9	59·0	485·5	59·7	H
	8	0		08·48	543·2	59·2	484·4	59·5	H
	9	0		07·78	543·7	59·0	466·6	59·3	H
	10	0		07·76	537·3	58·8	471·7	59·0	H
	11	0		07·67	542·6	58·6	460·4	58·4	W
	12	0		02·20	534·3	58·2	460·5	57·9	W
	13	0	25	07·78	535·0	57·7	462·3	57·3	W
	14	0		08·82	535·8	57·1	464·0	56·5	W
	15	0		09·26	536·0	56·5	471·8	55·8	W
	16	0		09·02	534·8	55·9	473·8	55·0	W
	17	0		08·06	533·9	55·3	478·1	54·3	W
	18	0		07·22	532·7	54·7	482·4	53·7	W
	19	0		06·23	529·6	54·1	489·6	53·0	B
	20	0		07·11	524·7	53·7	491·7	52·5	B
	21	0		07·57	524·1	53·2	484·6	52·2	H
	22	0		10·65	520·3	52·9	484·5	52·2	H
	23	0		14·20	518·3	52·7	480·7	52·2	H
6	0	0		17·71	526·8	52·7	479·3	52·5	B
	1	0		18·40	528·8	52·8	477·2	53·0	H
	2	0		19·14	543·0	53·2	485·1	53·7	B
	3	0		15·51	541·6	53·8	500·7	54·5	B
	4	0		12·42	540·0	54·6	505·8	55·4	B
	5	0		10·45	546·7	55·3	504·0	56·2	B
	6	0		09·62	548·0	55·9	501·3	56·8	W
	7	0		05·49	543·9	56·4	500·0	57·0	W
	8	0		07·10	544·7	56·6	495·7	57·2	W
	9	0		09·96	542·8	56·6	486·7	57·1	W
	10	0		09·46	541·1	56·6	480·0	57·0	W
	11	0		09·39	542·9	56·3	473·5	56·6	H
	12	0		09·22	542·4	56·0	470·0	56·2	H
7	13	0†	25	22·00	526·6	54·9	456·3	54·7	B
	14	0		11·64	533·8	54·5	396·7	54·5	B
	15	0		07·47	530·4	54·1	400·7	54·0	B
	16	0		02·28	529·7	53·7	412·4	53·5	B
	17	0		03·61	530·6	53·3	415·5	53·5	B
	18	0		01·31	539·0	52·9	441·3	52·5	B
	19	0		04·86	534·9	52·6	459·8	52·1	H
	20	0		05·02	527·1	52·3	471·8	51·7	H
	21	0		11·57	510·8	52·1	485·8	51·7	W
	22	0		14·92	517·4	52·0	480·8	51·7	H
	23	0		15·64	518·4	52·0	479·6	52·2	H
8	0	0		17·89	521·5	52·3	473·1	53·0	H
	1	0		18·87	522·9	52·9	483·0	54·0	H
	2	0		17·04	531·7	53·7	496·8	55·0	H
	3	0		17·33	537·9	54·5	502·7	55·8	H
	4	0		16·35	535·8	55·5	504·4	56·7	H

DECLINATION. Magnet untouched, June 18^d—Sept. 21^d.

BIFILAR. Observed 2^m after the Declination, k=0·000140. BALANCE. Observed 3^m after the Declination, k=0·000010.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
8	5	0	25	12·98	546·8	56·4	501·9	57·7	H
	6	0		12·06	542·9	57·4	506·6	58·5	W
	7	0		10·77	549·4	58·0	493·0	59·0	H
	8	0		10·45	545·6	58·4	481·9	59·1	B
	9	0		09·15	545·9	58·5	476·1	59·1	B
	10	0		10·20	544·6	58·4	469·8	59·0	B
	11	0		08·82	543·9	58·2	463·5	58·6	W
	12	0		07·71	544·9	58·0	461·1	58·4	W
	13	0	25	07·31	541·7	57·8	459·9	58·2	W
	14	0		08·36	543·1	57·6	411·9	58·0	W
	15	0		05·52	539·5	57·4	429·2	57·8	W
	16	0		05·09	539·3	57·3	440·3	57·6	W
	17	0		07·31	541·0	57·1	448·7	57·4	W
	18	0		07·02	540·8	57·0	454·2	57·2	W
	19	0		06·73	541·8	56·9	459·5	57·0	B
	20	0		07·00	535·8	56·8	462·2	57·0	B
	21	0		09·03	530·2	56·8	460·1	57·2	H
	22	0		10·38	520·3	56·9	460·8	57·3	H
	23	0		11·35	521·8	57·0	460·1	57·5	B
9	0	0		15·18	513·5	57·3	461·2	58·0	H
	1	0		15·34	521·3	57·8	465·8	58·5	B
	2	0		13·93	527·6	58·3	470·4	59·0	B
	3	0		12·78	534·7	58·8	472·1	59·5	B
	4	0		11·14	539·9	59·1	473·0	60·0	B
	5	0		09·87	543·8	59·6	470·3	60·4	W
	6	0		09·30	546·9	59·8	468·2	60·6	W
	7	0		07·91	540·7	60·0	474·8	60·7	W
	8	0		04·28	541·6	60·1	476·1	60·8	W
	9	0		07·58	541·6	60·2	466·5	60·8	W
	10	0		09·49	544·5	60·3	456·6	60·8	W
	11	0		11·17	545·3	60·2	447·1	60·7	H
	12	0		09·13	542·2	60·1	446·4	60·5	H
	13	0	25	15·81	543·2	60·0	438·5	60·3	H
	14	0		10·07	546·0	59·8	412·3	60·1	H
	15	0		08·82	537·1	59·7	425·6	59·8	H
	16	0		07·24	540·3	59·5	431·3	59·5	H
	17	0		06·46	541·5	59·2	438·9	59·4	H
	18	0		05·92	540·4	59·0	444·1	59·1	H
	19	0		05·99	541·0	58·8	450·3	58·8	W
	20	0		05·76	533·7	58·6	455·0	58·3	W
	21	0		06·56	524·2	58·3	460·8	58·0	B
	22	0		08·65	523·4	58·0	460·3	57·8	W
	23	0		11·17	527·3	57·9	455·7	57·6	W
10	0	0		13·86	527·4	57·8	455·2	57·6	W
	1	0		15·62	534·5	57·7	452·8	57·6	W
	2	0		15·09	540·1	57·6	456·7	57·6	W
	3	0		13·86	545·8	57·6	460·6	57·6	W
	4	0		11·08	537·5	57·7	461·9	57·8	W
	5	0		10·13	541·8	57·8	462·5	58·0	W
	6	0		10·16	543·6	57·9	458·5	58·2	H
	7	0		10·36	544·0	58·0	458·6	58·2	H
	8	0		10·01	544·8	57·9	453·2	58·0	H
	9	0		09·96	544·1	57·7	448·1	57·5	H
	10	0		09·76	543·6	57·4	452·8	57·0	H
	11	0		09·46	542·1	57·2	457·4	56·7	B
	12	0		09·12	542·1	56·9	457·6	56·4	B
10	13	0	25	09·15	543·1	56·6	457·8	56·0	B
	14	0		09·08	546·1	56·3	448·7	55·7	B
	15	0		08·12	539·6	55·9	458·3	55·4	B
	16	0		06·37	540·6	55·6	452·6	55·1	B
	17	0		09·96	536·1	55·3	457·1	54·8	B
	18	0		07·52	540·5	55·0	454·2	54·5	B
	19	0		07·87	541·3	54·8	456·0	54·2	H
	20	0		06·56	534·3	54·5	458·1	54·0	H
	21	0		07·67	531·1	54·3	459·3	54·0	W
	22	0		08·99	526·5	54·1	462·5	54·0	H
	23	0		11·44	524·7	54·1	460·9	54·0	H
11	0	0		15·11	524·1	54·0	455·0	54·0	H
	1	0		19·44	530·5	54·1	452·2	54·4	H
	2	0		17·39	531·2	54·4	452·6	54·8	H
	3	0		16·53	535·3	54·8	476·2	55·4	H
	4	0		11·51	537·8	55·3	492·9	56·0	H
	5	0		10·70	539·7	55·8	490·3	56·5	H
	6	0		08·82	543·9	56·4	476·3	56·8	B
	7	0		08·90	547·5	56·8	466·0	57·0	B
	8	0		08·36	548·9	56·9	468·4	57·0	B
	9	0		03·02	544·6	56·8	474·4	56·8	B
	10	0		08·32	543·2	56·7	465·8	56·6	B
	11	0		07·81	546·1	56·5	456·6	56·4	W
	12	0		08·65	544·1	56·3	447·8	56·2	W
	13	0	25	09·29	541·5	56·1	446·0	56·0	W
	14	0		09·00	543·0	55·9	447·4	55·8	W
	15	0		08·80	543·3	55·7	445·5	55·5	W
	16	0		08·95	545·1	55·4	437·2	55·3	W
	17	0		09·46	547·1	55·2	418·1	55·0	W
	18	0		07·24	547·4	55·0	406·3	54·8	W
	19	0		08·05	534·5	54·8	418·7	54·7	B
	20	0		08·66	535·5	54·7	434·2	54·5	B
	21	0		07·34	531·6	54·5	432·1	54·4	H
	22	0		11·66	525·5	54·5	453·7	54·7	H
	23	0		14·43	518·9	54·7	458·5	55·1	H
12	0	0		19·26	524·5	55·0	460·0	55·7	H
	1	0		19·19	531·7	55·6	445·3	56·3	B
	2	0		19·28	541·3	56·2	458·9	57·2	B
	3	0		17·20	542·0	57·2	472·0	58·4	H
	4	0		12·16	533·3	58·4	484·4	59·7	H
	5	0		11·27	544·8	59·5	499·9	60·8	H
	6	0		11·27	536·7	60·4	498·6	61·5	W
	7	0		07·96	543·8	60·9	487·9	61·5	W
	8	0		05·92	542·8	60·8	489·0	61·3	W
	9	0		09·05	539·2	60·7	476·6	61·1	W
	10	0		07·71	540·3	60·5	469·1	60·8	W
	11	0		08·65	541·2	60·0	463·7	60·3	H
	12	0		08·97	541·5	59·7	455·6	59·7	H
	13	0	25	09·66	552·8	59·2	435·7	59·1	H
	14	0		06·09	543·2	58·7	419·2	58·5	H
	15	0		06·06	534·5	58·2	429·5	58·0	H
	16	0		06·41	535·5	57·7	439·6	57·3	H
	17	0		05·99	537·6	57·2	441·2	56·7	H
	18	0		06·32	538·8	56·8	445·9	56·2	H
	19	0		08·26	536·0	56·4	452·0	55·8	W
	20	0		06·86	528·5	56·0	456·1	55·3	W

DECLINATION. Magnet untouched, June 18^{d}—Sept. 21^{d}.

BIFILAR. Observed 2^{m} after the Declination, k=0·000140. BALANCE. Observed 3^{m} after the Declination, k=0·000010.

Sept. 10^{d} 14^{h}. Declination magnet oscillating through 13′.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
12	21	3	25	12·78	523·7	55·7	461·6	55·0	B
	22	0		09·77	526·4	55·4	458·1	54·8	W
	23	0		12·95	526·5	55·1	454·7	54·8	W
13	0	0		15·98	526·8	55·0	453·3	55·0	W
	1	0		18·47	534·2	55·2	454·2	55·4	W
	2	0		17·26	533·5	55·5	461·8	55·8	W
	3	0		13·52	541·1	55·7	469·0	56·2	W
	4	0		11·14	544·7	56·1	467·0	56·5	W
	5	0		09·49	549·7	56·4	468·6	56·9	W
	6	0		08·80	537·8	56·7	471·2	57·2	W
	7	0		09·73	545·7	57·0	460·8	57·3	H
	8	0		09·05	553·9	57·0	462·4	57·8	H
	9	0		03·57	531·8	57·0	465·1	57·5	H
	10	0		08·88	540·3	57·1	458·1	57·5	H
	11	8		08·93	540·2	57·1	460·0	57·5	B
	12	0		09·02	539·9	57·0	458·6	57·3	B
14	13	0	25	09·89	535·2	57·0	450·5	56·2	W
	14	0		08·85	535·9	56·4	444·3	55·5	W
	15	0		08·03	536·3	55·7	450·6	54·8	W
	16	0		07·94	535·2	55·0	455·5	54·0	W
	17	0		07·94	535·3	54·3	455·1	53·0	W
	18	0		07·64	536·4	53·6	455·0	52·2	W
	19	0		07·31	536·0	52·9	461·0	51·3	B
	20	0		07·65	532·8	52·2	468·6	50·5	B
	21	0		08·14	529·8	51·7	474·8	50·2	H
	22	0		09·82	526·0	51·2	476·2	50·2	H
	23	0		11·89	522·9	51·0	468·5	50·4	B
15	0	0		13·05	529·8	51·2	469·6	51·3	B
	1	0		14·89	535·4	51·8	474·1	52·5	H
	2	0		14·20	539·0	52·6	478·8	53·5	H
	3	0		12·04	539·9	53·3	481·6	54·4	B
	4	0		10·06	541·0	54·0	480·6	55·2	H
	5	0		09·06	542·7	54·7	474·4	55·7	H
	6	0		09·12	543·6	55·3	467·7	56·2	W
	7	0		09·56	545·7	55·7	463·5	56·4	W
	8	0		09·57	544·6	55·8	459·6	56·4	W
	9	0		09·42	542·5	55·7	457·3	56·2	W
	10	0		09·22	542·4	55·6	455·9	56·0	W
	11	0		09·00	542·9	55·3	454·5	55·7	H
	12	0		08·58	543·3	55·0	453·8	55·4	H
	13	0	25	08·43	542·2	54·7	453·0	55·0	H
	14	0		08·31	542·2	54·4	452·8	54·6	H
	15	0		09·66	540·2	54·0	457·0	54·2	H
	16	0		07·27	542·1	53·7	451·0	53·6	H
	17	0		08·01	537·9	53·3	453·2	53·0	H
	18	0		08·82	540·4	53·0	452·1	52·5	H
	19	0		07·99	538·4	52·6	458·1	52·1	W
	20	0		08·23	534·6	52·3	462·7	51·7	W
	21	0		09·26	530·3	52·0	465·9	51·5	B
	22	0		11·34	526·6	51·8	467·0	51·4	W
	23	0		13·34	528·7	51·7	461·1	51·9	W
16	0	0		15·96	532·4	52·1	455·1	52·8	W
	1	0		18·01	537·9	52·7	450·3	53·7	W
	2	0		16·38	541·6	53·4	457·8	54·6	W
	3	0		14·26	540·6	54·3	468·8	55·5	W
	4	0		12·28	536·2	55·2	469·9	56·4	W
16	5	0	25	10·38	539·7	55·9	466·0	57·0	W
	6	0		09·10	545·0	56·4	459·2	57·5	H
	7	0		09·49	547·0	56·7	456·6	57·5	H
	8	0		09·08	549·4	56·8	449·6	57·5	H
	9	0		08·46	547·5	56·8	451·5	57·5	H
	10	0		04·12	538·8	56·6	460·5	57·2	H
	11	0		08·08	541·5	56·4	452·3	56·8	B
	12	0		07·71	541·7	56·1	447·6	56·5	B
	13	0	25	07·07	541·1	55·8	444·7	56·1	B
	14	0		07·55	538·0	55·6	448·0	55·8	B
	15	0		06·24	539·1	55·3	447·0	55·5	B
	16	0		06·41	539·0	55·0	446·5	55·1	B
	17	0		09·39	540·1	54·8	447·5	54·8	B
	18	0		07·42	542·4	54·5	446·1	54·5	B
	19	0		07·67	540·3	54·2	451·4	54·3	H
	20	0		07·51	535·0	54·0	453·9	54·1	H
	21	0		09·00	529·2	53·9	457·3	54·0	W
	22	0		11·91	523·5	53·8	453·7	54·0	H
	23	0		13·49	523·6	53·8	452·1	54·2	H
17	0	0		16·93	529·3	53·8	439·8	54·5	H
	1	0		19·10	531·5	54·0	446·3	54·7	H
	2	0		18·34	534·0	54·2	454·9	55·0	H
	3	0		15·99	540·8	54·3	459·7	55·2	H
	4	0		13·05	545·2	54·7	470·7	55·5	H
	5	0		10·31	543·0	55·0	479·4	55·7	H
	6	0		10·09	543·8	55·3	480·8	56·0	B
	7	0		10·14	545·8	55·6	473·8	56·3	B
	8	0		11·17	545·7	55·9	473·7	56·5	B
	9	0		10·13	543·4	56·0	472·3	56·7	B
	10	0†		10·80	555·3	56·2	456·6	56·8	B
	11	0†	25	01·45	535·0	56·4	447·2	56·8	W
	12	0†	24	49·10	530·4	56·5	410·8	57·0	W
	13	0†	24	56·16	506·5	56·6	339·6	57·3	W
	14	0†	25	00·40	525·0	56·8	239·0	57·5	W
	15	0		08·95	533·2	57·0	316·1	57·6	W
	16	0		06·50	538·7	57·0	400·0	57·5	W
	17	0		06·81	538·9	56·8	424·3	57·2	W
	18	0		04·28	545·4	56·6	427·9	57·0	W
	19	0†		06·70	540·6	56·4	424·3	56·7	B
	20	0		13·79	517·8	56·2	425·9	56·4	B
	21	0†		23·38	523·0	56·1	402·8	56·4	H
	22	0		17·31	524·0	56·0	407·9	56·5	H
	23	0		13·16	530·2	56·1	416·9	56·7	H
18	0	0		14·13	529·7	56·3	422·0	57·2	H
	1	0		17·96	539·2	56·8	426·4	57·5	B
	2	0		15·51	536·1	57·0	434·5	57·7	H
	3	0		15·20	528·0	57·2	449·7	58·0	B
	4	0		12·78	531·6	57·5	454·9	58·3	H
	5	0		10·75	538·3	57·8	460·5	58·5	B
	6	0		09·62	541·9	58·0	460·9	58·7	W
	7	0		08·97	542·3	58·1	456·2	58·7	W
	8	0		09·62	543·0	58·1	450·0	58·6	W
	9	0		09·53	542·0	58·0	445·7	58·5	W
	10	0		08·73	540·4	57·9	445·3	58·3	W
	11	0		07·67	540·8	57·7	442·4	58·0	H
	12	0		05·72	540·0	57·4	431·2	57·7	H

DECLINATION. Magnet untouched, June 18^{d}—Sept. 21^{d}.

BIFILAR. Observed 2^{m} after the Declination, $k=0·000140$. BALANCE. Observed 3^{m} after the Declination, $k=0·000010$.

† Extra Observations made.

Sept. 14^{d} 18^{h}. A very minute insect seen on the north cross-plate of the balance magnet.

Göttingen Mean Time of Declination Obs.	Declination.	Bifilar.		Balance.		Observer's Initial.	Göttingen Mean Time of Declination Obs.	Declination.	Bifilar.		Balance.		Observer's Initial.
		Corrected.	Thermometer.	Corrected.	Thermometer.				Corrected.	Thermometer.	Corrected.	Thermometer.	
d. h. m.	° ′	Sc. Div.	°	Mic. Div.	°		d. h. m.	° ′	Sc. Div.	°	Mic. Div.	°	
18 13 0	25 05·99	534·6	57·2	428·0	57·5	H	21 21 0	25 08·31	527·8	51·8	456·6	50·7	B
14 0	09·51	529·0	57·0	430·7	57·2	H	22 0	09·05	527·5	51·4	450·4	50·5	W
15 0	10·38	534·6	56·8	406·3	56·8	H	23 0	11·91	523·7	51·2	452·0	50·5	W
16 0	09·73	539·5	56·5	397·0	56·5	H	22 0 0	14·46	528·0	51·2	450·6	50·7	W
17 0	09·33	528·2	56·3	385·2	56·2	H	1 0	17·61	532·4	51·2	444·1	51·0	W
18 0	06·56	545·4	56·0	386·8	55·8	H	2 0	17·17	537·1	51·3	451·1	51·2	W
19 0	11·68	532·0	55·8	400·0	55·5	W	3 0	15·24	541·6	51·4	457·7	51·5	W
20 0	12·80	526·2	55·5	415·5	55·2	W	4 0	13·44	542·2	51·6	458·9	51·7	W
21 0	10·97	534·1	55·1	405·4	54·8	B	5 0	11·86	543·3	51·7	459·3	51·8	W
22 0	12·75	525·2	54·8	419·2	54·5	W	6 0	10·87	544·0	51·7	456·7	51·8	H
23 0	14·48	522·2	54·7	421·4	54·4	W	7 0	11·24	544·7	51·7	453·6	51·6	H
19 0 0	17·09	525·1	54·6	426·5	54·7	W	8 0	10·87	545·7	51·5	448·6	51·3	H
1 0	16·46	530·4	54·7	432·7	55·1	W	9 0	10·74	544·4	51·3	448·3	51·0	H
2 0	17·93	537·8	55·0	443·2	55·6	W	10 0	08·99	542·6	50·9	447·9	50·5	H
3 0	16·39	534·4	55·6	463·5	56·3	W	11 0	09·96	541·8	50·5	449·5	49·8	B
4 0	13·83	538·5	56·1	480·5	56·7	W	12 0	10·14	541·7	50·0	449·5	49·2	B
5 0	12·83	541·1	56·6	486·9	57·3	W							
6 0	10·16	545·1	57·0	475·5	57·6	H	13 0	25 10·06	532·1	49·5	451·2	48·5	B
7 0	09·93	545·5	57·2	473·5	57·3	H	14 0	09·60	540·6	48·9	453·5	47·8	B
8 0	09·74	540·0	57·1	480·2	57·2	H	15 0	09·42	540·3	48·4	455·8	47·2	B
9 0†	25 07·44	528·4	57·0	475·0	57·0	H	16 0	09·32	540·6	47·9	456·2	46·5	B
10 0†	24 59·09	538·3	56·8	429·6	56·8	H	17 0	09·53	541·6	47·3	457·8	45·9	B
11 0	25 05·77	525·3	56·6	433·8	56·5	B	18 0	09·22	542·3	46·7	459·0	45·2	B
12 0	07·67	535·4	56·3	431·6	56·0	B	19 0	08·82	540·9	46·1	465·8	44·7	H
							20 0	07·87	536·8	45·5	475·4	44·2	H
13 0	25 09·17	536·1	55·9	440·3	55·5	B	21 0	07·47	531·1	45·0	475·8	43·8	W
14 0	09·08	535·8	55·4	446·3	54·8	B	22 0	07·76	526·0	44·7	470·2	44·0	H
15 0	09·13	535·1	54·8	450·6	54·0	B	23 0	09·77	525·9	44·7	464·7	44·2	H
16 0	08·25	536·5	54·1	450·3	53·2	B	23 0 0	12·67	528·7	44·8	458·0	44·8	H
17 0	06·46	534·6	53·5	451·8	52·3	B	1 0	15·44	532·6	45·0	455·0	45·4	H
18 0	07·27	540·1	52·9	450·3	51·5	B	2 0	16·55	537·5	45·5	456·6	46·2	H
19 0	11·27	539·7	52·2	451·7	50·8	H	3 0	15·24	540·4	46·1	462·2	47·0	H
20 0	08·79	524·6	51·7	461·5	50·3	H	4 0	13·84	543·1	46·9	464·5	47·5	H
21 0	11·59	521·5	51·3	463·7	50·0	W	5 0	12·45	546·0	47·6	464·0	48·3	H
22 0	08·99	523·9	50·9	465·9	50·0	H	6 0	11·39	547·2	48·2	460·7	48·9	B
23 0	10·40	521·2	50·9	469·0	50·3	W	7 0	11·17	549·7	48·7	458·7	49·1	B
20 0 0	13·52	521·3	51·0	463·9	51·4	H	8 0	10·74	548·4	48·9	455·8	49·2	B
1 0	14·91	524·4	51·6	437·7	52·2	H	9 0	10·53	548·7	48·8	452·1	49·0	B
2 0	15·07	530·2	52·2	446·2	52·8	H	10 0	10·87	546·9	48·5	447·2	48·6	B
3 0	14·67	534·5	52·7	455·8	53·7	H	11 0	10·65	546·3	48·2	444·8	48·2	W
4 0	13·25	535·1	53·3	469·2	54·5	H	12 0	08·95	551·9	47·8	436·1	47·6	W
5 0	10·70	536·9	53·7	476·4	54·7	H							
6 0	10·47	542·3	53·9	463·4	54·8	B	13 0	25 09·19	550·2	47·4	439·6	47·1	W
7 0	10·04	545·2	54·0	451·8	54·7	B	14 0	08·83	549·6	47·0	440·3	46·5	W
8 0	09·82	543·4	53·9	449·5	54·5	B	15 0	08·26	546·0	46·5	443·0	45·9	W
9 0	09·13	545·1	53·9	451·6	54·5	B	16 0	06·59	543·0	46·0	443·1	45·3	W
10 0†	04·22	540·0	53·9	457·9	54·6	B	17 0	09·02	546·6	45·5	437·5	44·7	W
11 0	01·78	527·8	53·9	443·3	54·7	W	18 0	05·13	546·9	45·0	417·0	44·2	W
12 0	09·39	533·8	54·0	436·1	54·7	W	19 0	05·23	546·8	44·5	421·7	43·5	B
							20 0	06·27	541·4	44·0	427·9	43·0	B
21 13 0	25 08·66	539·1	55·0	431·5	55·2	H	21 0	07·47	541·6	43·7	440·2	42·9	H
14 0	11·71	537·9	54·7	433·6	54·7	H	22 0	09·05	526·1	43·5	447·4	43·2	H
15 0	08·56	539·6	54·2	431·4	54·0	H	23 0	12·01	522·3	43·6	446·0	43·8	B
16 0	07·40	539·6	53·8	433·1	53·2	H	24 0 0	18·84	535·7	44·0	440·9	44·7	H
17 0	07·71	539·2	53·3	437·0	52·6	H	1 0	18·84	533·3	44·9	451·9	45·8	H
18 0	08·14	539·0	52·9	440·8	52·1	H	2 0	18·67	546·3	45·8	442·8	46·8	B
19 5	07·17	539·3	52·5	445·4	51·6	W	3 0	15·85	541·8	46·8	450·4	48·0	H
20 0	06·90	536·0	52·1	449·4	51·1	W	4 0	14·01	543·4	47·6	455·3	48·7	H

DECLINATION. Torsion removed, Sept. 21ᵈ 22½ʰ + 19°.* Effect of + 10° of torsion = −0′·84.

BIFILAR. Observed 2ᵐ after the Declination, k=0·000140. BALANCE. Observed 3ᵐ after the Declination, k=0·000010.

Sept. 20ᵈ 2ʰ—6ʰ. The floor of the Observatory washed: doors open throughout the day.

* Sept. 21ᵈ 22½ʰ. This change of torsion may possibly be due to the dampness arising from washing the floor on Sept. 20: the brass bar was suspended with some difficulty, but it is not conceived that much torsion could have been thus introduced.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.	Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.							Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°		d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
24	5	0	25	12·75	546·5	48·1	452·5	49·1	B	26	13	0	25	11·57	542·1	52·0	428·0	51·8	W
	6	0		11·57	542·3	48·6	453·9	49·4	W		14	0		11·08	542·1	51·7	421·5	51·3	W
	7	0		11·25	545·7	48·7	449·3	49·5	W		15	0		07·04	534·9	51·3	425·3	50·9	W
	8	0		11·10	557·7	48·8	441·3	49·5	W		16	0		05·40	532·5	51·0	426·8	50·5	W
	9	0		10·95	557·7	48·9	437·4	49·6	W		17	0		09·24	537·4	50·7	431·7	50·3	W
	10	0		10·80	555·2	48·9	457·8	49·5	B		18	0		09·47	539·2	50·5	435·7	50·1	W
	11	0		10·13	549·4	48·9	442·7	49·5	B		19	0		09·67	541·5	50·3	437·8	50·0	B
	12	0		10·77	551·8	48·9	442·4	49·5	B		20	0		09·77	535·0	50·2	443·6	50·0	B
											21	0		11·41	531·4	50·0	445·0	50·0	H
	13	0	25	01·01	539·9	48·8	435·6	49·5	D		22	0		14·20	522·2	50·1	452·1	50·2	H
	14	0	24	59·09	541·9	48·8	400·4	49·5	D		23	0		17·60	526·0	50·2	449·9	50·5	H
	15	0	24	57·51	528·9	48·8	351·6	49·5	D	27	0	0		17·63	523·8	50·6	450·0	51·0	B
	16	0	24	53·38	530·4	48·8	278·0	49·5	D		1	0		16·99	528·8	51·0	451·1	51·7	H
	17	0	25	01·61	543·7	48·8	261·1	49·6	D		2	0		15·64	535·6	51·7	449·2	52·5	H
	18	0		11·74	520·2	48·8	256·7	49·7	H		3	0		14·85	534·6	52·4	456·2	53·3	H
	19	0		17·84	517·8	48·8	297·0	49·6	H		4	0		16·77	541·4	53·0	462·6	54·1	H
	20	0		12·82	506·6	48·8	352·9	49·5	H		5	0		07·79	526·2	53·8	490·5	54·8	W
	21	0		19·04	508·8	48·7	382·4	49·4	W		6	0	25	11·37	540·3	54·4	504·7	55·2	W
	22	0		16·15	528·7	48·7	392·5	49·3	W		7	0†	24	43·06	555·0	54·8	487·1	55·5	W
	23	0		17·42	521·5	48·7	416·4	49·5	W		8	0	24	57·56	528·9	54·8	485·2	55·5	H
25	0	0		16·08	525·1	48·9	430·7	49·7	W		9	0	25	01·21	514·2	54·8	476·6	55·3	W
	1	0		21·83	524·9	49·3	448·3	50·2	W		10	0		07·29	536·0	54·6	452·0	55·0	H
	2	0		23·34	542·1	49·9	551·5	51·0	B		11	0†		16·93	519·6	54·4	338·8	54·7	W
	3	0		19·24	528·0	50·8	579·2	52·1	B		12	0		09·57	537·1	54·0	342·8	54·5	H
	4	0		21·59	525·8	51·7	519·3	53·0	D										
	5	0		17·63	568·9	52·6	486·4	54·1	D	28	13	0	25	07·92	533·1	52·2	420·7	51·7	B
	6	0		07·99	564·0	53·3	706·6	54·8	W		14	0		08·08	536·7	51·9	414·9	51·3	B
	7	0		07·15	540·0	53·8	554·2	55·2	W		15	0		07·52	532·1	51·5	421·9	50·9	B
	8	0		12·26	538·7	54·1	485·6	55·3	W		16	0		10·68	534·9	51·1	424·1	50·5	B
	9	0	25	09·26	533·7	54·2	476·5	55·5	H		17	0		09·08	535·1	50·8	424·0	50·0	B
	10	0	24	56·40	544·0	54·2	453·0	55·4	H		18	0		11·57	535·3	50·4	424·2	49·6	B
	11	3	25	07·81	547·7	54·0	409·0	55·0	B		19	0		12·56	538·7	50·0	419·9	49·3	H
	12	0		07·71	534·9	53·8	396·5	54·5	B		20	0		11·71	534·2	49·8	431·8	49·0	H
											21	0		13·50	530·6	49·5	433·1	48·9	W
	13	0	25	09·84	534·8	53·5	385·9	54·0	B		22	0		13·93	528·2	49·4	431·8	49·0	H
	14	0		08·08	535·5	53·2	388·4	53·5	B		23	0		15·01	525·3	49·4	435·8	49·2	H
	15	0		05·79	525·6	52·8	397·7	53·0	B	29	0	0		15·61	534·7	49·6	440·0	49·8	H
	16	0		14·13	518·6	52·5	382·4	52·5	B		1	0		15·83	535·4	50·0	441·1	50·5	H
	17	0		12·76	529·8	52·1	388·0	52·0	B		2	0		14·58	535·8	50·5	449·1	51·2	H
	18	0		09·42	536·1	51·8	413·9	51·5	B		3	0		14·17	539·1	51·2	454·7	52·0	H
	19	0		15·07	523·1	51·4	420·4	51·0	H		4	0		12·23	541·6	51·9	458·1	52·6	H
	20	0		11·14	529·7	51·0	431·3	50·5	H		5	0		08·99	531·6	52·3	462·3	53·0	H
	21	0		12·58	530·2	50·7	437·1	50·2	W		6	0		08·75	541·8	52·6	472·6	53·2	B
	22	0		11·54	530·5	50·4	435·8	50·0	H		7	0		08·58	544·3	52·7	465·4	53·1	B
	23	0		12·85	525·5	50·4	445·4	50·3	H		8	0		06·73	538·0	52·6	451·5	52·8	B
26	0	0		17·53	526·7	50·4	442·3	50·5	H		9	0		06·39	536·6	52·3	446·0	52·5	B
	1	0		16·79	532·7	50·7	442·6	51·2	H		10	0		04·71	533·2	52·0	442·5	52·2	B
	2	0		15·58	533·0	51·0	446·9	52·0	H		11	0		06·71	535·2	51·8	431·9	52·0	W
	3	0		14·48	531·0	51·7	449·7	52·5	H		12	0		05·85	529·3	51·6	415·9	51·7	W
	4	0		14·77	532·4	52·2	465·9	53·0	H										
	5	0		09·57	531·6	52·7	472·8	53·5	H		13	0	25	07·85	524·1	51·4	406·3	51·4	W
	6	0		11·48	539·5	53·1	464·0	53·9	B		14	0		06·76	531·0	51·2	391·9	51·1	W
	7	0		10·60	544·9	53·4	455·3	54·0	B		15	0		01·88	535·3	51·0	392·2	50·9	W
	8	0		09·93	541·1	53·4	453·5	53·8	B		16	0		04·69	538·2	50·8	396·9	50·7	W
	9	0		08·16	535·1	53·2	457·1	53·5	B		17	0		09·06	537·6	50·6	410·0	50·5	W
	10	0		10·09	536·4	52·9	451·9	53·0	B		18	0		08·59	539·6	50·4	416·6	50·3	W
	11	0		10·53	539·0	52·6	445·0	52·6	W		19	0		10·56	538·4	50·2	424·7	50·0	B
	12	0		11·07	538·1	52·3	442·6	52·2	W		20	0		11·42	537·8	50·0	432·0	49·8	B

DECLINATION. Magnet untouched, Sept. 21^{d}—Dec. 29^{d}.

BIFILAR. Observed 2^{m} after the Declination, k=0·000140. BALANCE. Observed 3^{m} after the Declination, k=0·000010.

† Extra Observations made.

Sept 24^{d} 10^{h}—25^{d} 10^{h}. Term-Day Observations made.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
29	21	0	25	10·92	533·6	49·9	434·2	49·7	H
	22	0		10·74	526·4	49·8	440·2	49·8	H
	23	0		10·70	531·9	50·0	438·6	50·0	H
30	0	0		13·81	534·6	50·4	441·5	51·0	B
	1	7		16·48	535·8	51·1	446·8	52·0	B
	2	0		16·25	537·6	51·6	449·7	52·3	B
	3	0		14·43	539·0	52·0	452·9	53·0	H
	4	0		13·09	540·5	52·7	454·0	53·5	H
	5	0		10·83	538·9	53·0	453·9	54·0	H
	6	0		09·00	542·4	53·1	450·6	53·9	W
	7	0		09·64	541·0	53·1	445·8	53·5	W
	8	0		10·00	541·7	52·8	443·3	53·1	W
	9	0		10·07	541·4	52·5	439·3	52·6	W
	10	0		10·36	540·6	52·1	439·4	52·0	W
	11	0		10·13	541·3	51·7	436·9	51·4	H
	12	0		08·79	539·9	51·2	434·2	50·8	H
	13	0	25	09·42	539·1	50·8	434·8	50·3	H
	14	0		09·66	538·1	50·4	438·6	50·0	H
	15	0		10·53	537·9	50·0	438·3	49·7	H
	16	0		12·11	540·9	49·8	431·7	49·5	H
	17	0		10·30	539·9	49·6	434·3	49·2	H
	18	0		11·08	540·3	49·4	437·0	49·0	H
	19	0		10·03	542·8	49·2	439·4	48·8	W
	20	0		11·64	538·0	49·0	442·8	48·7	W
	21	0		08·83	536·4	48·9	445·5	48·7	B
	22	0		09·46	526·6	48·9	449·5	48·9	W
	23	0		14·21	527·9	49·0	448·7	49·3	W
1	0	0		16·77	522·7	49·5	451·1	50·0	W
	1	0		19·28	530·4	50·1	447·6	50·8	W
	2	0		18·00	532·0	50·8	453·5	51·8	W
	3	0		16·63	538·1	51·6	455·5	52·5	W
	4	0		12·82	541·1	52·2	472·8	53·1	W
	5	0		12·70	537·6	52·7	475·2	53·5	W
	6	0		10·60	540·5	52·8	470·2	53·6	W
	7	0		10·30	538·0	52·9	472·3	53·7	W
	8	0		10·01	537·7	53·0	465·0	53·6	H
	9	0		08·41	540·5	52·9	455·7	53·5	H
	10	0		05·76	536·9	52·8	441·8	53·3	H
	11	0		08·45	540·7	52·7	443·9	53·2	B
	12	0		09·64	541·8	52·6	438·7	53·0	B
	13	0	25	08·41	534·2	52·4	433·2	52·8	B
	14	0		08·45	537·3	52·3	409·8	52·7	B
	15	0		08·48	539·0	52·2	410·0	52·5	B
	16	0		13·90	551·1	52·1	396·1	52·4	B
	17	0		11·37	540·2	52·0	408·7	52·2	B
	18	0		10·72	544·1	51·9	419·3	52·0	B
	19	0		10·07	541·6	51·7	428·5	51·8	H
	20	0		08·09	540·4	51·5	435·9	51·5	H
	21	0		09·08	534·2	51·4	439·4	51·3	W
	22	0		11·17	528·0	51·2	439·1	51·3	H
	23	0		11·37	527·7	51·2	439·2	51·5	H
2	0	0		16·45	537·7	51·4	426·9	51·7	H
	1	0		16·48	531·6	51·7	431·4	52·2	H
	2	0		16·59	534·1	52·0	435·0	52·6	H
	3	0		15·34	536·4	52·4	443·6	53·2	H
	4	0		13·63	537·6	52·8	452·4	53·7	H
2	5	0	25	11·71	533·9	53·2	456·9	54·1	H
	6	0		11·12	541·2	53·4	449·8	54·2	B
	7	0		11·15	544·1	53·5	442·4	54·2	B
	8	0		10·13	544·2	53·5	440·0	54·1	B
	9	0		09·96	543·1	53·4	438·0	53·9	B
	10	0		10·00	542·5	53·2	437·2	53·7	B
	11	0		10·09	542·7	53·1	435·1	53·4	W
	12	0		10·04	543·3	52·9	434·6	53·1	W
	13	0	25	10·56	541·1	52·7	436·6	52·8	W
	14	0		10·51	541·7	52·5	436·3	52·5	W
	15	0		10·21	542·5	52·3	436·2	52·1	W
	16	0		10·23	542·4	52·0	437·1	51·8	W
	17	0		10·45	541·8	51·7	437·8	51·4	W
	18	0		10·23	542·1	51·4	436·7	51·0	W
	19	0		09·62	542·2	51·1	438·5	50·6	B
	20	0		09·08	538·8	50·9	442·7	50·3	B
	21	0		07·57	533·8	50·6	448·5	50·2	H
	22	0		09·13	526·2	50·3	449·0	50·0	H
	23	0		11·61	527·0	50·2	439·9	49·8	H
3	0	0		16·36	525·4	50·0	433·2	49·7	H
	1	0		18·77	528·5	50·0	430·5	49·7	H
	2	0		20·15	529·5	49·9	439·3	49·7	B
	3	0		18·57	529·4	49·8	447·6	49·6	B
	4	0		15·91	537·2	49·8	452·0	49·5	B
	5	0†		07·04	534·1	49·7	475·7	49·4	B
	6	0		11·75	535·9	49·6	482·6	49·5	W
	7	0		11·24	537·5	49·5	472·7	49·5	W
	8	0		11·01	540·2	49·5	467·2	49·5	W
	9	0		10·48	542·0	49·4	459·7	49·5	W
	10	0		10·48	543·0	49·4	453·3	49·4	W
	11	0		09·08	540·6	49·3	452·7	49·5	H
	12	0†		04·37	547·5	49·3	433·1	49·4	H
	13	0	25	08·41	540·3	49·3	432·3	49·4	H
	14	0†		18·77	550·1	49·2	407·0	49·4	H
	15	0		08·16	540·8	49·2	414·0	49·4	H
	16	0		08·46	542·1	49·2	424·1	49·2	H
	17	0		08·97	543·9	49·1	427·9	49·1	H
	18	0		08·48	542·0	49·0	432·9	49·0	H
	19	0		10·11	542·5	48·8	434·8	48·7	W
	20	0		08·75	542·2	48·7	438·4	48·5	W
	21	0		08·21	536·3	48·6	445·5	48·3	B
	22	0		08·85	532·2	48·5	446·8	48·3	W
	23	0		12·16	529·8	48·4	439·7	48·3	W
4	0	0		14·82	529·2	48·4	436·3	48·5	W
	1	0		16·19	526·1	48·6	433·5	48·7	W
	2	0		16·55	532·0	48·7	435·1	48·9	W
	3	0		16·10	538·6	48·8	441·4	49·0	W
	4	0		13·83	539·9	48·8	445·9	48·9	W
	5	0		12·09	541·5	48·7	478·5	48·7	W
	6	0		11·10	542·0	48·5	446·6	48·6	H
	7	0		11·01	543·6	48·3	441·7	48·3	H
	8	0		10·41	543·0	48·1	441·2	48·0	H
	9	0		10·14	543·0	48·0	440·7	47·7	H
	10	0		09·84	542·2	47·8	441·4	47·5	H
	11	0		10·03	541·9	47·7	443·4	47·3	B
	12	0		10·03	541·4	47·5	444·3	47·0	B

DECLINATION. Magnet untouched, Sept. 21^{d}—Dec. 29^{d}.

BIFILAR. Observed 2^{m} after the Declination, k=0·000140. BALANCE. Observed 3^{m} after the Declination, k=0·000010.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
5	13	0	25	09·54	545·1	47·0	436·1	46·5	W
	14	0		09·29	543·8	46·5	437·5	45·9	W
	15	0		09·86	541·7	46·0	439·5	45·3	W
	16	0		10·33	541·7	45·5	441·3	44·7	W
	17	0		09·51	542·6	44·9	442·2	44·0	W
	18	0		09·60	542·0	44·4	442·9	43·4	W
	19	0		09·59	539·4	43·9	444·0	42·8	B
	20	0		09·00	533·8	43·3	446·2	42·2	B
	21	0		09·08	536·7	42·8	445·6	41·8	H
	22	0		07·87	530·5	42·5	447·6	41·7	H
	23	0		11·27	526·4	42·3	440·7	42·0	H
6	0	0		14·73	522·3	42·3	440·5	42·5	B
	1	0		18·30	536·9	42·7	440·3	43·5	H
	2	0		19·28	549·3	43·7	448·8	45·0	B
	3	0		19·34	546·8	44·9	461·9	46·7	H
	4	0		16·53	542·2	45·9	466·6	47·2	B
	5	0		10·70	541·2	46·8	477·2	47·8	H
	6	0		10·06	536·0	47·3	484·9	48·1	W
	7	0		10·50	541·5	47·4	481·7	48·2	W
	8	0		07·72	536·8	47·6	481·6	48·3	W
	9	0		08·93	540·8	47·6	470·9	48·3	W
	10	0		10·72	545·5	47·5	455·5	48·1	W
	11	0		10·51	544·7	47·4	449·7	48·0	H
	12	0		11·61	554·1	47·2	431·6	47·8	H
	13	0	25	06·73	544·5	47·1	429·6	47·6	H
	14	0		10·16	544·0	47·0	428·1	47·5	H
	15	0		08·29	541·0	46·9	433·8	47·3	H
	16	0		08·66	541·4	46·9	437·2	47·2	H
	17	0		10·09	548·1	46·8	455·6	47·1	H
	18	0		07·78	544·3	46·7	438·0	47·0	H
	19	0		08·03	542·7	46·6	437·5	46·9	W
	20	0		07·60	538·5	46·5	441·6	46·9	W
	21	0		07·79	535·6	46·5	442·5	46·8	B
	22	0		08·66	529·2	46·5	442·6	46·9	W
	23	0		11·44	525·8	46·6	444·6	47·2	W
7	0	0		14·82	528·0	46·8	440·9	47·5	W
	1	0		16·63	532·1	47·2	440·3	47·8	W
	2	0		16·65	536·1	47·5	442·7	48·3	W
	3	0		16·13	542·8	47·8	445·3	48·7	W
	4	3		13·29	546·2	48·2	446·7	48·9	W
	5	0		11·12	544·2	48·3	452·8	49·0	W
	6	0		09·12	539·5	48·4	456·4	49·0	H
	7	0		11·95	543·5	48·4	452·4	49·0	H
	8	0		10·70	545·4	48·4	450·9	49·1	H
	9	0		10·16	545·9	48·4	446·7	49·0	H
	10	0		09·74	540·5	48·3	444·8	48·9	H
	11	0		09·03	543·7	48·2	440·5	48·7	B
	12	0		06·06	540·1	48·1	433·3	48·5	B
	13	0	25	07·13	541·9	48·0	409·0	48·2	B
	14	0		06·59	539·6	47·9	414·4	48·0	B
	15	0		06·84	542·0	47·7	422·1	47·8	B
	16	0		08·05	542·1	47·5	426·6	47·5	B
	17	0		07·84	541·5	47·3	430·7	47·3	B
	18	0		08·66	541·4	47·1	433·5	47·1	B
	19	0		08·41	541·9	47·0	435·8	46·9	H
	20	0		07·71	540·6	46·8	436·4	46·7	H
7	21	0	25	07·65	534·0	46·6	439·0	46·4	W
	22	0		08·25	531·4	46·4	439·7	46·3	H
	23	0		10·90	529·1	46·3	439·7	46·3	H
8	0	0		13·67	531·1	46·3	435·2	46·5	H
	1	0		15·39	532·1	46·5	436·8	47·0	H
	2	0		16·08	536·3	47·0	442·2	47·6	H
	3	0		15·31	539·6	47·6	447·2	48·4	H
	4	0		12·58	542·6	48·2	451·9	49·2	H
	5	0		11·75	544·2	48·9	449·9	49·7	H
	6	0		10·75	545·2	49·4	449·4	50·0	B
	7	0		11·10	544·9	49·7	447·2	50·2	B
	8	0		10·70	544·4	49·8	446·6	50·1	B
	9	0		11·15	544·3	49·7	444·0	50·0	B
	10	0		10·77	546·8	49·6	437·5	49·8	B
	11	0		06·95	551·7	49·4	429·7	49·7	W
	12	0		07·52	548·5	49·3	422·6	49·6	W
	13	0	25	07·82	542·0	49·3	424·4	49·6	W
	14	0		08·79	540·7	49·3	427·1	49·6	W
	15	0		07·37	543·9	49·3	426·7	49·6	W
	16	0		07·11	543·9	49·2	425·8	49·5	W
	17	0		06·68	543·3	49·2	427·6	49·5	W
	18	0		08·28	540·9	49·1	428·2	49·5	W
	19	0		08·25	541·9	49·0	427·6	49·3	B
	20	0		09·35	541·6	48·9	434·9	49·1	B
	21	0		07·13	539·3	48·8	436·4	49·0	H
	22	0		08·31	534·5	48·7	441·7	48·8	H
	23	0		10·27	530·2	48·7	429·6	49·0	H
9	0	0		12·80	532·3	48·7	437·0	49·7	B
	1	0		14·60	535·5	49·0	435·1	50·3	H
	2	0		14·53	540·1	49·7	435·7	50·9	H
	3	0		14·18	544·6	50·5	437·1	51·6	H
	4	0		12·95	546·1	51·2	436·2	52·2	H
	5	0		12·45	545·8	51·9	439·8	52·7	B
	6	0		11·51	541·9	52·2	436·3	52·8	W
	7	0		12·26	547·1	52·3	443·7	52·8	W
	8	0		13·17	551·0	52·3	445·0	52·5	W
	9	0		11·82	549·4	52·0	449·0	52·2	W
	10	0	25	04·82	536·4	51·7	446·5	51·7	W
	11	0†	24	43·72	512·3	51·3	420·3	51·2	H
	12	0†	24	53·32	499·1	51·0	236·8	50·8	H
	13	0†	24	54·01	496·7	50·7	298·3	50·6	H
	14	0†	25	01·65	526·6	50·4	323·4	50·3	H
	15	0†		00·06	533·1	50·1	319·5	50·0	H
	16	0		06·73	535·2	49·9	372·6	49·7	H
	17	0		10·50	536·4	49·7	398·6	49·4	H
	18	0		10·00	542·4	49·4	419·2	49·1	H
	19	0		10·03	534·3	49·1	435·5	48·8	W
	20	0		10·51	537·5	48·8	438·0	48·5	W
	21	4		12·92	510·5	48·6	444·7	48·2	B
	22	0		20·77	521·1	48·3	436·7	48·0	W
	23	3		16·92	528·5	48·2	437·6	47·9	W
10	0	0		18·72	531·0	48·2	442·2	48·3	W
	1	0		18·94	520·3	48·4	460·0	48·8	W
	2	2		18·61	531·9	48·8	478·5	49·3	W
	3	13		17·19	530·5	49·3	470·3	49·8	W
	4	0		15·39	534·9	49·5	465·0	49·9	W

DECLINATION. Magnet untouched, Sept. 21^{d}—Dec. 29^{d}.

BIFILAR. Observed 2^{m} after the Declination, k=0·000140. BALANCE. Observed 3^{m} after the Declination, k=0·000010.

† Extra Observations made.

Oct. 7^{d} 15^{h}. A small insect seen on the north cross-plate of the balance magnet.

Oct. 9^{d}—12^{d}. Workmen engaged erecting a fireplace in the east anteroom.

Göttingen Mean Time of Declination Obs.			Declination.		Bifilar.		Balance.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
10	5	0	25	11·51	531·8	49·6	474·9	49·9	B
	6	0		09·27	540·0	49·7	476·6	50·0	H
	7	0		10·75	546·2	49·7	465·7	50·0	H
	8	0		10·16	537·7	49·6	468·9	49·8	H
	9	0		09·08	541·3	49·5	462·6	49·7	H
	10	0		07·20	539·7	49·4	452·5	49·5	H
	11	0		08·92	539·3	49·2	444·2	49·2	B
	12	0		09·24	535·2	49·0	427·7	48·9	B
	13	0	25	10·97	537·8	48·8	432·0	48·5	B
	14	0		09·29	538·1	48·5	434·9	48·2	B
	15	0		10·36	539·3	48·2	435·8	48·0	B
	16	0		08·34	537·4	48·0	437·1	47·8	B
	17	0		08·75	538·7	47·8	437·2	47·6	B
	18	0		13·30	533·5	47·7	439·4	47·5	B
	19	0		13·32	544·9	47·5	429·1	47·5	H
	20	0		10·06	539·8	47·4	435·4	47·4	H
	21	0		11·37	536·7	47·4	440·9	47·3	W
	22	0		09·82	529·4	47·3	448·9	47·2	H
	23	0		12·82	534·7	47·3	450·0	47·3	H
11	0	0		13·79	522·9	47·4	452·3	47·5	H
	1	0		16·52	525·1	47·5	456·3	47·9	H
	2	0		14·37	531·8	47·8	448·8	48·2	W
	3	0		14·92	535·1	48·0	456·5	48·5	H
	4	0		10·00	530·7	48·4	467·1	49·0	H
	5	0		09·06	543·8	48·8	481·5	49·4	H
	6	0		09·77	538·1	49·1	468·0	49·6	B
	7	0		10·77	542·6	49·4	456·3	49·8	W
	8	0		10·63	542·7	49·6	452·7	50·0	B
	9	0		09·89	540·9	49·6	450·9	49·8	B
	10	0		07·31	541·5	49·5	449·0	49·6	B
	11	0		09·87	543·7	49·3	443·1	49·3	W
	12	0		09·71	540·9	48·9	443·1	48·9	W
12	13	0	25	09·69	540·4	49·0	437·8	49·1	H
	14	0		10·36	541·3	48·8	437·6	48·8	H
	15	0		09·44	542·5	48·7	435·3	48·5	H
	16	0		10·48	541·1	48·5	435·2	48·3	H
	17	0		10·47	541·9	48·2	432·2	48·2	H
	18	0		09·27	544·8	48·0	427·3	48·0	H
	19	0		08·68	545·6	48·0	431·0	48·0	W
	20	0		08·31	543·2	47·9	434·7	47·9	W
	21	0		08·09	534·7	47·9	440·3	48·0	B
	22	0		09·12	530·4	47·9	437·9	48·2	W
	23	0		11·42	530·0	48·0	437·4	48·5	W
13	0	0		13·93	533·4	48·4	438·4	49·0	W
	1	0		14·40	536·6	48·8	442·4	49·8	W
	2	0		13·79	538·8	49·5	443·6	50·3	W
	3	0		12·55	540·3	49·9	445·0	50·8	W
	4	0		11·27	542·6	50·4	450·0	51·3	W
	5	0		09·77	540·7	50·7	447·8	51·7	W
	6	0		10·06	542·3	51·0	443·9	52·0	H
	7	0		10·50	543·3	51·4	439·4	52·3	H
	8	0		10·47	543·8	51·7	436·9	52·7	H
	9	0		10·53	542·7	52·0	435·7	52·9	H
	10	0		09·64	548·9	52·2	431·1	53·2	H
	11	10		09·44	543·2	52·5	431·4	53·5	B
	12	0		10·27	543·8	52·7	430·7	53·7	B
13	13	0	25	10·03	543·6	52·9	430·9	53·9	B
	14	0		09·59	543·3	53·0	429·5	54·0	B
	15	0		09·91	543·4	53·1	427·5	54·1	B
	16	0		09·93	544·0	53·3	423·8	54·2	B
	17	0		09·08	545·0	53·4	422·2	54·3	B
	18	0		11·74	542·0	53·6	420·6	54·5	B
	19	0		10·54	536·9	53·7	412·2	54·5	H
	20	0		09·05	543·9	53·7	413·7	54·5	H
	21	0		07·45	538·3	53·7	419·3	54·5	W
	22	0		08·52	533·6	53·8	417·6	54·7	H
	23	0		11·71	531·0	54·0	412·4	54·8	H
14	0	0		14·03	533·4	54·0	412·1	55·0	H
	1	0		13·72	534·7	54·3	416·9	55·3	H
	2	0		12·35	537·7	54·7	417·4	55·7	H
	3	0		11·57	539·0	55·0	418·0	56·0	H
	4	0		10·38	539·7	55·3	418·2	56·3	H
	5	0		09·69	539·5	55·8	413·5	56·6	H
	6	0		10·09	542·5	56·0	408·1	57·0	B
	7	0		10·09	543·5	56·2	404·8	57·0	B
	8	0		09·56	542·1	56·3	405·5	57·0	B
	9	0		09·64	542·0	56·4	408·4	57·0	B
	10	0		09·08	545·8	56·4	406·2	57·0	B
	11	0		09·35	542·0	56·4	407·2	56·9	W
	12	0		08·16	543·8	56·3	405·4	56·8	W
	13	0	25	09·29	541·6	56·2	404·6	56·6	W
	14	0		10·56	541·8	56·1	404·4	56·4	W
	15	0		12·56	540·8	55·9	404·1	56·2	W
	16	0		09·89	543·2	55·7	403·0	56·0	W
	17	0		10·03	544·1	55·6	403·2	55·8	W
	18	0		09·54	543·8	55·4	403·9	55·7	W
	19	0		09·10	542·8	55·3	404·9	55·7	B
	20	0		08·28	540·7	55·3	409·3	55·7	B
	21	0		07·37	536·3	55·2	410·4	55·7	H
	22	0		07·91	531·6	55·2	410·5	55·7	H
	23	0		11·21	531·3	55·2	406·1	55·7	B
15	0	0		14·53	534·0	55·2	403·4	55·7	B
	1	0		14·87	540·5	55·2	405·7	55·7	H
	2	0		14·73	542·2	55·3	414·1	55·9	B
	3	0		14·46	541·9	55·6	420·9	56·2	B
	4	0		14·06	543·4	55·9	427·4	56·5	B
	5	0		15·09	538·6	56·0	433·5	56·7	B
	6	0		13·00	535·8	56·2	433·1	56·8	W
	7	0		10·00	539·5	56·3	430·5	56·7	W
	8	0		10·27	546·2	56·2	421·6	56·5	W
	9	0		08·79	541·4	56·0	418·1	56·3	W
	10	0†		06·73	540·6	55·8	414·9	55·9	W
	11	0		05·20	537·0	55·5	413·9	55·5	H
	12	0		09·24	540·5	55·1	412·0	55·2	H
	13	0	25	09·84	541·9	54·8	413·0	54·8	H
	14	0		09·39	539·3	54·5	415·1	54·5	H
	15	0		09·76	539·7	54·2	415·4	54·1	H
	16	0		10·27	541·2	53·9	415·7	53·8	H
	17	0		09·54	540·9	53·6	417·3	53·5	H
	18	0		09·35	541·4	53·3	415·4	53·1	H
	19	0		09·54	538·6	53·1	417·9	52·8	W
	20	0		07·84	538·3	52·9	424·1	52·6	W

DECLINATION. Magnet untouched, Sept. 21^{d}—Dec. 29^{d}.

BIFILAR. Observed 2^{m} after the Declination, k=0·000140. BALANCE. Observed 3^{m} after the Declination, k=0·000010.

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† Extra Observations made.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
15	21	0	25	07·60	533·0	52·7	430·1	52·3	B
	22	0		09·35	525·9	52·5	429·1	52·2	W
	23	0		13·52	521·8	52·3	426·9	52·3	W
16	0	0		15·41	524·8	52·4	429·8	52·5	W
	1	0		16·82	530·2	52·6	433·1	53·0	W
	2	0		16·05	533·4	52·9	436·2	53·7	W
	3	0		13·97	535·5	53·4	443·6	54·3	W
	4	0		12·58	539·8	53·8	445·6	54·6	W
	5	0		11·10	539·0	54·1	439·5	54·7	W
	6	0		11·24	542·4	54·1	432·0	54·7	H
	7	0		10·51	544·0	54·0	428·4	54·5	H
	8	0		10·56	539·2	53·9	429·4	54·2	H
	9	0		09·15	541·2	53·7	430·1	54·0	H
	10	0		10·09	542·2	53·4	426·7	53·6	H
	11	8		08·88	543·7	53·2	423·7	53·3	B
	12	0		08·68	543·6	53·0	421·7	53·0	B
	13	0	25	08·52	542·9	52·9	420·7	52·9	B
	14	0		08·28	543·9	52·7	422·7	52·8	B
	15	0		06·86	542·8	52·6	422·9	52·7	B
	16	0		12·01	544·7	52·4	420·6	52·6	B
	17	0		08·14	551·7	52·3	404·9	52·5	B
	18	0		09·40	550·0	52·2	406·0	52·4	B
	19	0		14·57	547·9	52·1	401·7	52·3	H
	20	0		13·05	540·5	52·0	405·3	52·2	H
	21	0		12·09	537·9	52·0	404·8	52·0	W
	22	0		08·48	529·5	51·9	411·0	52·0	H
	23	0		11·46	526·3	51·8	416·2	52·0	H
17	0	0		14·15	530·4	51·9	422·6	52·2	H
	1	0		15·99	525·9	52·0	421·2	52·5	H
	2	0		16·57	537·4	52·2	425·6	52·7	H
	3	0		20·46	538·9	52·4	439·1	53·0	H
	4	0		19·55	538·2	52·5	453·6	53·0	H
	5	0		15·67	538·1	52·7	463·2	53·2	H
	6	0		14·01	539·5	52·8	467·6	53·3	B
	7	0		11·91	541·2	52·9	465·2	53·5	B
	8	0		11·84	544·6	53·0	453·9	53·8	B
	9	0		10·09	542·8	53·2	447·6	54·0	B
	10	0		09·96	539·6	53·4	444·8	54·2	B
	11	0†	25	12·48	552·9	53·6	425·4	54·5	W
	12	0	24	59·76	540·3	53·9	423·7	54·8	W
	13	0	25	04·41	534·7	54·1	431·1	55·0	W
	14	0		02·75	534·4	54·4	424·6	55·2	W
	15	0		06·36	535·9	54·6	426·6	55·4	W
	16	0		06·41	540·7	54·7	421·7	55·5	W
	17	0		08·65	539·6	54·7	425·0	55·5	W
	18	0		10·65	540·6	54·7	424·4	55·5	W
	19	0		09·73	543·0	54·8	423·1	55·5	B
	20	0		08·79	539·3	54·8	426·7	55·4	B
	21	0		08·25	537·5	54·8	430·0	55·4	H
	22	0		09·98	529·1	54·8	431·4	55·4	H
	23	0		12·29	530·9	54·8	425·9	55·5	H
18	0	0		14·94	535·7	55·0	423·8	55·7	B
	1	0		15·36	538·7	55·2	419·4	56·0	H
	2	0		15·91	545·1	55·6	415·5	56·3	B
	3	0		14·87	545·6	55·9	423·8	56·7	B
	4	0		13·25	545·3	56·1	428·5	56·9	B
18	5	0	25	12·45	544·0	56·4	427·5	57·0	H
	6	0		12·85	548·0	56·6	423·4	57·0	W
	7	0		12·31	549·7	56·5	420·5	56·7	W
	8	0		11·44	544·4	56·2	422·8	56·4	W
	9	0		11·14	545·3	55·9	419·2	56·0	W
	10	0		08·43	552·5	55·6	416·7	55·6	W
	11	0		06·39	540·5	55·2	419·3	55·2	H
	12	0		09·42	543·1	54·9	416·9	54·7	H
19	13	0	25	07·74	550·3	53·7	406·2	54·3	B
	14	0		02·82	540·5	53·8	405·3	54·4	B
	15	0		05·96	542·9	53·9	406·1	54·5	B
	16	0		06·19	541·1	53·9	408·3	54·5	B
	17	0		07·00	544·7	53·9	410·1	54·3	B
	18	0		09·08	544·0	53·8	411·4	54·0	B
	19	0		10·09	541·1	53·4	411·2	53·5	H
	20	0		09·06	540·4	53·1	416·7	53·0	H
	21	0		08·08	539·1	52·8	419·5	52·6	W
	22	0		07·20	540·3	52·5	408·5	52·2	H
	23	0		12·65	535·0	52·2	398·0	52·2	H
20	0	0		16·87	535·8	52·2	395·5	52·2	H
	1	0		18·00	539·9	52·1	401·3	52·3	H
	2	0		21·54	552·7	52·1	417·4	52·3	H
	3	0†		25·43	542·7	52·2	445·5	52·5	H
	4	0†		20·05	536·2	52·3	461·3	52·7	H
	5	0		13·07	542·2	52·4	450·7	52·5	H
	6	0		11·91	542·8	52·3	440·0	52·3	W
	7	0		11·64	541·8	52·1	431·6	51·9	B
	8	0		11·74	541·6	51·8	429·0	51·4	B
	9	0		11·28	541·4	51·4	428·4	50·9	B
	10	0		10·77	539·2	51·0	432·0	50·4	B
	11	0†		08·95	533·0	50·6	438·3	49·9	W
	12	0	25	05·79	539·1	50·3	441·2	49·6	W
	13	0†	24	58·33	539·2	50·0	400·5	49·3	W
	14	0	25	01·85	535·9	49·6	404·2	49·0	W
	15	0		00·38	540·5	49·3	395·6	48·6	W
	16	0		06·06	538·2	48·9	397·2	48·2	W
	17	0†		12·01	538·8	48·6	388·0	47·8	W
	18	0†		17·54	521·6	48·2	364·9	47·5	W
	19	0†		19·91	518·4	47·9	396·3	47·2	B
	20	0		17·89	539·3	47·6	399·8	47·0	B
	21	0		10·34	531·8	47·4	420·2	46·9	H
	22	0		13·36	527·7	47·2	419·8	46·7	H
	23	0		16·68	526·4	47·1	411·5	46·8	B
21	0	0		19·28	513·0	47·0	428·5	47·1	H
	1	0		20·65	530·1	47·2	452·6	47·4	B
	2	4		23·16	524·9	47·3	455·1	47·7	H
	3	0		14·80	533·9	47·6	484·5	48·0	B
	4	0		16·01	534·4	47·9	475·7	48·3	B
	5	0		12·45	537·3	48·1	463·3	48·6	B
	6	0		11·48	539·3	48·3	458·0	48·9	W
	7	0		11·51	540·3	48·5	453·6	49·2	W
	8	0		10·95	541·9	48·7	450·7	49·3	W
	9	0†	25	08·12	532·0	48·8	453·3	49·5	W
	10	0†	24	46·59	534·3	49·0	466·1	49·8	W
	11	0†	25	07·13	536·3	49·2	445·8	50·0	H
	12	0		01·07	530·5	49·4	403·3	50·0	H

DECLINATION. Magnet untouched, Sept. 21ᵈ. —Dec. 29ᵈ.

BIFILAR. Observed 2ᵐ after the Declination, $k = 0·000140$. BALANCE. Observed 3ᵐ after the Declination, $k = 0·000010$.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
21	13	0	25	04·75	517·0	49·4	369·1	50·0	H
	14	0†		08·95	532·7	49·4	318·6	50·0	H
	15	0†		06·06	510·9	49·3	306·7	49·8	H
	16	0†		17·46	528·6	49·3	306·2	49·8	H
	17	0		11·10	535·8	49·3	346·1	49·8	H
	18	0		07·52	535·7	49·2	389·7	49·7	H
	19	0		08·82	536·9	49·1	409·1	49·5	W
	20	0		08·90	539·4	49·0	426·6	49·4	W
	21	0		08·48	533·0	48·9	428·4	49·2	B
	22	0		09·96	527·9	48·8	440·0	49·2	W
	23	0		12·87	528·8	48·8	428·3	49·2	W
22	0	0		14·17	533·4	48·9	428·4	49·5	W
	1	0		16·35	530·2	49·2	434·1	49·8	W
	2	0		16·43	534·7	49·6	430·5	50·3	W
	3	0		14·31	538·4	49·9	437·7	50·8	W
	4	0		11·86	538·6	50·4	438·9	51·3	W
	5	0		11·44	541·0	50·8	460·2	51·7	W
	6	0		01·58	540·3	51·0	467·3	51·8	H
	7	0		12·18	540·0	51·1	454·3	51·9	H
	8	0		09·93	542·3	51·0	435·5	51·7	H
	9	0		10·80	543·4	51·0	444·1	51·7	H
	10	0		10·40	542·2	51·0	440·0	51·7	W
	11	0		09·59	541·4	51·1	431·8	51·8	W
	12	0		09·56	538·9	51·2	436·2	52·0	W
	13	0	25	10·90	540·9	51·4	415·5	52·2	D
	14	0		11·00	537·9	51·4	421·0	52·4	D
	15	0		10·00	538·2	51·4	430·1	52·4	D
	16	0		10·94	539·8	51·5	431·0	52·5	D
	17	0		10·31	542·3	51·6	418·4	52·6	D
	18	0		09·47	543·3	51·7	421·0	52·6	B
	19	0		10·06	541·3	51·6	430·0	52·5	B
	20	0		09·54	537·6	51·5	435·8	52·3	B
	21	0		08·99	534·2	51·3	431·3	52·0	H
	22	0		10·09	529·6	51·2	434·0	52·0	H
	23	0		12·46	528·1	51·0	431·0	51·9	H
23	0	0		13·94	529·9	51·1	431·3	52·0	H
	1	0		14·99	532·7	51·2	433·6	52·2	W
	2	0		14·41	535·7	51·4	433·3	52·3	W
	3	0		12·98	538·7	51·6	437·1	52·4	W
	4	0		11·27	539·9	51·6	438·0	52·5	H
	5	0		10·40	541·0	51·7	436·7	52·5	H
	6	0		10·94	542·7	51·8	431·6	52·6	D
	7	0		10·48	543·2	51·9	433·4	52·8	D
	8	0		10·33	542·9	52·1	431·3	53·2	B
	9	0		10·50	542·5	52·2	429·9	53·3	B
	10	0		10·56	542·2	52·2	429·6	53·3	B
	11	0		10·67	541·8	52·3	427·9	53·0	W
	12	0		10·65	541·5	52·0	425·6	52·6	W
	13	0	25	10·21	543·0	51·8	424·0	52·3	W
	14	0		09·47	542·9	51·6	424·7	52·0	W
	15	0		09·96	542·3	51·4	426·5	51·7	W
	16	0		10·00	543·5	51·1	425·4	51·4	W
	17	0		10·23	543·0	50·9	425·8	51·1	W
	18	0		09·59	543·7	50·7	426·4	50·8	W
	19	0		09·69	543·8	50·5	427·8	50·6	B
	20	0		10·53	541·1	50·3	433·0	50·4	B
23	21	0	25	11·48	536·0	50·2	433·9	50·3	H
	22	0		12·85	527·5	50·0	435·9	50·2	H
	23	0		15·94	527·2	50·0	435·2	50·2	H
24	0	0		16·86	530·6	50·0	436·8	50·4	H
	1	0		17·36	532·3	50·1	440·3	50·5	B
	2	0		19·41	542·9	50·3	442·6	50·8	B
	3	0		14·68	527·8	50·5	446·8	51·0	H
	4	0		14·13	540·8	50·7	461·4	51·2	B
	5	0		13·46	540·4	50·8	468·6	51·5	H
	6	0		12·26	536·4	50·9	470·8	51·5	W
	7	0		08·92	537·5	50·9	468·2	51·5	W
	8	0		09·02	537·7	51·0	461·5	51·5	W
	9	0		10·90	537·2	51·0	454·9	51·5	W
	10	0		08·19	543·7	51·0	446·0	51·5	W
	11	0		07·72	540·2	51·0	442·0	51·5	H
	12	0		08·72	543·4	51·0	434·5	51·5	H
	13	0	25	08·68	543·0	50·9	430·3	51·5	H
	14	0		08·59	542·7	50·9	426·0	51·5	H
	15	0		09·46	540·9	50·9	417·3	51·5	H
	16	0		07·47	541·5	50·9	408·6	51·5	H
	17	0		11·44	543·7	50·8	395·8	51·2	H
	18	0		11·52	546·9	50·7	380·0	50·7	H
	19	0		10·95	544·9	50·4	385·4	50·3	W
	20	0		11·49	535·5	50·1	398·9	49·9	W
	21	0		15·64	526·8	49·8	413·5	49·4	B
	22	0		15·47	525·2	49·4	416·2	49·1	W
	23	0		16·35	523·0	49·1	418·2	49·0	W
25	0	0		18·37	527·9	49·0	425·0	49·0	W
	1	0		17·67	526·7	48·9	438·0	49·3	W
	2	0		16·55	536·7	49·3	447·7	49·8	W
	3	0		13·81	539·8	49·7	455·2	50·4	W
	4	0		12·31	542·5	50·1	462·1	50·9	W
	5	0		10·54	540·0	50·7	465·1	51·5	W
	6	0		10·51	539·5	51·0	462·9	51·7	H
	7	0		09·86	537·9	51·0	456·6	51·4	H
	8	0		10·60	540·9	50·8	451·5	51·0	H
	9	0		07·78	538·8	50·5	426·8	50·5	H
	10	0		07·04	532·6	50·0	444·2	50·0	H
	11	0		06·09	532·7	49·6	440·8	49·4	B
	12	0		05·11	531·7	49·2	431·8	48·9	B
26	13	0	25	07·81	540·7	47·6	438·8	48·0	W
	14	0		08·59	539·5	47·7	438·6	48·1	W
	15	0		10·13	541·4	47·8	439·2	48·3	W
	16	0		10·06	542·7	47·9	440·9	48·4	W
	17	0		09·53	544·3	47·9	440·7	48·5	W
	18	0		09·53	544·2	48·0	440·4	48·6	W
	19	0		09·15	544·6	48·2	441·0	48·8	B
	20	0		09·49	542·9	48·3	441·5	48·9	B
	21	0		08·45	541·0	48·4	439·9	49·0	H
	22	0		09·27	537·0	48·6	439·2	49·2	H
	23	0		11·68	533·3	48·8	435·7	49·4	B
27	0	0		(13·72)	(534·6)	……	(434·2)	……	
	1	0		15·67	536·0	49·2	432·8	49·8	B
	2	0		16·01	536·8	49·4	436·8	50·2	H
	3	0		15·20	537·7	49·7	447·6	50·4	B
	4	0		15·20	541·9	50·0	453·2	50·6	H

DECLINATION. Magnet untouched, Sept. 21^{d}—Dec. 29^{d}.

BIFILAR. Observed 2^{m} after the Declination, k=0·000140. BALANCE. Observed 3^{m} after the Declination, k=0·000010.

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† Extra Observations made.

Oct. 22^{d} 10^{h}—23^{d} 10^{h}. Term-Day Observations made.

Oct. 27^{d} 0^{h}. The quantities given in parentheses are approximate, and have been used in summations.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
27	5	0	25	15·11	536·2	50·0	454·9	50·7	B
	6	0		12·75	540·1	50·1	452·0	50·8	W
	7	0		10·56	544·3	50·2	445·7	50·9	W
	8	0		10·09	543·9	50·3	442·8	51·0	W
	9	0		10·00	543·7	50·4	441·3	51·1	W
	10	0		10·03	543·2	50·5	441·1	51·2	W
	11	0		08·52	542·5	50·6	437·8	51·5	H
	12	0		10·54	544·1	50·8	436·0	51·7	H
	13	0	25	10·38	544·1	51·0	437·1	52·0	H
	14	0		10·36	543·7	51·2	434·3	52·0	H
	15	0		10·36	544·0	51·4	432·4	52·2	H
	16	0		10·41	544·6	51·7	431·7	52·4	H
	17	0		10·16	544·3	51·8	429·5	52·5	H
	18	0		11·01	544·5	51·9	428·2	52·7	H
	19	0		09·64	544·8	52·1	425·8	52·8	W
	20	0		09·08	543·5	52·2	425·3	52·9	W
	21	0		08·45	540·8	52·2	426·7	52·9	B
	22	0		09·35	541·5	52·4	422·8	53·0	W
	23	0		11·44	538·1	52·5	422·3	53·2	W
28	0	0		12·89	538·9	52·7	424·8	53·6	W
	1	0		14·67	537·6	52·9	423·1	53·8	W
	2	0		13·63	540·4	53·0	423·6	54·0	W
	3	0		12·82	544·7	53·2	422·2	54·2	W
	4	0		11·89	545·3	53·4	421·1	54·3	W
	5	0		10·94	545·6	53·5	419·3	54·3	W
	6	0		11·14	545·3	53·5	416·9	54·3	H
	7	0		10·45	547·4	53·5	415·7	54·2	H
	8	0		10·47	545·4	53·5	417·3	54·2	H
	9	0		10·09	545·0	53·5	418·1	54·2	H
	10	0		09·96	545·2	53·4	417·8	54·1	H
	11	0		08·38	545·0	53·3	417·5	54·0	B
	12	0		03·40	537·9	53·3	413·5	54·0	B
	13	0	25	07·27	548·6	53·2	393·9	53·9	B
	14	0		08·48	542·5	53·2	399·6	53·8	B
	15	0		09·02	540·9	53·1	404·3	53·7	B
	16	0		07·05	543·4	53·0	408·4	53·6	B
	17	0		07·79	544·0	53·0	407·6	53·5	B
	18	0		10·85	544·3	53·0	403·0	53·5	B
	19	0		09·69	543·5	53·0	406·0	53·5	H
	20	0		08·55	541·1	53·0	411·5	53·5	H
	21	0		07·78	537·3	53·0	421·5	53·5	W
	22	0		08·31	532·8	53·0	421·7	53·5	H
	23	0		11·71	532·7	53·0	419·3	53·5	H
29	0	0		13·09	528·2	53·0	423·6	53·7	H
	1	0		14·51	533·3	53·0	424·7	53·8	H
	2	0		15·20	538·8	53·2	427·5	53·9	H
	3	0		13·79	537·2	53·2	431·1	54·0	H
	4	0		12·65	539·7	53·3	428·6	54·0	H
	5	0		12·11	542·9	53·3	426·5	54·0	H
	6	0		10·18	544·8	53·3	423·6	53·9	B
	7	0		10·06	539·4	53·2	426·1	53·7	B
	8	0		10·58	543·9	53·1	422·7	53·5	B
	9	0		09·06	543·2	53·0	423·3	53·4	B
	10	0		08·26	544·2	52·9	423·5	53·2	B
	11	0		06·97	546·1	52·8	419·7	53·1	W
	12	0		09·05	543·5	52·7	420·4	53·0	W

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
29	13	0	25	08·58	542·8	52·6	420·5	52·9	W
	14	0		08·08	540·1	52·6	419·8	52·8	W
	15	0		10·11	543·3	52·5	416·1	52·8	W
	16	0		09·24	545·4	52·5	411·2	52·8	W
	17	0		09·39	546·6	52·5	411·0	52·8	W
	18	0		08·41	545·9	52·6	413·6	53·0	W
	19	0		09·00	545·5	52·7	414·6	53·2	B
	20	0		08·95	543·8	52·8	415·8	53·3	B
	21	0		08·61	541·2	52·8	420·6	53·4	H
	22	0		08·31	536·3	52·9	421·6	53·5	H
	23	0		09·86	534·6	53·0	420·5	53·7	H
30	0	0		12·45	536·8	53·2	421·4	53·9	B
	1	0		15·42	542·0	53·4	422·2	54·2	H
	2	0		15·78	541·4	53·7	424·5	54·5	H
	3	0		14·26	542·6	53·9	420·8	54·8	H
	4	0		12·89	546·8	54·2	421·1	55·2	H
	5	0		11·30	547·6	54·6	418·2	55·3	B
	6	0		11·12	546·3	54·7	414·8	55·3	W
	7	0		10·25	546·4	54·6	411·2	55·0	H
	8	0		10·16	546·8	54·4	407·2	54·5	W
	9	0		09·10	546·0	54·0	407·5	54·0	W
	10	0		09·42	546·0	53·6	407·1	53·4	W
	11	0		09·24	544·0	53·1	408·7	52·8	H
	12	0		08·80	541·0	52·6	412·3	52·2	H
	13	0	25	09·42	542·6	52·2	414·3	51·7	H
	14	0		09·73	543·7	51·8	413·0	51·0	H
	15	0		10·03	543·3	51·3	414·8	50·5	H
	16	0		09·42	545·0	50·8	413·5	50·0	H
	17	0		09·47	547·0	50·3	413·3	49·5	H
	18	0		08·06	546·3	49·8	417·3	49·0	H
	19	0		07·94	545·6	49·4	419·5	48·5	W
	20	0		07·87	544·1	49·0	423·6	48·0	W
	21	5		07·58	538·5	48·6	432·3	47·5	B
	22	0		07·76	532·8	48·3	438·7	47·5	W
	23	0		09·40	530·8	48·0	437·3	47·7	W
31	0	0		11·57	532·0	48·1	439·6	48·0	W
	1	0		12·62	534·6	48·3	443·1	48·5	W
	2	0		13·46	542·1	48·5	439·4	48·8	W
	3	0		12·65	544·0	48·7	440·2	49·2	W
	4	0		11·64	547·1	49·0	437·9	49·5	W
	5	0		11·25	547·3	49·4	431·8	49·9	W
	6	0		11·07	546·9	49·7	427·9	50·2	H
	7	0		10·54	547·7	50·0	426·4	50·5	H
	8	0		09·24	548·0	50·0	426·4	50·8	H
	9	0		09·42	545·9	50·0	425·7	50·7	H
	10	0	25	09·12	549·1	50·1	425·6	50·7	H
	11	0†	24	59·27	532·9	50·2	435·4	50·7	B
	12	0	25	01·75	541·1	50·3	429·7	50·8	B
	13	0	25	03·54	531·1	50·4	416·9	50·8	B
	14	0		06·68	542·8	50·4	403·9	50·8	B
	15	0		07·49	544·3	50·3	383·1	50·7	B
	16	0		09·00	542·1	50·2	402·3	50·5	B
	17	0		08·75	545·2	50·1	411·6	50·3	B
	18	0		08·82	546·4	49·9	413·1	50·0	B
	19	0		08·83	549·9	49·7	409·9	49·9	H
	20	0		08·65	553·5	49·6	409·2	49·7	H

DECLINATION. Magnet untouched. Sept. 21d—Dec. 29d.

BIFILAR. Observed 2m after the Declination, k=0·000140. BALANCE. Observed 3m after the Declination, k=0·000010.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			Declination.		Bifilar.		Balance.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
31	21	0	25	07·45	547·4	49·4	412·0	49·3	W
	22	0		17·36	535·6	49·1	414·4	49·2	H
	23	0		12·60	537·0	49·1	411·3	49·2	H
1	0	0		13·25	526·6	48·9	427·4	49·2	H
	1	0		13·52	530·6	49·0	433·3	49·5	H
	2	0		15·58	531·9	49·0	434·1	49·7	H
	3	0		14·64	533·7	49·2	437·3	50·0	H
	4	0		14·87	534·6	49·4	457·0	50·0	H
	5	0†		02·82	532·6	49·6	474·3	50·2	H
	6	0†		10·23	537·2	49·7	481·5	50·3	B
	7	0		11·71	534·9	49·8	469·4	50·5	B
	8	0		05·60	523·8	49·9	467·1	50·5	B
	9	0†	25	02·39	526·0	49·9	467·2	50·3	B
	10	0	24	59·19	515·4	49·9	449·8	50·4	B
	11	0	25	01·73	529·6	49·9	446·2	50·3	W
	12	0		09·73	535·5	49·8	433·9	50·2	W
2	13	0	25	08·41	540·8	46·7	433·1	46·7	H
	14	0		10·28	541·2	46·5	434·3	46·5	H
	15	0†		17·83	544·7	46·3	400·5	46·5	H
	16	0†		06·46	544·3	46·2	398·5	46·4	H
	17	0		08·59	545·9	46·1	406·2	46·3	H
	18	0		08·88	543·2	46·0	413·1	46·2	H
	19	0†		12·55	545·0	45·9	414·5	46·0	W
	20	0		14·84	530·6	45·8	422·1	45·9	W
	21	0		16·35	527·3	45·8	437·8	45·8	B
	22	0		13·41	530·9	45·7	433·3	45·6	W
	23	0		13·29	530.6	45·6	435·7	45·7	W
3	0	0		14·10	530·5	45·6	435·7	45·7	W
	1	0		15·49	533·5	45·6	441·7	46·0	W
	2	0		15·54	537·3	45·8	447·4	46·3	W
	3	0		12·82	535·1	46·0	458·7	46·7	W
	4	0		11·71	543·2	46·5	459·6	47·2	W
	5	0		11·00	542·7	46·8	453·6	47·3	W
	6	0		10·31	542·8	46·9	449·0	47·4	W
	7	0		10·03	542·6	46·8	444·7	47·2	H
	8	0		09·39	543·4	46·7	440·6	46·7	H
	9	0		07·29	542·7	46·3	437·6	46·2	H
	10	0		05·27	538·0	45·9	439·2	45·7	H
	11	0		06·61	539·0	45·5	426·4	45·2	B
	12	0		05·87	539·9	45·1	428·2	44·6	B
	13	0	25	07·47	540·4	44·6	432·1	44·0	B
	14	0		10·23	538·8	44·1	437·7	43·4	B
	15	0		09·15	538·3	43·5	441·6	42·8	B
	16	0		10·01	539·3	43·0	446·1	42·2	B
	17	0		09·39	540·4	42·4	446·3	41·6	B
	18	0		09·42	540·3	41·9	448·8	41·0	B
	19	0		09·03	542·5	41·4	449·5	40·6	H
	20	0		09·13	538·3	40·9	452·9	40·2	H
	21	0		08·39	535·0	40·5	454·1	39·6	W
	22	0		08·03	531·5	40·1	461·2	39·3	H
	23	0		11·54	530·2	39·8	454·0	39·1	H
4	0	0		13·41	531·6	39·7	449·1	39·3	H
	1	0		15·29	536·7	39·6	452·8	39·7	H
	2	0		15·41	540·6	39·8	464·8	40·5	H
	3	0		14·26	542·0	40·4	471·5	41·3	H
	4	0		12·02	543·4	41·2	474·1	42·3	H
4	5	0	25	12·80	542·8	42·0	477·0	43·2	H
	6	0		11·68	545·5	42·7	466·6	43·5	B
	7	0		10·78	545·2	43·0	461·5	43·7	B
	8	0		09·86	542·3	43·0	457·4	43·5	B
	9	0†		05·99	535·4	42·8	464·7	43·3	B
	10	0†		03·45	529·7	42·6	449·8	43·0	B
	11	0		02·50	531·5	42·3	446·2	42·6	W
	12	0†		05·33	545·2	41·9	424·5	42·1	W
	13	0	25	08·14	535·8	41·7	406·4	41·9	W
	14	0		07·37	540·2	41·5	418·8	41·7	W
	15	0		09·29	541·1	41·3	430·7	41·4	W
	16	0		07·87	540·7	41·0	435·2	41·1	W
	17	0		12·80	542·3	40·7	434·2	40·8	W
	18	0		07·87	548·5	40·5	431·5	40·5	W
	19	0		10·30	551·2	40·2	430·3	40·2	B
	20	0		10·45	543·6	39·9	436·4	39·8	B
	21	0		09·24	539·9	39·7	438·6	39·5	H
	22	0		10·67	528·3	39·4	444·3	39·4	H
	23	0		10·97	532·9	39·3	442·6	39·4	H
5	0	0		12·38	533·8	39·4	445·9	40·0	B
	1	0		14·94	537·9	39·8	444·1	40·7	H
	2	0		15·62	538·6	40·5	451·6	41·7	H
	3	0†		20·77	530·4	41·4	476·8	42·9	B
	4	0†		22·47	543·4	42·4	518·0	43·9	B
	5	0†		20·97	543·1	43·2	573·1	44·7	H
	6	0†		21·50	538·1	43·9	600·6	45·2	W
	7	0†	25	12·25	532·3	44·4	618·8	45·5	W
	8	0†	24	58·49	526·7	44·6	478·6	45·7	W
	9	0†	25	05·32	532·5	44·7	536·8	45·8	W
	10	0		09·91	538·2	44·7	505·5	45·7	W
	11	0		09·59	539·5	44·7	477·6	45·5	H
	12	0		10·09	540·6	44·5	462·9	45·5	H
	13	0	25	10·95	540·5	44·5	458·1	45·5	H
	14	0		11·07	539·7	44·5	458·3	45·5	H
	15	0		10·83	541·2	44·5	458·2	45·5	H
	16	0		11·05	543·4	44·7	458·9	45·7	H
	17	0		10·77	544·2	44·8	460·1	46·0	H
	18	0		10·47	544·7	45·0	459·0	46·2	H
	19	0		09·82	545·7	45·4	458·1	46·6	W
	20	0		09·62	545·9	45·8	458·8	47·0	W
	21	0		09·22	540·1	46·2	461·6	47·4	B
	22	0		09·69	535·0	46·6	458·6	47·7	W
	23	0		11·46	532·6	46·9	453·6	48·2	W
6	0	0		12·95	531·6	47·4	449·6	48·8	W
	1	0		13·77	532·9	48·1	449·6	49·6	W
	2	0		13·56	537·5	48·9	445·4	50·4	W
	3	0		12·58	542·4	49·7	444·0	51·3	W
	4	0		11·39	544·8	50·4	438·4	51·9	W
	5	0		10·92	545·1	50·8	432·4	52·2	W
	6	0		10·30	545·5	51·0	426·2	52·5	H
	7	0		10·13	544·7	51·2	424·6	52·5	H
	8	0		10·00	545·0	51·4	423·0	52·6	H
	9	0		09·69	542·9	51·6	421·6	52·6	H
	10	0		08·90	544·8	51·6	419·2	52·3	H
	11	0		09·42	545·2	51·6	415·2	52·6	B
	12	0		10·03	543·8	51·7	415·1	52·7	B

Declination. Magnet untouched, Sept. 21^{d}—Dec. 29^{d}.

Bifilar. Observed 2^{m} after the Declination, k=0·000140. Balance. Observed 3^{m} after the Declination, k=0·000010.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
6	13	0	25	10·09	542·0	51·7	413·9	52·6	B
	14	0		10·43	542·9	51·6	412·7	52·5	B
	15	0		10·03	542·8	51·6	413·2	52·4	B
	16	0		12·18	543·9	51·5	409·2	52·3	B
	17	0		10·28	546·8	51·5	393·6	52·3	B
	18	0		08·14	545·9	51·4	399·6	52·2	B
	19	0		08·34	548·4	51·3	400·9	52·2	H
	20	0		09·76	553·9	51·3	407·8	52·2	H
	21	0		13·91	535·1	51·4	417·0	52·2	W
	22	0		15·31	528·3	51·4	419·3	52·1	H
	23	0		17·04	532·2	51·4	416·6	52·0	H
7	0	0		17·86	531·9	51·5	420·4	52·3	H
	1	0		18·35	532·7	51·7	425·1	52·5	H
	2	0		19·31	535·6	51·9	426·9	52·7	H
	3	0		17·33	539·0	52·3	435·5	53·3	H
	4	0		16·48	539·4	52·5	438·4	53·5	H
	5	0		15·07	535·2	52·7	451·3	53·6	H
	6	0		14·70	530·3	52·8	468·1	53·4	B
	7	0		11·68	531·2	52·7	472·6	53·2	B
	8	0		09·05	538·7	52·6	459·3	53·0	B
	9	0		08·48	536·5	52·4	450·3	52·9	B
	10	0		07·82	539·5	52·3	439·8	52·9	B
	11	0		03·04	541·3	52·3	423·3	52·8	W
	12	0		04·71	532·8	52·3	419·4	52·8	W
	13	0	25	10·07	542·0	52·2	407·5	52·7	W
	14	0		10·28	540·0	52·1	410·1	52·6	W
	15	0		11·34	541·2	52·0	410·8	52·5	W
	16	0		12·31	543·8	52·0	411·5	52·4	W
	17	0		12·08	540·2	51·9	411·1	52·3	W
	18	0		11·98	543·9	51·8	395·1	52·3	W
	19	0		09·29	544·3	51·8	403·1	52·3	B
	20	0		08·38	540·4	51·8	408·4	52·3	B
	21	0		08·23	537·3	51·8	414·0	52·3	H
	22	0		09·35	536·4	51·8	415·5	52·3	H
	23	0		12·29	534·3	51·8	414·4	52·3	B
8	0	0		13·99	535·1	51·9	414·9	52·5	H
	1	0		15·41	538·4	52·0	416·3	52·7	H
	2	0		14·85	540·0	52·1	418·6	52·8	H
	3	0		12·92	541·5	52·2	426·9	53·0	H
	4	0		11·10	545·0	52·3	427·6	53·0	B
	5	0		11·19	543·9	52·4	424·3	53·0	W
	6	0		10·51	543·8	52·5	422·8	53·0	W
	7	0		10·11	542·1	52·4	422·0	52·9	W
	8	0		10·21	543·2	52·3	420·2	52·7	W
	9	0		09·56	544·2	52·2	419·1	52·5	W
	10	0		09·67	544·4	52·0	417·4	52·3	W
	11	0		09·22	543·1	51·8	415·5	52·0	H
	12	0		09·73	542·6	51·6	414·0	51·7	H
9	13	0	25	09·69	542·6	47·5	425·7	46·9	B
	14	0		10·09	542·0	47·1	426·2	46·5	B
	15	0		09·56	542·4	46·7	425·8	46·1	B
	16	0		10·90	541·9	46·3	428·4	45·7	B
	17	0		09·76	543·7	45·9	426·9	45·3	B
	18	0		08·65	544·6	45·6	430·0	45·0	B
	19	0		08·82	543·6	45·3	432·4	45·0	H
	20	0		09·47	545·0	45·0	432·4	44·8	H
9	21	0	25	09·73	541·2	44·9	435·1	44·7	W
	22	0		12·04	538·8	44·8	433·8	44·7	H
	23	0		12·42	539·4	44·7	432·5	44·7	H
10	0	0		14·46	542·5	44·7	434·3	45·0	H
	1	0		14·67	541·0	44·7	438·2	45·2	H
	2	0		13·83	542·9	44·9	441·0	45·5	H
	3	0		13·12	545·0	45·1	438·9	45·7	H
	4	0		11·68	545·8	45·4	441·6	46·2	H
	5	0		10·03	547·9	45·8	443·9	46·5	H
	6	0		10·90	543·9	46·1	444·9	46·8	B
	7	0		07·10	541·9	46·3	447·3	47·0	B
	8	0		11·00	543·2	46·5	447·2	47·2	B
	9	0		08·75	543·4	46·7	447·3	47·4	B
	10	0		08·09	541·3	46·8	443·7	47·5	B
	11	0†		00·72	541·3	46·9	434·4	47·5	W
	12	0		06·39	542·6	47·0	430·5	47·7	W
	13	0†	25	12·89	544·8	47·0	417·1	47·7	W
	14	0		08·29	550·1	47·1	389·9	47·8	W
	15	0		05·90	539·5	47·2	388·8	47·8	W
	16	0		07·27	546·4	47·2	385·7	47·7	W
	17	0		05·52	543·3	47·1	394·9	47·7	W
	18	0		07·55	546·0	47·1	405·0	47·6	W
	19	0		07·27	548·3	47·0	408·5	47·5	B
	20	0		08·06	545·7	46·9	410·5	47·2	B
	21	0		08·88	540·7	46·7	412·3	46·9	H
	22	0		09·64	537·5	46·5	415·6	46·7	H
	23	0		11·54	535·1	46·3	416·0	46·6	H
11	0	0		13·56	536·5	46·2	419·4	46·6	B
	1	0		14·70	538·2	46·4	427·4	47·0	H
	2	0		13·77	542·5	46·7	433·9	47·5	H
	3	0		13·79	544·3	47·0	441·8	48·0	B
	4	0		11·77	542·5	47·3	444·0	48·5	H
	5	0		12·22	541·5	47·7	442·9	48·5	H
	6	0		06·14	542·5	47·8	444·4	48·5	W
	7	0		09·39	544·8	47·8	435·4	48·5	W
	8	0		09·27	543·9	47·8	433·7	48·5	W
	9	0		08·82	544·4	47·7	431·5	48·3	W
	10	0		06·73	545·7	47·6	427·8	48·0	W
	11	0		08·58	544·4	47·3	421·3	47·6	H
	12	0		09·49	543·9	47·0	420·3	47·2	H
	13	0	25	09·22	543·1	46·7	426·5	46·8	H
	14	0		09·49	543·8	46·3	425·2	46·4	H
	15	0		09·73	544·0	46·0	425 6	46·0	H
	16	0		10·67	542·3	45·7	427·0	45·6	H
	17	0		11·07	541·3	45·4	425·1	45·2	H
	18	0		09·62	544·2	45·0	423·0	44·8	H
	19	0		08·80	543·8	44·7	427·5	44·5	W
	20	0		08·43	542·6	44·4	430·6	44·2	W
	21	0		08·11	539·4	44·1	434·3	43·9	B
	22	0		18·93	536·8	43·8	435·4	43·6	W
	23	0		11·10	535·7	43·6	438·3	43·5	W
12	0	0		12·96	538·8	43·6	442·4	43·7	W
	1	0		13·46	541·7	43·7	443·9	44·1	W
	2	0		13·81	543·6	43·9	445·4	44·6	B
	3	0		12·45	545·8	44·3	447·1	45·1	W
	4	0		11·89	546·2	44·7	445·4	45·4	W

DECLINATION. Magnet untouched, Sept. 21^{d}—Dec. 29^{d}.

BIFILAR. Observed 2^{m} after the Declination, k=0·000140. BALANCE. Observed 3^{m} after the Declination, k=0·000010.

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† Extra Observations made.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
12	5	0	25	10·36	547·9	44·9	444·5	45·6	W
	6	0		10·70	544·7	45·0	443·9	45·7	H
	7	0		10·87	545·9	45·0	440·9	45·7	H
	8	0		10·01	546·6	45·0	439·2	45·5	H
	9	0		09·76	546·6	44·8	436·6	45·2	H
	10	0		06·70	540·6	44·7	442·4	45·0	H
	11	0		09·39	543·2	44·4	436·9	44·5	B
	12	0		09·26	542·4	44·1	436·9	44·2	B
	13	0	25	09·69	541·9	43·8	436·2	43·8	B
	14	0		09·76	542·5	43·5	436·9	43·5	B
	15	0		10·03	542·6	43·2	436·5	43·1	B
	16	0		09·22	544·1	42·9	436·8	42·8	B
	17	0		08·85	545·3	42·6	436·5	42·5	B
	18	0		08·48	546·0	42·3	435·7	42·2	B
	19	0		08·77	544·9	42·0	435·2	42·1	H
	20	0		09·05	544·0	41·8	435·8	42·0	H
	21	0		09·02	541·4	41·7	439·9	41·7	W
	22	0		09·40	537·7	41·5	440·8	41·5	H
	23	0		10·41	537·5	41·4	441·5	41·5	H
13	0	0		12·26	538·4	41·3	443·6	41·6	H
	1	0		10·80	541·1	41·3	447·6	41·9	H
	2	0		12·63	543·8	41·6	451·1	42·4	H
	3	0		11·98	545·7	42·0	453·4	43·0	H
	4	0		11·30	547·0	42·3	451·4	43·4	H
	5	0		11·14	546·6	42·6	452·0	43·7	H
	6	0		10·06	548·4	42·9	448·4	43·9	B
	7	0		09·67	547·5	43·1	445·1	44·0	B
	8	0		09·15	547·3	43·2	443·9	44·1	B
	9	0		08·95	547·5	43·3	443·0	44·2	B
	10	0		08·95	547·1	43·4	441·5	44·2	B
	11	0		08·88	546·9	43·4	440·8	44·2	W
	12	0		09·29	545·3	43·3	442·4	44·2	W
	13	0	25	09·53	545·6	43·3	441·0	44·1	W
	14	0		09·79	545·4	43·3	439·1	44·0	W
	15	0		10·06	545·5	43·2	437·9	43·9	W
	16	0		09·74	544·8	43·1	435·5	43·6	W
	17	0		08·92	544·7	42·9	435·2	43·3	W
	18	0		09·62	546·6	42·6	433·9	42·9	W
	19	0		09·00	545·3	42·3	434·2	42·5	B
	20	0		08·99	543·7	42·0	433·9	42·0	B
	21	0		09·08	541·6	41·7	435·8	41·6	H
	22	0		09·66	538·6	41·4	437·5	41·4	H
	23	0		11·48	538·9	41·2	436·8	41·3	H
14	0	0		13·27	539·5	41·0	441·0	41·4	H
	1	0		13·79	542·6	41·1	448·0	41·6	B
	2	0		12·51	543·9	41·2	449·8	42·0	H
	3	0		11·17	543·6	41·5	452·4	42·4	B
	4	0		10·33	544·0	41·8	451·2	42·8	B
	5	0		11·03	546·7	42·1	450·0	43·2	H
	6	0		10·72	549·6	42·4	441·6	43·4	W
	7	0		10·40	547·8	42·5	439·1	43·4	W
	8	0		08·73	547·5	42·5	437·7	43·3	W
	9	0		09·27	546·5	42·5	437·1	43·2	W
	10	0		09·06	546·2	42·4	436·1	43·0	W
	11	0		09·46	544·8	42·2	436·4	42·9	H
	12	0		09·06	546·1	42·0	435·0	42·6	H
14	13	0	25	10·36	545·0	41·9	434·6	42·4	H
	14	0		08·29	543·2	41·7	433·8	42·1	H
	15	0		10·09	545·0	41·5	432·5	41·8	H
	16	0		10·21	546·4	41·2	431·8	41·4	H
	17	0		09·56	546·1	40·9	431·7	41·0	H
	18	0		09·32	546·1	40·7	432·1	40·7	H
	19	0		09·02	545·7	40·4	433·6	40·3	W
	20	0		09·06	543·6	40·1	435·3	40·0	W
	21	0		09·15	540·5	39·8	439·1	39·7	B
	22	0		09·93	538·7	39·5	438·7	39·5	W
	23	0		11·66	537·9	39·4	433·9	39·4	W
15	0	0		12·89	539·1	39·3	437·4	39·5	W
	1	0		12·92	542·5	39·4	443·4	39·9	W
	2	0		11·86	544·6	39·6	446·2	40·3	W
	3	0		10·72	546·3	39·8	448·4	40·8	W
	4	0		10·45	547·7	40·2	447·6	41·3	W
	5	0		10·58	548·7	40·6	444·3	41·7	W
	6	0		10·27	548·8	41·0	442·7	42·2	H
	7	0		10·00	549·4	41·5	440·3	42·7	H
	8	0		09·53	548·8	41·8	437·8	43·0	H
	9	0		09·42	546·5	42·1	438·9	43·5	H
	10	0		09·12	547·0	42·4	437·1	43·7	H
	11	0		08·92	546·3	42·8	437·9	44·0	B
	12	0		08·41	548·0	43·1	435·9	44·3	B
16	13	0	25	08·28	545·2	46·2	423·3	46·8	W
	14	0		09·20	544·4	46·1	424·1	46·7	W
	15	0		09·84	542·3	46·0	420·1	46·5	W
	16	0		10·48	549·9	45·9	413·9	46·3	W
	17	0		08·50	551·7	45·7	414·3	46·1	W
	18	0		07·74	554·5	45·6	412·7	45·9	W
	19	0		09·22	557·6	45·4	410·0	45·8	B
	20	0		09·62	555·2	45·3	409·0	45·7	B
	21	0		10·36	544·4	45·1	410·0	45·5	H
	22	0†		16·79	510·9	45·1	422·9	45·5	H
	23	0†		24·12	528·1	45·0	411·3	45·5	B
17	0	0		19·14	526·5	45·0	422·5	45·5	B
	1	0		21·97	524·5	45·1	433·4	45·7	B
	2	0		19·02	537·5	45·2	442·3	45·7	H
	3	0		19·75	548·5	45·2	460·9	45·8	H
	4	0		10·27	540·6	45·3	489·5	45·8	H
	5	0		15·64	538·7	45·3	467·1	46·0	H
	6	0		11·28	542·7	45·4	461·0	45·9	W
	7	0†	25	09·57	536·1	45·3	512·9	45·8	W
	8	0†	24	58·82	526·1	45·3	516·8	45·8	W
	9	0†	25	07·32	522·3	45·3	502·9	45·8	W
	10	0†		05·82	538·5	45·3	455·1	45·7	W
	11	0		06·12	535·9	45·0	432·2	45·5	H
	12	0		07·94	533·8	44·8	402·7	45·2	H
	13	0	25	07·69	537·1	44·6	402·4	44·9	H
	14	0		08·75	533·9	44·4	416·2	44·5	H
	15	0		09·82	536·0	44·1	421·7	44·2	H
	16	0		10·13	536·5	43·8	428·6	43·8	H
	17	0		09·03	538·5	43·6	432·3	43·5	H
	18	0		09·05	538·9	43·3	431·8	43·2	H
	19	0		09·08	538·8	43·0	435·1	43·0	W
	20	0		09·66	538·4	42·8	438·0	42·8	W

DECLINATION. Magnet untouched, Sept. 21^d—Dec. 29^d.

BIFILAR. Observed 2^m after the Declination, $k = 0·000140$. BALANCE. Observed 3^m after the Declination, $k = 0·000010$.

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† Extra Observations made.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
17	21	0	25	09·76	538·0	42·6	436·9	42·6	B
	22	0		09·20	534·9	42·5	434·4	42·5	W
	23	0		11·54	535·4	42·4	428·8	42·5	W
18	0	0		11·28	535·0	42·3	429·6	42·5	W
	1	0		12·73	536·3	42·3	436·3	42·7	W
	2	0		15·34	540·0	42·4	444·7	42·8	W
	3	0		12·85	532·9	42·5	451·1	43·1	W
	4	0		10·74	539·0	42·7	461·0	43·4	W
	5	0	25	11·79	535·9	42·9	470·4	43·8	W
	6	0†	24	54·32	532·3	43·1	472·2	44·2	H
	7	0	25	03·43	539·8	43·5	464·7	44·5	H
	8	0		09·62	545·2	43·7	450·5	44·7	H
	9	0		08·18	544·2	43·9	445·0	45·0	H
	10	0	25	07·37	538·2	44·1	446·0	45·1	H
	11	4†	24	54·57	549·8	44·3	434·1	45·2	B
	12	0†	25	03·43	535·0	44·5	429·4	45·4	B
	13	0	25	06·06	541·2	44·7	414·2	45·6	B
	14	0		05·38	539·2	44·9	417·2	45·8	B
	15	0		13·39	542·3	45·0	403·7	46·0	B
	16	0		06·19	544·6	45·2	403·6	46·1	B
	17	0		08·61	540·9	45·4	416·9	46·3	B
	18	0		08·82	543·2	45·6	422·4	46·5	B
	19	0		10·25	544·7	45·8	420·3	46·8	H
	20	0		11·14	538·8	46·0	423·8	47·2	H
	21	0		12·35	532·3	46·3	428·0	47·4	W
	22	0		13·27	531·9	46·6	426·3	47·5	H
	23	0		08·53	535·7	46·8	430·3	47·7	H
19	0	0		10·47	540·2	47·1	435·8	47·9	H
	1	0		11·84	538·8	47·2	435·5	48·2	H
	2	0		11·21	542·9	47·4	436·2	48·5	H
	3	0		11·61	540·9	47·7	443·8	48·7	H
	4	0		10·90	534·3	47·9	446·5	48·9	H
	5	0†		08·46	530·7	47·9	443·5	48·7	H
	6	0		06·26	541·3	47·9	441·3	48·7	B
	7	0		07·87	543·0	47·9	434·1	48·6	B
	8	0		08·45	543·7	47·8	429·3	48·5	B
	9	0		04·76	542·2	47·7	428·7	48·4	B
	10	0		08·21	541·2	47·7	426·3	48·3	B
	11	0		04·69	537·5	47·6	424·3	48·2	W
	12	0		07·11	538·9	47·5	422·2	48·1	W
	13	0	25	08·11	540·0	47·4	420·8	48·0	W
	14	0		08·77	546·1	47·4	412·6	47·8	W
	15	0		05·63	545·5	47·3	403·6	47·7	W
	16	0		06·26	541·3	47·2	407·8	47·6	W
	17	0		06·95	545·5	47·1	408·8	47·5	W
	18	0		08·25	544·9	47·0	410·7	47·4	W
	19	0		11·00	541·1	46·9	410·8	47·2	B
	20	0		10·00	545·6	46·8	409·2	47·1	B
	21	0		10·77	543·6	46·7	411·7	47·0	H
	22	0		11·01	539·4	46·5	415·7	46·8	H
	23	0		12·04	536·0	46·4	416·0	46·6	H
20	0	0		12·45	536·3	46·3	417·0	46·6	H
	1	0		11·24	538·4	46·3	420·9	46·6	B
	2	0		11·10	537·0	46·3	425·7	46·8	B
	3	0		10·92	541·5	46·4	429·2	46·9	H
	4	0		09·69	542·5	46·4	431·2	47·0	H
20	5	0	25	08·88	543·5	46·5	431·5	47·0	B
	6	0		08·12	545·9	46·5	429·2	46·8	W
	7	0		08·36	544·5	46·3	428·3	46·5	W
	8	0		08·00	542·2	46·1	429·6	46·3	W
	9	0		07·64	543·2	45·8	430·3	46·0	W
	10	0		07·54	543·7	45·6	427·0	45·7	W
	11	0		08·01	541·8	45·4	425·8	45·5	H
	12	0		07·51	541·5	45·1	426·2	45·2	H
	13	0	25	07·52	540·2	44·9	426·7	45·0	H
	14	0		08·03	540·8	44·7	426·0	44·7	H
	15	0		08·01	541·8	44·4	427·1	44·5	H
	16	0		08·28	542·3	44·2	428·4	44·2	H
	17	0		07·87	541·5	44·0	431·2	44·0	H
	18	0		08·52	541·7	43·7	431·0	43·7	H
	19	0		07·42	542·7	43·5	431·1	43·4	W
	20	0		07·37	542·3	43·2	430·3	43·1	W
	21	5		07·47	541·3	42·9	431·3	42·8	B
	22	0		08·29	540·7	42·7	432·5	42·6	W
	23	0		08·73	538·1	42·6	433·2	42·5	W
21	0	0		10·00	534·1	42·4	433·6	42·5	W
	1	0		10·97	539·7	42·4	434·0	42·5	W
	2	0		10·51	541·8	42·4	434·0	42·7	W
	3	0		09·35	541·1	42·6	439·6	43·0	W
	4	0		07·04	539·3	42·8	445·0	43·4	W
	5	0		07·82	547·5	43·0	439·4	43·6	W
	6	0		08·08	546·8	43·0	439·5	43·7	H
	7	0		07·91	545·2	43·0	437·3	43·5	H
	8	0		04·64	544·8	42·8	434·6	43·3	H
	9	0		07·54	546·9	42·7	431·0	43·0	H
	10	0		07·81	545·0	42·5	428·0	42·6	H
	11	0		07·67	544·1	42·2	428·3	42·2	B
	12	0		07·54	543·9	41·9	428·7	41·8	B
	13	0	25	08·03	543·7	41·6	429·2	41·4	B
	14	0		07·98	543·2	41·2	429·9	41·0	B
	15	0		09·37	544·5	40·9	429·5	40·6	B
	16	0		08·05	544·3	40·5	431·1	40·2	B
	17	0		07·67	545·4	40·2	431·6	39·8	B
	18	0		08·56	544·1	39·8	433·7	39·5	B
	19	0		08·14	547·0	39·5	431·9	39·2	H
	20	0		07·44	544·6	39·2	432·5	38·8	H
	21	0		08·03	541·0	39·0	436·4	38·6	W
	22	0		09·08	540·1	38·7	436·6	38·4	H
	23	0		11·10	538·9	38·5	438·1	38·3	H
22	0	0		11·77	526·6	38·5	444·2	38·5	H
	1	0		12·33	540·7	38·7	449·8	39·2	H
	2	0		11·44	544·2	39·1	452·7	40·0	H
	3	0		11·34	545·2	39·7	455·4	40·7	H
	4	0		09·86	544·2	40·3	457·3	41·5	H
	5	0		08·31	542·3	40·9	454·9	42·0	H
	6	0		08·80	546·9	41·2	449·4	42·1	B
	7	0		08·48	547·2	41·3	445·8	42·1	B
	8	0†		02·59	545·3	41·3	443·7	42·0	B
	9	0		06·50	543·6	41·2	444·1	41·9	B
	10	0		07·55	540·8	41·1	443·1	41·7	B
	11	0		06·81	542·4	41·0	440·7	41·6	W
	12	0		07·60	542·0	40·9	438·5	41·5	W

DECLINATION. Magnet untouched, Sept. 21^{d}—Dec. 29^{d}.

BIFILAR. Observed 2^{m} after the Declination, $k=0{\cdot}000140$. BALANCE. Observed 3^{m} after the Declination, $k=0{\cdot}000010$.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
23	13	0	25	08·01	543·3	37·9	443·6	38·2	H
	14	0		08·36	543·4	37·8	444·8	38·2	H
	15	0		08·41	544·2	37·7	440·8	38·0	H
	16	0		08·41	545·3	37·6	439·7	37·9	H
	17	0		07·96	546·9	37·5	438·8	37·7	H
	18	0		08·31	547·0	37·4	437·0	37·4	H
	19	4		07·54	548·1	37·2	435·4	37·1	W
	20	0		07·07	546·7	37·0	436·9	36·8	W
	21	0		07·13	543·6	36·7	438·4	36·5	B
	22	0		08·41	541·7	36·5	438·5	36·2	W
	23	0		10·88	538·9	36·2	436·1	36·0	W
24	0	0		12·48	537·4	36·0	440·5	36·0	W
	1	0		12·08	539·5	36·0	444·7	36·3	W
	2	0		12·23	543·7	36·2	445·2	36·7	W
	3	0		11·59	545·7	36·6	452·1	37·3	W
	4	0		12·15	543·6	37·0	460·1	37·8	W
	5	0		09·46	542·6	37·4	462·5	38·1	W
	6	0		08·68	543·2	37·5	458·3	38·3	H
	7	0		08·75	543·3	37·7	454·4	38·2	H
	8	0†		05·11	537·2	37·7	455·6	38·2	H
	9	0		02·01	540·7	37·6	445·5	38·2	H
	10	0		04·51	538·0	37·6	444·1	38·2	H
	11	0		07·17	540·2	37·6	446·8	38·2	B
	12	0		07·94	542·7	37·6	446·4	38·2	B
	13	0	25	08·61	544·8	37·6	443·4	38·2	B
	14	0		09·39	545·1	37·6	442·3	38·3	B
	15	0		08·11	542·5	37·7	442·1	38·4	B
	16	0		12·11	541·9	37·8	437·9	38·6	B
	17	0		04·89	550·6	37·9	431·0	38·8	B
	18	0		06·70	549·3	38·2	437·9	39·2	B
	19	0		06·76	549·8	38·6	439·0	39·7	H
	20	0		07·60	549·9	39·0	438·2	40·3	H
	21	0		07·71	548·6	39·4	439·4	40·7	W
	22	0		08·12	544·5	39·8	437·6	40·9	H
	23	0		09·77	544·3	40·1	436·6	41·2	H
25	0	0		11·14	544·1	40·4	438·1	41·6	H
	1	0		10·83	546·1	40·8	438·6	42·0	H
	2	0		10·00	546·5	41·1	437·5	42·4	H
	3	0		09·47	547·5	41·5	436·3	42·7	H
	4	0		08·59	546·1	41·8	437·2	43·0	H
	5	0		08·52	546·3	42·0	436·4	43·2	H
	6	0		09·15	550·6	42·2	434·6	43·5	B
	7	0		09·08	546·2	42·4	436·5	43·7	B
	8	0		08·28	547·4	42·7	437·7	44·0	B
	9	0		06·59	547·4	42·9	437·7	44·2	B
	10	0		03·67	556·9	43·1	428·0	44·4	B
	11	0		07·51	543·8	43·4	432·6	44·7	W
	12	0		06·64	543·9	43·7	432·4	45·0	W
	13	0	25	07·31	543·9	44·0	430·2	45·2	W
	14	0		08·31	547·3	44·3	425·5	45·5	W
	15	0		08·28	548·0	44·6	422·4	45·8	W
	16	0		08·16	548·3	45·0	420·9	46·2	W
	17	0		07·64	549·6	45·3	417·2	46·5	W
	18	0		07·65	549·7	45·7	416·1	46·9	W
	19	0		07·71	547·5	46·1	415·4	47·3	B
	20	0		07·94	546·3	46·4	414·6	47·7	B
25	21	0	25	08·05	545·5	46·8	413·4	48·2	H
	22	0		09·05	545·8	47·2	410·4	48·5	H
	23	0		08·75	544·8	47·7	411·4	48·9	H
26	0	0		09·64	545·4	48·0	409·7	49·3	H
	1	0		09·84	546·4	48·4	405·7	49·7	H
	2	0		09·76	549·3	48·8	400·9	49·9	B
	3	0		09·32	548·3	49·1	402·1	50·2	H
	4	0		08·75	548·5	49·4	401·1	50·5	H
	5	0		09·42	550·1	49·6	399·5	50·5	B
	6	0		08·73	548·7	49·7	400·2	50·6	W
	7	0		08·63	547·5	49·8	399·4	50·7	W
	8	0		07·72	548·9	49·9	399·1	50·7	W
	9	0		07·20	547·4	49·9	400·0	50·8	W
	10	0		07·27	545·6	50·0	400·7	50·8	W
	11	0†		03·57	550·6	50·0	394·4	50·8	H
	12	0		02·86	543·5	50·1	388·1	51·0	H
	13	0	25	08·34	547·1	50·2	389·1	51·1	H
	14	0		08·23	548·1	50·2	387·1	51·0	H
	15	0		08·26	550·8	50·1	385·0	50·8	H
	16	0		07·65	550·5	50·0	382·9	50·6	H
	17	0		08·26	548·4	50·0	385·4	50·5	H
	18	0		07·58	548·1	49·8	383·9	50·3	H
	19	0		07·50	550·3	49·7	383·7	50·2	W
	20	0		07·32	548·7	49·6	384·4	50·0	W
	21	0		06·83	546·9	49·5	387·5	49·8	B
	22	0		06·97	544·2	49·4	389·9	49·7	W
	23	0		08·66	541·6	49·4	388·7	49·7	W
27	0	0		09·86	541·9	49·4	391·6	49·8	W
	1	0		12·11	544·6	49·5	393·5	50·0	W
	2	0		11·15	546·5	49·6	394·3	50·0	W
	3	0		10·06	547·5	49·6	395·3	50·0	W
	4	0		09·02	547·6	49·6	394·6	50·0	W
	5	0		08·48	548·8	49·6	393·7	50·0	W
	6	0		08·16	549·4	49·6	391·5	50·0	H
	7	0		07·89	550·0	49·6	391·3	50·0	H
	8	0		07·74	549·5	49·6	391·3	50·0	H
	9	0		07·71	549·8	49·6	391·2	50·0	H
	10	0		06·73	545·5	49·7	394·3	50·1	H
	11	0†		02·20	541·0	49·7	403·7	50·1	B
	12	0		05·92	540·9	49·7	401·6	50·2	B
	13	0	25	06·03	546·1	49·8	394·2	50·2	B
	14	0		05·96	545·8	49·8	395·2	50·2	B
	15	0		05·15	542·9	49·8	395·7	50·1	B
	16	0		07·49	549·5	49·8	392·4	50·1	B
	17	0		08·01	551·4	49·8	389·5	50·0	B
	18	0		06·98	549·9	49·7	388·5	50·0	B
	19	0†		15·34	548·1	49·7	372·2	50·0	H
	20	0		09·08	554·7	49·7	372·1	49·9	H
	21	0		10·21	535·5	49·6	382·7	49·8	W
	22	0		10·23	527·3	49·5	375·5	49·7	H
	23	0		14·46	518·4	49·4	393·5	49·6	H
28	0	0		12·55	522·8	49·3	404·6	49·5	H
	1	0		11·51	538·7	49·2	417·8	49·5	H
	2	0		12·96	542·8	49·2	418·1	49·5	H
	3	0		11·10	542·8	49·1	413·0	49·5	H
	4	0		09·76	543·3	49·1	409·8	49·5	H

DECLINATION. Magnet untouched, Sept. 21ᵈ—Dec. 29ᵈ.

BIFILAR. Observed 2ᵐ after the Declination, k=0·000140. BALANCE. Observed 3ᵐ after the Declination, k=0·000010.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			Declination.		Bifilar.		Balance.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
28	5	0	25	08·88	542·7	49·1	405·2	49·6	H
	6	0		07·91	543·9	49·2	403·3	49·6	B
	7	0		08·36	542·5	49·2	400·2	49·6	H
	8	0		07·98	541·2	49·1	403·2	49·5	B
	9	0		07·47	540·8	49·1	405·6	49·5	B
	10	0		06·39	541·1	49·1	405·9	49·5	H
	11	0		07·15	541·3	49·2	407·0	49·7	H
	12	0		06·83	542·5	49·4	405·9	50·0	H
	13	0	25	06·97	541·1	49·7	404·8	50·3	D
	14	0		07·74	539·1	49·8	401·4	50·4	D
	15	0		11·37	538·4	49·9	376·9	50·5	D
	16	0		07·64	542·0	49·8	375·4	50·4	D
	17	0		05·52	543·0	49·7	380·5	50·3	D
	18	0		07·17	543·3	49·6	381·0	50·1	W
	19	0		08·68	543·6	49·5	381·9	49·9	W
	20	0		07·38	540·8	49·3	386·0	49·8	W
	21	0		07·92	541·4	49·2	387·1	49·7	W
	22	0		05·38	534·8	49·0	392·8	49·4	B
	23	0		07·89	539·0	48·8	388·1	49·1	B
29	0	0		09·56	537·4	48·6	394·5	49·0	B
	1	0		10·31	535·2	48·6	401·1	49·1	H
	2	0		11·55	529·7	48·6	407·9	49·2	H
	3	0		11·00	535·9	48·7	411·3	49·4	H
	4	0		09·89	541·7	48·7	409·2	49·2	B
	5	0		00·40	522·2	48·6	424·7	49·0	B
	6	0		02·93	538·4	48·5	422·7	49·0	D
	7	0		08·19	540·9	48·4	409·8	48·9	D
	8	0		08·03	544·3	48·3	404·5	48·9	W
	9	0		06·97	543·9	48·1	402·0	48·6	W
	10	0		05·47	543·4	47·9	395·8	48·2	W
	11	0		03·77	537·8	47·5	394·1	47·7	H
	12	0		00·99	545·3	47·0	388·3	47·0	H
30	13	0	25	07·24	544·6	42·2	431·2	42·8	B
	14	0		09·22	544·8	42·5	438·2	43·2	B
	15	0		09·64	545·0	42·8	420·4	43·5	B
	16	0		08·68	545·8	43·1	421·3	43·8	B
	17	0		07·47	546·0	43·3	423·6	44·0	B
	18	0		07·78	545·8	43·4	420·4	44·1	B
	19	0		08·03	547·5	43·4	426·2	44·0	H
	20	0		07·67	544·3	43·3	416·5	43·8	H
	21	0		07·24	542·2	43·1	424·9	43·5	W
	22	0		07·13	539·0	42·9	424·5	43·2	H
	23	0		07·74	536·9	42·7	424·1	43·0	H
1	0	0		09·66	537·0	42·5	423·1	43·0	H
	1	0		10·68	537·9	42·5	426·6	43·0	H
	2	0		10·87	540·3	42·5	428·3	43·1	H
	3	0		10·30	542·5	42·6	430·8	43·2	H
	4	0		09·15	543·7	42·7	431·8	43·2	H
	5	0		07·44	543·5	42·7	434·1	43·3	H
	6	0		08·53	545·3	42·7	430·1	43·2	H
	7	0		08·21	545·1	42·6	427·0	43·0	H
	8	0		07·87	544·5	42·4	426·4	42·8	B
	9	0		05·69	541·8	42·2	427·9	42·6	B
	10	0		06·09	542·8	42·1	426·4	42·5	B
	11	0		06·59	541·6	42·0	428·5	42·3	W
	12	0		08·23	546·7	41·8	421·7	42·2	W
1	13	0	25	03·88	541·2	41·6	416·4	42·0	W
	14	0		07·45	542·6	41·5	417·4	41·8	W
	15	0		07·65	545·8	41·3	416·5	41·6	W
	16	0		06·93	546·7	41·1	416·8	41·4	W
	17	0		07·44	548·1	41·0	418·3	41·2	W
	18	0		07·10	550·5	40·8	417·5	41·0	W
	19	0		07·07	551·5	40·7	418·4	40·8	B
	20	0		08·80	551·0	40·6	416·1	40·7	B
	21	0		11·28	547·1	40·4	417·6	40·7	H
	22	0		11·48	541·0	40·3	421·5	40·7	H
	23	0		12·31	537·9	40·2	423·2	40·7	H
2	0	0		13·32	535·8	40·3	431·8	40·8	B
	1	0		14·65	533·7	40·4	435·2	41·1	H
	2	0		16·01	538·6	40·7	441·3	41·4	B
	3	0		14·50	542·5	40·9	445·2	41·7	H
	4	0		11·64	542·7	41·1	452·3	42·0	H
	5	0		08·79	544·8	41·1	446·8	42·0	H
	6	0		08·16	545·6	41·2	442·5	41·9	W
	7	0		08·12	544·9	41·1	439·0	41·8	W
	8	0		07·87	544·1	41·0	437·4	41·7	W
	9	0		04·91	538·7	41·0	438·4	41·6	W
	10	0		06·27	539·1	40·9	437·4	41·5	W
	11	0		07·67	541·8	40·8	430·1	41·3	H
	12	0		05·05	541·1	40·7	429·8	41·3	H
	13	0	25	06·86	542·5	40·6	429·7	41·2	H
	14	0		08·31	543·5	40·5	428·5	41·0	H
	15	0		08·55	544·0	40·4	428·9	40·9	H
	16	0		09·08	545·0	40·3	428·9	40·7	H
	17	0†		15·14	553·4	40·1	423·7	40·5	H
	18	0†		07·17	556·6	40·0	413·1	40·5	H
	19	0		10·13	557·4	39·9	413·8	40·4	W
	20	0		11·41	548·2	39·7	415·5	40·0	W
	21	10		13·05	535·8	39·5	422·4	39·6	B
	22	0		12·42	536·6	39·3	426·1	39·3	W
	23	0		14·68	531·9	39·1	425·6	39·2	W
3	0	0		19·19	528·6	39·0	427·6	39·3	W
	1	0		15·71	529·3	39·1	446·7	39·7	W
	2	0		15·04	545·0	39·2	451·7	40·0	W
	3	0		17·09	539·4	39·6	473·0	40·4	W
	4	0†		20·43	544·6	39·8	670·9	40·7	W
	5	0†		04·41	553·3	40·0	723·2	41·1	B
	6	0†		00·48	565·0	40·5	847·0	41·7	W
	7	0†		26·03	(730·0)	40·7	853·2	42·1	H
	8	0†		02·96	621·0	41·0	816·5	42·5	B
	9	0†		08·88	477·3	41·1	551·0	42·6	W
	10	0†	25	08·45	484·8	41·0	560·7	42·5	H
	11	0†	24	57·34	493·7	40·9	529·5	42·2	B
	12	0†	(24	54·20)	(497·0)	40·7	(519·0)	41·8	D
	13	0†	24	50·93	457·7	40·6	489·4	41·5	B
	14	0†	24	53·88	464·7	40·3	401·4	41·3	B
	15	0†	25	02·42	485·7	40·1	430·8	41·0	B
	16	0†		00·20	511·0	39·9	383·1	40·6	B
	17	0		05·79	519·7	39·5	444·0	40·1	B
	18	0		08·14	523·9	39·1	484·4	39·5	B
	19	0		09·59	528·2	38·7	480·3	38·8	H
	20	0		09·79	528·0	38·2	478·9	38·4	H
	21	0		07·96	529·6	37·8	480·4	38·1	W

DECLINATION. Magnet untouched, Sept. 21^{d}—Dec. 29^{d}.

BIFILAR. Observed 2^{m} after the Declination, k=0·000140. BALANCE. Observed 3^{m} after the Declination, k=0·000010.

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† Extra Observations made.

Nov. 28^{d} 10^{h}—29^{d} 10^{h}. Term-day Observations made.

Dec. 3^{d} 7^{h} 2^{m}. Bifilar scale out of sight, reading estimated.

Dec. 3^{d} 12^{h}. Observations accidentally omitted; the quantities in parentheses are the means of observations made 5^{m} before and 5^{m} after the times of hourly observation. See *Extra Observations.*

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
3	22	0	25	08·08	530·4	37·5	477·2	37·7	H
	23	0		08·61	532·8	37·2	484·9	37·7	H
4	0	0		10·43	533·5	37·1	478·5	37·7	H
	1	0		09·76	531·6	37·1	474·8	37·8	H
	2	0		09·82	537·1	37·3	478·2	38·2	H
	3	0		09·89	537·3	37·6	480·2	38·5	H
	4	0		08·45	534·9	37·9	480·0	38·6	H
	5	0		08·68	542·9	38·0	478·6	38·7	H
	6	0		10·97	535·3	38·2	481·9	39·0	B
	7	0		11·10	540·2	38·4	478·6	39·1	B
	8	0		08·92	540·5	38·5	477·8	39·2	B
	9	0		08·06	538·0	38·6	475·5	39·3	B
	10	0		07·79	537·9	38·7	475·5	39·4	B
	11	0		07·57	535·8	38·9	473·4	39·6	W
	12	0		07·74	534·9	39·0	472·1	39·8	W
	13	0	25	07·67	532·5	39·2	472·5	40·0	W
	14	0		08·72	535·5	39·4	470·4	40·2	W
	15	0		09·40	539·8	39·6	466·6	40·5	W
	16	0		07·92	537·5	39·8	465·6	40·7	W
	17	0		10·04	541·4	40·0	462·6	40·9	W
	18	0		05·23	545·1	40·2	459·0	41·0	W
	19	0		07·25	543·0	40·4	458·5	41·1	B
	20	0		09·35	541·5	40·5	456·4	41·2	B
	21	0		09·10	536·9	40·5	455·2	41·2	H
	22	0		11·99	526·4	40·5	459·7	41·2	H
	23	0		12·46	529·8	40·6	456·1	41·2	H
5	0	0		12·67	531·0	40·7	461·3	41·4	B
	1	0		14·73	528·0	40·8	464·1	41·6	H
	2	0		14·91	527·4	41·0	466·0	41·8	H
	3	0		13·02	531·5	41·3	480·2	42·0	H
	4	0		13·90	533·9	41·5	494·0	42·2	H
	5	0		15·74	528·8	41·5	504·8	42·2	H
	6	0		12·85	531·6	41·5	504·8	42·2	W
	7	0		08·83	537·0	41·6	493·7	42·2	W
	8	0		08·46	538·3	41·5	478·9	42·0	W
	9	0		07·94	536·3	41·3	471·5	41·8	W
	10	0		07·57	536·7	41·1	466·1	41·6	W
	11	0		07·71	536·3	40·9	462·0	41·5	H
	12	0		07·65	536·0	40·8	458·4	41·2	H
	13	0	25	06·63	537·5	40·7	456·6	41·2	H
	14	0		06·59	537·3	40·6	451·3	41·1	H
	15	0		05·43	536·6	40·4	449·1	40·9	H
	16	0		08·58	528·2	40·3	452·2	40·8	H
	17	0		08·38	540·2	40·2	446·8	40·6	H
	18	0		07·37	539·9	40·0	450·8	40·5	H
	19	0		07·99	543·0	39·9	450·7	40·4	W
	20	0		08·41	541·9	39·8	451·0	40·3	W
	21	0		08·52	536·1	39·7	453·8	40·2	B
	22	0		09·20	534·2	39·7	454·5	40·1	W
	23	0		09·76	532·8	39·6	454·1	40·0	W
6	0	0		11·32	534·6	39·6	456·2	40·2	W
	1	0		11·07	535·9	39·8	458·0	40·5	W
	2	0		11·42	537·8	40·1	460·8	40·9	W
	3	0		11·30	538·9	40·4	466·8	41·2	W
	4	0		11·03	536·9	40·7	473·2	41·5	W
	5	0		10·60	539·3	40·8	468·9	41·5	W
	6	0		08·34	536·9	40·8	468·4	41·5	H
6	7	0	25	10·04	538·5	40·8	463·2	41·5	H
	8	0		08·41	539·7	40·8	462·9	41·5	H
	9	0		08·90	538·0	40·8	463·0	41·5	H
	10	0		07·67	538·1	40·8	460·3	41·5	H
	11	0		02·62	544·0	40·8	456·1	41·3	B
	12	0		04·78	537·6	40·6	455·0	41·0	B
7	13	0	25	08·08	537·1	36·7	451·1	36·4	W
	14	0		08·05	536·6	36·4	446·3	36·0	W
	15	0		08·45	536·8	36·0	446·8	35·7	W
	16	0		08·58	537·7	35·7	447·3	35·4	W
	17	0		07·76	539·9	35·4	447·7	35·3	W
	18	0		07·60	541·9	35·2	447·9	35·1	W
	19	0		07·67	541·7	35·0	450·4	35·0	B
	20	0		07·67	540·5	34·9	452·2	35·0	B
	21	0		10·68	541·9	34·8	451·2	34·9	H
	22	0		07·60	538·9	34·7	451·8	34·9	H
	23	0		09·66	533·6	34·7	455·4	35·1	H
8	0	0		09·59	535·9	34·8	454·3	35·2	B
	1	0		12·82	540·1	34·9	454·8	35·4	B
	2	0		11·77	539·7	35·2	456·1	35·9	B
	3	0		11·44	541·0	35·6	460·2	36·4	H
	4	0		10·74	539·9	36·0	462·4	36·8	H
	5	0		09·35	541·0	36·6	460·5	37·4	H
	6	0		08·88	541·5	37·1	458·8	37·8	W
	7	0		05·96	539·7	37·5	460·9	38·2	W
	8	0		07·98	543·7	38·0	457·1	38·6	W
	9	0		07·55	543·6	38·4	454·5	39·0	W
	10	0		07·47	544·0	38·7	452·9	39·3	W
	11	0		07·00	541·8	38·9	453·1	39·7	H
	12	0		07·57	542·0	39·1	451·2	40·0	H
	13	0	25	07·69	542·8	39·5	448·2	40·3	H
	14	0		07·78	542·2	39·8	446·9	40·5	H
	15	0		08·05	543·1	40·0	443·9	40·7	H
	16	0		08·72	542·8	40·1	441·4	40·7	H
	17	0		08·80	544·7	40·2	440·6	41·0	H
	18	0		08·59	544·4	40·3	440·4	41·1	H
	19	0		07·79	547·1	40·4	439·3	41·1	W
	20	0		07·92	545·0	40·4	439·0	41·0	W
	21	0		07·40	544·4	40·3	439·6	40·9	B
	22	0		06·68	541·3	40·3	442·6	40·9	W
	23	0		08·01	538·3	40·3	442·8	40·9	W
9	0	0		09·27	538·8	40·5	443·8	41·2	W
	1	0		09·94	540·3	40·7	443·2	41·5	W
	2	0		10·47	540·9	41·0	445·1	41·8	W
	3	0		09·77	543·7	41·4	444·7	42·1	W
	4	0		08·01	542·2	41·7	445·6	42·3	W
	5	0		07·52	546·0	41·8	442·5	42·4	W
	6	0		08·05	544·5	41·7	440·8	42·4	H
	7	0		07·71	543·8	41·7	442·0	42·3	H
	8	0		08·39	542·9	41·6	440·7	42·2	H
	9	0		07·81	543·6	41·5	439·1	42·0	H
	10	0		07·34	542·1	41·3	438·1	41·8	H
	11	0		07·71	543·2	41·2	439·0	41·7	B
	12	0		07·87	543·9	41·1	436·5	41·5	B
	13	0	25	08·14	542·6	40·9	435·5	41·3	B
	14	0		08·38	543·3	40·8	434·6	41·2	B

DECLINATION. Magnet untouched, Sept. 21^{d}—Dec. 29^{d}.

BIFILAR. Observed 2^{m} after the Declination, k=0·000140. BALANCE. Observed 3^{m} after the Declination, k=0·000010.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.	Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.							Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°		d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
9	15	0	25	08·72	544·8	40·7	433·5	41·1	B	12	0	0	25	09·15	534·9	39·9	430·5	40·2	W
	16	0		08·72	545·4	40·6	432·0	41·0	B		1	0		13·41	542·2	39·9	434·0	40·2	W
	17	0		08·82	545·6	40·4	430·8	40·8	B		2	0		13·46	543·8	39·9	434·1	40·3	W
	18	0		08·25	545·7	40·3	430·3	40·6	B		3	0		13·34	545·9	39·9	437·7	40·4	W
	19	0		08·08	546·7	40·0	429·1	40·4	H		4	0		10·63	547·0	40·0	437·2	40·5	W
	20	0		08·39	548·2	39·9	427·8	40·2	H		5	0		09·29	547·2	40·0	436·0	40·5	W
	21	0		08·19	546·1	39·8	429·6	40·0	W		6	0		09·93	544·4	40·0	435·5	40·3	H
	22	0		08·97	543·1	39·6	431·4	39·8	H		7	0		09·10	541·4	39·8	437·0	40·1	H
	23	0		09·22	542·5	39·4	431·7	39·7	H		8	0		10·61	533·7	39·6	451·0	39·8	H
10	0	0		10·80	537·5	39·3	434·1	39·8	H		9	0		06·86	540·9	39·4	445·2	39·4	H
	1	0		13·99	540·8	39·4	436·1	40·1	H		10	0		07·24	543·0	39·0	440·7	39·0	H
	2	0		13·43	538·1	39·7	438·0	40·5	H		11	0		07·04	541·4	38·7	436·3	38·6	B
	3	0		10·83	538·5	39·9	441·1	40·7	H		12	0		06·79	540·5	38·3	436·3	38·2	B
	4	0		12·15	541·9	40·2	447·0	41·0	H		13	0	25	06·97	538·7	37·9	435·4	37·7	B
	5	0		08·61	544·9	40·2	446·4	41·1	H		14	0		05·42	537·5	37·5	429·5	37·2	B
	6	0		07·81	546·9	40·4	443·4	41·2	B		15	0		07·44	537·7	37·0	431·3	36·8	B
	7	0		07·65	546·4	40·5	440·2	41·2	B		16	0		08·08	538·0	36·6	431·4	36·3	B
	8	0		07·47	545·8	40·6	439·3	41·2	B		17	0		07·34	538·5	36·1	432·8	35·8	B
	9	0		07·17	545·5	40·7	440·0	41·3	B		18	0		07·60	539·7	35·6	433·1	35·3	B
	10	0		07·04	543·6	40·8	441·4	41·5	B		19	0		06·86	542·5	35·1	431·3	34·9	H
	11	0		07·47	544·8	40·8	440·8	41·7	H		20	0		07·34	542·6	34·7	430·6	34·4	H
	12	0		07·45	543·4	41·1	440·9	41·9	W		21	0		06·59	543·7	34·4	430·0	34·1	W
	13	0	25	06·90	542·5	41·4	441·8	42·3	W		22	0		06·77	544·0	34·1	428·8	33·7	H
	14	0		07·84	545·1	41·8	439·8	42·7	W		23	0		08·99	533·7	33·7	431·2	33·5	H
	15	0		08·14	545·6	42·2	436·9	43·1	W	13	0	0		14·98	523·1	33·6	437·1	33·5	H
	16	0		08·61	546·2	42·6	434·2	43·5	W		1	0		20·53	523·9	33·6	444·5	33·9	H
	17	0		08·41	545·8	43·0	433·4	43·9	W		2	0		21·32	534 3	33·7	456·1	34·3	H
	18	0		07·94	546·3	43·4	430·4	44·2	W		3	0		18·60	538·4	33·9	464·0	34·7	H
	19	0		07·67	545·8	43·6	427·8	44·2	B		4	0†		14·23	542·1	34·2	485·1	35·1	H
	20	0		07·54	545·0	43·7	427·4	44·2	B		5	0†		11·98	534·2	34·6	492·8	35·5	H
	21	0		07·40	544·0	43·7	429·1	44·2	H		6	5†	25	06·32	540·0	35·1	494·6	35·9	B
	22	0		06·97	540·9	43·5	427·5	44·0	H		7	0†	24	48·45	542·9	35·5	504·1	36·2	B
	23	0		08·38	539·3	43·4	424·6	43·7	H		8	0	25	05·85	532·2	35·7	482·7	36·4	B
11	0	0		09·76	540·1	43·4	425·5	43·8	H		9	0	25	05·85	529·4	35·8	476·8	36·3	B
	1	0		10·88	542·6	43·4	427·4	44·0	H		10	0†	24	50·78	525·5	35·7	470·9	36·2	B
	2	0		10·97	545·0	43·5	430·2	44·2	H		11	0	24	59·84	520·0	35·6	444·0	36·2	W
	3	0		10·28	547·3	43·6	431·5	44·1	B		12	0	25	03·65	528·7	35·4	416·0	35·9	W
	4	0		09·59	545·8	43·7	431·8	44·1	H	14	13	0	25	07·81	542·4	40·6	438·6	41·2	H
	5	0		08·19	548·4	43·7	428·4	44·0	H		14	0		07·72	543·7	41·0	436·2	41·7	H
	6	0		07·51	546·1	43·5	427·0	43·8	W		15	0		08·09	543·3	41·4	434·8	42·2	H
	7	0		07·84	546·9	43·3	424·4	43·6	W		16	0		08·11	544·0	41·8	432·0	42·5	H
	8	0		07·54	545·1	43·1	425·2	43·4	W		17	0		11·03	543·4	42·1	427·8	42·7	H
	9	0		07·07	544·5	42·9	424·0	43·2	W		18	0		08·18	547·6	42·3	416·1	42·9	H
	10	0		07·37	543·2	42·7	425·0	43·0	W		19	0		11·10	544·4	42·4	415·7	42·9	W
	11	0		07·31	541·1	42·5	426·5	42·8	H		20	0		05·97	546·0	42·4	417·2	42·9	W
	12	0		05·69	539·1	42·2	427·3	42·6	H		21	0		07·00	546·1	42·3	416·8	42·7	B
	13	0	25	08·55	538·2	42·0	424·5	42·3	H		22	0		05·85	544·3	42·2	419·4	42·5	W
	14	0		07·92	539·4	41·8	423·9	42·0	H		23	0		07·81	537·2	42·0	419·1	42·4	W
	15	0		07·91	541·5	41·6	424·8	41·7	H	15	0	0		13·77	519·8	41·9	427·4	42·3	W
	16	0		08·19	542·3	41·4	423·4	41·5	H		1	0		12·38	528·3	41·9	424·9	42·5	B
	17	0		08·25	544·9	41·1	421·0	41·2	H		2	0		12·98	535·1	42·0	431·7	42·7	W
	18	0		07·96	545·0	40·8	422·9	41·0	H		3	0		11·05	530·6	42·3	445·0	42·9	W
	19	0		06·79	546·7	40·6	421·5	40·7	W		4	0		10·60	543·5	42·4	442·8	43·0	W
	20	0		07·64	546·0	40·4	421·1	40·5	W		5	0		08·41	544·2	42·4	437·8	43·0	W
	21	0		07·20	544·4	40·3	425·3	40·4	B		6	0	25	08·80	541·0	42·3	437·8	43·0	H
	22	0		07·25	538·5	40·1	428·7	40·3	W		7	0†	24	49·22	519·6	42·2	459·3	42·8	H
	23	0		09·08	530·7	40·0	432·1	40·2	B		8	0	25	06·39	534·5	42·0	450·1	42·7	H

DECLINATION. Magnet untouched, Sept. 21^{d}—Dec. 29^{d}.

BIFILAR. Observed 2^{m} after the Declination, k=0·000140. BALANCE. Observed 3^{m} after the Declination, k=0·000010.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
15	9	0†	24	46·21	527·7	42·0	442·0	42·7	H
	10	0	25	05·62	537·6	42·0	430·6	42·8	H
	11	0		05·63	541·7	42·1	428·2	42·8	B
	12	0		07·31	543·8	42·1	425·6	42·7	B
	13	0	25	09·93	539·6	42·0	409·6	42·6	B
	14	0		06·98	539·1	42·0	411·6	42·6	B
	15	0		09·89	538·4	42·0	405·1	42·6	B
	16	0		08·68	543·5	42·0	391·2	42·7	B
	17	0		11·86	542·3	42·0	390·8	42·7	B
	18	0		09·29	542·1	42·1	397·8	42·8	B
	19	0		09·15	543·3	42·1	403·7	42·8	H
	20	0		08·50	539·1	42·2	417·6	42·9	H
	21	0		08·36	542·7	42·3	424·1	42·9	W
	22	0		08·39	541·0	42·2	424·6	42·8	H
	23	0		09·05	538·2	42·1	425·5	42·7	H
16	0	0		10·14	536·8	42·0	425·6	42·7	H
	1	0		11·88	532·8	42·0	426·0	42·7	H
	2	0		13·46	540·4	42·0	433·2	42·7	H
	3	0		10·36	538·7	42·1	435·8	42·7	H
	4	0		09·26	540·1	42·0	441·6	42·6	W
	5	0		08·68	538·3	41·9	441·5	42·5	H
	6	0		07·02	537·2	41·9	441·3	42·3	B
	7	0†		00·67	537·3	41·8	438·0	42·2	B
	8	0		02·93	543·0	41·7	432·2	42·1	B
	9	0		07·25	539·1	41·5	429·5	41·9	B
	10	0		05·32	539·0	41·3	428·3	41·7	B
	11	0		04·02	539·4	41·2	424·8	41·4	W
	12	0		01·19	536·7	41·0	411·0	41·1	W
	13	0	25	06·50	538·7	40·7	410·5	40·8	W
	14	0		04·91	536·2	40·4	414·1	40·5	W
	15	0		10·61	540·7	40·1	413·2	40·2	W
	16	0		10·38	536·8	39·8	411·5	39·8	W
	17	0		08·83	541·9	39·5	407·4	39·5	W
	18	0		08·72	542·3	39·2	407·9	39·0	W
	19	10		10·63	545·6	38·8	409·9	38·6	B
	20	0		12·42	540·5	38·5	412·8	38·3	B
	21	0		10·90	535·5	38·1	417·6	38·1	H
	22	0		09·67	530·1	37·8	418·8	37·8	H
	23	0		11·88	530·2	37·6	418·4	37·6	H
17	0	0		08·99	534·1	37·4	420·4	37·5	H
	1	0		11·37	529·2	37·3	428·5	37·5	H
	2	0		10·67	536·0	37·2	434·0	37·5	H
	3	0		12·45	539·9	37·2	441·4	37·7	H
	4	0		03·84	539·4	37·3	454·1	38·0	H
	5	0		09·02	540·8	37·5	448·0	38·0	B
	6	0		07·32	542·8	37·6	443·6	37·9	W
	7	0		07·24	544·5	37·5	437·9	37·8	W
	8	0		06·70	540·0	37·4	435·3	37·6	W
	9	0		04·44	544·2	37·2	431·6	37·3	W
	10	0		06·59	541·2	37·0	426·9	37·0	W
	11	0		06·59	540·6	36·7	425·9	36·7	H
	12	0		04·42	540·5	36·4	423·9	36·6	H
	13	0	25	06·39	535·3	36·2	416·7	36·5	H
	14	0		06·01	538·3	36·0	411·6	36·4	H
	15	0		07·07	538·8	35·9	418·6	36·2	H
	16	0		07·37	541·1	35·8	422·7	36·2	H
17	17	0	25	07·64	541·8	35·7	424·0	36·2	H
	18	0		08·68	539·0	35·6	426·5	36·2	H
	19	0		08·08	543·2	35·6	424·7	36·2	W
	20	0		08·06	539·4	35·6	426·5	36·1	W
	21	0		08·06	542·3	35·6	426·5	36·1	B
	22	0		08·48	540·8	35·7	427·1	36·2	W
	23	0		10·20	535·7	35·7	428·7	36·3	W
18	0	0		10·87	528·8	35·8	437·0	36·4	W
	1	0		13·76	532·7	36·0	438·1	36·7	B
	2	0		15·32	531·6	36·3	440·6	36·9	W
	3	0		14·60	535·0	36·6	451·8	37·3	W
	4	0		10·97	534·8	36·9	455·5	37·6	W
	5	0		15·78	541·1	37·2	455·8	37·8	W
	6	0		00·98	550·2	37·2	451·3	37·8	H
	7	0	25	08·77	542·4	37·2	444·6	37·8	H
	8	0	24	59·83	546·5	37·1	440·4	37·8	H
	9	0	25	06·95	538·7	37·0	439·3	37·7	H
	10	0		07·04	539·8	36·8	433·8	37·3	H
	11	0		04·98	541·0	36·6	429·6	36·9	B
	12	0		06·36	537·8	36·3	427·7	36·5	B
	13	0	25	08·28	540·6	36·0	425·6	36·2	B
	14	0		07·76	540·4	35·7	425·8	35·9	B
	15	0		07·76	541·0	35·5	427·9	35·7	B
	16	0		08·06	542·0	35·3	428·5	35·5	B
	17	0		08·34	541·6	35·1	429·5	35·4	B
	18	0		08·90	541·9	35·0	428·7	35·3	B
	19	0		08·16	542·1	34·9	428·1	35·3	H
	20	0		08·12	542·2	34·9	429·9	35·5	H
	21	0		08·08	542·1	34·9	434·0	35·7	W
	22	0		07·20	540·3	35·1	433·4	35·9	H
	23	0		07·34	540·4	35·3	432·8	36·2	H
19	0	0		09·02	540·1	35·7	434·2	36·5	H
	1	0		10·23	538·8	36·1	440·2	36·9	H
	2	0		10·70	540·1	36·5	436·9	37·3	H
	3	0		10·60	542·9	37·1	439·2	37·7	H
	4	0		09·19	544·7	37·6	440·6	38·3	H
	5	0		08·61	544·9	38·0	439·6	38·7	H
	6	0		07·92	546·0	38·3	436·6	38·7	B
	7	0		08·05	544·5	38·3	433·9	38·7	B
	8	0		07·94	544·2	38·3	437·3	38·7	B
	9	0		07·31	544·2	38·2	429·2	38·5	B
	10	0		07·34	544·2	38·1	424·1	38·5	B
	11	0		07·32	543·7	38·0	431·5	38·5	W
	12	0		07·37	542·7	37·9	425·7	38·5	W
	13	0	25	07·74	542·3	37·9	423·8	38·4	W
	14	0		07·72	544·5	37·8	421·1	38·3	W
	15	0		06·84	545·9	37·7	416·1	38·2	W
	16	0		08·38	542·4	37·6	415·5	38·1	W
	17	0		08·48	544·7	37·5	417·2	37·9	W
	18	0		07·87	546·4	37·4	417·2	37·8	W
	19	0		07·34	547·5	37·3	426·1	37·8	B
	20	0		07·94	546·3	37·2	421·5	37·7	B
	21	0		07·69	545·8	37·1	417·8	37·7	H
	22	0		07·13	544·5	37·1	426·8	37·7	H
	23	0		06·71	540·4	37·1	426·0	37·7	H
20	0	0		07·84	539·3	37·2	424·8	37·8	B
	1	0		10·16	540·2	37·2	429·2	37·8	H

DECLINATION. Magnet untouched, Sept. 21^{d}—Dec. 29^{d}.

BIFILAR. Observed 2^{m} after the Declination, $k=0·000140$. BALANCE. Observed 3^{m} after the Declination, $k=0·000010$.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
20	2	0	25	10·77	542·7	37·3	426·9	38·0	H
	3	0		10·85	545·9	37·4	429·6	38·0	B
	4	0		09·62	545·0	37·6	430·6	38·2	H
	5	0		08·61	545·1	37·7	428·2	38·3	H
	6	0		08·05	546·4	37·8	429·0	38·4	W
	7	0		08·19	546·5	37·9	429·8	38·5	W
	8	0		07·99	545·7	37·9	429·6	38·5	W
	9	0		02·64	542·7	37·9	433·2	38·5	W
	10	0		02·96	542·3	38·0	430·1	38·5	W
	11	0		03·43	541·2	38·0	433·3	38·7	H
	12	0		05·72	540·4	38·0	429·9	38·8	H
21	13	0	25	06·98	542·3	34·4	422·4	34·6	B
	14	0		07·64	541·9	34·3	423·9	34·6	B
	15	0		06·39	540·8	34·3	423·5	34·6	B
	16	0		07·52	541·9	34·3	423·4	34·7	B
	17	0		06·90	544·2	34·3	424·4	34·7	B
	18	0		06·50	551·0	34·3	422·3	34·8	B
	19	0		09·29	549·5	34·4	423·3	35·0	H
	20	0		07·71	548·4	34·7	424·6	35·3	H
	21	0		07·54	547·1	35·0	427·3	35·7	W
	22	0		08·03	547·2	35·4	421·4	35·9	H
	23	0		08·31	543·6	35·7	422·5	36·2	H
22	0	0		11·46	542·4	36·1	422·8	36·8	H
	1	0		10·94	543·2	36·7	424·1	37·5	H
	2	0		10·70	547·7	37·3	423·0	38·2	H
	3	0		09·59	547·3	38·0	425·1	38·6	H
	4	0		09·15	547·6	38·5	425·2	39·0	H
	5	0		09·06	547·3	38·7	427·0	39·4	H
	6	0		09·02	546·4	38·9	426·9	39·4	B
	7	0		08·08	548·1	39·0	425·1	39·4	B
	8	0		05·97	542·9	38·9	425·6	39·3	B
	9	0		07·78	546·1	38·8	422·8	39·1	B
	10	0		07·64	545·4	38·7	421·4	39·0	B
	11	0		06·53	542·4	38·6	423·2	38·9	W
	12	0		07·57	543·4	38·4	421·4	38·7	W
	13	0	25	08·36	543·8	38·3	418·1	38·6	W
	14	0		04·41	544·2	38·1	411·9	38·4	W
	15	0		06·51	541·8	38·0	414·7	38·3	W
	16	0		07·47	542·6	37·9	414·5	38·2	W
	17	0		06·86	544·1	37·8	414·8	38·2	W
	18	0		07·54	545·7	37·8	416·3	38·3	W
	19	0		07·37	545·1	37·8	418·0	38·3	B
	20	0		08·14	544·4	37·8	418·5	38·3	B
	21	0		07·98	543·7	37·8	418·8	38·4	H
	22	0		08·52	545·3	37·8	419·2	38·5	H
	23	0		08·55	543·7	37·9	418·5	38·5	H
23	0	2		09·69	543·5	38·2	418·2	38·8	H
	1	0		11·14	546·4	38·5	418·0	39·2	H
	2	0		10·50	547·4	38·8	418·0	39·6	H
	3	0		10·74	547·9	39·2	419·5	40·0	H
	4	0		10·09	548·1	39·5	422·1	40·2	H
	5	0		09·19	548·9	39·7	422·3	40·4	H
	6	0		10·67	546·2	39·8	421·7	40·5	W
	7	0		05·79	538·0	39·9	432·9	40·6	W
	8	0		09·62	548·5	39·9	423·3	40·6	W
	9	0		07·87	548·3	40·0	419·7	40·5	W
	10	0		07·74	548·4	39·9	418·1	40·5	W
23	11	0	25	07·98	547·4	39·8	416·9	40·5	H
	12	0		08·06	548·0	39·8	414·5	40·3	H
	13	0	25	08·12	547·7	39·6	412·1	40·2	H
	14	0		08·11	545·3	39·4	411·5	40·0	H
	15	0		08·72	546·8	39·1	409·8	39·8	H
	16	0		07·89	544·3	38·9	409·0	39·5	H
	17	0		07·20	544·0	38·8	409·3	39·2	H
	18	0		07·60	545·0	38·6	408·1	38·8	H
	19	0		07·17	545·8	38·4	408·7	38·5	W
	20	0		07·32	544·5	38·1	409·9	38·1	W
	21	0		07·37	545·0	37·8	408·5	37·7	B
	22	0		07·52	544·0	37·4	408·8	37·4	W
	23	0		09·12	540·8	37·2	408·8	37·2	W
24	0	0		11·69	538·3	36·9	409·1	37·0	W
	1	0		12·75	540·8	36·8	409·7	37·0	W
	2	0		12·83	543·4	36·7	410·0	37·1	W
	3	0		11·22	542·2	36·7	417·0	37·2	W
	4	0		10·77	539·3	36·8	423·6	37·4	W
	5	0		06·98	545·8	36·9	424·7	37·5	W
	6	0		08·41	545·1	37·0	423·4	37·7	H
	7	0		08·99	544·1	37·2	424·0	38·0	H
	8	0		08·65	547·0	37·4	424·6	38·3	H
	9	0		08·65	540·5	37·7	429·2	38·6	H
	10	0		06·66	544·2	38·2	429·0	39·0	W
	11	0		06·63	546·5	38·7	424·2	39·7	W
	12	0		07·84	546·6	39·4	418·9	40·4	W
	13	0	25	07·62	546·3	40·3	415·5	41·4	D
	14	0		07·25	545·9	41·1	414·4	42·2	D
	15	0		07·45	544·5	41·9	410·0	42·9	D
	16	0		07·98	545·2	42·7	407·5	43·7	D
	17	0		07·74	546·1	43·3	405·4	44·5	D
	18	0		07·40	547·8	44·0	402·7	45·0	B
	19	0		07·34	547·0	44·4	400·1	45·4	B
	20	0		07·13	546·7	44·7	398·5	45·6	B
	21	0		07·04	545·4	44·9	397·9	45·8	B
	22	0		07·38	544·0	45·1	396·6	45·7	H
	23	0		08·63	543·2	45·1	398·2	45·7	H
25	0	0		09·26	542·5	45·1	400·1	45·7	H
	1	0		10·75	543·3	45·1	400·2	45·9	W
	2	0		10·45	545·1	45·3	399·5	46·3	W
	3	0		10·47	546·5	45·6	399·7	46·7	W
	4	0		09·00	547·0	46·0	395·6	47·0	W
	5	0		08·18	546·8	46·1	392·2	47·1	H
	6	0		08·11	547·4	46·2	389·4	47·2	H
	7	0		07·87	547·3	46·4	385·4	47·3	D
	8	0		07·84	546·8	46·4	384·8	47·7	C
	9	0		07·78	546·3	46·4	386·4	47·7	H
	10	0		07·15	543·4	46·3	385·6	47·5	H
	11	3		06·95	544·9	46·1	385·0	46·8	W
	12	0		06·53	537·6	45·8	387·1	46·3	W
	13	0	25	06·24	541·2	45·4	387·9	45·8	W
	14	0		05·89	541·0	45·1	387·7	45·4	W
	15	0		07·32	543·4	44·7	385·0	45·1	W
	16	0		06·26	543·0	44·4	383·1	44·8	W
	17	0		07·25	542·9	44·2	384·3	44·5	W
	18	0		06·74	546·7	44·0	384·9	44·3	W

DECLINATION. Magnet untouched, Sept. 21^{d}—Dec. 29^{d}.

BIFILAR. Observed 2^{m} after the Declination, k=0·000140. BALANCE. Observed 3^{m} after the Declination, k=0·000010.

Dec. 24^{d} 10^{h}—25^{d} 10^{h}. Term-Day Observations made.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
25	19	0	25	06·29	546·8	43·8	386·7	44·1	B
	20	0		06·93	547·6	43·6	386·6	43·9	B
	21	0		07·64	549·3	43·4	386·0	43·8	H
	22	0		07·94	545·6	43·4	391·2	44·0	H
	23	0		08·80	542·9	43·4	394·3	44·2	H
26	0	0		09·69	540·8	43·6	396·5	44·5	H
	1	0		10·77	543·3	43·8	399·2	44·8	H
	2	0		10·90	546·8	44·1	402·3	45·2	H
	3	0		10·77	548·2	44·4	403·5	45·6	H
	4	0		09·69	548·2	44·7	401·2	45·6	H
	5	0		09·10	548·1	44·9	399·4	45·8	H
	6	0		08·66	547·5	45·0	396·6	45·8	W
	7	0		08·31	548·1	45·0	394·9	45·8	W
	8	0		07·84	548·5	45·0	391·4	45·5	W
	9	0		07·76	548·9	44·8	391·3	45·2	W
	10	0		07·24	546·8	44·6	382·0	44·9	W
	11	0		06·90	544·6	44·3	394·5	44·7	H
	12	0		06·36	544·5	43·9	395·5	44·2	H
	13	0	25	07·20	544·5	43·6	393·5	43·8	H
	14	0		07·15	544·4	43·3	394·3	43·4	H
	15	0		07·04	545·3	43·0	392·4	43·1	H
	16	0		07·35	544·8	42·7	392·3	42·7	H
	17	0		07·34	548·5	42·4	389·4	42·3	H
	18	0		07·98	546·0	42·2	391·5	42·0	H
	19	0		07·76	545·2	41·9	393·4	41·7	W
	20	0		07·10	545·4	41·6	394·0	41·4	W
	21	0		08·58	546·0	41·3	394·6	41·0	B
	22	0		08·08	542·4	41·0	396·9	40·8	W
	23	0		09·00	543·1	40·8	395·0	40·6	W
27	0	0		10·50	542·4	40·6	398·9	40·5	W
	1	0		11·84	542·5	40·4	402·4	40·5	W
	2	0		11·74	540·8	40·3	403·9	40·5	W
	3	0		11·24	532·1	40·3	412·0	40·5	W
	4	0		10·00	537·4	40·2	422·0	40·6	W
	5	0		11·12	541·6	40·1	413·1	40·5	W
	6	0		09·02	546·0	40·0	412·5	40·6	H
	7	0		08·99	542·9	40·0	413·5	40·7	H
	8	0		07·84	542·8	40·0	412·7	40·8	H
	9	0		07·42	542·5	40·1	413·6	41·0	H
	10	0		05·45	542·4	40·3	413·8	41·3	H
	11	0		06·63	545·1	40·7	413·1	41·7	B
	12	0		06·93	547·1	41·2	409·7	42·3	B
28	13	0	25	07·40	540·7	38·1	407·3	37·4	W
	14	0		07·51	540·5	37·7	409·4	37·1	W
	15	0		07·60	541·7	37·4	409·9	36·7	W
	16	0		08·18	542·7	37·0	410·1	36·4	W
	17	0		07·34	543·4	36·7	407·3	36·0	W
	18	0		07·22	544·1	36·4	406·8	35·7	W
	19	0		07·07	544·3	36·1	409·7	35·5	B
	20	0		07·11	543·6	35·8	410·0	35·3	B
	21	0		06·83	542·9	35·6	410·6	35·3	H
	22	0		06·98	542·8	35·4	406·0	35·2	H
	23	0		07·87	541·8	35·4	404·1	35·3	H
29	0	0		08·75	541·3	35·4	410·9	35·5	H
	1	0		06·42	542·8	35·5	415·4	36·0	H
	2	0		07·05	535·1	35·8	419·4	36·5	H
	3	0		06·27	542·9	36·3	425·9	37·1	H
29	4	0	25	05·77	543·8	36·8	428·1	37·7	H
	5	0		04·95	545·6	37·3	424·5	38·4	H
	6	0		04·68	547·3	38·0	418·7	39·1	B
	7	0		05·82	547·1	38·6	414·7	39·8	W
	8	0		05·74	546·8	39·2	411·5	40·3	W
	9	0		05·73	546·2	39·7	409·4	40·9	W
	10	0		05·51	545·3	40·3	409·7	41·7	W
	11	0		05·13	546·2	40·9	408·4	42·5	H
	12	0		05·50	547·4	41·6	406·0	43·3	H
	13	0	25	05·73	547·0	42·3	404·0	44·0	H
	14	0		05·74	548·5	43·0	401·6	44·7	H
	15	0		06·26	548·2	43·6	396·7	45·2	H
	16	0		06·18	550·2	44·0	391·3	45·6	H
	17	0		13·68	546·2	44·7	384·1	46·1	H
	18	0		06·52	556·3	45·0	363·5	46·5	H
	19	0		07·51	556·4	45·5	361·0	46·8	W
	20	0		07·35	540·0	45·9	365·4	47·2	W
	21	0		08·41	544·7	46·3	371·0	47·5	B
	22	0		06·86	541·6	46·5	371·5	47·5	W
	23	0		09·31	539·6	46·6	378·8	47·5	W
30	0	0		10·77	533·9	46·6	382·8	47·6	W
	1	0		10·89	530·0	46·7	395·3	47·6	W
	2	0		15·56	533·3	46·8	407·1	47·7	W
	3	0		01·84	542·7	46·9	441·7	47·8	W
	4	0		16·82	540·4	47·0	430·1	47·9	W
	5	0		06·00	539·8	47·1	428·6	48·0	H
	6	0		04·60	534·7	47·2	430·8	47·8	H
	7	0		07·29	534·5	46·9	438·9	47·4	H
	8	0		07·07	532·0	46·6	425·7	47·0	H
	9	0	25	08·08	537·3	46·3	398·2	46·5	H
	10	0	24	59·83	540·0	45·9	396·5	46·0	H
	11	0	25	08·55	534·6	45·5	389·3	45·4	B
	12	0		06·12	535·1	45·0	385·5	44·8	B
	13	0	25	05·56	533·7	44·5	382·7	44·1	B
	14	0		09·12	538·1	43·9	381·6	43·4	B
	15	0		09·24	537·3	43·3	382·2	42·8	B
	16	0		10·90	538·1	42·8	386·6	42·2	B
	17	0		09·24	537·9	42·3	391·3	41·8	B
	18	0		10·40	539·2	41·9	393·8	41·5	B
	19	0		12·51	540·4	41·6	392·1	41·3	H
	20	0		10·33	544·3	41·3	394·6	41·1	H
	21	0		12·02	541·3	41·0	396·4	40·8	W
	22	0		11·62	537·5	40·7	396·2	40·7	H
	23	0		12·89	535·2	40·7	399·3	40·7	H
31	0	0		12·08	534·7	40·5	405·2	40·7	H
	1	0		12·16	535·0	40·5	409·2	40·7	H
	2	0		10·72	535·4	40·6	418·8	40·9	H
	3	0		10·70	544·0	40·7	423·2	41·2	H
	4	0		10·09	541·3	40·8	425·7	41·5	H
	5	0		09·49	543·4	40·9	424·3	41·6	H
	6	0		08·99	543·9	41·0	420·0	41·7	B
	7	0		08·99	542·6	41·0	417·0	41·7	B
	8	0		07·72	541·5	41·1	416·9	41·7	B
	9	0		00·53	536·9	41·1	418·6	41·8	B
	10	0		07·31	541·0	41·2	416·7	42·0	B
	11	0		12·35	537·8	41·4	413·2	42·1	W
	12	0		06·04	538·4	41·5	410·4	42·3	W

DECLINATION. Torsion removed,—Dec. 29^d $0\frac{1}{2}^h$, 0°; 29^d $19\frac{1}{2}^h$, −11°; 30^d 9^h, $+7\frac{1}{2}$°*; 31^d 0^h, 0°, +12°*. Effect of + 10° of torsion = − 0′·84.

BIFILAR. Observed 2^m after the Declination, k=0·000140. BALANCE. Observed 3^m after the Declination, k=0·000010.

Dec. 29^d 1^h—30^d 7^h. Magnet with short scale used in the declinometer. The declination at 29^d 5^h—6^h, and 30^d 8^h—9^h, has been deduced from observations of the unifilar.

* Dec. 30^d 8^h. The deflecting magnet vibrated in the declinometer box.

Dec. 30^d 10^h—11^h. The declination magnet seems to have a tendency to vibrate through large arcs even after the arc has been made very small by checking.

* Dec. 31^d 0^h. Suspension thread wound up about ¼ of an inch; torsion again removed. The declination at 31^d 0^h deduced from an observation of the unifilar.

TERM-DAY OBSERVATIONS

OF

MAGNETOMETERS.

MAKERSTOUN OBSERVATORY,

1845.

Göttingen Mean Time of Declination Observation.	JANUARY 22, 23.											
	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.
Min.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.
		10^{h}.			14^{h}.			18^{h}.			22^{h}.	
0	25 14·77	536·0	604·9	25 12·90	535·6	580·3	25 12·72	539·7	578·2	25 16·68	542·7	570·3
5	14·67	533·9	607·3	11·98	536·5	579·3	12·13	540·9	578·0	16·08	541·4	570·8
10	14·71	536·5	604·9	11·54	536·6	,,	12·45	540·4	577·8	16·48	540·5	571·5
15	13·88	538·4	604·2	11·64	536·1	579·8	12·40	541·3	576·2	16·39	539·4	573·7
20	13·79	538·5	604·5	11·00	534·8	,,	12·58	540·9	576·4	16·92	538·2	575·1
25	14·10	539·6	604·2	10·81	535·6	581·2	12·56	539·5	576·3	17·36	537·7	576·0
30	14·37	540·0	603·9	11·39	535·3	581·3	12·72	539·1	576·2	18·03	539·1	576·6
35	14·37	537·5	605·1	10·92	535·1	582·3	12·63	538·0	575·7	18·90	539·1	577·8
40	14·44	536·0	604·8	10·33	533·9	582·1	12·46	538·7	575·8	18·82	539·4	577·8
45	14·50	535·0	605·8	10·03	532·8	582·8	13·07	538·7	575·7	19·61	540·1	579·6
50	13·86	536·4	604·6	10·51	532·8	582·1	14·03	538·6	,,	20·00	538·0	579·0
55	13·52	538·6	603·6	10·85	531·8	,,	14·75	539·5	575·9	20·06	536·9	579·5
		11^{h}.			15^{h}.			19^{h}.			23^{h}.	
0	25 13·84	539·3	602·9	25 11·03	532·8	583·3	25 15·04	540·5	575·8	25 19·37	536·0	579·1
5	14·21	539·0	603·1	10·78	532·8	,,	15·20	541·2	,,	18·81	537·5	579·7
10	14·10	541·3	600·5	10·72	533·1	583·2	15·04	542·2	573·4	19·04	538·1	579·6
15	15·02	541·4	601·4	10·65	533·8	584·0	15·17	542·3	573·2	19·51	537·8	580·3
20	15·22	540·9	601·8	11·03	534·3	,,	15·04	542·0	571·2	18·85	538·5	579·4
25	15·74	540·6	598·4	11·19	533·9	583·8	14·46	542·0	,,	18·37	542·1	577·6
30	07·65	548·5	590·0	11·21	534·0	,,	14·20	542·1	570·2	18·48	541·8	578·4
35	01·07	564·3	582·3	11·61	533·3	584·3	13·72	543·1	,,	17·42	542·5	578·5
40	01·07	572·9	578·9	10·87	532·6	584·5	13·61	543·4	570·0	18·68	543·0	580·5
45	03·57	574·6	577·3	10·94	532·5	,,	13·47	543·1	,,	19·84	542·7	581·6
50	06·09	577·0	574·3	11·30	531·6	586·4	13·16	543·9	570·0	20·63	543·5	582·2
55	10·81	571·1	573·7	11·68	532·0	,,	13·61	544·1	,,	21·46	541·9	583·1
		12^{h}.			16^{h}.			20^{h}.			0^{h}.	
0	25 14·18	558·4	573·8	25 11·69	533·6	586·0	25 13·32	543·9	571·1	25 21·81	541·8	582·6
5	14·80	554·2	571·8	12·11	534·1	585·1	13·56	544·3	574·5	21·59	540·4	582·1
10	17·98	546·4	573·0	11·37	535·1	,,	13·29	545·6	576·9	20·18	538·0	581·5
15	20·72	534·6	576·3	11·55	535·4	584·4	13·10	544·7	578·5	19·49	540·7	581·3
20	22·03	524·9	578·6	11·61	533·9	584·7	13·84	544·5	578·0	19·42	538·4	581·5
25	21·46	518·5	580·8	10·94	534·7	583·9	14·21	546·0	576·5	19·19	538·3	,,
30	17·73	519·3	580·0	11·27	535·8	,,	14·46	546·2	574·6	18·45	539·0	579·7
35	14·44	524·8	578·8	11·48	533·9	584·2	14·46	545·3	573·1	17·94	538·2	580·1
40	12·46	530·0	578·2	11·10	535·3	583·1	14·53	546·4	571·0	17·27	538·2	579·9
45	11·64	533·2	578·4	10·94	536·3	,,	14·70	546·3	570·4	17·20	538·2	,,
50	12·16	535·4	578·5	10·63	535·4	581·8	14·89	544·8	569·4	16·59	534·7	,,
55	12·70	533·4	580·5	10·30	536·7	581·5	13·79	548·6	568·7	15·94	539·5	578·7
		13^{h}			17^{h}.			21^{h}.			1^{h}.	
0	25 12·29	532·6	579·9	25 11·37	537·5	583·3	25 14·68	546·4	569·0	25 16·60	540·6	579·5
5	11·35	533·5	579·8	11·84	537·7	585·6	14·53	544·8	,,	16·77	540·0	582·3
10	11·05	535·4	580·1	12·28	537·7	585·8	14·65	544·5	570·6	17·15	541·9	583·3
15	11·30	536·5	579·4	12·43	538·2	585·5	14·30	544·7	570·6	18·25	542·0	584·6
20	11·88	536·7	579·5	12·62	539·9	584·3	15·01	546·8	569·8	18·94	543·9	585·0
25	12·45	537·3	580·6	13·14	539·1	584·2	15·24	548·7	567·9	20·29	544·4	586·6
30	13·25	537·9	580·5	12·75	538·0	583·3	16·05	550·1	566·9	20·05	541·5	586·0
35	13·61	537·9	579·5	12·35	539·0	583·1	16·82	549·1	567·2	19·59	539·1	586·1
40	13·76	537·6	579·5	12·75	539·6	581·6	16·82	548·2	566·9	18·10	536·1	584·7
45	13·91	537·6	580·2	13·00	539·6	581·4	17·06	545·8	567·3	16·77	535·8	585·3
50	13·69	538·6	578·9	12·72	539·8	580·9	17·09	545·3	568·0	18·34	537·7	587·8
55	13·70	536·6	578·9	……	540·9	579·5	16·70	543·5	569·1	19·17	538·6	590·8

BIFILAR. Observed 2^{m} after the Declination, $k=0·000140$. BALANCE. Observed 3^{m} after the Declination, $k=0·000010$.

The temperature of the bifilar and balance magnets, and the observers' initials, will be found at the corresponding hours in the Hourly Observations of Magnetometers.

When double commas („) occur in the column for the balance magnetometer, the needle was examined, and no change from the previous position being appreciable, the micrometers were not altered.

Jan. 22^{d} 11^{h} 25^{m}. Declination magnet commenced moving eastwards. 11^{h} 39^{m}. Bifilar reading, 569·0. 11^{h} 44^{m}. Bifilar reading, 574·0.

Göttingen Mean Time of Declination Observation.	JANUARY 22, 23.						FEBRUARY 21, 22.					
	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.
Min.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.
		2^{h}.			6^{h}.			10^{h}.			14^{h}.	
0	25 19·75	538·4	591·9	25 16·18	539·3	605·4	25 14·53	537·0	554·1	25 13·81	534·6	508·7
5	19·31	537·2	594·1	16·23	539·7	604·1	13·36	536·5	553·0	13·34	533·6	510·2
10	20·27	536·5	596·3	15·94	541·0	604·1	12·13	535·4	552·6	12·83	534·2	515·5
15	20·99	539·0	598·4	15·88	541·0	601·0	11·42	534·3	553·1	12·35	533·5	516·8
20	20·77	534·4	601·1	15·29	540·1	600·1	10·58	532·2	552·4	12·23	534·2	518·8
25	20·52	535·0	603·7	15·76	539·8	599·2	09·39	533·1	552·1	11·95	534·7	519·9
30	20·27	537·6	605·5	15·74	538·9	599·3	08·45	532·3	552·8	11·81	534·9	522·5
35	19·82	532·5	608·5	15·59	539·2	598·0	07·94	533·5	,,	12·01	534·3	525·4
40	17·40	532·5	608·6	15·38	539·0	596·2	07·37	534·4	552·5	12·40	532·8	527·1
45	17·33	534·3	610·4	15·09	539·3	595·7	06·97	535·4	551·9	12·02	533·6	528·4
50	17·04	529·2	614·0	14·78	539·7	595·7	06·76	536·8	550·5	12·28	534·2	531·4
55	17·10	525·4	616·8	14·60	540·2	,,	07·31	538·6	549·3	12·89	533·4	,,
		3^{h}.			7^{h}.			11^{h}.			15^{h}.	
0	25 17·12	525·2	616·6	25 14·50	540·4	594·1	25 08·11	540·6	548·9	25 12·28	533·3	533·4
5	18·07	526·8	615·3	14·28	540·2	,,	09·05	537·2	547·8	11·91	533·9	535·9
10	18·90	527·5	615·1	14·10	540·1	592·6	08·61	538·6	546·5	11·69	534·2	537·4
15	19·78	524·8	615·7	13·96	540·6	591·1	09·19	540·1	544·1	11·41	534·7	,,
20	20·85	525·3	614·5	13·79	540·4	,,	09·19	540·9	542·8	11·07	535·5	536·8
25	21·57	525·2	614·3	14·01	539·6	590·2	10·03	537·2	542·4	11·54	535·3	538·4
30	21·07	526·6	608·8	13·83	538·4	,,	09·12	537·6	541·4	11·52	533·9	539·8
35	20·77	528·6	608·2	13·99	539·7	590·6	09·60	534·9	541·6	11·03	534·2	540·8
40	19·61	532·4	609·4	13·93	540·0	589·7	09·76	532·8	541·2	10·81	534·1	,,
45	19·04	535·1	611·9	14·10	542·2	,,	09·89	531·9	540·9	10·28	534·5	540·6
50	18·84	534·8	610·4	14·67	538·7	592·8	09·80	533·0	540·7	10·50	534·3	,,
55	18·63	537·1	610·6	14·67	537·6	593·7	10·14	531·0	540·9	10·74	534·0	540·5
		4^{h}.			8^{h}.			12^{h}.			16^{h}.	
0	25 18·68	538·2	611·1	25 14·77	535·8	593·9	25 08·82	527·3	540·5	25 10·68	533·7	,,
5	18·60	541·9	613·4	14·58	535·1	597·1	07·60	527·1	541·1	11·00	532·8	541·7
10	19·10	541·5	615·6	14·57	534·8	,,	07·74	525·4	541·8	11·41	534·6	540·0
15	19·51	541·4	617·0	14·73	533·8	,,	09·05	528·0	540·7	11·64	533·3	541·1
20	19·26	542·7	617·8	14·80	532·9	599·9	10·67	529·4	......	11·64	531·9	540·3
25	19·28	542·4	619·7	14·23	533·1	,,	11·61	531·5	534·2	11·84	531·7	540·9
30	19·78	540·9	622·4	14·33	533·1	603·3	13·83	531·0	532·1	12·16	530·9	541·4
35	19·14	536·9	623·7	13·76	532·8	,,	15·79	533·0	528·5	11·93	530·1	542·8
40	18·99	535·2	623·2	13·84	532·2	606·6	18·21	531·0	523·6	12·42	528·6	541·4
45	19·07	534·0	622·0	13·76	530·8	,,	18·40	528·5	519·7	12·42	527·2	539·8
50	19·14	532·9	620·0	12·87	529·1	610·1	18·81	528·2	516·9	12·18	527·1	540·3
55	18·45	536·2	618·2	12·08	525·1	,,	17·51	530·4	512·7	12·02	526·8	542·1
		5^{h}.			9^{h}.			13^{h}.			17^{h}.	
0	25 17·20	531·0	620·4	25 10·74	522·5	619·2	25 16·79	531·4	509·4	25 11·93	527·2	540·5
5	18·21	530·1	618·8	09·53	521·0	625·8	15·83	531·6	503·2	12·29	526·5	540·2
10	17·93	530·1	617·1	09·08	520·5	630·9	14·94	533·0	502·9	12·70	525·2	542·5
15	17·49	532·6	616·7	08·36	521·6	633·4	14·91	534·7	501·3	12·46	526·7	541·8
20	16·89	530·3	615·6	08·55	532·4	623·7	15·69	536·3	500·1	12·63	528·0	540·7
25	16·28	532·9	615·1	05·32	555·7	616·3	15·49	536·5	498·6	12·83	528·7	541·0
30	16·75	534·1	613·6	13·02	553·7	611·7	15·85	536·8	,,	13·03	529·7	540·7
35	16·38	535·7	611·7	17·83	545·2	608·8	15·38	537·8	499·6	13·41	530·6	539·6
40	16·35	538·4	609·0	19·05	536·3	607·1	15·20	538·7	500·0	13·34	531·0	,,
45	16·28	542·9	606·5	18·00	531·1	603·7	15·27	537·5	,,	......	531·8	545·2
50	15·86	542·4	606·1	13·79	534·6	598·5	15·38	535·1	504·0	12·98	533·3	544·9
55	15·99	540·0	606·0	13·12	534·1	597·1	14·60	534·3	506·5	12·92	534·4	543·6

BIFILAR. Observed 2^{m} after the Declination, $k=0{\cdot}000140$. **BALANCE.** Observed 3^{m} after the Declination, $k=0{\cdot}000010$.

The temperature of the bifilar and balance magnets, and the observers' initials, will be found at the corresponding hours in the Hourly Observations of Magnetometers.

When double commas (,,) occur in the column for the balance magnetometer, the needle was examined, and no change from the previous position being appreciable, the micrometers were not altered.

Jan. 23^{d} 10^{h}. Extra Observations made.

Göttingen Mean Time of Declination Observation.	FEBRUARY 21, 22.											
	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.
Min.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.
		18^{h}.			22^{h}.			2^{h}.			6^{h}.	
0	25 13·22	533·9	543·6	25 16·59	518·4	548·2	25 21·44	533·3	564·9	25 16·25	533·7	605·8
5	12·65	536·2	542·8	15·14	519·5	,,	20·65	533·0	564·9	16·80	535·4	603·5
10	13·32	535·0	,,	15·24	520·9	548·4	20·30	535·3	564·8	16·95	535·6	600·0
15	13·19	533·6	544·4	15·61	521·4	,,	20·79	536·8	565·6	16·80	535·8	598·2
20	12·62	535·4	543·4	15·51	525·8	549·0	20·11	535·1	566·8	16·45	536·8	594·0
25	12·72	535·8	541·7	16·41	525·7	,,	19·41	536·2	566·7	16·48	538·0	591·7
30	12·04	537·2	541·6	15·85	527·0	548·9	19·37	536·0	566·5	16·32	539·0	589·7
35	11·98	536·9	541·5	16·35	529·1	,,	19·37	538·5	566·6	16·59	538·8	587·2
40	12·82	536·2	542·0	16·15	527·3	,,	19·14	538·7	567·4	16·41	540·7	583·6
45	13·29	533·9	541·7	15·17	528·1	548·8	19·49	540·0	568·5	15·71	542·3	582·6
50	13·66	536·1	540·7	15·59	526·9	,,	20·43	540·6	571·0	15·32	543·3	582·2
55	14·13	534·0	540·4	16·57	528·1	,,	19·76	535·6	573·3	15·47	540·1	582·6
		19^{h}.			23^{h}.			3^{h}.			7^{h}.	
0	25 13·47	535·1	540·8	25 16·35	529·5	549·4	25 19·19	532·5	573·6	25 15·92	538·8	581·8
5	14·03	535·1	539·3	16·55	530·0	,,	18·32	531·6	574·2	16·12	536·6	,,
10	14·26	535·8	538·1	16·06	530·4	,,	18·41	533·1	574·9	15·94	538·7	583·3
15	14·87	533·7	538·3	16·62	531·9	549·7	19·28	537·7	575·7	15·88	539·4	581·7
20	14·40	534·7	537·7	17·00	529·3	,,	20·13	539·4	577·2	15·44	539·2	580·6
25	14·03	535·3	536·7	15·94	527·3	,,	20·50	538·1	579·8	15·09	538·2	579·1
30	13·23	536·5	536·1	14·53	526·6	549·9	20·09	535·2	580·7	15·12	538·5	578·5
35	12·83	535·8	536·6	15·88	532·6	,,	19·59	535·4	580·4	14·98	539·5	577·2
40	12·25	537·1	536·0	17·06	527·9	,,	19·51	535·2	581·2	14·53	539·6	575·8
45	12·65	534·5	538·1	16·68	533·0	,,	19·10	536·1	582·9	14·30	540·2	575·3
50	12·42	535·8	538·3	18·03	533·1	551·4	18·94	537·7	583·1	14·17	541·5	574·1
55	12·45	537·8	537·5	18·70	531·5	,,	19·62	541·4	583·4	14·20	542·7	573·0
		20^{h}.			0^{h}.			4^{h}.			8^{h}.	
0	25 12·62	537·6	537·9	25 18·60	527·3	552·2	25 19·29	536·9	586·3	25 14·33	541·8	573·0
5	11·72	537·0	537·6	18·00	530·6	,,	19·93	540·3	586·7	13·99	542·3	572·7
10	11·51	537·9	537·5	17·42	529·1	551·8	20·67	540·5	589·9	13·91	540·2	575·2
15	11·77	538·0	538·2	16·38	529·8	,,	21·56	536·6	592·9	14·03	537·8	576·7
20	12·06	533·4	539·5	16·35	528·1	,,	20·40	527·7	597·8	14·43	537·3	576·5
25	11·25	533·7	540·0	16·18	530·8	553·7	19·91	526·4	600·2	13·86	537·2	,,
30	11·41	536·6	539·3	16·68	531·2	,,	19·37	523·9	602·0	13·56	536·2	578·8
35	12·67	535·6	540·2	16·93	531·5	,,	17·74	527·2	,,	14·01	536·3	578·7
40	12·11	534·6	540·1	16·87	531·1	554·6	16·82	519·1	606·7	13·94	535·9	580·0
45	11·95	537·1	539·2	17·22	532·8	555·9	16·65	513·8	608·4	13·63	537·3	579·7
50	13·07	536·4	539·0	17·34	534·1	,,	14·67	514·0	613·7	13·43	537·4	579·0
55	13·16	534·5	539·1	17·83	533·2	,,	11·61	520·4	614·1	13·02	538·0	577·2
		21^{h}.			1^{h}.			5^{h}.			9^{h}.	
0	25 13·52	524·4	537·0	25 17·20	532·2	556·6	25 09·98	527·5	617·0	25 12·09	541·8	575·9
5	13·76	533·4	536·3	17·44	528·5	557·6	08·41	529·3	619·5	12·72	540·0	578·1
10	14·77	530·0	537·4	16·93	531·7	558·6	08·58	535·3	621·0	12·02	540·7	578·0
15	14·64	527·9	539·3	18·60	529·7	559·5	09·26	541·2	623·5	12·40	538·0	577·7
20	11·44	526·9	540·6	17·87	529·0	559·3	10·47	540·4	625·8	09·35	534·0	578·2
25	15·85	525·2	541·2	17·83	529·9	559·5	11·07	543·9	622·6	06·54	534·9	578·2
30	15·62	524·9	541·5	17·91	530·1	559·7	11·81	540·8	624·3	05·79	533·7	579·3
35	14·91	525·7	540·3	18·34	533·2	559·5	12·46	540·4	622·3	02·99	536·8	579·2
40	14·91	525·2	,,	19·59	536·6	560·4	14·18	540·9	619·2	02·15	542·7	578·7
45	15·05	523·3	543·9	20·79	538·2	561·9	15·91	538·3	616·4	03·75	543·6	578·7
50	16·32	521·0	544·4	22·15	538·1	562·8	16·33	535·6	611·0	04·64	545·3	578·0
55	16·35	518·7	,,	22·11	537·4	563·8	15·88	533·7	610·3	05·52	546·1	577·0

BIFILAR. Observed 2^{m} after the Declination, k=0·000140. BALANCE. Observed 3^{m} after the Declination, k=0·000010.

The temperature of the bifilar and balance magnets, and the observers' initials, will be found at the corresponding hours in the Hourly Observations of Magnetometers.

When double commas (,,) occur in the column for the balance magnetometer, the needle was examined, and no change from the previous position being appreciable, the micrometers were not altered.

öttingen ean Time of eclination bservation.	MARCH 19, 20.											
	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.
Min.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.
		10^{h}.			14^{h}.			18^{h}.			22^{h}.	
0	25 06·51	527·7	570·1	25 03·21	535·5	467·5	25 06·91	529·4	474·9	25 11·84	526·4	523·4
5	08·56	521·5	573·1	01·93	532·8	,,	08·26	528·0	476·6	13·52	523·4	524·8
10	08·50	522·0	573·0	00·85	529·9	464·8	07·60	530·2	477·0	13·29	522·1	525·2
15	09·10	530·7	570·6	00·77	524·9	465·6	07·85	530·1	480·5	12·43	517·3	525·3
20	10·56	534·4	567·1	25 00·31	522·4	464·1	08·92	531·7	482·1	14·77	515·3	526·5
25	11·05	535·1	565·2	24 59·44	519·9	,,	08·32	535·2	482·9	13·86	517·4	526·2
30	11·71	535·1	563·9	25 00·20	518·5	465·3	10·63	534·9	484·5	14·84	525·3	527·8
35	12·78	537·8	560·2	01·54	517·6	467·0	10·36	536·8	482·6	15·51	515·2	527·9
40	14·40	541·4	553·1	04·39	516·2	470·3	09·93	538·3	482·6	16·15	513·5	,,
45	15·59	538·6	546·8	07·34	513·4	,,	10·67	538·3	484·6	14·80	511·2	529·9
50	15·86	538·9	541·7	09·35	510·5	469·8	11·51	537·4	485·5	15·47	511·9	532·5
55	17·71	540·8	537·9	11·99	511·1	,,	11·62	536·4	486·5	16·84	512·5	534·2
		11^{h}.			15^{h}.			19^{h}.			23^{h}.	
0	25 21·46	536·4	533·2	25 13·77	515·0	468·7	25 12·26	537·4	485·6	25 15·47	514·9	534·4
5	21·27	533·6	527·0	14·24	515·0	465·3	11·42	540·1	,,	13·79	516·8	532·5
10	19·96	528·6	520·1	14·51	519·6	459·1	10·09	540·2	484·9	12·42	518·3	532·0
15	16·41	529·6	515·8	14·30	525·3	458·5	10·01	538·4	486·2	12·22	521·1	532·5
20	13·86	532·6	514·1	14·33	528·3	457·1	09·19	537·3	489·5	13·43	525·4	534·8
25	13·32	534·2	513·3	13·91	532·4	456·0	09·08	537·4	491·0	15·51	520·8	538·3
30	12·55	535·6	513·6	13·97	534·0	453·4	09·89	536·2	493·6	15·36	519·4	539·3
35	11·17	537·4	511·5	14·06	535·6	449·6	10·23	535·7	496·0	15·78	520·8	539·9
40	10·72	538·6	510·1	13·46	535·7	,,	10·18	535·7	496·7	16·38	522·5	539·2
45	10·33	542·8	509·0	11·91	535·8	447·6	10·34	534·8	499·2	17·12	523·4	539·0
50	11·37	538·2	508·9	10·23	537·5	446·1	10·74	533·0	502·3	17·33	524·2	538·5
55	11·15	533·0	506·9	08·73	536·7	,,	09·89	533·3	502·5	18·07	523·3	538·8
		12^{h}.			16^{h}.			20^{h}.			0^{h}.	
0	25 09·69	530·0	506·3	25 07·34	535·5	447·4	25 09·46	533·9	503·1	25 17·94	524·6	538·1
5	08·11	531·3	505·7	06·76	536·5	451·5	09·20	534·1	506·4	18·37	528·2	536·8
10	07·32	534·1	504·5	06·64	535·1	454·0	08·82	533·5	507·6	18·70	527·7	536·8
15	06·81	538·9	504·1	05·76	536·2	458·1	08·43	533·4	508·2	19·37	528·4	536·6
20	08·77	537·8	502·6	05·38	537·5	,,	08·55	534·2	510·7	19·44	526·9	536·3
25	09·96	535·5	498·5	05·25	538·8	458·9	08·85	532·5	512·8	19·78	529·2	536·1
30	10·27	532·2	496·9	05·27	538·0	,,	08·92	531·4	513·8	20·02	531·7	534·5
35	10·06	529·1	491·4	04·84	537·1	461·0	08·68	531·8	516·7	21·23	531·5	534·3
40	09·12	527·5	489·3	04·61	537·0	463·0	08·82	531·0	517·5	21·43	531·2	533·8
45	09·73	524·5	487·4	04·15	537·0	,,	08·46	531·2	519·0	21·41	531·4	533·4
50	10·06	523·1	484·7	04·24	536·8	464·8	08·92	533·6	,,	22·10	531·1	532·1
55	11·10	524·9	484·1	04·19	536·8	466·6	09·49	531·6	520·2	21·66	528·1	532·4
		13^{h}.			17^{h}.			21^{h}.			1^{h}.	
0	25 10·60	527·6	481·1	25 04·95	534·4	469·1	25 09·39	532·0	519·9	25 21·23	525·9	532·6
5	09·79	528·4	478·4	05·08	533·2	467·2	09·49	531·7	520·5	21·10	527·1	531·8
10	09·86	529·5	477·0	05·49	532·3	471·5	10·01	530·9	521·2	20·85	526·8	533·4
15	09·54	532·4	476·8	06·61	531·6	472·6	10·09	531·1	521·4	21·17	526·1	534·6
20	09·29	538·3	,,	07·78	530·9	475·8	10·27	527·7	521·7	20·72	527·2	533·9
25	10·20	537·1	476·0	08·72	531·6	475·9	09·10	529·0	521·7	20·60	533·4	532·1
30	09·33	539·6	475·2	09·32	532·4	476·4	08·88	528·4	521·7	22·91	546·5	530·5
35	08·26	542·0	475·2	09·54	533·6	475·9	08·85	530·6	,,	22·64	539·5	531·4
40	07·20	543·3	472·9	10·09	530·8	,,	09·79	530·8	522·5	22·92	539·8	530·9
45	05·63	540·4	,,	09·77	530·4	473·8	10·98	531·1	523·1	22·67	534·9	531·8
50	04·79	540·1	470·7	08·92	526·6	472·9	12·46	528·1	524·1	22·27	532·9	531·6
55	03·58	538·3	,,	07·31	528·8	,,	11·66	526·1	523·5	22·24	534·1	531·8

BIFILAR. Observed 2^{m} after the Declination, k=0·000140. BALANCE. Observed 3^{m} after the Declination, k=0·000010.

The temperature of the bifilar and balance magnets, and the observers' initials, will be found at the corresponding hours in the Hourly Observations of Magnetometers.

When double commas (,,) occur in the column for the balance magnetometer, the needle was examined, and no change from the previous position being appreciable, the micrometers were not altered.

Mar. 19^{d} 9^{h}—10^{h}. Extra Observations made.

Göttingen Mean Time of Declination Observation.	MARCH 19, 20.						APRIL 23, 24.					
	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.
Min.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.
		2^h.			6^h.			10^h.			14^h.	
0	25 22·33	535·3	531·4	25 06·46	545·5	783·5	25 09·47	544·5	540·8	25 10·50	542·6	523·5
5	22·13	537·1	530·6	04·69	554·9	818·1	09·42	543·2	541·3	10·16	544·7	,,
10	21·90	538·7	529·9	06·84	539·6	828·0	09·35	543·5	541·2	09·87	544·6	522·1
15	21·97	537·0	532·0	10·53	530·7	824·6	09·73	549·6	538·5	09·73	542·6	524·1
20	21·48	536·4	532·6	10·48	528·9	808·4	10·56	551·5	535·1	09·40	540·2	524·3
25	21·26	538·6	533·0	10·36	526·3	789·6	09·89	550·2	532·2	09·02	540·4	524·5
30	21·32	538·9	532·1	10·23	528·8	766·7	08·12	543·3	,,	08·79	540·9	,,
35	21·09	539·8	533·0	13·47	533·5	748·4	07·00	539·2	534·9	09·05	540·7	525·5
40	20·89	542·4	531·8	17·06	528·9	740·0	06·98	539·1	537·1	09·22	539·4	,,
45	20·89	543·2	532·1	17·06	525·2	730·5	07·55	538·9	538·6	08·85	544·1	525·9
50	20·56	541·5	532·3	17·12	527·0	723·3	08·26	542·6	,,	09·73	543·3	524·4
55	20·02	543·7	531·9	15·99	530·9	710·1	09·13	547·2	534·0	09·27	542·8	,,
		3^h.			7^h.			11^h.			15^h.	
0	25 20·36	545·0	531·4	25 15·51	533·7	699·0	25 10·13	546·5	533·5	25 08·88	542·4	523·5
5	20·00	546·0	530·8	15·31	530·4	699·2	09·82	542·7	,,	09·08	540·5	,,
10	20·11	547·2	530·9	14·46	534·5	679·2	09·87	541·5	535·9	08·82	540·6	,,
15	19·79	545·7	532·1	15·12	532·7	669·1	09·33	542·7	,,	08·41	541·0	523·6
20	19·64	543·1	534·0	15·58	531·9	658·9	09·47	543·4	533·8	08·93	541·3	523·9
25	19·08	545·4	533·5	15·49	532·4	648·9	09·29	542·8	,,	09·42	540·2	,,
30	19·91	546·5	535·5	15·25	536·7	639·7	09·76	541·2	534·1	09·73	538·5	526·0
35	19·39	550·4	537·6	14·91	541·9	630·5	10·30	537·4	536·5	10·06	538·1	526·2
40	19·66	537·8	542·8	15·45	541·6	625·6	10·23	537·6	,,	10·16	538·7	523·6
45	18·10	543·2	541·8	14·98	538·3	623·4	10·31	542·4	533·2	09·76	539·3	,,
50	19·07	551·4	542·3	14·30	539·1	620·1	11·10	541·4	531·9	09·26	539·9	522·2
55	18·60	552·5	545·0	14·43	535·2	619·3	10·47	541·8	529·6	09·02	540·4	,,
		4^h.			8^h.			12^h.			16^h.	
0	25 18·41	547·5	545·9	25 14·55	535·1	616·2	25 10·97	544·4	528·9	25 09·02	540·3	,,
5	18·03	537·4	550·0	14·73	532·4	616·4	10·43	542·3	,,	08·73	539·5	520·5
10	17·63	529·4	550·5	15·01	530·6	615·0	10·33	541·9	,,	08·25	539·6	,,
15	17·20	538·1	548·3	13·86	534·1	619·2	10·13	541·7	528·9	08·11	538·2	522·5
20	17·29	554·2	545·9	13·77	534·6	607·6	10·09	540·5	,,	07·65	538·1	523·3
25	18·03	567·1	547·6	13·69	535·0	603·3	10·16	540·4	,,	07·71	537·2	523·1
30	17·63	562·4	553·0	13·36	535·2	601·0	09·93	540·1	530·3	07·52	536·6	,,
35	17·26	555·9	557·0	13·50	536·1	599·3	09·15	538·4	,,	07·34	536·6	530·8
40	16·86	557·3	559·5	13·77	536·0	596·4	10·04	539·6	532·1	07·20	536·1	537·7
45	16·99	559·7	562·1	13·72	537·1	592·5	10·36	541·3	,,	07·29	535·9	531·3
50	16·59	560·6	566·1	13·72	537·1	590·7	10·60	542·4	,,	07·35	536·3	528·2
55	17·22	557·6	571·8	13·29	536·7	589·3	10·90	542·6	531·0	07·47	535·7	,,
		5^h.			9^h.			13^h.			17^h.	
0	25 17·78	562·6	575·6	25 13·14	536·7	586·7	25 10·56	540·5	531·9	25 07·40	536·0	526·7
5	18·87	564·5	583·6	12·98	535·7	584·4	10·88	540·9	531·8	07·35	536·2	530·2
10	20·20	554·7	595·2	12·92	535·7	583·6	10·77	539·7	,,	07·34	535·9	530·8
15	20·20	543·8	610·3	13·25	536·3	582·0	10·45	539·4	531·3	07·54	536·1	531·5
20	20·85	549·1	627·8	13·39	535·8	580·7	10·83	539·5	532·5	07·67	536·1	532·4
25	18·55	548·1	648·9	13·43	535·8	578·8	10·88	540·9	,,	07·49	536·5	533·2
30	16·59	535·9	670·1	13·52	535·4	578·0	11·17	539·8	532·6	07·35	536·6	,,
35	13·34	532·1	674·9	13·47	535·8	577·4	11·32	540·8	532·4	07·24	536·6	533·7
40	12·45	544·9	646·7	13·52	536·3	575·9	11·17	541·8	530·2	07·18	536·8	533·5
45	12·42	546·0	652·1	13·52	536·0	573·7	11·25	543·7	527·4	07·31	536·9	533·5
50	11·91	542·0	674·9	13·52	535·6	572·8	11·74	545·4	526·7	07·04	536·7	,,
55	10·63	541·0	717·7	13·66	536·0	572·2	11·19	544·8	,,	07·35	536·5	532·9

BIFILAR. Observed 2^m after the Declination, k=0·000140. BALANCE. Observed 3^m after the Declination, k=0·000010.

The temperature of the bifilar and balance magnets, and the observers' initials, will be found at the corresponding hours in the Hourly Observations of Magnetometers.

When double commas (,,) occur in the column for the balance magnetometer, the needle was examined, and no change from the previous position being appreciable, the micrometers were not altered.

March 20^d 15^h. Extra Observations made.

tingen n Time of ination rvation.	APRIL 23, 24.											
	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.
Min.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.
		18^h.			22^h.			2^h.			6^h.	
0	25 07·13	536·5	534·3	25 08·95	522·7	542·8	25 22·24	537·4	521·5	25 18·85	560·7	571·1
5	07·11	536·1	534·5	09·00	521·4	543·1	22·47	538·2	522·0	18·32	563·5	574·0
10	07·29	536·5	534·3	08·66	522·7	542·1	22·78	543·2	521·9	18·55	567·2	574·3
15	07·81	536·4	534·8	08·59	523·4	541·4	23·14	540·7	522·9	18·32	568·6	575·5
20	07·81	535·8	535·0	08·79	523·2	541·9	23·38	541·6	524·6	18·55	565·8	580·8
25	07·72	535·1	535·6	08·90	523·3	541·5	22·91	538·4	526·1	17·98	562·1	583·2
30	08·05	534·3	,,	09·26	522·1	541·9	23·54	539·9	527·9	18·34	560·3	587·4
35	08·18	534·4	536·4	09·26	521·1	542·1	23·48	535·7	530·4	18·90	550·6	591·4
40	08·48	535·6	536·7	09·08	521·4	541·0	22·75	529·4	532·6	18·23	547·2	594·0
45	08·32	535·1	536·2	09·47	523·3	539·5	22·40	534·6	532·6	17·39	547·4	,,
50	08·38	535·6	536·0	10·27	524·2	536·7	22·85	535·0	533·0	16·39	546·1	592·0
55	08·65	536·0	,,	10·70	524·2	536·6	23·27	526·7	536·8	15·67	543·7	,,
		19^h.			23^h.			3^h.			7^h.	
0	25 08·56	535·6	537·0	25 11·34	523·4	537·1	25 21·19	528·4	537·2	25 15·85	545·6	593·5
5	08·26	535·5	538·0	11·64	523·2	536·9	21·53	538·3	535·0	14·80	546·9	592·2
10	08·28	535·7	537·6	11·88	522·2	536·5	22·44	543·1	532·4	14·73	547·4	589·3
15	07·71	535·6	537·7	12·33	521·5	536·4	22·00	546·0	532·2	14·68	547·0	,,
20	08·16	535·5	538·8	12·38	520·8	536·2	22·37	549·4	531·9	15·25	546·8	589·0
25	08·18	536·0	538·5	12·65	521·8	535·7	21·93	548·3	531·6	14·80	543·8	587·4
30	08·72	535·6	540·1	12·93	522·1	534·7	22·27	555·7	530·8	14·37	544·9	584·0
35	08·55	535·0	540·0	13·39	522·3	534·7	23·19	558·2	530·8	13·99	544·7	584·3
40	08·18	535·4	539·9	13·59	522·6	533·3	22·33	563·1	530·3	13·90	542·7	581·9
45	08·28	534·9	539·9	13·88	523·1	532·7	22·40	571·5	529·8	14·13	546·5	577·9
50	08·14	535·1	,,	14·17	524·4	531·7	23·31	578·6	529·3	14·23	544·3	577·0
55	08·14	533·9	539·6	14·65	524·8	530·9	22·50	568·6	532·2	14·53	544·3	574·4
		20^h.			0^h.			4^h.			8^h.	
0	25 07·81	534·1	539·6	25 14·91	523·7	530·6	25 22·11	565·5	535·1	25 14·50	544·5	572·9
5	07·49	533·3	539·3	14·98	523·6	,,	22·18	563·9	537·5	14·20	542·0	,,
10	06·97	533·0	,,	15·54	523·3	530·7	21·91	562·1	540·3	13·47	544·3	567·2
15	06·93	530·6	541·1	15·83	522·8	531·1	21·51	563·7	540·9	13·09	544·6	,,
20	07·34	529·5	541·8	16·05	522·7	531·0	21·95	563·0	542·0	12·58	545·1	,,
25	07·82	530·6	541·2	16·25	522·9	530·6	21·68	556·8	546·4	12·63	546·9	564·0
30	08·34	530·9	541·9	16·75	522·5	530·5	20·79	553·3	548·9	12·63	546·0	563·5
35	08·61	530·2	542·6	16·86	522·4	529·7	21·04	552·2	550·2	12·78	545·4	561·7
40	09·32	529·7	,,	17·26	522·5	528·2	20·76	553·6	550·2	13·02	545·2	560·4
45	09·35	530·2	541·3	17·46	522·6	528·3	20·82	552·7	551·7	13·00	546·3	558·7
50	09·46	530·3	541·0	17·71	523·7	526·8	20·38	549·7	553·9	12·85	545·1	......
55	09·60	530·4	539·9	18·00	524·8	526·0	19·69	545·6	555·4	12·98	543·3	556·3
		21^h.			1^h.			5^h.			9^h.	
0	25 09·69	530·6	540·0	25 18·30	525·1	525·9	25 19·31	547·1	556·2	25 12·65	543·4	555·4
5	10·16	529·9	540·0	18·70	523·8	526·5	18·77	545·2	556·9	12·62	543·2	554·8
10	09·76	529·1	539·9	18·70	525·2	525·8	19·61	551·2	555·5	12·89	542·9	554·5
15	09·66	528·0	540·1	19·02	528·1	525·3	10·82	552·4	557·0	12·92	543·2	552·5
20	09·56	527·3	540·4	19·51	529·2	524·6	20·03	555·9	556·2	12·55	542·2	551·2
25	09·35	527·7	540·7	19·96	532·9	522·4	19·98	561·9	555·1	12·38	541·8	550·5
30	09·33	525·7	541·5	20·56	535·6	521·6	20·25	563·3	556·6	12·15	541·2	550·1
35	08·82	526·4	540·3	20·97	535·5	521·4	19·64	562·0	559·3	11·75	541·8	548·5
40	09·00	526·1	541·0	21·44	536·5	520·3	19·64	566·1	562·0	11·61	543·6	547·4
45	08·93	525·1	540·7	21·70	536·7	520·4	19·51	561·9	564·5	11·71	541·5	547·9
50	08·86	523·9	541·8	22·20	538·6	520·6	19·21	561·7	567·9	11·61	540·6	546·6
55	08·88	523·3	542·2	22·13	537·8	521·1	19·24	561·5	570·7	11·52	541·0	546·3

BIFILAR. Observed 2^m after the Declination, $k=0·000140$. **BALANCE.** Observed 3^m after the Declination, $k=0·000010$.

' The temperature of the bifilar and balance magnets, and the observers' initials, will be found at the corresponding hours in the Hourly bservations of Magnetometers.

When double commas (,,) occur in the column for the balance magnetometer, the needle was examined, and no change from the previous osition being appreciable, the micrometers were not altered.

Göttingen Mean Time of Declination Observation.	MAY 30, 31.											
	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.
Min.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.
		10h.			14h.			18h.			22h.	
0	25 10·36	542·0	530·4	25 05·45	536·6	461·6	25 03·87	540·8	458·0	25 14·98	523·6	476·8
5	09·82	540·8	530·3	04·59	538·7	,,	03·65	542·6	458·9	……	524·1	476·2
10	09·57	542·3	528·2	03·25	540·6	455·3	03·63	543·8	459·3	15·38	526·0	475·5
15	09·22	541·5	527·7	01·45	541·8	452·3	03·50	544·1	460·8	15·74	526·1	475·3
20	08·45	540·5	527·8	00·60	541·5	451·0	03·16	545·2	462·9	16·10	527·3	475·1
25	08·25	538·2	529·2	00·33	539·9	,,	03·47	544·6	464·4	17·04	530·1	474·9
30	07·74	536·6	530·3	00·20	538·0	450·2	03·09	542·8	466·5	17·51	532·7	472·8
35	07·81	535·6	529·8	00·42	534·9	,,	02·87	542·8	470·6	17·86	533·5	472·6
40	07·82	536·4	528·9	00·17	533·7	449·6	03·20	544·0	472·8	18·75	530·7	471·6
45	08·06	536·1	527·7	00·77	533·7	449·7	03·50	543·2	475·5	18·13	529·8	471·0
50	08·18	537·0	525·3	02·01	534·6	,,	03·77	542·9	476·9	18·45	531·4	470·7
55	07·99	535·0	523·6	02·60	534·8	,,	04·10	542·1	478·5	18·65	530·4	471·1
		11h.			15h.			19h.			23h.	
0	25 07·13	534·3	522·4	25 02·82	535·7	444·4	25 04·14	540·9	479·9	25 18·04	527·7	471·6
5	06·64	533·8	522·0	03·09	535·6	442·8	04·31	540·4	479·6	17·73	525·4	472·0
10	05·94	531·5	521·0	02·86	535·4	,,	04·21	540·1	480·8	17·24	524·9	471·6
15	05·33	532·6	518·9	02·82	534·4	441·5	04·64	539·6	482·4	18·11	523·5	473·4
20	04·34	535·9	516·9	02·96	533·3	442·4	04·76	538·1	483·1	18·18	523·4	473·1
25	02·42	532·7	514·5	03·27	533·0	445·0	04·78	536·3	484·2	17·73	525·9	472·4
30	01·36	531·7	514·3	03·23	533·4	446·2	04·91	535·1	484·9	18·61	527·7	471·8
35	01·11	532·7	513·0	03·37	534·2	445·6	04·53	533·2	485·6	19·17	529·0	472·5
40	01·19	534·2	511·6	03·27	533·6	449·1	04·78	533·1	485·9	18·63	527·5	472·8
45	01·61	535·0	510·9	03·43	533·7	451·9	04·91	529·1	486·8	18·14	522·7	474·7
50	02·25	534·3	509·3	03·23	533·9	453·2	04·39	528·9	486·8	18·52	523·3	476·4
55	02·91	533·9	508·5	03·37	534·1	455·3	04·59	526·3	487·7	19·24	521·1	478·9
		12h.			16h.			20h.			0h.	
0	25 03·70	530·8	508·4	25 03·81	534·2	455·0	25 04·91	524·6	488·5	25 20·09	517·7	481·1
5	04·44	530·8	507·0	04·07	534·2	458·4	05·29	522·9	489·2	20·38	517·8	483·3
10	05·09	532·0	504·7	04·37	535·2	459·1	05·45	521·8	490·4	21·32	518·6	483·2
15	05·67	532·5	501·9	05·02	535·8	460·4	07·37	522·6	491·2	21·97	520·7	483·3
20	05·76	531·4	499·8	05·49	535·9	461·5	07·07	518·2	491·6	22·48	524·2	482·2
25	05·76	530·5	498·2	06·06	536·8	468·6	06·86	515·5	492·1	22·47	520·2	483·8
30	05·32	530·4	496·7	06·16	537·3	464·8	06·79	514·3	492·6	22·57	522·1	484·1
35	05·05	531·3	494·6	07·07	535·0	466·6	06·79	513·4	491·9	23·31	522·1	484·5
40	04·71	533·4	493·5	07·13	534·5	468·7	08·06	513·4	491·3	23·68	523·7	483·7
45	05·00	534·1	492·4	07·47	533·9	468·9	08·99	514·6	491·6	23·88	525·2	483·4
50	05·18	533·3	491·7	09·27	531·5	469·9	10·20	514·9	491·1	24·05	525·4	483·9
55	05·45	532·7	491·6	10·13	530·3	472·9	11·74	515·8	491·6	24·48	524·5	485·2
		13h.			17h.			21h.			1h.	
0	25 05·27	533·0	490·2	25 10·53	530·3	472·8	25 13·57	516·5	491·1	25 24·55	523·7	486·3
5	05·29	533·3	488·8	10·95	532·3	472·1	14·65	516·6	489·5	24·67	521·5	487·8
10	05·52	533·9	486·1	11·69	533·7	470·8	14·46	516·4	486·7	23·86	526·1	487·7
15	05·50	533·1	483·0	11·44	535·5	467·5	14·92	518·7	484·2	23·81	522·4	491·0
20	05·99	532·6	,,	11·21	536·8	465·1	14·57	518·3	482·4	24·05	528·5	489·3
25	06·93	532·9	482·4	10·80	538·2	461·8	14·85	523·0	479·2	24·25	549·7	483·8
30	07·49	532·3	479·1	09·89	540·4	457·9	15·67	525·0	477·6	27·84	566·2	481·4
35	07·91	532·8	477·0	08·79	540·8	455·0	14·31	521·3	477·4	27·19	544·3	488·4
40	07·25	532·5	474·0	07·38	542·0	453·3	13·88	521·9	476·5	25·83	525·8	497·2
45	……	531·6	469·5	06·59	540·9	453·0	14·13	525·2	475·5	27·02	524·6	498·4
50	06·50	531·9	467·9	05·25	541·4	454·5	14·26	526·5	475·4	27·24	528·7	496·9
55	06·26	534·1	466·1	04·34	541·2	,,	15·32	525·3	476·6	28·22	539·9	496·6

BIFILAR. Observed 2m after the Declination, $k=0·000140$. BALANCE. Observed 3m after the Declination, $k=0·000010$.

The temperature of the bifilar and balance magnets, and the observers' initials, will be found at the corresponding hours in the Hourly Observations of Magnetometers.

When double commas (,,) occur in the column for the balance magnetometer, the needle was examined, and no change from the previous position being appreciable, the micrometers were not altered.

Göttingen Mean Time of Declination Observation.	MAY 30, 31.						JUNE 18, 19.					
	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.
Min.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.
		2h.			6h.			10h.			14h.	
0	25 29·93	531·5	500·6	25 14·40	544·2	544·0	25 10·63	547·9	502·4	25 10·16	546·0	490·3
5	31·34	531·8	501·8	13·47	539·2	547·2	10·53	547·9	501·0	10·27	546·8	,,
10	33·43	537·2	498·4	12·75	536·5	550·9	10·47	547·5	500·3	10·40	546·3	488·9
15	34·44	548·4	493·3	12·31	536·7	551·8	10·43	547·2	500·6	10·34	545·6	,,
20	33·53	559·4	488·9	11·99	536·2	553·5	10·36	547·7	500·0	10·07	544·9	489·1
25	30·79	556·7	490·7	11·62	538·4	551·7	10·54	547·8	499·7	09·93	544·9	488·3
30	29·27	547·0	496·7	11·51	541·8	550·6	10·61	547·4	499·6	09·98	544·0	487·7
35	29·16	543·5	502·1	11·51	543·0	549·3	10·63	546·8	499·5	09·56	544·5	487·0
40	29·36	537·8	506·9	11·44	545·6	548·0	10·43	547·1	499·0	09·66	544·8	,,
45	30·10	536·0	511·5	11·52	545·3	546·5	10·38	546·0	499·6	09·74	541·9	489·1
50	31·26	532·0	516·2	11·57	540·4	546·9	10·40	544·9	499·4	09·33	542·7	,,
55	31·86	533·7	518·5	11·82	539·8	544·8	10·30	546·3	499·2	09·56	543·3	489·3
		3h.			7h.			11h.			15h.	
0	25 31·52	534·6	520·8	25 11·96	539·6	543·2	25 10·14	546·9	499·1	25 09·87	543·6	489·5
5	31·75	538·3	523·7	12·08	540·4	543·1	10·33	547·2	498·3	09·80	544·4	,,
10	31·92	540·1	525·5	11·91	542·8	540·2	10·33	546·9	498·3	10·03	544·4	,,
15	31·01	536·9	526·9	11·71	544·2	537·3	10·40	546·8	498·7	10·01	544·5	488·9
20	30·04	534·8	536·9	11·46	545·2	534·6	10·43	545·9	498·7	09·80	544·9	487·9
25	29·50	529·6	541·1	11·44	546·9	532·2	10·36	544·7	498·8	09·96	545·0	487·2
30	29·06	531·7	543·0	11·21	551·5	529·8	10·30	546·1	498·5	10·09	544·6	,,
35	29·14	531·0	544·3	11·25	552·9	528·9	10·34	546·5	497·9	10·06	544·5	487·6
40	28·40	529·7	544·8	11·57	549·4	529·2	10·45	546·1	497·9	10·00	544·4	486·9
45	26·35	529·9	545·7	12·11	546·7	529·5	10·20	546·1	497·7	09·93	544·2	487·5
50	25·47	532·4	546·7	12·20	547·6	527·0	10·33	545·9	497·5	09·79	544·3	,,
55	25·19	537·0	546·6	11·89	547·1	525·8	10·25	545·6	497·9	09·69	544·1	488·8
		4h.			8h.			12h.			16h.	
0	25 24·73	539·1	546·1	25 11·39	544·4	524·7	25 10·11	546·0	497·6	25 09·49	544·0	489·0
5	24·17	542·6	544·5	11·37	544·3	523·8	10·23	546·1	497·0	09·39	544·0	,,
10	23·19	540·4	545·4	10·77	544·4	523·4	10·23	545·4	497·0	09·40	543·4	488·8
15	22·71	545·8	543·0	10·14	545·6	522·5	10·14	543·9	497·1	09·15	543·9	489·7
20	22·65	550·8	539·1	09·82	548·3	521·5	09·98	541·2	499·2	09·29	543·7	489·7
25	21·71	550·6	544·4	08·79	549·5	521·1	09·87	540·8	499·8	09·20	544·0	,,
30	21·34	551·1	543·8	07·99	552·8	521·4	09·98	542·4	499·2	09·29	544·8	490·8
35	20·89	546·6	546·1	07·98	553·3	521·5	10·23	542·9	498·4	09·05	545·5	491·6
40	20·08	530·6	551·4	08·56	551·9	521·7	10·14	543·7	498·1	09·29	543·8	491·6
45	19·59	531·7	552·5	09·26	549·6	521·8	10·23	544·5	497·6	08·97	543·6	,,
50	18·16	533·4	551·1	09·53	546·5	522·9	10·31	545·8	496·9	08·58	543·8	491·5
55	17·74	542·8	552·5	09·59	547·1	524·9	10·31	545·3	496·2	08·55	543·2	491·4
		5h.			9h.			13h.			17h.	
0	25 17·06	545·7	548·4	25 09·66	546·3	525·5	25 10·23	545·3	495·2	25 08·14	543·1	492·0
5	16·87	546·9	545·8	09·86	545·6	526·9	10·13	545·3	496·8	08·34	543·2	491·4
10	16·86	540·7	545·8	10·00	546·3	527·0	10·31	545·3	494·4	07·94	541·9	,,
15	17·24	532·5	546·7	10·16	547·0	525·3	10·18	544·8	,,	08·11	540·8	493·9
20	16·70	531·7	545·8	10·36	545·7	526·1	10·00	544·4	494·3	07·81	540·8	494·0
25	16·19	534·5	543·9	10·48	546·5	525·2	10·04	545·1	493·9	07·44	540·2	494·1
30	16·08	544·3	539·3	10·30	546·3	525·2	10·11	545·1	490·8	07·99	540·1	494·9
35	16·39	555·0	530·9	10·33	546·0	,,	10·03	544·7	491·9	07·62	539·9	495·4
40	16·77	561·0	529·4	10·77	546·2	526·5	10·01	544·8	492·3	07·38	539·7	495·5
45	16·59	560·6	528·7	11·07	546·2	526·0	10·13	545·1	492·2	06·36	537·9	496·3
50	16·19	556·0	532·9	11·30	545·1	525·9	10·13	545·2	,,	07·49	538·7	496·1
55	15·14	550·4	537·9	11·28	544·6	525·3	10·20	545·3	489·3	06·77	537·9	495·5

BIFILAR. Observed 2m after the Declination, $k=0{\cdot}000140$. **BALANCE.** Observed 3m after the Declination, $k=0{\cdot}000010$.

The temperature of the bifilar and balance magnets, and the observers' initials, will be found at the corresponding hours in the Hourly Observations of Magnetometers.

When double commas (,,) occur in the column for the balance magnetometer, the needle was examined, and no change from the previous position being appreciable, the micrometers were not altered.

Göttingen Mean time of Declination Observation.	JUNE 18, 19.											
	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.
Min.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.
		18^{h}.			22^{h}.			2^{h}.			6^{h}.	
0	25 05·89	537·9	494·9	25 08·79	526·0	488·8	25 19·05	543·0	468·6	25 11·35	548·5	493·2
5	06·41	537·5	494·2	09·03	525·5	488·0	19·07	543·2	468·7	11·03	548·9	492·8
10	04·91	537·8	495·6	09·49	524·2	488·1	19·24	541·1	469·3	10·95	549·1	492·2
15	05·42	537·8	495·8	09·54	523·3	487·2	18·95	538·4	471·4	10·83	549·2	492·3
20	05·11	537·8	496·5	10·20	522·7	486·5	18·87	541·1	472·0	10·72	550·6	492·5
25	05·45	537·1	496·5	10·23	522·9	485·6	19·07	545·8	471·2	10·56	549·2	492·5
30	05·76	538·0	496·7	10·30	523·1	485·6	19·08	546·5	471·3	10·41	549·5	492·1
35	05·72	536·8	497·0	10·67	523·1	485·1	19·04	545·8	472·2	10·43	548·7	492·9
40	05·87	536·8	496·6	11·10	523·0	485·5	19·07	545·9	472·0	10·38	548·6	493·6
45	05·92	536·9	499·6	11·32	522·5	484·9	18·94	545·9	472·5	10·45	548·3	493·6
50	05·58	536·5	500·1	11·72	521·9	485·5	18·75	546·1	472·5	10·45	548·8	494·7
55	05·35	537·1	498·7	11·93	523·1	485·5	18·68	545·6	473·3	10·56	549·7	495·2
		19^{h}.			23^{h}.			3^{h}.			7^{h}.	
0	25 04·89	536·2	497·0	25 12·33	524·1	486·5	25 18·52	543·0	473·7	25 10·65	549·5	501·0
5	04·24	534·7	496·2	12·67	525·1	487·1	18·21	542·3	473·9	10·25	546·8	498·2
10	04·08	535·4	495·6	12·96	526·1	486·7	17·93	543·4	474·6	10·41	547·0	494·6
15	04·41	536·4	496·2	13·64	525·9	486·9	17·70	542·5	475·3	10·30	547·7	491·6
20	04·44	536·4	495·0	14·03	525·2	487·5	17·42	537·9	476·5	10·54	547·7	488·0
25	05·30	535·7	495·4	14·57	524·9	486·9	17·17	541·4	477·1	10·65	548·4	484·7
30	05·08	534·3	495·1	14·55	526·4	485·3	17·15	538·9	478·3	10·77	549·0	489·5
35	04·78	533·9	495·3	15·01	527·2	484·0	17·04	544·3	480·1	11·00	549·7	,,
40	04·10	534·3	495·2	15·44	527·3	483·1	16·82	542·4	481·7	11·10	549·4	491·3
45	05·05	535·2	494·3	15·64	528·2	482·2	16·70	542·0	482·0	11·10	549·9	488·6
50	05·18	534·3	494·7	15·99	528·4	480·8	16·55	543·0	482·4	11·30	550·1	488·9
55	04·81	534·2	494·7	16·46	529·1	479·9	16·55	544·2	482·8	11·30	550·7	489·2
		20^{h}.			0^{h}.			4^{h}.			8^{h}.	
0	25 05·32	533·7	495·4	25 16·75	529·7	478·7	25 16·33	544·5	483·3	25 11·17	549·0	489·6
5	05·55	532·9	495·6	17·06	530·5	478·2	16·19	545·0	484·3	11·30	550·8	,,
10	05·70	531·4	494·9	17·29	531·0	477·9	15·96	546·6	484·9	11·00	550·4	488·3
15	04·68	531·9	495·1	17·39	531·6	477·3	15·89	546·9	485·9	11·03	549·5	489·8
20	05·53	532·9	494·2	17·61	532·8	476·4	15·74	546·6	486·4	10·97	549·3	,,
25	05·69	532·5	494·6	17·49	534·5	475·0	15·76	547·2	487·2	10·75	549·4	490·3
30	05·62	531·7	495·0	17·46	535·6	474·1	15·71	546·9	488·3	10·75	548·6	494·5
35	06·81	530·0	494·9	17·40	535·8	472·9	15·49	547·0	489·4	10·60	547·2	496·1
40	06·21	530·2	494·8	17·37	536·5	473·0	15·36	547·4	490·3	10·67	546·8	496·6
45	06·63	529·9	494·8	17·47	536·4	472·0	15·22	546·4	490·9	10·77	547·3	496·6
50	06·46	529·0	494·9	17·44	537·7	471·8	14·80	546·2	491·5	10·70	547·0	496·3
55	07·08	528·3	493·7	17·56	538·3	471·4	14·55	546·5	492·4	10·80	546·5	495·6
		21^{h}.			1^{h}.			5^{h}.			9^{h}.	
0	25 06·37	528·0	491·9	25 17·61	537·8	471·6	25 14·55	547·8	492·6	25 10·63	546·9	494·1
5	06·70	529·5	491·5	17·56	539·9	471·1	14·17	547·9	493·1	10·90	547·5	492·9
10	07·20	529·0	491·1	18·03	540·2	471·4	13·90	547·6	493·6	10·68	547·1	492·1
15	05·62	529·7	489·0	18·00	539·2	472·3	13·63	547·4	493·6	10·63	547·1	490·9
20	07·27	527·1	493·1	18·01	539·1	472·5	13·36	548·1	493·7	10·75	547·1	489·3
25	07·45	526·0	494·2	18·10	541·4	472·4	13·20	549·2	493·6	10·60	546·9	489·0
30	07·87	525·3	494·6	18·25	542·1	472·2	13·05	548·9	493·7	10·43	546·4	488·8
35	06·77	526·0	493·2	18·47	543·1	471·6	12·60	546·7	493·7	10·61	546·1	488·8
40	06·59	525·5	491·5	18·79	541·5	471·3	12·33	546·7	493·8	10·40	545·9	488·6
45	07·25	525·5	,,	18·77	542·2	469·8	11·99	547·1	494·6	10·47	545·8	488·3
50	07·29	526·8	489·2	18·81	541·2	469·5	11·74	547·2	493·6	10·74	545·9	488·5
55	08·11	526·4	489·1	18·90	541·4	468·7	11·51	546·8	493·4	10·54	545·7	487·8

BIFILAR. Observed 2^{m} after the Declination, k=0·000140. BALANCE. Observed 3^{m} after the Declination, k=0·000010.

The temperature of the bifilar and balance magnets, and the observers' initials, will be found at the corresponding hours in the Hourly Observations of Magnetometers.

When double commas („) occur in the column for the balance magnetometer, the needle was examined, and no change from the previous position being appreciable, the micrometers were not altered.

öttingen ean Time of eclination servation.	JULY 23, 24.											
	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.
Min.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.
	10^{h}.			14^{h}.			18^{h}.			22^{h}.		
0	25 10·54	549·6	499·3	25 09·59	542·8	481·1	25 11·48	536·6	468·4	25 06·39	532·7	476·5
5	10·33	548·2	499·1	08·92	543·0	481·1	11·41	536·4	467·3	06·71	532·5	475·9
10	09·96	549·0	498·5	08·70	545·7	480·6	11·37	536·5	464·8	06·88	531·9	474·4
15	10·63	549·5	498·5	09·69	543·1	481·7	11·27	537·2	464·3	07·18	531·9	473·5
20	09·66	550·0	498·0	09·37	542·9	481·5	12·38	537·6	464·2	07·31	531·1	473·0
25	09·54	549·7	498·4	09·15	543·9	481·2	12·31	539·1	463·7	07·31	531·0	471·9
30	09·47	549·6	497·8	09·19	543·3	481·5	12·89	539·2	462·7	07·47	531·1	470·5
35	09·46	548·9	497·7	09·47	542·6	481·5	12·98	539·3	461·7	07·51	531·0	469·4
40	09·54	549·5	497·8	09·39	542·4	481·5	12·51	539·8	461·1	08·41	532·8	468·5
45	09·60	549·2	497·2	09·39	543·0	481·5	11·71	541·7	460·3	09·39	531·4	469·2
50	09·64	549·5	496·2	10·74	542·6	481·5	10·87	543·0	460·0	09·54	530·8	468·7
55	09·87	549·6	495·7	10·94	543·9	480·1	11·00	540·9	460·1	09·42	529·0	467·7
	11^{h}.			15^{h}.			19^{h}.			23^{h}.		
0	25 09·76	550·8	493·7	25 10·58	545·0	481·2	25 10·47	539·8	461·7	25 08·61	529·0	466·0
5	09·91	550·9	492·3	10·47	544·0	481·0	09·64	538·4	462·5	08·72	530·7	465·7
10	10·00	549·9	492·1	09·84	544·3	481·0	08·63	538·1	463·5	09·19	531·2	465·8
15	10·18	548·9	491·4	10·03	543·7	481·3	08·11	535·9	465·0	09·54	529·2	466·9
20	09·79	547·6	490·8	09·73	546·1	479·5	07·27	537·7	466·4	09·44	528·3	467·4
25	09·42	547·8	490·1	09·80	546·3	481·3	06·36	539·6	466·3	09·74	527·1	468·3
30	09·51	549·0	489·0	09·96	545·9	482·8	06·77	539·8	470·4	09·13	527·4	468·3
35	09·15	549·5	488·1	10·01	546·5	482·7	07·44	538·2	470·7	09·24	527·8	468·0
40	09·37	549·4	487·5	10·16	546·5	482·8	06·44	538·7	471·4	09·24	527·3	468·4
45	09·53	549·6	486·5	09·59	547·5	481·0	06·12	539·8	471·0	09·32	527·9	468·7
50	09·46	548·7	485·3	09·89	546·5	481·0	05·92	541·7	472·0	09·69	528·9	469·1
55	09·49	549·0	485·0	10·54	545·6	480·9	07·08	538·2	474·2	10·06	529·0	470·2
	12^{h}.			16^{h}.			20^{h}.			0^{h}.		
0	25 09·84	549·0	485·0	25 11·91	541·8	478·6	25 05·18	540·1	473·4	25 10·43	529·0	470·4
5	10·04	548·5	484·5	12·27	540·2	477·8	05·38	540·4	474·2	10·30	528·9	470·8
10	09·80	547·9	483·6	12·04	540·6	476·7	05·62	540·3	475·0	10·68	530·2	470·6
15	10·40	548·1	483·2	12·75	543·1	474·6	05·62	539·6	475·3	10·97	528·8	471·1
20	10·53	548·3	481·6	13·47	543·4	472·0	05·72	538·4	476·1	11·54	528·4	471·6
25	10·50	549·8	479·6	12·35	545·1	468·6	05·38	538·2	475·8	11·74	527·8	471·8
30	09·93	549·3	477·6	10·98	546·9	468·5	05·15	537·9	476·3	12·16	526·9	471·7
35	09·53	548·7	477·3	10·97	546·1	464·8	05·05	537·3	475·8	12·36	527·0	471·1
40	08·85	548·1	476·5	09·59	547·2	464·6	04·97	538·4	476·1	12·76	527·8	471·6
45	08·41	548·2	476·2	09·17	545·2	464·4	05·52	535·3	476·5	13·02	528·8	472·0
50	08·06	547·5	476·7	08·01	545·2	464·1	04·59	536·1	476·3	12·96	529·7	472·4
55	07·82	547·9	476·6	08·14	544·7	465·8	04·37	537·0	476·1	13·10	531·5	472·6
	13^{h}.			17^{h}.			21^{h}.			1^{h}.		
0	25 08·18	547·1	477·0	25 09·69	545·0	467·1	25 04·51	537·0	476·0	25 13·32	530·8	473·9
5	08·18	546·6	479·2	10·63	542·0	469·5	04·64	536·5	477·4	13·50	528·5	476·5
10	08·18	546·3	478·2	09·82	541·2	471·8	04·78	535·5	477·3	13·84	528·5	477·4
15	08·65	546·2	478·6	10·70	541·0	473·1	04·73	534·4	477·7	14·03	531·2	478·2
20	09·32	544·9	478·7	11·77	538·4	474·2	04·28	536·3	477·1	14·17	533·5	478·7
25	09·15	544·7	479·6	12·02	535·6	474·3	04·75	536·0	477·5	14·20	535·4	480·0
30	09·42	545·2	479·7	11·57	535·1	474·4	05·20	536·2	478·6	14·73	535·8	480·5
35	09·62	545·3	481·1	10·83	535·0	474·0	05·43	533·8	478·6	14·71	535·6	482·3
40	09·60	543·9	480·8	10·97	535·7	474·0	05·50	534·5	478·6	14·77	532·9	484·0
45	09·33	544·4	480·2	11·25	536·1	473·8	05·83	534·1	479·1	14·46	530·3	486·2
50	09·71	545·8	480·8	11·27	536·3	471·9	06·14	533·0	478·8	14·41	528·5	487·8
55	09·76	544·5	480·8	11·17	537·0	470·2	06·10	533·1	477·9	14·30	526·8	488·3

BIFILAR. Observed 2^{m} after the Declination, $k = 0·000140$. BALANCE. Observed 3^{m} after the Declination, $k = 0·000010$.

The temperature of the bifilar and balance magnets, and the observers' initials, will be found at the corresponding hours in the Hourly Observations of Magnetometers.

Göttingen Mean Time of Declination Observation.	JULY 23, 24.						AUGUST 29, 30.					
	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.
Min.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.
		2^h.			6^h.			10^h.			14^h.	
0	25 14·40	526·9	488·7	25 13·91	555·2	552·9	24 45·87	508·5	224·5	24 57·75	529·5	272·6
5	15·01	525·7	489·8	13·23	554·7	553·4	24 33·34	526·4	235·6	57·41	531·7	276·1
10	15·38	523·9	491·2	13·56	558·0	554·9	24 30·07	566·3	235·4	57·68	531·4	278·9
15	15·54	524·5	492·1	13·77	560·3	554·0	24 46·28	560·6	242·9	57·01	525·0	289·0
20	15·74	529·2	490·7	13·90	561·9	552·7	24 58·70	551·3	264·2	54·93	522·8	298·0
25	16·21	530·7	490·6	14·33	561·4	554·8	25 04·34	538·5	305·1	54·38	522·6	304·5
30	16·43	532·6	489·8	14·57	559·7	555·1	25 02·45	531·0	326·0	54·55	523·2	313·6
35	17·02	535·1	489·1	14·04	562·7	555·5	24 59·24	531·4	334·2	56·38	520·1	314·2
40	16·43	536·1	487·7	13·66	560·3	555·6	24 55·94	541·3	344·4	56·82	517·5	321·2
45	16·55	539·5	487·5	13·46	562·7	554·1	24 56·07	549·8	345·9	57·08	520·0	321·7
50	16·32	539·9	488·0	13·10	558·8	556·7	24 59·01	546·7	347·4	24 59·51	515·1	328·4
55	16·50	540·3	488·5	12·15	558·4	555·8	25 03·11	535·0	350·5	25 02·12	513·4	334·8
		3^h.			7^h.			11^h.			15^h.	
0	25 16·53	542·5	488·4	25 11·55	559·1	556·8	25 00·99	538·7	348·7	25 08·45	511·0	328·2
5	16·53	543·7	488·5	12·01	556·1	557·2	00·51	535·4	346·5	05·90	515·0	322·5
10	16·52	542·2	490·2	11·91	557·6	554·8	00·87	536·6	342·2	05·47	517·8	319·5
15	16·08	542·9	490·7	12·35	560·8	553·3	01·54	539·4	341·1	04·64	515·6	321·0
20	16·87	544·7	492·2	13·67	558·4	553·2	02·73	537·2	341·0	04·71	514·4	322·8
25	16·66	542·3	494·3	13·76	554·5	553·7	04·07	537·2	336·8	04·59	515·1	332·5
30	16·25	543·2	495·0	11·68	555·1	551·9	04·21	537·2	334·1	05·00	518·0	336·7
35	15·85	545·9	496·2	10·83	553·5	550·5	04·49	538·8	330·0	05·80	522·1	343·5
40	16·03	549·5	497·2	10·58	554·7	548·0	07·52	535·4	322·9	07·45	524·1	346·3
45	16·21	551·2	498·8	11·41	553·3	547·7	08·34	544·1	306·4	08·77	524·5	347·2
50	16·26	554·6	499·0	12·04	550·9	547·8	09·64	554·0	290·6	10·06	525·0	343·0
55	15·98	555·3	499·9	11·84	549·4	547·3	10·43	553·4	272·9	10·03	524·7	342·8
		4^h.			8^h.			12^h.			16^h.	
0	25 15·76	557·4	501·3	25 11·00	548·9	547·1	25 09·96	541·7	258·3	25 10·58	520·5	342·5
5	15·86	556·0	502·7	10·77	547·1	548·8	08·19	540·0	251·6	10·04	517·8	343·3
10	16·18	560·8	505·4	07·64	546·0	548·5	08·75	538·7	249·6	09·57	520·3	339·2
15	16·19	559·2	507·4	08·52	546·1	546·0	10·30	534·4	247·2	09·66	521·7	334·4
20	15·24	559·2	510·6	07·64	548·4	544·5	11·34	534·4	242·7	09·22	525·8	330·5
25	15·67	561·6	512·4	07·47	548·1	542·4	12·80	524·3	235·1	09·29	533·7	326·5
30	16·05	558·7	516·0	08·08	546·0	542·2	12·38	514·5	237·9	09·71	533·7	328·5
35	15·86	552·2	521·0	08·68	546·1	539·9	08·31	511·3	239·3	09·71	532·7	333·7
40	14·40	550·1	524·6	08·97	543·9	540·2	02·12	529·1	242·9	10·14	534·1	334·3
45	12·58	552·3	525·7	07·54	543·8	537·9	00·20	534·8	233·6	09·66	530·6	338·6
50	14·06	559·2	526·1	05·72	544·0	535·2	00·60	538·8	227·3	06·68	531·2	342·2
55	14·53	563·3	526·9	05·65	543·8	533·9	01·61	536·9	224·9	05·03	533·5	347·6
		5^h.			9^h.			13^h.			17^h.	
0	25 15·67	561·1	530·0	25 06·68	543·5	532·3	25 02·08	531·1	224·0	25 04·10	534·1	353·5
5	15·69	560·1	532·1	06·97	541·1	530·1	01·02	535·4	220·9	02·89	533·5	359·8
10	15·71	554·8	535·9	06·03	538·7	527·8	01·72	531·5	222·0	02·10	535·3	363·3
15	14·06	552·6	538·9	04·17	538·5	525·0	02·91	528·4	221·7	03·52	535·2	368·3
20	13·64	555·3	540·9	02·69	539·0	524·4	04·39	518·4	219·9	04·08	533·5	370·6
25	12·95	558·7	541·7	01·85	543·2	521·5	03·82	510·6	222·7	03·97	534·5	370·2
30	13·52	557·3	544·3	03·95	541·8	519·4	25 02·08	509·8	225·9	04·07	535·4	371·4
35	13·96	553·4	547·3	05·55	537·7	518·0	24 59·77	516·8	234·1	04·76	534·0	374·9
40	13·79	552·5	548·6	06·79	532·1	514·1	24 57·79	524·1	239·7	03·81	533·6	377·3
45	14·46	553·1	551·0	06·36	533·4	506·4	25 00·77	528·1	247·4	04·58	534·0	377·9
50	14·92	552·8	552·3	06·23	536·5	506·3	24 58·92	528·8	253·1	05·50	535·1	378·9
55	14·37	554·4	553·3	05·99	540·4	500·9	24 58·62	527·5	272·1	06·32	536·9	377·6

BIFILAR. Observed 2^m after the Declination, $k=0·000140$. BALANCE. Observed 3^m after the Declination, $k=0·000010$.

The temperature of the bifilar and balance magnets, and the observers' initials, will be found at the corresponding hours in the Hourly Observations of Magnetometers.

July 24^d 11^h. Extra Observations made.

Aug. 29^d 10^h. For observations before the commencement of the Term-Day Observations, see the Extra Observations of Magnetometers. See also the Notes, after the Extra Observations, upon the Aurora Borealis, seen before and after 10^h.

Göttingen Mean Time of Declination Observation.	AUGUST 29, 30.											
	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.
Min.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.
		18^{h}.			22^{h}.			2^{h}.			6^{h}.	
0	25 08·28	535·5	379·1	25 13·43	521·4	452·0	25 16·93	536·6	479·8	25 10·09	548·4	456·9
5	07·72	533·5	379·8	14·30	517·5	458·4	16·57	534·6	481·4	10·00	544·0	457·2
10	07·74	531·4	381·7	15·20	517·3	460·1	16·52	530·7	484·4	09·89	549·9	456·6
15	07·40	530·9	384·5	16·65	521·7	461·2	16·62	529·0	486·6	09·29	551·2	457·2
20	07·60	530·4	388·5	17·09	520·7	462·2	16·65	535·9	485·8	09·49	548·0	459·2
25	07·60	531·4	394·2	16·32	520·6	462·8	17·19	536·2	486·8	08·05	545·1	461·0
30	08·72	531·3	398·9	16·08	521·0	463·0	17·44	533·5	488·3	07·51	543·5	465·4
35	09·06	532·7	402·5	15·34	520·3	462·9	17·71	535·3	489·2	06·41	536·5	470·2
40	09·54	534·7	406·3	14·17	522·9	462·6	17·39	535·9	490·4	05·70	534·1	475·5
45	10·60	532·3	409·8	13·22	524·1	464·1	17·49	529·8	492·5	04·98	531·6	479·6
50	10·83	530·4	411·4	13·32	526·7	465·1	18·10	526·3	493·6	25 02·93	527·3	482·7
55	10·50	530·5	412·3	12·58	527·3	466·8	18·40	527·4	494·1	24 59·36	530·4	485·5
		19^{h}.			23^{h}.			3^{h}.			7^{h}.	
0	25 11·71	526·5	414·3	25 12·38	528·9	466·9	25 17·33	525·9	493·9	24 55·33	544·0	482·6
5	11·71	527·4	413·2	13·36	530·5	467·1	15·74	525·2	493·9	52·38	554·5	488·2
10	12·62	526·4	414·7	13·83	529·5	467·6	15·51	526·7	494·3	52·40	559·4	487·1
15	13·02	523·1	415·7	12·53	527·5	468·1	15·58	526·5	494·8	54·46	566·9	485·0
20	14·67	520·5	415·4	14·33	524·0	468·6	15·81	527·2	493·6	24 57·78	565·3	487·6
25	14·87	516·2	416·5	13·90	527·9	466·4	15·44	527·0	493·2	25 00·22	558·2	488·1
30	14·53	509·6	417·3	14·30	526·2	466·7	15·58	528·1	492·3	02·25	548·5	487·9
35	14·94	508·2	419·1	14·94	527·5	465·7	15·01	527·7	491·7	00·40	549·7	486·0
40	16·62	505·9	419·3	15·17	524·4	466·0	15·15	532·8	490·8	00·50	552·2	485·8
45	18·03	503·0	419·1	15·14	524·0	467·3	14·70	530·6	491·9	02·19	549·4	485·2
50	18·54	498·0	418·9	15·76	521·6	468·0	12·42	535·9	493·2	02·86	550·1	483·3
55	16·75	503·3	417·5	15·91	524·6	468·4	10·43	536·2	496·6	03·77	546·0	485·3
		20^{h}.			0^{h}.			4^{h}.			8^{h}.	
0	25 15·11	509·9	417·2	25 16·65	523·4	469·1	25 09·89	539·7	497·7	25 04·88	543·8	485·8
5	14·06	519·9	417·0	16·68	524·7	469·7	09·54	543·7	498·7	05·38	543·0	485·4
10	15·78	526·5	417·6	16·32	527·8	469·4	09·15	542·0	499·9	04·79	546·1	485·4
15	16·89	523·1	420·5	16·75	526·1	471·5	09·53	545·2	499·9	05·13	549·1	483·7
20	16·33	520·7	421·5	16·59	533·7	469·4	10·18	542·9	499·1	07·11	544·5	483·7
25	14·87	517·2	423·1	16·99	528·2	471·2	11·34	540·7	497·5	06·98	538·4	483·7
30	13·25	508·6	427·1	16·62	526·4	473·0	11·95	537·6	493·6	05·25	540·0	481·9
35	11·03	507·4	430·1	16·65	524·5	474·4	12·28	538·0	488·0	05·11	543·2	480·2
40	11·51	512·7	430·6	16·70	522·2	473·6	12·28	538·7	483·8	05·72	544·1	477·8
45	09·15	509·7	433·0	17·20	523·7	474·4	12·29	535·9	480·4	06·39	542·3	477·5
50	08·88	510·6	436·3	17·47	522·3	473·8	12·11	535·5	476·3	06·50	541·9	477·1
55	12·95	513·6	439·9	17·22	523·1	472·8	11·99	533·1	473·9	07·10	539·7	477·3
		21^{h}.			1^{h}.			5^{h}.			9^{h}.	
0	25 15·94	506·4	443·5	25 16·41	527·1	471·6	25 11·84	540·3	469·5	25 07·47	534·1	479·2
5	13·81	503·0	444·3	16·15	533·2	468·1	11·34	538·7	468·4	06·26	533·9	478·7
10	15·52	503·4	445·7	17·27	532·0	469·2	11·28	543·3	463·0	04·81	536·4	476·7
15	15·91	499·5	447·8	16·99	533·6	469·8	11·14	548·0	463·0	03·87	538·6	473·0
20	16·28	501·2	447·7	16·65	533·2	471·0	10·80	545·3	464·3	02·96	541·7	467·8
25	17·02	505·5	449·6	15·61	536·7	471·4	10·25	542·9	465·3	03·27	545·3	462·4
30	17·36	497·3	451·1	15·41	534·2	473·9	10·04	540·4	466·1	05·38	540·8	461·0
35	15·91	501·7	448·3	15·58	535·1	474·4	10·50	538·4	465·2	09·79	532·0	461·6
40	15·85	503·9	446·4	16·45	536·8	475·1	10·04	543·0	463·8	09·76	529·8	461·3
45	17·33	497·3	451·4	16·86	538·2	475·3	10·41	542·9	460·1	06·90	530·8	461·1
50	15·27	501·9	452·6	16·84	539·8	476·0	10·38	542·1	459·0	05·72	532·3	462·5
55	13·32	512·2	452·5	16·86	542·4	476·7	10·43	545·0	458·2	04·37	535·6	463·5

BIFILAR. Observed 2^{m} after the Declination, k=0·000140. BALANCE. Observed 3^{m} after the Declination, k=0·000010.

The temperature of the bifilar and balance magnets, and the observers' initials, will be found at the corresponding hours in the Hourly Observations of Magnetometers.

Aug. 30^{d} 9^{h} 32^{m}. Bifilar magnet vibrating 12 sc. div.

Göttingen Mean Time of Declination Observation.	SEPTEMBER 24, 25.											
	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANC Correcte
Min.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div
	10^h.			14^h.			18^h.			22^h.		
0	25 10·80	555·2	437·8	24 59·09	541·9	400·4	25 11·74	520·2	256·7	25 16·15	528·7	392·5
5	10·58	554·1	438·5	58·49	539·3	388·8	07·44	515·3	264·8	17·27	524·1	395·6
10	10·47	555·0	438·4	57·31	539·1	384·4	06·56	513·2	274·4	16·41	523·1	398·4
15	10·25	557·1	437·6	56·20	536·7	379·0	10·53	528·7	274·5	16·62	524·9	400·1
20	10·50	557·3	438·7	53·67	533·8	373·7	10·04	543·5	273·3	17·26	525·1	402·3
25	10·34	554·1	439·6	53·00	528·0	370·5	10·50	543·1	272·3	16·21	525·7	403·7
30	10·36	556·3	439·0	51·99	524·1	365·6	10·33	537·3	273·1	16·39	523·9	406·8
35	10·77	549·4	441·6	52·64	516·9	363·0	11·00	530·3	280·8	16·05	523·3	409·3
40	08·82	544·5	444·3	52·70	516·6	360·6	11·03	521·1	287·6	16·18	524·4	411·1
45	09·35	542·4	446·1	53·52	520·8	361·8	14·23	513·6	294·4	17·49	521·6	413·7
50	09·35	546·4	445·3	54·92	525·1	361·9	17·07	512·5	296·5	17·22	521·6	415·0
55	10·07	548·4	444·5	56·58	526·9	358·9	18·58	514·5	296·8	17·29	519·7	416·6
	11^h.			15^h.			19^h.			23^h.		
0	25 10·13	549·4	442·7	24 57·51	528·9	351·6	25 17·84	517·8	297·0	25 17·42	521·5	416·4
5	10·23	549·5	442·8	57·51	526·9	346·6	17·70	517·6	298·2	17·12	523·9	416·5
10	10·50	548·5	445·3	24 59·04	525·5	338·0	18·47	515·7	302·2	17·60	523·7	416·7
15	10·70	546·8	445·0	25 00·40	525·8	327·8	18·79	511·6	301·8	17·37	521·4	418·0
20	10·53	548·7	444·6	24 59·21	530·2	322·6	18·27	509·0	301·6	16·65	520·5	418·6
25	10·68	551·5	443·2	59·56	529·6	318·6	16·21	509·7	303·0	15·98	520·2	424·4
30	10·74	552·5	442·1	59·77	531·3	314·0	12·95	514·1	308·4	15·18	525·2	427·5
35	10·75	549·7	442·5	58·27	534·0	306·8	13·37	516·3	314·0	15·47	521·9	430·0
40	10·40	548·2	443·4	55·84	533·4	301·1	14·10	512·1	320·4	15·47	528·0	430·0
45	10·41	547·5	443·4	53·88	528·7	297·5	13·02	508·1	331·1	16·16	523·4	431·1
50	10·09	544·9	445·1	52·46	528·0	294·8	12·82	504·1	342·0	15·65	526·5	431·0
55	10·47	548·7	444·2	53·27	527·4	287·6	12·29	506·6	350·0	16·52	524·9	431·4
	12^h.			16^h.			20^h.			0^h.		
0	25 10·77	551·8	442·4	24 53·38	530·4	278·0	25 12·82	506·6	352·9	25 16·08	525·1	430·7
5	10·56	550·9	441·7	52·80	533·4	274·3	13·86	505·1	360·4	16·13	531·6	429·3
10	10·13	549·3	442·1	52·50	535·3	271·2	13·52	510·3	363·8	17·78	528·1	430·3
15	09·24	550·1	440·8	53·31	538·3	269·5	16·68	504·3	370·1	16·75	528·5	430·4
20	07·81	552·5	438·5	54·82	542·1	266·8	11·17	516·2	369·6	17·39	524·4	431·2
25	06·79	556·1	434·3	55·44	544·7	269·8	19·31	506·3	370·0	17·80	531·6	430·2
30	25 03·23	554·3	430·9	55·73	547·2	266·5	18·77	510·3	370·6	18·84	524·8	431·5
35	24 59·76	552·0	430·0	57·49	549·5	267·9	19·07	504·4	370·5	19·81	542·3	429·7
40	57·31	547·5	431·0	24 58·80	551·6	267·2	17·76	509·6	370·1	21·57	538·5	430·9
45	55·89	543·5	433·7	25 00·27	554·3	265·7	18·34	511·7	369·9	21·10	547·3	430·1
50	57·44	538·2	435·9	01·36	550·0	265·2	20·25	507·8	373·4	22·58	546·6	433·1
55	24 58·38	539·1	436·6	01·79	548·3	262·7	20·32	504·0	379·0	21·63	542·4	438·8
	13^h.			17^h.			21^h.			1^h.		
0	25 01·01	539·9	435·6	25 01·61	543·7	261·1	25 19·04	508·8	382·4	25 21·83	524·9	448·3
5	01·90	542·9	433·4	02·33	536·8	257·4	19·28	509·8	384·8	21·54	517·1	453·7
10	01·73	542·4	430·9	03·47	544·2	256·0	19·68	507·7	389·7	23·45	510·0	460·8
15	02·45	544·7	428·3	05·99	545·1	254·6	18·67	515·3	392·6	24·39	506·9	468·6
20	03·61	544·9	425·7	08·45	537·9	251·4	19·93	517·1	392·8	23·90	505·6	476·8
25	03·43	546·3	421·3	07·62	535·9	248·5	21·70	516·7	394·1	23·61	510·7	488·4
30	01·95	547·4	418·1	06·73	536·8	248·3	21·39	513·5	392·1	20·72	505·2	501·7
35	02·50	547·2	414·0	07·27	535·8	247·7	19·53	514·0	390·4	21·71	514·6	511·9
40	01·51	545·3	412·6	07·27	535·5	248·5	18·50	520·2	389·3	24·08	520·6	522·6
45	00·92	546·1	409·0	08·36	533·4	249·8	17·81	525·7	389·3	23·85	513·1	535·5
50	25 00·75	544·6	404·7	10·13	530·3	255·0	18·01	527·7	389·4	20·38	528·4	542·7
55	24 59·97	543·5	399·7	12·04	527·4	255·2	17·40	526·8	390·2	20·45	528·8	546·1

BIFILAR. Observed 2^m after the Declination, $k=0·000140$. BALANCE. Observed 3^m after the Declination, $k=0·000010$.

The temperature of the bifilar and balance magnets, and the observers' initials, will be found at the corresponding hours in the Hourly Observations of Magnetometers.

öttingen ean Time of clination servation.	SEPTEMBER 24, 25.						OCTOBER 22, 23.					
	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.
Min.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.
		2h.			6h.			10h.			14h.	
0	25 23·34	542·1	551·5	25 07·99	564·0	706·6	25 10·40	542·2	440·0	25 11·00	537·9	421·0
5	26·43	543·1	574·3	07·57	558·4	709·2	10·40	542·7	436·0	10·95	538·5	424·8
10	24·05	549·9	594·0	01·85	541·4	672·4	10·51	542·2	436·0	11·24	539·0	429·3
15	27·04	547·0	624·0	05·96	537·0	652·7	10·54	541·9	436·6	11·37	539·9	427·1
20	25·53	533·3	638·7	07·04	536·2	637·9	10·38	541·8	434·1	11·08	539·4	423·3
25	22·24	536·4	638·3	05·60	535·0	616·2	10·36	542·2	430·2	10·74	540·2	425·9
30	22·06	536·1	634·1	06·01	539·4	607·0	10·18	542·2	431·8	10·36	540·5	429·6
35	21·23	541·9	625·5	06·93	538·6	596·9	09·80	542·1	433·7	10·06	540·6	427·7
40	21·44	546·6	612·3	07·44	533·9	589·4	10·03	542·2	433·5	09·59	540·3	424·6
45	21·26	550·9	603·4	06·93	532·8	584·4	09·98	542·2	432·1	09·47	539·5	424·2
50	21·26	546·4	596·8	05·80	532·2	576·3	09·87	541·6	429·1	09·32	539·1	422·6
55	18·94	540·2	587·3	04·14	539·9	565·0	09·77	540·8	430·3	09·35	538·6	425·9
		3h.			7h.			11h.			15h.	
0	25 19·24	528·0	579·2	25 07·15	540·1	554·2	25 09·59	541·4	431·8	25 10·00	538·2	430·1
5	18·70	534·9	566·2	07·99	539·6	545·3	09·86	542·1	428·3	10·06	538·9	430·2
10	19·91	540·1	555·6	09·22	539·0	536·0	10·00	543·2	426·4	10·01	538·5	428·8
15	21·48	545·5	547·6	10·92	537·8	528·6	10·47	542·3	426·2	09·87	537·8	426·5
20	21·53	538·3	544·2	11·88	536·0	521·5	10·30	541·5	425·5	10·38	537·0	427·0
25	21·12	535·0	539·7	12·56	534·0	516·0	09·79	541·2	425·2	10·01	538·1	422·2
30	22·10	545·5	535·1	12·72	532·8	511·1	09·53	541·8	425·4	10·36	537·4	423·1
35	21·57	545·9	532·1	12·65	534·5	505·8	09·47	541·1	426·0	10·40	537·1	429·3
40	22·03	544·4	531·7	12·83	533·4	501·4	09·51	540·8	426·7	10·50	537·5	431·6
45	22·67	536·2	530·1	12·60	532·6	498·6	08·99	540·0	427·2	10·67	538·5	430·7
50	22·27	531·8	527·3	12·45	536·6	492·9	08·73	539·6	429·4	11·00	538·5	432·8
55	21·68	525·5	524·8	11·68	537·8	487·7	08·97	539·0	434·3	10·83	539·4	431·8
		4h.			8h.			12h.			16h.	
0	25 21·59	525·8	519·3	25 12·26	538·7	485·6	25 09·56	538·9	436·2	25 10·94	539·8	431·0
5	21·37	529·4	514·0	11·93	537·7	483·9	10·47	539·5	436·3	11·14	539·5	429·9
10	20·18	529·3	507·9	11·95	535·4	483·8	11·37	541·9	433·5	11·44	538·8	430·5
15	19·19	530·6	501·9	11·71	537·9	481·4	11·42	543·7	431·1	11·08	539·7	426·0
20	17·84	530·8	495·7	11·69	536·8	480·0	11·57	542·3	427·2	10·72	540·1	424·5
25	17·00	534·4	489·5	11·48	535·4	480·1	11·21	542·0	423·8	10·83	540·6	425·4
30	16·45	535·0	487·3	10·87	534·3	480·4	10·70	541·3	419·1	10·75	541·5	425·8
35	16·36	541·6	483·2	10·77	537·6	478·0	10·51	540·3	418·4	10·65	542·0	419·4
40	16·97	549·6	479·2	11·00	538·8	476·9	10·53	539·0	421·1	10·53	542·7	418·4
45	17·29	559·1	475·4	10·70	540·8	475·7	09·22	539·8	419·0	10·40	542·4	413·7
50	18·38	569·4	475·7	10·63	538·8	475·0	10·67	540·9	422·0	10·06	542·8	413·0
55	18·18	569·5	480·2	10·00	535·7	475·2	11·07	541·0	418·2	10·33	542·3	415·4
		5h.			9h.			13h.			17h.	
0	25 17·63	568·9	486·4	25 09·26	533·7	476·5	25 10·90	540·9	415·5	25 10·31	542·3	418·4
5	18·70	575·6	497·0	08·41	535·2	476·3	10·74	540·4	417·0	10·09	542·3	421·5
10	20·02	572·1	511·6	08·08	538·5	474·0	11·00	539·7	416·8	09·62	542·6	418·7
15	22·13	557·0	527·9	07·91	538·4	473·8	10·94	539·5	416·4	09·53	543·2	418·0
20	21·21	549·5	548·1	09·32	536·0	473·1	10·98	539·4	416·9	09·60	542·6	416·9
25	17·94	551·0	568·7	09·29	536·5	472·2	10·98	538·9	417·2	09·47	542·3	418·1
30	14·13	546·8	579·8	09·46	536·3	470·4	10·54	539·3	422·0	09·57	542·3	415·3
35	10·80	548·5	581·9	08·72	537·6	468·3	10·56	539·1	425·3	09·62	542·3	417·8
40	09·64	560·2	581·0	06·56	539·0	467·0	11·17	538·5	422·0	09·57	542·2	417·6
45	10·03	558·8	585·7	05·02	542·3	462·7	11·03	537·2	420·6	09·40	542·1	416·1
50	11·21	554·4	603·4	25 02·62	543·6	459·6	11·32	536.7	420·9	09·27	542·4	415·0
55	10·09	548·7	643·9	24 59·06	540·3	457·2	10·90	537·0	420·4	09·15	543·3	418·6

BIFILAR. Observed 2m after the Declination, $k=0·000140$. **BALANCE.** Observed 3m after the Declination, $k=0·000010$.

The temperature of the bifilar and balance magnets, and the observers' initials, will be found at the corresponding hours in the Hourly Observations of Magnetometers.

Göttingen Mean Time of Declination Observation.	OCTOBER 22, 23.											
	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.
Min.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.
		18^{h}.			22^{h}.			2^{h}.			6^{h}.	
0	25 09·47	543·3	421·0	25 10·09	529·6	434·0	25 14·41	535·7	433·3	25 10·94	542·7	431·6
5	09·89	542·2	423·4	09·86	529·9	433·1	14·44	536·6	434·4	10·80	542·4	431·8
10	09·46	542·7	426·3	09·94	529·6	432·3	14·24	537·0	434·1	10·90	542·8	433·1
15	09·60	542·5	427·5	10·23	530·3	431·7	14·40	536·8	435·0	10·83	542·9	432·5
20	09·57	541·4	426·6	10·47	530·9	430·7	14·03	535·9	435·2	10·80	542·7	432·5
25	09·62	541·5	429·4	11·10	530·0	431·6	13·91	537·9	……	10·60	542·3	432·6
30	09·40	542·3	432·5	11·12	529·6	431·0	13·96	538·4	435·2	10·67	542·5	431·6
35	09·62	542·1	429·8	11·07	529·9	430·3	13·96	537·0	436·3	10·60	542·7	432·4
40	09·77	541·5	426·7	11·57	530·8	430·2	13·59	538·1	436·0	10·67	543·2	433·8
45	09·54	541·5	428·9	12·15	528·3	430·8	13·69	539·0	436·4	10·63	543·4	432·7
50	09·86	541·6	432·5	11·41	526·6	430·7	13·39	538·0	436·9	10·63	543·4	433·2
55	09·80	540·7	433·4	11·21	528·6	430·3	13·16	538·4	436·9	10·51	543·4	433·3
		19^{h}.			23^{h}.			3^{h}.			7^{h}.	
0	25 10·06	541·3	430·0	25 12·46	528·1	431·0	25 12·98	538·7	437·1	25 10·48	543·2	433·4
5	09·79	540·7	428·2	11·91	527·1	431·6	12·83	538·8	437·5	10·56	543·2	432·4
10	09·77	541·2	429·5	11·74	525·7	431·7	12·75	539·6	447·2	10·56	543·5	432·4
15	09·76	541·5	430·8	12·01	526·4	431·9	12·69	540·0	437·6	10·51	543·6	432·9
20	09·79	540·8	427·8	12·18	526·5	432·3	12·46	539·3	437·6	10·45	543·6	432·2
25	09·76	540·3	426·7	12·09	527·6	432·1	12·22	539·3	437·5	10·48	543·4	434·4
30	09·74	540·0	428·2	12·36	528·4	432·2	12·11	539·1	437·7	10·38	542·7	433·6
35	09·74	539·4	428·2	13·05	528·4	432·0	11·98	540·4	438·5	10·36	542·8	434·2
40	09·82	539·3	430·8	13·05	528·5	432·1	11·77	539·2	438·2	10·40	543·2	432·2
45	09·87	539·1	432·9	13·14	528·8	431·4	11·66	539·7	438·1	10·33	543·1	432·6
50	09·79	538·6	435·1	13·16	530·0	431·1	11·62	539·7	438·6	10·41	543·1	432·1
55	09·60	538·0	434·2	13·56	529·3	431·8	11·41	539·2	438·1	10·40	543·0	432·1
		20^{h}.			0^{h}.			4^{h}.			8^{h}.	
0	25 09·54	537·6	435·8	25 13·94	529·9	431·3	25 11·27	539·9	438·0	25 10·33	542·9	431·3
5	09·15	537·0	436·9	14·10	529·8	431·2	11·27	540·1	438·0	10·40	542·8	430·3
10	09·00	538·0	435·6	14·01	529·9	430·8	11·22	539·5	437·4	10·50	542·7	431·3
15	09·08	538·3	433·1	14·26	530·5	430·8	10·83	538·9	438·3	10·43	542·6	431·2
20	09·45	536·3	434·4	14·33	530·7	430·3	10·90	538·7	438·1	10·51	542·5	431·1
25	09·06	533·5	436·7	14·23	532·0	429·9	10·50	538·5	437·8	10·41	542·5	431·2
30	08·99	534·8	438·2	14·68	533·6	430·0	10·54	539·5	438·0	10·36	542·4	431·6
35	09·35	535·5	437·5	14·67	533·1	430·1	10·87	539·9	437·3	10·43	542·4	430·9
40	09·49	536·2	435·8	15·20	532·6	431·3	10·53	540·2	437·4	10·43	542·4	430·9
45	09·60	535·4	433·7	15·05	529·0	432·3	10·48	541·0	437·6	10·47	542·4	430·6
50	09·30	534·4	430·6	14·91	530·0	432·6	10·41	540·7	437·2	10·50	542·5	430·7
55	09·08	534·2	430·1	14·84	531·4	432·2	10·47	540·2	437·2	10·56	542·5	430·3
		21^{h}.			1^{h}.			5^{h}.			9^{h}.	
0	25 08·99	534·2	431·3	25 14·99	532·7	433·6	25 10·40	541·0	436·7	25 10·50	542·5	429·9
5	09·29	532·4	432·0	14·85	533·7	433·2	10·41	541·6	436·4	10·50	542·4	429·6
10	08·72	532·2	433·1	15·17	533·7	433·4	10·43	539·2	436·2	10·50	542·2	429·5
15	08·68	532·2	435·0	15·22	532·2	433·7	10·43	542·1	436·0	10·50	542·1	429·5
20	08·25	533·2	435·4	15·05	533·1	433·7	10·43	542·7	436·0	10·50	542·2	429·8
25	08·66	532·9	435·1	14·99	535·1	433·1	10·43	541·9	436·0	10·50	542·2	429·9
30	08·38	532·1	434·9	15·27	533·9	433·0	10·43	540·9	436·0	10·50	542·3	429·6
35	08·88	532·1	435·1	14·75	534·0	433·5	10·36	542·9	435·8	10·50	542·4	429·3
40	09·05	532·2	435·7	14·94	532·7	433·7	10·43	540·8	435·5	10·51	542·6	430·0
45	09·35	531·8	434·6	14·57	534·1	433·9	10·56	541·5	435·6	10·50	542·5	429·6
50	09·53	531·3	434·3	14·40	534·8	433·9	10·60	542·1	434·4	10·50	542·4	429·6
55	09·60	531·4	434·2	14·35	535·5	433·4	10·67	542·3	433·4	10·50	542·5	429·7

BIFILAR. Observed 2^{m} after the Declination, $k=0·000140$. **BALANCE.** Observed 3^{m} after the Declination, $k=0·000010$.

The temperature of the bifilar and balance magnets, and the observers' initials, will be found at the corresponding hours in the Hourly Observations of Magnetometers.

NOVEMBER 28, 29.

öttingen ean Time of eclination servation.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.
Min.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.
		10^h.			14^h.			18^h.			22^h.	
0	25 06·39	541·1	405·9	25 07·74	539·1	401·4	25 07·17	543·3	381·0	25 05·38	534·8	392·8
5	06·43	541·7	405·6	08·61	537·7	400·9	07·29	540·8	381·3	05·11	536·8	392·0
10	06·61	542·1	405·0	08·36	539·2	400·2	07·15	543·1	382·0	05·29	537·0	390·8
15	06·59	542·0	405·3	08·43	541·5	398·2	07·87	540·6	381·8	05·77	537·5	390·8
20	06·73	542·7	407·0	07·45	541·7	396·8	07·74	540·9	382·4	05·05	535·2	389·2
25	06·70	542·0	406·2	07·13	540·8	393·3	07·99	543·4	382·0	05·05	540·5	387·9
30	06·37	541·9	406·2	06·71	540·0	392·2	07·87	545·4	381·3	06·90	537·5	389·1
35	06·39	541·9	406·5	08·70	538·3	391·7	08·38	542·8	381·5	05·79	538·4	387·7
40	06·43	542·1	407·2	09·82	537·5	390·6	07·94	541·2	380·8	06·26	537·0	387·5
45	06·43	542·3	407·2	10·77	540·5	386·6	07·82	542·1	382·6	05·82	537·0	387·1
50	06·48	542·7	406·9	11·77	540·4	384·9	07·81	542·4	381·6	07·32	539·2	388·1
55	06·83	541·7	407·1	12·29	539·1	382·4	07·85	543·2	381·4	06·09	539·2	387·4
		11^h.			15^h.			19^h.			23^h.	
0	25 07·15	541·3	407·0	25 11·37	538·4	375·2	25 08·68	543·6	381·9	25 07·89	539·0	388·1
5	07·10	541·1	407·2	11·37	541·5	370·5	07·85	545·6	381·1	07·94	534·1	389·4
10	07·00	541·5	407·3	08·66	540·9	368·6	07·74	542·7	381·9	07·05	538·8	389·4
15	06·90	542·1	406·5	07·13	540·4	367·2	07·24	544·7	381·7	09·15	537·6	389·5
20	07·08	542·4	406·0	06·36	541·0	369·2	07·84	543·9	382·0	08·48	536·8	389·9
25	06·86	543·2	405·7	06·64	539·4	370·2	08·11	545·7	381·6	08·52	538·1	390·7
30	07·13	543·3	405·5	06·66	538·7	372·4	08·19	542·9	381·9	07·94	537·1	390·9
35	06·79	542·4	406·4	06·88	539·1	373·2	07·35	545·5	382·4	07·98	538·0	392·2
40	06·73	542·4	406·0	07·18	540·3	375·3	07·76	542·2	382·8	08·72	536·9	392·8
45	06·76	542·7	405·2	07·57	540·3	375·9	07·85	543·7	382·9	07·67	537·0	393·5
50	06·86	543·5	406·1	08·11	540·7	376·1	07·20	543·4	382·9	09·08	537·5	393·6
55	07·05	543·3	406·0	08·05	541·1	377·0	06·46	542·4	384·6	09·82	536·2	395·3
		12^h.			16^h.			20^h.			0^h.	
0	25 06·83	542·5	405·9	25 07·64	542·0	376·9	25 07·38	540·8	386·0	25 09·56	537·4	394·5
5	07·17	542·3	406·4	07·49	542·6	378·1	07·44	544·1	384·5	09·77	536·8	395·2
10	07·25	541·6	406·9	07·47	542·2	378·1	07·74	545·5	384·4	09·22	537·0	394·8
15	07·07	540·6	406·2	06·90	543·4	378·3	06·98	543·0	384·0	09·57	537·7	394·5
20	06·93	540·3	406·6	07·31	545·5	378·8	07·18	544·0	384·0	09·42	538·4	395·2
25	07·37	540·9	406·4	07·34	544·2	378·8	06·50	543·1	384·7	09·54	536·7	395·9
30	07·47	541·7	406·8	06·95	544·1	378·2	07·57	541·9	386·7	09·32	535·9	396·2
35	07·15	541·3	405·6	06·26	543·9	378·1	07·89	542·7	386·5	09·57	534·0	396·3
40	06·90	541·6	405·3	05·58	542·6	378·1	07·35	544·6	385·4	09·66	536·2	396·7
45	07·07	541·8	405·3	04·84	543·0	378·4	07·45	543·8	385·4	09·56	535·4	396·9
50	07·08	543·1	405·5	04·81	543·3	378·9	07·38	544·9	385·9	09·19	534·8	398·0
55	07·05	541·8	405·7	05·02	543·4	378·9	07·58	543·1	385·6	09·12	535·3	400·0
		13^h.			17^h.			21^h.			1^h.	
0	25 06·97	541·1	404·8	25 05·52	543·0	380·5	25 07·92	541·4	387·1	25 10·31	535·2	401·1
5	07·37	541·3	404·0	05·94	542·0	382·5	07·85	539·3	388·8	10·33	534·2	401·9
10	07·58	540·7	404·0	05·69	543·3	381·7	06·63	539·9	389·3	10·47	535·7	402·6
15	07·04	540·1	404·8	05·63	542·3	382·3	07·31	541·0	389·8	11·41	534·2	402·9
20	07·07	540·9	404·3	06·53	542·9	382·5	07·07	538·2	390·2	11·39	538·1	404·0
25	07·07	540·3	402·1	06·17	542·4	381·7	06·12	539·1	391·9	11·61	538·9	403 4
30	07·07	539·6	403·4	05·82	544·0	381·1	06·93	535·4	393·1	12·45	538·5	403·6
35	07·32	538·9	403·0	06·06	541·5	381·5	06·12	536·5	393·7	12·22	535·7	404·7
40	07·54	539·8	401·0	06·12	542·8	381·6	06·16	534·1	394·2	11·91	534·1	405·7
45	07·71	540·0	402·3	06·16	544·8	380·3	05·63	533·5	394·4	11·98	533·9	405·4
50	07·89	540·3	401·9	06·26	544·1	380·0	05·05	532·4	394·2	12·45	534·2	406·0
55	08·08	539·8	401·2	06·23	544·9	380·7	04·98	535·1	393·5	11·77	532·3	406·2

BIFILAR. Observed 2^m after the Declination, $k=0·000140$. BALANCE. Observed 3^m after the Declination, $k=0·000010$.

The temperature of the bifilar and balance magnets, and the observers' initials, will be found at the corresponding hours in the Hourly bservations of Magnetometers.

Göttingen Mean Time of Declination Observation.	NOVEMBER 28, 29.						DECEMBER 24, 25.					
	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.
Min.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.
		2^{h}.			6^{h}.			10^{h}.			14^{h}.	
0	25 11·55	529·7	407·9	25 02·93	538·4	422·7	25 06·66	545·2	429·0	25 07·25	546·9	414·4
5	11·32	528·7	408·7	04·55	537·8	421·9	05·92	545·0	428·3	07·07	547·1	414·0
10	11·01	527·0	410·1	05·18	536·3	421·3	05·47	544·5	428·5	07·04	546·8	413·0
15	10·77	527·7	411·1	06·34	536·8	421·0	05·49	544·9	427·5	07·10	546·5	413·7
20	10·21	528·1	412·4	07·82	532·9	420·9	05·42	543·2	428·4	07·00	546·4	413·3
25	09·56	528·5	413·7	06·39	538·2	417·8	05·29	543·7	428·1	06·93	546·6	411·8
30	09·05	529·7	415·4	07·13	540·2	416·6	05·43	545·1	428·2	07·08	546·5	412·4
35	10·00	533·1	416·4	07·15	542·9	414·3	05·76	546·0	425·6	07·10	546·2	410·8
40	09·79	535·8	415·2	07·31	544·5	412·6	06·06	545·4	426·8	07·17	545·7	411·5
45	11·34	537·1	414·9	08·21	545·5	411·7	06·07	544·2	426·9	07·17	545·5	411·3
50	11·81	537·0	413·8	09·02	544·3	410·4	06·46	545·3	426·7	07·35	545·5	,,
55	11·41	536·0	412·6	09·05	543·1	408·9	06·59	546·3	425·6	07·40	545·7	411·1
		3^{h}.			7^{h}.			11^{h}.			15^{h}.	
0	25 11·00	535·9	411·3	25 08·19	540·9	409·8	25 06·63	547·5	424·2	25 07·45	545·5	410·0
5	09·73	537·2	410·2	08·38	542·5	409·8	06·71	547·2	423·4	07·44	545·0	409·7
10	10·16	539·4	409·5	08·95	541·5	408·8	06·53	547·1	422·7	07·57	544·9	,,
15	10·33	540·1	408·8	08·82	542·6	409·1	06·86	546·1	422·4	07·31	545·4	409·9
20	10·06	540·3	408·6	08·95	541·5	409·3	06·79	545·8	422·7	08·01	545·4	407·7
25	09·89	540·0	408·0	08·58	542·5	408·3	06·84	546·8	422·0	08·25	545·3	408·4
30	09·89	541·1	408·0	08·43	543·0	408·8	07·24	547·6	421·8	07·78	545·8	408·4
35	10·09	542·3	407·8	08·50	543·4	407·4	07·27	547·3	420·3	07·71	545·9	,,
40	10·13	542·2	408·1	09·19	544·4	407·4	07·54	546·4	420·7	07·74	545·8	408·2
45	10·11	542·0	408·1	08·41	544·9	405·7	07·54	547·8	420·2	07·91	545·9	407·0
50	10·06	545·0	408·6	08·08	544·7	405·0	07·72	547·7	419·4	07·98	546·2	406·1
55	08·86	543·0	407·2	08·21	544·6	405·0	07·65	547·5	418·8	07·98	546·3	406·3
		4^{h}.			8^{h}.			12^{h}.			16^{h}.	
0	25 09·89	541·7	409·2	25 08·03	544·3	404·5	25 07·84	547·6	418·9	25 07·98	546·2	407·5
5	10·16	542·7	409·7	07·92	544·5	405·4	07·82	548·1	418·1	08·03	546·5	406·3
10	10·06	544·8	408·8	07·74	544·1	405·3	07·82	547·5	418·2	08·08	546·6	407·0
15	09·62	545·4	409·4	07·60	543·9	405·4	07·78	546·9	418·0	08·09	546·4	,,
20	09·96	544·9	409·4	07·55	543·4	404·6	07·84	546·6	418·7	07·89	546·5	406·9
25	10·16	544·3	409·8	07·78	543·1	403·5	07·72	546·6	418·5	07·71	546·5	406·0
30	10·16	543·9	410·7	07·67	543·3	404·6	07·84	547·0	418·2	07·65	546·5	405·4
35	10·51	541·2	411·8	07·60	543·1	403·9	07·79	547·4	417·7	07·74	547·0	405·6
40	11·24	537·2	413·9	07·47	543·3	403·1	07·82	547·2	417·9	07·76	546·8	406·2
45	11·68	528·6	416·9	07·25	543·9	403·1	07·74	546·7	418·2	07·78	546·9	405·2
50	09·44	517·7	421·4	07·13	543·3	402·9	07·78	546·8	417·3	07·78	546·8	405·3
55	05·25	518·0	423·7	07·13	543·9	402·7	07·72	547·0	418·2	07·72	547·0	405·2
		5^{h}.			9^{h}.			13^{h}.			17^{h}.	
0	25 00·40	522·2	424·7	25 06·97	543·9	402·0	25 07·62	547·3	415·5	25 07·74	547·1	405·4
5	25 01·54	523·1	427·0	06·98	544·0	400·9	07·69	547·5	416·1	07·81	547·1	405·5
10	24 57·28	524·5	430·1	06·93	544·0	398·5	07·81	547·3	415·9	07·79	547·0	406·5
15	56·63	525·7	431·2	06·74	544·5	400·1	07·69	546·8	415·8	07·74	547·1	405·8
20	56·34	529·7	430·2	06·74	545·0	397·4	07·57	546·7	415·3	07·67	547·1	406·5
25	56·94	532·4	428·6	06·76	543·4	397·2	07·62	547·2	,,	07·67	546·9	406·0
30	58·22	534·1	427·9	06·39	543·9	396·6	07·57	547·2	415·8	07·65	546·7	405·5
35	57·07	538·7	425·7	06·27	543·6	396·6	07·67	547·4	415·0	07·58	546·3	405·5
40	58·09	540·3	425·7	06·56	542·9	396·6	07·51	547·2	414·9	07·54	546·9	404·8
45	24 59·09	539·6	424·6	06·51	541·7	396·9	07·51	547·3	414·6	07·51	547·7	404·0
50	25 00·11	539·7	423·8	05·12	541·3	396·5	07·60	547·4	414·3	07·51	548·0	403·8
55	25 01·51	539·8	423·6	05·65	542·0	396·2	07·60	547·0	,,	07·78	547·7	403·6

BIFILAR. Observed 2^{m} after the Declination, $k=0·000140$. BALANCE. Observed 3^{m} after the Declination, $k=0·000010$.

The temperature of the bifilar and balance magnets, and the observers' initials, will be found at the corresponding hours in the Hourly Observations of Magnetometers.

When double commas (,,) occur in the column for the balance magnetometer, the needle was examined, and no change from the previous position being appreciable, the micrometers were not altered.

ttingen an Time of lination ervation.	DECEMBER 24, 25.											
	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.
Min.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.
		18^{h}.			22^{h}.			2^{h}.			6^{h}.	
0	25 07·40	548·8	402·7	25 07·38	545·0	396·6	25 10·45	546·1	399·5	25 08·11	548·4	389·4
5	07·25	548·6	402·4	07·40	545·1	397·0	10·38	545·8	399·6	08·29	547·9	388·6
10	07·20	548·4	401·8	07·81	545·4	397·3	10·51	546·4	399·4	08·38	547·5	388·6
15	07·05	548·5	400·4	07·87	545·1	397·0	10·75	546·6	399·5	08·38	547·0	,,
20	07·05	548·7	401·4	07·47	544·9	396·9	10·81	546·3	399·3	08·56	547·4	388·3
25	07·10	548·6	401·3	07·81	544·5	396·8	10·78	547·8	399·4	08·21	548·0	387·8
30	07·10	548·6	400·9	08·08	545·2	396·9	11·14	547·6	399·7	08·29	547·9	385·4
35	07·18	549·0	400·7	07·87	544·9	396·9	10·80	546·6	399·8	08·38	547·7	386·0
40	07·34	549·0	400·6	08·08	545·3	396·8	10·63	546·9	399·5	08·28	547·6	386·2
45	07·44	548·5	400·5	08·31	544·6	397·2	10·70	547·1	399·2	08·08	547·7	387·1
50	07·47	548·1	400·1	08·11	544·6	397·5	10·54	547·4	399·1	08·14	547·9	386·5
55	07·34	548·3	399·9	08·52	544·1	397·8	10·43	547·4	399·4	07·94	548·0	385·9
		19^{h}.			23^{h}.			3^{h}.			7^{h}.	
0	25 07·34	548·0	400·1	25 08·63	544·2	398·2	25 10·47	547·5	399·7	25 07·87	548·3	385·4
5	07·20	548·0	400·1	08·65	543·7	398·5	10·23	547·7	399·1	07·84	548·2	385·5
10	07·17	548·5	400·0	08·70	543·3	399·0	10·14	547·7	399·1	07·85	548·2	384·2
15	07·20	548·0	399·6	08·52	543·2	399·2	10·06	548·3	398·9	07·85	548·2	384·9
20	07·07	548·0	399·3	08·41	543·2	399·5	10·07	548·5	398·7	07·87	548·5	385·9
25	07·07	547·9	399·8	08·80	543·1	400·2	09·89	548·2	398·0	07·84	548·5	385·7
30	07·01	548·6	399·3	08·82	542·4	400·7	09·86	548·6	397·9	08·03	548·6	383·7
35	07·13	548·6	399·2	09·05	542·6	400·6	09·77	548·0	397·3	07·92	548·1	384·4
40	07·07	547·7	399·3	09·19	543·0	400·0	09·56	547·7	396·9	07·87	548·1	384·4
45	07·08	548·0	399·3	09·19	543·2	400·4	09·42	548·1	395·9	08·01	548·2	384·2
50	07·15	547·6	398·9	08·72	543·3	400·0	09·35	547·7	395·9	07·51	548·2	384·4
55	07·17	547·6	398·9	09·35	543·3	399·9	09·19	547·8	395·6	07·74	548·2	384·6
		20^{h}.			0^{h}.			4^{h}.			8^{h}.	
0	25 07·13	547·7	398·5	25 09·26	543·5	400·1	25 09·00	548·0	395·6	25 07·84	547·8	384·8
5	07·27	547·7	398·7	09·62	543·7	399·4	08·99	548·0	395·2	07·78	547·8	384·8
10	07·18	547·1	398·5	09·79	543·8	399·6	08·85	547·4	394·9	07·71	547·8	385·8
15	07·20	546·8	399·1	09·59	543·1	399·8	08·79	547·4	395·0	07·60	548·1	385·8
20	07·29	546·5	399·1	10·27	543·3	399·9	08·72	547·4	394·5	07·60	548·1	387·1
25	07·07	546·5	399·0	10·16	543·0	399·9	08·65	547·4	394·7	07·67	547·7	387·2
30	07·05	546·8	398·9	10·33	542·6	400·1	08·55	547·5	394·2	07·78	547·8	386·6
35	07·05	546·6	398·6	10·30	544·5	400·4	08·53	548·1	392·9	07·76	548·2	386·7
40	07·13	546·3	398·6	10·30	543·3	400·3	08·34	548·4	392·3	07·71	547·8	386·5
45	07·31	546·5	398·7	10·30	543·8	400·2	08·21	548·4	392·3	07·91	547·1	386·5
50	07·17	546·7	398·5	10·54	544·3	400·1	08·21	548·4	392·7	07·81	547·4	386·6
55	07·10	546·1	398·4	10·83	544·2	399·8	08·34	548·1	392·8	07·81	547·5	386·6
		21^{h}.			1^{h}.			5^{h}.			9^{h}.	
0	25 07·04	546·4	397·9	25 10·75	544·3	400·2	25 08·18	547·8	392·2	25 07·78	547·3	386·4
5	07·10	546·9	397·9	10·65	544·6	399·9	08·18	547·6	392·0	07·78	546·8	386·2
10	07·20	546·2	397·6	10·70	544·7	400·2	08·21	547·7	392·4	07·76	546·2	387·0
15	07·10	546·6	397·9	10·70	544·9	400·6	08·31	548·3	391·7	07·74	546·6	386·9
20	07·40	546·5	397·6	10·34	545·0	400·1	08·28	548·5	391·3	07·67	546·0	387·4
25	07·10	546·7	397·5	10·53	544·8	399·6	08·23	548·5	391·3	07·67	545·9	387·3
30	07·07	546·0	397·7	10·30	544·4	399·7	08·31	549·3	389·8	07·54	546·4	387·8
35	07·24	545·9	397·6	10·20	545·4	399·4	08·34	548·9	390·3	07·57	545·8	387·7
40	07·24	545·9	397·6	10·30	545·4	399·3	08·34	548·3	390·2	07·84	545·1	386·5
45	07·32	545·7	397·2	10·18	545·6	399·8	08·41	548·2	390·5	07·60	545·2	385·2
50	07·27	545·5	396·8	10·47	546·0	399·8	08·31	548·6	390·1	07·47	544·8	385·6
55	06·83	545·2	396·0	10·51	546·3	399·3	08·28	548·5	389·7	07·52	544·1	384·9

BIFILAR. Observed 2^{m} after the Declination, k=0·000140. **BALANCE.** Observed 3^{m} after the Declination, k=0·000010.

The temperature of the bifilar and balance magnets, and the observers' initials, will be found at the corresponding hours in the Hourly Observations of Magnetometers.

When double commas (,,) occur in the column for the balance magnetometer, the needle was examined, and no change from the previous position being appreciable, the micrometers were not altered.

EXTRA OBSERVATIONS

OF

MAGNETOMETERS.

MAKERSTOUN OBSERVATORY.

1845.

Gött. Mean Time.	DECLINATION.		BIFILAR Corrected.		BALANCE Corrected.	
d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.
0 15*	0	25 11·17	2	532·8	3	615·3
	10	12·92	12	540·9	13	611·9
	15	13·81	17	541·3	18	611·5
	30	15·98	32	534·0	33	605·9
	45	11·08	47	532·1	48	599·6
	55	08·68	57	527·9	58	601·6
0 16*	0	08·05	2	526·3	3	603·4
	5	08·14	7	526·8	8	606·0
	15	09·96	17	528·9	18	609·1
	20	10·98	22	529·4	23	611·2
	25	11·39	27	530·0	28	610·1
0 17	0	11·91	2	533·1	3	610·4
1 4	0	25 12·08	2	528·7	3	643·2
	10	10·77	12	537·6	13	641·0
	15	11·44	17	537·5		
1 5	0	12·20	2	537·1	3	640·3
1 7	0	12·67	2	531·9	3	631·9
	10	04·44	12	535·6	13	630·1
	15	04·24	17	539·7	18	629·3
	20	01·65	22	547·5	23	627·4
	25	03·43	27	549·2	28	,,
	30	06·63	32	544·7	33	628·4
	40	11·44	42	538·4		
1 8	0	11·34	2	536·2	3	626·5
	30	13·93	32	534·7	33	624·6
1 9	0	12·96	2	536·2	3	621·2
1 10	0	08·19	2	537·4	3	620·7
	10	08·82	12	537·4	13	620·6
1 11	0	11·61	2	532·9	3	619·1
2 10	0	25 06·68	2	529·6	3	632·5
	10	07·34	12	530·3	13	632·6
2 11	0	13·05	2	536·0	3	621·5
3 15	0	25 11·37	2	539·9	3	593·5
	10	10·56	12	538·3	13	595·2
3 16	0	12·02	2	535·6	3	598·8
7 7*	0	25 14·44	2	537·3	3	602·6
	15	13·46				
	32	15·51	33	535·0	34	610·0
7 8	0	13·19	2	532·0	3	608·8
7 21	0	25 17·60	2	540·0	3	597·2
	15	18·07	17	542·0		
7 22	0	17·54	2	541·8	3	593·1
9 2	0	25 22·37	2	533·0	3	607·0
	10	24·22	12	531·0	13	611·3
	20	24·59	22	528·7	23	614·2
	30	23·11	32	530·2	33	614·2
	40	22·87	42	534·1	43	612·0
9 3	0	21·90	2	532·7	3	614·6
9 5	0	15·47	2	536·9	3	647·9
	15	19·73	17	533·1	18	658·2
	20	20·29	22	532·0	23	658·5
	30	20·65	32	532·7	33	658·2
9 6	0	16·43	2	537·6	3	653·4
9 7*	0	12·93	2	535·4	3	663·0
	10	12·22	12	532·5	13	665·3

Gött. Mean Time.	DECLINATION.		BIFILAR Corrected.		BALANCE Corrected.	
d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.
9 7	15	25 11·01	17	534·1	18	665·1
	25	09·96	27	537·3	28	663·5
	30	09·08	32	530·4	33	667·6
	35	09·26	37	531·5	38	668·8
9 8*	0	06·59	2	525·0	3	688·4
	5	06·43	7	524·1	8	695·0
	20	07·78	22	530·5	23	726·3
	25	07·51	27	536·5	28	731·1
			32	534·0	33	730·5
	35	09·08	37	536·2	38	726·9
	50	09·49	52	522·9	53	728·4
	55	05·45	57	528·2	58	733·6
9 9*	0	25 00·27	2	558·8	3	766·6
	5	24 59·12	7	580·0	8	832·4
	10	59·23	12	554·4	13	869·7
	15	58·42	17	542·1	18	848·6
	20	57·34	22	528·7	23	820·1
	25	58·94	27	516·5	28	806·9
	30	24 59·43	32	504·4	33	789·0
	35	25 00·60	37	503·4	38	767·9
	40	24 56·13	42	520·9	43	738·1
	45	24 58·36	47	515·4	48	733·0
	50	24 59·06	52	511·1	53	729·9
	55	25 00·18	57	504·3	58	704·9
9 10*	0	04·14	2	499·7	3	682·3
	5	04·31	7	543·8	8	694·5
	10	07·13	12	503·6	13	640·9
	15	25 04·66	17	511·5	18	605·4
	20	24 51·86	22	599·2	23	633·4
	24	26·43	24	587·7		
	25	19·63	26	561·2		
	26	18·89	27	543·7	27	580·0
			28	534·4		
	29	22·32	29	529·0		
	30	31·07	30	517·0	31	517·6
			31	515·7		
	32	32·89	32	515·2		
			33	515·4	34	557·9
	35	31·74	35	514·7		
	36	34·00	36	509·9		
			37	506·1	37	502·3
	38	36·05	38	501·8		
			39	501·2	39	499·8
	40	33·87				
	42	41·70	42	493·9		
			43	490·1	43	487·0
			44	485·2		
	45	40·63	45	481·3		
			46	479·4		
			47	475·9		
			48	473·6	48	471·4
			49	474·6		
	50	37·29	50	477·0		
			51	483·2		
	52	40·15	52	481·2		
			53	480·1	53	410·9
			54	479·7		
	55	48·27	55	478·9		
			56	473·5		
			57	471·0		
			58	466·5	58	368·1

Gött. Mean Time.	DECLINATION.	
d. h.	Min.	° ′
9 10		
9 11*	0	24 56·61
	1	55·39
	5	46·82
	7	44·73
	9	46·21
	10	46·70
	12	48·87
	15	24 54·72
	19	25 00·20
	20	25 00·01
	22	24 59·26
	25	58·87
	27	49·95
	29	41·00
	30	39·34
	32	41·27
	35	41·11
	37	41·16
	40	41·70
	45	47·73
	47	47·17
	50	39·07
	55	39·01
9 12*	0	44·54
	5	50·87

BIFILAR. $k=0·000140$. BALANCE. $k=0·000010$.

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* See notes on the Aurora Borealis, *after* the *Extra Observations of Magnetometers.*
Jan. 9d 10h 23m. Bifilar reading probably highest (615) at this time.
Jan. 9d 11h 22m. Bifilar vibrating 20 sc. div.

IFILAR rrected.	BALANCE Corrected.		Gött. Mean Time.	DECLINATION.			BIFILAR Corrected.		BALANCE Corrected.		Gött. Mean Time.	DECLINATION.			BIFILAR Corrected.		BALANCE Corrected.	
Sc. Div.	Min.	Mic. Div.	d. h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.
458·4			9 12				6	477·3			9 14	45	54	54·84	47	445·4	48	650·2
455·4							7	470·8	7	381·9					49	423·7		
446·0				9	24	48·67	9½	461·2	8	385·2		50	25	00·37	51	429·3	52	633·9
443·0				10		47·96	10	464·5							53	431·3		
445·1	3	375·6					11	470·5	11	388·0					54	429·8		
447·4				12		47·35	12	469·9				55		04·31	57	426·8	56	618·2
454·9							13	474·5	13	386·2					59	451·1	58	611·3
455·6							15	476·5			9 15	0		04·95	2	445·4	3	603·5
463·3							16	480·6	16	408·8					4	430·7		
467·1	8	367·4		17		46·72	18	497·2	18	425·6		5		08·29	7	426·9	8	572·7
466·7							19	499·5							9	436·5		
462·2				20		47·35	20	495·9				10		14·91	12	422·6	13	598·8
459·0	11	353·8					21	494·0							14	424·6		
462·3				22		49·17	23	490·2	23	456·0		15		26·65	16	413·1		
470·2	13	339·8					24	482·0							17	407·7	17	608·7
474·7				25		49·74	25	477·3							18	408·7		
474·2							27	474·4							19	409·8	19	612·0
472·3	16	314·9					28	479·6	28	454·6		20		29·77	22	427·5	23	626·3
470·8				30		49·51	31	480·4				21		27·68				
463·3	18	300·1					32	481·0	33	477·1		24		23·96	25	461·6	26	659·5
460·5							34	495·9				27		21·63	28	486·2	29	661·0
458·7	21	299·3		35	24	53·27	36	507·3	36	506·0		30		18·45	31	494·9	32	641·7
474·2							37	513·6	37	517·8					33	495·6	34	634·6
470·2	23	313·2		40	25	00·40	41	525·1							35	497·2		
460·1							42	523·3	43	544·4		36	25	05·69	38	499·8	37	643·5
449·3				45		05·42	46	511·1	48	539·4		40	24	57·89	42	507·3	43	645·7
449·2	26	323·1					49	529·5				45		56·57	47	503·3	48	640·7
450·0				50		11·22			51	549·6		50		58·82	52	499·8	53	642·5
458·9	28	359·9					52	552·1			9 16	0		55·47	2	500·3	3	631·1
471·5							53	547·7	54	557·5		5	24	57·68	7	506·7	8	631·8
479·1				55		10·50	56	567·5				20	25	00·03	21	526·0	22	630·1
473·9	31	368·3					57	573·5	57	571·5		36		09·05	37	502·6	38	633·6
470·4							58	567·0				51		05·52	52	512·3		
465·9	33	360·7					59	558·3			9 17	0		06·09	2	524·1	3	647·1
459·0			9 13*	0		06·70	2	543·6	3	594·3		10		08·36	12	510·8	13	643·5
460·4	36	349·2		5		08·68	7	534·8	8	631·6		30		09·82	32	510·3	33	642·3
459·6				10	25	07·05	12	502·8	13	618·3		51		10·33	52	521·7	53	632·3
459·0	38	342·1					14	497·9			9 18	0		10·90	2	522·9	3	629·4
453·9				15	24	55·47	17	498·3	18	575·2		15		13·49	16	525·5	17	619·1
450·3	41	333·1		20		54·92	22	476·1	23	528·4	9 19	0		12·48	2	531·5	3	614·0
446·1							24	474·7				10		13·03	12	529·8	13	615·8
445·4	43	335·1		25		59·43	27	488·8	28	545·2		20		13·57	22	530·9	23	614·0
446·5							29	496·2			9 20	0		14·46	2	529·7	3	611·3
441·8	46	345·7		30		54·10	32	514·7	33	578·3								
443·0	48	363·2		35		47·76	37	505·6	38	561·2	10 8	0	25	10·92	2	518·7	3	648·5
447·1				36		47·84	39	502·6				10		11·98	12	519·4	13	652·7
446·9				40		48·33	42	495·4	43	546·7		30		13·72	32	525·9	33	643·9
447·6				45		52·70	47	498·7	48	562·5		50		04·58	52	552·3	53	612·5
444·9				50		51·49	52	486·6	53	571·9		55		06·46	57	554·2	58	604·0
439·9	53	362·5		55		46·70	57	476·8	58	555·7	10 9	0		09·74	2	537·3	3	604·6
436·5			9 14*	0		45·27	2	479·2	3	570·4		5		06·63	7	534·0	8	600·7
430·5				5		44·32	7	475·2	8	576·9		10		04·37	12	543·2	13	595·0
429·4				10		44·76	11	448·2	12	552·6		15		06·27	16	543·5	17	593·3
423·9							13	441·2				25		10·67	27	540·9	28	589·5
414·7	58	329·5		15		49·98	17	458·5	16	551·4		30		14·13	32	537·1	33	590·8
411·9							19	472·7	18	568·5		35		14·89	37	527·8	38	594·8
422·6				20		53·07	22	479·0	23	593·9		41		13·81	42	526·9	43	597·0
438·3				25		51·19	27	478·1	28	605·4	10 10	0		13·61	2	527·6	3	601·1
450·7	3	335·3		30		51·43	32	472·1	33	605·5	10 13	0		15·71	2	537·9	3	581·2
463·8				35		52·15	37	460·4	38	609·5		10		14·85	12	537·5	13	579·1
472·7				40		53·20	42	464·1	43	640·7	10 14	0		12·69	2	527·6	3	589·6

BIFILAR. k=0·000140. BALANCE. k=0·000010.

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* See notes on the Aurora Borealis, *after* the *Extra Observations of Magnetometers.*

Jan. 9^{d} 15^{h} 4^{m}. Bifilar vibrating 20 div.

Jan. 9^{d} 15^{h} 5^{m}. Bifilar vibrating 12½ div.

Gött. Mean Time.		DECLINATION.			BIFILAR Corrected.		BALANCE Corrected.	
d.	h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.
10	14	15	25	11·91	17	527·9	18	590·1
10	15	0		12·01	2	528·3	3	597·5
11	7	0	25	07·24	2	538·4	3	619·3
		10		08·25	12	535·9	13	619·2
		20		08·38	22	541·4	23	616·4
		30		10·36	32	540·5		
11	8	0		14·53	2	531·7	3	613·2
12	13	0	25	17·20	2	535·4	3	577·5
		30		14·91	32	541·3	33	583·6
12	14	0		14·80	2	531·3	3	591·5
12	16	0		15·61	2	528·8	3	600·2
		30		15·34	32	532·5	33	593·2
12	17	0		21·91	2	522·3	3	595·8
		11		22·74	12	520·2	13	592·8
		15		21·93	16	520·4	17	590·2
		27		19·04	28	529·3	29	582·6
		40		18·82	41	531·8	42	579·8
		55		17·65	57	532·4	58	580·8
12	18	0		17·26	2	533·9	3	580·4
		30		15·61	32	535·6	33	588·2
12	19	0		14·71	2	536·3	3	595·1
14	11	0	25	11·17	2	544·9	3	576·4
		10		09·93	12	545·9	13	573·7
		15		09·33	17	545·5	18	572·4
		35		09·17	37	538·0	38	570·7
		40		09·02	42	536·3	43	570·1
14	12	0		09·76	2	534·5	3	572·1
		10		11·71	12	529·2	13	574·5
		15		11·81	17	529·5	18	575·4
		35		13·90	37	533·3	38	574·7
14	13	0		16·48	2	537·2	3	570·3
		10		16·65	12	537·7	13	569·2
		38		13·22	39	537·9	40	569·2
14	14	0		12·98	2	533·5	3	577·7
15	11	0	25	02·77	2	546·4	3	582·8
		10		03·47	12	552·4	13	580·6
		15		01·14	17	557·4	18	576·4
		20		05·02	22	559·7	23	573·5
		25		05·87	27	560·0	28	570·8
		30		07·10	32	555·2	33	570·4
		40		08·29	42	542·1	43	571·5
		50		08·66	52	534·8	53	574·6
15	12	0		12·62	2	533·4	3	576·2
		15		15·88	17	542·9	18	569·0
		30		15·58	31	542·3	32	562·0
		45		14·06	46	534·9	47	564·0
15	13	0		14·64	2	535·4	3	566·6
		45		13·22	47	535·9	48	571·3
15	14	0		14·60	2	534·0	3	574·2
16	19	0	25	18·30	2	540·8	3	596·5
		10		22·20	12	537·7	13	596·5
		15		23·07	17	538·4	18	594·9
		20		22·50				
		25		21·61	27	543·1	28	588·0
		30		20·40	32	546·3	33	585·5
		35		19·41	37	547·9	38	583·4

Gött. Mean Time.		DECLINATION.			BIFILAR Corrected.		BALANCE Corrected.	
d.	h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.
16	19	40	25	18·23	42	549·2	43	581·4
		55		15·67	57	547·4	58	581·9
16	20	0		15·31	2	544·2	3	583·1
		16		14·40	17	541·9	18	587·2
16	21	0		14·71	2	541·2	3	592·5
19	13*	0	24	44·83	2	493·5	3	399·8
		5		43·63	7	492·8	8	396·7
		10		44·30	12	493·3	13	395·0
		15		44·88	17	501·7	18	399·3
		20		47·37	22	509·5	23	395·6
		25		48·36	27	516·3	28	390·4
		30		48·77	32	520·0	33	384·1
		35		48·80	37	540·7	38	379·2
		40		47·64	42	516·5	43	372·2
		45		46·41	47	511·4	48	364·9
		50		47·46	52	512·6	53	364·5
		55		51·05	57	513·0	58	364·9
19	14	0	24	54·79	2	512·4	3	363·2
		10	25	02·23	12	513·0	13	361·0
		20		03·63	22	515·0	23	361·4
		30		04·81	32	498·6	33	349·6
		35		04·89	37	496·0	38	340·3
		40		05·38	42	488·4	43	329·4
		45		03·70	47	468·2	48	308·8
		50		02·96	52	449·6	53	275·5
					54	437·7		
		55		01·95	56	434·3		
					57	432·4	58	236·3
19	15	0		03·50	2	423·4	3	198·8
		5		05·29	7	440·4	8	199·7
		10		08·52	12	465·5	13	216·8
		15		10·70	17	478·6	18	230·1
		20		12·18	22	496·9	23	239·6
		25		13·14	27	509·8	28	247·4
		30		13·44	32	516·7	33	259·0
		35		15·11	37	522·5	38	271·1
		40		15·31	42	528·2	43	275·2
		50		07·78	52	533·0	53	287·1
19	16	0		04·31	2	537·8	3	305·3
		10		06·97	12	538·5	13	309·7
		30		03·94	32	542·4	33	298·5
		45		05·02	47	543·6	48	308·1
19	17	0		06·88	2	539·8	3	330·0
		30		10·20	32	534·5	33	357·4
19	18	0		13·72	2	543·6	3	385·3
19	19	0		17·22	2	545·9	3	436·4
		30		19·28	32	340·7	33	457·9
19	20	0		19·59	2	535·7	3	476·1
		15		20·09	16	535·5	17	483·0
19	21	3		15·83	4	531·5	5	504·1
		15		15·85	17	529·9	18	510·2
		20		15·64	21	530·3	22	511·8
19	22*	0		17·49	2	530·2	3	522·4
20	2	0	25	24·99	2	535·4	3	585·9
		20		20·18	22	534·0	23	594·8
		30		21·63	32	537·5	33	600·5
		45		24·69	47	532·7	48	609·5
		51		25·63	52	533·9	53	612·0
20	3	0		23·65	2	531·4	3	621·3

Gött. Mean Time.		DECLINATION.		
d.	h.	Min.	°	′
20	3	5	25	24·39
		10		21·39
		15		19·05
		20		15·61
		25		15·67
		35		16·15
		40		16·26
		46		21·68
		50		23·58
		55		19·44
20	4	0		18·52
		10		16·60
		20		16·12
		44		16·95
20	5	0		16·68
		37		16·65
20	6	0		17·70
20	7	0		16·01
20	8	0		11·19
		15		06·06
		30		05·72
20	9	0		13·12
		30		14·30
20	10	0		09·12
20	11*	0		12·06
		15		13·39
		25		14·55
20	12	0		13·83
		10		12·95
20	13	0		15·44
20	18	0	25	19·69
		10		24·82
		15		24·84
		20		23·63
		25		22·17
		30		21·84
		35		20·13
		40		18·32
20	19	0		13·67
21	8*	0	25	03·34
		5		05·97
		10		07·47
		20		09·35
		30		12·20
		40		13·16
21	9	0		13·67
21	11	0		09·39
		10		10·28
		33		12·08
21	12	0		11·93
		31		08·21
21	12	35		08·45
		50		11·61
21	13	0		12·70
		20		12·16
21	14	0		14·78
21	15	0		10·87
		29		11·77
21	16	0		13·83

BIFILAR. $k=0{\cdot}000140$. BALANCE. $k=0{\cdot}000010$.

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* See notes on the Aurora Borealis, *after* the *Extra Observations of Magnetometers.*

Jan. 20^{d} 2^{h} 51^{m}. Clock put right; error previously $+4^{s}{\cdot}6$.

Bifilar orrected.		Balance Corrected.	
n.	Sc. Div.	Min.	Mic. Div.
7	526·3	8	629·4
2	529·4	13	636·2
7	524·5	18	643·8
2	533·6	23	649·4
7	537·5	28	654·5
7	534·5	38	663·3
2	538·6	43	665·0
7	538·6	48	667·7
2	520·5	53	674·6
7	528·2	58	677·6
2	530·8	3	675·7
2	534·4	13	670·1
2	535·6	23	665·1
5	538·0	46	651·2
2	531·6	3	642·7
8	531·6	38	631·5
2	530·8	3	624·2
2	535·6	3	606·1
2	522·5	3	621·1
7	523·0	18	621·4
2	523·1	33	618·0
2	521·7	3	607·0
2	524·6	33	603·0
2	532·4	3	586·6
2	531·9	3	584·8
7	535·3	18	581·7
7	534·2	28	581·2
2	537·8	3	575·8
2	538·1	13	574·2
2	536·7	3	574·6
2	539·3	3	569·3
2	539·3	13	567·6
7	539·5	18	564·0
2	540·6	22	560·1
7	542·8	28	556·7
2	540·1	33	555·4
7	540·8	38	552·8
2	538·6	3	555·1
2	533·7	3	602·2
7	533·9	8	602·2
2	535·6	13	599·9
2	539·3	23	595·3
2	536·6	33	592·9
2	534·6	43	591·0
2	534·8	3	589·6
2	537·2	3	580·4
2	536·4	13	579·9
4	536·2	35	578·3
2	537·9	3	563·3
2	526·6	33	569·7
6	528·4	37	571·4
1	529·5	52	573·9
2	531·4	3	572·9
2	532·8	23	572·7
2	535·1	3	574·5
2	534·2	3	572·9
	531·7	31	572·1
2	535·7	3	571·7

Gött. Mean Time.		Declination.			Bifilar Corrected.		Balance Corrected.	
d.	h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.
22	9	0	25	11·44	2	540·8	3	604·8
		16		14·06	17	540·7	18	602·9
		38		16·75	39	535·2	40	604·6
		45		16·41	46	535·7	47	603·2
22	10	0		14·77	2	536·0	3	604·9
23	10	0	25	11·99	2	527·2	3	594·2
		15		02·01	17	536·1	18	587·8
		20		01·41	22	537·6	23	588·7
		25		02·96	27	537·5	28	594·1
		30		05·82	32	536·8		
23	11	0		12·92	2	529·0	3	588·9
		20		09·35	22	531·8	23	587·0
		40		06·77	42	531·7	43	582·6
		50		04·41	52	530·9	53	578·2
		55		03·23	57	529·6	58	576·0
23	12	0		01·83	2	529·6	3	574·4
		10		01·45	12	527·2	13	575·9
		20		03·02	22	534·9	23	579·2
		35		05·40	37	533·3	38	581·9
		50		08·83	52	529·2	53	587·6
23	13	0		10·20	2	528·1	3	589·5
23	14	0		09·89	2	529·2	3	586·0
		10		14·33	12	532·5	13	579·4
		15		14·46	17	533·9	18	570·3
		20		13·02	22	533·4	23	563·2
		25		10·77	27	533·6	28	558·4
		30		07·67	32	537·7	33	554·3
		35		07·00	37	536·1	38	553·0
		40		06·70	42	534·3	43	550·5
		45		07·65	47	534·5	48	547·9
		50		08·70	52	536·5	53	542·3
		55		11·91	57	529·9	58	533·9
23	15	0		12·36	2	522·1	3	520·5
		5		11·37	7	516·0	8	506·4
		10		09·79	12	511·7	13	496·1
		15		08·11	17	505·2	18	486·9
		20		04·71	22	506·5	23	483·2
		25	25	00·45	27	519·4	28	484·7
	*	30	24	59·36	32	527·8	33	486·1
		35	25	00·44	37	531·6	38	486·5
		40		01·38	42	534·6	43	486·3
		45		02·22	47	536·8	48	484·0
		50		02·96	52	535·3	53	483·3
		55		02·75	57	536·2	58	481·7
23	16	0		02·86	2	536·4	3	480·0
		5		03·50	7	535·7	8	478·1
		30		06·06	32	522·1	33	485·7
		35		06·12	37	521·8	38	489·4
		55		10·18	57	528·6	58	503·7
23	17	0		11·81	2	530·0	3	506·0
		10		13·16	12	530·4	13	508·4
		20		12·48	22	533·7	23	510·0
		30		11·84	32	533·3	33	513·4
23	18	0		11·68	2	532·2	3	531·2
23	21	0		19·51	2	531·2	3	561·2
		15		19·48	17	535·2	18	560·7
23	22	0		14·91	2	537·4	3	559·4
24	6	0	25	11·74	2	519·6	3	644·6
		10		12·76	12	522·6	13	646·6

Gött. Mean Time.		Declination.			Bifilar Corrected.		Balance Corrected.	
d.	h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.
24	6	20	25	14·10	22	524·8	23	647·1
		30		13·20	32	524·5	33	650·3
24	7	0		16·80	2	524·6	3	653·2
		36		07·84	37	518·0	38	659·1
		40		03·77	42	534·8	43	648·8
		45		10·47	47	533·0	48	647·9
	*	50		12·15	52	530·7	53	642·5
		55		08·14	57	550·5	58	629·0
					59	556·5		
24	8	0		15·34	2	547·3	3	629·4
		5		19·53	7	532·5	8	631·4
		10		20·74	12	527·7	13	632·3
		15		18·50	17	531·2	18	628·0
		20		18·30	22	532·6	23	627·5
		30		16·08	32	534·9	33	624·6
		40		15·07	42	536·8	43	623·0
		50		13·41	52	544·7	53	616·6
24	9	0		15·47	2	539·0	3	618·9
		10		15·74	12	535·7	13	619·3
24	10	0		14·20	2	534·8	3	612·4
		10		10·27	12	538·7	13	612·1
		20	25	03·81	22	543·0	23	608·5
					24	553·6		
		25	24	59·50	26	561·9		
					27	562·5	28	599·4
					29	563·3		
		30	25	03·06	32	562·7	33	595·5
		35		05·15	37	562·3	38	592·2
		40		09·66	42	556·9	43	589·6
		45		13·19	47	546·6	48	588·3
		50		14·91	52	538·9	53	585·1
		55		12·62	57	543·4	58	577·5
24	11	0		14·15	2	545·3	3	571·8
		5		15·81	7	543·3	8	567·0
	*	10		16·63	12	540·8	13	562·7
		15		17·67	17	536·3	18	559·1
		20		17·76	22	530·5	23	557·0
		25		16·12	27	523·4	28	555·9
		30		12·48	32	520·7	33	554·4
		35		09·76	37	521·4	38	553·6
		40		07·67	42	521·5	43	553·6
		45		05·52	47	522·5	48	552·4
		50		04·98	52	523·8	53	541·4
24	12	0		09·42	2	515·0	3	562·6
		5		07·08	7	514·0	8	566·5
		10		06·68	12	512·9	13	570·2
		15		05·45	17	515·5	18	573·7
		20		04·55	22	514·2	23	575·8
		25		03·35	27	510·9	28	578·8
		30		03·04	32	513·3	33	581·5
		35		04·46	37	514·7	38	584·0
		40		04·24	42	512·3	43	586·9
		45		04·58	47	512·4	48	592·0
		50		05·13	52	513·7	53	594·8
		55		06·46	57	518·1	58	598·7
24	13	0		07·49	2	519·9	3	600·7
		5		07·45	7	521·3	8	600·7
	*	10		07·62	12	521·3	13	599·3
		20		05·76	22	524·1	23	600·1
		31		09·32	32	525·1	33	601·8
		35		10·13	37	525·8	38	598·5

BIFILAR. k=0·000140.

BALANCE. k=0·000010.

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* See notes on the Aurora Borealis, *after* the *Extra Observations af Magnetometers.*

Gött. Mean Time.	DECLINATION.		BIFILAR Corrected.		BALANCE Corrected.		Gött. Mean Time.	DECLINATION.		BIFILAR Corrected.		BALANCE Corrected.		Gött. Mean Time.	DECLINATION.	
d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	° ′
24 13	45	25 12·26	47	527·8	48	588·5	25 6	25	25 12·96	27	525·5	28	657·0	26 14	41	25 13·39
	50	14·38	52	525·1	53	583·9		30	11·05	32	525·7	33	656·6		45	11·22
24 14	0	15·34	2	529·1	3	572·5		35	06·79	37	529·8	38	653·4		50	09·56
	10	13·12	12	536·0	13	562·0		40	05·49	42	543·9	43	647·6		55	08·52
	15	16·73	17	538·4	18	561·3		45	11·52	47	535·5	48	650·4	26 15	0	07·11
	20	21·44	22	533·4	23	556·3		50	11·01	52	534·3	53	646·9	*	5	05·32
	25	22·03	27	535·5	28	553·8		55	13·29	57	536·0	58	644·6		10	05·15
	30	20·80	32	529·7	33	547·7	25 7	0	12·16	2	534·2	3	642·4		15	04·48
	35	15·59	37	529·5	38	541·1		10	13·46	12	532·1	13	639·1		20	04·32
	40	11·21	42	532·3	43	537·8		20	11·15	22	531·9	23	636·4		25	03·87
	45	08·05	47	532·9	48	536·0		30	11·37	31	537·6	32	633·4		30	03·48
	50	06·59	52	531·2	53	538·1		45	14·13	46	534·1	47	628·6		35	04·86
24 15	0	04·29	2	530·4	3	549·6	25 8	0	14·03	2	536·2	3	620·9		46	05·65
	10	07·78	12	527·4	13	560·3		30	12·18	31	535·6	32	616·3		50	05·74
	15	09·35	16	526·5	17	562·7		50	12·78						55	05·53
	30	12·95	32	525·4	33	573·5	25 9	0	09·05	2	529·1	3	610·7	26 16	0	05·00
	45	12·35	46	529·6	47	578·1		5	25 00·20	7	538·1	8	601·7	*	10	05·49
24 16	0	13·59	2	531·9	3	583·6		10	24 52·50	12	565·9	13	590·4		15	06·59
	31	12·58	32	532·5	33	590·5				14	569·8				25	07·72
24 17	0	12·36	2	532·3	3	593·6		15	24 58·65	16	569·0				35	08·38
	34	13·46	35	535·0	36	593·7				17	567·7	18	589·1		40	08·55
24 18	0	13·02	2	536·7	3	591·9				19	566·2				45	07·79
24 19	0	12·89	2	538·8	3	587·6		20	25 03·47	22	560·3	23	588·9		50	07·64
	20	14·40	22	536·4	23	588·2		25	02·93	27	555·1	28	585·7	26 17	0	08·48
	30	14·33	32	536·5	33	,,		30	02·59	32	555·2	33	582·5		20	07·35
24 20	0	18·03	2	538·5	3	584·7		35	04·91	37	549·5	38	582·9	26 18	0	07·62
24 23	0	17·09	2	532·5	3	590·6		40	06·66	42	541·7	43	584·5		15	08·08
	30	16·41	32	534·4	33	601·2		45	07·18	47	534·5	48	586·5		25	10·80
	43	16·35	44	539·1	45	598·3		50	07·87	52	533·5	53	586·5		30	11·41
25 0	0	18·27	2	540·8	3	597·4		55	08·65	57	533·4	58	587·1		35	13·19
	12	20·13	13	540·5	14	598·1	25 10	0	10·16	2	530·0	3	589·3		40	11·48
25 1	0	20·27	2	521·7	3	609·3		10	11·57	12	535·1	13	588·8		45	12·92
			12	526·9	13	614·5		20	14·43	22	535·1	23	585·8		50	11·27
	30	21·66	31	533·6	32	621·2		30	12·87	32	539·1	33	581·2		55	12·01
			37	524·5	38	623·4		45	12·95	47	533·0	48	583·4	26 19	0	12·85
	40	19·64	42	526·7			25 11	0	11·37	2	534·7	3	586·2		5	11·44
			53	538·8	54	625·4		10	11·93	12	536·1	13	587·0		10	12·04
25 2	0	19·29	2	542·4	3	628·4		20	11·51	22	537·6	23	585·7		15	12·69
	10	21·06	12	540·9	13	628·2		30	12·96	32	534·0	33	587·6		25	11·74
	50	22·20	52	538·9	53	628·0		40	13·02	42	533·1				30	12·35
25 3	0	22·13	2	537·9	3	626·2				52	536·7	53	583·7		45	12·55
	40	22·64	42	518·4	43	640·6	25 12	0	10·20	2	546·9	3	577·2	26 20	0	12·69
25 4	0	13·86	2	536·4	3	648·8		10	11·86	12	564·3	13	565·8		30	15·04
	10	13·29	12	542·8	13	652·8		15	15·94	17	558·4	18	563·8	26 21	0	15·94
	25	15·04	27	543·2	28	653·9		26	18·84	27	540·2	28	562·0			
	35	18·34	37	544·0	38	653·7		30	18·07	32	536·0	33	561·8	27 3	0	25 15·56
	45	20·05	47	543·1	48	652·6		40	14·82	42	532·6	43	557·5		30	18·07
	55	21·90	57	535·5	58	650·2								27 4	0	17·96
25 5	0	21·06	2	533·4	3	646·7	26 13	0	25 14·18	2	530·0	3	524·7	27 6	0	15·27
	10	18·94	12	527·3	13	642·9	*	10	11·95	12	532·0	13	529·0		15	15·09
	20	17·56	22	531·1	23	642·3		15	11·14	17	534·7	18	531·1	27 7	0	14·04
	25	17·06	27	529·9	28	644·4		20	11·59	22	530·4	23	535·3			
	30	17·10	32	527·4	33	647·5		30	09·39	32	527·9	33	539·4	27 10	0	25 01·41
	35	14·64	37	528·5	38	643·2		35	08·66	37	531·3	38	542·0		5	01·48
	40	10·97	42	540·1	43	640·8		40	09·02	42	533·9	43	545·5		10	02·55
	45	11·14	47	545·3	48	640·3		55	10·70	57	536·9	58	554·8		20	04·55
	50	11·10	52	544·2	53	641·5	26 14	0	12·49	2	537·3	3	558·2		30	05·65
25 6	0	13·16	2	542·5	3	641·7	*	15	18·94	17	532·2	18	558·1		40	08·01
	10	15·07	12	536·6	13	644·1		20	18·32	22	532·9				50	10·83
	15	16·48	17	528·0	18	649·5		25	18·67	27	532·4			27 11	0	15·05
	20	16·62	22	524·5	23	655·5		30	16·46	32	532·3				10	15·94

BIFILAR. k=0·000140. BALANCE. k=0·000010.

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* See notes on the Aurora Borealis, *after* the *Extra Observations of Magnetometers.*

FILAR rected.	BALANCE Corrected.		Gött. Mean Time.		DECLINATION.			BIFILAR Corrected.		BALANCE Corrected.		Gött. Mean Time.		DECLINATION.			BIFILAR Corrected.		BALANCE Corrected.	
Sc. Div.	Min.	Mic. Div.	d.	h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.	d.	h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.
527·7	43	553·0	27	11	35	25	10·63	37	538·4	38	560·6	28	11	40	25	12·69	42	510·4	43	529·0
523·3	48	553·9			40		10·43	42	538·4	43	561·0			45	25	03·70	47	522·2	48	539·5
520·5	53	555·9	27	12	0		10·97	2	538·8	3	563·6			50	24	55·84	52	539·7	53	545·5
521·7	58	557·5			10		10·67	12	535·9	13	566·4			55	24	55·80	57	545·9	58	545·4
520·8	3	558·4			45		12·22	47	534·5	48	570·0	28	12	0	24	59·66	2	548·8	3	542·8
520·8	8	559·7	27	13	0		12·11	2	534·6	3	572·0			5	25	04·41	7	543·5	8	542·3
522·1														10		08·34	12	540·4		
523·8	18	562·7	28	4	0	25	19·34	2	540·1	3	603·0			15		11·62	17	528·3	18	544·6
525·6	23	563·2			15		17·06	17	543·1	18	614·4			20		10·43	22	523·6		
					50		17·80	52	525·2	53	618·0			30		10·40	32	525·0	33	547·4
526·7	33	566·1	28	5	0		15·38	2	524·9	3	623·1			40		12·04	42	521·3	43	549·3
					25		09·56	27	520·7	28	638·2	28	13	0		13·25	2	528·3	3	550·9
529·5	48	567·8			35		07·07	37	526·9	38	640·7			30		16·82	32	531·1	33	549·4
					40		08·01	42	529·1	43	639·9	28	14	0		21·56	2	533·7	3	541·0
527·4	58	568·4			45		08·73	47	533·4	48	639·3			10		24·25	12	522·9	13	537·4
526·8	3	569·0			50		12·75	52	527·3	53	640·6			20		23·12	22	520·8	23	534·7
524·6	13	574·5			55		12·95	57	527·6	58	640·8			40		16·92	42	526·9	43	531·6
524·1	18	576·4	28	6	0		13·05	2	528·1	3	638·6	28	15	0		12·92	2	529·8	3	537·7
520·2	28	578·2			10		14·73	12	525·6	13	640·3			15		13·29	17	532·3	18	547·2
521·7					20		14·30	22	531·3	23	635·0	28	16	0		14·15	2	533·8	3	560·0
					35		15·12	37	530·1	38	630·2	28	19	0		23·45	2	534·8	3	558·6
			28	7	0		16·26	2	528·0	3	633·4			5		23·54	7	536·1	8	556·1
529·8	55	580·6			20		13·72	21	530·5	22	636·1			10		23·49	12	536·4	13	552·6
529·7	3	583·8		*	35		10·41	37	536·8	38	636·1			15		24·35	17	537·1	18	549·0
531·7	23	583·4			40		11·30	42	537·3	43	636·4			20		24·08				
533·1	3	580·0	28	8	0		09·10	2	540·4	3	641·4			30		24·32	32	541·3	33	541·2
536·6	18	581·0			12		09·87	13	534·6	14	643·2			35		24·32	37	540·8	38	539·3
536·3	28	582·2			28		06·32	29	539·4					40		24·08	42	539·3	43	537·7
539·0	33	582·3		*	30		12·04	32	530·9	33	645·0			50		24·22	52	541·9	53	535·1
534·5					35		01·51	37	546·1	38	622·2	28	20	0		25·11	2	539·6	3	534·5
542·4	43	580·8			40		09·73	42	536·4	43	621·7			15		26·18	17	535·7	18	528·1
539·2	48	581·2			45		12·45	47	527·1	48	633·6			20		25·76				
542·9					51		07·74	52	533·1	53	622·1			26		25·24	27	536·6	28	525·6
542·6	58	579·2			55		10·14	57	534·7	58	623·7			30		26·13	32	534·4	33	525·7
536·2	3	579·9	28	9	0		12·15	2	531·0	3	632·5			35		24·86	37	532·5	38	525·2
539·0	8	580·9			5		12·35	7	526·1	8	641·8			40		23·32	42	534·8	43	524·3
541·5					10		10·92	12	531·7	13	648·3			47		23·11				
540·9	18	580·5			15		10·97	17	527·3	18	652·5	28	21	5		24·84	7	536·5	8	529·2
541·8	28	580·8			21		08·03	22	531·4	23	654·7			20		25·67	22	539·6	23	525·7
539·4					25		06·76	27	527·3	28	654·4			30		23·85	32	541·3	33	522·7
541·3	48	583·7			30		03·92	32	528·9	33	650·3			35		22·58	37	543·3	38	521·6
539·6	3	587·5			35		03·67	37	530·3	38	646·6						39	546·0		
542·0	33	586·7			45		08·12	47	535·8	48	638·4			40		22·67	42	542·6	43	522·9
538·3	3	582·4			50		09·13	52	531·3	53	635·5			45		20·94	46	540·0		
			28	10	0		13·12	2	524·3	3	632·3						47	541·3	48	523·5
546·2	3	616·3			10		12·40	12	513·1	13	625·1			50		20·92	51	543·3		
539·7	33	615·2			15		10·38	17	512·2	18	620·1	28	22	0		21·73	2	539·0	3	524·8
534·7	3	617·0			20		08·75	22	509·2	23	615·3			15		22·92	17	540·9	18	528·6
537·5	3	606·4			25		07·64	27	509·4	28	613·3			35		21·86	37	533·9	38	538·1
538·7	18	600·1			30		06·26	32	511·4	33	613·5			50		17·60	52	540·7	53	538·0
540·4	3	597·8			35		04·04	37	513·8	38	611·9	28	23	0	25	16·03	2	539·6	3	541·2
					40		02·80	42	514·1	43	608·1									
555·0	3	578·5			45		04·24	47	518·6	48	606·5	29	6	0	24	59·63	2	532·5	3	622·2
553·6	8	578·3			50		05·11	52	520·5	53	605·1			5	24	58·05	7	537·7	8	623·8
552·0	13	578·4			55		05·35	57	522·1	58	603·1			10	24	58·99	12	539·4		
542·6	23	580·3	28	11	0		06·19	2	523·1	3	600·5			15	25	00·91	17	538·7	18	623·3
539·0	33	578·8			10		09·86	12	523·8	13	594·9			20	25	00·71	22	543·4	23	619·8
532·6	43	579·6			20		16·13	22	556·6	23	549·2			25	25	00·48	27	542·9		
533·0	53	580·4			25		18·68	27	549·0	28	524·9			30	24	59·97	32	540·2	33	620·2
543·4	3	567·3			30		22·50	32	537·7	33	519·4			40	25	02·12	42	535·5	43	633·3
540·4	13	563·4			35		19·73	37	521·4	38	520·1			45	24	56·23	47	546·7	48	628·8

BIFILAR. k=0·000140. BALANCE. k=0·000010.

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* See notes on the Aurora Borealis, *after* the *Extra Observations of Magnetometers.*

Gött. Mean Time.		DECLINATION.			BIFILAR Corrected.		BALANCE Corrected.	
d.	h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.
29	6	50	25	03·81	52	545·3	53	632·9
		55		11·21	57	521·2	58	645·8
29	7	0		05·29	2	524·7	3	645·0
	*	5		06·30	7	527·4	8	647·7
		15		13·69	17	531·4	18	679·2
		20		12·22	22	521·3	23	702·6
		25		04·75	27	527·5	28	685·5
		30		07·55	32	527·4	33	674·1
		35		08·99	37	533·6	38	662·2
		40		12·18	42	536·4	43	659·4
		50		18·30	52	529·6	53	659·7
29	8	0		16·68	2	531·2	3	656·3
		10		14·67	12	529·3	13	654·2
		30		17·37	32	534·1	33	633·2
29	9	0		14·43	2	527·0	3	616·8
		10		02·05	12	535·6	13	600·3
		15		05·00	17	541·8	18	596·5
		25		08·55	27	541·6	28	586·5
		40		12·28	42	522·3	43	588·2
		50	25	05·15	52	543·1	53	578·8
		55	24	57·24	57	577·9	58	560·2
29	10	0	25	03·60	2	584·2	3	544·8
		5		10·14	7	569·3	8	539·4
		10		14·46	12	552·1	13	531·6
		15		14·80	17	543·6	18	524·8
		20		16·82	22	537·0		
		30		17·49	32	523·0	33	526·6
		45		15·47	47	526·2	48	522·7
29	11	0		12·80	2	533·3	3	516·0
		10		16·89	12	521·2	13	509·5
		15		15·15	17	513·2	18	513·0
		20		09·96	22	514·9	23	516·6
		25		05·32	27	518·5	28	519·7
		30		01·34	32	528·2	33	521·6
		35		01·51	37	547·1	38	521·9
		40		04·95	42	539·2	43	523·0
		45		08·46	47	536·2	48	519·7
		50		09·86	52	532·0		
29	12	0		09·69	2	526·2	3	529·5
		5		08·65	7	525·9	8	532·0
		10		07·44	12	528·8	13	532·5
		20		09·86	22	529·7	23	536·1
		25		10·43	27	529·9	28	536·8
		30		11·46	32	530·9	33	537·7
		40		12·93	42	530·3	43	540·0
		50		14·43	52	528·5	53	543·2
29	13	0		12·73	2	521·9	3	547·4
		10		09·10	12	525·8	13	549·9
		20		11·10	22	527·3	23	556·1
		30		13·09	32	526·2	33	559·7
29	14	0		14·87	2	528·9	3	564·1
		10		15·07	12	529·2	13	566·9
29	15	0		16·26	2	528·0	3	570·3
		10		17·09	12	529·4	13	570·3
		15		17·51				
29	16	0		12·01	2	532·2	3	567·7
		15		12·82	16	530·1	17	571·9
29	17	0		12·29	2	530·4	3	575·5
30	5	0	25	16·62	2	529·6	3	591·6
					32	534·6	33	597·5

Gött. Mean Time.		DECLINATION.			BIFILAR Corrected.		BALANCE Corrected.	
d.	h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.
30	5	40	25	14·13	42	536·8	43	594·0
30	6	0		14·53	2	538·9	3	598·9
		30		17·56	32	534·7	33	599·6
30	7	0		16·68	2	536·1	3	600·9
30	8	0	25	02·89	2	523·7	3	608·3
		5	24	56·54	7	532·4	8	606·4
		10		53·81	12	544·2	13	603·7
		15		55·33	17	547·7	18	602·5
		20		55·20	22	550·1	23	600·8
30	8	25		56·13	27	556·8	28	595·8
		30		57·10	32	558·4	33	592·2
		35	24	58·45	37	559·9	38	589·3
		40	25	01·78	42	556·6	43	586·5
		45		03·92	47	551·2	48	584·6
		50		05·56	52	545·9	53	583·3
		55		07·60	57	539·6	58	583·0
30	9	0		07·74	2	535·1	3	583·1
		10		07·13	12	524·3	13	584·5
		15		05·99	17	528·7	18	582·9
		20		05·99	22	531·0		
		41		10·70	42	529·8	43	584·5
		45		11·71	47	528·7	48	584·2
		55		12·08	57	527·8	58	583·5
30	10*	0		12·01	2	529·9	3	582·2
		10		13·20	12	532·7	13	579·9
		20		13·61	22	531·8	23	579·0
		30		13·63	32	532·4	33	576·9
30	11	0		14·03	2	535·9	3	570·6
31	2	0	25	18·54	2	531·3	3	586·6
		30		16·05	32	529·9	33	538·2
31	3	0		17·09	2	532·4	3	585·4
1	11	0	25	13·46	2	535·5	3	579·3
		15		10·00	17	545·3	18	571·9
		30		11·71	32	536·2	33	573·8
		50		12·95	52	544·9	53	568·3
		55		13·86	57	545·1	58	566·7
1	12	0		14·06	2	543·5	3	565·2
	*	12		12·46	13	539·7	14	563·5
		30		11·14	31	536·8	32	565·2
		47		11·54	48	533·3	49	567·0
3	15	0	25	07·94	2	535·3	3	558·6
		30		11·24	32	535·7	33	563·3
3	16	0		12·11	2	535·5	3	562·1
4	8	0	25	13·23	2	531·0	3	575·4
		15		10·94	17	531·8	18	579·1
4	9	0		13·14	2	537·1	3	580·2
5	4	0	25	21·50	2	546·9	3	597·1
		6		23·88	7	543·7	8	600·0
		10		23·88	12	541·1	13	601·7
		20		23·54	22	543·7	23	603·0
5	5	0		27·42	2	535·5	3	640·1
		5		24·89	7	535·8	8	643·9
		10		25·09	12	542·1	13	655·7
		15		26·23	17	535·6	18	668·5
		20		25·49	22	531·0	23	682·2
		25		23·27	27	527·9	28	687·0

Gött. Mean Time.		DECLINATION.		
d.	h.	Min.	°	′
5	5	30	25	21·86
		35		22·33
		40		22·20
		45		21·09
		50		21·23
		55		23·65
5	6	0		24·77
		5		24·93
		10		23·22
		15		22·98
		20		23·12
		25		21·03
		30		20·32
		35		18·18
		40		17·60
		50		14·58
5	7	0		15·22
		10		15·61
		20		16·12
		30		16·12
		40		16·32
		50		16·28
5	8	0		16·10
	*	30		14·94
5	9	0		15·24
	*	30		11·68
5	10	0		12·89
	*	10		13·12
5	11	0		13·16
	*	10		12·38
		46		12·69
5	12	0		11·88
	*	10		11·81
		25		12·63
		35		12·25
		40		11·37
		45		11·07
		50		10·36
		55		09·84
5	13	0		09·46
	*	5		10·09
		10		06·88
		15		08·06
		20		06·09
		25		04·14
		30		04·58
		35		06·34
		40		06·32
		45		06·59
		50		06·39
5	14	0		08·88
		10		08·79
		30		09·19
5	15	0		11·77
5	19	0		18·63
		10		19·12
		20		18·40
		30		16·57
		40		15·01
5	20	0		13·77
5	22	0		19·21

BIFILAR. $k=0·000140$. BALANCE. $k=0·000010$.

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* See notes on the Aurora Borealis, *after* the *Extra Observations of Magnetometers.*

BIFILAR Corrected.		BALANCE Corrected.		Gött. Mean Time.		DECLINATION.			BIFILAR Corrected.		BALANCE Corrected.		Gött. Mean Time.		DECLINATION.			BIFILAR Corrected.		BALANCE Corrected.	
Min.	Sc. Div.	Min.	Mic. Div.	d.	h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.	d.	h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.
32	526·8	33	689·4	5	22	30	25	25·83	32	509·3	33	580·4	12	15	10	25	11·71	12	534·9	13	523·8
37	529·6	38	690·8			46		23·95	47	514·1	48	581·0			30		11·77	32	536·1	33	530·0
42	531·2	43	695·8	5	23	0		23·72	2	520·2	3	583·7	12	16	0		10·21	2	537·3	3	536·7
47	534·0	48	698·3			20		20·38	22	527·2	23	579·1									
52	537·8	53	705·8			34		20·18	35	533·4	36	579·0	13	14	0	25	16·50	2	541·9	3	553·1
57	533·1	58	721·6	6	0	0		22·01	2	528·3	3	585·3			30		12·28	32	536·5	33	551·8
2	530·8	3	746·0										13	15	0		13·90	2	537·9	3	551·1
7	524·4	8	754·4	7	10	0	25	05·29	2	527·2	3	587·8									
12	526·5	13	763·2			10		06·76	12	526·1	13	589·6	17	6	0	25	09·33	2	526·8	3	584·3
17	529·0	18	769·5			20		06·63	22	527·1	23	594·1			5		06·74	7	530·8	8	585·7
22	526·4	23	778·0			30		10·83	32	533·5	33	592·4			10		06·46	12	535·4	13	586·9
27	529·7	28	784·5			40		13·84	42	540·4	43	582·9			15		06·79	17	537·5	18	586·6
32	526·8	33	787·7	7	11	0		11·57	2	531·6	3	575·4			31		12·78	32	537·9	33	585·9
37	526·8	38	777·9			10		09·35	12	533·7	13	574·4			35		13·83	37	534·6	38	585·4
42	525·8	43	769·6			15		09·47	17	533·3	18	575·3			45		15·24	47	532·8	48	584·8
52	524·5	53	739·3	7	12*	0		13·47	2	535·5	3	574·6			55		16·28	57	532·6	58	584·4
2	528·9	3	717·3	7	15	0		13·07	2	535·8	3	570·5	17	7	0		16·06	2	533·2	3	583·5
12	530·9	13	701·3		*	10		14·11	12	534·7	13	571·6									
22	531·3	23	688·7			15		14·40	17	535·2			19	13	0	25	12·33	2	547·6	3	528·5
32	539·1	33	664·9	7	16	0		14·98	2	538·0	3	566·6			11		12·11	12	545·8	13	527·5
42	537·1	43	655·7		*	9		13·52	10	538·9	11	564·6			20		11·57	22	542·6	23	527·0
52	534·4	53	649·0	7	17	0		12·15	2	535·2	3	568·3			40		11·54	41	540·9	42	528·5
2	532·7	3	645·3										19	14	0		11·22	2	541·3	3	529·4
32	534·8	33	637·0	9	13	0	25	09·42	2	539·5	3	561·1									
2	536·9	3	630·5			15		10·77	17	538·4	18	561·0	20	1	0	25	21·91	2	555·1	3	525·4
32	537·7	33	622·6	9	14	0		04·68	2	532·3	3	556·5			10		21·90	12	545·1	13	530·9
2	534·4	3	626·5			10		06·57	12	529·6	13	554·6			26		24·05	27	549·0	28	533·0
12	534·7	13	626·5			20		10·58	22	527·8	23	562·2			45		18·21	47	529·7	48	539·7
2	535·9	3	612·7			30		14·11	32	534·6	33	558·8	20	2	0		19·39	2	538·4	3	541·8
12	534·9	13	613·4			45		12·70	47	537·5	48	549·1			30		23·34	32	553·1	33	543·9
47	531·5	48	615·1	9	15	0		08·56	2	535·3	3	545·7	20	3	0		22·03	2	544·1	3	547·1
2	533·6	3	609·4			15		11·54	17	534·0	18	544·3									
12	528·1	13	613·1			30		11·84	32	530·1	33	547·8	20	10	0	25	12·31	2	549·9	3	565·1
27	531·0	28	610·7	9	16	0		13·17	2	533·9	3	547·5			5		05·42	7	553·1	8	565·9
37	532·4	38	605·6	9	18	0		15·49	2	527·7	3	556·5			10	25	01·81	12	557·8	13	564·8
42	529·7	43	603·5			10		16·82	12	525·9	13	554·2			15	24	58·20	17	552·0	18	565·0
47	526·8	48	602·8	9	19	0		14·70	2	536·8	3	548·2			20		56·10	22	543·7	23	567·9
52	525·5	53	601·2			15		12·72	16	539·7	17	548·8			25		53·41	27	537·2	28	570·9
57	526·0	58	600·2			38		12·18	39	541·2	40	552·7			30		52·53	32	533·6	33	574·4
2	528·6	3	599·0	9	20	0		12·29	2	541·4	3	557·0			35		53·51	37	533·8	38	577·2
7	528·1	8	598·0												40		56·47	42	534·3	43	578·8
12	538·4	13	589·4	10	13	0	25	12·43	2	535·5	3	562·7			45	24	59·77	47	532·5	48	580·1
17	536·0	18	583·6			5		12·85	7	544·3	8	559·8			50	25	02·66	52	530·6	53	580·4
22	535·7	23	582·3			10		14·30	12	544·9	13	558·2	20	11	0		07·92	2	528·3	3	578·5
27	535·0	38	580·5			30		07·46	32	539·0	33	555·8			10		10·50	12	528·6	13	575·7
32	534·4	33	581·6	10	14	0		14·11	2	535·1	3	556·3			20		10·60	22	531·1	23	572·2
37	533·4	38	584·2	10	15	0		16·55	2	539·8	3	556·2			30		10·09	32	535·1	33	569·8
42	530·8	43	584·9			9		17·12	10	540·7	11	553·9	20	12	0		06·77	2	540·6	3	571·0
47	532·4	48	584·3	10	16	0		13·69	2	531·4	3	559·0			15		09·32	17	532·4	18	572·4
52	535·5	53	583·1										20	13	0		08·85	2	542·9	3	564·6
2	531·8	3	585·1	11	11	0	25	10·85	2	537·4	3	570·7			30		07·84	32	530·7	33	572·8
12	528·5	13	585·0			15		11·59	16	539·3	17	569·9	20	14	0		09·42	2	533·7	3	572·3
31	527·0	32	588·6	11	12	0		13·79	2	541·3	3	563·7	20	16	0		14·40	2	525·6	3	555·8
2	530·7	3	592·3												10		16·18	12	528·2	13	553·0
2	530·0	3	583·8	12	13	0	25	09·26	2	538·2	3	559·3			20		18·47	22	532·2	23	546·9
12	530·9	13	581·4			20		08·97	22	535·3	23	556·7			25		21·12	27	527·0	28	543·6
22	532·4	23	576·5	12	14	0		14·43	2	554·6	3	536·2			30		22·67	32	524·1	33	541·3
32	535·4	33	572·0			10		15·74	12	549·7	13	530·4			35		22·57	37	523·5	38	539·2
42	537·1	43	565·5			20		16·19	22	546·3	23	525·1			40		23·66	42	524·2	43	530·7
2	534·7	3	570·8			30		15·20	32	539·8	33	522·0			45		23·14	47	526·3	48	528·2
2	510·9	3	579·9	12	15	0		11·44	2	534·4	3	521·7			50		22·57	52	526·7	53	521·0

BIFILAR. $k=0{\cdot}000140$. BALANCE. $k=0{\cdot}000010$.

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* See notes on the Aurora Borealis, *after* the *Extra Observations of Magnetometers.*

Gött. Mean Time.	DECLINATION.		BIFILAR Corrected.		BALANCE Corrected.		Gött. Mean Time.	DECLINATION.		BIFILAR Corrected.		BALANCE Corrected.		Gött. Mean Time.	DECLINATION.	
d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic.Div.	d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic.Div.	d. h.	Min.	° ′
20 16	55	25 20·11	57	530·9	58	515·1	23 12	58	24 51·66					23 19	30	25 16·53
20 17	0	18·13	2	534·7	3	511·3	23 13	0	52·87	2	528·1	3	505·4		35	17·06
	10	15·11	12	533·5	13	506·9		5	55·44	7	533·7	8	511·3		50	14·82
	20	12·04	22	534·8	23	507·9		10	24 58·47	12	531·9	13	518·4	23 20	0	14·04
	30	11·96	32	532·0	33	509·5		15	25 01·98	17	533·0	18	523·3		20	14·73
20 18	0	08·34	2	534·5	3	514·0		20	04·41	22	529·4	23	527·1	23 21	0	15·41
	10	07·38	12	539·0	13	517·8		25	05·53	27	525·2	28	525·7			
	20	08·08	22	539·6	23	520·3		30	05·63	32	526·8	33	523·5	24 4	0	25 06·06
20 19	0	09·84	2	533·4	3	524·8		35	05·60	37	528·6	38	521·2		5	08·79
	36	15·27	37	527·1	38	529·9		41	07·17	43	527·8	44	521·3		10	09·35
	40	15·61	42	529·2	43	529·5		45	08·50	47	526·0	48	521·4		15	10·27
	53	17·93	54	534·4	55	526·0		50	08·70	52	526·0	53	521·3		30	12·31
20 20	0	18·75	2	529·2	3	527·9		55	09·76	57	526·1	58	522·7		35	12·62
	12	18·50	13	526·0	14	529·6	23 14	0	09·30	2	528·0	3	525·1		47	14·26
	27	17·96	28	531·1	29	528·9		10	09·12	12	529·3	13	526·9	24 5	0	13·46
	40	19·91	41	535·3	42	527·2		35	10·80	37	518·0	38	528·1		31	13·39
20 21	0	19·44	2	535·2	3	527·7		40	09·46	42	516·9	43	527·6	24 6	0	25 14·15
	15	20·97	17	540·2	18	526·6		45	09·10	47	518·8	48	529·2		58	24 47·33
	20	19·58	22	538·6	23	526·2		50	10·18	52	524·6	53	527·7	24 7	0	48·81
20 22	0	16·72	2	534·6	3	532·9		55	13·69	57	521·4	58	524·6		5	53·95
	38	13·25	39	529·2	40	541·0	23 15	0	15·72	2	519·0	3	518·6		10	56·67
20 23	0	18·01	2	528·1	3	542·4		5	17·83	7	519·5	8	510·7		15	59·50
21 1	0	22·15	2	526·7	3	554·3		10	18·82	12	521·0	13	499·5		20	59·43
	20	22·67	22	541·7	23	551·2		15	18·63	17	519·1	18	489·6		25	24 59·93
	30	21·37	29	525·1				20	17·68	22	517·9	23	482·4		30	25 01·07
			32	535·8	33	554·1		25	16·97	27	517·1	28	479·3		35	25 00·77
			34	536·5				30	15·54	32	520·6	33	482·6		50	24 54·21
	35	21·88	37	541·2	38	552·9		35	16·41	37	523·8	38	485·8		55	52·17
	40	23·01	42	545·5	43	552·2		40	16·46	42	525·0	43	482·8	24 8	0	50·73
	45	24·08	47	542·9	48	553·5		45	17·13	47	521·3	48	478·9	*	5	52·21
	55	21·86	57	534·9	58	554·4		50	18·10	52	516·4	53	477·9		10	53·00
21 2	0	20·63	2	534·8	3	554·8		55	18·00	57	514·3	58	478·1		15	52·55
	10	18·84	12	534·4	13	555·7	23 16	0	17·36	2	513·4	3	476·7		20	49·54
	20	19·28	22	545·2	23	557·9		5	15·99	7	509·4	8	474·1		25	46·83
	30	23·04	32	544·1	33	564·8		10	14·44	12	508·3	13	471·6		30	24 55·31
	41	22·71	42	538·3	43	569·4		15	12·63	17	513·9	18	471·8		35	25 01·14
	45	21·70	47	536·0	48	572·0		20	12·33	22	512·8	23	472·5		40	08·61
21 3	0	17·70	2	530·2	3	578·2		25	13·19	27	513·4	28	474·7		45	10·13
	30	15·27	31	542·3	32	583·1		30	15·14	32	512·6	33	475·9		50	21·93
21 4	0	17·00	2	541·6	3	576·5		35	15·88	37	516·3	38	474·4			
21 6	0	11·37	2	529·7	3	596·6		40	16·23	42	522·3	43	473·1		55	12·55
	10	25 07·98	12	528·7	13	598·2		45	16·65	47	527·2	48	472·8	24 9	0	09·33
	30	24 59·50	32	534·1	33	599·2		50	17·29	52	530·5	53	468·5	*	5	16·19
	35	58·42	37	534·9				55	18·45	57	528·3	58	463·2		10	04·55
	45	57·24	47	527·7	48	606·3	23 17	0	18·61	2	529·7	3	458·2		18	03·30
	50	57·41	52	529·0				10	17·10	12	536·8	13	458·8		20	02·26
21 7	0	24 59·41	2	526·5	3	610·0		15	16·12	17	538·8	18	458·5		25	02·67
	10	25 02·45	12	529·8	13	609·6		20	14·58	22	535·6	23	462·0		32	25 03·02
	30	08·75	32	534·3	33	603·4		30	14·01	32	528·7	33	465·7		35	24 59·93
21 8	0	14·68	2	539·1	3	588·5		46	08·08	47	534·9	48	476·2		40½	24 51·02
21 9	0	03·23	2	546·3	3	577·7		50	08·95	52	533·6	53	481·2		45	24 58·25
	10	06·06	12	543·8	13	575·2		55	09·69	57	533·6	58	482·4		50	25 09·87
	35	06·29	37	544·6	38	564·9	23 18	0	11·71	2	528·7	3	484·7		55	13·94
21 10	0	14·53	2	537·0	3	554·1		5	09·44	7	535·0	8	483·0	24 10	0	19·66
								10	10·56	12	531·8	13	482·7	*	5	17·89
								20	08·03	22	538·0	23	487·0		10	13·44
22 10	0	25 06·63	2	545·4	3	576·2		25	08·95	27	533·0	28	491·3		15	09·82
	10	09·53	12	538·7	13	576·1		30	09·40	32	531·3	33	493·5		20	08·34
	20	09·89	22	535·9	23	573·9	23 19	0	14·57	2	533·8	3	498·0		25	10·28
	40	10·75	42	535·8	43	570·8		10	14·53	12	532·1	13	498·5		30	10·70
22 11	0	10·36	2	533·0	3	571·5		26	15·32	27	531·4	28	502·0		35	09·56

BIFILAR. k=0·000140. BALANCE. k=0·000010.

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* See notes on the Aurora Borealis, *after* the *Extra Observations of Magnetometers.*

Feb. 23d 18h 20m. The declination and bifilar magnets have been moving backwards and forwards through a few divisions.

Feb. 24d 4h 5m. The instruments have evidently been slightly disturbed throughout the day.

Feb. 24d 8h 40m. Bifilar vibrating 13 sc. div.

Bifilar Corrected.	Balance Corrected.		Gött. Mean Time.		Declination.			Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.		Declination.			Bifilar Corrected.		Balance Corrected.	
Sc. Div.	Min.	Mic. Div.	d.	h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.	d.	h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.
530·9	33	502·6	24	10	45	25	05·36	47	522·8	48	487·2	25	4	10	25	17·44	12	541·5	13	616·0
527·7	38	504·3	24	11	0		05·79	2	516·8	3	492·8			15		17·29	17	548·5	18	616·5
527·4	53	504·8		*	10		03·07	12	526·0	13	494·2			20		17·36	22	551·0	23	616·6
529·3	3	507·5			15		03·20	17	530·0	18	492·1			25		17·70	27	546·3	28	616·2
531·0	22	511·7			20		06·46	22	534·9	23	490·4			30		18·10	32	539·3	33	616·3
532·6	3	518·6			25		09·03	27	533·5	28	490·3	25	5	0		15·64	2	544·9	3	607·9
					30		09·35	32	532·3	33	487·9			17		16·43	18	542·1	19	601·8
547·1	3	617·0			35		08·23	37	532·2	38	485·7			20		16·08	22	544·1	23	600·0
551·0	8	615·2	24	12	0		08·73	2	524·5	3	471·1						32	527·5		
544·5	13	614·0		*	10		13·22	12	525·3	13	474·2						33	528·2	34	601·7
544·5	18	611·2			20		15·61	22	533·9	23	458·4			35		13·66	36	530·8	37	601·7
544·8	33	606·1			25		14·98	27	541·6	28	447·6						47	546·2	48	605·5
546·1	38	604·3			30		14·11	32	545·0	33	438·1						49	545·6		
545·4	49	600·3			35		14·57	37	541·5	38	433·4			50		08·79	52	542·7	53	607·8
542·1	3	595·3			40		14·37	42	537·4	43	433·2			55		06·12	56	544·1	57	607·4
541·0	33	589·5			45		13·76	47	533·9	48	433·6	25	6	0	25	05·05	2	543·5	3	609·0
538·1	3	581·6			50		13·63	52	530·1	53	436·8			10	24	58·32	12	553·0	13	609·3
554·1			24	13	0		11·66	2	520·9	3	444·6			15	24	58·82	17	551·8	18	609·4
558·2	3	587·9		*	10		14·50	12	531·0	13	451·4			20	25	02·82	22	542·6	23	612·7
559·1	8	586·0			20		03·99	22	537·0	23	454·2			25		03·84	27	537·6	28	603·5
561·9	13	582·1			25		00·84	27	538·2					30		04·15	32	538·7	33	614·0
559·1	18	576·6			30		02·75	32	539·9	33	454·1			40		05·58	42	533·1		
561·4	23	571·5			40		04·08	42	536·8	43	457·6			50		04·61	52	530·0	53	614·7
557·0	28	569·4			55		04·48	57	530·7	58	463·7	25	7	0		06·97	2	528·3	3	613·8
551·0	33	569·1	24	14	0		04·61	2	529·2	3	465·8			22		02·50	23	528·1	24	611·1
548·3	38	567·8			10		04·84	12	526·4	13	467·3			30		00·53	32	535·5	33	611·4
526·5	53	578·0		*	20		04·31	22	522·3	23	471·5			45		04·95	47	533·3	48	609·4
529·9	58	576·7			30		04·58	32	516·3	33	472·5	25	8	0		06·63	2	538·1	3	603·8
534·3	3	575·9			40		08·01	42	510·5	43	477·2			30		11·37	32	530·9	33	604·4
537·8	8	574·8			45		08·34	47	513·9	48	480·5	25	9	0		13·02	2	540·4	3	593·3
531·7	13	573·8			50		08·85	52	516·2	53	478·4	25	11	0		13·22	2	530·4	3	527·0
526·5	18	576·1	24	15	0		10·20	2	520·3	3	478·8			10		12·38	12	534·5	13	522·0
528·5	23	572·1			10		12·04	12	525·3	13	487·8			15		14·50	17	542·4	18	515·8
548·7	28	564·5			22		14·80	23	530·3	24	491·2			20		16·15	22	548·4	23	506·7
548·4	33	561·7			30		18·43	32	524·1	33	493·2			25		16·57	27	553·7	28	495·2
546·3	38	559·0			35		18·82	37	521·0	38	489·4			30		16·15	32	556·4	33	484·7
546·2	43	552·8			40		17·53	42	520·9	43	485·0			35		15·83	37	559·0	38	477·6
551·6	48	539·9	24	16	0		12·35	2	533·1	3	487·6			40		15·79	42	559·7	43	470·2
517·2	53	551·1			30		11·03	32	530·1	33	510·2			45		16·52	47	559·2	48	462·9
509·6			24	17	0		09·03	2	518·4	3	513·7			50		16·15	52	554·3	53	457·2
513·1	58	550·7			20		15·18	22	511·0	23	503·1			55		15·67	57	550·4	58	453·5
515·5	3	553·6			35		16·38	37	517·2	38	485·7	25	12	0		14·84	2	544·6	3	450·5
516·2	8	556·4	24	18	0		16·28	2	527·9	3	471·3			5		15·04	7	537·6	8	449·4
518·6	13	557·2	24	19	2½		10·31	4	532·3	5	474·8			10		15·58	12	527·4	13	453·7
518·9					15		10·09	16	528·8	17	482·8			22		10·50	23	502·2	24	466·4
523·3	23	556·9			36		12·15	37	528·8	38	494·8			25		05·87	27	509·1	28	468·8
532·4	28	550·5	24	20	0		14·18	2	523·0	3	511·1			30	25	00·84	32	519·0	33	468·3
521·7					15		12·02	16	529·2	17	511·1			35	24	59·95	37	524·0	38	466·4
520·2	38	538·7	24	21	0		17·89	2	528·7	3	518·3			40	25	01·66	42	525·4	43	469·1
554·4	43	518·0			10		18·03	12	522·6	13	520·4			45		05·45	47	524·3	48	471·5
564·4	48	499·5			20		16·95	21	523·5	22	521·1			50		07·40	52	523·3	53	472·9
535·5	53	493·1	24	22	0		15·05	2	521·0	3	531·1			55		08·21	57	521·6	58	471·9
540·2	58	488·3										25	13	0		06·97	2	528·3	3	467·9
521·2	3	480·9	25	3	0	25	15·72	2	547·4	3	616·6			5		04·98	7	534·6	8	464·9
516·3	8	477·8			18		17·49	19	542·2	20	615·6			10		04·10	12	538·4	13	465·2
515·6	13	468·9			21		17·19	22	536·4	23	614·4			15		05·32	17	535·9	18	465·6
520·5	18	477·9			25		19·48	27	536·3	28	614·0			20		06·71	22	529·5	23	466·5
523·6	23	474·0			30		17·98	32	535·7	33	609·4			51		10·83	52	511·6	53	480·9
516·7	28	474·5			49		21·03	50	546·3	51	607·7			55		10·41	57	513·0	58	478·4
513·0	33	480·2			52		21·26	53	546·9	54	608·7	25	14	0		09·82	2	520·0	3	479·3
511·4	38	483·2	25	4	0		21·10	2	532·3	3	616·0			10		11·42	12	521·5	13	482·1

Bifilar. k=0·000140. Balance. k=0·000010.

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* See notes on the Aurora Borealis, *after* the *Extra Observations of Magnetometers.*

Feb. 25^{d} 3^{h} 20^{m}. Bifilar vibrating 15 sc. div.

Feb. 25^{d} 11^{h} 12^{m}. Bifilar vibrating 10 sc. div.

Feb. 25^{d} 11^{h} 17^{m}. Bifilar vibrating 10 sc. div.

Gött. Mean Time.	DECLINATION.		BIFILAR Corrected.		BALANCE Corrected.	
d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.
25 14	15	25 11·51	17	525·1	18	483·5
25 15	0	14·94	2	522·7	3	483·6
	10	16·19	12	519·4	13	487·5
	15	15·67	17	520·6	18	490·0
25 16	0	14·51	2	528·8	3	500·5
25 18	0	08·72	2	524·8	3	527·5
	10	10·48	12	522·0	13	530·7
	15	11·84	17	521·8	18	529·6
25 19	0	17·93	2	534·5	3	509·7
	15	15·81	17	541·1	18	502·0
	30	14·71	32	540·0	33	505·1
25 20	0	13·19	2	537·9	3	507·0
26 1	0	25 17·46	2	511·6	3	563·8
			12	518·7	13	573·0
	15	14·46	17	524·5	18	573·9
	20	21·46	22	523·7	23	577·1
	30	21·71	32	529·0	33	581·0
26 2	0	22·89	2	523·0	3	582·3
26 3	0	23·54	2	541·8	3	591·3
	10	23·48	12	522·9	13	594·9
	30	25·06	32	532·0	33	616·2
	35	21·53	37	522·0	38	628·2
	40	11·24	42	527·8	43	637·3
	45	08·31	47	532·9	48	651·8
	50	06·97	52	532·4	53	660·9
	55	03·47	57	543·7	58	665·2
26 4	0	03·34	2	546·6	3	668·4
	10	06·06	12	549·2	13	668·8
	25	13·49	27	541·8	28	651·7
	30	14·06	32	542·4	33	644·2
	40	16·59	42	545·7	43	632·7
	50	17·67	52	540·2	53	623·4
26 5	0	17·33	2	539·9	3	618·6
	25	16·15	27	537·0	28	611·9
26 6	0	14·71	2	536·1	3	603·5
26 10	0	25 11·64	2	541·8	3	550·8
	10	10·23	12	542·5	13	548·8
	15	10·48	17	543·2	18	548·7
26 11	0	09·19	2	533·3	3	554·3
	40	07·99	41	538·1	42	554·9
	52	13·39	53	536·0	54	544·2
	55	13·56	57	530·1	58	541·6
26 12	0	12·89	2	525·4	3	538·6
	10	10·70	12	522·1	13	538·9
	15	11·51	17	531·2	18	539·2
	20	14·94	22	535·6	23	536·0
	25	16·92	27	536·5	28	530·3
	30	17·36	32	538·7	33	523·1
	35	17·83	37	537·6	38	517·1
	40	17·29	42	536·9	43	512·6
	51	13·86	52	533·1	53	509·9
26 13	0	12·72	2	533·2	3	512·8
	20	09·93	22	536·3	23	520·5
26 14	0	11·42	2	529·4	3	533·1
26 15	0	18·47	2	530·2	3	506·8
	6	16·93	7	531·7	8	499·8
	15	16·53	17	538·2	18	499·7
	20	17·39	22	536·2	23	500·9
	30	15·22	32	533·6	33	504·0

Gött. Mean Time.	DECLINATION.		BIFILAR Corrected.		BALANCE Corrected.	
d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.
26 15	40	25 14·40	42	533·9	43	510·5
26 16	0	12·62	2	534·5	3	522·3
	31	11·98	32	532·0	33	533·5
26 17	0	12·38	2	535·5	3	539·0
27 2	0	25 22·03	2	541·2	3	560·8
	13	18·27	14	530·2	15	562·1
27 3	0	17·81	2	535·0	3	567·2
27 8	0	25 01·59	2	549·2	3	575·1
	10	24 59·79	12	546·2	13	573·8
	15	24 59·70	17	541·9	18	574·8
	20	25 01·22	22	536·8	23	578·7
	30	24 58·76	32	530·7	33	580·5
	35	56·10	37	533·1	38	578·5
	40	54·59	42	535·1	43	578·5
	45	52·82	47	534·5	48	577·8
	50	50·90	52	537·2	53	575·2
	55	49·91	57	543·1	58	574·4
27 9	0	52·40	2	544·3	3	574·4
	5	55·77	7	541·7	8	574·2
	10	24 57·37	12	539·9	13	573·5
	22	25 01·46	23	535·1	24	570·0
	30	03·94	32	532·6	33	567·2
	55	04·42	56	523·2	57	565·7
27 10	0	04·32	2	526·5	3	565·6
	10	06·12	12	533·0	13	563·8
	20	07·44	22	533·2	23	562·2
27 11	0	10·25	2	531·4	3	560·8
27 12	0	08·95	2	534·5	3	550·3
	33	13·52	34	529·7	35	551·3
27 13	0	14·13	2	529·0	3	543·8
27 14	0	19·48	2	524·1	3	502·4
	10	16·45	12	526·6	13	494·6
	20	14·73	22	530·3	23	495·0
	30	13·52	32	529·9	33	499·3
27 15	0	11·41	2	534·8	3	518·0
28 6	0	25 07·47	2	539·6	3	596·4
	10	09·15	12	536·6	13	595·9
	30	12·11	32	526·6	33	591·3
28 7	0	12·95	2	542·4	3	582·0
28 10	0	25 01·95	2	543·0	3	568·9
	5	01·01	7	542·6	8	568·1
	15	02·89	17	534·1	18	566·4
	20	02·23	22	529·3	23	566·5
	25	01·92	27	527·3		
	30	02·37	32	526·5	33	567·5
	35	03·58	37	529·2	38	567·7
	40	05·70				
28 11	0	09·40	2	531·2	3	566·5
	10	10·88	12	533·7	13	565·9
	31	11·55	32	529·9	33	568·2
28 12	0	11·99	2	534·4	3	565·3
28 13	0	10·94	2	529·4	3	561·8
	10	14·10	12	526·6	13	559·7
28 14	0	05·60	2	533·0	3	504·2
	5	05·05	7	530·8	8	503·0
	10	05·05	12	528·5	13	504·9
	15	05·11	17	527·5		

Gött. Mean Time.	DECLINATION.	
d. h.	Min.	° ′
28 14	25	25 06·19
	35	05·69
	46	06·53
	55	08·45
28 15	0	08·82
3 9	0	25 09·35
	5	04·81
	10	06·81
	15	09·42
	25	06·58
	35	10·30
	50	12·25
3 10	0	12·33
4 10	0	25 10·83
	10	12·28
	15	12·36
4 11	0	13·37
	10	11·81
	20	11·00
4 12	0	11·24
5 10	1	25 10·70
	10	12·11
	15	12·55
5 11	0	12·23
7 10	0	25 09·49
	10	10·40
	15	10·34
	20	10·87
	25	11·77
	30	12·04
7 11*	0	10·30
9 14	0	25 14·75
	10	17·26
	15	17·22
	20	15·85
	25	13·93
	30	12·45
	35	11·81
	40	11·68
	45	11·75
9 15	0	12·55
	10	12·69
	15	15·88
	20	18·40
	25	20·22
	30	20·79
	35	21·19
	40	20·29
	45	19·51
	50	17·49
9 16	0	14·53
	10	11·74
	15	10·63
	20	09·62
	25	09·46
	30	09·29

BIFILAR. $k=0·000140$. BALANCE. $k=0·000010$.

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* See notes on the Aurora Borealis, *after* the *Extra Observations of Magnetometers.*

Feb. 25^d 18^h 10^m. The magnets evidently disturbed throughout the night, but within small limits.

March 4^d 10^h 15^m. Instruments slightly disturbed.

ifilar rrected.	Balance Corrected.	
Sc. Div.	Min.	Mic. Div.
522·5	28	512·4
524·5	38	516·6
526·1	48	522·0
526·5	58	525·2
528·0	3	527·2
540·1	3	571·7
552·5	8	562·4
558·1	13	559·2
551·8	18	559·3
549·2	28	555·5
546·8	38	554·7
537·7	53	559·5
536·1	3	562·5
541·3	3	550·3
546·6	13	551·7
543·7	18	552·1
540·9	3	550·0
541·4	13	547·1
539·9	23	546·4
540·6	3	540·3
543·4	3	545·8
539·5	13	548·5
539·1	18	549·4
541·1	3	546·1
540·6	3	571·5
539·6	13	570·3
536·9	18	571·4
535·3	23	572·3
535·8	28	571·7
536·5	33	571·5
539·6	3	560·4
536·6	3	552·6
539·3	13	549·7
541·4	18	545·7
542·1	23	540·3
541·5	28	537·3
540·4	33	535·5
539·5	38	535·4
537·7	43	536·8
536·2	48	537·7
533·6	3	540·2
538·3	13	539·9
544·3	18	539·4
552·5	23	534·7
555·9	28	529·4
557·1	33	523·8
553·4	38	519·7
549·1	43	517·6
544·8	48	514·9
542·2		
538·3	3	513·6
534·0	13	516·3
533·3	18	518·4
534·6	23	520·9
535·2	28	522·3
535·8	33	524·8

Gött. Mean Time.		Declination.			Bifilar Corrected.		Balance Corrected.	
d.	h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.
9	16	35	25	09·44	37	534·9	38	527·7
		40		09·35	42	534·5	43	530·6
9	17	0		08·99	2	534·8	3	538·0
10	1	0	25	18·63	2	527·6	3	551·8
		18		20·92	19	532·8	20	554·6
		40		20·50	42	530·9	43	557·4
10	2	0		19·37	2	530·0	3	557·6
10	8	0	25	09·69	2	538·9	3	565·2
		10		10·09	12	540·5	13	564·9
10	9	0		11·98	2	539·3	3	561·4
11	7	0	25	07·57	2	536·2	3	573·9
		10		09·15	12	537·6	13	574·7
		20		09·69	22	540·9	23	570·6
		25		09·96	27	541·5	28	569·4
		30		09·98	32	542·9	33	567·8
		40		09·49	42	541·4	43	566·6
11	8	0		11·21	2	541·4	3	565·8
11	10	0		06·07	2	535·7	3	556·1
		5		05·11	7	540·4	8	554·6
		10		06·01	12	540·6	13	554·8
		15		06·32	17	540·9	18	554·8
		25		07·98	27	540·1	28	555·3
11	11	0		11·10	2	536·4	3	551·9
13	16	0	25	13·25	2	545·2	3	536·9
		38		08·99	39	540·3	40	534·8
13	17	0		08·45	2	543·6	3	535·3
		26		11·24	27	544·3	28	536·2
13	18	0		11·14	2	543·6	3	536·6
13	20	0		11·21	2	530·0	3	545·4
		10		12·58	12	524·0	13	547·5
		18		15·11	19	527·1		
		20		12·93	22	523·2	23	546·9
		25		13·76	27	521·7	28	546·3
		30		15·36	32	520·6	33	546·2
		35		15·81	37	516·0	38	546·8
		40		16·21	42	511·7	43	546·3
		45		15·94	47	513·6	48	545·5
13	21	0		19·31	2	520·5	3	543·4
		10		19·91	12	523·0	13	542·1
		15		20·92	17	525·2	18	539·3
		20		20·70	22	528·4	23	538·2
		30		20·89	32	529·0	33	535·3
13	22	5		20·94	6	532·9	7	532·8
		15		21·66	17	535·2	18	533·0
		25		19·14	27	537·5	28	532·3
		35		17·86	37	524·9	38	535·5
		45		15·24	47	526·7	48	537·0
		55		13·83	57	524·3	58	538·9
13	23	0		13·52	2	526·3	3	538·5
		10		13·29	12	528·8	13	537·5
		20		14·10	22	528·5	23	537·7
		32		16·35	34	529·3	35	537·8
14	0	0		18·38	2	527·6	3	534·3
14	1	0		18·60	2	532·7	3	535·5
		20		18·54	21	524·6	22	541·9
14	2	0		21·19	2	535·1	3	541·1

Gött. Mean Time.		Declination.			Bifilar Corrected.		Balance Corrected.	
d.	h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.
14	7	0	25	04·55	2	528·8	3	604·3
		10		00·87	12	536·9	13	601·0
		15		00·80	17	538·7	18	600·7
		20		02·22	21	540·1	22	600·0
14	8	0		09·93	2	534·0	3	593·1
14	9	0		07·04	2	532·3	3	581·5
		10		06·86	11	532·4	12	581·7
14	10	0		02·08	2	542·8	3	556·7
		12		04·07	14	546·0	15	555·0
		20		05·58	22	540·8	23	553·6
		30		07·17	32	537·9	33	552·5
14	11	0		10·67	2	539·8	3	544·5
		10		08·65	12	537·2	13	543·1
		20		07·17	22	538·1	23	541·0
		30		07·04	32	538·4		
14	12	0		06·66	2	533·1	3	539·2
		15		10·47	17	532·4	18	540·1
14	13	0		11·49	2	535·2	3	531·6
14	14	0		10·16	2	530·4	3	537·5
		15		09·53	17	529·0	18	540·4
		40		11·48	42	528·6	43	542·9
14	15	0		13·76	2	530·6	3	542·0
14	16	0		16·68	2	532·4	3	529·6
		10		15·41	12	534·7	13	527·8
		20		14·92	22	534·5	23	522·4
14	17	0		10·97	2	532·4	3	527·7
15	6	0	25	05·02	2	540·4	3	577·9
		10		02·79	12	544·1	13	579·2
		20		03·70	22	547·5	23	582·7
		35		06·32	37	545·6	38	588·3
		45		07·78	47	542·0	48	592·0
15	7	0		10·81	2	540·3	3	592·8
		15		12·58	17	544·0	18	588·2
		50		12·53	52	536·7	53	586·7
15	8	0		12·04	2	542·9	3	583·1
16	13	0	25	04·71	2	527·7	3	482·0
		10		03·34	12	526·6	13	477·4
		20		05·29	22	522·7	23	477·6
		30		08·11	32	522·4	33	479·5
		40		10·65	42	524·2	43	486·4
		50		12·49	52	527·8	53	488·2
16	14	0		12·93	2	531·7	3	487·7
		15		15·39	17	529·4	18	485·2
		30		15·29	32	530·1	33	487·5
16	15	0		16·05	2	534·2	3	503·3
		30		11·68	32	530·0	33	507·1
16	16	0		08·21	2	525·3	3	515·3
		10		09·42	12	522·6	13	518·9
		20		11·03	22	521·6	23	522·0
		30		13·22	32	520·7	33	523·0
		40		14·84	42	519·3	43	522·8
		50		14·80	52	522·7	53	517·6
16	17	0		15·88	2	524·4	3	513·1
		30		13·07	32	511·0	33	506·6
16	18	0		14·50	2	532·5	3	508·5
17	9	0	25	10·90	2	547·0	3	551·7
		15		11·52	17	550·3	18	547·1
		30		12·65	32	543·7	33	541·1

BIFILAR. k=0·000140. BALANCE. k=0·000010.

h 13^d 1^h and afterwards. Declination reading higher than its mean value; the magnet was watched, but no change of importance took place.

h 15^d 11^h. Instruments slightly disturbed.

Gött. Mean Time.		Declination.			Bifilar Corrected.		Balance Corrected.	
d.	h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.
17	10	0	25	13·36	2	539·0	3	545·1
17	11	0		07·13	2	543·7	3	539·4
		10		08·21	12	549·6	13	535·2
		15		09·19	17	552·9	18	532·9
		20		10·27	22	552·1	23	531·1
		35		09·79	36	545·5	37	527·2
17	12	0		11·79	2	541·3	3	521·9
18	7	0	25	13·39	2	543·0	3	572·7
		30		15·11	32	542·9	33	571·3
18	8	0		14·06	2	538·6	3	574·3
18	9	0		11·71	2	542·7	3	570·7
18	10	0		03·37	2	558·2	3	534·4
		5		05·15	7	555·6	8	532·4
	*	10		06·70	12	548·9	13	533·2
		20		05·53	22	538·6	23	531·4
		25		02·96	27	546·7	28	528·3
		30		03·90	32	548·3	33	526·4
		35		04·64	37	548·3	38	523·4
		45		06·04	47	540·4	48	521·2
		50		06·06	52	539·5	53	521·2
18	11	0		06·19	2	541·9	3	518·4
		15		05·47	17	540·2	18	518·7
		30		08·80	32	538·0	33	522·4
18	12	0		13·23	2	534·6	3	529·1
19	6	0	25	12·23	2	537·6	3	581·3
		25		08·83	27	530·5	28	597·9
		45		04·24	47	527·6	48	606·1
19	7	0		03·41	2	530·0	3	609·2
19	8	0		09·79	2	526·5	3	607·8
19	9	0		16·28	2	528·1	3	542·8
		5		06·84	7	518·8	8	546·1
		10		10·36	12	524·0	13	551·1
		15		06·06	17	532·9	18	554·5
		20		05·96	22	529·3	23	554·6
		25		05·58	27	528·1	28	554·9
		30		04·68	32	530·2	33	556·3
		45		02·96	47	528·0	48	563·4
	*	50		03·06	52	527·4	53	565·6
19	10	0		06·51	2	527·7	3	570·1
20	15	0	25	18·37	2	532·2	3	538·3
		5		21·63	7	536·8	8	531·4
		10		22·50	12	541·0	13	522·3
		15		24·72	17	540·8	18	510·3
		20		24·99	22	538·3	23	498·9
		25		24·28	27	538·6	28	486·8
		30		22·27	32	536·3	33	476·2
		35		19·93	37	535·9	38	469·9
		40		17·56	42	535·3	43	466·4
		45		15·61	47	537·2	48	465·1
		50		13·96	52	539·7	53	467·2
		55		15·01	57	540·5	58	469·3
20	16	0		14·68	2	536·9	3	471·2
		21		11·21	22	533·1	23	492·7
		30		11·55	32	534·6	33	497·4
20	17	0		09·24	2	533·3	3	517·5
		10		10·33	12	533·5	13	522·0
		35		09·15	36	534·6	37	528·6
20	18	0		10·67	2	532·8	3	539·2

Gött. Mean Time.		Declination.			Bifilar Corrected.		Balance Corrected.	
d.	h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.
21	9	0	25	09·26	2	532·2	3	565·6
		10		15·72	12	553·2	13	536·3
		15		15·67	17	547·0	18	537·1
		20		11·77	22	561·5	23	530·2
		25		18·38	28	555·7	29	522·1
		30		22·27	32	536·0	33	521·0
		35		18·20	37	528·5	38	522·9
		40		09·56	42	541·2	43	516·8
		45		07·54	47	549·4	48	514·0
		50		09·69	42	549·7	53	511·9
		55		11·77	57	545·2	58	508·3
21	10	0		13·96	2	547·8	3	505·9
		15		11·48	17	531·5	18	506·5
		25		07·57	27	537·8	28	498·4
		30		07·67	32	534·7	33	493·0
21	11	0		08·36	2	530·7	3	482·5
		15		07·34	17	528·2	18	484·4
		45		07·40	46	532·3	47	496·1
21	12	0		10·78	2	531·6	3	495·9
21	13	0		12·29	2	537·0	3	500·3
		10		15·31	12	536·6	13	498·0
		20		16·63	22	535·3	23	495·1
		30		17·63	32	534·5	33	493·2
		40		16·15	42	534·5	43	490·8
21	14	0		15·49	2	533·8	3	494·2
21	16	0		10·92	2	519·5	3	497·1
		11		10·63	12	524·1	13	488·7
		15		10·50	17	527·4	18	485·6
		35		09·19	37	531·3	38	484·4
21	17	0		06·90	2	536·4	3	492·5
		20		06·59	22	542·5	23	495·9
21	18	0		07·27	2	541·4	3	506·4
21	19	0		12·45	2	534·9	3	518·6
		15		12·78	17	533·0	18	520·8
		25		12·78	26	533·6	27	522·9
21	20	0		14·03	2	533·1	3	525·4
23	13	0	25	08·06	2	538·8	3	507·0
	*	15		06·74	16	524·6	17	502·3
					18	520·4		
		19		07·60	22	513·8	23	500·0
					24	507·3		
		25		08·48	27	504·5	28	496·9
		30		08·72	32	506·0	33	487·4
		35		08·28	37	515·1	38	480·6
		40		08·05	42	528·3	43	472·7
		45		09·76	47	539·3	48	459·4
		50		13·25	52	541·4	53	440·2
		55		16·01	57	538·1	58	421·9
23	14	0		17·53	2	535·3	3	406·5
	*	5		18·21	7	530·9	8	391·1
		10		17·73	12	528·3	13	381·7
		15		17·37	17	523·9	18	375·1
		20		16·21	22	521·9	23	373·6
		25		14·77	27	522·6	28	373·5
		30		12·92	32	523·5	33	371·7
		35		13·82	37	522·3	38	370·9
		40		10·80	42	523·1	43	376·9
		45		09·15	47	525·1	48	381·7
		50		06·81	52	528·3	53	387·2
		55		05·52	57	529·7	58	397·0

Gött. Mean Time.		Declination.		
d.	h.	Min.	°	′
23	15	0	25	04·37
		5		05·85
		15		07·40
23	16	0		04·01
		10		02·22
		15		04·04
		20		03·20
		25		02·75
		30		01·95
		35		01·81
		40		01·59
		51		02·15
23	17	0		05·65
		10		09·24
		20		10·47
		36		12·82
		45		13·72
23	18	0		13·39
		10		10·70
		20		10·43
23	19	0		09·30
24	6	0	25	15·51
		15	25	15·38
		20	25	07·74
		25	24	55·44
		30	24	53·54
		35	24	59·57
		40	25	05·55
		45		05·83
		50		03·54
		55		05·58
24	7	0		08·58
		10		05·58
		15		03·23
		20		02·48
		45		08·31
		50		07·67
		55		07·27
24	8	0		07·17
		10		10·34
		20		10·90
		30		07·17
		45		06·86
		55		06·43
24	9	0		07·54
		32		10·36
24	10	0		10·83
24	11	0		09·33
		20		01·98
		25		01·04
		31		01·93
24	12	0		16·25
		7		19·01
		10		18·10
		15		14·13
		20		11·57
		25		11·78
		30		12·16
		35		11·52

BIFILAR. $k=0·000140$. BALANCE. $k=0·000010$.

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* See notes on the Aurora Borealis, *after* the *Extra Observations of Magnetometers.*

BIFILAR orrected.		BALANCE Corrected.	
n.	Sc. Div.	Min.	Mic. Div.
2	532·2	3	407·0
7	531·8	8	419·3
7	532·1	18	433·3
2	529·6	3	461·9
2	528·2	13	465·9
7	525·1	18	466·3
7	527·4	28	459·7
2	524·7	33	456·7
7	519·8	38	456·3
2	516·7	43	453·9
2	519·1	53	457·1
2	508·6	3	461·8
2	506·5	13	466·2
2	514·0	23	463·3
7	522·5	38	465·4
7	532·5	48	468·8
2	537·3	3	475·6
2	540·8	13	480·8
2	538·8	23	489·8
2	537·2	3	521·8
2	540·4	3	644·8
4	551·9	13	679·2
7	544·9	18	699·8
2	545·4	23	713·7
7	554·5	28	692·3
2	570·3	33	668·0
7	574·0	38	654·1
2	557·5	43	653·5
7	548·2	48	648·1
2	551·1	53	638·8
7	552·3	58	632·7
2	548·1	3	631·3
2	524·3	13	636·9
7	526·1	18	638·1
2	528·5	23	636·0
7	536·2	48	615·9
2	535·5	53	612·5
7	534·0	58	611·5
2	532·6	3	611·2
2	535·3	13	606·4
2	536·9	23	598·0
2	534·7	33	594·5
7	529·2	48	600·8
7	530·6	58	602·6
2	532·5	3	602·6
3	534·4	34	591·7
2	533·5	3	582·0
2	535·8	3	558·4
2	535·5	23	557·1
7	534·4	28	559·0
2	530·4	33	561·8
2	536·7	3	544·2
3	537·8	9	524·7
2	541·6	13	506·8
7	545·9	18	482·4
2	553·9	23	466·4
7	554·1	28	458·5
2	544·2	33	452·8
7	539·8	38	451·1

Gött. Mean Time.		DECLINATION.			BIFILAR Corrected.		BALANCE Corrected.	
d.	h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.
24	12	40	25	08·53	42	538·3	43	449·6
		45		05·83	47	541·2	48	449·0
		50		04·68	52	546·0	53	446·1
		55		05·18	57	546·5	58	442·0
24	13	0		05·96	2	543·5	3	439·8
		15		09·87	17	525·5	18	439·8
		26		08·73	27	510·5	28	438·0
					29	506·5		
		30		07·62	31	501·9		
					32	499·3	33	437·1
					34	496·3		
		35	25	02·64	36	496·8	37	435·9
					38	499·3		
		40	24	56·94	41	502·3	42	433·0
					44	514·3		
		45		52·94	47	516·6	48	431·6
		50		54·16	52	516·5	53	430·5
		55		54·35	57	511·0	58	427·6
24	14	0		53·72	2	512·6	3	430·0
		6		53·20	7	508·7	8	427·2
		10		52·60	12	509·0	13	426·7
		20		52·60	22	504·8	33	429·6
		25		52·84	26	506·6	27	431·1
		35		54·08	37	503·3	38	431·2
		45	24	56·75	47	507·5	48	429·6
		56	25	00·33	57	510·2	58	425·8
24	15	0		04·14	2	505·8	3	418·2
		5		07·32	7	503·7	8	407·5
	*	10		08·08	12	508·7	13	396·1
		15		08·68	17	511·7	18	390·0
		20		09·39	22	514·3	23	386·2
		30		11·10	32	515·7	33	379·9
		45		07·87	46	525·1	47	373·4
24	16	0	25	00·71	2	533·8	3	352·7
		6	24	59·36	7	544·2	8	358·8
		11	25	01·41	12	543·5	13	360·6
		15		02·84	17	536·6	18	360·8
		25		04·73	27	524·7	28	358·8
		30		03·30	32	527·2	33	362·6
					47	513·5	48	392·4
24	17	0		05·11	2	511·3	3	421·2
		25		09·39	27	527·2	28	457·2
		45		09·22	47	530·5	48	471·9
24	18	0		10·03	2	532·2	3	483·7
24	19	0		09·98	2	529·4	3	521·9
		25		11·57	27	523·1	28	533·7
24	20	0		10·53	2	517·2	3	543·9
25	5	0	25	15·12	2	533·1	3	601·9
		36		04·51	37	543·0	38	621·6
		40		06·19	42	545·4	43	622·0
		45		07·49	47	545·2	48	620·4
		50		07·79	52	547·4	53	618·7
25	6	0		10·30	2	542·1	3	615·6
		22		12·25	23	539·3	24	603·6
25	7	0		13·66	2	541·5	3	583·5
25	13	0	25	04·89	2	550·9	3	498·9
		10		04·89	12	548·1	13	499·2
		20		06·79	22	542·3	23	504·5

Gött. Mean Time.		DECLINATION.			BIFILAR Corrected.		BALANCE Corrected.	
d.	h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.
25	13	30	25	08·45	32	536·5	33	508·3
		40		09·12	42	532·4		
		50		07·29	52	532·4	53	508·5
25	14	0		04·86	2	532·4	3	508·1
		10		03·30	12	533·7	13	506·9
		20		04·48	22	530·6	23	506·6
		30		06·77	32	528·8		
25	15	0		11·91	2	527·1	3	504·6
		10		13·66	12	528·9	13	504·7
		20		13·47	22	534·7	23	504·6
25	16	0		08·29	2	531·2	3	517·6
		30		07·87	32	530·4	33	526·1
25	17	0		10·58	2	532·0	3	534·9
26	5	0	25	12·67	2	542·1	3	594·4
		10		07·47	12	545·1	13	599·1
		15		06·84	17	553·0	18	602·9
		20		08·16	22	554·5	23	606·3
		40		10·70	41	542·2	42	620·4
26	6	0		08·11	2	536·7	3	626·0
		10		01·72	12	543·2	13	627·7
		15		00·40	17	553·4	18	625·7
		20		02·69	22	556·0	23	624·9
		25		06·76	27	558·2	28	623·0
		30		08·48	32	551·5	33	620·9
26	7	0	25	05·06	2	544·9	3	618·5
		50	24	58·15	52	543·1	53	560·4
		55	24	59·01	57	549·4	58	554·1
26	8	0	25	04·19	2	553·2	3	549·8
		5		08·93	7	545·8	8	548·7
		10		13·52	12	536·2		
		15		15·94	17	520·7	18	552·9
		20		13·66	22	518·0	23	554·7
		25		09·12	27	529·9		
		30		10·41	32	531·4	33	557·5
		40		10·51	42	535·3	43	563·0
		50		10·95	52	534·2	53	567·7
26	9	0		12·02	2	534·9	3	568·5
		45		11·88	47	540·4	48	554·0
26	10	0		16·93	2	527·9	3	539·2
		10		15·58	12	543·1	13	511·5
		20		16·77	22	530·7	23	497·5
		30		11·24	32	527·0	33	492·0
		35		06·90	37	536·0	38	492·1
		40		05·27	42	541·0	43	492·3
		45		05·36	47	542·7	48	490·2
		50		05·94	52	544·3	53	491·0
26	11	0		08·82	2	540·7	3	496·8
	*	15		07·74	17	524·6	18	495·0
		25		04·48	27	531·9	28	494·0
		35		05·38	37	530·8	38	499·9
		45		06·50	47	536·1	48	504·4
		55		08·38	57	540·7	58	503·4
26	12	0		09·06	2	544·1	3	502·0
		10		09·35	12	542·3	13	501·0
		20		09·12	22	540·8	23	501·2
		30		09·82	32	539·8	33	504·1
26	13	0		09·84	2	535·1	3	499·3
	*	10		08·31	12	530·3	13	501·6
		30		10·09	32	527·2	33	510·4
26	14	0		11·64	2	516·3	3	507·4

BIFILAR. $k=0·000140$. BALANCE. $k=0·000010$.

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* See notes on the Aurora Borealis, *after* the *Extra Observations of Magnetometers.*

Gött. Mean Time.		DECLINATION.			BIFILAR Corrected.		BALANCE Corrected.	
d.	h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.
26	14*	10	25	10·87	12	516·8	13	502·5
		30		13·84	32	524·5	33	488·8
		35		16·41	37	521·2	38	483·5
		40		18·05	42	519·0	43	474·6
		45		20·05	47	517·0	48	468·1
		50		21·59	52	513·8	53	461·3
		55		22·20	57	510·5	58	453·3
26	15	0		20·87	2	513·0	3	447·7
		10		18·87	12	518·2	13	440·5
		15		19·28	17	520·3	18	441·2
		20		18·67	22	526·9	23	445·8
		25		18·48	27	531·4	28	450·0
		30		16·95	32	534·3	33	453·7
		45		12·82	47	535·5	48	465·8
26	16	0		09·22	2	537·5	3	477·8
		10		08·25	12	536·5	13	481·8
		30		04·44	32	538·1	33	490·4
		35		04·44				
26	17	0		08·01	2	530·0	3	513·0
		15		07·22	17	529·1	18	515·0
		55		14·77	57	526·4	58	531·8
26	18	0		14·92	2	524·1	3	532·9
		10		13·59	12	522·8	13	565·1
26	19	0		11·62	2	536·3	3	534·3
27	5	0	25	15·18	2	518·8	3	600·4
		10		10·27	12	532·6	13	603·1
		21		11·41	22	538·4	23	609·1
		30		10·77	32	546·1	33	602·2
		40		13·00	42	551·3	43	597·0
		50		14·03	52	548·9	53	597·6
27	6	0		13·05	2	539·6	3	605·5
27	7	0		12·58	2	542·3	3	611·5
		42		09·53	43	523·6	44	616·4
		45		05·79	47	529·4	48	613·9
		50		04·71	52	538·9	53	610·7
		55		07·05	57	540·9	58	607·2
27	8	0		06·03	2	540·3	3	603·5
		5		04·98	7	536·9	8	603·7
		10	25	00·57	12	536·6	13	599·0
		15	24	58·47	17	539·2	18	596·7
		20	24	55·53	22	555·3	23	584·5
					24	561·4		
		25	24	59·36				
		26	25	01·75	27	569·2	28	574·2
					29	574·1		
		30		03·57	32	577·2	33	560·4
		35		09·29	37	569·7	38	552·6
		40		14·33	42	547·3	43	547·3
					44	539·0		
		45		13·37	47	534·0	48	542·4
		50		10·50	52	534·4	53	536·8
		56		09·32	57	531·7	58	532·0
27	9	0		09·29	2	527·4	3	531·1
		10		02·73	12	528·0	13	532·0
		15		00·74	17	538·0	18	530·5
		20		03·37				
		47		08·05	48	535·0	49	541·8
27	10	0		08·79	2	533·3	3	546·6
		10		08·05	12	533·2	13	548·7
27	11	0		09·67	2	530·8	3	537·1

Gött. Mean Time.		DECLINATION.			BIFILAR Corrected.		BALANCE Corrected.	
d.	h.	Min.	°	′	Min.	Sc. Div.	Min	Mic. Div.
28	9	1½	25	08·68	3	540·4	4	551·4
		10		05·82	12	540·8	13	552·4
		15		05·35	17	544·2	18	552·3
		31	25	04·44	32	541·0	33	552·1
		57	24	57·51				
28	10	0		56·27	2	541·6	3	547·5
		5		54·28	7	543·1	8	546·5
		10		54·55	12	543·4	13	548·1
		15		55·78	17	540·9	18	548·0
		20		57·02	22	538·8		
		30	24	57·68	32	536·2	33	546·9
		40	25	00·80	42	529·1	43	548·8
		50		04·12	52	521·4	53	549·8
28	11	0		04·91	2	525·6	3	545·4
		10		06·97	12	528·2	13	543·3
		20		08·14	22	527·3	23	542·5
		30		07·81	32	532·0	33	542·1
		45		11·51	47	531·9	48	541·3
28	12	0		10·13	2	533·7	3	539·7
29	10	0	25	05·69	2	539·3	3	541·1
		10		03·37	12	536·7	13	538·4
		20		00·47	22	541·5	23	532·7
		30		00·74	32	538·0	33	529·9
		40		01·16	42	537·5	43	523·5
		50		03·04	52	533·2	53	520·2
29	11	0		03·90	2	530·7	3	518·7
	*	15		08·82	17	531·2	18	506·9
		25		08·52	27	529·8	28	501·0
		35		06·39	37	537·6	38	504·3
		50		06·50	52	536·5	53	505·3
29	12	0		07·85	2	533·7	3	506·8
3	9	0	25	06·59	2	539·0	3	570·2
		15		10·20	17	529·8	18	571·5
		25		07·51	27	537·1	28	571·9
		30		08·31	32	537·9	33	571·5
		45		08·08	47	536·0	48	571·3
3	10	0		06·43	2	538·3	3	568·4
		10		06·03	12	538·4	13	567·2
3	11	0		09·93	2	537·7	3	557·0
12	0	0	25	14·35	2	543·2	3	555·3
		10		15·74	12	544·6	13	553·8
12	1	0		18·45	2	529·0	3	548·3
13	11	25	24	53·88	26	541·6	27	424·7
	*	30		48·56	31	545·8	32	427·5
		45		43·52	47	579·6	48	423·8
		51	24	45·74	52	588·3	53	432·8
13	12	0	25	01·54	2	563·6	3	404·5
13	13	3	24	52·40	4	453·0	5	180·2
	*	10		43·42	12	482·5	13	154·8
		15		34·74				
		16		33·29	17	464·7	18	110·2
					18	438·9		
		19		32·55				
		20		32·86	22	396·4	23	60·8
					24	371·9		
		25		29·56				
		26		26·45	27	346·7	28	66·6

Gött. Mean Time.		DECLINATION.		
d.	h.	Min.	°	′
13	13			
		30	24	31·67
		31		31·14
		35		38·27
		36		39·19
		40		41·90
		41		41·37
		45		45·49
		46		47·02
		50		50·31
		51		50·85
		55		50·42
		56		49·57
13	14	0	24	59·59
	*	1	25	00·13
		5	24	57·41
		10		56·16
		15		52·46
		16		51·76
		20		48·23
		21		50·65
		25		48·61
		30		39·75
		31		37·83
		35		32·08
		36		31·99
		40		31·67
		41		29·47
		45		24·65
		46		23·54
		50		22·39
		51		21·83
		55		22·61
		56		22·70
13	15	0		13·32
		5		32·68
		10		43·97
		11		42·98
		15		54·45
		16	24	57·15
		20	25	04·78
		25		00·13

BIFILAR. $k=0·000140$.　　BALANCE. $k=0·000010$.

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* See notes on the Aurora Borealis *after* the *Extra Observations of Magnetometers.*

FILAR rected.	BALANCE Corrected.		Gött. Mean Time.		DECLINATION.			BIFILAR Corrected.		BALANCE Corrected.		Gött. Mean Time.		DECLINATION.			BIFILAR Corrected.		BALANCE Corrected.	
Sc. Div.	Min.	Mic. Div.	d.	h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.	d.	h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.
363·4			13	15				29	591·3			14	6	20	25	11·68	22	549·3	23	621·1
405·8	33	83·0		*	30	24	53·17	32	559·3	33	267·6			30		09·79	32	550·0	33	622·7
391·7								34	539·0					45		07·81	47	535·8	48	624·0
					35		48·36	37	519·9	38	251·9			55		04·12	57	541·0	58	630·4
419·7	38	155·7						39	525·0			14	7	0	25	00·57	2	543·8	3	633·7
430·9					40		45·04							10	24	57·04	12	555·9	13	624·3
					41		45·20	42	525·7	43	266·0			15	24	59·36	17	564·6	18	618·8
397·0	43	213·6						44	516·4					25	25	03·48	27	556·0	28	612·5
400·2					45		43·89	47½	505·9	48½	280·8			50		07·81	52	536·8	53	599·1
					50		44·19	52	508·9	53	299·0	14	8	0		06·74	2	536·7	3	593·3
414·4	48	224·5						54	515·4					35		10·06	37	533·4	38	576·9
422·2					55		45·07	57	521·5	58	317·4	14	9	0		11·64	2	531·7	3	570·8
								59	525·2			14	11	0		12·36	2	530·3	3	512·1
432·0	53	224·8	13	16	0		47·19	2	528·0	3	288·6			30		12·78	32	529·0	33	501·7
414·5				*	5		49·57	7	526·1	8	369·5	14	12	0		16·43	2	531·1	3	470·5
					10		50·18	12	519·8	13	392·7			11		15·56	12	531·2	13	469·8
406·9	58	185·5			15	24	57·24	17	517·6	18	403·9			20		14·40	22	530·2	23	471·0
426·6					20	25	00·20	22	519·6	23	412·6			30		12·38	32	530·9	33	475·1
427·5					30		02·32	32	518·2	33	434·2	14	13	0		12·55	2	535·2	3	483·5
437·9	3	216·0			40		02·66	42	526·1	43	443·0									
453·2	8	239·5			45		08·36	47	514·9	48	441·9	15	9	0	25	02·99	2	549·9	3	540·2
482·8	13	220·8			50		07·78	52	509·2	53	441·4			25		06·66	27	543·6	28	535·3
487·3			13	17	0	25	06·46	2	524·5	3	448·2	15	10	0		07·57	2	539·9	3	532·9
					10	24	58·42	12	525·3	13	455·0									
478·3	18	184·0						14	530·8			18	8	0	25	08·32	2	543·9	3	593·6
475·2					15	25	00·80	17	525·3	18	457·7			16		04·68	17	536·3	18	608·0
475·5	23	181·5						22	534·2	23	459·1			20		03·84	22	535·6	23	611·2
484·0					25	24	59·01	27	538·8	28	464·4			25		05·15	27	540·4	28	610·9
484·6	28	162·5			35	25	04·10	37	535·3	38	476·3			30		04·69	32	548·9	33	604·1
476·6					45		02·96	47	540·1	48	487·1			35		07·81	37	547·3	38	594·9
					55		03·09	57	533·4	58	493·3			40		09·84	42	541·8	43	583·3
469·3	33	113·4	13	18	0		02·99	2	537·0	3	499·9			45		08·95	47	539·1	48	579·6
460·1					10		05·09	12	536·8	13	506·5			55		05·63	57	530·6	58	577·3
					20		07·78	22	532·0	23	511·0	18	9	0		03·50	2	531·7	3	574·2
455·4	38	83·0	13	19	0		07·38	2	531·0	3	518·5			5		01·93	7	532·2	8	570·7
455·6					15		05·00	17	530·0	18	517·1			10	25	00·38	12	535·4	13	567·0
			13	20	0		03·23	2	539·8	3	509·6			15	24	59·32	17	537·5	18	563·1
445·0	43	64·4			10		09·35	12	532·0	13	514·6			20	25	00·10	22	537·4	23	559·0
453·2					20		08·31	22	533·5	23	519·4			35		01·68	37	531·0	38	549·6
			13	21	0		06·59	2	522·7	3	523·7			40		02·35	42	529·5	43	549·6
433·9	48	– 0·8												45		02·25	47	529·2	48	549·4
445·9			14	2	0	25	20·69	2	517·6	3	560·8			55		01·68	57	533·1	58	548·1
					30		20·29	32	529·0	33	564·9	18	10	0		01·59	2	533·1	3	546·6
434·3	53	– 27·4	14	3	0		20·50	2	533·1	3	569·1			15		03·90	17	530·8	18	550·3
408·7			14	4	0		14·50	2	538·6	3	650·6	18	11	0		08·80	2	538·0	3	550·6
					10		08·99	12	556·3	13	667·2	18	13	0		10·16	2	539·7	3	539·1
382·2	58	– 2·4			15		03·20	17	571·5	18	669·8			10		18·38	12	542·7	13	527·8
310·?					20		05·79	22	581·2	23	667·7			15		15·98	17	546·5	18	511·7
291·5	3	– 4·5			25		10·83	27	569·4	28	665·6			21		12·29	22	550·4	23	497·6
318·8					30		15·71	32	546·6	33	654·7			25		10·11	27	552·1	28	489·8
346·8	8	– 20·5			35		17·02	37	544·7	38	643·2			30		08·79	32	553·0	33	482·5
386·9					40		17·71	42	539·6	43	633·5			35		09·03	37	549·1	38	478·5
					45		17·80	47	537·5	48	625·4			40		08·92	42	544·2	43	476·4
367·7	13	19·4			50		17·80	52	538·7	53	617·4			45		08·12	47	538·6	48	476·1
369·2			14	5	0		16·87	2	541·8	3	603·5			50		07·15	52	536·4	53	475·6
					10		16·80	12	538·2	13	600·4	18	14	0		07·89	2	536·2	3	477·7
363·5	18	33·7			40		18·23	42	562·8	43	587·3			30		03·16	32	535·5	33	476·0
393·6					50		18·20	52	556·2	53	598·6	18	15	0		00·94	2	525·1	3	482·0
458·8	23	146·2			55		14·91	57	546·1	58	610·0			10		00·91	12	524·0	13	487·7
469·2			14	6	0		11·59	2	543·5	3	619·8			20		01·61	22	522·4	23	492·9
586·0	28	255·7			10		11·30	12	555·9	13	618·6			30		02·05	32	524·1	33	496·8

BIFILAR. $k=0·000140$. BALANCE. $k=0·000010$.

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* See notes on the Aurora Borealis, *after* the *Extra Observations of Magnetometers*.

April 13^d 14^h 57^m 30^s. The horizontal component diminished rapidly, and the bifilar scale went out of the field of the reading telescope.

April 13^d 15^h 0^m. The arms of the bifilar torsion circle were turned through 1° 12′; they were turned at 15^h 46^m to within 9′·5 of their riginal position, and at 21^h 30^m to their original position: all the observations made between 15^h 0^m and 21^h 30^m have been corrected to the ormal reading of the torsion circle. See *Introduction*, p. xxxii.

Gött. Mean Time.		DECLINATION.			BIFILAR Corrected.		BALANCE Corrected.	
d.	h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.
18	16	0	25	08·41	2	521·3	3	500·7
18	17	0		08·05	2	536·5	3	485·3
		30		05·32	32	534·3	33	493·2
18	18	0		05·60	2	534·1	3	507·9
19	5	0	25	16·28	2	570·1	3	539·1
					7	573·4	8	541·4
					22	572·4	23	554·9
		25		15·54	27	554·2	28	566·7
		30		15·51	32	547·1	33	572·5
		45		15·32	47	540·7	48	584·8
19	6	0		12·72	2	547·6	3	541·2
		30		09·42	32	551·0	33	608·9
19	7	0		11·51	2	549·0	3	555·7
19	9	0		01·11	2	538·4	3	534·2
		10		09·35	12	524·5	13	541·3
		15		08·97	17	528·7	18	540·3
		25		09·76	27	534·0	28	539·4
		30		10·60	32	534·0	33	539·3
19	10	0		07·82	2	534·5	3	540·2
20	13	0	25	15·17	2	519·6	3	434·0
		5		13·70	7	523·7	8	432·6
		10		12·38	12	522·7	13	427·6
		15		09·79	17	529·6	18	428·8
		25		07·54	27	536·4	28	439·9
		30		07·13	32	537·0	33	444·5
		52		05·29	53	533·6	54	461·3
20	14	0		04·32	2	530·5	3	467·2
		35		05·86	37	527·9	38	498·5
20	15	0		08·75	2	530·5	3	514·8
20	18	0		13·54	2	524·4	3	522·6
		16		14·13	17	529·3	18	517·1
20	19	8		08·05	9	530·2	10	529·1
25	2	0	25	24·12	2	524·8	3	566·5
		42		23·54	43	532·8	44	568·2
25	3	0		24·80	2	536·6	3	567·3
25	11	0	25	10·16	2	553·1	3	517·7
		15		11·77	17	548·8	18	509·0
		35		11·07	37	543·5	38	498·0
25	12	0		09·62	2	536·4	3	498·0
27	13	0	24	59·73	2	529·5	3	265·5
		10	25	03·16	12	534·7	13	278·7
		15		04·21	17	524·6	18	288·9
		20		03·70	22	528·0	23	300·6
		25		05·09	27	527·9	28	321·7
		30		04·82	32	534·0	33	329·8
		35		04·21	37	534·4	38	340·1
		40		02·40	42	534·6	43	352·5
		45	25	00·87	47	536·9	48	378·0
		50	24	59·53	52	537·6	53	397·5
		55	25	00·00	57	535·1	58	414·0
27	14	0	24	59·37	2	545·4	3	426·3
		5	25	01·68	7	544·0	8	437·4
		10		04·81	12	538·9	13	436·9
		15		00·64	17	541·7	18	440·8
		20		01·68	22	540·5	23	446·6
		25		00·00	27	534·7	28	453·0

Gött. Mean Time.		DECLINATION.			BIFILAR Corrected.		BALANCE Corrected.	
d.	h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.
27	14	30	24	59·19	32	536·8	33	459·4
		45	25	01·07	47	543·5	48	474·9
27	15	0	25	01·01	2	535·4	3	483·4
		30	25	02·55	32	527·2	33	488·9
27	16	0	24	57·53	2	529·0	3	465·8
		10	25	02·42	12	526·8	13	473·5
		20		00·58	22	523·1	23	469·0
		30		01·88	32	508·9	33	443·1
		35		03·54	37	495·5	38	430·0
		40		03·87	42	484·4	43	416·3
		45		17·76	47	461·5	48	346·0
		50		23·41	52	509·4	53	327·0
		55		25·09	57	507·2	58	292·5
27	17	0		21·32	2	487·6	3	231·3
		5		19·24	7	504·5	8	215·7
		10		16·21	12	500·5	13	214·6
		15		13·39	17	502·0	18	232·1
		20		13·16	22	517·4	23	238·4
		25		10·40	27	522·2	28	238·7
		30		09·37	32	524·6	33	243·9
		35		07·34	37	529·7	38	254·0
		40		08·92	42	521·6	43	279·1
		45		07·02	47	523·3	48	302·2
		50		06·61	52	524·6	53	328·7
		55		05·06	57	526·3	58	347·5
27	18	0		05·49	2	524·8	3	359·2
		10		03·87	12	525·7	13	387·8
		35		03·88	37	526·2	38	443·1
27	19	0		02·50	2	523·6	3	476·3
27	20	0		04·19	2	528·1	3	504·2
		10		04·51	12	522·2	13	509·9
27	21	0		04·79	2	520·4	3	513·1
27	22	0		09·93	2	510·7	3	514·4
		10		12·62	12	509·5	13	517·3
27	23	0		13·88	2	509·1	3	518·5
30	11	5	25	03·54	6	552·8	7	483·7
		15		07·31	17	544·6	18	482·8
		30		10·09	32	537·2	33	483·6
30	12	0		07·76	2	538·1	3	483·0
		25		01·81	27	534·8	28	467·5
		30		00·80	32	534·6	33	460·1
		40		01·01	42	527·9	43	449·1
		50	25	00·10	52	522·4	53	430·0
30	13	0	24	57·35	2	518·1	3	409·1
		5		56·00	7	518·2	8	399·8
		10		56·30	12	514·0	13	384·8
		15	24	57·34	17	512·7	18	370·7
		20	25	02·99	22	520·2	23	365·8
		25		07·37	27	520·1	28	330·6
		30		07·25	32	516·0	33	335·5
		35		06·16	37	520·0	38	303·9
		40		03·75	42	524·5	43	294·8
		45	25	01·76	47	528·2	48	282·9
		50	24	59·03	52	528·1	53	261·8
		55		58·63	57	534·5	58	255·4
30	14	0		56·90	2	533·2	3	255·5
		5		56·70	7	536·6	8	255·9
		10		55·65	12	527·2	13	258·8
		15		53·92	17	522·0	18	271·3
		20		51·27	22	517·1	23	286·7

Gött. Mean Time.		DECLINATION.		
d.	h.	Min.	°	′
30	14	25	24	49·95
		30		52·13
		35		54·38
		40		55·56
		45	24	57·76
		50	25	01·85
		55		05·49
30	15	0		09·08
		10		14·13
		15		18·34
		20		19·59
		25		23·65
		30		30·15
		35		32·15
		40		31·18
		45		23·31
		50		18·34
		55		13·19
30	16	0		08·52
		5		06·76
		10		06·56
		25		04·41
		40		07·67
30	17	0		07·47
*14	12	0	25	11·71
		20		14·78
		40		14·67
14	13	0		13·16
16	5	0	25	22·03
		10		21·54
		15		20·70
		20		20·30
		25		18·97
		30		18·77
		40		18·34
16	6	0		15·47
		15		14·91
		35		13·49
16	7	0		13·49
17	4	0	25	15·58
17	5	0		13·19
18	13	0	25	02·70
		10		07·71
		15		11·00
		20		14·98
		25		14·51
		30		08·90
		35		05·89
		40		07·37
		45		07·51
		50		07·04
		55		03·77
18	14	0		03·60
		10		00·45
		15		01·88
		20		04·76

BIFILAR. $k=0·000140$. BALANCE. $k=0·000010$.

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* May 14^d^ 12^h^.

April 25^d^. Instruments evidently slightly disturbed throughout the evening.

May 16^d^ 5^h^ 25^m^. Clock put right; error previously −28^s^.

FILAR rected.	BALANCE Corrected.		Gött. Mean Time.		DECLINATION.			BIFILAR Corrected.		BALANCE Corrected.		Gött. Mean Time.		DECLINATION.			BIFILAR Corrected.		BALANCE Corrected.	
Sc. Div.	Min.	Mic. Div.	d.	h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.	d.	h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.
513·0	28	292·9	18	14	35	25	03·67	37	530·0	38	385·9	4	12	10	25	06·73	12	541·1	13	473·1
508·7	33	295·2			45		03·02	47	531·9	48	398·0			20		08·28	22	541·6	23	472·8
509·8	38	291·6	18	15	0		09·32	2	533·4	3	403·5			40		10·20	42	542·8	43	470·2
508·3	43	288·5			15		17·60	17	537·9	18	395·5	4	13	0		09·46	2	541·1	3	469·7
507·2	48	280·9			25		17·94	27	542·1	28	378·3									
506·3	53	275·6			35		17·60	37	546·9	38	367·9	7	12	0	25	11·14	2	546·0	3	454·5
505·2	58	266·6			45		17·02	47	538·6	48	364·2			10		13·32	12	546·0	13	450·7
507·9	3	256·1	18	16	0		20·62	2	508·3	3	363·7			20		12·78	22	547·5	23	442·5
503·6	13	228·8			10		25·06	12	502·6	13	351·2			35		14·06	37	548·0	38	432.7
498·2	18	215·9			20		27·75	22	506·0	23	319·6			40		14·85	42	548·1	43	428·8
491·8	23	194·5			25		23·19	27	513·7	28	303·8			45		15·78	47	544·4	48	425·7
492·8	28	185·3			30		18·61	32	514·1	33	287·9			50		16·41	52	542·7	53	426·2
498·5	33	167·4			35		13·27	37	520·4	38	287·6			55		17·53	57	540·9	58	417·4
517·7	38	175·4			40		10·60	42	521·3	43	284·7	7	13	0		18·50	2	540·0	3	412·8
523·4	43	148·6			45		09·82	47	520·8	48	291·1			5		16·92	7	539·2	8	408·0
511·6	48	132·3	18	17	0		10·11	2	526·7	3	379·0			10		16·01	12	537·5	13	405·4
510·9	53	127·2			15		08·19	17	524·1	18	369·0			20		13·12	22	537·9	23	401·7
513·4	58	134·4			45		07·69	47	528·3	48	432·3			46		08·48	47	539·0	48	409·5
516·1	3	153·6	18	18	0		08·14	2	527·7	3	451·1	7	14	0		08·66	2	539·4	3	419·7
522·3	8	172·4						27	523·0	28	477·2									
537·8	13	202·5	18	19	8		08·39	9	522·6	10	495·7	8	8	0	25	11·46	2	552·8	3	496·2
539·8	28	249·2			20		08·11	22	523·0	23	497·9			10		12·65	12	542·7	13	504·8
533·7	43	309·9	18	20	0		08·19	2	525·6	3	505·1			15		12·69	17	538·0	18	507·2
534·8	3	367·4												25		09·62	27	545·8	28	506·7
			20	13	0	25	07·67	2	535·7	3	495·6			30		09·02	32	550·8	33	505·5
550·4	3	492·9			31		06·66	32	535·2	33	490·3			40		08·85	42	552·2	43	503·7
549·7	23	480·8	20	14	0		07·67	2	534·4	3	482·3	8	9	0		09·51	2	552·3	3	500·1
544·6	43	472·8																		
549·7	3	461·1	22	10	0	25	02·99	2	538·6	3	534·8	8	17	0	25	16·82	2	526·3	3	472·1
					10		03·60	12	542·3	13	529·6			10		18·87	12	527·3	13	467·0
578·4	3	495·7			20		05·99	22	540·9	23	527·9			15		20·35	17	527·9	18	460·5
572·4	13	502·1	22	11	0		10·43	2	540·0	3	522·0			20		20·52	22	529·9	23	454·8
563·0	18	509·4												30		19·84	32	531·3	33	442·7
563·5	23	513·1	29	13	0	25	13·56	2	544·8	3	497·3			40		18·34	42	533·0	43	433·2
560·1	28	520·1			35		10·18	37	545·2	38	492·9	8	18	0		15·34	2	536·7	3	418·3
563·7	33	524·8	29	14	0		09·89	2	544·5	3	491·8			32		10·23	33	541·2	34	423·0
562·1	43	534·3										8	19	0		05·99	2	539·5	3	436·1
528·6	3	565·9	*	1	0	25	22·15	2	550·3	3	497·4									
533·4	18	575·1			30		22·27	32	551·9	33	500·3	17	2	0	25	21·23	2	540·6	3	467·2
539·4	38	573·2	4	2	0		15·12	2	535·4	3	511·1			40		21·26	42	541·2	43	468·5
543·3	3	567·5	4	4	0		19·51	2	533·7	3	553·1	17	3	0		20·89	2	543·0	3	467·7
					15		20·58	17	551·1	18	548·5									
565·1	3	505·0			25		19·01	27	562·1	28	547·1	17	8	0	25	11·12	2	554·2	3	484·2
551·8	23	512·6			35		18·13	37	562·7	38	550·9			31		07·87	32	554·3	33	486·4
552·7	3	517·8			45		17·83	47	557·7	48	559·7	17	9	0		08·80	2	553·7	3	486·2
			4	5	0		19·12	2	547·9	3	571·8									
540·9	3	445·1			30		15·11	32	551·9	33	577·2	17	12	0	25	07·00	2	544·5	3	469·0
536·1	13	416·4			45		14·64	47	552·1	48	577·8			30		08·14	32	543·8	33	468·8
523·8	18	403·7	4	6	0		15·31	2	554·4	3	580·0	17	13	0		08·32	2	542·7	3	469·8
505·3	23	390·7																		
487·9	28	371·9	8	13	0	25	07·79	2	539·9	3	479·5	18	13	0	25	08·38	2	543·2	3	439·2
498·8	33	361·7			20		04·98	22	539·8	23	473·6			15		06·06	17	539·8	18	444·5
516·0	38	367·0			30		04·76	32	538·9	33	472·1			20		05·42	22	538·5	23	445·8
518·3	43	372·6	8	14	0		05·22	2	531·0	3	475·6	18	14	0		07·38	2	537·5	3	452·3
514·8	48	377·0																		
511·6	53	375·9	10	8	0	25	07·05	2	560·1	3	536·6	18	21	3	25	12·04	4	529·2	5	470·5
517·9	58	371·0			15		09·20	17	557·6	18	540·3			15		13·52	17	530·5	18	467·1
522·7	3	372·8			30		10·20	32	551·7	33	540·8			32		12·87	33	528·1	34	463·5
534·9	13	374·0	10	9	0		11·34	2	547·9	3	536·8	18	22	0		11·03	2	529·4	3	457·1
535·1	18	373·4																		
533·8	23	377·8	†4	12	0	25	04·82	2	548·0	3	471·1	24	11	0	25	08·93	2	534·5	3	481·1

BIFILAR. k=0·000140. BALANCE. k=0·000010.

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* June 4^d 1^h. † July 4^d 12^h.

July 17^d 8^h 0^m. The declination and bifilar magnets vibrating slightly and irregularly; the declination changing its mean position to a small ent; it has gradually gone eastward till 30^m; the bifilar has been nearly stationary.

Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.	Declination.	
d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	° ′
24 11	20	25 09·10	22	538·1	23	479·5	24 20	0	25 16·82	2	518·9	3	350·9	1 11	10	24 53·64
24 12	0	07·55	2	538·1	3	476·0		10	18·40	12	517·8	13	355·0		15	54·48
24 13	0	03·30	2	536·0	3	459·4		20	19·04	22	520·3	23	360·5		20	24 57·41
	15	25 03·23	17	531·2	18	450·5		30	17·53	32	525·7	33	361·4		25	25 00·25
24 14	0	24 54·26	2	523·5	3	405·0		40	19·49	42	518·2	43	368·0		30	03·20
	10	24 58·58	12	520·3	13	394·9		50	14·50	52	511·7	53	375·4		40	10·47
	15	25 00·84	17	521·9	18	386·0	24 21	0	16·53	2	514·3	3	382·2		50	10·50
	20	02·17	22	529·9	23	377·9		15	14·13	17	512·8	18	388·1	1 12	0	06·16
	25	02·57	27	533·5	28	367·4		32	17·36	33	513·0	34	396·2		10	06·26
	30	02·48	32	530·0	33	359·8	24 22	0	20·33	2	516·9	3	398·8		20	07·60
	35	01·38	37	524·0	38	352·1		20	17·46	22	503·9	23	412·2		30	07·04
	40	25 00·67	42	521·3	43	343·5		25	17·96	27	505·9	28	414·6		40	05·13
	45	24 58·62	47	518·7	48	337·7		40	18·43	42	503·3	43	428·5		50	03·02
	50	56·50	52	514·4	53	333·3	24 23	0	18·60	2	500·4	3	437·3	1 13	0	02·28
	55	54·95	57	520·7	58	331·3		15	19·17	17	497·9	18	442·3		10	05·29
24 15	0	55·78	2	527·2	3	328·1		30	22·84	32	499·5	33	451·1		25	09·42
	5	56·63	7	529·0	8	322·8	25 0	0	18·81	2	505·7	3	451·2		35	10·43
	10	24 57·61	12	531·7	13	318·5				32	510·5	33	457·9		50	15·24
	15	25 00·27	17	536·2	18	314·4		35	18·67					1 14	0	18·35
	20	03·35	22	538·2	23	312·0	25 1	0	17·65	2	529·8	3	466·8		10	19·48
	25	09·39	27	546·0	28	306·5		30	16·32	32	535·3	33	481·9		20	16·90
	30	13·05	32	554·2	33	295·3	25 2	0	17·19	2	538·2	3	482·9		30	13·81
	35	11·81	37	554·1	38	281·8									40	12·82
	40	07·57	42	548·4	43	275·5	25 10	0	25 03·13	2	539·6	3	453·0		50	10·56
	45	07·40	47	550·6	48	273·4		10	02·99	12	543·6	13	448·3	1 15	0	10·00
	50	05·94	52	551·9	53	276·8		20	05·89	22	541·9	23	447·6		20	12·90
	55	08·03	57	547·3	58	279·6	25 11	0	08·58	2	534·7	3	446·1		45	08·41
24 16	0	08·90	2	546·4	3	280·6								1 16	0	03·77
	15	12·58	17	529·1	18	290·0	1 2	0	25 23·88	2	558·7	3	458·7		10	02·22
	20	14·24	22	520·7	23	295·2		10	25·09	12	538·7	13	465·9		20	03·06
	25	15·51	27	519·0	28	296·3		25	26·74	27	521·8	28	471·4		40	07·13
	30	16·55	32	517·5	33	293·8		30	28·04	32	526·0	33	470·0	1 17	0	08·05
	35	16·41	37	515·4	38	288·4		40	26·50	42	538·1	43	464·1			
	40	16·26	42	510·0	43	284·3		50	23·95	52	534·9	53	468·1	2 11	0	25 06·26
	45	17·73	47	506·5	48	285·2	1 3	0	22·99	2	539·8	3	468·6		10	05·38
	50	19·07	52	510·3	53	291·5		10	21·64	12	503·4	13	481·4		30	10·09
	55	20·16	57	513·6	58	300·3		16	23·14	17	515·4	18	480·4	2 12	0	05·92
24 17	0	21·56	2	512·3	3	304·2		20	22·67	22	528·2	23	476·5			
	5	24·33	7	512·1	8	302·1		25	21·97	27	540·9	28	474·2	3 14	0	25 11·52
	10	27·15	12	514·3	13	298·2		30	21·46	32	550·4	33	473·7		15	17·09
	15	29·90	17	525·3	18	291·1		35	21·24	37	554·3	38	473·8		20	19·51
	20	29·26	22	535·6	23	283·8		40	21·12	42	559·8	43	475·3		25	20·58
	25	26·81	27	527·7	28	278·2		45	21·68	47	558·0	48	479·7		30	21·16
	30	24·19	32	526·0	33	274·4		50	21·24	52	560·8	53	481·4		35	21·36
	35	23·34	37	525·2	38	274·7		55	21·50	57	557·2	58	484·2		40	21·03
	40	22·77	42	520·2	43	277·2	1 4	0	20·55	2	555·5	3	488·1		45	20·22
	45	24·52	47	522·9	48	278·2				17	566·6	18	493·7		50	18·50
	50	25·54	52	523·3	53	280·0		35	22·80	37	585·0	38	502·5		55	16·45
	55	24·82	57	516·0	58	281·6				47	564·5	48	525·6	3 15	0	14·82
24 18	0	22·87	2	512·8	3	285·7	1 5	0	19·91	2	546·9	3	560·7		31	09·46
	5	22·28	7	514·0	8	288·5		10	18·77	12	534·4	13	575·9	3 16	0	07·49
	15	20·89	17	513·4	18	289·3		20	19·37	22	543·8	23	575·3	3 20	0	09·57
	40	18·30	42	516·2	43	315·4		30	18·50	32	549·8	33	569·8		38	12·78
24 19	0	19·07	2	518·1	3	320·2		40	21·06	42	567·2	43	562·3	3 21	0	12·11
	10	19·04	12	514·9	13	322·7		50	20·20	52	553·9	53	565·6			
	15	18·20	17	512·4	18	327·5	1 6	0	19·41	2	552·5	3	569·4	4 3	0	25 15·17
	25	19·61	27	514·0	28	328·4		15	16·68	17	535·2	18	576·9		37	16·62
	30	19·81	32	510·2	33	334·7		30	14·53	32	538·6	33	566·9	4 4	0	16·25
	40	18·77	42	515·5	43	341·1	1 7	0	25 13·25	2	549·1	3	537·2			
	50	17·22	52	508·1	53	349·0								4 14	0	25 05·83
	55	17·00	57	515·0	58	349·2	1 11	5	24 54·01	6	551·8	7	408·9		30	05·62

BIFILAR. $k=0·000140$. BALANCE. $k=0·000010$.

July 24^d 14^h 15^m. A very small insect climbing along one of the balance spider crosses; length of the insect about 7 micrometer divisions, or rather more than a thousandth of an inch.

July 25^d. The instruments slightly disturbed throughout the evening.

FILAR rected.	BALANCE Corrected.	
Sc. Div.	Min.	Mic. Div.
551·0	13	406·9
548·6	18	407·5
545·4	23	408·8
544·8	28	408·4
544·6	33	408·7
537·0	43	408·5
532·9	53	404·7
535·3	3	404·4
534·2	13	409·0
536·5	23	410·0
536·2	33	409·6
538·3	43	403·6
534·3	53	405·8
534·5	3	417·8
537·1	13	428·3
535·0	28	427·0
534·8	38	424·6
536·2	53	428·2
535·6	3	419·5
533·6	13	408·5
543·1	23	394·8
547·4	33	392·2
541·6	43	380·7
535·2	53	379·0
531·0	3	375·6
540·1	23	380·6
544·3	48	374·2
541·5	3	374·0
534·7	13	378·0
531·5	23	384·0
533·4	43	383·3
541·6	3	374·0
534·6	3	462·2
545·9	13	452·6
551·1	33	427·1
540·9	3	426·4
530·3	3	423·7
527·1	18	430·7
527·1	23	429·9
529·2	28	427·0
532·4	33	422·6
535·4	38	419·4
539·1	43	415·2
539·6	48	412·4
541·8	53	410·8
542·6	58	410·3
544·2	3	410·3
542·0	33	422·8
540·6	3	438·3
517·2	3	472·1
513·7	40	463·1
509·8	3	459·6
558·5	3	506·7
535·1	39	518·3
538·7	3	517·9
537·7	3	435·1
535·7	33	437·4

Gött. Mean Time.		DECLINATION.			BIFILAR Corrected.		BALANCE Corrected.	
d.	h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.
4	15	0	25	06·12	2	535·3	3	444·9
4	16	0		16·08	2	531·9	3	432·7
		15		15·44	17	530·9	18	430·8
		30		14·53	32	532·1	33	429·7
4	17	0		13·36	2	534·8	3	425·9
5	20	0	25	06·14	2	527·3	3	467·5
		16		15·07	17	527·1	18	451·9
5	21	0		08·19	2	527·7	3	466·9
7	13	0	25	12·83	2	542·3	3	444·3
		15		09·76	17	541·1	18	389·9
		30		08·18	32	542·0	33	393·6
		45		05·42	47	540·5	48	398·1
7	14	0		04·56	2	529·8	3	407·9
		10		06·63	12	532·6	13	411·1
		20		10·33	22	535·2	23	411·6
		30		12·42	32	534·6	33	408·9
		45		17·83	47	537·8	48	402·4
		51		21·90	53	534·9	54	400·0
		55		24·79	57	533·3	58	397·8
7	15	0		26·16	2	532·9	3	390·8
		5		25·02	7	531·9	8	382·8
		10		22·64	12	533·2	13	377·7
		15		18·70	17	535·2	18	372·3
		20		15·22	22	538·0	23	371·7
		25		12·98	27	539·5	28	373·7
		30		11·64	32	539·6	33	379·9
		35		11·64	37	538·8	38	385·1
7	16	0		07·20	2	540·6	3	402·8
		30		06·39	32	540·3	33	418·9
7	17	0		06·26	2	537·5	3	432·4
9	12	0	25	00·69	2	550·6	3	438·1
		5		00·96	7	546·8	8	438·7
		10		00·51	12	544·3	13	441·2
15	3	0	25	22·80	2	513·7	3	483·3
		25		21·86	27	555·8	28	482·0
		35		21·23	37	565·6	38	482·6
		45		20·52	47	568·1	48	487·4
		55		20·89	57	572·6	58	494·5
15	4	0		19·86	2	563·6	3	502·3
		15		19·28	17	542·3	18	521·6
		25		18·25	27	537·6	28	529·6
		35		17·42	37	541·3	38	533·3
		45		16·75	47	546·1	48	544·9
15	5	0		15·94	2	550·8	3	537·8
17	13	0	25	01·34	2	531·8	3	421·8
		10		00·67	12	526·8	13	422·8
17	14	0		04·91	2	537·8	3	434·0
17	15	0		16·15	2	529·5	3	423·3
		15		20·11	17	550·8	18	414·3
		20		23·21	22	557·5	23	406·5
		25		23·27	27	555·8	28	393·2
		30		20·99	32	552·0	33	379·5
		35		18·16	37	549·3	38	372·0
		50		11·24	52	547·2	53	365·4
17	16	0		08·25	2	548·2	3	366·3
		10		04·84	12	547·7	13	369·1

Gött. Mean Time.		DECLINATION.			BIFILAR Corrected.		BALANCE Corrected.	
d.	h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.
17	16	20	25	01·61	22	542·5	23	375·6
		30		00·87	32	535·6	33	388·5
		45		02·42	47	535·1	48	399·1
17	17	0		01·95	2	538·4	3	404·0
		35		06·79	37	519·3	38	421·1
17	18	0		11·10	2	525·6	3	425·2
22	14	0	25	02·01	2	538·1	3	447·5
		10		01·41	12	536·1	13	448·5
		20		01·95	22	536·8	23	449·6
		30		02·64	32	534·9	33	452·0
22	15	0		04·98	2	536·4	3	455·2
24	16	0	25	14·21	2	539·4	3	430·7
		10		13·79	12	546·3	13	420·7
		30		07·10	32	547·5	33	411·5
24	17	0		03·40	2	543·5	3	418·1
26	4	0	25	16·62	2	562·0	3	466·1
		37		18·84	38	545·5	39	491·5
		40		19·12	42	550·9	43	491·2
26	5	0		17·76	2	552·1	3	503·4
28	12	0	25	03·84	2	540·2	3	446·0
		15		06·64	17	544·2	18	444·0
		35		04·61	37	541·8	38	440·4
28	13	0		05·72	2	542·9	3	432·3
29	3	0	25	22·98	2	560·9	3	462·5
		10		23·12	12	552·0	13	465·3
		20		21·36	22	534·1	23	471·2
		25		20·80	27	529·6	28	472·2
		35		16·93	37	537·2	38	453·8
29	4	0	25	14·87	2	553·3	3	477·4
29	7	0	24	51·16	2	549·9	3	493·4
		5		48·58	7	560·1	8	494·4
		10		46·41	12	568·7	13	493·8
		15		46·11	17	578·1	18	489·6
		20		50·25	22	574·9	23	489·3
		25		52·91	27	569·7	28	489·8
		30		45·56	32	559·1	33	493·2
		40		57·84	42	552·4	43	494·5
		50	24	57·84	52	545·1	53	494·0
29	8	0	25	01·78	2	548·1	3	490·6
		20		01·41	22	542·1	23	484·6
		40		05·32	42	534·4	43	477·7
29	9	0		04·08	2	531·9	3	461·0
		15		03·74	17	515·7	18	440·0
		20	25	01·21	22	511·8	23	418·5
		25	24	59·57	27	530·2	28	386·5
		30		57·31	32	512·3	33	349·5
		35		53·11	37	511·9	38	327·3
		40		43·65	42	515·1	43	285·0
		45		46·73	47	521·7	48	244·1
		50		52·20	52	519·7	53	206·1
	*	55		46·41	57	496·3		
29	10	0	24	45·87	2	508·5	3	224·5
31	15	0	25	17·12	2	525·4	3	418·1
		10		17·49	12	528·6	13	406·1
		30		13·91	32	531·8	33	383·2

BIFILAR. $k = 0·000140$. BALANCE. $k = 0·000010$.

* See notes on the Aurora Borealis, *after* the *Extra Observations of Magnetometers.*
Aug. 8^d 11^h—19^h. The magnets moving irregularly at intervals.

Gött. Mean Time.		Declination.			Bifilar Corrected.		Balance Corrected.	
d.	h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.
31	16	0	25	08·92	1	533·4	2	385·3
1	8	0	25	01·85	2	550·0	3	472·6
		15		02·93	17	550·4	18	467·4
		30		08·45	32	555·6	33	453·9
		45		07·60	47	538·6	48	449·5
1	9	0		05·11	2	542·8	3	445·9
1	15	0	25	17·06	2	525·3	3	410·4
		10		18·77	12	531·0	13	400·5
		20		17·60	22	535·1	23	390·4
		40		15·31	42	539·2	43	376·8
1	16	0		09·66	2	540·3	3	376·6
1	17	0		12·18	2	528·8	3	387·0
		25		16·79	27	520·7	28	395·8
		35		19·17	37	522·0	38	393·5
		45		21·59	47	529·2	48	385·3
1	18	0		16·41	2	533·3	3	370·4
		10		13·52	12	530·7	13	374·7
1	19	0		12·58	2	532·6	3	395·2
2	5	0	25	08·82	2	537·1	3	553·9
		10		03·37	12	546·0	13	552·5
		20		04·17	22	554·6	23	551·1
		30		08·38	32	546·9	33	546·2
		55		10·83	57	534·9	58	524·2
2	6	0		10·60	2	535·5	3	520·7
2	9	0	25	00·47	2	536·1	3	486·9
		10	24	57·17	12	551·7	13	464·3
		15	25	02·75	17	547·2	18	458·9
		20	24	55·13	22	556·2	23	447·4
		25	24	56·54	27	564·3	28	437·2
		30	25	00·40	32	547·3	33	431·4
		35		02·82	37	555·7	38	425·0
		40		06·86	42	550·2	43	420·5
		50		12·73	52	516·3	53	422·5
		55		04·81	57	530·4	58	423·4
2	10	0		04·17	2	541·6	3	421·8
	*	5		09·89	7	530·8	8	422·4
		10		11·37	12	517·7	13	427·3
		15		07·24	17	522·6	18	431·2
		20		06·39	22	529·0	23	435·7
		25		06·63	27	529·1	28	438·5
2	11	0		05·43	2	532·4	3	451·8
2	12	0		09·46	2	551·8	3	400·7
	*	15		07·20	17	543·8	18	394·9
2	13	0		07·20	2	534·0	3	405·7
2	15	0		11·72	2	534·3	3	433·1
		15		09·27	17	537·2	18	428·7
2	16	0		04·32	2	529·7	3	443·8
3	4	0	25	10·47	2	542·2	3	584·0
		15		17·93	17	531·9	18	587·6
		25		16·89	27	522·5	28	582·7
		40		16·21	42	535·0	43	580·6
		50		13·16	52	542·9	53	576·6
3	5	0		14·98	2	549·7	3	573·7
3	9	0	25	01·45	2	534·0	3	503·3
		10	24	59·68	12	537·6	13	501·0
		15		58·25	17	538·6	18	499·4
3	9	20	24	58·45	22	541·2	23	498·4
		41	24	59·81	42	545·7	43	490·8
		51	25	03·16	52	544·0	53	488·3
		55		04·81	57	539·5	58	487·8
3	10	0		04·51	2	541·3	3	485·2
		10		06·32	12	542·5	13	480·6
3	11	0		08·43	2	539·3	3	474·3
4	4	0	25	06·93	2	564·4	3	529·3
		10		05·56	12	557·7	13	537·1
4	5	0		11·55	2	535·7	3	539·0
		15		10·70	17	534·1	18	538·2
4	6	0		09·44	2	536·8	3	526·9
4	13	0	25	13·39	2	536·8	3	424·6
		15		12·31	17	537·6	18	424·6
4	14	0		07·71	2	538·2	3	441·1
7	13	0	25	22·00	2	526·6	3	456·3
		10		22·06	12	531·2	13	441·4
		20		20·55	22	538·0	23	419·2
		25		18·23	27	536·8	28	412·0
		40		12·42	42	540·0	43	404·9
7	14	0		11·64	2	533·8	3	396·7
7	16	0		02·28	2	529·7	3	412·4
		10		03·02	12	529·6	13	415·1
7	17	0		03·61	2	530·6	3	415·5
		10		02·01	12	531·0	13	419·3
7	18	0		01·31	2	539·0	3	441·3
		10		02·69	12	538·9	13	445·7
7	19	0		04·86	2	534·9	3	459·8
8	14	0	25	08·36	2	543·1	3	411·9
		15		08·73	17	541·7	18	414·4
8	15	0		05·52	2	539·5	3	429·2
9	13	0	25	15·81	2	543·2	3	438·5
		15		14·80	17	548·5	18	427·9
9	14	0		10·07	2	546·0	3	412·3
9	16	0		07·24	2	540·3	3	431·3
		20		05·60	22	540·5	23	434·7
		35		06·30	37	540·3	38	437·6
9	17	0		06·46	2	541·5	3	438·9
11	9	0	25	03·02	2	544·6	3	474·4
		15		06·06	17	541·5	18	473·1
11	10	0		08·32	2	543·2	3	465·8
12	13	0	25	09·66	2	552·8	3	435·7
		15		07·13	17	548·1	18	426·5
		30		06·34	32	543·4	33	424·3
12	14	0		06·09	2	543·2	3	419·2
13	9	0	25	03·57	2	531·8	3	465·1
		10		04·07	12	537·0	13	463·7
		30		07·54	32	540·9	33	461·5
13	10	0		08·88	2	540·3	3	458·1
16	10	0	25	04·12	2	538·8	3	460·5
		10		04·26	12	536·9	13	460·4
16	11	0		08·08	2	541·5	3	452·3
17	10	0	25	10·80				
		10		07·74				
		20		05·85				
17	11	0		01·45				
		20		02·52				
		30	25	01·21				
		35	24	55·04				
		42		45·64				
		45		43·85				
		50		43·83				
		55		46·14				
17	12	0		49·10				
		5		51·25				
		10		51·63				
		20		49·22				
		25		48·27				
		30		47·62				
		40		50·23				
		50		54·48				
17	13	0	24	56·16				
		15	25	00·67				
		20		02·93				
		25		05·45				
		30		06·63				
		35		10·92				
		40		13·99				
		45		13·02				
		50		08·58				
		55		04·91				
17	14	0		00·40				
		11		01·68				
		20		05·03				
		40		14·44				
		45		15·25				
17	15	0		08·95				
17	19	0	25	06·70				
		20		09·53				
		40		10·87				
17	20	0		13·79				
		20		19·17				
17	21	0		23·38				
		10		22·00				
		25		21·12				
		42		21·29				
17	22	0		17·31				
18	12	0	25	05·72				
		30		04·04				
18	13	0		05·99				
19	9	0	25	07·44				
		15		05·38				
		30	25	07·44				
19	10	0	24	59·09				
		10	25	04·95				
		20	24	58·79				

BIFILAR. $k=0·000140$.

BALANCE. $k=0·000010$.

* See notes on the Aurora Borealis, *after* the *Extra Observations of Magnetometers.*
Sept. 17ᵈ 10ʰ 46ᵐ. Clock put forward 16ˢ; error afterwards +2ˢ.

ILAR ected.	Balance Corrected.		Gött. Mean Time.	Declination.			Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.	Declination.			Bifilar Corrected.		Balance Corrected.	
Sc. Div.	Min.	Mic. Div.	d. h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.
555·3	3	456·6	19 10	30	24	57·21	32	524·3	33	431·0	3 15	0	25	08·16	2	540·8	3	414·0
543·0	13	458·8		40	24	59·70	42	524·4	43	430·2								
546·1	23	456·7	19 11	0	25	05·77	2	525·3	3	433·8	6 12	0	25	11·61	2	554·1	3	431·6
535·0	3	447·2										15		08·65	17	548·2	18	428·3
539·0	23	423·3	20 10	0	25	04·22	2	540·0	3	457·9	6 13	0		06·73	2	544·5	3	429·6
524·2	33	422·5		10	24	57·10	12	553·6	13	447·9								
525·2	38	426·1		15		54·68	17	559·9	18	443·4	9 11	0	24	43·72	2	512·3	3	420·3
532·1	44	428·1		20		54·92	22	560·1	23	440·2		5		42·71	7	522·2	8	403·4
536·6	48	424·1		30	24	56·97	32	544·5	33	439·3		10		42·44	12	524·5	13	393·6
539·4	53	416·0	20 11	0	25	01·78	2	527·8	3	443·3		15		44·97	17	518·1	18	377·5
538·5	58	412·2		21		05·89	22	533·1	23	443·4		20	24	53·58	22	499·7	23	357·5
530·4	3	410·8	20 12	0		09·39	2	533·8	3	436·1		25	25	02·48	27	476·9	28	328·3
524·5	8	408·8										30		10·36	32	457·2	33	296·0
516·5	13	404·3	24 8	0	25	11·10	2	557·7	3	441·3		35		13·74	37	472·1	38	305·9
511·7	23	398·6		20		10·98	22	551·7	23	442·4		40		11·77	42	433·1	43	263·8
509·9	28	394·5	24 9	0		10·95	2	557·7	3	437·4		45	25	00·98	47	450·7	48	245·4
512·9	33	389·5		30		11·21	32	557·2	33	436·8		50	24	55·36	52	482·2	53	239·8
506·6	43	373·4	24 10	0		10·80	2	555·2	3	437·8		55		53·74	57	493·7	58	233·8
505·3	53	362·1									9 12	0		53·32	2	499·1	3	236·8
506·5	3	339·6	25 10	0	24	56·40	2	544·0	3	453·0		5		53·54	7	491·5	8	243·1
468·8	18	266·8		10	24	56·57	12	542·5	13	449·1		10		52·50	12	498·1	13	244·8
466·2			25 11	3	25	07·81	4	547·7	5	409·0		15		52·46	17	495·4	18	248·9
461·1				20		09·86	22	541·6	23	406·1		25		46·65	27	503·4	28	262·5
461·0	23	238·1	25 12	0		07·71	2	534·9	3	396·5		30		46·52	32	504·0	33	266·8
462·7												40		48·83	42	501·6	43	272·8
468·3			25 16	0	25	14·13	2	518·6	3	382·4		50		56·07	52	498·2	53	281·6
471·8	28	225·9		31		17·26	32	521·5	33	377·6	9 13	0	24	54·01	2	496·7	3	298·3
481·9	33	216·2	25 17	0		12·76	2	529·8	3	388·0		15	25	01·14	17	510·0	18	344·1
501·3	38	216·3										32		05·97	33	518·7	34	360·0
515·6	43	215·7	27 7	0	24	43·06	2	555·0	3	487·1	9 14	0	25	01·65	2	526·6	3	323·4
529·6	48	215·7		5		46·18	7	559·7	8	482·3		15	24	55·76	17	526·8	18	309·5
533·6	53	224·1		10		52·04	12	553·2	13	482·6		30	24	52·94	32	519·5	33	307·3
532·3	58	229·7		15		55·37	17	542·0	18	484·1		45	24	57·78	47	517·7	48	314·1
525·0	3	239·0		20		57·08	22	533·1	23	485·5	9 15	0	25	00·06	2	533·1	3	319·5
524·3	13	261·2	27 8	0	24	57·56	2	528·9	3	485·2		15		00·06	17	539·4	18	318·5
519·6	23	277·6										40		01·61	42	538·8	43	350·2
523·8	43	292·0	27 11	0	25	16·93	2	519·6	3	338·8	9 16	0		06·73	2	535·2	3	372·6
526·4	48	292·9		10		05·35	12	535·3	13	319·3								
533·2	3	316·1		15		00·80	17	561·9	18	324·0	9 22	0	25	20·77	2	521·1	3	436·7
				20		04·24	22	560·6	23	323·7		36		15·54	37	533·2	38	429·5
540·6	3	424·3	27 12	0		09·57	2	537·1	3	342·8	9 23	3		16·92	4	528·5	5	437·6
543·4	23	420·1																
535·6	43	418·9	1 16	0	25	13·90	2	551·1	3	396·1	15 10	0	25	06·73	2	540·6	3	414·9
517·8	3	425·9		10		10·65	12	550·3	13	397·4		6		04·24	7	544·2	8	412·9
517·4	23	425·2	1 5	0		11·37	2	540·2	3	408·7		20		00·48	21	544·8	22	410·2
523·0	3	402·8									15 11	0		05·20	2	537·0	3	413·9
523·9	13	402·7	3 5	0	25	07·04	2	534·1	3	475·7								
529·8	28	404·6		20		04·56	22	546·6	23	483·4	17 11	0	25	12·48	2	552·9	3	425·4
526·1	44	408·1		25		07·07	27	541·4	28	484·8		45		06·29	27	540·6	28	418·0
524·0	3	407·9		30		07·47	32	541·3	33	485·2		45	25	03·27	47	530·6	48	421·6
			3 6	0		11·75	2	535·9	3	482·6	17 12	0	24	59·76	2	540·3	3	423·7
540·0	3	431·2										33	25	02·72	34	534·3	35	430·4
536·8	33	425·8	3 12	0	25	04·37	2	547·5	3	433·1	17 13	0		04·41	2	534·7	3	431·1
534·6	3	428·0		10		03·70	12	545·3	13	433·3								
				20		03·95	22	542·5	23	431·8	19 14	0	25	02·82	2	540·5	3	405·3
528·4	3	475·0	3 13	0		08·41	2	540·3	3	432·3		30		04·91	32	541·7	33	407·5
539·2	18	465·9	3 14	0		18·77	2	550·1	3	407·0	19 15	0		05·96	2	542·9	3	406·1
540·1	33	447·9		10		14·70	12	546·9	13	399·9								
538·3	3	429·6		20		10·40	22	545·3	23	399·1	20 3	0	25	25·43	2	542·7	3	445·5
517·7	13	427·5		30		08·93	32	544·0	33	401·8		15		24·75	17	537·3	18	452·1
515·6	23	432·5		40		08·61	42	542·2	43	406·4		25		22·10	27	527·3	28	455·7

Bifilar. k=0·000140. Balance. k=0·000010.

Sept. 20d 16h. Instruments slightly disturbed throughout the night.
Sept. 28d 13h—18h. Idem.
Sept. 29d 13h—18h. Idem.

Gött. Mean Time.		DECLINATION.			BIFILAR Corrected.		BALANCE Corrected.	
d.	h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.
20	3	30	25	22·37	32	528·6	33	457·4
		40		22·91	42	522·0	43	459·6
		50		21·97	52	534·1	53	459·1
20	4	0		20·05	2	536·2	3	461·3
		15		17·86	17	531·2	18	463·5
		25		16·21	27	535·1	28	461·2
		40		13·99	42	537·5	43	456·7
20	5	0		13·07	2	542·2	3	450·7
20	11	0	25	08·95	2	533·0	3	438·3
		15		03·02	17	531·2	18	441·8
		37		05·18	38	529·5	39	448·7
20	12	0	25	05·79	2	539·1	3	441·2
20	13	0	24	58·33	2	539·2	3	400·5
	*	6		58·15	7	534·3	8	397·9
		10		57·78	12	529·4	13	397·7
		20		58·43	22	526·8	23	402·0
		30	24	57·37	32	529·5	33	404·4
		47	25	00·38	48	538·7	49	404·1
20	14	0		01·85	2	535·9	3	404·2
		42		03·02	43	537·0	44	401·3
20	15	0		00·38	2	540·5	3	395·6
20	17	0		12·01	2	538·8	3	388·0
		20		14·55	22	532·0	23	387·8
		30		18·95	32	532·1	33	384·6
		35		21·27	37	534·6	38	378·4
		40		20·99	42	535·6	43	371·1
		45		20·16	47	532·6	48	366·9
		50		19·24	52	529·1	53	364·1
20	18	0		17·54	2	521·6	3	364·9
		10		16·15	12	520·4	13	371·4
20	19	0		19·91	2	518·4	3	396·3
		20		16·15	22	533·2	23	392·2
		40		17·89	42	537·2	43	397·6
20	20	0		17·89	2	539·3	3	399·8
21	9	0	25	08·12	2	532·0	3	453·3
		5	25	05·13	7	519·0	8	459·2
		10	24	59·32	12	510·9	13	462·4
		15		54·46	17	518·5	18	466·9
		20		58·67	22	520·5	23	476·9
		25		55·71	27	526·2	28	490·7
		30		43·72	32	528·7	33	506·4
		35		32·63	37	552·1		
		36		30·82			38	502·9
		39		32·10				
		40		33·15	41	561·6		
					42	560·8	43	482·9
		45		40·89	47	548·4	48	477·9
		50		44·03	52	538·6	53	473·6
		55		43·85	57	537·3	58	469·0
21	10	0		46·59	2	534·4	3	466·1
		10		51·16	12	524·8	13	467·4
		20	24	55·93	22	523·0	23	467·1
21	11	0	25	07·13	2	536·3	3	445·8
		30		07·00	32	539·7	33	415·7
21	12	0		01·07	2	530·5	3	403·3
		30		05·05	32	524·3	33	389·9
21	13	0		04·75	2	517·0	3	369·1
21	14	0		08·95	2	532·7	3	318·6
		22		11·10	23	544·7	24	283·0
21	14	30	25	08·14	32	546·4	33	286·9
		45		05·49	47	527·1	48	301·9
		50		06·73	52	520·5	53	306·8
		55		08·26	57	512·7	58	307·0
21	15	0		06·06	2	510·9	3	306·7
		10		08·28	12	514·7	13	306·8
		15		11·51	17	513·0	18	304·0
		20		15·24	22	509·6	23	300·0
		25		17·80	27	508·2	28	296·0
		30		19·98	32	514·5	33	295·0
		35		20·38	37	518·4	38	293·0
		40		19·34	42	521·4	43	291·1
		45		18·23	47	524·5	48	291·9
21	16	0		17·46	2	528·6	3	306·2
		30		13·29	32	537·5	33	316·4
21	17	0		11·10	2	535·8	3	346·1
22	6	0	25	01·58	2	540·3	3	467·3
		15		06·23	17	534·7	18	468·8
		40		11·54	42	540·6	43	459·6
22	7	0		12·18	2	540·0	3	454·3
28	12	0	25	03·40	2	537·9	3	413·5
		10		05·23	12	536·9	13	413·2
28	13	0		07·27	2	548·6	3	393·9
31	11	0	24	59·27	2	532·9	3	435·4
		10	24	58·79	12	524·7	13	442·4
		20	25	00·24	22	524·3	23	446·4
		40		00·13	42	538·9	43	439·5
31	12	0		01·75	2	541·1	3	429·7
1	5	0	25	02·82	2	532·6	3	474·3
		10		04·17	12	526·9	13	482·4
		20		03·70	22	522·5	23	489·6
		30		02·69	32	526·6	33	491·4
		42		03·97	43	523·0	44	492·2
1	6	0		10·23	2	537·2	3	481·5
		10		12·92	12	530·0	13	479·1
		20		12·55	22	536·9	23	474·9
		30		13·93	32	533·3	33	473·0
		40		13·05	42	533·9	43	469·6
1	7	0		11·71	2	534·9	3	469·4
1	9	0	25	02·39	2	526·0	3	467·2
		10	24	59·86	12	526·9	13	463·7
		20		58·15	22	522·4	23	460·8
		45		57·44	47	513·4	48	455·8
1	10	0		59·19	2	515·4	3	449·8
2	15	0	25	17·83	2	544·7	3	400·5
		10		13·59	12	546·7	13	391·7
		15		12·38	17	545·2	18	388·9
		30		09·33	32	545·1	33	388·7
		45		06·32	47	545·1	48	392·0
2	16	0		06·46	2	544·3	3	398·5
		30		09·03	32	544·2	33	403·3
2	17	0		08·59	2	545·9	3	406·2
2	19	0		12·55	2	545·0	3	414·5
		25		15·01	27	536·9	28	418·2
		48		15·20	49	533·3	50	421·6
2	20	0		14·84	2	530·6	3	422·1
4	9	0	25	05·99				
		20		09·67				
		30		05·79				
		40		04·78				
		50		04·34				
4	10	0		03·45				
		10		02·35				
		20		02·89				
4	11	0		02·50				
		20		01·95				
4	12	0		05·33				
	*	10		08·11				
		15		08·50				
		25		08·21				
		45		08·29				
4	13	0		08·14				
4	17	0	25	12·80				
		15		11·98				
4	18	0		07·87				
5	3	0	25	20·77				
		10		22·47				
		25		18·43				
		40		17·83				
		50		17·26				
		55		19·15				
5	4	0		22·47				
		10		21·73				
5	5	0		20·97				
		10		24·86				
		15		23·85				
		20		17·70				
		25		19·28				
		30		21·98				
		35		24·03				
		40		25·96				
		45		23·09				
		50		23·72				
5	6	0		21·50				
		5		20·85				
		15		19·01				
		25		19·44				
		35		19·64				
	*	45		17·47				
		55		12·87				
5	7	0		12·25				
		5		12·01				
		16		12·92				
		35		10·97				
		45		06·86				
		50		03·87				
		55	25	00·47				
5	8	0	24	58·49				
		5		56·55				
		10		54·25				
		15		54·01				
		20		51·57				
		25		52·01				
		30	24	53·98				
		45	25	00·17				

BIFILAR. $k=0·000140$. BALANCE. $k=0·000010$.

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* See notes on the Aurora Borealis, *after* the *Extra Observations of Magnetometers.*
Nov. 5ᵈ 7ʰ 55ᵐ. Clock put back 8ˢ; error afterwards 0ˢ.

IFILAR rrected.	BALANCE Corrected.		Gött. Mean Time.		DECLINATION.			BIFILAR Corrected.		BALANCE Corrected.		Gött. Mean Time.		DECLINATION.			BIFILAR Corrected.		BALANCE Corrected.	
Sc. Div.	Min.	Mic. Div.	d.	h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.	d.	h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.
535·4	3	464·7	5	9	0	25	05·32	2	532·5	3	536·8	17	10	0	25	05·82	2	538·5	3	455·1
547·4	23	450·9			21		07·67	22	535·9	23	528·6			16		06·21	17	540·8	18	443·8
541·0	33	448·3	5	10	0		09·91	2	538·2	3	505·5	17	11	0		06·12	2	535·9	3	432·2
542·0	43	446·3												30		08·88	32	546·9	33	419·3
534·0	53	448·0	7	11	0	25	03·04	2	541·3	3	423·3	17	12	0		07·94	2	533·8	3	402·7
529·7	3	449·8			40		02·86	42	532·0	43	420·8			30		05·85	32	540·9	33	404·2
530·3	13	450·4	7	12	0		04·71	2	532·8	3	419·4	17	13	0		07·69	2	537·1	3	402·4
530·9	23	451·9																		
531·5	3	446·2	7	17	0	25	12·08	2	540·2	3	411·1	18	6	0	24	54·32	2	532·3	3	472·2
529·7	23	444·5			32		15·07	33	544·3	34	402·5			10	24	57·37	12	545·7		
545·2	3	424·5			50		14·08	51	545·8	52	397·0			20	25	00·84	22	542·4	23	471·4
543·4	13	414·2	7	18	0		11·98	2	543·9	3	395·1			30		04·10	32	536·5	33	470·4
541·9	18	412·1										18	7	0		03·43	2	539·8	3	464·7
539·0	28	410·5	10	11	0	25	00·72	2	541·3	3	434·4			30		08·11	32	542·3	33	457·2
535·3	48	411·0			10	24	57·22	12	538·5	13	435·0	18	8	0	25	09·62	2	545·2	3	450·5
535·8	3	406·4			15	24	56·43	17	536·0	18	436·7	18	11	4	24	54·57	5	549·8	6	434·1
					20	24	57·49	22	535·4	23	437·4			10		53·98	12	557·2	13	429·2
542·3	3	434·2			38	25	03·43	39	535·4	40	438·0			15		54·15	17	557·4	18	427·0
543·0	18	432·8	10	12	0		06·39	2	542·6	3	430·5			20		53·49	22	555·0	23	425·2
548·5	3	431·5	10	13	0		12·89	2	544·8	3	417·1			25		54·35	27	549·7	28	425·8
					15		15·39	17	546·9	18	409·6			30		55·42	32	543·9	33	426·1
530·4	3	476·8			35		10·50	37	545·3	38	401·1			35		55·49	37	541·5	38	426·3
521·4			10	14	0		08·29	2	550·1	3	389·9			50	24	59·59	52	533·0	53	429·2
530·0	28	497·8										18	12	0	25	03·43	2	535·0	3	429·4
541·3	43	504·1	16	22	0	25	16·79	2	510·9	3	422·9			15		10·36	17	539·1	18	424·6
545·6	53	509·4			15		20·58	17	509·7	18	422·6			30		10·43	32	543·6	33	417·0
549·9	58	511·2			30		25·22	32	508·2	33	417·9	18	13	0		06·06	2	541·2	3	414·2
543·4	3	518·0			45		25·94	47	533·9	48	411·6									
548·6	13	523·8			51		25·09	52	535·4	53	408·7	19	5	0	25	08·46	2	530·7	3	443·5
543·1	3	573·1	16	23	0		24·12	2	528·1	3	411·3			20		01·09	22	545·0	23	443·6
539·2	13	574·3			10		21·50	12	529·5	13	410·4			30		02·45	32	546·2	33	444·0
535·3	18	585·3	17	0	0		19·14	2	526·5	3	422·5	19	6	0		06·26	2	541·3	3	441·3
547·5	23	586·4																		
549·5	28	582·9	17	6	0	25	11·28	2	542·7	3	461·0	22	8	0	25	02·59	2	545·3	3	443·7
550·1	33	583·4		*	42		13·16	43	534·8	44	480·5			10	24	59·39	12	552·9	13	443·0
550·8	38	585·9	17	7	0		09·57	2	536·1	3	512·9			20	25	01·01	22	549·1	23	445·0
544·5	43	594·3		*	6	25	07·10	7	525·3	8	535·6	22	9	0		06·50	2	543·6	3	444·1
546·9	48	593·5			10	24	58·55	12	533·3	13	528·0									
545·7	53	594·9			15	25	02·40	17	535·8	18	527·9	24	8	0	25	05·11	2	537·2	3	455·6
538·1	3	600·6			20	25	04·86							10	24	59·12	12	551·0	13	451·9
540·3	8	600·6			25	25	05·00	27	536·8	28	571·9			15	24	57·34	17	563·3	18	448·1
537·8	18	607·5			30	24	59·73	32	530·5	33	554·6			20	24	58·92	22	564·4	23	446·8
537·7	28	606·9			35	24	59·17	37	536·0	38	532·7			25	25	00·53	27	561·4	28	445·5
533·1	38	616·4			40	25	01·11	42	533·9	43	519·1			30		02·55	32	559·4	33	444·9
					45	25	01·07	47	527·4	48	516·2			40		04·17	42	543·3	43	444·6
533·2	58	620·3			50	25	00·18	52	524·4	53	515·3	24	9	0		02·01	2	540·7	3	444·4
532·3	3	618·8			55	24	57·42	57	528·7	58	514·1			30		05·58	32	549·0	33	444·4
533·9	8	616·2	17	8	0	24	58·82	2	526·1	3	516·8	24	10	0		04·51	2	538·0	3	444·1
534·2	18	607·3			5	24	57·56	7	528·2	8	515·4									
533·7	38	591·0			15	24	55·33	17	526·8	18	518·3	26	11	0	25	03·57	2	550·6	3	394·4
550·7	48	576·1			30	25	02·25	32	521·7	33	509·7			15		04·41	17	552·4	18	393·4
538·0	53	578·4		*	50		07·07	52	521·7	53	503·0			30		02·48	32	566·1	33	384·2
536·1	58	572·3			56		08·55	57	524·3	58	501·7			40		03·87	42	558·9	43	384·0
526·7	3	578·6	17	9	0		07·32	2	522·3	3	502·9	26	12	0		02·86	2	543·5	3	388·1
526·1	8	583·2		*	6		02·12	7	531·5	8	499·4			30		07·78	32	543·9	33	391·1
531·4	13	579·3			11		04·21	12	538·4	13	484·9	26	13	0		08·34	2	547·1	3	389·1
534·1	18	572·6			15		07·87	17	535·7	18	471·0									
528·8	23	566·2			20		04·39	22	531·7	23	464·7	27	11	0	25	02·20	2	541·0	3	403·7
528·6	28	561·9			25		09·47	27	530·7	28	461·2			10		03·16	12	541·7	13	403·3
531·4	33	559·9			35		09·49	37	528·6	38	458·8			25		04·17	27	543·7	28	402·2
533·5	48	546·6			50		06·57	52	536·7	53	459·2	27	12	0		05·92	2	540·9	3	401·6

BIFILAR. $k = 0·000140$. **BALANCE.** $k = 0·000010$.

* See notes on the Aurora Borealis, *after* the *Extra Observations of Magnetometers.*

Gött. Mean Time.	DECLINATION.			BIFILAR Corrected.		BALANCE Corrected.	
d. h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.
27 19	0	25	15·34	2	548·1	3	372·2
	10		12·04	12	559·2	13	368·7
	20		08·90	22	557·0	23	368·0
	40		08·25	42	555·3	43	370·9
27 20	0		09·08	2	554·7	3	372·1
2 12	0	25	05·05	2	541·1	3	429·8
	30		06·66	32	542·0	33	428·9
2 13	0		06·86	2	542·5	3	429·7
2 17	0	25	15·14	2	553·4	3	423·7
	10		16·35	12	555·1	13	421·2
	20		13·46	22	558·6	23	415·2
	30		10·16	32	561·7	33	413·5
	40		09·56	42	559·9	43	411·3
	50		07·31	52	559·5	53	412·0
2 18	0		07·17	2	556·6	3	413·1
	15		08·08	17	554·3	18	415·1
2 19	0		10·13	2	557·4	3	413·8
3 4	0	25	20·43	2	544·6	3	670·9
	10		13·70	11	539·3	12	674·6
	15		12·11	17	543·3	18	657·8
	20		16·43	22	541·5	23	676·5
	25		16·65	27	545·6	28	738·1
				29	551·4		
	30		02·93	31	563·5		
				32	582·9	33	729·3
				34	578·2		
	35		18·40			35	708·3
				36	573·7		
				37	571·9	38	721·5
				39	565·5		
	40		15·74				
	41		13·43	41	558·0		
	42		11·52	42	556·1	43	762·9
				44	549·9		
	45		13·22			45	754·2
	46		16·68	46	540·2		
	47		17·15	47	530·6	48	765·6
				49	530·1		
	50		07·64			50	767·6
	51		05·99	51	531·2		
	52		04·58	52	530·9	53	759·0
				54	538·0		
	55		04·44			55	756·1
				56	537·5		
	57		04·21	57	537·5	58	749·2
				59	542·7		
3 5	0		04·41			0	744·2
				1	551·7		
				2	553·3	3	723·2
				4	560·0		
	5		14·44	6	559·2	5	712·4
				7	558·0	8	718·5
	8		13·81	9	584·0		
	10		16·32	10	583·8	11	736·5
				12	592·5	13	753·2
	13		12·04	14	603·5		
	14	25	06·73				
	15	24	58·25	15	619·8		

Gött. Mean Time.	DECLINATION.			BIFILAR Corrected.		BALANCE Corrected.	
d. h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.
3 5	16	24	56·67	16	635·8		
	17	24	55·67	17	641·3	17	768·0
				18	644·6		
				19	653·6	19	757·3
	20	25	02·55	20	660· +	20	760·4
				(out	of field)	21	763·4
	22		14·26			22	763·5
				23	647·		
	24		32·39	24	611·1	24	730·1
	25		32·26	25	588·1		
				26	578·5	26	711·6
	27		23·54	27	571·8		
	28		19·58	28	573·3	28	739·8
	29		13·16	29	564·1	29	746·7
	30		07·64	30	569·7	30	745·2
				31	583·5	31	744·5
	32		07·44	32	590·3		
	33		06·23	33	597·5	33	736·1
	34		09·02	34	616·4	34	721·3
	35		16·48	35	632·9	35	703·9
	36		30·94	36	633·4	36	683·8
	37	25	50·83	37	616·4	37	660·0
	38	26	03·88	38	589·2	38	637·2
	39	26	13·31	39	551·3	39	624·6
	40	26	15·39	40	532·2	40	629·2
	41	26	11·76	41	523·6	41	690·5
	42	26	02·37	42	509·8	42	718·2
	43	25	36·49	43	562·7	43	762·5
	44		24·86	44	642·7	44	802·4
	45		21·90	(out	of field)	45	845·2
	46		18·08			46	877·1
	47		11·57			47	914·9
	48		09·08			48	941·4
	49		09·15			49	954·4
*	50		08·95	50	642·	50	954·5
	51		10·00	51	630·8		
	52		07·27	52	620·8	52	944·2
	53		04·53	53	622·4	53	935·3
	54		05·58	54	621·9	54	928·4
	55		07·72	55	613·6	55	914·2
	56		10·09	56	599·4	56	901·7
	57		07·74	57	587·0	57	891·6
	58		06·27	58	575·9	58	883·7
	59		02·39	59	571·9	59	876·8
3 6	0	25	00·48	0	565·1	0	871·0
*	1	24	57·07	1	559·8	1	866·3
	2		55·19	2	565·2	2	859·5
	3		54·68	3	568·8	3	847·1
	4		55·24	4	575·8	4	827·7
	5	24	58·99	5	586·7	5	814·2
	6	25	03·84	6	592·5	6	802·4
	7		08·68	7	595·3	7	798·4
	8		13·36	8	592·2	8	798·0
	9		16·48	9	579·6	9	798·0
	10		15·17	10	576·0	10	803·4
	11		09·93	11	579·9	11	821·4
	12		02·45	12	594·1		
	13		00·84	13	603·9	13	826·0
	14		02·45	14	604·6	14	820·7
	15		06·59	15	606·6	15	813·9
	16		10·23	16	607·1	16	808·8

Gött. Mean Time.	DECLINATION.		
d. h.	Min.	°	′
3 6	17	25	11·84
	18		12·38
	19		12·22
	20		10·43
	21		08·65
	22		08·25
	23		10·80
	24		10·70
	25		10·60
	26		13·63
	27		20·29
	28		26·81
	29		35·58
	30		40·06
	31		36·66
*	32		32·56
	33		32·19
	34		29·66
	35		25·96
	36		21·46
	37		24·89
	38		26·13
	39		34·34
	40		41·57
	41		41·87
	42		40·15
	43		41·74
	44		35·04
	45		33·20
	46		33·13
	47		38·04
	48		44·83
	49		51·92
	50		56·08
	51		58·34
	52		58·94
	53		59·08
	54		57·16
	55	25	57·02
	56	26	02·83
	57	25	56·67
	58		49·03
	59		35·58
3 7	0		26·03
	1		23·21
	2		24·28
	3		30·65
	4		29·06
	5		19·51
	6		14·89
	7		10·63
	8		09·96
	9		11·44
	10		12·11
	11		11·44
	12		02·35
	13		08·95
	14		11·10
	15		13·44
	16		13·49
	17		14·70

BIFILAR. $k=0·000140$. BALANCE. $k=0·000010$.

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* See notes on the Aurora Borealis, *after* the *Extra Observations of Magnetometers.*

Dec. 3d 7h 2m. Arms of the bifilar torsion circle turned from 110° 16′·5 to 107° 3′. The observations of the bifilar, between 7h 2m and 48m have been corrected to the original torsion circle reading. See Introduction, p. xxxii.

ILAR ected.	BALANCE Corrected.		Gött. Mean Time.		DECLINATION.			BIFILAR Corrected.		BALANCE Corrected.		Gött. Mean Time.		DECLINATION.			BIFILAR Corrected.		BALANCE Corrected.	
Sc. Div.	Min.	Mic. Div.	d.	h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.	d.	h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.
603·6	17	807·8	3	7	18	25	12·11	18	559·5	18	829·5	3	8	19	24	50·85	19	551·4	19	833·5
603·9	18	807·0			19		12·16	19	570·9	19	835·4			20		45·54	20	531·8	20	828·7
603·8	19	808·3			20		07·71	20	580·1	20	845·7			21		42·78	21	520·2	21	818·2
605·9	20	812·3			21		02·42	21	604·4	21	859·4			22		38·06	22	516·9	22	808·8
615·7	21	814·7			22		02·52	22	620·0	22	861·5			23		36·11	23	513·1	23	800·5
616·9	22	818·3			23		05·22	23	627·3	23	857·3			24		31·39	24	509·4	24	786·7
621·4	23	822·1			24		10·27	24	629·0	24	842·1			25		28·87	25	554·1	25	783·2
627·2	24	824·6		*	25		16·48	25	628·9	25	822·9						26	608·1	26	792·2
628·4	25	824·3			26		25·06	26	639·8	26	811·0			27		28·72	27	615·3	27	793·2
641·7	26	823·1			27		26·23	27½	606·6	27	804·0			28		29·54	28	597·4	28	785·5
639·2	27	820·8			28		15·98			28	791·6			29		24·03	29	595·7	29	785·3
630·3	28	820·4			29		10·72	29½	657·1	29	789·1			30		19·10	30	615·1	30	793·2
606·0	29	815·9			30		32·96	30½	615·2	30	768·6			31		19·94	31	619·8	31	778·3
579·8	30	811·0			31		26·10	31	642·8	31				32		37·53	32	633·1	32	750·1
568·6	31	811·9			32	25	59·45	32	637·8	32	720·5			33		51·93	33	652·3	33	782·3
586·5	32	815·2			33	26	10·62	33	576·2	33	669·6			34		44·79	34	624·6	34	816·0
602·4	33	817·3			34	26	24·71	34	534·7					35		33·29	35	602·3	35	832·8
619·8	34	823·4			35	26	22·59	35	486·6	35	706·8			36	24	20·83	36	602·1	36	809·3
647·5	35	837·4			36	25	47·35	36	534·7	36	834·0						37	623·8	37	736·5
660·	36	856·8			37		30·11	37	597·5	37	882·8			38	25	01·88	38	650·6	38	702·3
of field)	37	863·5			38		23·27	38	640·3	38	885·8			39		05·69	39	628·3	39	760·0
	38	863·7			39		24·35	39	634·8	39	881·5			40		09·73	40	607·4	40	758·5
	39	847·4			40		20·38	40	644·3	40	854·2			41		09·02	41	573·4	41	782·8
613·3	40	810·8			41		28·79	41	656·1	41	828·0			42	25	01·78	42	536·5	42	790·0
550·8	41	764·4			42		23·21	42	652·5	42	817·2			43	24	49·41	43	528·4	43	785·8
533·9	42	736·1			43		37·33	43	627·7	43	843·3			44		50·98	44	521·4	44	780·6
534·1	43	715·7			44		27·31	44	602·3	44	858·6			45		42·51	45	503·4	45	784·0
544·6	44	710·7			45		27·10	45	591·8	45	855·4			46		37·83	46	489·7	46	761·2
575·1	45	722·7			46		27·91	46	503·7	46	834·2						47	482·3	47	727·7
601·4	46	733·2			47		25·93	(out	of field)	47	796·5			48		39·18	48	500·0	48	722·1
611·3	47	734·9			48		20·99			48	771·4			49		37·12	49	507·8	49	720·2
604·0	48	730·4			49		18·81			49	769·2			50		41·57	50	505·6	50	682·5
591·8	49	721·9			50		16·48	50	410·6	50	774·1			51		43·92	51	492·4	51	659·4
574·4	50	721·0			51		12·82	51	420·9	51	781·3						52	481·6	52	632·5
577·2	51	728·6			52		08·95	52	436·2	52	795·2			53		47·08	53	482·4	53	615·6
598·0	52	741·5			53		05·72	53	462·3	53	797·3			54		47·42	54	483·6	54	600·0
614·6	53	759·2			54		04·98	54	499·2	54	796·7			55		51·56	55	487·3	55	565·6
646·7	54	786·2			55		04·91	55	524·9	55	795·3			56	24	59·56	56	484·8	56	556·1
of field)	55	811·8			56		03·43	56	543·8	56	797·0						57	479·6	57	551·8
	56	841·8			57		02·55	57	561·7	57	798·2			58	25	05·38	58	482·7	58	536·6
	57	890·3			58		03·77	58	571·0	58	800·6			59		10·33	59	490·4	59	537·0
	58	936·4			59		03·50	59	586·7			3	9	0		08·88	0	488·3	0	552·2
	59	944·6	3	8	0		02·96	0	597·1	0	808·8						1	483·4	1	564·6
	0	917·0		*	1		01·27	1	613·2	1	790·2						2	477·3	2	559·9
	1	878·5			2		00·94	2	621·0	2	814·1						3	471·2	3	551·0
	2	853·6						3	623·2	3	816·5			4		04·14	4	470·5	4	552·5
	3	853·2			4		01·34	4	625·0	4	816·5			5		04·44	5	472·1	5	562·0
					5		00·84	5	625·0				*				6	476·7		
713·7	5	911·8			6		00·40	6	649·5	6	817·8			7		02·59	7	483·1	7	567·1
700·3	6	916·1			7		01·34	(out	of field)	7	810·9						8	488·3	8	563·5
704·6	7	916·1			8		05·22			8	798·2			9		04·64	9	493·8		
685·0	8	901·5			9		05·82	9	647·0	9	792·0			10		06·16				
672·3	9	893·0			10		02·62	10	645·7	10	797·7			12		10·47	12	497·0	13	560·9
657·3	10	880·1			11	25	02·69	11	631·5	11	802·9			14		09·26				
634·9	11	887·1			12	24	57·31	12	611·9	12	815·5			15	25	05·69	17	489·0	18	568·3
605·2	12	887·0			13		57·31	13	599·7	13	827·7			20	24	56·74	22	490·9	23	547·2
578·1	13	877·2			14		53·54	14	587·5	14	839·9			25		56·74	27	488·0	28	534·1
557·2	14	854·7						15	588·7	15	844·1			30		59·32	32	494·6	33	536·8
549·0	15	837·8						16	576·5	16	837·1			35	24	57·98	37	488·2	38	531·3
547·0	16	828·8			17		51·25	17	569·7					40	25	01·21	42	514·4	43	531·2
548·3	17	829·4			18		49·61	18	564·0	18	836·7			45		13·05	47	518·3	48	571·0

BIFILAR. $k=0{\cdot}000140$. BALANCE. $k=0{\cdot}000010$.

See notes on the Aurora Borealis, *after* the *Extra Observations of Magnetometers.*

ec. 3^d 7^h 30^m. The bifilar magnet moving backwards and forwards with great rapidity.

ec. 3^d 7^h 48^m. Arms of the bifilar torsion circle turned back from 107° 3′ to 110° 23′·0. The observations of the bifilar from 7^h 48^m till 47^m have been corrected (by − 5·5 sc. div.) to the original reading of the torsion circle. See Introduction, p. xxxii.

ec. 3^d 8^h 37^m. The declination magnet moved westwards from 36^m to 37^m.

Gött. Mean Time.	DECLINATION.			BIFILAR Corrected.		BALANCE Corrected.		Gött. Mean Time.	DECLINATION.			BIFILAR Corrected.		BALANCE Corrected.		Gött. Mean Time.	DECLINATION.		
d. h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	°	′
3 9	50	25	02·62	52	507·7	53	567·3	3 13				7	484·5	8	484·5	3 14			
	55		06·59	57	521·6	58	580·2					9	492·1						
3 10	0		08·45	2	484·8	3	560·7		10	24	52·40	11	491·9				55	24	57·88
	5		12·95	7	467·6	8	554·8					12	490·1	13	487·6	3 15	0	25	02·42
	10		09·12	12	476·9	13	566·8		15		50·04	17	501·6	18	487·4		5	25	01·21
	15	25	04·14	17	481·8	18	586·9		20		45·98	22	502·1	23	474·5	*	10	24	59·86
	20	24	54·65	22	511·9	23	600·0		25		49·17	27	514·4	28	467·3		20	25	02·48
	25		52·20	27	502·0	28	600·0		30		52·70	32	500·0	33	448·0		25		03·30
	30		50·22	32	507·3	33	583·8					34	488·7				30		02·62
	35		49·74	37	527·0	38	572·5		35		53·27	37	477·8	39	421·5		35		05·38
	40	24	57·37	42	533·7	43	568·5		40		54·45	42	481·9	43	414·8		40		08·65
	45	25	03·81	47	520·4	48	571·9		45		53·88	47	485·9	48	411·1		45		06·12
	50	25	01·34	52	489·8	53	561·3		50		54·18	52	485·3	53	406·7		50		03·34
	55	24	57·78	57	485·7	58	539·6		55		55·80	57	474·8	58	402·7		55		03·27
3 11	0		57·34	2	493·7	3	529·5	3 14	0		53·88	2	464·7	3	401·4	3 16	0		00·20
*	5		52·33	7	486·7	8	526·2	*	5		53·20	7	459·6	8	399·6	*	5		01·01
	10		53·38	12	500·6	13	530·9		10		50·92	12	472·0	13	399·8		10		03·43
	15		53·88	17	504·8	18	536·1		15		49·51	17	477·2	18	397·5		15		02·89
	20		57·28	22	498·5	23	540·9		20		49·37	22	473·4	23	384·9		20		03·50
	25	24	58·82	27	495·9	28	537·5					24	482·6				25		03·37
	30	25	00·40	32	506·7	33	,,		25	24	56·30	27	471·2	28	375·2		30		07·40
	35	25	01·72	37	496·4	38	537·9					29	474·8				45		07·10
	40	25	57·51	42	468·1	43	486·6		30	25	03·20	32	483·3	33	379·5	3 17	0		05·79
	45	25	02·08	47	438·4	48	452·7		35	25	05·32	37	470·0	38	380·4				
	50	25	02·69	52	454·3	53	457·3					39	462·3			13 4	0	25	14·23
	55	25	04·95	57	460·9	58	520·4		40	25	01·41	41	448·1				10		19·98
3 12	5	24	43·52	7	533·2	8	517·7					42	451·8	43	382·7		15		16·89
	10	24	44·50	12	541·8	13	505·5					44	456·9				21		09·59
	25	24	57·07	27	516·2				45	24	58·25	46	463·0				25		07·40
	40	25	03·97	42	461·9	43	509·7					47	471·0	48	392·2		30		07·00
	50	24	54·59	52	477·0	53	514·6					49	477·9				35		08·11
3 13	0		50·93	2	457·7	3	489·4		50	25	00·00	51	488·8				40		08·41
*	5		50·95	6	476·4														

BIFILAR. k=0·000140. BALANCE. k=0·000010.

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* See notes on the Aurora Borealis, *after* the *Extra Observations of Magnetometers.*

ILAR ected.	BALANCE Corrected.		Gött. Mean Time.		DECLINATION.			BIFILAR Corrected.		BALANCE Corrected.		Gött. Mean Time.		DECLINATION.			BIFILAR Corrected.		BALANCE Corrected.	
Sc. Div.	Min.	Mic. Div.	d.	h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.	d.	h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.
479·4	53	414·4	13	4	50	25	12·04	52	514·4	53	492·3	15	9	0	24	46·21	2	528·7	3	442·0
478·7			13	5	0		11·98	2	535·2	3	492·8			5		43·15	7	535·6	8	441·1
480·9	58	421·7			15		14·26	17	538·2	18	492·6			10		43·29	12	551·9	13	438·2
485·7	3	430·8			25		13·66	27	540·4	28	491·0			15		49·54	17	555·6	18	437·0
473·6	8	419·8	13	6	5		06·32	6	541·0	7	494·6			20	24	59·53	22	545·0	23	439·5
479·7	13	402·2			30		07·40	32	520·7	33	506·8			25	25	04·17	27	532·8	28	439·7
477·8	23	384·9			35	25	01·54	37	508·9	38	517·1			30		04·04	32	528·5	33	439·5
489·6	28	370·9			40	24	48·36							40		02·32	42	540·1	43	434·7
492·3	33	363·2			41		47·69	42	533·1	43	511·6	15	10	0		05·62	2	538·6	3	430·6
497·6	38	361·3						44	535·5			15	11	0		05·63	2	542·7	3	428·2
497·0	43	363·6			45		47·69	47	535·2	48	508·6			20		01·88	22	535·6	23	429·8
487·0	48	364·2			50		48·50	52	534·7	53	509·5	15	12	0		07·31	2	544·8	3	425·6
494·2	53	362·9			55		48·90	57	534·9	58	509·1									
501·9	58	370·1	13	7	0		48·45	2	543·9	3	504·1	16	7	0	25	00·67	2	538·3	3	438·0
511·0	3	383·1			5		52·94	7	545·6	8	510·6			10	24	54·82	12	558·4	13	432·4
515·0	8	393·1			10	24	57·04							15	24	57·71	17	558·7	18	433·8
516·6	13	401·9			20	25	00·74	22	527·2	23	495·6			20	25	01·81	22	552·6	23	434·7
512·2	18	418·2			45		06·90	47	527·3	48	488·1			35		04·95	37	546·0	38	432·5
511·4	23	428·8	13	8	0	25	05·85	2	533·2	3	482·7	16	8	0		02·93	2	544·0	3	432·2
515·3	28	432·1	13	10	0	24	50·78	2	526·5	3	470·9									
512·4	33	431·8			5		48·77	7	529·8	8	468·5	18	6	0	25	00·98	2	551·2	3	451·3
515·1	48	422·5			15		51·05	17	528·1	18	466·5			10	24	59·73	12	550·5	13	448·7
519·7	3	444·0			30		54·82	32	517·6	33	462·9	18	7	0	25	08·77	2	543·4	3	444·6
					50		58·49	52	519·5	53	452·1	18	8	0	24	59·83	2	547·5	3	440·4
543·1	3	485·1	13	11	0	24	59·84	2	521·0	3	444·0			10	25	03·81	12	539·0	13	439·9
529·7	13	495·9												35		05·32	37	542·0	38	438·6
519·3	18	502·3	15	7	0	24	49·22	2	520·6	3	459·3	18	9	0		06·95	2	541·7	3	439·3
524·2	23	499·3			5		49·15	7	520·3	8	461·1									
532·0	28	497·7			10		49·88	12	519·3	13	463·9	31	9	0	25	00·53	2	537·9	3	418·6
535·9	33	494·7			20		54·75	22	523·4	23	465·4			10		00·13	12	541·3	13	419·2
537·4	38	492·2			30	24	59·46	32	529·6	33	463·7			30		03·50	32	534·4	33	422·9
538·3	43	492·1	15	8	0	25	06·39	2	535·5	3	450·1	31	10	0		07·31	2	542·0	3	416·7

BIFILAR. $k=0·000140$. BALANCE. $k=0·000010$.

ec. 13^{d} 6^{h} 20^{m}. The instruments read nearly as at 6^{h} 0^{m}.
ec 13^{d} 10^{h} 15^{m}—30^{m}. Magnets moving very little and steadily in one direction.
ec. 25^{d} 11^{h} 20^{m}. Declination magnet moved eastwards slowly and regularly from 0^{m}. The magnets, especially the declination magnet, were teady throughout the night.

NOTES ON THE AURORÆ BOREALES SEEN AT MAKERSTOUN.

d. h. m.

Jan. 0 15 10. The sky looks more milky to N. than in any other quarter. Aurora?

Jan. 16 5. Aurora to W.; faint and diffuse. Fog commencing; dense fog at 20^{m}.

Jan. 7 Aurora seen in Orkney.

9 7 10. Faint auroral band 8° high. 20^{m}. Slight pulsations in the aurora.

8 5. Fine auroral arch, about 10° altitude at the vertex.

8 15. Measured and found the summit of the arch 15°·5 altitude, the one extremity meets the horizon at N. 45° E., the other about W. 13° N., but this extremity is so diffuse that the measure is but rough.

8 35. The arch nearly meets the horizon at NE.; faint and diffuse to W. 55^{m}. Triple arch; the middle one has its greatest altitude 29°; brushes below the arches to NNE.

9 5. The aurora in a series of four arches, stretches across the sky from WSW. to ENE., crossing near the zenith; diffuse broad arches with dark strips of sky between. The E. extremity rises in brushes a few degrees above the horizon.

9 19. Aurora in two arches, one passing 5° or 6° N. of zenith, the other 20° high; 40° of sky between the arches. 24^{m}. The upper arch passes through the zenith; faint brush to NNE. below the lower arch. 29^{m}. Faint portion of upper arch with the W. extremity visible; lower arch breaking in the middle, the two portions making a sharp angle with each other; pencils below to N by E. 34^{m}. The western extremity of the upper arch has two branches, one passing 10° to S., the other 10° to N. of zenith; pencils to N by E.

9 42. Aurora bright to W., passing 25° S. of zenith, terminating in a bright patch to E.; middle of W. extremity of arch W. 22° S., of E. extremity of arch E. 18° N. Altitude of lower arch 23°.

45. W. portion of upper arch 60° in length, split into two; lower arch bright to NE. 49^{m}. Pencil risen from W. 28° S. 51^{m}. Three pencils from the same point; patch of aurora, altitude of centre 76° above E. 14° N; disappeared at 52^{m}. 54^{m}. The upper extremity of the W. pencils attains the altitude 29° above S. 24° W. 55^{m}. Lower arch very steady and complete azimuths of the extremities W. 3° N., and N. 48° E.

56. Brushes to W. brighter, varying in intensity. Lower arch, altitude 24°, breadth about 4°. (The measures of altitude of the summit of arches are always made in the magnetic meridian, and the highest portion of the belt is taken).

9 58. Western portion of the upper arch nearly extinct.

10 4. The lower arch has broken into a seried rank of pencils, very beautiful and of a bright light-green; a portion of a lower arch visible at the E. extremity; the whole of the arches consists of series of pencils or brushes. 6^{m}. A very luminous pencil to NNW., very bright to N. 7^{m}. Bright to NW. The pencils start up everywhere, moving both vertically and sideways; generally they are of a beautiful light-green, but some of the most vivid are tinged with red. The pencils rarely if ever exceed 10° in length; no long streamers seen. 8^{m}. A patch to SW.; the pencils below the arch are now less distinct.

12. Auroral arch below quite diffuse; mass of streamers, not distinct. 13^{m}. Faint patches cross near the zenith like a portion of the upper arch again.

13½. Meteor with reddish, sparky tail, from 37° to 27° of altitude above E. 35° S., shot nearly vertically down.

15. The lower arch now an amorphous mass of patches. $15\frac{1}{2}^{m}$. Arch forming, altitude 65°, disappearing immediately; pencils to NE.

16–17. Patch to ENE., 25° altitude. This patch, which has reappeared frequently, seems to belong to the highest arch. $18\frac{1}{2}^{m}$. Portion of an arch nearly across the zenith, another to S. of zenith from W., as at first. 19^{m}. Bright patches to NE.

20. Bright arch passes 10° SSE. of zenith, altitude of summit of lower edge 61° above SSE. 21^{m}. Summit of lower edge 56° above SSE. The lower arch to N. in one diffuse mass.

22½. The arch passing to S. of the zenith, has split into two portions; the azimuths of the extremities of the lower portion are W. 33° S., and E. 13° N. 24^{m}. Streamer due W., bright to W., streamer to N.

25. The lowest edge of the arch to S. has the altitude of 37° above SSE. There has been a belt of cirrous clouds from W. to N. throughout these observations.

10 30. Auroral arch to S., about 30° altitude; bright to SW.

32. Still bright to SW., but the arch is nearly away. 36^{m}. Bright patch on SW. horizon; aurora faint to N.; cirro-strati rising.

40. Patches to SSW., 20° altitude, faint; aurora faint to N., with faint streamers below; faint on SW. horizon; cirro-strati rising to N.

55. Rapid pulsations and streamers.

11 3. Pulsations to an altitude of 50°.

NOTES ON THE AURORÆ BOREALES SEEN AT MAKERSTOUN.

d. h. m.

Jan. 9 11 7. Streamers and pulsations from an amorphous mass to N. 8^{m}. Rapid pulsations; aurora in patches forming broken arches; altitude of highest about 32°. 12^{m}. Bright patch, with rapid pulsations, to NNE., since last observation. 13^{m}. Rows of streamers to N. 15^{m}. Mass of faintish streamers, with pulsations to NNE. A mass of cirro-stratus due N., altitude 10°, apparently stationary. 17^{m}. Large amorphous masses pulsating, especially to NE. 23^{m}. Nearly as at 17^{m}, but not bright, occasionally brushes near horizon. 24^{m}. Pencils to NNE. and NE.

27. Large mass, about 60° in length from NE., pointing to 10° S. of zenith; pencils occasionally to NE. 32^{m}. Aurora diffuse, faint pulsations nearly to zenith. 35^{m}. Pulsations like waves revolving from NNE. 38^{m}. A digitate mass to NE. 41^{m}. The mass of cirro-stratus to N., like a black island lying in a sea of light, seems nearly stationary, its middle is about due N., and has an altitude of 10°; thin cirri to NW.

52. Aurora rather diffuse, stretching from NNE. to W.; a faint, variable belt from W. to NE., altitude 50°, with lateral pulsations; few pulsations in the body of the aurora.

12 0. Aurora on the whole brighter; patches to NE.; the mass of cirro-stratus still exists, but is more spread out towards the NW.

9. A belt of nebulous patches stretches from W. to NE. through Polaris; many patches in NW. quarter of the sky, to altitude 55°; the principal part of the aurora is to N., very bright; one streamer seen in the brightest portion of it; bright patches to NE.

11. Obscured to NNW. by cirro-stratus; pulsations among the patches of aurora.

17. Patches appearing and disappearing with great rapidity all over the N. portion of the sky as high as the zenith; they seem to spread from the NNE., where there are still many bright patches.

22. Aurora fainter; many bands stretching from NE. to W by S., appearing and disappearing in a second or two, also many patches; the bands seem to have their origin in the NE., they seldom attain nearer than 30° of the W. point of the horizon.

26. As before, the bands rather more persistant.

30. Much as before; lateral pulsations to NE. among bright patches; brushes.

39. A series of broken bands from NE. to altitude of 70°—90° above N.; not many pulsations.

44. A faint belt can be traced from WSW. to NE., altitude 60° above NNW.; aurora generally fainter.

13 4. An arch of very faint light stretching from NE by N. to W by S., altitude 75°: streamers and bright patches to N. near the horizon; most of the aurora is now obscured by the cirro-stratus.

10. Cirro-stratus and cirri over the aurora, and in no other part of the sky.

15. No pulsations can be perceived; aurora fainter.

26. Bands from NE by N. through 10° SSE. of zenith to SSW., composed principally of patches. 31^{m}. The same; some of the streaks seen to 60° above SSE. The aurora seen through clouds to N.

40. Faint streaks and patches over N. sky, and to 15° S. of zenith.

14 9. Scarcely any of the aurora can now be seen for clouds; no patches are seen near the zenith.

21. Patches and bands of light; a thin haze seems spreading over the sky, which probably diminishes the intensity of the auroral light; the clouds to N. obscure the aurora there.

Jan. 19 12 0. Sky nearly covered with woolly cirri or cirrous haze; an indistinct lunar halo seen; conceived there was an auroral light to N., but was not certain, on account of the moonlight (B.) When the observer (H.) went to the Observatory at 13^{h}, he found the magnets considerably disturbed.

22 10. Cirri rising in tufts from NNW., and radiating from that point, with the curls of the tufts *on all sides* turned towards the magnetic meridian; very dense on the horizon, like a mass of auroral light, and in single tufts higher.

Jan. 20 11 10. Large corona when the moon is covered by thin watery cloud, and small bluish corona in the apparently pure sky. Auroral light to N.; doubtful, from moonlight. Aurora seen in Orkney. (See Meteorological Notes on growing cloud.)

Jan. 21 8 10. Large lunar corona. Auroral light to N.; doubtful, from moonlight.

Jan. 23 15 34. A break in the clouds, to N., shews auroral light.

Jan. 24 7 46. Cannot detect any appearance of aurora, probably on account of the bright moonlight.

11 10. Cirri in thin bands, much like those described previously (Observations for 1844, Nov. 23, page 325), as apparently connected with aurora.

13 10. There is a great similarity in the appearance of the filmy cirri with that of aurora; the cirri shoot up from about NW by N., (a few degrees from the magnetic north;) bands of nearly stationary black clouds are lying on the NNW. horizon in a white light, just as in appearances of auroræ. There seems little doubt that the light on the NNW. horizon is a combination of this cirrous cloud and the aurora. The bands, which reach as far as the zenith, move very slowly; at some times it was imagined that they were pulsating; this, however, was doubtful, a slight change of the direction of vision being sufficient, with the moonlight, to give an unsteady appearance to the filmy bands.

NOTES ON THE AURORÆ BOREALES SEEN AT MAKERSTOUN.

d. h. m.

Jan. 26 13 10. Very thin cirri radiating in bands, as on the 24th, from NW by N. and SE by S., forming a very irregular halo round the moon; the cirri seem to spring in tufts from the border of the halo, in the direction of the radiations, namely, from SE by S.

25. The halo rather better defined, although still irregular. The colours of the interior corona are also more distinct. There may be auroral light to N., but if so, it is completely masked by the cirri and moonlight.

14 10. Cirri much as before, very like a bank of auroral light from NW by N., eastward. There is something decidedly peculiar about these cirri. At 14^{h} 10^{m} observed towards SW., altitude 45°, a series of parallel narrow bands of cirri, some nearly $30'$ broad; watched them very attentively, in order to see if any pulsations occurred; could not see that they moved excepting longitudinally; at 14^{m} they had arrived at the moon and broken the halo into bands; they had thus moved bodily about 40° in less than 4^{m}. It is conceived that the length of the bands are increased as well as their number. It is to be remarked, that these bands did not lie in the same direction as the other cirrous streaks, the latter lie nearly in the magnetic meridian, the bands lie nearly east and west. The bands from NW by N. span the sky in complete arches. Were the cirri not seen plainly near the moon, and the connection traced to the N., the appearance on the N. horizon would be noted *unhesitatingly* as the common homogeneous bank of auroral light.

15 10. Halo gone at present, but cirrous bands nearly as before. A black patch of cirro-stratus near the NW. horizon; this was also noticed at 13^{h}. 15^{m}. It has been noticed throughout, that the declination magnet moves irregularly, by fits or jerks, the vibration often ceasing, or nearly so, suddenly. 30^{m}. W. portion of halo visible; many patches of cirro-stratus or scud risen on NW., N. and SW. horizon. 45^{m}. A rather thicker cirrus coming up to the meridian, moving slowly, with patches of cirro-stratus. The clouds continued moving up more quickly, becoming more and more dense till 16^{h} 10^{m}, when the moon was totally obscured, though thin cirri were still seen to E.

Jan. 28 7 35. Light seen through the clouds to N.

8 30. Auroral light seen through the clouds to N.

50. As far as the aurora can be seen it appears to be quite amorphous; no pulsations or streamers.

Jan. 29 7 5. Auroral light to N. 30^{m}. Auroral light becoming fainter.

Jan. 30 10 10. There seems a faint auroral light among the haze to N., but it is doubtful.

Feb. 1 12 4. The magnets having exhibited some slight irregularities in their motions, the observer looked to see if he could detect any appearance of aurora, the sky being perfectly clear, but he could not; having again entered the Observatory for a minute, he returned at 9^{m}, and found the sky suddenly (in a minute or so) turned milky, with the exception of a streak of blue, reaching from SW. towards NE., another streak meeting it near the zenith (from NE.?) at the same time it became much lighter to N. and especially to NE. There was *now* without doubt aurora, with faint pulsations.

12 20. A most strange aurora; one portion extends in a bank along the horizon from SW. to NE. to an altitude of 45° above WNW., another similar portion to E.; pulsations all round, especially to SE.; just now streaks with the bluish sky to E., altitude 45°.

25. The western bank brightest on the whole; there is a sort of radiation from SW. and NE.; six-tenths of the sky covered by aurora, and as much to S. as to N.; at times no pulsations visible, but the aurora seems to extend like a thin haze over the deeper blue of the sky; the general position of the great boundaries are pretty permanent for some time.

36. Very bright pulsation; meteor shot rapidly *towards* the zenith from 60° altitude above NE.; streaks to E. still bright; patch to SSW. with pulsations; all the stars distinctly visible through the aurora.

45. Much as before; the Pleiades are immediately *out of* the W. bank, as they have been throughout the whole time.

50. Sky nearly covered with the milky aurora; bank of cirro-stratus during the whole period to SE.; no other clouds visible; streaks of blue sky to NW; dark space throughout the observations in N. horizon. The edge of the cirro-stratus in E. and S. horizon, seems to be rather brighter than the rest, just like the clouds in the N. horizon during aurora.

The observer watched the appearance of this aurora till 13^{h} 10^{m}. In its general features it continued much as before; a rather wide streak of sky to NW. noticed at 50^{m} (which, it is believed existed before that minute), passing immediately below the Pleiades seems very permanent in its form and relation to the bank of aurora. The W. bank was on the whole brightest, although very variable in its brightness throughout. The luminosity of each mass was rather uniform, excepting a patch to SSW. which was much brighter than the surrounding aurora. The dark space on the N. horizon mentioned at 50^{m}, was something like that under the usual auroral arch, but ill formed, and not easily separated in some places from the aurora.

NOTES ON THE AURORÆ BOREALES SEEN AT MAKERSTOUN.

d. h. m.

The appearance, as noted at 9^{m}, was much the same as if sheets of the *very thinnest* vapoury haze had been *suddenly* illuminated by a rising moon. The stars were as well defined in the aurora as in the dark spaces unoccupied by it, the only difference consisting in the *ground* on which they were seen. The moon did not rise for several hours after this, but there was not the slightest doubt as to the auroral character of the phenomenon. (B.)

[All the remarks on aurora are given almost *verbatim* as they were noted during the phenomena. The above is a description of a phenomenon which I have named milky aurora, interesting for its peculiar character. It was observed on this occasion for the first time, but has been several times observed since, and always during very minute magnetic irregularities; in several instances it covered the sky uniformly, giving an unusual degree of luminosity to a starlight night. One distinctive difference between this appearance and that of thin cirrous haze, is the clear definition of the stars; stars within the ordinary phenomenon of auroral sheets are seen exactly as if observed through a telescope with an illuminated field; this is the case during milky aurora; in haze, however, the stars become blurred even when the haze is thinnest. October 1848. B.]

eb. 5 8 5. Bank of auroral light to NNW. like strong twilight.

30. Aurora brighter, and extending rather higher.

9 10. Auroral light in form of a segment of a circle, summit of the arch in the *astronomical* meridian.

30. As before.

10 10. Aurora quite steady, not so bright as last hour.

11 10. Faint auroral light behind the clouds to N.

12 10. Faint aurora in form of an arch, altitude 5°, crown in the magnetic meridian.

20. Arch measured, azimuths of extremities N. $27\frac{1}{2}$° E. and N. 67° W., centre of arch N. 20° W., altitude of summit 8°.

38. Streamers shooting out from the arch all along. 44^{m}. Streamers fainter and fewer; one rather bright to NNE.

45—50. A low auroral arch, quite black below, with bright persistent streamers to (WNW.?) The sky decidedly blacker immediately *without* the arch than at a distance from it.

49. One very vivid pencil to NW. moving eastward, disappeared before 51^{m}.

54. A bundle of pencils to NW. moving E., no other pencils along the arch. 57^{m}. Arch faint, several streamers breaking out in all parts of it.

13 4. Aurora altogether much fainter, one or two very faint streamers. 11^{m}. Aurora brighter; patches close on horizon, like the tops of streamers from a lower arch; arch broken up into pencils to NW., a black streak of cirro-stratus there. 14^{m}. Arch quite broken; a number of bundles of pencils; streak of cirro-stratus still to NW.; shooting star to N., altitude 30°, moving towards N. horizon. 19^{m}. The streak of cloud has disappeared; aurora quite amorphous, and much diminished in altitude; masses of streamers interpsersed, none of them bright. 24^{m}. Aurora fainter, a great number of very faint streamers. 29^{m}. Much as before, several small patches of cloud near N. horizon; after this the aurora gradually became fainter, and at 50^{m} could scarcely be distinguished. The greatest altitude of the arch did not exceed 12°. The previous observations after 10^{h} 10^{m} were made by Mr Welsh at the Observatory; the following were made by myself at my own residence, about 300 yards from the Observatory.

13 10—15. Arch as before, altitude not above 6° or 7°, no streamer at 10^{m}, black within the arch, afterwards streamers from the same point as before, and, within the black, others rise all along the horizon; they shew what I could not observe before, several small black patches of (cirro-stratus?) within the black to (NW.?) the blackish sky without the arch extends to 45° altitude, and is blackest in one point. This cannot be a deception due to the effect of the adjacent light on the eye, since, when the aurora is shut out from view, the blackness still subsists as before. The stars seem duller, as if covered by a thin cloud in the black. The darkness seems however greater and more extended when the brightness of the streamers is greatest. The form of the external blackness is much that of the arch, but, as mentioned, extends farthest beside the bright streamers. I do not remember to have observed this blackness so decided on any previous occasion. A shooting star was seen about 12^{h} 46^{m}, and another about 13^{h} 12^{m}, both moving rapidly (B.) See notes on rosy beams seen at sunrise lying nearly in the magnetic meridian. Meteorological Notes, Feb. 5^{d} 20^{h}.

eb. 7 14 5. Cirrous clouds like cirrous haze cover the greater part of the sky, rendering the stars dim, especially to S.

10. On a more careful examination the sky seems covered with the milky aurora, as seen on February 1st, thick cirrous haze obscures the stars to altitude of 45° from S.; they become more and more distinct to zenith, where the appearance is milky. Faint Pulsations?

NOTES ON THE AURORÆ BOREALES SEEN AT MAKERSTOUN.

d. h. m.

Feb. 7 14 15. Pulsations without doubt, the wedge of pure sky pointing nearly NNE. as on February 1st; frequent pulsations to NE., and especially on the edges of the loose cirro-stratus to NE.

30. Very fine *milky* aurora; nearly as distinct as on February 1st, bright to W., with pulsations; parallel bars of dark and light sky, altitude about 45° from W., pointing nearly NNE.; pulsations all round; stars getting brighter to S.

40. Aurora much off; stars very clear and distinct; very faint aurora now; very faint pulsations ? neither would have been detected unless carefully watched.

50. Much as at 40^{m}; most distinct about NNE., where the point of the wedge of sky is still well seen.

15 0. Very faint; as before.

5. Bright again with pulsations; nearly the whole sky covered. An amorphous mass of cirrous cloud on SSW. horizon, which seems to pulsate (or merely reflects the pulsations of the rest of the sky ?); it is dense on one side, and extends into thin cirri on the other (W.) side.

20. Faint again, with pulsations around.

30. The cloud to SSW. has extended into long strips of cirrus; radiating from that point, it completely obscures the stars, excepting at the extremities, where the stars are seen dimly. The strips have a slight curvature, the concavity to E., are blackish, and quite different from the milky aurora. They reach now to zenith; pulsations to E.

35. Idem.

16 0. Overcast; pulsations to NNE. ?

10. Loose, chequered cirro-cumuli to S. (B.)

Feb. 24 8 5. A very faint auroral bank, 5° altitude. 25^{m}. Aurora as before; very faint, sky quite clear, and no moonlight.

35. The auroral light can with difficulty be detected.

44. The aurora, which has been very faint, was now broken into bundles of streamers some of them reaching to an altitude of 20°.

49. A low indistinct arch, crown about N by W., altitude 5°; a few faint streamers to NNW., reaching to an altitude of 25°.

56. Arch from NE by N., to NW by W., a few pencils at the eastern extremity.

9 1. Flat arch about 7° altitude.

15. Measurements of arch; extremities N. 27° E. and N. 70° W., altitude of summit 8°, centre of arch N. 20° W.; a few patches within the arch. 20^{m}. The arch has much diminished and is very faint, a few patches on the horizon.

25. Two arches, the upper one very faint, the lower broken and about $2\frac{1}{2}$° altitude; a dark space, not cloud, among the aurora to N. 28^{m}. Aurora much fainter. 30^{m}. Growing brighter, chiefly composed of broad patches which commence on the horizon and spread upwards.

38—40. An irregular mass of light from about N. $\frac{1}{2}$° W. to N., where it breaks abruptly; the mass moves slowly eastward; at the termination of the light there is a dark space, and a little farther eastward a few streamers; the light breaks up into patches, filling up the dark space; it then swells out into a dense mass of light, and moves westwards, apparently pushing an intensely black patch before it.

45. All broken up, a few bright patches. 51^{m}. The moon rose about this time, and obscured the aurora, some streamers were seen occasionally afterwards. (W.)

10 0. Faint streamers seen to NNW.

Feb. 28 11 0—30. The sky seems milky all over, with a slight appearance of radiation from N by E.; it seems probable that this is milky aurora. There is rather more light to N. than elsewhere. Cannot be sure that there are any pulsations. There are dark-looking patches (of cloud ?) to NW., through whose edges at least stars are visible.

12 0. Evidently auroral light to N., but very faint; in fact only a little lighter than the rest of the sky, which is much as before; the black patches to N. are away, at least from their previous position; if clouds they were very thin.

13 4. Cirri radiating from S by W., sky milky as before; some cirrous haze.

14 4. Cirri with cirrous haze, cirri radiating from about S. and N. Faint auroral light to N. It may be remarked that the *character* of the disturbances on the nights of milky aurora has been the same.

March. 7 14 10. Clouds cleared off from zenith, and to an altitude of 45° above NE., where the sky seems milky and lighter than nearer the zenith; cirro-cumulous clouds to NW. are very black, and seem lying in a milky sky. Speck of light near horizon at NNW. At the edges of the clouds the sky seems milkier than elsewhere, or if milky in no other place, it seems milky there; this has been frequently noticed before, is it merely an optical deception? (B.)

NOTES ON THE AURORÆ BOREALES SEEN AT MAKERSTOUN.

d. h. m.

March 18 10 15. There is little doubt there is an aurora; along with it, however, there is the phenomenon of auroral-like cirrous streaks. A series of arches of cirrous streaks extend from WSW. to NE., altitude of the highest 45° above NNW., breadth of streaks about 8°, then a belt of sky, and from 25° or so above the horizon the whole is aurora or cirri, or both, with dark streaks amidst; the moonlight renders all doubtful.

29. Cirrous streaks within 10° of zenith.

49. The cirrous arches in strips now cover nearly the whole sky, rising from SW by W. and NE.? A lunar halo is formed in the streaks. Afterwards the cirri moved off towards SE.

March 19 10 10. Auroral light to N.; rendered faint by the moonlight. 11^h 10^m and 12^h 10^m. Auroral light. 13^h 10^m. Faint auroral light.

March 23 13 10. Aurora. Streamers? near horizon. Linear cirri radiate from SSW., a lunar halo is formed in them, which is barred by the strips of cirri; cirro-stratus on N. horizon.

14 10. Aurora not well marked on account of the bright moonlight.

March 24 15 5. Clear to N.; sky very milky near horizon.

March 26 11 10. The sky seems rather light, especially to NNW. and SSE., the former probably due to faint aurora, the latter to a rising moon? the banks of clouds on both these points render it difficult to determine. Two or three flashes of lightning seen about 10^h.

13 10. Auroral light to N.? seen above cirro-stratous scud; doubtful, however, from moonlight.

14 10. Sky milky; the moon projects the shadow of the clouds in the air. Faint aurora? Stormy about 12^h.

March 29 11 15. Faint auroral light to NNW.; sky milky.

35. Aurora rather brighter, brightest near N.; pulsations?

45. Less bright; cirri radiate from NNW.; sky milky, whiter in some places than others; like thin haze to W. and S. and NW.; stars seen dimly through it; a bank or arch like a crepuscular arch to E.

April 13 11 10. An auroral arch about 15° altitude, brightest towards the E., the W. end probably being rendered fainter by the light of the moon; very little change till about 18^m, when it suddenly broke entirely up into patches and bundles of streamers, some of the streamers reaching to about 50^c altitude; some of the patches very bright, they moved about considerably, but in no particular direction: after a little the aurora grew fainter.

12 0. Aurora faint.

13 10. Vivid aurora, with, large, broad and persistent streamers. 26^m. Auroral arch about 35° altitude, with pencils inside the arch, very vivid. 33^m. Arch irregular, continuous and rapid pulsations, streamers, &c. 38^m. Arch broken and diffuse, with slight variation, few streamers. 42^m—43^m. Arch flat, 15° (?) altitude; aurora homogeneous, slight change. 47^m—48^m. Arch higher and brighter, much of it covered by cirro-cumulus and cirro-stratus. 52^m—53^m. Nearly as before, bright to NE. 57^m—58^m. Arch higher, much as before in brightness, but becoming more and more covered with clouds.

14 6. Clouds 9.5. Aurora brightest to NE.

23. Aurora apparently much fainter, seen through the openings of the clouds. 34^m. Aurora much brighter. 48^m. Vivid patches seen between the clouds.

53—54. Vivid streamers.

15 29. Aurora vivid. 35^m. Aurora extends to an altitude of 50^c, nearly homogeneous, with pulsations. 50^m. Aurora evidently fainter; wind rising.

16 4. Auroral patches in zenith? Aurora to S.?; light to S. 9^m. Sky milky? or aurora; not very bright to N., but clouds there. 25^m. Sky overcast with hazy cloud; rain commencing.

18 5—15. A long strip of light above the sun (E by N.), like the sun reflected from much rippled water, cirri radiating from NNW. (magnetic north.)

April 19 11 5. Milky-like to NNW. Aurora?

April 30 11 15. Faint auroral light to N.

13 10. Idem.

Aug. 29 9 55. A bright and very complete belt of auroral light stretching entirely across the sky from ENE. to WSW., the part nearest the zenith having an altitude of 80° from the SSE.; at both extremities of the belt there was a slight turn towards the N.; the breadth at the broadest part was about 2° or 2½°, becoming less near the horizon; a diffuse auroral light to northward.

10 7. The belt has now gradually disappeared, except a small portion to WSW., which still remains in the form of a narrow streamer; a few faint streamers to NNW.

15. A portion of an arch to westward, composed of wisps of auroral light placed *en echelon*, about 2° or 3° apart, and their length from 5° to 10° each, varying in width, and more or less irregular; a belt of light to eastward; the highest wisps point to NW., the lowest to WSW., the directions varying gradually between these.

NOTES ON THE AURORÆ BOREALES SEEN AT MAKERSTOUN.

	d.	h.	m.	
Aug.	29	10	20.	The belt portion of the arch does not join directly with the wisp portion, but has a twist a few degrees to S. of the zenith, the direction of the belt near the junction is at right angles to the direction of the wisps.
			20.	A falling star to E., altitude 20°, moving towards E by S., first magnitude.
			24.	The belt has shifted slowly to 10° S. of the zenith; the portion to westward is now of a homogeneous character; patches or wisps still in the zenith; fading to E.
				The light has always been very persistent; no corruscations or pulsations being discernible.
			35.	The band has the appearance of a rope of two strands teased out at the ends, extending from W. to a little past zenith.
			45.	The band still subsists to W., a few small patches to SSE., altitude 70°. A shooting star to SSW., altitude 30°, moving S. The aurora has been always faint to NNW.
			55.	The band has all disappeared except a small portion to WSW., which has assumed the form of three short streamers.
		11	0.	Almost every trace of aurora has now disappeared; there is still a very faint light to NNW.
			50.	Aurora becoming rather brighter, still quite diffuse; patches of cirro-stratus and cirrus interspersed.
			55.	A small shooting-star to S., moving to SSW.
		12	35.	Streamers breaking out to N by W.; the aurora considerably obscured by clouds.
			45.	Faint streamers thrown up throughout the aurora.
		13	25.	Diffuse patches of auroral light.
Sept.	2	10	5.	Faint auroral light and faint streamers, 20° altitude, to NW.
		11	50.	Occasionally very vivid streamers close to the NW by N. horizon, length about 5° (B.)
		12	0–30.	A band of very faint light, stretching from ESE. point of horizon to S., altitude 30°, the breadth perhaps 10°. The light however was so very faint as to create a suspicion of its being an optical illusion; it was certainly not the milky way; no traces of it could be seen at $13^{\rm h}$ (W.)
Oct.	20	13	5.	Faint auroral light, with patches and small streamers, altitude 5°. Moon shining.
Nov.	4	12	5.	Diffuse auroral light, to altitude 6°, interspersed with streamers, some of which rise to 15° or 20° altitude.
			20.	Aurora nearly imperceptible.
Nov.	5	6	50.	Faint auroral arch; azimuths of extremities N. 42° E. and N. 72° W., greatest altitude of upper edge 12°. At this time M. HANSTEEN observed an aurora at Christiania, consisting of an arch of 10° altitude, with its summit at the NW., visible from $5\frac{1}{2}^{\rm h}$ till $8^{\rm h}$, when the sky became overcast. So that $4\frac{1}{2}^\circ$ farther north the aurora has had no greater altitude than at Makerstoun.—*Mem. Acad. Roy. de Belgique*, tome xx.
Nov.	17	6	40.	Faint auroral arch, about 7° altitude. $55^{\rm m}$. Auroral arch, altitude 13°.
		7	5.	Arch has become diffuse and broken, extends from N. 38° E. to N. 82° W., altitude $12\frac{1}{2}^\circ$. $15^{\rm m}$. The arch has now a depression at the middle, about 3° east of the magnetic meridian; a faint patch to N by E., altitude 26°.
			20–25.	A portion of another arch, altitude 27°, also some appearance of a third arch close to the horizon; streamers throughout the aurora from the horizon; the whole seen as through a fog.
			30.	The upper arch gone; a bright patch due W. moving a little to S.; streamers to NNE.
			35.	Auroral arch to N., in the form of a segment of a circle, altitude $11\frac{1}{2}^\circ$; the western extremity of an arch has formed, which, if completed, would have been about 30° altitude; this had disappeared at $39^{\rm m}$; the aurora altogether diminished.
			42.	Very faint; moon rising.
			45.	Arch becoming rather more vivid, dark space below it, with small streaks of cloud to N. and N by W.; strips of cirro-stratus to NNE. $50^{\rm m}$. Nearly as before. $55^{\rm m}$. A faint streamer to NW. within the arch. There have been patches of cirro-stratus among the aurora almost the whole time.
		7	57–59.	The auroral light, which had sprung up towards NE., rolled gradually westward in the dark space under the arch (like fire sweeping along a heath in a dark night), breaking at one time into two opposing combs, the teeth vertical. At $59^{\rm m}$ a bright meteor, first magnitude, fell vertically from an altitude of about 25° above NNW., (*i. e.*, in the magnetic meridian); it moved with considerable slowness, occupying perhaps two or three seconds, till it *met* the auroral arch, where it was suddenly and completely extinguished.
		8	50.	Double arch, the upper one 12° altitude, and the lower 4° altitude; the lower arch is the most vivid; a brush to NW.; at $46^{\rm m}$ and again at $52^{\rm m}$ irregular streaks of cirri to S. $55^{\rm m}$. Bright masses of light forming to N by E., proceeding westwards and forming a portion of an arch 8° altitude. $58^{\rm m}$. Bright brush to N by E.; bright horizontal band to N., altitude 3°. $59^{\rm m}$. Brushes and patches scattered throughout the aurora.

NOTES ON THE AURORÆ BOREALES SEEN AT MAKERSTOUN.

d. h. m.
Nov. 17 9 5. Bright patches and bands, forming combs, brushes, and streamers.
7. Bright brushes and streamers to NNW. 10^{m}. Faint streamers to N by W., occasionally bright. 15^{m}. Faint streamers throughout.
20. Altogether faint.
55—59. Patches and brushes breaking out.
10 16. No aurora visible.
Dec. 3 5 50. Auroral arch about 35° altitude, vivid pencils and brushes *within* the arch.
56. Very bright to NNW.
58. Double arch, bright to NW.
59. Like rows of spears, bright to NW.
6 0. Vivid broken pencils or double brushes.
1. Bright beams to NNW. from the lower arch, and within the upper arch the latter has an altitude of 25°.
4. Vivid brushes from a low arch to NW by N.
7. Arch of short brushes about a degree in breadth.
8. Inferior side of arch of brushes 5° altitude.
9—10. Vivid green brushes to NNE., which break up the arch.
10. The arch of brushes like a reaping-hook, the apex of the circular portion in the magnetic meridian.
11. Brushes and patches detached, of much breadth.
13. The arch of brushes now forms two, like the arches of a bridge, the junction of the two being in the magnetic meridian; a patch of black cloud in the upper auroral arch to NE.
14. Brush arch quite flat.
15. Vivid green spears to NNE.
16. Undulated arch of brushes.
18. Vivid pencils and brushes, the most vivid to NNW; the pencils are penetrating the upper arch.
21. Black cloud still stationary in auroral arch to NE.; bright to NNE.
23. Upper arch rather higher, 27° altitude.
24. Brushes close to horizon.
25. Double row of brushes, bright in some places.
26. Portion of an arch close to horizon to N., rising.
27. Cloud to NE. becoming smaller, but still in the same position.
28. Like a lake of flame to N.
31. Cloud to NE. disappeared; streamers vivid to NE.
32. Low arch of brushes 4° inferior altitude, vivid pencils to NNE.
35. Upper or permanent arch faint; three rows of brushes, vivid to NNE. and NNW.
36. Beautiful, undulating, and travelling masses of green brushes.
37. Again the curve somewhat like a reaping-hook.
39. Three piles of brushes (one above the other), bright to NW.
40. Brushes chiefly to NW.
41. Much fainter.
42. Amorphous mass of light to NE., arch disappearing or falling in.
44. Streamers above the upper arch and also close to horizon.
45. The permanent arch still visible.
50. Aurora faint till now, vivid streamers to W., arch about 30° altitude, but faint; black cloud to NW. in the aurora.
52. Faint. The previous observations were made within the Observatory from one of the north windows.
53. Upper arch disappearing. As the disturbance was still considerable the observer went out of the Observatory to see the phenomena more completely, when he found—
54. A broad arch through zenith, very diffuse to W., and bent from ENE. to the S. with a great bay.
56. An arch springing from ENE., about 10° broad, taking a large bend towards the S., and crossing at about 10° to the S. of the zenith; the southern edge passes within 2° of Aldebaran, touches the Pleiades, the belt then stretches straight across the sky, passing through Cygnus, the northern edge touching α Cygni.
59. The arch moving off towards the S., altitude 50°; streamers springing from the eastern extremity.
7 0. Arch going still farther towards the south.
8. Auroral arch through zenith, faint; bright pencils to E., *en echelon.*
18. Vivid pencils as before to N., with black cloud to NW.
20. A series of broken arches to N., under 60° altitude; the arch to the S. has disappeared.
21. Three broken arches with the altitude of 60°. Amorphous brushes to NE.
24. Brushes to NE., inclined irregularly to different points.

NOTES ON THE AURORÆ BOREALES SEEN AT MAKERSTOUN.

d. h. m.

Dec. 3 7 27. Serried rows of brushes moving and undulating in three rows or arches coloured green, with occasional red.

28. Faint arch 25° altitude; clouds to NNW.

30. Irregular brushes to NNE.

31. At this time commenced the most beautiful phenomenon of the evening which it is impossible to describe completely. A vertical scroll or sheet of beams, with one extremity nearly fixed to NE by N. or NNE., altitude 10° at the bottom, commenced unwinding itself, assuming the forms of a succession of scrolls, which undulated with a worm-like motion; meanwhile the beams of green rolled backwards and forwards; the foremost or advancing portion of the scroll was generally reddish, and moved towards the NW. The whole period of unfolding the scroll could not be above 1^m.

33. Another scroll-like mass of pencils to NE.

36. Low arch of brushes; black band below them for some time.

38. Irregular mass of brushes.

42. A sheet unfolding to W., and rolling along; gorgeous.

46. Most magnificent lights to W., with beautiful green and red.

49. Aurora faint, pencils above the arch.

51. Pencils rising from WSW., and broken arches passing nearly through the zenith.

59.—8^h. 5^m. Like a large pair of wings pulsating near zenith, appearing and disappearing.

8 0. A wavy sheet of auroral light, passing about 10° to S. of the zenith, principally composed of patches, each patch having the appearance of a pair of half-expanded wings, the front of them being towards the E.; very rapid pulsations proceeding along the belt from eastward, several times in a second; the patches become faint or nearly disappear, in the intervals between the pulsations.

4. Sheets unfolding and rolling along to N.

5. An arch to N. about 45° broad, altitude of the lower edge 40°; the lower edge is formed upon unfolding sheets. The belt through the zenith has disappeared.

11. Vivid extremity of an arch to NE.

14. The arch brightest to NE.

16. A patch of scud to SW., and a black patch below the arch to NNE.; diffuse homogeneous light over the whole of the north portion of the sky.

21. Bright auroral arch, with patches of black cloud.

26. E. extremity of arch a sea of flame, with black, island-like clouds in the midst.

30. An arch, with a very brilliant border.

32. Pencils on the arch at considerable distances from each other; a bright speck on NNW. horizon.

34. Brushes below the arch to N by W., arch cycloidal at the terminations.

36. Arch like a portion of an ellipse.

38. A portion of a bright arch, formed under the former arch.

40. The arch is rather breaking up, altitude 10°.

41. A beam immediately above the moon, which is setting, to WSW.

55. The eastern portion of an arch to SE. altitude 35°; homogeneous light to N.

58. Pencils to NE.

9 5. There is still a portion of a faint arch to S. altitude 25°.

9. Arch to S. very faint, 20° altitude; amorphous light to N.

35. Circular segment of auroral light to altitude 15°. An arch 45° altitude composed of patches of nebulous light, pulsations throughout the aurora.

45. Faint bands and patches all over the NW. portion of sky to altitude of 70°.

11 0. Flash of lightning on SSW. horizon; auroral arch still bright.

15. Auroral arch stretching from W by S. to NE., altitude of inner edge 15°, 10° to 15° broad; occasional bands and patches, to an altitude of 45°; very little change has occurred for an hour.

13 15. Auroral arch falling in the middle, with brushes below.

25. Arch about 10° broad in bands with brushes.

32. Arch somewhat elliptical on the inner edge, and circular on the outer edge, altitude of inner edge about 10°, of outer edge 20°.

39. The eastern side of the inner edge of the arch slopes off like the outer edge, the western side remaining more vertical, as at 32^m.

50. Arch formed of irregular bands, total altitude 40°, altitude of inner edge, rather fallen in in the middle, 10°.

14 5. Arch again complete. 12^m. Brushes within the arch to NNE.; a second arch forms occasionally by frequent pulsations at an altitude of 35°.

14. Bright pencils to NE.; second arch of short pencils.

NOTES ON THE AURORÆ BOREALES SEEN AT MAKERSTOUN.

d. h. m.

Dec. 3 14 22. Pulsating arch about 35° altitude. 23^{m}. The lower arch falling into bright brushes; rapid pulsations between the upper and lower arches.

26. Rapid pulsations; row of brushes below the lower arch, altitude 5°.

28. Continuous pulsations; bright brush on NNW. horizon, pencils from it; rows of brushes below the lowest arch.

31. Pulsations upwards from the arch, brushes all below, pulsating arch gone ?

35. Bright pencils and pulsations, the former within, the latter without, the low arch. 41^{m}. Arch fainter.

44. Arch formed of rapidly pulsating bands, with streamers here and there.

50. A continuation of the rapid flashes from the arches.

15 10. Pulsations chiefly about 20° altitude, sometimes vivid. The arch getting lower wholly within about 12° altitude.

27—28. Streamer to NNE., brushes, continuous pulsations.

30. Pulsating brushes low.

39. W. extremity of an arch visible; the original arch now composed of pulsating brushes. Streaks of cirro-stratus to WNW. and NNW. all apparently radiating from about NNW. Rapid pulsations.

16 4. Masses of cirro-stratus increased, middle of the masses about NNW: as if branching from that point (magnetic north); rapid pulsations; no complete arch.

15. Clouds separating; aurora rather increasing; homogeneous segment with pulsations above. The clouds do not seem to move away, but simply to increase or diminish in bulk, disappearing altogether at times. (This growth and disappearance of cloud has been frequently observed during exhibitions of aurora, and will be found noticed in future notes. B.)

24. The eastern portion of clouds remaining, the rest gone, excepting a few specks to NNW.

29. Nearly homogeneous circular segment of light, pulsations faint. 32^{m}. Clouds gone.

46. Auroral light within 10° altitude at NNW.; faint, with faint pulsations.

The same time is employed in these Notes as in the *Extra Observations of Magnetometers*, namely, Göttingen mean time, astronomical reckoning.

OBSERVATIONS OF MAGNETIC DIP,

AND FOR THE

ABSOLUTE HORIZONTAL INTENSITY.

MAKERSTOUN OBSERVATORY,

1845.

Göttingen Mean Time, Middle of Observation.	Duration.	Needle.			Face of Circle E.		Face of Circle W.		Mean.	Observed Dip.	Observer's Initial.
		Number.	Temperature.	End dipping.	Mark on Needle E.	W.	Mark on Needle E.	W.			
d. h. m.	m.		°		° ′	° ′	° ′	° ′	° ′	° ′	
Jan. 7 0 30	...	2	37	B	72 22·5	71 29·0	71 35·0	70 57·5	71 36·00*	71 29·72	B
Jan. 7 4 10	20	2	36	B	72 22·0	71 28·5	71 42·0	70 55·0	71 36·87*		B
Jan. 7 4 45	20	2	36	A	71 22·0	72 15·0	70 41·0	71 14·0	71 23·00*		B
Jan. 7 23 30	38	2	43	A	71 18·5	72 6·5†	70 38·0†	71 18·5	71 20·37	71 29·28	W
Jan. 8 0 15	20	2	45	A	71 19·0	72 5·5	70 39·5	71 17·0	71 20·25		W
Jan. 8 0 40	20	2	46	B	72 39·0	71 21·5	71 51·5	70 39·0	71 37·75		W
Jan. 8 1 45	20	2	46	B	72 38·0	71 19·0	71 54·0	70 44·0	71 38·75		W
Jan. 16 22 40	25	2	37	B	72 37·5	71 25·0	71 49·5	70 44·0	71 39·00	71 30·90	W
Jan. 17 0 0	25	2	39	B	72 44·0	71 24·5	71 55·0	70 42·0	71 41·37		B
Jan. 17 0 30	25	2	42	A	71 1·0	72 29·5	70 20·0	71 30·0	71 20·12		W
Jan. 17 1 35	20	2	43	A	71 6·0	72 30·5	70 17·0	71 39·0	71 23·12		B
Jan. 20 22 50	17	2	35	A	71 1·0	72 28·5	70 14·0	71 28·5	71 18·00	71 28·68	W
Jan. 21 4 40	20	2	38	A	71 2·5	72 25·5	70 19·5	71 32·0	71 19·87		W
Jan. 24 0 0	32	2	40	B	72 30·0	71 22·0	71 53·0†	70 48·5	71 38·37		W
Jan. 24 4 40	16	2	41	B	72 28·5	71 22·5	71 55·0†	70 48·0	71 38·50		W
Feb. 3 22 45	21	2	37	A	71 7·0	72 19·0	70 27·5	71 22·0	71 18·87	71 27·31	W
Feb. 4 4 45	20	2	45	A	71 5·5	72 11·0	70 32·5	71 26·5	71 18·87		W
Feb. 7 0 0	20	2	34	B	72 28·5	71 19·0	71 48·0	70 41·5	71 34·25		W
Feb. 7 4 50	20	2	32	B	72 32·0	71 19·5	71 53·0	70 44·5	71 37·25		W
Feb. 10 22 30	20	2	32	A	71 3·0	72 26·0	70 11·5	71 25·0	71 16·37	71 28·68	W
Feb. 11 4 35	20	2	33	A	71 2·0	72 27·5	70 18·5	71 24·5	71 18·12		W
Feb. 13 22 30	19	2	36	B	72 51·0	71 13·0	72 1·5	70 35·0	71 40·12		W
Feb. 17 23 50	20	2	36	B	72 58·0	71 16·5	72 8·5	70 34·5	71 44·37	71 32·06	B
Feb. 18 4 55	20	2	51	B	72 51·5	71 16·0	72 9·0	70 44·5	71 45·25		B
Feb. 20 22 50	18	2	37	A	71 4·0	72 11·0	70 31·0	71 27·5	71 18·37*		W
Feb. 21 4 50	25	2	41	A	71 4·5	72 11·5	70 34·5	71 30·5	71 20·25*		W
Feb. 24 23 30	26	2	36	B	72 37·5	71 20·0	71 55·0	70 42·0	71 38·62	71 28·53	W
Feb. 25 5 0	27	2	44	B	72 27·0	71 18·5	71 58·0	70 48·5	71 38·00		W
Feb. 27 23 30	25	2	38	A	71 1·5	72 19·0	70 25·5	71 29·0	71 18·75		W
Feb. 28 4 45	21	2	42	A	70 53·5	72 9·0	70 34·5	71 38·0	71 18·75		W
Mar. 3 22 45	25	2	38	B	72 43·5	71 17·0	72 2·0	70 41·0	71 40·87	71 29·43	W
Mar. 4 4 45	25	2	36	B	72 41·5	71 17·5	72 1·5	70 41·5	71 40·50		W
Mar. 6 22 30	30	2	37	A	70 54·0	72 30·5	70 15·5	71 35·5	71 18·87		W
Mar. 10 22 35	20	2	44	A	70 58·0	72 31·5	70 13·5	71 35·0	71 19·50*		B
Mar. 11 4 50	...	2	44	A	70 56·5	72 16·5	70 22·5	71 45·5	71 20·25	71 26·52	B
Mar. 12 5 0	15	2	49	A	70 50·0	72 24·0	70 21·5	71 41·0	71 19·12		B
Mar. 17 22 20	30	2	37	B	72 10·0	71 26·5	71 44·0	70 58·0	71 34·62		W
Mar. 18 4 50	...	2	59	B	72 4·0	71 23·5	71 44·0	70 57·0	71 32·12		W
Mar. 20 22 40	25	2	36	B	72 9·5	71 28·5	71 43·0	70 51·5	71 33·12	71 27·40	W
Mar. 22 4 50	20	2	54	B	72 3·5	71 26·0	71 42·0	70 58·0	71 32·37		W
Mar. 24 22 50	20	2	56	A	71 2·0	72 27·0	70 22·0	71 32·5	71 20·87		B
Mar. 25 5 0	20	2	50	A	71 5·0	72 23·5	70 28·5	71 36·0	71 23·25		B
Apr. 3 22 50	35	2	40	A	70 56·0	72 15·0	70 24·0	71 28·5	71 15·87	71 28·43	W
Apr. 4 4 50	26	2	46	A	70 56·0	72 12·0	70 29·5	71 30·0	71 16·87		W
Apr. 7 23 10	23	2	50	B	72 26·0	71 21·0	72 3·0	70 53·0	71 40·75		W
Apr. 8 5 0	20	2	53	B	72 29·5	71 20·5	72 2·0	70 49·0	71 40·25		W
Apr. 11 0 0	25	2	45	A	71 1·5	72 16·0	70 23·0	71 34·5	71 18·75	71 27·59	W
Apr. 11 5 0	23	2	46	A	70 59·5	72 16·0	70 23·5	71 34·0	71 18·25		W
Apr. 24 22 50	22	2	50	B	72 20·0	71 29·5	71 48·0	70 53·0	71 37·62		W
Apr. 25 4 50	20	2	65	B	72 14·5	71 25·5	71 48·0	70 55·0	71 35·75		W
Apr. 28 23 25	25	2	62	A	71 1·0	72 19·0	70 22·5	71 37·0	71 19·87	71 27·96	W
Apr. 29 4 50	15	2	65	A	71 2·0	72 19·5	70 18·5	71 36·0	71 19·00		W
May 1 23 50	20	2	61	B	72 28·0	71 18·5	71 55·0	70 45·0	71 36·62		W
May 2 4 50	20	2	62	B	72 25·0	71 17·0	71 57·5	70 46·0	71 36·37		W
May 9 23	...	2	53	A	70 48·5	72 10·0	70 32·0	71 43·5	71 18·50	71 26·75	W
Azimuth 30°	...	2	53	A	73 2·0	73 48·5	72 39·0	73 28·5	73 14·50		W
Azimuth 60°	...	2	53	A	79 47·5	80 49·0	79 34·0	80 45·5	80 14·00		W
Azimuth 90°	...	2	53	A	89 27·0	90 45·0	89 14·5	90 23·0	89 57·37		W
Azimuth 120°	...	2	53	A	80 51·5	79 35·0	81 1·5	80 4·0	80 23·00		W

* Observations considered good. † Observations considered bad or unsatisfactory.

Jan. 7^{d} 23^{h} 30^{m}. The two readings †† were doubtful, as the needle when lifted always vibrated through 5° or 6°; this did not happen in observations immediately after at 8^{d} 0^{h} 15^{m}.

Jan. 24^{d} 0^{h} and 24^{d} 4^{h}. The readings †† were unsatisfactory for the same reason as above.

April 3^{d} 22^{h}. Horizontal level rather out. April 4^{d} 4^{h}. Instrument levelled before this observation.

May 9^{d}. Observations made in different azimuths, for the results, see the Introduction, article Inclinometer. The dip given opposite, May 9^{d} 23^{h}, is deduced from the observation at that time, A dipping, and from the observation, May 10^{d} 2^{h} 40^{m}, B dipping, both observations having been made in the magnetic meridian.

Göttingen Mean Time, Middle of Observation.	Duration.	Needle.			Face of Circle E.		Face of Circle W.		Mean.	Observed Dip.	Observer's Initial.
		Number.	Temperature.	End dipping.	Mark on Needle E.	Mark on Needle W.	Mark on Needle E.	Mark on Needle W.			
d. h. m.	m.		°		° ′	° ′	° ′	° ′	° ′	° ′	
Azimuth 150°	...	2	53	A	73 39·0	72 41·0	73 51·0	73 16·0	73 21·75		W
May 10 2 40	...	2	53	B	72 4·5	71 26·5	71 43·5	71 5·5	71 35·00		W
Azimuth 30°	...	2	53	B	74 3·5	73 27·0	73 39·0	73 16·5	73 36·50		W
Azimuth 60°	...	2	53	B	81 9·5	80 16·0	80 39·5	79 57·0	80 30·50		W
Azimuth 90°	...	2	53	B	90 39·0	89 45·5	90 7·5	89 16·5	89 57·12		W
Azimuth 120°	...	2	53	B	80 1·5	80 39·5	80 21·0	81 6·5	80 32·12		W
Azimuth 150°	...	2	53	B	73 16·5	73 43·5	73 26·5	74 11·5	73 39·50		W
May 12 23 20	20	2	59	B	72 6·5	71 26·5	71 46·0	71 1·5	71 35·12	71 26·55	W
May 13 4 25	19	2	64	B	72 4·5	71 23·5	71 43·0	71 2·0	71 33·25		W
May 15 22 50	...	2	70	A	71 8·5	72 4·0	70 37·5	71 29·0	71 19·75		W
May 16 4 50	20	2	72	A	71 6·5	72 2·0	70 35·5	71 28·5	71 18·12		W
May 19 22 30	25	2	50	B	72 17·5	71 23·5	71 50·0	70 58·5	71 37·37	71 27·62	W
May 20 4 50	20	2	...	B	72 11·5	71 27·0	71 48·5	70 59·0	71 36·50		W
May 22 22 20	26	2	51	A	71 2·0	72 23·0	70 17·0	71 31·5	71 18·37		W
May 23 4 50	20	2	55	A	71 0·0	72 22·0	70 17·0	71 34·0	71 18·25		W
May 27 23 0	20	2	53	B	72 18·0	71 20·5	71 53·5	70 52·0	71 36·00	71 28·77	B
May 28 4 50	18	2	65	B	72 22·0	71 30·0	71 42·0	70 49·5	71 35·87		B
June 2 23 0	25	2	67	A	71 17·0	72 9·5	70 38·0	71 29·0	71 23·37†		B
June 3 5 0	20	2	66	A	71 14·0	72 10·0	70 31·5	71 24·0	71 19·87		B
June 5 23 10	25	2	64	B	72 8·0	71 30·0	71 45·0	70 54·0	71 34·25	71 26·69	B
June 6 5 20	15	2	63	B	72 8·0	71 32·5	71 41·0	70 51·5	71 33·25		B
June 9 23 30	25	2	64	A	71 15·0	71 59·0	70 39·5	71 25·5	71 19·75		W
June 10 4 50	20	2	65	A	71 15·0	71 58·5	70 42·5	71 22·0	71 19·50		W
June 20 22 20	16	2	64	B	72 25·5	71 19·0	71 55·5	70 56·0	71 39·00	71 28·75	W
June 21 4 45	20	2	78	B	72 19·5	71 20·0	71 55·0	70 55·5	71 37·50		W
June 23 22 30	20	2	62	A	71 12·0	72 22·5	70 16·0	71 28·0	71 19·62		W
June 24 4 40	15	2	62	A	71 10·0	72 21·0	70 14·5	71 30·0	71 18·87		W
July 6 23 45	20	2	73	B	72 23·5	71 20·5	71 58·0	70 51·5	71 38·37	71 27·50	W
July 7 4 50	...	2	79	B	72 20·0	71 18·5	71 52·0	70 52·0	71 35·62		W
July 11 22 40	22	2	64	A	71 2·0	72 40·0	70 1·5	71 31·5	71 18·75		W
July 12 4 50	...	2	70	A	71 4·0	72 30·0	70 2·0	71 33·0	71 17·25		W
July 14 23 25	20	2	60	B	72 33·0	71 23·0	71 58·0	70 48·0	71 40·50	71 29·59	W
July 15 5 0	20	2	74	B	72 29·0	71 19·0	71 56·5	70 49·5	71 38·50		W
July 17 22 45	20	2	62	A	71 15·0	72 11·5	70 31·5	71 20·0	71 19·50		W
July 18 5 0	...	2	68	A	71 14·5	72 8·0	70 34·5	71 22·5	71 19·87		W
July 21 23 40	18	2	53	B	72 30·0	71 24·5	71 47·0	70 52·0	71 38·37	71 29·34	W
July 22 5 0	...	2	56	B	72 22·0	71 24·0	71 46·0	70 50·0	71 35·50		W
July 24 23 0	25	2	62	A	71 13·0	72 22·0	70 26·5	71 29·0	71 22·62		W
July 25 4 50	20	2	74	A	71 9·0	72 13·5	70 30·0	71 31·0	71 20·87		W
July 28 22 50	15	2	72	B	72 29·0	71 24·0	71 49·5	70 50·5	71 38·25	71 28·68	B
July 29 5 0	15	2	73	B	72 21·0	71 17·0	71 50·0	70 51·5	71 34·87		B
Aug. 1 22 45	30	2	65	A	71 21·5	72 7·5	70 37·5	71 17·0	71 20·87		B
Aug. 2 4 50	25	2	66	A	71 16·5	72 9·0	70 34·5	71 23·0	71 20·75		B
Aug. 5 23 0	20	2	81	B	72 9·0	71 20·0	71 46·0	70 58·5	71 33·37	71 26·59	W
Aug. 6 5 0	22	2	74	B	72 11·5	71 18·5	71 45·0	70 55·0	71 32·50		W
Aug. 8 22 40	30	2	59	A	71 2·5	72 27·0	70 22·0	71 35·0	71 21·62		W
Aug. 9 5 0	20	2	55	A	71 3·0	72 26·0	70 14·5	71 32·0	71 18·87		W
Aug. 11 22 30	25	2	57	B	72 31·0	71 24·5	71 49·0	70 50·0	71 38·62	71 28·03	W
Aug. 12 4 50	15	2	59	B	72 27·0	71 24·0	71 48·0	70 49·0	71 37·00		W
Aug. 14 22 25	30	2	57	A	71 11·5	72 35·5	70 1·5	71 24·5	71 18·25		W
Aug. 18 23 40	25	2	59	A	71 5·0	72 31·5	70 9·5	71 29·0	71 18·75	71 24·90	B
Aug. 19 5 0	20	2	53	A	71 6·0	72 33·5	70 1·5	71 20·0	71 15·25		B
Aug. 22 23 0	...	2	64	B	72 13·0	71 26·5	71 37·5	70 56·0	71 33·25		B
Aug. 23 5 0	20	2	67	B	72 9·0	71 25·0	71 37·5	70 58·0	71 32·37		B
Aug. 26 22 40	23	2	62	A	71 18·5	72 8·5	70 32·5	71 20·0	71 19·87	71 28·96	W
Aug. 27 5 0	20	2	71	A	71 15·5	72 5·5	70 39·0	71 23·0	71 20·75		W
Aug. 28 23 30	25	2	82	B	72 29·0	71 13·0	72 1·5	70 48·0	71 37·87		W
Aug. 29 4 50	20	2	86	B	72 28·0	71 14·0	72 2·5	70 45·0	71 37·37		W

† Observation considered bad.

Göttingen Mean Time, Middle of Observation.	Duration.	Needle.			Face of Circle E.		Face of Circle W.		Mean.	Observed Dip.	Observer's Initial.
		Number.	Temperature.	End dipping.	Mark on Needle E.	Mark on Needle W.	Mark on Needle E.	Mark on Needle W.			
d. h. m.	m.		°		° ′	° ′	° ′	° ′	° ′	° ′	
Sept. 1 22 40	20	2	57	A	71 8·5	72 19·5	70 23·0	71 27·0	71 19·50	71 28·87	W
Sept. 2 4 50	20	2	64	A	71 10·0	72 19·5	70 24·0	71 28·0	71 20·37		W
Sept. 4 22 40	25	2	65	B	72 32·5	71 16·0	71 57·0	70 47·0	71 38·12		W
Sept. 5 4 50	15	2	68	B	72 30·5	71 14·0	71 57·5	70 48·0	71 37·50		W
Sept. 9 0 0	20	2	63	A	71 11·5	72 26·0	70 18·0	71 15·0	71 17·62	71 25·12	B
Sept. 9 5 0	20	2	64	A	71 5·0	72 22·5	70 19·5	71 25·0	71 18·00		B
Sept. 11 23 0	20	2	64	B	72 16·0	71 22·0	71 44·0	70 54·0	71 34·00		B
Sept. 12 5 0	20	2	76	B	72 9·0	71 19·5	71 42·0	70 53·0	71 30·87		B
Sept. 16 22 50	20	2	57	A	71 17·0	72 9·0	70 34·5	71 26·0	71 21·62	71 31·68	W
Sept. 17 5 0	20	2	60	A	71 12·0	72 6·5	70 34·5	71 25·0	71 19·50		W
Sept. 18 22 45	20	2	54	B	72 49·0	71 36·0	71 57·5	70 39·5	71 45·50		W
Sept. 19 6 20	25	2	64	B	72 46·5	71 17·0	72 1·0	70 36·0	71 40·12		W
Sept. 22 23 0	20	2	59	A	71 4·5	72 27·0	69 58·5	71 33·0	71 15·75	71 26·87	W
Sept. 23 4 50	20	2	64	A	71 2·0	72 25·5	70 12·0	71 24·0	71 15·87		W
Sept. 25 23 0	25	2	57	B	72 32·5	71 20·0	71 55·0	70 49·5	71 39·25		W
Sept. 26 5 0	...	2	60	B	72 28·0	71 24·0	71 47·5	70 47·0	71 36·62		W
Sept. 29 23 15	20	2	62	A	71 11·0	72 19·5	70 40·5	71 34·0	71 26·25	71 27·28	B
Sept. 30 4 50	15	2	54	A	71 7·0	72 16·5	70 39·5	71 28·0	71 22·75		B
Oct. 5 23 15	20	2	58	B	72 5·0	71 23·5	71 39·0	70 52·0	71 29·87		B
Oct. 7 4 40	15	2	49	B	72 12·5	71 24·5	71 34·0	70 50·0	71 30·25		B
Oct. 9 22 50	20	2	47	A	71 10·5	72 19·5	70 22·0	71 23·0	71 18·75	71 29·90	W
Oct. 10 4 50	...	2	50	A	71 13·0	72 16·5	70 27·0	71 22·5	71 19·75		W
Oct. 13 22 40	25	2	56	B	72 50·0	71 15·0	72 5·0	70 38·0	71 42·00		W
Oct. 14 5 0	...	2	64	B	72 42·0	71 13·0	72 2·0	70 41·5	71 39·62		W
Oct. 16 23 25	30	2	55	A	71 10·0	72 21·5	70 16·0	71 26·5	71 18·50		W
Oct. 17 5 0	20	2	53	A	71 6·5	72 22·0	70 17·0	71 30·5	71 19·00		W
Oct. 21 23 20	20	2	50	B	72 28·0	71 23·0	71 45·0	70 48·0	71 36·00	71 28·06	B
Oct. 22 5 0	25	2	54	B	72 24·0	71 24·0	71 48·5	70 52·0	71 37·12		B
Oct. 24 0 15	20	2	52	A	71 16·0	72 11·5	70 30·0	71 19·0	71 19·12		B
Oct. 24 4 50	15	2	52	A	71 16·0	72 12·0	70 30·0	71 22·0	71 20·00		B
Oct. 28 22 50	20	2	52	B	72 19·5	71 19·5	71 47·0	70 50·0	71 34·00	71 26·09	W
Oct. 29 5 0	...	2	51	B	72 19·0	71 19·5	71 46·0	70 50·0	71 33·62		W
Oct. 31 22 50	25	2	46	A	71 2·0	72 44·5	69 58·0	71 26·5	71 17·75		W
Nov. 1 5 0	25	2	49	A	71 6·0	72 41·5	70 0·0	71 28·5	71 19·00		W
Nov. 3 22 50	25	2	35	B	72 42·0	71 20·5	71 48·0	70 31·5	71 35·50	71 28·87	W
Nov. 4 4 40	20	2	52	B	72 41·5	71 20·0	71 58·0	70 36·0	71 38·87		W
Nov. 6 22 20	25	2	50	A	71 19·5	72 21·0	70 21·5	71 25·0	71 21·75		W
Nov. 7 4 30	...	2	51	A	71 9·5	72 18·5	70 24·5	71 25·0	71 19·37		W
Nov. 10 23 0	20	2	46	B	72 29·0	71 18·0	71 50·0	70 42·0	71 34·75	71 27·87	B
Nov. 11 4 50	20	2	47	B	72 27·5	71 16·5	71 51·0	70 43·0	71 34·50		B
Nov. 14 0 0	20	2	42	A	71 23·0	72 13·0	70 30·0	71 19·0	71 21·25		B
Nov. 14 4 45	20	2	42	A	71 21·0	72 12·0	70 32·0	71 19·0	71 21·00		B
Nov. 18 23 40	20	2	49	B	72 26·5	71 22·0	71 56·0	70 44·5	71 37·25	71 27·65	W
Nov. 19 4 45	20	2	46	B	72 26·0	71 22·5	71 46·5	70 50·0	71 36·25		W
Nov. 20 22 30	20	2	39	A	70 57·5	72 27·0	70 21·5	71 38·5	71 21·12		W
Nov. 21 7 20	25	2	33	A	70 51·5	72 27·0	70 5·0	71 40·5	71 16·00†		W
Nov. 21 22 30	25	2	35	A	70 53·5	72 21·0	70 24·0	71 37·5	71 19·00	71 26·28	W
Nov. 22 4 40	25	2	39	A	70 57·0	72 20·5	70 15·5	71 35·0	71 17·00		W
Nov. 24 23 25	20	2	44	B	72 40·0	71 12·0	71 56·0	70 31·0	71 34·75		W
Nov. 25 4 25	20	2	44	B	72 36·5	71 13·0	71 52·0	70 36·0	71 34·37		W
Nov. 27 23 0	25	2	46	A	70 58·0	72 20·0	70 14·5	71 33·5	71 16·50	71 26·18	W
Nov. 28 4 30	22	2	48	A	70 53·5	72 19·0	70 17·5	71 38·0	71 17·00		W
Dec. 1 23 25	50	2	40	B	72 48·0	71 10·0	71 51·5	70 33·0	71 35·62		B

† Observation not satisfactory.
Oct. 22d 5h. Instrument rather out of level.
Oct. 24d 0h. Levelled the instrument.
Dec. 1d 23h. Observation unsatisfactory, lifter getting unsteady.

Göttingen Mean Time of Observation.	Deflecting Bar.				Declinometer.		Unifilar Reading.	Deflection corrected for Torsion.	Bifilar.		Log. $\frac{1}{2} r^3$ tan. u.
	Distance $= r$.		N. End.	Temperature.	Observed Reading.	Reduced to Unifilar.			Reading Corrected.	Thermometer.	
d. h. m.	Feet.			°	Sc. Div.	Sc. Div.	Sc. Div.	° ′ ″	Sc. Div.	°	
Dec. 29 2 27	5·08$\dot{3}$	E	E	40·7	6·04	6·73	479·24	2 28 11·2	545·5	36·0	0·4520220
3 16			W	39·3	6·16	6·87	37·34		544·6	36·4	
4 25		W	E	40·5	7·12	7·93	478·09		547·6	37·0	
3 23			W	39·6	6·36	7·09	39·75		544·6	36·4	
2 33	5·250	E	E	40·0	6·04	6·73	459·23	2 14 40·5	546·0	36·0	0·4524765
3 12			W	39·4	6·30	7·02	57·61		544·4	36·4	
4 19		W	E	40·7	7·10	7·91	458·04		547·7	37·0	
3 26			W	39·7	6·34	7·06	59·75		544·4	36·5	
2 36	5·500	E	E	40·0	5·87	6·54	433·02	1 57 14·0	545·9	36·0	0·4527822
3 8			W	39·3	6·53	7·28	84·00		544·7	36·3	
4 10		W	E	40·9	7·21	8·04	432·66		546·4	36·9	
3 29			W	39·7	6·28	7·00	85·55		544·2	36·5	
2 40	9·708$\dot{3}$	E	E	39·9	6·00	6·69	290·19	0 21 22·6	546·0	36·1	0·4538295
3 0			W	39·3	6·37	7·10	226·99		544·9	36·3	
3 59		W	E	40·4	7·18	8·00	291·21		546·0	36·9	
3 36			W	39·7	6·35	7·08	227·02		543·9	36·5	
2 44	9·83$\dot{3}$	E	E	39·7	6·17	6·88	289·21	0 20 35·9	545·3	36·1	0·4543491
2 57			W	39·3	6·56	7·32	228·42		544·6	36·2	
3 54		W	E	40·3	7·05	7·86	290·01		545·1	36·8	
3 39			W	39·7	6·47	7·21	228·33		543·8	36·6	
2 48	10·250	E	E	39·7	6·36	7·09	285·91	0 18 14·0	544·6	36·1	0·4554307
2 52			W	39·7	6·41	7·14	231·66		544·6	36·2	
3 51		W	E	40·0	6·95	7·75	286·37		544·6	36·7	
3 42			W	39·7	6·61	7·37	232·07		543·5	36·7	
								(Diff.) Sc. Div.			
2 10	Magnet away				5·44	6·06	257·52	251·46			
4 32					7·25	8·09	259·65	251·56			
Dec. 30 2 43	5·000	E	E	48·0	23·11	25·76	496·39	2 35 25·2	539·4	46·9	0·4509181
4 35			W	40·4	9·67	10·78	20·59		540·4	47·1	
2 55		W	E	47·8	23·30	25·97	496·79		538·9	46·9	
4 45			W	40·5	13·27	14·79	23·93		537·0	47·1	
3 41	5·500	E	E	48·6	4·39	4·89	418·22	1 56 50·8	551·8	47·0	0·4518898
4 31			W	40·6	8·68	9·68	76·53		541·0	47·1	
3 0		W	E	47·8	22·53	25·11	439·21		544·1	46·9	
3 35			W	48·2	8·51	9·48	76·53		554·6	47·0	
3 49	6·000	E	E	48·7	4·21	4·69	378·54	1 30 8·4	544·6	47·0	0·4523740
4 27			W	41·0	8·48	9·45	115·91		541·4	47·1	
3 4		W	E	47·9	21·13	23·55	397·89		546·5	46·9	
3 31			W	48·0	9·41	10·49	117·22		550·6	47·0	
3 53	6·500	E	E	48·8	4·12	4·59	350·00	1 10 57·3	546·3	47·0	0·4527087
4 23			W	41·0	7·26	8·10	143·02		541·5	47·1	
3 7		W	E	48·0	19·42	21·64	367·49		546·7	46·9	
3 28			W	47·9	10·39	11·58	146·77		549·8	47·0	
3 56	7·000	E	E	48·7	3·32	3·70	328·22	0 56 53·4	546·9	47·0	0·4533288
4 19			W	42·3	6·52	7·27	163·12		541·4	47·1	
3 11		W	E	48·0	17·38	19·37	344·41		547·9	46·9	
3 25			W	47·8	11·70	13·04	169·09		548·2	46·9	
4 0	7·500	E	E	48·4	2·36	2·63	311·43	0 46 17·3	543·2	47·0	0·4536859
4 13			W	46·0	5·75	6·41	177·90		541·5	47·0	
3 14		W	E	48·0	15·92	17·74	326·94		547·5	46·9	
3 22			W	47·8	12·65	14·10	185·86		548·0	46·9	
4 4	8·000	E	E	48·5	2·99	3·33	300·43	0 38 13·9	540·5	47·0	0·4546369
4 9			W	46·2	4·57	5·10	188·76		540·1	47·0	
3 17		W	E	48·0	14·73	16·41	313·59		546·5	46·9	
3 20			W	47·9	13·87	15·46	199·16		547·1	46·9	
								(Diff.) Sc. Div.			
2 20	Magnet away				4·18	4·66	245·34	240·68			
4 52					16·59	18·49	258·87	240·38			

Date.	N. END OF MAGNET MOVING E.					N. END OF MAGNET MOVING W.					BIFILAR.		
	No. of Vib.	Time of Transit.	No. of Vib.	Time of Transit.	Time of one Vib.	No. of Vib.	Time of Transit.	No. of Vib.	Time of Transit.	Time of one Vib.	Time of Obs.	Reading Cor.	Thermometer.
		h. m. s.		h. m. s.	s.		m. s.		m. s.	s.	h. m.	Sc. Div.	°
Dec. 29	0	5 15 53·4	70	5 34 0·9	15·536	1	16 8·2	71	34 15·3	15·530	5 21	549·2	37·7
	6	17 26·5	76	35 34·1	537	5	17 10·4	75	35 17·3	527	33	548·9	
	10	18 28·7	80	36 36·2	536	11	18 43·6	81	36 50·4	526	38	548·3	
	16	20 2·2	86	38 9·4	531	15	19 45·7	85	37 52·4	524	47	549·1	
	20	21 4·3	90	39 11·6	533	21	21 18·8	91	39 25·6	526	52	548·9	
	26	22 37·4	96	40 44·8	534	25	22 21·2	95	40 27·7	521			
	30	23 39·6	100	41 46·9	533	31	23 54·3	101	42 0·8	521	Mean	548·9	
	36	25 12·8	106	43 20·0	531	35	24 56·4	105	43 2·7	519			
	40	26 14·8	110	44 22·1	533	41	26 29·6	111	44 35·9	519			
	46	27 48·3	116	45 55·5	531	45	27 31·7	115	45 38·0	519			
	50	28 50·3	120	46 57·6	533	51	29 4·8	121	47 11·0	517			
	56	30 23·6	126	48 30·7	530	55	30 6·7	125	48 13·1	520			
	60	31 25·7	130	49 32·9	531	61	31 39·9	131	49 46·2	519			
	66	32 58·9	136	51 6·0	530	65	32 42·0	135	50 48·4	520			
	Mean observed time of one vibration = $15^{\mathrm{s}}{\cdot}5274$. Semi-arc of vibration, commencing 6°, ending 2°. Temperature of magnet, 40°·0.												
Dec. 30	0	7 43 27·4	50	7 56 28·6	15·624	1	43 41·6	51	56 41·8	15·604	7 45	543·6	46·6
	6	45 1·3	56	58 2·3	620	5	44 44·1	55	57 44·3	604	50	546·3	
	10	46 3·7	60	59 4·8	622	11	46 17·8	61	59 17·7	598	55	541·1	
	16	47 37·4	66	8 0 38·4	620	15	47 20·3	65	0 20·0	594	8 2	534·0	
	20	48 39·9	70	1 40·9	620	21	48 53·8	71	1 53·4	592	5	533·1	
	26	50 13·7	76	3 14·7	620	25	49 56·4	75	2 55·7	586			
	30	51 16·2	80	4 17·1	618	31	51 30·0	81	4 29·0	580	Mean	539·6	
	36	52 49·8	86	5 50·8	620	35	52 32·3	85	5 31·4	582			
	40	53 52·4	90	6 53·3	618	41	54 5·9	91	7 4·6	574			
	46	55 26·0	96	8 27·0	620	45	55 8·4	95	8 6·7	566			
	Mean observed time of one vibration = $15^{\mathrm{s}}{\cdot}6041$. Semi-arc of vibration, commencing 6°, ending $1\frac{3}{4}$°. Temperature of magnet, 48°·4.												
Dec. 30	0	8 52 4·7	60	9 7 38·6	15·565	1	52 20·6	61	7 54·3	15·562	8 55	538·8	46·3
	6	53 38·3	66	9 12·0	562	5	53 22·7	65	8 56·6	565	9 2	539·3	
	10	54 40·6	70	10 14·3	562	11	54 56·2	71	10 30·0	563	5	539·0	
	16	56 13·8	76	11 47·6	563	15	55 58·4	75	11 32·3	565	11	538·8	
	20	57 16·2	80	12 50·0	563	21	57 31·8	81	13 5·7	565	15	538·4	
	26	58 49·6	86	14 23·4	563	25	58 34·2	85	14 8·1	565	20	537·8	
	30	59 51·8	90	15 25·7	565	31	0 7·5	91	15 41·5	567			
	36	9 1 25·2	96	16 59·1	565	35	1 9·7	95	16 43·8	568	Mean	538·7	
	40	2 27·4	100	18 1·4	567	41	2 43·1	101	18 17·3	570			
	46	4 0·8	106	19 34·8	567	45	3 45·4	105	19 19·6	570			
	50	5 3·0	110	20 37·0	567	51	5 18·7	111	20 52·9	570			
	56	6 36·4	116	22 10·4	567	55	6 21·0	115	21 55·4	573			
	Mean observed time of one vibration = $15^{\mathrm{s}}{\cdot}5658$, Semi-arc of vibration, commencing $5\frac{1}{2}$°, ending $1\frac{1}{2}$°. Temperature of magnet, 47°·6.												

HOURLY METEOROLOGICAL OBSERVATIONS.

MAKERSTOUN OBSERVATORY,

1845.

Gott. Mean Time.		BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
0	13	29·999	30·9	30·7	0·2	0·1	0·0	18		2·5	Cirro-cumulo-strati.
	14	30·004	31·2	31·0	0·2	0·0	0·0	20		8·2	Id.
	15	013	29·3	29·5	···	0·0	0·0	20		1·0	Id.; faint aurora to N?
	16	013	28·2	28·4	···	0·0	0·0	20	20 : — : —	1·0	Misty scud; cirro-cumulo-strati; aurora to N?
	17	010	29·4	29·2	0·2	0·0	0·0	17	— : 8 : —	6·0	Cirro-cumulo-strati; fog just gone.
	18	009	28·8	28·8	···	0·0	0·0	20	— : 8 : —	5·0	Id.; lunar corona.
	19	008	28·0	28·0	···	0·0	0·0	24		3·0	Id.; id.
	20	017	27·3	27·3	···	0·0	0·0	22		3·5	Cirro-cumulous scud.
	21	038	26·8	26·7	0·1	0·0	0·0	22	— : 4 : —	6·0	Id.
	22	050	28·2	28·0	0·2	0·0	0·0	24	— : 7 : —	7·0	Id.
	23	052	29·2	28·7	0·5	0·0	0·0	22	— : 6 : —	7·0	Id.
1	0	051	31·0	30·2	0·8	0·0	0·0	20	— : 6 : —	9·0	Cirro-cumulous scud.
	1	044	31·9	31·4	0·5	0·0	0·0	22	— : 12 : —	7·0	Cirro-cumulous scud; woolly cirri.
	2	041	32·6	31·9	0·7	0·1	0·0	26	— : 10 : —	8·0	Cirro-cumulous scud; cirro-cumuli.
	3	038	33·3	32·4	0·9	0·0	0·0	23	— : 10 : —	9·0	Id.; id.
	4	040	33·3	32·6	0·7	0·0	0·0	18	10 : 10 : —	9·8	Scud; cirro-cumulous scud; drops of rain.
	5	041	32·9	32·6	0·3	0·0	0·0	22	10 : 10 : —	9·8	Id.; id.
	6	039	32·9	32·6	0·3	0·0	0·0	20		10·0	Id.; id.
	7	036	33·1	32·6	0·5	0·0	0·0	20		10·0	Id.; dark.
	8	042	33·4	32·8	0·6	0·0	0·0	18		10·0	Id.; id.
	9	042	33·2	32·8	0·4	0·0	0·0			10·0	Id.; id.
	10	042	33·7	33·1	0·6	0·1		17		10·0	Id.
	11	035	33·8	33·2	0·6	0·0	0·0	18		10·0	Id.
	12	037	34·2	33·5	0·7	0·1	0·0	30		10·0	Id.
	13	30·021	33·6	33·1	0·5	0·0	0·0	20		10·0	Id.; rain$^{0·2}$.
	14	014	34·7	34·2	0·5	0·0	0·0	18		10·0	Id.
	15	010	33·2	32·9	0·3	0·0	0·0	17		10·0	Id.
	16	30·004	33·0	32·7	0·3	0·0	0·0	17		10·0	Id.
	17	29·981	33·0	32·7	0·3	0·0	0·0	20		10·0	Id.
	18	969	32·6	32·3	0·3	0·0	0·0	18		9·9	Id.
	19	962	33·0	32·7	0·3	0·0	0·0	17		10·0	Id.
	20	957	32·0	32·0	···	0·0	0·0		— : 8 : —	9·8	Cirro-cumulous scud: stratus.
	21	954	30·4	······	···	0·0	0·0	4	— : 7 : —	2·5	Id.: id.
	22	956	30·7	30·9	···	0·0	0·0	6	— : 8 : —	9·8	Cirro-stratous scud: id.; objects invisible at 1 mile.
	23	941	33·0	32·3	0·7	0·0	0·0	24	— : 7 : —	9·9	Id.
2	0	923	34·2	33·6	0·6	0·0	0·0	20	— : 6 : —	9·9	Id.; very thin fog.
	1	903	35·9	35·1	0·8	0·0	0·0	20		8·0	Scud; cirro-cumulous scud; drops of rain.
	2	876	36·7	35·9	0·8	0·0	0·0	20		9·8	Id.; id.; slight fog.
	3	857	36·0	35·1	0·9	0·0	0·0	12	4 : — : —	9·6	Id.; id.; drops of rain.
	4	838	34·6	34·1	0·5	0·0	0·0	12	4 : — : —	9·7	Scud; slight fog.
	5	819	33·3	33·1	0·2	0·1	0·1	17	— : 4 : —	9·9	Cirro-stratous scud; fog denser.
	6	799	33·4	33·2	0·2	0·0	0·1	26		10·0	Id.
	7	781	33·8	33·4	0·4	0·0	0·0	20		10·0	Id.
	8	771	33·0	32·8	0·2	0·0	0·0	21		9·9	Id.; stars dim.
	9	760	33·1	32·9	0·2	0·0	0·0	16		10·0	Id.
	10	745	33·4	33·0	0·4	0·0	0·0	18		10·0	Id.
	11	727	33·8	33·1	0·7	0·0	0·0	24		10·0	Id. Kelso bells heard (4 miles distant.)
	12	708	34·0	33·1	0·9	0·0	0·0	20		10·0	Id.
	13	29·676	32·5	31·7	0·8	0·0	0·0	22		2·0	Scud to E. and N.
	14	667	31·5	30·8	0·7	0·0	0·0	18		10·0	Scud.
	15	664	31·9	30·6	1·3	0·0	0·0	20		10·0	Id.
	16	649	32·9	31·1	1·8	0·1	0·1	21		10·0	Id.
	17	625	33·2	31·7	1·5	0·1	0·0	20		10·0	Id.
	18	610	33·2	31·9	1·3	0·0	0·0	20		10·0	Id.
	19	590	33·4	32·1	1·3	0·1	0·0	18		10·0	Id.
	20	592	34·2	32·7	1·5	0·2	0·1	20		10·0	Id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. T motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Jan. 0d 16h 4m. Patches of misty scud moving very quickly from SW. (20.): 16h 8m, fog rapidly covering the sky, forming a lun corona; a lunar fog-bow opposite the moon of 40° span, and less than 20° altitude. Fog moved off about 17h 0m.

Jan. 1d 21h. Observation made at 21h 5m.

Gött. Mean Time.	BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1ʰ.	Maximum force in 10ᵐ.	From			
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
2 21	29·589	34·7	33·3	1·4	0·2	0·1	18	20 : — : —	10·0	Nearly homogeneous scud.
22	589	35·2	33·7	1·5	0·1	0·1	21		10·0	Id.
23	579	36·0	34·8	1·2	0·4	0·4	21	21 : — : —	10·0	Id.; drops of rain.
3 0	572	36·9	35·9	1·0	0·7	0·4	22	21 : — : —	10·0	Id.; slight shower of sleet since last observation.
1	561	37·6	36·4	1·2	0·4	0·7	21	21 : — : —	10·0	Id.
2	545	38·0	37·0	1·0	0·6	0·7	20		10·0	Id.
3	554	39·0	38·0	1·0	1·2	0·8	20	22 : — : —	10·0	Scud; cirrous mass.
4	563	39·2	38·1	1·1	1·0	0·2	20	20 : — : —	9·5	Id.; cirro-cumuli; cirrous mass.
5	577	39·4	38·1	1·3	0·4	0·3	22	22 : — : —	9·9	Id.; cirro-strati.
6	586	38·9	38·2	0·7	0·6	0·1	21		9·0	Id.; id.
7	606	38·0	37·3	0·7	0·2	0·1	20		6·0	Scud, cirro-strati; stars dim.
8	623	36·7	36·1	0·6	0·1	0·0	20		9·0 v.	The same.
9	650	38·6	37·7	0·9	0·1	0·0	22		7·0 v.	Id.
10	669	38·3	37·5	0·8	0·0	0·0	18		9·5	Id.
11	691	36·3	35·7	0·6	0·1	0·0	14		0·8	Cirri.
12	707	36·5	36·0	0·5	0·1	0·0	20		0·8	Id.
13	29·730	37·4	36·2	1·2	0·1	0·1	20		0·2	Thin cirri on E. horizon.
14	741	37·2	35·9	1·3	0·2	0·3	21		0·0	
15	758	36·9	35·5	1·4	0·3	0·4	21		0·0	
16	773	38·5	36·7	1·8	0·6	0·3	21		0·2	Thin cirri on W. horizon.
17	791	37·5	36·0	1·5	0·3	0·3	22		0·0	
18	800	38·8	36·4	2·4	0·6	0·5	24		0·2	Thin cirri on N. and S. horizon. ☽
19	816	35·0	33·8	1·2	0·3	0·0	16		0·1	Faint lunar corona. ☽
20	833	34·6	33·3	1·3	0·1	0·0	20		0·3	Id.; thin cirri, scud on Cheviot. ☽
21	843	34·5	33·2	1·3	0·1	0·0	20		4·0	Patches of scud; cirrous haze.
22	850	35·6	34·3	1·3	0·1	0·0	22		3·0	Light cirri and cirrous haze. ⊙
23	842	37·1	35·7	1·4	0·4	0·2	20		9·0	Cir. and cir. haze over the sky; traces of a halo. ⊖
4 0	836	38·0	36·6	1·4	0·2	0·1	22		10·0	Cirrous clouds, becoming very dense.
1	813	38·6	37·0	1·6	0·3	0·3	17	— : 22 : —	10·0	Dense cirro-strati.
2	789	39·5	37·9	1·6	1·2	0·4	20	22 : 22? : —	10·0	Scud: dense cirro-strati.
3	768	39·8	38·2	1·6	1·7	0·9	19	22 : — : —	10·0	Id.; id.
4	742	41·0	39·3	1·7	1·0	0·8	20	21 : — : —	10·0	Scud; dense homogeneous mass.
5	726	41·6	39·7	1·9	3·5	1·3	19	21 : — : —	10·0	As before.
6	708	41·1	39·3	1·8	2·0	0·8	20		10·0	Id.
7	681	42·3	40·4	1·9	2·3	1·7	20		10·0	Id.
8	661	43·2	41·1	2·1	2·7	1·8	20		10·0	Id.
9	624	43·4	41·4	2·0	3·2	3·8	20		10·0	Id.; very dark.
10	602	43·7	41·8	1·9	3·4	2·5	20		10·0	Id.; id.
11	543	44·4	42·7	1·7	3·5	2·0	20		10·0	Id.; light band on N. and S. horizon.
12	518	44·3	42·8	1·5	3·7	3·6	20		10·0	Id.; clouds broken.
23	29·561	50·4	48·3	2·1	3·5	1·8	22	23 : — : —	10·0	Scud; dense cirro-strati.
5 13	29·445	48·3	46·6	1·7	5·2	2·6	20		10·0	Scud; rain $^{0·2}$.
14	441	47·9	46·7	1·2	3·6	2·9	20		10·0	Id.; drops of rain.
15	445	47·9	46·7	1·2	3·0	2·4	19		10·0	Id.; id.
16	431	47·6	46·3	1·3	3·8	2·2	19		10·0	Id.; id.; very dark.
17	427	48·9	47·4	1·5	3·2	2·3	20		10·0	As before.
18	441	49·0	47·5	1·5	2·6	1·9	20		10·0	Id.
19	480	50·0	47·0	3·0	2·1	1·4	21		4·0	Scud; cirro-strati.
20	528	50·2	46·5	3·7	1·9	1·6	24	24 : — : —	9·0	Id.; id.
21	587	47·6	43·4	4·2	1·9	1·6	23	24 : 22 : —	6·0	Scud; cirro-strati; cirri.
22	638	45·8	42·0	3·8	1·7	1·0	22	24 : — : 22	8·0	Scud; woolly cirri and cirro-strati.
23	681	45·8	42·0	3·8	1·1	0·5	23	24 : — : 21	9·0	Id.; id., lying WSW. to ENE. ⊖
6 0	703	45·0	40·7	4·3	1·4	0·7	23	— : — : 22	8·0	Id.; id., id. ⊖
1	725	44·2	40·2	4·0	1·0	1·1	22	— : — : 22	8·5	Id.; id., id. ⊖

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motion of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Gött. Mean Time.		BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in		From			
						1h.	10m.				
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
6	2	29·771	44·7	40·0	4·7	0·4	0·2	22	26 : — : 22	9·0	Scud; woolly cir. and cir.-str., lying WSW. to ENE. ⊖
	3	790	44·7	40·0	4·7	0·3	0·3	22	26 : — : 22	9·0	Patches of scud; woolly cirri; cirro-strati. ⊖
	4	815	42·2	38·8	3·4	0·3	0·2	23	— : — : 22	9·5	Woolly cirri; cirro-strati; haze.
	5	838	41·0	37·9	3·1	0·2	0·2	18		7·0	Id.; id.; id.
	6	862	36·8	35·2	1·6	0·1	0·0	22		8·0	Id.; id.; id.
	7	884	37·0	35·3	1·7	0·1	0·0	20		7·0	As before.
	8	899	35·3	34·0	1·3	0·1	0·1	21		5·0	Id.
	9	928	34·8	33·7	1·1	0·2	0·1	10		4·0	Id.
	10	938	32·5	31·8	0·7	0·1	0·0	17		4·0 ?	Id.; stars dim.
	11	948	31·4	30·9	0·5	0·0	0·0	16		2·0	Cirri and cirrous haze.
	12	951	31·2	30·8	0·4	0·0	0·0	16		4·0	Id.
	13	29·953	31·2	30·9	0·3	0·1	0·0	20		7·0	Cirri and cirrous haze.
	14	958	32·3	31·8	0·5	0·0	0·0	20		8·0	Id.
	15	959	32·9	32·1	0·8	0·0	0·0	22		4·0	Id.
	16	958	32·8	32·2	0·6	0·0	0·0	20		10·0	Id.
	17	955	33·6	32·9	0·7	0·0	0·0	24		10·0	Id.; drops of rain.
	18	952	33·7	33·1	0·6	0·0	0·0	24		10·0	Rain $^{0\cdot5}$.
	19	958	34·0	33·6	0·4	0·0	0·0	20		10·0	Cirri, &c.; Rain $^{0\cdot2}$; a few stars very dim.
	20	966	34·3	33·8	0·5	0·0	0·0	21		10·0	Id. id.
	21	967	34·2	33·7	0·5	0·1	0·0	20	— : 23 : —	10·0	Cirro-stratous scud; cirro-strati.
	22	973	34·8	34·3	0·5	0·1	0·0	20		9·9	Mass of cirro-stratus.
	23	983	35·6	35·0	0·6	0·1	0·0	20		9·8	Thick mass of wavy cirro-stratus.
7	0	987	37·2	36·3	0·9	0·1	0·2	24		9·8	Cirro-stratous scud; cirro-strati; cirri.
	1	972	38·0	37·2	0·8	0·1	0·0	27	— : 22 : —	9·0	Cirro-cumuli; cirro-strati; cirrous haze. ⊖
	2	947	38·3	37·4	0·9	0·1	0·0	16	— : 22 : —	3·0	Wo. cir.-cum; stratus to E.; cir.-str. scud; cir. haze. ⊙
	3	966	38·3	37·3	1·0	0·1	0·0	27		1·5	Linear cirri; stratus to E. and S. ⊙
	4	968	35·5	35·0	0·5	0·1	0·0	20		1·5	Id.; id.; cirro-strati. ⊖
	5	959	33·3	33·0	0·3	0·0	0·0			2·5	Woolly cirri; id.; id.
	6	957	30·9	30·7	0·2	0·0	0·0	22		2·0	Cirro-strati and cirri on horizon.
	7	962	31·1	30·9	0·2	0·0	0·0	24		6·5	Cirrous clouds.
	8	969	32·6	32·2	0·4	0·0	0·0			10·0	Id.
	9	965	33·0	32·6	0·4	0·0	0·0	24		10·0	Dark.
	10	968	34·1	33·9	0·2	0·0	0·0	22		10·0	Id.; fine particles of rain.
	11	963	34·5	34·2	0·3	0·0	0·0			10·0	Dense fog.
	12	964	34·9	34·5	0·4	0·0	0·0	22		10·0	Id.
	13	29·960	35·0	34·7	0·3	0·0	0·0			10·0	Fog clearing away.
	14	950	35·2	34·8	0·4	0·0	0·0			10·0	
	15	946	35·2	34·8	0·4	0·0	0·0	24		10·0	Dark.
	16	926	35·7	35·2	0·5	0·0	0·0			10·0	Id.
	17	914	36·2	35·8	0·4	0·0	0·0	20		10·0	Id.
	18	908	36·5	36·1	0·4	0·0	0·0			10·0	Id.
	19	909	37·0	36·6	0·4	0·0	0·0	22		10·0	Id.
	20	909	37·3	36·9	0·4	0·0	0·0	28	— : 20 : —	9·9	Cirro-stratous scud; cirro-strati.
	21	917	39·6	39·2	0·4	0·0	0·0	16	— : 17 : —	9·9	Id.
	22	912	41·9	41·0	0·9	0·0	0·0	16	16 : 16 : —	3·0	Masses of scud and cirro-strati. ⊙
	23	911	41·7	40·7	1·0	0·1	0·0	20	16 : — : 12	2·0	Scud; loose cumuli; cirri; cirro-strati. ⊙
8	0	899	43·3	42·1	1·2	0·0	0·0	18	16 : — : —	2·0	Scud; loose cumuli. ⊙
	1	879	42·0	40·8	1·2	0·5	0·3	14	17 : — : 14	5·5	Id.; id.; woolly cirri; cirrous haze. ⊖
	2	874	43·3	41·6	1·7	0·4	0·2	15	17 : — : 15	6·0	Id.; id.; cirro-strati; cirri; cirrous haze.
	3	865	40·7	39·4	1·3	0·2	0·2	16	— : 16 : —	9·7	Dense cirrous clouds and haze.
	4	865	40·6	39·1	1·5	0·5	0·1	16	18 : — : —	9·8	Scud; woolly cirrous clouds, very low; much haze.
	5	864	40·3	38·6	1·7	0·3	0·0	4	17 : — : —	8·0	As before.
	6	873	35·3	34·7	0·6	0·1	0·0	18		3·0	Cirro-strati; haze.
	7	864	32·7	32·3	0·4	0·1	0·0	16		0·2	Patches of light clouds to W.
	8	870	32·8	32·2	0·6	0·0	0·0	20		0·5	Haze round horizon.
	9	870	32·3	31·7	0·6	0·1	0·0	23		0·5	Id.; patch of scud to E.

Jan. 6d 8h. It was found that the balancing weight of the anemometer acted at about two inches from the extremity of the spiral when the index was at 0; the indications for some time must consequently have been rather too small: the suspending cord of the inner vessel was now shortened, so as to allow the weight to act correctly.

Jan. 7d 22h. Masses of loose cirro-stratus evaporating very rapidly, whilst scud is forming as quickly; both currents moving from the same point.

Gött. Mean Time.		BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1h.	10m.	From			
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
8	10	29·866	33·1	32·0	1·1	0·1	0·0	24		0·5	Cirri and haze on horizon.
	11	857	32·7	31·8	0·9	0·2	0·0	24		3·0	Cirri radiating from SW. and NE.
	12	857	31·0	30·4	0·6	0·0	0·0			5·0	Id.
	13	29·851	30·9	30·5	0·4	0·0	0·0	0		7·0	Cirri; stars dim.
	14	843	30·3	29·9	0·4	0·0	0·0			6·0	Id.; id.
	15	842	29·8	29·5	0·3	0·0	0·0	4		8·0?	Thin cirri; stars dim.
	16	824	30·3	29·9	0·4	0·0	0·0	28		8·0	Cirri thicker; id.
	17	818	33·1	32·7	0·4	0·0	0·0	16		7·0	Id.
	18	815	32·1	31·7	0·4	0·0	0·0	15		4·0	Cirri radiating from SW. and NE.
	19	814	32·0	31·6	0·4	0·1	0·0	22		4·0	Scud; cirro-strati.
	20	815	32·2	31·8	0·4	0·0	0·0	28		7·0	Id.; id.
	21	809	33·4	32·8	0·6	0·0	0·0	18		7·0	Cirro-cumuli; cirro-strati; cirri; red to SE.
	22	816	34·0	32·9	1·1	0·3	0·1	18	— : 20 : —	7·0	Id.; id.; id. ⊖
	23	804	36·9	35·4	1·5	0·2	0·0	0	— : — : 20	8·0	Woolly cirri; cirro-strati; haze. ⊖
9	0	782	38·4	36·7	1·7	0·1	0·1	14	— : — : 20	8·0	Id.; id.; id. ⦶
	1	761	42·4	39·3	3·1	0·2	0·1	28	— : — : 21	8·5	Id.; id.; id. ⦶
	2	734	43·3	39·3	4·0	0·1	0·1	1	— : — : 21	8·0	Sky nearly covered with woolly cirri. ⦶
	3	734	42·3	38·7	3·6	0·1	0·1	17	— : — : 21	8·0	Id. ⦶
	4	735	39·3	36·3	3·0	0·2	0·1	17	— : 20 : —	9·0	Id.; cirro-strati. ⦶
	5	729	35·5	33·8	1·7	0·2	0·1	28		4·0	Cirro-strati; cirri lying NE. to SW. since 8^{d} 18^{h}. ☽
	6	711	33·1	31·9	1·2	0·2	0·0	17		1·5	Thin cirri. ☽
	7	708	30·8	29·8	1·0	0·0	0·0			0·5	Band of thin cirrus; faint aurora to N.
	8	706	30·7	31·2	...	0·0	0·0	2		0·2	Id.; fine auroral arch.
	9	684	28·7	28·6	...	0·1	0·0			0·2	Id.; bright aurora.
	10	655	29·0	28·7	0·3	0·0	0·0			0·2?	Id.; id.
	11	632	29·9	29·0	0·9	0·0	0·0			0·5	Cirro-strati to N.; id.
	12	616	30·3	29·4	0·9	0·4	0·4	16		0·2	Id. to NW.
	13	29·601	29·1	28·6	0·5	0·1	0·0	16		1·0	Cirro-strati to N.
	14	568	28·8	28·6	0·2	0·0	0·0			2·0	Id. to N.; aurora obscured.
	15	551	34·9	32·7	2·2	0·5	0·8	16		8·0	Cirro-strati, cirri, and haze.
	16	543	35·4	33·9	1·5	0·5	0·1	17		10·0	Cirro-strati and cirrous haze.
	17	520	36·3	34·7	1·6	0·6	0·3	18		9·9	Id.
	18	505	38·0	36·0	2·0	1·0	0·8	18		10·0	Id.
	19	491	38·4	36·4	2·0	0·6	0·3	20		10·0	Id.; cirri radiating from SW.
	20	486	38·8	36·8	2·0	0·6	0·3	22	— : 20 : —	9·9	Cirro-stratous scud? reddish to SE.
	21	466	38·9	37·0	1·9	0·8	0·7	18	20 : — : —	8·0	Scud; cirro-cumuli; cirro-strati; cirri; red to SE.
	22	458	39·7	37·8	1·9	1·1	1·0	17	— : 20 : —	9·0	Cirro-cumulous scud; loose scud; cirro-strati; cirri. ⦶
	23	457	41·2	39·0	2·2	1·2	0·4	17	— : 20 : —	9·0	As before; scud on Cheviot.
0	0	436	41·7	39·4	2·3	2·3	1·9	17	20 : — : —	9·5	Scud; cirro-strati; cirri.
	1	398	43·0	40·7	2·3	3·4	2·3	17	19 : — : 22	9·5	Id.; woolly cirri; cirro-strati. ●
	2	374	42·8	40·5	2·3	2·4	1·0	17	17 : — : —	9·9	Id.; cirro-strati; cirri.
	3	340	43·2	40·9	2·3	2·0	1·6	17	17 : — : —	10·0	Id.; id.
	4	311	43·2	40·9	2·3	1·5	1·1	16	18 : — : —	10·0	Id.; id.; cirrous mass.
	5	289	43·2	40·9	2·3	2·0	0·7	17	18 : — : —	10·0	Id.; id.; id.
	6	254	43·6	41·0	2·6	1·2	0·5	16		9·0	Id.; id.; cirrous haze. ☽
	7	223	44·0	41·2	2·8	1·4	2·1	16		9·5	Scud and cirro-strati.
	8	201	43·9	41·2	2·7	1·7	1·2	16		10·0	Id.
	9	160	45·3	42·2	3·1	2·5	2·1	15		10·0	Id.; rain$^{0·5}$
	10	116	45·4	43·2	2·2	2·8	1·5	16		10·0	Id.; rain$^{0·2}$
	11	079	47·0	44·3	2·7	5·2	4·2	16		9·5	Id.; id.
	12	060	46·7	44·5	2·2	5·2	3·8	17		9·9	Id.; clouds broken.
	13	29·049	47·0	44·8	2·2	3·8	2·5	16		10·0	Scud and cirro-strati; rain$^{0·2}$
	14	044	46·9	45·0	1·9	3·8	2·0	17		10·0	Id.; id.
	15	045	46·9	45·1	1·8	2·3	1·8	16		8·0	Id.; stars dim.
	16	044	47·7	46·0	1·7	2·5	2·4	17		10·0	Id.; rain$^{1·5}$

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Gött. Mean Time.		BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc.:C.-s.:Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
10	17	29·031	47·2	46·1	1·1	3·0	2·0	17		10·0	Scud and cirro-strati; rain$^{2\cdot0.}$
	18	050	46·0	45·0	1·0	2·1	0·4	18		10·0	Id.; rain$^{1\cdot0.}$
	19	072	45·1	44·0	1·1	0·8	0·7	18		10·0	Id.
	20	113	43·8	42·4	1·4	0·7	0·7	19	20 : — : —	6·5	Scud.
	21	161	42·2	40·6	1·6	1·3	0·5	19	20 : — : —	1·5	Loose scud; cirro-stratous scud.
	22	179	42·4	40·8	1·6	1·1	0·7	20	21 : 18 : —	6·5	Scud: cirro-strati; woolly cirri.
	23	210	42·9	41.1	1·8	1·5	1·2	18	21 : — : 19	2·5	Scud: woolly cirri; loose, ragged cumuli to SE. ⊙
11	0	243	44·0	41 5	2·5	0·8	0·5	18	21 : — : —	1·5	Scud; loose cumuli; cirri; cirro-strati. ⊙
	1	274	44·2	41·3	2·9	1·3	0·9	19		1·0	Id.; Id. ⊙
	2	277	44·0	41·0	3·0	1·7	1·0	18		1·0	Cumuli to SE.; cir. and cir.-str. to SW. and E. ⊙
	3	300	43·0	40·0	3·0	1·2	0·4	20	21 : — : 18	7·0	Scud: mottled and woolly cir.; rad. from S by W.
	4	325	42·2	39·7	2·5	0·4	0·4	18	21 : — : 18	7·5	Scud: woolly cirri; cirro-strati.
	5	351	40·8	38·7	2·1	0·7	0·6	16	20 : — : —	8·0	Scud and loose cumuli; dappled grey cir., cirrous haze.
	6	374	38·4	37·1	1·3	0·7	0·3	16		5·0	Id.; to S. woolly cirri. ☽
	7	383	37·9	36·5	1·4	0·5	0·2	18		1·0	Scud cirrous haze; lunar corona. ☽
	8	391	37·0	35·3	1·7	0·2	0·1	19		0·5	Cirri and haze on horizon; lunar corona. ☽
	9	396	36·9	35·3	1·6	0·4	0·3	18		0·5	Id.; id. ☽
	10	391	36·2	34·9	1·3	0·3	0·3	18		0·5	Id.; id. to E.
	11	401	36·3	34·9	1·4	0·4	0·2	24		0·8	Cirri and cirro-strati to NE.
	12	408	34·7	33·7	1·0	0·1	0·0	25		0·8	Id.
12	0	29·590	40·3	39·1	1·2	0·5	0·4	18	20 : — : 20		Sunday. Scud and cirri.
12	13	29·581	27·2	……	…	0·4	0·0	20		2·0 ?	Rather dense fog.
	14	567	26·6	27·3	…	0·0	0·0			7·0 ?	Id.
	15	551	27·6	27·8	…	0·0	0·0			10·0	Id.
	16	535	28·0	28·0	…	0·0	0·0	18		10·0	Id.
	17	520	27·4	27·7	…	0·0	0·0	6		10·0	Id.
	18	500	28·5	28·3	0·2	0·0	0·0	18		10·0	Id.; clearing off at 18h 30m.
	19	492	28·0	27·8	0·2	0·0	0·0	16		10·0	Stratus in the hollows?
	20	475	28·0	27·8	0·2	0·0	0·0	17	10 : — : —	10·0	Scud.
	21	456	32·3	32·0	0·3	0·1	0·1	7	5 : — : —	10·0	Id.; a few drops of rain at 20h 50m.
	22	436	36·6	36·0	0·6	0·1	0·1	9	7 : — : —	10·0	Id.; Scotch mist.
	23	413	37·7	37·0	0·7	0·2	0·2	10	9 : — : —	10·0	Id.; fog to N.
13	0	386	37·3	36·9	0·4	0·2	0·2	10	10 : — : —	10·0	Id.; id.
	1	364	39·3	38·0	1·3	0·4	0·4	11	12 : — : —	10·0	Id.
	2	338	39·8	38·2	1·6	0·6	0·3	9	12 : — : —	10·0	Id.
	3	321	40·7	38·7	2·0	0·4	0·3	8	12 : — : —	10·0	Id.; clouds breaking to S.
	4	299	40·7	38·5	2·2	0·4	0·3	7	11 : — : —	8·0	Id.; woolly cirri.
	5	291	40·0	38·9	1·1	0·5	0·3	7	12 : — : —	9·9	Id.
	6	287	40·0	38·4	1·6	0·3	0·5	11		10·0	Thick scud; drops of rain.
	7	280	39·0	37·7	1·3	0·6	0·3	11		10·0	Id.; id.
	8	278	39·0	38·0	1·0	0·4	0·1	8		10·0	Thick scud or cirro-strati; rain$^{0\cdot2.}$
	9	284	40·1	39·3	0·8	0·1	0·1	12		10·0	Id.; id.
	10	290	41·3	40·0	1·3	0·5	0·4	12		10·0	Id.
	11	290	40·9	39·6	1·3	0·4	0·2	12		9·8	Id.
	12	306	39·5	38·3	1·2	0·3	0·3	13		5·0	Scud.
	13	29·325	36·9	35·9	1·0	0·5	0·1	12		1·0	Clouds to E.
	14	325	36·6	36·1	0·5	0·3	0·1	4		5·0	Scud.
	15	340	39·2	37·8	1·4	0·1	0·1	8		10·0	Id.
	16	353	40·3	39·4	0·9	0·4	0·5	10		10·0	Id.; rain$^{2\cdot0.}$
	17	369	41·3	39·8	1·5	0·8	0·4	13		10·0	Id.
	18	399	41·4	39·8	1·6	0·7	0·6	12		10·0	Id.
	19	428	41·1	39·6	1·5	0·7	0·5	12		10·0	Id.
	20	460	40·7	39·4	1·3	0·7	0·3	12		9·5	Id.
	21	507	40·8	39·6	1·2	0·4	0·3	13	13 : — : —	10·0	Id.
	22	546	41·0	39·6	1·4	0·5	0·2	13	13 : — : —	10·0	Id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	10m.	From			
. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
3 23	29·559	41·6	39·8	1·8	0·2	0·1	14	— : 13 : —	9·8	Cirro-stratous scud.
4 0	566	42·2	40·2	2·0	0·3	0·0	13	12 : — : —	10·0	Scud.
1	573	42·0	40·2	1·8	0·1	0·0	12		9·9	Id. ; cirro-strati.
2	575	43·1	41·1	2·0	0·1	0·1	16	13 : 13 : —	10·0	Id. ; id.
3	581	43·3	41·3	2·0	0·1	0·0	14		10·0	Id. ; id.
4	588	42·3	40·9	1·4	0·1	0·0	10	— : 13 : —	10·0	Cirro-stratous scud.
5	602	42·0	40·0	2·0	0·1	0·0	12	— : 14 : —	10·0	Id.
6	609	41·3	39·7	1·6	0·2	0·2	10		10·0	Id.
7	607	40·5	39·4	1·1	0·1	0·0			10·0	Id.
8	596	38·5	38·0	0·5	0·1	0·0	8	— : 12 : —	1·0	Scud or cirro-strati to E., patches to W. ☽
9	589	38·5	38·0	0·5	0·1	0·2	8		10·0	Scud.
10	561	40·0	39·0	1·0	0·0	0·0	6	12 : — : —	9·8	Scud ; cirro-stratous scud. ⊁
11	561	40·6	39·1	1·5	0·3	0·3	13	12 : — : —	9·0	Id. ; id.
12	553	40·0	37·9	2·1	0·4	0·3	14		9·9	Cirro-stratous scud ; cirro-cumulous scud.
13	29·526	38·8	37·4	1·4	0·2	0·0	13		10·0	Clouds much denser.
14	502	38·5	37·2	1·3	0·1	0·0			10·0	As before.
15	494	38·6	37·3	1·3	0·1	0·0			10·0	Id.
16	480	38·0	37·0	1·0	0·0	0·0	8		10·0	Id.
17	460	38·6	37·3	1·3	0·0	0·1	12		9·8	Clouds broken ; stars dim.
18	448	37·6	36·4	1·2	0·1	0·0	12		9·8	Id.
19	438	37·8	36·4	1·4	0·1	0·1	10		9·0	Id.
20	434	37·5	36·5	1·0	0·1	0·1	25		9·9	Id.
21	427	36·8	35·9	0·9	0·1	0·0	18	— : 16 : —	9·8	Broken cirro-stratous scud.
22	442	36·7	35·8	0·9	0·2	0·2	12	15 : — : —	8·0	Scud ; broken cirro-stratous scud. ⦶
23	448	37·2	35·8	1·4	0·6	0·2	12		2·0	Cirro-strati ; cirro-stratous scud round horizon. ⊙
5 0	441	37·5	36·3	1·2	0·4	0·4	15		2·0	Bank of dense cirro-strati round horizon. ⊙
1	442	39·6	37·8	1·8	0·5	0·1	16	13 : 13 : —	8·5	Scud : cirro-cumuli ; cirro-strati.
2	439	42·4	40·2	2·2	0·3	0·1	14	10 : — : —	6·5	Id. ; id. ; id. ⦶
3	439	41·4	39·2	2·2	0·1	0·1	30	11 : — : —	9·5	Id. ; id. ; id.
4	452	40·4	38·6	1·8	0·0	0·0	27	12 : — : 28	7·5	Id. ; finely mottled cir. to W., lying NW. and WSW.
5	470	37·0	36·2	0·8	0·2	0·1	17		10·0	Id.
6	484	38·0	36·8	1·2	0·1	0·0			10·0	Id.
7	504	35·8	35·3	0·5	0·0	0·0	8		9·0	Watery cirro-cumuli ; irregular lunar corona. ⊁
8	519	33·3	33·0	0·3	0·0	0·0		— : 26? : —	6·5	Id. ; id. ⊁
9	543	30·0	29·7	0·3	0·1	0·0	20		0·5	Thin cirri ; sky milky ; lunar corona and halo. ☽
10	559	28·5	28·0	0·5	0·1	0·0	18		0·0	As before ; sky very milky.
11	579	28·0	...	...	0·0	0·0			0·3	Band of cirri to S., very thin haze. ☽
12	597	28·0	28·4	...	0·0	0·0	18		0·2	Cirri and cirrous haze.
13	29·609	28·1	28·6	...	0·0	0·0	18		0·5	Cirri and cirrous haze.
14	625	27·6	28·0	...	0·0	0·0			0·3	Cir.-cum. to W., streaks of cir. and cir. haze to N. ⊁
15	649	27·0	27·2	...	0·0	0·0	20		0·0	Hazy on horizon.
16	666	25·8	26·0	...	0·0	0·0	18		0·0	Id.
17	675	25·7	25·8	...	0·0	0·0			0·0	Hazy, stars dim.
18	695	28·4	28·1	0·3	0·0	0·0	18		5·0 ?	Cirrous haze over the sky.
19	719	29·1	28·8	0·3	0·1	0·0	20		10·0	Dense cirrous mass ?
20	728	30·5	30·2	0·3	0·1	0·0	18 v.		10·0	Id.
21	744	30·8	30·3	0·5	0·0	0·1	21		10·0	Id.
22	760	31·5	31·2	0·3	0·1	0·0	20		10·0	Id. ; fog, objects invisible at ½ mile.
23	768	31·9	31·7	0·2	0·2	0·2	24		10·0	Id. ; dense fog, objects invisible at ¼ mile.
6 0	772	32·2	31·9	0·3	0·1	0·1	17		10·0	Id.
1	762	31·6	31·6	...	0·2	0·1	17		10·0	Id.
2	740	31·0	31·2	...	0·2	0·1	21		10·0	Id. ⅛ mile.
3	741	30·4	30·3	...	0·1	0·1	0		5·0?	Id. id.
4	755	29·8	29·8	...	0·2	0·0	22	— : 22 : —	7·0	Cirro-cumulous scud ; cirri ; fog clearing off.
5	758	28·1	28·0	...	0·1	0·0	16		2·5	Stratus ; cirro-strati ; cirri. ☽
6	749	26·2	26·0	0·2	0·1	0·0	20		2·0	Id. ; id. ; id. ; lunar corona. ☽

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Gött. Mean Time.		BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
16	7	29·747	26·5	26·2	0·3	0·0	0·0	18	20 : — : —	3·0	Loose misty scud; fog gone off; faint halo. ☽
	8	746	28·0	27·7	0·3	0·0	0·0	20	22 : — : —	1·0	Id. ☽
	9	751	27·8	27·7	...	0·0	0·0	20	22 : — : —	6·0	Scud. ☽̶
	10	741	29·2	29·1	...	0·0	0·0	24	21 : — : —	4·0 v.	Id.; thin haze. ☽
	11	749	28·2	28·0	0·2	0·2	0·1	17	— : 20 : —	9·5	Cirro-cumulous scud. ☽̶
	12	741	34·2	32·4	1·8	0·1	0·4	16		10·0	Thick scud.
	13	29·729	36·2	35·2	1·0	0·4	0·3	18		10·0	Thick scud.
	14	720	35·8	34·9	0·9	0·2	0·1	16		9·5	Scud; cirro-strati.
	15	717	37·2	36·0	1·2	0·4	0·3	17		9·5	Id.; id.
	16	708	37·2	35·7	1·5	0·5	0·3	18		10·0	Id.; id.
	17	685	37·5	36·0	1·5	0·3	0·2	18		10·0	Id.; id.
	18	688	37·8	36·2	1·6	0·3	0·3	18		10·0	Id.; id.
	19	679	38·6	36·7	1·9	0·5	0·1	17		10·0	Id.; id.
	20	682	38·3	36·6	1·7	0·2	0·1	18		10·0	Id.; id.
	21	683	37·9	36·3	1·6	0·3	0·1	18	— : 20 : —	10·0	Loose cir.-cum.; cir.-str.; cirrous haze; clouds red.
	22	689	38·3	36·6	1·7	0·2	0·1	18	— : 20 : —	10·0	Id.; id.; id.
	23	686	39·0	37·0	2·0	0·2	0·1	14	— : 18 : —	9·9	Id.; id.; id. ⦶
17	0	679	40·3	38·1	2·2	0·4	0·5	17	— : 20 : —	9·9	Id.; id.; id.
	1	667	42·2	39·7	2·5	0·8	0·5	17	— : 20 : 18	9·8	Watery cirri; masses of cirro-strati; cirrous haze.
	2	639	44·7	41·5	3·2	1·3	1·7	16	19 : 19 : —	9·6	Patches of scud; cir.-str.; loose cir.-cum.; woolly cir. ⊙
	3	632	43·4	40·6	2·8	1·7	0·9	17	20 : — : —	9·9	Nearly as before.
	4	632	41·6	39·3	2·3	1·3	0·6	16		9·9	Id.
	5	626	41·4	39·3	2·1	0·8	0·5	16	20 : — : —	10·0	Id.
	6	619	41·4	39·4	2·0	0·5	0·2	16		10·0	Scud; cirro-strati.
	7	619	40·0	38·0	2·0	0·6	0·3	16		10·0	Id.; id. ☽̶
	8	601	39·8	37·4	2·4	1·7	1·2	18		9·5	Id.; id.
	9	607	40·4	37·9	2·5	1·3	0·5	17		10·0	Id.; id.
	10	602	39·2	37·2	2·0	1·2	0·5	16	— : 20 : —	9·9	Cirro-cumulous scud. ☽̶
	11	593	38·7	36·7	2·0	0·7	0·6	16	— : 19 : —	9·2	Watery cir.-cum.; cirri; cirrous haze; lunar corona. ☽̶
	12	573	38·8	36·6	2·2	1·6	1·2	16		8·0	Id.; id.
	13	29·562	39·0	36·6	2·4	1·6	0·7	16		8·5	Watery cirro-cumuli, denser.
	14	548	38·6	36·6	2·0	0·7	0·3	16		9·2	As at last hour; sky to E.
	15	529	39·4	37·1	2·3	0·8	0·4	16		10·0	Id.
	16	511	39·4	36·9	2·5	0·9	0·7	16		9·0	Cirro-strati; thin cirri.
	17	485	39·7	37·1	2·6	1·6	0·3	16		9·8	Id.; id.
	18	447	38·7	36·3	2·4	0·9	0·6	15		9·8	Id.; id., or cirrous haze.
	19	417	39·6	37·0	2·6	0·8	0·7	15		10·0	Id.
	20	393	38·2	36·8	1·4	1·2	0·6	14		10·0	Scud; cirro-strati.
	21	362	38·6	37·1	1·5	0·8	1·0	15	18 : — : —	10·0	Id.; dense homogeneous cirro-strati; rain$^{0\cdot5}$
	22	343	38·5	37·2	1·3	1·9	1·6	16	19 : — : —	9·9	Id.; cirro-strati breaking up.
	23	336	40·2	38·3	1·9	1·8	1·5	14	20 : — : —	10·0	Id.; id.
18	0	323	40·7	39·1	1·6	1·2	1·1	15	18 : — : —	9·9	Id.; cirro-strati; cirri.
	1	305	41·2	39·6	1·6	1·1	1·2	16	18 : 18 : —	4·0	Id.; loose ragged cumuli; cirro-cumulous scud.
	2	280	43·3	40·7	2·6	1·3	0·8	16	18 : — : —	2·0	Id.; cumuli to E.; cirro-strati; cirri. ⊙
	3	255	43·2	40·0	3·2	1·3	1·0	16	18 : — : —	9·0	As before.
	4	245	42·5	39·4	3·1	1·8	0·3	16	18 : — : —	9·9	Scud; cirro-strati; cirri.
	5	219	42·2	39·7	2·5	1·2	0·1	17	18 : 18 : —	10·0	Id.; id.; drops of rain.
	6	203	41·6	39·4	2·2	1·7	0·9	16	— : 18 : —	8·2	Watery cirro-cumuli; sky milky; lunar corona. ☽̶
	7	199	40·8	38·8	2·0	1·7	1·6	17		1·5	Id. ☽
	8	199	39·6	37·7	1·9	1·4	0·8	16		1·5	Id. ☽
	9	202	40·4	38·4	2·0	1·0	0·6	16		9·5	Cirro-stratous scud; cirri.
	10	188	38·8	37·0	1·8	1·1	0·8	17		9·0 ?	Cirri; cirrous haze; faint lunar corona and halo. ☽̶
	11	177	36·7	35·3	1·4	0·7	0·3	17		8·0	Cirrous haze over the sky; lunar halo. ☽̶
	12	171	35·6	34·4	1·2	0·5	0·1	16		9·0	Id.; halo disappeared. ☽̶
	23	29·120	34·5	33·3	1·2	1·7	0·2	18	— : 19 : —	......	Sunday—variable. A.M. Cirro-cumulo-strati.; cirri, snow. P.M. Dense, cirrous mass; snow and sleet. ⊙

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Jan. 17d 12h. Observation made at 12h 12m.

ott. ean me.	BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	10m	From			
h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
13	29·047	29·5	29·3	0·2	1·1	0·1	30		9·0	Cirro-cumulo-strati; cirro-strati. ☽
14	063	28·9	28·7	0·2	0·0	0·1	24		9·0	Id.; id.; cirri. ☽
15	086	27·5	27·5	...	0·0	0·1	20		9·5	Id.; id.; id. ☽
16	116	27·3	27·3	...	0·1	0·0	20		7·0	Id.; id.; id. ☽
17	149	25·7	25·7	...	0·0	0·1	17		5·0	Id.; id. ☽
18	175	25·8	25·7	...	0·1	0·0	16		4·0	Id.; id. ☽
19	211	26·0	26·0	...	0·0	0·0	24		0·4	Cirro-strati near horizon.*
20	248	28·7	28·3	0·4	0·1	0·0	24		1·0	Woolly cirri; cir.-strati; cir. haze; loose cum. to SE.
21	298	26·9	26·6	0·3	0·1	0·0	16		0·8	Woolly cir. and cir.-str.; scud on the flank of Cheviot.
22	331	26·4	26·2	0·2	0·1	0·0	18	— : — : 29	2·0	Woolly cirri; cirro-strati.* ⊙
23	347	31·0	29·7	1·3	0·2	0·0	18	— : — : 29	1·5	Loose woolly cirri, as before. ⊙
0	356	32·0	30·8	1·2	0·1	0·0	23		0·0	Haze on horizon. ⊙
1	383	35·0	32·8	2·2	0·3	0·2	20		0·2	Cirro-strati to NE. ⊙
2	406	38·2	35·9	2·3	0·5	0·4	23	— : 29 : —	5·0	Loose cirro-strati, 2h 30m Rainbow. ⊙
3	423	39·3	36·1	3·2	0·5	0·5	26		3·0	Id.; loose nimbi and shower to N. ⊙
4	464	34·7	33·5	1·2	3·2	0·4	29		2·0	Loose cumuli and cirro-strati. ⊙
5	493	34·6	32·4	2·2	0·4	0·1	26		1·5	Cirro-strati and thick cirrous haze on horizon.
6	526	32·5	32·2	0·3	0·2	0·1	22		1·5	Id. on N. horizon. ☽
7	545	34·2	31·7	2·5	0·2	0·1	23		9·5	Scud: cirro-strati. ☽
8	573	32·7	31·3	1·4	0·2	0·2	26		0·2	Cirro-strati on SE. horizon. ☽
9	612	33·5	31·2	2·3	0·4	0·2	26		0·2	Id. SE. and N. horizon. ☽
10	636	36·8	34·0	2·8	0·9	0·9	27		1·5	Id. to E. ☽
11	671	37·4	34·0	3·4	0·9	0·7	28	— : 0 : —	2·5	Watery, loose cirro-cumuli; lunar corona.* ☽
12	718	38·4	35·2	3·2	0·8	0·4	29	— : 0 : —	9·8	Cirro-cumulo-strati. ☽
13	29·755	38·3	35·3	3·0	0·5	0·3	28	— : 0 : —	6·5	Cirro-cumulo-strati; sky in zenith. ☽
14	764	36·8	34·3	2·5	0·3	0·4	24 v·	— : 0 : —	3·0	Id.; cirri; faint lunar corona.* ☽
15	786	33·3	31·8	1·5	0·1	0·1	28		1·0	Id.; id. ☽
16	818	34·3	32·7	1·6	0·2	0·1	29		9·8	Id.; denser.
17	839	35·0	33·5	1·5	0·1	0·1	18		9·9	Id.; id.
18	850	34·5	33·3	1·2	0·0	0·0	18		9·9	Id.
19	867	34·0	32·8	1·2	0·1	0·1	20		9·5	Scud: clouds broken.
20	887	33·2	31·9	1·3	0·1	0·1	20		8·5	Id.; cirro-cumulo-strati; cirro-strati.
21	911	30·7	30·3	0·4	0·1	0·0	20	— : 18 : —	3·0	Loose cirro-cumuli; cirro-strati.
22	925	30·5	29·9	0·6	0·1	0·2	20	— : 26 : —	3·0	Fleecy, woolly cirri; cirro-cumuli; cirro-strati. ⊙
23	924	32·0	31·0	1·0	0·2	0·1	25	— : 25 : —	6·5	Id.
0	922	35·0	32·8	2·2	0·1	0·1	21	— : 24 : —	9·6	Cirro-cumulo-strati; cirro-strati; cirri.
1	925	36·2	34·3	1·9	0·1	0·0	20	— : 24 : —	9·9	As before.
2	905	37·7	35·5	2·2	0·2	0·1	22	— : 24 : —	9·9	Cirro-stratous scud; wavy cirro-strati; cirri.
3	887	38·3	36·1	2·2	0·2	0·1	20	— : 24 : —	9·5	Id.; id. ●
4	872	38·0	36·0	2·0	0·3	0·1	18		8·0	Id.; id.
5	874	38·2	36·0	2·2	0·3	0·3	17	20 : 24 : —	6·0	Scud: cirro-stratous scud; red tinged cirri to W. ☽
6	858	34·3	33·0	1·3	0·2	0·0	16	20 : — : 24	8·0	Misty scud: thin cirro-strati and cirri. ☽
7	853	36·7	34·7	2·0	0·6	0·3	18	20 : — : —	10·0	Chiefly smoky scud. ☽
8	851	36·6	34·8	1·8	0·5	0·3	18		9·5	Id.; cirro-strati; lunar corona. ☽
9	843	37·8	36·2	1·6	0·5	0·2	18		10·0	Dense, nearly homogeneous mass of scud.
10	832	38·6	37·3	1·3	0·7	0·7	18	19 : — : —	10·0	Nearly as before, but varying.
11	817	38·7	37·3	1·4	0·6	0·8	18		10·0	Nearly homogeneous.
12	806	39·8	38·5	1·3	2·0	1·4	19		10·0	Id.
13	29·784	39·0	37·7	1·3	1·0	0·5	18	20 : 22 : —	9·2	Loose scud: cir.-cum.; cir.-str.; coloured lunar cor. ☽
14	765	40·2	39·2	1·0	1·2	0·9	19	20 : 22 : —	8·0	Id.; cir.-str.; thin haze, causing a col. cor. ☽
15	778	40·1	39·2	0·9	1·1	0·4	20		10·0	Homogeneous; drops of rain.
16	777	41·1	40·5	0·6	0·6	0·1	20		10·0	Id.; id.
17	778	41·3	40·8	0·5	0·2	0·0	14		10·0	Thick scud and cirro-strati.
18	774	43·0	42·5	0·5	0·5	0·4	20		10·0	Id.
19	789	43·4	42·7	0·7	0·8	0·2	20	20 : — : —	3·0	Smoky scud; cirri.
20	803	43·5	42·8	0·7	0·2	0·0	22		10·0	Id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motion of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Jan. 20d 3h 40m. Heavy showers of snow and sleet with strong wind.

* See additional Meteorological Notes after the *Hourly Meteorological Observations.*

Gott. Mean Time.		Barometer at 32°.	Thermometers.			Wind.			Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
21	21	29·821	43·1	42·3	0·8	0·1	0·2	24	20 : — : —	10·0	Smoky scud ; cirrous mass.
	22	825	42·3	41·8	0·5	0·3	0·1	20	21 : — : 22	9·0	Id. ; wo. cir, lying from NE. to SW. ; halo.
	23	834	41·4	41·1	0·3	0·2	0·1	22	— : — : 23	8·0	Woolly, mottled, and linear cirri ; solar halo.
22	0	846	45·3	43·7	1·6	0·2	0·1	20	23 : — : —	9·0	Smoky scud, various cirri radiating from SW. ⊖
	1	846	46·0	43·8	2·2	0·4	0·2	19	22 : — : —	7·0	Id. ; cirro-strati ; cirri. ⊖
	2	823	46·4	44·3	2·1	0·8	1·0	19	22 : — : —	8·0	Id. ; id. ; id. ; cirrous haze ; halo. ⊖
	3	815	45·9	43·7	2·2	0·6	0·6	19	21 : — : 20	8·0	Scud ; woolly cirrri lying SW. to NE. ; cirro-strati. ●
	4	824	44·6	42·2	2·4	1·1	0·5	19	21 : — : 23	6·0	Id. ; id. lying S by E. to N by W. id. ●
	5	795	41·7	40·2	1·5	0·8	1·1	18		5·0	Id. ; id.
	6	786	41·0	39·9	1·1	1·6	0·9	19		2·5	Scud ; cirri. ☽
	7	788	41·8	40·5	1·3	1·2	0·6	17		1·5	Cir.-str. ; cir. and cir. haze ; faint lunar halo and cor. ☽
	8	780	42·6	41·3	1·3	0·8	0·1	20	21 : — : —	2·0	Scud ; cirri ; cirrous haze ; halo and corona. ☽
	9	791	43·1	41·7	1·4	0·9	0·8	18		10·0	Thick scud.
	10	790	43·0	41·7	1·3	1·6	0·6	18		10·0	Id.
	11	781	42·2	41·2	1·0	0·8	0·2	18		10·0	Id.
	12	767	42·8	41·6	1·2	0·5	0·2	15		10·0	Scud ; cirro-strati ; cirri.
	13	29·737	41·4	40·2	1·2	0·9	1·6	17	20 : — : 24	10·0	Scud. ; mass of cirri ; lunar halo. ☽
	14	701	39·5	38·7	0·8	0·5	0·1			4·0	Thin, watery cirri.
	15	660	42·1	40·8	1·3	0·0	0·0			10·0	Thick scud ; cirro-strati.
	16	593	44·7	43·6	1·1	0·7	0·6	17		10·0	Id. ; rain^{3}.
	17	556	46·1	45·1	1·0	1·5	1·1	20		10·0	Id. ; rain$^{0\cdot5}$.
	18	529	46·3	45·9	0·4	1·6	1·1	18		10·0	Id. ; rain$^{0\cdot5}$.
	19	498	48·6	48·0	0·6	1·2	0·7	20		10·0	Id. ; rain$^{0\cdot2}$; wind in gusts.
	20	478	48·8	47·8	1·0	2·9	2·6	18	20 : — : —	10·0	Id.
	21	460	49·2	47·9	1·3	2·3	1·4	19	20 : — : —	10·0	Id.
	22	439	49·7	47·5	2·2	2·9	2·3	20	20 : 20 : —	9·9	Scud ; cirro-strati.
	23	418	50·0	47·1	2·9	4·1	5·0	19	20 : 21 : —	9·9	Id. ; id. ; cirri.
23	0	404	51·1	46·9	4·2	6·3	4·2	18	20 : 20 : —	9·7	Id. ; id. ; id.
	1	387	50·0	46·6	3·4	6·3	3·4	19	20 : — : —	10·0	Id.
	2	360	50·0	46·7	3·3	4·3	4·2	18	20 : — : —	10·0	Id. ; rain to E. ?
	3	318	49·8	46·8	3·0	4·6	3·7	18		10·0	Id.
	4	297	49·3	46·4	2·9	4·5	5·2	18	20 : — : —	10·0	Id. ; rain to SE.
	5	286	48·9	46·4	2·5	5·2	3·5	19	20 : — : —	10·0	Thick scud.
	6	274	47·8	45·8	2·0	3·6	2·8	18		8·5	Scud ; cirro-strati ; cirri ; drops of rain.
	7	279	48·1	46·0	2·1	2·7	2·7	20		9·0	Id. ; id.
	8	260	47·6	45·8	1·8	3·2	2·5	17		10·0	Id. ; id. ; rain$^{0\cdot2}$.
	9	251	46·5	45·8	0·7	2·2	0·8	18		10·0	Id. ; id. ; rain$^{0\cdot5}$.
	10	233	46·0	44·7	1·3	1·3	1·3	18	20 : — : —	10·0	Id. ; id. ; rain$^{0\cdot2}$.
	11	224	45·7	44·3	1·4	0·8	0·4	18	20 : — : —	10·0	Id. ; watery cirrous haze ; no halo visible. ☽
	12	210	45·5	44·0	1·5	0·5	0·5	18		10·0	Cirro-strati ; watery haze ; faint halo. ☽
	13	29·195	45·3	44·0	1·3	0·2	0·2	17		10·0	Cirro-strati ; gradually becoming denser ; broken to S.
	14	168	44·8	43·7	1·1	0·3	0·0	17		10·0	Cirro-strati, or cirro-stratous scud.
	15	160	44·1	43·3	0·8	0·0	0·0	17		10·0	As at 13h ; particles of rain.
	16	154	44·1	43·7	0·4	0·1	0·0	15		10·0	Id. ; rain$^{0\cdot2}$.
	17	146	43·8	43·4	0·4	0·0	0·0	14	18 : — : —	10·0	Scud ; cirro-strati.
	18	142	43·7	43·3	0·4	0·0	0·0	0		10·0	Id. ; id. ; drops of rain.
	19	147	44·0	43·2	0·8	0·0	0·1	21		10·0	Id. ; id. ; rain^{1}.
	20	186	43·3	42·4	0·9	0·1	0·1	24		10·0	Id. ; id. ; rain^{2}.
	21	242	38·7	38·0	0·7	1·8	1·5	30	31 : — : —	10·0	Id. ; id. ; rain^{3}.
	22	290	37·4	36·2	1·2	1·5	0·6	31	31 : — : —	10·0	Id. ; cirrous mass ; rain^{2}.
	23	340	37·7	36·7	1·0	0·9	0·7	28		10·0	Id, ; id.
24	0	380	39·0	37·8	1·2	0·9	0·9	28		10·0	Scud on S. horizon ; dense cirrous mass.
	1	414	41·0	39·2	1·8	1·1	1·7	28		10·0	Smoky scud round horizon ; cirro-strati.
	2	439	42·3	40·0	2·3	1·3	1·3	28	— : 28 : —	8·5	Cirro-strati ; cirri ; snow on Cheviot.
	3	477	42·9	40·0	2·9	1·0	0·7	29		6·0	Patches of scud ; cirro-strati ; woolly cirri.
	4	516	43·2	39·7	3·5	1·2	0·7	28		2·0	Cumulo-strati ; cirro-strati ; cirri.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Jan. 22d 3h. The smoky scud seems to have a sort of internal motion.

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc.: C.-s,: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1$^{\mathrm{h}}$.	Maximum force in 10$^{\mathrm{m}}$.	From			
h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
4 5	29·542	40·9	38·2	2·7	0·6	0·1	23		1·5	Cumulo-strati; cirro-strati; cirri; clouds tinged red.
6	570	37·6	36·7	0·9	0·1	0·0	24		0·8	Cirro-strati; haze on E. horizon.
7	592	35·7	34·4	1·3	0·3	0·3	18		0·0	Moon risen very orange-coloured. ☽
8	615	36·5	34·5	2·0	0·3	0·3	20		0·1	Streaks of cirri to N. ☽
9	635	33·4	32·5	0·9	0·3	0·1	18		0·1	Cirri to E. ☽
10	648	32·9	32·1	0·8	0·3	0·3	20		0·2	Cirri to SW.; scud on Cheviot. ☽
11	661	37·1	35·0	2·1	0·7	0·1	18	— : — : 28	2·0	Bands of cirri lying NW by N. to SW by S.; patches of scud. ⊁
12	669	33·4	32·3	1·1	0·4	0·0	17		1·0	Bands of cirri: portion of a halo. ☽
13	29·662	32·7	31·8	0·9	0·2	0·0	10		0·5	Cirri; cirro-strati. ☽
14	663	35·0	33·6	1·4	0·6	0·6	20		1·0	Cirri and cir.-str. on hor.; patches of scud to NW. ☽
15	654	33·8	32·9	0·9	0·5	0·1	20	— : — : 26	1·5	Sheets of thin cirro-strati and cirri. ☽
16	629	33·6	33·0	0·6	0·4	0·3	18		7·0	Cir.-cum.; sheets of cir.-str.; cir. haze; lunar halo and corona. ⊁
17	609	35·9	35·0	0·9	0·5	0·6	19	20 : 28 : —	10·0	Scud; cirro-cumuli; cirro-strati.
18	575	38·6	37·0	1·6	0·8	0·4	19		10·0	Thick scud and cirro-strati.
19	539	40·2	38·4	1·8	1·7	1·1	19	22 : 28 : —	10·0	Scud; watery cirrous haze and cirro-strati. ⊁
20	512	40·8	38·8	2·0	3·7	3·8	18		10·0	Cirro-cumulous scud; id.; tinged red on SE.
21	494	41·2	39·2	2·0	2·8	1·3	18	— : 20 : —	10·0	Id.
22	435	44·0	42·4	1·6	3·4	4·0	19	19 : 23 : —	10·0	Loose, watery scud; cirro-stratous scud; cirrous mass.
23	416	46·0	44·0	2·0	4·4	3·0	20	19 : 24 : —	10·0	Id.; id.
5 0	386	48·4	46·0	2·4	4·5	4·3	20	20 : 24 : —	9·5	Id.; cirro-strati; cirro-cumuli; wild sky.
1	362	49·2	47·0	2·2	3·5	2·8	18	20 : 24 : —	9·8	Id.; id.; id.
2	345	49·3	47·5	1·8	2·8	3·1	20	20 : — : —	10·0	Id.
3	301	48·4	47·2	1·2	3·3	1·7	20	20 : — : —	10·0	Id.; id.; id.
4	269	48·8	47·5	1·3	2·8	2·0	20	20 : — : —	10·0	Id.; id.; id.
5	250	49·8	47·8	2·0	4·6	3·3	19	20 : — : —	10·0	Id.; id.
6	202	49·7	48·0	1·7	3·3	3·1	19	20 : — : —	10·0	Loose scud; dense homogeneous cirro-strati.
7	156	50·1	48·9	1·2	3·5	3·0	18		10·0	Occasional rain$^{0\cdot5-1}$ since 6$^{\mathrm{h}}$.
8	109	50·4	49·0	1·4	4·2	3·2	18		10·0	Rain$^{0\cdot5}$.
9	29·050	50·6	49·2	1·4	3·0	3·5	19		10·0	Id.
10	28·983	50·1	49·0	1·1	3·1	4·3	18		10·0	Id.
11	933	50·3	48·7	1·6	4·4	4·4	18		10·0	Rain$^{1\cdot5}$.
12	944	47·0	43·2	3·8	4·3	3·2	20	22 : — : —	4·0	Misty scud; cirro-strati; cirri ☽
12¾	28·918	45·7	42·7	3·0	...	...			9·0	Rain$^{0\cdot2}$.
23¼	29·026	40·2	35·5	4·7	8·7	2·3	25	27 : — : 26		Patches of scud; woolly cirri; cirro-strati slowly.
6 5	306	...	...	...	...	...				Cloudy throughout the day, occasional ⊙ and flakes of snow, P.M.
13	29·302	29·9	27·4	2·5	5·5	0·3	20		4·0	Very thin cirri; lunar halo and corona. ☽
14	287	28·6	26·6	2·0	0·4	0·2	20		4·0	Auroral cirri; id.; id. ☽
15	240	27·8	26·0	1·8	0·3	0·1	21		5·0	Id.; id. ☽
16	175	28·6	26·9	1·7	0·4	0·1	20	— : 24 : —	9·8	Cirrous mass, gradually growing denser. ⊁
17	120	30·5	28·6	1·9	0·5	0·0	24		10·0	Id., less dense; cirro-strati below. ⊁
18	062	30·1	28·6	1·5	0·0	...	28		10·0	Homogeneous mass of cirri.
19	29·006	29·7	29·1	0·6	0·1	0·2	7		10·0	Id., snow^{1}; snow began at 18$^{\mathrm{h}}$ 30$^{\mathrm{m}}$.
20	28·970	29·2	28·9	0·3	0·0	0·1	7		10·0	Id., snow$^{2\cdot5}$; 1½ inch deep.
21	944	29·7	29·4	0·3	0·1	0·1	2		10·0	Snow^{2}; 2¾
22	920	29·2	28·8	0·4	0·2	0·0	4		10·0	Flakes of snow; 3
23	888	31·2	30·6	0·6	0·2	0·0	4		10·0	Snow^{2}
7 0	880	32·6	32·0	0·6	0·0	0·1	30		10·0	Flakes of snow.
1	868	33·7	32·2	1·5	0·2	0·3	25		10·0	Cirrous mass; mean depth of snow 2·9 inches. ●
2	857	33·3	32·1	1·2	0·2	0·1	28	— : 26 : —	10·0	Cirro-strati; cirrous mass.
3	838	33·2	32·4	0·8	0·5	0·5	26	— : 28 : —	9·9	Scud; dense cirro-strati.
4	830	32·1	31·8	0·3	0·7	0·6	28	— : 28 : —	7·5	Cirrous scud; cirro-strati; woolly cirri. ⊙
5	825	31·2	30·8	0·4	0·6	0·6	28	30 : — : —	9·0	Scud, cirro-strati, cirri; clouds tinged red.
6	821	31·5	31·0	0·5	0·6	0·6	29		10·0	Homogeneous mass; breaks to SW. and W.
7	821	31·4	31·2	0·2	0·6	0·5	28		10·0	Snow^{1}, (since 6$^{\mathrm{h}}$ 15$^{\mathrm{m}}$.)
8	823	31·6	31·0	0·6	0·5	0·4	29		10·0	Snow^{1}, fine particles.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Jan. 24$^{\mathrm{d}}$ 5$^{\mathrm{h}}$. Sky purplish on E. horizon; at 6$^{\mathrm{h}}$, dark red on SW. horizon, and slightly orange above.

Jan. 24$^{\mathrm{d}}$ 11$^{\mathrm{h}}$ and 13$^{\mathrm{h}}$, and 26$^{\mathrm{d}}$ 13$^{\mathrm{h}}$. See *Notes on the Auroræ Boreales.*

Gött. Mean Time.		BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt pt.	0—10.	
27	9	28·832	32·0	31·5	0·5	0·3	0·3	30		10·0	Snow$^{0·5}$; fine particles.
	10	839	32·0	31·7	0·3	0·2	0·1	31		10·0	Id.
	11	839	32·0	31·6	0·4	0·0	0·0	1		10·0	Snow^1
	12	839	31·6	31·2	0·4	0·0	0·0	2		10·0	Id.
	13	28·834	31·2	30·9	0·3	…	0·0	3		10·0	Clouds not so homogeneous.
	14	831	31·3	30·9	0·4	…	0·0	2		10·0	Homogeneous.
	15	829	31·4	31·0	0·4	…	0·0			10·0	Id.
	16	823	31·3	31·0	0·3	…	0·0	2		10·0	Scud; cirro-strati; clouds broken.
	17	814	31·0	30·6	0·4	…	0·0	2	6 : — : —	10·0	Id.; id.; id. ☽
	18	809	30·6	30·1	0·5	…	0·0	4		9·9	Id.; id. ☽
	19	812	29·8	29·5	0·3	…	0·1	4	6 : — : —	9·8	Thin scud; cirro-strati ?
	20	813	27·1	27·0	…	…	0·1	4	6 : — : —	9·0	Cirrous scud; cirro-strati; cirri; stratus to E ? ☽
	21	825	26·9	26·7	0·2	…	0·1	4	4 : — : —	9·0	Id.; id.; id.; id.
	22	838	26·8	26·6	0·2	…	0·1	26		10·0	Scud; snow^1; stratus to E.
	23	845	29·0	28·3	0·7	…	0·1	17		9·5	Cirro-strati to W.; cirrous mass; solar halo. ●
28	0	863	30·5	29·8	0·7	0·1	0·1	23	4 : — : —	10·0	Scud; cirrous mass; solar halo. ●
	1	873	31·7	30·8	0·9	0·1	0·1	23		10·0	Id.; snow^3; snow 6¼ inches deep.
	2	871	32·7	32·2	0·5	0·2	0·1	25	4 : — : —	10·0	Id.; dense cirro-strati and haze.
	3	870	32·4	31·4	1·0	0·3	0·2	1	4 : — : —	10·0	Id.; id.
	4	881	32·7	32·2	0·5	0·9	0·4	1		10·0	Dense cirrous mass; snow^7 since 3h.
	5	903	32·3	32·2	0·1	0·6	0·6	6		10·0	Id.; snow^7
	6	911	31·0	30·7	0·3	0·3	0·0	0		10·0	Scud; dense cirro-strati; slate-blue to NW. and NE.
	7	922	31·0	30·2	0·8	…	0·0	0		7·0	Cirro-strati; haze; stars dim.
	8	937	31·1	29·5	1·6	…	0·5	3		6·0	Id.; id.; id.
	9	951	31·9	29·5	2·4	0·9	1·1	3		4·0	As before; faint aurora.
	10	978	31·9	29·5	2·4	0·8	0·6	3		6·0	Id.
	11	28·993	32·8	30·0	2·8	1·3	0·8	3		4·0	Scud; cirro-strati on horizon; faint aurora.
	12	29·007	33·3	31·5	1·8	1·5	1·2	5		9·0	Id.; id.; id.
	13	29·033	31·7	30·8	0·9	0·7	0·3	4		4·0	Bank of cirro-strati to S.; haze. ☽
	14	048	26·9	26·0	0·9	0·4	0·2	4		3·0	Cirro-strati; cirri; lunar corona. ☽
	15	069	23·8	23·3	0·5	0·1	0·1	20		5·0	Id.; id.; lunar halo. ☽
	16	078	25·3	24·4	0·9	0·2	0·1	9		5·0	Id.; id.; id. ☽
	17	089	22·8	22·3	0·5	0·2	0·1	25		4·0	Id.; id.; id. ☽
	18	110	18·8	18·8	…	0·2	0·1	23		4·0	Id.; id.; id. ☽
	19	117	20·2	20·0	0·2	0·1	0·0	18		3·0	Scud; thin haze; faint lunar halo. ☽
	20	126	15·0	15·5	…	0·0	0·0	20		2·5	Id.; cirri; cirro-strati; lunar corona. ☽
	21	145	14·3	14·7	…	0·0	0·0	12	— : 10 : 17	6·0	Cirro-stratous scud; diffuse cirri; loose cum. on hor.
	22	151	14·8	15·0	…	0·0	0·0		— : — : 20	6·0	Woolly cirri; masses of scud on horizon. ⊙
	23	158	19·3	19·0	0·3	0·0	0·0	22	12 : — : 20	9·0	Scud; woolly cirri and cirrous haze. ⊖
29	0	154	22·0	21·1	0·9	0·2	0·0	22		9·0	Woolly cir. and cir. haze; cum. in haze to NE.; solar halo. ⊖
	1	154	23·7	22·7	1·0	0·1	0·1	25		9·0	Id.; solar halo. ⊖
	2	139	23·7	22·9	0·8	0·0	0·0	20	— : — : 18	9·0	Id.; id. ⊖
	3	126	22·3	22·0	0·3	0·0	0·0	20	— : — : 20	8·0	Id.; id. ⊖
	4	115	20·9	20·5	0·4	0·0	0·0	20	— : — : 20	8·0	Id.; id. ⊖
	5	106	19·0	18·8	0·2	0·0	0·0	20	— : — : 18	8·0	Cirri; atmospheric haze.
	6	097	13·6	14·0	…	0·1	0·1	20		9·0	Cirro-strati; cirri; dense cirri to E.
	7	091	11·8	12·8	…	0·1	0·1	18		1·5	Cirro-strati and haze round horizon.
	8	079	10·2	10·5	…	0·1	0·1	18		1·5	Id.; faint auroral light.
	9	075	9·8	10·0	…	0·1	0·1	18		1·0	Id.; id.
	10	066	8·4	8·8	…	0·1	0·1	18		1·0	Id.
	11	055	9·8	10·0	…	0·2	0·0	17		6·0	Cirri; faint aurora ?
	12	053	13·5	13·3	0·2	0·0	0·0	20		10·0	Id. ? snow$^{0·5}$ for a little.
	13	29·025	16·7	16·4	0·3	0·0	0·0	18		9·8	Cirri ?
	14	28·996	17·4	17·0	0·4	0·0	0·0	20		10·0	Id.
	15	28·995	17·4	17·2	0·2	0·0	0·0	19		10·0	Id. denser.

Jan. 27d 11h—23h. Anemometer vane frozen up.

Jan. 28d 8h. The vane of the anemometer being frozen up it was released: the wind commenced blowing about 7h 40m.

Jan. 28d 20h. There is scarcely any moisture deposited on the stems, &c. of the external thermometers, a very unusual circumstance at so low a temperature.

Jan. 29d 8h 30m. Dry thermometer reading 7°·7.

ott. ean ime.	BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1^h.	Maximum force in 10^m.	From			
h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
16	28·985	15·3	15·4	...	0·0	0·0	18		8·0	Thin cirri; stars dim; halo. ⊁
17	976	17·4	17·2	0·2	0·0	0·0	21	— : 22 : —	4·0	Cirro-cumulous scud; thin cirri; fine halo. ⊁
18	980	15·8	16·0	...	0·0	0·0	20		2·0	Thin cirri; faint halo. ☽
19	981	18·4	18·0	0·4	0·0	0·1	20		1·5	Cirro-strati; cirri. ⊁
20	28·979	22·0	21·3	0·7	0·2	0·2	20		1·5	Bank of cirro-strati on E. horizon; cirri. ☽
21	29·000	20·0	19·9	0·1	0·0	0·0	26	20 : — : 22	3·0	Patches of scud: cirri; cirro-strati; cirrous haze.
22	006	17·0	16·7	0·3	0·0	0·0	20	— : — : 22	4·0	Id.; id. ⦶
23	013	18·8	18·3	0·5	0·1	0·0	18		3·0	Cirro-strati; cirri all round horizon. ⦶
0	021	21·3	20·9	0·4	0·0	0·0	18		5·0	Id.; id. ⦶
1	023	23·6	22·7	0·9	0·0	0 0	20	— : — : 20	3·5	Woolly cir. and loose woolly cir.-str.; faint solar halo. ⊖
2	011	24·0	23·2	0·8	0·1	0·0	20		3·0	Id.; id. ⦶
3	014	25·9	24·3	1·6	0·1	0·0	18	— : — : 20	5·0	Id.; id. ⦶
4	033	23·6	22·6	1·0	0·1	0·0	17	— : — : 20	8·0	Woolly cirri and cirro-strati. ⊖
5	046	21·0	20·6	0·4	0·0	0·0		— : — : 20	9·0	Id.
6	072	17·1	17·1	...	0·0	0·0			8·0	Id.
7	080	12·4	12·8	...	0·0	0·0			4·0	Id.
8	093	9·8	10·0	...	0·0	0·0			0·5	Haze on horizon.
9	110	8·4	8·6	...	...	0·0			0·5	Haze to N.; faint aurora?
10	126	6·4	6·6	...	...	0·1	20		0·0	Haze on horizon; faint aurora.
11	136	5·4	5·2	...	...	0·0			0·2	Id.
12	153	4·3	4·5	...	...	0·0	18		0·2	Id.
13	29·173	4·0	4·0	...	...	0·0	18		0·2	Haze on horizon.
14	195	2·3	2·8	...	...	0·0	18		0·0	Id.
15	206	0·5	1·1	...	...	0·0			0·2	Id.; cirro-strati to SE.
16	225	2·0	2·0	...	...	0·0	18		0·1	Id.; id. ☽
17	253	1·3	1·5	...	...	0·0	18		0·0	Clear. ☽
18	278	−1·1	−0·4	...	...	0·0	16		0·1	Cirro-strati to SE.; haze to E. ☽
19	309	−0·2	...	...	...	0·1	18		0·4	Cirro-strati to E. ☽
20	333	1·7	1·9	...	...	0·1	16		0·8	Id.; and cirri to E. and S. ☽
21	365	1·0	1·2	...	...	0·0	20		1·0	Id.; cirri; haze.
22	402	2·4	2·8	...	...	0·0	20		1·0	Id.; id.; id.; cumuli. ⦶
23	428	6·4	6·4	...	...	0·0			0·8	Cumuli; cumulo-strati; haze on horizon. ⊙
0	451	10·0	9·8	0·2	...	0·1	2		0·5	Id.; id. ⦶
1	472	14·7	14·3	0·4	...	0·1	12		0·5	Id.; id. ⊙
2	475	22·8	21·0	1·8	...	0·0			0·5	Cumulo-strati to E.; cirri to S. ⊙
3	493	24·4	21·8	2·6	...	0·0	28		0·1	Id. ⊙
4	500	23·2	20·7	2·5	...	0·0			0·1 ?	Cirri; cirrous haze. ⊙
5	515	15·4	14·8	0·6	...	0·1	18		0·8	Cirri; cirro-strati, and cirrous haze.
6	529	10·4	10·2	0·2	...	0·0	20		0·7	Cirro-strati to N.; cirrous haze on horizon.
7	546	8·6	8·5	0·1	...	0·0	20	— : 2 : —	0·4	Cirro-strati; cirrous haze.
8	553	8·3	8·2	0·1	...	0·0	0		1·0	Cirro-strati to N.
9	562	13·3	12·7	0·6	...	0·0	12		9·0	Cirro-strati moved up from northwards; sky to N.
10	576	16·7	15·8	0·9	...	0·1	18		7·0	Cirro-strati; cirri and haze.
11	578	26·7	25·0	1·7	...	0·2	28		3·0	Cirro-strati to E. and N.
12	587	27·8	26·3	1·5	...	0·8	28		4·0	Id.
13	29·597	28·3	26·9	1·4	...	0·8	28		1·5	Cirro-strati to E. and N.
14	596	29·0	27·3	1·7	...	0·8	28		1·5	Id. to E.; thin cirrous clouds to N.
15	608	29·2	28·0	1·2	...	0·5	31		1·0	Id.
16	613	29·2	27·2	2·0	...	0·8	30		0·5	Id.
17	628	30·0	28·4	1·6	...	0·8	28		0·5	Id.; to SE. ⊁
18	648	28·7	...	...	...	0·5	28		1·5	Cirro-cumulo-strati to SE. ☽
19	655	28·4	...	...	...	0·5	29		1·0	Cirro-strati to E. ☽
20	668	30·5	28·1	2·4	...	0·8	29	0 : — : —	1·5	Scud and cirro-strati to E. and SE. ☽
21	700	28·8	26·7	2·1	...	0·7	30	— : 2 : —	2·0	Cir.-str. scud; cirro-strati; cirri; cumulo-strati to NE.
22	712	30·6	28·3	2·3	...	0·5	29	— : 2 : —	9·0	Cir.-cum. scud; woolly cirri; cumulo-strati to NE.
23	722	32·6	30·1	2·5	...	0·2	29	— : — : 1	7·0	Woolly cirri; cirro-strati and cumulo-strati to E. ⊙

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motion of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Jan. 29^d 17^h. The anemometer has been partially frozen, its indications are therefore not trustworthy: the pressure of the wind has not been more than 0·2 lb. during the night.

Gott. Mean Time.		BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1^{h}.	10^{m}.	From			
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
1	0	29·737	33·6	31·2	2·4	...	0·0	14	— : — : 0	9·0	As before.
	1	743	35·1	32·2	2·9	...	0·0	20		9·5	Woolly cir.; cir. haze; cir.-str.; faint solar halo ⊖
	2	749	34·8	32·5	2·3	...	0·2	28	— : — : 1	8·0	Woolly, curled, and mottled cirri; cirro-strati. ⊖
	3	751	36·7	34·0	2·7	...	0·2	31	4 : 1 : —	8·0	Scud; cirro-cumuli; cirro-strati; cirri.
	4	768	34·9	32·4	2·5	...	0·2	28	4 : 0 : —	4·0	Scud; cirro-cumuli in bands, lying N. and S.; slight snow since 3ʰ.
	5	781	32·8	31·2	1·6	...	0·1	29	2 : 0 : —	3·0	Cir.-str. scud; cir.-cum. as before; cum.-str. to E.
	6	798	31·8	30·2	1·6	...	0·1	5		6·0	Id.; cirri radiating from S by W. and N by E.
	7	805	27·7	27·2	0·5	...	0·0	7		2·0	Id.; cirri round horizon.
	8	821	28·5	27·9	0·6	...	0·1	22		2·0	Id.; id.
	9	832	26·2	...	...	...	0·0	18		2·0	Id.; id.
	10	838	23·8	23·7	...	...	0·0	18		1·5	Id.; cirri to E. and S.
	11	845	24·6	23·8	0·8	...	0·1	22		0·8	Cirri to SE.
	12	844	20·0	20·2	...	...	0·1	22		0·8	Id.;
	23¼	29·801	34·0	32·4	1·6	...	0·2	22		10·0	Sunday—overcast; cirrous mass; cirro-strati. A.M., shower of snow.
2	13	29·660	38·2	37·5	0·7	...	0·3	20		10·0	Dense mass of cirro-strati; drops of rain.
	14	656	37·4	36·8	0·6	...	0·1	18		9·2	Scud and cirro-strati; sky to N.; drops of rain.
	15	654	37·6	37·0	0·6	...	0·2	17		10·0	Id.
	16	651	36·6	36·3	0·3	...	0·0	17		3·0	Id.; stars dim.
	17	652	38·2	37·8	0·4	...	0·1	18		7·0	Id.
	18	659	37·4	37·1	0·3	...	0·0	17		2·0	Id. on horizon; stars bright.
	19	673	36·4	36·0	0·4	...	0·2	19		0·5	Cirro-strati; cirri on E. and S. horizon. ☽
	20	681	35·4	35·0	0·4	...	0·1	19		0·2	Strati; scud on Cheviot; cirro-strati to S. ☽
	21	710	35·0	34·8	0·2	...	0·1	18		0·2	Strati; scud on Cheviot; cirro-strati to E.; clouds tinged red. ⊖
	22	720	35·2	35·1	0·1	...	0·1	17		0·2	Cirro-strati on S. and E. horizon; mist in valleys. ⊙
	23	741	36·4	36·3	0·1	...	0·1			0·2	As before.
3	0	760	38·0	37·9	0·1	...	0·1	26	— : 31 : —	3·0	Cirro-stratous scud; slight fog in valleys. ⊙
	1	791	40·9	40·2	0·7	...	0·1	23	— : 31 : —	4·0	Id.; bank of cirro-strati to E.; stratus. ⊙
	2	793	43·6	40·7	2·9	...	0·1	28	— : 1 : —	1·0	Id.; atmospheric haze. ⊙
	3	809	43·5	40·7	2·8	...	0·1	30		2·5	Bank of cirro-strati; cumulo-strati to E. ⊙
	4	852	41·3	39·3	2·0	0·2	0·2	2	1 : — : —	9·0	Scud; cirro-strati; cirri; drops of rain.
	5	874	39·8	38·2	1·6	0·2	0·2	3	1 : 0 : —	9·5	Id.; cirro-stratous scud; cirro-strati.
	6	893	38·7	37·1	1·6	0·2	0·0	0		1·5	Scud.
	7	901	38·7	37·0	1·7	0·6	0·5	2	2 : — : —	1·0	Id.
	8	914	37·6	35·8	1·8	0·8	0·6	2		2·5	Id.
	9	952	37·1	34·6	2·5	1·1	0·1	3		0·7	Scud and cirro-strati on horizon.
	10	956	36·6	34·0	2·6	0·7	0·4	1		0·5	Id. on E. horizon.
	11	967	34·8	33·2	1·6	0·9	0·2	31		0·2	Id. id.
	12	984	32·3	31·3	1·0	0·1	0·1	21		0·2	Id. id.
	13	30·004	30·4	29·8	0·6	0·1	0·0	19		0·5	Scud and cirro-strati on E. horizon.
	14	29·995	30·8	30·0	0·8	0·1	0·0	31		0·2	Id. id.
	15	30·006	29·7	29·2	0·5	0·1	0·1	18		0·5	Id. round horizon.
	16	30·010	29·0	31·3	...	0·1	0·1	22		0·2	Id. on E. horizon.
	17	29·992	27·5	28·0	...	0·1	0·1	26		0·0	Clear.
	18	989	26·6	26·8	...	0·1	0·0	19		0·0	Id.
	19	975	28·0	28·0	...	0·1	0·1	19		0·1	Cirro-strati on horizon. ☽
	20	974	28·0	28·0	...	0·2	0·1	20		0·5	Cirro-strati and patches of cirri over the sky. ☽
	21	978	27·6	27·5	...	0·2	0·1	19	— : — : 29	0·8	Linear and woolly cirri. ⊙
	22	978	30·8	30·1	0·7	0·1	0·1	21	— : 28 : 28	0·4	Patches of cirro-strati and cirri. ⊙
	23	975	34·7	33·0	1·7	0·4	0·4	18	— : 28 : —	0·4	cirro-cumuli; cirro-strati and cirri. ⊙
4	0	969	36·6	35·3	1·3	0·6	0·2	18		0·4	Masses of cirro-strati on horizon. ⊙
	1	928	39·6	37·6	2·0	0·9	1·0	20	— : 26 : —	0·8	Cirro-strati; cirro-cumuli; woolly cirri. ⊙
	2	904	40·6	38·5	2·1	1·0	0·9	19	— : 26 : —	2·5	Id.; id. ⊙
	3	896	42·0	39·2	2·8	2·0	1·6	20	— : 27 : —	7·0	Cirro-cumulo-strati; cirro-strati.
	4	871	40·8	38·6	2·2	1·7	1·7	21	— : 27 : —	7·5	Cir.-cum.-str.; cir.-str.; loose cum. to SE. and patches of scud to N.
	5	867	40·3	37·9	2·4	1·3	1·7	20	24 : 27 : —	8·0	Scud; cirro-cumuli and dense cirro-strati to NE.; thin woolly cirri.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Feb. 2ᵈ 20ʰ. The sky on SSE. horizon is yellowish, becoming slightly orange to SE.; to E. it is orange, becoming reddish; to ENE., red; to NE., purple: patches of *growing* scud on E. horizon, lying in a horizontal line, and at about equal intervals.

Feb. 3ᵈ 20ʰ. Masses of stratus in the hollows of Cheviot, afterwards rising above the hill.

ött. ean me.	BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
6	29·853	39·7	37·4	2·3	1·6	0·6	23	24 : — : —	9·9	Scud; cirro-cumuli and dense cirro-strati to NE.; thin woolly cirri.
7	849	42·0	39·2	2·8	3·2	2·0	20		9·9	Id.
8	843	42·0	39·4	2·6	2·1	0·6	20		10·0	Id.; dark.
9	839	42·2	39·6	2·6	0·4	0·3	20		10·0	Id.; id.
10	830	41·2	39·2	2·0	0·5	0·2	20		10·0	Id.; clouds broken.
11	811	42·7	40·2	2·5	0·8	0·8	20		10·0	Id.; cirri above.
12	793	42·8	40·4	2·4	1·4	0·4	20		10·0	Id.; id.
13	29·770	41·9	39·4	2·5	0·4	0·4	20		9·8	Scud; clearing to W.
14	768	41·4	38·4	3·0	1·0	1·0	24		0·8	Cirro-stratous scud?
15	766	39·4	36·7	2·7	0·7	0·4	24		3·0	Cirro-strati?
16	739	38·7	36·2	2·5	0·8	0·6	23		3·0	Id.; cirri; stars dim.
17	734	38·7	35·8	2·9	0·8	0·6	26		0·5	Id.?
18	723	38·6	35·8	2·8	1·3	1·2	27		0·2	Cirri on S. horizon?
19	734	37·8	35·0	2·8	1·7	1·3	28		0·5	Cirro-strati; cirri on S. horizon.
20	719	37·3	34·5	2·8	1·5	1·6	25		0·2	Patches of scud and cirri on E. and S. horizon.
21	719	37·3	34·0	3·3	1·5	1·3	26		0·6	Cirro-strati on horizon; mass of loose cumuli to SE. ⊖
22	716	38·3	35·0	3·3	1·9	1·8	28		0·5	Bank of cirro-strati on E. hor.; loose cumuli to S. ⊙
23	712	39·7	36·2	3·5	2·2	1·7	28		0·8	Scud and cirro-strati on horizon; id. ⊙
0	705	41·2	36·6	4·6	1·8	1·6	28		0·2	Cirro-strati and cirri on E. horizon; loose cumuli. ⊙
1	671	41·8	38·0	3·8	2·0	1·6	25	28 : — : —	0·8	Scud; cirri; loose cumuli. ⊙
2	642	42·1	38·0	4·1	2·1	2·3	26	27 : — : —	7·0	Scud and loose cumuli; cirri. ⊖
3	596	42·6	38·5	4·1	2·6	1·8	25	26 : — : —	7·0	Loose, ragged cum.; drops of rain; cirro-strati to E. ⊖
4	572	42·9	38·6	4·3	3·3	3·6	25	26 : — : —	4·0	Id. ⊙
5	551	42·3	38·3	4·0	6·5	3·0	29	26 : — : —	9·0	Scud; dense black mass to NE., falling in rain or snow. 5^h 15^m, rain[2]
6	583	38·0	36·4	1·6	4·2	1·8	29	29 : — : —	10·0	Id.; cirrous mass; cumulo-strati to E.; rain[1]
7	597	35·7	34·1	1·6	3·6	2·3	30		4·0	Id.; cirro-stratous scud; 6^h 10^m, sleet and hail[5]
8	623	36·3	33·9	2·4	2·2	1·0	30		3·0	Id.; id; auroral light.
9	641	35·0	32·9	2·1	1·0	0·8	29		1·0	Cirro-strati to SE. and to NNW. among aurora.
10	649	34·1	32·4	1·7	1·4	0·4	29		3·0	Id. to W. and N.; auroral bank.
11	654	34·0	32·0	2·0	0·8	0·7	28		3·0	Scud and cirro-strati; faint auroral light.
12	657	33·5	30·7	2·8	0·9	0·9	29		2·0	Cirrous clouds; id.
13	29·667	33·6	30·2	3·4	2·3	1·6	29		0·0	Clear; faint aurora.
14	665	32·5	29·5	3·0	2·1	1·3	30		0·1	Id.; small patches of cloud to N.
15	661	32·1	28·6	3·5	3·9	2·2	31		0·1	Id.; cirro-strati on N. horizon.
16	656	31·7	28·7	3·0	4·1	3·5	30		0·0	Id.
17	668	31·0	27·7	3·3	3·4	2·4	30		0·0	Very clear.
18	680	30·4	27·4	3·0	2·8	2·1	30		0·0	Id.
19	696	30·7	27·7	3·0	4·2	3·0	30		0·5	Cirro-stratous scud on E. horizon.
20	719	29·4	27·4	2·0	2·4	2·4	30		0·5	Id.*
21	723	29·4	27·5	1·9	2·3	2·0	30		0·5	Id.; tinged red.
22	738	30·6	28·1	2·5	3·0	4·7	29		0·8	Scud and cirro-strati on E. horizon. ⊙
23	768	32·5	29·5	3·0	5·8	4·3	30	— : 31 : —	1·5	Cirro-stratous scud. ⊙
0	792	33·2	29·4	3·8	4·5	3·3	30	0 : — : —	9·5	Scud and loose cumuli; flakes of snow.
1	808	32·7	29·0	3·7	3·8	3·8	30	0 : — : —	6·0	Id.
2	831	33·8	29·8	4·0	4·4	2·6	31	0 : — : —	8·0	Id.
3	834	31·9	28·8	3·1	3·9	3·4	31		2·0	Id. round horizon. ⊙
4	859	31·2	27·3	3·9	4·8	2·2	31		2·5	Id.; cirro-strati on horizon. ⊙
5	868	29·8	26·6	3·2	2·5	0·7	0		1·0	Id.; id. on E. horizon. ⊙
6	868	28·7	25·6	3·1	1·7	1·4	30		1·5	Loose cumuli; cirro-strati to SW., tinged with red.
7	870	28·3	25·0	3·3	1·8	1·4	0		0·7	Scud and loose cumuli.
8	878	27·4	24·9	2·5	1·6	0·6	30		0·2	Clouds on horizon.
9	876	27·3	24·8	2·5	1·5	1·3	31		1·0	Scud.
10	873	27·1	24·7	2·4	1·9	0·9	30		0·5	Id.
11	896	27·0	24·3	2·7	1·7	0·6	31		1·0	Id. on E. horizon.
12	888	26·2	23·8	2·4	2·0	0·6	30		0·5	Id. id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motion of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Feb. 5^d 2^h. The snow has nearly all disappeared; there are still a few patches in the valleys. Several mole-hills thrown up near the [Observatory.

Feb. 5^d 5^h 20^m. Barometer 29·570 in. (rain and sleet)[4]

* See additional Meteorological Notes after the *Hourly Meteorological Observations*.

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1^h.	Maximum force in 10^m.	From			
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
6 13	29·891	26·7	24·6	2·1	1·0	0·9	30		3·0	Scud.
14	885	26·4	24·8	1·6	1·2	0·6	30		3·0	Id.
15	870	27·7	25·9	1·8	0·6	0·5	30		10·0	Id.
16	851	27·4	25·8	1·6	0·8	0·7	30		9·9	Id. ; flakes of snow.
17	845	27·5	25·8	1·7	1·0	1·0	30		5·0	Id. ; snow^1
18	851	27·4	25·9	1·5	0·7	0·5	30		9·0	Id.
19	843	27·3	25·7	1·6	1·1	0·9	30		7·0	Scud and cirro-strati.
20	860	27·0	25·3	1·7	0·9	0·6	31	3 : — : —	9·5	Id. ; a few flakes of snow.
21	883	26·9	25·8	1·1	0·8	0·4	29		9·9	Cirro-stratous scud, falling in snow^2.
22	874	27·0	26·1	0·9	0·7	0·6	29	— : 2 : —	9·0	Id.
23	877	29·4	27·3	2·1	0·7	0·5	1	3 : — : —	2·5	Scud ; flakes of snow ; fine linear cir. ; faint solar halo. ⊖
7 0	881	31·0	28·1	2·9	0·8	0·8	0	3 : — : —	3·0	Loose cumuli ; thin cirri and haze. ⊙
1	870	31·4	27·7	3·7	1·3	0·7	2		3·0	Id. ; id. ⊙
2	864	32·0	28·9	3·1	0·6	0·2	1	2 : — : —	9·5	Scud and loose cumuli ; woolly cirri.
3	865	31·7	28·9	2·8	0·6	0·4	0	— : 3 : —	9·5	Cirro-stratous scud ; loose cum. ; particles of fine snow.
4	860	31·6	28·8	2·8	0·4	0·2	0	— : 2 : —	9·5	Id. ; cirro-strati ; cirri ; flakes of snow.
5	863	30·9	28·4	2·5	0·3	0·1	1	4 : 4 : —	10·0	Scud ; cirro-strati ; nimbi to NE. ; flakes of snow.
6	874	30·3	28·0	2·3	0·2	0·2	31		10·0	Id.; id.
7	885	29·7	27·7	2·0	0·2	0·1	31		10·0	Id.
8	888	30·0	28·0	2·0	0·2	0·1	26		10·0	Id. ; dark ; flakes of snow.
9	891	29·8	27·8	2·0	0·2	0·1	29		10·0	Id. ; id.
10	891	29·8	27·8	2·0	0·2	0·2	28		10·0	Id. ; id.
11	890	29·0	27·4	1·6	0·1	0·1	28		5·0	Id. ? cirro-strati ?
12	894	28·2	27·2	1·0	0·0	0·0	17		10·0	Id. ? id.
13	29·892	27·9	26·7	1·2	0·0	0·0	20		9·8	Nearly as before.
14	894	26·5	25·6	0·9	0·0	0·0			4·0	Cirro-strati ; cirri ; stars dim.
15	894	25·0	24·1	0·9	0·0	0·0	20		1·0	Id. ; id. ; milky aurora *over* the sky.
16	891	25·9	24·6	1·3	0·0	0·0	20		9·8	Cirrous clouds ; chequered to S.
17	893	25·5	24·5	1·0	0·0	0·0	20		10·0	Cirro-strati ; cirrous haze ; stars seen dimly.
18	893	25·6	24·7	0·9	...	0·1	20		10·0	Id. ; id. ; id.
19	897	25·2	24·3	0·9	...	0·1			9·5	Id. ; id. ; id.
20	898	25·3	24·5	0·8	...	0·1	24		10·0	Id. ; cirrous mass.
21	898	25·4	24·7	0·7	...	0·0	22		10·0	Dense homogeneous cirrous mass ; cum. on E. horizon.
22	908	27·0	25·9	1·1	...	0·0	24		10·0	Id. ; faint halo.
23	904	28·8	27·6	1·2	...	0·0	22		10·0	Id. ; cumuli on horizon ; faint halo.
8 0	907	30·3	28·8	1·5	...	0·1	26		10·0	Woolly cirri ; cirrous mass ; faint halo. ●
1	899	32·7	30·7	2·0	...	0·1	17		9·5	Id. ⊙
2	896	32·8	30·4	2·4	...	0·1	17	18 : — : —	9·0	Scud and loose cumuli ; woolly cirri.
3	875	34·4	31·6	2·8	...	0·1	16	18 : — : —	9·5	Id. ; id. ⊖
4	874	34·0	31·0	3·0	...	0·1	19	18 : — : —	8·5	Id. ; id. ; cirro-strati. ⊙
5	867	31·0	29·0	2·0	...	0·0	19	— : 27 : —	9·8	Cirro-cumulo-strati ; cirri ; cirrous haze. ⊙
6	868	28·0	26·7	1·3	...	0·1	17	— : 28 : —	6·0	Loose cirro-cumuli ; id. ; id. ☽
7	869	26·5	26·0	0·5	...	0·1	17		7·0	Id. ; id. ; id.*
8	862	28·4	26·8	1·6	...	0·1	17		10·0	Cirrous mass ? dark.
9	855	28·9	27·1	1·8	...	0·1	18		10·0	Id. ; id.
10	855	29·2	27·2	2·0	...	0·1	18		10·0	Id. ; id.
11	843	29·7	27·6	2·1	...	0·1	18		10·0	Overcast with dense clouds.
12	835	29·6	27·5	2·1	...	0·1	17		10·0	Id.
9 $0\frac{3}{4}$	29·634	32·2	31·2	1·0	0·6	0·2	16			Sunday. Overcast ; snow from 8^d 23^h till 9^d 5^h.
13	29·457	33·3	32·5	0·8	0·5	0·0			10·0	Dense cirrous mass ; snow^1
14	452	33·2	32·4	0·8	0·2	0·1	18		10·0	Id.
15	450	33·7	32·6	1·1	0·1	0·0	18		10·0	Id. ; snow$^{0\cdot5}$.
16	438	33·8	32·7	1·1	0·1	0·0			10·0	Id.
17	431	34·3	33·3	1·0	0·1	0·1	20		10·0	Id.
18	421	34·4	33·4	1·0	0·1	0·0	22		10·0	Id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Feb. 8^d 5^h. Cirro-cumulo-strati radiating from NNW. and SSE. 4^h. New silk put on wet bulb.

* See additional Meteorological Notes after the *Hourly Meteorological Observations.*

ött. ean me.	BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
19	29·414	34·0	33·3	0·7	0·0	0·0	20		10·0	Dense cirrous mass.
20	412	34·7	33·6	1·1	0·3	0·1	20		10·0	Scud and cirro-strati.
21	414	35·0	34·0	1·0	0·1	0·1	19	— : 24 : —	10·0	Cirrous clouds; cirro-stratous scud.
22	411	36·0	34·7	1·3	0·0	0·0	18	— : 22 : —	9·9	Cirro-stratous scud; cirro-strati.
23	407	37·9	36·0	1·9	0·2	0·0	20	— : 24 : —	9·9	Id.; id.
0	401	37·9	36·0	1·9	0·1	0·0	24	20 : 20 : —	10·0	Thin misty scud; cirro-strati.
1	392	39·6	37·5	2·1	0·0	0·0	22	20 : — : —	9·7	Loose scud; cirro-strati; cirro-cumuli.
2	379	39·0	37·6	1·4	0·0	0·0	28	20 : — : —	10·0	Scud; cirro-strati; cirrous clouds.
3	377	39·4	37·7	1·7	0·1	0·0	2	19 : — : —	10·0	Id.; id.
4	375	38·6	37·2	1·4	0·0	0·0	16		10·0	Id.; id.; thin fog or haze to E.
5	373	37·5	36·4	1·1	0·0	0·0	6	19 : — : 22	9·9	Id.; woolly cirri and cirro-strati; thin fog.
6	389	35·2	34·4	0·8	0·0	0·0	14	18 : — : —	9·9	Id.; cirro-strati.
7	402	34·0	32·7	1·3	0·2	0·1	16		9·0	Id.; id.; stars dim.
8	419	33·0	31·8	1·2	0·1	0·2	16		9·9	Id.; id.
9	428	31·8	32·2	...	0·4	0·2	18		9·0	Id.; id.; clouds broken.
10	453	31·3	30·0	1·3	0·2	0·3	17		9·0	Id.; id.
11	485	31·2	29·8	1·4	0·4	0·4	16		9·0	Id.; id.; cirrous haze; stars dim.
12	520	30·6	29·2	1·4	1·0	0·4	16		10·0	Id.; id. ? id. ?
13	29·548	30·4	28·8	1·6	0·5	0·7	15		10·0	Nearly as before; very dark.
14	581	29·9	28·5	1·4	0·5	0·3	15		10·0	Id.; id.
15	610	29·7	28·2	1·5	1·2	0·7	15		10·0	Id.
16	630	30·0	27·9	2·1	0·7	0·6	15		10·0	Id.
17	651	29·7	27·3	2·4	1·5	0·8	15		10·0	Id.
18	687	29·8	27·8	2·0	1·1	1·2	15		10·0	Id.
19	709	29·8	27·4	2·4	1·6	1·5	16		10·0	Id.
20	751	29·8	27·7	2·1	1·3	0·8	16		10·0	Dense cirrous mass.
21	779	30·0	27·8	2·2	1·6	1·4	16		10·0	Id.
22	807	30·6	28·2	2·4	1·8	1·8	16	— : 28 : —	10·0	Cirro-stratous scud; cirro-strati; cum. on E. and S. hor.
23	832	31·2	28·3	2·9	1·8	1·8	16		10·0	Id.; id.; flakes of snow.
0	840	31·0	29·4	1·6	1·2	0·6	16		10·0	Id.; snow^2.
1	861	32·2	30·2	2·0	0·7	0·2	15	18 : — : —	10·0	Scud; cirro-strati.
2	880	32·9	30·3	2·6	0·4	0·1	22		10·0	Id.; cum. on E. hor.; cirro-strati; cirrous mass.
3	892	32·0	30·2	1·8	0·3	0·1	23		10·0	Loose scud to E.; id.; id.
4	911	32·3	30·3	2·0	0·1	0·1	22		10·0	Dense cirrous mass.
5	939	32·2	30·0	2·2	0·1	0·1	20	— : 24 : —	10·0	Thick, wavy cirro-stratus.
6	959	31·6	29·9	1·7	0·2	0·0	20		10·0	Id.
7	971	31·4	29·4	2·0	0·2	0·1	18		10·0	Dense mass.
8	974	31·6	30·0	1·6	0·3	0·3	19		10·0	Id.
9	29·985	31·7	30·2	1·5	0·3	0·2	20		10·0	Id.
10	30·001	31·9	29·8	2·1	0·4	0·3	19		10·0	Id.
11	013	31·9	29·7	2·2	0·5	0·2	22		10·0	Id.
12	020	31·8	29·7	2·1	0·5	0·3	20		10·0	Id.
13	30·030	31·8	29·6	2·2	0·7	0·3	20		10·0	Dense mass.
14	040	31·4	29·4	2·0	0·5	0·1	23		10·0	Id.
15	045	30·7	28·6	2·1	0·5	0·6	22		7·0	Cirro-strati and cirrous haze ?
16	040	29·9	27·7	2·2	0·5	0·4	21		8·0	Id.
17	047	30·1	27·9	2·2	0·5	0·4	21		10·0	Id.
18	056	30·0	27·8	2·2	0·4	0·2	19		10·0	Id.
19	062	29·4	27·2	2·2	0·3	0·2	18		10·0	Id.
20	059	29·4	27·3	2·1	0·2	0·2	18	— : 20 : —	10·0	Id., breaking; fog at a distance; red to SE.
21	074	29·5	27·2	2·3	0·4	0·4	20	— : 20 : —	10·0	Id.; tinged red to E.; id.
22	077	29·4	27·2	2·2	0·5	0·2	20		7·0	Id.; woolly cirri; fog getting nearer. ⊙
23	066	31·5	28·7	2·8	0·2	0·1	19	— : 20 : —	10·0	Cirro-strati; cirrous haze.
0	057	32·8	30·0	2·8	0·3	0·3	19	— : 19 : —	10·0	Undulated cirro-strati; atmosphere hazy.
1	043	33·4	30·0	3·4	0·4	0·2	22	— : 20 : —	10·0	Id.; cirrous mass; atmosphere hazy.
2	030	33·1	30·0	3·1	0·8	0·5	21	— : 20 : —	10·0	Id.; id.; id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The iotions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Feb. 10^d 14^h. The vane of the anemometer frozen up with the opening towards SW.; the indications have been too small during the ight; the vane was released at 14^h 15^m.

Gött. Mean Time.		Baro-meter at 32°.	Thermometers.			Wind.			Clouds, Sc.: C.-s: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1^{h}.	Maximum force in 10^{m}.	From			
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
12	3	30·028	32·4	30·8	1·6	0·8	0·6	18		10·0	Nearly homogeneous cirrous mass; snow since 2^{h}.
	4	30·004	31·9	30·0	1·9	0·7	0·5	18		10·0	Undulated cirro-strati and cirrous mass.
	5	29·988	32·0	30·2	1·8	0·7	0·6	19		10·0	Nearly homogeneous cirrous mass.
	6	976	32·1	30·4	1·7	0·6	0·3	20		10·0	Homogeneous clouds; snow^{1}.
	7	972	31·3	30·4	0·9	0·4	0·2	19		10·0	Id.; snow^{2}.
	8	946	32·4	31·6	0·8	0·5	0·8	18		10·0	Snow$^{0·5}$; vivid flash of lightning at 8^{h} 10^{m}. ☽
	9	909	32·7	31·6	1·1	1·1	0·6	18		10·0	Id.
	10	879	33·7	32·5	1·2	3·7	3·0	17		10·0	Id.
	11	873	33·8	32·4	1·4	2·9	1·4	18		10·0	Scud.
	12	855	33·4	32·0	1·4	1·7	1·2	18		10·0	Id.; snow^{1}.
	13	29·828	33·7	32·3	1·4	2·3	2·3	17		10·0	Scud; snow$^{0·5}$.
	14	785	35·5	33·0	2·5	2·2	2·2	18		10·0	Id.
	15	756	37·8	36·4	1·4	3·8	3·2	20		10·0	Id.; rain^{2}.
	16	713	38·8	37·0	1·8	4·6	6·2	21		10·0	Id.
	17	685	38·0	36·5	1·5	5·0	3·8	20		10·0	Id.; rain^{2}.
	18	652	38·2	36·5	1·7	5·0	3·6	20		10·0	Id.; rain^{1}.
	19	623	38·7	36·7	2·0	4·0	3·8	20		10·0	Id.
	20	590	38·9	36·9	2·0	3·9	2·4	20	20 : — : —	10·0	Loose scud; dense cirro-strati.
	21	567	39·9	37·8	2·1	6·1	3·4	19	19 : 23 : —	10·0	Thin, loose scud; loose cirro-strati; cirro-strati.
	22	536	40·4	38·7	1·7	4·6	3·1	20	20 : 24 : —	10·0	Id.; id.
	23	506	40·7	39·4	1·3	3·3	2·5	19	20 : — : —	10·0	Id.; id.; drops of rain.
13	0	493	40·2	38·9	1·3	2·7	1·7	18	20 : — : —	10·0	Id.; id.; id.
	1	458	42·4	41·0	1·4	2·2	0·8	19		10·0	Id.; id.
	2	426	44·0	42·1	1·9	1·8	1·7	18	20 : 23 : —	9·0	Id.; id.; blue cir.-str. to E. ⊖
	3	388	43·7	42·0	1·7	2·9	1·9	20	21 : 23 : —	10·0	Id.; id.; drops of rain.
	4	374	43·8	42·7	1·1	1·8	1·0	18		10·0	Scud, rather thicker; cirro-strati; drizzle$^{0·2}$.
	5	372	45·0	43·2	1·8	1·6	0·7	21	24 : 22 : 22	6·5	Id.; cirro-cumulous scud; many varieties of cirri.
	6	377	44·5	40·8	3·7	3·3	0·1	20	24 : 24 : —	8·0	Id.; id.; cirri; sky red. ☽
	7	377	43·7	40·3	3·4	1·2	3·5	25	25 : — : —	2·0	Id.; id. ☽
	8	407	42·7	40·0	2·7	3·1	1·5	23		9·5	Id.; shower since last.
	9	415	41·7	38·8	2·9	0·9	0·6	20		9·0	Scud and cirro-strati.
	10	406	40·0	37·4	2·6	1·3	0·8	20		4·0	Cir.-cum. scud; loose cir.-str.; bands of thin cirri. ☽
	11	395	39·4	36·4	3·0	1·0	1·2	20	24 : — : —	1·8	Patches of scud; bands of cirri; bluish corona. ☽
	12	399	37·5	34·7	2·8	1·1	0·6	20		0·0	Faint lunar corona. ☽
	13	29·404	37·1	34·4	2·7	0·6	0·6	21		0·0	Very clear; 12^{h} 5^{m}, meteor from zenith to NW. ☽
	14	393	36·3	33·6	2·7	0·6	0·5	20		0·2	Scud to W. ☽
	15	402	36·3	34·1	2·2	1·0	0·5	21		0·0	Clear; stars twinkling very hard.
	16	414	34·8	32·8	2·0	0·6	0·1	20		0·5	Cirro-strati to E.
	17	407	35·2	32·8	2·4	0·5	0·7	20		0·0	Clear.
	18	398	34·4	32·2	2·2	0·8	0·7	22		0·1	Streak of cirro-stratus to E.; sky getting milky to E.
	19	399	34·4	32·2	2·2	1·0	0·6	24		0·1	Scud on Cheviot and on horizon.
	20	402	34·8	32·2	2·6	0·5	0·4	22	30 : — : —	8·0	Id.; cirro-strati; hoar-frost on the ground.
	21	415	35·5	33·0	2·5	0·7	0·7	26	— : 28 : —	9·8	Cirro-strati and loose hanging cir. clouds; scud to SE.
	22	430	35·6	33·0	2·6	0·7	0·7	26	— : 30 : —	9·0	Loose cirro-cumuli; cirro-strati; scud on Cheviot.
	23	456	37·7	34·4	3·3	1·1	0·4	26	— : 31 : —	9·0	As before.
14	0	481	37·3	35·0	2·3	1·1	0·5	30	28 : — : 30	9·0	Scud; wo. cir. and cir. haze; cir.-str.; cum. on E. hor.
	1	491	38·2	35·2	3·0	0·6	0·5	29	31 : 30 : —	9·0	Scud and loose cumuli; cirri; cirro-strati; haze. ⊙
	2	520	37·9	35·0	2·9	0·7	0·3	31	31 : — : —	10·0	Id.; cir.-str.; slight snow-shower.
	3	535	37·1	34·5	2·6	0·4	0·2	31	31 : — : —	9·5	Id.; id. [NE. ⊙
	4	549	38·3	35·2	3·1	0·2	0·3	30	30 : — : —	9·5	Id.; id.; loose scud; cumuli to
	5	560	36·7	34·2	2·5	0·5	0·2	28	30 : — : —	9·8	Id.; id.; loose cum. on E. hor.
	6	587	35·3	32·9	2·4	0·1	0·0	31	30 : — : —	10·0	Id.; snow-shower around.
	7	612	33·5	32·5	1·0	0·4	0·1	30	— : 30 : —	4·0	Watery cirro-cumuli; cirro-strati; fine lunar cor. ☽
	8	633	32·5	31·5	1·0	0·2	0·1	26	— : 30 : —	2·0	Id.; id. ☽
	9	662	34·2	31·7	2·5	0·3	0·6	30		10·0	Id., much denser.
	10	683	33·8	31·7	2·1	0·8	0·4	29		1·8	Id. ☽

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Feb. 12^{d} 21^{h}. Clouds bluish to E.; the scud is lower than the top of Cheviot.

Feb. 13^{d} 7^{h} 30^{m}. Large masses of loose cumuli and scud, which, when thin, produce an indistinct corona while passing over the moon. The sky is unusually clear beyond. 13^{d} 18^{h} 5^{m}. Twilight beginning to break. Sky milky to altitude 30° from E.

tt. an ae.	BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1ʰ.	Maximum force in 10ᵐ.	From			
h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
11	29·701	32·7	29·5	3·2	1·1	0·5	29	30 : — : —	2·5	Scud; cirro-strati on horizon; small lunar corona. ☽
12	718	32·4	29·1	3·3	0·8	0·4	29		3·0	Id.; id. ☽
13	29·725	31·1	28·6	2·5	0·4	0·2	28		3·5	Cirro-cumulous scud, causing a lunar corona. ☽̶
14	737	31·2	28·0	3·2	0·5	0·3	28		0·3	Clouds near horizon. ☽
15	741	30·0	27·3	2·7	0·3	0·1	23		4·0	Cirro-cumulous scud; cirro-strati.
16	742	31·0	28·4	2·6	0·2	0·1	23		10·0	Overcast.
17	734	32·5	29·2	3·3	0·4	0·2	18		10·0	Id.
18	734	33·6	33·3	3·3	0·2	0·4	24		10·0	Id.
19	741	34·7	31·6	3·1	0·5	0·4	24		10·0	Scud.
20	737	35·0	32·3	2·7	0·6	0·2	22	— : 31 : —	10·0	Cirro-cumulous scud; red to E.
21	747	36·0	32·4	3·6	0·4	0·3	25	— : 30 : —	10·0	Id.; cirro-strati.
22	737	37·1	34·0	3·1	0·4	0·3	23	— : 30 : —	10·0	Cirro-stratous scud; id.
23	735	38·5	35·4	3·1	0·6	0·3	22	— : 30 : —	9·9	Id.; id.; sky greenish to N.
0	734	39·6	36·5	3·1	0·7	0·5	23	— : 31 : —	9·8	Id.; woolly cirro-cumuli; cirro-strati.
1	730	40·8	37·4	3·4	0·9	0·4	20	— : 31 : —	9·8	Cirro-cumulous scud; id.; id.
2	717	41·6	38·2	3·4	1·2	0·6	26	— : 31 : —	9·8	Id.; id.; id.
3	713	41·3	38·0	3·3	0·5	0·3	26	— : 31 : —	10·0	Id.; id.; id.
4	696	40·7	37·6	3·1	0·5	0·4	25	— : 31 : —	10·0	Cirro-strati; cirrous mass.
5	687	40·6	37·5	3·1	0·6	0·4	25	— : 31 : —	10·0	Cirro-stratous scud; undulated cirro-strati.
6	688	40·1	37·3	2·8	0·5	0·3	24		10·0	Dense cirro-strati.
7	687	40·0	37·0	3·0	0·5	0·2	25		10·0	Id.
8	691	40·6	37·3	3·3	0·4	0·3	25		9·9	Id., breaking to N.
9	687	40·3	37·4	2·9	0·4	0·2	27		10·0	Id.
10	686	39·9	37·2	2·7	0·5	0·7	27		10·0	Id., becoming looser.
11	680	40·0	37·4	2·6	0·7	0·3	30		10·0	Id.
12	697	39·4	37·0	2·4	0·4	0·2	2		10·0	Id.
0	29·708	38·9	37·3	1·6	0·2	0·0			......	Sunday—Cloudy, with gleams of ⊙; cirro-stratous scud; woolly cirro-cumuli. P.M. Wind WNW.?
13	29·651	38·4	36·7	1·7	0·5	0·4	16		10·0	Dense scud.
14	650	38·0	36·4	1·6	0·4	0·2	17		10·0	Id.
15	645	37·7	36·0	1·7	0·2	0·2	17		10·0	Id.
16	636	37·5	35·9	1·6	0·3	0·1	17		10·0	Id.
17	635	37·7	36·0	1·7	0·3	0·1	17		10·0	Id.
18	638	37·1	36·5	1·6	0·2	0·3	17		10·0	Id.
19	636	36·7	35·1	1·6	0·3	0·2	18		10·0	Id.
20	636	36·4	34·8	1·6	0·4	0·5	18	22 : — : —	10·0	Id.
21	646	37·0	35·4	1·6	0·4	0·2	18	23 : — : —	10·0	Id.; hazy.
22	655	38·8	36·8	2·0	0·3	0·3	23		9·8	Id.; id. to N. ⊖
23	662	39·7	37·8	1·9	0·5	0·3	17	22 : — : —	8·5	Id.; cirro-strati; cirro-cumuli.
0	668	41·3	39·2	2·1	0·6	0·3	17	22 : — : —	9·5	Scud and cirro-strati.
1	671	42·2	39·8	2·4	0·6	0·2	17	— : 20 : —	9·9	Cirro-stratous scud; cirro-strati; cumuli on NE. hor.
2	668	43·6	40·7	2·9	0·3	0·4	18	— : 22 : —	10·0	Id.; id.
3	663	42·7	39·7	3·0	0·3	0·5	20	— : 22 : —	10·0	Id.; id.
4	671	42·3	39·3	3·0	0·7	0·6	18	— : 20 : —	10·0	Id.; id.; very hazy. [blue.
5	670	42·0	38·7	3·3	0·3	0·3	20	— : 20 : —	10·0	Id.; id.; id.; clouds orange and
6	681	40·7	38·0	2·7	0·4	0·3	18	— : 20 : —	10·0	Id.; hazy atmosphere.
7	680	39·6	37·4	2·2	0·2	0·2	18	— : 20 : —	10·0	Id. ☽̶
8	691	39·5	37·4	2·1	0·1	0·1	18	— : 20 : —	9·9	Id. ☽̶
9	700	37·3	35·9	1·4	0·1	0·0	18	— : 20 : —	9·8	Watery cirro-cumuli. ☽̶
10	708	35·4	34·5	0·9	0·0	0·0	17	— : 20 : —	9·8	Id. ☽̶
11	717	34·4	33·7	0·7	0·0	0·0	18	— : 21 : —	9·8	Id.; hazy; coloured lunar corona. ☽̶
12	726	32·3	31·8	0·5	0·0	0·0	18		3·0	Id.; id.; id. ☽̶
13	29·736	29·3	29·2	0·1	0·0	0·0	16		0·2	Thin cirri; haze. ☽
14	739	30·7	30·5	0·2	0·0	0·0	20		0·4	Id.; id.; lunar corona. ☽
15	746	29·2	29·3	...	0·0	0·0			3·0	Loose cirro-cumuli. ☽̶
16	743	30·9	30·8	0·1	0·0	0·0			9·9	Cirro-cumulous scud.

, The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The notion of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Gött. Mean Time.		Barometer at 32°.	Thermometers.			Wind.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
17	17	29·751	31·9	31·8	0·1	0·0	0·0	22		10·0	Dark.
	18	754	32·7	32·3	0·4	0·0	0·0	22		10·0	Id.
	19	763	34·4	33·6	0·8	0·0	0·0	26	21 : — : —	10·0	Scud ?
	20	775	34·7	33·7	1·0	0·0	0·0	24	— : 21 : —	10·0	Loose cirro-cumulous scud ; cirri ; atmosphere hazy.
	21	779	32·8	32·2	0·6	0·1	0·2	19	— : 22 : —	6·0	Id. ; bank to S. ; id. to E.
	22	795	36·2	34·8	1·4	0·2	0·0	24		10·0	Cirro-stratous scud ; cirrous mass ; hazy.
	23	806	36·9	35·2	1·7	0·2	0·2	22		10·0	Id. ; id. ; id.
18	0	820	37·8	36·0	1·8	0·2	0·2	24		10·0	Cirro-strati ; cirrous mass ; hazy.
	1	813	40·8	38·4	2·4	0·1	0·0	24	— : 24 : —	9·9	Cirro-stratous scud ; cirro-strati ; haze on horizon.
	2	813	40·7	37·8	2·9	0·0	0·2	28	22 : — : —	7·0	Loose cumuli ; cirro-stratous scud ; streaks of cirri.
	3	812	41·5	37·8	3·7	0·1	0·0	26	22 : — : —	9·5	Id. ; id. ; id.
	4	812	43·9	40·0	3·9	0·1	0·1	22	22 : — : —	9·0	Id. ; id. ; haze.
	5	812	40·6	37·2	3·4	0·1	0·0	23	22 : — : —	7·0	Id. ; id. ; id. ⊙
	6	817	38·3	35·8	2·5	0·2	0·1	25		3·0	Id. ; id. ; streaks of cirri.
	7	825	33·8	32·7	1·1	0·3	0·0	16		0·2	Streaks of cirri ; haze on horizon. ☽
	8	844	29·0	28·6	0·4	0·0	0·0			0·1	Id. ; id. ☽
	9	857	27·6	27·9	···	0·0	0·0	20	— : — : 18	0·2	Id. ; id. ☽
	10	863	26·2	26·9	···	0·0	0·0	16		2·0	Thin cirri over the sky ; haze. ☽
	11	882	29·7	29·6	···	0·0	0·0	20	— : 18 : —	9·5	Large cirro-cumuli. ☽
	12	878	29·9	29·5	0·4	0·0	0·0	20	— : 18 : —	9·5	Id. ☽
	13	29·882	28·0	28·0	···	0·2	0·1	20		0·2	Clouds and haze on E. horizon. ☽
	14	887	25·8	26·0	···	0·2	0·0	17		0·2	Id. ☽
	15	893	24·6	25·0	···	0·0	0·0			0·5	Id. ☽
	16	891	25·8	25·8	···	0·0	0·0	16		0·5	Id. ☽
	17	898	26·0	26·0	···	0·1	0·0	20		0·5	Id. ☽
	18	907	25·2	25·1	···	0·0	0·0			0·5	Id.
	19	910	24·9	24·7	0·2	0·0	0·0	22		0·2	Haze on horizon ; very thick to E.
	20	910	24·8	24·6	0·2	0·0	0·0	24		0·5	Very hazy round horizon ; a patch of cloud to E.
	21	926	25·6	25·3	0·3	0·1	0·1	20		0·5	Haze brown to E., bluish to W ; loose cirri to SW.
	22	923	28·0	27·6	0·4	0·2	0·1	24	18 : — : —	8·0	Loose misty scud ; general haze. ●
	23	927	29·3	28·9	0·4	0·1	0·1	25		0·5 ?	Hazy ; very thick on horizon ; no clouds visible. ⊙
19	0	927	31·6	30·8	0·8	0·0	0·0	26		0·0	As before. ⊙
	1	918	33·5	32·1	1·4	0·2	0·0			0·0	Id. ⊙
	2	907	36·3	35·0	1·3	0·2	0·0	12		0·0	Id. ⊙
	3	891	37·2	35·4	1·8	0·0	0·0	6		1·5	Cirro-strati and cirri in haze near horizon. ⊙
	4	884	37·7	36·0	1·7	0·0	0·0		— : 19 : —	5·0	Cirro-cumulous scud ; very hazy. ⊖
	5	885	36·6	35·0	1·6	0·2	0·2	16		3·0	Loose cirro-strati ; id. ⊖
	6	888	33·2	32·3	0·9	0·2	0·2	16		7·0	Cirro-strati ; id. ☽
	7	892	35·0	33·5	1·5	0·2	0·1	21	— : 21 : —	10·0	Cirro-cumulous scud ; id.
	8	885	35·0	33·5	1·5	0·2	0·1	24	— : 21 : —	10·0	Id. ; id. ☽
	9	888	34·9	33·4	1·5	0·2	0·2	18	— : 21 : —	10·0	Id. ; id.
	10	889	34·3	33·3	1·0	0·2	0·2	18	— : 21 : —	10·0	Id.
	11	887	34·6	33·3	1·3	0·1	0·0			10·0	Scud ? id.
	12	886	34·8	33·5	1·3	0·0	0·0	20		10·0	Id.
	13	29·882	34·5	33·2	1·3	0·0	0·0	18		10·0	Scud ?
	14	868	34·0	33·0	1·0	0·0	0·0	18		10·0	Id., cirrous clouds above. ☽
	15	860	34·0	32·6	1·4	0·4	0·1	20		10·0	Id.
	16	851	33·9	32·6	1·3	0·3	0·1	18		10·0	Id.
	17	838	33·9	32·6	1·3	0·2	0·1	16		10·0	Homogeneous.
	18	820	32·2	31·9	0·3	0·5	0·2	17		7·0	Cirrous clouds and haze. ☽
	19	818	32·0	32·0	···	0·7	0·1	18	— : 28 : —	9·0	Cir.-cum.-str. ; cir.-str. ; hazy to E. ; fiery red to SE.
	20	821	33·0	32·0	1·0	0·3	0·3	18	— : 28 : —	9·0	Id. ; id. ; id.
	21	824	34·0	32·3	1·7	0·1	0·3	20	— : 26 : —	9·5	Id. ; id. ; id.
	22	818	35·7	34·0	1·7	0·3	0·3	17	— : 26 : —	9·8	Id. ; id. ; id.
	23	801	36·4	34·1	2·3	0·5	0·9	21		2·0	Id. ; id. ; id. ⊙
20	0	799	39·4	36·2	3·2	0·7	1·0	18	24 : 30 : —	2·2	Cirro-cum. scud ; loose cirro-str. ; cirri ; cir. haze. ⊙

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motious of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Feb. 19d 5h. There has been a very dense haze in the atmosphere throughout the day ; objects being invisible at a distance of three miles.

tt. an ne.	BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
1	29·783	41·3	37·0	4·3	0·9	1·0	18	24 : — : —	3·0	Scud; loose cirro-strati; cirrous haze. ⊙
2	768	44·5	40·0	4·5	1·3	1·4	18	24 : 28 : —	9·2	Id.; cirro-cumulo-strati; cirro-strati. ⊖
3	761	43·3	39·7	3·6	1·0	0·5	18	— : 28 : —	9·8	Id.; id. ●
4	754	42·8	39·7	3·1	0·9	0·9	18	24 : 28 : —	9·8	Id.; id.
5	754	41·5	38·7	2·8	0·7	0·3	18	24 : — : —	9·9	Id.; id.
6	748	40·7	38·3	2·4	0·3	0·1	16		10·0	Thick scud; reddish cirro-strati to NE. and NW.
7	746	40·2	38·0	2·2	0·1	0·0	18		9·9	Id.; cirro-strati.
8	741	37·8	36·0	1·8	0·7	0·4	21	28 : 28 : —	2·5	Masses of scud and cirro-strati. ☽
9	733	37·1	35·7	1·4	0·4	0·1	20		7·5	Scud; loose cirro-cumuli. ☽̶
10	723	37·2	35·7	1·5	0·4	0·4	20		9·8	Id.; id.; drops of rain.
11	719	36·0	34·9	1·1	0·4	0·2	20	28 : — : —	6·5	Id.; id. ☽̶
12	710	36·0	35·0	1·0	0·3	0·3	18	— : 28 : —	9·9	Cirro-cumulo-strati.
13	29·703	37·3	36·1	1·2	0·4	0·3	20		10·0	Cirro-cumulo-strati.
14	692	37·8	36·4	1·4	0·5	0·3	16	28 : 28 : —	8·5	Scud; cirro-cumulo-strati; cirri. ⊖
15	684	37·0	35·8	1·2	0·2	0·1	18		10·0	Id.; id.
16	662	37·0	36·0	1·0	0·3	0·3	20	28 : — : —	9·9	Id.; id.
17	660	37·3	36·0	1·3	0·4	0·2	20	26 : — : —	9·9	Id.; id.
18	642	35·8	34·8	1·0	0·2	0·2	18		7·0	Loose cirro-cumulo-strati; cirro-strati.
19	624	35·4	34·4	1·0	0·5	0·5	20		3·0	Scud; loose cirro-strati.
20	621	34·4	33·7	0·7	0·5	0·2	20	25 : — : 30	3·0	Id.; cirro-strati; patches of linear cirri.
21	625	36·1	35·0	1·1	0·4	0·3	20	22 : 26 : —	9·5	Loose scud on hor.; cir. scud; cirro-strati; cirri; shower
22	622	37·6	36·2	1·4	0·5	0·1	20	25 : 26 : —	9·9	Scud; cirro-stratous scud; cirro-strati. [to NE. ⊖
23	615	39·3	37·4	1·9	0·4	0·4	21	24 : 26 : —	10·0	Id.; id.; id.; drops of rain.
0	600	40·6	38·6	2·0	0·5	0·4	18	25 : — : —	10·0	Id.; id.; id.; id.
1	581	41·1	39·2	1·9	0·5	0·3	20		10·0	Id.; id.; id.; id.
2	563	40·2	39·0	1·2	0·6	0·4	18	26 : — : —	10·0	Thick scud; cirro-strati; occasional rain $^{0·2}$.
3	544	39·7	38·6	1·1	0·4	0·3	19	25 : — : —	9·8	Scud; loose cumuli; cirro-strati; cirri.
4	525	41·5	39·7	1·8	0·4	0·1	19	25 : — : —	9·9	Id.; id.; id.; id.
5	508	41·8	39·3	2·5	0·4	0·1	20	24 : — : —	9·8	Id.; id.; id.
6	502	40·2	38·0	2·2	0·4	0·1	20	24 : — : —	9·5	Id.; id.; id., tinged red.
7	498	38·4	36·8	1·6	0·2	0·2	19	24 : — : —	7·0	Id.; id.; id.
8	492	33·0	32·3	0·7	0·2	0·1	20		2·0	Clouds to E. ☽
9	475	30·9	30·4	0·5	0·1	0·0		19 : — : —	1·5	Loose scud; cirro-strati; woolly cirri to E. ☽
10	452	32·3	31·9	0·4	0·4	0·0	18	— : 23 : —	7·0	Fine sheets of cirro-cumuli. ☽̶
11	438	31·0	30·6	0·4	0·0	0·0	28		0·3	Streaks of thin cirro-strati; very slight haze. ☽
12	415	28·0	28·0	···	0·1	0·0	28		0·3	Patches of loose cirro-strati; id. ☽
13	29·401	27·0	27·4	···	0·0	0·0	22		0·4	Patches of loose cirro-strati. ☽
14	391	28·7	28·7	···	0·0	0·0		— : 18 : —	1·0	At $13^h 40^m$ sky clouded = 9; cir.-cum.-str.; corona.
15	364	27·8	28·2	···	0·1	0·0			3·0	Woolly cirri.
16	329	27·7	28·3	···	0·1	0·0			10·0	Dense fog.
17	313	30·0	30·0	···	0·0	0·0	15		10·0	Id.; objects invisible at 200 yards.
18	298	30·0	30·0	···	0·0	0·0	8		10·0	Id.; id.
19	288	28·9	29·0	···	0·0	0·0	6		10·0	Id.; id. 150.
20	279	27·7	28·0	···	0·0	0·0		— : 20 : —	9·5	Loose cirro-cumuli; fog as at last hour.
21	276	28·9	29·0	···	0·0	0·0	16	— : 21 : —	9·5	Id.; cirri; fog at a distance.
22	272	32·6	31·8	0·8	0·1	0·0	10	— : 22 : —	9·8	Cirro-cumulo-strati; id.
23	269	33·5	30·0	3·5	0·5	0·3	17	— : 22 : —	7·5	Id.; cirro-strati; cirri; fog on hor. ⊖
0	270	34·0	30·0	4·0	0·6	0·5	14	— : 20 : —	4·0	Loose cirro-cumuli; cirri; cirrous haze; no fog. ⊖
1	268	32·7	29·2	3·5	0·5	0·4	10	— : 14 : 23	9·0	Woolly cirro-cumuli; woolly cirri; cirro-strati; fog.
2	255	37·2	32·5	4·7	0·4	0·3	14	— : 26 : —	9·8	Id.; cirro-strati; cirrous haze. ⊖
3	253	37·0	32·8	4·2	0·3	0·4	12		10·0	Nearly homogeneous cir.-str. and cir. haze; faint halo. ⊖
4	250	36·7	32·6	4·1	0·5	0·2	11	16 : — : —	10·0	Patch of scud; dense cirro-strati and haze.
5	252	35·0	31·3	3·7	0·4	0·2	10	— : 24 : —	10·0	Cirro-strati; haze; woolly cirri.
6	251	33·7	30·7	3·0	0·2	0·2	12		10·0	Id.; id.; cirrous mass.
7	262	33·0	30·2	2·8	0·2	0·2	14		10·0	Id.; id.
8	262	32·4	30·4	2·0	0·4	0·1	16		10·0	Dense cirrous mass.

, The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Gött. Mean Time.	BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1^h.	10^m.	From			
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
22 9	29·263	32·5	31·0	1·5	0·2	0·2	15		10·0	Dark ; 9^h 15^m, particles of snow.
10	261	32·0	30·2	1·8	0·2	0·0	6		10·0	Cirro-strati, more broken than at 9^h.
11	264	32·6	30·5	2·1	0·0	0·0	16		10·0	Id.
12	261	32·0	30·3	1·7	0·1	0·0	16	— : 20 : —	10·0	Id.
23¼	29·218	32·1	28·5	3·6	0·2	0·0		— : — : 29	......	Sunday—A.M., clear ; a few woolly cirri. P.M.—Overcast with cirro-stratous scud ; air very dry all day.
23 13	29·266	33·6	32·5	1·1	0·5	0·0	22		10·0	Thick scud and cirro-strati.
14	271	33·4	32·5	0·9	0·0	0·0	20		10·0	Id.
15	276	33·8	32·6	1·2	0·0	0·0	22		9·9	Cirro-stratous scud.
16	278	34·0	32·5	1·5	0·0	0·0	16		10·0	Id. ; drops of rain or snow.
17	277	34·7	32·6	2·1	0·3	0·3	22		10·0	Id.
18	301	36·0	33·0	3·0	0·4	0·2	25		10·0	Id.
19	326	36·8	33·8	3·0	0·5	0·3	28	— : 28 : —	10·0	Id. [white to E.
20	365	36·3	33·8	2·5	0·5	0·2	28	29 : — : —	10·0	Loose scud ; cirro-stratous scud, orange-coloured ; ground
21	389	35·4	33·4	2·0	0·2	0·4	29	29 : 30 : —	8·5	Id. ; cirro-cumulo-strati ; cirro-strati.
22	429	37·2	33·2	4·0	0·6	0·6	29	— : 0 : —	2·0	Cirro-stratous scud ; cum. and cum.-strati on horizon. ⊙
23	458	39·2	33·9	5·3	1·5	1·2	29	0 : — : —	2·0	Loose cumuli ; id. ⊙
24 0	513	34·4	32·8	1·6	2·2	0·8	6	4 : 0 : 31	5·0	Loose scud ; loose cumuli ; cirro-stratous scud ; hail showers around.
1	564	34·8	32·6	2·2	1·0	0·8	6	4 : 2 : —	9·8	Id. ; id. ; id. ; id.
2	605	34·4	31·9	2·5	1·3	0·6	6	6 : — : —	10·0	Id. ; particles of hail and snow ; id.
3	645	34·4	32·0	2·4	0·8	0·4	8	8 : 4 : —	9·2	Id. ; cirro-stratous scud ; cumuli to E.
4	665	33·5	30·3	3·2	0·4	0·1	14		0·8	Id. ; id. on horizon. ⊙
5	689	33·1	29·4	3·7	0·2	0·0	5		0·8	Id. ; id. id. ⊙
6	713	32·2	28·8	3·4	0·1	0·1	4		0·5	Loose cumuli to E. ; slight cirrous haze on horizon.
7	740	27·7	26·6	1·1	0·0	0·0	28		0·4	Patches of cirro-stratous scud to N. ; cir. haze to SW.
8	764	24·7	25·0	...	0·0	0·0	12		0·0	Very clear ; very faint aurora.
9	781	24·4	24·7	...	0·0	0·0	18		0·0	Id. ; auroral arch 8° altitude.
10	804	25·2	25·3	...	0·1	0·0	20		0·1	Streak of cloud to NE. ☽
11	823	23·4	23·8	...	0·0	0·0	24		0·0	☽
12	834	23·7	23·3	0·4	0·1	0·0			0·0	☽
13	29·859	23·4	22·9	0·5	0·1	0·1	14		0·2	Linear cirri to S. ; auroral light to N. ☽
14	873	21·3	21·3	...	0·1	0·0	20		0·1	Id. ☽
15	878	21·3	21·3	...	0·1	0·1			0·1	Id. ☽
16	876	20·3	20·3	...	0·1	0·1	20		0·2	Cirro-strati ; cirri to S. ☽
17	881	19·2	19·2	...	0·1	0·1	22		0·2	Id. ; id. to SW. ☽
18	878	19·2	19·2	...	0·2	0·2	21		0·8	Cirro-strati and cirri to SW.
19	874	18·1	18·1	...	0·0	0·0	18		0·3	Thin cir. and cir. haze near hor., cum. low on E. hor. ☽
20	889	16·9	17·0	...	0·0	0·0	20		0·5	Cirro-strati and cirri. ⊙
21	896	19·8	19·6	0·2	0·2	0·1	22		0·5	Id. to SW. ⊙
22	882	23·0	22·3	0·7	0·2	0·0	22		0·2	Clear ; a few patches and streaks of cirri. ⊙
23	876	25·7	24·5	1·2	0·0	0·0	30		0·2	Slight cirrous haze on horizon ; cirro-strati to SW. ⊙
25 0	864	29·8	28·0	1·8	0·1	0·1	6		0·2	Patches of cirri and cirro-strati to W. and SW. ; thick haze to E. ⊙
1	840	33·7	31·6	2·1	0·2	0·2	10		0·3	Id. ; id. ⊙
2	802	39·1	33·7	5·4	0·6	0·5	15	— : — : 28	0·8	Striated and vertebrated cirri ; haze on horizon. ⊙
3	763	40·8	35·3	5·5	0·6	0·5	14		1·0	Masses of cirro-strati and cirrous haze to W. ⊙
4	727	40·1	35·3	4·8	0·7	0·5	16	— : 19 : 26	7·5	Cir.-cum. scud and loose cir.-str. ; cirri ; cirrous haze ; faint halo· ⊖
5	701	38·2	34·7	3·5	0·5	0·3	14	— : 16 : 28	9·5	Loose cir.-str. ; mass of cir. lying NW by N. ; cir. haze. ●
6	666	37·0	33·8	3·2	0·5	0·6	14		10·0	Cirro-strati and cirrous mass.
7	631	36·2	33·4	2·8	0·8	0·6	16		10·0	Cirrous mass.
8	599	36·2	33·6	2·6	0·7	0·8	16		10·0	Id. ; dark.
9	549	35·9	33·9	2·0	0·9	0·2	14		10·0	Id. ; id. ; snow$^{0·2}$
10	499	36·2	34·4	1·8	1·2	0·4	15		10·0	Id. ; id. ; rain$^{0·2}$
11	440	35·8	34·6	1·2	0·9	0·8	16		10·0	Id. ; id. ; rain$^{0·5}$
12	373	36·4	35·0	1·4	0·8	0·5	15		10·0	Id. ; ? rain^{1}
13	29·319	37·0	35·8	1·2	1·2	0·4	16		10·0	Id. ; ? rain^{2}
14	283	36·7	35·9	0·8	0·5	0·5	18		10·0	Id. ; rain^{2}

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Feb. 23^d 20^h. Hexahedral particles of snow or hail, plano-convex ; snow outside, with an icy crystal within.

Feb. 24^d 8^h. Zodiacal light to W. 25^d 1^h. Many spots on the sun to-day, and for the last three days.

itt. ean ne.	BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
15	29·245	36·8	36·0	0·8	0·6	0·1	20		10·0	Clouds rather broken; rain$^{0\cdot5}$
16	225	37·7	37·1	0·6	0·2	0·1	24	24 : — : —	10·0	Scud; rain$^{0\cdot5}$
17	213	39·1	38·1	1·0	0·4	0·3	24	24 : — : —	10·0	Id.; cirrous clouds; rain at intervals.
18	215	40·4	38·4	2·0	1·2	1·0	25	24 : 26 : —	4·0	Patches of scud, very low; watery cir.-str.; corona. ☽
19	220	39·9	37·9	2·0	1·3	1·2	25		9·8	Id.; cirro-strati.
20	241	41·0	38·7	2·3	2·2	1·6	27	28 : — : —	10·0	Id.; id.; cirrous mass.
21	265	41·1	39·0	2·1	2·2	1·7	26	26 : — : —	10·0	Dense homogeneous mass; patches of scud; rain$^{0\cdot2}$
22	295	41·3	39·2	2·1	3·1	1·6	28		10·0	Id.; rain^{1}
23	312	42·5	39·8	2·7	2·2	1·8	30	29 : — : —	10·0	Scud; cirrous mass.
0	375	41·0	39·3	1·7	1·8	1·0	0	29 : — : —	10·0	Id.; id.; rain$^{0\cdot2}$
1	408	39·7	38·2	1·5	0·7	0·6	31		10·0	Id.; id.
2	443	39·4	37·6	1·8	0·9	0·6	31	0 : — : —	10·0	Loose scud; cirro-strati; cirrous mass.
3	472	39·2	37·3	1·9	0·5	0·3	31	0 : — : —	10·0	Id.; id.; id.
4	500	38·8	37·7	1·1	0·3	0·2	0	1 : — : —	10·0	Id.; id.; id.; rain$^{0\cdot2}$
5	512	39·4	38·0	1·4	0·3	0·2	1	2 : — : —	10·0	Id.; id.; id.
6	541	38·7	37·6	1·1	0·3	0·1	12	4 : 30 : —	10·0	Id.; cirro-stratous scud; cirro-strati, red to E.
7	562	37·6	36·7	0·9	0·1	0·0			10·0	Cirro-stratous scud.
8	580	37·2	36·4	0·8	0·0	0·0			10·0	Very dark.
9	595	36·8	36·3	0·5	0·0	0·0			10·0	Id.
10	610	36·6	36·2	0·4	0·0	0·0	2		10·0	Id.
11	628	36·6	36·0	0·6	0·0	0·0			10·0	Overcast with dense clouds; rain$^{0\cdot2}$
12	654	36·3	35·8	0·5	0·0	0·0	2		10·0	Id.; id.
13	29·661	34·7	34·3	0·4	0·0	0·0	20		7·0	Cirro-cumuli; cirro-strati.
14	677	33·4	33·1	0·3	0·0	0·0	30		6·5	Id.; id.
15	690	32·2	32·1	0·1	0·0	0·0	0		3·0	Id. to S.; milky to N. ☽
16	701	31·9	31·7	0·2	0·0	0·0	4	6 : — : —	8·5	Scud in detached masses; cirro-cumuli to S.
17	711	30·4	30·3	0·1	0·0	0·0	22		3·0	Cirro-cumulous scud; cirro-cumuli. ☽
18	724	32·1	32·0	0·1	0·0	0·0	24		10·0	Thick scud and cirro-strati.
19	743	32·5	32·3	0·2	0·0	0·0		2 : — : —	10·0	Id.; red opening to E.
20	756	32·7	32·5	0·2	0·1	0·0	18	3 : — : —	9·5	Loose scud; cumuli to N.
21	771	34·8	34·7	0·1	0·1	0·1	18	5 : — : —	8·0	Scud and loose cumuli; cumuli; cirro-strati; cirri.
22	781	35·8	35·0	0·8	0·2	0·1	4		0·5	Cumuli; cumulo-strati; cirro-strati; haze on hor. ⊙
23	786	37·6	36·2	1·4	0·2	0·2	4	4 : — : —	2·0	Id.; cirro-strati; haze on horizon. ⊙
0	790	41·2	39·1	2·1	0·1	0·2	11	3 : — : —	6·5	Scud and loose cumuli; cirro-strati. ⊙
1	789	41·3	36·8	4·5	0·4	0·2	2	4 : — : —	9·5	Id.; id. ⊙
2	776	41·5	37·6	3·9	0·3	0·3	5	6 : — : —	9·5	Scud; loose cumuli and cumulo-strati. ⊖
3	769	42·8	38·4	4·4	0·3	0·5	5	9 : — : —	9·0	Id.; cirro-stratous scud; cirri.* ⊖
4	770	39·3	35·4	3·9	0·4	0·2	7	— : 10 : 28	6·5	Cirro-stratous scud; linear cirri.
5	766	39·7	35·6	4·1	0·6	0·5	6	— : 9 : 28	7·0	Id.; id.; halo. ⊙
6	774	38·6	34·9	3·7	0·6	0·3	6		3·5	Scud; cir.-str.; cirri and cir. haze; cum.-str. on E. hor.
7	779	33·6	32·6	1·0	0·3	0·1	8		2·0	Id.; id; mot. cir.; cir. haze; id.
8	776	33·9	32·8	1·1	0·0	0·0	6		4·0	Scud and cirro-strati.
9	780	33·4	32·6	0·8	0·0	0·0	6		10·0	Overcast.
10	790	34·3	33·4	0·9	0·3	0·1	8		10·0	Id.; sky clouded = 6 at 9h 30m.
11	786	35·6	34·0	1·6	0·3	0·3	8		10·0	Scud and cirro-strati.
12	794	35·8	33·8	2·0	0·2	0·1	7		10·0	Id.
13	29·795	35·2	33·2	2·0	0·2	0·1	7		10·0	Scud and cirro-strati; dark.
14	790	35·0	32·6	2·4	0·2	0·0	8		10·0	Id.; id.
15	775	35·0	32·7	2·3	0·1	0·0	10		10·0	Id.; clouds breaking.
16	766	35·3	33·3	2·0	0·1	0·0	8		10·0	Id.
17	768	34·8	33·7	1·1	0·3	0·1	12		10·0	Id.; drops of rain.
18	769	35·3	33·7	1·6	0·2	0·2	12		10·0	Id.
19	764	35·1	33·4	1·7	0·4	0·5	13	12 : — : —	10·0	Dense scud.
20	773	35·3	33·2	2·1	0·6	0·5	14	12 : — : —	9·8	Scud; cirro-stratous scud.
21	791	35·7	33·1	2·6	0·8	1·0	14	13 : 14 : —	9·5	Id.; id.
22	787	36·6	34·1	2·5	1·1	0·6	14	13 : 13 : —	9·5	Loose ragged scud; cirro-stratous scud.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The notions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

* See additional Meteorological Notes after the *Hourly Meteorological Observations.*

Gött. Mean Time.	BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in		From			
					1^{h}.	10^{m}.				
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
27 23	29·789	37·7	34·7	3·0	1·2	1·2	14	13 : — : —	9·9	Scud ; loose cumuli ; cirro-stratous scud.
28 0	794	38·1	35·1	3·0	1·7	1·3	13	13 : — : —	9·5	Id. ; id. ⊙
1	786	39·4	35·3	4·1	2·3	1·3	15	14 : — : —	9·0	Id. ; id. ⊙
2	775	38·8	34·3	4·5	2·3	1·8	15	14 : 16 : —	5·0	Id. ; id. ; loose cirro-strati. ⊙
3	771	38·4	34·4	4·0	2·2	1·8	15	14 : 16 : —	6·0	Id. ; id. ; id. ; patches of cir. ⊙
4	767	36·7	33·0	3·7	2·2	2·2	15		3·0	Id. ; id. ; id. ; thin cirri. ⊙
5	770	34·3	31·0	3·3	1·8	1·4	15	— : — : 30	2·0	Woolly cir. ; masses of scud ; cir.-str. ; part of a halo. ⊙
6	779	31·3	29·0	2·3	0·7	0·6	15		5·0	Masses of scud ; cirro-strati.
7	779	30·7	28·7	2·0	1·2	0·9	14		4·0	Scud ; cirro-strati ; woolly cirri.
8	775	30·7	28·4	2·3	1·1	1·0	14		2·0	Id. ; id.
9	776	31·0	28·4	2·6	1·6	1·1	14		6·0	Chiefly thin clouds ; lightish to W.
10	776	30·4	28·0	2·4	1·4	1·1	14		3·0	Clouds to E.
11	776	29·7	27·6	2·1	1·8	1·2	15		1·0	Cirro-strati ? to E. ; sky milky ; hazy on horizon.*
12	771	28·8	26·9	1·9	1·5	1·2	15		0·8	Id. ; id. ; id.
13	29·769	28·4	26·9	1·5	1·4	1·0	15		3·0	Cirri ; cirrous haze ; sky milky ; hazy on horizon.*
14	757	28·8	27·0	1·8	1·4	0·9	15		6·0	Id. ; id. ; id. ; faint aurora ?
15	742	28·3	26·7	1·6	1·4	1·2	15		3·0	Cir.-str. ; cir. ; cir. haze ; id. ; id.
16	736	29·0	27·3	1·7	1·4	0·9	15		9·5	Id. ; cirrous haze.
17	727	29·6	27·8	1·8	1·2	1·0	15		10·0	Id. ; id.
18	728	29·8	27·9	1·9	1·3	0·6	16		10·0	Id. ; id. ; much thicker.
19	730	29·8	27·8	2·0	0·9	0·5	16		10·0	Scud and cirro-strati ; reddish to E.
20	732	30·0	28·0	2·0	1·1	0·4	16		10·0	Cirro-strati ; cirrous mass.
21	731	30·7	29·0	1·7	0·4	0·2	16		10·0	Dense cirro-strati ; fine mealy snow$^{0\cdot5}$
22	726	32·6	31·0	1·6	0·2	0·2	15		10·0	Id. ; id.
23	721	34·0	32·0	2·0	0·3	0·2	14		10·0	Id. ; flakes of snow.
1 0	715	35·0	32·6	2·4	0·2	0·1	20	18 : — : —	10·0	Scud ? dense cir.-strati ; id.
1	700	35·3	32·8	2·5	0·3	0·3	16		10·0	Id. ; id.
2	688	35·7	33·8	1·9	0·3	0·3	20	18 : — : —	10·0	Id. ; id. ; snow$^{0\cdot2}$
3	678	35·3	33·8	1·5	0·3	0·2	20		10·0	Id. ; id. ; snow^{1}
4	667	34·8	34·0	0·8	0·3	0·2	17		10·0	Id. ; id. ; snow$^{0\cdot5}$
5	664	34·2	33·4	0·8	0·2	0·1	20		10·0	Id. ; id. ; snow^{2}
6	665	33·7	33·0	0·7	0·2	0·1	19		10·0	Homogeneous mass of cirro-strati ? snow^{2}
7	663	33·3	32·7	0·6	0·1	0·0	19		10·0	As before ; snow$^{0\cdot5}$
8	656	33·3	32·6	0·7	0·2	0·1	19		10·0	Id. ; snow$^{0\cdot2}$
9	653	33·3	32·6	0·7	0·1	0·0	19		10·0	Id. ; snow$^{0\cdot2}$
10	650	33·3	32·6	0·7	0·0	0·0	19		10·0	Id. ; snow$^{0\cdot2}$
11	644	33·4	32·7	0·7	0·2	0·0	21		10·0	Id.
12	639	33·3	32·6	0·7	0·0	0·0	20		10·0	Id. ; sky clouded = 9·8 at 11^{h} 30^{m}.
23¼	29·691	40·7	37·5	3·2	0·8	0·5	28	— : 30 : —	……	Sunday. A.M. Generally clear ; loose woolly cirro-str. ; P.M. Overcast with dense cirro-strati.
2 13	29·487	41·2	40·0	1·2	0·5	0·2	20		7·0	Scud ; stars dim ; sky milky to N.
14	467	40·8	39·8	1·0	0·2	0·1	22		8·0	Id. ; id.
15	457	38·9	38·2	0·7	0·1	0·0	27		9·9	Id.
16	460	40·7	39·0	1·7	0·7	0·6	31		10·0	Id. ; dark.
17	482	37·0	36·2	0·8	1·2	0·3	31		9·5	Id. ; rain$^{0\cdot2}$
18	485	38·6	37·9	0·7	0·8	0·6	30		10·0	Id.
19	505	38·2	37·9	0·3	1·1	0·4	2	3 : — : —	10·0	Misty scud ; rain$^{0\cdot5}$
20	541	36·9	36·4	0·5	0·6	0·5	3	4 : — : —	10·0	Id. ; rain$^{0\cdot2}$; clouds yellow to E.
21	589	36·9	35·9	1·0	0·5	0·2	4	10 : — : —	10·0	Scud.
22	626	36·6	35·4	1·2	0·6	0·3	9	10 : — : —	10·0	Id.
23	646	36·1	35·0	1·1	0·5	0·1	10	10 : — : —	10·0	Id.
3 0	676	35·8	34·8	1·0	0·2	0·1	12	11 : — : —	10·0	Id.
1	685	37·3	35·7	1·6	0·2	0·1	10	10 : — : —	10·0	Id.
2	693	37·6	35·0	2·6	0·2	0·1	8	9 : — : —	10·0	Id. ; moving very slowly.
3	705	36·6	34·2	2·4	0·3	0·2	12	10 : — : —	10·0	Id. ; dense mass of cirro-strati.
4	720	36·3	34·0	2·3	0·4	0·2	12	10 : — : —	10·0	Id. ; id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Feb. 28^{d} 9^{h}. The water in the wet bulb cistern is not freezing.

Feb. 28^{d} 12^{h}. The water seems to be freezing at the bottom but not at the top of the wet bulb cistern.

* See additional Meteorological Notes after the *Hourly Meteorological Observations*.

	BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1^{h}.	10^{m}	From			
	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
5	29·729	35·5	33·3	2·2	0·1	0·1	16		10·0	Scud; dense mass of cir.-str.; a few fine particles of snow.
6	756	34·3	32·0	2·3	0·2	0·1	14		10·0	Id.; id.; snow$^{0\cdot2}$
7	764	33·5	31·8	1·7	0·2	0·1	16		10·0	Id.; id.; id.
8	772	33·2	31·5	1·7	0·2	0·1	18		10·0	Id.; id.
9	791	32·8	31·3	1·5	0·2	0·1	18		10·0	Id.; id.; dark.
0	791	32·5	31·0	1·5	0·1	0·1			10·0	Id.; id.; id.
1	791	31·6	30·3	1·3	0·1	0·1	14		7·0	Cirro-strati; cirri; cirrous haze; sky milky.
2	795	31·6	30·3	1·3	0·2	0·0	20		10·0	Id.?
3	29·795	31·7	30·5	1·2	0·1	0·1	18		10·0	Cirro-strati?
4	793	31·1	30·3	0·8	0·1	0·0	18		10·0	Id.?
5	779	30·8	30·2	0·6	0·1	0·0	24		10·0	Id.; cirri; cirrous haze; stars seen.
6	775	30·7	30·2	0·5	0·0	0·0	14		10·0	Id.; id.; id.
7	769	30·9	30·2	0·7	0·1	0·0	20		10·0	Id.; id.; id.
8	769	31·7	30·1	1·6	0·1	0·1	16		10·0	Id.; broken to E.
9	773	31·5	30·2	1·3	0·1	0·1	14		10·0	Id.; id.; flakes of snow.
0	775	32·0	30·4	1·6	0·1	0·1	12		9·9	Id.; dense cirrous mass; sky to S.; haze to N.
1	771	34·7	32·0	2·7	0·1	0·1	14		9·9	Cirro-strati and dense cirrous haze. ⊖
2	780	35·2	32·2	3·0	0·4	0·3	14		9·9	Patches of scud; cirro-strati and dense cirrous haze. ●
3	784	34·6	32·3	2·3	0·2	0·1	28	20 : — : —	10·0	Loose scud; cir.-str.; cir. mass; haze; flakes of snow. ●
0	788	33·8	32·4	1·4	0·2	0·2	28		10·0	Cirro-strati; dense cirri; haze; snow^{1}
1	789	34·7	33·1	1·6	0·1	0·1	23	— : 12 : —	10·0	Id.; id.; id.; snow$^{0\cdot5}$
2	786	34·5	32·7	1·8	0·1	0·1	28		10·0	Id.; id.
3	778	34·0	32·3	1·7	0·2	0·0	4		10·0	Id.; id.; snow^{1}
4	771	34·4	32·4	2·0	0·1	0·1	18	12 : — : —	9·8	Scud; cumuli; cumulo-strati; cirro-strati; snow$^{0\cdot5}$
5	779	33·5	31·8	1·7	0·2	0·1	8	10 : 4 : —	9·8	Id.; cirro-stratous scud; cumulo-strati to E.
6	793	32·0	30·0	2·0	0·4	0·3	7	— : 6 : —	7·5	Cirro-cumulous scud.
7	795	30·7	28·4	2·3	0·3	0·1	6		1·5	Id., radiating from NNW.
8	806	29·7	28·3	1·4	0·2	0·2	7		0·5	Cirro-stratous scud on E. horizon.
9	813	27·3	26·4	0·9	0·0	0·0	5		0·8	id.; zodiacal light visible.
0	821	25·5	25·9	...	0·0	0·0			5·0	Cirro-cumulous scud.
1	819	27·3	27·2	0·1	0·0	0·0			9·0	Loose scud; cirro-strati; flakes of snow.
2	826	29·9	29·3	0·6	0·0	0·0	2		9·8	Id.; id.
3	29·829	29·7	29·1	0·6	0·0	0·0			10·0	Snow$^{0\cdot5}$
4	829	29·1	28·9	0·2	0·0	0·0	2		10·0	Id.
5	830	26·5	26·5	...	0·0	0·0	0		6·5	Stars dim.
6	833	22·8	23·0	...	0·0	0·0	26		4·0	Clouds near horizon.
7	839	23·0	23·0	...	0·0	0·0	16		9·8	Snow$^{0\cdot5}$
8	857	24·9	24·7	0·2	0·0	0·0	30		10·0	Snow^{1}
9	884	26·3	26·1	0·2	0·0	0·0			10·0	Snow^{3}
0	901	27·7	27·4	0·3	0·0	0·0	6		10·0	Cirro-cumuli; snow$^{0\cdot5}$
1	917	28·2	27·8	0·4	0·0	0·1	4	4 : — : —	9·5	Scud and cirro-cumuli. ⊖
2	934	30·3	29·8	0·5	0·0	0·1	6	4 : — : —	3·0	Scud; cumuli; cirro-strati on horizon; snow$^{0\cdot5}$
3	952	30·0	28·4	1·6	0·2	0·2	5	— : 6 : —	4·0	Cirro-cumulous scud; snow$^{0\cdot2}$ ⊖
0	969	31·8	30·2	1·6	0·2	0·2	7	— : 7 : —	9·0	Id.; cirrous haze. ⊖
1	979	32·4	29·3	3·1	0·9	0·2	8	— : 7 : —	9·0	Scud; cirro-cumuli; fine cumuli to SW. and NE.
2	980	33·2	30·7	2·5	0·5	0·4	6	6 : — : —	7·0	Id. and loose cumuli; id. on horizon. ●
3	985	32·7	29·4	3·3	1·0	0·6	10	4 : — : —	4·5	Loose cumuli and nimbi; snowing around. ⊙
4	29·995	33·4	29·7	3·7	0·5	0·5	9	6 : — : —	4·0	Scud; cumuli and nimbi; flakes of snow. ⊙
5	30·008	32·9	29·3	3·6	0·6	0·4	7		3·5	Id.; id.; snowing around. ⊙
6	017	30·8	26·8	4·0	0·4	0·4	5	4 : — : —	2·5	Id.; id.
7	033	27·1	25·3	1·8	0·4	0·1	8		0·5	Cumulo-strati and haze on horizon.
8	054	26·4	24·6	1·8	0·1	0·0	4		0·5	Clouds near horizon.
9	066	24·0	23·3	0·7	0·0	0·0	0		2·0	Thin clouds.
0	078	27·6	25·9	1·7	0·0	0·0	2		10·0	Snow$^{0\cdot5}$
1	091	27·6	26·7	0·9	0·1	0·1	8		9·9	Snow^{2}
2	097	23·7	23·7	...	0·1	0·0	12		2·0	Clouds to E.

he direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The ion of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

March 4^{d} 3^{h}. The snow has melted on reaching the ground, throughout the day.

arch 4^{d} 6^{h}. Observation made at 6^{h} 20^{m}.

Gött. Mean Time.	BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1^{h}.	Maximum force in 10^{m}.	From			
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
5 13	30·109	25·0	24·9	...	0·0	0·0			10·0	Snow^{2}
14	117	22·5	22·1	0·4	0·0	0·0	28		3·0	Scud.
15	118	27·0	26·6	0·4	0·1	0·1	0		10·0	Flakes of snow.
16	121	26·9	26·7	0·2	0·1	0·1	8		9·5	Stars dim.
17	130	27·2	26·8	0·4	0·1	0·0	2		10·0	Scud ; snow$^{0\cdot2}$
18	143	26·2	25·9	0·3	0·1	0·0			10·0	Id. ;
19	144	26·8	26·5	0·3	0·1	0·0	24		10·0	Dense mass of cirro-strati ; snow$^{0\cdot2}$
20	151	27·8	27·5	0·3	0·0	0·0	16	— : 4 : —	10·0	Cirro-stratous scud ; cirro-strati ; flakes of snow.
21	170	30·2	29·4	0·8	0·1	0·0	16	— : 4 : —	10·0	Id. ; snow$^{0\cdot2}$
22	177	32·0	31·0	1·0	0·1	0·0	8		10·0	Id. ; id.
23	179	35·1	32·3	2·8	0·1	0·0	4		10·0	Id.
6 0	188	34·4	32·3	2·1	0·2	0·2	4		10·0	Id. ; snow$^{0\cdot5}$
1	186	36·2	33·3	2·9	0·5	0·4	2	— : 6 : —	10·0	Id.
2	183	35·3	32·3	3·0	1·0	0·8	0	— : 7 : —	9·9	Id.
3	182	35·1	32·0	3·1	1·1	1·1	1		10·0	Id.
4	183	34·0	31·6	2·4	1·2	0·4	0	— : 6 : —	10·0	Id.
5	181	33·6	30·3	3·3	0·5	0·5	31	— : 6 : —	10·0	Id.
6	186	33·2	30·8	2·4	0·7	0·3	31	— : 6 : —	10·0	Id.
7	187	33·2	30·4	2·8	0·3	0·2	0		9·9	Id. ; sky to SW.
8	193	34·0	30·7	3·3	0·6	0·6	31		8·5	Clouds broken ; stars dim.
9	189	33·5	31·0	2·5	0·8	0·9	30		10·0	Scud.
10	187	34·0	30·6	3·4	1·6	1·0	31		10·0	Id.
11	194	34·3	31·1	3·2	1·2	1·0	31		10·0	Id.
12	196	34·1	31·4	2·7	1·1	0·6	31		7·5	Cirro-stratous scud ; ? sky on zenith.
13	30·189	34·7	32·2	2·5	1·5	0·7	31		10·0	Id. ?
14	187	35·5	32·9	2·6	1·4	0·9	0		10·0	Id. ?
15	190	35·6	33·8	1·8	1·1	0·8	0		9·8	Id. ; ? drops of rain.
16	189	35·2	34·0	1·2	0·7	0·8	0		7·5	Id. ?
17	183	36·4	34·6	1·8	0·6	0·6	1		9·5	Id. ?
18	189	35·7	34·4	1·3	0·8	0·3	1		9·5	Cirro-cumulo-strati ; day-break.
19	187	36·6	35·2	1·4	0·4	0·2	2	4 : — : —	9·9	Scud and cirro-cumulo-strati ; loose cumuli.
20	192	36·9	35·5	1·4	0·5	0·5	2	4 : — : —	9·9	Id. ; id. ; haze.
21	206	35·7	35·0	0·7	0·4	0·1	4	3 : — : —	10·0	Scud ; dense cirro-stratous scud and cirro-strati.
22	203	38·2	36·7	1·5	0·3	0·4	2	4 : — : —	9·9	Id. ; cirro-stratous scud.
23	215	36·3	35·0	1·3	1·7	0·6	2	4 : — : —	10·0	Id. ; id. ; rain$^{0\cdot2}$
7 0	217	40·3	37·8	2·5	1·3	0·2	2	— : 5 : —	9·9	Cirro-cumulo-strati ; cirro-strati.
1	215	41·3	38·3	3·0	0·4	0·5	4	4 : — : —	9·9	Scud. ; cirro-strati.
2	200	40·3	37·3	3·0	0·7	0·4	4	4 : — : —	10·0	Id. ; id. ; a few hail-stones.
3	192	40·3	37·8	2·5	0·4	0·2	1	4 : — : —	10·0	Id. ; id. [cirro-strati.
4	183	39·8	37·2	2·6	0·7	0·5	2	4 : — : —	10·0	Low detached masses of scud ; ragged cumuli on N. hor. ;
5	177	39·2	37·2	2·0	0·5	0·3	0	4 : — : —	10·0	Smoky scud ; cirro-stratous scud.
6	165	38·6	36·7	1·9	0·5	0·4	1	4 : — : —	10·0	Scud ; id.
7	163	37·5	35·8	1·7	0·5	0·4	0	4 : — : —	10·0	Id. ; id.
8	161	37·3	35·7	1·6	0·5	0·4	2		10·0	Id. ; id.
9	163	37·3	35·7	1·6	0·5	0·0	2		10·0	Id. ; id.
10	161	36·9	35·6	1·3	0·1	0·1	1		10·0	Id. ; id.
11	156	37·0	35·8	1·2	0·2	0·1	0		9·8	Id. ; id.
12	149	37·4	36·0	1·4	0·2	0·0	1		9·8	Id. ; dark.
13	30·140	36·9	35·9	1·0	0·1	0·0	0		10·0	Id. ; id.
14	137	37·4	35·9	1·5	0·1	0·1	31		10·0	Id. ; id.
15	131	37·7	36·4	1·3	0·1	0·1	5		10·0	Id. ; id.
16	118	38·1	36·7	1·4	0·9	0·7	7		10·0	Id. ; id.
17	117	38·6	37·1	1·5	0·7	0·5	7		10·0	Id. ; id.
18	115	39·1	37·6	1·5	0·6	0·6	0		10·0	Id.
19	117	39·4	37·9	1·5	0·6	0·4	2	4 : — : —	10·0	Id.
20	121	40·0	38·4	1·6	0·6	0·5	3	4 : 6 : —	10·0	Loose scud ; cirro-cumulo-strati ?

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

March 6d 20h. White smoky scud rising, as if from a fire, on N. horizon. Shower of hail since 19h.

ött. ean me.	BARO- METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc.: C.-s,: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	10m.	From			
h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
21	30·131	40·0	38·6	1·4	0·6	0·6	2	4 : — : —	10·0	Loose scud ; cirro-cumulo-strati ? cirro-strati.
22	144	41·0	39·0	2·0	0·8	0·6	2	4 : — : —	9·9	Id. ; id. ; id.
23	153	42·3	40·0	2·3	0·9	0·5	3	4 : 5 : —	9·9	Id. ; id. ; cumuli to N.
0	165	41·6	39·8	1·8	0·8	0·9	2	4 : 5 : —	9·9	Id. ; cirro-cumuli ; woolly cirro-cumuli.
1	168	43·3	40·2	3·1	1·0	0·8	2	4 : 5 : —	9·9	Id. ; id. ; id.
2	167	44·0	40·7	3·3	1·2	1·0	3	4 : 6 : —	9·5	Scud ; cumuli ; cirro-cumulo-strati.
3	162	43·7	40·8	2·9	1·2	1·2	3	4 : — : —	9·0	Id. ; woolly cirro-cumuli. ⊖
4	162	44·8	41·0	3·8	1·5	0·5	2	2 : 4 : 6	9·9	Id. ; cir.-str. scud ; cir.-str. ; $4^h\ 8^m$, hail-shower.
5	165	42·3	40·3	2·0	1·2	1·7	4	3 : 5 : —	10·0	Id. ; id. ; showers of rain since 4^h.
6	172	40·6	39·2	1·4	1·5	1·2	3	3 : — : —	10·0	Dense scud ; rain$^{1-2}$
7	173	40·3	39·3	1·0	0·9	0·8	2		10·0	Id. ; id.
8	190	40·4	39·6	0·8	1·1	0·7	2		10·0	Id. ; rain$^{0\cdot2}$
9	196	40·6	39·7	0·9	0·7	0·6	3		10·0	Id. ; rain occasionally.
10	210	40·8	39·7	1·1	0·8	0·5	3		10·0	Very dark.
11	222	40·2	39·2	1·0	0·6	0·4	3		10·0	Id.
12	234	40·2	39·2	1·0	0·5	0·4	3		10·0	Id.
23½	30·244	42·3	39·6	2·7	0·6	0·1	0	— : 4 : —	……	Sunday—Overcast ; cirro-cumulo-strati ; scud.
13	30·156	40·6	38·3	2·3	0·9	0·6	0		10·0	Scud.
14	147	39·4	37·7	1·7	0·6	0·1	0		9·5	Id., &c. ; slight shower lately.
15	131	38·8	37·3	1·5	0·3	0·1	0		9·8	Id. ; cirro-cumulo-strati ? sky milky.
16	123	39·7	37·6	2·1	0·4	0·1	0		10·0	Id. ; id. ; aurora seen to N.
17	112	39·9	37·6	2·3	0·4	0·4	0		10·0	Id. ; id. ; drops of rain.
18	101	38·9	37·4	1·5	0·7	0·6	29		10·0	Id. ; id. ; $18^h\ 10^m$, shower$^{0\cdot5}$
19	083	38·9	37·5	1·4	0·5	0·6	30	2 : — : —	10·0	Loose scud and cirro-stratous scud.
20	089	39·2	38·0	1·2	0·4	0·2	20 v.	4 : — : —	9·9	Id.
21	082	41·0	39·6	1·4	0·4	0·3	29		10·0	Dense mass of cirro-strati ; nearly homogeneous.
22	077	40·4	39·7	0·7	0·3	0·2	29		10·0	Id. ; foggy ; $21^h\ 50^m$, Scotch mist.
23	060	43·7	41·7	2·0	0·3	0·4	30	— : 1 : —	10·0	Id.
0	046	45·2	42·2	3·0	0·7	0·7	1	— : 1 : —	9·9	Cirro-stratous scud ; cirrous mass.
1	036	46·0	42·5	3·5	0·8	0·7	31	2 : — : —	10·0	Scud ; cirrous mass.
2	018	45·8	42·2	3·6	0·7	0·4	0	2 : — : —	10·0	Id. ; cirro-stratous scud.
3	30·001	46·3	42·4	3·9	0·4	0·3	30	0 : — : —	10·0	Id. ; id.
4	29·972	46·5	42·1	4·4	0·4	0·3	30	— : 30 : —	9·9	Id. ; id. ; cumuli on E. horizon.
5	948	46·1	41·5	4·6	0·5	0·2	30	— : 29 : —	9·7	Cirro-stratous scud ; loose cumuli and scud.
6	937	44·7	40·8	3·9	0·4	0·2	29	30 : 31 : —	9·5	Scud ; cirro-stratous scud ; clouds coloured.
7	928	43·5	40·6	2·9	0·2	0·2	29	30 : — : —	10·0	Heavy electric-looking masses of scud.*
8	958	37·5	36·4	1·1	2·5	1·7	2		10·0	Scud ; rain$^{0\cdot5}$
9	966	36·8	34·9	1·9	3·0	1·0	1		9·8	Id. ; sky to NNE.
10	960	36·4	33·5	2·9	2·5	3·0	1		10·0	Id. ; shower of fine-grained snow^{1}
11	953	35·2	32·1	3·1	3·7	2·7	0		6·0	Id.
12	961	33·0	30·0	3·0	2·2	0·5	0		2·5	Id.
13	29·957	33·2	29·8	3·4	2·9	1·7	0		9·8	Scud ; shower of snow$^{0\cdot2}$
14	941	32·2	28·9	3·3	1·8	1·7	0		1·0	Id.
15	928	31·0	28·1	2·9	1·8	1·3	31		1·0	Id.
16	900	30·7	27·7	3·0	1·4	1·9	31		0·8	Id.
17	890	30·7	27·3	3·4	2·3	0·8	29		1·0	Id.
18	881	29·4	27·0	2·4	1·4	0·5	29		0·7	Id.
19	873	30·6	26·9	3·7	1·0	1·1	29	1 : — : —	6·0	Thin scud.
20	859	31·2	29·5	1·7	2·1	1·6	29	— : 1 : —	5·0	Cir.-cum. scud ; snow showers at intervals ; snowing around.
21	871	32·8	31·6	1·2	1·2	1·5	29	— : 1 : —	8·5	Id. ; snow^{2}
22	853	33·8	31·4	2·4	1·4	1·3	31	1 : — : —	1·5	Thin scud ; cumuli and cirro-strati on horizon. ⊙
23	873	35·7	32·4	3·3	3·0	2·5	31	31 : 0 : —	9·0	Id. ; cir.-cum.-str. ; cir.-str. ; cum. to S. ; nimbi.
0	869	34·3	31·3	3·0	2·5	1·6	31	0 : — : —	1·0	Scud ; loose cumuli ; haze on horizon. ⊙
1	858	35·8	32·3	3·5	2·3	2·3	30	0 : — : —	2·5	Id. ; id. ; cumuli and cirro-strati. ⊙
2	831	37·1	32·4	4·7	3·6	2·3	31	31 : — : —	2·5	Id. ; id. ; id.

March $8^d\ 0^h$. Observation made at $0^h\ 5^m$.

March $10^d\ 19^h$. The ice removed from about the vane of the anemometer ; some of the last indications of the anemometer are too small, s the vane was fixed, with the opening towards N by E.

* See additional Meteorological Notes after the *Hourly Meteorological Observations.*

Gött. Mean Time.		BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt pt.	0—10.	
11	3	29·826	36·0	32·0	4·0	3·7	2·7	31	0 : — : —	5·0	Scud; cirro-strati; nimbi. ⊙
	4	804	36·1	31·6	4·5	3·8	3·8	31	0 : — : —	1·2	Id.; loose cumuli; id. ⊙
	5	803	35·4	31·5	3·9	3·7	2·2	0		1·5	Id.; id.; id. ⊙
	6	802	33·3	30·1	3·2	2·4	1·1	30		1·5	Cumulo-strati; nimbi and cirro-strati on horizon. ⊙
	7	797	32·5	29·6	2·9	1·4	0·8	30	0 : — : —	3·0	Scud; cumulo-strati; nimbi; cirro-strati. ☽
	8	793	32·0	29·5	2·5	1·8	0·9	31		1·0	Cumulo-strati, &c., on horizon. ☽
	9	788	31·6	29·0	2·6	1·5	1·1	29		0·5	Clouds on horizon. ☽
	10	789	31·0	28·7	2·3	1·4	1·0	31		0·2	Id. ☽
	11	789	31·0	28·8	2·2	1·2	1·1	31		0·2	Id.
	12	781	30·4	28·4	2·0	1·2	1·2	31		0·2	Id.
	13	29·777	30·3	28·2	2·1	0·8	0·7	30		2·0	Clouds on horizon, principally to E.
	14	770	30·2	28·1	2·1	0·9	0·6	30		4·0	Id., id.
	15	762	29·9	29·2	0·7	0·6	0·4	30		10·0	Scud; snow^{1}
	16	752	29·9	28·7	1·2	0·5	0·5	0		10·0	Id.; snow^{2}
	17	753	27·5	27·0	0·5	0·6	0·2	30		2·0	Clouds to E.
	18	747	25·2	24·7	0·5	0·3	0·2	29		2·0	Id.
	19	752	26·4	25·8	0·6	0·5	0·1	31		10·0	Snow$^{2-3}$
	20	753	28·1	27·6	0·5	0·0	0·0	22	3 : — : —	9·7	Scud; loose woolly cir.-cum.; snow-showers since last obs.
	21	754	29·1	28·2	0·9	0·1	0·1	22	4 : 2 : 0	9·5	Id.; loose cum.; woolly cir.-cum.; snow at intervals.
	22	745	30·5	28·7	1·8	0·1	0·3	30	— : 0 : —	3·0	Woolly cir.-cum.; cum.-str. on E. and N. horizon. ⊖
	23	736	32·8	28·9	3·9	0·5	0·5	0		2·0	Cumuli and cum.-str. to E. and N.; cir.-str.; patches of cirri. ⊙
12	0	725	33·3	27·8	5·5	1·0	1·1	1		2·0	Loose cum. to E. and N.; nimbi to NW. patches of cir. ⊙
	1	718	34·5	29·5	5·0	1·5	0·7	2		4·0	Cumuli and scud, both white. ⊙
	2	707	33·7	29·2	4·5	1·7	1·3	2	2 : — : —	3·5	Id. [snow. ⊙
	3	700	33·7	28·9	4·8	1·6	0·7	3	4 : — : —	3·5	Id.; thick watery cloud to E., falling in
	4	698	34·0	29·2	4·8	0·8	0·4	3	3 : — : —	6·0	Scud and cum.; sheets of watery cloud. ⊙
	5	698	31·7	29·0	2·7	1·3	0·6	3		3·0	Loose cumuli and cumulo-strati.
	6	695	31·0	27·2	3·8	0·7	0·3	5	3 : — : —	4·0	Id.; cumulo-strati; cirro-strati.
	7	701	27·5	26·4	1·1	0·6	0·1	4		0·2	Cumulo-strati; cirro-strati and haze on horizon. ☽
	8	706	24·7	24·5	0·2	0·2	0·0	6		0·1	Clouds and haze on horizon. ☽
	9	702	21·2	21·3	...	0·1	0·0			0·1	Id. on E. horizon. ☽
	10	702	19·8	19·8	...	0·0	0·0			0·1	Id. ☽
	11	694	23·2	22·8	0·4	0·0	0·0			2·5	Cirrous clouds to E. ☽
	12	685	21·7	21·2	0·5	0·1	0·1	18		0·8	Cirro-strati to E.
	13	29·678	20·4	19·8	0·6	0·1	0·1	23		0·8	Cirro-strati to E.; very clear.
	14	674	18·8	18·7	...	0·1	0·0	20		5·0	Id.; clouding over very quickly.
	15	655	21·3	20·7	0·6	0·1	0·2	20		6·5	Cirro-strati?
	16	647	23·0	22·2	0·8	0·2	0·2	20		7·0	Cirrous clouds; snow$^{0\cdot5}$
	17	646	23·5	22·7	0·8	0·2	0·1	19		9·8	Id.; id.
	18	652	24·2	23·1	1·1	0·2	0·2	18		9·8	Id.
	19	664	24·4	23·2	1·2	0·3	0·3	16	— : 20 : —	9·5	Id.
	20	678	23·6	22·5	1·1	0·3	0·2	14	— : 12 : —	5·0	Cirro-cumuli and cirro-stratous scud; cirro-strati. ⊙
	21	689	24·8	23·4	1·4	0·1	0·1	17		0·5	Cirro-cumulo-strati to SE. ⊙
	22	680	25·4	23·7	1·7	0·3	0·2	17		0·1	Id. and haze on E. horizon. ⊙
	23	690	27·3	25·3	2·0	0·2	0·1	17		0·2	Patches of scud and haze. ⊙
13	0	677	29·2	25·7	3·5	0·2	0·2	19		0·2	Id. ⊙
	1	656	30·6	26·7	3·9	0·4	0·3			0·5	Patches of scud and cirro-strati. ⊙
	2	634	32·9	27·9	5·0	0·4	0·2	19		0·5	Patches of cirri to N. ⊙
	3	605	34·2	28·7	5·5	0·5	0·2	26	27 : — : —	2·0	Id. ⊙
	4	583	34·9	29·2	5·7	0·5	0·5	28	27 : — : —	1·0	Patches of cumuli; cirro-strati. ⊙
	5	556	34·8	28·9	5·9	0·5	0·4	24		1·0	Cumuli and cirro-strati on horizon. ⊙
	6	538	33·5	28·9	4·6	0·5	0·3	22	— : 30 : —	3·0	Loose cirro-strati and cirro-cumuli; cum.-str. to NE. ⊙
	7	526	30·7	27·0	3·7	0·3	0·2	20	— : 30 : —	6·0 ?	Id. and cirrous haze. ☽
	8	522	29·2	26·1	3·1	0·3	0·3	20		3·5	Cirro-strati; thin cirri; lunar corona. ☽
	9	511	28·0	25·0	3·0	0·5	0·4	20		0·8	Cirri. ☽
	10	500	27·1	24·6	2·5	0·5	0·3	20		0·0	Hazy on E. horizon? ☽

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

March 12d 19h. Ice removed from the vane of the anemometer.

tt. an ne.	BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
11	29·488	26·5	24·0	2·5	0·2	0·2	24		0·5	Sheets of thin filmy cirri, chiefly to N. ☽
12	482	26·5	24·3	2·2	0·5	0·2	24		0·3	Patches and sheets of thin cirri. ☽
13	29·488	25·6	23·9	1·7	0·2	0·1	20		2·0	Thin cirri and haze over the sky.
14	485	26·3	24·9	1·4	…	0·4	26		2·5	Thick clouds to E.; haze; stars dim.
15	480	26·7	25·2	1·5	0·8	0·7	31		2·0	Cirro-strati and cirrous clouds.
16	481	27·0	25·3	1·7	1·4	0·6	31		0·5	Cirro-strati near horizon.
17	496	26·0	24·2	1·8	0·8	0·3	30		0·2	Cirro-strati to E.
18	500	24·0	22·6	1·4	0·5	0·2	28		0·8	Cirro-strati and cumulo-strati to E.
19	500	22·8	21·6	1·2	0·4	0·3	29	— : 31 : —	0·8	Cir.-str. scud; coloured to ESE.; purplish to WNW.
20	491	25·3	23·1	2·2	0·5	0·4	28	— : 31 : —	1·0	Id. ⊙
21	479	26·4	24·2	2·2	0·5	0·5	25	— : 28 : —	2·0	Id.; cirro-strati. ⊙
22	475	28·8	25·8	3·0	0·6	0·5	24	— : 25 : —	10·0	Wavy cir.-str. and cir.-str. scud; cum. on SE. horizon.
23	484	28·9	26·4	2·5	0·4	0·3	18	— : 8 : —	10·0	Cirro-stratous scud; particles of fine hail.
0	489	31·5	28·9	2·6	0·4	0·2	12	— : 9 : —	2·5	Id.; cirro-strati; nimbi. ⊙
1	511	35·2	32·2	3·0	0·2	0·2	10	— : 10 : —	8·5	Id.; id.; loose scud; cir. mass. ⊖
2	511	30·9	28·9	2·0	0·4	0·3	4	11 : — : 6	7·0	Scud; woolly cirri; mass of cir.; cir.-str.; cum.-str. ⊙
3	518	34·3	31·0	3·3	0·4	0·5	10	11 : 9 : —	9·0	Id.; cirro-stratous scud; flakes of snow.
4	526	32·7	29·8	2·9	1·2	1·2	8	11 : — : —	9·9	Id.; cirro-cumuli; cirrous-mass; stormy-looking.
5	547	29·2	28·2	1·0	1·9	1·6	8	9 : — : —	10·0	Id.; cirrous clouds; snow ^{1}
6	579	28·3	26·7	1·6	2·2	2·0	8	9 : — : —	10·0	Id.; id.; id.
7	617	27·7	25·3	2·4	2·9	1·8	7		10·0	Nearly homogeneous.
8	638	27·2	24·6	2·6	2·0	1·2	7		9·7	Cirro-stratous scud.
9	656	26·0	23·6	2·4	2·1	0·6	5		0·1	Clear; one or two patches of cirri. ☽
10	664	25·3	22·3	3·0	1·3	0·6	4	6 : — : —	1·0	Scud. ☽
11	663	25·5	22·7	2·8	0·5	0·3	2	4 : — ; —	4·0	Scud; sky milky to N. and E. ☽
12	675	23·8	21·3	2·5	0·5	0·3	2		5·0	Cirro-cumulo-strati; bank to W. ☽
13	29·679	24·0	21·8	2·2	0·6	0·5	2		8·0	Cirro-cumulo-strati. ☽
14	685	23·8	22·8	1·0	0·6	0·3	4		9·5	Scud; shower of snow since last observation.
15	682	23·0	22·7	0·3	0·7	0·2	2		9·5	Id.
16	693	23·0	22·8	0·2	0·2	0·1	2		10·0	Id.; snow $_{5}$
17	699	19·6	19·0	0·6	0·1	0·3	6		3·5	Id.
18	715	22·0	21·8	0·2	0·3	0·2	4		10·0	Id.; snow ^{3}
19	723	23·0	22·4	0·6	0·3	0·3	6	6 : — : —	9·8	Id.; cirrous haze; snow ceasing.
20	735	21·6	21·1	0·5	0·2	0·0	30	6 : — : —	3·0	Id.; cirro-stratous scud. ⊙
21	755	18·8	18·5	0·3	0·1	0·0	0	— : — : 6	9·0	Cirrous-like scud; loose cirro-cumuli; snow ^{1}
22	758	25·0	24·3	0·7	0·6	0·1	4	7 : — : —	9·8	Scud; loose ragged cumuli; haze; snow occasionally. ⊖
23	763	25·6	24·6	1·0	0·1	0·1	3		3·0	Loose cumulo-strati around; fine blue sky. ⊙
0	769	31·6	29·8	1·8	0·6	0·4	1	6 : — : —	7·0	Scud and loose cumuli; passing showers of snow. ⊖
1	763	30·6	28·9	1·7	0·6	0·5	1		7·0	Id.
2	756	28·6	27·6	1·0	0·5	0·2	2		10·0	Shower of snow ^{4}
3	759	28·7	27·0	1·7	0·1	0·1	8	9 : — : —	3·0	Scud; cumulo-strati and nimbi. ⊙
4	764	30·7	28·3	2·4	0·1	0·4	6	10 : — : —	3·0	Thin fleecy scud, rather high; nimbi; shower of snow^{1} ⊙
5	770	25·9	24·4	1·5	0·6	0·2	7	10 : — : —	4·0	As before; shower to E. ⊙
6	789	25·3	24·7	0·6	0·2	0·3	8	10 : — : —	8·0	Id.; nimbi. ⊖
7	802	22·8	22·2	0·6	0·2	0·1	2	10 : — : —	5·0	Id.: id.; haze.
8	821	21·3	20·6	0·7	0·2	0·1	4		8·0	Scud.
9	821	21·8	20·8	1·0	0·1	0·1	6		1·5	Id. ☽
10	826	21·4	20·2	1·2	0·2	0·0			1·0	Cirro-cumulous scud. ☽
11	837	18·6	17·9	0·7	0·0	0·0		— : 6 : —	2·5	Id. ☽
12	831	17·2	17·0	0·2	0·0	0·0	10		9·5	Id. ☽
0	29·726	30·7	28·6	2·1	0·9	0·3	4		……	Sunday—Overcast; light showers of snow occasionally.
13	29·604	26·0	25·4	0·6	0·8	0·2	4		10·0	Scud; flakes of snow.
14	597	26·2	25·0	1·2	0·2	0·2	28		10·0	Id.
15	583	26·6	25·7	0·9	0·5	0·5	28		10·0	Id.; id.
16	572	26·2	25·1	1·1	0·8	0·5	29		10·0	Id.

March 13^d 15^h. The vane of the anemometer found frozen up, with the opening towards SW., ice removed; the wind commenced to blow [about 14^h 20^m.

March 13^d 22^h. Observation made at 22^h 5^m.

March 14^d. Flocks of lapwings, plovers, and herring-gulls, moving westward: particles of snow at 2^h.

March 14^d 21^h. Observation made at 21^h 6^m.

March 14^d 23^h. Snow 4 inches deep.

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
16 17	29·551	25·9	25·0	0·9	0·7	0·7	29		10·0	Scud.
18	549	25·4	24·4	1·0	0·7	0·5	28		9·9	Streak of sky on NE. horizon.
19	541	26·0	25·0	1·0	0·8	0·8	26		10·0	Dense homogeneous cirro-strati.
20	550	27·0	24·3	2·7	0·4	0·2	22		10·0	Id.
21	550	29·7	26·4	3·3	0·4	0·2	24		10·0	Cirrous mass; Cirro-strati on horizon; solar halo. ⊖
22	552	32·7	29·0	3·7	0·2	0·1	24	— : 0 : —	10·0	Dense irregular cirro-strati; bluish to N.
23	547	35·0	30·3	4·7	0·4	0·4	22		10·0	Id.
17 0	544	37·2	31·6	5·6	0·6	0·4	20		9·8	Nearly homogeneous mass of cirro-strati; sky to N.
1	543	37·1	31·7	5·4	0·3	0·3	22	— : 2 : —	9·5	Id.; id.
2	533	38·1	32·1	6·0	0·3	0·1	22	— : 0 : —	9·8	Cirro-strati, breaking in zenith.
3	523	39·1	33·0	6·1	0·2	0·1	26	— : 0 : —	9·8	Id. ⊖
4	516	37·9	32·4	5·5	0·4	0·4	27		9·9	Id.
5	517	35·4	32·1	3·3	0·4	0·2	26		9·7	Id.
6	517	36·8	32·2	4·6	0·3	0·2	24		9·9	Cirro-strati; cirrous mass.
7	520	34·2	30·4	3·8	0·1	0·2	26	— : 31 : —	9·5	Id.; id.; sky to NW. ☽
8	527	32·0	29·4	2·6	0·2	0·1	26	— : 28 : —	9·0	Cirro-stratous scud; cirro-strati. ☽
9	530	31·2	29·6	1·6	0·1	0·1	23	— : 30 : —	9·0	Cirro-cumulo-strati; lunar corona. ☽
10	533	30·8	28·2	2·6	0·1	0·1	18	— : 30 : —	10·0	Cirro-strati.
11	536	29·7	27·6	2·1	0·1	0·1	19		10·0	Id.?
12	537	30·5	28·5	2·0	0·0	0·0	20		10·0	Id.
13	29·537	29·9	28·6	1·3	0·0	0·0	18		10·0	Cirro-strati.
14	537	29·7	28·7	1·0	0·0	0·0	18		10·0	Id.
15	529	29·8	28·5	1·3	0·0	0·0	17		10·0	Mass of cirro-stratus.
16	523	29·9	28·7	1·2	0·0	0·0	18		10·0	As before.
17	516	30·4	28·7	1·7	0·0	0·0	22		10·0	Darker.
18	510	30·3	28·7	1·6	0·0	0·0	18		10·0	Nearly homogeneous mass of cirro-stratus.
19	508	29·4	28·5	0·9	0·0	0·0	20		10·0	Id.
20	514	31·2	29·7	1·5	0·1	0·0	20		10·0	Cirro-strati and cirrous mass.
21	515	33·6	31·3	2·3	0·1	0·1	18		10·0	Dense cirro-strati; rather hazy.
22	518	36·3	32·8	3·5	0·1	0·1	25		10·0	Id.
23	516	40·0	35·4	4·6	0·1	0·1	22		10·0	Id.
18 0	511	41·2	36·2	5·0	0·2	0·1	22	— : 1 : —	9·0	Cirro-cumulo-strati; cirro-strati; haze.
1	502	39·7	33·6	6·1	0·2	0·2			2·0	Id. to S. ⊙
2	493	40·2	33·0	7·2	0·3	0·2	25		0·5	Id.; cirro-strati; haze. ⊙
3	477	40·5	33·2	7·3	0·2	0·2	25		0·5	Id.; id.; id. on horizon. ⊙
4	463	41·7	34·2	7·5	0·2	0·2	23	— : 0 : —	3·0	Woolly cirro-cumuli; haze. ⊙
5	448	42·3	35·2	7·1	0·2	0·2	22	— : 30 : —	2·5	Cirro-stratous scud; woolly cirri; cirro-strati. ⊙
6	446	40·2	35·4	4·8	0·2	0·1	26	— : 31 : —	7·5	Loose cirro-cumulo-strati; very hazy atmosphere. ⊙
7	442	37·7	34·1	3·6	0·1	0·0	20	31 : — : —	9·5	Scud; cirro-stratous scud; showers to N.?
8	459	37·0	34·7	2·3	1·3	0·1	28		9·5	Id.; id.; rain$^{0·2}$; sky to NW.
9	478	35·1	33·6	1·5	0·1	0·0		— : 30 : —	4·5	Cirro-cumulous scud. ☽
10	487	31·7	30·6	1·1	0·0	0·0	30		2·0	Id.; aurora? ☽
11	495	31·2	30·0	1·2	0·0	0·0	1		2·0	Scud or cir.-str. to S.; bands of cir. to N.; faint halo. ☽
12	500	31·0	29·0	2·0	0·0	0·0	28		0·5	Linear cirri scattered over the sky; halo. ☽
13	29·500	28·5	27·6	0·9	0·0	0·0	26		0·5	Cirri to SE. ☽
14	498	29·4	28·0	1·4	0·3	0·3	28		0·3	Clouds to NW. and SE.; clear. ☽
15	497	29·6	28·4	1·2	0·4	0·1	28	— : 0 : —	4·5 v.	Cirro-cumulo-strati. ☽
16	495	30·7	28·8	1·9	0·3	0·3	28		6·5	Scud. ☽
17	505	29·6	27·9	1·7	0·4	0·3	28		0·7	Clouds on E. horizon.
18	516	27·9	26·6	1·3	0·4	0·1	28		0·3	Scud, &c., on E. horizon.
19	532	28·3	26·7	1·6	0·5	0·3	29	— : 28 : —	1·0	Thin cir.-cum.-str.; cum. and cir.-str. scud on horizon.
20	542	29·0	27·3	1·7	0·5	0·7	30	1 : 29 : —	1·0	Cirro-stratous scud; thin cirro-cumuli. ⊙
21	562	32·0	29·8	2·2	1·2	1·2	31	— : 2 : —	5·0	Thin cirro-cumuli; cirro-strati. ⊙
22	576	33·4	30·9	2·5	1·3	1·3	0	2 : — : —	9·8	Scud and cirro-cumulo-strati; flakes of snow.
23	592	34·0	31·3	2·7	1·8	1·5	2	2 : — : —	9·9	Id.
19 0	612	33·5	30·4	3·1	2·0	1·3	1	1 : 29 : —	9·2	Scud; loose cumuli; cirro-cumulo-strati.

March 17d 5h. The observation of the barometer was omitted, the reading given is a mean of the preceding and succeeding observations.
March 17d 19h. Kelso town bell (4 miles distant) heard very distinctly.

March 18d 6h. Brownish atmospheric haze, very dense and even electric-looking from NW. to E.: the sun projects a strong shadow of the clouds in the haze. 7h. Scud, forming in ragged strings below the cirro-stratous scud, and falling in showers? to N.

t. n e.	BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
1	29·619	33·2	29·0	4·2	1·8	1·7	0	0 : 26 : —	5·0	Scud ; loose cumuli ; cirro-cumulo-strati. ⊙
2	635	33·2	29·0	4·2	2·5	1·7	31	0 : — : —	6·5	Id. ; id. ; cirro-strati. ⊙
3	645	33·3	29·0	4·3	2·3	0·7	1	0 : 29 : —	9·0	Id. ; id. ; cirro-cumulo-strati.
4	653	33·4	29·1	4·3	1·3	0·9	0	30 : — : —	8·0	Id. ; id. ; id.
5	671	30·9	27·5	3·4	1·1	0·8	31	31 : — : —	5·0	Id. ; cirro-cumulo-strati.
6	682	31·7	27·6	4·1	1·2	1·1	31	31 : — : —	6·5	Id. ; id.
7	711	30·7	27·4	3·3	0·9	0·5	31		9·0	Id. ; id.
8	728	28·3	25·5	2·8	0·5	0·2	30		1·5	Id. ☽
9	744	27·9	25·4	2·5	0·3	0·1	29	30 : — : —	9·8	Id. ; cirro-cumulo-strati, causing a lun. cor. at 9h 30m.
10	753	27·6	25·3	2·3	0·7	0·6	29		2·0	Id. ; id. ; sky very clear. ☽
11	765	25·8	23·9	1·9	0·8	0·3	28		0·5	Cirro-stratous scud to E. ; auroral light. ☽
12	773	25·8	23·8	2·0	0·3	0·3	29		0·5	Id. ; id. ☽
13	29·783	25·5	23·0	2·5	0·3	0·3	29		0·5	Cirro-stratous scud to E. ; faint auroral light. ☽
14	790	24·9	22·9	2·0	0·4	0·3	25		0·5	☽
15	793	25·0	22·9	2·1	0·5	0·4	25		0·0	☽
16	808	23·6	21·7	1·9	0·3	0·2	24		0·0	☽
17	824	24·9	22·6	2·3	0·4	0·2	25		0·0	☽
18	846	25·0	22·5	2·5	0·5	0·4	25		0·1	Clouds on E. horizon.
19	865	25·0	22·5	2·5	0·9	0·5	28		0·1	Id.
20	878	26·0	23·4	2·6	0·7	0·7	29		0·1	Cirro-strati on E. horizon. ⊙
21	896	29·0	26·0	3·0	1·0	0·9	29		0·1	Id. ⊙
22	924	31·1	27·1	4·0	1·3	1·2	29		0·2	Cirro-strati to E. ⊙
23	942	32·7	28·0	4·7	1·2	0·5	29		0·3	Cirro-strati on E. horizon. ⊙
0	958	34·0	28·7	5·3	0·7	0·4	28		0·2	Id. on NE. horizon. ⊙
1	968	36·0	29·8	6·2	0·5	0·5	27		0·2	Cirro-strati and haze on E. horizon. ⊙
2	972	37·0	30·3	6·7	0·5	0·4	28		0·1	Cirri to S. ; haze or stratus on horizon. ⊙
3	971	37·2	30·8	6·4	0·4	0·3	0		0·2	Id. ; id. ⊙
4	969	37·5	31·0	6·5	0·2	0·0	4		0·1	Id. ; id. ⊙
5	29·987	37·9	32·2	5·7	0·2	0·2	7		0·0	Hazy on horizon. ⊙
6	30·004	35·2	32·2	3·0	0·2	0·2	7		0·1	Cirro-cumulo-strati to W. ; haze. ⊙
7	025	30·6	28·1	2·5	0·1	0·0			0·8	Cirri ; cirro-strati ; much haze on horizon.
8	064	29·1	26·9	2·2	0·1	0·0	16		3·0	Thin cirri and cirrous haze over the sky. ☽̵
9	076	28·0	26·6	1·4	0·0	0·0	20		1·0	Sky very hazy. ☽
10	078	28·5	27·0	1·5	0·1	0·0	20		4·0	Woolly and linear cirri and cirrous haze. ☽
11	082	26·0	24·7	1·3	0·1	0·0	21	— : 29 : —	5·0	Thin and loose cirro-cumuli ; cirri in belts.* ☽
12	084	27·6	25·9	1·7	0·2	0·2	20	— : 29 : —	9·0	Cirro-cumuli ; cirri. ☽̵
13	30·084	27·2	25·6	1·6	0·2	0·1	21		0·8	Cirro-cumuli ; cirri. ☽
14	096	25·4	24·2	1·2	0·1	0·1	22		0·0	Sky milky ; faint aurora. ☽
15	082	22·8	22·3	0·5	0·1	0·0	20		1·0	Cirri ; faint aurora. ☽
16	069	23·4	22·3	1·1	0·0	0·0	18		1·0	Bands of thin cirri to W. ; milky cirri. ☽
17	056	23·0	22·3	0·7	0·2	0·2	19		2·0	Id. ; id.*
18	064	24·1	23·3	0·8	0·1	0·1	14	— : — : 30	4·0	Woolly cirri ; cirro-strati ; red vapours to E.
19	057	28·0	26·8	1·2	0·2	0·1	16	22 : — : —	8·5	Scud ; linear and woolly cirri, tinged red. ⊖
20	060	32·0	30·7	1·3	0·1	0·2	24	22 : — : —	8·5	Id. ; id. ; parhelia seen at 20½h. ⊙
21	058	35·1	32·4	2·7	1·2	0·6	18	20 : — : —	10·0	Id. ; dense cirro-strati.
22	050	36·7	34·4	2·3	1·8	1·4	18	20 : — : —	10·0	Id. ; id.
23	045	39·2	36·3	2·9	1·7	1·3	18	20 : — : —	10·0	Id. ; id.
0	039	39·8	36·5	3·3	1·3	0·7	18	20 : — : —	10·0	Id. ; id.
1	033	40·1	36·4	3·7	1·8	1·3	20	20 : — : —	10·0	Id. ; dense homogeneous mass of cirro-strati and haze.
2	017	40·2	36·4	3·8	2·7	2·3	18	20 : — : —	10·0	Id. ; id.
3	30·005	39·7	36·4	3·3	4·0	1·5	19	20 : — : —	10·0	Id. ; id.
4	29·971	39·8	37·2	2·6	2·5	2·1	18	20 : — : —	10·0	Id. ; id.
5	973	39·0	36·7	2·3	2·3	0·8	18	20 : — : —	10·0	Id. ; id.
6	942	39·7	37·8	1·9	2·6	1·6	18	19 : — : —	10·0	Id.
7	910	40·4	38·3	2·1	2·6	2·2	18	19 : — : —	10·0	Id.
8	907	41·3	39·5	1·8	3·3	3·7	18		10·0	Id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The otion of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

* See additional Meteorological Notes after the *Hourly Meteorological Observations.*

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
21 9	29·864	42·7	40·3	1·4	5·3	4·0	18		10·0	Loose scud; woolly cirri; cirro-strati. ☽
10	847	43·4	41·2	2·2	5·3	4·6	18		10·0	Id.; id. ☽
11	810	43·6	41·4	2·2	4·7	3·9	19	20 : 22 : —	9·9	Id.; cirro-strati; cirro-cumuli; cirrous haze.
12	802	44·4	42·2	2·2	5·0	3·4	20		9·8	As before; traces of a halo at 11h.
13	29·779	45·2	43·1	2·1	4·8	4·1	19		9·9	Scud; loose cirro-strati; shower at 12h 30m.
14	797	44·6	42·7	1·9	6·2	4·6	20		10·0	Scud and cirro-strati; drops of rain.
15	822	44·1	42·9	1·2	4·2	0·6	19		10·0	Id.; rain$^{0\cdot5}$
16	798	45·7	44·4	1·3	2·6	1·5	19		10·0	Id.; id.
17	797	45·6	44·0	1·6	2·2	2·2	19		10·0	Id.
18	806	45·1	43·7	1·4	2·2	1·2	19		10·0	Id.
19	812	44·8	43·9	0·9	2·4	1·2	19	20 : 24 : —	9·8	Smoky scud; loose cirro-strati; cir.-cum.-str.; cirri.
20	847	45·5	44·3	1·2	1·0	0·4	19	20 : — : —	10·0	Homogeneous scud; streaks to E.
21	852	45·9	44·8	1·1	0·8	0·4	21		10·0	Id.
22	846	47·7	46·4	1·3	0·5	0·3	18	— : 20 : —	10·0	Cirro-stratous scud; cirro-strati; cirrous mass.
23	835	48·2	46·7	1·5	0·9	0·7	18		10·0	Nearly homogeneous mass of scud.
22 0	811	49·9	48·1	1·8	1·3	2·0	18	20 : — : —	10·0	Scud; cirro-strati; drops of rain.
1	792	51·7	49·2	2·5	2·4	1·8	18	19 : — : —	10·0	Id.; id.
2	766	53·4	50·3	3·1	2·0	2·0	20	20 : — : —	10·0	Id.; id.; drops of rain.
3	743	51·8	49·4	2·4	3·6	3·1	20	20 : — : —	10·0	Id.; id.; id.
4	715	52·0	49·2	2·8	2·8	2·5	20	20 : — : —	10·0	Smoky scud; cirro-strati; cirrous mass. ☉
5	692	50·8	48·7	2·1	4·1	2·5	21	20 : — : —	10·0	Id.; id.; id.
6	695	49·6	47·3	2·3	3·1	2·4	21	20 : — : —	10·0	Loose scud; homogeneous cirro-strati.
7	719	47·8	46·3	1·5	3·7	2·0	19	20 : — : —	10·0	Id.; id.
8	705	48·4	46·6	1·8	1·7	1·2	19		10·0	Id.; id.
9	697	49·6	47·9	1·7	1·8	1·4	18		9·0	Id.; cirri and cirro-strati.
10	692	48·9	47·6	1·3	2·1	1·4	18		9·5	Id.; id. ☽
11	711	48·7	47·4	1·3	1·3	1·0	18	21 : 20 : —	9·9	Id., very low and quickly; woolly cirri; cir.-str. ☽
12	731	49·2	47·8	1·4	0·8	1·0	17	21 : — : —	9·9	Id.; id. ☽
23 1	29·755	53·7	46·0	7·7	2·9	1·1	22	— : 24 : —	……	Sunday—A.M. Clear; with a few cumuli. P.M. Overcast with cirri and cumuli.
13	29·768	38·7	36·7	2·0	3·5	0·2	27	— : — : 25	6·0	Woolly cirri; linear cirri; aurora; halo. ☽
14	763	38·1	36·0	2·1	0·6	0·2	26	— : — : 25	3·0	Id.; cirri; cirro-strati on horizon; aurora. ☽
15	776	37·6	35·7	1·9	0·2	0·0	25	— : 26 : —	8·5	Cirro-cumulo-strati; cirro-strati; cirri; aurora? ☽
16	783	37·7	36·0	1·7	0·3	0·1	20	— : 26 : —	5·0	Id. ☽
17	795	35·3	34·0	1·3	0·1	0·0	16	— : 26 : —	8·5	Id.
18	804	36·0	34·5	1·5	0·2	0·0	16	— : 26 : —	7·0	Id. ☽
19	813	35·3	34·0	1·3	0·1	0·2	17		3·0	Scud; cirro-cumulo-strati to E.
20	833	36·7	35·0	1·7	0·1	0·2	22		0·5	Cirro-strati on E. horizon. ☉
21	847	41·9	38·4	3·5	0·3	0·1	23		0·3	Cirro-cumulo-strati to SE. ☉
22	858	43·8	39·7	4·1	0·3	0·2	23		0 2	Id. ☉
23	869	46·4	39·8	6·6	0·7	0·6	28	29 : — : —	1·5	Loose cumuli; cumulo-strati. ☉
24 0	877	46·5	40·0	6·5	0·6	0·5	29	29 : — : —	5·0	Id.; id. ☉
1	875	48·3	40·1	8·2	0·6	0·2			4·0	Id. ☉
2	874	50·0	41·7	8·3	0·6	0·4	28	28 : — : —	6·5	Scud and loose cumuli. ☉
3	852	48·2	41·2	7·0	0·5	0·5	28	26 : — : —	5·0	Cumuli. ☉
4	848	49·7	42·7	7·0	0·9	0·3	28	26 : — : —	5·5	Id.; cirro-strati. ☉
5	835	48·2	41·8	6·4	0·5	0·2	26	26 : — : —	6·5	Id.; cumulo-strati; cirro-strati. ☉
6	838	47·8	41·7	6·1	0·5	0·5	22	— : 27 : —	2·5	Loose cirro-strati; cumulo-strati. ☉
7	838	44·0	39·7	4·3	0·3	0·4	22		1·0	As before; cirri; red haze on horizon.
8	843	40·8	37·7	3·1	0·2	0·1	20	— : 24 : —	0·8	Patches of cirro-strati; hazy on horizon.
9	850	39·3	36·6	2·7	0·1	0·0	22		0·8	Id. ☽
10	843	34·4	33·0	1·4	0·0	0·0			0·5	Cirri; sky greenish near the moon. ☽
11	838	32·7	31·7	1·0	0·0	0·0			0·8	Id., radiating from SE. towards NW. ☽
12	832	31·7	31·0	0·7	0·1	0·0	18		1·0	Id., scattered over the sky, chiefly to S. and SW. ☽
13	29·820	31·9	31·3	0·6	0·0	0·0	20		2·0	As before; portion of a lunar halo. ☽
14	812	28·9	28·6	0·3	0·0	0·0	17		4·0	Id.; id. ☽

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

t. n e.	BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
15	29·796	30·3	30·0	0·3	0·0	0·0	18		4·0	Woolly cir. and cir.-str., chiefly to S.; lunar halo. ⊁
16	767	28·6	28·7	...	0·0	0·0	18		7·0	Woolly and curled cir. over the sky; part of a halo. ⊁
17	758	27·1	27·9	...	0·0	0·0	20		4·0	Id. ☽
18	744	26·9	27·1	...	0·0	0·0	20		2·5	Id.; lying NNW. to SSE.; corona. ☽
19	722	26·7	27·2	...	0·0	0·0	20	— : — : 24	4·5	Id.; lying NW. to SE.; pectinated cir.
20	714	31·0	30·6	0·4	0·0	0·0		— : — : 24	8·5	Id.; cir.-str.; part of a halo. ⊙
21	690	33·9	32·2	1·7	0·0	0·1	20	— : — : 22	9·0	Woolly and linear cirri; cirro-strati; haze. ⊙
22	669	38·6	36·6	2·0	0·2	0·0	30	— : 18 : 22	6·5	Loose cirro-strati; cirri; haze. ⊙
23	647	44·8	40·8	4·0	0·4	0·3	18	18 : 22 : —	9·0	Id.; cirro-cumulo-strati; haze.
0	627	47·7	43·2	4·5	2·5	1·7	18	18 : 21 : —	9·9	Id.; id.; id.
1	612	47·8	44·2	3·6	1·5	1·1	18	19 : — : —	10·0	Scud; cirro-strati; cirri.
2	579	48·3	45·4	2·9	2·1	1·3	20	18 : 21 : —	9·5	Id.; cirro-cumulo-strati; cirri. ●
3	565	48·5	45·2	3·3	2·0	1·3	19	19 : — : —	10·0	Id.; cumuli; cirro-strati.
4	571	46·0	45·0	1·0	1·5	0·5	20	19 : — : —	10·0	Id.; Scotch mist.
5	562	45·5	43·4	2·1	1·1	0·6	22	20 : — : —	10·0	Id.; cirrous mass.
6	560	44·2	42·9	1·3	0·6	0·4	19	20 : — : —	9·9	Id.; dense cirro-strati; patch of sky to N.
7	548	43·7	42·1	1·6	0·9	0·3	18	— : 21 : —	9·7	Cir.-str. scud; cir.-cum.-str.; red to E.; cum.-str. to N.
8	540	42·9	41·0	1·9	0·5	0·1	20		9·7	Cirro-stratous scud; cirro-strati; cirri.
9	544	41·7	39·7	2·0	0·4	0·1	20		9·8	Sky to NW.; lightish there.
10	536	41·2	40·0	1·2	0·2	0·2	21		10·0	Overcast.
11	532	41·2	40·1	1·1	0·5	0·1	22		10·0	Id.
12	523	39·9	38·9	1·0	0·3	0·3	21		9·0	Id.; stars dim; lunar halo. ⊁
13	29·512	38·3	37·7	0·6	0·4	0·1	23		9·0	Clouds broken; stars dim; lunar halo. ⊁
14	503	37·3	36·0	1·3	0·2	0·1	26	— : 24 : —	3·0	Loose cirro-strati. ☽
15	496	36·4	36·0	0·4	0·1	0·1	23		9·9	Id.
16	486	35·3	34·9	0·4	0·1	0·0	18		9·9	Id.
17	476	34·7	34·2	0·5	0·1	0·1	28	20 : — : —	10·0	Scud. ⊁
18	461	34·0	33·4	0·6	0·1	0·1	22		1·5	Cirro-cumulo-strati; cirro-strati to E.
19	458	34·9	34·1	0·8	0·6	0·4	22	24 : — : —	1·5	Scud; cirro-strati and cirrous haze to E. ⊙
20	458	35·7	35·0	0·7	0·3	0·1	23	23 : — : —	3·5	Id.; a few cirro-strati to E. ⊙
21	458	41·0	39·3	1·7	0·6	0·7	19	— : 24 : —	8·0	Cirro-stratous scud.
22	460	42·4	40·0	2·4	0·8	0·6	19	24 : — : —	5·0	Scud; loose cumuli. ⊙
23	456	45·4	40·2	5·2	1·5	1·8	21	24 : — : —	6·0	Detached cumuli. ⊙
0	455	46·0	39·6	6·4	1·8	1·3	20		1·5	Id. ⊙
1	450	47·6	41·0	6·6	2·0	2·7	21	25 : — : —	9·0	Scud and loose cumuli.
2	444	49·2	41·7	7·5	1·9	1·4	22	24 : — : —	3·5	Id. ⊙
3	433	50·3	42·0	8·3	2·3	1·7	22	24 : — : 26	3·0	Id.; thick woo. cir., spreading out from NW. ⊙
4	417	49·2	41·5	7·7	3·3	1·6	21		9·0	Id.; cirri and sheets of cirro-strati.
5	390	46·2	42·1	4·1	2·4	2·6	19	22 : — : —	9·8	Scud; thick cirrous haze; cirro-strati; halo.
6	348	45·0	41·0	4·0	3·6	2·2	18	22 : — : —	10·0	Id.; id.
7	300	43·1	40·4	2·7	3·6	1·8	18	21 : — : —	10·0	Id.; id.
8	246	43·0	41·0	2·0	2·4	3·1	19		10·0	Id.; rain$^{1\cdot5}$
9	169	42·8	41·2	1·6	4·0	4·3	18		10·0	Id.; dark; rain^{1}
10	103	44·5	42·8	1·7	5·2	4·6	19		4·0	Loose scud.
11	091	43·7	42·5	1·2	4·8	1·6	21		0·5	Cirro-stratous scud (?) on N. and SE. horizon.*
12	080	45·7	42·5	3·2	1·8	1·7	21		10·0	Scud; rain$^{0\cdot5}$
13	29·084	44·7	42·1	2·6	6·3	1·4	22	24 : — : —	5·0	Id.; cirro-stratous scud to N; aurora.?*
14	105	44·4	40·4	4·0	3·3	3·6	24	24 : — : —	1·0	Id.; sky milky; id.? ☽
15	119	43·4	40·4	3·0	2·9	2·4	24		0·8	Id. to S.; sky milky. ☽
16	135	43·2	39·6	3·6	5·2	3·6	24		0·5	Id.; id. ☽
17	159	44·0	39·7	4·3	3·7	3·5	24		0·5	Id. ☽
18	175	44·0	40·0	4·0	4·3	3·0	25	25 : — : —	0·8	Id.; streaks of cirri to E. ☽
19	210	44·4	40·0	4·4	4·2	2·6	24	24 : — : 27	2·0	Id.; woolly cirri. ⊙
20	234	45·2	40·8	4·4	3·1	2·3	24	26 : — : —	2·0	Id.; id.; haze. ⊙
21	259	46·9	41·8	5·1	4·7	3·2	25	25 : — : 28	4·0	Id.; mottled and woolly cirri. ⊖
22	293	47·8	43·0	4·8	4·6	3·9	26	25 : — : —	5·0	Id.; id. ⊙

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The
tions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

* See additional Meteorological Notes after the *Hourly Meteorological Observations*.

Gött. Mean Time.		BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc.: C.-s: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
26	23	29·341	49·2	43·4	5·8	4·1	3·1	26	26 : — : —	7·0	Scud and loose cumuli; cirri.
27	0	346	50·9	44·2	6·7	2·9	2·8	24	24 : — : —	7·5	Id.; id.; cirro-strati.
	1	366	52·9	45·4	7·5	3·1	2·0	22	24 : — : 26	7·0	Id.; woolly cirri; cirro-strati.
	2	365	52·2	46·0	6·2	1·8	1·2	20	24 : — : —	9·9	Id.
	3	351	51·7	46·2	5·5	1·8	1·5	20	24 : — : —	10·0	Id.; cirrous mass.
	4	335	49·1	45·7	3·4	1·2	0·6	20	21 : — : —	10·0	Id.; id.; drops of rain.
	5	299	48·0	46·0	2·0	0·8	0·7	22	23 : — : —	10·0	Scud; cirrous mass; solar halo.
	6	262	48·5	46·4	2·1	2·8	1·7	18	24 : — : —	10·0	Id.; mass of cirro-strati.
	7	231	48·8	47·5	1·3	2·1	1·3	19	24 : — : —	10·0	Electric-like scud; cirro-strati; showers.
	8	199	50·5	48·1	2·4	2·8	3·2	19		10·0	Scud; cirrous mass.
	9	184	49·7	47·3	2·4	3·3	2·6	20		10·0	Id.; id.; drops of rain.
	10	134	49·3	47·2	2·1	3·8	3·9	19		10·0	Id.; id.; id.
	11	078	49·0	46·7	2·3	4·3	4·2	19		9·5	Id.; id.; lightest drizzle.
	12	032	48·1	46·1	2·0	5·5	4·7	20		10·0	Id.; id.; id.
	13	29·010	47·5	46·0	1·5	4·7	2·2	19		10·0	Scud; cirrous mass; lightest drizzle.
	14	28·958	47·7	46·1	1·6	3·6	3·6	19		9·9	Id.; id.; a shower at 13^h 30^m.
	15	938	49·6	44·5	5·1	5·1	5·3	21	22 : — : —	7·0	Id.; cirro-cumulo-strati; shower^3 at 14^h 30^m.
	16	923	47·9	42·1	5·8	5·7	4·2	22		9·8	Id.; id.
	17	900	47·3	41·7	5·6	8·0	6·6	21	24 : — : —	9·7	Scud and loose cumuli.
	18	873	45·7	41·7	4·0	6·3	5·4	21	24 : — : —	8·0	Thick scud and loose cumuli; sky slightly milky.
	19	842	45·9	40·9	5·0	7·6	7·1	21	24 : 25 : —	3·0	Scud; loose cum.; sky slightly milky; showers after 19
	20	841	45·0	41·2	3·8	9·6	5·5	22	23 : 25 : —	3·0	Id.; woolly cirro-strati; sky slightly milky.
	21	839	46·2	42·0	4·2	8·0	9·1	22	24 : — : —	4·0	Id.; id.; id.
	22	855	45·7	41·7	4·0	13·3	7·2	23	24 : — : —	7·0	Id.; part of a rainbow.
	23	885	48·4	41·9	6·5	9·8	9·7	23	24 : 25 : —	8·0	Id.; loose cumuli.
28	0	920	49·0	42·7	6·3	8·8	8·8	25 v.	25 : — : —	6·0	Id.; cirrous haze to E.
	1	28·967	48·2	42·4	5·8	9·2	6·2	24	25 : — : —	7·0	Id.; cirro-strati; drops of rain.
	2	29·013	48·0	42·7	5·3	7·7	5·6	24	25 : — : —	4·5	Scud and loose cumuli; cirro-strati.
	3	074	48·4	43·2	5·2	7·2	3·2	25	26 : 28 : —	6·0	Scud; loose cumuli; cirro-strati.
	4	120	48·0	42·7	5·3	4·9	4·3	27	25 : 26 : —	4·0	Id.; id.; id.
	5	166	46·3	42·4	3·9	2·9	1·6		27 : — : —	4·0	Id.; id.; nimbi; cirro-strati to N.
	6	208	45·9	41·1	4·8	3·1	1·7	26	26 : 26 : —	2·0	Id; id.; sheets of cirro-strati.
	7	238	43·5	39·6	3·9	2·1	2·2	25		2·0	Masses of scud; cirro-strati and cirrous haze to N.
	8	273	42·8	39·0	3·8	3·7	1·8	26		1·0	Cirro-strati to N., and patches scattered about.
	9	296	41·9	38·8	3·1	2·4	1·6	26		0·8	Id.
	10	331	41·8	38·3	3·5	2·6	0·8	25		0·7	Id.; faint auroral light.
	11	353	41·2	38·2	3·0	1·6	1·6	28		1·0	Id.; id.
	12	398	41·2	38·2	3·0	2·1	2·0	26		1·5	Cirro-strati on N. and E. horizon.
	13	29·424	40·6	38·0	2·6	2·0	1·2	25		2·0	Clouds to E. and N.
	14	455	40·0	37·6	2·4	1·8	1·5	27		0·5	Id. on E. horizon.
	15	481	39·8	37·2	2·6	1·6	0·8	25		0·1	Thin clouds on E. horizon.
	16	501	40·0	37·2	2·8	1·2	0·8	25		0·1	Id.
	17	540	40·2	37·2	3·0	1·1	0·8	26		0·1	Cirro-strati on E. horizon.
	18	585	39·7	36·4	3·3	0·5	1·1	26		0·2	Bank of cirro-strati on E. horizon.
	19	625	40·5	37·3	3·2	1·1	0·7	27		0·3	Scud above Cheviot; patches of cir.-str. on E. hor.
	20	661	42·1	38·7	3·4	0·7	0·7	24		0·2	Nearly as before.
	21	699	45·1	40·7	4·4	1·3	2·1	27		0·3	Id.; thin streaks of cirri to E.
	22	731	47·5	42·5	5·0	2·2	1·2	28	30 : — : —	0·5	Patches of scud and loose cum.; streaks of cir. to E.
	23	773	48·4	40·5	7·9	3·3	3·3	28	29 : — : —	2·0	Detached cumuli.
29	0	808	50·5	42·6	7·9	3·6	2·1	30	28 : — : —	6·0	Cumuli; milky-looking near the sun.*
	1	851	49·3	40·6	8·7	2·5	1·8	30		3·0	Id.
	2	878	51·4	42·4	9·0	2·2	1·0	29	29 : — : —	3·5	Id.
	3	888	51·9	42·1	9·8	2·2	1·8	29	29 : — : —	4·0	Id.
	4	894	51·5	41·9	9·6	1·7	1·2	30	29 : — : —	2·0	Id.
	5	924	51·7	42·3	9·4	1·4	0·9	30	29 : — : —	2·5	Id.
	6	951	50·1	40·7	9·4	1·2	0·6	29		2·0	Id.; becoming slightly cirro-cumulous in some plac

March 27^d 10^h. The pressure of the wind would have been estimated at upwards of 7 lbs., in some cases; the anemometer has not shew 4 lbs.; the index is frequently tugged back 2 lbs. in strong gusts, and the gust is over before it can mark. This is evidently due to the aperture in the vane being presented obliquely to the wind, which creates a vacuum in the tube.

March 28^d 0^h. The clouds seen blown into thin vapour or rain.

* See additional Meteorological Notes after the *Hourly Meteorological Observations*.

t. n e.	BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
7	29·972	45·3	39·4	5·9	0·3	0·2	29	— : 29 : —	2·0	Cirro-stratous scud. ⊙
8	29·988	41·8	37·8	4·0	0·1	0·1	30		2·0	Id.; cumuli to N.
9	30·025	42·0	38·3	3·7	0·1	0·0			6·0	Id.
0	032	41·2	38·0	3·2	0·0	0·0			2·0	Id.
1	036	36·4	35·2	1·2	0·0	0·0	17		0·5	Streaks of cirri with aurora to N.; sky milky.
2	30·042	35·0	33·8	1·2	0·1	0·0	17		1·0	Cirri radiating from NW by N.; faint aurora; sky hazy and milky.
0¼	29·823	42·8	40·8	2·0	0·5	0·2	13	16 : — : —	10·0	Sunday—Scud and mass of cirro-strati; rain throughout the day.
4½	521	...	...	...	...	...			......	
3	29·540	40·8	38·2	2·6	4·1	3·0	28		2·5	Cirro-strati.
4	608	39·6	37·0	2·6	2·4	1·1	27		0·2	Id. on E. horizon.
5	653	39·4	36·6	2·8	1·8	0·2	27		0·1	Stars dim.
6	678	39·5	36·7	2·8	0·9	0·6	28		0·2	Cirro-strati to E. ☽
7	719	39·7	36·7	3·0	1·8	0·7	28		0·2	Id. ☽
8	762	39·0	36·5	2·5	0·9	0·5	24		0·7	Id.; scud to SE. and S.; thin cirri to E. ☽
9	810	39·4	37·4	2·0	0·4	0·2	23	— : 28 : —	0·2	Cirro-stratous scud on Cheviot. ⊙
0	854	41·4	38·6	2·8	0·6	0·3	22	— : 28 : —	0·5	Id.; thin cirri to N. ⊙
1	883	43·5	39·4	4·1	0·6	0·6	22		0·2	Cirro-strati and cirri on E. horizon. ⊙
2	919	45·5	40·5	5·0	1·1	0·4	26	28 : — : —	0·5	Scud and haze. ⊙
3	940	47·7	41·3	6·4	1·1	0·4	23	29 : — : —	0·5	Scud; cirro-strati; haze. ⊙
0	938	50·0	43·0	7·0	0·6	0·6	28		0·5	Id.; id.; id. ⊙
1	938	51·7	43·2	8·5	0·4	0·2	31	29 : — : —	0·7	Id.; cirro-strati with mottled edges; haze. ⊙
2	945	51·8	43·8	8·0	0·2	0·1	31	— : — : 25	6·0	Woolly cirri; cirro-strati; patch of scud. ⊙
3	953	54·3	45·2	9·1	0·2	0·2	18	— : 25 : 24	5·0	Wo. and mot. cir.; lin. and curl. cir.; cum.-str.* ⊙
4	957	56·4	47·0	9·4	0·4	0·3	18	— : — : 26	8·0	Id.; id. ⊙
5	962	53·6	47·4	6·2	1·0	1·3	19	18 : 25 : —	5·0	Scud; loose cumuli; cumulo-strati; cir.-str.; cirri* ⊙
6	967	50·2	45·3	4·9	1·3	0·8	18	— : 25 : —	7·0	Woolly cirri; cirro-cumuli; cirro-strati; cumuli to E.
7	972	46·6	43·3	3·3	0·9	0·2	19	— : 25 : —	7·0	Id.; id.; id.
8	975	42·6	40·4	2·2	0·5	0·2	18		5·0	Id.; cirro-strati and cirrous haze.
9	977	40·3	38·4	1·9	0·5	0·2	16		2·0	Cirro-strati and cirri.
0	978	38·4	36·6	1·8	0·7	0·1	17		0·5	Id.; stars dim.
1	982	35·2	34·0	1·2	0·2	0·1	20		1·5	Id. round horizon.
2	983	35·3	34·3	1·0	0·0	0·1	22		1·5	Id. id.
3	29·983	35·0	34·0	1·0	0·1	0·0			2·0	Cirro-strati and cirri round horizon.
4	977	33·5	33·0	0·5	0·0	0·0			3·0	Id., principally to E.
5	958	34·3	33·5	0·8	0·0	0·0			4·0	Id.; stars dim.
6	951	33·5	32·5	1·0	0·0	0·0			4·0	Id.; id.
7	943	32·8	32·2	0·6	0·0	0·0			4·5	Id. ☽
8	933	31·8	31·4	0·4	0·1	0·0	20	— : 22 : —	9·0	Cirro-cumulo-strati; cirri; cirro-strati.
9	937	34·7	33·7	1·0	0·2	0·1	22	— : 22 : —	9·8	Woolly cirri; cir.-str.; cir.-cum.; cir.-haze; parhelia.*
20	939	37·6	36·3	1·3	0·1	0·0		— : 22 : —	9·7	Woolly cirri; cir.-str.; cir.-cum.; cir. haze; thick linear cirri to E.
21	946	39·5	38·4	1·1	0·1	0·0	16	— : 22 : —	6·0	Id.; id.; id.; id. ⊖
22	943	48·0	44·0	4·0	0·6	0·6	18	— : 22 : —	4·0	Cir.-str. in sheets, woolly, mot., and lin.; patches of cir.-str. scud. ●
23	935	51·0	44·6	6·4	1·4	1·1	18	— : 22 : —	8·0	Cirro-cumuli; cirro-strati; woolly and linear cirri. ⊖
10	944	52·9	46·2	6·7	1·5	0·5	18	— : 22 : —	8·5	Cirro-cumulo-strati; cirro-strati; cirri.
1	926	53·7	45·0	8·7	1·4	1·5	18		8·5	Id.; id.; id. ⊖
2	932	54·7	45·4	9·3	1·7	0·8	20	— : 20 : —	9·0	Id.; id.; id.
3	926	53·7	45·8	7·9	1·3	0·7	20		9·0	Dense cirro-strati, becoming rather homogeneous.
4	907	54·6	47·1	7·5	1·1	1·4	18	— : 18 : —	9·7	Cirro-strati; cirro-cumulo-strati and cirri.
5	912	54·6	47·2	7·4	1·4	0·6	18	— : 20 : —	6·0	Id.; id. id.
6	911	51·9	45·2	6·7	1·3	0·6	18	— : 22 : —	4·5	Id.; id. id. ⊖
7	924	50·2	44·0	6·2	0·4	0·1	23	— : 22 : —	3·0	Id.; id.
8	929	45·0	41·4	3·6	0·2	0·0	25		2·5	Id.; id.
9	928	43·7	40·7	3·0	0·2	0·1	18		2·5	Id.
10	929	41·5	39·2	2·3	0·2	0·2	2		2·0	Id.; clouds broken.
11	935	40·8	38·8	2·0	0·2	0·0	12		7·0	Cirrous clouds.
12	936	39·6	38·3	1·3	0·0	0·0	24		7·0	Id.

March 29d 12h 25m. Barometer 30·043.
March 31d 3h—4h. Portion of a halo.
April 1d. Swallows said to have been seen at Kelso.
* See additional Meteorological Notes after the *Hourly Meteorological Observations.*

Gött. Mean Time.		BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc.:C.-s.:Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1^h.	Maximum force in 10^m.	From			
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
1	13	29·924	38·4	37·4	1·0	0·0	0·0			2·0	Cirrous clouds.
	14	918	34·4	34·0	0·4	0·0	0·0			0·0	Hazy near horizon.
	15	909	33·0	32·6	0·4	0·1	0·0	18		1·0	Cirri radiating from ESE.
	16	901	31·9	31·2	0·7	0·0	0·0	16		1·0	Id.
	17	899	29·5	29·3	0·2	0·0	0·0	18		1·5	Id.; vapours slightly coloured to E. ☽
	18	891	29·4	29·4	...	0·1	0·0	18		7·0	Id., coloured; id.* ☽
	19	897	34·2	32·5	1·7	0·1	0·0			7·5	Woolly and linear cirri. ⊙
	20	899	35·0	33·0	2·0	0·0	0·0	7		10·0	Cirrous mass; dense fog; object invisible at 150 yards.
	21	900	36·0	35·6	0·4	0·0	0·0	4		10·0	Damp fog; objects invisible at 140 yards.
	22	907	39·5	39·0	0·5	0·0	0·1	7		10·0	Id.; objects invisible at 170 yards.
	23	903	42·5	41·4	1·1	0·1	0·1	7	— : — : 24	6·0	Woolly cirri; cirro-strati; fog clearing off. ⊙
2	0	892	47·9	44·9	3·0	0·2	0·1	4		6·0	Id.; id., motion imperceptible. ⊙
	1	893	53·1	45·7	7·4	0·2	0·2	1		8·0	Id.; cirrous haze. ⊙
	2	880	56·7	49·3	7·4	0·1	0·0	15		8·0	Id.; id. ⊙
	3	864	61·0	51·0	10·0	0·7	0·6	16	— : — : 20	8·0	Id.; id. ⊙
	4	862	61·5	50·2	11·3	0·8	0·7	14	— : — : 22	7·5	Id.; id. ⊙
	5	857	60·3	49·3	11·0	0·6	0·3	13	— : — : 22	8·5	Id.; id. ⊙
	6	860	55·6	47·4	8·2	0·7	0·4	16	— : — : 24	8·0	Wool. and lin. cir., becoming thick cir.-str. to NE. ⊖
	7	862	50·2	44·3	5·9	0·8	0·5	13	— : — : 25	8·5	Id.; id.*
	8	869	45·9	41·9	4·0	0·3	0·1	8		8·0	Id.; id.; very hazy.
	9	887	41·8	40·4	1·4	0·1	0·0	6		2·0	Cirri radiating from NW.; sky milky.
	10	886	40·0	38·8	1·2	0·1	0·0	3		1·0	Id.; hazy near horizon.
	11	887	35·6	35·1	0·5	0·0	0·0	8		0·0	Clouds or haze on horizon?
	12	890	33·7	33·6	0·1	0·0	0·0			0·0	Id.
	13	29·884	31·1	31·0	0·1	0·0	0·0	16		0·0	Clouds or haze on horizon?
	14	875	29·6	29·4	0·2	0·0	0·0			0·0	Thin fog.
	15	863	28·4	28·4	...	0 0	0·0			0·0	Id.
	16	853	28·4	...	...	0·0	0·0	18		0·0?	Fog rather dense.
	17	854	28·3	28·6	...	0·0	0·0	26		0·0?	Fog; objects invisible at 300 yards.
	18	857	30·2	30·1	0·1	0·0	0·0			10·0	Id.; id. 200 yards.
	19	854	31·9	31·5	0·4	0·1	0·0	4		10·0	Id.; id. 100 yards; hoar-frost.
	20	854	31·6	31·3	0·3	0·1	0·0	4		10·0	Id.; id. 120 yards.
	21	832	33·0	32·3	0·7	0·1	0·0	8		10·0	Id.; id. 150 yards.
	22	830	34·5	34·3	0·2	0·1	0·1	23		10·0	Id. on the ground, objects invisible at 250 yards.
	23	824	38·2	37·5	0·7	0·0	0·0	24		10·0	Id.; objects invisible at 1 mile.
3	0	812	40·7	39·3	1·4	0·1	0·1	12	27 : — : —	5·0	Fog-clouds; fog at 3 miles; clearing. ⊖
	1	791	43·4	41·4	2·0	0·1	0·0	7		1·0	Very hazy on horizon. ⊙
	2	758	49·9	45·7	4·2	0·0	0·0	4		0·5	Id. ⊙
	3	742	55·3	48·3	7·0	0·1	0·1	7		0·5	Cirrous clouds and haze on horizon. ⊙
	4	720	59·2	49·5	9·7	0·1	0·0	4		0·5	Brownish hazy clouds to E. ⊙
	5	709	60·3	49·8	10·5	0·2	0·2	8		0·5	Id. ⊙
	6	703	57·4	50·1	7·3	0·5	0·5	4		2·0	Thick haze on horizon; cir.-str. and cirri among it. ⊙
	7	709	48·4	45·3	3·1	0·5	0·2	6		2·5	Cirro-strati and thick haze on horizon. ⊙
	8	720	43·5	41·9	1·6	0·2	0·1	4		2·5	As before; the sun set at 7^h 16^m, very red and large like.
	9	726	40·0	39·5	0·5	0·0	0·0	4		1·0	Very hazy; slight fog.
	10	728	35·7	35·6	0·1	0·1	0·0	12		1·0	Id.
	11	739	33·2	33·0	0·2	0·0	0·0			1·0	Id.
	12	755	34·0	33·8	0·2	0·1	0·0	4		10·0	Dense fog; no stars visible.
	13	29·760	34·4	34·6	0·1	0·0	0·0			10·0	Dense fog; no stars visible.
	14	784	33·6	33·3	0·3	0·5	0·4	4		10·0	Id.; dark.
	15	790	34·9	34·7	0·2	0·4	0·3	6		10·0	Id.; id.
	16	793	35·2	35·0	0·2	0·3	0·1	2		10·0	Id.
	17	795	36·2	36·0	0·2	0·1	0·1	4		10·0	Id.
	18	799	35·2	34·8	0·4	0·2	0·1	4		10·0	Id.; objects invisible at 1½ mile.
	19	811	35·6	35·1	0·5	0·1	0·2	0		10·0	Scotch mist at 2 miles.
	20	833	36·1	35·8	0·3	0·5	0·1	31		10·0	Id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

* See additional Meteorological Notes after the *Hourly Meteorological Observations.*

t. n e.	BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1^{h}.	Maximum force in 10^{m}.	From			
h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
1	29·839	38·0	37·4	0·6	0·1	0·0	20	4 : — : —	10·0	Misty scud ; slight mist (indistinct at 3 miles.)
2	852	40·0	39·2	0·8	0·0	0·0	6	4 : — : —	10·0	Id. ; id.
3	860	40·8	39·6	1·2	0·3	0·1	6		10·0	Id. ; id.
0	865	42·8	40·6	2·2	0·2	0·1	6	5 : — : —	10·0	Id. ; rather homogeneous ; fog on horizon.
1	872	42·5	40·5	2·0	0·2	0·1	6		10·0	Id. ; id. ; id.
2	876	42·6	41·1	1·5	0·4	0·2	4		10·0	Id. ; id. ; id.
3	872	43·1	41·3	1·8	0·3	0·2	4		10·0	Id. ; id. ; id.
4	871	43·6	42·0	1·6	0·2	0·1	5		10·0	Id. ; id. ; id.
5	877	43·3	41·6	1·7	0·3	0·1	2	6 : — : —	10·0	Id. ; id. ; id.
6	889	42·3	40·5	1·8	0·2	0·1	5		10·0	Id. ; id. ; id.
7	895	41·4	39·8	1·6	0·3	0·2	9		10·0	Id. ; haze on horizon.
8	909	40·8	39·4	1·4	0·2	0·2	7		10·0	Id.
9	922	40·2	39·1	1·1	0·2	0·1	7		10·0	Id.
0	933	40·0	38·9	1·1	0·1	0·1	4		10·0	Dark.
1	934	39·8	38·9	0·9	0·1	0·0	9		10·0	Id.
2	937	39·1	38·4	0·7	0·1	0·1	4		10·0	Id.
3	29·934	39·0	38·2	0·8	0·0	0·0	6		10·0	Dark.
4	938	38·7	38·0	0·7	0·2	0·1	16		10·0	Id.
5	924	38·4	37·7	0·7	0·0	0·0	16		10·0	Id. ; lightest rain.
6	923	38·0	37·2	0·8	0·0	0·0	16		10·0	Id.
7	921	38·0	37·0	1·0	0·1	0·0	10		10·0	Lighter.
8	919	37·9	36·9	1·0	0·0	0·0	13	14 : — : —	10·0	Nearly homogeneous scud.
9	922	37·6	36·6	1·0	0·0	0·1	13		10·0	Id.
0	924	38·1	37·0	1·1	0·1	0·0	14		10·0	Id.
1	923	38·0	36·9	1·1	0·1	0·0	4		10·0	Id.
2	924	37·9	36·6	1·3	0·1	0·0	4		10·0	Id.
3	924	40·9	39·0	1·9	0·2	0·1	12		10·0	Id.
0	918	41·6	39·0	2·6	0·2	0·2	6	— : 14 : —	6·0	Cirro-stratous scud ; cirro-strati ; cirrous haze. ⊙
1	912	45·7	42·3	3·4	0·2	0·1	28	— : 12 : —	4·0	Cirro-cumulous scud ; woolly cirri ; haze. ⊙
2	902	47·8	43·7	4·1	0·1	0·0	12		3·0	Woolly cirri ; cirro-strati ; haze. ⊙
3	883	50·5	45·2	5·3	0·1	0·0	6		7·0	Loose cirri ; cir.-str. ; mottled cirri ; small cir.-cum. ⊙
4	874	51·6	45·6	6·0	0·5	0·5	7		7·5	As before ; cir.-cum. larger ; linear cirri radiating from NW. ⊙
5	868	50·7	45·0	5·7	0·4	0·2	2		3·0	Id.
6	875	48·0	42·9	5·1	0·4	0·3	2	— : — : 0	2·5	Woolly and linear cirri ; hazy on horizon. ⊙
7	878	44·0	40·7	3·3	0·4	0·3	2		2·0	Mottled, linear, and tuft cirri ; id.* ⊙
8	889	41·1	38·9	2·2	0·3	0·0	3		1·5	Cirri and haze ; purple to W.
9	902	36·9	36·0	0·9	0·1	0·0	3		0·5	Haze on horizon.
0	900	33·0	32·7	0·3	0·1	0·0	20		0·0	Clear.
1	902	31·5	31·1	0·4	0·1	0·0	20		0·0	Id.
2	905	30·3	30·2	0·1	0·0	0·0			0·0	Id.
0½	29·810	51·0	42·2	8·8	0·2	0·0			0·0	Sunday—Beautiful day ; cloudless.
2¾	...	57·3	44·5	12·8	...	...			......	Light wind sprung up about 5^{h}.
13	29·792	39·4	39·1	0·3	0·7	0·1	1		10·0	Dark ; lightest rain.
14	787	39·8	39·4	0·4	0·0	0·0			10·0	Id. ; id.
15	781	40·3	39·9	0·4	0·0	0·0			10·0	Id. ; id.
16	761	40·7	40·2	0·5	0·1	0·0			10·0	Id. ; id.
17	754	41·0	40·4	0·6	0·0	0·0	17		10·0	Id.
18	747	40·9	40·4	0·5	0·0	0·0	20	— : 6 : —	10·0	Cirro-stratous scud ; cirrous mass.
19	743	41·6	40·7	0·9	0·1	0·0	22		10·0	Dense mass of thick scud and cirro-strati.
20	733	43·6	42·4	1·2	0·0	0·0	24	— : 4 : —	9·9	Cirro-stratous scud.
21	727	46·0	44·1	1·9	0·2	0·1	18	16 : 9 : —	9·0	Hazy scud ; loose cirri-cumuli ; very hazy. ⊖
22	719	49·7	46·6	3·1	0·1	0·0	14	10 : — : —	9·8	Scud ; loose woolly cirro-cumulo-strati.
23	705	51·2	47·2	4·0	0·1	0·0	20		10·0	Hazy scud and loose cirro-strati.
0	685	54·1	49·3	4·8	0·1	0·0	16	— : 16 : —	9·8	Cirro-stratous scud and cirro-cumulo-strati.
1	658	51·9	46·8	5·1	0·3	0·1	6	16 : — : —	3·0	Loose scud ; slight haze. ⊙

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The
ptions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

April 5^{d} 6^{h}. Three swallows seen near the Observatory.

* See additional Meteorological Notes after the *Hourly Meteorological Observations.*

Gött. Mean Time.		BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
7	2	29·626	53·0	47·4	5·6	0·2	0·1	4	20 : — : —	4·0	Loose cumuli and scud ; hazy.
	3	590	53·6	48·4	5·2	0·4	0·3	6	18 : — : —	3·5	Id. ; very hazy on horizon. ⊖
	4	553	53·7	48·3	5·4	0·5	0·5	4	19 : — : —	7·0	Id. ; very hazy.
	5	523	54·1	48·4	5·7	1·0	1·1	14	21 : — : —	4·0	Id. ; id. [at 1½ mile.
	6	508	52·0	47·3	4·7	1·3	1·3	15	20 : — : —	4·0	Id. ; dense haze ; objects invisible
	7	493	48·2	45·2	3·0	0·7	0·3	15		3·0	As before ; sun blood-red. ⊙
	8	476	45·0	42·7	2·3	0·3	0·4	17		2·0	Haze on horizon, &c. ; as before.
	9	465	42·6	41·0	1·6	0·5	0·4	17		2·0	Id.
	10	443	40·5	39·4	1·1	0·5	0·1	17		0·0	Id.
	11	413	39·4	38·3	1·1	0·1	0·1	17		0·0	Hazy on horizon.
	12	392	38·8	37·6	1·2	0·2	0·0			3·0	Thin cirri ; stars dim.
	13	29·359	40·3	38·4	1·9	0·4	0·3	18		3·0	Thin cirri ; stars dim.
	14	324	39·0	37·0	2·0	0·2	0·0			9·5	Id., radiating from S.
	15	288	40·1	37·6	2·5	0·8	0·4	15		7·0	Id. ; sky in zenith.
	16	270	40·6	37·9	2·7	0·3	0·2	18		10·0	Cirrous clouds.
	17	236	41·6	38·9	2·7	0·6	0·3	18		10·0	Cirro-strati ; cirri.
	18	220	41·7	39·5	2·2	0·5	0·2	18	— : 20 : —	10·0	Loose cirro-strati ; rain$^{0·2}$
	19	202	42·0	40·4	1·6	0·6	0·4	17	19 : — : 18	9·9	Scud ; woolly cirri.
	20	175	46·3	44·0	2·3	0·5	0·6	17	20 : 21 : —	9·9	Id. ; cirro-cumulo-strati.
	21	163	47·1	44·7	2·4	1·0	0·5	18	20 : 16 : —	9·7	Id. ; loose cirro-strati.
	22	144	48·7	45·2	3·5	0·9	0·6	18	20 : — : —	9·9	Id. ; cirrous mass ; cirro-strati ; cumuli.
	23	129	47·3	43·3	4·0	1·1	0·7	21	23 : — : —	9·9	Id. ; id. ; id. ; id.
8	0	122	47·8	43·0	4·8	0·8	0·4	20	— : 23 : —	10·0	Cirro-stratous scud ; cirrous mass.
	1	107	47·2	43·6	3·6	0·7	0·4	24	22 : — : —	10·0	Scud ; cirrous mass ; shower since 0h.
	2	077	48·7	45·4	3·3	0·7	0·7	20	23 : — : —	9·9	Scud and loose cumuli ; cirro-strati ; cirri ; showers.
	3	062	50·0	46·7	3·3	1·2	0·3	18	24 : — : —	9·5	Id. ; id. ; nimbi. ●
	4	043	49·0	45·0	4·0	1·1	1·2	18	23 : — : —	8·5	Scud ; cumuli to N. ; nimbi. ⊙
	5	031	46·3	43·0	3·3	2·9	1·8	21	23 : — : —	8·0	Id. ; id. ; id. ⊙
	6	041	44·8	41·7	3·1	2·2	1·6	19	— : 23 : —	7·5	Cirro-stratous scud ; nimbi ; cirri ; cirro-strati.* ⊙
	7	033	42·8	40·0	2·8	1·0	0·5	21	— : 23 : —	1·8	Id. ; id. ; id. ; piles of cumuli. ⊙
	8	027	40·3	38·1	2·2	0·5	0·3	20		0·8	Id. ; cirro-cumuli. ☽
	9	028	38·4	37·0	1·4	0·9	0·4	18		0·5	Id. ; cirro-strati. ☽
	10	019	35·9	34·6	1·3	0·3	0·0			0·1	Streaks of cirro-strati ; very clear.*
	11	009	35·2	34·1	1·1	0·0	0·0	22		0·2	Patches of cirro-strati to E. and W.
	12	005	35·0	34·2	0·8	0·4	0·1	21		0·2	Patches of cirro-strati.
	13	29·000	32·8	32·1	0·7	0·3	0·0	10		0·0	Clear.
	14	28·984	32·0	31·6	0·4	0·2	0·0	28		0·2	Patches of cloud ; stars rather dim.
	15	964	32·4	31·8	0·6	0·2	0·1	18		0·0	Clear.
	16	944	32·1	31·3	0·8	0·1	0·1	20		0·1	Id. ; cirro-strati to NE.
	17	929	29·8	29·4	0·4	0·0	0·0	20		0·4	Cirro-strati and haze to E.
	18	927	28·6	28·5	0·1	0·1	0·0	16		0·5	Loose scud to S. ; cirro-strati and cirrous haze to E.
	19	927	31·6	31·2	0·4	0·2	0·0	8		0·2	Scud ; cumuli ; cirro-strati ; cirri on horizon. ⊙
	20	924	34·5	34·0	0·5	0·0	0·0	4		0·5	As before ; hazy to E. ⊙
	21	918	38·0	36·7	1·3	0·0	0·0	16		0·8	Cirro-cumulo-strati ; cir.-str. to S. ; haze on E. hor. ⊙
	22	906	40·8	39·2	1·6	0·1	0·1	17	— : 22 : —	3·0	Id. ; cumuli to N. ⊙
	23	900	44·7	41·7	3·0	0·1	0·1	15	8 : — : —	2·5	Loose cumuli ; cumuli ; cirro-strati ; haze. ⊙
9	0	897	46·6	40·9	5·7	0·1	0·1	2	17 : — : —	3·5	Cumuli ; cirri. ⊙
	1	889	47·7	41·3	6·4	0·1	0·1	10	10 : — : 21	4·0	Id. ; cumulo-strati ; cirri ; clouds moving variously.
	2	877	48·4	42·0	6·4	0·2	0·2	6	16 : — : —	7·5	Electric-looking cumuli and cumulo-strati. ●
	3	861	49·2	43·2	6·0	0·1	0·3	8	4 : — : —	7·5	Id. ⊙
	4	860	48·3	42·0	6·3	0·8	0·3	7	4 : — : —	3·0	As before ; clouds scarcely moving ; haze on horizon. ⊙
	5	861	46·8	40·6	6·2	0·6	0·7			1·5	Cumuli ; cirro-strati ; haze. ⊙
	6	868	45·3	39·7	5·6	0·5	0·2	7		1·5	Cum.-str. and cir.-str. to S. ; brownish haze to W. ⊙
	7	879	43·7	38·4	5·3	0·4	0·2	6		1·0	Cirro-strati and haze round horizon.
	8	894	40·6	38·0	2·6	0·4	0·2	4		1·5	Cirro-strati on horizon, chiefly to NE. ☽
	9	901	39·0	36·9	2·1	0·2	0·0	2		9·9	Scud.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

April 7d 3h. The clouds seem to be acted on by various currents.

April 8d 18h 8½m. The sun just above the horizon.

* See additional Meteorological Notes after the *Hourly Meteorological Observations.*

tt. an ie.	BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1^{h}.	Maximum force in 10^{m}.	From			
h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
10	28·904	41·0	38·6	2·4	0·3	0·3	4		10·0	Scud.
11	906	40·1	38·1	2·0	0·3	0·4	3		10·0	Id.; lightest rain.
12	912	39·2	37·3	1·9	0·4	0·4	1		10·0	Id.
13	28·911	38·9	37·2	1·7	0·7	0·4	31		10·0	Scud; rain$^{0\cdot2}$
14	908	39·0	37·6	1·4	0·7	0·8	31		10·0	Id.; rain^{2}
15	906	38·0	36·6	1·4	1·2	0·4	0		10·0	Id.; rain$^{0\cdot2}$
16	907	38·2	36·0	2·2	0·8	0·5	0		10·0	Id.
17	908	37·8	36·0	1·8	0·9	0·5	0		10·0	Id.
18	910	38·0	36·0	2·0	0·5	1·3	0	2 : — : —	10·0	Id.; cirro-strati; cirrous mass.
19	915	38·2	36·3	1·9	1·4	1·6	31	1 : — : —	10·0	Scud and dense cir.-str.; nearly homogeneous; rain$^{0\cdot5}$
20	919	38·0	36·8	1·2	1·5	1·1	31	1 : — : —	10·0	Id.; id.; id.
21	935	38·4	37·2	1·2	1·5	1·1	31	0 : — : —	10·0	Id.; rain$^{0\cdot5}$
22	943	42·0	39·7	2·3	1·0	0·9	2	4 : — : —	10·0	Scud; loose cumuli; cirro-strati; rain$^{0\cdot5}$
23	968	42·4	39·3	3·1	1·6	1·4	3	4 : — : —	9·5	Id.; id.; shower of hail at 22^{h} 30^{m}.
0	28·997	40·3	39·3	1·0	2·2	2·0	3	4 : — : —	10·0	Thick scud and loose cumuli; shower^{1}
1	29·020	40·9	39·5	1·4	2·5	2·3	3	4 : — : —	10·0	Id.; rain$^{0\cdot5}$
2	041	42·0	39·6	2·4	3·0	2·2	4		10·0	Rain^{3}, slightly mixed with sleet.
3	057	42·7	39·3	3·4	4·0	2·9	3	4 : — : —	9·8	Scud; loose cumuli; cirro-strati; cirro-cumuli.
4	086	40·9	37·7	3·2	3·4	2·9	2	3 : — : —	9·8	Id.; id.
5	105	40·9	37·5	3·4	3·5	3·4	2	3 : — : —	9·8	Id.; showers around; milky haze above. ●
6	119	40·4	37·4	3·0	3·8	3·3	2	3 : — : —	10·0	Id.; id.; id.
7	140	40·3	37·8	2·5	4·1	3·0	1	3 : — : —	10·0	Id.; dense cirrous mass.
8	165	38·9	37·8	1·1	3·3	2·8	1	3 : — : —	10·0	Id.; id.; rain^{1}
9	192	39·8	37·7	2·1	2·2	2·2	2		10·0	Id.; id. ⚳
10	203	40·1	37·8	2·3	2·1	2·0	1		10·0	Id.; clouds broken. ⚳
11	225	39·8	36·8	3·0	3·2	2·5	0		9·0	Id.; thin cirri. ⚳
12	236	39·8	37·3	2·5	2·6	1·9	1		10·0	As before.
13	29·256	39·6	37·3	2·3	2·6	1·4	1		10·0	As before.
14	266	39·3	36·5	2·8	3·2	2·4	1		2·0	Id.
15	281	38·6	35·3	3·3	2·9	1·7	1		9·0	Id.; sky in zenith.
16	289	39·0	35·6	3·4	3·1	1·9	2		10·0	Id.
17	310	38·0	35·7	2·3	2·3	1·5	1	3 : — : —	9·5	Scud; cirro-cumuli; cirri; shower$^{0\cdot5}$
18	326	37·8	36·0	1·8	1·6	0·7	1	3 : — : —	10·0	Id.; drops of rain.
19	350	38·0	36·3	1·7	2·0	1·2	1	3 : — : —	10·0	Id.; rain^{2}; 19^{h} 10^{m}, sleet; 20^{m}, parhelion.
20	366	38·0	37·0	1·0	2·0	1·2	1	3 : — : —	9·5	Id.; cirro-cumulo-strati; cir.-str.; frequent showers.
21	368	40·0	38·3	1·7	1·1	1·7	2	2 : — : —	9·5	Loose scud and nimbi; showers around.
22	390	38·4	37·3	1·1	3·1	2·3	2	2 : 3 : —	8·0	Id.; cir.-cum.-str.; nimbi; cirri; rain^{2}
23	410	42·1	39·0	3·1	3·0	1·8	1	2 : — : —	9·9	Id.; id.; id.; id.
0	416	42·4	39·0	3·4	3·3	2·9	2	2 : — : —	9·5	Id.; loose cumuli; nimbi. ●
1	425	43·2	39·0	4·2	3·7	1·5	1	2 : — : —	9·9	Id.; cumuli to N.; id.
2	438	43·7	38·8	4·9	3·1	2·0	2	2 : — : —	9·9	Id.; id.; cirro-strati.
3	435	43·6	39·3	4·3	3·2	2·0	1	2 : — : —	9·9	Scud and loose cumuli; cumulo-strati; cirro-strati.
4	432	43·3	38·4	4·9	2·1	1·4	2	2 : — : —	9·8	Id.; cirro-strati.
5	460	42·8	38·7	4·1	1·8	0·9	2	2 : — : —	9·9	Id.; id.
6	484	42·2	38·2	4·0	2·3	0·7	4	2 : 1 : —	9·5	Scud; cirro-stratous scud.
7	492	41·3	37·3	4·0	0·5	0·3	3	— : 1 : —	8·0	Cirro-stratous scud. ⊖
8	508	39·4	36·3	3·1	0·5	0·2	1	— : 1 : —	2·5	Id. ☽
9	509	36·0	34·2	1·8	0·2	0·1	2		0·5	Id. ☽ [NE. ☽
10	515	34·0	32·9	1·1	0·1	0·1	24		0·2	Id.; broad strips of thin cirri lying SW. and
11	512	33·1	32·1	1·0	0·0	0·0			0·0	Clear. ☽
12	513	31·4	30·9	0·5	0·1	0·0	22		0·0	Id. ☽
13	29·509	31·4	30·8	0·6	0·1	0·0	22		0·1	Haze or thin cirro-strati to N.
14	506	29·0	28·6	0·4	0·1	0·0			0·3	Cirro-strati to NE.
15	508	30·7	30·0	0·7	0·2	0·0	20		7·5	Cirro-strati.
16	502	30·0	29·5	0·5	0·0	0·0			3·0	Cirro-stratous scud.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The ption of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
11 17	29·493	30·7	30·0	0·7	0·0	0·0			9·0	Cirro-stratous scud.
18	486	30·7	30·0	0·7	0·0	0·0	22	— : 26 : —	9·5	Id.; Cheviot covered with snow.
19	495	32·0	31·3	0·7	0·1	0·0	16	— : 27 : —	10·0	Id.
20	492	34·3	33·1	1·2	0·0	0·0	24		10·0	Id.
21	481	38·7	36·5	2·2	0·2	0·2	22	— : 26 : —	10·0	Id.
22	476	42·4	39·8	2·6	0·3	0·3	18	— : 26 : —	9·5	Id.
23	468	45·0	41·5	3·5	0·7	0·6	20	— : 26 : —	9·5	Id. ⊖
12 0	461	46·8	41·6	5·2	0·7	0·8	20	24 : — : —	10·0	Scud; cirro-stratous scud.
1	451	47·7	42·8	4·9	1·0	1·6	19	24 : — : —	10·0	Id.; id.
2	437	49·1	43·5	5·6	1·0	0·5	21	25 : — : —	9·5	Id.; id.
3	422	50·1	43·8	6·3	0·7	0·6	21	25 : — : 12	6·0	Id.; fine woolly cirri; cirro-strati; cumuli; haze.
4	418	49·6	44·3	5·3	0·8	0·4	20	25 : — : —	9·9	Id.; cirro-strati; cumulo-strati; haze.
5	424	47·7	42·4	5·3	0·8	0·6	21		9·9	Cirro-stratous scud; cirrous mass.
6	433	45·7	42·5	3·2	1·1	0·5	19	23 : — : —	10·0	Scud; dense mass of cirro-strati; rain$^{0\cdot5}$
7	436	44·1	42·5	1·6	0·7	0·1	19	22 : — : —	10·0	Id.; id.
8	441	43·0	41·2	1·8	0·4	0·0	20		10·0	Id.; id.; clouds very red at sunset.
9	446	41·2	39·9	1·3	0·1	0·0	20		8·0	Scud; cir.-str.; cir. haze; coloured lunar corona. ☽
10	445	39·4	38·2	1·2	0·1	0·0	20		0·5	Thin cirri and cirrous haze. ☽
11	445	38·0	36·7	1·3	0·2	0·3	22		0·5	Id. ☽
12	443	37·2	36·0	1·2	0·3	0·2	22		0·5	Id.; lunar corona. ☽
13 0	29·134	46·4	44·5	1·9	2·6	1·0	21		10·0	Sunday. Showers throughout the day.
8	28·924	...	...	...	...	...			......	
11	884	...	...	...	...	...			......	
13	28·914	34·4	33·8	0·6	1·1	0·4	29		5·0	Cirro-stratous scud; cirro-strati; cirri; vivid aurora. ☽
14	920	37·4	36·3	1·1	0·6	0·5	29		9·5	Cirro-str. scud? &c., radiating from SSW.; id.
15	946	38·9	36·9	2·0	1·3	1·5	29		10·0	Id.; aurora.
16	962	40·0	37·5	2·5	1·3	1·0	28		6·0	Scud and cirrous clouds; drops of rain; aurora.
17	28·976	40·4	38·6	1·8	1·7	0·8	28		10·0	Id.; rain$^{0\cdot5}$; rain^{3} since $16^{h}\,30^{m}$.
18	29·000	41·0	38·6	2·4	1·5	1·4	29	30 : — : 0	9·0	Scud; cirri; cirro-strati; cirrous haze.*
19	017	42·3	39·3	3·0	2·2	3·0	29	31 : — : —	9·9	Id.
20	037	44·0	40·5	3·5	3·1	2·9	29	31 : — : —	9·9	Id.; cirro-strati; cirrous mass.
21	056	45·4	41·3	4·1	3·8	3·7	29	29 : — : —	10·0	Id.; dense mass of cirro-strati; rain$^{0\cdot5}$
22	079	44·7	41·3	3·4	6·7	3·4	29	30 : — : —	10·0	Id.; id.; rain$^{0\cdot5}$
23	123	43·5	41·2	2·3	5·1	4·7	31	30 : — : —	10·0	Id.; id.; rain^{3}
14 0	171	40·6	39·7	0·9	3·0	2·4	31	30 : — : —	10·0	Id.; id.; rain$^{0\cdot5}$
1	208	42·4	40·9	1·5	2·2	2·0	31	31 : — : —	10·0	Id.; rain$^{0\cdot5}$
2	238	43·4	41·3	2·1	2·7	2·2	31	31 : — : —	10·0	Id.; rain$^{0\cdot2}$
3	268	42·0	40·5	1·5	2·7	2·0	31	31 : — : —	9·8	Id.; cirro-strati; woolly cirri.
4	304	43·5	40·4	3·1	2·6	1·8	0	0 : — : —	9·8	Id.; id.; id.; cumuli.
5	339	43·9	40·4	3·5	4·5	3·7	0	0 : — : —	9·0	Id.; id.; id.; loose cumuli. ⊖
6	372	43·3	39·0	4·3	4·2	4·4	0	0 : — : —	9·0	Id.; cirro-str. scud; cirri; cirrous haze to NNW.
7	416	43·2	39·5	3·7	5·2	4·0	0	0 : — : —	8·5	Id.; id.; woolly and mot. cir.; cir. haze.*
8	467	40·9	37·7	3·2	3·7	1·5	0	0 : — : —	6·0?	Id.; cirro-strati; cirri.* ☽
9	498	41·3	37·7	3·6	2·4	2·1	31		8·0	Id.; id.; woolly cirro-cumuli.
10	528	41·8	38·2	3·6	3·7	2·1	0		10·0	Id.; id.
11	558	40·6	38·6	2·0	4·7	3·7	0		10·0	Id.; id.; rain$^{0\cdot5}$
12	598	39·9	38·7	1·2	5·1	3·5	0		10·0	Id.; id.; rain$^{0\cdot5}$
13	29·624	40·6	39·0	1·6	4·6	3·3	31		10·0	Scud; cirro-strati; rain$^{0\cdot2}$
14	548	41·9	39·6	2·3	3·7	3·7	0		10·0	Id.; id.
15	695	42·3	39·6	2·7	4·6	3·3	0		10·0	Id.; id.
16	734	42·2	39·5	2·7	5·4	4·6	1		10·0	Id.; id.
17	785	42·7	39·8	2·9	5·2	4·6	0		10·0	Id.; id.
18	833	42·3	39·5	2·8	4·7	3·5	0	2 : — : —	10·0	Id.; id.
19	870	42·6	40·0	2·6	4·1	5·2	1	2 : — : —	9·5	Id.; cirro-cumulo-strati; cirro-strati.
20	904	43·4	40·4	3·0	4·4	3·2	2	2 : — : —	7·0	Id.; id.; id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

April $13^{d}\,0^{h}$. Observation made at $23^{h}\,50^{m}$. 8^{h}. Observation made at $7^{h}\,45^{m}$. 11^{h}. Observation made at $11^{h}\,10^{m}$.

April $14^{d}\,10^{h}$. Observation made at $10^{h}\,5^{m}$.

* See additional Meteorological Notes after the *Hourly Meteorological Observations*.

t. n e.	BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	10m	From			
h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
21	29·947	44·2	41·2	3·0	4·5	3·1	1	2 : — : —	6·0	Scud ; cirro-cumulo-strati ; cirro-strati ; cirri. ⊖
22	969	45·2	41·2	4·0	5·2	3·8	1	2 : — : —	6·5	Id. ; id. ; id. ⊖
23	29·995	46·2	41·8	4·4	5·0	4·4	1	2 : — : —	8·5	Id. ; id.
0	30·004	46·4	41·9	4·5	6·5	4·5	1	2 : — : —	6·0	Scud and loose cumuli. ⊖
1	037	47·0	41·2	5·8	5·0	4·0	1	2 : — : —	5·0	Id. ⊖
2	043	47·4	42·0	5·4	5·1	3·8	1	2 : — : —	5·5	Id. ⊖
3	066	46·5	41·3	5·2	5·1	3·3	2	2 : — : —	7·0	Id.
4	078	46·3	40·7	5·6	4·2	3·3	2	2 : — : —	3·0	Id. ⊙
5	102	46·2	41·2	5·0	2·6	2·6	2	2 : — : —	2·0	Id. ⊙
6	123	45·1	40·5	4·6	2·2	1·8	2	2 : — : —	2·5	Id. ⊙
7	141	43·8	39·9	3·9	2·0	0·5	2		0·5	Id. ; cirro-strati and haze on hor. ⊙
8	154	41·6	38·6	3·0	1·0	0·0	3		0·3	Cirro-strati and haze on horizon. ☽
9	188	39·3	37·6	1·7	0·4	0·0	31		0·2	Cirro-strati on horizon ; clear. ☽
10	201	39·7	38·3	1·4	0·1	0·1	31	2 : — : —	7·5	Scud. ⊅
11	216	38·4	37·3	1·1	0·1	0·1	31	— : 2 : —	8·0	Large cirro-cumulo-strati ; milky to N. ☽
12	218	37·8	36·8	1·0	0·1	0·0	30	— : 2 : —	8·5	Id. ⊅
13	30·216	35·4	34·9	0·5	0·0	0·0			2·0	Cirro-cumuli and cirro-strati on horizon. ☽
14	234	37·2	36·2	1·0	0·0	0·0			9·8	Scud.
15	231	37·2	35·7	1·5	0·1	0·1	30		2·0	Cirro-strati on horizon ; thin cirrous clouds to W.
16	247	35·9	34·8	1·1	0·0	0·1	30		3·0	Id. ; clouds to E. and SE.
17	244	33·1	32·6	0·5	0·1	0·1	22		0·2	Woolly and linear cirri radiating from NNE ; cir.-str.
18	254	33·4	33·0	0·4	0·1	0·1	20		0·5	As before ; cirri tinged red. [on horizon.
19	263	37·1	35·4	1·7	0·0	0·0	20	— : — : 2	2·0	Mottled and woolly cirri ; cirro-strati on horizon. ⊙
20	270	38·3	36·8	1·5	0·1	0·0	22	— : — : 2	6·0	Woolly cirri ; cirro-strati.
21	270	40·9	39·0	1·9	0·1	0·0	4	2 : — : —	3·0	Patches of scud ; linear, woolly, and tufted cirri. ⊙
22	271	42·9	40·7	2·2	0·2	0·0	4		2·5	Small patches of scud; linear cirri; cir.-str.; cir. haze. ⊙
23	269	45·3	41·2	4·1	0·2	0·0	0	— : — : 2	5·0	Cirri, chiefly tufted ; cirro-strati ; cirrous haze.
0	259	51·9	46·1	5·8	0·1	0·0	18		8·0	Woolly cirri and cirrous haze ; solar halo. ⊖
1	267	52·1	46·3	5·8	0·2	0·1	11		8·0	Id.
2	264	52·7	46·3	6·4	0·2	0·1	11		2·5	Cirri ; cirro-strati ; patches of scud to N. ⊙
3	250	53·5	47·0	6·5	0·2	0·1	8		0·5	Id. ; loose cumuli to N. ⊙
4	245	54·3	46·9	7·4	0·2	0·1	6		0·5	Cirro-strati and patches of scud on horizon. ⊙
5	238	55·0	48·0	7·0	0·3	0·2	4		0·8	Cirro-strati ; haze, and patches of scud on horizon. ⊙
6	232	53·0	46·5	6·5	0·3	0·3	4		1·5	Id. ; id. ⊙
7	233	51·0	45·8	5·2	0·3	0·1	4		7·5	Woolly cirri ; cirro-strati. ⊙
8	255	47·2	43·6	3·6	0·2	0·0	4		5·0	Woolly cirri and cirrous haze ; cirro-strati. ☽
9	271	45·0	42·2	2·8	0·1	0·1	4		5·0	Id. ; lunar corona. ☽
10	271	43·4	41·4	2·0	0·2	0·1	5	— : 3 : —	8·5	Cirro-cumulo-strati ; cirrous haze ; cirro-strati. ⊅
11	285	41·0	39·5	1·5	0·0	0·0		— : — : 4	8·0	Cirri ; halo-circle of light and corona.* ⊅
12	283	37·4	36·9	0·5	0·0	0·0	17	— : — : 4	8·5	Woolly cirri and cirro-cumuli ; corona. ⊅
13	30·284	38·5	37·9	0·6	0·0	0·0	17	— : — : 4	9·2	Woolly cirri and cirro-cumuli, getting thicker. ⊅
14	284	36·8	36·3	0·5	0·1	0·0	17		2·0	Cirro-strati ; cirri. ⊅
15	285	39·4	38·7	0·7	0·0	0·0	20		10·0	Id. ; id.
16	279	40·5	39·6	0·9	0·0	0·0	19		10·0	Id. ; id.
17	272	40·9	39·5	1·4	0·1	0·1	20	— : 4 : —	10·0	Cirro-stratous scud.
18	275	41·3	39·9	1·4	0·1	0·0	24	— : 2 : —	10·0	Id.
19	276	42·3	41·0	1·3	0·1	0·0	25	— : 2 : —	10·0	Id.
20	289	44·3	42·3	2·0	0·1	0·0			10·0	Id. ; cirro-strati.
21	286	48·4	45·0	3·4	0·0	0·0	22	— : 2 : —	10·0	Thick cirro-strati.
22	285	48·2	44·0	4·2	0·2	0·1	26		10·0	Id.
23	273	51·3	46·6	4·7	0·1	0·1	17		10·0	Id.
0	264	57·0	51·5	5·5	0·1	0·1	14	— : 0 : —	10·0	Cirro-stratous scud ; cirro-strati ; cumuli.
1	244	59·8	53·0	6·8	0·1	0·1	7	— : 30 : —	10·0	Id. ; id. ●
2	233	58·0	51·4	6·6	0·2	0·1	7	— : 30 : —	9·5	Cirro-cumulo-strati ; cumuli ; haze. ⊖
3	218	57·9	50·9	7·0	0·2	0·2	6	— : 30 : —	6·0	Id. ; id. ⊖
4	202	58·2	51·8	6·4	0·2	0·3	6	— : 30 : —	9·5	Id. ; id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The otion of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

* See additional Meteorological Notes after the *Hourly Meteorological Observations.*

Gött. Mean Time.		Baro-meter at 32°.	Thermometers.			Wind.			Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
17	5	30·187	58·2	51·5	6·7	0·3	0·3	5	— : 29 : —	6·0	Cirro-cumulo-strati; cirro-strati; haze. ⊙
	6	172	56·8	50·1	6·7	0·3	0·1	7		0·5	Cirri; cirro-strati and haze on horizon. ⊙
	7	167	56·0	50·4	5·6	0·2	0·1	5		1·0	Bank of cirro-strati to E.; cirri. ⊙
	8	172	53·8	49·2	4·6	0·1	0·1	6	— : 1 : —	10·0	Cirro-stratous scud.
	9	167	51·7	48·2	3·5	0·2	0·1	4	— : 2 : —	9·0	Id.
	10	167	49·3	46·0	3·3	0·1	0·0	4	— : 2 : —	9·0	Cirro-cumulo-strati; lunar corona. ☽
	11	166	48·4	45·9	2·5	0·1	0·0	4	— : 2 : —	10·0	Cirro-strati; cirro-cumulo-strati. ☽
	12	164	48·4	46·3	2·1	0·0	0·0			10·0	Id.; id.
	13	30·155	47·6	45·3	2·3	0·0	0·0	4		10·0	Cirro-strati; cirro-cumulo-strati.
	14	143	47·8	45·7	2·1	0·0	0·0	0		10·0	Cirro-cumulo-str; cirro-strati lying in ridges N. to S.
	15	138	48·0	46·0	2·0	0·0	0·0			10·0	Homogeneous.
	16	126	47·2	45·9	1·3	0·0	0·0			9·8	Scud and cirro-strati broken up.
	17	120	47·5	45·8	1·7	0·0	0·0	2		10·0	Thick cirro-strati.
	18	121	47·7	46·1	1·6	0·0	0·0		— : 2 : —	10·0	Thick rippled cirro-strati.
	19	124	48·3	46·8	1·5	0·0	0·0	2		10·0	Id.
	20	122	50·2	48·1	2·1	0·1	0·0	4		10·0	Id.
	21	118	51·9	49·7	2·2	0·0	0·0	8		10·0	Cirro-strati; cirrous mass.
	22	119	52·4	49·8	2·6	0·1	0·1	6	— : 2 : —	10·0	Id.; id.
	23	122	52·3	49·3	3·0	0·2	0·3	5	— : 3 : —	10·0	
18	0	120	54·2	51·2	3·0	0·3	0·2	7	— : 4 : —	10·0	Cirro-stratous scud.
	1	119	53·5	51·2	2·3	0·3	0·3	7	— : 5 : —	10·0	Id.
	2	111	54·3	51·4	2·9	0·6	0·5	5	5 : — : —	10·0	Scud.
	3	107	54·0	51·0	3·0	0·6	0·4	5	5 : — : —	10·0	Id.
	4	093	53·6	51·0	2·6	0·4	0·3	7	5 : — : —	10·0	Id.
	5	089	53·6	51·4	2·2	0·4	0·3	4	5 : — : —	9·8	Misty scud breaking.
	6	083	51·3	49·9	1·4	0·3	0·2	6	5 : — : —	10·0	Scud; cirro-strati.
	7	090	48·3	47·4	0·9	0·8	0·4	4		10·0	Id.; id.; mist at 3 miles.
	8	105	44·6	44·2	0·4	0·6	0·2	4		10·0	Scotch mist at 1 mile.
	9	115	44·0	43·6	0·4	0·4	0·4	5		10·0	Id.; light drizzle.
	10	118	43·0	42·6	0·4	0·3	0·2	3		10·0	Scud.; light drizzle.
	11	115	42·7	41·9	0·8	0·1	0·0	4		10·0	Id.
	12	111	42·4	41·0	1·4	0·1	0·1	3		10·0	Id.
	13	30·103	42·3	40·9	1·4	0·1	0·1	2		10·0	Scud.
	14	095	42·2	40·8	1·4	0·1	0·0	8		10·0	Id.
	15	084	41·9	40·6	1·3	0·1	0·0	4		10·0	Id.
	16	075	41·4	40·3	1·1	0·2	0·0	0		10·0	Id.
	17	074	41·4	40·2	1·2	0·0	0·0	30		10·0	Cirro-stratous scud; cirro-strati; cirri.
	18	071	40·4	39·4	1·0	0·0	0·0	4	— : 2 : —	8·5	Cirro-cumuli; cirro-strati; woolly cirri; cirrous haze.
	19	077	41·3	40·0	1·3	0·1	0·0			10·0	Thick cirro-stratous scud and cirro-strati.
	20	080	44·1	42·6	1·5	0·0	0·0			10·0	Homogeneous mass of cirro-strati?; patches of scud.
	21	072	46·7	44·3	2·4	0·2	0·4	2	4 : — : —	9·0	Misty scud; cirro-stratous scud; slightly foggy. ⊖
	22	071	48·3	45·1	3·2	0·4	0·2	5	4 : — : —	10·0	Thick scud.
	23	061	50·2	46·7	3·5	0·5	0·5	3	4 : — : —	9·0	Scud; loose cumuli. ⊖
19	0	054	52·0	47·9	4·1	0·6	0·5	4	4 : — : —	4·0	Id.; id. ⊙
	1	048	51·3	46·7	4·6	0·7	0·7	5		1·5	Id.; id. ⊙
	2	045	52·1	47·7	4·4	1·0	0·6	7		0·5	Patches of scud. ⊙
	3	031	51·2	46·6	4·6	1·2	0·7	11		0·2	Id. ⊙
	4	023	51·4	47·0	4·4	1·0	0·6	7		0·1	Id. ⊙
	5	022	50·1	45·7	4·4	0·7	0·6	6		0·1	Cirro-strati and haze on horizon. ⊙
	6	020	48·8	45·0	3·8	0·9	0·4	4		0·1	Id.
	7	016	47·8	44·5	3·3	0·4	0·4	3		0·1	Id.
	8	021	45·0	43·0	2·0	0·4	0·2	2		0·1	Haze round horizon. ☽
	9	025	42·0	40·8	1·2	0·3	0·2	3		0·1	Id. ☽
	10	031	40·7	39·8	0·9	0·2	0·1	3		0·5	Cirro-strati and haze. ☽
	11	035	39·8	39·3	0·5	0·3	0·1	4	5 : — : —	4·5	Misty scud moving rapidly; corona; milky to N. ☽
	12	039	40·5	39·9	0·6	0·1	0·0	3		10·0	Id., or fog at ¼ mile.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

t. n e.	BAROMETER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1^h.	10^m.	From	Clouds, Sc.: C.-s,: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
h.	in.	°	°	°	lbs.	lbs.	pt	pt. pt. pt.	0—10.	
0½	30·039	53·2	49·6	3·6	0·3	0·2	6		......	Sunday—Very clear all day; very faint streaks of cirrus seen near hor.
3	30·039	37·6	36·9	0·7	0·6	0·0			0·0	Very clear; heavy dew. ☽
4	034	36·6	36·3	0·3	0·0	0·0	18		0·0	Id.; id. ☽
5	028	36·6	36·4	0·2	0·0	0·0	18		0·1	Very thin cirri to SW.; corona. ☽
6	025	34·2	33·9	0·3	0·0	0·0			0·2	Thin cirri to SW.; cirrous haze on E. horizon. ☽
7	020	34·8	34·6	0·2	0·1	0·0			0·4	Cirri to E. and S.
8	020	35·5	35·0	0·5	0·0	0·0	20		0·4	Id. ⊙
9	024	39·2	37·6	1·6	0·1	0·1	20		0·5 ?	Thinnest cirrous streaks near horizon. ⊙
0	017	41·4	39·4	2·0	0·1	0·0	22		0·5 ?	Id. ⊙
1	008	46·5	43·2	3·3	0·1	0·0	24		0·1	Id. ⊙
2	30·004	52·3	47·2	5·1	0·1	0·0	30		0·2	Id. ⊙
3	29·999	57·2	49·8	7·4	0·1	0·0	14		0·2	Thinnest patches of scud to S. ⊙
0	982	60·0	51·0	9·0	0·1	0·1	8	6 : — : —	0·5	Patches of scud and cumuli to S.; cirrous streaks. ⊙
1	969	62·2	53·0	9·2	0·2	0·4	4		0·5	Id.; id. ⊙
2	955	64·3	55·0	9·3	0·4	0·5	6		0·2	Id.; haze on horizon. ⊙
3	931	64·2	53·0	11·2	0·6	0·6	7		0·5	Id.; id. ⊙
4	927	63·9	52·4	11·5	0·8	0·7	7		0·2	Streaks of haze. ⊙
5	920	63·3	51·9	11·4	0·5	0·3	9		0·2	Id. ⊙
6	915	62·9	50·7	12·2	0·4	0·5	7		0·5	Id. ⊙
7	911†	59·5	48·7	10·8	0·4	0·0	8		0·5	Vertebrated cirri. ⊙
8	920	53·7	46·7	7·0	0·1	0·0	12	— : — : 4	1·0	Woolly cirri; hazy on horizon. ☽
9	921↓	49·8	45·7	4·1	0·0	0·0			0·5	Id.; id. ☽
0	919	44·0	41·6	2·4	0·0	0·0	14		0·0	Clear. ☽
1	915	40·8	39·6	1·2	0·1	0·0	17		0·0	Id. ☽
2	916	39·3	38·4	0·9	0·0	0·0	17		0·0	Id. ☽
3	29·905	37·8	37·4	0·4	0·1	0·0	16		0·1	Thin cirrous clouds to SW. ☽
4	897	36·3	36·1	0·2	0·0	0·0	17		0·1	Id. ☽
5	898	34·4	34·1	0·3	0·0	0·0	18		0·1	Id. ☽
6	897	33·9	33·8	0·1	0·1	0·0	18		0·2	Linear cirri on NE. horizon. ☽
7	889	31·1	31·0	0·1	0·1	0·1	22		0·5	Id.; hazy.
8	894	35·8	34·6†	1·2	0·0	0·0	22		0·5	Id.; id. ⊙
9	893	36·3	35·9	0·4	0·2	0·0	22		0·0	Clear; slightly milky to E. ⊙
0	892	42·6	40·6	2·0	0·0	0·0	6		0·0	Id. ⊙
1	893	46·8	43·7↓	3·1	0·1	0·0	6		0·2	Cirri and haze on horizon. ⊙
2	884	53·4	47·0	6·4	0·2	0·3	6		0·1	Cirro-strati on NE. horizon. ⊙
3	875	55·9	48·3	7·6	0·5	0·5	2		0·0	Clear. ⊙
0	861	59·4	50·2	9·2	0·8	0·4	6		0·0	Milky streaks. ⊙
1	850	60·8	50·4	10·4	0·8	0·7	7		0·0	Id. near horizon. ⊙
2	841	61·9	50·4	11·5	1·3	0·8	12		0·0	Clear. ⊙
3	828	62·0	50·7	11·3	1·2	1·0	10		0·0	Thin streaks of cirri to S. ⊙
4	809	61·3	49·9	11·4	0·2	0·8	8		0·0	Clear. ⊙
5	809	58·8	50·3	8·5	1·0	1·0	6		0·0	Id. ⊙
6	807	56·9	49·4†	7·5	1·0	0·8	6		0·0	Id. ⊙
7	806	55·7	47·6	8·1	0·6	0·4	6		0·1	Thin streaks of cirri to E. ⊙
8	811	51·0	46·7↓	4·3	0·3	0·1	5		0·1	Id.
9	813	48·1	43·9	4·2	0·1	0·1	4		0·0	Haze round horizon.
0	811	45·3	42·4	2·9	0·1	0·1	6		0·0	Id. ☽
1	815	40·4	39·4	1·0	0·0	0·0	24		0·0	Clear; greenish corona, 3° diameter. ☽
2	812	37·0	36·5	0·5	0·0	0·0	24		0·0	Id. ☽
3	29·804	35·4	35·0	0·4	0·0	0·0	24		0·0	Clear; faint corona. ☽
4	797	34·2	33·9	0·3	0·0	0·0	20		0·0	Id. ☽
5	796	34·0	33·8	0·2	0·2	0·0	22		0·0	Id. ☽
6	778	33·8	33·6	0·2	0·1	0·0	20		0·2	Reddish vapours. ☽
7	768	31·7	31·6	0·1	0·0	0·0	18		0·2	Id.* ☽
8	768	33·6	33·3†	0·3	0·0	0·0	20		0·2	Haze. ⊙

April 20^d 17^h. α Lyræ was visible till 17^h 26^m; the sun's upper limb was above the horizon at 17^h 31^m.

April 20^d 19^h. Observation made at 19^h 8^m.

April 21^d 18^h. † Thermometers removed to the western side of the Observatory *before* 18^h. 21^d 21^h. ↓ Returned *after* 21^h. 22^d 6^h. † Thermometers removed to the eastern side of the Observatory *before* 6^h. 22^d 8^h. ↓ Returned *after* 8^h. See *Introduction*, p. liv.

* See additional Meteorological Notes after the *Hourly Meteorological Observations.*

Gött. Mean Time.		Barometer at 32°.	Thermometers.			Wind.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.	
			Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From				
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.		
22	19	29·761	36·1	35·1	1·0	0·1	0·0	20		0·2	Very thin cirrous cloud to E.	⊙
	20	754	40·2	38·1	2·1	0·1	0·0			0·1	Id.	⊙
	21	746	45·2	42·4	2·8	. . .	. . .			0·2		
	22	739	50·7	45·0	5·7	0·1	0·1	8		1·5	Linear cirri and haze to E.	⊙
	23	724	55·3	47·8	7·5	0·3	0·2	7		2·0	Id.	⊙
23	0	704	57·7	49·8	7·9	0·5	0·4	7		2·5	Woolly and linear cirri to E.	⊙
	1	693	59·2	51·4	7·8	0·6	0·5	7	8 : — : 14	3·0	Patches of scud; woolly cirri and haze.	⊙
	2	678	59·0	50·6	8·4	0·7	0·7	6	— : — : 14	2·5	Id.; id.	⊙
	3	663	57·8	49·2	8·6	1·0	0·7	7	— : — : 14	3·0	Woolly and linear cirri.	⊖
	4	647	56·8	49·2	7·6	1·2	0·7	7	— : — : 14	5·0	Id.	⊖
	5	628	57·2	49·2	8·0	0·7	0·5	5	— : — : 16	6·0	Id.	⊙
	6	625	53·7	47·6	6·1	0·6	0·4	7	— : — : 14	8·0	Woolly linear and diffuse cirri; halo.	⊖
	7	624	51·3	46·6	4·7†	0·4	0·2	6	— : — : 14	7·0	Id.; id.	⊖
	8	624	45·4	42·7	2·7↓	0·4	0·2	7	— : — : 14	7·0	Id.; fog bank to E.	
	9	652	42·2	40·7	1·5	0·2	0·1	4		8·0	Id.; id.	
	10	620	39·8	39·2	0·6	0·1	0·1	7		7·0	Id.; id.	
	11	619	38·3	38·2	0·1	0·1	0·0			10·0	Cirrous mass and haze.	
	12	625	38·2	38·1	0·1	0·1	0·0			10·0	Fog; objects invisible at 100 yards.	
	13	29·614	37·2	37·0	0·2	0·0	0·0			10·0	Fog; objects invisible at 100 yards.	
	14	606	36·8	36·7	0·1	0·0	0·0			10·0	Id.	
	15	598	35·9	35·7	0·2	0·0	0·0			10·0	Id.	
	16	596	35·6	35·3	0·3	0·0	0·0			10·0	Id.	
	17	587	34·0	33·8	0·2	0·0	0·0	22		10·0	Id.; objects invisible at 300 yards.	
	18	587	33·4	33·2	0·2	0·0	0·0	20		10·0	Id.; id. 200 yards.	
	19	592	35·0	34·8	0·2	0·0	0·0			10·0	Id.; id. 250 yards.	
	20	597	36·2	36·0	0·2	0·0	0·0	8		10·0	Id.; id. 500 yards.	
	21	601	37·2	37·0	0·2	0·1	0·1	10		10·0	Id.; id. $\frac{3}{4}$ mile.	
	22	601	40·5	39·8	0·7	0·2	0·1	7		10·0	Id.; id. 3 miles.	
	23	594	44·3	42·9	1·4	0·1	0·1	5	4 : 9 : —	9·9	Fog-cloud; cirro-strati.	
24	0	584	46·0	43·8	2·2	0·3	0·2	4		3·0	Cirri; portion of a halo; Cheviot invisible.	⊙
	1	566	50·6	46·2	4·4	0·3	0·3	4	— : — : 10	5·0	Id.; id.; patches of scud.	⊙
	2	559	54·0	47·7	6·3	0·5	0·5	4		5·0	Id.; id.; id.	⊙
	3	548	52·7	47·7	5·0	0·7	0·7	3		4·0	Id.; id.; cirrous haze.	⊙
	4	537	52·6	47·8	4·8	0·7	0·7	5		4·0	Id.; id.; id.	⊙
	5	537	51·0	46·7	4·3	0·8	0·5	3		2·0	Id.; hazy to E.	⊙
	6	531	50·3	46·6	3·7	0·5	0·3	3		1·5	Id.; id.	⊙
	7	519	48·3	45·3	3·0	0·5	0·4	3		0·8	Id.	⊙
	8	541	44·7	43·3	1·4	0·3	0·1	2		0·0	Haze on horizon.	
	9	542	41·7	41·1	0·6	0·2	0·0	4		0·0	Id.	
	10	541	39·7	39·6	0·1	0·2	0·0	6		10·0	Fog commenced at 9h 55m from eastward.	
	11	546	39·7	39·6	0·1	0·1	0·1	7		10·0	Fog; objects invisible at 200 yards.	
	12	548	39·6	39·5	0·1	0·1	0·0			10·0	Id.; id. 100 id.	
	13	29·545	39·3	39·2	0·1	0 0	0·0			10·0	Fog; objects invisible at 100 yards.	
	14	541	39·3	39·2	0·1	0·0	0·0			10·0	Id.; id. 200 yards.	
	15	537	38·8	38·6	0·2	0·0	0·0	8		10·0	Id.; id. 200 yards.	
	16	527	38·2	38·0	0·2	0·0	0·0	15		10·0	Id.; id. 200 yards.	
	17	529	37·9	37·7	0·2	0·0	0·0			10·0	Id.; id. 200 yards.	
	18	530	37·7	37·5	0·2	0·0	0·0	18		10·0	Id.; id. 200 yards.	
	19	528	38·0	37·8	0·2	0·0	0·0	28		10·0	Id.; id. 250 yards.	
	20	535	38·4	38·2	0·2	0·0	0·0	26		10·0	Id.; id. 300 yards.	
	21	530	40·5	40·3	0·2	0·0	0·0	4		10·0	Id.; id. 350 yards.	
	22	525	43·4	42·7	0·7	0·1	0·1	8		10·0	Id.; id. $\frac{1}{3}$ mile.	
	23	501	45·1	44·0	1·1	0·2	0·1	4	6 : — : —	9·9	Fog clearing off; loose foggy scud.	⊖
25	0	474	50·7	47·8	2·9	0·3	0·2	4	12 : — : 24	2·0	Cumuli to S.; woolly cirri; very hazy on horizon.	⊙
	1	448	58·6	53·2	5·4	0·5	0·5	4	14 : — : 24	3·5	Detached cumuli; id.; id.	
	2	434	65·6	55·3	10·3	1·5	2·0	15	16 : — : —	8·5	Cum.; cir. and cir. haze; electric-looking; very hazy.	

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

April 24d 0h 40m. It was found on trial that when the feather-vane was pointing from the north, its index pointed to NNE.; the index was set right; this error could have existed for a short period only.

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt pt.	0—10.	
25 3	29·410	63·4	54·7	8·7	1·7	1·1	14	16 : — : —	9·5	As before ; solar halo.
4	385	62·8	53·9	8·9	2·0	1·7	13		10·0	Nearly homogeneous cir. haze; patches of cum. to SW. ⊖
5	367	60·9	53·7	7·2	1·9	1·3	14		10·0	Thick cirrous haze.
6	362	58·3	52·4	5·9	1·5	0·5	14		10·0	Id.
7	330	57·2	51·3	5·9	0·7	0·3	13		10·0	Id.
8	307	56·8	50·6	6·2	0·9	0·5	12	— : 16 : —	10·0	Cirro-stratous scud ; cirro-strati ; cirrous mass.
9	286	56·7	50·3	6·4	1·2	1·2	14		10·0	Id. ; id. ; id.
10	259	55·7	49·8	5·9	1·3	1·5	14		10·0	Scud and cirro-strati.
11	225	55·6	49·6	6·0	2·0	1·5	14		10·0	Id. ; light, as from a fire on S. horizon.*
12	203	54·4	49·6	4·8	2·1	0·6	14		10·0	Id.
13	29·154	53·3	49·4	3·9	1·8	1·8	14		10·0	Scud and cirro-strati ; drops of rain.
14	100	52·7	49·7	3·0	3·3	4·3	15		10·0	Id. ; rain^{1}; light on hor. to N by E.*
15	062	52·7	50·8	1·9	3·7	3·0	14		10·0	Id. ; rain^{2}
16	29·030	51·6	50·2	1·4	3·4	1·5	14		10·0	Id. ; rain^{1}
17	28·999	51·8	50·2	1·6	2·4	2·7	15	14 : — : —	10·0	Scud ; scud and cirro-strati ; rain$^{0·5}$
18	985	51·5	50·2	1·3	1·7	1·5	14	14 : — : —	10·0	Id. ; id. ; id.
19	968	51·6	50·3	1·3	1·5	1·6	15	14 : — : —	10·0	Id. ; id. ; rain$^{1·5}$
20	948	53·2	52·0	1·2	2·0	1·3	16	15 : — : —	10·0	Id. ; id. ; id.
21	929	54·4	53·0	1·4	1·2	0·4	15	16 : — : —	10·0	Id. ; dense mass of cirro-strati ; drops of rain.
22	941	55·0	53·0	2·0	0·8	0·3	16		10·0	Id. ; id. ; rain$^{1·5}$ [thick.
23	934	56·0	54·4	1·6	0·8	0·6	17	17 : — : —	10·0	Id. ; id. ; clouds dark and
26 0	971	54·0	51·8	2·2	1·4	1·4	20	20 : — : —	9·9	Id. ; cirro-strati ; cirrous mass ; sky to SW.
1	28·984	55·8	51·7	4·1	2·4	1·6	18	20 : — : —	9·5	Id. ; loose cumuli ; cirro-strati ; woolly cirri.
2	29·008	55·9	50·4	5·5	2·2	1·6	22	20 : — : —	4·0	Loose cumuli ; id. ; id. ⊙
3	002	56·0	49·8	6·2	2·3	1·7	20	20 : — : —	2·5	Id. ; id. ; id. ⊙
4	003	57·2	50·8	6·4	1·7	1·3	18	19 : — : —	3·0	Id. ; cumuli ; cirro-strati. ⊙
5	008	57·4	48·4	9·0	1·8	0·6	20	18 : — : —	1·5	Id. ⊙
6	003	56·2	48·3	7·9	0·7	0·2	16	16 : — : —	3·5	Id. ; cirro-stratous scud ; cirri. ⊙
7	012	50·1	46·9	3·2	2·5	0·4	16	14 : — : —	9·5	Scud ; cumuli ; nimbi ; cumulo-strati ; cirri ; showers.
8	020	49·6	45·6	4·0	0·5	0·4	15	— : 14 : —	9·0	Cirro-stratous scud ; rain$^{0·5}$
9	017	47·3	44·4	2·9	0·4	0·2	14	— : 14 : —	7·0	Id.
10	017	48·0	45·3	2·7	1·4	1·0	16		10·0	Id.
11	023	47·2	45·3	1·9	1·0	0·3	17		9·8	Id.
12	29·033	47·9	45·7	2·2	1·0	0·5	18		10·0	Rain$^{0·2}$
23¼	28·976	55·0	50·7	4·3	4·2	2·6	16	16 : 18 : —	10·0	Sunday—Scud ; cirro-cumulo-strati ; showers throughout the day.
27 13	29·117	48·9	46·7	2·2	4·2	1·3	20		5·0	Scud.
14	144	48·4	46·4	2·0	2·0	1·1	20		4·0	Id.
15	158	47·8	46·2	1·6	2·2	1·6	20		7·0	Id.
16	177	47·9	46·7	1·2	1·6	1·1	18	20 : — : —	9·5	Id. ; rain$^{0·2}$
17	191	47·8	46·2	1·6	1·8	1·1	20		7·0	Id. ; woolly cirri, lying WSW. and ENE.
18	206	47·2	45·4	1·8	1·2	1·0	20	21 : — : 21	7·0	Id. ; id., lying SW by W. and NE by E.
19	233	48·6	46·5	2·1	1·5	0·5	18	21 : — : —	7·0	Id. ; loose cumuli ; cirro-cumulo-strati.
20	251	50·6	47·9	2·7	1·4	0·7	20	20 : — : —	9·9	Id. ; dense cirro-strati and cirro-cumulo-strati.
21	277	51·2	48·1	3·1	1·0	0·8	20	20 : 21 : —	10·0	Id. ; id.
22	288	51·9	48·4	3·5	1·2	1·0	19	20 : 21 : 21	9·5	Id. ; woolly cirri ; cirro-cumulo-strati; shower$^{0·2}$
23	300	53·7	50·2	3·5	1·6	1·1	19	20 : 21 : —	9·8	Id. ; cirro-strati ; drops of rain.
28 0	311	54·7	50·2	4·5	1·3	1·4	20		9·9	Id. ; id.
1	326	55·9	51·7	4·2	1·4	1·3	19	20 : — : —	9·8	Id. ; id.
2	336	56·7	51·3	5·4	1·7	0·9	20	20 : — : —	9·8	Id. ; id.
3	339	57·9	51·6	6·3	1·0	1·2	21	20 : 22 : 22	9·8	Id. ; loose cumuli ; woolly cirri ; cirro-strati. ⊖
4	345	57·0	51·2	5·8	1·2	0·9	20	20 : 21 : —	10·0	Id. ; id. ; cirro-cumulo-strati ; cirro-strati.
5	351	56·1	50·3	5·8	0·7	0·3	19		10·0	Thick cirro-strati and cirro-cumulo-strati.
6	366	54·8	48·8	6·0	0·2	0·1	21		10·0	Scud ; cirro-strati ; cirrous mass.
7	369	52·8	48·3	4·5	0·2	0·2	18	20 : — : —	10·0	Id. ; id. ; id. ; drops of rain.
8	389	50·6	47·5	3·1	0·7	0·1	18		10·0	Thick cirro-strati.

April 26d 6h 40m. Heavy shower, with gusts of wind.
April 26d 23h. Observation made at 23h 20m.
April 28d 1h. Observation made at 1h 6m.
* See additional Meteorological Notes after the *Hourly Meteorological Observations.*

Gött. Mean Time.		BAROMETER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1h.	10m.	From	Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
28	9	29·396	48·8	46·2	2·6	0·1	0·1	20		10·0	Thick cirro-strati; rain$^{1\cdot5}$
	10	408	47·1	45·7	1·4	0·0	0·0			10·0	Id.; rain^{1}
	11	431	46·7	45·8	0·9	0·0	0·1	19		10·0	Id.; ? rain^{1}
	12	426	46·4	45·4	1·0	0·1	0·0	20		9·8	Scud and cirro-strati; sky to W.
	13	433	46·1	45·0	1·1	0·1	0·0	22		7·0	Scud and cirro-strati.
	14	440	45·2	44·3	0·9	0·1	0·0	19		5·0	Id.
	15	455	42·4	42·0	0·4	0·1	0·1	20		2·5	Cirro-stratous scud. ☽
	16	463	46·3	45·0	1·3	0·8	0·6	20		8·5	Id.;
	17	479	44·7	43·9	0·8	0·4	0·1	24	21 : 23 : —	2·5	Smoky scud; cirro-strati; cirro-cumuli. ☽
	18	490	46·0	44·7†	1·3	0·0	0·0	22	21 : 23 : —	1·0	Id.; id.; cirri. ⊙
	19	508	47·8	46·4	1·4	0·2	0·1	18	— : 21 : —	1·5	Cirro-cumulo-strati; bank of cirro-strati round hor. ⊙
	20	522	50·4	47·7	2·7	0·8	0·6	18	— : 21 : —	5·0	Id. ⊙
	21	535	53·5	49·3	4·2	0·7	0·7	18	20 : — : —	5·0	Loose cumuli; cirro-strati to E. ⊙
	22	558	54·9	50·4↓	4·5	1·2	0·6	18	20 : — : —	9·0	Id.; id.; cumuli. ⊙
	23	566	55·2	50·0	5·2	1·2	0·7	21	20 : — : —	8·5	Id.; cumuli; cum.-str.; cir.-str.; cirri. ⊖
29	0	570	57·0	51·4	5·6	1·5	1·2	21	20 : — : —	9·5	Scud and loose cum.; cum.; cir.; portion of faint halo. ⊖
	1	573	57·5	51·3	6·2	1·1	1·0	20	20 : — : —	9·9	Id.; cirrous mass. ⊖
	2	588	58·0	52·0	6·0	1·3	0·7	20	20 : — : —	9·9	Id.; id.; faint halo. ⊖
	3	589	58·2	51·2	7·0	1·9	1·2	21	20 : — : —	9·9	Id.; id.; id. ⊙
	4	601	57·0	49·6	7·4	1·3	1·0	20		9·5	Id.; id.; id. ⊙
	5	609	55·8	49·5	6·3	1·5	0·8	18	20 : — : —	10·0	Id.; id.; id. ⊖
	6	617	53·2	49·3	3·9	1·3	0·6	21	20 : — : —	10·0	Scud; nearly homogeneous cirrous mass, thicker.
	7	627	51·6	48·3	3·3	0·7	0·2	20	20 : — : —	10·0	Id.; id.
	8	637	49·2	46·7	2·5	0·6	0·3	20		10·0	Homogeneous cirrous mass; rain$^{0\cdot5}$
	9	649	48·3	47·3	1·0	0·5	0·3	19		10·0	Scud; homogeneous cirrous mass; rain$^{0\cdot5}$
	10	639	47·4	46·7	0·7	0·2	0·0	16		10·0	Id.; id.; rain$^{0\cdot2}$
	11	629	46·9	45·7	1·2	0·1	0·0	16		10·0	Rain$^{0\cdot2}$
	12	623	46·6	45·3	1·3	0·1	0·0	16		10·0	Id.
	13	29·620	47·6	46·0	1·6	0·2	0·1	17		9·8	Scud and cirro-strati.
	14	612	47·8	46·3	1·5	0·4	0·2	16		10·0	Id.
	15	603	48·1	46·6	1·5	0·2	0·1	18		10·0	Id.; drops of rain.
	16	584	48·4	46·9	1·5	0·4	0·5	16	20 : — : —	9·0	Scud; loose cirro-cumulo-strati.
	17	583	48·4	47·0	1·4	0·8	0·1	16	18 : — : —	10·0	Loose scud; thick cirro-strati.
	18	598	49·8	48·1	1·7	0·1	0·1	15	18 : — : —	10·0	Id.; cirri to W.
	19	610	50·7	49·2	1·5	0·3	0·5	17	19 : — : —	10·0	Id.
	20	601	52·1	50·1	2·0	1·4	0·8	16	19 : — : —	10·0	Id.
	21	604	53·2	50·5	2·7	1·0	0·6	18	20 : 21 : —	9·0	Id.; cirro-strati; cirri. ⊖
	22	604	54·4	51·3	3·1	1·0	0·4	21	20 : — : —	9·9	Id.; id.
	23	608	56·2	52·2	4·0	0·8	1·8	18	19 : — : —	9·9	Id.; id.
30	0	596	53·8	50·5	3·3	1·2	0·6	20	19 : — : —	10·0	Id.; id.
	1	567	56·6	52·2	4·4	1·2	1·0	18	18 : 20 : 22	10·0	Smoky scud; scud; cirro-strati; cirrous mass.
	2	533	57·4	52·6	4·8	1·6	1·0	17	— : 22 : —	10·0	Mottled cirro-strati; scud; cumulo-strati.
	3	502	57·9	51·7	6·2	2·8	2·4	17	18 : — : —	9·8	Scud; cirro-strati.
	4	469	62·6	55·1	7·5	3·4	2·2	17	18 : — : —	9·8	Id.; cirro-stratous scud; masses of cirro-strati.
	5	446	57·7	52·3	5·4	3·0	2·1	19	18 : — : —	9·9	Id.; id.; id.
	6	414	56·8	52·9	3·9	3·8	3·7	18	18 : 20 : 20	7·0	Id.; woolly cirri and cirro-strati. ⊖
	7	382	55·0	51·4	3·6	3·0	2·8	18	18 : — : —	9·5	Id.; cirro-strati; drops of rain.
	8	348	52·5	51·5	1·0	3·2	2·0	19	19 : 20 : 20	8·0	Id.; woolly cirri; cirro-strati; shower^{1}
	9	341	52·7	51·3	1·4	4·6	3·6	18	19 : — : —	10·0	Id.
	10	332	52·0	50·6	1·4	4·4	2·6	18	20 : — : —	8·5	Id.
	11	325	51·3	49·8	1·5	3·0	2·0	20		7·0	Id.; auroral light to N.; rain^{2}
	12	309	51·0	49·4	1·6	3·7	2·8	20		6·0	Id.; clouds broken.
	13	29·291	50·5	48·6	1·9	3·9	2·3	20		4·0	Scud; faint auroral light to N.
	14	268	50·8	48·4	2·4	5·1	5·0	21		3·0	Id.; id.
	15	261	50·8	48·2	2·6	3·5	4·0	20		9·0	Id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

April 30d 1h—2h. Clouds wild and stormy-like.

Gött. Mean Time.		BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
0	16	29·258	50·5	48·0	2·5	4·2	5·2	20	20 : — : —	9·0	Smoky scud ; cirro-strati.
	17	251	50·3	47·8	2·5	5·0	4·2	20	21 : — : —	5·0	Id. ; id. ☽
	18	270	51·0	48·2†	2·8	4·1	3·8	18	21 : — : —	5·0	Id. ; id.
	19	259	50·4	48·0	2·4	4·2	4·0	20	21 : — : —	3·5	Scud ; loose cumuli. ⊙
	20	271	52·6	49·3↓	3·3	4·7	3·1	20	20 : — : 22	7·0	Loose scud ; linear cirri ; cirro-strati. ⊖
	21	277	53·6	49·5	4·1	4·8	4·5	20	21 : 22 : —	8·0	Id. ; loose cirro-strati ; cirri ; cirrous haze. ⊙
	22	276	54·1	49·7	4·4	5·7	2·7	19	21 : — : 22	5·0	Id. ; woolly cirri ; cirrous haze ; clear to N. ⊖
	23	269	56·6	51·4	5·2	4·8	3·8	20	21 : 22 : —	8·0	Id. ; cirro-strati. ⊖
1	0	266	53·6	50·6	3·0	3·3	2·2	19	21 : — : 22	6·0	Scud ; loose cumuli ; linear cirri ; cirro-strati. ⊙
	1	260	51·3	49·0	2·3	3·4	2·2	20	22 : — : —	10·0	Id. ; nimbi ; cirro-strati ; shower^{1}
	2	245	54·2	51·0	3·2	3·7	2·0	22	22 : — : —	4·0	Id. ; cumuli ; nimbi. ⊙
	3	250	52·3	50·6	1·7	6·2	4·0	20	22 : — : —	8·0	Id. ; nimbi ; cirro-strati ; passing showers. ⊙
	4	249	52·2	51·0	1·2	5·0	2·0	20	22 : — : —	3·0	Id. ; id. ; id. ; double rainbow. ⊙
	5	233	54·4	50·6	3·8	3·3	2·6	18		3·0	Id. ; cumuli ; nimbi ; cirro-strati ; very fine double rainbow.* ⊙
	6	225	54·1	49·7	4·4	2·8	2·7	21	22 : — : —	7·0	Id. ; id. ; id. ; id.
	7	228	51·5	50·0	1·5	3·2	1·5	19	22 : — : —	3·5	Id. ; id. ; id. ; id. ; showers. ⊖
	8	233	48·5	46·7	1·8	1·8	1·1	19	22 : — : —	5·0	Id. ; id. ; cirro-strati.
	9	258	45·0	43·9	1·1	3·7	1·6	18	22 : — : —	6·5	Id. ; id.
	10	244	45·5	43·8	1·7	1·1	1·0	18		1·0	Scud and cirro-strati on horizon.
	11	256	46·6	44·2	2·4	1·7	1·1	18		1·0	Scud ; cirro-stratous scud ; light to NNW.
	12	264	46·3	44·6	1·7	1·1	0·9	20		2·0	Id. ; id. ; sky rather milky.
	13	29·261	45·6	43·8	1·8	1·4	1·1	19		1·0	Scud ; cirro-stratous scud ; sky rather milky.
	14	259	46·6	44·7	1·9	1·7	1·6	20		3·5	Id. ; id. ; rain$^{0·5}$
	15	259	46·0	44·4	1·6	1·5	0·9	21		1·5	Id. ; cirri.
	16	263	44·7	43·2	1·5	1·0	0·6	21	23 : — —	7·0	Id. ; cirro-strati ; cirri. ☽
	17	265	45·7	44·0	1·7	1·1	1·0	20	23 : — : —	7·0	Id. ; id. ; id. ☽
	18	284	47·0	43·8†	3·2	1·4	1·4	20	23 : — : —	1·0	Id. ; id. ; id. ; sky milky. ⊙
	19	310	48·7	44·7	4·0	1·2	0·9	20	24 : — : —	5·0	Id. ; id. ; id. ⊙
	20	320	49·8	45·0↓	4·8	1·7	1·2	21	24 : — : —	7·0	Id. ; id. ; id.
	21	331	50·8	46·3	4·5	2·7	1·9	21	25 : — : —	9·8	Id. ; loose cumuli.
	22	353	51·7	46·8	4·9	2·3	1·0	22	25 : — : —	9·5	Id. ; id. ; cumuli ; cirri.
	23	363	52·3	46·8	5·5	1·1	0·7	21	25 : — : —	8·0	Id. ; id. ; id. ; id. ⊖
2	0	373	53·8	47·7	6·1	2·9	1·2	24	25 : — : —	9·5	Id. ; cumuli ; nimbi ; cirri ; 0h 10m, rain$^{1·5}$
	1	381	54·7	46·0	8·7	2·1	1·7	21	25 : — : 24	8·0	Id. ; loose cumuli ; cumuli ; woolly cirri. ⊖
	2	403	53·6	46·0	7·6	3·0	1·5		25 : — : —	8·5	Id. ; id. ; woolly cirri. ⊖
	3	407	55·0	47·8	7·2	2·0	1·3	26	24 : — : —	8·5	Id. ; id. ; id. ⊖
	4	419	55·2	46·6	8·6	2·6	1·9	26	24 : — : —	7·5	Id. ; id. ; cumuli ; cumulo-strati ; cirri.
	5	439	52·0	46·2†	5·8	2·1	1·2	26	24 : — : —	5·0	Id. ; id. ; id. ; id. ; id. ⊙
	6	450	51·7	45·9	5·8	2·7	0·8	23	25 : — : —	3·0	Loose cumuli ; nimbi. ⊖
	7	466	47·9	43·6	4·3	3·1	1·0	22	— : — : 26	3·0	Masses of woolly cirri, like fir branches ; scud. ⊙
	8	496	45·7	42·9↓	2·8	1·8	0·6	24	— : — : 27	8·5	Id., much denser ; passing showers ; scud, &c.
	9	511	46·0	42·3	3·7	0·7	0·6	22		10·0	Masses of cirri and cirro-strati.
	10	522	44·6	41·6	3·0	0·7	0·2	20		10·0	Id.
	11	523	45·1	41·9	3·2	0 3	0·2	22		10·0	Dense clouds.
	12	524	44·7	41·9	2·8	0·4	0·5	21		8·0	Cirrous clouds.
	13	29·520	43·7	41·0	2·7	1·3	0·8	21		5·0	Cirrous clouds and haze.
	14	513	43·9	41·1	2·8	1·2	0·6	20		9·0	Cirro-strati.
	15	504	44·6	42·0	2·6	0·9	0·6	20		9·5	Id.
	16	492	44·7	41·9	2·8	1·6	1·1	21		9·5	Id.
	17	469	44·3	42·3	2·0	1·2	1·0	20	24 : — : —	9·5	Scud ; cirri and cirrous haze.
	18	468	45·2	43·1	2·1	1·5	1·2	22	24 : — : —	10·0	Id. ; thick cirro-strati and haze.
	19	468	46·6	44·2	2·4	1·4	1·4	21	24 : 25 : —	10·0	Id. ; nearly homogeneous cirro-strati and cirri.
	20	453	47·9	45·5	2·4	1·4	1·3	21	23 : 25 : —	10·0	Id. ; id.
	21	448	48·5	45·2	3·3	1·3	0·7	21	23 : — : —	10·0	Id. ; id. ●
	22	445	49·7	45·8	3·9	1·1	0·9	22	23 : — : —	10·0	Id. ; cirrous mass.
	23	429	50·7	46·2	4·5	1·9	1·5	20	23 : — : —	10·0	Id. ; id. ; cirro-strati.

April 30d 21h 30m. Portion of a solar halo.
May 1d. Thunder and lightning at Wolflee, about 13 miles SSW. of Makerstoun.
May 1d 1h. Observations made at 1h 13m.
* See additional Meteorological Notes after the *Hourly Meteorological Observations*.

Gött. Mean Time.	Barometer at 32°.	Thermometers.			Wind.			Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in		From			
					1^{h}.	10^{m}.				
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
3 0	29·426	52·6	47·8	4·8	2·5	0·8	22	24 : — : —	10·0	Scud.
1	418	53·6	48·2	5·4	1·3	0·6	23	24 : — : —	10·0	Id.
2	417	53·1	48·1	5·0	1·2	1·3	24	24 : — : —	9·9	Id.; cirro-strati; cirri. ●
3	422	53·2	48·2	5·0	1·3	1·1	25	25 : — : 26	9·0	Id.; woolly cirri; cumuli; cirro-strati. ⊖
4	425	53·2	47·6	5·6	1·7	2·1	26	25 : — : —	9·0	Id.; cumuli; cumulo-strati; cirro-strati; cirri.
5	430	54·8	48·7	6·1	1·4	1·2	28	26 : — : 28	7·5	Id.; woolly cirri; cumuli, &c., as before. ⊖
6	445	55·0	47·0	8·0	2·0	2·2	28	27 : — : —	7·0	Cumuli; cumulo-strati; nimbi; rainbow. ⊖
7	471	51·2	44·6†	6·6	2·3	1·7	28	27 : — : 28	3·0	Id.; id.; woolly cirri; cirro-strati. ⊙
8	491	48·0	43·6	4·4	1·5	1·2	27		2·0	Id.; id. and cirro-strati on horizon. ⊙
9	508	46·2	42·1↓	4·1	1·2	0·7	26		1·0	Id.; id. id.
10	521	44·4	40·4	4·0	1·2	0·3	27		0·5	Id.; id. id.
11	537	43·3	39·8	3·5	0·7	0·3	22		4·0	Id.; cirro-strati.
12	540	43·3	40·8	2·5	0·2	0·1	22		9·0	Scud; id.
23¼	29·541	50·1	44·2	5·9	3·3	2·0	30	30 : — : —	……	Sunday—Cumuli; nimbi; and passing showers of hail and rain.
4 13	29·685	38·6	37·5	1·1	4·5	0·0	26		1·0	Cirro-strati; sky rather milky.
14	684	38·5	37·2	1·3	0·1	0·3	28		0·5	Id., (?) on E. horizon.
15	676	39·7	37·5	2·2	0·6	0·4	29	— : 30 : —	4·0	Cirro-strati.
16	666	40·0	37·0	3·0	0·4	0·3	28	— : 30 : —	7·0	Cirro-cumuli; cirro-strati.
17	662	40·6	37·6	3·0	0·5	0·1	26	— : 31 : —	9·5	Cirro-stratous scud; woolly cirro-strati; cir.-cum.
18	659	42·0	38·7	3·3	0·3	0·1	25	— : 30 : —	9·5	Id.
19	658	43·0	39·7	3·3	0·2	0·2	28	— : 30 : —	9·0	Cirro-cumuli; cirro-strati.
20	652	43·3	40·0	3·3	1·1	0·6	29	— : 30 : —	7·5	Id.; id.
21	638	45·9	41·0	4·9	1·2	1·5	31	0 : — : —	6·0	Cumuli; cirro-strati.
22	656	43·8	41·8	2·0	3·5	1·7	0	— : 31 : —	9·9	Cirro-stratous scud; cirro-strati.
23	664	45·8	42·4	3·4	2·5	2·1	1	1 : — : —	8·5	Scud and loose cumuli. ⊖
5 0	681	46·5	41·2	5·3	2·9	1·3	1	1 : — : —	8·0	Id. ⊙
1	683	48·2	42·0	6·2	1·8	0·9	2	1 : — : —	8·0	Id.
2	686	47·7	41·4	6·3	1·7	1·1	3	2 : — : —	8·5	Id. ⊙
3	690	47·5	40·7	6·8	1·2	0·6	2	2 : — : —	5·5	Id. ⊙
4	695	48·3	41·8	6·5	1·1	0·6	2	2 : — : —	4·5	Id. ⊙
5	695	47·3	41·7	5·6	1·2	0·9	5	2 : — : —	4·0	Id. ⊙
6	700	46·0	40·8†	5·2	0·7	0·6	3	4 : — : —	3·0	Loose cumuli. ⊙
7	703	45·4	40·4	5·0	0·5	0·3	3	4 : — : —	1·0	Id. ⊖
8	708	42·9	38·8↓	4·1	0·3	0·1	3	4 : — : —	1·0	Id. ⊙
9	707	40·4	37·7	2·7	0·2	0·1	2	— : 4 : —	0·8	Cirro-str. scud; streaks of cirri radiating from NW.
10	710	38·3	36·9	1·4	0·1	0·0		— : 4 : —	8·5	Id.; id.
11	711	40·3	38·7	1·6	0·0	0·0	1		10·0	Overcast.
12	702	41·3	39·7	1·6	0·0	0·0			10·0	Id.
13	29·695	41·7	40·5	1·2	0·0	0·0			10·0	Overcast.
14	685	42·5	41·4	1·1	0·0	0·0	2		10·0	Id.
15	670	42·3	41·3	1·0	0·0	0·0			10·0	Id.
16	654	42·1	41·2	0·9	0·0	0·0		6 : — : —	10·0	Thick scud.
17	647	42·3	41·2	1·1	0·0	0·0		7 : — : —	10·0	Id.
18	640	42·8	41·6	1·2	0·0	0·0	4	7 : — : —	10·0	Loose scud; cirro-stratous scud; rain$^{0.2}$
19	636	43·7	42·0	1·7	0·1	0·0	2	4 : 6 : —	10·0	Smoky scud; cirro-stratous scud; cirri.
20	634	45·3	43·5	1·8	0·2	0·3	2	4 : 6 : —	10·0	Smoky and cumulous scud; cirro-stratous scud; rain^{1}
21	622	45·7	43·2	2·5	0·3	0·2	4	4 : — : —	10·0	Id.; id.
22	608	47·0	43·9	3·1	0·4	0·4	7	5 : 7 : —	9·8	Id.; woolly cirro-cumuli.
23	601	47·6	43·8	3·8	0·5	0·6	8	5 : 7 : —	10·0	Id.; cir.-str. scud; cir.-cum.
5 0	599	48·3	44·7	3·6	0·8	0·6	8	7 : 8 : —	10·0	Cumulous scud; cirro-stratous scud.
1	596	48·4	44·2	4·2	1·0	0·6	7	7 : 8 : —	9·5	Id.; id.
2	601	48·2	43·9	4·3	0·8	0·7	7	7 : 8 : —	9·5	Id.; id.
3	604	49·2	43·4	5·8	1·0	0·9	7	8 : — : —	9·5	Scud and loose cumuli.
4	605	48·8	44·3	4·5	1·5	0·6	4	8 : — : —	5·5	Cumulous scud; cumuli.
5	619	47·4	43·9	3·5	1·2	0·6	7	6 : 7 : —	9·2	Id.; cirro-stratous scud.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

May 4^{d} 18^{h}. Observations made at 18^{h} 10^{m}.

ött. ean me.	BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1^{h}.	Maximum force in 10^{m}.	From			
h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
6	29·621	46·4	43·2	3·2	1·4	1·0	6	6 : 6 : —	9·9	Cumulous scud; cirro-stratous scud.
7	636	45·4	42·5	2·9	1·0	0·9	4	5 : — : —	10·0	Scud.
8	645	44·7	42·4	2·3	1·2	0·5	3	5 : — : —	10·0	Id.
9	659	44·6	42·9	1·7	0·8	0·5	4	4 : — : —	10·0	Id.
10	672	42·9	42·1	0·8	1·8	0·7	5		10·0	Id.; rain$^{0\cdot5}$
11	681	40·7	40·2	0·5	1·6	0·7	4		10·0	Id.; rain^{2}
12	692	41·2	40·5	0·7	0·9	1·5	4		10·0	Id.; id.; dark.
13	29·696	41·3	40·5	0·8	1·7	0·6	4		10·0	Scud; rain^{2}; dark.
14	701	42·0	40·9	1·1	1·5	0·6	3		10·0	Id.; id.; id.
15	703	42·2	40·9	1·3	1·1	1·2	4		10·0	Id.; id.; id.
16	692	42·3	41·0	1·3	1·1	0·9	3	4 : — : —	10·0	Id.; cirro-stratous scud; cirrous mass.
17	685	43·0	41·3	1·7	0·8	0·7	2	3 : — : —	10·0	Id.; id.; id.
18	668	43·4	41·4	2·0	1·8	2·3	0	— : 3 : —	10·0	Cirro-stratous scud; wavy cirro-stratus; cirrous mass.
19	657	43·7	41·3	2·4	2·5	1·8	0	2 : 3 : —	10·0	Loose scud to E.; dense cirro-strati over the sky.
20	645	44·7	42·3	2·4	2·9	2·7	0	1 : 3 : —	9·9	Loose scud in patches; cirro-stratous scud.
21	630	46·0	43·2	2·8	3·8	3·2	0	1 : 3 : —	10·0	Id.; id.
22	617	45·9	43·0	2·9	3·5	3·9	1	1 : — : —	10·0	Scud; cirro-strati and cirrous haze.
23	609	46·9	43·4	3·5	4·0	3·3	2	2 : — : —	10·0	Thick scud.
0	597	47·3	44·3	3·0	3·6	3·0	2	2 : — : —	10·0	Id.
1	586	46·8	43·6	3·2	4·0	2·9	2		10·0	Id.; rain$^{0\cdot5}$
2	573	44·4	42·0	2·4	3·6	2·7	1	2 : — : —	10·0	Id.; shower$^{0\cdot5-2}$
3	554	44·0	42·0	2·0	3·1	2·9	3		10·0	Id.; rain$^{1-3}$
4	545	41·4	40·1	1·3	3·0	1·6	4	2 : — : —	10·0	Id.; rain^{2}
5	533	40·6	39·3	1·3	1·7	0·8	3	2 : — : —	10·0	Id.; dense mass of cirro-strati above? rain$^{0\cdot5}$
6	502	41·7	39·6	2·1	1·7	2·2	1	2 : — : —	10·0	Id.; dense cirro-strati and haze; rain$^{0\cdot2}$
7	492	41·3	39·1	2·2	3·1	3·0	2		10·0	Rain$^{0\cdot5}$
8	493	40·3	39·3	1·0	2·5	1·6	2		10·0	Rain^{1}
9	486	40·3	39·4	0·9	2·2	1·7	2	2 : — : —	10·0	Scud; rain$^{0\cdot5}$
10	467	40·3	39·5	0·8	2·2	2·0	2		10·0	Id.; id.
11	454	40·6	39·8	0·8	2·1	1·4	2		10·0	Very dark; rain^{2}
12	446	40·3	39·6	0·7	1·8	1·2	4		10·0	Id.; id.
13	29·433	40·2	39·0	1·2	1·7	1·0	3		10·0	Very dark; rain$^{0\cdot5}$
14	415	39·6	38·3	1·3	1·7	1·3	4		9·9	Scud; showers$^{1-3}$
15	414	39·4	38·4	1·0	0·8	0·1	2		10·0	Id.; showers$^{1-2}$
16	405	38·9	38·0	0·9	0·5	0·3	4	4 : — : —	10·0	Id.
17	391	38·8	37·7	1·1	0·6	0·5	2	6 : 4 : —	9·0	Id.; cirro-stratous scud; linear cirri.
18	386	39·0	38·1	0·9	0·4	0·2	3	6 : — : —	9·5	Id.; id.; mottled and linear cirri.
19	375	40·0	39·0	1·0	0·3	0·4	3	— : 4 : —	10·0	Cirro-stratous scud; scud near horizon; rain$^{0\cdot5}$
20	366	41·6	40·2	1·4	0·4	0·2	4	— : 3 : —	8·0	Id.; id. ⊙
21	359	44·2	41·5	2·7	0·4	0·5	6	4 : — : —	9·5	Scud; cirro-stratous scud. ●
22	351	45·0	41·9	3·1	0·7	0·6	6	4 : — : —	9·7	Id.; loose cumuli; cirri and cirro-strati.
23	342	45·6	42·7	2·9	0·7	0·6	3	4 : — : —	9·9	Id.; id.
0	332	46·0	42·4	3·6	0·6	0·5	4	4 : — : —	10·0	Id.; id.; cirro-strati; cirrous haze.
1	322	44·9	40·4	4·5	0·6	0·6	3	4 : — : —	10·0	Id.; id.; id.; id.
2	312	48·0	43·9	4·1	0·4	0·3	6		10·0	Id.; id.; id.; id.
3	298	47·1	42·9	4·2	0·5	0·3	7	4 : — : —	9·8	Id.; id.; haze breaking; solar halo.
4	290	45·8	41·8	4·0	0·4	0·4			9·7	Id.; id.; cirro-strati; woolly cirri. ⊖
5	281	46·0	42·0	4·0	0·4	0·3	7	4 : — : —	9·0	Id.; woolly cirri. ⊙
6	282	45·4	41·7	3·7	0·4	0·4	6	6 : — : —	9·5	Id.; loose cumuli; woolly cirri. ⊖
7	282	43·3	40·4	2·9	0·5	0·3	4	6 : — : 0	9·0	Id.; cirro-stratous scud; woolly and linear cirri. ⊖
8	294	42·5	40·1	2·4	0·4	0·1	4		10·0	Cirro-statous scud; woolly and linear cirri. ⊖
9	301	41·0	38·9	2·1	0·3	0·1	4	— : 8 : —	9·5	Id.; scud on horizon; masses of cirri.
10	309	39·7	38·6	1·1	0·1	0·1	4		9·8	Id.; masses of cirri.
11	310	38·0	37·4	0·6	0·0	0·0			2·0	Scud and cirro-strati, near horizon radiating from N.
12	313	36·7	36·3	0·4	0·0	0·0	4		2·0	Id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The ptions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Gött. Mean Time.	BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
8 13	29·317	37·0	36·7	0·3	0·0	0·0			7·0	Scud and cirro-strati.
14	317	38·4	37·9	0·5	0·0	0·0			10·0	Overcast; drops of rain.
15	318	39·0	38·5	0·5	0·0	0·0			9·8	Thick scud and cirro-strati.
16	321	39·6	39·0	0·6	0·1	0·0	4		9·5	Id.
17	321	39·1	38·3	0·8	0·1	0·0	4	10 : 10 : —	8·0	Id.
18	329	38·7	38·0	0·7	0·0	0·0	4	5 : 10 : —	3·0	Thin misty scud; cirro-strati; cirro-cumulo-strati. ⊙
19	332	39·5	38·9	0·6	0·0	0·0	3	5 : — : —	10·0	Id.
20	331	41·7	41·3	0·4	0·1	0·1	4	5 : — : —	10·0	Id.; rain^{1}
21	329	39·2	38·7	0·5	0·8	0·2	2	6 : — : —	10·0	Id.; cirro-strati; rain$^{0·5}$
22	320	42·2	41·0	1·2	0·3	0·2	2	4 : — : —	10·0	Id.; id.
23	316	44·9	44·7	0·2	0·6	0·1	12	10 : 9 : —	9·5	Thin scud; cirro-cumulo-strati; cirro-strati; cirri.
9 0	314	47·5	44·4	3·1	0·4	1·3	8	9 : — : —	9·8	Scud; id.
1	319	47·0	43·4	3·6	1·1	1·1	10	9 : 10 : —	9·8	Id.; loose cumuli; cirro-strati.
2	317	49·2	45·0	4·2	1·4	1·1	9	10 : 11 : —	9·0	Id.; id.; id.; cirri. ⊙
3	312	49·2	45·8	3·4	1·1	1·1	7	10 : 11 : —	8·5	Id.; id.; id.; id.; cumuli. ⊖
4	310	50·4	46·0	4·4	1·0	0·9	9	10 : — : —	9·0	Thin scud; loose cumuli; cirro-strati; cirri.
5	308	47·2	44·2	3·0	1·2	0·5	8	10 : — : —	9·9	Scud; cirro-strati; rain$^{0·5}$
6	327	46·1	44·0	2·1	1·0	0·5	8	9 : — : —	10·0	Id.; loose cumuli; cirro-strati; shower lately.
7	328	45·6	43·5	2·1	0·6	0·6	8	9 : — : —	9·8	Id.; id.; id.
8	331	45·1	42·9	2·2	0·7	0·2	7	— : 10 : —	7·0	Cir.-cum-str.; loose cum.; cir.-str. and cum.-str. to E. ⊙
9	329	42·1	40·7	1·4	0·3	0·0	2	7 : — : —	7·0	Scud; cirro-strati; cirro-cumulo-strati. ☽
10	334	42·7	41·9	0·8	0·2	0·0	2		10·0	Loose misty scud; cirro-strati; shower$^{0·5}$
11	331	42·7	42·1	0·6	0·1	0·0			10·0	Scud; rain$^{0·2}$
12	324	42·9	43·3	0·6	0·0	0·0			10·0	Id.
13	29·323	42·9	42·4	0·5	0·1	0·0	4		9·9	Scud.
14	326	42·7	42·2	0·5	0·1	0·0			10·0	Id.; rain$^{0·2}$
15	324	41·3	41·0	0·3	0·1	0·0	8		9·5	Id.; cirro-strati.
16	327	41·7	41·2	0·5	0·0	0·0	7		10·0	Id.; id.
17	332	41·8	41·3	0·5	0·1	0·0	7	— : 4 : —	9·9	Dense mass of cirro-strati.
18	342	41·6	41·0	0·6	0·1	0·0	3	4 : 1 : —	9·8	Cirro-stratous scud; cirro-cumuli; cirro-strati.
19	352	44·0	42·8	1·2	0·1	0·0	4	— : 6 : —	9·9	Cirro-cumulo-strati; loose cumuli to E.
20	363	44·6	42·9	1·7	0·2	0·0	4	— : 4 : —	9·5	Id.; scud and cumuli on horizon.
21	369	46·1	43·2	2·9	0·2	0·1	7	6 : 8 : —	6·5	Scud; loose cumuli. ⊙
22	375	48·6	44·8	3·8	0·3	0·2	6	7 : — : —	9·8	Id.; id.; cir.-str. scud; cirro-cum.-str.
23	386	48·3	44·3	4·0	0·4	0·4	4		10·0	Id.; id.; id.
10 0	399	48·7	44·7	4·0	0·5	0·5	7	6 : — : —	10·0	Id.; thick cirro-stratous scud and cirro-strati.
1	405	47·6	43·7	3·9	0·6	0·6	5	6 : — : —	10·0	Id.; id.
2	415	47·4	43·8	3·6	0·7	0·3	5	4 : — : —	10·0	Id.; loose cumuli; dense cirro-strati.
3	420	49·0	44·6	4·4	0·6	0·3	6		10·0	Id.; id.; id. and cir.-cum.str.
4	427	47·7	44·0	3·7	0·5	0·3	4	4 : — : —	9·5	Id.; id.; id.; id.
5	434	47·0	43·5	3·5	0·4	0·3	5	4 : — : —	9·5	Id.; id.; id.; id.
6	440	48·0	44·3	3·7	0·3	0·3	4	4 : — : —	8·5	Id.; id.; id.; id.
7	462	47·3	43·7	3·6	0·2	0·2	3	2 : — : —	7·0	Id.; id.; cirro-strati.
8	483	46·8	43·3	3·5	0·2	0·1	3		1·5	Cumuli; cirro-strati; cirrous haze on horizon.
9	500	43·0	41·3	1·7	0·1	0·1	2		1·0	Cirro-strati; haze on horizon.
10	527	41·8	40·2	1·6	0·1	0·1	2		9·8	Scud; cirro-cumuli.
11	533	42·4	40·8	1·6	0·3	0·1	3		9·9	Thick scud and cirro-strati.
12	538	42·3	40·7	1·6	0·1	0·0	30		10·0	Id.
11 1½	29·529	57·3	48·7	8·6	0·5	0·1	20	— : 24 : —		Sunday—A.M. Cumuli and cumulo-strati; cirri and thick cirro-strati at 7h.
13	29·410	45·9	45·0	0·9	1·9	0·8	21		1·5	Cirro-strati to N. and W.; very faint auroral light.
14	409	47·3	45·9	1·4	0·7	0·1	23		8·0	Scud; cirro-strati on horizon; lightish to N.
15	411	45·2	43·0	2·2	0·6	0·2	21		2·0	Scud and cirro-strati on horizon.
16	415	42·2	40·5	1·7	0·4	0·2	22		2·0	Cirro-stratous scud and cirro-strati on E. horizon.
17	420	42·3	40·3	2·0	0·5	0·2	22		2·0	Id.
18	435	44·9	42·0	2·9	0·5	0·5	24		0·8	Masses of cirro-strati and scud; cumulo-strati to NE. ⊙

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motion of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

tt. an ie.	BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
19	29·450	45·9	42·6†	3·3	0·6	0·3	24	— : — : 20	0·8	Woolly cirri ; cirro-strati ; cumulo-strati. ⊙
20	444	48·0	43·6	4·4	0·8	0·7	26	28 : — : 20	4·0	Patches of scud ; cirri ; cirro-strati ; cumulo-strati. ⊙
21	448	50·0	44·3⸸	5·7	1·0	1·0	28	30 : — : —	5·0	Id. ; id. ; id. ; id. ⊙
22	455	52·0	45·3	6·7	1·3	1·7	30	30 : — : —	6·0	Scud and loose cumuli ; cirri ; cirro-strati ; cum.-str. ⊙
23	480	52·2	46·0	6·2	1·3	0·6	30	30 : — : —	8·5	As before. ⊖
0	493	53·4	46·0	7·4	1·7	0·8	30	30 : — : —	7·5	Id. ⊖
1	495	54·4	47·0	7·4	1·3	1·1	30	29 : — : —	5·5	Id. ⊙
2	506	56·0	48·0	8·0	1·7	0·8	31	29 : — : —	9·0	Id. ; cumulo-strati to S. ; electric-looking. ⊙
3	554	47·2	45·9	1·3	2·6	0·7	0	30 : — : —	9·0	Scud; cum. ; cum.-str. ; cir.-str. ; cirrous mass ; showers.*
4	568	50·2	46·4	3·8	2·2	3·1	0	30 : — : —	9·8	Id. ; cumulo-strati ; cirro-strati ; rain^{4}
5	574	50·7	46·6	4·1	2·1	0·2	30	30 : — : —	6·0	Id. ; id. ; id.
6	586	54·3	49·6	4·7	0·2	0·1	30		5·5	Id. ; watery cirro-strati ; cumulo-strati ; drops of rain. ⊖
7	612	46·1	45·7†	0·4	1·3	0·1	0	31 : — : —	6·5	Scud and nimbi to S. ; cum.-str. to N. and E. ; cir.-str.*
8	643	48·0	46·0⸸	2·0	0·2	0·2	29	31 : — : —	8·5	Thick scud and cirro-strati ; rain$^{0·2}$
9	659	47·6	44·4	3·2	0·5	0·5	31	— : 29 : —	9·5	Cirro-stratous scud.
10	689	46·8	44·8	2·0	0·7	0·6	0		9·8	Id.
11	707	45·4	43·5	1·9	0·5	0·2	30		9·8	Id.
12	719	45·2	43·8	1·4	0·1	0·1	28		9·0	Id. ☽
13	29·736	42·9	41·4	1·5	0·1	0·2	28		1·5	Cirro-stratous scud.
14	766	43·0	41·2	1·8	0·4	0·2	30		1·5	Id.
15	783	42·3	40·0	2·3	0·4	0·4	29		1·5	Scud ; cirro-strati.
16	796	40·9	38·9	2·0	0·4	0·2	27		2·0	Id. ; id.
17	812	41·7	39·2†	2·5	0·4	0·3	30	— : — : 28	4·0	Woolly cirri, radiating from NW. and SE. ; cirro-strati.
18	829	44·0	41·0	3·0	0·4	0·7	28	— : — : 28	8·0	Id. ; id.
19	845	46·4	42·4	4·0	0·9	0·5	29	— : 28 : 28	7·0	Loose woolly cirro-strati and cirri. ⊖
20	865	48·9	44·0	4·9	1·3	0·5	29	— : — : 28	6·5	Woolly cirri and cirro-strati ; patches of cumuli. ⊙
21	890	49·8	44·7⸸	5·1	1·9	0·8	30	30 : — : —	5·0	Loose cumuli ; cirro-strati to S. ⊙
22	903	51·1	45·5	5·6	1·7	1·0	0	30 : — : —	8·0	Id.
23	923	52·9	46·4	6·5	2·0	1·4	0	30 : — : —	9·0	Id.
0	942	52·6	45·6	7·0	2·0	0·7	0	30 : — : —	9·7	Id. ; thick cirro-stratous scud.
1	959	52·9	47·1	5·8	1·6	0·6	3	31 : — : —	9·9	Id. ; id.
2	975	52·5	47·5	5·0	1·3	0·6	3	0 : — : —	9·9	Id. ; cirro-cumulo-strati.
3	29·986	53·7	48·3	5·4	0·7	0·8	3	0 : — : —	9·0	Id. ; id. ⊖
4	30·002	54·1	48·9	5·2	1·0	0·8	3	0 : — : —	8·5	Id. ; id. ⊖
5	014	53·3	47·7	5·6	1·2	0·8	3	2 : 0 : —	5·0	Id. ; id. ⊙
6	028	51·8	46·5†	5·3	0·8	0·7	3	3 : — : —	2·5	Id. ; cirro-strati ; cirri. ⊙
7	055	50·0	44·9	5·1	0·6	0·4	2		2·0	Loose scud ; cumuli on horizon ; woolly cirri. ⊙
8	078	47·8	43·8	4·0	0·3	0·1	2		2·0	Patches of scud ; cirro-strati ; id. ⊙
9	100	44·0	42·3⸸	1·7	0·1	0·1	3		2·0	Cumuli ; cirro-strati ; woolly and linear cirri. ☽
10	111	40·8	40·0	0·8	0·1	0·1	1		2·0	Cirro-strati ; cirri ; cirrous haze ; small lunar corona. ☽
11	119	41·2	39·7	1·5	0·1	0·0	30		1·0	Cirri and cirro-strati. ☽
12	131	36·8	36·7	0·1	0·0	0·0			0·2	Id.
13	30·137	35·3	35·3	0·0	0·2	0·0	16		0·2	Cirri and cirro-strati.
14	141	33·1	33·1	0·0	0·0	0·0			0·5	Id.
15	148	33·3	33·3	0·0	0·0	0·0			2·0	Id.
16	154	33·1	33·1	0·0	0·0	0·0			3·0	Id.
17	150	35·3	34·7	0·6	0·2	0·0			3·5	Id.
18	160	36·6	36·2	0·4	0·1	0·0	20		1·5	Id. [parhelia. ⊙
19	161	42·3	40·3	2·0	0·0	0·0		— : — : 31	7·5	Woolly cirri ; cirro-strati ; cirrous mass ; solar halo and
20	161	46·8	44·6	2·2	0·1	0·0	16	— : — : 31	8·5	Id. ; id. ⊙
21	152	52·3	48·2	4·1	0·0	0·0			10·0	Milky cirrous haze over the sky ; cirro-strati ; halo. ⊖
22	142	57·2	50·3	6·9	0·1	0·0			10·0	Cirro-stratous scud ; cumuli ; cum.-str. ; cirrous mass. ⊙
23	136	53·9	48·2	5·7	0·2	0·3	26	24 : — : —	10·0	Scud ; cumuli ; cumulo-strati ; cirrous mass.
0	132	56·0	50·0	6·0	0·4	0·3	24	24 : — : —	10·0	Id. ; cumulo-strati ; cirrous mass.
1	134	50·8	47·4	3·4	0·4	0·5	25		10·0	Id. ; dense cirrous mass ; rain^{1}
2	138	50·3	47·4	2·9	0·4	0·3	24		10·0	Id. ; id. ; id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The otions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

May 12^{d} 3^{h}. Two claps of thunder heard. 6^{h} 45^{m}. Shower^{3}, with bright double rainbow. 6^{h} 50^{m}—7^{h} 0^{m}. Two peals of thunder to SW.

. Loose nimbi, spreading out in some places into masses of watery cirro-stratus ; slate-blue homogeneous clouds to SSW.

* See additional Meteorological Notes after the *Hourly Meteorological Observations.*

Gött. Mean Time.		BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc.:C.-s.:Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
14	3	30·126	51·6	49·2	2·4	0·3	0·1	24	24 : — : —	10·0	Loose scud ; dense cirrous mass ; rain^{1}
	4	117	51·3	48·7	2·6	0·7	0·2	24	24 : — : —	10·0	Id. ; id. ; id.
	5	098	51·0	48·7	2·3	0·3	0·2	20	24 : — : —	10·0	Scud ; id. ; rain$^{0\cdot2}$
	6	085	51·0	49·6	1·4	0·3	0·3	19	24 : — : —	10·0	Id. ; rain^{1}
	7	081	50·8	48·8	2·0	0·3	0·3	22	24 : — : —	10·0	Id. ; mass of cirro-strati.
	8	082	50·2	48·3	1·9	0·7	0·2	23	25 : — : —	10·0	Id. ; id.
	9	083	49·6	48·3	1·3	0·4	0·1	20	25 : — : —	10·0	Id. ; id.
	10	082	49·2	48·2	1·0	0·1	0·0	20	25 : 31 : —	9·9	Id. ; cirro-stratous scud.
	11	079	46·9	46·4	0·5	0·0	0·0	20	27 : — : —	3·5	Id., moving quickly ; cir.-str. on hor. ; faint lun. cor. ☽
	12	077	45·7	45·4	0·3	0·0	0·0	24		0·5	Masses of scud and cirro-strati. ☽
	13	30·078	46·0	45·6	0·4	0·1	0·0	24		7·5	Cirro-stratous scud. ☽
	14	081	46·9	46·4	0·5	0·1	0·0	24		9·0	Id.
	15	079	46·8	46·4	0·4	0·0	0·0	6		4·5	Scud ; loose cum. ; cirro-strati ; cirri ; cirrous haze.
	16	074	44·6	44·4	0·2	0·0	0·0	16	29 : — : —	9·0	Id. ; cirri ; cirro-strati.
	17	082	43·0	43·0	0·0	0·0	0·0	20	30 : 0 : 0	8·0	Id. to E. ; woolly cir. ; cir.-cum. ; cir.-str. ; mist on the ground.
	18	089	45·8	45·6	0·2	0·0	0·0	24	— : 31 : —	9·8	Cirro-stratous scud ; loose scud to E.
	19	092	49·1	48·3	0·8	0·0	0·0	16	— : 0 : —	10·0	Cir.-cum. scud ; undulated cir.-str. and cirro-cumuli.
	20	094	52·4	51·0	1·4	0·0	0·0		— : 0 : —	10·0	Sheets of cirro-stratus.
	21	099	56·8	54·0	2·8	0·1	0·0	15		10·0	Id.
	22	097	58·0	55·2	2·8	0·1	0·2	2		10·0	Loose scud ; cirro-strati ; cirrous mass.
	23	082	62·0	57·3	4·7	0·3	0·3	27	— : 31 : —	10·0	Cirro-stratous scud ; cirro-strati ; cirrous mass. ●
15	0	081	62·6	56·8	5·8	0·6	0·7	29	31 : — : —	10·0	Patches of scud ; sheets of cirro-stratus.
	1	082	63·0	57·3	5·7	0·8	0·7	30	31 : — : —	9·8	Loose cum. ; cum.-str. ; cir.-cum.-str. ; cirri.
	2	078	65·3	58·3	7·0	0·9	1·1	30	31 : — : —	9·2	Id. ; id. ; woolly and mottled cirri.
	3	074	65·4	58·4	7·0	0·9	0·5	31	31 : — : —	9·5	Id. ; id. ; id.
	4	066	67·2	59·7	7·5	0·5	0·6	2	30 : — : —	9·5	Id. ; id.
	5	067	64·4	58·1	6·3	0·6	0·5	4	29 : 31 : —	8·0	Id. ; id. ; cirro-stratous scud ; cirri.
	6	084	58·0	54·7†	3·3	0·9	0·4	5	— : 30 : —	8·0	Cirro-stratous scud ; cirro-cumulo-strati.
	7	102	55·0	52·7	2·3	0·5	0·3	6	4 : 30 : —	9·8	Scud ; cirro-stratous scud.
	8	109	53·7	52·0	1·7	0·3	0·2	4	4 : 30 : —	10·0	Id. ; id.
	9	111	52·7	51·3⸸	1·4	0·2	0·1		4 : 31 : —	9·0	Id. ; cirro-stratous scud ; cir.-cum.-str. ; cirri.
	10	111	52·5	51·3	1·2	0·1	0·0			10·0	Cirro-stratous scud, nearly homogeneous.
	11	113	52·3	51·2	1·1	0·0	0·0			10·0	As before.
	12	112	52·1	51·1	1·0	0·0	0·0	20		10·0	Id.
	13	30·112	52·0	51·2	0·8	0·0	0·0			10·0	As before.
	14	107	52·0	50·9	1·1	0·0	0·0	20		10·0	Id. nearly homogeneous.
	15	102	50·7	49·2	1·5	0·2	0·1	21		9·5	Scud ; cirro-stratous scud ; cirro-strati.
	16	102	48·9	47·9	1·0	0·2	0·1	22		6·0	Id. ; id. ; id. ; cirri.
	17	098	48·3	47·0	1·3	0·2	0·2	23		4·0	Cum.-str. to W. ; bank of cirro-stratus to S. ; cirri. ⊙
	18	102	48·8	47·4†	1·4	0·3	0·2	23	— : — : 0	6·0	Woolly cir. ; cirro-strati ; cumuli ; cumulo-strati. ⊙
	19	103	51·3	48·7	2·6	0·3	0·3	24	— : 31 : —	8·0	Varieties of cirro-strati ; cum.-str. to NW. ; loose cum. to SE. ⊖
	20	098	52·1	49·0	3·1	0·5	0·4	24	— : 30 : 30	7·0	Woolly cir. and cir.-str. ; cir.-cum. ; small cum.-str. ; cum. to SW. ⊖
	21	105	55·9	51·8⸸	4·1	0·3	0·3	26	— : 30 : —	9·0	Loose cir.-str. or cir.-cum.-str., mixed with cum. ; cir. haze. ⊖
	22	084	57·3	52·8	4·5	0·3	0·4	26	28 : 30 : 30	6·5	Patches of cum. ; woolly cirri ; cir.-str. ; cir.-cumuli. ⊙
	23	081	60·1	55·1	5·0	0·4	0·3	26	25 : 28 : —	7·5	Id. ; cirro-cumulo-strati ; cirro-strati. ⊖
16	0	057	62·6	56·0	6·6	0·7	0·5	26	26 : — : —	8·0	Loose cumuli ; cirro-stratous scud ; cirro-strati. ⊖
	1	044	64·0	56·5	7·5	0·6	0·5	28	26 : 29 : —	9·5	Id. ; cirro-strati. ⊙
	2	025	65·0	58·0	7·0	1·2	0·4	26	26 : 29 : —	9·5	Id. ; id., becoming more homgeneous.
	3	014	64·8	57·7	7·1	1·2	1·4	28	29 : 29 : —	7·0	Id. ; id. ; cir.-cum.-str. ; woolly cir. ⊖
	4	30·005	64·9	57·8	7·1	1·0	0·5	29	28 : — : —	8·0	Id. ; id. ; cirri ; cirrous haze. ⊖
	5	29·995	63·2	55·8	7·4	1·1	0·8	27	28 : — : —	9·2	Id. ; cumulo-strati ; cirrous haze ; halo. ⊖
	6	993	60·3	54·1†	6·2	1·1	0·7	26	27 : — : —	6·0	Id. ; id. ; cirro-strati ; woolly cir. ⊙
	7	992	56·0	51·9	4·1	0·7	1·3	28	— : 30 : —	9·0	Cirro-stratous scud ; cirro-strati ; woolly cirri. ●
	8	989	53·8	50·3	3·5	1·0	0·7	28	— : 0 : —	9·9	Cirro-cumulo-strati ; id. ; id.
	9	997	52·0	47·8⸸	4·2	0·7	0·1	24		10·0	Cirro-stratous scud and cirrous mass ; small corona. ☽
	10	980	50·8	47·6	3·2	0·6	0·3	24		9·0	Cirro-strati ; woolly cirri ; cirrous haze ; lunar cor. ☽

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

ött. ean me.	BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	10m.	From			
h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
11	29·978	51·3	48·0	3·3	0·4	0·4	27		10·0	Cirro-stratous scud; cirro-strati; cirrous haze.
12	966	51·0	48·1	2·9	0·6	0·4	22		10·0	Id.; id.; id.
13	29·961	51·0	48·7	2·3	0·5	0·5	21		10·0	Id.; id.
14	947	51·2	49·1	2·1	0·6	0·3	22		10·0	Id.; id.
15	924	51·6	49·3	2·3	1·5	0·6	23		10·0	Id.; id.; drops of rain lately.
16	923	51·5	49·3	2·2	1·0	0·4	26	— : 28 : —	10·0	Id.; id.
17	921	51·7	49·4	2·3	0·4	0·1	27	— : 29 : —	10·0	Id.; id.
18	922	51·8	49·8	2·0	0·6	0·4	29	29 : 30 : —	10·0	Scud; cir.-str. scud; dense cir.-str.; slight shower [lately.
19	937	46·7	46·5	0·2	0·3	0·2	0		10·0	Id.; id.; rain^{1}
20	958	47·5	47·0	0·5	0·3	0·4	2	1 : — : —	10·0	Id.; cirrous mass.
21	957	50·6	47·6	3·0	0·9	1·1	2	2 : 29 : —	6·5	Loose cumulous scud; fleecy cirro-cumuli; cirri. ⊖
22	968	51·4	46·8	4·6	1·2	1·2	2	31 : 29 : —	8·5	Id.; id.; id. ⊖
23	965	53·4	47·4	6·0	1·7	1·1	2	30 : 30 : —	8·5	Woolly cirro-cumulo-strati; cirro-strati; id. ⊖
0	978	53·8	47·7	6·1	1·5	0·8	3	29 : 30 : —	9·5	Loose cumulous scud; cirro-cumulo-strati; id. ⊖
1	958	54·0	47·7	6·3	1·5	1·1	3	29 : 30 : —	9·5	Id.; id.; id. ●
2	969	54·8	49·2	5·6	0·9	0·5	31	30 : 30 : —	9·5	Id.; id.; cum.; id. ⊖
3	961	54·8	48·0	6·8	0·9	0·8	1	30 : 30 : —	8·5	Id.; id.; id.; id. ⊙
4	958	53·8	46·7	7·1	1·1	0·6	1	30 : — : —	8·0	Id.; cirro-strati; cirri. ⊖
5	956	53·8	47·2	6·6	0·8	0·5	2	30 : — : —	5·0	Loose cumuli; id.; id. ⊙
6	959	52·5	46·0†	6·5	0·5	0·4	2	— : 29 : —	5·5	Cirro-stratous scud; cirri. ⊙
7	963	51·8	45·0	6·8	0·9	0·6	1	— : 30 : —	5·0	Cirro-cumulo-strati; cirri, radiating from NW. ⊙
8	973	49·0	43·8	5·2	0·6	0·2	2	— : 30 : —	5·5	Id. ⊖
9	982	47·7	43·3↓	4·4	0·4	0·1	2	— : 30 : —	8·5	Id.; cirri; cirrous haze. ☽
10	982	45·7	42·3	3·4	0·1	0·0	4	— : 30 : —	3·5	Id.; id.; id. ☽
11	982	43·7	40·6	3·1	0·1	0·1	0		0·5	Cirro-strati; cirri. ☽
12	971	42·8	39·4	3·4	0·1	0·0	0		0·2	Id., id. ☽
23¼	29·813	52·0	48·4	3·6	0·8	0·6	30		……	Sunday—Thick scud; a continued succession of light showers throughout the day.
13	29·693	46·5	43·6	2·9	2·4	1·3	2	30 : — : —	6·0	Scud; cirro-strati. ☽
14	681	44·5	42·3	2·2	1·0	0·7	3	30 : — : —	6·0	Id.; id. ☽
15	682	43·8	41·8	2·0	0·6	0·6	2	30 : — : —	4·0	Id.; id.
16	680	44·2	41·5	2·7	1·0	0·5	4	0 : — : —	6·0	Id. and cirro-cumulo-strati.
17	691	43·2	42·2	1·0	0·2	0·2	2	1 : — : —	9·9	Id.; cirro-strati; drops of rain.
18	684	44·0	42·0†	2·0	0·6	0·4	2	— : 31 : 30	5·0	Cir.-cum.-str.; wool. cir. radiating from NNW.; cir.-str. ⊖
19	688	45·6	42·5	3·1	1·2	1·5	1	0 : — : —	8·0	Scud; cirro-stratous scud; cirro-strati and cirri.
20	688	47·0	43·5↓	3·5	1·6	0·8	1	0 : — : —	9·5	Id.; loose cumuli; cirri to N.
21	695	46·8	42·4	4·4	2·6	1·8	3	0 : — : —	9·0	Id.; id.; cir.-cum.-str.; cirri; cir. haze.
22	692	47·0	42·6	4·4	1·8	1·9	2	0 : — : —	10·0	Id.; id.; cir.-str.; thick cir.-cum.-strati.
23	689	48·2	44·0	4·2	2·4	2·1	0	0 : — : —	10·0	Id.; id.; id.; id.
0	689	48·0	44·0	4·0	2·2	1·5	1	0 : — : —	10·0	Id.; id.; id.; id,
1	690	45·6	43·5	2·1	1·7	0·5	0		10·0	Id.; id.; cirro-strati. ⊖
2	689	48·3	43·8	4·5	1·7	1·3	2	1 : — : —	9·5	Id.; id.; id.
3	692	48·6	44·7	3·9	2·0	2·1	2	1 : — : —	9·0	Id.; id.; cirro-cumulo-strati. ⊖
4	700	47·9	42·6	5·3	2·0	1·4	2	1 : — : —	9·4	Loose cumuli; cirro-cumulo-strati. ⊖
5	708	48·4	43·6	4·8	2·1	1·5	4	1 : — : —	9·2	Id.; thick cirro-strati.
6	719	46·7	43·2	3·5	2·0	1·5	4	2 : — : —	10·0	Scud; id.
7	722	45·8	43·3	2·5	1·6	0·8	2	2 : — : —	10·0	Id.; id.
8	731	45·3	42·7	2·6	1·6	1·2	2	2 : — : —	10·0	Id.; id.
9	745	44·0	42·6	1·4	1·5	0·4	31	2 : — : —	10·0	Id.; id.; drops of rain.
10	751	44·0	42·8	1·2	0·7	0·2	1		10·0	Id.; id.; rain$^{0·5}$
11	761	44·4	43·1	1·3	0·3	0·2	3		10·0	Id.
12	760	44·4	43·0	1·4	0·3	0·3	2		10·0	Id.
13	29·757	44·1	43·0	1·1	0·4	0·1	3		9·9	Scud and loose cumuli.
14	762	43·7	42·6	1·1	0·3	0·1	3		9·9	Scud and cirro-stratous scud?
15	763	43·3	42·3	1·0	0·1	0·1	2		9·5	Id.
16	765	43·4	41·8	1·6	0·1	0·1	2	3 : — : —	9·8	Id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The otions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

May 18^{d} 19^{h}. Observation made at 19^{h} 8^{m}.

'May 18^{d} 21^{h}. Observation made at 21^{h} 5^{m}.

Gött. Mean Time.		Baro-meter at 32°.	Thermometers.			Wind.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.	
			Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From				
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.		
19	17	29·769	42·2	41·0	1·2	0·1	0·0		—: 3 : —	8·2	Cirro-stratous scud.	
	18	778	44·1	42·6	1·5	0·1	0·0	31	2: 1 : —	9·5	Id.; cirro-cumulo-strati.	
	19	790	45·2	43·3	1·9	0·1	0·3	0	—: 2 : —	10·0	Id.	
	20	778	46·2	43·8	2·4	0·2	0·1	1	—: 2 : —	10·0	Id.	
	21	786	46·5	43·8	2·7	0·3	0·2	2	2 : — : —	10·0	Thick scud ; drops of rain.	
	22	783	48·7	45·2	3·5	0·7	0·7	2	2 : — : —	10·0	Id.	
	23	770	49·2	46·4	2·8	0·5	0·2	0	—: 1 : —	10·0	Cirro-stratous scud ; cirrous mass.	
20	0	761	48·7	45·0	3·7	0·5	0·3	2	—: 0 : —	9·9	Id. ; id.	
	1	747	50·7	46·2	4·5	0·7	0·4	2	0: 1 : —	9·9	Id. ; cirro-cumulo-strati.	
	2	738	51·0	46·4	4·6	0·9	0·7	1	0: 1 : —	9·9	Id. ; id.	
	3	732	51·0	47·2	3·8	1·1	0·6	1	0: 2 : —	9·0	Loose cumuli ; cirro-cumulo-strati ; cirri.	⊖
	4	723	52·2	47·3	4·9	1·0	0·6	5	31 : 30 : —	9·0	Id. ; id. ; id.	⊖
	5	713	51·9	47·2	4·7	1·2	1·0	5	0 : 30 : —	8·5	Scud ; loose cumuli ; cirri.	⊖
	6	713	49·4	45·1	4·3	1·0	0·9	2	2 : 31 : —	9·8	Id. ; loose cumuli ; cir.-str. scud ; cir.-str. ; cir.	⊖
	7	715	47·8	45·4	2·4	0·7	0·5	2	2 : 31 : —	9·5	Id. ; id. ; id. ; id.	⊖
	8	708	46·6	43·8	2·8	1·4	0·4	2	3 : 30 : —	5·0	Id. ; cirro-cumulo-strati ; mottled cirri.	⊖
	9	718	46·3	44·2	2·1	0·7	0·3	3	3 : 31 : —	9·8	Id. ; id. ; cirro-strati ; cirri.	☽
	10	717	44·7	43·0	1·7	0·3	0·2	1	3 : — : —	2·5	Id.	☽
	11	710	44·6	43·0	1·6	0·1	0·1	2		10·0	Thick scud.	
	12	707	45·0	43·2	1·8	0·6	0·5	2		10·0	Id.	
	13	29·699	44·7	42·8	1·9	0·7	0·5	2		10·0	Thick scud.	
	14	700	44·7	42·4	2·3	1·0	0·4	3		10·0	Id.	
	15	698	44·2	42·3	1·9	0·9	0·3	3		10·0	Id.	
	16	695	43·9	42·3	1·6	1·0	0·6	3	2 : — : —	10·0	Id.	
	17	695	43·5	41·8	1·7	1·0	0·5	3	3 : — : —	10·0	Id.	
	18	703	43·7	42·1	1·6	1·1	1·0	4	2 : — : —	10·0	Id.	
	19	714	44·9	43·2	1·7	0·8	0·7	4	3 : — : —	10·0	Id.	
	20	716	45·0	43·1	1·9	0·7	0·4	3	2 : — : —	10·0	Id.	
	21	726	45·7	44·0	1·7	0·6	0·6	4		10·0	Id.	
	22	726	46·4	44·5	1·9	0·6	0·9	3	3 : — : —	10·0	Id.	
	23	708	49·6	46·7	2·9	0·8	0·8	2	2 : — : —	8·5	Scud and loose cumuli ; cirri.	●
21	0	706	51·0	47·7	3·3	1·1	1·1	2	2 : — : —	9·0	Id. ; tufts of cirri.	⊖
	1	695	52·3	48·3	4·0	1·3	0·9	2	2 : — : —	9·0	Id. ; cirri.	
	2	691	53·0	48·7	4·3	1·0	0·8	3	2: 0 : —	9·9	Scud, in two currents.	
	3	683	51·5	47·5	4·0	1·1	0·9	4	2: 0 : —	9·5	Id.	
	4	667	54·0	49·1	4·9	1·0	1·0	3	2 : — : —	9·5	Scud ; cirrous haze ; solar halo.	⊖
	5	659	52·9	48·4	4·5	1·4	1·3	2	2 : — : —	9·9	Id. ; id., thicker, ; halo disappearing.	⊖
	6	661	50·8	47·7	3·1	1·7	1·5	3	1 : — : —	9·8	Id. ; thick cirri ; cirro-strati and cirrous haze.	
	7	663	49·6	47·0	2·6	1·4	0·6	2	2 : — : 8	9·9	Id. ; woolly cirri ; cirro-strati ; cirrous haze.	
	8	670	48·1	46·0	2·1	1·3	1·2	3	2 : — : —	10·0	Id. ; cirri and cirrous haze.	
	9	675	46·7	44·6	2·1	2·1	1·2	3	2 : — : —	10·0	Id.	
	10	683	46·0	44·2	1·8	1·2	1·2	2		10·0	Id.	
	11	695	45·5	44·0	1·5	2·0	1·3	4		10·0	Id. ; cirro-strati.	
	12	694	45·0	43·8	1·2	1·3	0·6	4		10·0	Id. ; id.	
	13	29·690	44·9	43·2	1·7	1·2	0·9	2		10·0	Scud. ; cirro-strati.	
	14	688	44·4	43·2	1·2	1·2	0·4	2		10·0	Id. ; id. ; drops of rain.	
	15	682	44·3	42·7	1·6	1·7	1·6	2		10·0	Id. ; id. ; id.	
	16	683	44·2	42·6	1·6	2·0	1·4	2	2 : — : —	10·0	Id. ; id.	
	17	697	44·2	42·4	1·8	1·2	0·6	2	2 : — : —	10·0	Id. ; id.	
	18	697	44·5	42·4	2·1	1·2	0·8	3	2 : — : —	10·0	Id. ; id.	
	19	700	44·3	42·9	1·4	1·5	0·5	3	2 : — : —	10·0	Thick scud and cirro-strati.	
	20	704	45·4	43·3	2·1	1·2	0·7	3	3 : — : —	10·0	Id.	
	21	714	46·3	44·4	1·9	1·3	1·2	3	4 : — : —	9·9	Smoky scud ; cirro-cumulo-strati.	
	22	714	46·7	45·6	1·1	1·7	1·2	4	4: 3 : —	9·8	Id. ; id ; drizzle lately.	⊖
	23	717	48·3	45·1	3·2	1·5	1·3	4		10·0	Thick scud.	
22	0	724	48·7	45·7	3·0	1·5	1·3	3	3 : — : —	10·0	Id.	

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

t. n e.	BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
1	29·727	47·7	45·0	2·7	1·3	0·7	3	3 : — : —	10·0	Thick scud.
2	727	49·3	46·3	3·0	0·8	0·5	4		10·0	Id.
3	723	51·3	47·8	3·5	1·4	0·8	4	2 : 4 : —	9·8	Scud ; cir.-cum.-str. ; cir.-str. scud ; clouds broken. ⊖
4	721	50·0	46·6	3·4	1·2	0·7	4	3 : — : —	9·8	Id. ; cirro-stratous scud. ⊖
5	719	49·6	46·2	3·4	1·5	0·7	6	4 : — : —	9·8	Id. ; id. ⊖
6	721	48·9	46·0	2·9	1·1	0·6	4	3 : — : —		Id. ; id.
7	723	47·0	44·4	2·6	0·7	0·6	4	2 : — : —	9·5	Id. ; id.
8	730	45·6	43·5	2·1	0·6	0·3	3	2 : — : —	10·0	Id. ; id.
9	741	44·3	42·8	1·5	0·4	0·4	3		10·0	Id. ; id.
10	752	43·4	42·3	1·1	0·4	0·2	4		10·0	Id. ; id.
11	755	43·3	42·5	0·8	0·4	0·4	3		10·0	Id.
12	761	43·4	42·5	0·9	0·4	0·5	3		10·0	Id. ; slight spit of rain.
3	29·755	43·2	42·3	0·9	0·5	0·3	3		10·0	Scud.
4	750	42·9	42·3	0·6	0·4	0·3	3		10·0	Id. ; fine rain$^{0\cdot2}$
5	746	42·7	42·2	0·5	0·4	0·2	3		10·0	Id. ; id.
6	742	43·3	42·6	0·7	0·3	0·2	3	2 : — : —	10·0	Id. ; fine rain$^{0\cdot1}$
7	743	43·7	42·4	1·3	0·5	0·4	3	2 : — : —	10·0	Id. ; id.
8	746	43·8	42·6	1·2	0·5	0·3	3		10·0	Id.
9	748	43·7	42·8	0·9	0·4	0·3	3	2 : — : —	10·0	Id. ; fine rain$^{0\cdot1}$
0	753	44·8	43·0	1·8	0·4	0·4	3	2 : — : —	10·0	Id. ; id.
1	750	46·9	44·7	2·2	0·5	0·4	3	3 : — : —	10·0	Id. ; dense cirro-strati.
2	752	48·7	45·8	2·9	0·4	0·4	3		10·0	Id. ; id.
3	746	50·2	46·7	3·5	0·4	0·1	4	2 : — : —	10·0	Id. ; id.
3 0	742	52·2	48·8	3·4	0·4	0·3	4		10·0	Id. ; id.
1	739	51·3	48·2	3·1	0·4	0·6	2	2 : — : —	10·0	Id. ; id.
2	738	51·0	47·5	3·5	0·4	0·4	2	2 : — : —	10·0	Id. ; id.
3	741	50·0	47·2	2·8	0·5	0·3	5		10·0	Id. ; id.
4	730	49·2	47·4	1·8	0·4	0·4	4	2 : — : —	10·0	Id.
5	731	47·8	45·0	2·8	0·5	0·4	4	3 : — : —	10·0	Id.
6	728	48·0	45·7	2·3	0·5	0·2	3	3 : — : —	10·0	Id.
7	731	46·9	44·4	2·5	0·4	0·4	4	3 : — : —	10·0	Id.
8	735	46·1	44·1	2·0	0·4	0·3	3	3 : — : —	10·0	Id.
9	745	45·6	43·6	2·0	0·5	0·4	3		10·0	Id.
0	749	44·4	43·0	1·4	0·5	0·2	1		10·0	Id.
1	754	44·0	43·2	0·8	0·6	0·3	4		10·0	Id. ; light drizzle.
2	751	44·2	43·3	0·9	0·4	0·3	3		10·0	Id. ; id.
3	29·760	44·2	43·2	1·0	0·4	0·3	4		10·0	Scud.
4	757	44·2	42·8	1·4	0·3	0·2	3		10·0	Id.
5	772	44·2	42·6	1·6	0·4	0·1	4		10·0	Id.
6	770	44·0	42·4	1·6	0·2	0·2	2		10·0	Id.
7	779	43·8	42·4	1·4	0·2	0·1	0		10·0	Id. ; cirro-stratous scud.
8	779	43·9	42·5	1·4	0·4	0·4	4	— : 3 : —	10·0	Thick cirro-stratous scud.
9	799	44·3	43·2	1·1	0·4	0·5	3	4 : — : —	10·0	Nearly uniform mass of scud.
0	810	44·2	43·0	1·2	0·4	0·4	3	4 : — : —	10·0	Id.
1	813	44·3	43·3	1·0	0·5	0·3	4		10·0	Id.
2	800	46·0	44·3	1·7	0·6	0·5	4	4 : — : —	10·0	Id.
3	803	46·3	44·4	1·9	0·8	0·6	3	4 : — : —	10·0	Id.
4 0	791	47·5	45·7	1·8	0·7	0·7	4		10·0	Id.
1	784	48·0	46·2	1·8	0·7	0 7	3		10·0	Id.
2	780	48·3	46·4	1·9	0·9	0·7	4	2 : — : —	10·0	Id.
3	778	48·4	46·3	2·1	0·9	0·8	4	3 : — : —	10·0	Id.
4	775	46·3	44·9	1·4	0·9	0·9	4		10·0	Id.
5	771	46·2	45·1	1·1	1·0	0·7	6		10·0	Id.
6	774	45·4	44·0	1·4	0·8	0·4	4		10·0	Id.
7	766	45·3	44·0	1·3	0·7	0·4	3		10·0	Id.
8	765	44·3	43·1	1·2	0·6	0·4	3		10·0	Id.

he direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The ions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

lay 22^{d} 18^{h}. Observations made at 18^{h} 10^{m}.

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
24 9	29·769	44·0	43·0	1·0	0·8	0·4	3		10·0	Nearly uniform mass of scud; light drizzle.
10	764	43·6	42·5	1·1	0·5	0·2	3		10·0	Id.
11	764	43·3	42·4	0·9	0·4	0·2	2		10·0	Id.; light drizzle.
12	759	43·0	42·4	0·6	0·4	0·2	3		10·0	Id.
23¼	29·703	47·0	44·6	2·4	0·5	0·3	6	4 : — : —	10·0	Sunday—Nearly uniform mass of scud.
25 13	29·656	43·4	43·0	0·4	0·5	0·3	2		10·0	Nearly uniform mass of scud.
14	655	43·3	41·7	1·6	0·3	0·2	4		10·0	
15	630	43·0	41·8	1·2	0·4	0·2	2		10·0	Scud; slight drizzle.
16	628	42·8	42·1	0·7	0·2	0·1	2		10·0	Id.
17	616	43·3	42·5	0·8	0·2	0·1	2	3 : — : —	10·0	Misty scud; fine rain$^{0.2}$
18	597	43·6	43·0	0·6	0·4	0·6	2	3 : — : —	10·0	Id.; cirro-stratous scud; clouds breaking.
19	600	44·6	43·3	1·3	0·7	0·6	3	3 : — : —	10·0	Id.; id.
20	590	45·2	43·8	1·4	1·2	1·7	4	3 : — : —	10·0	
21	596	44·9	43·9	1·0	1·8	1·1	3	3 : — : —	10·0	Dense clouds, chiefly misty scud; light drizzle.
22	602	45·3	44·0	1·3	1·1	0·6	3	3 : — : —	10·0	Id.
23	592	44·8	44·2	0·6	1·2	0·8	2	3 : — : —	10·0	Id.; rain$^{0.5}$
26 0	572	45·4	44·2	1·2	1·9	1·6	3		10·0	Dense clouds.
1	565	44·8	44·0	0·8	2·5	1·2	4	3 : — : —	10·0	Id.; rain$^{1.5}$
2	547	45·2	44·3	0·9	1·7	0·7	3		10·0	Id.; rain^{2}
3	541	45·0	44·1	0·9	2·3	1·8	2	3 : — : —	10·0	Id.; rain^{3}
4	541	44·7	44·4	0·3	1·7	1·3	2	3 : — : —	10·0	Id.; rain^{1}
5	537	44·6	44·2	0·4	2·8	1·3	3		10·0	Id.; rain^{2}
6	531	44·0	43·8	0·2	1·8	1·1	3		10·0	Dense scud; rain^{3}
7	533	43·6	43·6	0·0	2·0	1·7	3		10·0	Id.; rain^{4}
8	532	43·9	43·7	0·2	2·0	1·2	3		10·0	Scotch mist, objects invisible at 1 mile; rain^{2} ?
9	536	44·3	44·1	0·2	1·4	1·1	3		10·0	Id.; rain^{2}
10	551	44·8	44·6	0·2	1·6	0·9	4		10·0	Id.; rain^{1}
11	562	45·5	45·4	0·1	1·4	0·7	4		10·0	Id.; rain$^{0.2}$
12	584	45·6	45·4	0·2	0·8	0·6	4		10·0	Id.; id.
13	29·592	45·5	45·3	0·2	0·7	0·3	4		10·0	Scotch mist; rain$^{0.2}$
14	598	45·3	45·0	0·3	0·6	0·7	3		10·0	Id.; id.
15	622	45·0	44·7	0·3	0·8	0·5	6		10·0	Id.; id.
16	635	44·7	44·3	0·4	0·6	0·1	5		10·0	Id.
17	648	45·0	44·6	0·4	0·4	0·4	7	7 : — : —	10·0	Misty scud; dense mass of clouds.
18	667	44·6	44·2	0·4	0·7	0·3	6	6 : — : —	10·0	As before; rain$^{0.2}$
19	690	45·0	44·5	0·5	0·5	0·5	4	5 : — : —	10·0	Id.; id.
20	709	46·1	45·4	0·7	0·7	0·5	5	5 : — : —	10·0	Id.; rain$^{0.5}$
21	727	46·7	45·9	0·8	0·7	0·7	4	5 : — : —	10·0	Id.; rain$^{0.2}$
22	752	46·7	45·9	0·8	0·8	0·6	4	5 : — : —	10·0	Misty scud; Scotch mist.
23	766	47·0	46·0	1·0	1·2	1·1	5	5 : — : —	10·0	Id.; id.; rain$^{0.5}$
27 0	788	46·8	45·9	0·9	1·1	0·5	4	5 : — : —	10·0	Id; clouds breaking.
1	800	46·8	45·9	0·9	0·7	0·7	4	5 : — : —	10·0	Id.; id.
2	819	47·7	46·3	1·4	0·9	0·6	4	4 : — : —	10·0	Scud; id.
3	828	47·2	45·6	1·6	0·7	0·6	4	4 : — : —	10·0	Id.; id.
4	834	47·3	45·3	2·0	0·9	0·9	4	4 : — : —	10·0	Id.; id.
5	847	46·7	44·5	2·2	1·3	1·0	4	4 : — : —	10·0	Id.
6	852	46·4	44·2	2·2	0·9	0·5	4	5 : — : —	10·0	Id.; clouds breaking.
7	865	45·6	43·5	2·1	1·0	0·5	4	4 : — : —	10·0	Id.
8	879	45·0	42·9	2·1	0·6	0·5	6	4 : — : —	10·0	Id.
9	887	44·0	42·4	1·6	0·7	0·7	4		10·0	Id.
10	896	44·2	42·4	1·8	0·4	0·2	4	3 : — : —	10·0	Id.
11	913	43·9	42·2	1·7	0·4	0·3	4		10·0	Id.
12	915	43·5	41·4	2·1	0·4	0·3	4		10·0	Id.
13	29·922	43·2	41·7	1·5	0·3	0·2	3		10·0	Scud.
14	925	43·1	41·2	1·9	0·4	0·3	3		10·0	Id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

ött. ean me.	BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.	
		Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m	From				
h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.		
15	29·926	42·9	40·7	2·2	0·6	0·5	3		10·0	Scud.	
16	928	42·8	40·7	2·1	0·4	0·3	3		10·0	Id.	
17	933	42·8	40·7	2·1	0·7	0·4	4		10·0	Id. ; cirro-strati.	
18	935	43·4	41·0	2·4	0·7	0·5	4		10·0	Mass of cirro-stratus.	
19	940	44·0	41·6	2·4	0 6	0·3	3	4 : — : —	10·0	Scud ; dense mass of cirro-stratus.	
20	946	45·3	42·3	3·0	0·9	0·7	5	— : 4 : —	10·0	Cirro-stratous scud, breaking.	
21	948	46·4	43·4	3·0	1·2	0·8	2	4 : — : —	10·0	Scud, with other clouds above.	
22	947	48·7	45·0	3·7	1·0	1·1	4	5 : — : —	9·8	Id., id.	⊖
23	941	48·4	44·9	3·5	1·2	1·0	4		10·0	Id., id.	
0	945	49·4	45·6	3·8	1·4	1·1	4		9·9	Id. ; cirro-strati.	
1	937	48·9	45·4	3·5	1·4	0·9	5	— : 5 : —	8·0	Cirro-stratous scud ; patches of cirro-strati.	⊖
2	927	51·6	48·1	3·5	1·0	0·4	5	— : 4 : —	9·0	Scud. ; patches of cirro-strati and cirri.	⊖
3	920	48·7	45·1	3·6	1·3	1·0	6	— : 5 : —	4·0	Id. ; cirri to SE.	⊙
4	908	49·8	46·1	3·7	1·4	1·2	4	— : 5 : —	7·0	Id. ; id.	⊙
5	898	48·8	45·0	3·8	1·2	0·9	6	— : 4 : —	6·5	Id. ; woolly cirri.	⊖
6	888	47·7	44·3†	3·4	1·1	0·9	5	— : 5 : —	8·0	Id. ; id.	
7	891	46·0	43·7	2·3	1·0	0·7	4	— : 5 : —	10·0	Id. ; cirro-strati.	
8	886	45·6	42·8	2·8	1·2	0·7	4		9·9	Id. ; id.	
9	891	43·4	41·7⸸	1·7	1·2	1·3	3		10·0	Dense mass of scud and cirro-stratus.	
10	887	44·2	41·8	2·4	1·3	0·2	4		10·0	Id.	
11	886	44·0	41·6	2·4	1·1	0·5	4		10·0	Scud ?	
12	880	43·9	41·1	2·8	1·1	1·0	4		10·0	Id.	
13	29·873	43·5	41·0	2·5	0·8	0·4	3		10·0	Scud ?	
14	858	43·3	40·9	2·4	0·7	0·9	2		10·0	Id.	
15	854	42·9	40·3	2·6	1·0	0·7	3		10·0	Id.	
16	841	43·0	41·0	2·0	1·1	0·6	2		10·0	Id.	
17	837	43·0	41·0	2·0	1·0	0·4	2	3 : — : —	10·0	Id. ; cirro-stratous scud.	
18	823	43·4	41·4	2·0	0·6	0·5	2	3 : — : —	10·0	Id. ; id.	
19	818	43·7	41·0	2·7	0·7	0·5	3	4 : — : —	10·0	Id. ; id.	
20	812	44·2	41·3	2·9	1·2	0·7	3	4 : — : —	10·0	Id. ; id.	
21	807	45·0	42·0	3·0	1·3	1·0	4	5 : — : —	10·0	Id. ; id.	
22	799	46·2	43·2	3·0	1·4	0·7	3	5 : — : —	10·0	Id. ; id.	
23	795	47·2	44·0	3·2	1·5	1·0	3	5 : — : —	10·0	Id. ; id.	
0	788	49·1	45·4	3·7	1·3	1·8	3	5 : — : —	9·9	Id. ; id.	
1	785	50·0	46·2	3·8	1·3	1·1	4	5 : — : —	9·9	Id. ; id.	
2	777	51·9	47·7	4·2	1·1	0·9	2	5 : — : —	9·9	Id. ; id.	
3	763	52·0	48·0	4·0	1·0	0·8	5	4 : — : —	9·0	Id. ; loose cumuli.	⊖
4	750	51·0	46·9	4·1	0·7	0·4	2	4 : — : —	9·5	Id. ; cirro-strati ; loose cumuli.	
5	750	50·8	47·0	3·8	0·9	0·6	3	4 : — : —	9·5	Id. ; id. ; id.	
6	750	49·6	46·1‡	3·5	0·9	0·4	3	3 : 6 : —	6·0	Cirro-stratous scud ; cirro-strati ; cirro-cumuli.	⊙
7	750	47·8	45·2	2·6	0·7	0·6	4	— : 3 : —	10·0	Dense mass of cirro-stratous scud.	
8	762	46·0	44·2	1·8	0·8	0·5	4	— : 4 : —	9·8	Cirro-stratous scud.	
9	773	45·4	44·0	1·4	0·6	0·3	4	4 : — : —	9·5	Loose cirro-stratous scud.	
10	782	43·7	42·7	1·0	0·3	0·1	3	4 : — : —	8·0	Id.	
11	773	44·1	43·2	0·9	0·1	0·1	3	4 : — : —	9·5	Id.	
12	781	45·4	44·4	1·0	0·4	0·2	3		9·8	Id.	
13	29·784	45·3	44·6	0·7	0·3	0·2	3		9·9	Loose cirro-stratous scud. [N. and NE. hor.	
14	784	43·8	43·3	0·5	0·1	0·0	3		3·0	Scud to S. ; clouds moving off ; cirro-strati and haze on	
15	785	39·5	39·3	0·2	0·0	0·0	30		1·0	Id. SE. ; cir.-str. to NE. ; haze on NE. horizon.	☽
16	786	36·1	36·1	0·0	0·0	0·0	20		0·8	Nearly as before ; stratus on the ground, red to NE.	
17	788	38·0	38·0†	0·0	0·0	0·0	20		0·5	Scud on SE. horizon ; cirro-strati to N.	⊙
18	792	40·7	40·4	0·3	0·0	0·0	20	5 : — : —	3·5	Loose misty scud ; id.	⊙
19	803	46·0	44·8⸸	1·2	0·0	0·0	10	4 : 4 : —	9·5	Id. ; cirro-stratous scud.	
20	817	48·8	46·8	2·0	0·3	0·2	3	3 : 4 : —	9·8	Id. ; id.	●
21	839	50·2	47·7	2·5	0·5	0·5	2	3 : 4 : —	9·0	Id. ; id.	⊖
22	824	52·5	49·0	3·5	0·7	0·6	4	3 : 4 : 5	9·0	Scud ; loose-cumuli ; woolly cirri.	

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The notions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

May 29d 6h. Cirro-stratous scud becoming cirro-stratus, some portions of it slightly cymoid : cirro-cumuli and cirro-cumulo-strati.

Gött. Mean Time.		BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in		From			
						1h.	10m.				
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
29	23	29·843	52·3	48·3	4·0	0·8	0·6	4	3 : 4 : —	9·0	Scud ; loose cumuli. ⊖
30	0	847	53·7	49·2	4·5	0·9	0·6	6	3 : 4 : —	9·5	Id. ; id. ; cumuli ; cirro-strati. ⊖
	1	871	53·3	48·5	4·8	1·2	0·6	4	3 : 4 : —	9·5	Id. ; id. ; id. ; id. ⊖
	2	873	54·2	49·7	4·5	1·0	0·5	4	3 : — : —	9·8	Loose cirro-stratous scud ; cumuli ; cirri. ⊖
	3	878	53·0	48·0	5·0	1·1	0·5	4	2 : — : —	6·0	Id. ; id. ; id. ; cirro-strati. ⊙
	4	874	52·7	46·2	6·5	1·0	0·7	4	0 : — : —	7·0	Id. ; id. ; id. ; id.
	5	881	50·3	44·5	5·8	0·8	0·6	4	2 : — : —	9·0	Id. ; cirro-strati ; cum.-str. ; cir.
	6	884	50·5	45·0	5·5	0·5	0·4	3	— : 30 : —	7·5	Cir.-cum.-str. ; patches of scud below, and of cir. above. ⊖
	7	896	49·5	44·3	5·2	0·4	0·2	4	— : 30 : —	7·0	Id.
	8	899	48·3	43·0	5·3	0·2	0·0	6	— : 30 : —	3·0	Cirro-cumulous scud ; cirro-cumulo-strati.
	9	912	45·4	41·7	3·7	0·0	0·0	4		3·0	Id. ; id.
	10	919	44·8	41·7	3·1	0·1	0·0	4		9·9	Cirro-stratous scud ; cirro-cumulo-strati.
	11	924	44·9	42·6	2·3	0·1	0·0	8		9·2	Id. ; id.
	12	927	42·6	41·3	1·3	0·0	0·0	23		7·5	Id. ; id.
	13	29·932	43·4	42·4	1·0	0·1	0·0	20		10·0	Cirro-stratous scud ; cirro-cumulo-strati.
	14	929	43·0	42·2	0·8	0·0	0·0			10·0	Id. ; id.
	15	925	42·8	42·1	0·7	0·0	0·0			9·5	Id. ; id.
	16	917	39·4	39·4	0·0	0·0	0·0			3·5	Id. ; id.
	17	929	41·6	41·0	0·6	0·1	0·0	23	2 : 0 : —	9·0	Scud ; loose cumuli ; cumuli ; cirro-strati ; cirri.
	18	932	43·4	41·7†	1·7	0·0	0·0	24	— : — 24 :	9·0	Cirri and cirrous haze ; fine cumuli on N. horizon.
	19	937	46·7	44·3	2·4	0·0	0·0	20	— : 23 : —	8·5	Cirro-cumulo-strati ; cum. ; cum.-str. ; cir.-str. ; cir. ⊙
	20	947	50·2	47·0	3·2	0·1	0·1	28	31 : — : —	8·0	Scud and loose cumuli ; cumuli, &c. ; as before.
	21	940	53·7	49·0↓	4·7	0·1	0·0	12	30 : — : —	9·5	As before ; rather electric-looking.
	22	944	54·0	49·3	4·7	0·1	0·0	8	31 : — : —	9·8	Loose cumuli ; woolly cirri and cirro-strati.
	23	942	56·1	50·1	6·0	0·1	0·0	14	28 : — : —	8·5	Id. ; cirro-stratous scud ; cirri ; cirro-strati. ⊖
31	0	938	57·3	51·0	6·3	0·2	0·2	12	30 : — : —	3·5	Cumuli ; loose cirro-strati. ⊙
	1	928	57·0	50·5	6·5	0·3	0·2	6	29 : — : —	5·0	Id. ; id. ⊙
	2	922	58·4	51·6	6·8	0·5	0·2	5	28 : — : —	8·5	Id. ; id. ⊖
	3	917	57·8	51·2	6·6	0·3	0·3	6	28 : — : —	8·0	Id. ; id.
	4	913	61·0	53·7	7·3	0·2	0·1	8	19 : 27 : —	8·8	Scud ; cumuli ; cirro-cumulo-strati.
	5	915	56·8	52·8	4·0	0·5	0·2	18		7·5	Id. ; id. ; id.
	6	903	56·4	52·4	4·0	0·4	0·2			5·0	Id. ; id. ; id.
	7	898	55·5	50·6†	4·9	0·2	0·1	20	— : 22 : —	5·0	Cirro-cumulo-strati ; cumuli and cumulo-strati on hor.
	8	894	53·0	49·7	3·3	0·2	0·1	18	— : 24 : —	4·0	Id. ; cumulo-strati to N. ⊖
	9	899	51·4	48·6↓	2·8	0·3	0·3	17		1·5	Cirro-stratous scud ; cirro-strati ; cirri.
	10	889	47·9	46·0	1·9	0·6	0·1	17		2·0	Cirro-strati and haze near horizon.
	11	897	46·4	44·7	1·7	0·2	0·1	18		1·5	Cirro-stratous scud and haze near horizon. [from WSW.
	12	897	45·3	43·7	1·6	0·1	0·0	19		2·0	Cirro-strati and haze to N ; faint milky streaks of cirri radiating
1	1	29·767	58·3	54·9	3·4	1·5	0·7	19	20 : — : —	9·2	Sunday—Scud, cum., and cir.-cum.-str. ; cloudy, with occasional sunshine and showers ; electric-looking.
	13	29·656	53·0	52·2	0·8	1·5	0·8	20		10·0	Overcast ; scud ?
	14	648	53·2	52·2	1·0	0·5	0·2	20		10·0	Id. ; id.
	15	637	53·1	52·0	1·1	0·2	0·0	22		10·0	Id. ; id.
	16	622	52·9	52·0	0·9	0·4	0·1	20		10·0	Nearly homogeneous.
	17	617	52·6	51·7	0·9	0·4	0·5	22	21 : — : —	10·0	Loose scud ; densely clouded.
	18	616	52·7	51·9	0·8	0·7	0·3	20		10·0	Id. ; id.
	19	613	54·4	53·0	1·4	0·5	0·3	20	21 : — : —	10·0	Id. ; id.
	20	613	55·6	53·5	2·1	0·6	0·8	19	21 : 22 : —	10·0	Id. ; cirro-cumulo-strati.
	21	604	58·3	55·4	2·9	1·0	0·9	20	21 : 22 : —	9·5	Id. ; id.
	22	584	59·5	55·2	4·3	1·3	0·8	19	22 : 23 : —	9·5	Id. ; id. ; cirri. ●
	23	575	60·8	55·2	5·6	2·4	1·2	18	22 : 23 : —	9·8	Id. ; id. ; id. ●
2	0	564	60·8	55·6	5·2	2·0	1·6	18	22 : 23 : —	9·8	Id. ; id. ; wo. and curled cir. ●
	1	565	60·9	55·5	5·4	2·4	1·2	19	22 : 23 : —	9·9	Id. ; id. ; id.
	2	553	60·2	54·3	5·9	2·6	1·7	21	22 : 23 : —	9·5	Scud ; cir.-cum.-str. ; tufts of cir. and cir. haze ; sky stormy-like
	3	542	60·8	55·6	5·2	2·2	1·2	19	22 : 23 : —	9·8	Id. ; id. ; id. ; solar halo. ⊖
	4	526	59·8	54·2	5·6	1·6	1·2	20	22 : — : —	9·9	Id. ; id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

tt. an ne.	BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1^{h}.	Maximum force in 10^{m}.	From			
h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
5	29·521	59·4	54·4	5·0	1·8	1·1	20	22 : — : —	9·9	Scud; tufts of cirri and cirrous haze.
6	509	57·6	53·2	4·4	1·7	1·3	22	22 : — : —	9·8	Id.; various kinds of cirro-strati; cirri.
7	498	57·0	52·6	4·4	1·4	1·6	20	23 : — : —	9·5	Id.; cir.-str.; cirri and cirrous haze; imperfect halo. ⊖
8	486	55·2	51·6†	3·6	1·7	1·4	19		9·5	Sky covered with cirri; cir.-str. and cir.-haze; halo and parhelia. ⊖
9	482	52·9	50·1⸸	2·8	1·2	0·6	20	— : — : 12	9·0	As before; halo just disappearing.
10	471	51·3	49·2	2·1	0·6	0·6	18		7·0	Id.; cirri thinner.
11	465	49·1	48·0	1·1	0·7	0·4	19		7·0	Cirro-strati, cirri, and haze.
12	458	48·3	47·0	1·3	0·2	0·1	20		3·0	Id.
13	29·439	45·7	45·3	0·4	0·2	0·0	20		3·0	Cirro-strati, cirri, and haze round horizon.
14	419	46·4	45·7	0·7	0·1	0·0	22		4·0	Id.
15	396	45·7	45·3	0·4	0·1	0·0	18	20 : — : —	10·0	Smoky scud; cirro-strati; cirrous mass.
16	371	49·4	48·3	1·1	0·5	0·3	18	20 : — : —	10·0	Scud; dense cirrous mass.
17	353	50·2	48·4	1·8	0·4	0·2	17		10·0	Id.; id.
18	340	51·2	49·3	1·9	0·2	0·2	17		10·0	Dense cirrous mass.
19	324	53·1	51·1	2·0	0·3	0·6	19	20 : — : —	10·0	Scud and dense cirro-stratus.
20	298	56·4	53·6	2·8	1·8	1·0	18	20 : — : —	3·0	Scud; woolly cirri and sheets of white cirro-strati. ⊙
21	270	59·7	55·5	4·2	2·1	0·9	18	19 : 17 : —	8·0	Cumulous scud; id. ⊙
22	242	59·1	54·8	4·3	1·0	1·0	19	19 : — : —	9·5	Scud and loose cumuli; cirri and cirro-strati.
23	221	60·6	55·1	5·5	1·3	1·3	18	18 : — : —	9·4	Scud; cumuli; cirro-strati.
0	201	60·0	54·6	5·4	2·9	1·8	18	19 : — : —	9·7	Id.; id.; id. ⊖
1	160	61·0	54·1	6·9	3·4	2·3	18	20 : — : —	9·7	Id.; id. ⊖
2	124	62·5	54·1	8·4	3·1	2·2	19	18 : — : —	6·5	Cumuli; white cirro-stratus to W. ⊖
3	074	62·2	55·0	7·2	3·5	1·8	19	18 : — : —	7·5	Loose cumuli; woolly cirri and cirro-strati.
4	037	61·4	53·6	7·8	3·0	2·1	18	18 : — : —	9·3	Id.; dense cirro-stratus and haze.*
5	29·003	59·9	52·6	7·3	2·9	1·7	18	18 : — : —	9·5	Scud; loose cumuli; id.
6	28·967	59·7	53·3	6·4	2·0	0·8	18	18 : — : —	10·0	Id.; dense cirro-stratus and haze.
7	954	55·0	51·2	3·8	1·4	1·1	20	18 : — : —	10·0	Id.; id.; rain$^{0\cdot5}$
8	921	50·8	49·4	1·4	1·5	0·7	18	18 : — : —	10·0	Id.; rain^{1}
9	909	49·8	47·7	2·1	2·6	0·7	20		10·0	Nearly homogeneous; rain$^{0\cdot5}$
10	889	48·0	46·8	1·2	0·6	0·3	21		10·0	Scud; cirro-strati; cirrous mass.
11	874	47·7	46·4	1·3	0·7	0·6	19		9·5	Id.; cirri.
12	876	47·7	45·5	2·2	1·5	0·9	20		10·0	Id.
13	28·899	45·7	42·9	2·8	1·9	0·9	22		10·0	Scud.
14	909	45·8	43·3	2·5	1·2	0·7	22		10·0	Id.; cirro-strati; cirri.
15	929	44·9	42·3	2·6	1·2	0·6	22	— : 24 : —	4·5	Cirro-stratous scud; woolly cirro-strati.
16	949	43·3	41·2	2·1	1·1	0·2	22	— : 24 : —	2·0	Id.; id.
17	957	43·6	41·7†	1·9	0·6	0·8	20	24 : — : 25	4·5	Scud; cir.-str. scud; mottled, woolly, and linear cirri. ⊙
18	973	45·4	43·3	2·1	1·3	0·6	21	— : 24 : 25	2·0	Cirro-stratous scud; cirri; cirro-strati. ⊙
19	28·996	49·3	46·2	3·1	1·5	1·5	21	22 : — : —	5·0	Scud; cirro-strati; cumulo-strati; cumuli; cirri. ⊙
20	29·001	50·4	46·8⸸	3·6	1·7	1·2	20	23 : — : —	6·0	Scud and loose cumuli; cirro-strati, &c., as before. ⊙
21	002	53·5	48·7	4·8	2·0	1·8	20	21 : — : —	4·0	Loose cumuli; loose cirro-cumulo-strati. ⊖
22	015	54·7	49·5	5·2	2·5	2·1	21	22 : — : —	5·0	Id.; cumuli; cumulo-strati; cirro-strati. ⊙
23	016	56·3	49·5	6·8	2·6	2·4	19	22 : — : —	6·0	Id.; id.; id.; id. ⊖
0	026	55·4	48·3	7·1	3·3	2·7	20	22 : — : —	6·0	Id.; id.; id.; nimbi.
1	047	54·8	49·8	5·0	4·3	1·7	21	22 : — : —	9·0	Scud; id.; id.; id.; rain$^{0\cdot5}$
2	057	53·4	48·7	4·7	2·8	2·3	20	22 : — : —	9·8	Id.; id.; id.; id.; rain$^{1\cdot5}$
3	085	51·3	48·2	3·1	3·7	3·2	18	22 : — : —	9·5	Id.; id.; id.; id.; rain^{2}
4	096	49·8	48·0	1·8	2·6	1·5	20	22 : — : —	9·8	Scud and loose cumuli; cumuli; cirro-strati.
5	100	52·2	49·4	2·8	1·6	1·2	19	23 : — : —	4·5	Id.; id.; id.; rainbows.
6	116	53·5	51·0†	2·5	1·7	0·8	22	23 : — : —	7·5	Scud; cumuli; cum.-str.; nimbus; cir-str.; rainbows and showers.*
7	129	51·8	49·3	2·5	1·2	0·9	20	22 : — : —	3·5	As before. ⊖
8	146	50·2	48·1	2·1	1·3	0·6	19	22 : — : —	9·0	Scud; cirro-stratous scud; cumulo-strati; nimbi; cirri.
9	170	49·1	47·0⸸	2·1	0·8	0·2	19	22 : — : —	8·0	As before.
10	178	48·6	46·7	1·9	0·6	0·2	19	— : 22 : —	4·5	Cirro-stratous scud.
11	186	45·0	44·0	1·0	0·1	0·0	18		7·5	Id.
12	188	47·1	46·0	1·1	0·2	0·4	18		8·0	Id.; drops of rain.

June 2^{d} 21^{h}. Observations made at 21^{h} 5^{m}.
June 3^{d} 5^{h}. Greenish sky to E.; cirro-strati of a slate-blue colour to NW.
June 3^{d} 19^{h}. Observations made at 19^{h} 30^{m}.
June 4^{d} 6^{h}, 7^{h}, and 8^{h}. Passing showers. The lowest stratum of clouds *just* touches the top of Cheviot.
* See additional Meteorological Notes after the *Hourly Meteorological Observations.*

Gött. Mean Time.		BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in		From			
						1^{h}.	10^{m}.				
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
4	13	29·196	46·2	45·4	0·8	0·5	0·1	17		6·5	Cirro-stratous scud.
	14	196	45·5	44·9	0·6	0·3	0·1	17		5·0	Scud ; cirri and cirro-strati.
	15	187	48·7	47·5	1·2	0·2	0·1	16		10·0	Thick scud. [rippled ; tinged with yellowish red.
	16	172	48·6	46·6	2·0	0·4	0·2	17	— : 22 : —	9·5	Cir.-str. and haze ; scud to N. and on Cheviot ; cirro-strati slightly
	17	179	48·1	46·3	1·8	0·4	0·1	19		10·0	Dense cirro-stratus and haze.
	18	187	47·9	46·4	1·5	0·3	0·1	14		10·0	Id. ; showers$^{0·5}$
	19	175	48·2	47·0	1·2	0·3	0·2	14		10·0	Id. ; rain^{1}
	20	159	49·5	47·7	1·8	0·3	0·3	15	15 : — : —	10·0	Ragged scud below mass of cirro-stratus ; rain$^{0·5}$ *
	21	150	51·2	49·5	1·7	0·5	0·7	15	18 : — : —	10·0	Id.
	22	137	56·6	53·0	3·6	0·7	0·8	16	17 : — : —	10·0	Scud ; id.
	23	115	57·7	54·8	2·9	1·6	1·7	16	17 : — : —	10·0	Id. ; id.
5	0	122	56·4	54·2	2·2	1·1	0·8	17	18 : — : —	10·0	Id. ; id.
	1	113	59·8	56·4	3·4	1·1	1·3	21	19 : 20 : —	10·0	Loose scud ; scud.
	2	113	62·3	58·4	3·9	2·3	2·4	20	21 : 20 : —	9·0	Id. ; id. ●
	3	117	61·8	57·8	4·0	2·8	0·7	21	18 : — : —	9·9	Scud ; cirro-strati ; cirri.
	4	121	58·2	56·0	2·2	0·5	0·2	19	18 : — : —	10·0	Id. ; id.
	5	095	61·4	57·4	4·0	1·2	0·4	18	18 : — : —	10·0	Id. ; id.
	6	069	60·8	56·6	4·2	1·6	0·4	16	17 : — : —	10·0	Id. ; loose cum. ; cir.-str., gloomy and electric-looking.
	7	047	61·5	57·0	4·5	0·6	0·5	16	16 : — : —	9·6	Id. ; cirro-strati and cirrous haze.
	8	29·017	60·9	56·4	4·5	1·3	0·7	15	17 : 18 : —	10·0	Id. ; id. ; cirro-cumuli and cirrous haze.
	9	28·987	60·0	55·8	4·2	2·9	3·0	16	17 : — : —	9·8	Id. ; id. ; id.
	10	960	59·2	55·4	3·8	2·5	2·4	16	18 : — : —	9·0	Id. ; id. and cirrous haze.
	11	954	59·2	55·2	4·0	4·1	3·8	15		9·9	Id. ; id.
	12	951	57·7	54·4	3·3	3·7	3·3	20		9·8	Thick scud ; rain^{2}
	13	28·961	50·9	48·9	2·0	1·6	1·0	20		1·5	Bank on E. horizon.
	14	944	49·8	47·2	2·6	1·4	1·1	18		1·5	Id.
	15	925	51·4	48·3	3·1	2·7	1·3	18		1·5	Scud and cirro-strati round horizon.
	16	922	51·5	48·4	3·1	1·6	0·8	17	18 : — : —	4·0	Scud ; cirro-strati ; cirri.
	17	893	53·0	49·2†	3·8	1·8	1·9	17	19 : — : —	5·0	Id. ; woolly cirri ; dense bank of cirro-strati to E.
	18	901	55·2	51·3	3·9	3·3	1·8	16	19 : — : —	8·0	Smoky scud ; cirri ; id. to E and N.
	19	899	56·0	52·3↓	3·7	3·1	2·7	16	17 : 19 : 20	7·0	Scud in two currents ; sheets of cir. & cir.-str. ; rainbow.
	20	903	57·4	54·0	3·4	3·7	3·3	16	18 : — : —	9·8	Id. ; cirro-strati ; a few drops of rain.
	21	935	55·9	53·0	2·9	2·8	1·4	19	19 : — : —	10·0	Id. ; shower$^{0·5}$
	22	936	60·9	55·0	5·9	3·1	4·1	18	18 : — : —	9·8	Scud and loose cumuli ; cirro-strati.
	23	955	59·7	53·4	6·3	5·5	3·4	19	18 : — : —	9·7	Id. ; id.
6	0	963	60·7	54·0	6·7	6·4	4·6	18	18 : — : —	9·9	Thick scud and loose cumuli.
	1	968	56·7	52·7	4·0	6·6	3·5	18	18 : — : —	10·0	Id. ; drops of rain.
	2	28·988	58·2	54·4	3·8	6·4	3·8	19	19 : — : —	10·0	Id. ; id.
	3	29·025	57·1	54·0	3·1	6·1	2·6	19	19 : — : —	10·0	Id. ; id.
	4	052	58·9	54·7	4·2	4·8	3·9	18	19 : 20 : —	7·0	Scud ; sheets of cirro-strati and woolly cirri. ⊖
	5	101	58·0	53·4	4·6	5·8	3·3	19	20 : — : —	9·8	Thick scud ; cirro-strati.
	6	137	56·7	52·3	4·4	4·2	2·4	19	20 : — : —	9·9	Id.
	7	183	56·4	51·8	4·6	3·7	2·2	19	21 : 20 : —	9·0	Thin scud ; cirro-cumulo-strati ; woolly cirri.
	8	194	54·3	50·8	3·5	3·7	1·6	19	19 : — : —	4·0	Id. ; id. ; id.
	9	254	53·8	50·4	3·4	2·0	0·6		19 : — : —	8·5	Id. ; id. ; id. ; cirro-strati.
	10	260	52·4	49·5	2·9	1·5	1·4	18	20 : — : —	9·0	Thick scud ; cirro-strati ; cirrous mass.
	11	296	52·2	49·4	2·8	2·0	0·9	21		9·5	Scud ; cirro-stratous scud ; cirro-cumulo-strati.
	12	327	51·6	48·8	2·8	1·5	0·5	21		9·8	Id. ; clouds denser than before.
	13	29·340	51·6	48·9	2·7	1·3	0·7	19		9·5	Scud and cirrous clouds ; sky in zenith.
	14	357	50·6	47·9	2·7	0·8	0·8	18	20 : 18 : —	9·0	Id. in patches ; cir.-cum.-str. radiating from S by E.
	15	370	50·6	47·7	2·9	1·1	1·4	19	20 : 18 : —	9·0	Id. ; id.
	16	390	49·7	47·4	2·3	0·9	0·7	19	20 : 18 : —	8·0	Id. ; id. [rad. from S by E.
	17	414	50·0	47·1	2·9	1·1	1·2	19	20 : 18 : —	5·5	Scud in patches and on hor. ; detached cir.-str. ; wool. and curl. cirri,
	18	432	50·4	47·8	2·6	0·7	1·3	21	21 : 18 : 18	6·0	Nearly as before, with net-like cirri.
	19	459	53·2	50·2	3·0	1·6	1·0	19	20 : — : 18	7·0	Scud and loose cum. ; woolly cirri ; cum. ; cir-stratus. ⊙
	20	474	55·0	50·2	4·8	1·7	1·2	19	20 : — : —	7·0	Id. ; id. ; id. ⊖

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

June 4^{d} 20^{h}. The scud below cirro-stratus just touches the top of Cheviot.

June 6^{d} 12^{h}. The anemometer index rests at −0·2 ; set right before this observation, and the observation of maximum pressure corrected.

* See additional Meteorological Notes after the *Hourly Meteorological Observations*.

t. n e.	BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
6 1	29·489	56·7	51·0	5·7	1·8	1·6	18	20 : — : —	4·0	Scud and loose cum.; sheets of cir.-str. and woolly cir. ⊙
2	508	59·8	53·0	6·8	2·3	2·0	18	20 : — : —	6·5	Id.; id. ⊙
3	510	60·8	53·2	7·6	2·0	1·2	19	20 : — : —	6·0	Id.; cum.-str. and cirro-strati to E. ⊙
7 0	518	60·5	53·2	7·3	1·7	1·7	19	20 : — : —	7·0	Id.; cumuli; cirro-strati. ⊙
1	511	60·7	52·6	8·1	2·1	1·2	18	19 : — : —	6·0	Id.; id.; id.; cirri. ⊙
2	540	63·8	55·8	8·0	1·8	0·9	18	19 : — : 17	9·0	Id.; woolly cir.; cum.; cir.-str.; haze. ⊙
3	528	62·8	54·2	8·6	1·1	0·6	19		9·8	Patches of scud; sky nearly covered with cirro-strati
4	513	60·0	52·7	7·3	1·2	0·2	21		9·9	As before. [and cirrrous haze. ⊖
5	507	60·5	53·5	7·0	0·2	0·0	24	16 : — : —	10·0	Cirro-stratous scud; cumuli; cirro-stratus.
6	489	61·6	53·4‡	8·2	0·2	0·2	8	17 : — : —	9·2	Loose scud forming below cir. haze; piles of cauliflower cum.-str.
7	490	56·6	52·7	3·9	0·6	0·1	8	12 : 12 : —	9·9	Scud; cir.-str.: cir. haze; passing showers; electric-like to SE.
8	477	55·3	52·4	2·9	0·2	0·1	5	— : 13 : —	10·0	Hazy cir.-str. scud and cir.-str.; piles of loose cum. on hor.
9	468	54·7	52·3	2·4	0·3	0·1	9		10·0	Nearly as before; rain$^{0·5}$
0	453	53·1	51·9	1·2	0·1	0·1	3		10·0	Id.; id.
1	439	52·3	51·7	0·6	0·2	0·1	4		10·0	Scud and cirro-strati; rain^{1}
2	413	51·6	51·0	0·6	0·3	0·2	3		10·0	Id.; id.
23¼	29·402	59·6	53·1	6·5	1·2	0·3	6	1 : 30 : —	……	Sunday—Overcast, with cumuli; occasional showers and sunshine.
8 3	29·845	48·5	45·2	3·3	2·1	0·5	21		2·5	Cirro-strati.
4	861	47·5	44·6	2·9	0·7	0·8	21		1·5	Patches of scud; cirro-strati.
5	877	47·0	44·3	2·7	0·9	0·4	18	— : 25 : —	3·5	Cirro-stratous scud; id.
6	892	47·2	44·8	2·4	0·4	0·6	19	25 : — : —	5·0	Scud; cirro-strati; woolly cirri.
7	919	49·7	45·3†	4·4	0·8	0·6	20	25 : — : —	8·0	Id.; id.; id.
8	930	49·2	45·8	3·4	0·6	0·6	20	— : — : 28	6·0	Mottled cir. and cir.-str.; cymoid cir.-str, scud on E. horizon. ⊙
19	943	51·6	47·5	4·1	0·6	0·5	17		7·0	Cir.-str. to E., thick cir. haze and woolly cir. to W. and NW.; masses of cum. to NW. ⊙
20	963	54·0	48·1	5·9	1·2	1·2	22	23 : — : —	9·5	Masses of loose cum.; woolly cir. and cir. haze; cir.-str.; portion of a solar halo. ⊖
21	972	55·9	50·7↓	5·2	2·1	1·3	20	23 : — : —	9·0	All as last hour, with drops of rain. ⊖
22	967	55·9	50·0	5·9	1·7	1·7	20	21 : — : —	10·0	Masses of loose cum.; dense cir. haze, becoming cir.-str.; drops of ⊖
23	970	55·9	50·1	5·8	2·3	0·7	18	22 : — : —	10·0	Id.; id. [rain.
9 0	958	57·7	52·3	5·4	1·6	2·5	20	22 : — : —	10·0	Masses of scud; cirro-strati and cirrous haze.
1	956	58·1	52·5	5·6	3·2	2·0	18	21 : — : —	10·0	Id.; id. ●
2	972	57·3	51·7	5·6	3·9	1·5	20	22 : — : —	10·0	Scud; dense cirro-stratus and haze.
3	972	55·0	51·4	3·6	4·0	2·7	20	21 : — : —	10·0	Id.; id.
4	967	54·6	51·6	3·0	2·7	2·4	20	20 : — : —	10·0	Id.; id.
5	980	54·3	51·3	3·0	3·0	2·3	19	20 : — : —	10·0	Id.; id.
6	974	54·8	52·2	2·6	2·8	1·7	19	20 : — : —	10·0	Id.; id.
7	29·987	55·2	52·7	2·5	2·0	1·2	18	20 : — : —	10·0	Id.; id.
8	30·005	54·7	52·8	1·9	1·6	1·6	21	20 : — : —	10·0	Id.; id.; drops of rain.
9	013	55·0	53·0	2·0	1·7	0·6	21	20 : — : —	9·9	Id.; cirro-strati.
10	015	54·5	52·8	1·7	1·0	1·7	21	20 : — : —	10·0	Id.; mass of cirro-stratus.
11	020	53·9	52·7	1·2	1·0	0·8	21	21 : — : —	9·5	Smoky scud; cirro-strati; cirrous haze.
12	022	53·5	52·3	1·2	1·2	0·6	21		5·5	Id.; id.; id.
13	30·016	53·7	52·5	1·2	0·7	0·6	20		3·0	Cirri radiating from SW by W. and NE by E.; patches of cir.-str.
14	017	54·6	53·4	1·2	0·8	0·7	22		6·5	Scud; cirro-strati; cirri radiating from SW by W.
15	028	55·0	53·6	1·4	0·7	0·2	22		10·0	Cirro-stratous scud.
16	021	54·7	53·8	0·9	0·7	0·7	20	20 : — : —	10·0	Misty scud, very low and moving quickly.
17	026	54·6	54·0	0·6	1·1	0·7	20	20 : 23 : —	9·8	Id.; cir.-str.; cir.-cum.-str. and cir. seen through
18	044	56·8	55·8	1·0	0·8	0·5	18		10·0	As before. [the scud.
19	041	57·4	56·0	1·4	0·9	0·8	18	21 : — : —	10·0	Scud; cirro-strati and a cirrous mass.
20	064	58·7	56·7	2·0	1·2	0·7	20	20 : — : —	10·0	Id.; id.
21	071	58·8	56·7	2·1	0·9	0·9	19	20 : — : —	10·0	Thick scud.
22	072	62·5	59·2	3·3	0·8	0·9	21		9·9	Id.; cirro-strati.
23	072	62·2	58·3	3·9	1·1	0·3	20	20 : — : —	9·8	Scud; cirro-cumulo-strati; cirro-strati; cirri.
1 0	068	62·9	59·2	3·7	0·7	0·7	21	21 : — : —	9·8	Id.; id.; id.; id. ●
1	071	65·0	60·5	4·5	0·9	0·5	21	21 : — : —	9·9	Id.; id.; id.; id. ●
2	072	63·5	59·3	4·2	0·8	0·7	21	21 : — : —	9·9	Id.; id.; id.; id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The otions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

June 7d 6h. Atmosphere close, and appearances electrical, in about 15m; portion of a solar halo and fine drops of rain.

Gött. Mean Time.		BAROMETER at 32°.	THERMOMETERS. Dry.	THERMOMETERS. Wet.	THERMOMETERS. Diff.	WIND. Maximum force in 1h.	WIND. Maximum force in 10m.	WIND. From	Clouds, Sc.: C.-s: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
10	3	30·064	66·0	60·7	5·3	1·0	0·6	21	21 : — : —	9·5	Scud and loose cumuli ; cirro-strati ; cirri.
	4	049	64·8	60·2	4·6	0·9	0·7	20	22 : — : —	8·5	Id. ; id. ; id. ●
	5	042	62·7	58·7	4·0	0·8	0·7	20	22 : — : —	7·5	Id. ; id. ; id. ⊖
	6	043	62·7	59·0†	3·7	0·6	0·6	20	22 : — : —	9·0	Misty cir.-str. scud ; cum. on horizon ; sheets of cirri.
	7	044	61·4	58·0	3·4	0·7	0·3	21	22 : — : —	6·5	Id. ; sheets of mottled and diffuse cir. ⊖
	8	045	60·8	57·7	3·1	0·5	0·3	19	21 : 22 : 23	8·0	Misty scud ; cir.-str. scud ; sheets of cir. ; cum. on hor. ⊖
	9	043	58·9	56·8↓	2·1	0·4	0·4	21		9·9	Id. ; id. ; id. ; scud denser than before.
	10	039	58·0	56·3	1·7	0·3	0·1	19	21 : — : —	9·9	Id. ; id. ; cirro-strati.
	11	037	57·7	56·2	1·5	0·4	0·2	20		9·9	Scud and cirro-strati.
	12	038	57·4	55·8	1·6	0·3	0·1	23		9·9	Id.
	13	30·037	56·4	55·1	1·3	0·3	0·1	22		9·8	Scud and cirro-strati.
	14	026	56·6	55·1	1·5	0·1	0·1	22		9·9	Id.
	15	024	56·7	55·1	1·6	0·7	0·3	20	21 : — : —	10·0	Scud.
	16	013	55·4	54·2	1·2	0·3	0·1	23	21 : 22 : —	9·8	Id. ; cirro-cumulo-strati ; cirrous haze.
	17	015	56·0	54·7	1·3	0·3	0·1	20	22 : — : —	7·0	Loose scud ; woolly cirri and cirro-cumuli.
	18	018	57·7	56·0	1·7	0·1	0·0	22	22 : — : —	9·9	Id. ; cirro-strati and cirri.
	19	012	60·9	58·4†	2·5	0·4	0·2	20	21 : 23 : —	9·9	Misty scud ; cirro-cumulo-stratus. ⊙
	20	017	61·1	58·0	3·1	0·5	0·3	20		9·9	Patches of loose scud ; cirro-cumulo-stratus.
	21	020	61·4	58·0↓	3·4	0·8	0·6	19		10·0	Id. ; cirro-strati and cirrous mass.
	22	017	66·0	61·0	5·0	0·8	0·5	19	— : 23 : —	9·0	Cirro-cumulo-strati ; cirro-strati ; cirri.
	23	020	68·5	62·2	6·3	1·2	1·2	20	— : 21 : —	7·0	Id. ; loose cumuli ; cirro-strati ; cirri. ⊖
11	0	017	67·3	61·2	6·1	1·1	0·8	20	22 : — : —	7·0	Scud and loose cum. ; cir.-str. ; diffuse and mot. cir. ⊖
	1	012	68·0	61·4	6·6	1·3	1·1	20	22 : — : —	7·0	Id. ; id. ⊙
	2	016	69·0	61·5	7·5	0·8	1·5	20	22 : — : —	7·0	Id. ; id. ; id. ⊖
	3	30·005	70·0	62·2	7·8	1·2	1·2	21	21 : — : —	7·0	Id. ; id. ; id. ⊖
	4	29·996	71·7	63·4	8·3	1·1	0·5	21	21 : — : —	5·0	Id. ; id. ; id. ⊙
	5	992	70·6	62·7	7·9	0·9	0·5	20	21 : — : —	3·0	Id. ; id. ⊙
	6	976	69·0	61·9†	7·1	0·9	0·3	18		2·0	Id. ; patches of cirri and cir.-cum. ⊙
	7	976	68·3	61·6	6·7	0·4	0·2	22	— : — : 20	2·5	Sheets of woolly and mot. cir. ; loose cum. near hor. ⊙
	8	977	66·5	60·4	6·1	0·2	0·1	22		1·0	Flat cumuli to N. ; sheets of cirro-strati and cirri. ⊙
	9	29·993	63·1	59·6↓	3·5	0·0	0·0	20		2·0	Sheets of cirro-strati and cirri. ⊙
	10	30·001	60·0	57·7	2·3	0·1	0·0	20	— : 20 : —	2·0	Cirro-cumulo-strati ; cumulo-strati on E. horizon. ☽
	11	005	57·0	55·8	1·2	0·1	0·0	17		2·0	Cirro-strati and cirri ; id. ☽
	12	003	54·2	53·5	0·7	0·0	0·0	20		1·5	Id. ; id.
	13	30·007	53·2	53·0	0·2	0·0	0·0	20		8·5	Cirro-cumulo-strati ; cirro-strati.
	14	29·999	53·7	53·2	0·5	0·0	0·0	20		2·0	Id. ; id. on horizon ; woolly cir.
	15	29·994	52·8	52·2	0·6	0·1	0·1	22		3·0	Cirro-strati and haze on horizon.
	16	30·001	51·7	51·3	0·4	0·1	0·0	18	— : 20 : —	8·0	Cirro-cumulo-strati ; cirro-strati.
	17	30·001	52·2	51·9	0·3	0·1	0·0		— : 20 : —	5·0	As before ; cir. haze ; mass of electric-looking clouds to S.
	18	30·000	53·7	52·7†	1·0	0·0	0·0	20	— : 20 : —	6·0	As before ; very hazy round horizon.
	19	29·990	56·1	54·9	1·2	0·1	0·0	20	— : 19 : —	10·0	Cirro-cumulo-strati ; very hazy near horizon. ●
	20	993	59·3	56·9↓	2·4	0·1	0·0	20	— : 20 : —	10·0	Id. ; id.
	21	988	64·5	61·1	3·4	0·1	0·0	24	20 : — : 24	4·0 ?	Patch of scud ; wo. and diff. cir; atmosphere very hazy. ⊙
	22	976	68·5	63·9	4·6	0·0	0·0	20		9·0	Cirri, &c. ; atmosphere very hazy. ⊖
	23	969	71·1	65·7	5·4	0·1	0·0	16	— : — : 24	7·0	Woolly and linear cirri ; atmosphere very hazy. ⊖
12	0	967	74·6	67·6	7·0	0·4	0·3	18	20 : — : —	5·0	Masses of loose cumuli ; streaks of cirri ; very hazy. ⊙
	1	962	77·4	69·0	8·4	0·6	0·4	18	20 : — : —	4·0	Id. ; id. ; id. ⊖
	2	958	77·0	68·0	9·0	0·6	0·3	18		2·5	Id. ; id.; less cum. and haze. ⊙
	3	946	78·1	68·0	10·1	0·7	0·6	20	17 : — : —	2·5	Small masses of cumuli ; cirri near horizon ; hazy. ⊙
	4	938	78·2	68·0	10·2	0·6	0·6	20	16 : — : —	2·0	Cum.-str. to SE. ; woolly cir. to NW. ; hazy on hor. ⊙
	5	939	75·7	66·7†	9·0	1·1	0·6	20		1·5	Cum.-str. to E. and SE. ; woolly cir. ; hazy on hor. ⊙
	6	934	74·8	65·4	9·4	0·9	0·6	20		2·0	Id. ; id. ; id. ⊙
	7	931	72·8	64·2	8·6	0·6	0·4	20		2·5	Id. ; id. ; id. ⊙
	8	942	69·2	62·9	6·3	0·4	0·1	20		2·0	Id. ; id. ; id. ⊙
	9	955	65·8	61·3	4·5	0·2	0·0	18		2·5	Dense bank of cir.-str. and haze on E. hor. ; wo. cir. ⊙
	10	954	62·4	59·5↓	2·9	0·2	0·1	18		2·0	Cirro-strati ; cirri and haze. ☽

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

June 10d 20h. Observations made at 20h 5m.

June 11d 21h. Observations made at 21h 5m.

t. n e.	BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc.: C.-s,: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
2 1	29·958	58·7	56·8	1·9	0·1	0·0	16		0·8	Cirro-strati; cirri to north. ☽
2	967	57·6	56·1	1·5	0·0	0·0	18		0·8	Id.; id.
3	29·977	56·0	55·0	1·0	0·1	0·0	18		0·5	Cirro-strati; cirri, coloured red to NNE.
4	979	55·6	54·7	0·9	0·0	0·0	18		0·5	Id.; id.
5	978	53·3	51·9	1·4	0·1	0·0	18		0·5	Id.; id. [the ground.
6	979	54·3	53·9	0·4	0·1	0·0	18		0·8	Id.; cirri, coloured crimson to NE.; mist on
7	981	53·6	53·3†	0·3	0·0	0·0	18		0·8	Strips of woolly cirri to NW., radiating from SW. and NE.; hazy. ⊙
8	980	56·6	55·7	0·9	0·0	0·0	23	—:—:20	0·8	Id.; very hazy. ⊙
9	985	60·0	58·5	1·5	0·0	0·0	18		1·0	Id.; id. ⊙
0	986	62·8	59·5	3·3	0·1	0·1	20		1·5	Patches of scud and woolly cirri round horizon. ⊙
1	29·992	66·0	61·1↓	4·9	0·2	0·2	28		2·5	Patches of cumuli; woolly cirri and loose cirro-strati. ⊙
2	30·004	68·6	62·3	6·3	0·1	0·1	26	22:—:20	2·5	Id.; band of woolly cirrus lying from NE. to SW. ⊙
3	30·002	68·6	62·0	6·6	0·2	0·1	26		4·5	Id.; woolly cirri and cirro-strati. ⊖
3 0	30·002	69·9	62·2	7·7	0·1	0·1	28	—:19:19	2·5	Woolly cirri and cirro-strati; patch of scud to W. ⊙
1	29·993	73·5	63·4	10·1	0·3	0·3	28		2·0	Id. ⊙
2	991	75·0	64·5	10·5	0·3	0·1	26		1·5	Id.; patches of scud to S. ⊙
3	985	75·0	64·0	11·0	0·4	0·2	30		1·0	Id.; id. ⊙
4	981	75·0	64·2	10·8	0·4	0·2	28		0·5	Id.; id. ⊙
5	973	74·0	64·0†	10·0	0·3	0·3	26		0·5	Patches of cumuli to SE.; diffuse cirri to N. ⊙
6	973	72·1	62·2	9·9	0·4	0·3	28		0·5	Id.; id. ⊙
7	979	70·8	62·7	8·1	0·2	0·2	27		0·5	Id.; id.; haze on E. hor. ⊙
8	29·997	68·0	60·7	7·3	0·2	0·1	28		0·5	Id.; id.; id. ⊙
9	30·008	63·3	58·7↓	4·6	0·1	0·0	28		0·5	Cirri and haze. ⊙
0	016	60·9	57·3	3·6	0·1	0·0	23		0·5	Id. ☽
1	002	56·6	55·0	1·6	0·0	0·0	24		0·1	Cirrous haze on horizon; faint lunar corona. ☽
2	014	54·0	53·3	0·7	0·0	0·0			0·2	Cirro-strati to N.; cirri to SW. ☽
3	30·016	55·0	54·0	1·0	0·0	0·0			0·4	Cirro-strati to N.; streaks of cirri forming.
4	30·007	53·4	52·7	0·7	0·0	0·0	20		7·0	Cirro-cumulo-strati.
5	29·998	54·0	53·2	0·8	0·0	0·0	22		8·0	Id.
6	991	54·6	53·4	1·2	0·0	0·0	22	—:19:—	7·0	Id.; cirri.
7	992	54·1	53·0	1·1	0·0	0·0	22	—:19:—	5·0	Id.; id.
8	993	56·7	55·0	1·7	0·0	0·0	20	—:20:—	9·0	Id., lying in ridges, in some places.
9	994	60·2	58·2	2·0	0·1	0·0	14	—:20:21	9·0	Id.; tufts of curled and woolly cirri. ⊙
20	995	61·5	59·0†	2·5	0·1	0·1	8	4:20:21	8·0	Scud; patches of cir.-cum.-str.; sheets of woolly and linear cirri,
21	993	65·3	61·3	4·0	0·1	0·1	6	4:—:—	10·0	Id.; cirro-strati; cirrous mass. [rad. from SW. ⊖
22	992	68·5	63·4	5·1	0·1	0·1	9	4:—:—	9·9	Id.; id.; cirro-cumulo-strati.
23	992	66·7	61·2↓	5·5	0·1	0·2	6	4:24:—	9·9	Id.; cirro-cumulo-strati; cumuli; woolly cirri.
14 0	979	66·5	61·0	5·5	0·2	0·1	6	4:—:—	6·0	Scud and loose cumuli; cirro-strati; woolly cirri; haze.
1	967	67·5	61·4	6·1	0·1	0·2	4	4:—:—	7·5	Id.; id.; id.; id. ⊙
2	953	69·3	62·8	6·5	0·2	0·2	12	4:—:25	7·5	Id.; woolly cirri; cirrous haze; solar halo. ⊙
3	935	68·5	61·0	7·5	0·1	0·2	9	—:25:—	8·0	Cirro-cumulo-strati; cirrous haze; woolly cirri; halo. ⊖
4	929	69·2	62·0	7·2	0·2	0·1	7	2:23:—	6·0	Loose cumuli, moving in two currents; woolly cirri. ⊖
5	920	67·8	61·3	6·5	0·2	0·2	6	—:—:22	6·0	Woolly cirri; patches of scud and cumuli.
6	912	66·3	60·3†	6·0	0·4	0·2	8		2·0	Cumulo-strati to S.; cirri. ⊙
7	905	64·4	59·2	5·2	0·4	0·1	4	—:—:24	7·0	Woolly cirri; cumulo-strati; faint solar halo. ⊖
8	897	62·4	58·3	4·1	0·1	0·0	8	—:—:24	8·0	Id.; cir.-str.; a slight tendency to a parhelion. ⊖
9	903	59·4	57·0↓	2·4	0·2	0·1	4	—:24:—	8·0	Cirro-cumulous scud; woolly cirri.
10	896	57·5	55·0	2·5	0·1	0·0	4	—:24:—	7·0	Id.; cirro-cumuli, cirri, and cir. haze. ☽
11	910	55·2	53·5	1·7	0·1	0·0	4		8·0	Id.; id., id.
12	900	54·7	53·4	1·3	0·1	0·0	4		9·0	Id.; id.
1 0½	29·751	69·0	64·2	4·8	0·2	0·2	20		……	Sunday—Overcast, with thick scud and cirro-stratus.
13	29·637	55·7	53·9	1·8	0·1	0·0			9·0	Cirro-strati.
14	631	55·0	54·0	1·0	0·0	0·0			10·0	Id.
15	608	55·0	53·9	1·1	0·1	0·0			10·0	Id.
16	602	54·9	53·9	1·0	0·0	0·0			10·0	Id.

June 12d 13h (1h 10m A.M. Mak. M. T.) Strong twilight, the smallest type read with ease.
June 12d 16h 20m. The mist on the ground has a purplish tinge at some places.
June 13d 12h. Observation made at 12h 5m.
June 14d 0h. Observation made at 0h 5m.

Gött. Mean Time.		Barometer at 32°.	Thermometers.			Wind.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
15	17	29·599	55·3	54·0	1·3	0·0	0·0			10·0	Cirro-strati.
	18	594	56·2	55·1	1·1	0·0	0·0			10·0	Id. and scud ; smart shower.
	19	581	58·2	56·8	1·4	0·0	0·0			10·0	Id. ; nearly homogeneous ; rain$^{0·2}$
	20	575	58·0	56·5	1·5	0·0	0·0			10·0	Id. ; id. ; rain$^{0·2}$
	21	564	59·8	56·8	3·0	0·0	0·0	6	20 : — : —	10·0	Patches of scud to W. ; dense cirro-stratus.
	22	559	62·8	59·2	3·6	0·0	0·0			10·0	Scud and cum. on NW. hor. ; dense cir.-str. ; rain$^{0·2}$
	23	556	60·0	57·6	2·4	0·1	0·1	9	19 : — : —	10·0	Id. ; id.
16	0	547	60·5	58·7	1·8	0·1	0·1	10	18 : — : —	10·0	Scud ; cirro-strati ; cirrous mass ; rain$^{1·5}$
	1	542	62·6	60·9	1·7	0·1	0·1	16	18 : — : —	10·0	Id. ; id. ; id.
	2	536	66·5	63·2	3·3	0·1	0·1	17	18 : — : —	10·0	Id. ; id. ; id.
	3	534	62·5	60·0	2·5	0·1	0·1	20	18 : — : —	10·0	Id. ; id. ; id.
	4	535	62·7	60·7	2·0	0·2	0·1	19	18 : — : —	10·0	Id. ; id. ; scotch mist.
	5	532	63·0	60·4	2·6	0·1	0·2	20	18 : — : —	10·0	Id. ; id.
	6	532	63·1	60·2	2·9	0·2	0·1	20	18 : — : —	9·9	Id. ; cirro-cumulo-strati ; occasional showers.
	7	531	61·1	58·7	2·4	0·1	0·0	20	18 : — : —	10·0	Loose scud ; cirro-stratous scud ; id.
	8	543	60·3	58·2	2·1	0·0	0·0	20		10·0	Id. ; id.
	9	554	59·1	57·5	1·6	0·1	0·0	22		10·0	Id. ; id. ; drops of rain.
	10	562	58·5	57·4	1·1	0·1	0·0	20		10·0	Cirro-stratous scud.
	11	563	58·0	57·0	1·0	0·0	0·0			10·0	Scud and cirro-stratus.
	12	574	56·5	55·6	0·9	0·0	0·0	20		10·0	Id. ; very light drizzle.
	13	29·577	55·5	55·0	0·5	0·0	0·0	22		10·0	Scud and cirro-stratus ; very light drizzle.
	14	580	55·0	54·5	0·5	0·0	0·0	20		10·0	Id.
	15	584	55·0	54·4	0·6	0·0	0.0	22		10·0	Id. ; id.
	16	578	54·6	54·0	0·6	0·0	0·0	20	18 : — : —	10·0	Scud ; dense cirro-stratus ; rain$^{0·5}$
	17	590	54·5	54·2	0·3	0·0	0·0	20	24 : 17 : —	10·0	Loose low misty scud to N. ; scud ; dense cir.-str. ; rain$^{0·5}$
	18	602	56·2	55·4	0·8	0·0	0·0	24		10·0	Nearly as before, clouds more homogeneous ; rain$^{0·2}$
	19	612	57·6	56·4	1·2	0·0	0·0	23	25 : 17 : —	10·0	Loose misty scud, moving very slowly ; loose cir.-str. ; cir.-cum.-str.
	20	622	60·7	58·3	2·4	0·1	0·0			10·0	Scud and cirro-cumulo-stratus.
	21	626	62·6	59·2	3·4	0·0	0·0	17	18 : — : —	10·0	Scud ; cirro-strati ; cirro-cumulo-strati ; cirri.
	22	632	65·1	60·9	4·2	0·0	0·0			10·0	Id. ; id. ; id.
	23	631	64·3	60·7	3·6	0·1	0·1	8	12 : — : —	10·0	Id. ; id. ; id.
17	0	632	61·3	58·7	2·6	0·1	0·1	6		10·0	Id. ; id. ; id. ; drops of rain.
	1	624	62·8	59·5	3·3	0·2	0·1	4	10 : — : —	10·0	Id. ; cirro-cumulo-strati.
	2	616	59·4	59·1	0·3	0·2	0·1	10		10·0	Id. ; id. ; rain^{2}
	3	615	60·3	59·5	0·8	0·2	0·1	4		10·0	Id. ; id. ; id.
	4	616	58·3	58·2	0·1	0·1	0·1	6		10·0	Id. ; thick cirrous mass ; rain^{1} ; showers$^{2—5}$ since 3h
	5	606	62·0	60·7	1·3	0·1	0·1	8	12 : — : —	10·0	Id. ; id.
	6	613	60·7	59·3	1·4	0·1	0·0	4	16 : — : —	10·0	Id. ; dense cirro-cumulo-strati and cirro-strati.
	7	611	60·3	59·3	1·0	0·2	0·1	6	17 : — : —	10·0	Id. ; dense cirro-strati ; misty on horizon.
	8	617	59·3	58·4	0·9	0·1	0·0		16 : — : —	10·0	Id. ; id. ; id.
	9	618	58·4	57·5	0·9	0·0	0·0	24	17 : — : —	10·0	Id. ; id. ; id.
	10	619	56·0	54·9	1·1	0·0	0·0			10·0	Id. ; id. ; id.
	11	620	55·6	54·2	1·4	0·0	0·0	17		10·0	Id. ; id.
	12	602	53·9	51·9	2·0	0·0	0·0			10·0	Id. ; id.
	13	29·604	53·8	52·5	1·3	0·0	0·0	16		10·0	Scud ; dense cirro-strati.
	14	600	53·8	52·8	1·0	0·0	0·0	18		10·0	Id. ; cirro-strati ; cirrous mass.
	15	598	53·3	52·3	1·0	0·1	0·1	20	16 : — : —	10·0	Id. ; id. ; cumulo-strati to E.
	16	600	52·7	51·7	1·0	0·1	0·0	20	16 : — : —	10·0	Cirro-cumulo-strati ; wavy cirro-str. ; loose scud to E.
	17	601	53·5	51·8	1·7	0·1	0·0	20		10·0	Sky covered with wavy cirro-strati, dark blue to W.
	18	592	53·5	51·0	2·5	0·1	0·0		— : 15 : —	10·0	Cirro-cumulo-strati ; wavy cirro-strati ; cum.-str. to E.
	19	588	54·6	52·0	2·6	0·0	0·0		— : 16 : —	10·0	Dense cirro-stratus.
	20	590	54·4	52·0	2·4	0·0	0·0	18		10·0	Id. ; drops of rain.
	21	584	55·0	52·7	2·3	0·1	0·0	18		10·0	Id. ; id.
	22	587	54·0	52·0	2·0	0·0	0·0	22		10·0	Clouds homogeneous ; rain$^{0·5}$
	23	576	55·1	53·6	1·5	0·1	0·0	16	— : 18 : —	10·0	Dense cirro-stratus ; rain$^{0·2}$
18	0	577	58·5	56·1	2·4	0·0	0·0	20		10·0	Id. ; drops of rain.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

June 15d 21h. Observation made at 21h 10m.

June 18d. New turkey feather vane erected to-day.

BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
	Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
in.	°	°	°	lbs.	lbs.	pt.	pt. pt pt.	0—10.	
29·564	60·3	57·8	2·5	0·0	0·0	16	— : 16 : —	10·0	Dense cirro-stratus; drops of rain.
554	62·1	56·6	5·5	0·0	0·0		26 : 14 : —	10·0	Patches of scud; dense cirro-stratus.
552	67·0	60·7	6·3	0·0	0·0	20	26 : 16 : —	10·0	Masses of thick scud; id.
533	64·7	58·6	6·1	0·0	0·0	2	27 : — : —	10·0	Thick electric-looking scud; dense cirro-strati.
516	62·6	56·7	5·9	0·0	0·0			10·0	Scud; dense cir.-str.; much haze; rather electric-looking.
515	63·3	57·2	6·1	0·1	0·1	4		10·0	Id.; id.; id.
511	61·3	55·8	5·5	0·1	0·1	28		10·0	Id.; id.; id.
511	60·3	56·0	4·3	0·1	0·1	20	30 : — : —	10·0	Id.; id.; id.; electric-looking.
511	58·5	55·5	3·0	0·1	0·1	31	31 : — : —	10·0	Patches of scud; dense homogeneous cirro-strati; drops of rain.
494	58·4	54·4	4·0	0·3	0·3	30		10·0	Scud and dense cirro-stratus.
492	56·6	53·6	3·0	0·5	0·3	29		10·0	Id.; drops of rain.
493	55·7	53·3	2·4	0·5	0·5	28		10·0	Id.; rain[1]
29·503	54·8	54·0	0·8	0·8	0·1	30		10·0	Rain[2]
505	53·4	52·4	1·0	0·2	0·2	20		10·0	Scud and cirro-strati.
515	52·6	51·3	1·3	0·2	0·1	20		10·0	Id.; rain[1]
526	51·2	49·9	1·3	0·3	0·3	20		10·0	Id.
556	51·0	49·0	2·0	0·3	0·3	24	28 : 24 : —	9·0	Scud; cirro-cumulo-strati; cirro-strati.
574	50·6	49·0	1·6	0·2	0·5	22	27 : — : —	7·5	Scud and loose cumuli; cirro-strati; woolly cirri. ⊙
590	54·3	51·0	3·3	0·6	0·8	26	— : 24 : —	6·0	Cirro-cumulo-strati; cumuli; id; id.
613	56·0	52·2	3·8	0·7	0·6	25	— : 24 : —	3·0	Id.; cirro-strati; patches of scud to N. ⊙
632	58·2	53·0	5·2	0·7	0·7	22	27 : — : —	8·0	Scud and loose cumuli; cirro-strati. ⊙
654	60·1	54·2	5·9	0·8	0·3	26	27 : — : —	9·7	Id.
670	61·2	55·0	6·2	0·7	0·4	26	27 : — : —	9·8	Id.
682	60·4	53·4	7·0	0·6	0·5	24	26 : — : —	9·9	Id.
702	60·6	54·6	6·0	0·8	0·5	26	26 : — : —	10·0	Id.
712	63·2	56·2	7·0	0·5	0·5	26	24 : — : —	9·0	Cirro-cumulo-strati and cirro-strati.
735	62·1	55·9	6·2	0·7	0·4	24	— : 25 : —	9·9	Scud and cirro-stratous scud.
752	61·9	55·4	6·5	0·7	0·3	23	— : 25 : —	9·9	Cirro-stratous scud; cumuli.
766	60·6	54·4	6·2	0·4	0·2	20		10·0	Id.
773	61·1	56·0	5·1	0·4	0·1	22	— : 26 : —	9·5	Id.
789	60·5	55·5	5·0	0·5	0·1	19	— : 27 : —	8·0	Id.; cumuli. ⊖
794	61·0	55·7	5·3	0·3	0·2	21		2·5	Id. ⊙
816	57·0	53·3	3·7	0·4	0·0	24		1·5	Id. ⊙
836	53·3	51·0	2·3	0·1	0·0	20	— : 24 : —	4·0	Cirro-cumulo-strati; cirro-strati.
848	50·0	48·6	1·4	0·1	0·0	18		2·5	Cirro-strati. ☽
855	47·8	46·6	1·2	0·0	0·0	18		3·0	Cirro-cumulo-strati to N. ☽
29·863	47·8	46·8	1·0	0·0	0·0	18		8·5	Cirro-cumulo-strati to N. ☽
874	48·0	47·2	0·8	0·0	0·0	20		9·0	Id.
880	50·0	48·9	1·1	0·0	0·0	19		9·8	Thick scud.
892	49·0	48·0	1·0	0·0	0·0	22	0 : — : —	9·8	Scud; cirro-cumulo-strati.
902	50·3	49·6	0·7	0·0	0·0	22	1 : — : —	10·0	Id.
914	53·1	51·5	1·6	0·0	0·0	6	2 : — : —	9·8	Id.; cirri.
917	54·2	52·2	2·0	0·0	0·0	6	6 : — : —	10·0	Id.; cirro-stratous scud.
932	56·7	53·8	2·9	0·1	0·1	6	6 : — : —	10·0	Id.; id.
926	60·0	55·6	4·4	0·1	0·1	8	8 : — : —	9·8	Scud and loose cum.; cir.-cum.-str.; cirri. ⊖
931	60·4	55·2	5·2	0·1	0·1	12	8 : — : —	10·0	Cirro-stratous scud; id.
935	62·5	56·2	6·3	0·1	0·1	4	8 : — : —	7·0	Scud and loose cumuli. ⊖
930	65·7	59·0	6·7	0·1	0·1	28	16 : — : —	6·0	Id.; cirro-strati. ⊙
923	63·4	57·2	6·2	0·1	0·1	18	24 : — : —	3·0	Id.; id. ⊙
908	65·0	57·6	7·4	0·1	0·1	18	24 : — : —	7·0	Id.; id. ⊙
899	67·6	58·2	9·4	0·1	0·2	21	24 : — : —	9·0	Id.; cir.-cum.-str.; cir.-str.; cirri ⊙
890	67·2	59·0	8·2	0·2	0·1	20	20 : — : —	9·5	Id.; id.; id. ⊖
883	67·3	59·0	8·3	0·1	0·1	20	20 : — : —	9·0	Id.; id.; id.; cumuli. ⊙
875	67·7	59·4†	8·3	0·2	0·2	24	20 : — : —	3·5	Loose cum. and cum.-str.; cirro-strati to NW. ⊙
876	63·0	55·4	7·6	0·7	0·5	24		3·0	Cumulo-strati; cirri and cirro-strati. ⊙
880	59·9	53·9	6·0	0·4	0·2	25	— : — : 28	4·0	Cirri and thin cirro-strati; scud and loose cumuli. ⊙

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The tions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Gött. Mean Time.	BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
20 9	29·887	56·4	52·2⸸	4·2	0·3	0·0	24		7·0	Cirri and cirro-strati.
10	886	54·3	50·4	3·9	0·1	0·0	20		6·0	Cirro-strati ; cirri and cirrous haze ; red to NW.
11	886	53·0	48·7	4·3	0·1	0·0	24		9·0	Id. ; cirro-cumulo-strati. ☽̶
12	880	53·9	50·7	3·2	0·2	0·1	20		8·5	Id. ; id.
13	29·869	54·3	50·6	3·7	0·1	0·0	23		9·0	Cirro-strati ; cirro-cumulo-strati. ☽̶
14	855	53·0	50·3	2·7	0·2	0·1	20		9·5	Id. ; id. ☽̶
15	850	54·0	50·7	3·3	0·2	0·2	21		9·9	Id. ; clouds tinged red to E.
16	833	54·9	51·0	3·9	0·5	0·3	20		9·9	Id. ; mass of cirro-stratus.
17	833	54·9	51·3	3·6	0·4	0·3	22	25 : 25 : —	9·5	Id. ; dense cir.-str. ; cum. to W. ; str. to E. and on Cheviot.
18	829	56·4	52·8†	3·6	0·4	0·3	20	— : 25 : —	8·0	Cirro-stratous scud ; cir.-str. ; woolly and mottled cir. ⊙
19	829	56·9	53·2⸸	3·7	0·7	0·8	22	25 : 26 : —	9·8	Loose scud ; thick cir.-str. and cir.-str. scud ; cirri seen to S.
20	821	58·0	54·3	3·7	0·9	0·9	22	26 : 26 : —	10·0	Scud and cirro-strati.
21	830	60·1	56·0	4·1	0·7	0·2	23	25 : 26 : —	10·0	Scud ; cirro-strati.
22	839	60·6	56·8	3·8	0·5	0·1	20	24 : — : —	10·0	Scud and cirro-strati.
23	839	61·6	58·1	3·5	0·4	0·1	24	24 : — : —	10·0	Id.
21 0	830	64·1	58·7	5·4	0·4	0·1	26	23 : — : —	8·0	Loose cumuli.
1	813	65·6	57·9	7·7	0·7	0·8	28	23 : — : —	5·0	Id. ⊙
2	809	66·7	57·8	8·9	0·9	0·6	26	24 : — : —	2·0	Id. ; patches of cirri. ⊙
3	810	65·1	57·0	8·1	0·9	0·7	24		1·0	Id. ; cirri and cirro-strati near horizon. ⊙
4	814	65·0	56·5	8·5	1·1	0·3	24	26 : — : —	2·0	Id. ; id. ⊙
5	808	64·3	55·6	8·7	0·8	0·6	26	26 : — : —	0·7	Id. ; streaks of cirro-stratus near horizon. ⊙
6	811	62·5	55·2†	7·3	0·5	0·3	26		1·0	Id. ; cirro-strati and cumuli on horizon. ⊖
7	804	62·4	56·4	6·0	0·3	0·2	30	— : 2 : 26	6·0	Cirro-cumulo-strati ; woolly cirri. ⊙
8	814	61·2	56·8	4·4	0·4	0·3	24	— : 2 : —	8·5	Id. ; id. ⊖
9	830	57·8	52·6	5·2	0·3	0·1	10	— : 2 : —	7·5	Id. ; id. ; cumuli to N. ⊖
10	837	56·2	51·0⸸	5·2	0·2	0·3	30	25 : — : —	7·5	Cirro-stratous scud ; cirro-strati ; cirri.
11	837	54·3	50·3	4·0	0·1	0·0	28	28 : — : —	7·5	Id. and loose cumuli.
12	846	51·8	48·9	2·9	0·1	0·0	26		5·0	Scud ; cirro-strati ; light cirri. ☽
22 1¾	29·785	60·4	53·8	6·6	0·7	0·2	22		……	Sunday—The mean quantity of clouds about 6 ; sunshine.
13	29·822	46·0	45·0	1·0	2·4	0·1	20		2·0	Woolly cirri and cirro-strati radiating from NNW. ☽
14	829	45·6	44·2	1·4	0·1	0·0	22		1·5	Woolly cirri and cirro-strati. ☽̶
15	831	45·2	43·7	1·5	0·1	0·0	23		2·0	Diffuse cirri ; cirro-strati ; patches of scud to N. ☽
16	840	44·7	43·0	1·7	0·2	0·2	23		3·0	Cirri and sheets of cirro-strati. ☽
17	850	45·1	43·7†	1·4	0·5	0·0	22		2·0	Cirro-cumuli and cirro-strati. ⊖
18	859	47·0	44·8	2·2	0·3	0·4	24	— : 28 : —	2·0	Id. ; scud on Cheviot. ⊙
19	860	50·6	46·7	3·9	0·5	0·4	24	— : 28 : —	3·5	Id. ; haze on horizon. ⊙
20	872	52·7	47·8	4·9	0·4	0·3	22	— : 28 : —	3·5	Id. ; scud and loose cum. to N. ⊙
21	872	55·6	50·3⸸	5·3	0·3	0·1	22	— : 28 : —	8·0	Cirro-stratous scud ; loose cumuli ; cirri.
22	869	56·0	50·2	5·8	0·4	0·4	23	— : 28 : —	8·0	Cirro-cumuli and cirro-strati ; cumuli ; cirri. ⊖
23	871	56·7	50·0	6·7	0·4	0·6	22	24 : 29 : 27	8·5	Scud and loose cum. ; detached cir.-cum. ; woolly cir.-cum. ; cir.-str.
23 0	863	60·7	53·2	7·5	0·4	0·4	24	24 : 28 : —	8·0	Loose cumuli ; cirro-cumuli ; cirri. ⊙
1	859	60·4	52·8	7·6	0·5	0·4	25	29 : — : —	8·0	Scud and loose cumuli ; cirro-strati ; very hazy on hor. ⊙
2	851	60·9	51·0	9·9	0·5	0·5	29	29 : — : —	8·5	Id. ; id. ; id. ⊙
3	843	61·7	53·0	8·7	0·4	0·2	30	26 : — : —	9·0	Id. ; id. ; cirri ; haze.
4	827	63·0	55·3	7·7	0·4	0·3	26	26 : — : —	9·5	Id. ; id. ; id. ; id. ⊖
5	828	62·2	55·2	7·0	0·4	0·3	24	— : 28 : —	9·8	Cirro-strati and cirro-cumulo-strati ; scud ; cum. ; cum.-str. ; haze.
6	823	60·6	54·6	6·0	0·4	0·3	23	— : 28 : —	9·9	Cir.-str. ; cir.-cum.-str. ; masses of scud and loose cum.
7	824	60·0	54·3	5·7	0·4	0·3	25	— : 26 : —	10·0	Loose cirro-strati ; cumulo-strati to E. ; masses of scud.
8	823	59·3	54·6	4·7	0·3	0·1	24	— : 26 : —	10·0	Id. ; masses of scud.
9	820	57·3	53·7	3·6	0·5	0·2	22	— : — : 26	4·0	Thin cirri ; cirro-stratous scud to E. ⊙
10	818	54·0	51·9	2·1	0·2	0·0	25		3·0	Thin cirri and cirrous haze ; cirro-strati on horizon.
11	817	51·9	50·5	1·4	0·1	0·1	20		2·0	Id. ; id.
12	807	49·3	48·3	1·0	0·1	0·1	15		2·0	Thin cir. and cir. haze ; cir.-str. ; patches of scud to N. ☽
13	29·800	49·4	48·3	1·1	0·3	0·2	21		3·0	Thin cir. and cir. haze ; cir.-str. ; patches of scud to N. ; lunar cor. ☽
14	791	48·3	47·7	0·6	0·2	0·1	18		2·0	Id. ; id. ; id. ; id. ☽

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

t. n e.	BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
5	29·770	49·0	47·8	1·2	0·3	0·1	26	— : 29 : —	3·0	Cirro-cumulo-strati ; cirro-strati ; cirri ; lunar corona. ☽
6	748	49·0	47·3	1·7	0·1	0·1	22	— : 28 : —	6·0	Id. ; id. ; id. ☽
7	724	48·5	47·5†	1·0	0·1	0·0	20	— : 26 : —	7·0	Id. ; id. ; id. ⊖
8	708	50·7	48·8	1·9	0·1	0·1	23	— : 24 : —	8·5	Id. ; id. ; id. ; cum.-str. to E. ⊖
9	682	53·7	50·7↓	3·0	0·2	0·1	18		10·0	Cir.-cum.-str. ; dappled cir.-str., like small cir.-cum. ; cir.-str. and cir. [haze.
0	668	55·6	52·4	3·2	0·5	0·4	22	21 : 20 : —	10·0	Patches of loose scud ; dense cir.-str. and cir.-haze.
1	659	56·9	53·6	3·3	0·6	0·1	21	20 : — : —	10·0	Masses of scud ; dense cirro-stratus and cirrous haze.
2	638	58·6	54·5	4·1	0·5	0·1	22	20 : — : —	10·0	Scud ; dense cirro-stratus and cirrous haze.
3	605	56·8	54·5	2·3	0·1	0·1	24	20 : — : —	10·0	Id. ; id. ; rain$^{0\cdot2}$
0	577	57·0	55·0	2·0	0·1	0·0	16		10·0	Scud and dense cirro-stratus ; continuous rain$^{1-2}$
1	544	57·4	55·0	2·4	0·0	0·0	16	15 : — : —	10·0	Scud ; dense mass above ; id.
2	506	58·2	56·0	2·2	0·2	0·0	12	15 : — : —	10·0	Id. ; id. ; id.
3	474	59·5	55·7	3·8	0·1	0·0	12	16 : — : —	10·0	Loose and cumulous scud ; cirro-strati ; rain$^{0\cdot5}$
4	445	58·2	53·7	4·5	0·1	0·0	0		10·0	Heavy masses of cum. scud ; cir.-str. scud and cir.-str.
5	430	54·3	52·3	2·0	0·2	0·1	0	31 : — : —	10·0	Thick scud ; rain$^{1-2}$
6	430	53·8	51·4	2·4	0·3	0·3	29	27 : — : —	10·0	Id. ; cirro-strati and a cirrous mass.
7	432	51·8	49·5	2·3	0·7	1·0	31	27 : — : —	10·0	Id. ; id. ; rain^{1}
8	434	51·0	49·0	2·0	0·6	0·2	30	— : 28 : —	10·0	Cirro-stratous scud ; cirro-strati.
9	432	51·2	49·0	2·2	0·3	0·3	30	— : 28 : —	10·0	Id. ; id.
0	432	50·9	49·2	1·7	0·2	0·1	26		10·0	Id. ; id.
	427	50·8	49·2	1·6	0·1	0·1			10·0	Id. ; id.
2	425	50·7	48·4	2·3	0·2	0·1	22		9·8	Id. ; id.
3	29·419	49·9	48·4	1·5	0·2	0·1	22		10·0	Cirro-strati on N. horizon ; rain$^{0\cdot5}$
4	420	49·3	47·7	1·6	0·2	0·1	24		6·0	Id.
5	417	46·9	45·8	1·1	0·2	0·1	22		3·0	Id.
6	419	46·7	45·4	1·3	0·2	0·2	22		6·0	Id.
7	420	47·1	45·8	1·3	0·3	0·2	28		0·7	Patches of scud.
8	425	48·6	46·7	1·9	0·2	0·2	24		2·0	Id.
	437	53·6	50·7	2·9	0·2	0·3	25	— : 28 : —	7·0	Cirro-cumulo-strati and cirro-strati. ⊙
	440	54·3	50·5	3·8	0·7	0·4	30	28 : — : —	9·0	Cirro-stratous scud ; id. ⊖
	438	56·5	52·0	4·5	0·5	0·2		28 : — : —	9·8	Loose cumuli ; cirro-strati.
	445	55·6	51·7	3·9	0·7	0·5	28	29 : 24 : —	9·0	Id. ; cirro-cumulo-strati ; cirro-strati.
	450	59·2	52·8	6·4	0·9	0·4	28	28 : 25 : —	8·0	Id. ; id. ; id. ; cumuli.
	451	61·7	53·7	8·0	0·5	0·2	26	28 : 26 : —	6·0	Id. ; id. ; id. ; cum.-str.
	445	63·7	55·2	8·5	1·0	0·5	26	27 : — : —	6·0	Scud and loose cumuli ; cumuli ; id. ; id. ⊙
	441	61·3	54·0	7·3	0·7	0·6	22	27 : — : —	4·0	Id. ; id. ; id. ; id. ⊙
	437	63·4	54·5	8·9	0·7	0·7	22	28 : 28 : —	6·0	Cumuli : patches of cirro-strati ; dark to NW., clouds slate-blue. ⊙
	442	62·2	55·2	7·0	1·0	0·2	29	27 : — : —	9·0	Id. ; cir.-str. ; fantastic columns of cum. to N. ; cirrous-crowned cum.- [str. to NNW.
	460	54·0	51·2	3·8	1·0	0·2	25	28 : — : —	9·5	As before, but clearer to W. ; rain$^{2-3}$ since last. ⊖
	457	57·0	52·7	4·3	0·4	0·3	24	26 : — : —	8·0	Cirro-stratous scud ; cumulo-strati round the horizon.
	474	55·0	51·0	4·0	0·5	0·4	26	26 : — : —	9·0	Scud ; cumulo-strati ; cirri ; rain$^{1\cdot5}$
	477	53·2	50·5	2·7	0·3	0·1	22	28 : — : —	9·5	Id. ; id. ; rain^{1}
	489	52·3	51·3	1·0	0·2	0·1	20	28 : — : —	9·8	Id. ; id. ; cirri to N. ; clouds slate-blue to SE.
	500	51·8	49·2	2·6	0·1	0·0	24	28 : — : —	6·0	Id. ; cir.-cum.-str. ; linear cir., rad. from WNW., clouds tinged red.
	502	48·7	46·9	1·8	0·1	0 0	20		8·0	Id. ; cum. ; cum.-str. on hor. ; lin. cir. and cir.-str. ; slightly red to [NW.
	502	47·9	46·4	1·5	0·1	0·0	20		7·5	Id. ; cumuli ; cumulo-strati.
	29·511	47·0	45·3	1·7	0·0	0·0	16		9·0	Scud and loose cumuli.
	514	48·3	45·3	3·0	0·1	0·0	28		9·8	Id.
	518	47·0	44·8	2·2	0·0	0·0	22		9·5	Thick cirro-stratous scud.
	526	46·0	43·5	2·5	0·1	0·0	22	26 : — : —	9·0	Scud ; cirro-stratous scud ; cir.-str., tinged with red.
	534	46·0	43·3	2·7	0·1	0·1	18	20 : — : 25	8·0	Id. ; id. ; thick sheets of cirri.
	533	46·0	43·5	2·5	0·0	0·0	18	20 : — : —	3·0	Scud ; cirro-stratous scud ; patches of cirri. ⊖
	537	47·3	44·9†	2·4	0·2	0·1	24	— : 24 : —	3·0	Cirro-cumuli ; woolly cirri ; cirro-strati. ⊙
	537	47·8	45·4	2·4	0·2	0·4	24	— : 24 : —	3·0	Id. ; id. ; id. ; patches of scud ; cum. ⊖
	541	51·6	46·7↓	4·9	0·4	0·6	25	26 : — : —	2·5	Loose cumuli ; cirro-strati ; cirri. ⊙
	544	54·4	48·2	6·2	0·7	0·4	22	— : 29 : —	8·5	Cirro-stratous scud ; cumulo-strati ; cirro-strati. ⊖

he direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The ons of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

ne 24^{d} 19^{h}. Observation made at 19^{h} 9^{m}.

ne 25^{d} 12^{h} 6^{m}. A shooting star to NW., altitude 20°, moving towards SW., inclined to the horizon about 30°.

ne 25^{d} 17^{h}. Some of the cirro-stratous scud spreading out like branches ; dark and undulated to E.

Gött. Mean Time.		BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1^{h}.	Maximum force in 10^{m}.	From			
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
25	23	29·550	53·8	48·2	5·6	0·5	0·3	20	— : 28 : —	9·9	Cirro-stratous scud ; cumulo-strati ; cirro-strati ; cum. ⊙
26	0	550	56·3	50·2	6·1	0·2	0·2	26	28 : — : —	9·9	Scud ; cirro-strati ; cumuli.
	1	554	58·2	51·1	7·1	0·3	0·3	26	28 : — : —	9·8	Scud and loose cumuli ; cirro-strati. [horizon. ⊖
	2	552	59·3	52·4	6·9	0·4	0·2	26	29 : — : —	9·8	Id. ; id. ; sky greenish on NE.
	3	549	57·0	51·8	5·2	0·3	0·3	28	28 : — : —	9·3	Id. ; id. ; id.
	4	548	59·3	51·8	7·5	0·7	0·3	28	28 : — : —	9·5	Id. ; id.
	5	548	57·7	51·3	6·4	0·6	0·4	28	27 : — : —	9·9	Thick semifluid scud ; cum. ; cir.-str. and cir.-cum.-str.
	6	554	59·2	51·2	8·0	0·6	0·5	30	28 : — : —	9·5	Thick scud ; cum.-strati ; cir.-str. ; a shower since last.
	7	561	55·6	49·2	6·4	1·0	0·3	30	26 : — : —	9·0	Cirro-stratous scud ; cirro-strati.
	8	571	53·0	48·7	4·3	0·4	0·1	0	26 : — : —	9·0	Thick scud ; cirro-strati ; a slight shower commencing.
	9	576	51·8	48·4	3·4	0·1	0·1	0	25 : — : —	7·0	Cirro-stratous scud ; loose cumulo-strati on horizon.
	10	588	50·4	48·4	2·0	0·0	0·0	26	25 : — : —	9·5	Id.
	11	593	47·8	46·8	1·0	0·1	0·0			6·5	Id. ; id.
	12	581	44·0	43·8	0·2	0·1	0·0	17		3·5	Id. ; cirro-strati.
	13	29·578	44·6	44·2	0·4	0·1	0·0	21		2·5	Cirro-stratous scud ; cirro-strati.
	14	573	44·1	43·5	0·6	0·0	0·0	18		6·0	Id. ; cirro-cumulo-strati.
	15	563	43·6	42·8	0·8	0·1	0·0	18		7·0	Id. ; cumuli ; woolly and linear cirri. ☽
	16	546	40·4	40·2	0·2	0·1	0·0	20		7·0	Id. ; id. ; id. ; clouds red.
	17	549	42·5	42·0	0·5	0·0	0·0	16		6·5	Cir.-cum.-str. ; dense cir.-str. to E. ; cum.-str. to S., various cirri.
	18	534	43·2	42·3	0·9	0·1	0·0	8	— : 24 : —	7·0	Woolly cir.-cum. ; various cirri ; cir.-str. scud ; cirro-strati ; cum. ⊖
	19	529	45·4	44·2†	1·2	0·0	0·0	20	— : 24 : —	4·0	Cirro-cumulo-strati ; loose cumulo-strati to N. and E. ⊙
	20	518	52·8	50·5⸸	2·3	0·0	0·0	2	12 : 22 : —	9·7	Masses of scud and loose cumuli ; cirro-cumulo-strati.
	21	504	54·0	51·3	2·7	0·1	0·0	4	9 : 24 : —	6·0	Scud and cumuli ; cirro-cumulo-strati. ⊙
	22	490	59·1	52·7	6·4	0·0	0·0	12	10 : — : —	9·8	Id. ; id. ⊖
	23	469	59·9	53·2	6·7	0·2	0·1	14	10 : — : —	10·0	Id. ; id.
27	0	451	59·3	53·0	6·3	0·3	0·1	16	10 : — : —	10·0	Id. ; cirro-stratus. [horizon.
	1	429	59·2	53·3	5·9	0·6	0·4	12	— : 16 : —	10·0	Thick cir.-str. clouds ; scud and loose cum. ; clouds electric-like near
	2	419	56·9	52·1	4·8	0·7	0·7	6	14 : 14 : —	10·0	Scud ; cumuli and cirro-stratous clouds.
	3	397	57·4	52·2	5·2	0·9	0·9	8	12 : — : —	10·0	Masses of loose cumuli ; dense cirro-stratus and haze.
	4	374	56·0	51·3	4·7	1·3	1·5	9	12 : — : —	10·0	Id. ; id.
	5	364	53·2	50·0	3·2	1·2	0·8	10	10 : — : —	10·0	Id. ; id. ; drops of rain.
	6	355	50·8	49·7	1·1	1·2	0·5	8	9 : — : —	10·0	Scud ; rain^{2}
	7	323	50·8	49·7	1·1	0·7	0·9	7	7 : — : —	10·0	Id. ; id.
	8	302	49·6	48·5	1·1	0·8	0·5	8	8 : — : —	10·0	Id. ; dense cirro-stratus ; rain$^{1-2}$
	9	277	49·5	48·5	1·0	0·8	0·4	6	8 : — : —	10·0	Id ; id. ; rain$^{1\cdot5}$
	10	264	49·0	48·0	1·0	0·5	0·5	4		10·0	Id. ; rain^{2}
	11	214	48·0	47·3	0·7	1·3	0·8	4		10·0	Id. ; rain$^{2-4}$
	12	195	48·2	47·6	0·6	1·8	1·3	5		10·0	Id. ; rain$^{1\cdot5}$
	13	29·163	48·8	48·2	0·6	1·1	0·8	4		10·0	Scud ; rain^{1}
	14	130	48·7	48·2	0·5	2·0	1·6	4		10·0	Id. ; rain^{1}
	15	105	49·2	48·8	0·4	1·7	1·0	4		10·0	Id. ; rain^{3}
	16	086	49·3	48·9	0·4	1·8	0·8	4		10·0	Id. ; rain$^{1\cdot5}$
	17	078	49·6	49·3	0·3	0·8	0·7	4		10·0	Id. ; rain^{2}
	18	064	50·2	49·6	0·6	1·5	0·5	4		10·0	Id. ; rain^{3}
	19	060	50·8	49·8	1·0	0·7	2·0	2	2 : — : —	10·0	Id. ; rain^{2}
	20	055	50·3	49·2	1·1	2·6	2·8	1	2 : — : —	10·0	Id. ; rain^{2}
	21	068	49·0	47·6	1·4	6·1	3·7	1	1 : — : —	10·0	Id. ; rain$^{0\cdot2}$
	22	087	47·7	46·8	0·9	7·0	4·8	0	0 : — : —	10·0	Id. ; rain$^{0\cdot5}$
	23	110	47·4	45·9	1·5	5·3	4·2	0	0 : — : —	10·0	Id. ; rain$^{0\cdot5}$
28	0	139	48·0	46·0	2·0	5·5	3·8	1	0 : — : —	10·0	Id. ; rain$^{2-4}$
	1	168	47·7	46·0	1·7	4·3	3·0	0	0 : — : —	10·0	Id.
	2	188	48·2	45·7	2·5	3·7	2·3	0	31 : — : —	10·0	Id.
	3	225	48·1	45·8	2·3	3·1	0·8	31	30 : — : —	10·0	Id.
	4	253	50·2	46·7	3·5	2·4	2·0	0	31 : — : —	10·0	Id.
	5	274	50·7	46·7	4·0	2·4	1·2	0	31 : — : —	9·9	Id. ; cirro-strati ; cirrous mass.
	6	301	50·0	46·3	3·7	1·4	0·5	31	30 : — : —	9·5	Id. ; id. ; id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

t. an ie.	BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1^{h}.	Maximum force in 10^{m}.	From			
h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
7	29·325	49·8	46·3	3·5	0·9	0·3	0	30 : — : —	9·9	Scud ; cirro-strati ; cirrous mass.
8	347	51·7	47·7	4·0	0·3	0·3	31	30 : — : —	9·5	Cirro-stratous scud ; cumuli to S. ; cirro-strati.
9	363	49·7	45·6	4·1	0·2	0·2	30	30 : — : —	8·5	Scud and loose cumuli ; cirro-cumuli ; cirro-strati.
10	381	44·2	42·5	1·7	0·1	0·1	28		1·0	Patches of scud and cirro-strati round horizon.
11	394	44·0	41·9	2·1	0·1	0·1	28		0·7	Masses of scud and cirro-strati on horizon.
12	408	43·7	41·7	2·0	0·2	0·1	26		0·5	Cirro-strati near horizon ; sky very clear.
$1\frac{3}{4}$	29·531	59·2	52·0	7·2	2·2	0·2	20	22 : — : —	……	Sunday—Loose cumuli ; cirro-strati ; slight showers about 2^{h}.
13	29·461	50·7	48·8	1·9	1·5	0·1	12		10·0	Scud and cir.-str. ; rain^{2}
14	436	50·9	49·9	1·0	0·3	0·5	16	19 : — : —	10·0	Id.
15	426	49·5	48·8	0·7	0·5	0·1	18	19 : — : —	3·0	Id. ; cumuli to W. and S. ; cir.-str. ; woolly
16	427	50·4	49·4	1·0	0·2	0·2	20	21 : — : —	8·5	Id. ; id. ; id. [cirri.
17	427	50·5	49·3†	1·2	0·8	0·4	20	— : 21 : —	5·0	Cirro-cumulo-strati ; cirro-strati. ⊙
18	434	51·8	50·2	1·6	0·8	0·5	20	— : 22 : —	3·0	Id. ; id. ; cum.-str. ; nimbi to S. ⊙
19	434	53·2	50·3	2·9	0·7	0·7	17	22 : — : —	2·5	Cum. and cum.-str. on hor. ; patches of scud, loose cum.,
20	442	54·9	50·9⸸	4·0	0·8	0·6	20	22 : — : —	2·0	As before. ⊙ [and cirro-strati. ⊙
21	444	60·2	54·7	5·5	0·8	0·7	18	22 : — : —	6·0	Loose cumuli ; patches of cirro-stratus. ⊙
22	448	58·6	52·9	5·7	1·4	0·7	20	21 : — : —	7·0	Id. ; cir.-cum.-str. ; hazy cirri to S. ⊖
23	443	62·1	56·2	5·9	1·4	1·3	20	21 : — : —	3·0	Id. ; cirro-strati to S. ⊖
0	442	60·4	55·0	5·4	1·8	2·0	21	22 : — : —	2·0	Id. ; cum.-str. ; masses of cirro-strati. ⊙
1	446	62·7	55·9	6·8	2·5	1·8	20	21 : — : 24	7·0	Id. ; id. ; cir.-str. ; woolly cirri. ⊙
2	445	63·0	55·4	7·6	1·5	1·5	22	20 : 22 : —	7·5	Id. ; id. ; id. ; id. ⊖
3	443	60·1	55·3	4·8	1·8	1·2	18	21 : — : —	9·7	Id. ; id. ; id. ; shower$^{1-3}$ at 2^{h} 30^{m}. ⊖
4	437	61·0	54·8	6·2	1·9	1·4	21	21 : — : —	9·8	Id. ; id. ; id. ; woolly cirri ; shower^{1}
5	437	59·3	54·0	5·3	1·7	0·8	20	20 : — : —	9·5	Id. ; thick scud ; raining to N.
6	452	57·6	52·8	4·8	1·4	0·7	22	22 : — : —	9·8	Thick scud ; cumuli and cumulo-strati to S. ; rain^{1}
7	457	52·7	52·0	0·7	0·7	0·7	20	22 : — : —	9·8	Id. ; id.
8	449	56·2	54·0	2·2	1·0	0·6	20	— : 22 : —	6·0	Cirro-cumulo-strati ; loose scud ; cirro-strati. ⊙
9	455	54·7	52·3	2·4	1·0	0·2	24	19 : 22 : —	8·0	Scud ; cirro-cumulo-strati ; id.
10	454	54·0	52·2	1·8	0·6	0·2	20	19 : 22 : —	9·0	Id. ; id. ; id.
11	472	53·8	52·0	1·8	0·4	0·2	19		10·0	Id.
12	459	53·2	52·1	1·1	0·2	0·4	20		10·0	Id. ; rain$^{0·5}$
13	29·433	53·2	51·8	1·4	0·6	0·4	20		10·0	Scud.
14	412	53·0	51·4	1·6	0·4	0·3	20		10·0	Id.
15	387	50·9	48·9	2·0	0·3	0·2	16		10·0	Id.
16	368	49·7	48·8	0·9	0·1	0·1	19		9·7	Id.
17	344	50·9	49·7	1·2	0·2	0·0	8		10·0	Id. ; rain^{1}
18	316	51·3	50·3	1·0	0·0	0·0	8		10·0	Id. ; rain$^{0·5}$
19	284	51·8	50·3	1·5	0·1	0·1	8	17 : — : —	10·0	Id. ; cirro-strati ; cirrous mass ; scud on Cheviot.
20	219	51·6	50·4	1·2	0·2	0·0	8	16 : — : —	10·0	Cirro-stratous scud ; id. ; rain$^{0·5}$
21	163	52·1	50·7	1·4	0·1	0·1	12	12 : — : —	10·0	Scud ; dense cirro-stratus ; rain$^{0·5}$
22	097	52·7	51·7	1·0	0·9	0·8	14		10·0	Scud on horizon ; id. ; rain^{3}
23	29·040	54·5	53·2	1·3	0·5	0·5	14	14 : — : —	10·0	Patches of scud ; id. ; rain$^{2-3}$
0	28·963	56·2	54·0	2·2	2·1	1·5	15	14 : — : —	9·9	Scud ; cirro-strati ; loose cumuli to SE.
1	926	57·7	55·2	2·5	2·5	2·0	18	18 : 18 : —	8·0	Id. ; loose cum. ; cir.-str. ; cumuli ; nimbi. ⊖
2	880	59·3	55·0	4·3	4·0	1·8	16	17 : — : —	9·8	Id. ; id. ; id. ; showers occasionally. ●
3	842	54·8	53·7	1·1	3·5	1·0	20	18 : — : —	10·0	Id. ; id. ; id. ; id.
4	794	54·2	52·2	2·0	3·8	1·8	20	18 : — : —	10·0	Id. ; rain^{2}
5	727	52·7	51·4	1·3	3·9	5·2	19	19 : — : —	10·0	Id. ; id.
6	729	52·7	51·1	1·6	6·0	5·3	19	20 : — : —	10·0	Id. ; drops of rain.
7	792	53·0	50·9	2·1	4·6	1·6	21	23 : — : —	10·0	Id. ; id.
8	846	52·9	50·8	2·1	2·8	1·7	22	23 : — : —	10·0	Id. ; rain$^{0·5}$
9	887	52·0	50·2	1·8	2·3	0·9	22	23 : — : —	9·8	Id. ; dense mass of cirro-strati ; sky to W.
10	921	52·5	49·5	3·0	3·7	1·1	20	24 : — : —	9·9	Id. ; id.
11	954	52·8	49·4	3·4	1·6	1·1	22	24 : — : —	9·8	Id. ; cirro-strati.
12	991	52·6	49·3	3·3	1·4	0·8	22		9·8	Scud and cirro-stratus.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The otions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Gött. Mean Time.		BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
1	13	29·036	52·7	49·9	2·8	0·6	0·4	22		9·5	Scud and cirro-stratus.
	14	073	52·0	49·2	2·8	1·0	0·9	23		7·0	Scud ; cirro-strati and cirro-cumulo-strati.
	15	111	52·0	49·0	3·0	1·1	0·5	24	28 : 28 : —	6·5	Id. ; cirro-strati ; woolly cirri.
	16	149	50·7	48·3	2·4	0·7	0·3	22	— : 28 : —	3·0	Cirro-strati, tinged with red to NE.
	17	197	51·2	48·4†	2·8	0·7	0·7	23	— : 26 : —	2·5	Masses of cirro-strati ; woolly cirri and cirro-cumuli. ⊙
	18	237	52·6	49·4	3·2	1·8	0·8	24		2·0	Cirro-strati and cirro-cumulo-strati. ⊖
	19	285	54·0	50·0	4·0	1·6	1·3	26	24 : 28 : —	1·0	Patches of scud and loose cum. ; sheets of cirro-strati. ⊙
	20	332	55·3	50·8	4·5	1·5	1·3	22	— : 24 : —	2·0	Cir.-str. scud ; cir.-str. ; woolly cir. ; patches of scud. ⊙
	21	374	55·4	50·5↓	4·9	1·1	1·2	22	— : 24 : —	1·5	Id. ; id. ; cumuli to N. ; id. ⊙
	22	395	56·7	51·0	5·7	1·5	1·2	24	— : 25 : —	1·5	Loose cirro-strati ; id. ; id. ⊙
	23	441	58·0	51·0	7·0	1·3	0·4	20		1·0	Scud and cumuli round horizon. ⊙
2	0	473	59·0	51·7	7·3	1·5	0·4	23	23 : — : —	1·5	Loose cumuli ; cumulo-strati ; cumuli ; cirro-strati. ⊙
	1	493	60·6	52·4	8·2	0·7	0·3	26	23 : — : —	1·5	Scud and loose cumuli. ⊙
	2	515	60·5	51·7	8·8	0·7	0·7	26	23 : — : —	2·5	Id. ; cum.-str. ; cum. ; cir.-str. ⊙
	3	525	60·4	51·9	8·5	0·5	0·3	30	23 : — : —	2·0	Scud ; cumulo-strati ; cumuli ; cirro-strati ; cirri. ⊙
	4	538	62·3	52·6	9·7	0·6	0·4	28	23 : — : 22	5·0	Id. ; woolly cirri ; cum.-str. ; cumuli ; cirro-strati. ⊙
	5	547	62·5	52·7	9·8	0·6	0·4	26	— : — : 21	7·0	Woolly cirri ; cum.-str. ; cum. ; cir.-str. ; solar halo. ⊖
	6	560	61·3	53·7†	7·6	0·2	0·0	22	22 : — : 20	7·0	Masses of scud and loose cumuli ; woolly cirri. ⊖
	7	571	58·3	52·9	5·4	0·0	0·0	22	— : 20 : —	10·0	Cir.-str. ; wo. cir. and cir. haze ; masses of cum. round hor.
	8	583	56·8	52·4↓	4·4	0·0	0·0	20		10·0	Id. ; id. ; id.
	9	590	53·9	50·9	3·0	0·0	0·0	18	— : 19 : —	9·0	Id. ; id. ; id. ⊙
	10	604	51·8	49·8	2·0	0·0	0·0	18	16 : — : —	9·9	Scud in patches to SE. ; thick cir. haze and woolly cir. ; sunset very red.
	11	617	50·3	48·5	1·8	0·0	0·0	24		8·0	Scud ; cirrous haze ; woolly cirri.
	12	613	49·7	48·6	1·1	0·0	0·0	17		10·0	Id. ; id.
	13	29·613	49·6	48·3	1·3	0·0	0·0	28		10·0	Scud ; cirrous haze.
	14	600	49·6	48·3	1·3	0·0	0·0	4		10·0	Id. ; id. ; cirro-strati.
	15	576	50·8	49·0	1·8	0·0	0·0	4		10·0	Cirro-stratous scud ; mass of cirro-strati.
	16	575	50·4	49·4	1·0	0·0	0·0	4		10·0	Id. ; id. ; drops of rain.
	17	577	50·4	50·0	0·4	0·0	0·0	4	— : 12 : —	10·0	Id. ; id. ; rain$^{1\cdot5}$
	18	572	51·0	50·5	0·5	0·1	0·1	3		10·0	Id. ; id. ; rain^{1}
	19	556	52·0	51·3	0·7	0·1	0·2	4	4 : 9 : —	10·0	Misty scud ; cirro-stratous scud and cirro-strati ; rain$^{0\cdot5}$
	20	544	52·4	52·0	0·4	0·2	0·2	4	4 : — : —	10·0	Id. ; rain$^{0\cdot5}$
	21	533	53·0	52·5	0·5	0·5	0·5	2	4 : — : —	10·0	Id. ; rain$^{0\cdot5}$
	22	518	53·9	53·4	0·5	0·4	0·3	6	6 : — : —	10·0	Id. ; Scotch mist ; rain$^{0\cdot5}$
	23	509	54·2	53·6	0·6	0·6	0·5	6	6 : — : —	10·0	Id. ; id. ; rain$^{0\cdot2}$
3	0	484	53·6	53·2	0·4	0·6	0·7	5	4 : — : —	10·0	Id. ; id. ; rain$^{0\cdot2}$
	1	477	54·9	54·3	0·6	0·7	0·3	3		10·0	Thick Scotch mist ; objects invisible at half a mile.
	2	466	55·3	55·0	0·3	0·4	0·2	3		10·0	Mist ; objects invisible at $\frac{2}{3}$ of a mile.
	3	458	55·0	54·5	0·5	0·4	0·3	2		10·0	Nearly as before.
	4	416	55·6	55·0	0·6	0·4	0·2	3		10·0	Mist at a mile ; clouds homogeneous.
	5	391	56·6	56·3	0·3	0·5	0·2	4		10·0	Mist ; objects invisible at $\frac{1}{3}$ of a mile.
	6	374	57·6	56·9	0·7	0·4	0·2	4		10·0	Mist clearing off ; homogeneous mass.
	7	363	58·8	57·9	0·9	0·3	0·1	3	15 : 16 : —	9·9	Cirro-stratous scud ; cirro-cumulo-strati.
	8	350	57·6	57·4	0·2	0·2	0·2	3	4, 12 : 16 : —	9·9	Misty scud ; scud ; loose cumuli ; shower$^{1\cdot5}$ since last.
	9	342	56·5	56·4	0·1	0·3	0·1	4		10·0	Scotch mist ; objects invisible at $\frac{3}{4}$ of a mile.
	10	314	56·4	56·4	0·0	0·2	0·1	3		10·0	Dense fog ; objects invisible at $\frac{1}{4}$ of a mile.
	11	313	56·2	56·0	0·2	0·1	0·0	16		3·0	Scud and haze round horizon.
	12	315	57·1	54·7	2·4	1·9	2·0	16		0·5	Small patches of scud and cumuli on horizon.
	13	29·320	56·0	53·3	2·7	2·4	0·8	16		2·0	Scud to W.
	14	333	54·4	52·1	2·3	1·7	1·2	16		2·5	Scud and cirro-strati.
	15	325	54·7	50·9	3·8	1·3	0·5	16		9·5	Scud.
	16	316	54·0	50·7	3·3	2·9	1·7	16		8·5	Id.
	17	321	55·0	50·1	4·9	3·3	4·9	16		8·0	Id.
	18	325	53·0	49·6	3·4	4·5	5·7	16		9·5	Id.
	19	391	52·4	50·8	1·6	4·9	2·7	18	21 : 20 : —	9·9	Id. ; cirro-cumulo-strati. ⊖
	20	452	54·3	51·2	3·1	3·4	2·0	20	21 : 20 : —	9·9	Id. ; id. ; drops of rain.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

July 2d 7h. Observations made at 7h 30m.

	BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1^{h}.	Maximum force in 10^{m}.	From			
	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
1	29·471	56·0	51·4	4·6	3·8	5·9	20	22 : — : —	4·0	Scud and loose cumuli. ⊙
2	519	57·3	52·1	5·2	4·0	3·2	21	23 : — : —	4·5	Id. ⊖
3	578	57·9	52·0	5·9	2·4	2·0	22	22 : — : —	3·0	Id.; cirro-strati. ⊙
0	613	60·5	54·2	6·3	3·5	3·8	19	22 : — : —	6·0	Id.
1	639	61·2	54·2	7·0	3·2	3·3	20	23 : — : —	3·5	Id.; cirro-strati on E. horizon. ⊙
2	665	61·0	53·3	7·7	4·0	3·8	19	23 : — : —	3·0	Id.; range of cumuli to N. ⊙
3	689	61·0	53·6	7·4	3·7	3·7	18	23 : — : —	2·5	Id.; id. ⊙
4	710	61·0	53·8	7·2	3·1	1·7	18	22 : — : —	2·5	Id.; id. ⊙
5	738	61·6	54·8	6·8	2·7	2·0	21	22 : — : —	2·0	Id.; cumuli; cirro-strati. ⊙
6	760	58·5	52·0†	6·5	2·2	1·6	18	20 : 21 : —	2·5	Masses of cumuli; cirro-cumulo-strati and cirro-strati. ⊙
7	784	56·8	51·4	5·4	1·2	1·0	18		0·5	Id.; cirro-strati. ⊙
8	800	55·3	50·7	4·6	1·7	1·6	20		0·2	Piles of cumuli and cumulo-strati on N. horizon. ⊙
9	820	52·7	49·2	3·5	1·2	0·4	19		0·2	Patches of cumulo-strati on N. horizon. ⊙
0	834	49·2	47·0↓	2·2	0·3	0·2	18		0·1	Id.
1	845	46·9	45·6	1·3	0·4	0·0	20		0·1	Patches of cirro-stratus to N.; very clear.
2	856	44·7	43·9	0·8	0·0	0·0	22		0·2	Patches of cirro-stratus on horizon.
3	29·873	43·6	43·0	0·6	0·0	0·0	26		7·0	Scud and cirro-stratus.
4	871	44·4	43·7	0·7	0·0	0·0	28		6·5	Id.
5	873	43·5	43·0	0·5	0·0	0·0	2		2·0	Cirri and cirro-strati to SE.
6	889	43·4	42·8	0·6	0·0	0·0	23		1·5	Id. to E.
7	895	46·7	45·3	1·4	0·1	0·1	24		1·0	Cir. and cir-.str. near hor.; a mass of cum.-cir.-str. to S. ⊙
8	906	48·6	46·6†	2·0	0·1	0·1	20		0·7	Id.; cumulo-strati to SSW. ⊙
9	915	51·6	49·4	2·2	0·4	0·2	18		0·5	A few cumuli on N. and S. horizon; cir.-str. near hor. ⊙
0	930	56·1	52·3	3·8	0·6	0·2	21	22 : — : —	3·0	Scud and loose cumuli. ⊙
1	949	57·3	52·9↓	4·4	0·9	0·7	20	22 : — : —	2·5	Id.; cumuli. ⊙
2	948	59·3	54·7	4·6	0·7	0·3	20	22 : — : —	3·0	Id.; id. ⊙
3	960	62·2	56·3	5·9	0·6	0·4	21	22 : — : —	3·0	Id.; id. ⊙
5 0	965	63·5	55·2	8·3	0·5	0·5	20	22 : — : —	2·5	Id.; id. ⊙
1	974	65·4	56·2	9·2	0·8	0·6	17	21 : — : —	2·5	Id.; id.; woolly cirri. ⊙
2	977	66·0	56·4	9·6	0·7	0·4	18	21 : — : —	5·0	Id.; id.; id.
3	981	63·8	54·7	9·1	1·0	0·3	19	20 : — : 22	4·0	Id.; woolly cirri; cumuli.
4	982	65·0	54·8	10·2	0·4	0·3	28	— : — : 23	4·0	Woolly cirri; cumuli and cumulo-strati. ⊙
5	982	66·3	55·0	11·3	0·3	0·3	24	— : — : 23	5·0	Sheets of cirri; patches of scud; cumuli; cir.-str. ⊙
6	981	63·4	55·3†	8·1	0·6	0·1	25		2·0	Cumulo-strati to E. and N.; cirro-strati on horizon. ⊙
7	983	62·5	53·9	8·6	0·3	0·1	21	— : 20 : 20	3·0	Sheets of cir.-str. and woolly cirri; cum.-str. to E. ⊙
8	982	59·6	53·9	5·7	0·1	0·1	23	— : 18 : 18	3·0	Cirro-cumuli; woolly cirri and cirro-strati. ⊙
9	29·987	57·0	52·4↓	4·6	0·0	0·0	22	— : 16 : 20	4·0	Cirro-cumulous scud; woolly cirri and cirro-strati. ⊙
0	30·003	54·8	52·4	2·4	0·1	0·0	16	— : 18 : —	6·0	Id.; cirro-strati and cirrous haze.
1	30·001	53·0	51·0	2·0	0·1	0·0	24		6·0	Id.; cirro-strati.
2	30·000	52·5	50·8	1·7	0·0	0·0	24		10·0	Scud; cirro-strati and cirrous haze.
6 1¾	29·918	66·5	57·2	9·3	1·2	0·7	12	12 : 16 : —	……	Sunday—A.M. Masses of cir.-str., cir. haze, and solar halo. P.M. Scud and cir.-str.; slight showers about 5^{h}.
3	29·781	55·0	54·5	0·5	1·4	0·2	4		10·0	Scud; rain$^{1·5}$
4	745	54·6	54·5	0·1	0·3	0·3	3		10·0	Id.; rain^{2}
5	730	55·2	54·8	0·4	0·4	0·4	5		10·0	Id.
6	711	54·5	54·4	0·1	0·5	0·2	5		10·0	Id.; dense fog.
7	678	54·2	54·1	0·1	0·4	0·3	4		10·0	Id.; id.
8	687	54·0	53·9	0·1	0·2	0·1	4		10·0	Id.; id.
9	674	54·7	54·6	0·1	0·0	0·0	4		10·0	Id.; id.; objects invisible at ¼ of a mile.
20	669	56·5	56·3	0·2	0·0	0·0	4		10·0	Dense fog; objects invisible at ¼ of a mile.
21	662	60·1	58·9	1·2	0·0	0·0	22		10·0	Homogeneous clouds; the sun beginning to break through; mist at 1½ mile.
22	663	62·3	60·3	2·0	0·0	0·0	24	20 : — : —	10·0	Scud; cirrous mass; mist clearing off.
23	656	66·0	62·0	4·0	0·3	0·1	23	20 : — : —	10·0	Id.; cumuli to N.; cirro-strati; cirri and haze.
7 0	673	67·0	61·2	5·8	0·7	0·3	21	19 : — : —	10·0	Id.; id.; id.; id.
1	685	65·5	60·0	5·5	0·7	0·7	22	— : 18 : —	9·9	Cirro-cumulo-strati; id.; cirri. ⊖
2	682	65·7	60·0	5·7	0·8	0·9	20	19 : 18 : —	9·5	Scud; cirro-cumulo-strati; cirro-strati; cirri. ⊖

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The ptions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Gött. Mean Time.		BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
7	3	29·675	68·2	61·3	6·9	0·7	0·5	21	19 : 18 : —	9·2	Scud; cir.-cum.-str.; cir.-str.; sheets of cir.; solar halo. ⊖
	4	677	68·0	60·0	8·0	0·9	0·8	21	20 : — : —	9·0	Scud and loose cumuli; cirro-strati; cirri; id. ⊖
	5	678	70·0	61·8	8·2	1·0	1·0	20	18 : — : —	8·0	Loose cumuli; woolly cirri to SE. ⊖
	6	677	67·2	60·4†	6·8	0·8	0·5	20	16 : — : 18	3·0	Id.; woolly cirri. ⊙
	7	676	63·7	58·4	5·3	0·5	0·3	22		3·0	Id.; id. ⊖
	8	684	62·8	57·7	5·1	0·4	0·2	22	— : — : 18	4·0	Woolly cirri; loose cumuli; cirro-strati. ⊙
	9	688	59·0	55·7	3·3	0·2	0·1	19	— : — : 18	4·0	Id.; cumulo-strati; cumuli; cirro-strati. ⊙
	10	688	57·0	54·7⸸	2·3	0·1	0·1	23		4·0	Id.; id.; id.
	11	685	55·2	53·6	1·6	0·0	0·0	22		6·0	Scud and cirro-strati.
	12	687	53·0	52·2	0·8	0·0	0·0	18		7·5	Scud, cirro-strati, and cirri.
	13	29·673	52·3	51·7	0·6	0·0	0·0			8·5	Scud, cirro-strati, and cirri.
	14	655	52·0	51·4	0·6	0·0	0·0	22		7·0	Cirro-strati, cirrous haze, and patches of scud.
	15	645	52·0	51·6	0·4	0·0	0·0	24	— : 18 : —	9·5	Cirro-stratus, cumulo-strati, and cirrous haze to NE.
	16	641	51·4	51·0	0·4	0·0	0·0		— : 18 : —	10·0	Cir.-str. and cir. haze; clouds tinged with red to NE.
	17	636	52·0	51·3	0·7	0·0	0·0	28	— : 18 : —	10·0	Id.; drops of rain.
	18	628	53·6	52·7	0·9	0·0	0·0	24	— : 18 : —	8·5	Cirro-stratous scud; cirro-strati.
	19	613	57·0	55·0†	2·0	0·1	0·0	22	— : 18 : —	8·5	Id.; id. ⊖
	20	606	60·2	57·5	2·7	0·2	0·1	20	— : 18 : —	9·8	Id.; id.
	21	608	60·9	57·8	3·1	0·0	0·1	19	18 : — : —	10·0	Scud; cumuli; cirro-strati; rain$^{0·5}$
	22	601	61·7	59·0⸸	2·7	0·2	0·2	19	17 : — : —	9·5	Id.; cumulo-strati; cirro-strati.
	23	579	65·2	59·8	5·4	0·4	0·4	19	18 : — : —	9·8	Id.; id.; id. ●
8	0	562	66·7	60·0	6·7	0·5	0·3	19	20 : 18 : —	9·8	Id.; cirro-cumulo-strati; cirro-strati. ⊖
	1	574	57·6	56·2	1·4	1·2	0·4	18		10·0	Nearly homogeneous cirro-str. scud and cir.-str.; rain^{1}
	2	553	65·0	61·3	3·7	0·3	0·7	18	20 : — : —	9·5	Scud; cumuli; cirro-strati; cirri.
	3	534	64·1	58·6	5·5	1·3	1·3	19	19 : — : —	4·5	Id.; id. ⊙
	4	526	64·6	57·6	7·0	2·1	1·4	21	19 : — : $\dot{—}$	2·5	Id.; id.; id.; id.; nimbi. ⊙
	5	520	64·3	57·3	7·0	1·8	1·3	19		1·8	Id.; id.; id. ⊙
	6	513	63·3	57·8†	5·5	1·7	1·0	20	19 : — : —	2·5	Loose cumuli; id.; id. ⊙
	7	517	59·9	55·8	4·1	1·0	0·7	21	— : 18 : —	8·7	Cirro-stratous scud; masses of scud and loose cumuli.
	8	510	58·7	55·7⸸	3·0	0·7	0·5	20	19 : 19 : —	7·5	Thick scud; sheets of cir.-str.; cum.-str. on NE. hor.; drops of rain.
	9	501	56·4	53·7	2·7	0·7	0·2	18		2·5	Scud to W.; cirro-strati; nimbi and cum.-str. to SE.
	10	482	53·9	52·4	1·5	0·6	0·1	18		9·0	Cirro-strati, cirri, and cir. haze; masses of loose cum.
	11	476	53·4	52·3	1·1	0·2	0·1	20		8·5	Scud; cirro-strati; rain$^{1·5}$
	12	463	55·4	54·3	1·1	0·2	0·1	19		10·0	Id.; id.
	13	29·450	55·3	54·1	1·2	0·5	0·1	19		4·0	Scud; cirro-strati.
	14	459	53·8	52·4	1·4	0·2	0·1	23		8·0	Id.; id.
	15	451	53·0	52·0	1·0	0·1	0·0	24	22 : — : —	8·0	Scud; cirro-cumulo-strati; cirro-strati.
	16	452	54·0	52·6	1·4	0·4	0·4	22	— : 22 : —	9·8	Cirro-str. scud; cirro-strati; clouds tinged red to E.
	17	462	54·3	52·3	2·0	0·6	0·5	22	— : 23 : —	8·5	Id.; id.; woolly cirri.
	18	466	54·0	52·3	1·7	0·3	0·1	21	22 : 23 : —	3·5	Smoky scud; cir.-cum.-str.; id.; cirro-strati. ⊖
	19	466	56·0	53·4†	2·6	0·4	0·6	22	22 : — : —	9·9	Thick scud; cirro-strati.
	20	469	57·7	54·7⸸	3·0	1·2	0·7	21	22 : — : —	9·0	Scud; loose cumuli; cirro-strati.
	21	490	59·6	55·3	4·3	1·0	1·0	21	23 : — : —	9·8	Id.; id.; id. [cirri to W. ⊖
	22	493	60·8	55·5	5·3	1·6	1·8	21	23 : 22 : —	8·7	Id.; id.; id.; cir.-cum.-str.; mottled
	23	506	63·0	57·4	5·6	1·3	0·7	20	22 : — : —	9·9	Id.; id.; id. [rain. ⊖
9	0	509	62·6	56·9	5·7	1·1	2·0	20	23 : — : —	9·5	Id.; id.; woolly cirri and cir.-str.; drops of
	1	514	66·7	60·3	6·4	1·8	1·0	19	22 : — : —	9·0	Id.; id.; cirro-strati. ⊖
	2	525	62·1	56·1	6·0	2·2	1·8	20	23 : — : —	7·0	Id.; id.; id. ⊖
	3	526	60·0	56·3	3·7	2·6	1·7	20	23 : — : —	9·8	Id.; id.; id.; shower^{2} at 2h 40m. ⊖
	4	523	58·0	54·8	3·2	2·6	1·6	21	22 : — : —	9·9	Id.; id.; id.; slight passing shower.
	5	520	60·3	55·5	4·8	3·8	1·8	22	21 : 23 : —	10·0	Id.; id.; id.; occasional slight showers.
	6	522	58·6	53·9	4·7	3·0	2·5	22	21 : 23 : —	9·5	Id.; cirro-cumulo-strati; cirro-strati. ⊖
	7	526	55·9	52·7	3·2	2·1	0·7	21	23 : — : —	10·0	Id.; id.
	8	518	55·4	52·3	3·1	1·3	0·5	22	23 : — : —	9·0	Id.; id.; id.
	9	516	53·7	51·8	1·9	1·4	0·5	22	— : 22 : —	9·0	Cirro-cumulo-str.; cir.-str. scud; cirro-strati; cirri. ⊙
	10	512	53·2	51·4	1·8	0·8	0·4	22	— : 22 : —	8·0	Id.; id.; id.; id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

July 7d 15h. Loose muddy cirro-stratus moved up and covering nearly all the sky except to NE., where the front of it is nearly a straight line lying NNW. to SSE.

	BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1^{h}.	Maximum force in 10^{m}	From			
	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
1	29·516	52·0	50·6	1·4	0·9	0·2	22	22 : — : —	8·0	Smoky scud ; cirro-stratous scud ; cir.-cum.-strati.
2	499	52·6	51·7	0·9	0·4	0·2	18		9·5	Nearly as before.
3	29·484	52·6	51·6	1·0	0·3	0·2	18		9·5	Scud ; cirro-stratous scud ; cirro-strati ; cirri.
4	469	52·7	51·6	1·1	0·2	0·0			9·9	Sheet of cirro-strati ; sky on N. horizon.
5	461	52·3	51·6	0·7	0·0	0·0	18		9·5	Cirro-stratous scud ; cirro-strati radiating from SSE.
6	448	52·7	52·0	0·7	0·1	0·1	18	— : 22 : —	9·5	Id. ; id.
7	444	53·3	52·3	1·0	0·2	0·0		— : 21 : —	9·5	Id. ; id.
8	439	54·6	53·4	1·2	0·0	0·0	18	22 : — : —	9·8	Smoky and cirro-stratous scud ; cirro-cumulo-strati.
9	430	57·7	55·8	1·9	0·0	0·0		22 : — : —	9·8	Scud ; cirro-strati. ●
0	426	58·9	55·8	3·1	0·0	0·0	28	22 : — : —	9·5	Id. ; id. ●
1	424	60·1	55·0	5·1	0·0	0·0	0	25 : 22 : —	3·0	Loose cumuli ; cirro-strati and cirro-cumulo-strati. ⊙
2	421	62·5	56·2	6·3	0·0	0·0		25 : 22 : —	8·5	Id. ; id.
3	418	65·5	58·5	7·0	0·1	0·1	28	24 : 21 : —	9·5	Id. ; id. ●
0	414	68·0	60·0	8·0	0·1	0·2	29	21 : — : —	9·0	Id. ; id.
1	406	67·3	58·5	7·8	0·1	0·0	28		9·8	Id. ; id. ; woolly cirri. ⊖
2	406	65·8	57·2	8·6	0·3	0·2	28	20 : — : —	9·5	Id. ; cirro-strati ; woolly cirri. ●
3	400	67·3	58·9	8·4	0·2	0·2	31	24 : 22 : —	9·8	Id. ; cir.-str. and cir.-cum.-str; woolly cirri. ⊖
4	394	66·4	57·4	9·0	0·4	0·3	25	21 : — : —	8·0	Id. ; woolly cirri ; cirro-strati. ⊖
5	383	66·3	57·3	9·0	0·4	0·1	28	— : 21 : —	9·0	Cirro-cumulo-strati ; cirro-strati ; cirri ; cumuli. ⊖
6	379	66·3	57·4	8·9	0·3	0·3	24	25 : 22 : —	9·0	Cum.-str. ; cir.-cum.-str. ; clouds hazy and electric-like
7	385	64·0	57·4†	6·6	0·3	0·1	30	25 : 22 : —	8·5	As before ; very black to E. ; rain there? [on hor. ⊖
8	383	61·3	56·1‡	5·2	0·2	0·1	28	25 : 22 : —	8·2	Cum.-str. ; cir.-cum. ; cir.-str. ; hazy on horizon. ⊙
9	385	55·9	53·0	2·9	0·1	0·1	22	— : 22 : 19	7·0	Cir.-cum.-str. ; curled cirri ; piles of cum.-str. to ESE. ☽
0	391	55·1	52·2	2·9	0·0	0·0	21	— : 25 : —	9·0	Id. ; cirri and cirrous haze. ⊁
1	390	53·5	52·2	1·3	0·0	0·0	18		8·5	Cir.-str. scud ; cirro-strati and cumuli on horizon.
2	389	53·6	52·0	1·6	0·0	0·0	20		9·0	Id.
3	29·387	51·5	50·4	1·1	0·0	0·0	0		5·0	Id.
4	386	50·8	49·6	1·2	0·0	0·0	24		8·5	Cirro-cumulo-strati and cirro-strati.
5	386	49·6	48·4	1·2	0·0	0·0	16		5·0	Scud ; cir.-cum. ; cir.-str. [tinged red to NE.
6	388	45·8	45·3	0·5	0·0	0·0	22		2·5	Id. ; id. ; id. ; cir. haze on hor. ; upper clouds
7	398	46·8	46·0	0·8	0·0	0·0	18	0 : 28 : —	9·5	Thin scud ; cirro-cumulo-strati.
8	401	50·3	49·3	1·0	0·0	0·0	22	1 : — : —	10·0	Id. ; cirro-strati.
9	412	52·8	51·3	1·5	0·0	0·0	26	2 : — : —	10·0	Id. ; id.
0	418	55·8	53·0	2·8	0·0	0·3	2	3 : 0 : —	9·9	Id. ; cirro-cumulo-strati.
1	423	55·6	52·8	2·8	0·4	0·6	0	2 : 1 : —	9·9	Id. ; id.
2	436	54·0	52·9	1·1	0·6	0·6	8	3 : 31 : —	9·0	Id. ; id. ; cum. ; cir-str. ; shower^4 lately.
3	448	56·4	53·2	3·2	0·8	0·8	3	4 : — : —	10·0	Scud and cirro-stratous scud. ●
0	461	53·3	51·2	2·1	1·3	0·6	2	3 : — : —	10·0	Scud ; drops of rain.
1	460	55·7	52·0	3·7	0·9	0·6	4	3 : 28 : —	9·0	Id. ; cirro-cumulo-strati ; cirro-strati.
2	460	56·7	52·2	4·5	0·8	0·6	4	4 : 28 : —	9·5	Id. ; id.
3	464	57·4	53·0	4·4	0·6	0·3		4 : 28 : —	9·0	Id. ; id. ; loose cum. ; cir.-str. ⊖
4	476	57·5	53·3	4·2	0·6	0·4	4	3 : 28 : —	9·8	Id. ; id.
5	487	56·0	51·8	4·2	0·5	0·3	3	4 : — : —	10·0	Id. ; mass of cirro-strati.
6	500	54·1	51·1	3·0	0·3	0·1	4	0 : — : —	9·7	Scud and dense cir.-str. ; sky to E. ; drops of rain.
7	503	54·0	51·2	2·8	0·1	0·1	3	0 : 28 : —	10·0	Scud ; dense cirro-stratus ; drops of rain.
8	514	53·7	51·0	2·7	0·0	0·0	8	2 : 28 : —	9·8	Id. ; cirro-strati ; sky on E. hor. ; breaking to W.
9	527	52·1	49·9	2·2	0·0	0·0	4	28 : 28 : —	10·0	Thick scud and cir.-str. ; very thick and dark to W.
0	543	50·8	49·2	1·6	0·0	0·0	6	27 : 25 : —	9·0	Scud ; cirro-strati ; drops of rain.
1	552	50·2	49·1	1·1	0·0	0·0	7		10·0	Id.
2	562	50·2	49·6	0·6	0·1	0·0	20		10·0	Id.
3	29·571	49·8	49·1	0·7	0·0	0·0	30		10·0	Scud ; rain^3
4	578	48·2	47·5	0·7	0·0	0·0	0		10·0	Id. ; rain^1
5	580	47·8	47·5	0·3	0·1	0·0	9		10·0	Id. ; cirro-strati ; sky to W.
6	596	45·9	45·7	0·2	0·0	0·0			5·0	Cirro-cumulo-strati ; cirro-strati.
7	608	45·4	45·2	0·2	0·0	0·0		— : 28 : —	8·0	Cirro-stratous scud ; cumuli ; woolly cirri.

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he direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The
ions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

uly 10^{d} 2^{h}. Observation made at 2^{h} 20^{m}.

Gött. Mean Time.		Baro-meter at 32°.	Thermometers.			Wind.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in		From			
						1^h.	10^m.				
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
11	18	29·619	47·0	46·0	1·0	0·0	0·0	25	6 : 27 : —	9·5	Smoky scud ; cir.-cum.-str. ; cir.-str. ; cir. ; clouds very troubled like.
	19	634	48·0	47·2	0·8	0·0	0·0		2 : — : —	10·0	Loose scud ; dense cirro-strati. [slowly. ⊖
	20	646	51·4	49·1	2·3	0·1	0·0	6	6, 2 : 28 : —	9·8	Loose ragged scud ; loose cum. scud ; cir.-str. moving
	21	665	50·6	48·5	2·1	0·0	0·0		0 : 28 : —	10·0	Id. ; sheets of cir.-cum.-str. and cir.-str.
	22	666	51·9	49·2	2·7	0·1	0·0	0	28 : 28 : —	9·7	Scud ; loose cumuli ; cirro-strati.
	23	664	55·8	53·6	2·2	0·1	0·1	26	28 : — : —	3·0	Loose cumuli ; cirro-strati to SE. ⊙
12	0	659	56·3	52·2	4·1	0·3	0·0	30	28 : — : —	3·5	Id. ; nimbus to W. ⊙
	1	655	58·0	53·2	4·8	0·3	0·1	24	29 : — : —	5·0	Id. ; cumulo-strati to S. ⊖
	2	659	59·7	53·0	6·7	0·5	0·4	24		7·5	Id. ; id. ⊙
	3	651	60·5	52·0	8·5	0·4	0·5	26	26, 29 : — : —	5·0	Loose cum., acted on by different currents ; cirro-strati to W. ⊙
	4	683	60·9	53·3	7·6	0·6	0·6	28	28 : — : —	9·0	Loose cumuli ; cumulo-strati ; linear cirri ; cirro-strati.
	5	683	53·0	50·3	2·7	0·7	1·3	6	25 : — : —	9·8	Thick dark scud and cum. ; cum.-str. ; cir.-str. ; shower^3 10^m ago.
	6	684	52·3	50·4	1·9	0·2	0·1	6	25 : — : —	9·0	Scud and loose cumuli ; cirro-strati ; cirri.
	7	692	55·1	52·0	3·1	0·1	0·1	18	25 : — : 28	8·5	Thick scud ; woolly cir. moving rather quickly ; cir.-str.
	8	700	54·4	50·0	4·4	0·3	0·2	0	27 : — : 27	9·9	Scud ; thick woolly cirri ; cirro-strati.
	9	708	50·4	49·3	1·1	0·1	0·1	25	— : 27 : —	9·0	Cirro-cumulo-strati ; cirro-strati ; cirri.
	10	712	49·0	48·2	0·8	0·1	0·1	18	27 : — : —	10·0	Scud ; id. ; id.
	11	712	48·6	46·3	2·3	0·1	0·0	18	— : 28 : —	8·8	Cirro-strati ; cirro-cumuli ; cirri.
	12	709	46·2	45·3	0·9	0·0	0·0	20		9·8	Cirro-cumulo-stratus ; cirro-strati.
13	1	29·622	59·8	55·0	4·8	0·3	0·1	18		……	{ Sunday—Dense cirro-stratus and scud ; rain occasionally after 2^h.
	13	29·526	52·3	50·8	1·5	0·5	0·3	20		9·7	Cirro-stratus and cirro-stratous scud ; sky to N.
	14	528	51·7	50·1	1·6	0·3	0·2	20		9·7	Id. ; id.
	15	528	52·4	50·7	1·7	0·4	0·3	21		9·7	Thick scud ; cirro-strati.
	16	531	52·9	50·8	2·1	0·4	0·4	21	— : 27 : —	9·8	Cirro-stratous scud ; cirro-strati.
	17	544	52·8	51·0	1·8	0·2	0·1	24	— : 27 : —	10·0	Id. ; id.
	18	570	51·4	50·0	1·4	0·5	0·4	0	1 : — : —	10·0	Thick misty scud ; drops of rain.
	19	607	49·3	48·6	0·7	0·7	0·3	2	1 : — : —	10·0	Id. ; rain^1 in fine drops.
	20	638	49·7	48·3	1·4	0·5	0·4	2	2 : 0 : 28	9·8	Misty scud ; cirro-stratous scud ; cirro-strati ; rain$^{0·2}$
	21	660	51·2	48·3	2·9	0·6	0·6	1	— : 31 : —	9·8	Cirro-stratous scud ; cumuli to N. id.
	22	677	55·1	49·9	5·2	0·7	0·7	1	31 : 29 : —	9·5	Cir.-str. scud ; cir-cum.-str. ; cum. on Cheviot ; woolly cir.
	23	692	56·3	51·5	4·8	0·5	0·3	1	30 : — : —	8·0	Scud and loose cumuli ; cirro-strati.
14	0	707	56·8	51·8	5·0	0·7	0·5	30	29 : — : —	7·0	Loose cumuli ; cumulo-strati and nimbi ? ⊙
	1	717	58·6	52·8	5·8	0·9	0·7	28	29 : — : —	9·0	Id. ; id. ⊖
	2	714	60·1	54·0	6·1	1·1	0·7	30	29 : — : —	8·5	Id. ; id. ⊖
	3	735	58·8	54·3	4·5	1·7	0·3	30	29 : — : —	8·0	Id. ; id. ; rain falling to N. ⊖
	4	748	56·3	52·1	4·2	1·1	0·2	29	— : 29 : —	6·5	Cir.-cum.-str. ; woolly cir. ; cum. and nimbi round hor. ⊖
	5	762	52·7	52·5	0·2	1·5	0·3	30	— : 29 : —	7·0	As before ; passing showers. [rainbow to E. ⊙
	6	783	54·4	50·4	4·0	2·7	1·2	3	30 : — : —	8·5	Thick scud and cumuli, falling in rain to SE., cum.-str. ; cir.-str. ;
	7	797	56·0	51·6†	4·4	0·5	0·3	4	0, 30 : 28 : —	9·5	Scud and loose cumuli ; cirro-strati.
	8	811	53·1	50·5⸸	2·6	0·6	0·1	30	31 : 31 : —	9·7	Scud and cirro-strati.
	9	833	50·9	49·5	1·4	0·2	0·0	22	0 : 0 : —	9·0	Id.
	10	847	50·3	48·6	1·7	0·1	0·0	26	30 : 30 : —	9·8	Id.
	11	859	49·0	47·5	1·5	0·2	0·1	25		8·5	Id. ☽
	12	870	47·9	45·9	2·0	0·5	0·1	26		3·0	Id. ☽
	13	29·877	47·0	45·7	1·3	0·2	0·1	26		2·5	Scud and cirro-strati.
	14	877	46·0	44·4	1·6	0·1	0·0	25		1·5	Id.
	15	873	44·2	42·7	1·5	0·1	0·1	26	30 : — : —	1·5	Id.
	16	877	44·8	42·7	2·1	0·1	0·0	30	30 : — : —	6·0	Id.
	17	877	47·0	44·5	2·5	0·2	0·1	28	31 : 31 : —	9·0	Scud ; cirro-cumulo-strati ; cirro-strati.
	18	885	48·7	45·5	3·2	0·1	0·2	27	— : 30 : —	9·8	Dense mass of cirro-stratous scud and cirro-strati.
	19	889	50·4	46·8	3·6	0·2	0·2	29	— : 0 : —	9·9	Cirro-stratous scud.
	20	893	51·1	47·2	3·9	0·3	0·1	30	— : 0 : —	10·0	Id.
	21	904	52·0	47·3	4·7	0·4	0·6	30	— : 31 : —	10·0	Id. ; very dense.
	22	898	54·6	48·9	5·7	0·5	0·3	31	31 : — : —	9·9	Scud ; loose cumuli ; cirro-strati.
	23	896	56·0	49·0	7·0	0·9	0·7	30	0 : — : —	9·8	Id. ; id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

July 12^d 4^h. The reading of the barometer is somewhat doubtful.

July 14^d 6^h. The wet bulb found partially dry ; the difference previously to wetting it was 2°·7. 7^h. A new piece of silk put on the wet bulb.

.	BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in		From			
					1^{h}.	10^{m}.				
1.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
0	29·889	56·0	48·7	7·3	1·0	0·4	0	0 : — : —	8·5	Loose cumuli and cirro-stratous scud.
1	868	59·9	51·3	8·6	0·7	0·8	0		7·0	Loose cumuli. ⊙
2	860	59·7	50·9	8·8	1·5	0·7	31	30 : — : —	7·0	Id. ; cirro-strati. ⊙
3	848	61·1	52·0	9·1	0·5	0·7	4	29 : — : —	7·0	Id. ; id.
4	838	59·7	52·2	7·5	1·3	0·3	2	30 : — : —	6·5	Id. ; id. ⊙
5	829	59·0	51·7†	7·3	0·4	0·2	2		2·0	Id. ; id. ⊙
6	833	56·9	50·3	6·6	0·7	0·4	2	29 : — : —	2·0	Id. ; id. ⊙
7	832	57·4	50·7	6·7	0·5	0·3	3	— : 31 : —	8·0	Cirro-cumulo-strati ; cirro-strati. ⊙
8	836	54·0	48·7	5·3	0·5	0·2	6	— : 31 : —	3·0	Id. ; id. ⊙
9	845	51·3	48·0↓	3·3	0·3	0·1	4	— : 31 : —	4·0	Id. ; id. ⊙
0	850	49·8	47·6	2·2	0·1	0·0	4	2 : 30, 31 : —	3·0	Patches of scud ; dark ramified cirro-stratus to N. ; cir.-cum.-str. ☽
1	854	47·7	46·2	1·5	0·1	0·0	20	0 : 28 : —	9·0	Loose scud ; cirro-cumulo-strati. ☽
2	853	48·3	46·9	1·4	0·0	0·1	22	0 : — : —	10·0	Dense scud.
3	29·845	48·2	46·8	1·4	0·1	0·0	20		10·0	Dense scud.
4	835	47·8	46·7	1·1	0·0	0·0	22		9·5	Scud ; cirro-cumulo-stratus ; sky in zenith.
5	829	47·5	45·1	2·4	0·0	0·0	30	— : 30 : —	8·0	Cirro-stratous scud ; cirro-cumuli ; cirro-strati.
6	826	44·8	44·0	0·8	0·0	0·0	24	— : 29 : —	9·0	Id. ; id.
7	824	44·0	43·1	0·9	0·0	0·0	20	30 : 31 : —	5·0	Id. ; id.
8	825	46·7	45·0	1·7	0·2	0·1	25	30 : — : —	8·0	Id. ; id. ⊙
9	820	48·7	46·4	2·3	0·2	0·1	31	29 : — : —	3·0	Id. ; cumulo-strati to N. ; cirro-strati. ⊙
0	814	50·4	46·9	3·5	0·1	0·0	26	30 : — : —	6·0	Loose cumuli ; cirro-strati. ⊖
1	804	53·1	48·2	4·9	0·0	0·0	28	29 : — : —	6·0	Id.
2	802	54·2	47·5	6·7	0·1	0·1	28	29 : — : —	6·0	Id. ⊙
3	786	56·4	50·4	6·0	0·2	0·1	18	29 : — : —	8·5	Id.
0	779	60·7	53·4	7·3	0·2	0·2	12	29 : — : —	8·0	Id. ⊖
1	770	59·1	52·5	6·6	0·1	0·1	14	24 : 26 : —	6·0	Thin scud ; loose cumuli. ⊙
2	754	59·8	51·6	8·2	0·2	0·1	8	— : 25 : —	6·0	Cirro-cumulo-strati ; loose cumuli ; woolly cirri. ⊙
3	738	63·4	55·0	8·4	0·1	0·1	14	24 : — : —	7·0	Loose cumuli ; woolly cirri.
4	726	59·6	53·8	5·8	0·4	0·4	3	24 : — : 30	5·5	Id. ; band of woolly cirri lying from NNW. to SSE. ⊖
5	726	57·3	51·7	5·6	0·6	0·9	6	— : — : 28	5·5	Band of cirrus from NW. to zenith ; cum. to S. and N. ; haze on hor. ⊙
6	716	54·9	50·0†	4·9	0·8	0·6	4	23 : — : 28	7·0	Loose cumuli ; strips of linear and woolly cirri rad. from NW. ⊖
7	722	55·2	50·2	5·0	0·8	0·3	4	21 : 23 : 28	6·5	Scud moving rather quickly ; loose cumuli ; cirri as before.
8	715	52·9	49·4↓	3·5	0·4	0·1	4	22 : 24 : 27	7·5	Id. ; id. ; id. ⊙
9	710	50·1	48·3	1·8	0·1	0·0		— : 24 : 27	7·0	Cirro-stratous scud ; cirri rad. from NW by W. ; cir. haze on hor. ☽
0	711	48·6	47·6	1·0	0·0	0·0	20	22 : — : 27	5·0	Loose scud ; cirri as before. ☽̶
1	708	47·0	46·5	0·5	0·0	0·0	16		6·0	Woolly cirri. ☽̶
2	705	45·7	45·4	0·3	0·0	0·0	24		7·0	Cirri and cirrous haze. ☽̶
3	29·701	44·2	44·0	0·2	0·0	0·0	18		4·0	Cirri and cirrous haze.
4	689	42·0	41·8	0·2	0·0	0·0	7		4·0	Fog, objects invisible at about 300 yards ; cirri.
5	676	42·5	42·3	0·2	0·0	0·0	9	— : 26 : 26	8·0	Woolly cirri and loose cirro-strati ; fog, objects invisible at 250 yards.
6	672	44·2	44·0	0·2	0·0	0·0	20		9·7	Cirro-strati and cirrous clouds ; hazy ; fog-bank to E.
7	672	46·4	46·0†	0·4	0·0	0·0	2	6, 14 : — : —	9·7	A few patches of scud, in different currents ; cir.-str. and cir. haze ;
8	668	47·9	47·0	0·9	0·0	0·0	26	— : 20 : —	9·8	Dense cirro-stratus. [faint rainbow.
9	671	49·3	48·3	1·0	0·1	0·0	0		10·0	Loose scud in patches ; sheets of cir.-str. ; drops of rain.
0	670	51·7	50·2	1·5	0·0	0·0	4		10·0	Thin scud ; sheets of cirro-stratus ; drops of rain.
1	668	53·2	51·7↓	1·5	0·1	0·0	3	10 : — : —	10·0	Id. ; cirrous mass ; rain^{1}
2	667	54·7	52·5	2·2	0·1	0·0	4		10·0	Id. ; id. ; rain$^{0·2}$
3	661	56·5	53·7	2·8	0·1	0·1	4	12 : — : —	10·0	Scud ; cirrous mass ; rain$^{0·2}$
7 0	662	58·1	55·3	2·8	0·0	0·0	18	16 : — : —	10·0	Id. ; id. ; fine rain$^{0·1}$
1	664	57·7	56·3	1·4	0·2	0·1	14	15 : — : —	10·0	Id. ; id.
2	661	58·8	57·0	1·8	0·1	0·0	17		10·0	Id. ; id. ; fine rain$^{0·5}$
3	660	60·0	57·8	2·2	0·1	0·0		17 : — : —	10·0	Id. ; id.
4	661	59·8	57·7	2·1	0·1	0·0	4	20 : — : —	10·0	Id. ; id.
5	662	60·8	58·4	2·4	0·1	0·0	4	22 : — : —	10·0	Thick scud ; cirrous mass ; rain$^{1·5}$ [of rain.
6	667	60·0	58·1	1·9	0·3	0·5	22	22 : — : —	9·9	Thick scud to N. and W. ; cir.-str. ; sky to S. ; drops
7	683	58·4	57·3	1·1	0·3	0·0	22	23 : — : —	10·0	Scud and cir.-str. ; occasional heavy showers since 6^{h}.

uly 15^{d} 10^{h} 9^{m}. A shooting-star of the first magnitude to S by W., moved from altitude 35° to near horizon.

uly 16^{d} 6^{h}. The simple lines of cirri lie at right angles to the strips. The surface current is from NE., the scud current, which is about 2500 ft high, is from SW by W., the loose cumuli, perhaps about 3500 feet high, are from W by S., and the cirri, probably many thousand feet high, a from NW.

uly 16^{d} 20^{h}. Observation made at 20^{h} 5^{m}. July 17^{d} 5^{h} 15^{m}. A thunder-shower$^{4—6}$, the drops being large ; clouds thick and black to W.

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1^h.	Maximum force in 10^m.	From			
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
17 8	29·691	56·1	55·1	1·0	0·4	0·3	22		10·0	Scud and cirro-stratus.
9	693	55·2	54·4	0·8	0·3	0·1	22	22 : — : —	9·8	Id.
10	702	54·7	53·6	1·1	0·2	0·2	22	24 : 22 : —	10·0	Scud ; cirro-strati.
11	710	54·7	53·4	1·3	0·2	0·1	22		9·8	Id. ; cirro-cumulo-strati.
12	721	53·8	52·4	1·4	0·2	0·1	22		10·0	Id. ; cirro-strati ; drops of rain.
13	29·730	53·2	52·0	1·2	0·1	0·0	20		10·0	Scud ; cirro-strati.
14	738	52·3	50·9	1·4	0·2	0·1	20		10·0	Id. ; id. ; cirro-cumulo-strati.
15	740	51·4	50·7	0·7	0·1	0·0	23		9·8	Id. ; id. ; id.
16	742	51·0	49·5	1·5	0·2	0·1	22	25 : — : —	9·5	Id. ; id. ; id.
17	752	50·4	49·5	0·9	0·2	0·1	20	24 : — : 25	9·5	Thin scud ; woolly cirri ; cirro-cumulo-strati ; cir.-str.
18	761	52·0	50·6	1·4	0·2	0·3	20	— : 26 : —	9·8	Cirro-stratous scud ; id. ; id.
19	770	55·5	53·0	2·5	0·3	0·4	22	26 : 28 : —	9·9	Scud ; cirro-cumulo-strati ; cirro-strati ; cirri. ⊖
20	784	55·4	52·4	3·0	0·8	0·2	23	26 : — : —	10·0	Patches of scud ; a uniform mass of cirro-stratus.
21	801	56·5	53·6	2·9	0·3	0·3	23	28 : 26 : —	10·0	Id. ; id.
22	810	58·9	54·7	4·2	0·3	0·2	23	— : 26 : —	9·9	Dense cirro-stratus ; patches of scud to S.
23	819	60·4	56·3	4·1	0·2	0·1	23	27 : — : —	10·0	Thick scud ; dense cirro-stratus.
18 0	834	61·2	56·0	5·2	0·3	0·1	0	26 : — : —	10·0	Loose cumuli, and cirro-stratous scud.
1	846	64·2	58·3	5·9	0·3	0·3	0		9·9	Loose cumuli and cirro-strati. ⊖
2	844	65·4	58·6	6·8	0·3	0·1	28	28 : — : —	9·9	Masses of thick scud and cumuli ; cirro-strati.
3	855	63·6	57·7	5·9	0·3	0·0	31	28 : — : —	10·0	A mass of black electric-looking scud to N. ; cum. ; cum.-str.; cir.-str.
4	861	62·0	57·0	5·0	0·1	0·0	6	27 : — : —	9·9	Scud ; loose cumuli ; cirro-stratous scud.
5	868	65·0	59·8	5·2	0·2	0·1	22	— : 30 : —	9·9	Cirro-cumulo-stratus ; cumulo-strati.
6	870	64·5	58·3	6·2	0·2	0·1	23	— : 30 : —	9·8	Id. ; id.
7	881	64·3	59·0	5·3	0·1	0·1	22	— : 30 : —	9·8	Id. ; cirro-strati. ⊖
8	896	59·6	56·4	3·2	0·2	0·1	4	— : 31 : —	9·5	Id. ; id. ; cumulo-strati.
9	902	57·7	55·3	2·4	0·2	0·1	3	— : 0 : —	9·5	Id. ; id. ; id.
10	908	55·0	53·5	1·5	0·2	0·1	4		2·0	Id. ; id. ☽
11	920	53·1	51·8	1·3	0·1	0·0	2		1·2	Id. ⊁
12	931	50·4	49·8	0·6	0·0	0·0	4	— : 31 : —	0·8	Cir.-cum. ; cir.-str. near horizon ; mist on the ground. ☽
13	29·936	48·3	48·0	0·3	0·0	0·0	16		8·0	Cirro-cum.-str. ; cir.-str. near hor. ; mist on the ground. ☽
14	939	49·7	49·2	0·5	0·0	0·0	4		10·0	Dense mass of scud ? and cirro-cumulo-stratus.
15	937	51·0	50·5	0·5	0·0	0·0	4	— : 0 : —	9·5	Cirro-cumulo-stratus.
16	936	51·0	50·5	0·5	0·0	0·0	4	2 : 0 : —	10·0	Misty scud ; cirro-cumulo-stratus.
17	940	51·0	50·5	0·5	0·0	0·0	24		10·0	Homogeneous mass of misty scud.
18	944	52·9	51·9	1·0	0·0	0·0	25		10·0	Id.
19	939	53·7	52·5	1·2	0·0	0·0	24		10·0	Id. ; Scotch mist.
20	939	55·7	54·3	1·4	0·1	0·0	25		10·0	Id. ; id.
21	950	56·7	55·4	1·3	0·1	0·1	3	4 : — : —	10·0	Misty scud ; a dense mass of clouds.
22	948	57·9	55·6	2·3	0·3	0·2	4	4 : — : —	10·0	Id. ; id.
23	952	58·2	55·3	2·9	0·3	0·4	6	4 : — : —	10·0	Id. ; id.
19 0	956	60·0	56·4	3·6	0·4	0·4	6	4 : — : —	10·0	Scud ; dense cirrous mass.
1	955	58·3	55·0	3·3	0·5	0·3	4	4 : — : —	10·0	Id. ; id.
2	955	58·0	54·2	3·8	0·5	0·2	5	5 : — : —	10·0	Id. ; id.
3	955	59·2	55·0	4·2	0·4	0·4	6	7 : — : —	10·0	Id. ; id. ●
4	956	59·6	55·0	4·6	0·5	0·3	6	6 : — : —	10·0	Id. ; id.
5	952	58·7	54·0	4·7	0·4	0·5	7	6 : — : —	10·0	Id. ; id.
6	957	56·3	53·2	3·1	0·5	0·3	6	6 : — : —	10·0	Id. ; dense mass of cirro-stratus.
7	961	55·6	52·5	3·1	0·4	0·2	7	5 : — : —	10·0	Id. ; id.
8	966	55·1	52·4	2·7	0·2	0·2	4	5 : — : —	10·0	Id. ; cir.-cum.-str. radiating from N., clouds breaking.
9	968	54·2	52·0	2·2	0·1	0·1	4	5 : — : —	10·0	Id. ; id.
10	970	53·4	51·0	2·4	0·0	0·0	6		10·0	Cirro-stratous scud.
11	972	53·1	50·9	2·2	0·0	0·0	6		10·0	Id.
12	971	51·8	49·0	2·8	0·2	0·1	4	4 : — : —	9·5	Scud, breaking. ⊁
$23\frac{1}{4}$	29·979	55·4	53·2	2·2	0·7	0·7	3	3 : — : —	……	Sunday—Thick scud ; a slight drizzle throughout most of the day.
20 13	29·975	52·2	51·8	0·4	1·3	0·6	4		10·0	Homogeneous mass.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

July 19^d 23^h. Observation made at 23^h 20^m.

	BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1^h.	Maximum force in 10^m.	From			
	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
4	29·969	51·8	51·4	0·4	0·7	0·3	3		10·0	Homogeneous mass.
5	966	51·9	51·4	0·5	0·3	0·3	3		10·0	Id.
6	958	52·0	51·5	0·5	0·3	0·2	4		10·0	Id.
7	959	52·4	51·4	1·0	0·3	0·2	4		10·0	Id.
8	968	52·0	51·0	1·0	0·3	0·4	3		10·0	Id. ; showers$^{3-5}$ since last.
9	971	52·0	51·4	0·6	1·2	0·5	3		10·0	Thick, nearly homogeneous, misty scud.
0	974	52·5	51·9	0·6	0·7	0·6	4		10·0	Id. ; mist at 2 miles.
1	984	52·6	51·9	0·7	1·4	0·8	4		10·0	Id. ; mist at 5 miles.
2	989	52·6	51·9	0·7	1·0	0·7	2		10·0	Scotch mist ; light drizzle ; objects invisible at 3 miles.
3	991	53·0	52·1	0·9	0·9	0·7	3		10·0	Id. ; id. ; id.
0	991	54·1	52·7	1·4	0·9	0·7	3	2 : — : —	10·0	Nearly homogeneous scud ; mist cleared off.
1	992	55·2	53·6	1·6	0·7	0·5	4		10·0	Id.
2	992	55·0	53·3	1·7	0·7	0·7	2		10·0	Id.
3	988	54·7	53·3	1·4	0·8	0·6	3		10·0	Id. ; slight drizzle commencing.
4	977	55·1	53·0	2·1	0·8	0·6	2		10·0	Id.
5	976	54·6	53·0	1·6	0·7	0·4	1		10·0	Id. ; slight drizzle.
6	967	53·7	52·5	1·2	0·5	0·5	3		10·0	Id.
7	965	52·9	51·8	1·1	0·6	0·6	3		10·0	Id.
8	966	52·1	51·5	0·6	0·5	0·5	2		10·0	Id. ; slight mist.
9	974	51·8	51·3	0·5	0·5	0·5	2		10·0	Id. ; id.
0	976	51·2	50·9	0·3	0·5	0·4	5		10·0	Id. ; id.
1	980	51·2	50·7	0·5	0·6	0·3	2		10·0	Id. ; Scotch mist.
2	978	51·0	50·5	0·5	0·4	0·4	2		10·0	Id. ; id.
3	29·973	51·0	50·4	0·6	0·5	0·4	4		10·0	Id. ; Scotch mist.
4	963	50·9	50·4	0·5	0·3	0·2	4		10·0	Id. ; slight drizzle.
5	955	50·8	50·1	0·7	0·5	0·4	3		10·0	Id. ; id.
6	946	50·0	49·4	0·6	0·6	0·5	3		10·0	Id. ; id. [miles.
7	944	50·0	49·3	0·7	1·1	0·8	3	4 : — : —	10·0	Id. ; Scotch mist ; objects invisible at 5
8	940	50·0	49·4	0·6	0·7	0·3	3		10·0	Id. ; id. ; id.
9	935	50·9	50·2	0·7	0·5	0·2	3	3 : — : —	10·0	Scud ; Scotch mist ; objects invisible at 2 miles.
0	941	50·0	49·4	0·6	0·9	0·6	4		10·0	Id.; id. ; id.
1	946	50·6	49·6	1·0	1·0	0·8	4	4 : — : —	10·0	Thick misty scud ; Scotch mist and light drizzle.
2	949	51·1	50·0	1·1	0·9	0·5	4	4 : — : —	10·0	Id. ; id.
3	947	51·7	50·0	1·7	1·5	0·8	4	4 : — : —	10·0	Id. ; id.
2 0	942	53·0	50·5	2·5	0·7	1·2	4	4 : — : —	10·0	Id.
1	937	53·0	50·4	2·6	0·9	0·6	4	4 : — : —	10·0	Scud.
2	933	54·0	51·0	3·0	1·1	0·7	4	4 : — : —	10·0	Id.
3	930	52·7	50·7	2·0	0·9	0·6	3	4 : — : —	10·0	Id.
4	919	54·0	50·7	3·3	1·6	0·9	4	4 : — : —	10·0	Id.
5	917	52·8	50·5	2·3	1·3	0·6	4	3 : — : —	10·0	Id.
6	914	52·5	49·6	2·9	1·0	0·6	4	4 : — : —	10·0	Id.
7	914	52·0	49·4	2·6	0·9	0·6	4		10·0	Id. ; nearly homogeneous. [drizzle.
8	917	51·0	48·8	2·2	0·9	0·5	4	4 : — : —	10·0	Misty scud, in blue and yellowish bands to W. ; slight
9	918	50·6	48·3	2·3	0·9	0·5	3		10·0	Nearly as before.
0	919	50·3	48·0	2·3	0·6	0·6	4		10·0	Id.
1	920	50·3	48·0	2·3	1·1	0·4	4		10·0	Id. ; drops of rain.
2	917	49·5	48·3	1·2	0·5	0·2	3		10·0	A few drops of fine rain.
3	29·907	49·5	48·6	0·9	0·3	0·2	3		10·0	Slight drizzle.
4	892	49·5	48·2	1·3	0·5	0·1	3		10·0	Scud.
5	879	49·6	48·3	1·3	0·2	0·1	3		10·0	Id.
6	877	50·0	48·0	2·0	0·6	0·3	2	4 : — : —	10·0	Id.
7	875	49·7	47·7	2·0	0·6	0·3	3		10·0	Id.
8	870	50·2	48·1	2·1	0·3	0·2	1	2 : — : —	10·0	Id.
9	872	50·2	49·1	1·1	0·4	0·3	2		10·0	Homogeneous scud ; slight drizzle.
0	876	50·8	49·4	1·4	0·8	0·3	2		10·0	Id. ; id.
1	870	52·0	50·7	1·3	0·6	0·4	3		10·0	Id. ; id.

he direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The
ions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.
ily 20^d 19^h. Observation made at 19^h 30^m.

Gött. Mean Time.		BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
22	22	29·868	52·4	50·9	1·5	0·6	0·4	3	4 : — : —	10·0	Scud ; misty.
	23	867	52·4	51·0	1·4	0·8	0·4	4	4 : — : —	10·0	Id. ; slight drizzle.
23	0	859	53·0	51·4	1·6	0·6	0·6	3	4 : — : —	10·0	Id. ; id.
	1	852	55·4	52·4	3·0	1·0	1·3	2	2 : — : —	10·0	Scud breaking ; cirrous mass above.
	2	849	55·0	52·1	2·9	1·2	0·6	2	2 : — : —	10·0	Scud ; occasional showers.
	3	846	54·7	52·2	2·5	1·2	0·9	3	2 : — : —	10·0	Id. ; drops of rain.
	4	842	55·7	52·3	3·4	1·1	0·9	4	3 : — : —	10·0	Id.
	5	838	54·7	51·9	2·8	0·9	0·9	3		10·0	Id. ; occasional showers.
	6	836	54·3	52·3	2·0	0·9	0·7	2	3 : — : —	10·0	Id.
	7	839	52·4	51·0	1·4	1·3	0·5	3	3 : — : —	10·0	Id.
	8	836	52·4	50·7	1·7	0·5	0·3	2	2 : — : —	10·0	Id. ; the upper clouds seem to be breaking.
	9	829	51·9	50·6	1·3	0·6	0·2	4	3 : — : —	10·0	Scud.
	10	830	51·7	50·3	1·4	0·4	0·2	2		10·0	Id.
	11	827	51·4	50·3	1·1	0·3	0·1	2		10·0	Id. ; drops of rain.
	12	827	51·2	50·0	1·2	0·1	0·1	2		10·0	Id.
	13	29·825	51·4	49·0	2·4	0·2	0·2	2		10·0	Scud.
	14	821	51·2	48·8	2·4	0·4	0·4	2		10·0	Id.
	15	813	51·0	48·7	2·3	0·6	0·4	3		10·0	Id.
	16	808	50·3	48·8	1·5	0·2	0·1	3	3 : — : —	10·0	Id.
	17	816	49·9	48·0	1·9	0·2	0·1	2	3 : — : —	10·0	Cirro-stratous scud.
	18	792	50·3	49·4	0·9	0·1	0·1	3	2 : — : —	10·0	Misty scud ; slight drizzle.
	19	792	50·2	49·8	0·4	0·1	0·1	2	2 : — : —	10·0	Id. ; rain^1
	20	801	51·4	50·9	0·5	0·5	0·4	3	3 : — : —	10·0	Scud breaking ; slight drizzle.
	21	807	52·4	51·0	1·4	0·4	0·3	3	3 : — : —	10·0	Scud.
	22	808	54·0	52·0	2·0	0·5	0·2	4	3 : — : —	10·0	Id. ; rain$^{0·5}$ in a few minutes.
	23	811	54·1	51·3	2·8	0·4	0·3	3	3 : — : —	10·0	Id. ; dense cirro-stratus.
24	0	811	55·4	52·1	3·3	0·3	0·3	4	3 : — : —	10·0	Id. ; a tendency to break to S.
	1	810	56·3	52·9	3·4	0·3	0·2	4	3 : — : —	10·0	Id. ; id.
	2	806	56·3	52·1	4·2	0·1	0·2	5		10·0	Id.
	3	805	59·2	53·7	5·5	0·2	0·2	5	4 : — : —	10·0	Id.
	4	785	58·3	54·0	4·3	0·2	0·2	5		10·0	Id. and cirro-stratous.
	5	774	57·6	53·6	4·0	0·1	0·0	7		10·0	Id. id.
	6	769	56·5	52·7	3·8	0·1	0·0	7	10 : — : —	10·0	Id. id.
	7	768	55·6	52·5	3·1	0·0	0·0	8		10·0	Id. id.
	8	764	54·7	52·2	2·5	0·0	0·0	1		10·0	Id. id.
	9	762	54·0	51·5	2·5	0·0	0·0	4		10·0	Id. id.
	10	756	53·4	51·8	1·6	0·0	0·0	4		10·0	Id. id.
	11	755	53·3	52·1	1·2	0·1	0·0	4		10·0	Id. id.
	12	742	53·3	51·8	1·5	0·0	0·0	16		10·0	Id. id. ?
	13	728	53·2	52·0	1·2	0·0	0·0	20		10·0	Id. id. ; very still. [drops of rain.
	14	717	53·2	52·0	1·2	0·0	0·0	18		10·0	Clouds, in strips, radiating from SSW. and NNE.;
	15	705	53·3	51·9	1·4	0·0	0·0	22		10·0	Cirro-strati ; drops of rain.
	16	698	53·9	51·9	2·0	0·0	0·2	20	27 : 24 : —	10·0	Scud ; cirro-strati.
	17	694	54·1	52·5	1·6	0·2	0·0	18		10·0	Nearly homogeneous scud ; cirro-strati.
	18	695	54·6	53·1	1·5	0·1	0·0	20	25 : — : —	10·0	Id. ; id.
	19	699	55·3	52·3	3·0	0·2	0·2	25		9·9	Cirro-stratous scud ; cirro-strati ; cirro-cumulo-strati.
	20	701	55·8	52·8	3·0	0·3	0·1	23	— : 24 : —	10·0	Id. ; id.
	21	701	57·4	54·0	3·4	0·1	0·0	25	— : 20 : —	10·0	Id. ; id.
	22	698	57·7	53·4	4·3	0·2	0·3	24	— : 21 : —	10·0	Id. ; id.
	23	692	58·4	53·8	4·6	0·2	0·3	25		10·0	Id. ; id.
25	0	692	60·0	54·4	5·6	0·2	0·2	28	— : 21 : —	10·0	Id. ; id.
	1	687	62·0	56·0	6·0	0·3	0·2	25	— : 21 : —	10·0	Id. ; id.
	2	674	63·0	56·4	6·6	0·5	0·2	22	— : 23 : —	9·8	Cirro-cumulo-strati. Θ
	3	673	66·6	58·2	8·4	0·2	0·2	24	— : 23 : —	9·5	Id. Θ
	4	661	65·8	58·2	7·6	0·6	0·4	20	— : 26 : —	9·0	Id. ; loose cumuli.
	5	651	65·8	57·4	8·4	0·3	0·1	22	23 : — : —	8·0	Loose cumuli. Θ

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Barometer at 32°.	Thermometers.			Wind.			Clouds, Sc.: C.-s,: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
	Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
29·646	65·7	58·6†	7·1	0·4	0·3	24	— : 22 : 2	7·5	Cir.-cum.-str. ; linear cirri rad. from NNE., with tufts
648	62·3	56·0	6·3	0·3	0·3	27	— : 21 : 0	7·5	As before. ⊖ [of cirri. ⊖
657	57·3	53·7	3·6	0·2	0·2	22	— : — : 0	8·0	Woolly cirri, diverging from NE. and SW. ; cir.-str. ⊖
662	54·0	51·2⸸	2·8	0·2	0·1	22	— : — : 0	9·0	Woolly and linear cirri becoming cir.-str., rad. from SW by S. and
663	51·7	49·3	2·4	0·2	0·1	22		8·0	Nearly as before. [NW by N.; scud on Cheviot.
661	48·9	47·6	1·3	0·1	0·0	21		3·5	Cirro-strati and woolly cirri.
660	49·0	47·6	1·4	0·1	0·1	24		7·0	Cirro-cumuli and cirro-strati. ☽
29·652	48·6	47·3	1·3	0·1	0·1	22		9·5	Cirro-cumuli and cirro-strati. ☽
650	50·4	48·1	2·3	0·1	0·0	24		9·8	Id.
636	50·2	48·4	1·8	0·1	0·1	24		9·8	Cirro-strati.
626	50·7	48·6	2·1	0·2	0·1	22		9·8	Id.
622	50·8	49·1	1·7	0·1	0·1	18	— : 28 : —	9·8	Thick cirro-stratus ; scud on Cheviot.
623	51·8	49·9	1·9	0·3	0·3	23	25 : 28 : —	9·8	Patches of scud to N. ; thick cir.-str. ; scud on Cheviot.
627	52·9	50·7	2·2	0·5	0·3	19	24 : 23 : —	10·0	Id. ; id. ; id.
626	54·3	52·0	2·3	0·3	0·4	20	24 : 23 : —	10·0	Id. ; id. ; id.
623	55·3	52·5	2·8	0·6	1·1	21	— : 23 : —	10·0	Cirro-stratous scud ; id. ; id.
612	57·5	54·0	3·5	1·1	0·5	20	— : 23 : —	10·0	Id. ; id. ; patches of scud.
605	57·7	54·0	3·7	0·9	0·9	22	23 : 22 : —	9·9	Id. ; scud ; mass of cir.-str. ; scud to S.
603	59·2	54·8	4·4	0·9	0·6	20	23 : — : —	9·9	Scud ; cirro-strati ; cirrous mass ; rain$^{0\cdot2}$
597	62·3	56·2	6·1	1·4	1·0	20	22 : 21 : —	9·9	Id. ; id. ; id.
581	63·2	57·0	6·2	1·6	1·2	20	22 : — : —	10·0	Id. ; id. ; id.
575	61·2	56·2	5·0	1·6	0·6	21	22 : — : —	10·0	Id. ; id. ; id.
555	61·7	56·7	5·0	0·8	0·8	20	22 : 24 : —	9·5	Id. ; cirro-cumulo-strati ; cirro-strati ; woolly cirri.
550	63·0	57·8	5·2	2·0	1·2	20	22 : — : —	10·0	Id. ; id. ; id.
546	59·8	55·4	4·4	1·1	0·8	18	22 : — : —	9·8	Scud, loose cumuli, and thick cirro-stratus.
541	60·2	54·9	5·3	1·1	0·6	20	22 : — : —	9·8	Id. ; cirro-strati ; cirro-cumulo-strati ; cirri.
533	57·1	53·4	3·7	1·4	0·7	18	21 : — : —	9·5	Id. ; id. ; id. ; id.
519	56·8	53·9	2·9	0·7	0·5	20	21 : — : —	9·5	Id. ; id. ; id. ; id.
505	56·1	53·7	2·4	1·2	0·5	22		8·5	Id. ; id.
495	56·2	54·0	2·2	0·7	0·8	20		10·0	Id. ; id.
476	56·8	54·3	2·5	0·6	0·6	20		10·0	Scud and cirro-strati.
29·318	63·9	59·9	4·0	2·2	0·9	19	23 : — : —	……	Sunday—Sunshine and showers ; clouds, loose cumuli and nimbi.
29·427	46·0	44·4	1·6	2·8	0·1	20	— : 28 : —	3·5	Cirro-cumulo-stratus ? radiating from NW. ☽
431	43·0	42·3	0·7	0·2	0·0	20		0·2	Patches of cloud on the horizon. ☽
425	43·6	42·4	1·2	0·4	0·3	21		0·2	Patches of cirrus on horizon ; scud on Cheviot. ☽
429	42·4	41·6	0·8	0·4	0·0	30		0·8	Id. ; id. ☽
428	43·6	42·6	1·0	0·1	0·1	22		0·8	Patches of cirri and cirro-strati ; id. ⊙
432	45·2	43·8†	1·4	0·3	0·0	20	21 : 22 : 22	2·0	Patches of scud ; cirri and cirro-strati over the sky. ⊙
435	49·4	47·7	1·7	0·1	0·1	14	20 : — : —	6·0	Scud ; cirri. ⊙
435	51·5	48·3	3·2	0·3	0·4	20	— : — : 22	6·0	Woolly cirri and cirro-strati ; scud round horizon. ⊙
427	55·3	50·1⸸	5·2	0·6	0·9	18	21 : — : —	3·5	Loose cumuli ; cirri and cirro-strati ⊙
426	57·2	51·0	6·2	0·9	0·9	20	21 : — : —	5·0	Id. ; id. ⊖
423	58·0	51·0	7·0	0·8	0·9	18	21 : — : —	4·0	Id. ; id. ⊙
422	60·0	53·4	6·6	0·7	0·7	20	21 : 23 : —	8·0	Scud ; loose cumuli ; cumuli ; cirro-strati ; cirri. ⊖
420	63·7	55·8	7·9	0·7	1·2	16	— : 22 : —	9·0	Cirro-stratous scud ; id. ; id. ; id. ⊖
413	63·4	54·7	8·7	0·6	0·2	15	22 : — : —	8·0	Loose cumuli ; id. ; id. ; id.
415	58·7	52·0	6·7	0·4	0·2	31	20 : — : —	8·5	Scud and loose cumuli ; cirro-strati, &c., as before. ⊖
411	60·7	52·4	8·3	0·6	0·2		— : 20 : —	8·5 ?	Cir.-cum.-str. ; cum.-str. ; sheets of cir.-str. ; woolly cirri ; nimbi ;
411	62·7	53·3	9·4	0·4	0·4	18	— : 20 : —	9·0	Nearly as before. ⊖ [rain to E.
410	58·8	52·6†	6·2	0·5	0·4	10	17 : 18 : —	8·0	Scud ; cirro-cumulo-strati ; nimbi ; cirro-strati ; cirri. ⊙
413	58·8	50·4	8·4	0·4	0·1	17	17 : — : —	7·0	Id. ; id. ; id. ; id. id. ⊙
421	55·6	49·9	5·7	0·3	0·2	14	17 : 18 : —	5·0	Nearly as before; stormy appearance moved up to ENE. ⊙
438	51·4	48·5⸸	2·9	0·1	0·0	20		7·0	Cir.-cum.-str. ; cum. and nimbi on NW. and SE. hor. ; cir.-str. and cirri
440	47·4	46·0	1·4	0·0	0·0	18		7·0	Cir.-cum.-str. ; woolly cirri. [rad. from SSW. ; cirri red.
443	43·9	43·3	0·6	0·0	0·0	0		3·0	Thin cirri and cirrous haze ; cirro-strati on horizon.
444	42·7	42·2	0·5	0·0	0·0	18		4·0	Id. id.

e direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The mo ons of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

ly 28^{d} 7^{h}. Very dark and stormy-like to ESE. ; vertex of a solar halo.

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1h.	10m.	From	Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
28 13	29·446	42·5	42·1	0·4	0·0	0·0	24		2·5	Cirro-strati on horizon. ☽
14	442	42·5	42·1	0·4	0·0	0·0	24		2·0	Id. ☽
15	439	41·4	41·0	0·4	0·1	0·0	22		2·5	Cirro-cumuli, cirro-strati, and cirri. ☽
16	444	37·3	37·0	0·3	0·0	0·0	24		5·0	Id. ; id. ; id. ☽
17	443	38·2	38·0	0·2	0·0	0·0	16	— : 12 : —	3·5	Id. ; id. ; id.
18	456	40·0	39·6	0·4	0·0	0·0	18	4 : — : —	10·0	Loose scud moved up since last observation.
19	472	43·9	42·9	1·0	0·0	0·1	22		10·0	Misty scud, nearly homogeneous.
20	479	48·5	47·3	1·2	0·1	0·0	20	3 : — : —	10·0	Id., breaking ; fog ; objects invisible at 3 miles. ●
21	482	55·0	52·5	2·5	0·1	0·1	22	— : 3 : —	9·5	Thin scud ; cirro-cumulo-strati ; cirri.
22	476	55·4	51·2	4·2	0·1	0·2	4	3 : — : —	7·0	Loose cumuli ; cumuli ; woolly cirri. ⊙
23	473	58·0	52·0	6·0	0·2	0·1	0	2 : — : —	4·5	Id. ; id. ; id. ⊙
29 0	465	60·7	52·9	7·8	0·3	0·3	4	1, 29 : — : —	8·5	Loose black cum. ; cum. ; cir. in streaks ; clouds look rather electric.
1	462	58·2	52·4	5·8	0·2	0·2	4	29 : — : —	9·0	Id. ; id. ; id. ⊙
2	472	59·0	52·2	6·8	0·3	0·3	6	31 : 28 : —	9·0	Id. ; id. ; cirrous haze round E. horizon. ⊖
3	470	60·3	51·6	8·7	0·4	0·3	5	31 : 28 : —	9·0	Id. ; id. ; id. ●
4	467	60·7	53·3	7·4	0·3	0·1	5	29 : — : —	6·0	Cum. ; cum.-str. ; cir.-str. ; cirri ; id.
5	472	59·8	52·2	7·6	0·2	0·1	3	29 : — : —	9·0	Id. ; id. ; id. ; id. ; id.
6	469	59·7	54·0†	5·7	0·1	0·0	20	28 : 16 : —	6·5	Id. ; id. ; id. ; woolly cirri. ⊖
7	470	58·3	54·3	4·0	0·1	0·1	18	26 : — : —	8·5	Loose cum. and cum.-str. ; cir.-str. ; cir. and cir. haze. ⊖
8	464	55·8	51·7⸸	4·1	0·1	0·1	21	27 : — : —	9·5	Id. ; id.
9	460	55·0	51·0	4·0	0·1	0·1	20	28 : — : —	9·0	Scud ; cirro-strati.
10	468	52·3	50·0	2·3	0·1	0·0	24		7·0	Id. ; loose cumuli ; cirro-strati.
11	467	48·7	46·4	2·3	0·1	0·1	23		5·0	Cirro-strati ; cirri.
12	476	48·2	46·4	1·8	0·1	0·0	20		5·0	Scud and cirro-strati ; clouds broken.
13	29·472	46·2	44·8	1·4	0·1	0·0	16		2·0	Cloud to E.
14	465	43·5	42·3	1·2	0·1	0·1	20		0·2	Id.
15	450	41·3	40·4	0·9	0·2	0·1	20		0·2	Cirro-strati and cirri on E. horizon. ☽
16	441	43·0	41·6	1·4	0·3	0·2	22		0·2	Id. ☽
17	428	41·0	40·0†	1·0	0·3	0·2	24		0·2	Id. ⊖
18	433	40·9	40·3	0·6	0·2	0·1	0		0·5	Cumulo-strati on NE. horizon ; woolly cirri to N. ⊙
19	425	46·7	45·0	1·7	0·1	0·1	20	— : — : 20	0·5	Wool. and tufted cir., nearly stationary ; cir.-str. & cum.-str. to NE. ⊙
20	411	49·8	47·8⸸	2·0	0·1	0·1	16		0·8	Sheets of cirri ; cumulo-strati to NE. ; small patches of scud to S. ⊙
21	402	55·2	51·2	4·0	0·2	0·1	14	22 : — : —	0·8	Loose cum. and scud, chiefly round hor. ; streaks of cir. to N. & W. ⊙
22	388	57·7	52·4	5·3	0·2	0·1	8	21 : — : —	3·5	Detached cum., having a kind of internal rotatory motion ; patches
23	384	59·9	52·4	7·5	0·5	0·4	20	20 : — : —	7·0	Scud ; loose cum., and loose cir.-cum.-str. ⊙ [of cir.-str. ⊙
30 0	373	59·4	52·5	6·9	0·6	0·2	26	21 : — : —	8·0	Loose cumuli ; cirro-strati.
1	349	64·0	55·9	8·1	0·2	0·1	16	20 : — : —	7·0	Id. ; cirro-cumulo-strati ; patches of cirri.
2	346	58·7	55·4	3·3	0·3	0·1	22		9·0	Id. ; cirro-strati ; cirri ; shower lately.
3	315	63·0	56·4	6·6	0·1	0·1	14	16 : — : —	9·5	Thick scud and loose cumuli ; cirro-strati and cirri.
4	294	62·0	53·4	8·6	0·7	0·8	17		9·5	Scud and loose cum. on hor. ; cir. haze and cir.-str. ; faint solar halo. ⊖
5	271	60·5	55·3	5·2	0·9	0·3	12	13 : — : —	9·7	Scud and loose cumuli ; cirro-strati and cir. haze ; slight shower. ⊖
6	255	57·7	53·7	4·0	1·3	0·3	13	14 : — : —	9·5	Thick smoky scud ; id.
7	244	56·5	52·7	3·8	0·6	0·5	12	— : 13 : —	9·9	Cirro-stratous scud ; cirro-strati ; cumuli on horizon.
8	231	55·6	52·0	3·6	0·7	0·5	12		10·0	Id.
9	220	54·7	51·7	3·0	0·6	0·3	14	13 : — : —	10·0	Scud and cirro-stratus ; rain^{2}
10	213	53·7	51·7	2·0	0·4	0·3	12		10·0	Id.
11	210	52·5	51·5	1·0	0·3	0·1	6		10·0	Id ? very dark ; rain$^{0·2}$
12	197	52·5	51·5	1·0	0·2	0·1	4		10·0	Id ? id. ; rain$^{0·5}$
13	29·183	52·3	51·5	0·8	0·2	0·0	12		10·0	Scud and cirro-stratus ; very dark ; rain^{2}
14	170	51·9	51·3	0·6	0·0	0·0	16		10·0	Id. ? rather broken ; dark ; rain$^{0·5}$
15	175	50·0	49·6	0·4	0·0	0·0		8 : — : —	5·0	Id. ? fog on the ground.
16	174	47·9	47·5	0·4	0·1	0·1	16		1·5	Cirro-stratous scud ; woolly cirri ; fog in the hollows. ☽
17	185	46·3	46·0	0·3	0·1	0·0	14	— : 13 : —	1·5	Id. ; cirro-strati ; cirri ; id. ☽
18	188	46·3	45·9†	0·4	0·0	0·0	14	— : 13 : —	1·8	Id. ; id. ; id. ⊙
19	193	49·7	48·4	1·3	0·0	0·1	30		1·0	Bank of cir.-str. round horizon ; patch of scud to W. ⊙
20	193	53·3	51·0	2·3	0·5	0·3	16	16 : 14 : —	2·5	Thin scud ; cirro-cumulo-strati ; cirro-strati. ⊙

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
	Dry.	Wet.	Diff.	Maximum force in 1^{h}.	Maximum force in 10^{m}.	From			
in.	°	°	°	lbs.	lbs.	pt.	pt. pt pt.	0—10.	
29·203	55·6	51·3↓	4·3	0·8	0·8	14	15 : 12 : —	7·5	Scud; broken masses of loose cir.-str.; loose cum. & cum.-str. on hor. ⊖
205	59·1	53·8	5·3	0·7	0·3	15	14 : 12 : —	6·0	As before; cumulo-strati to W. ⊖
200	61·4	54·8	6·6	0·6	0·5	14	13 : — : —	8·0	Scud and loose cumuli; cumuli; cirro-strati.
206	62·8	56·5	6·3	0·7	0·3	14	14 : — : —	7·0	Id.; id. ⊖
198	63·0	54·8	8·2	0·6	0·3	14	14 : — : —	7·5	Id.; id. ⊖
216	57·0	51·0	6·0	0·9	1·3	16 v.	14 : — : —	9·0	Thick black scud; cirro-strati; cumuli; rain^{2}*
228	53·3	51·7	1·6	0·8	0·2	14	14 : — : —	10·0	Id.; id.; id.; rain^{1}
222	52·8	51·7	1·1	0·2	0·2	2	14 : — : —	10·0	Scud; cirro-strati; cumuli.
215	55·8	52·0	3·8	0·3	0·0	6	11 : — : —	9·9	Id.; id.; id.; nimbi around.
218	53·4	50·3	3·1	0·9	0·3	6	14 : — : —	9·9	Cirro-stratous scud; nimbi; cirro-strati.
220	53·8	51·0	2·8	0·5	0·4	6	13 : — : —	9·9	As at 6^{h}; still looking electrical; drops of rain.
216	53·2	50·4	2·8	0·5	0·5	6	12 : — : —	9·0	Ragged scud; cir.-str. scud; cum.; cum.-str.; nimbi; cirro-strati; showers around.
226	53·4	50·3	3·1	0·5	0·3	12		10·0	Nearly as before.
234	52·2	50·3	1·9	0·3	0·1	6		9·8	Id.
234	52·0	50·3	1·7	0·1	0·0	2		9·8	Thick scud; loose cumuli; cirro-strati.
237	52·3	50·2	2·1	0·2	0·0	12		9·9	Thick dark clouds; small openings here and there.
29·237	51·6	50·2	1·4	0·2	0·1	4		10·0	Thick dark clouds.
232	51·6	49·9	1·7	0·3	0·1	4		9·9	Id.
236	51·7	50·1	1·6	0·1	0·1	14		9·8	Thick scud.
231	50·7	50·0	0·7	0·2	0·1	6		9·8	Scud and cirro-stratus.
235	51·1	49·7	1·4	0·1	0·0	10	12 : — : —	9·9	Thick ragged scud, tinged with red to NE.; masses of scud lower.
237	50·9	50·0	0·9	0·1	0·0	4	10 : 12 : —	9·7	Scud; cirro-stratous scud.
251	52·1	50·6	1·5	0·0	0·0	8	10 : 12 : —	9·9	Id.; id.; cirro-strati.
250	53·8	51·8	2·0	0·1	0·1	8	10 : 12 : —	9·8	Loose smoky scud; misty cir.-str.; cir.-cum.-str.
250	57·9	53·9	4·0	0·1	0·1	8	13 : — : —	10·0	Id.; cirro-cumulo-strati; rain$^{0·2}$
252	57·0	53·2	3·8	0·1	0·2	14	12 : — : —	10·0	Scud; cirro-strati.
248	57·3	53·4	3·9	0·1	0·1	10	13 : 12 : —	9·0	Id.; cirro-cumulo-strati; cumuli; cirro-strati. ⊙
248	59·1	53·5	5·6	0·2	0·1	4	14 : 16 : —	9·0	Black masses of scud; cum. scud; cum. and nimbi; cumulo-strati.
254	63·7	59·2	4·5	0·3	0·2	14	14 : 16 : —	8·5	Masses of cum.; cir.-cum.-str. and woolly cirri; passing showers. ⊖
257	59·0	55·7	3·3	1·1	0·1	22	14 : 16 : 16	9·5	As before; rain$^{0·5}$; occasional showers with gusts of wind.
252	63·7	57·9	5·8	0·2	0·1	20	— : 17 : —	8·0	Cir.-cum.-str.; piles of cauliflower cum., and cum.-str. around hor. ⊙
248	61·7	55·4	6·3	0·1	0·5	22	— : 20 : —	9·9	Cirro-stratous scud; cirro-strati; cumuli.
253	57·6	53·8	3·8	0·3	0·2	30	20 : — : —	7·5	Piles of cum., cum.-str., & nimbi; cir.-cum str.; rain$^{0·5}$ ⊖
268	56·7	53·4↑	3·3	0·5	0·4	16	17 : — : —	9·9	Thick dark scud; 5^{h} 55^{m}–6^{h} 5^{m}, shower $^{3–4}$; cum.-str. on hor.
271	53·6	52·3↓	1·3	0·2	0·1	20	18 : — : —	9·5	Scud; cir.-str.; cum.-str. on hor.; thick and dark to SW.
278	52·9	52·0	0·9	0·1	0·1	22	— : — : 20	6·5	Woolly cirri; scud; loose cum.-str. and cir.-str. on hor.
283	51·4	50·7	0·7	0·1	0·0	24	20 : 20 : —	8·0	Scud; cirro-stratus and cirri.
291	51·1	50·4	0·7	0·0	0·0	8		8·0	Id.; cirro-strati; cumuli.
292	50·2	49·7	0·5	0·1	0·0			9·8	Id.; id.
292	49·8	49·2	0·6	0·1	0·0			9·5	Id., clouds broken.
29·293	49·9	49·5	0·4	0·1	0·0			10·0	Scud; drops of rain.
288	50·0	49·5	0·5	0·0	0·0			9·9	Id.; id.
282	49·3	49·0	0·3	0·0	0·0			8·0	Id; id.; stars dim.
271	49·7	49·1	0·6	0·0	0·0	23	16 : — : —	9·0	Smoky scud; cirro-strati.
276	49·7	49·0	0·7	0·1	0·1	7	— : 16 : —	9·8	Cirro-stratous scud; mass of cirro-strati.
276	51·7	50·5	1·2	0·1	0·1	10	— : 16 : —	9·9	Id.; id.
274	53·5	52·2	1·3	0·0	0·0	6	16 : — : —	10·0	Scud and cirro-stratus.
274	55·7	53·6	2·1	0·0	0·0	6	— : 16 : —	9·8	Cir.-str.; cir.-cum.-str.; masses of scud near horizon.
273	58·1	54·9	3·2	0·1	0·1	7	12 : 16 : —	9·9	Smoky scud; loose cum.; cir.-str.; cirri; drops of rain.
261	58·5	55·3	3·2	0·2	0·1	21	16 : 16 : —	9·9	Scud; cirro-strati.
249	65·3	59·7	5·6	0·1	0·1	13	14 : 16 : —	9·8	Scud and loose cum.; cir.-cum.-str.; cirro-strati.
239	64·6	58·6	6·0	0·6	0·6	16	14 : — : —	9·7	Scud; loose cumuli and cirro-strati.
222	67·4	59·7	7·7	0·6	0·2	12	14 : — : —	8·5	Cum.; cum.-str.; cirro-cumulo-strati and cirri. ⊙
216	63·7	57·6	6·1	0·8	0·3	14	15 : — : —	9·7	Thick dark scud and cum. to W.; scattered cum. to E.
204	63·1	57·1	6·0	0·4	0·1	6	13 : — : —	9·7	Black scud to W.; patches of ragged scud below; cum. on E. hor.; sky to E.
202	60·0	55·2	4·8	0·4	0·4	25	13 : 14 : —	9·5	Scud; cir.-str.; wool. cir.; 3^{h} 50^{m}, muttering of thunder to NW.

A. 1^{d} 5^{h}. Distant thunder in NE.; very dark to NE. and SSW. 5^{h} 10^{m}—15^{m}. Two flashes of lightning seen to NE.; no thunder heard.

A. 1^{d} 11^{h}. Observation made at 11^{h} 5^{m}.

A. 2^{d} 2^{h}. Thunder in W. at 2^{h} 5^{m}; at 7^{m}, a flash of lightning, with thunder in 1½^{s}; 12^{m}, thunder in 4^{s} after the lightning; 12^{m}—22^{m}, about 4 or 5 heard to NW.; 22^{m}, thunder in 16^{s} after lightning, the peal lasting 30^{s}; 28^{m}, thunder to NW., interval 19^{s}, peal lasting 38^{s}; 30^{m}, a long streak of lightNW., from altitude 15° to horizon, thunder in 5^{s}, lasting 47^{s}. From 2^{h} 4^{m}—10^{m}, rain$^{0·5}$; no thunder was heard after 2^{h} 35^{m}; about 15 peals were

* See additional Meteorological Notes after the *Hourly Meteorological Observations.*

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
2 5	29·199	61·0	57·2	3·8	0·3	0·0	25	13 : — : —	8·0	Scud and cumuli ; cirro-strati and cirri.
6	195	61·3	57·9	3·4	0·1	0·0	23	12 : — : —	9·5	Id. ; id.
7	188	60·0	57·3	2·7	0·1	0·0	22	13 : — : —	8·0	Id. ; id. ; cum.-str. ⊙
8	178	58·4	56·0	2·4	0·1	0·1	21	13 : 13 : —	5·0	Scud and cir.-cum.-str. ; range of cum. on E. horizon ; cir.-str.; cum.-str. ; rain 0·2 ⊖
9	172	53·8	52·0	1·8	0·1	0·0	20	— : 13 : —	5·0	Cir.-str.-scud ; cum.-str. ; cir.-str. ; fog rising from the ground.
10	169	51·3	49·8	1·5	0·1	0·0	1	— : 14 : —	7·0	Id. ; id., denser.
11	161	52·0	51·8	0·2	0·1	0·0	2		10·0	Fog ; objects invisible at 150 yards.
12	148	52·0	51·8	0·2	0·0	0·0			10·0	Id. ; id.
23¼	29·107	62·6	57·0	5·6	2·2	1·0	20		……	Sunday—Overcast, chiefly loose ragged cumuli ; occasional showers.
3 13	……	…	…	…	…	…			……	
14	29·212	51·6	50·4	1·2	4·0	0·5	21		2·0	Cirro-strati round horizon ; cirrous haze to S.
15	224	52·4	50·9	1·5	0·7	0·5	19		7·0	Scud and cirro-strati.
16	233	52·7	51·3	1·4	0·4	0·3	18		9·8	Id.
17	243	52·9	51·4	1·5	0·4	0·5	20	20 : — : —	9·8	Id.
18	261	53·0	51·6	1·4	0·6	0·5	21	21 : — : —	9·7	Scud ; cirro-strati and cirro-cumulo-strati.
19	280	55·1	52·9	2·2	0·9	0·4	19	22 : 23 : —	9·8	Misty scud very low ; cirro-cumulo-strati ; cirro-strati.
20	290	59·8	56·2	3·6	0·5	0·5	19	23 : 24 : —	9·0	Id. ; id. ; id. ⊙
21	299	60·0	56·3	3·7	0·5	0·2	19	22 : 23 : —	9·9	Scud ; id. ; id.
22	312	61·2	57·7	3·5	0·6	0·3	16	22 : — : —	10·0	Id. ; cirro-strati ; cirrous mass.
23	320	61·6	58·2	3·4	0·6	0·7	18	21 : — : —	9·0	Scud and loose cumuli ; cirrous mass. ⊖
4 0	319	64·7	59·0	5·7	0·9	0·6	18	22 : — : —	8·7	Id. ⊖
1	335	56·0	55·3	0·7	1·2	0·9	19		9·8	Id. ; shower$^{3-7}$
2	345	61·0	56·9	4·1	1·5	0·8	19	21 : 22 : —	9·5	Scud ; cum.-str. ; cir.-cum.-str. ; cir. ; drops of rain. ⊖
3	346	62·5	57·5	5·0	1·1	0·5	20	21 : — : —	9·5	Loose cumuli ; cirro-strati. [to NE.
4	359	61·0	56·4	4·6	1·0	0·6	19	21 : — : —	9·9	Scud ; loose cum. ; cir.-str. ; dense black mass of clouds
5	367	62·4	56·5	5·9	0·9	0·7	20	— : 22 : —	9·5	Cir.-cum.-str. ; cir.-str. ; scud and cumuli on horizon.
6	373	58·4	54·9	3·5	0·8	0·4	20	— : 22 : —	9·5	Cirro-strati ; masses of scud and cum.-str. on horizon.
7	381	58·1	55·2	2·9	0·4	0·2	22	22 : — : —	9·5	Scud and cirro-stratus ; cumulo-strati on horizon.
8	395	57·5	54·0	3·5	0·5	0·2	23	22 : 22 : —	9·5	Id. ; thick dark clouds to NW.
9	402	56·2	53·0	3·2	0·3	0·1	26	21 : — : —	8·5	Id. ; cirro-cumulo-strati.
10	416	53·6	51·6	2·0	0·1	0·0	24		4·0	Id. ; id. ; cirri.
11	424	49·8	48·9	0·9	0·1	0·1	18		1·5	Id.
12	426	50·0	49·0	1·0	0·1	0·0	18		5·0	Id.
13	29·431	48·3	47·9	0·4	0·1	0·0	22		6·0	Scud and cirro-stratus.
14	437	48·3	47·7	0·6	0·0	0·0			4·0	Id.
15	449	46·7	45·3	1·4	0·0	0·0	23		4·0	Id.
16	452	47·2	46·9	0·3	0·0	0·0	25		6·0	Id. ; woolly cirri.
17	463	47·0	46·8	0·2	0·0	0·0	26		10·0	Homogeneous mass ; fog, objects invisible at 2 miles.
18	473	49·2	48·8	0·4	0·2	0·1	25		10·0	Id. ; objects invisible at 1 mile.
19	481	52·0	50·0†	2·0	0·1	0·0	24	20 : — : 22	7·0	Misty scud to S. ; linear cirri ; traces of a solar halo.
20	487	54·9	52·9	2·0	0·0	0·0	24	— : — : 19	8·0	Woolly cirri ; loose scud to S. ; partial solar halo.
21	490	56·7	53·3↓	3·4	0·2	0·1	26	— : — : 19	9·2	Diffuse cirri ; scud and loose cum. on hor. ; solar halo.
22	491	60·7	55·7	5·0	0·1	0·0	16		9·5	Id. ; cir. haze ; loose cum. round horizon ; solar halo.
23	494	65·0	58·0	7·0	0·1	0·1	30	20 : — : 20	9·0	Detached cum. ; cir. and cir. haze ; towering cum. to S. ; solar halo.
5 0	495	64·2	56·4	7·8	0·1	0·1	6		8·0	Id. ; id.
1	496	67·7	58·7	9·0	0·2	0·1	18		9·0	Id. ; id. ; solar halo.
2	499	67·1	58·2	8·9	0·2	0·1	8	— : 18 : —	9·9	Cirro-cumulo-strati ; loose cumuli ; cirrous haze.
3	496	68·5	59·6	8·9	0·1	0·2	8	20 : 18 : —	10·0	Loose cum. ; cir.-cum.-str. ; cir.str. and cir haze ; portion of a sola
4	500	63·4	57·0	6·4	0·3	0·3	5	20 : — : —	10·0	Loose cum. moving very slowly ; dense cir.-str. and cir. haze. [halo.
5	507	61·6	57·4	4·2	0·3	0·1	12		10·0	Dense mass of cir.-str. and haze ; masses of scud and loose cumu
6	516	60·7	57·4	3·3	0·2	0·1	14	4 : — : —	10·0	Scud ; mass of cirro-stratus. ; rain^2 [below ; drops of rai
7	528	59·0	56·8	2·2	0·1	0·0	20	4 : — : —	10·0	Id. ; id. ; slight drizzle.
8	538	57·7	56·4	1·3	0·1	0·0	16		9·9	Cirro-stratous scud ; wavy cirro-strati ; cir.-cum.-str.
9	535	55·7	54·0	1·7	0·1	0·0	18		9·8	Cir.-str. ; wavy cir.-str. radiating from NNE. and SSW
10	541	54·3	53·2	1·1	0·1	0·0	26		9·8	Cirro-cumulo-strati ; cirro-strati. [sky to

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. Th motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
5 11	29·546	51·3	51·0	0·3	0·1	0·0			2·0	Bank of cirro-stratus on E. horizon, rad. from SSW., thin at the edges; sky milky.
12	548	49·0	48·6	0·4	0·0	0·0	18		3·5	As before; sky clearer.
13	29·546	47·6	47·2	0·4	0·0	0·0	20		4·0	As before, with cirrous haze.
14	543	48·8	48·6	0·2	0·0	0·0			9·0 ?	Fog; cirro-stratus and cirrous haze ?
15	545	49·3	49·1	0·2	0·0	0·0	20		10·0	Id., objects invisible at about 200 yards.
16	541	49·0	48·8	0·2	0·0	0·0	24		10·0	Id. 250 yards.
17	543	48·3	48·1	0·2	0·0	0·0	18		10·0	Id. 400 yards.
18	542	47·9	47·6	0·3	0·0	0·0	20	20 : — : 17	9·5	Id. 300 yards; wo. cir. and cir.-cum.
19	537	48·7	48·0†	0·7	0·1	0·1	23	— : 17 : —	9·8	Cir.-cum.-str.; thick woolly cirri; cirrous haze; fog clearing off. ⊖
20	541	50·6	49·5	1·1	0·1	0·1	24	— : 16 : —	9·5	Id.; id.; id.
21	536	52·9	51·4‡	1·5	0·0	0·0	24		6·5	Woolly and linear cirri; cir.-cum.-str.: cirrous haze and cirro-strati.
22	527	58·0	53·4	4·6	0·1	0·0	28	— : — : 16	5·0	As before; cirri radiating from N. and S. ⊙
23	521	61·8	56·0	5·8	0·1	0·1	18	— : — : 16	4·0	Id.; id.; cum. and haze on hor. ⊙
6 0	514	65·0	60·4	4·6	0·1	0·1	24	21 : — : —	5·0	Loose cumuli; woolly cirri; cirro-strati; cumuli.
1	504	65·9	57·4	8·5	0·2	0·2	20	21 : — : —	4·5	Id.; id.; cumuli.
2	498	66·4	57·7	8·7	0·4	0·3	18	20 : 21 : —	4·0	Id.; cir.-cum.-str.; cir.-str.; cumuli; cirri. ⊙
3	492	63·9	57·5	6·4	0·6	0·6	18	20 : — : —	9·9	Scud; cirro-strati; cumuli.
4	486	64·6	59·0	5·6	0·6	0·4	19	— : 18 : —	9·9	Cirro-cumulo-strati; cumuli; cumulo-strati; cir.-str. ●
5	475	65·0	58·7	6·3	0·5	0·3	21	20 : — : —	9·5	Scud and loose cumuli; id.; id. ⊖
6	465	63·5	58·4	5·1	0·3	0·2	22	19 : — : —	9·5	Scud; cum.-str.; cirro-strati; cirri; drops of rain.
7	465	61·9	57·4	4·5	0·2	0·2	22	19 : — : —	9·8	Id.; id.; nimbi; cirri; heavy rain to ESE.
8	470	59·7	56·3	3·4	0·2	0·0	20	20 : — : —	9·9	Nearly as before; showers around; clouds quite blue to NNW.
9	464	57·0	56·6	0·4	0·3	0·2	20	20 : — : —	10·0	Dense scud and cirro-stratous scud; showers$^{1-2}$
10	464	56·0	54·4	1·6	0·3	0·1	20		10·0	Id.
11	461	54·7	53·6	1·1	0·2	0·0	20		10·0	Id.; rain$^{0·5}$
12	457	54·3	53·5	0·8	0·0	0·0	24		10·0	Id.; drops of rain.
13	29·446	54·7	53·9	0·8	0·1	0·1	20		10·0	Dark.
14	445	54·0	53·4	0·6	0·1	0·0	20		10·0	Id.
15	441	53·6	52·9	0·7	0·0	0·0	20		10·0	Thick scud.
16	440	53·0	52·4	0·6	0·0	0·0	20		10·0	Dense cirro-stratus and scud.
17	436	52·7	52·1	0·6	0·0	0·0	20		10·0	Id.
18	438	52·8	52·0	0·8	0·0	0·0	24	26 : — : —	9·0	Thin scud; cirro-strati.
19	445	54·0	52·1	1·9	0·3	0·3	23	— : 27 : —	8·2	Cir.-str. scud; cir.-cum.-str.; scud on horizon; cirri.
20	450	55·7	52·8	2·9	0·3	0·4	20	26 : 26 : —	6·0	Scud; cir.-cum.-str.; cirro-stratous scud on hor.; cir.-str.; cirri. ⊙
21	454	56·6	53·0	3·6	0·3	0·3	26		5·5	As before. ⊖
22	449	58·8	53·9	4·9	0·6	0·3	22	27 : — : —	5·5	Loose cumuli; cirro-cumulo-strati, &c., as before. ⊖
23	450	62·2	56·9	5·3	0·6	0·3	26	27 : — : —	8·0	Id.; id.
7 0	451	63·0	56·5	6·5	0·6	0·4	27	24 : — : —	8·5	Id.; cumulo-strati.
1	451	62·8	55·9	6·9	0·7	0·3	28	27 : 25 : —	8·5	Scud; loose cumuli; cumuli; cumulo-strati; cirri.
2	458	63·3	56·7	6·6	0·6	0·3	26	28 : 25 : —	9·0	Id.; id.; id.; id.; id. ⊖
3	458	63·0	57·0	6·0	0·2	0·4	28	28 : 25 : —	8·0	Loose cum.; piles of cum. and cum.-str.; cir.-cum.-str.
4	466	63·5	56·4	7·1	0·3	0·3	30	27 : 26 : —	8·0	Nearly as before; very black to W.
5	476	61·4	56·2	5·2	0·3	0·3	30	27 : 26 : —	9·9	Scud; dense cirro-cumulo-stratus and nimbi.
6	475	62·9	58·3†	4·6	0·4	0·1	28		9·7	Loose cir.-str. and cir.-cum.-str.; cum.-str. on horizon.
7	482	60·7	57·0	3·7	0·2	0·2	27	— : 28 : —	9·9	Cirro-cumulo-strati; cumulo-strati; cirro-strati.
8	490	59·3	56·0	3·3	0·2	0·1	10	30 : 28 : —	9·0	Id.; cirro-strati; cumulo-strati.
9	493	55·3	54·0‡	1·3	0·1	0·1	30		8·5	Id.; id.; id.
10	505	51·7	51·1	0·6	0·1	0·0	20		3·0	Cirro-strati and cirro-cumulo-strati.
11	510	51·6	51·2	0·4	0·1	0·0			2·0	Id. round horizon.
12	510	49·7	49·2	0·5	0·0	0·0			9·0	Scud and cirro-strati.
13	29·505	51·0	50·6	0·4	0·0	0·0	14		9·5	Scud.
14	503	51·6	51·0	0·6	0·0	0·0			3·0	Id.
15	505	50·9	50·2	0·7	0·0	0·0	20		0·2	Cirro-strati on E. horizon.
16	502	48·7	48·3	0·4	0·2	0·1	17	— : 28 : —	1·5	Cirro-stratous scud.
17	506	49·7	49·3	0·4	0·1	0·1	22	— : 27 : —	1·0	Id.; cirro-strati.

Aug. 5d 13h 5m. A meteor from altitude 80° to W by S., fell vertically 30°.
Aug. 6d 9h. Observation made at 9h 7m.
Aug. 7d 3h. Clouds looking electric throughout the day; showers around.
Aug. 7d 11h 7m—36m. Five shooting-stars seen.
Aug. 7d 14h 40m—44m. Two shooting-stars seen.

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
7 18	29·498	50·7	49·7†	1·0	0·2	0·2	23	— : 27 : —	1·5	Cirro-stratous scud ; cirro-strati. ⊙
19	503	53·3	51·3	2·0	0·4	0·3	24		1·5	Scud and loose cumuli to S. ; cirro-strati to E. ⊙
20	504	54·6	51·3	3·3	0·6	0·4	18		1·5	Masses of scud and loose cum. on hor. ; cirro-strati to E. and N. ⊙
21	501	56·9	52·7⸸	4·2	0·6	0·4	24	26 : — : —	1·2	As before ; cirro-strati and sheets of thin cir. to N. ⊙
22	494	58·4	53·3	5·1	0·5	0·5	24	27 : — : —	3·0	Masses of scud and loose cum. ; cir.-str. to E. and N. ⊙
23	497	60·4	54·7	5·7	0·8	0·5	22	27 : — : —	7·0	Scud and loose cumuli ; cirro-strati. ⊙
8 0	492	63·0	56·6	6·4	0·7	0·5	24	26 : — : —	6·5	Id. ; id. ⊙
1	487	63·5	56·9	6·6	0·6	0·8	26		7·0	Id. ⊙
2	481	64·7	57·2	7·5	0·9	0·6	25	26 : — : —	6·0	Id. ⊖
3	475	65·6	58·0	7·6	0·7	0·3	23	26 : — : —	9·7	Id. ; id.
4	466	65·8	58·0	7·8	0·6	0·5	22	26 : — : —	4·0	Loose cumuli : cirro-cumulo-strati. ⊙
5	456	65·0	57·6	7·4	0·5	0·3	22	29 : — : —	9·6	Id. ; id.
6	456	64·4	57·8	6·6	0·6	0·6	23	28 : — : —	9·5	Id. ; id. ⊖
7	463	61·6	55·8†	5·8	0·8	0·7	21	— : 27 : —	8·0	Cirro-cumulo-strati and loose cirro-strati. ⊖
8	465	58·0	53·0	5·0	0·7	0·3	23	— : 27 : —	8·5	Cirro-stratous scud ; masses of cirro-strati ; cirri.
9	454	57·5	53·8⸸	3·7	0·4	0·3	22	— : 26 : —	9·8	Id. ; id.
10	440	56·4	53·2	3·2	0·4	0·4	23		9·9	Id.
11	438	55·5	53·1	2·4	0·5	0·1	20		10·0	Id. ?
12	431	54·4	52·5	1·9	0·3	0·3	20		10·0	Id. ?
13	29·414	54·4	52·6	1·8	0·3	0·1	18		9·8	Cirro-stratous scud.
14	401	52·2	51·3	0·9	0·1	0·2	22		3·5	Id. ; cirrous haze.
15	389	52·3	51·3	1·0	0·2	0·0			9·8	Cirro-cumulo-stratus ?
16	370	52·6	51·6	1·0	0·0	0·0	16		10·0	Id.
17	351	52·3	51·4	0·9	0·0	0·0	0	12 : 12 : —	10·0	Id.
18	338	52·4	51·7	0·7	0·1	0·0	0	12 : 12 : —	10·0	Scud ; cirro-stratous scud.
19	(324)	(52·9)	(52·1)	(0·8)	(0·0)	(0·0)			(10·0)	
20	311	53·5	52·6	0·9	0·1	0·1	2	12 : 12 : —	10·0	Scud.
21	298	54·6	53·3	1·3	0·1	0·1	2	4 : 10 : —	10·0	Loose scud ; thick scud and cirro-stratus.
22	289	56·7	54·7	2·0	0·1	0·2	3	2 : — : —	10·0	Id. ; id. ; rain$^{0\cdot2}$
23	282	56·0	55·2	0·8	0·3	0·2	4	4 : — : —	10·0	Scud ; id. ; rain^{1}
9 0	268	56·0	54·4	1·6	0·3	0·2	4	5 : — : —	10·0	Id. ; id. ; rain$^{1\cdot5}$
1	258	55·8	54·8	1·0	0·3	0·5	4	5 : — : —	10·0	Id. rain^{2}
2	256	53·4	52·2	1·2	0·6	0·3	3	5 : — : —	10·0	Id. ; id. ; rain$^{2—3}$
3	236	54·8	53·2	1·6	0·6	0·4	1	5 : — : —	10·0	Id. ; id.
4	214	53·3	52·2	1·1	0·6	0·7	2	4 : — : —	10·0	Id. ; id. ; rain$^{0\cdot2}$
5	209	53·4	52·2	1·2	1·6	1·2	2	3 : — : —	10·0	Id. ; rain^{1}
6	202	53·3	52·1	1·2	2·0	1·9	0	3 : — : —	10·0	Id. ; id. ; rain$^{0\cdot5}$
7	205	53·0	52·0	1·0	2·0	0·9	0	3 : — : —	10·0	Id. ; id. ; Scotch mist ; rain^{1}
8	207	53·0	52·0	1·0	1·7	1·3	0	0 : 3 : —	10·0	Id. ; id. ; clouds more broken ; rain$^{0\cdot5}$
9	209	53·6	52·5	1·1	1·2	0·8	0	3 : — : —	10·0	Id. ; id. ;
10	205	53·3	52·2	1·1	1·8	1·5	31		10·0	Id.
11	199	53·7	52·4	1·3	1·5	1·1	0		10·0	Id. ; slight drizzle.
12	173	53·7	52·7	1·0	1·5	1·6	0		10·0	Id. ; rain^{1}
23$\frac{1}{4}$	29·253	56·0	55·6	0·4	3·1	1·9	0	3 : 1 : —	……	Sunday—A.M. Nearly continuous rain. P.M. The clouds partially cleared off.
10 13	29·388	54·2	52·8	1·4	2·6	0·5	2		10·0	Scud.
14	387	54·3	53·4	0·9	1·1	0·7	3		10·0	Id. ; drops of rain.
15	387	54·3	53·2	1·1	0·9	0·5	2		10·0	Id.
16	398	54·0	53·0	1·0	0·6	0·4	1		10·0	Id.
17	400	53·9	53·5	0·4	0·4	0·2	0	2 : — : —	9·9	Id. ; mass of cirro-strati.
18	418	54·8	53·4	1·4	0·3	0·1	1	2 : — : —	10·0	Id. ; id.
19	425	55·2	53·7	1·5	0·3	0·2	0	2 : — : —	10·0	Id. ; cirro-stratous scud.
20	437	56·5	54·3	2·2	0·4	0·2	0	2 : — : —	9·6	Id. ; loose cumuli ; cirro-cumulo-strati.
21	449	57·4	54·4	3·0	0·9	0·7	3	2 : 1 : —	9·8	Id. ; cirro-cumulo-strati ; cirri. ⊖
22	461	58·2	54·4	3·8	0·8	0·6	3	2 : — : —	9·9	Id. ; cumulous scud.
23	479	58·6	54·1	4·5	1·0	0·6	4	2 : — : —	9·9	Id. ; loose cumuli.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

ött. ean me.	BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
0	29·495	58·2	53·7	4·5	0·7	0·6	4	2 : — : —	9·9	Scud; loose cumuli.
1	506	60·4	55·5	4·9	0·7	0·5	3	3 : — : —	9·5	Id.; id.
2	514	60·1	55·1	5·0	0·7	0·6	3	3 : — : —	9·9	Id.; id.
3	527	60·3	55·0	5·3	1·0	0·7	3	2 : — : —	9·0	Id.; id.
4	540	59·9	55·7	4·2	1·2	0·4	3	2 : — : —	9·5	Id.; id. ⊙
5	544	59·9	55·3	4·6	0·7	1·2	3	2 : — : 8	9·9	Id.; id.; woolly cirri and cir. haze; part of a
6	560	55·4	54·0	1·4	1·4	1·0	3	2 : — : —	10·0	Id.; cirrous mass; slight drizzle. [solar halo. ⊖
7	573	55·2	53·2	2·0	0·9	0·9	2	2 : — : —	10·0	Id.; id.; cirro-strati.
8	590	53·3	52·4	0·9	1·1	0·5	1	2 : — : —	10·0	Id.; id.; id.; rain^{1}
9	597	53·6	52·0	1·6	1·0	0·6	2	1 : — : —	10·0	Id.; id.; id.
10	614	53·3	52·5	0·8	0·8	0·6	1		10·0	Id.; cirro-strati.
11	625	53·5	51·5	2·0	1·2	0·3	0		10·0	Id.; id.
12	624	53·4	51·8	1·6	0·6	0·4	1		10·0	Id.
13	29·627	53·9	50·9	3·0	1·2	0·9	1		10·0	Scud.
14	627	53·8	50·8	3·0	1·1	0·7	3		10·0	Id.
15	635	53·7	50·5	3·2	0·9	0·4	0		10·0	Id., radiating from N by E.; clouds breaking.
16	635	53·3	50·6	2·7	0·6	0·2	1		10·0	Id.; id.
17	637	53·1	50·4	2·7	0·3	0·2	1	0 : — : —	9·5	Id.; cirro-strati.
18	652	52·7	50·7	2·0	0·3	0·3	30	0 : — : —	9·5	Id.; id.
19	663	52·7	49·8	2·9	0·3	0·2	2	0 : — : —	9·2	Id.; id.
20	671	53·2	50·2	3·0	0·3	0·2	0	0 : — : —	10·0	Id.; id.
21	681	53·7	49·6	4·1	1·0	0·6	0	1 : — : —	9·9	Dense cirro-stratous scud; scud below to E.
22	686	54·9	50·7	4·2	0·7	0·6	0	1 : — : —	10·0	Id.; scud below to N. and E.
23	691	56·7	51·4	5·3	0·8	0·8	1	1 : — : —	10·0	Id.; id.
0	706	55·5	51·0	4·5	0·9	0·5	1	0 : — : —	10·0	Scud; cirro-stratous scud; cirrous mass.
1	715	54·0	51·4	2·6	1·1	0·2	31	0 : — : —	10·0	Id.; slight drizzle.
2	724	54·4	52·2	2·2	0·4	0·3	30	31 : — : —	10·0	Id.
3	728	55·3	51·2	4·1	0·6	0·7	1	0 : — : —	9·9	Id., clouds breaking; sky greenish on E. horizon.
4	740	55·4	50·8	4·6	0·6	0·4	2	0 : — : —	9·9	Id.; id.; id.
5	741	55·2	49·8	5·4	0·8	0·4	0	— : 31 : —	9·9	Cir.-str.; thick wavy cirro-strati; id.
6	749	54·8	50·3	4·5	0·4	0·3	0	31 : — : —	9·8	Patches of scud; cirro-stratus; sky on E. horizon.
7	760	54·0	50·7	3·3	0·2	0·1	30	31 : 30 : —	9·9	Scud; cirro-cumulo-stratus; clouds breaking.
8	771	52·6	50·4	2·2	0·2	0·1	1	1 : — : —	10·0	Id.; rain$^{0·2}$
9	785	51·0	50·0	1·0	0·1	0·1	4	30 : — : —	10·0	Id.; loose scud on horizon; occasional showers.
10	788	51·0	49·0	2·0	0·1	0·1	1		10·0	Id.
11	792	50·0	48·4	1·6	0·0	0·0	28		9·8	Id.; cirro-stratus and cirrous haze.
12	800	48·9	46·3	2·6	0·1	0·1	0		9·0	Id.; id.
13	29·799	47·5	45·7	1·9	0·1	0·1	28		9·0	Scud; cirro-stratus and cirrous haze.
14	798	45·6	44·5	1·1	0·0	0·0	26		3·0	Clouds round horizon; sky hazy.
15	798	45·8	44·9	0·9	0·0	0·0	26		9·8	Cirro-strati.
16	786	45·8	44·9	0·9	0·1	0·1	22		9·9	Id.
17	790	46·3	45·2	1·1	0·2	0·1	24		9·5	Cirro-cumulo-strati.
18	798	46·1	45·3	0·8	0 1	0·1	24	— : 28 : —	9·8	Id.
19	789	48·8	47·2	1·6	0·1	0·0	24	— : 28 : —	9·2	Id.
20	802	51·2	48·9	2·3	0·1	0·1	24	— : 28 : 28	7·0	Cir.-cum.-str.; sheets of cirri; patches of scud to SE. ⊖
21	792	53·1	48·9	4·2	0·2	2·0	22	— : — : 31	4·0	Woolly cirri; cir.-cum.-str. to W.; scud on NW. & N. hor.; cir.-str. ⊙
22	787	57·3	51·3	6·0	0·2	0·3	28	26 : — : 29	6·0	Loose cumuli; woolly cirri; cirro-strati; cumuli. ⊙
23	782	59·6	53·2	6·4	0·3	0·2	25	26 : 29 : 31	8·0	Scud & loose cum.; cir.-str.; long lines of cirri radiating from N. by E.
0	781	61·4	52·4	9·0	0·2	0·2	29	26 : — : 31	9·5	Scud and loose cum.; cirri and cir. haze; solar halo. ⊙
1	777	61·0	51·5	9·5	0·3	0·3	28	26 : — : —	9·5	As before. ⊙
2	774	62·6	53·4	9·2	0·4	0·3	28	28 : 30 : —	9·2	Scud and loose cum.; cir.-cum.-str.; cirri; cir. haze. ⊖
3	776	62·1	52·3	9·8	0·3	0·2	30	28 : 31 : —	9·2	Id.; id.; id.; id. ⊙
4	776	60·4	52·8	7·6	0·2	0·1	29	— : 28 : —	9·8	Cirro-stratous scud; cirri; cirro-strati.
5	774	60·0	52·8	7·2	0·2	0·1	29		9·9	Scud; cir.-str. scud; nearly homogeneous mass of cir.-str.
6	772	58·4	53·1	5·3	0·1	0·1	0	28 : — : —	10·0	Scud; dense cirro-stratus and haze.
7	782	56·5	52·7	3·8	0·0	0·0	3	— : 28 : —	10·0	Thick cirro-stratous scud; dense cir.-str. and haze.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The tions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Aug. 13d 3h. Observation made at 3h 7m.

Aug. 13d 6h 20m—40m. A long line of loose scud to ESE. lying close to the ground, and creeping along the lower Cheviot hills; some the masses have spiculæ pointing upwards; green sky above Cheviot.

Gött. Mean Time.		BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1^{h}.	Maximum force in 10^{m}.	From			
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
13	8	29·785	54·3	52·2	2·1	0·1	0·0	6		10·0	Masses of scud ; cirro-stratous and cirrous haze.
	9	791	53·4	51·9	1·5	0·1	0·0	20		10·0	Id. ; id.
	10	793	52·5	51·4	1·1	0·0	0·0	26		10·0	Scud and dense cirro-stratus.
	11	799	51·0	50·3	0·7	0·0	0·0	26		7·0	Scud, cirro-stratus, and haze.
	12	798	49·2	48·3	0·9	0·0	0·0	25		3·0	Id.
	13	29·778	49·9	48·9	1·0	0·0	0·1	20		5·0	Scud, cirro-stratus, and haze.
	14	761	48·9	48·0	0·9	0·1	0·0	18		6·0	Id.
	15	754	49·2	48·3	0·9	0·1	0·0	18		10·0	Id.
	16	732	50·0	48·2	1·8	0·1	0·0	20		10·0	Id.
	17	716	51·2	48·8	2·4	0·1	0·1	20	26 : 26 : —	10·0	Scud and cirro-stratous scud ; cirro-strati.
	18	707	51·7	49·0	2·7	0·3	0·3	25	— : 28 : —	10·0	Cir.-str. scud ; sheets of cirro-strati ; scud on Cheviot.
	19	698	52·1	49·3	2·8	0·2	0·1	24		10·0	Dense cirro-stratus.
	20	693	53·3	50·1	3·2	0·2	0·1	26		10·0	Id. ; patches of scud to E.
	21	694	55·5	51·4	4·1	0·6	0·5	26	28 : 30 : —	10·0	Patches of scud ; dense sheets of homogeneous and wavy
	22	691	54·4	51·3	3·1	0·5	0·4	30	28 : — : —	10·0	As before ; rain$^{0\cdot5}$ [cirro-strati ; drops of rain.
	23	684	56·0	52·2	3·8	0·5	0·7	29		10·0	Patches of scud to S. ; dense homogeneons cirro-stratus.
14	0	674	59·0	53·9	5·1	1·1	0·5	28	30 : — : —	10·0	Masses of scnd and loose cum. ; homogeneous cir.-str.
	1	661	59·6	53·3	6·3	0·8	0·7	30	30 : — : —	10·0	Id. ; id.
	2	651	60·7	54·3	6·4	1·0	0·3	31	29 : — : —	10·0	Id. ; id.
	3	642	59·9	53·6	6·3	0·6	0·2	31	29 : — : —	10·0	Id. ; id.
	4	624	57·8	53·4	4·4	0·6	0·4	28	29 : — : —	10·0	As before ; drops of rain.
	5	614	56·4	52·7	3·7	0·3	0·1	22	— : 26 : —	10·0	Cirro-stratous scud and dense cirro-stratus.
	6	599	55·9	52·3	3·6	0·4	0·3	28	— : 28 : —	10·0	Id.
	7	598	54·8	52·2	2·6	0·4	0·2	25		10·0	Id.
	8	599	53·2	50·8	2·4	0·4	0·2	28	— : 30 : —	10·0	Id.
	9	593	52·9	50·4	2·5	0·4	0·2	30		10·0	Id. ; drops of rain.
	10	589	52·2	50·2	2·0	0·1	0·1	31		10·0	Id.
	11	582	51·7	49·8	1·9	0·1	0·1	26		10·0	Id.
	12	574	52·2	49·6	2·6	0·1	0·1	27		10·0	Id. ; drops of rain
	13	29·566	51·9	49·5	2·4	0·1	0·0	26		10·0	Cirro-stratous scud and dense cirro-stratus.
	14	577	56·3	49·4	0·9	0·9	0·2	0		10·0	Scud ; showers$^{1-2}$ lately ; rain$^{0\cdot5}$
	15	578	50·2	48·6	1·6	0·2	0·3	2		9·5	Id. ; cirro-strati ; sky to N.
	16	578	48·7	46·5	2·2	1·6	0·3	0		9·5	Id. ; id. ; id.
	17	577	47·0	45·0	2·0	0·3	0·0	28	— : 0 : —	3·8	Cirro-stratous scud.
	18	587	47·7	45·3	2·4	0·2	0·1	31	0 : 0 : —	9·9	Loose and cir.-str. scud, tinged blue, yellow, and orange ; sky on h
	19	588	49·3	46·2	3·1	0·4	0·3	30	— : 0 : —	9·9	Cirro-stratous scud ; undulated cirro-stratus.
	20	592	51·2	47·2	4·0	0·5	0·3	1	— : 1 : —	9·5	Id. ; cirro-strati.
	21	596	52·3	47·9	4·4	1·0	1·0	31	0 : — : —	7·0	Scud and loose cumuli ; cirro-strati.
	22	602	53·0	48·2	4·8	1·5	1·1	31	1 : — : —	9·8	Id. ; id.
	23	597	52·5	48·8	3·7	1·1	0·9	0	1 : — : —	7·0	Id. ; id.
15	0	594	54·3	47·8	6·5	2·7	2·0	30	0 : — : —	4·5	Loose cumuli ; cumulo-strati ; cirro-strati.
	1	600	57·4	50·6	6·8	2·7	2·4	2	1 : — : —	9·0	Scud and loose cum. ; piles of cum. to N. ; cum.-str
	2	612	56·3	49·8	6·5	2·6	2·2	1	1 : — : —	7·0	As before. ⊙ [cirro-strati
	3	622	57·5?	49·0	8·5?	2·3	1·7	30	0 : — : —	7·5	Id. ; woolly cirro-cumulo-strati.
	4	618	56·3	49·2	7·1	0·9	0·7	2	31 : — : —	9·8	Id. ; sky greenish on E. horizon.
	5	617	56·7	49·8	6·9	1·8	3·1	0	0 : — : —	9·2	Id.
	6	622	54·8	47·7	7·1	2·3	1·3	0	0 : — : —	7·0	Scud and loose cumuli ; cirro-cumulo-strati.
	7	632	53·4	47·8	5·6	1·9	1·1	0	0 : 30 : —	4·0	Id. ; id. ; thin cirr
	8	649	52·6	47·3	5·3	1·5	0·8	0	— : 0 : —	9·0	Cirro-stratous scud.
	9	656	49·7	45·8	3·9	0·5	0·4	31	— : 0 : —	9·5	Id.
	10	674	50·6	46·4	4·2	0·7	0·5	31	— : 0 : —	9·0	Id.
	11	672	49·8	45·7	4·1	0·4	0·8	0		10·0	Id.
	12	669	50·3	45·4	4·9	1·1	0·5	31		10·0	Id.
	13	29·670	49·9	45·1	4·8	0·8	0·4	30		10·0	Cirro-stratous scud.
	14	668	49·4	44·8	4·6	0·9	0·4	31		9·5	Cirro-strati and cirro-cumulo-strati ; clouds breakin

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. T motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

tt. ean me.	BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1^h.	Maximum force in 10^m.	From			
h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
15	29·668	48·8	44·7	4·1	0·7	0·2	30		9·8	Cirro-strati and cirro-cumulo-strati.
16	672	47·7	44·6	3·1	0·3	0·1	30		9·5	Scud ; cirro-stratus.
17	670	47·9	44·6	3·3	0·4	0·1	26	1 : — : —	10·0	Id. ; id.
18	678	47·2	44·3	2·9	0·1	0·1	30	1 : — : —	9·9	Id. ; cirro-stratous scud.
19	684	48·4	45·4	3·0	0·5	0·2	30	— : 1 : —	9·8	Cirro-cumulo-stratus ; scud to E.
20	697	50·2	46·4	3·8	0·4	0·1	30	— : 2 : —	9·8	Id. ; id. [scud to W.
21	701	51·3	46·2	5·1	0·4	0·3	1	— : 1 : —	9·2	Id. ; masses of cirro-strati ; patches of
22	704	53·6	46·3	7·3	1·8	1·2	0	— : 0 : —	8·5	Id. ; id. ⊖
23	713	53·1	46·0	7·1	0·9	0·8	0	— : 30 : —	9·5	Id. ; patches of scud to W.
0	712	54·1	47·5	6·6	1·0	0·3	1	— : 30 : —	10·0	Id.
1	710	54·3	48·2	6·1	0·4	0·4	2	— : 28 : —	9·8	Id.
2	703	55·3	48·3	7·0	0·3	0·2	31	— : 29 : —	9·5	Id. ⊖
3	694	57·8	50·4	7·4	0·2	0·2	0	— : 29 : —	9·8	Id.
4	690	57·0	49·0	8·0	0·3	0·2	0	— : 29 : —	9·9	Id.
5	686	56·8	49·0	7·8	0·2	0·4	31	— : 29 : —	9·9	Id.
6	675	54·7	49·6	5·1	0·1	0·0	8	— : 28 : —	9·9	Id.
7	675	53·1	49·1	4·0	0·1	0·0	4	28 : 28 : —	9·9	Scud and cirro-stratus.
8	677	51·5	48·6	2·9	0·1	0·0	12		9·9	Id.
9	678	50·4	47·8	2·6	0·1	0·0	4		10·0	Id.
10	683	49·7	47·4	2·3	0·0	0·0	4		10·0	Id.
11	681	48·9	47·3	1·6	0·1	0·1	7		10·0	Id.
12	677	48·3	47·0	1·3	0·0	0·0	23		9·9	Cirro-cumulo-strati and cirro-strati.
23¼	29·581	60·0	52·7	7·3	0·5	0·5	20		……	Sunday—A.M. Scud and cir.-str. P.M. Scud and showers.
13	29·422	51·0	50·7	0·3	0·8	0·0	22	22 : — : —	10·0	Scud ; cirro-cumulo-strati ? rain$^{0·5}$
14	418	52·0	51·5	0·5	0·1	0·1	22	22 : — : —	9·9	Id. ; id.
15	416	51·4	50·7	0·7	0·1	0·0	22	22 : — : —	9·2	Id. ; id. ☽
16	405	49·5	49·2	0·3	0·1	0·0	22		9·2	Id. ; id.
17	399	49·4	49·1	0·3	0·0	0·0	22	24 : — : —	9·5	Cirro-stratous scud ; cirro-strati ; cirri.
18	404	50·4	49·9	0·5	0·0	0·0	22	23 : 21 : 23	9·5	Id. ; cirro-cumulo-strati ; cirri.
19	403	51·6	51·0	0·6	0·1	0·0	24	— : 18 : 23	9·0	Id. ; woolly cirri ; cir.-str. ; cum. to N.
20	405	55·4	54·0	1·4	0·0	0·0	23	21 : — : 23	9·5	Thin scud ; woolly and mottled cirri ; cumuli to N. ●
21	404	58·4	55·9	2·5	0·0	0·0	23	20 : — : —	9·9	Loose ragged scud and loose cumuli ; cirro-strati.
22	408	58·2	53·9	4·3	0·0	0·0	23	20 : — : —	9·5	Scud and loose cumuli ; cumulo-strati ; cirro-strati.
23	400	59·4	55·0	4·4	0·1	0·1	9	21 : — : —	5·0	Loose cumuli ; cumuli ; id. ; id. ⊙
0	395	61·2	56·6	4·6	0·2	0·1	16	20 : — : —	9·5	Id. ; id. ; id. ; id.
1	386	64·7	59·8	4·9	0·2	0·3	20	21 : — : —	8·5	Scud and loose cumuli ; id. ; id.
2	378	63·2	57·8	5·4	0·3	0·2	19	21 : — : —	9·8	Id. ; id. ; id.
3	383	55·2	54·0	1·2	1·1	0·1	18		10·0	Scud ; cumuli ; rain^{2}
4	381	59·0	55·4	3·6	0·1	0·1	6	5, 20 : — : —	9·5	Thin scud ; scud and loose cumuli ; cirro-strati.
5	381	57·0	54·5	2·5	0·2	0·1	7	21 : — : —	9·5	As before ; cumulo-strati on E. horizon.
6	387	57·4	54·7†	2·7	0·1	0·1	4	6, 23 : 20 : —	8·0	Loose scud ; cum. and cir.-cum.-str. ; piles of cum.-str. on ESE. hor. ⊙
7	378	54·7	53·0⸸	1·7	0·1	0·0	3	— : 20 : —	3·5	Cir.-str. scud ; loose cir.-cum. ; piles of cum.-str. and nimbi on hor.
8	384	53·4	52·4	1·0	0·1	0·0	20	— : 20 : —	9·2	Nearly as before.
9	379	51·7	51·0	0·7	0·1	0·1	24	— : 21 : —	9·2	Id.
10	378	51·3	50·8	0·5	0·1	0·0	24		9·8	Cirro-cumulo-strati.
11	371	50·4	50·0	0·4	0·0	0·0	24		9·9	Id.
12	369	50·6	50·1	0·5	0·0	0·0			10·0	Rain$^{0·5}$
13	29·362	50·6	50·0	0·6	0·0	0·0			10·0	Scud and cirro-stratus.
14	348	50·5	49·8	0·7	0·0	0·0	24		9·9	Cirro-stratous scud, causing a diffuse lunar corona. ☽
15	339	50·0	49·3	0·7	0·0	0·0			9·8	Cirro-cumulo-strati.
16	336	48·5	48·3	0·2	0·0	0·0	28		10·0	Misty scud and cirro-stratus.
17	320	49·5	48·7	0·8	0·0	0·0		4 : — : —	10·0	Id.
18	319	49·7	49·2	0·5	0·0	0·0	20	3 : — : —	9·8	Misty scud ; cirro-stratus ; gathering of swallows.
19	312	52·6	51·6	1·0	0·0	0·0	12	4 : — : —	9·8	Id. ; id. ●
20	308	53·6	52·3	1·3	0·0	0·0	12	4 : 20 : —	9·5	Id. ; woolly cir.-cum. ; piles of cum.-str. on N. hor.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The ptions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Aug. 18d 19h. Observation made at 19h 25m.

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
18 21	29·300	55·8	53·3	2·5	0·0	0·0	10	4 : — : —	9·8	Misty scud ; cirro-strati.
22	290	55·7	53·7	2·0	0·1	0·2	6	5 : — : —	10·0	Id. ; cirrous mass.
23	283	55·0	53·4	1·6	0·5	0·5	5	5 : — : —	10·0	Id. ; id. ; rain$^{1\cdot5}$
19 0	263	54·1	53·0	1·1	0·9	0·9	3	4 : — : —	10·0	Id. ; fine rain$^{0\cdot8}$
1	256	53·8	52·9	0·9	0·8	0·9	3	3 : — : —	10·0	Id. ; fine rain$^{0\cdot8}$
2	244	52·6	51·6	1·0	1·5	0·9	2	3 : — : —	10·0	Id. ; fine rain^{1}
3	228	53·0	52·6	0·4	1·3	1·0	2	3 : — : —	10·0	Id. ; fine rain^{1}
4	215	52·4	51·1	1·3	1·5	1·0	2	3 : — : —	10·0	Id. ; fine rain^{1}
5	195	52·3	51·0	1·3	1·3	0·7	2	3 : — : —	10·0	Id. ; fine rain^{1}
6	181	51·8	50·6	1·2	1·0	0·4	0	2 : — : —	10·0	Masses of loose scud ; dense mass of cir.-str. ; rain$^{0\cdot5}$
7	168	50·7	49·9	0·8	0·8	0·4	2	2 : — : —	10·0	As before ; rain$^{0\cdot5}$ [yellow to NW. ; rain$^{0\cdot5}$
8	157	50·4	48·7	1·7	0·9	0·9	1		10·0	Patches of loose scud ; dense cirro-str. ; clouds tinged
9	145	50·4	49·2	1·2	0·9	0·7	1		10·0	Scud and cirro-stratus ; continuous rain$^{1-2}$
10	115	51·0	49·1	1·9	1·7	1·4	31		10·0	Rain^{1}
11	097	50·2	48·2	2·0	2·3	1·7	0		10·0	Scud ; rain$^{0\cdot2}$
12	079	50·0	48·0	2·0	2·5	1·4	31		10·0	Id. ; rain$^{0\cdot5}$
13	29·064	49·7	48·7	1·0	1·7	0·7	30		10·0	Scud ; rain^{1}
14	045	49·7	48·8	0·9	1·1	1·2	30		10·0	Id. ; rain$^{1\cdot5}$
15	028	49·8	48·8	1·0	1·5	1·2	30		10·0	Id. ; rain^{2}
16	021	49·8	48·8	1·0	1·7	1·3	30		10·0	Id. ; rain$^{1\cdot5}$
17	015	49·9	48·9	1·0	1·4	0·5	30	30 : — : —	10·0	Id. ; rain^{1}
18	012	49·9	48·9	1·0	1·5	0·9	29	30 : — : —	10·0	Id. ; rain^{1}
19	009	50·3	48·9	1·4	1·9	1·4	29	30 : — : —	10·0	Loose scud ; dense cirro-stratus ; rain$^{1-2}$
20	008	51·0	49·6	1·4	1·9	1·7	29	31 : — : —	10·0	Id. ; rain$^{0\cdot5}$
21	027	52·2	50·0	2·2	2·4	1·8	29	30 : — : —	10·0	Id. ; rain$^{0\cdot8}$
22	040	52·5	50·3	2·2	1·9	1·3	30	30 : — : —	10·0	Id. ; rain$^{0\cdot8}$
23	042	53·3	51·1	2·2	3·3	1·8	28	30 : — : —	10·0	Id. ; rain$^{0\cdot8}$
20 0	062	53·4	51·0	2·4	2·7	1·9	28	29 : — : —	10·0	Id. ; rain^{1}
1	086	54·9	52·2	2·7	2·3	1·7	28	29 : — : —	10·0	Id. ; rain^{1}
2	116	54·3	52·4	1·9	5·0	1·1	28	30 : — : —	10·0	Id. ; rain$^{0\cdot5}$
3	138	55·1	52·4	2·7	1·3	1·0	28	30 : — : —	10·0	Id. ; rain^{1} [nearly visible.
4	160	55·6	53·1	2·5	1·8	0·7	29	30 : — : —	10·0	Id. ; dense cirro-str ; drops of rain ; sun's disc
5	177	56·4	53·6	2·8	1·9	1·4	28	28 : — : —	10·0	Masses of scud ; homogeneous cirro-stratus ; rain$^{0\cdot5}$
6	202	55·2	52·7	2·5	1·5	1·1	29		10·0	Patches of scud ; id. [stratus ; rain$^{0\cdot2}$
7	231	54·0	51·8	2·2	1·2	0·9	28		10·0	Masses of scud and cir.-str. to S. ; homogeneous cirro-
8	261	53·0	50·7	2·3	2·3	1·0	30		10·0	Id. ; id.
9	285	52·4	50·0	2·4	1·1	0·8	29		10·0	Scud ; rain$^{0\cdot2}$
10	306	52·0	49·4	2·6	1·2	0·6	30		10·0	Id.
11	329	50·9	48·8	2·1	0·8	0·1	26		10·0	Mass of cirro-stratus.
12	350	51·2	48·4	2·8	0·3	0·2	29		10·0	Id. ; lower cir.-str. radiating from NW.
13	29·362	49·8	48·3	1·5	0·2	0·0	20		10·0	Mass of cir.-str. ; lower cir.-str. radiating from NW.)
14	386	50·4	48·2	2·2	0·1	0·1	22		10·0	Id., thinner ; id.
15	407	50·0	47·4	2·6	0·2	0·1	22		10·0	Id., much thinner ; patches of scud. ☽
16	424	49·3	47·4	1·9	0·1	0·0	22		10·0	Loose cirro-strati ; cirro-cumulo-str. ; clouds broken. ☽
17	428	49·4	47·3	2·1	0·3	0·3	24	— : 28 : —	10·0	As before. ☽ [cum. ; sky rather wild-looking.
18	449	48·6	46·3	2·3	0·3	0·2	24	— : 26 : —	9·0	Loose cir.-cum.-str. ; dense cir.-str. ; woolly cir. ; cirro-
19	468	49·3	46·7	2·6	0·4	0·3	23	— : 28 : —	8·5	Cirro-cumulo-strati ; cirro-strati ; woolly cirri.
20	490	49·6	46·4	3·2	0·4	0·5	23	— : — : 30	8·5	Woolly cirri ; id. ; scud.
21	522	52·7	48·6	4·1	0·2	0·1	27	— : 27 : 26	7·0	Cirro-cumulo-strati ; woolly cirri.
22	541	55·8	49·8	6·0	1·2	0·6	29	— : 27 : —	7·5	Id. ; id. ; cirro-strati.
23	555	55·8	49·0	6·8	1·5	1·2	30	27 : — : —	7·5	Scud and loose cumuli ; cirro-strati ; woolly cirri.
21 0	573	56·8	50·0	6·8	0·9	0·2	30	26 : — : —	9·5	Id. ; id.
1	592	56·3	50·0	6·3	0·3	0·2	24	— : 26 : —	9·9	Cirro-stratous scud ; wavy cirro-strati ; cirri.
2	610	56·7	50·3	6·4	0·4	0·2	23	— : 28 : —	10·0	Thick cirro-stratous scud.
3	623	58·0	51·0	7·0	0·4	0·2	27	28 : — : —	9·9	Scud ; cir.-cum.-str. ; cum.-str. on E. hor. ; cir.-strati.
4	634	57·2	51·0	6·2	0·4	0·3	21	28 : — : —	9·8	As before.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

t. n e.	BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m	From			
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
5	29·642	57·7	52·0	5·7	0·1	0·1	26	— : 28 : —	9·8	Large cirro-cumulo-strati ; cirro-strati ; cumuli. ⊖
6	659	57·3	51·1	6·2	0·3	0·1	23	— : 29 : —	9·2	As before. [rather electric looking.
7	676	55·9	50·6	5·3	0·2	0·2	22	29 : — : —	9·5	Inky detached scud ; cir.-cum.-str. ; cum.-str. on hor. ;
8	696	53·6	49·7	3·9	0·4	0·1	22	— : 29 : —	6·5	Cirro-cumulo-strati ; cirro-strati.
9	717	50·7	47·8	2·9	0·2	0·1	20		7·2	Id. ; id.
10	737	50·0	47·4	2·6	0·3	0·3	22		5·0	Id. ; id.
11	747	47·9	45·8	2·1	0·3	0·2	22		1·5	Id. ; id. ☽
12	759	45·6	44·4	1·2	0·1	0·1	22		1·0	Id. ☽
13	29·771	45·4	43·9	1·5	0·1	0·1	22		0·2	Cirro-stratus on E. horizon. ☽
14	785	42·7	42·0	0·7	0·1	0·1	21		0·3	Light cirrus to N. ; cirro-stratus or scud to SE. ☽
15	799	38·7	38·4	0·3	0·1	0·0			0·5	Cirri and cirro-strati on horizon. ☽
16	814	38·5	38·2	0·3	0·0	0·0	14		0·8	Cirro-strati, &c., to E. ☽
17	818	40·7	40·2	0·5	0·0	0·0	18		2·5	Cirri and cirro-strati. ☽
18	835	43·7	42·5†	1·2	0·1	0·1	20	— : 28 : —	7·0	Cirro-cumuli ; cirrous haze. ⊙ [cap of scud. ⊙
19	846	45·7	44·0	1·7	0·2	0·1	21	— : 25 : 27	1·0	Loose cir.-cum.-str. ; small cir.-str.; lin. & tufted cir.; Cheviot has a
20	846	50·0	47·4	2·6	0·2	0·4	22	— : 27 : —	4·0	Cir.-cum. in patches ; cir.-str. ; scud on Cheviot & N. hor. ; cir.; cir.
21	848	53·7	49·7⸸	4·0	0·3	0·4	20	— : 27 : —	5·0	Cir.-cum. ; cir.-str. ; scud on horizon. ⊙ [haze. ⊙
22	855	57·0	52·7	4·3	0·6	0·5	20	22 : 26 : —	4·5	Loose cum.; cir.-cum.-str. ; cir.-str.; loose scud on hor. ⊙
23	851	58·0	51·0	7·0	1·3	1·2	20	21 : 24 : —	6·5	As before. ⊙
22 0	841	61·2	54·4	6·8	1·1	1·0	20	21 : 25 : 27	9·0	Loose cum. ; cir.-cum. ; tufted cirri ; portion of a halo. ⊖
1	834	60·7	53·4	7·3	1·7	1·3	21	21 : 24 : —	9·8	Id. ; id. ; cir.-str. ; cir. mass ; halo. ●
2	828	63·7	56·2	7·5	1·6	0·9	20	20 : 24 : —	9·0	Id. ; id. ; id. ⊖
3	820	61·2	54·6	6·6	2·4	1·3	20	20 : 23 : 26	9·0	Id.; many whale-like cir.-str. on hor. ; mot. cirri & thickening
4	820	60·9	53·7	6·2	1·5	0·8	20	20 : 22 : —	8·5	Nearly as before. ⊖ [cir. haze. ⊖
5	809	59·5	52·6	6·9	1·9	1·6	21	20 : 22 : —	9·5	Id. ; cir. haze less dense & portion of a halo
6	797	57·2	52·4	4·8	1·7	1·1	20	21 : 20 : —	10·0	Scud ; cir.-str. ; cir.-cum. and cir. haze. [visible. ⊖
7	774	56·4	53·1	3·3	1·0	1·2	20	20 : — : —	10·0	Scud ; cirro-stratus and haze.
8	763	56·0	52·6	3·4	1·9	0·8	20	20 : — : —	10·0	Id. ; id.
9	756	55·7	52·5	3·2	2·3	1·2	19	20 : — : —	10·0	Id. ; cirro-stratus.
10	752	55·7	52·5	3·2	1·7	1·1	19		10·0	Id.
11	734	55·4	52·3	3·1	1·7	1·2	19		10·0	Id.
12	712	55·4	52·8	2·6	1·4	1·2	19		10·0	Id. ; streak of light on E. horizon.
13	29·695	54·0	52·8	1·2	1·6	0·6	18		10·0	Scud ; rain$^{0\cdot5}$
14	670	55·7	53·4	2·3	1·8	2·0	20		10·0	Id. ; drops of rain
15	654	55·8	54·0	1·8	2·6	2·4	18		10·0	Id.
16	636	55·2	53·6	1·6	1·8	0·7	17		10·0	Id. ; rain$^{0\cdot2}$
17	620	56·4	54·8	1·6	1·6	2·0	18	20 : — : —	10·0	Scud moving rapidly ; cirrous mass above.
18	613	55·4	55·0	0·4	2·2	0·5	18	21 : — : —	10·0	Scud ; drifting rain^{2}
19	606	55·3	54·0	1·3	1·4	1·3	20	20 : — : —	9·6	Id. ; rain$^{1-3}$; sky to NW.
20	601	56·4	54·9	1·5	1·5	0·4	18	20 : — : —	9·8	Id. ; cirro-strati.
21	600	58·1	56·4	1·7	0·8	0·4	18	20 : 22 : —	9·2	Loose scud ; loose cumuli and cirro-cumuli. ⊖
22	598	61·4	57·2	4·2	0·9	0·8	18	20 : — : —	6·0	Scud and loose cumuli. ⊙
23	591	59·1	55·0	4·1	1·8	1·5	19	21 : — : —	4·0	Id. ; cirro-strati on E. horizon. ⊙
23 0	594	59·3	54·9	4·4	2·1	1·3	20	20 : — : —	6·0	Id. ; slight showers occasionally.
1	602	61·3	56·6	4·7	2·1	1·6	19	21 : — : —	4·0	Id. ⊙
2	584	61·4	55·6	5·8	2·5	1·1	18	21 : — : —	5·0	Id. ⊙
3	570	63·0	56·6	6·4	2·3	1·5	19	21 : — : —	4·0	Id.
4	565	62·0	55·6	6·4	2·7	2·1	19	21 : — : —	7·0	Id. ; cirro-cumulo-strati. ⊖
5	568	58·4	55·4	3·0	2·3	1·6	21	21 : — : —	9·8	Id. ; slight shower.
6	556	57·3	55·2	2·1	2·5	1·8	19	22 : 21 : —	9·0	Scud; cir.-cum.-str.; cum.-str.; cir.-str.; rainbow; rain$^{1\cdot5}$ ⊖
7	555	56·3	54·6	1·7	1·5	0·5	19	22 : 21 : —	7·0	As before ; nimbi ; sky wild-like ; passing showers.
8	560	54·0	53·0	1·0	0·6	0·2	17	20 : 21 : —	9·0	Scud ; very thick dark scud ; cirro-strati ; showers$^{3-6}$
9	569	52·8	52·0	0·8	0·2	0·0	17	20 : — : —	9·5	Thick scud. [since 7h.
0	562	51·9	51·0	0·9	0·5	0·3	18		2·0	Scud and cirro-strati.
1	578	49·9	49·1	0·8	0·3	0·1	20		1·0	Id. ☽
2	584	48·9	48·4	0·5	0·2	0·1	20		3·5	Cirro-cumulo-strati. ☽

he direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The ions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

ug. 22d 5h 45m. A parhelion and solar halo were seen.

Gött. Mean Time.	BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
23 23¼	29·641	61·3	55·8	5·5	0·8	0·4	24	24 : — : —	......	Sunday—Scud and loose cum. ; showers in the forenoon
24 13	29·668	51·3	49·6	1·7	1·5	0·1	18		9·0	Cirro-cumulo-strati.
14	654	49·7	48·2	1·5	0·1	0·1	20		9·0	Id.
15	646	50·1	48·4	1·7	0·2	0·1	20		9·0	Id.
16	625	50·9	49·4	1·5	0·1	0·1	19		9·7	Scud and cirro-stratus.
17	606	51·8	50·1	1·7	0·2	0·2	18	21 : — : —	10·0	Thick scud ; cirro-stratus.
18	587	52·2	50·7	1·5	0·2	0·2	16		10·0	Thick cirro-stratus and scud ; rain$^{0\cdot5}$
19	588	52·8	51·5	1·3	0·4	0·2	18	19 : 23 : —	10·0	Loose scud ; mass of cirro-strati.
20	575	53·4	52·0	1·4	0·3	0·3	17		10·0	Scud ; id. ; rain^{2}
21	563	53·0	52·0	1·0	0·2	0·2	18	19 : — : —	10·0	Id. ; id. ; rain^{1}
22	555	54·6	53·3	1·3	0·3	0·2	17	19 : — : —	10·0	Id. ; id.
23	538	57·7	55·3	2·4	0·7	0·6	17	18 : — : —	10·0	Id. ; id.
25 0	522	56·5	55·1	1·4	0·6	0·2	18	18 : — : —	10·0	Id. ; id.
1	497	59·0	56·7	2·3	0·8	0·4	17	18 : — : —	10·0	Id. ; id.
2	475	61·2	58·6	2·6	0·9	1·2	18	18 : — : —	10·0	Id. ; id. ; clouds breaking.
3	453	64·7	60·3	4·4	1·7	1·3	18	18 : 18 : —	9·8	Scud and loose cumuli ; cumulo-strati ; cirro-strati.
4	443	61·3	59·0	2·3	1·4	0·8	17	18 : — : —	10·0	Id. ; id. ; rain^{1}
5	419	61·3	58·8	2·5	1·2	0·9	18	18 : — : —	9·9	Id. ; id.
6	399	58·9	57·6	1·3	1·0	0·5	19	19 : — : —	10·0	Scud ; cirro-stratus ; rain$^{1-2}$
7	382	59·2	57·7	1·5	1·2	0·7	19	18 : — : —	10·0	Id. ; id.
8	372	58·1	57·1	1·0	1·2	0·9	18		10·0	Drizzling rain$^{1-2}$
9	379	56·2	55·4	0·8	0·8	0·3	28		10·0	Scud and cirro-stratus.
10	389	53·4	52·6	0·8	0·1	0·1	20		7·0	Id., clearing off from westward.
11	393	50·6	50·0	0·6	0·2	0·1	18		6·0	Scud and cirro-strati.
12	389	50·9	50·0	0·9	0·2	0·1	20		4·0	Id.
13	29·387	50·0	49·0	1·0	0·2	0·1	24		3·0	Cirro-cumulo-strati.
14	383	48·7	48·0	0·7	0·2	0·1	24		3·0	Id. ; cirrous haze.
15	400	50·4	49·7	0·7	0·2	0·1	23		9·0	Scud and cirro-strati.
16	406	50·7	50·0	0·7	0·1	0·1	22		9·9	Id.
17	409	50·9	49·6	1·3	0·2	0·2	19		8·5	Cirro-stratous scud.
18	424	49·7	48·8	0·9	0·2	0·2	21	— : 22 : —	8·5	Id. ; mass of cirro-strati.
19	430	51·4	49·7	1·7	0·2	0·1	22	— : 24 : —	8·5	Cirro-strati.
20	446	52·5	50·3	2·2	0·2	0·1	22	23 : 22 : —	6·0	Patches of loose scud ; cirro-strati and cir.-cum.-str.
21	461	55·6	52·0	3·6	0·7	0·5	22	24 : 23 : —	9·5	Id. ; id.
22	475	57·4	53·2	4·2	0·7	0·7	23	24 : 24 : —	8·5	Id. ; id.
23	485	59·3	53·1	6·2	1·1	0·8	23	24 : 27 : —	8·5	Scud and loose cumuli ; cirro-strati and woolly cirri.
26 0	504	62·2	55·0	7·2	1·4	1·5	26	25 : — : —	9·5	Id. ; cirro-stratus and woolly cirri.
1	514	61·7	54·9	6·8	1·7	0·7	25	25 : — : —	10·0	Id. ; thick cirrous haze and cir.-st
2	519	62·3	54·9	7·4	1·8	1·2	26	25 : — : —	9·9	Id. ; id.
3	531	62·4	54·8	7·6	1·8	1·4	24	26 : — : —	9·7	Id. ; id.
4	541	62·6	55·1	7·5	2·2	1·2	26	25 : 26 : —	9·5	Masses of scud and loose cumuli ; cirro-strati.
5	556	62·1	55·3	6·8	2·8	1·8	24	26 : 26 : —	9·5	Scud ; loose cum., cir.-str., and cir.-cum.-str.
6	559	61·4	54·8	6·6	1·9	1·8	26	— : 28 : 28	8·5	Woolly cirri and cirro-strati ; scud and cum. near hor.
7	581	59·0	53·4	5·6	2·3	1·3	22	— : 28 : 28	2·0	Id. ; id.
8	600	56·2	52·2	4·0	1·5	1·2	26		1·5	Scud and cirro-stratus.
9	618	55·1	51·7	3·4	1·0	2·2	26	28 : — : —	2·5	Id.
10	637	54·7	51·4	3·3	1·9	1·2	22		0·5	Id.
11	660	54·0	51·8	2·2	1·3	1·0	24		0·7	Id.
12	680	52·1	49·3	2·8	1·6	0·4	24		0·0	Id.
13	29·705	50·8	48·6	2·2	0·4	0·4	20		1·0	Scud and cirro-stratus.
14	722	50·8	48·7	2·1	1·1	0·3	26		4·5	Id.
15	733	51·8	49·2	2·6	0·3	0·2	24		9·5	Id.
16	746	52·2	49·4	2·8	0·6	0·2	28		9·7	Id.
17	767	54·3	50·1	4·2	0·5	0·7	28		10·0	Id.
18	802	54·2	50·1	4·1	0·5	0·9	28		10·0	Id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. Th motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Gött. Mean Time.		BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
26	19	29·822	54·3	50·2	4·1	1·0	0·5	30	— : 30 : —	10·0	Sky covered with cirro-strati.
	20	851	54·8	50·8	4·0	0·8	0·4	29	— : 30 : —	6·0	Cirro-cumulo-strati ; cir.-str. ; patches of scud to N. ⊙
	21	866	56·6	52·0	4·6	1·2	0·5	28	— : 0 : —	2·5	Sheets of cirro-strati ; patches of scud to S. ⊙
	22	893	58·1	53·2	4·9	1·6	1·2	0	0 : — : —	8·0	Loose cumuli ; cirro-strati ; patches of scud to S. ●
	23	915	60·0	54·3	5·7	1·1	0·8	0	0 : — : —	9·9	Id. ; id.
27	0	934	59·7	54·2	5·5	0·8	0·2	0	0 : — : —	9·0	Id. ; id.
	1	955	58·7	54·7	4·0	0·5	0·4	2	0 : — : —	9·9	Id. ; id.
	2	968	60·2	54·8	5·4	0·4	0·3	3	0 : — : —	9·0	Id. ; id. ⊖
	3	977	59·6	54·8	4·8	0·3	0·2	4	— : 30 : —	8·5	Cirro-cumulo-strati ; cirro-strati. ⊖
	4	987	60·3	55·0	5·3	0·3	0·2	1	— : 30 : —	8·0	Cumulo-strati ; cirro-strati ; woolly cirri. ⊙
	5	29·999	59·7	54·4	5·3	0·3	0·2	6		1·5	Cirro-strati ; woolly cirri. ⊙
	6	30·005	59·4	53·7	5·7	0·3	0·1	4	28 : — : —	1·0	Scud ; cirro-strati and light cirri. ⊙
	7	017	59·0	54·7	4·3	0·2	0·1	4	— : 29 : —	7·0	Detached cir.-str., rad. from NNW. ; cirri ; ragged scud on Cheviot. ⊙
	8	042	53·3	52·0	1·3	0·2	0·1	4	— : 29 : —	6·0	Cirro-strati ; woolly cirri and haze.
	9	052	49·0	47·4	1·6	0·0	0·0	30		5·0	Bands of woolly cir.-str., rad. from NNE. and SSW. ; cirrous haze.
	10	068	49·3	48·8	0·5	0·1	0·0			9·0	Cirro-strati and haze.
	11	079	50·2	49·4	0·8	0·1	0·0	18		10·0	Overcast.
	12	083	50·3	49·6	0·7	0·0	0·0	20		10·0	Id.
	13	30·078	48·3	47·8	0·5	0·0	0·0	20		1·0	Clouds on horizon.
	14	086	45·9	45·4	0·5	0·0	0·0	26		1·0	Cirro-strati ; stratus on the ground. ☽
	15	095	43·5	43·4	0·1	0·0	0·0	22		0·5	Cirro-cumuli ; id. ☽
	16	084	46·0	45·8	0·2	0·0	0·0	16		9·5	Cirro-strati. ☽
	17	086	46·3	45·9	0·4	0·0	0·0	22	— : 1 : —	9·5	Cirro-cumulo-strati ; clouds tinged with red to E.
	18	095	46·9	46·3	0·6	0·0	0·0	24	— : 1 : —	9·2	Id. ; cirro-strati.
	19	113	48·0	47·3	0·7	0·0	0·0	20	2 : 1 : —	5·0	Loose cirro-strati ; cirro-cumuli.
	20	122	49·7	48·8	0·9	0·0	0·0	24	16 : 2 : 1	0·8	Patches of loose scud ; loose cir.-str. ; cir.-cum. ; all to E. ⊙
	21	106	53·3	52·0	1·3	0·1	0·0	17		0·3	Cirro-strati on S. horizon. ⊙
	22	119	58·5	55·3	3·2	0·1	0·0	15		0·2	Id. ⊙
	23	115	60·3	55·3	5·0	0·1	0·1	26		0·1	Scud and cirro-strati on SE. horizon. ⊙
28	0	111	62·7	56·8	5·9	0·1	0·1	20		0·2	Scud, cirro-strati, and haze, on SE. horizon. ⊙
	1	107	65·8	59·2	6·6	0·1	0·1	22		0·2	Id., id., id. round horizon. ⊙
	2	106	67·9	59·8	8·1	0·1	0·1	20	16 : — : —	0·5	Small cumuli ; cirro-stratous bank ; cirrous haze to E. ⊙
	3	106	68·3	59·3	9·0	0·1	0·0	2		0·3	As before. ⊙
	4	098	70·2	59·5	10·7	0·0	0·0			0·5	Small cumuli, cirri, and cirro-strati. ⊙
	5	093	70·2	59·1	11·1	0·1	0·1	2		0·5	Id., id., id. ⊙
	6	088	69·0	60·3†	8·7	0·1	0·0	19		0·3	Id., id., id. ⊙
	7	088	66·3	60·3⸸	6·0	0·1	0·1	21		0·2	Cirri. ⊙
	8	101	63·2	59·0	4·2	0·1	0·1	24		1·0	Woolly cirri ; cirrous haze.
	9	114	59·2	56·0	3·2	0·1	0·0	0		0·3	Id. ; id.
	10	117	55·9	54·3	1·6	0·1	0·0	18		0·1	Clear ; one or two patches of cirrus.
	11	115	53·0	52·0	1·0	0·1	0·0			0·0	Id.
	12	116	51·3	51·0	0·3	0·0	0·0			0·0	Id.
	13	30·122	49·7	49·4	0·3	0·1	0·0	18		0·0	Clear.
	14	122	48·6	48·5	0·1	0·0	0·0	20		0·1	Id. ; haze on NE. horizon.
	15	117	48·6	48·6	0·0	0·0	0·0	16		0·2	Cirro-strati and haze on E. hor. ; mist in the valleys. ☽
	16	112	52·6	52·4	0·2	0·1	0·1	24		9·0 ?	Dense fog ; a star visible in zenith.
	17	114	53·9	53·7	0·2	0·2	0·1	24		10·0 ?	Id. ; objects invisible at ¾ of a mile.
	18	128	53·0	52·8	0·2	0·1	0·1	22		2·0	Misty scud and cir.-str. round hor. ; fog clearing off. ⊙
	19	140	52·7	52·4†	0·3	0·1	0·0	24		1·0	Scud to S. ; cirro-strati and cirri near horizon. ⊙
	20	128	57·6	56·4⸸	1·2	0·1	0·1	19	28 : — : —	0·8	Patches of scud ; cirri to NW. ⊙
	21	130	60·8	58·6	2·2	0·2	0·1	18	25 : — : —	0·8	Id. ; streaks of cirri rad. from N by E. ⊙
	22	132	65·1	61·4	3·7	0·1	0·1	21	26 : — : 28	4·0	Loose scud ; cirri. ⊙
	23	129	67·0	62·3	4·7	0·2	0·1	18	27 : — : —	9·5	Scud and loose cumuli ; cirri.
29	0	136	69·6	64·6	5·0	0·1	0·1	20	27 : — : —	9·7	Id. ; id. ⊖
	1	134	69·0	63·0	6·0	0·1	0·1	30	26 : — : —	9·5	Id. ; id.
	2	124	70·5	63·0	7·5	0·3	0·2	28	26 : — : —	9·5	Id. ; id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
29 3	30·116	71·4	64·1	7·3	0·3	0·1	22	26 : — : —	8·5	Scud and loose cumuli. ⊖
4	122	70·2	63·2	7·0	0·3	0·2	26	24 : — : 22	3·0	Scud ; cirri. ⊙
5	119	70·0	62·5	7·5	0·3	0·1	25	— : — : 28	2·5	Loose cumuli ; cirri. ⊙
6	117	68·6	61·8†	6·8	0·2	0·1	22	28 : — : —	2·0	Id. ; id. ⊙
7	114	64·8	61·7	3·1	0·1	0·0	24		1·5	Loose cumuli ; cirro-strati ; cirri and haze round hor. ⊙
8	128	62·2	58·7⸸	3·5	0·2	0·1	24		1·5	Cirro-strati ; cirri and haze on horizon.
9	135	57·8	56·0	1·8	0·2	0·1	22		1·0	Id. ; id.
10	140	55·8	54·5	1·3	0·1	0·1	22		0·2	Patches of cirro-stratus to N. ; faint aurora.
11	145	52·6	52·1	0·5	0·1	0·0	18		0·3	Id. ; id.
12	147	51·8	51·7	0·1	0·0	0·0	20		0·3	Id. ; id.
13	30·136	50·5	50·2	0·3	0·0	0·0	19		0·3	Haze and cirrous clouds to N. ; faint aurora.
14	140	50·2	50·0	0·2	0·0	0·0	24		0·4	Cirro-strati to N.
15	145	48·9	48·8	0·1	0·0	0·0			0·5	Patch of cloud.
16	141	47·8	47·7	0·1	0·0	0·0			0·5	Id.
17	145	46·9	46·7	0·2	0·1	0·0	20	— : 28 : —	4·0	Cirro-cumuli ; cirro-strati ; cirri ; fog in hollows.
18	142	48·0	47·6	0·4	0·1	0·0	18	— : — : 30	9·0	Woolly, mottled, and linear cir. ; patches of cir.-cum. ;
19	150	49·0	48·6	0·4	0·0	0·0	20	— : — : 30	9·2	As before. ● [cir.-str. ; fog in hallows. ●
20	159	54·1	53·5	0·6	0·1	0·1		— : — : 29	8·0	Cirri ; cirrous haze and cirro-strati over the sky. ⊖
21	167	60·0	58·8	1·2	0·1	0·2	24	24 : — : 30	8·0	Scud ; cirri as before, with large feathers rad. from N. ⊙
22	164	63·7	60·8	2·9	0·3	0·3	24	28 : — : 25	8·0	Patches of scud ; woolly cirri ; sheets of cirro-strati. ⊙
23	160	67·2	61·8	5·4	0·3	0·3	24	29 : — : —	8·5	Scud, cirri, &c., as before. ⊙ [halo. ⊖
30 0	161	69·2	62·7	6·5	0·4	0·4	25	28 : — : 30	9·5	Patches of scud ; woolly cir. and cir. haze ; faint solar
1	148	71·0	63·7	7·3	0·4	0·2	22	— : — : 30	9·5	Thick woolly cir. ; cir.-str. ; cir. mass. ⊖
2	144	71·6	64·5	7·1	0·4	0·2	21	— : — : 31	9·5	Woolly cirri. ⊖
3	141	72·6	64·6	8·0	0·6	0·3	24		9·5	Id. ; cirrous haze ; patches of cumuli. ⊙
4	140	70·7	63·1	7·6	0·5	0·4	28	— : — : 31	9·9	Id. ; id. and cirro-strati. ⊖
5	130	69·3	63·4†	5·9	0·4	0·2	27	— : 31 : —	10·0	Woolly cirro-cumulo-strati ; cirri ; cirro-strati. ⊖
6	126	67·9	61·7	6·2	0·3	0·1	28		8·5	Woolly cirri ; cirrous haze. ⊖
7	125	64·8	60·7⸸	4·1	0·3	0·3	27		6·0	Id. ; id.
8	140	62·5	58·9	3·6	0·3	0·1	22		6·0	Id. ; id.
9	141	61·5	57·9	3·6	0·7	0·3	22		4·0	Cirrous bands radiating from N by W.
10	152	58·9	56·6	2·3	0·3	0·1	23		1·5	Cirri to N.
11	157	57·9	56·0	1·9	0·1	0·1	24		1·0	Cirri and cirro-strati, chiefly to N.
12	153	55·7	54·6	1·1	0·1	0·1	16		1·0	Faint Aurora seen through clouds.
23¾	30·175	65·4	59·6	5·8	0·1	0·1	4		……	Sunday—A.M. Nearly clear, a few cirri. P.M. Overcast with a loose sort of cirro-stratous scud or cir.-cum.-str.
31 13	30·162	53·1	52·4	0·7	0·6	0·0			10·0	Mass of cirro-stratus.
14	154	54·0	53·4	0·6	0·0	0·0			10·0	Id.
15	148	54·8	54·0	0·8	0·0	0·0			10·0	Id.
16	137	55·0	54·1	0·9	0·0	0·0			10·0	Id.
17	124	55·0	54·0	1·0	0·0	0·0	24		10·0	Cirro-stratous scud.
18	125	55·0	54·1	0·9	0·0	0·0	20	— : 24 : —	10·0	Id.
19	121	56·1	55·1	1·0	0·0	0·0	22	— : 24 : —	9·9	Id.
20	123	58·5	57·0	1·5	0·1	0·0	22	— : 24 : —	9·9	Id., or large cirro-cumulo-strati.
21	122	63·0	60·0	3·0	0·1	0·0	18	— : 24 : —	9·8	Cirro-cumulo-strati. ⊖
22	113	65·9	61·2	4·7	0·0	0·0	20	— : 24 : —	9·8	Id.
23	105	68·5	62·7	5·8	0·1	0·1	24	24 : — : —	9·0	Scud ; loose cumuli ; cirro-cumulo-strati. ⊖
1 0	094	68·2	62·1	6·1	0·1	0·1	0	24 : — : —	9·5	Id. ; Id.
1	089	69·4	63·6	5·8	0·1	0·1	18	24 : — : —	5·0	Id. ⊙
2	075	70·0	62·6	7·4	0·1	0·1	30	22 : — : —	8·0	Id.
3	059	70·6	62·0	8·6	0·1	0·1	28	24 : — : —	5·0	Id. ⊙
4	047	72·9	63·8	9·1	0·2	0·3	28	26 : — : —	6·0	Id. ; hazy towards horizon. ⊙
5	041	67·7	62·4	5·3	0·4	0·4	4	24 : — : —	9·8	Scud ; loose cumuli ; hazy.
6	039	65·0	60·5	4·5	0·3	0·2	6	— : 24 : —	9·9	Cirro-stratous scud.
7	048	62·0	58·7	3·3	0·4	0·3	4		10·0	Id.
8	064	58·2	56·3	1·9	0·6	0·5	3		10·0	Id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Aug. 30d 11h 56m. A shooting-star to E., magnitude 2, passing, towards the N., over 20° in 2 or 3 seconds; the course inclined 10° to the horizon.

t. n e.	BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1^{h}.	Maximum force in 10^{m}.	From			
h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
9	30·070	57·2	55·7	1·5	0·4	0·3	4		10·0	Cirro-stratous scud.
0	068	56·6	55·2	1·4	0·2	0·2	4		10·0	Id.
1	068	56·1	55·1	1·0	0·1	0·0	2		9·9	Id.
2	062	56·0	54·8	1·2	0·0	0·0	4		10·0	Id.
3	30·057	55·9	54·5	1·4	0·0	0·0	0		10·0	Cirro-stratous scud.
4	051	55·5	54·3	1·2	0·0	0·0	2		9·8	Id.
5	045	55·3	54·0	1·3	0·0	0·0	2		10·0	Id.
6	043	55·2	54·0	1·2	0·0	0·1			10·0	Id.
7	042	54·8	53·8	1·0	0·0	0·0	24	— : 0 : —	10·0	Id.
8	049	54·4	53·6	0·8	0·0	0·0	16	— : 0 : —	10·0	Id.
9	049	55·2	54·8	0·4	0·1	0·0	16	— : 30 : —	10·0	Id.
0	068	56·3	54·8	1·5	0·1	0·2	4	5 : — : —	10·0	Misty scud; cirro-stratous scud.
1	062	54·9	53·4	1·5	0·3	0·2	4		10·0	Dense homogeneous mass of cirro-stratus.
2	076	52·8	51·8	1·0	0·5	0·4	4		10·0	Id.; fine rain$^{0·5}$
3	078	53·4	52·0	1·4	0·4	0·5	4	4 : — : —	10·0	Misty scud.
0	083	52·4	50·8	1·6	0·4	0·5	4	4 : — : —	10·0	Id.; rain$^{0·2}$
1	084	52·8	51·4	1·4	0·2	0·1	6	4 : — : —	10·0	Id.; id.
2	074	57·3	54·0	3·3	0·2	0·1	8	— : 6 : —	10·0	Cirro-stratous scud; cirrous mass. ●
3	070	56·7	52·2	4·5	0·2	0·1	4	— : 6 : —	10·0	Id.
4	062	57·8	51·6	6·2	0·2	0·3	6	2 : 30 : —	9·8	Scud; cirro-cumulo-strati.
5	066	56·0	50·8	5·2	0·2	0·2	8		9·9	Cirro-strati.
6	066	55·3	51·4	3·9	0·1	0·1	4		9·9	Scud on horizon; cirro-stratous scud.
7	068	54·2	50·3	3·9	0·1	0·0		0 : 30 : —	9·8	Cirro-stratous scud; cirro-cumulo-stratus.
8	071	52·9	50·7	2·2	0·1	0·1	8	0 : 30 : —	9·8	Id.; id.
9	082	50·8	49·2	1·6	0·1	0·0			8·0	Cirro-cumulo-stratus.
0	080	47·4	47·0	0·4	0·0	0·0			0·5	Faint auroral light with faint streamers to NW.
1	082	42·6	42·3	0·3	0·0	0·0	26		0·0	Very clear; a faint light, low on N. horizon.
2	084	42·4	42·4	0·0	0·0	0·0			0·1	Cirro-stratus on N. horizon.
3	30·082	38·4	38·2	0·2	0·0	0·0			0·2	Cirro-stratus on N. horizon.
4	083	37·4	37·0	0·4	0·0	0·0			0·5	Id.; stratus on the ground.
5	086	37·3	37·2	0·1	0·0	0·0	22		1·0	Cirro-stratus to N.
6	079	39·9	39·7	0·2	0·0	0·0	24		9·9	Scud.
7	080	41·4	41·2	0·2	0·0	0·0	24		9·8	Id.
8	079	41·5	41·2	0·3	0·0	0·0	22	1 : — : —	9·5	Id.; cirrous haze to W., tinged with red.
9	085	40·7	40·3	0·4	0·0	0·0	22	— : 0 : —	7·0	Cir.-cum.-str.; id.; fog bank to E.
0	090	42·9	42·6	0·3	0·1	0·0	20	— : 0 : —	7·5	Id.; sheet of cirrous haze to S. ⊖
1	088	49·7	48·3	1·4	0·1	0·0	20	— : 31 : —	9·8	Id. ⊖
2	089	54·0	51·3	2·7	0·1	0·0	12	— : 30 : —	9·5	Id.; patches of scud on horizon. ⊖
3	081	55·8	50·4	5·4	0·1	0·0	2	0 : — : —	9·9	Scud; cirro-cumulo-strati. ●
0	074	57·8	51·6	6·2	0·1	0·1	4	0 : 31 : —	6·0	Id.; id.; cirro-strati. ⊖
1	065	58·0	51·0	7·0	0·1	0·1	8	30 : — : —	7·5	Loose cumuli; woolly cirri. ⊖
2	047	60·2	53·0	7·2	0·1	0·1		28 : — : —	9·0	Id.; cirro-cumulo-strati. ⊖
3	032	61·2	53·9	7·3	0·1	0·0	8	28 : — : —	9·2	Id.; id. ●
4	021	59·3	52·3	7·0	0·1	0·0	5	28 : — : —	9·0	Id.; id.; cirrous haze to S. ●
5	011	59·8	53·0	6·8	0·1	0·0	6	28 : — : —	9·0	Id.; id.; id. ●
6	008	58·0	52·4	5·6	0·1	0·0	4	— : 28 : —	9·5	Cirro-cumulo-strati; cirrous haze.
7	006	54·1	51·0	3·1	0·1	0·1	2	— : 28 : —	9·8	Id.; reticulated cirri; cirrous haze.
8	016	51·9	48·4	3·5	0·1	0·1	3	29 : — : —	10·0	Thick scud.
9	028	51·1	47·4	3·7	0·4	0·4	3		10·0	Id.; dark.
0	032	51·1	47·0	4·1	0·4	0·3	5		10·0	Very dark.
1	043	51·4	47·2	4·2	0·2	0·1	0		10·0	Id.
2	052	51·2	47·4	3·8	0·0	0·0			10·0	Id.
3	30·049	50·4	47·9	2·5	0·0	0·0			10·0	Very dark.
4	052	49·8	48·0	1·8	0·0	0·0			10·0	Id.
5	047	48·3	47·4	0·9	0·0	0·0	21		10·0	Scud.

ept. 1^{d} 11^{h}. Observation made at 11^{h} 10^{m}.

ept. 2^{d} 12^{h} 5^{m}—25^{m}. Five shooting-stars seen to SE., all at about 30° altitude, moving generally towards S., but the directions vary 45°.

ept. 2^{d} 14^{h} 5^{m}. Shooting-star to SE., altitude 25°, moving eastward, magnitude 2.

ept. 2^{d} 15^{h} 5^{m}. Shooting-star to E., altitude 5°, moving towards ESE., magnitude 1; at 6^{m}, another to S. moving southward.

Gött. Mean Time.		BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc.: C.-s: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in		From			
						1^{h}.	10^{m}.				
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
3	16	30·045	48·5	47·6	0·9	0·0	0·0	20		10·0	Scud.
	17	045	48·8	47·8	1·0	0·0	0·0	20		10·0	Cirro-stratous scud.
	18	046	48·5	47·2	1·3	0·0	0·0	20	— : 28 : —	10·0	Id. ; cirro-strati.
	19	055	49·4	48·3	1·1	0·0	0·0	22	— : 28 : —	9·7	Cirro-cumulo-strati.
	20	067	51·6	49·7	1·9	0·1	0·0	22	— : 28 : —	9·9	Id.
	21	073	53·5	49·9	3·6	0·1	0·0	6	2 : 30 : —	10·0	Scud, chiefly on horizon ; cirro-cumulo-strati.
	22	072	55·0	50·6	4·4	0·1	0·0	6	2 : 28 : —	9·9	Masses of loose cumuli ; cirro-cumulo-strati.
	23	069	57·6	52·4	5·2	0·0	0·0	8	2 : 28 : —	10·0	Id. ; id.
4	0	072	56·6	51·0	5·6	0·1	0·1	6	6 : 28 : —	9·5	Id. ; id.
	1	077	55·1	50·4	4·7	0·1	0·1	4	4 : — : —	10·0	Thick scud and loose cumuli.
	2	074	55·8	50·8	5·0	0·1	0·1	4		10·0	Thick cirro-stratous scud.
	3	068	54·9	50·7	4·2	0·1	0·1	6		10·0	Id.
	4	065	55·4	50·6	4·8	0·1	0·1	10	28 : — : —	10·0	Id.
	5	060	55·0	50·5	4·5	0·1	0·1	8	28 : — : —	10·0	Id.
	6	059	53·7	50·3	3·4	0·2	0·1	4	28 : — : —	10·0	Id.
	7	058	52·7	50·2	2·5	0·1	0·1	8	28 : — : —	10·0	Id.
	8	061	51·9	49·7	2·2	0·1	0·0	7	26 : — : —	10·0	Id.
	9	064	50·5	49·0	1·5	0·1	0·1	31		10·0	Id.
	10	070	50·0	48·7	1·3	0·1	0·0			10·0	Id.
	11	070	49·5	48·7	0·8	0·0	0·0	28		10·0	Id.
	12	066	49·1	48·6	0·5	0·0	0·0	25		10·0	Id.
	13	30·057	48·9	48·3	0·6	0·0	0·0	25		10·0	Thick cirro-stratous scud.
	14	053	48·9	48·2	0·7	0·0	0·0			10·0	Scud and cirro-cumulo-stratus ?
	15	046	49·2	48·4	0·8	0·0	0·0	25		10·0	Id.
	16	041	48·7	48·0	0·7	0·1	0·0	25		10·0	Id.
	17	035	48·2	47·5	0·7	0·0	0·0	24		9·8	Id. ; sky to NE.
	18	034	47·2	46·5	0·7	0·0	0·0	20	4 : — : —	9·5	Loose ragged scud and cirro-cumulo-stratus.
	19	036	47·7	47·0	0·7	0·1	0·0	12	— : 3 : —	7·0	Cirro-cumulo-strati ; cirro-strati ; loose scud. ⊙
	20	037	51·7	50·3	1·4	0·1	0·0	8	— : 2 : —	7·0	Id. ; id. ; id. ⊙
	21	042	53·4	51·0	2·4	0·1	0·0	6	4 : 2 : —	9·0	Scud and loose cum. ; large loose cirro-cumulo-stratus.
	22	045	53·7	49·7	4·0	0·1	0·1	4	2 : — : —	8·0	Id. ; cumuli ; cirro-strati. ●
	23	046	54·8	50·3	4·5	0·2	0·1	6	2 : — : —	9·0	Id. ; id. ; id. ; pat. of scud.
5	0	046	55·3	49·7	5·6	0·3	0·3	7	2 : — : —	9·8	Scud and loose cumuli ; cirro-strati ; haze. ●
	1	049	54·0	48·8	5·2	0·3	0·2	6	— : 2 : —	6·0	Cirro-cumulo-strati ; id. ; id. ⊙
	2	046	55·0	49·0	6·0	0·3	0·2	4	6 : — : —	8·0	Scud and loose cumuli ; id. ; id. ⊙
	3	036	56·0	49·4	6·6	0·3	0·2	4	8 : — : —	9·8	Id. ; id. ; id.
	4	022	55·7	49·3	6·4	0·3	0·1	12	8 : — : —	7·5	Id. ; id. ⊖
	5	027	54·7	49·2	5·5	0·2	0·1	10	— : 8 : —	5·0	Masses of cirro-strati ; id. ; id. ⊙
	6	030	53·5	48·1†	5·4	0·2	0·1	7	— : 6 : —	2·0	Cirro-stratous scud ; cirri to N. ⊙
	7	037	50·8	47·4	3·4	0·1	0·1	20	— : 11 : —	4·0	Cirro-cumulo-strati ; id.
	8	047	49·0	46·9⸸	2·1	0·1	0·1	23		9·9	Cirro-stratous scud.
	9	058	48·0	46·4	1·6	0·1	0·0	20		8·0	Id.
	10	057	44·8	44·2	0·6	0·1	0·0	8		0·2	Clouds on E. horizon.
	11	062	41·8	41·1	0·7	0·1	0·0	20		0·0	Clear.
	12	066	38·9	38·5	0·4	0·0	0·0	20		0·0	Id.
	13	30·072	38·7	38·3	0·4	0·1	0·0	24		0·0	Clear.
	14	072	38·3	38·0	0·3	0·0	0·0	18		1·0	Cirro-stratus to N.
	15	077	37·8	37·4	0·4	0·0	0·0	18		9·5	Scud and cirro-stratus.
	16	080	40·4	40·0	0·4	0·0	0·0	20		9·5	Id.
	17	082	39·5	39·1	0·4	0·0	0·0	22		8·0	Scud ; cirro-cumulo-strati.
	18	090	40·0	39·4	0·6	0·1	0·1	24	14 : — : —	9·0	Cirro-stratous scud.
	19	097	41·7	40·7	1·0	0·1	0·0	15	14 : — : —	9·8	Id. ; cirri.
	20	093	44·7	43·2	1·5	0·0	0·0	24	16 : — : —	9·9	Id. ; id.
	21	098	47·0	45·2	1·8	0·0	0·0	20	16 : — : —	10·0	Id.
	22	097	50·8	48·4	2·4	0·1	0·0	24	16 : — : —	10·0	Id.
	23	105	53·4	50·2	3·2	0·0	0·0	28	16 : — : —	10·0	Id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
	Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
30·101	56·7	51·6	5·1	0·1	0·1	16	16 : — : —	10·0	Cirro-stratous scud.
101	58·0	52·8	5·2	0·1	0·1	23	14 : — : —	9·8	Id.
092	58·3	52·7	5·6	0·1	0·0	14	13 : 13 : —	9·0	Scud and cirro-cumulo-strati ; atmosphere very hazy. ⊖
085	59·3	53·4	5·9	0·1	0·1	12	13 : 13 : —	9·8	Id. ; id. ●
077	58·0	51·6	6·4	0·1	0·1	12	12 : 12 : —	9·8	Loose cumuli and cirro-cumulo-strati ; id. ●
074	56·8	51·0	5·8	0·1	0·1	6	4 : 12 : —	9·8	Scud ; cumulo-strati ; hazy atmosphere.
072	54·6	50·6	4·0	0·1	0·1	7	— : 12 : —	8·0	Cirro-cumulo-strati ; cumuli on horizon.
075	54·0	51·2	2·8	0·1	0·1	10	— : 12 : —	8·0	Id. ; atmosphere hazy.
088	50·0	48·3	1·7	0·1	0·0	0		7·5	Id. ; id.
100	49·0	47·8	1·2	0·0	0·0	6		8·0	Id.
105	46·8	46·0	0·8	0·0	0·0	24		5·0	Thin sheets of cirro-cumulo-strati scattered over the sky.
108	43·9	43·6	0·3	0·0	0·0			4·0	Cirro-strati.
111	42·8	42·4	0·4	0·0	0·0	20		4·0	Id.
30·091	51·4	49·8	1·6	0·1	0·0			……	
29·991	43·5	43·0	0·5	0·5	0·0			9·8	Cirro-cumulo-strati.
980	42·3	41·9	0·4	0·0	0·0			7·0	Id.
957	41·2	40·9	0·3	0·0	0·0	22		5·0	Id.
935	41·1	40·9	0·2	0·0	0·0	16		8·0	Id. ; cirri ?
943	43·3	43·0	0·3	0·1	0·1	24		9·5	Id., denser ; sky red to E.
926	44·3	43·9	0·4	0·0	0·0	18	— : 20 : —	9·9	Cir.-str. scud ; cir.-cum.-str. ; very red to E. ; fog in the
933	45·3	45·0	0·3	0·0	0·0	22		10·0	Cirro-cumulo-strati ; cirro-strati. [hollows.
913	46·8	46·2	0·6	0·0	0·0	23		10·0	Cirro-stratous scud ; cirrous mass.
924	52·2	50·6	1·6	0·0	0·0	22	22 : — : —	10·0	Scud ; thick cirrous haze and cirro-stratus.
912	56·0	53·1	2·9	0·3	0·3	20	22 : — : —	10·0	Id. ; id.
900	58·2	53·5	4·7	0·5	0·5	20	22 : — : —	10·0	Id. ; id. ; solar halo. ⊖
907	60·0	55·8	4·2	0·5	0·5	18	19 : — : —	9·8	Id. ; thick cirrous haze. ⊖
897	59·7	54·8	4·9	0·7	0·5	18	— : — : 19	9·9	Thick woolly cirri ; cirro-stratus. ●
878	61·7	56·0	5·7	0·6	0·5	20		9·9	Id. ; id. [patches of scud. ⊙
868	61·8	56·8	5·0	0·6	0·5	19	— : 24 : —	4·5	Woolly cir.-cum.; cir.-str. with mottled edges; cir. haze;
864	62·7	57·0	5·7	0·5	0·4	20	— : — : 26	4·5	Woolly cirri ; sheets of cirro-strati ; cumuli. ⊙
874	61·8	56·6	5·2	0·5	0·2	18	— : — : 27	7·5	Sheets of woolly cirri ; cirro-cumuli and cirro-strati. ⊙
857	60·7	55·4	5·3	0·5	0·3	19	— : — : 26	9·0	Id. ; id.
859	57·3	53·3	4·0	0·4	0·3	22		7·0	Id. ; id. ☽
856	53·6	51·2	2·4	0·3	0·1	22		8·0	Id. ; id. ☽
862	53·3	50·8	2·5	0·3	0·3	20		5·0	Id. ; id. ; sky in zenith.
857	52·9	50·5	2·4	0·3	0·1	16		7·0	Cirro-strati ; cirri.
840	51·6	49·4	2·2	0·1	0·0	21		8·0	Id.
833	51·7	49·6	2·1	0·1	0·0	20		9·8	Id.
29·816	52·9	51·0	1·9	0·4	0·1	18		9·9	Cirro-strati.
801	53·5	51·2	2·3	0·3	0·3	22		9·9	Scud and cirro-stratus.
787	54·1	51·7	2·4	0·6	0·5	19		9·7	Scud ; cirro-strati.
770	53·5	51·6	1·9	0·4	0·3	20		9·0	Id. ; id.
755	54·1	51·9	2·2	1·1	0·1	18		9·9	Id. ; id.
743	54·4	52·1	2·3	0·7	0·0	12	20 : 22 : —	9·7	Loose scud ; cirro-strati. [cir.-str. and cir.-cum.
752	56·3	54·0	2·3	0·6	0·2	24	21 : 23 : —	9·0	Id. seems to form at an altitude of 15°—20° ;
735	58·0	55·1	2·9	0·6	0·5	20	21 : 24 : —	9·5	Occasionally thin patches of scud ; loose and dense masses
725	58·7	55·6	3·1	1·1	0·7	20	21 : 24 : —	9·9	As before. [of cirro-strati.
726	60·2	56·8	3·4	1·2	1·2	20	21 : 24 : —	9·9	Id.
720	61·5	57·7	3·8	1·4	1·5	21	21 : 22 : —	9·9	Patches of scud ; dense masses of cirro-strati.
706	61·3	57·8	3·5	2·0	1·7	22	20 : 20 : —	9·9	Id. ; id. [rain.
704	61·4	58·2	3·2	1·2	1·1	21	20 : 20 : —	9·9	Masses of scud and cirro-strati ; occasionally drops of
701	61·3	58·1	3·2	1·1	1·0	22	21 : — : —	9·9	Id.
683	62·1	59·0	3·1	1·2	1·2	20	21 : 21 : —	9·5	Id. ; sky in patches.
673	62·1	59·0	3·1	1·7	1·7	21		10·0	Id.
675	59·7	58·0	1·7	1·6	0·5	20	21 : — : —	10·0	Loose misty scud, moving rapidly.

e direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The ns of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
9 6	29·675	60·9	58·4	2·5	1·7	0·6	19	20 : — : —	3·0	Loose misty scud, moving rapidly ; cir.-cum.-strati. ⊙
7	694	59·0	57·4	1·6	0·4	0·1	20	21 : — : —	10·0	Id. ; id.
8	699	58·4	57·3	1·1	0·3	0·1	19	24 : — : —	9·5	Scud.
9	716	59·7	57·4	2·3	0·7	0·1	24		9·9	Id. ; cirro-cumulo-strati.
10	726	58·4	56·1	2·3	0·3	0·3	24		9·0	Id.
11	741	55·3	54·3	1·0	0·3	0·1	9		4·5	Id. ; cirro-strati.
12	764	54·2	53·5	0·7	0·1	0·0			10·0	Id. ; id.
13	29·780	55·0	54·2	0·8	0·1	0·0	20		5·0	Scud ; cirro-strati.
14	805	51·6	51·3	0·3	0·0	0·0	20		1·5	Id. ; id. ; mist in the hollows.
15	825	53·4	52·9	0·5	0·0	0·0	22		10·0	Id. ; id.
16	858	55·9	54·8	1·1	0·3	1·1	2		10·0	Id. ; rain$^{0·2}$
17	891	53·3	52·5	0·8	0·9	0·5	1	2 : — : —	10·0	Id.
18	922	52·7	51·7	1·0	0·5	0·3	3	3 : — : —	10·0	Id.
19	958	51·9	51·0	0·9	0·4	0·2	2	3 : — : —	10·0	Loose misty scud ; drizzling rain$^{0·2}$
20	974	52·0	50·6	1·4	0·5	0·1	3	4 : — : —	10·0	Id. ; id.
21	29·997	52·6	50·8	1·8	0·3	0·2	4	3 : — : —	10·0	Id. ; id.
22	30·004	53·7	50·9	2·8	0·7	0·8	3	4 : — : —	10·0	Scud.
23	019	53·7	50·3	3·4	0·8	0·9	3	4 : — : —	10·0	Id.
10 0	018	54·6	51·6	3·0	0·6	0·4	3	4 : — : —	10·0	Id.
1	021	54·0	51·0	3·0	0·7	0·3	4	3 : — : —	10·0	Id. ; cirro-stratous scud.
2	020	54·3	50·7	3·6	0·3	0·2	7	3 : — : —	10·0	Id. ; id.
3	015	54·9	50·4	4·5	0·4	0·2	5	4 : — : —	10·0	Id. ; id.
4	024	54·6	50·3	4·3	0·5	0·3	8	5 : — : —	9·5	Id. ; id. ; clouds breaking.
5	017	54·0	50·2	3·8	0·3	0·1	4	5 : — : —	4·0	Id.
6	019	52·0	49·0	3·0	0·2	0·1	7	5 : — : —	9·0	Cirro-stratous scud.
7	019	50·8	47·8	3·0	0·3	0·1	4	4 : — : —	7·5	Scud and cirro-stratous scud.
8	021	49·3	47·0	2·3	0·2	0·1	5		10·0	Id.
9	022	48·7	46·0	2·7	0·2	0·1	4		10·0	Id.
10	023	49·0	46·8	2·2	0·1	0·1	4		10·0	Id.
11	020	49·2	46·5	2·7	0·0	0·2	4		10·0	Id.
12	019	48·6	46·5	2·1	0·2	0·0	4		10·0	Id.
13	30·009	48·7	46·6	2·1	0·1	0·1	10		10·0	Scud and cirro-stratous scud.
14	29·997	48·6	46·9	1·7	0·1	0·0	10		10·0	Id.
15	985	48·6	47·2	1·4	0·0	0·0	8		10·0	Id.
16	981	48·5	47·3	1·2	0·1	0·0	8		10·0	Id.
17	978	48·6	47·1	1·5	0·1	0·0	6		10·0	Id.
18	975	48·5	47·3	1·2	0·0	0·0	6	8 : — : —	10·0	Id. ; slightest drizzle of rain.
19	967	48·7	47·1	1·6	0·1	0·1	7	8 : — : —	10·0	Id.
20	966	49·4	47·7	1·7	0·1	0·1	9	8 : — : —	10·0	Id. ; id.
21	959	49·9	48·3	1·6	0·1	0·1	6	6 : — : —	10·0	Dense cirro-stratus and scud.
22	956	51·3	49·4	1·9	0·1	0·1	7		10·0	Id.
23	946	52·2	50·0	2·2	0·1	0·1	7	— : 7 : —	10·0	Id.
11 0	937	54·3	51·4	2·9	0·2	0·1	6		10·0	Id.
1	928	54·8	51·7	3·1	0·1	0·1	8		10·0	Id.
2	918	52·5	51·2	1·3	0·3	0·2	4		9·9	Id.
3	903	56·9	53·0	3·9	0·2	0·2	4	— : 14 : —	8·0	Cirro-cumulo-strati ; cirro-strati.
4	885	54·8	51·0	3·8	0·3	0·3	7	— : 13 : —	2·5	Id. ; id. ; woolly cirri.
5	880	54·4	51·0	3·4	0·4	0·2	4	— : 16 : —	8·0	
6	883	53·2	50·2	3·0	0·2	0·2	4	14 : — : —	9·8	Scud ; cirro-stratous scud.
7	881	51·8	49·4	2·4	0·2	0·1	3	14 : — : —	10·0	Id. ; id.
8	886	51·0	48·9	2·1	0·2	0·1	6		10·0	Id. ; id.
9	888	50·6	48·7	1·9	0·1	0·1	7		10·0	Id. ; id.
10	887	50·3	48·4	1·9	0·1	0·0	10		10·0	Id. ; id.
11	879	50·1	48·5	1·6	0·0	0·0	12		10·0	Id. ; id.
12	881	49·7	47·8	1·9	0·0	0·0	18		10·0	Id. ; id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
	Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
in.	°	°	°	lbs.	lbs.	pt.	pt. pt pt.	0—10.	
29·875	49·4	47·7	1·7	0·0	0·0	20		10·0	Scud; cirro-stratous scud,
870	49·4	47·9	1·5	0·0	0·0	16		10·0	Dark; very slight drizzle.
867	49·0	47·6	1·4	0·0	0·0	22		10·0	Id.
857	49·0	47·9	1·1	0·0	0·0			10·0	Id.; very slight drizzle.
848	48·9	47·8	1·1	0·0	0·0	22		10·0	Thick scud and cirro-stratus.
849	49·0	48·0	1·0	0·0	0·0			10·0	Id.
858	49·2	48·2	1·0	0·0	0·0	8	16 : — : —	10·0	Dense scud and cirro-stratous scud.
854	51·3	49·1	2·2	0·0	0·0	30	— : 17 : —	9·9	Cirro-cumulo-stratus. ●
858	54·7	51·3	3·4	0·1	0·1	2	— : 17 : —	8·0	Id.; scud to W. ●
862	56·2	52·2	4·0	0·1	0·0	14	— : 17 : —	9·9	Cirro-cumulo-strati and cirro-strati. ●
854	58·2	53·5	4·7	0·1	0·1	14	— : 18 : —	9·9	Cirro-cumulo-strati.
847	61·4	56·2	5·2	0·2	0·1	15	18 : — : —	8·5	Loose cumuli; cirro-strati. ●
843	60·6	55·0	5·6	0·2	0·1	18	17 : — : —	4·0	Id. ⊙
830	62·2	55·4	6·8	0·3	0·1	20	16 : — : —	6·0	Id., with a peristaltic motion. ⊙
819	64·4	57·0	7·4	0·2	0·1	23	16 : — : —	2·5	Id.; very hazy on E. and S. horizon. ⊙
803	63·7	56·4	7·3	0·1	0·1	18	20 : — : —	3·5	Id.; id. ⊙
792	61·5	56·5	5·0	0·1	0·0	20		3·0	Id.; id. ⊙
788	58·9	55·4	3·5	0·0	0·0	16		2·5	Patches of scud and cir.-cum.-str.; much atmospheric haze.
791	55·3	53·0	2·3	0·2	0·2	18	22 : — : —	4·0	Scud; haze. ⊙
791	51·2	49·8	1·4	0·3	0·1	16		1·0	Id.; id. ☽
794	50·9	49·6	1·3	0·0	0·0	24		0·3	Haze on horizon. ☽
796	48·8	48·0	0·8	0·0	0·0	24	— : 18 : —	2·0	Cirro-cumulo-strati to S.; haze on horizon. ☽
785	46·0	45·7	0·3	0·1	0·0	18		0·5	Haze on horizon. ☽
783	42·9	42·5	0·4	0·1	0·0	18		2·5	Cirro-cumulo-strati to S.; haze on horizon. ☽
29·775	43·2	42·9	0·3	0·0	0·0	17		6·5	Cir.-cum.-str., rad. from SW by W.; haze on hor.; mist on the ground; very hazy.
768	43·5	43·3	0·2	0·0	0·0	22		9·0	As before. ☽
761	45·4	45·1	0·3	0·0	0·0	20		7·5	Id.
741	44·0	43·8	0·2	0·0	0·0	22		2·0	Clouds and haze round horizon.
717	44·3	44·1	0·2	0·0	0·0	22		9·8	Cirro-cumulo-strati and cirro-strati.
707	44·7	44·3	0·4	0·1	0·0	22	— : 18 : —	10·0	Cirro-cumulo-strati.
707	46·0	45·6	0·4	0·0	0·0	24	— : 19 : —	9·9	Id., or cirro-stratous scud; slight fog on horizon.
700	47·8	47·1	0·7	0·0	0·0		— : 18 : —	10·0	Cirro-stratous scud; slight fog towards horizon.
685	49·6	48·6	1·0	0·1	0·0	24	— : 18 : —	10·0	Id.; id.
672	52·7	51·1	1·6	0·0	0·0	28	— : 18 : —	10·0	Id.; id.
660	56·4	54·1	2·3	0·0	0·0			10·0	Id.
640	59·1	56·1	3·0	0·0	0·0	0	18 : — : —	10·0	Scud and loose cum.; dense cir.-str. scud and cir.-str.
620	60·1	56·8	3·3	0·0	0·0	16	18 : — : —	10·0	Patches of scud; dense mass of cir.-str.; loose cum.-str. to SE.
600	61·3	56·7	4·6	0·1	0·1	22		10·0	As before.
575	61·3	57·2	4·1	0·1	0·1	18	— : 18 : —	10·0	Dense cirro-stratus and cirro-stratous scud.
549	61·0	56·8	4·2	0·1	0·0	16	— : 17 : —	9·9	Dense cir.-str.; cum.-str. to SE.; sky in patches to NW.
524	60·0	56·6	3·4	0·1	0·0	20		10·0	As before.
506	58·5	55·7	2·8	0·0	0·0	20	— : 17 : —	10·0	Id.; sky in patches to NW.
492	56·7	55·0	1·7	0·1	0·0	24		10·0	Id.; id.
474	55·3	54·2	1·1	0·1	0·0	20		10·0	Cirro-cumulo-strati, with scud below.
460	54·7	53·3	1·4	0·1	0·0	24		10·0	Id.
428	53·4	51·9	1·5	0·1	…	31		9·8	Dense cirro-cumulo-strati and cirro-strati.
404	53·8	51·3	2·5	0·1	0·1	18		10·0	Id.
378	54·6	52·1	2·5	0·5	0·2	15		10·0	Cirro-strati and scud ? radiating from SW.
29·203	61·2	55·9	5·3	0·8	0·1	18	20 : 14 : —	……	Sunday—Loose cumuli; cirro-cumulo-strati and woolly cirri; slight showers occasionally.
29·191	37·0	36·7	0·3	1·1	0·0			0·8	Masses of scud to SE. ☽
185	37·2	36·9	0·3	0·0	0·0	22		0·2	Clouds to E. ☽
182	35·4	35·2	0·2	0·0	0·0	20		0·0	Very clear. ☽
176	34·7	34·5	0·2	0·0	0·0	22		0·0	Id. ☽
187	33·4	33·2	0·2	0·0	0·0	22		0·2	Cirro-stratus and haze on E. horizon. ☽
198	34·2	34·0	0·2	0·0	0·0	22		0·5	Cir.-str. and cirri; hoar frost; mist rising from the river.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Sept. 13d 11h. Observation made at 11h 8m.

Gött. Mean Time.		BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1h.	10m.	From			
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
14	19	29·205	35·5	35·3	0·2	0·1	0·0	20		0·8	Linear and woolly cirri. ⊙
	20	211	38·9	38·7	0·2	0·1	0·1	20	— : — : 20	1·0	Id. ⊙ [WSW.; haze. ⊙
	21	219	44·3	43·7	0·6	0·1	0·0	25		4·0	Id.; radiating from ENE. and
	22	222	50·2	48·2	2·0	0·1	0·1	22		4·0	As before, with patches of scud to N. and cum. to S. ⊙
	23	235	55·8	51·6	4·2	0·1	0·1	20	24 : — : 22	4·0	Loose cum.; linear, curled, and woolly cir.; portion of a
15	0	233	57·6	51·6	6·0	0·3	0·1	23	22 : — : —	7·0	Loose cumuli; cirri as before. ⊖ [solar halo. ⊙
	1	229	58·7	52·4	6·3	0·3	0·1	20	22 : — : —	7·0	Id.; cumuli; cirro-strati; woolly cirri.
	2	227	59·2	51·6	7·6	0·2	0·1	30	22 : — : —	6·5	Id.; id.; id.; id.
	3	227	58·6	51·6	7·0	0·1	0·3	21	21 : — : —	8·2	Id.; id.; cirri.
	4	230	58·7	51·8	6·9	0·7	0·3	21	20 : — : —	8·5	Id.; id.; id.; cirro-strati.
	5	238	54·8	50·4	4·4	0·5	0·1	24	20 : 23 : —	9·0	Scud; loose cirro-strati; cum.-str., showers to N. ●
	6	243	53·8	50·1	3·7	0·1	0·0	20	21 : — : —	7·0	Id.; id.; great piles of cumulo-strati. ⊖
	7	254	50·5	48·3	2·2	0·0	0·0	20	20 : — : —	4·0	Scud; cirro-strati.
	8	264	47·5	45·9	1·6	0·1	0·0	2		7·0	Cirro-cumulo-strati. ☽
	9	265	48·6	46·9	1·7	0·0	0·0	16		8·0	Id.
	10	272	47·3	46·2	1·1	0·0	0·0	4		9·0	Id.
	11	280	46·8	46·0	0·8	0·1	0·0	17	— : 20 : —	8·5	Id.; cirro-strati.
	12	286	48·3	47·4	0·9	0·1	0·0	23	— : 20 : —	6·5	Id.; id. ☽
	13	29·291	45·7	45·1	0·6	0·1	0·0	17		1·5	Cirro-cumulo-strati; cirro-strati. ☽
	14	293	42·5	42·3	0·2	0·1	0·0	17		1·0	Id. to S.
	15	294	41·3	41·1	0·2	0·1	0·0	18		0·2	Thin cirri; cirro-strati to W.; mist on the ground. ☽
	16	290	42·5	42·0	0·5	0·1	0·0	22		0·0	Very clear. ☽
	17	303	42·8	42·3	0·5	0·2	0·1	24		0·2	Streak of cirri on E. horizon. ☽ [Cheviot. ☽
	18	307	42·0	41·4	0·6	0·2	0·1	26		0·5	Id.; cirro-strati; scud on
	19	319	42·0	41·0	1·0	0·0	0·0	20	20 : — : 26	1·0	Scud to W.; woolly and mottled cirri. ⊙
	20	328	44·9	44·1	0·8	0·2	0·1	18	20 : — : —	2·5	Loose scud to S.; patches of cirrus. ⊙ [quickly. ⊙
	21	335	48·9	47·4	1·5	0·3	0·3	20	19 : — : 26	1·2	Loose scud on hor.; flame-like cir.; both strata moving
	22	340	51·3	49·0	2·3	0·3	0·3	24	20 : — : —	2·0	Masses of scud and loose cum.; cir.-str. near hor. ⊙
	23	330	54·3	51·0	3·3	0·5	0·5	18	20 : — : —	7·0	As before. ⊙
16	0	315	55·8	50·8	5·0	0·6	0·3	18	21 : — : 25	5·0	Scud and loose cumuli; cirri and cirrous haze. ⊖
	1	308	58·0	51·8	6·2	0·5	0·4	20	21 : — : —	8·0	As before; traces of a solar halo. ⊖
	2	294	58·5	52·2	6·3	0·9	0·4	20	21 : — : —	9·0	Id. ⊖
	3	278	60·0	53·0	7·0	0·5	0·2	21	20 : 26 : —	9·0	Id.; cirro-cumulo-strati. ⊙
	4	264	57·6	50·2	7·4	0·6	0·2	20	18 : 24 : —	9·8	Id.; id.
	5	250	58·0	51·3	6·7	0·3	0·1	18	— : 24 : —	9·7	Cirro-cumulo-strati; loose cumuli to S.
	6	242	56·3	50·4	5·9	0·1	0·0		— : 24 : —	9·0	Id.; woolly cir.-cum.; cir.-str.; haze.
	7	246	52·0	48·7	3·3	0·0	0·0	15	19 : — : —	9·8	Cirro-stratous scud; mass of cirro-stratus.
	8	232	49·0	47·3	1·7	0·1	0·0	31	— : 24 : —	9·8	Cirro-cumulo-strati; id.
	9	222	48·6	47·0	1·6	0·0	0·0	31	— : 24 : —	9·8	Id.; id.
	10	217	46·7	45·7	1·0	0·0	0·0	24	— : 24 : —	9·9	Id.
	11	203	45·9	45·2	0·7	0·1	0·0	16	— : 23 : —	9·8	Id.
	12	194	46·6	45·7	0·9	0·0	0·0	23		10·0	Cirro-stratus scud and cirro-cumulo-strati.
	13	29·184	46·9	46·1	0·8	0·1	0·0	20		10·0	As before; shower$^{0·5}$ since 12^{h}.
	14	176	47·2	46·4	0·8	0·0	0·0	18		10·0	Clouds denser.
	15	162	47·8	46·9	0·9	0·0	0·0	18		10·0	Thick mass of cirro-stratous scud?
	16	148	48·3	47·7	0·6	0·0	0·0	4		10·0	Id.; slight drizzle.
	17	126	48·4	47·9	0·5	0·0	0·0	3		10·0	Id.; id.
	18	113	48·8	48·3	0·5	0·0	0·0	8	14 : — : —	10·0	Id.
	19	116	49·3	48·9	0·4	0·1	0·0	6	15 : — : —	10·0	Id.
	20	092	50·7	50·2	0·5	0·1	0·0	4	— : 19 : —	9·9	Cirro-cumulo-strati and cirro-strati.
	21	071	52·0	51·1	0·9	0·1	0·0	6		9·8	Id.
	22	040	54·0	52·8	1·2	0·1	0·0	2	— : 20 : —	9·8	Id.
	23	29·009	54·7	53·2	1·5	0·1	0·1	3	— : 20 : —	9·9	Id.; patches of scud.
17	0	28·983	54·4	53·8	0·6	0·1	0·0	3	16 : — : —	10·0	Scud; dense cirro-strati; rain^{2}
	1	933	55·4	54·7	0·7	0·1	0·1	6	6 : — : —	10·0	Id.; id.; rain^{1}
	2	898	54·4	54·2	0·2	0·1	0·2	3	4 : — : —	10·0	Loose scud; dense mass of cirro-stratus; rain$^{1-8}$

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. Th motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

tt. an ne.	BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
3	28·873	55·7	55·2	0·5	0·2	0·2	3	6 : 20 : —	10·0	Loose misty scud ; thick cir.-str. scud ; both currents
4	852	56·6	55·8	0·8	0·1	0·2	12	6 : 20 : —	10·0	Patches of loose scud ; thick scud. [moving rapidly.
5	841	60·5	58·6	1·9	1·2	0·8	18	20 : 21 : —	9·0	Loose misty scud ; cirro-cumulo-strati and cirro-strati.
6	846	59·3	56·9	2·4	1·1	0·6	20	20 : 21 : 18	9·2	Id. ; cir.-cum.-str. ; wo. cir. ; showers around.
7	848	57·7	55·5	2·2	0·8	0·3	20	20 : — : —	9·2	Id. ; id. ; id. ; id.
8	838	56·1	54·6	1·5	0·5	0·3	19		5·0	Id. ; id. ; id. ☽
9	844	56·9	56·0	0·9	0·7	0·2	19		9·5	Id. ; id. ; showers$^{0·5}$ ☽
0	836	56·7	56·2	0·5	0·3	0·1	19		10·0	Scud ; rain$^{0·8}$
1	833	56·6	56·1	0·5	0·3	0·1	20		10·0	Id. ; cirro-strati ; cirro-cumulo-strati.
2	826	57·0	56·0	1·0	0·5	0·8	19		10·0	Id. ; id. ; id. ; drops of rain.
3	28·821	56·3	55·1	1·2	1·3	1·0	20		10·0	Scud ; cirro-strati ; cirro-cumulo-strati ; drops of rain.
4	830	55·1	53·7	1·4	1·9	0·4	20	20 : — : —	5·0	As before ; drops of rain from a thin hazy cloud. ☽
5	838	53·8	52·4	1·4	1·2	0·7	19	20 : — : —	8·0	Scud. ☽
6	849	53·6	51·8	1·8	1·1	1·8	18		1·0	Scud and loose cumuli. ☽
7	836	51·6	50·3	1·3	0·9	0·3	18		2·0	Id. ☽ [rain.
8	837	52·2	50·7	1·5	0·5	0·2	19	20 : — : —	9·9	As before, with cir.-str. and cir. haze on hor. ; drops of
9	850	51·5	50·2	1·3	0·7	0·1	19	— : 20 : —	6·0	Cir.-str. scud ; piles of nimbi on hor. ; very black to SE.
0	847	52·6	50·8	1·8	0·6	0·1	18	19 : 20 : —	9·5	Scud ; cirro-stratous scud ; cirri ; cumuli on horizon.
1	841	56·7	53·7	3·0	0·3	0·2	16	18 : 22 : —	9·5	Id. ; cirro-cumulo-strati ; cirro-strati. ⊙
2	830	57·0	53·4	3·6	0·6	0·2	16	18 : — : —	9·9	Id. ; id. ; id.
3	818	60·0	55·8	4·2	0·4	0·3	18	19 : — : —	9·9	Cirro-stratous scud ; loose scud on hor. ; cirro-strati.
0	796	58·9	55·7	3·2	0·3	0·3	14 v.	19 : — : —	10·0	Id. ; loose scud ; thick cirro-stratus.
1	785	56·0	54·4	1·6	0·3	0·1		19 : — : —	10·0	Scud ; cirro-stratous scud.
2	781	58·0	55·7	2·3	0·1	0·1	6	19 : — : —	10·0	Cirro-stratous scud ; loose scud ; thick cirro-stratus.
3	784	60·4	56·9	3·5	0·1	0·1	26	22 : 22 : —	9·8	Scud ; cirro-cumulo-strati ; showers occasionally.
4	790	58·4	55·7	2·7	0·1	0·1	24	22 : — : —	10·0	Id. ; cirro-stratous scud ; cumulo-strati to N.
5	796	56·3	55·2	1·1	0·1	0·1	20	22 : — : —	9·9	Id. ; id. ; id. ; rain$^{0·5}$
6	828	56·4	54·4	2·0	0·1	0·1	19	22 : 22 : —	10·0	Thick cirro-stratus and scud.
7	854	54·8	53·4	1·4	0·0	0·0	20	23 : 23 : —	9·9	Id.
8	876	53·4	52·1	1·3	0·3	0·1	22		10·0	Id.
9	894	52·8	51·2	1·6	0·3	0·2	20		9·9	Id.
0	910	52·4	50·8	1·6	0·3	0·1	22		10·0	Id.
1	923	52·3	50·3	2·0	0·2	0·2	20		10·0	Scud and cirro-strati.)
2	930	51·0	49·2	1·8	0·3	0·3	20	22 : — : —	10·0	Id. ; cumulo-strati.)
3	28·931	50·5	48·7	1·8	0·2	0·2	18	22 : — : —	9·0	Scud ; cirro-cumulo-strati. ☽
4	928	50·7	48·8	1·9	0·2	0·2	20		10·0	Id.
5	924	50·2	48·6	1·6	0·1	0·0	9		10·0	Id.
6	935	49·8	48·8	1·0	0·1	0·0	2		10·0	Id. ; rain^{2}
7	28·967	48·8	48·3	0·5	0·5	1·7	0		10·0	Id. ; rain$^{2—4}$
8	29·035	47·7	46·7	1·0	1·7	0·9	29	30 : — : —	10·0	Id.
9	098	46·5	45·1	1·4	2·0	1·3	29	30 : — : —	10·0	Loose scud ; dense homogeneous cirro-stratus.
0	151	47·0	45·4	1·6	1·6	0·6	29	29 : — : —	9·9	Id. ; id. ; sky to N.
1	200	49·2	46·1	3·1	1·4	0·7	28	— : 29 : —	9·5	Mass of cirro-stratus and cirri ; scud on horizon.
2	249	50·3	46·6	3·7	1·8	1·1	29	29 : 28 : —	9·8	Masses of scud ; cirro-strati ; cirro-cumulo-strati.
3	277	53·1	47·6	5·5	1·8	1·5	28	29 : 28 : —	8·5	Masses of scud and loose cum. ; cir.-str., woolly cirri,
90	317	54·4	48·0	6·4	1·5	0·5	29	29 : — : —	7·0	As before. ⊙ [and cirrous haze. ⊙
1	353	54·5	47·6	6·9	1·5	0·2	28	29 : — : —	7·0	Id. ⊙ [a solar halo. ⊙
2	382	57·1	49·0	8·1	0·7	0·8	29	29 : — : —	5·0	Masses of scud and loose cum. ; linear cirri ; portion of
3	414	56·1	48·4	7·7	0·7	0·4	28	29 : — : —	4·0	Loose cumuli ; patches of cirri.
4	445	56·5	48·0	8·5	0·4	0·3	28	29 : — : —	4·0	Id. ; id.
5	437	56·3	48·4	7·9	0·4	0·4	30	28 : — : —	7·0	Id.
6	499	53·4	47·5	5·9	0·1	0·1	28	28 : — : —	2·0	Id. ; cumulo-strati to S. ; haze. ⊙
7	534	49·3	46·0	3·3	0·1	0·0	28	28 : 27 : —	9·0	Id. ; id. ; cirro-strati.
8	568	50·0	47·0	3·0	0·1	0·1	0		9·2	Scud and cirro-strati.
9	594	49·0	45·4	3·6	0·1	0·1	20		5·0	Id. ; very dark clouds to E.
0	612	46·8	43·8	3·0	0·1	0·1	23		3·0	Scud and cirro-cumulo-strati. ☽

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The tions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1^{h}.	10^{m}.	From			
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
19 11	29·638	41·3	40·4	0·9	0·1	0·1	26		7·5	Thin cirro-cumulo-stratus. ☽
12	645	42·3	40·8	1·5	0·1	0·0	17	— : 21 : —	7·0	Thick cirro-cumulo-stratus. ☽
13	29·659	38·8	38·3	0·5	0·0	0·0	12		0·5	Thick cirro-cumulo-stratus on hor.; faint lunar cor. ☽
14	671	37·7	37·3	0·4	0·0	0·0	20		0·3	Id.; id. ☽
15	674	35·2	34·8	0·4	0·1	0·0	20		0·2	Id.; id. ☽
16	670	34·2	34·0	0·2	0·0	0·0	6	— : 20 : —	0·8	Id. to SW., and on E. hor. ☽
17	662	33·6	33·1	0·5	0·0	0·0	20	— : 23 : —	3·0	Thin cir.-cum.-str. and cir., rad. from WNW.; lun. cor. ☽
18	664	36·8	36·4	0·4	0·1	0·1	21	— : 20 : —	9·0	Cir-cum.-str., thick to SW.; bright window of sky to E. ☽
19	672	38·6	38·0	0·6	0·1	0·1	28	19 : — : —	9·0	Scud; cir.-str.; cir. to S.; cum. to E.; rainbow 18^{h} 42^{m}.
20	667	42·0	41·3	0·7	0·1	0·0	18	20 : — : 23	8·5	Loose scud; woolly cirri; cumulo-strati to NE. ⊙
21	662	45·3	44·3	1·0	0·0	0·0	30	— : 22 : 22	7·0	Woolly cirri, cirro-strati, and cirrous haze. ⊙
22	657	49·4	47·6	1·8	0·1	0·0	10		10·0	Mass of cir.-str.; cir. haze; patches of scud to S.; faint solar halo. ⊙
23	641	54·0	50·6	3·4	0·0	0·0	30	17 : — : —	9·0	Loose cumuli; woolly cirri and cirrous haze. ⊖
20 0	623	56·8	51·0	5·8	0·4	0·4	16	18 : — : —	9·0	Scud and loose cum.; cir.-str.; cir. haze; woolly cir. ⊖
1	600	56·3	50·0	6·3	1·2	0·8	14		9·8	Thick cirrous mass; loose cumuli; solar halo. ⊖
2	581	57·7	51·5	6·2	0·2	0·5	16	20 : — : —	10·0	Scud; cirro-cumulo-strati; cumuli. ●
3	555	57·7	51·4	6·3	0·8	0·2	18	20 : — : —	10·0	Id.; thick mass of cirro-stratus.
4	535	56·0	51·0	5·0	0·5	0·4	17	20 : — : —	10·0	Id.; id.
5	515	55·4	51·0	4·4	0·4	0·1	14	19 : — : —	9·9	Id.; id.
6	504	53·6	49·6	4·0	0·6	0·4	14	— : 18 : —	9·9	Cirro-stratous scud; cirro-strati; cirrous haze.
7	482	52·6	48·9	3·7	0·4	0·3	14	— : 18 : —	10·0	Id.; id.; id.
8	470	52·6	49·3	3·3	0·8	0·3	14		10·0	Id.; id.; drops of rain.
9	440	52·6	49·6	3·0	0·7	0·4	14		10·0	Dark masses of scud and cirro-strati; id.
10	412	52·0	49·6	2·4	0·4	0·4	15		10·0	Id.
11	379	52·8	50·4	2·4	0·8	0·9	15		10·0	Id.; id.
12	353	52·7	50·9	1·8	1·2	0·7	14		10·0	Scud and cirro-stratus; a slight shower since 11^{h}.
23¼	29·240	57·4	55·0	2·4	1·2	0·1	22	18 : — : —	……	Sunday—Overcast with loose cum. scud and cir.-cum.-str.; showers; continuous rain in the evening.
21 13	29·222	46·9	45·2	1·7	3·3	2·3	30		10·0	Dense mass of scud and cirro-stratus.
14	238	45·0	43·4	1·6	3·2	3·3	0		10·0	Id.; rain^{1}
15	262	44·4	42·2	2·2	3·6	2·0	0		10·0	Id.; rain$^{0\cdot5}$
16	279	44·2	42·0	2·2	2·7	1·5	0		10·0	Id.
17	308	44·2	42·0	2·2	1·9	0·5	0		10·0	Id.; passing showers.
18	329	44·4	42·1	2·3	1·4	1·0	31		10·0	Loose scud; dense cirrous mass; rain$^{0\cdot5}$
19	360	44·5	42·2	2·3	1·4	0·3	30	0 : — : —	10·0	Scud; drops of rain.
20	380	44·3	42·1	2·2	0·7	0·3	30	0 : — : —	10·0	Id.; rain$^{0\cdot2}$
21	420	45·3	42·9	2·4	0·6	0·3	30	31 : — : —	10·0	Id.; mass of cirro-stratus; drops of fine rain.
22	436	47·0	44·3	2·7	0·5	0·8	30	0 : 28 : —	9·9	Loose scud; cirro-cumulo-strati.
23	466	49·0	45·5	3·5	1·5	0·4	28		9·9	Id.; id.
22 0	487	48·7	44·0	4·7	1·6	1·2	27	0 : 26 : —	10·0	Id.; id.
1	517	50·0	43·9	6·1	1·6	1·4	28	30 : 22 : —	9·0	Id.; id.
2	521	51·4	44·2	7·2	2·8	2·6	29	29 : — : —	7·0	Thick scud and cum.; nimbus to N.; cir.-cum.-str. ⊙
3	565	48·9	43·1	5·8	1·2	0·6	28	29 : 26 : —	8·0	Loose cumuli and cumulo-strati; cirro-cumulo-strati.
4	594	48·1	44·2	3·9	0·8	0·1	28	29 : 26 : —	9·0	Id.; id.
5	625	47·6	43·2	4·4	0·6	0·1	30	30 : 26 : —	8·0	Id.; id. ⊖
6	661	45·3	41·7	3·6	0·6	0·4	30	28 : 26 : —	6·0	Scud; loose cum. and cum.-str.; nimbi to E. and S., falling in rain.
7	686	43·0	40·0	3·0	0·2	0·0	28	26 : — : —	7·0	Cumulo-strati; cirro-strati; cumuli.
8	700	40·6	38·0	2·6	0·1	0·1	26		2·5	Scud and cirro-strati on horizon.
9	733	37·5	35·8	1·7	0·1	0·1	24		0·2	Very clear; haze on S. horizon.
10	754	34·8	33·0	1·8	0·1	0·1	20		0·2	Id.; id.
11	777	36·5	34·8	1·7	0·1	0·1	22		0·1	A few patches of cirrous clouds on horizon. ☽
12	790	36·5	34·6	1·9	0·1	0·1	20		0·0	Very clear. ☽
13	29·803	33·7	32·4	1·3	0·1	0·0	22		0·0	Very clear. ☽
14	822	35·0	33·1	1·9	0·1	0·0	22		0·0	Id. ☽
15	841	33·7	32·3	1·4	0·1	0·0	21		0·0	Id.; hoar-frost. ☽
16	854	32·9	31·6	1·3	0·1	0·0	20		0·0	Id.; id. ☽

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Sept. 19^{d} 16^{h}. The clouds somewhat cymoid, and moving rather quickly.

Sept. 21^{d} 19^{h}. Observation made at 19^{d} 5^{m}.

t. an e.	BAROMETER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1h.	10m.	From	Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
17	29·868	34·1	32·6	1·5	0·2	0·1	21		0·2	Belt of cirro-stratus to E.; hoar-frost. ☽
18	888	31·7	30·8	0·9	0·1	0·1	20		0·5	Cirro-cumulo-stratus on N. and E. hor.; hoar-frost. ☽
19	907	33·7	32·2	1·5	0·1	0·1	21	— : 30 : —	2·0	Id.; cum.-str. on E. hor.; hoar-frost on the
20	934	36·0	34·3	1·7	0·1	0·1	24		0·2	Cumulo-strati on E. horizon. ⊙ [ground. ⊙
21	951	41·4	38·4	3·0	0·3	0·1	20	— : 30 : —	3·0	Cirro-cumulo-strati; cumulo-strati on E. horizon. ⊙
22	960	44·3	40·2	4·1	0·2	0·1	21	— : 30 : —	0·7	Id.; id.; cirro-strati. ⊙
23	968	46·2	40·0	6·2	0·8	0·3	30	30 : — : —	3·0	Loose cumuli; id. ⊖
0	986	48·5	42·8	5·7	0·6	0·6	28	30 : — : —	6·0	Id.; id. ⊙
1	29·997	50·3	43·2	7·1	0·9	0·6	28	30 : — : —	5·0	Id.; cirro-strati. ⊖
2	30·003	51·0	43·2	7·8	0·6	0·4	24	29 : — : —	6·5	Id.; id. ⊖
3	29·996	51·2	43·2	8·0	0·5	0·5	0	29 : — : —	5·0	Id.; id. ⊖
4	29·998	51·6	43·3	8·3	0·3	0·2	0	29 : — : —	3·5	Id.; id.; cirri to NE. ⊙
5	30·026	50·3	43·0	7·3	0·3	0·1	30	29 : — : —	3·0	As before. ⊙ [atmospheric haze near hor. ⊙
6	047	47·1	42·1	5·0	0·1	0·0	24	29 : — : 1	1·5	Patches of cum.; tufts of cirri like tadpoles; cir. and
7	056	41·6	38·9	2·7	0·1	0·0	22		0·8	Cirro-cumulo-stratus and cirrous haze on horizon.
8	078	41·0	38·3	2·7	0·1	0·1	22		2·5	Id.
9	077	39·3	36·9	2·4	0·1	0·1	18		0·2	Patches of cloud on E. horizon ?
0	072	35·3	34·3	1·0	0·0	0·0	18		0·0	Clear.
1	074	34·1	33·2	0·9	0·0	0·0			0·0	Id.
2	069	32·2	31·6	0·6	0·0	0·0			0·0	Id. ☽
3	30·060	31·9	31·3	0·6	0·0	0·0	18		0·0	Clear. ☽
4	052	30·4	30·0	0·4	0·0	0·0	28		0·0	Id. ☽
5	049	30·4	30·0	0·4	0·0	0·0	18		0·0	Id. ☽
6	033	30·7	30·4	0·3	0·0	0·0			0·1	One or two streaks of cirrus to NW. ☽
7	021	29·6	31·8	…	0·0	0·0	16		0·0	Light fog. ☽
8	021	29·9	30·3	…	0·0	0·0	0		0·5	Fog to E.; cirro-strati and cirrous haze on E. hor. ☽
9	020	31·6	31·1	0·5	0·0	0·0			3·0	Streaks of thin cirri, radiating from SSW.; fog over the Tweed. ⊖
0	016	36·9	36·6	0·3	0·0	0·0	20	— : — : 0	6·0	Thin cirri over much of the sky; solar halo. ⊙
1	010	44·4	43·2	1·2	0·1	0·2	19		5·0	Woolly cirri and cirrous haze; patch of scud to S. ⊙
2	30·004	48·6	45·3	3·3	0·6	0·3	21	23 : — : —	4·5	Scud; cirri, &c.; as before; halo. ⊖ [solar halo. ⊖
3	29·984	51·8	48·3	3·5	0·4	0·4	19	21 : — : 0	8·0	Scud on hor.; woolly & linear cir. & cir. haze thickening;
0	955	54·5	48·8	5·7	1·0	0·6	21	21 : — : —	9·0	Scud and loose cum.; woolly cir. & cir. haze; solar halo. ⊖
1	933	52·8	48·4	4·4	1·1	0·2	21	21 : — : —	9·8	Id.; cirro-strati; cirri.
2	899	53·6	48·7	4·9	0·8	0·2	22	20 : — : —	9·0	Id.; woolly, linear, and mottled cirri. ⊙
3	876	53·7	48·0	5·7	1·1	0·4	21	20 : — : —	9·9	As before. ●
4	865	52·5	47·6	4·9	0·9	0·5	20	20 : — : —	10·0	Scud; dense mass of cirro-stratus.
5	844	50·3	46·5	3·8	0·4	0·3	18		10·0	Patches of scud; dense mass of mottled cirro-stratus.
6	821	48·6	45·0	3·6	0·4	0·5	20	20 : — : —	10·0	Thick muddy cirro-stratus, descending.
7	799	46·7	43·6	3·1	0·3	0·1	16		10·0	Dense mass of cirro-stratus.
8	780	46·1	43·0	3·1	0·3	0·3	16		10·0	Id.
9	758	45·2	41·9	3·3	0·4	0·1	18		10·0	Id.
0	727	44·7	41·4	3·3	0·3	0·3	19		10·0	Id.
1	691	44·7	41·7	3·0	0·4	0·2	18		10·0	Id.
2	663	45·7	42·3	3·4	0·4	0·4	18		10·0	Id.
3	29·637	45·0	42·2	2·8	0·4	0·2	18		10·0	Dense mass of cirro-stratus.
4	611	45·8	43·1	2·7	0·9	0·3	16		10·0	Id.
5	537	46·1	43·3	2·8	1·0	0·6	16		10·0	Id.
6	518	45·4	42·9	2·5	0·7	0·2	20		10·0	Id.
7	444	46·2	43·5	2·7	0·6	0·7	19		10·0	Id.
8	446	46·4	43·5	2·9	1·2	0·9	18	22 : — : —	10·0	Scud; cirro-stratus.
9	430	47·0	43·5	3·5	1·1	0·8	18	19 : — : —	10·0	Id.; id.
0	397	47·0	44·0	3·0	0·6	0·2	18	19 : — : —	9·8	Id.; id.
1	375	49·7	46·0	3·7	1·5	0·9	19	19 : — : —	10·0	Loose scud; cirro-stratus and cirro-cumulo-strati.
2	361	51·4	47·8	3·6	1·2	1·4	17	19 : — : —	9·9	Id.; id.
3	350	50·5	47·9	2·6	1·5	1·0	18	19 : — : —	9·9	Scud; cirro-stratus; a slight shower at 22h 20m.
0	327	52·3	49·3	3·0	2·6	1·1	18		9·5	Id.; id.; drops of rain.

he direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The ons of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
25 1	29·320	56·0	52·0	4·0	1·8	1·6	19	19 : — : —	7·0	Scud and loose cumuli; cirro-strati. ⊙
2	316	58·6	51·9	6·7	1·0	1·0	20	22 : — : —	5·0	Id.; id. ⊖
3	315	57·9	50·3	7·6	1·2	0·6	21	22 : — : —	5·5	Id. ⊙
4	310	57·7	50·2	7·5	1·1	0·4	21	23 : — : —	4·0	Id. ⊙
5	320	56·9	50·0	6·9	1·1	0·6			2·0	Id. ⊙
6	343	52·7	47·3	5·4	0·6	0·2	18	— : 23 : —	7·0	Cirro-cumulo-strati; loose cumuli. ⊙
7	349	49·8	46·6	3·2	0·4	0·4	20	22 : — : —	7·0	Scud; cirro-strati.
8	350	48·0	45·2	2·8	0·5	0·4	18		2·0	Scud and cirro-strati.
9	351	47·2	45·0	2·2	0·2	0·2	18		1·5	Id.
10	366	44·7	43·4	1·3	0·2	0·2	17		3·0	Id.
11	363	48·2	46·6	1·6	0·3	0·1	20		8·8	Id.
12	361	48·4	46·5	1·9	0·7	0·3	21		9·0	Scud; rain^{1}
13	29·354	45·7	44·6	1·1	0·3	0·1	20		0·5	Patches of cloud near horizon.
14	353	42·0	41·3	0·7	0·1	0·1	18		0·5	Cirro-cumulo-stratus to E.
15	341	43·4	42·5	0·9	0·4	0·3	19		0·5	Id. ☽
16	329	44·1	43·0	1·1	0·4	0·5	18		0·8	Id.; faint aurora to N. ☽
17	348	40·7	40·2	0·5	0·4	0·1	18		0·8	Id. ☽
18	356	38·8	38·6	0·2	0·1	0·0	18		0·8	Id. ☽
19	380	40·4	40·2	0·2	0·1	0·2	18		2·0	Id.; cirro-strati. ⊖
20	384	45·2	44·0	1·2	0·2	0·1	19	— : 20 : —	8·5	Cir.-cum.-str.; cir.-str.; woolly cir.; patches of scud. ⊖
21	395	47·6	46·0	1·6	0·2	0·1	20	22 : — : —	9·7	Patches of scud; cirro-stratus and cirrous haze.
22	409	50·0	47·4	2·6	0·2	0·3	18	24 : 22 : —	9·5	Scud; id. ●
23	408	53·2	49·0	4·2	0·3	0·3	22	23 : — : —	9·0	Scud and loose cumuli; cirro-strati; cirri. ⊙
26 0	414	52·5	49·4	3·1	0·8	0·2	20	— : 23 : —	6·0	Cirro-cumulo-strati; cumuli; cirro-strati; cirri. ●
1	422	55·4	49·7	5·7	0·4	0·5	22	22 : — : —	9·0	Scud and loose cumuli; cirro-strati; cirri.
2	422	55·5	49·7	5·8	0·9	0·3	26	— : 26 : —	9·8	Cirro-cumulo-strati; cumulo-strati; cirro-strati.
3	433	55·8	50·0	5·8	1·0	1·3	26	26 : — : —	4·0	Loose cumuli; cumulo-strati on horizon. ⊙
4	456	53·6	48·0	5·6	1·3	0·5	26	25 : — : —	4·5	Id.; id.
5	470	53·2	47·4	5·8	0·9	0·6	21		2·0	Id.; id. ⊙
6	505	50·9	46·7	4·2	0·6	0·1	21	— : 27 : —	0·5	Loose cirro-strati and cirri; hazy near horizon.
7	528	47·4	44·4	3·0	0·1	0·1	21		0·8	Patches of cirro-strati and linear cirri; hazy near hor.
8	544	46·7	43·7	3·0	0·3	0·4	21		0·8	Id.
9	552	45·8	43·4	2·4	0·3	0·3	21		0·2	Patches of cirro-strati.
10	557	43·8	42·2	1·6	0·3	0·3	21		0·2	Cirrous haze on W. horizon.
11	553	44·2	42·3	1·9	0·4	0·2	20		0·5	Thin cirrous haze over the sky.
12	547	44·3	42·6	1·7	0·2	0·1	20		9·0	Cirrous haze and cirro-strati.
13	29·531	41·9	41·0	0·9	0·1	0·0	14		9·9	Cirrous haze and cirro-strati.
14	497	42·8	41·9	0·9	0·1	0·1	19		10·0	Id.
15	477	46·0	44·6	1·4	0·2	0·1	18		9·9	Id.
16	451	46·8	45·2	1·6	0·1	0·1	18		10·0	Dense cirro-stratus.
17	418	48·4	46·5	1·9	0·8	0·3	19		10·0	Id.
18	388	49·3	46·6	2·7	0·9	0·7	19		10·0	Id.
19	365	49·4	46·9	2·5	1·1	1·1	19	20 : 26 : —	10·0	Loose ragged scud; mass of cirro-strati.
20	322	49·9	48·0	1·9	1·5	1·1	19	19 : — : —	10·0	Id.; id.
21	278	51·1	49·1	2·0	1·8	1·5	19	19 : — : —	10·0	Id.; id.
22	245	53·7	52·2	1·5	1·4	1·2	20	19 : — : —	10·0	Id.; id.; rain^{1}
23	197	55·8	54·0	1·8	1·5	1·0	21	20 : — : —	10·0	Id.; id.
27 0	168	58·0	55·2	2·8	2·8	3·5	20	21 : — : —	10·0	Id.; id.
1	170	58·8	56·3	2·5	2·3	1·0	18	22 : — : —	9·8	Thin scud; cirro-strati and cirri.
2	163	59·2	56·3	2·9	1·9	1·0	20	23 : — : —	9·5	Scud; id.; passing showers.
3	166	60·6	52·0	8·6	2·5	2·3	24		2·0	Loose cumuli; cumuli; cirro-strati; cirri.
4	185	59·2	52·6	6·6	3·2	3·4	21	23 : — : —	2·0	Id.; id.; id.; id.; haze.
5	209	57·1	50·6	6·5	4·3	2·2	21	24 : — : —	1·0	Scud and loose cumuli.
6	237	54·6	49·0	5·6	2·2	1·6	22	23 : — : —	7·0	Id.
7	271	52·4	49·0	3·4	1·4	0·7	21		8·0	Scud; shower$^{0·5}$
8	282	49·2	46·3	2·9	0·4	0·2	20		3·5	Id.; and cirro-strati.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

t. n e.	BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
9	29·293	49·7	46·7	3·0	0·5	0·1	18		0·2	Faint auroral arch, altitude 7°.
0	315	49·8	46·8	3·0	0·5	0·4	19		9·7	Scud; auroral light to N. seen through the clouds.
1	300	48·6	46·7	1·9	1·2	1·0	19		9·5	Id.
2	297	48·7	46·0	2·7	1·7	0·7	20		1·5	Id.
3¼	29·364	52·8	47·3	5·5	2·3	2·2	20	23 : — : —	……	
3	29·468	44·6	42·5	2·1	3·2	0·8	20		1·5	Cirrous scud ?
4	474	43·3	41·8	1·5	1·2	0·3	18		1·0	Id.
5	474	43·0	41·9	1·1	0·7	0·3	19		1·5	Id.; 15h 30m, shower$^{0·5}$
6	475	42·4	41·6	0·8	0·8	0·3	20		1·0	Id.
7	479	42·1	40·9	1·2	0·3	0·3	19		0·5	Id.)
8	480	42·2	41·1	1·1	0·3	0·3	20	23 : 25 : —	5·0	Smoky and cirro-stratous scud; cirro-cumuli. ☽
9	491	42·4	41·3	1·1	0·3	0·2	22	24 : — : —	8·0	Id.; id. [bow. ⊖
0	485	45·2	43·9	1·3	0·3	0·3	22	24 : — : —	8·0	Id.; id.; cir.-str.; rain-
1	488	47·3	45·8	1·5	0·9	0·3	26	21 : — : —	9·5	Scud; cirro-cumulo-strati; cir.-str.; passing showers. ⊖
2	476	47·7	45·8	1·9	1·4	0·3	22	22 : — : —	8·0	Id.; id.; id. ⊖
3	464	51·4	48·0	3·4	1·2	1·5	18	22 : 24 : —	7·0	Id.; id.; id. ⊙
0	454	52·4	48·8	3·6	1·7	0·7	20	23 : — : —	7·5	Loose cumuli; cumulo-strati; cirro-strati. ⊙
1	440	53·2	47·7	5·5	2·2	1·1	19	23 : — : —	5·0	Scud and loose cum.; cum.-str.; cir.-str.; cirri. ⊙
2	420	55·0	49·2	5·8	1·7	1·2	22	22 : — : —	6·5	Id.; id.; id.; nimbi to S. ⊙
3	414	54·2	47·9	6·3	1·9	0·8	20	22 : — : —	7·0	Id.; id.; id. ⊙
4	400	53·5	47·8	5·7	1·0	0·4	20	21 : 22 : —	8·0	Loose scud; cirro-cumulo-strati; cumulo-strati. ⊖
5	388	49·0	46·0	3·0	1·1	0·5	20	— : 22 : —	9·5	Cirro-stratous scud; dense mass of cirro-stratus.
6	376	47·4	45·0	2·4	0·7	0·4	20	— : 24 : 24	4·5	Cirro-cumuli; ribbed cirri; cirro-strati; cumulo-strati.
7	366	45·0	43·5	1·5	0·7	0·3	20		1·5	Cirrous and cirro-stratous scud, and nimbi on hor.; cirro-
8	351	45·6	44·1	1·5	0·4	0·2	20		8·8	Scud and cirro-strati. [strati.
9	340	47·3	45·4	1·9	0·7	0·8	20		9·5	Id.; very dark to W.
0	322	46·9	45·3	1·6	0·7	0·4	19		9·9	Id.
1	304	46·8	45·2	1·6	0·5	0·7	20		9·9	Scud; slight showers.
2	284	45·8	45·0	0·8	0·4	0·3	19		2·5	Id.; clouds cleared off rapidly; occasional showers.
3	29·271	46·1	45·0	1·1	0·5	0·5	20		9·5	Scud.
4	277	47·6	45·8	1·8	0·8	0·1	20		10·0	Id.; shower$^{1—3}$
5	260	47·6	46·4	1·2	0·3	0·3	21		9·8	Id.
6	246	46·8	45·7	1·1	0·7	0·8	20		1·5	Id.
7	246	45·8	44·5	1·3	0·9	0·4	20		2·0	Id.; drops of rain.
8	249	45·0	43·9	1·1	0·5	0·3	19	24 : — : —	2·5	Id. [horizon. ⊙
9	266	43·2	42·5	0·7	0·4	0·1	20	— : 23 : —	3·0	Loose cir.-cum. and cir.-str.; scud on Cheviot and N.
0	262	45·9	44·3	1·6	0·3	0·3	20	23 : — : 23	1·5	Loose cumuli and nimbi; woolly cirri. ⊙
1	258	48·1	46·0	2·1	0·9	0·6	19	24 : — : —	1·5	Scud to N.; cumuli; woolly cirri to S. ⊙
2	247	51·7	48·3	3·4	1·0	1·2	21	23 : — : —	5·0	Scud and loose cum.; cir.-cum.-str.; cir.-str.; wo. cir. ⊙
3	241	53·3	48·3	5·0	1·8	1·6	22	22 : 22 : —	9·0	Thin scud; cir.-cum.-str.; cirro-strati; cirri; cumuli; nimbi to S. ⊖
0	244	52·8	49·0	3·8	2·7	1·2	21	21 : — : 23	9·5	Scud; woolly and ribbed cirri; passing showers. ⊖
1	227	48·2	46·2	2·0	1·8	0·8	21	22 : — : —	5·0	Id.; loose nimbi, heavy showers around; id.
2	224	53·3	48·6	4·7	1·3	1·3	22	23 : — : —	2·0	Loose cumuli; cumulo-strati to E. ⊙
3	213	53·4	47·6	5·8	2·3	0·7	21	23 : — : —	2·5	Id.; id.; nimbi to W. ⊙
4	215	49·9	46·7	3·2	1·7	0·4	24	22 : — : —	9·0	Scud; cumulo-strati to E.; rain falling to W.
5	227	46·8	44·4	2·4	1·6	1·6	22	22 : — : —	9·0	Scud hanging in bags, with cirrous pendants; shower^{2}
6	227	46·2	43·3	2·9	0·8	0·4	24	24 : — : —	5·0	Scud; nimbi and cumulo-strati on E. horizon.
7	237	44·0	41·5	2·5	1·5	1·2	19		1·5	Scud and nimbi.
8	257	42·8	41·2	1·6	0·8	0·1	18		2·0	Scud.
9	279	44·6	42·2	2·4	0·9	1·5	20		10·0	Id.; shower$^{1—3}$
0	289	41·1	40·0	1·1	2·5	0·3	20		1·0	Id.
1	296	40·4	39·4	1·0	0·3	0·4	20		0·2	Scud and cirro-strati on horizon.
2	296	42·4	41·0	1·4	0·4	1·3	20		1·0	Id.
3	29·309	43·8	42·5	1·3	0·6	0·2	19		8·0	Scud and cirro-strati on horizon.
4	330	46·0	44·0	2·0	0·3	0·3	20		9·0	Id.; rain$^{0·5}$

Sept. 27d 10h. A few minutes after 10h, bright streamers seen rising from NNW. and N. horizon.
Sept. 29d 6h. Sheets of cirro-strati lying E. and W.; scud on Cheviot: small cumulo-strati to E.
Sept. 30d 1h. Observation made at 1h 7m.
Sept. 30d 5h. Beautiful and complete double rainbow, with supplementary bows.

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m	From			
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
30 15	29·336	46·0	43·7	2·3	0·9	0·4	19		3·0	Scud and cirro-strati on horizon.
16	353	45·2	42·8	2·4	0·5	1·1	20		4·5	Id.
17	367	44·6	43·2	1·4	1·6	0·2	20		9·5	Id.
18	375	46·6	44·0	2·6	0·8	0·5	20	24 : — : —	7·5	Smoky scud ; cirro-strati.
19	391	46·5	44·0	2·5	1·3	1·1	21		2·0	Scud ; loose cumuli, and cirro-strati on horizon.
20	418	46·7	45·0	1·7	0·8	0·1	20		2·0	Id. ; id. ; id.
21	442	49·9	47·4	2·5	0·8	0·9	19	23 : 24 : —	8·5	Id. ; watery cirro-cumuli.
22	456	52·0	48·7	3·3	1·0	1·0	20	23 : — : —	7·0	Id. ; cirro-strati ; thin cirro-cumuli.
23	470	52·0	48·0	4·0	1·7	1·5	22	23 : — : —	3·5	Id. ; loose cumuli ; patches of cirri.
1 0	456	54·0	49·6	4·4	3·3	1·9	20	23 : — : 24	3·5	Id. ; id. ; woolly cirri.
1	444	54·4	48·3	6·1	2·6	2·2	20	22 : — : 24	7·0	Id. ; id. ; id. ; cirrous haze.
2	445	54·3	48·6	5·7	3·5	2·0	20	22 : — : —	9·0	Id. ; id. ; id. ; id.
3	429	54·7	49·4	5·3	3·2	3·0	21	22 : — : —	9·5	Id. ; id. ; id. ; id.
4	430	54·0	49·2	4·8	2·4	2·3	21	22 : — : —	9·9	Id. ; id. ; id. ; id.
5	431	52·8	49·1	3·7	3·0	0·9	21	21 : — : —	10·0	Thick scud and loose cumuli ; cirrous haze.
6	432	52·3	48·6	3·7	1·7	0·9	20	21 : — : —	10·0	Thick scud ; cirro-strati.
7	419	52·0	48·6	3 4	1·2	0·6	21	21 : — : —	10·0	Id.
8	413	51·5	48·4	3·1	1·6	1·2	21		5·0	Id. ; id. ; stars dim.
9	411	51·0	48·0	3·0	1·6	1·1	20		3·0	Scud ; id. ; haze ; stars dim.
10	397	50·8	47·8	3·0	1·8	1·4	20		2·0	Id. ; id. ; id. ; id.
11	389	51·0	48·3	2·7	2·3	1·8	20		1·5	Id. ; cirrous haze ? id.
12	388	50·0	47·8	2·2	1·8	0·9	21		1·0	Id. ; id. ; id.
13	29·400	49·8	47·7	2·1	1·8	1·2	21		4·0	Dark mass of cirrous scud (?) to W.
14	405	50·8	48·4	2·4	1·2	0·6	21		10·0	Id.
15	408	50·0	47·0	3·0	1·3	0·7	22		9·9	Scud ? breaking to W. ; shower lately.
16	413	48·0	45·2	2·8	0·5	0·2	21		6·0	Id. ? sky to N., rather milky.
17	413	46·8	44·7	2·1	0·2	0·1	20		9·0	Id. ? sky in zenith.
18	405	46·0	44·3	1·7	0·1	0·0	16	— : 22 : —	9·0	Cirro-cumulo-strati ; cirrous haze ?
19	414	46·8	44·8	2·0	0·1	0·1	22	— : 22 : —	10·0	Cirro-strati radiating from ENE. and WSW.
20	424	47·4	45·3	2·1	0·1	0·0	23		10·0	Id.
21	434	49·0	46·9	2·1	0·1	0·1	24		9·9	Cirro-strati ; cirro-cumulo-strati.
22	446	52·2	49·4	2·8	0·1	0·1	20		10·0	Id. ; id. ; patches of scud.
23	453	54·2	50·2	4·0	0·1	0·0	22	25 : — : —	10·0	Loose scud ; dense mass of cirro-strati. ● [cir.-str.
2 0	461	53·2	48·0	5·2	0·1	0·0	24	— : — : 21	9·5	Woolly cir. rad. from WSW. ; loose scud to N. ; cum. ;
1	458	53·4	48·7	4·7	0·1	0·1	24	— : — : 22	8·5	As before ; flocks of swallows flying about.
2	454	55·8	50·2	5·6	0·2	0·1	22	26 : — : —	9·9	Scud and loose cumuli ; dense mass of cirro-stratus.
3	440	55·4	50·0	5·4	0·2	0·0	20	— : 21 : —	9·9	Cirro-cumulo-strati and cirro-strati ; cumuli.
4	446	54·3	49·7	4·6	0·1	0·0	18	26 : — : —	10·0	Scud ; sky covered with cirrous haze.
5	450	52·8	49·4	3·4	0·1	0·1	17		10·0	As before. [and moving slightly in various directions.
6	457	50·4	48·1	2·3	0·0	0·0	16		10·0	Blotched mass of cirro-stratus with patches of scud forming below,
7	456	48·8	46·7	2·1	0·0	0·0			10·0	As before ; flock of lapwings moving north at 6h.
8	450	49·0	46·4	2·6	0·1	0·0	4		10·0	Id. ? very dark.
9	457	48·1	46·2	1·9	0·1	0·0	3		10·0	Id. ; rain in a few minutes.
10	493	47·0	46·4	0·6	0·1	0·0			10·0	Id. ; rain^1
11	460	46·3	45·8	0·5	0·0	0·0	8		10·0	Rain^1
12	446	45·4	44·8	0·6	0·1	0·1	6		10·0	Id.
13	29·426	45·0	44·2	0·8	0·1	0·0	6		10·0	Rain^1
14	437	45·3	44·3	1·0	0·3	0·1	4		10·0	Rain^2
15	431	44·7	43·9	0·8	0·5	0·4	3		10·0	Id.
16	430	44·8	44·1	0·7	1·7	0·4	3		10·0	Rain$^{1-2}$
17	394	44·0	43·5	0·5	1·1	0·9	6		10·0	Id.
18	370	44·9	44·5	0·4	1·6	1·2	4		10·0	Id.
19	396	45·5	44·9	0·6	1·4	0·6	5	6 : — : —	10·0	Scud ; rain$^{1-2}$
20	400	45·7	45·0	0·7	1·1	0·8	5	6 : — : —	10·0	Id. ; continuous rain$^{1·5}$
21	414	46·0	45·3	0·7	1·4	0·6	3	6 : — : —	10·0	Id. ; rain^2
22	386	46·3	45·7	0·6	1·6	1·1	4	5 : — : —	10·0	Id. ; rain$^{0·2}$

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

t. n e.	BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
3	29·366	46·5	45·8	0·7	1·7	2·7	4	5 : — : —	10·0	Scud ; drifting rain^{1}
0	372	46·9	46·3	0·6	2·2	1·4	3	5 : — : —	10·0	Id. ; rain^{2}
1	334	46·8	46·4	0·4	1·6	2·8	6	5 : — : —	10·0	Id. ; id.
2	312	46·9	46·3	0·6	2·4	1·8	5	5 : — : —	10·0	Id. ; rain (Scotch mist)$^{0\cdot5}$
3	291	47·0	46·4	0·6	2·3	1·0	5		10·0	Id. ; rain^{1}
4	287	47·2	46·7	0·5	1·5	0·7	5	5 : — : —	10·0	Id. ; rain^{2}
5	209	48·0	47·3	0·7	2·7	2·3	5	6 : — : —	10·0	Id. ; rain (Scotch mist)$^{0\cdot5}$
6	218	47·8	47·3	0·5	3·1	0·8	4	6 : — : —	10·0	Id. ; rain$^{2-3}$
7	208	47·7	47·4	0·3	0·9	0·6	3		10·0	Id. ; rain$^{1-3}$
8	201	48·0	47·7	0·3	0·9	0·7	2		10·0	Rain$^{0\cdot2}$
9	200	48·2	47·7	0·5	0·9	0·5	2		10·0	Id.
0	202	48·4	47·7	0·7	0·8	0·8	2		10·0	Id.
1	218	48·3	47·4	0·9	1·0	0·6	2		10·0	Scud.
2	234	47·8	47·3	0·5	1·0	0·5	3		10·0	Id. ; rain$^{0\cdot5}$
3	29·248	46 6	46·0	0·6	1·6	1·1	3		10·0	Scud ; rain$^{0\cdot2}$
4	256	46·0	45·2	0·8	1·3	0·8	2		10·0	Id.
5	261	45·4	44·7	0·7	1·0	0·5	2		10·0	Id.
6	269	45·6	44·6	1·0	0·6	0·3	2		9·0	Id.
7	281	45·4	44·3	1·1	0·4	0·4	2		8·0	Id. ; stars dim ; slight drizzle.
8	279	45·3	44·2	1·1	0·4	0·8	2	2 : 24 : —	8·0	Smoky scud ; cirro-cumulo-strati.
9	292	45·3	44·2	1·1	0·6	0·1	3	2 : — : —	10·0	Loose scud.
0	304	45·9	44·6	1·3	0·2	0·1	3	3 : — : —	10·0	Id. ; rain$^{0\cdot2}$ commencing.
1	320	46·0	44·8	1·2	0·2	0·1	2	4 : — : —	10·0	Id. ; mass of cirro-stratus ; mist around.
2	323	44·9	44·4	0·5	0·8	0·3	1	4 : — : —	10·0	Id. ; drizzling rain$^{0\cdot5}$
3	323	47·1	46·3	0·8	0·5	0·3	2	4 : — : —	10·0	Id. ; dense homogeneous cir.-str. ; drops of rain.
0	321	48·2	46·2	2·0	0·5	0·5	3	4 : — : —	10·0	Id. ; id. ; id.
1	322	47·6	45·7	1·9	0·9	0·4	2	3 : — : —	10·0	Id. ; id. ; id.
2	315	47·2	44·7	2·5	1·2	0·8	1	3 : — : —	10·0	Id. ; id.
3	315	45·7	44·0	1·7	1·0	0·5	2	3 : — : —	10·0	Id. ; id. ; rain$^{1-2}$
4	316	45·0	43·5	1·5	0·7	0·3	2		10·0	Id. ; id. ; id.
5	328	43·9	42·9	1·0	0·5	0·3	2		10·0	Id. ; id. ; id.
6	336	43·7	43·0	0·7	0·2	0·1	2	2 : — : —	10·0	Scud ; homogeneous mass ; rain^{2}
7	344	43·0	42·0	1·0	0·3	0·2	0		10·0	Id. ; id. ; id.
8	359	42·3	41·0	1·3	0·8	0·2	2		10·0	Id. ; id.
9	374	42·0	41·2	0·8	0·1	0·1	28		10·0	Id. ; id.
0	382	42·5	41·0	1·5	0·1	0·2	30		8·5	Id. ; clouds broken.
1	401	42·0	39·7	2·3	0·3	0·2	31		9·0	Thin cirro-strati.
2	422	41·3	39·0	2·3	0·2	0·1	30		8·5	Id.
3½	29·663	44·0	39·9	4·1	0·4	0·2	20		……	Sunday—generally clear ; a few loose cumuli.
3	29·726	32·3	32·2	0·1	0·3	0·0	24		0·3	Patches of thin clouds.
4	718	32·1	32·1	…	0·0	0·0	22		0·3	Id. ; stars rather dim.
5	706	31·0	31·4	…	0·0	0·0			0·3	A few clouds near the horizon.
6	704	29·0	29·4	…	0·0	0·0	22		0·5	Id.
7	698	29·3	29·6	…	0·0	0·0	16		0·3	Id.
8	690	28·3	28·5	…	0·0	0·0	20		0·8	Masses of scud to SW.
9	698	28·7	28·5	0·2	0·0	0·0	22	— : — : 20	3·0	Stripes of woolly cir., lying E. & W. ; cir.-str. on S. & N. hor. ; fog in [the valleys.
0	702	30·8	30·5	0·3	0·0	0·0	20	— : — : 20	5·0	Nearly as before. ⊙
1	700	33·0	31·7	1·3	0·1	0·1	20		4·0	Woolly cirri ; cirro-strati and patches of scud to N. ⊙
2	688	37·3	36·7	0·6	0·1	0·1	0		2·0	Id. ⊙
3	676	43·7	42·0	1·7	0·1	0·1	6		1·0	Id. and haze round horizon. ⊙
0	665	49·3	45·4	3·9	0·3	0·3	15	16 : — : 20	2·0	Patches of cumuli ; woolly cirri. ⊙
1	645	51·8	46·7	5·1	0·3	0·2	15	15 : — : —	4·0	Loose cumuli ; id. ⊙
2	631	53·6	47·8	5·8	0·4	0·3	15	15 : — : —	4·5	Id. ; id. ⊙
3	606	52·4	46·6	5·8	0·5	0·3		— : — : 18	5·5	Woolly cirri ; loose cumuli. ⊙
4	596	49·7	44·5	5·2	0·3	0·3	15	15 : 18 : 18	8·0	Cum. ; cir.-cum. ; woolly cir. thickening into cir.-str. ⊖

he direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The
ions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.
ct. 4^{d} 6^{h}. Swallows seen to-day in considerable numbers, for the last time.
ct. 6^{d} 4^{h}. Portion of a halo lately ; parhelion at 4^{h} 30^{m}.

Gött. Mean Time.		Baro-meter at 32°.	Thermometers.			Wind.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
6	5	29·587	48·5	44·4	4·1	0·2	0·1	14	— : 18 : 18	9·5	Thick woolly cirri; cirro-strati and cirrous haze.
	6	592	46·7	43·4	3·3	0·2	0·1	12	14 : — : —	10·0	Scud; dense cirro-stratus and haze.
	7	587	46·0	42·7	3·3	0·1	0·1	8		10·0	Dense cirro-stratus and scud.
	8	579	44·4	42·1	2·3	0·1	0·0	11		10·0	Id.
	9	565	44·0	42·0	2·0	0·1	0·1	4		10·0	Id.
	10	550	44·6	42·5	2·1	0·1	0·0	2		10·0	Id.
	11	543	44·4	42·8	1·6	0·0	0·0			10·0	Id.
	12	527	44·5	43·0	1·5	0·1	0·0	6		10·0	Id.; rain^{1}
	13	29·506	44·0	43·4	0·6	0·1	0·0	2		10·0	Dense cirro-stratus and scud; rain$^{0\cdot5}$
	14	472	44·1	43·5	0·6	0·1	0·1	2		10·0	Id.; rain$^{0\cdot2}$
	15	445	44·0	43·4	0·6	0·2	0·1	2		10·0	Id.; rain$^{0\cdot5}$
	16	406	44·3	43·4	0·9	0·2	0·2	4		10·0	Id.; rain^{1}
	17	383	44·1	43·7	0·4	0·2	0·2	2		10·0	Scud; slight drizzle.
	18	355	45·0	44·3	0·7	0·2	0·3	2		10·0	Id.; id.
	19	324	45·4	44·7	0·7	0·4	0·3	2		10·0	Id.; drops of rain.
	20	311	45·9	45·0	0·9	0·4	0·2	2	4 : — : —	10·0	Loose scud; drizzling rain$^{0\cdot5}$
	21	291	46·0	45·0	1·0	0·5	0·3	2	3 : — : —	10·0	Id.
	22	260	46·8	45·5	1·3	0·9	0·4	2	4 : — : —	10·0	Id.; dense mass of cirro-stratus.
	23	238	49·1	47·1	2·0	0·5	0·1	1	3 : — : —	10·0	Id.; id.
7	0	213	49·0	47·5	1·5	0·8	0·5	0	1 : — : —	10·0	Id.; id.
	1	183	51·0	48·7	2·3	0·8	0·7	31	0 : 14 : —	10·0	Scud; cirro-strati; cirro-cumulo-strati.
	2	160	49·2	47·4	1·8	1·0	0·6	31	31 : — : —	10·0	Id.; drizzling rain$^{0\cdot2}$
	3	146	48·1	46·3	1·8	0·8	0·3	31		10·0	Id.
	4	135	47·7	45·9	1·8	0·5	0·3	28	27 : — : —	10·0	Id.
	5	125	47·4	45·2	2·2	0·4	0·2	26	27 : — : —	10·0	Id.
	6	109	47·1	44·4	2·7	0·7	0·2	22	27 : — : —	9·8	Id.; cirro-strati.
	7	112	47·2	44·0	3·2	0·4	0·5	21		9·9	Id.; id.
	8	099	46·7	43·8	2·9	0·3	0·2	20		10·0	Id.; id.
	9	097	46·2	43·7	2·5	0·2	0·2	19		10·0	Id.; id.
	10	100	45·4	42·7	2·7	0·3	0·2	18		7·0 ?	Id.; id.; stars dim.
	11	103	44·4	42·4	2·0	0·4	0·1	20		9·8	Thin cirro-strati, the stars seen dimly in some places.
	12	107	44·7	42·9	1·8	0·3	0·7	19		10·0	Cirro-strati?
	13	29·110	44·7	42·8	1·9	0·4	0·4	19		10·0	Cirro-strati?
	14	112	44·0	42·3	1·7	0·4	0·4	19		10·0	Id.
	15	116	42·9	41·5	1·4	0·3	0·4	19		7·5	Id.
	16	126	42·6	41·0	1·6	0·4	0·1	20		7·0 ?	Id.; cirrous haze; stars dim.
	17	135	41·9	40·6	1·3	0·3	0·1	20		9·0	Id.; id.; id.
	18	146	41·2	40·0	1·2	0·2	0·0	24		9·0	Id.; id.; id.
	19	157	39·7	39·0	0·7	0·1	0·1	24		4·0	Id.; id.
	20	158	39·7	39·3	0·4	0·1	0·0	16		8·5	Id.; woolly cirri; cirro-cumulo-strati. ⊖
	21	161	42·3	41·5	0·8	0·0	0·0	12	— : 18 : —	10·0	Thick cirro-stratus; small cumulo-strati and haze to N.
	22	164	45·8	44·3	1·5	0·0	0·0	10	— : 18 : —	9·9	Cirro-cumulo-strati; cirro-strati.
	23	158	47·4	45·4	2·0	0·0	0·1	4	— : 18 : —	9·9	Id.
8	0	149	50·0	47·3	2·7	0·1	0·0	8	— : 18 : —	8·0	Id. ⊖
	1	127	52·4	48·3	4·1	0·1	0·2	14	14 : — : 13	5·0	Loose cum.; woolly and mottled cirri; cir.-str.; cum. ☉
	2	113	53·8	48·6	5·2	0·5	0·3	13	14 : — : —	4·0	Loose cum.; woolly and mottled cir.; cir.-str.; cum.; cum.-str.; dense haze on hor. ☉
	3	103	52·2	47·8	4·4	0·3	0·2	12	18 : — : —	4·5	Scud and loose cum.; cum.-str. and haze round hor. ⊖
	4	084	53·3	48·3	5·0	0·7	0·2	12		2·5	Woolly and linear cirri; id.
	5	077	51·3	47·2	4·1	0·7	0·2	12	— : — : 17	3·0	Woolly and linear cir.; cum.-str. and haze round hor.; pat. of scud. ⊖
	6	069	48·0	45·4	2·6	0·4	0·2	10	— : 14 : —	7·5	Cir.-str.; cir.-cum.; cir.; cir. haze; scud on horizon;
	7	061	45·3	43·9	1·4	0·1	0·0	8		2·5	Cirro-strati; cirri. ☽ [atmospheric haze.
	8	048	47·0	45·0	2·0	0·8	0·7	10		5·0	Id.; id. ☽
	9	044	46·9	44·6	2·3	0·4	0·3	12		9·0	Id.; id.
	10	29·009	47·8	45·0	2·8	0·6	0·9	11		8·0	Id.; id.
	11	28·984	49·6	46·8	2·8	1·1	0·5	11	12 : — : —	9·9	Scud; cirro-stratus and haze.
	12	28·966	50·6	48·0	2·6	1·4	1·1	11		10·0	Id.; id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

	BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1^h.	Maximum force in 10^m.	From			
h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
3	28·962	49·7	48·0	1·7	0·8	0·3	12		10·0	Dark; a slight shower lately.
4	952	49·4	47·6	1·8	0·4	0·2	12		10·0	Id.
5	950	48·2	46·6	1·6	0·7	0·2	14		10·0	Id.; rain$^{0\cdot5-1\cdot0}$
6	946	48·1	46·3	1·8	0·7	0·7	14		10·0	Id.
7	974	46·9	45·7	1·2	1·3	0·1	19		9·8	Scud and cirro-stratus.
8	28·994	43·3	42·6	0·7	0·1	0·0	12		9·0	Scud, cirro-strati, and cirrous haze.
9	29·008	43·0	42·0	1·0	0·1	0·0	26	20 : 12 : —	10·0	Scud on S. horizon; cirro-strati; cirrous haze.
0	019	43·6	42·3	1·3	0·1	0·0	20	20 : 12 : —	9·5	Id.; cir.-cum.-str.; cirro-stratus rad. from SE.;
1	038	43·2	42·6	0·6	0·1	0·0			9·5	As before. [cir. haze; sky to SSW.
2	053	46·4	44·0	2·4	0·1	0·0	1		9·2	Id. [haze; solar halo. ⊖
3	059	49·6	47·0	2·6	0·1	0·1	15	20 : 12 : 12	8·5	Scud and loose cum. on S. hor.; thin cir.-str., woolly cirri, and cir.
0	058	51·3	47·9	3·4	0·0	0·0		20 : 11 : 11	6·0	As before; sky to S. ⊙
1	061	52·0	48·2	3·8	0·1	0·1	20	20 : — : —	4·0	Loose cumuli; cumuli; cirro-strati; cirri. ⊙
2	069	54·8	48·3	6·5	0·1	0·1	19	20 : — : —	4·5	Id.; id.; id. ⊙
3	071	53·8	47·8	6·0	0·1	0·1	21	20 : — : —	3·5	Id.; id.; id. ⊙
4	075	52·8	47·8	5·0	0·2	0·1	18	20 : — : —	4·0	Id.; id. ⊙
5	086	49·6	45·7	3·9	0·1	0·0	18	— : 17 : 14	1·8	Cirro-cumulo-strati; woolly cirri. ⊙
6	091	44·0	42·3	1·7	0·0	0·0	20		5·0	Woolly cirri and cirrous haze.
7	105	40·0	39·0	1·0	0·0	0·0	22		7·0	Cirro-strati; woolly cirri; cirrous haze. ⊁
8	123	39·9	39·1	0·8	0·0	0·0	18		9·5	Cirro-cumuli. ⊁
9	133	39·7	39·1	0·6	0·0	0·0	28		9·8	Cirro-cumulo-strati.
0	130	37·5	37·0	0·5	0·0	0·0	20		2·0	Patches of cirro-cumulo-strati; woolly cirri. ☽
1	143	40·0	39·7	0·3	0·1	0·1	18		9·9	Scud and cirrous mass.
2	139	39·9	39·6	0·3	0·0	0·0			10·0	Id.
3	29·154	41·3	40·7	0·6	0·0	0·0			10·0	Scud and cirrous mass; rain^{1}
4	152	42·0	41·7	0·3	0·0	0·0			10·0	Scud; rain^{1}
5	139	42·8	42·4	0·4	0·0	0·0			10·0	Id.; id.
6	135	42·9	42·7	0·2	0·0	0·0	4		10·0	Id.; rain$^{0\cdot5}$
7	114	42·5	42·1	0·4	0·0	0·0	26		10·0	Id.; rain^{1}
8	105	42·0	41·6	0·4	0·0	0·0	6		10·0	Id.; id.
9	092	42·2	41·6	0·6	0·0	0·0	26		10·0	Dense mass of cirro-stratus; rain$^{1\cdot0}$
0	087	42·2	41·7	0·5	0·0	0·0	20		10·0	Continuous rain$^{1-2}$
1	090	42·3	41·9	0·4	0·1	0·1	20		9·5	Scud; cirro-stratous mass; sky to SSW; rain^{2}
2	091	44·3	43·8	0·5	0·1	0·0	22	22 : — : —	9·5	Loose scud; cirro-strati; cirro-cumulo-strati.
3	088	48·0	46·4	1·6	0·0	0·0	2	20 : — : —	7·0	Patches of scud; woolly cir.-str., moving very slowly. ⊙
0	084	48·7	46·7	2·0	0·1	0·0	20	18 : — : —	3·0	Scud and loose cumuli; woolly cirri. ⊙
1	084	53·0	49·9	3·1	0·0	0·0	16	17 : — : —	9·0	Id.
2	090	52·0	47·8	4·2	0·4	0·5	16	17 : — : —	9·9	Id.
3	101	51·7	47·0	4·7	0·6	0·1	15	16 : — : —	9·9	Id.; cirro-strati.
4	121	48·0	46·0	2·0	0·5	0·1	16	— : 14 : —	10·0	Thick scud and cirro-stratus; slight rain lately.
5	120	48·0	46·3	1·7	0·2	0·1	13	— : 14 : —	9·9	Id.; id.
6	128	47·8	46·0	1·8	0·2	0·2	14	— : 14 : —	9·9	Id.
7	137	47·0	45·2	1·8	0·4	0·2	15		9·0	Id.
8	147	46·3	44·7	1·6	0·2	0·2	15		6·5	Scud and cirro-strati. ☽
9	152	43·5	42·4	1·1	0·2	0·1	14		3·0	Cirro-cumulo-strati and cirro-strati; cirri. ☽
0	167	42·8	41·8	1·0	0·1	0·1	16		8·5	Id.; id. ⊁
1	174	41·6	40·6	1·0	0·1	0·1	15		9·5	Sheets of woolly cirri and cirro-strati. ⊁
2	169	41·9	40·8	1·1	0·1	0·0	4		10·0	Mass of cirro-stratus.
3	29·159	41·4	40·4	1·0	0·1	0·0	2		10·0	Mass of cirro-stratus; a few stars dimly visible.
4	154	43·3	42·0	1·3	0·3	0·1	8		10·0	Id.
5	148	44·7	43·3	1·4	0·1	0·1	12		10·0	Id.
6	141	46·0	44·0	2·0	0·1	0·1	10		10·0	Id.
7	149	46·8	55·0	1·8	0·3	0·3	15		10·0	Id.; rain$^{1\cdot0}$ commenced.
8	152	45·6	44·6	1·0	0·7	0·3	12		10·0	Id.; continuous rain$^{1-2}$
9	159	44·9	43·9	1·0	0·4	0·3	12		10·0	Id.
0	180	45·3	43·7	1·6	0·3	0·1	18	— : 20 : —	9·8	Cirro-stratous scud; mass of cirro-stratus.

he direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The ions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

ct. 10^d 3^h. Observation made at 3^h 13^m.

Gött. Mean Time.	BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
10 21	29·202	45·2	43·7	1·5	0·8	0·2	14	— : 18 : —	9·9	Dense cirro-stratus.
22	221	47·0	44·8	2·2	0·4	0·3	14		10·0	Id.
23	241	48·8	46·2	2·6	0·2	0·2	14	— : 16 : —	9·8	Id.
11 0	260	50·9	47·8	3·1	0·2	0·2	14	18 : 16 : —	8·0	Loose scud; cirro-cumulo-strati.
1	273	51·2	47·8	3·4	0·4	0·3	17	18 : — : —	9·9	Smoky scud; id.
2	288	51·0	48·1	2·9	0·3	0·0	16	— : 20 : —	9·5	Cirro-stratous scud; cirro-strati; loose cumuli.
3	307	53·3	49·8	3·5	0·1	0·1	16	— : 21 : —	8·8	Id.; id.; id. ⊙
4	326	52·2	48·0	4·2	0·2	0·1	18	23 : — : —	9·0	Scud; cirro-cumulo-strati; cirro-strati.
5	352	51·0	47·2	3·8	0·1	0·1	20		2·5	Id.; id.; id. round horizon. ⊙
6	389	49·5	45·5	4·0	0·1	0·1	21	23 : 24 : —	9·5	Id.; id.; id.
7	409	46·8	44·7	2·1	0·2	0·0	4		9·0	Cirro-cumulo-strati. ∋
8	432	45·0	43·6	1·4	0·1	0·1	28		0·5	Id. on horizon. ☽
9	454	40·2	39·8	0·4	0·1	0·1	20		0·2	Id. ☽
10	469	39·9	39·7	0·2	0·1	0·1	20		0·5	Id. ∋
11	490	38·5	38·2	0·3	0·1	0·0	20		7·0	Id.; cirro-strati.
12	514	40·2	40·0	0·2	0·0	0·0	18		9·9	Scud and cirro-stratus.
12 0½	29·775	55·5	49·5	6·0	0·4	0·2	23		……	Sunday—Scud, loose cumuli, and cirro-str.; thick cir. haze and lunar halo in the evening.
13	29·898	42·3	41·0	1·3	0·7	0·1	8		10·0	Dense cirrous mass.
14	892	45·8	43·2	2·6	0·2	0·2	16		10·0	Id.
15	896	46·2	43·7	2·5	0·2	0·1	24		10·0	Id.; rain$^{0\cdot3}$
16	893	46·4	44·0	2·4	0·1	0·1	9		10·0	Id.; id.
17	887	45·6	44·4	1·2	0·1	0·0			10·0	Id.; rain$^{0\cdot5}$
18	883	46·5	45·2	1·3	0·2	0·1	17		10·0	Id.; rain$^{0\cdot2}$
19	874	47·0	46·0	1·0	0·4	0·1	16		10·0	Thick cirro-stratus and scud; rain$^{0\cdot5}$
20	878	47·8	46·8	1·0	0·7	0·3	17	— : 20 : —	10·0	Id.; id.
21	886	49·1	48·1	1·0	0·4	0·3	17	17 : 19 : —	10·0	Loose scud; cirro-stratous scud; cirro-strati; rain^{1}
22	884	50·5	49·4	1·1	0·8	0·2	17	18 : — : —	10·0	Scud; dense cirro-stratus.
23	879	52·6	50·9	1·7	1·1	0·8	16	16 : 19 : —	10·0	Id.; id.
13 0	878	55·4	53·0	2·4	1·0	1·3	18	18 : — : —	10·0	Id.; id.
1	880	56·2	53·3	2·9	2·8	1·0	17	18 : — : —	10·0	Id.; id.
2	901	56·5	53·8	2·7	1·8	0·5	18	18 : — : —	10·0	Id.; id.
3	895	56·7	54·2	2·5	0·5	0·4	18	19 : — : —	10·0	Id.; id.
4	878	57·9	54·9	3·0	0·7	0·7	20	19 : — : —	10·0	Id.; id.
5	889	57·7	54·8	2·9	0·9	0·7	18	19 : 23 : —	9·9	Id.; cirro-cumulo-strati; cirro-strati.
6	902	57·7	54·4	3·3	1·1	1·0	18	19 : — : —	9·9	Id.; id.; id.; clouds tinged red.
7	913	57·3	53·8	3·5	1·5	0·7	18		9·8	Id.; id.; id.
8	941	57·4	53·9	3·5	0·8	0·5	20		10·0	Id.; id.
9	960	56·8	53·8	3·0	0·3	0·2	18		10·0	Dense mass of cirro-stratus.
10	964	56·1	53·4	2·7	0·2	0·1	19		10·0	Id.
11	972	56·4	53·4	3·0	0·4	0·4	18		10·0	Id.
12	983	56·3	53·3	3·0	1·1	0·5	18		10·0	Id.
13	29·987	55·5	53·2	2·3	0·7	0·8	18		10·0	Dense mass of cirro-stratus; a few drops of very fine [rain.
14	30·001	54·6	53·4	1·2	1·1	0·6	18		10·0	Scud; id.? rain$^{0\cdot3}$
15	004	54·7	53·6	1·1	0·7	0·4	19		10·0	Scud and cirro-strati; clouds rather broken; rain$^{0\cdot3}$
16	000	56·8	54·4	2·4	0·7	0·4	18		10·0	Id.; id.
17	013	56·2	53·7	2·5	0·7	0·3	19		10·0	Scud; cirro-strati; cirro-cumulo-strati.
18	012	54·3	52·0	2·3	0·5	0·8	18		9·2	Id.; id.; id.
19	017	53·8	51·2	2·6	0·5	0·4	19	— : 19 : 21	9·0	Cir.-str. scud; thick woolly cirri and cir.-str.; scud on [Cheviot.
20	032	54·7	52·0	2·7	0·2	0·1	20	— : 19 : —	9·5	As before. ●
21	043	55·3	51·4	3·9	·0·2	0·1	20	20 : — : —	9·5	Loose scud; loose cir.-cum.-str.; sheets of cir. and cir.-str.
22	040	54·6	51·3	3·3	0·3	0·1	16	— : 20 : 21	7·5	Cirro-stratus and woolly cirro-cumulo-strati.
23	038	56·0	51·8	4·2	0·1	0·1	20	— : 21 : 21	8·5	Thick woolly cirri and cirro-stratus. ●
14 0	017	59·2	54·5	4·7	0·1	0·1	18	— : 21 : —	9·0	Woolly cirro-cumuli; woolly cirri and cirro-strati. ●
1	30·005	60·3	55·0	5·3	0·2	0·1	16	— : 21 : —	8·5	Id.; id. ●
2	29·975	61·4	54·3	7·1	0·3	0·8	19	— : 21 : —	9·0	Id.; id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Oct. 13d 11h. Observation made at 11h 10m.

Oct. 13d 22h. Sheets of thin cirro-stratus having an arborescent structure, and having the appearance of very thin mottled scud when passing over the zenith, moving rather quickly.

BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
	Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
29·976	61·4	53·8	7·6	0·2	0·1	19	— : 21 : —	9·0	Woolly cir.-cum.; woolly cir. & cir.-str.; loose scud to N. ⊖
958	62·5	55·0	7·5	1·1	0·4	17	20 : — : —	9·5	Loose ragged cir.-str. scud ; cir.-cum.-str ; cir.-str. and
927	61·3	54·0	7·3	1·6	0·5	18	20 : — : —	9·8	Nearly as before. [cirri. ⊖
939	59·2	52·9	6·3	0·6	0·3	18	20 : — : —	9·9	Id.
920	58·0	52·3	5·7	0·5	0·3	18		10·0	Id.
907	58·5	50·7	7·8	0·6	0·5	18		10·0	Id.
896	58·4	51·4	7·0	0·9	0·4	18		10·0	Cirro-stratous-scud and cirro-strati.
888	56·6	50·2	6·4	0·6	0·7	17		10·0	Id.
879	56·9	49·3	7·6	0·5	0·5	18		10·0	Id.
858	57·9	49·3	8·6	0·9	0·8	19		10·0	Thick cirro-strati and cirro-cumulo-strati.
29·838	57·1	48·5	8·6	1·6	1·0	19		9·8	Thick cirro-strati and cirro-cumulo-strati.
803	55·7	48·0	7·7	1·4	0·7	20		9·9	Masses of cirro-stratous scud ; cirro-strati and haze. ⊁
795	55·2	47·8	7·4	1·1	0·8	19		9·8	Cir.-cum.-str. ; cir.-str. & cir. haze ; portion of a lunar
784	54·7	47·7	7·0	1·6	0·9	19		9·9	As before. [halo. ⊁
797	55·0	49·3	5·7	1·0	0·2	18		10·0	Dense cirro-stratus.
798	56·7	51·6	5·1	2·0	1·2	20		10·0	Id.
779	56·3	51·8	4·5	1·6	1·2	19	— : 20 : —	10·0	Cirro-stratous scud ; clouds red to ESE.
785	55·0	52·0	3·0	1·0	0·5	19		10·0	Id.
782	55·0	52·7	2·3	0·7	0·6	18	— : 19 : —	10·0	Id.
781	52·3	51·4	0·9	0·4	0·2	18	— : 19 : —	10·0	Id. ; slight drizzle.
777	53·0	52·6	0·4	0·7	0·3	18	— : 20 : —	10·0	Id. ; id.
763	54·7	53·7	1·0	0·4	0·2	18	— : 20 : —	10·0	Id.
753	55·8	54·9	0·9	0·2	0·2	20		10·0	Id.
741	58·2	56·4	1·8	0·5	0·6	21	21 : 20 : —	10·0	Ragged scud ; mass of cirro-stratus ; deep blue to E. ●
727	58·0	55·6	2·4	0·6	0·4	21	21 : 19 : —	9·9	Scud on horizon ; cirro-cumulo-strati ; cirro-strati.
730	58·2	55·8	2·4	0·6	0·3	20	23 : 19 : —	9·5	Loose scud ; id. ; id. ●
723	55·7	53·3	2·4	0·7	0·3	20	23 : — : —	9·5	Id. ; sheets of thin cirro-strati.
725	54·2	51·4	2·8	0·4	0·3	20	23 : 19 : —	9·0	Id. ; cirro-cumuli ; cirro-strati.
732	52·1	50·4	1·7	0·2	0·1	16		9·0	Scud ; cirro-strati.
735	49·8	48·5	1·3	0·3	0·2	20		0·5	Cirri and cirro-strati to E. ☽
713	46·6	45·9	0·7	0·4	0·4	20		0·3	Cirro-strati to SE. ☽
717	46·3	45·3	1·0	0·4	0·6	20		0·3	Id. ☽
696	47·7	46·9	0·8	0·6	0·3	20	22 : — : —	9·8	Scud moving rapidly.)
700	48·3	47·2	1·1	0·4	0·2	19	22 : — : —	9·0	Scud ; cirro-cumulo-strati.)
29·677	49·7	47·6	2·1	0·9	0·4	19		1·5	Scud ; cirro-cumulo-strati. ☽
653	48·4	46·7	1·7	0·9	0·5	20		0·5	Id. on E. and S. horizon. ☽
642	47·0	45·6	1·4	0·6	0·7	20		0·3	Id. ☽
633	48·4	46·4	2·0	1·0	0·1	21	— : 22 : —	3·5	Cirro-cumulo-strati ; cirro-strati. ⊁
630	50·0	47·9	2·1	0·4	1·2	20		9·5	Scud ; drops of rain.
650	48·3	46·1	2·2	1·3	0·3	21		9·8	Id. ; shower^2 since last. [cir. haze to E. ☽
665	46·3	43·6	2·7	1·7	0·8	22		0·5	Scud on Cheviot & in patches round hor. ; thin cir. and
676	46·0	43·1	2·9	0·7	0·4	22		0·3	Cirro-strati and cirrous haze on horizon. ⊙
702	48·1	44·5	3·6	1·0	0·5	22	24 : — : —	0·8	Scud ; cirro-strati ; cirri. ⊙ [woolly cirri. ⊙
725	50·3	45·6	4·7	1·6	1·5	22	24 : 23 : —	1·5	Masses of scud and loose cum. ; patches of cir.-str. and
726	52·0	46·6	5·4	1·8	1·8	22	24 : — : —	3·0	Id. ; sheets of curled cir.-str. to SE. ⊙
720	53·1	47·0	6·1	2·7	1·6	23	24 : — : —	2·0	Id. ⊙
718	54·4	47·8	6·6	2·0	1·6	22	24 : — : —	4·0	Id. ⊙
707	53·9	47·6	6·3	2·7	2·0	22	24 : — : —	2·0	Scud and loose cumuli. ⊙
712	52·5	46·7	5·8	2·7	2·2	22	24 : — : —	3·0	Id. ⊙
715	52·6	46·6	6·0	2·6	0·9	21	24 : — : —	7·0	Id.
717	51·6	46·3	5·3	2·0	1·7	21	24 : — : —	2·5	Id. ⊙
707	50·0	46·2	3·8	3·1	0·6	18	23 : — : —	9·5	Thick scud.
684	49·8	46·6	3·2	2·2	1·5	18	23 : — : —	8·0	Id.
690	49·6	46·0	3·6	1·7	1·0	17		9·5	Id. ; cirro-cumulo-strati. ☽
676	48·7	45·3	3·4	2·5	1·5	20	24 : — : —	8·5	Scud ; id. ; cirro-strati ; cirri. ⊁
673	49·0	45·7	3·3	2·7	1·2	20		10·0	Id. ; cirrous mass ; lunar halo. ⊁

direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The ns of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Gött. Mean Time.	Barometer at 32°.	Thermometers.			Wind.			Clouds, Sc.: C.-s: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1^h.	Maximum force in 10^m.	From			
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
16 11	29·657	50·0	46·4	3·6	1·2	0·8	19	23 : — : —	10·0	Scud.
12	632	50·1	46·9	3·2	1·4	1·1	19		10·0	Id. [a few drops of rain.
13	29·622	50·4	47·3	3·1	2·7	1·1	19		10·0	Scud on hor.; sky covered with cir. haze; lunar halo
14	590	49·7	47·3	2·4	2·6	1·7	19		10·0	As before, haze rather denser.
15	579	50·1	47·6	2·5	3·2	3·4	19	24 : — : —	10·0	Id.
16	580	49·8	47·6	2·2	3·1	1·6	19		10·0	Scud; thickening cirrous haze; rain$^{0\cdot3}$
17	564	49·7	47·6	2·1	1·8	1·9	19	24 : — : —	10·0	Patches of scud; thickening cir. haze; drops of rain.
18	553	50·0	47·6	2·4	2·0	2·2	19		10·0	Id.; id.; id.
19	569	49·6	47·7	1·9	2·7	1·6	20	23 : — : —	10·0	Id.; id.
20	577	48·4	46·6	1·8	1·6	0·8	21	23 : — : —	10·0	Id.; id.
21	570	49·3	47·8	1·5	0·7	0·5	19	23 : — : —	10·0	Thick scud; rain$^{0\cdot5}$
22	550	50·5	48·7	1·8	1·3	0·7	18	23 : — : —	10·0	Id.; flock of gulls moving westward.
23	535	52·3	49·3	3·0	1·8	1·0	20	23 : — : —	10·0	Scud; cirro-cumulo-strati; cirro-strati.
17 0	538	53·0	50·3	2·7	1·3	1·1	20	23 : — : —	10·0	Id.; mass of cirro-stratus and cirrous haze.
1	512	53·7	50·8	2·9	1·7	0·1	19	23 : — : —	9·9	Id.; id.
2	496	53·5	50·7	2·8	1·2	1·1	20	23 : — : —	10·0	Id.; id.
3	473	54·9	51·3	3·6	1·1	0·7	19	22 : — : —	10·0	Id.; rain$^{0\cdot3}$
4	449	52·4	51·7	0·7	0·5	0·4	18	23 : — : —	10·0	Id.; Scotch mist; rain$^{0\cdot3}$
5	436	53·2	52·7	0·5	0·6	0·5	20	24 : — : —	10·0	Id.; id.; rain$^{0\cdot5}$
6	443	54·8	53·8	1·0	0·5	0·3	22	24 : — : —	10·0	Id.; id.; rain$^{0\cdot3}$
7	452	55·6	54·0	1·6	0·5	0·4	22		10·0	Id.; id.; id.
8	453	57·0	54·3	2·7	1·7	0·8	21		10·0	Id.
9	465	56·8	54·3	2·5	1·4	0·6	21		10·0	Id.; drops of rain.
10	477	57·0	54·5	2·5	1·4	0·9	21		10·0	Id.; id.
11	470	58·0	54·7	3·3	2·1	1·5	20		10·0	Id.
12	498	57·9	54·6	3·3	2·6	2·5	21		10·0	Id.
13	29·501	58·0	54·3	3·7	3·3	1·5	21		10·0	Scud.
14	508	56·2	53·9	2·3	3·8	2·2	21		10·0	Id.
15	517	56·0	53·2	2·8	2·6	1·7	20		10·0	Id.
16	543	55·7	52·2	3·5	3·7	3·4	21		10·0	Id.
17	556	55·3	51·7	3·6	3·8	2·0	21		10·0	Id.
18	551	54·9	51·1	3·8	4·5	3·7	20	24 : — : —	9·8	Id.
19	569	54·4	50·6	3·8	3·1	1·5	21	24 : — : —	9·2	Id.; cirro-cumulo-stratus. [cir. and cir.-cu
20	564	55·4	50·6	4·8	2·9	1·9	20	24 : 26 : —	9·2	Loose scud resting on Cheviot; cir.-str. scud; mottle
21	565	55·7	51·0	4·7	2·6	1·6	20	24 : — : —	9·0	Scud; cirro-cumulo-strati; cirri.
22	558	56·3	51·6	4·7	3·3	4·3	20	23 : — : —	9·8	Id.; cirro-strati.
23	547	56·7	53·2	3·5	3·2	2·3	21	23 : 25 : —	9·8	Id.; cirro-cumulo-strati.
18 0	532	57·3	53·3	4·0	3·3	2·7	22	24 : — : —	9·9	Id.; a few drops of rain.
1	538	58·0	54·2	3·8	3·0	2·7	20	24 : — : —	10·0	Id.; id. [sionally.
2	529	58·7	54·2	4·5	3·5	5·5	23	24 : — : —	6·0	Scud or loose cumuli; cirri to E.; drops of rain occa
3	556	58·6	54·1	4·5	5·2	4·2	26	24 : — : —	2·2	Id.; id.
4	597	55·7	49·8	5·9	7·3	2·1	24	25 : — : —	1·5	Id.; id.
5	653	53·3	47·6	5·7	3·2	3·6	21	26 : — : —	3·5	Id.; woolly and mottled cirri.
6	676	52·1	47·4	4·7	2·7	1·3	24	26 : 25 : —	3·0	Scud; sheets of thin mottled cirro-stratus.
7	717	51·4	47·3	4·1	1·6	1·3	22		1·5	Scud and patches of cirri.
8	763	50·0	46·4	3·6	1·0	0·2	20		0·3	Patches of scud and streaks of cirri.
9	786	49·3	45·9	3·4	0·5	0·7	21		0·2	Id.
10	813	48·6	45·4	3·2	0·7	0·2	21		0·2	Cirri.
11	830	46·7	44·0	2·7	0·4	0·4	21		2·0	Woolly cirri to S.
12	870	46·0	43·8	2·2	0·2	0·1	18		8·5	Cirro-strati; cirro-cumulo-strati and cirri.
23¾	29·810	48·0	47·7	0·3	0·6	0·0			……	Sunday—Cloudy, with occasional sunshine and heav showers; scud from W by S.
19 13	29·509	54·4	53·4	1·0	3·9	1·9	20		10·0	Scud; cirro-stratus; rain^{1}
14	493	54·0	52·9	1·1	4·2	2·6	20	22 : — : —	9·5	Id.; loose cir.-cum.-str.; rain$^{0\cdot5}$; lunar corona.
15	470	53·9	52·7	1·2	3·4	1·7	20		10·0	Id.; id.; rain^{1}
16	507	49·7	47·2	2·5	3·1	1·6	20		10·0	Id.; id.; rain^{1}

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. Th motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Oct. 16^d 11^h. Observation made at 11^h 8^m.

Oct. 17^d 5^h. Portion of the turkey-feather vane disappeared, so that the directions for a day or two have probably been taken a poin too much south of west.

ött. ean ime.	BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
17	29·496	47·1	45·6	1·5	3·1	1·3	20		10·0	Thick mass of scud and cirro-stratus ? rain[1]
18	482	47·4	45·0	2·4	2·4	1·4	20		10·0	Id.; id.
19	464	45·9	43·4	2·5	3·9	1·1	18	23 : — : —	5·0	Scud; scud lying on Cheviot; cirro-strati on horizon.
20	455	45·5	42·0	3·5	5·1	1·8	20	24 : — : —	2·5	Id.; cumuli and nimbi; cirro-strati. ⊖
21	446	46·0	42·7	3·3	4·3	2·6	20	24 : — : —	7·0	Scud and loose cumuli; wild-looking sky.
22	449	46·7	44·0	2·7	4·5	2·6	20	24 : — : —	6·0	Id. ⊖
23	448	47·9	44·3	3·6	5·3	3·5	20	24 : — : —	8·0	Id. ⊖
0	436	51·2	45·4	5·8	6·8	7·0	24	25 : — : —	3·0	Id. ⊙
1	447	50·8	44·8	6·0	7·9	5·3	24	26 : — : —	1·5	Id. ⊙
2	473	50·6	44·4	6·2	8·9	3·7	25	26 : — : —	3·0	Id. ⊙
3	502	50·7	46·0	4·7	5·5	3·8	26	26 : — : —	0·8	Id. ⊙
4	507	49·4	42·9	6·5	6·3	5·2	28		0·2	Patches of scud and haze on horizon. ⊙
5	567	47·3	41·5	5·8	6·3	3·6	26		0·2	Id. ⊙
6	612	46·3	40·3	6·0	4·0	2·2	25	26 : — : —	0·3	Patches of scud and loose cumuli to S.; thin cirri.
7	640	44·7	40·6	4·1	3·7	2·0	21		0·0	Clear.
8	677	45·0	39·7	5·3	3·4	3·3	25		0·0	Id.
9	705	44·7	39·9	4·8	2·0	1·1	25		0·0	Id. ☽
10	747	44·3	39·3	5·0	1·8	1·3	25		0·0	Id. ☽
11	771	43·5	39·2	4·3	1·0	0·5	24		0·0	Id. ☽
12	800	43·9	38·4	5·5	1·6	0·8	23		0·0	Id. ☽
13	29·820	43·5	38·1	5·4	1·2	0·9	23		0·0	Clear; faint auroral light; altitude 5°. ☽
14	848	41·6	37·9	3·7	0·9	0·7	24		0·0	Id. ☽
15	871	42·2	38·6	3·6	0·9	0·4	24		0·3	Thin cirri, causing a coloured lunar corona. ☽
16	891	41·6	37·9	3·7	0·6	0·3	20		0·0	A very thin cirrous haze seen near the moon. ☽
17	899	40·6	37·4	3·2	0·3	0·3	21		5·0	Thin cirri over the sky; portion of a lunar halo. ☽
18	903	41·8	38·7	3·1	0·5	0·4	21	— : 29 : —	7·0	Cirro-cumuli; cirrous haze. ☽̶
19	941	42·6	39·8	2·8	0·6	0·3	20	— : 29 : —	6·0	Id.; cirro-strati; cirrous haze. ☽
20	961	42·2	39·6	2·6	0·3	0·1	23	— : 30 : —	5·0	Fine mottled and ribbed cir.-cum.; cir.-str. in patches; cir. haze. ⊖
21	968	44·2	40·9	3·3	0·4	0·4	22	— : 29 : —	8·5	Cirro-cumulo-strati and cirro-strati; cirrous haze. ⊙
22	29·988	46·0	42·5	3·5	0·9	0·4	25	— : — : 29	9·0	Thick woolly and mottled cirri; cir.-str.; cir. haze. ⊙
23	30·008	48·6	43·9	4·7	0·6	0·4	24	— : 30 : —	9·5	Sheets of cir.-str., rad. from N. and S.; cir.-cum.; scud
1 0	30·002	49·0	43·3	5·7	0·6	0·9	25	— : 30 : —	9·8	As before. [on Cheviot.
1	30·006	50·3	45·5	4·8	1·2	0·4	24	— : 30 : —	9·2	Id.
2	29·995	50·8	46·2	4·6	1·7	1·7	24		9·8	Thick mass of cirro-strati.
3	30·001	50·3	46·9	3·4	2·2	0·6	23	— : 30 : —	10·0	Id.; bank of cir.-str. scud on hor.
4	004	51·3	47·9	3·4	1·1	0·5	23	25 : 30 : —	9·8	Scud; sheets of cir.-str., rad. from N. and S.; cir.-cum. ⊖
5	002	51·7	47·7	4·0	1·6	0·7	23	26 : — : —	9·9	Id.; id.; id.
6	007	51·3	47·6	3·7	1·4	1·6	24	26 : 30 : —	10·0	Patches of scud; cir.-cum.-str.; cir.-str. and cir. haze.
7	024	50·8	47·0	3·8	1·0	0·5	20		10·0	Dense mass of cirro-stratus.
8	036	49·6	46·4	3·2	0·6	0·1	20		10·0	Id.
9	043	49·2	46·5	2·7	0·5	0·1	22		10·0	Id.
10	038	49·3	46·3	3·0	0·7	0·7	24		10·0	Id.
11	043	48·3	46·0	2·3	0·6	0·1	20		8·5	Id.; stars dim.
12	049	47·7	45·2	2·5	0·3	0·1	20		6·0	Cirro-cumulo-strati, cirro-strati, and haze. ☽̶
13	29·045	46·7	44·3	2·4	0·3	0·1	22		1·0	Cirro-strati, cirri, and cirrous haze; lunar corona. ☽
14	058	45·9	43·7	2·2	0·1	0·0	17	— : 28 : —	3·0	Cirro-cumulo-strati; cirrous haze; id. ☽
15	071	48·3	45·3	3·0	0·3	0·1	20		3·5	Id.; faint auroral light to N. ☽
16	063	46·0	44·2	1·8	0·4	0·2	20		0·5	Cir.-str. and woolly cirri; faint auroral light to N.; col. lun. cor. ☽
17	072	46·4	44·0	2·4	0·3	0·2	20		1·5	Id.; id.; id. ☽
18	072	45·0	43·0	2·0	0·3	0·1	22		1·5	Id.; coloured lunar corona. ☽
19	084	46·5	43·6	2·9	0·2	0·2	20		7·0	Woolly cirri; cirrous haze; cirro-strati; lunar cor. ☽
20	100	45·2	43·2	2·0	0·3	0·1	19	28 : 26 : —	9·5	Patches of scud; woolly cirri and cirro-strati. ⊖
21	101	46·2	43·7	2·5	0·2	0·1	20	— : 26 : 26	7·0	Woolly cirri and cirro-strati; cir.-str. scud on hor. ⊖
22	119	50·0	45·8	4·2	0·7	0·4	21	27 : — : —	9·7	Scud; cirri and cirro-strati.
23	135	50·5	46·5	4·0	0·9	0·5	21	26 : — : —	7·0	Id.; id.
2 0	131	52·2	47·7	4·5	0·8	0·4	22	26 : — : —	6·5	Id.; sheets of woolly cirri and cirro-strati. ⊖

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[1] The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
22 1	30·127	52·8	48·1	4·7	0·9	0·5	23	26 : — : —	9·7	Scud ; sheets of woolly cirri and cirro-strati. ⊖
2	113	53·0	47·8	5·2	0·9	0·8	22	26 : — : —	8·7	Scud and loose cumuli ; woolly cirri and cirro-strati.
3	118	54·3	48·1	6·2	1·3	0·7	23	26 : — : —	7·0	Id. ; id.
4	114	52·7	48·1	4·6	0·9	0·2	20	25 : 28 : 28	9·5	Id. ; woolly cir. and cir.-str. thickening.
5	117	50·6	46·7	3·9	0·8	0·4	21	25 : 26 : 26	9·8	Scud and loose cumuli ; cirri and cirro-strati.
6	124	48·4	45·2	3·2	1·7	0·2	21	25 : — : —	8·5	Scud ; cirri and cirro-strati ; cloud tinged red.
7	143	48·0	45·3	2·7	0·6	0·3	22		1·5	Id. on S. horizon.
8	170	47·4	45·0	2·4	0·2	0·2	20		2·0	Id.
9	177	48·4	45·6	2·8	0·3	0·3	22		8·0	Id.
10	172	47·3	44·9	2·4	0·4	0·3	19		0·5	Scud near horizon.
11	173	45·4	43·6	1·8	0·1	0·3	22		0·2	Hazy near horizon. ☽
12	176	46·0	44·1	1·9	0·3	0·0	12		0·3	Scud or cirro-stratus near horizon ; lunar corona. ☽
13	30·165	45·2	43·9	1·3	0·2	0·2	21		0·3	Scud or cirro-stratus near horizon ; lunar corona. ☽
14	157	46·5	45·3	1·2	0·4	0·2	19		9·5	Cirro-stratous scud ; cirro-cumulo-strati ; rain$^{0·2}$
15	172	47·1	45·6	1·5	0·2	0·0			10·0	Id. ; id.
16	152	47·7	45·3	2·4	0·1	0·4	20		8·5	Id. ; id.
17	138	46·4	44·2	2·2	0·3	0·2	19	— : 24 : —	3·0	Id. ; id. ; lunar cor. ☽
18	153	43·6	41·9	1·7	0·3	0·1	21		5·0	Id. ; id. ☽
19	170	46·4	44·1	2·3	0·2	0·2	16		9·2	Id. ; id.
20	174	48·0	44·5	3·5	0·2	0·1	19	— : 24 : —	9·8	Id. ; patches of loose scud on Cheviot ;
21	167	48·4	45·8	2·6	0·4	0·3	21	— : 24 : —	9·8	Id. ; id. [cir.-str. ; cir.
22	158	49·6	46·3	3·3	0·7	0·8	20	— : 24 : —	9·0	Id. ; id. ⊖
23	158	50·2	46·2	4·0	0·9	1·0	24	— : 25 : —	8·0	Loose cirro-stratus ; cirro-str. ; cirri ; patches of scud.
23 0	157	50·4	46·4	4·0	0·8	0·8	19	— : 24 : —	9·8	Cirro-stratous scud ; id. ; id.
1	147	51·0	46·9	4·1	0·7	1·1	20	24 : — : —	9·6	Scud ; cirro-stratous scud.
2	128	51·0	46·7	4·3	1·3	0·5	20	23 : — : —	9·8	Id. ; id.
3	121	51·2	47·0	4·2	0·9	0·3	20	23 : — : —	9·8	Id. ; id.
4	120	50·3	46·7	3·6	1·7	0·6	20	23 : — : —	9·7	Cirro-stratous scud ; cirro-cumulo-strati.
5	121	49·4	46·2	3·2	0·7	0·8	20	23 : 23 : —	9·8	Id. ; id.
6	122	49·0	46·0	3·0	0·7	0·3	21		10·0	Id.
7	126	48·8	46·0	2·8	0·8	0·4	19		10·0	Id.
8	126	48·5	45·6	2·9	0·9	0·6	20		10·0	Id.
9	127	48·3	45·4	2·9	0·9	0·8	19		9·9	Id.
10	115	48·3	45·1	3·2	0·9	0·8	18		9·9	Id.
11	093	48·2	44·6	3·6	1·1	0·9	19		8·0	Id.
12	080	47·7	44·3	3·4	1·3	1·2	20		6·0	Id. ; cirro-cumulo-strati.
13	30·077	47·9	44·6	3·3	2·1	1·0	20		7·5	Cirro-stratous scud ; cirro-cumulo-strati.
14	061	47·9	44·4	3·5	1·1	1·2	22		9·0	Id. ; id. ☽
15	048	47·0	43·4	3·6	1·2	0·8	20	— : 22 : —	7·0	Id. ; id. ☽
16	042	47·6	43·6	4·0	1·3	0·4	18		9·8	Id. ; id.
17	032	47·6	43·5	4·1	0·8	0·6	18		9·8	Id. ; id.
18	026	46·9	42·6	4·3	1·5	0·3	19	— : 22 : —	8·0	Id. ; id.
19	020	46·8	42·8	4·0	0·7	0·4	21	— : 22 : —	9·5	Id. ; id.
20	024	48·1	43·5	4·6	1·3	1·0	21	— : 22 : —	9·8	Id.
21	022	48·2	44·3	3·9	0·6	0·2	20	— : 22 : —	10·0	Id. ; dense mass of cirro-stratus.
22	005	49·2	45·3	3·9	0·4	0·6	21	— : 22 : —	10·0	Id. ; id.
23	30·001	51·3	47·4	3·9	1·3	0·5	19	— : 22 : —	9·5	Id. ; sheets of cirro-strati.
24 0	29·997	51·6	47·2	4·4	1·3	0·4	20	— : 22 : —	9·8	Id. ; id.
1	969	52·3	47·7	4·6	1·7	0·6	19	21 : 20 : —	6·0	Scud ; cirro-cumulo-strati.
2	938	52·4	47·9	4·5	2·4	1·3	20	21 : — : —	9·5	Loose and cirro-stratous scud.
3	912	51·7	49·0	2·7	1·0	0·8	19	20 : 21 : —	10·0	Scud ; cirro-stratous scud.
4	888	51·5	48·2	3·3	1·6	1·2	18	20 : 21 : —	9·0	Id. ; cirro-cumulo-strati.
5	874	50·3	47·4	2·9	1·7	0·8	19	20 : — : —	10·0	Id. ; id.
6	854	49·7	47·0	2·7	0·9	0·7	19	20 : — : —	10·0	Id. ; id.
7	843	49·6	47·0	2·6	0·5	0·6	19		10·0	Id. ; id.
8	815	49·8	47·4	2·4	1·3	0·9	18		10·0	Id. ; id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Gt. Mn. Te.	BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt pt.	0—10.	
24 9	29·798	49·9	47·7	2·2	1·6	1·3	20		10·0	Scud.
0	780	49·8	47·2	2·6	2·3	1·6	20		7·0	Scud and cirro-stratus.
1	768	50·6	47·5	3·1	1·9	0·6	20		7·0	Id.
2	752	51·0	48·0	3·0	2·3	1·2	20		9·9	Id.
3	29·752	50·9	48·2	2·7	1·6	1·0	20		7·0	Scud and cirro-stratus; sky to S.
4	748	50·4	48·9	1·5	1·6	1·1	24		10·0	Id.; very dark; rain^{2}
5	792	47·0	44·0	3·0	1·7	0·3	24		10·0	Id. [large lunar corona. ☽
6	829	45·4	42·7	2·7	1·1	0·1	23		7·0	Cir.-cum.-str. and cir.-str., radiating from NE. and SW.;
7	851	44·6	40·8	3·8	1·2	0·8	24		6·5	Thick woolly cirri and cirrous haze. ☽
8	896	42·0	39·0	3·0	0·4	0·2	26		1·0	Bands of cirro-strati and woolly cirri to SE. ☽
9	933	40·6	38·4	2·2	0·2	0·1	24		0·8	Cirro-strati to SE. ☽
0	29·975	37·8	36·6	1·2	0·3	0·0	22		2·0	Cirro-strati, cirri, and cirrous haze on horizon.
1	30·000	39·4	37·5	1·9	0·1	0·1	20		0·5	Streaks of cirri and haze on horizon. ⊙
2	020	43·0	39·7	3·3	0·2	0·2	24		0·5	Id. ⊙
3	038	45·0	41·0	4·0	0·3	0·2	20		0·3	Id. ⊙
25 0	052	46·6	41·4	5·2	0·7	0·3	24		0·3	Patches of cumuli to N.; cirrous haze on horizon. ⊙
1	062	47·4	41·7	5·7	0·7	0·4	26		0·3	A few patches of cumuli; id. ⊙
2	058	48·5	41·7	6·8	0·5	0·3	24		0·5	Id.; id. ⊙
3	061	48·0	41·6	6·4	0·5	0·4	24		0·5	Id.; id. ⊙
4	067	46·3	41·7	4·6	0·4	0·4	24	26 : — : —	0·8	Masses of cumuli; cirri and cirrous haze.
5	068	44·7	40·3	4·4	0·3	0·2	24	24 : — : —	7·0	Scud; cirrous haze.
6	068	40·7	38·3	2·4	0·3	0·1	20		2·0	Id.; id.
7	080	40·2	37·7	2·5	0·2	0·1	20		0·5	Haze on horizon.
8	081	40·0	37·9	2·1	0·1	0·0	24		0·2	Id.
9	067	40·2	37·6	2·6	0·2	0·2	20		0·5	Id.
0	050	40·8	38·0	2·8	0·6	0·4	20		0·2	Id.
1	037	39·8	37·5	2·3	0·5	0·6	20		0·5	Cirrous streaks.
2	30·018	38·7	36·8	1·9	0·8	0·5	20		0·8	Patches of cirro-strati and cirri.
23½	29·821	47·5	44·6	2·9	3·3	1·1	20	22 : — : —	……	Sunday—Overcast; scud and cirrous haze.
26 3	29·595	49·6	46·4	3·2	3·6	1·4	21		9·7	Scud and cirro-stratus; drops of rain.
4	580	49·7	46·8	2·9	2·1	2·0	21		9·9	Id.
5	560	50·0	46·6	3·4	2·7	2·0	21		9·7	Id.; drops of rain.
6	559	49·9	46·9	3·0	3·5	1·9	21		9·0	Id.
7	558	50·1	47·2	2·9	2·3	1·5	22		9·0	Id.
8	572	50·9	47·6	3·3	1·5	2·4	25		9·9	Id.; very slight drizzle.
9	577	51·2	47·6	3·6	3·1	2·1	22	24 : — : —	10·0	Patches of scud; thin cirro-stratus; drizzling rain$^{0·2}$ ☽
20	593	50·4	47·3	3·1	2·1	1·5	20	25 : — : —	10·0	Scud; cirro-stratus.
21	610	50·0	47·8	2·2	1·5	0·4	22	25 : — : —	10·0	Id.; id.
22	618	51·0	47·9	3·1	1·7	0·7	21	25 : — : —	10·0	Id.; id.
23	622	51·7	48·3	3·4	0·9	0·4	21	25 : — : —	10·0	Id.; id.
27 0	(624)	(51·5)	(48·5)	(3·0)	…	…			(10·0)	Id.; id.
1	627	51·2	48·6	2·6	0·8	0·2	20	25 : — : —	10·0	Id.; id.
2	617	52·7	48·7	4·0	0·5	0·4	20	25 : — : —	10·0	Id.; id.; drops of rain.
3	619	51·0	49·0	2·0	0·7	0·2	20	25 : — : —	10·0	Id.; id.; drizzling rain$^{0·2}$
4	594	50·2	48·9	1·3	0·3	0·1	19	22 : — : —	10·0	Cirro-stratous scud; cirro-stratus; rain$^{0·2}$
5	582	49·7	48·7	1·0	0·2	0·2	20	24 : 22 : —	10·0	Scud; cirro-stratous scud; cirro-strati; rain$^{0·2}$
6	570	50·0	49·3	0·7	0·6	0·3	20		10·0	Scud and cirro-stratus; rain$^{0·5}$
7	569	51·0	50·0	1·0	0·3	0·2	20		10·0	Id.; id.
8	559	51·5	50·6	0·9	0·5	0·4	20		10·0	Dark; rain$^{0·5}$
9	564	52·3	51·4	0·9	0·6	0·1	20		10·0	Id.; id.
0	561	53·4	52·0	1·4	0·4	0·2	21		10·0	Id.; id.
1	567	53·8	52·2	1·6	0·3	0·3	21		10·0	Id.
2	567	54·2	52·3	1·9	0·9	0·6	22		10·0	Id.
3	29·570	54·2	52·1	2·1	0·6	0·4	20		10·0	Dark.
4	573	54·2	52·0	2·2	0·6	0·4	20		10·0	Scud and cirro-stratus.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The
tions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Gött. Mean Time.		BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
27	15	29·572	54·6	51·7	2·9	1·0	0·6	24		7·0	Scud and cirro-stratus; stars dim.
	16	582	55·0	51·7	3·3	1·0	0·6	24		10·0	Id.; very dark.
	17	586	53·4	51·9	1·5	1·8	0·7	21		9·5	Id.; clouds broken.
	18	590	54·2	51·5	2·7	0·8	0·5	21		9·0	Id.; id.
	19	600	53·8	51·0	2·8	0·5	0·5	20	23 : — : —	10·0	Scud; cir.-str.; the upper clouds tinged with red to SE.
	20	614	52·8	50·6	2·2	0·2	0·3	18	23 : 26 : 26	6·0	Id.; cirri; cirro-strati.
	21	625	53·2	51·2	2·0	0·6	0·7	19	23 : 24 : —	9·9	Loose scud; cirro-stratous scud; cir.-cum.; cir.-str.
	22	625	54·6	51·7	2·9	1·1	0·8	19	23 : 24 : —	10·0	Scud; cirro-strati.
	23	629	56·0	51·7	4·3	1·3	0·6	20	23 : 25 : —	9·8	Id.; id.; cirri.
28	0	647	56·3	52·8	3·5	1·6	0·4	18	23 : — : —	10·0	Id.; id.; id.
	1	644	54·9	52·6	2·3	0·9	0·4	18	23 : — : —	9·8	Id.; id.; id.
	2	637	55·6	52·7	2·9	0·9	0·5	18	23 : — : —	9·9	Id.; id.
	3	643	54·4	51·9	2·5	1·4	0·8	19	22 : — : —	10·0	Id.; id.
	4	626	53·9	51·3	2·6	1·7	1·4	19	22 : — : —	9·9	Id.; id.
	5	639	52·5	51·3	1·2	1·4	1·1	19	22 : — : —	10·0	Id.; id.; rain$^{0\cdot5}$
	6	628	53·0	51·0	2·0	1·6	1·5	20		10·0	Id.; id.
	7	638	52·7	50·7	2·0	0·7	0·5	22		9·0	Id.; id.
	8	639	52·6	50·9	1·7	0·6	0·5	22		9·0	Id.; id.
	9	630	52·2	50·6	1·6	0·6	0·6	21		5·0	Scud and cirro-stratus.
	10	620	52·5	50·8	1·7	0·9	1·2	21		5·0	Id.
	11	610	51·8	50·2	1·6	1·5	0·8	20		1·5	Thin cirro-stratus scud?
	12	621	52·3	50·6	1·7	1·1	1·3	20		3·0	Scud on horizon.
	13	615	52·5	50·6	1·9	1·7	1·1	20		9·8	Scud; cirrous haze?
	14	616	53·0	50·6	2·4	1·1	0·7	20		10·0	Id.; id.
	15	612	52·9	50·5	2·4	1·0	0·9	20		10·0	Id.
	16	610	52·3	50·0	2·3	0·9	0·3	20		10·0	Id.
	17	608	52·6	50·3	2·3	0·6	0·9	19		10·0	Id.
	18	593	51·6	50·0	1·6	0·6	0·6	19		10·0	Id.
	19	579	52·2	51·2	1·0	0·8	0·5	20		10·0	Id.
	20	583	52·5	50·7	1·8	0·5	0·6	21	20 : 21 : —	10·0	Id.; cirro-stratous scud and cirro-stratus.
	21	576	52·6	50·8	1·8	0·5	0·6	20	21 : — : —	10·0	Id.; dense cirro-stratus and haze.
	22	576	52·3	51·1	1·2	0·8	0·3	20	20 : — : —	10·0	Id.; id.; rain$^{0\cdot5}$
	23	589	52·6	51·4	1·2	0·6	0·2	20	20 : — : —	10·0	Id.; id.; rain^{1}
29	0	587	53·2	51·2	2·0	0·8	0·5	20	20 : — : —	10·0	Id.; id.
	1	575	52·8	51·0	1·8	0·4	0·2	22	20 : — : —	10·0	Id.; id.; rain$^{0\cdot2}$
	2	561	52·5	51·0	1·5	0·4	0·0	17	19 : — : —	10·0	Id.; id.
	3	551	52·2	50·3	1·9	0·2	0·1	16	19 : — : —	10·0	Id.; id.
	4	527	51·7	49·8	1·9	0·1	0·1	19	19 : — : —	10·0	Id.; id.; rain^{1}
	5	516	50·4	49·0	1·4	0·1	0·1	20		10·0	Id.; id.; slight drizzle.
	6	511	49·8	48·7	1·1	0·2	0·2	19		10·0	Id.; rain$^{0\cdot5}$
	7	498	49·5	48·4	1·1	0·2	0·1	18		10·0	Id.; id.
	8	481	49·4	48·4	1·0	0·1	0·0	18		10·0	Id.
	9	463	49·6	48·7	0·9	0·0	0·0	20		10·0	Id.; id.
	10	444	49·7	48·9	0·8	0·1	0·0			10·0	Id.; very dark; rain$^{0\cdot5}$
	11	429	49·8	49·1	0·7	0·0	0·0	20		10·0	Rain$^{0\cdot5}$
	12	407	49·7	49·2	0·5	0·0	0·0	22		10·0	Id.
	13	29·385	51·7	50·9	0·8	0·3	0·1	18		10·0	Dark.
	14	374	52·0	51·1	0·9	0·3	0·2	19		10·0	Id.
	15	357	52·0	51·3	0·7	0·7	0·3	18		10·0	Very slight drizzle.
	16	343	52·2	51·5	0·7	0·6	0·5	18		10·0	Id.; clouds broken at 15^{h} 40^{m}.
	17	353	54·3	53·1	1·2	1·1	0·5	19		9·9	Scud.
	18	370	54·1	52·9	1·2	1·1	1·0	20		8·0	Id.
	19	398	53·8	52·3	1·5	1·2	0·2	20	23 : — : —	9·0	Id.; cirri.
	20	437	53·8	53·0	0·8	0·3	0·1	20	23 : — : —	10·0	Id.; rain^{1}
	21	470	53·0	51·0	2·0	0·8	0 4	20	23 : — : —	9·0	Id.; cirro-cumulo-strati; cirro-strati; cirri.
	22	510	53·9	51·1	2·8	0·2	0·6	22	23 : — : —	8·5	Id.; cirro-strati.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. Th motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

tt. an ie.		BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
29	23	29·540	52·2	48·0	4·2	1·9	1·3	23	23 : — : —	1·5	Scud and loose cumuli ; cumulo-strati ; cirro-strati. ⊙
30	0	567	53·4	47·2	6·2	1·8	1·8	24	24 : — : —	2·0	Loose cumuli ; thin cirro-strati. ⊙
	1	610	53·3	46·8	6·5	1·8	0·7	21	25 : — : —	4·0	Id. ; cirro-strati ; cumuli. ⊙
	2	625	52·7	45·3	7·4	2·4	1·6	21		1·5	Cirro-stratous scud ; streaks of cirri and cirrous haze. ⊙
	3	646	53·2	46·6	6·6	1·7	1·1	22	— : 25 : —	2·5	Id. ; id. ⊙
	4	678	51·6	46·1	5·5	1·3	0·1	20	— : 25 : —	2·0	Id. ; cirro-strati ; cirrous haze. ⊙
	5	707	48·7	44·7	4·0	0·6	0·7	22	— : 25 : —	0·8	Id. ; cirri ; cirrous haze.
	6	720	46·1	43·1	3·0	0·6	0·1	20		0·5	Id.
	7	741	45·0	42·0	3·0	0·2	0·1	16		1·0	Cirro-strati to S.
	8	771	41·4	40·0	1·4	0·2	0·1	22		0·2	Clear.
	9	790	42·9	41·1	1·8	0·1	0·1	18		0·0	Id.
	0	808	43·0	41·4	1·6	0·1	0·0	23		0·3	Patches of cloud.
	1	820	40·5	39·6	0·9	0·1	0·1	25		0·2	Streak of cloud to N.
	2	832	40·7	39·8	0·9	0·1	0·0	17		0·0	Clear.
	3	29·842	39·5	38·8	0·7	0·1	0·1	16		0·2	Clear.
	4	845	39·3	38·4	0·9	0·2	0·1	16		0·2	Id.
	5	845	38·8	38·0	0·8	0·2	0·1	24		0·2	Id.
	6	844	38·8	38·0	0·8	0·2	0·1	18		0·2	Id.
	7	839	40·7	39·0	1·7	0·2	0·4	22		1·0	Cirro-strati on S. and W. horizon.
	8	838	38·8	37·8	1·0	0·3	0·1	24		0·5	Patches of clouds to E. [the sky.
	9	832	42·2	40·0	2·2	0·5	0·4	20		0·8	Patches of cir.-str. on hor. ; light cirri spreading over
	20	848	39·0	38·0	1·0	0·4	0·0	16		3·0	Cirro-strati to N. ; thin cirri over most of the sky.
	21	859	44·3	41·9	2·4	0·2	0·3	20	— : 24 : —	2·5	Id. ; thin cirri ; patches of scud to N. ⊙
	22	857	46·6	44·0	2·6	0·7	0·7	18	— : — : 24	4·0	Woolly cirri, cirro-strati, and woolly cirro-cumuli. ⊙
	23	858	48·8	45·3	3·5	1·7	1·3	19	24 : — : 24	7·5	Masses of scud, woolly cirri, cirro-cumuli, and cir.-str. ⊖
31	0	870	49·7	46·3	3·4	1·4	0·8	19	23 : — : 25	7·0	Scud ; woolly cirri ; cirro-strati. ⊖
	1	878	50·0	46·9	3·1	1·0	0·4	20	24 : — : —	9·3	Id. ; id. ; id.
	2	867	52·0	48·3	3·7	0·9	0·6	19	24 : — : —	9·0	Id. ; cirro-cumulo-strati ; cirri ; cirro-strati. ⊖
	3	871	52·0	48·6	3·4	1·0	0·3	18	— : 24 : —	10·0	Cirro-stratous scud.
	4	863	53·6	50·1	3·5	1·0	0·3	19	— : 23 : —	9·5	Id. ; cirri ; cirro-strati. ⊙
	5	864	50·7	48·2	2·5	0·9	0·4	18	— : 24 : —	9·7	Id. ; id. ; id.
	6	868	49·8	47·6	2·2	0·5	0·8	18		9·0	Id. ; id. ; id. ; clouds tinged red.
	7	874	49·7	47·4	2·3	0·6	0·2	18		9·8	Id.
	8	881	50·4	48·0	2·4	0·7	0·5	20		10·0	Very dark.
	9	877	50·0	48·0	2·0	0·8	0·3	24		10·0	Id.
	10	890	49·5	47·7	1·8	0·7	0·1	17		9·8	Scud. [light to N. ; aurora ?
	11	892	49·8	47·6	2·2	0·3	0·3	20		7·0 ?	Patches of scud ; cir.-str. ; thin cir. haze over sky ; milky
	12	899	50·4	46·2	4·2	0·4	0·6	21		3·5	Thin cir.-str. and cir. haze round hor. ; milky to N. ; clear in zenith.
	13	29·915	48·8	45·4	3·4	0·3	0·2	22		7·0 ?	Cirro-strati ; cirrous haze.
	14	923	47·8	45·0	2·8	0·2	0·2	21		7·0 ?	Id. ; id. [milky to N.
	15	919	46·3	44·0	2·3	0·4	0·1	21		7·0 ?	As before ; stars seen dimly over 7·0 of sky ; rather
	16	913	46·3	43·9	2·4	0·2	0·2	21		1·5	Cirro-strati and cirrous haze on horizon.
	17	932	46·0	43·7	2·3	0·3	0·1	21		0·8	Cirrous haze on E. horizon.
	18	932	43·6	42·2	1·4	0·2	0·1	21		0·5	Id. ; sky milky to E by S.
	19	931	42·8	41·4	1·4	0·1	0·1	22		1·5	Cirro-strati and cirri on horizon.
	20	938	42·3	41·0	1·3	0·1	0·1	23	— : — : 26	5·0	Woolly and mottled cirri, rad. from E. and W. ; cir.-str.
	21	961	43·1	41·8	1·3	0·0	0·0	21	— : 28 : —	8·0	Cirro-cumulo-strati ; cirri. ⊖
	22	973	46·3	44·3	2·0	0·1	0·0	23	— : 28 : —	9·0	Id. ; id. ●
	23	985	47·8	45·8	2·0	0·0	0·0	15	— : 27 : —	7·5	Id. ; id. ●
	0	979	50·8	46·2	4·6	0·0	0·0	23		9·5	Cirro-cumulo-strati and cirro-strati ; cirri. ●
	1	982	51·2	46·3	4·9	0·1	0·0	20		9·9	Cirro-stratous scud ; cirro-strati.
	2	980	50·2	46·0	4·2	0·1	0·0	23		10·0	Dense mass of cirro-stratus.
	3	977	50·2	46·2	4·0	0·0	0·0	26		10·0	Id.
	4	976	49·0	45·6	3·4	0·0	0·0	31		10·0	Id.
	5	976	48·0	45·0	3·0	0·1	0·0	31		10·0	Id.
	6	980	47·6	44·0	3·6	0·0	0·0	8		10·0	Id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The otions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Oct. 31d 21h. Observation made at 21h 5m.

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in		From			
					1h.	10m.				
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
1 7	29·987	47·2	43·7	3·5	0·0	0·0	28		10·0	Very dark.
8	992	46·4	43·8	2·6	0·0	0·0	28		10·0	Id.
9	993	47·0	43·5	3·5	0·0	0·0			10·0	Id.
10	999	46·4	43·6	2·8	0·0	0·0			10·0	Cirro-stratous-scud ? clouds tending to break.
11	29·998	45·4	43·5	1·9	0·0	0·0			10·0	Homogeneous.
12	30·005	45·0	43·3	1·7	0·0	0·0	18		10·0	Id.
2 1½	30·116	48·0	44·0	4·0	0·1	0·1	8	— : 8 : —	10·0	Cirro-stratous scud.
13	30·138	42·2	40·0	2·2	0·3	0·1	17		10·0	Scud.
14	128	42·8	39·7	3·1	0·2	0·1	16		10·0	Id.
15	124	42·3	39·3	3·0	0·4	0·1	17		10·0	Id.
16	109	42·5	39·0	3·5	0·2	0·2	18		10·0	Id.
17	103	41·8	39·3	2·5	0·1	0·1	18		10·0	Id.
18	099	41·5	38·9	2·6	0·1	0·1	18		10·0	Id.
19	098	41·6	38·9	2·7	0·2	0·1	16		9·9	Id.
20	108	40·8	38·7	2·1	0·1	0·0	18	— : 19 : —	10·0	Cirro-stratous scud.
21	120	41·4	39·4	2·0	0·0	0·0	18	— : 18 : —	9·8	Id. ; thick and flame-like cirri to SE.
22	125	42·7	40·0	2·7	0·1	0·0	18	— : 18 : —	9·9	Id. ; cirrous haze and cirro-strati. ⊖
23	125	43·5	40·6	2·9	0·2	0·1	16	— : 19 : —	9·8	Id. ; id. ⊖
3 0	124	44·6	41·4	3·2	0·1	0·1	18	— : 20 : —	7·0	Id. ; cirri and cirrous haze. ⊖
1	115	45·0	42·0	3·0	0·1	0·0	20	— : 21 : —	9·8	Id. ; id.
2	104	47·4	43·3	4·1	0·1	0·0	20	— : 20 : —	8·0	Id. ; id.
3	091	46·7	42·5	4·2	0·1	0·0	20	— : 21 : —	9·5	Id. ; id.
4	088	44·8	41·2	3·6	0·1	0·0	18	— : 20 : —	7·0	Id. ; id.
5	085	37·7	36·6	1·1	0·0	0·0	18		3·5	Cirri and cirrous haze ; patches of scud to W.
6	080	34·3	33·6	0·7	0·0	0·0	16		0·5	Cirri and cirrous haze on horizon. ☽
7	092	32·1	31·4	0·7	0·1	0·0	23		0·2	Id. ☽
8	091	30·7	30·5	0·2	0·0	0·0			0·2	Cirrous haze on horizon.
9	097	30·6	30·2	0·4	0·0	0·0			0·2	Id.
10	091	29·6	29·4	0·2	0·0	0·0			0·2	Id.
11	068	29·7	29·3	0·4	0·0	0·0			0·0	Clear ; hoar-frost on the ground.
12	061	29·8	30·5	···	0·0	0·0			0·0	Id.
13	30·050	28·0	27·9	···	0·0	0·0			0·0	Clear.
14	30·028	29·2	29·0	0·2	0·0	0·0			0·0	Id.
15	30·012	27·1	27·1	···	0·0	0·0			0·0	Id.
16	29·997	28·0	27·4	0·6	0·0	0·0			0·0	Id.
17	979	28·0	27·7	0·3	0·0	0·0	24		0·0	Id.
18	970	28·5	28·0	0·5	0·0	0·0	22		0·0	Id.
19	960	29·5	29·3	0·2	0·1	0·0	26		0·7	Cirro-strati and cirri on E. horizon.
20	953	28·4	27·6	0·8	0·0	0·0	22		0·7	Cirri and cirrous haze on E. horizon.
21	949	29·0	28·6	0·4	0·0	0·0	18		1·5	Cirri and cirro-strati to SE. ⊖
22	942	31·7	31·4	0·3	0·0	0·0	20	— : — : 20	3·0	Woolly cirri and cirro-strati rad. from SW. and NE. ⊙
23	925	34·4	32·4	2·0	0·0	0·0	28	— : — : 20	4·0	Id. ⊙
4 0	909	37·9	37·1	0·8	0·0	0·0	26	— : — : 20	4·0	Id. ; cirrous haze. ⊙
1	886	39·8	38·7	1·1	0·0	0·0	22	— : — : 20	4·0	Id. ; id. ⊙
2	853	45·3	40·0	5·3	0·1	0·0	22	— : — : 20	4·0	Id. ; id. ⊙
3	836	47·3	40·8	6·5	0·2	0·1	21		2·0	Id. ; cir. haze on hor. ⊙
4	824	43·5	39·7	3·8	0·1	0·0	18		0·2	Id. ; id. ⊙
5	810	39·1	35·3	3·8	0·1	0·0	20		0·2	Id. ; cirrous haze. ☽
6	796	37·2	32·9	4·3	0·1	0·0	18		0·2	Id. ; id. ☽
7	792	32·6	30·0	2·6	0·0	0·0			0·0	Clear ; haze on horizon ? ☽
8	772	31·0	28·6	2·4	0·0	0·0	17		0·0	Id. ; id. ☽
9	761	29·0	27·0	2·0	0·0	0·0	16		0·0	Id.
10	741	31·9	28·7	3·2	0·1	0·0	14		0·0	Id.
11	708	35·8	31·4	4·4	0·4	0·4	17		0·0	Id. ; very faint auroral light to NNW.
12	680	38·0	32·9	5·1	1·2	1·0	17		0·0	Id. ; aurora.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Gö. Ma Ti		BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1^h.	Maximum force in 10^m.	From			
	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
4	3	29·666	36·4	33·2	3·2	0·9	0·3	18		0·0	Clear.
	4	648	34·9	32·2	2·7	0·4	0·1	19		0·0	Id.
	5	620	35·5	32·4	3·1	0·4	0·1	24		0·0	Id.
	6	597	34·2	31·0	3·2	0·1	0·0	20		0·0	Id.
	7	568	31·6	29·8	1·8	0·0	0·0	8		0·0	Id.
	8	539	31·4	29·4	2·0	0·0	0·0			0·0	Id.
	9	537	31·9	30·2	1·7	0·1	0·1	18		0·0	Id.; fine red on E. horizon.
	0	544	35·5	32·7	2·8	0·6	0·5	16		0·0	Id.; reddish on W. horizon.
	1	548	34·5	32·1	2·4	0·3	0·1	26		0·2	Id.; cloud on S. horizon. ⊙
	2	540	37·6	34·4	3·2	0·2	0·0	0		0·2	Id.; thin cirri and haze on horizon. ⊙
	3	528	39·7	36·3	3·4	0·0	0·0	16		0·2	Id.; id. ⊙
5	0	503	42·7	38·4	4·3	0·1	0·0	16		0·5	Streaks of cir. to E. and W., radiating from about N.; hazy on hor. ⊙
	1	485	45·5	41·3	4·2	0·2	0·1	12	— : 20 : —	0·7	Loose cirro-stratus; cirro-strati; cirrous haze. ⊙
	2	476	47·7	43·7	4·0	0·2	0·1	11	— : 18 : —	6·5	Cir.-str. scud and loose cir.-str.; cum.-str.; woolly cirri and haze. ⊙
	3	463	47·1	43·4	3·7	0·4	0·1	14		0·8	Patches of loose cir.-str.; cir.-cum.-str.; cir.; brownish atmospheric haze. ⊙
	4	441	44·4	41·5	2·9	0·1	0·0	12	— : — : 19	1·5	Woolly and mottled cir.; cir.-str. and haze. ⊙
	5	447	42·6	40·3	2·3	0·1	0·0	12		5·0	Id.; id. ☽
	6	447	38·5	37·5	1·0	0·0	0·0	30		1·0	Cirro-strati and cirri. ☽
	7	435	36·8	36·1	0·7	0·0	0·0			0·5	Patches of cirri; cir. haze; coloured lunar corona. ☽
	8	432	35·3	34·8	0·5	0·0	0·0			2·0	Cirro-str., cir.-cum., and cirrous haze; lunar corona. ⊁
	9	416	36·6	35·9	0·7	0·0	0·0	16		10·0	Scud? the sky became overcast about 8^h 30^m.
	0	394	41·4	40·5	0·9	0·5	0·0	6		9·0	Cirro-stratus and haze.
	1	389	42·9	41·9	1·0	0·1	0·1	22		10·0	Id.
	2	377	43·6	42·6	1·0	0·1	0·0			10·0	Id.
	3	29·370	45·4	44·1	1·3	0·0	0·0			10·0	Very dark.
	4	358	45·9	44·9	1·0	0·1	0·1	16		10·0	Id.
	5	344	49·3	47·9	1·4	0·3	0·0			8·5	Clouds broken.
	6	350	49·4	48·0	1·4	0·0	0·1	18		9·8	Scud.
	7	351	51·7	49·7	2·0	0·6	0·2	16		10·0	Id.
	8	343	51·8	50·0	1·8	0·4	0·2	16		10·0	Id.
	9	340	50·5	48·7	1·8	0·5	0·2	16	18 : — : —	3·0	Id.; cirro-strati.
	0	338	49·6	48·0	1·6	0·4	0·3	16	20 : — : —	2·5	Patches of scud; sheets of cir.-cum.-str.; cirri and haze.
	1	338	50·3	48·5	1·8	0·5	0·5	15	— : 16 : —	5·0	Loose cir.-cum.-str.; scud; flame-like and linear cirri. ⊙
	2	338	51·4	49·5	1·9	0·5	0·3	16	16 : — : —	5·0	Cirro-cumulous scud; sheets of cirro-strati and cirri ⊖
	3	332	52·0	49·8	2·2	0·9	0·7	16	17 : — : —	5·0	Scud; cirro-strati. ⊖
6	0	311	56·0	52·4	3·6	0·8	1·0	16	18 : 16 : —	4·0	Id.; patches of cirro-strati and cirri. ⊖
	1	294	54·1	51·1	3·0	0·8	0·5	14		5·0	Scud near horizon; cir.-cum.-str. and woolly cirri. ⊙
	2	285	56·1	52·3	3·8	0·9	0·5	15	— : 16 : —	4·0	Cirro-cumulo-strati; woolly cirri. ⊙
	3	262	54·0	50·9	3·1	1·5	1·0	15	— : 15 : —	3·5	Sheets of cirro-strati and cirro-cumulo-strati.
	4	244	52·2	50·0	2·2	1·7	0·9	14	14 : 15 : —	3·0	Loose scud near horizon; cirro-cumulo-strati.
	5	223	52·0	49·8	2·2	2·2	1·2	14	14 : 15 : —	7·5	Patches of scud; cir.-str.; cir.-cum.-str.; brown haze on hor. ⊁
	6	201	52·7	50·5	2·2	1·1	1·3	14	— : 14 : —	8·5	Cirro-cumulo-strati and cirro-strati. ⊁
	7	194	53·0	50·7	2·3	1·3	1·5	15		9·8	Id.
	8	175	52·8	50·3	2·5	1·3	0·4	13		10·0	Scud and cirro-strati.
	9	164	53·3	50·2	3·1	1·2	1·2	12		9·9	Id.
	0	136	52·4	49·8	2·6	1·9	1·8	14		10·0	Id.; cirrous mass.
	1	109	51·2	48·7	2·5	0·9	1·1	12		10·0	Id.; id.
	2	107	50·9	48·6	2·3	1·1	0·1	12		10·0	Very dark.
	3	29·083	50·8	48·5	2·3	0·3	0·2	7		10·0	Very dark; a few drops of fine rain.
	4	29·039	50·1	48·5	1·6	0·3	0·4	11		10·0	Id.; rain$^{0·2}$
	5	29·021	50·0	48·6	1·4	0·6	0·4	11		10·0	Id.; shower^{1} since last hour.
	6	28·978	50·7	48·9	1·8	1·3	0·7	13		10·0	Cirro-strati; rather broken to E.
	7	28·990	50·7	49·2	1·5	2·0	0·7	14		10·0	Id.; dark.
	8	28·980	50·5	49·2	1·3	1·3	0·2	14		10·0	Scud and cirro-strati; clouds broken to S.
	9	28·983	51·2	49·5	1·7	0·6	0·2	14		9·8	Id.
	0	29·028	52·3	49·5	2·8	1·5	1·5	18	19 : 18 : —	8·5	Loose scud; dense mass of wavy cirro-strati.

he direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The mions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

ov. 5^d 7^h. Auroral arch 12° altitude to NNW.

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	10m.	From			
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
6 21	29·047	49·0	46·0	3·0	2·0	1·7	18	19 : — : 14	4·0	Patches of scud; woolly and linear cirri.
22	095	49·2	45·0	4·2	2·3	0·9	18	— : — : 14	6·5	Woolly and linear cir.; scud and cir.-str. round hor.
23	141	51·3	47·0	4·3	1·3	1·2	18	19 : — : —	7·5	Scud and loose cumuli; cirro-strati; cirri.
7 0	161	52·1	47·3	4·8	1·3	0·9	16	19 : — : —	6·5	Id.; id.
1	170	51·5	46·6	4·9	1·3	1·3	16		0·7	Loose scud and cirro-strati round horizon.
2	187	52·0	46·9	5·1	0·8	1·2	17		0·5	Id.
3	203	49·8	45·2	4·6	0·3	0·1	15	— : — : 16	3·0	Woolly cirri; cirro-strati; haze.
4	191	49·8	45·1	4·7	0·3	0·2	14	16 : — : 16	9·0	Scud; woolly cirri; cirro-strati; haze.
5	178	47·7	45·6	2·1	0·4	0·3	16	— : 16 : —	9·0	Cirro-stratus; cirri and cirrous haze.
6	182	49·4	46·5	2·9	2·1	1·7	13		5·0	Cirro-cumulo-stratus; cirro-strati; cirrous haze.
7	186	50·2	47·4	2·8	2·1	1·0	14		9·8	Thickening cir.-str. and cir. haze; drops of rain.
8	179	50·1	47·7	2·4	1·8	1·3	13		9·5	Cirro-cumulo-strati; cirro-strati; showers occasionally.
9	179	51·7	48·7	3·0	3·2	2·7	14		10·0	Patches of scud; cirro-strati; cirrous haze.
10	205	51·1	49·2	1·9	3·7	2·3	16		10·0	Dark; rain^2
11	194	48·9	47·4	1·5	0·9	0·5	16	17 : — : —	5·0	Scud; cirrous haze.
12	175	49·3	47·7	1·6	2·2	1·0	15		3·0	Cirri and cirrous haze.
13	29·179	50·3	48·1	2·2	1·8	1·7	15		9·9	Scud and cirro-strati.
14	188	49·9	48·0	1·9	1·9	0·4	14		10·0	Id.
15	181	50·1	48·4	1·7	0·5	0·1	13		10·0	Id.
16	170	50·2	48·4	1·8	0·3	0·2	13		10·0	Id.
17	165	50·3	48·7	1·6	0·4	0·2	18		10·0	Drops of rain.
18	157	50·6	48·7	1·9	1·2	0·5	18		9·0	Scud and cirro-strati.
19	159	50·2	48·6	1·6	1·0	0·9	15		9·9	Id. [on horizon.
20	169	51·0	49·1	1·9	1·4	0·7	16	— : 16 : —	10·0	Cir.-str. scud; cir.-str.; homogeneous cir. mass; scud
21	179	51·7	49·8	1·9	0·8	0·7	15	16 : — : —	10·0	Scud; cirro-strati, &c., as before.
22	204	52·6	50·4	2·2	1·1	0·6	15	16 : — : —	10·0	Id.; id.
23	205	53·4	51·3	2·1	0·6	0·2	15	16 : — : —	10·0	Id.; id.
8 0	206	53·8	51·8	2·0	0·3	0·1	15	16 : — : —	10·0	Id.; id.
1	206	54·9	51·9	3·0	0·2	0·2	15	17 : — : —	10·0	Id.; id.; drops of rain.
2	210	52·7	51·5	1·2	0·3	0·1	17	18 : — : —	10·0	Id.; id.; rain$^{0\cdot2}$
3	213	52·3	51·3	1·0	0·0	0·0	15		10·0	Dense mass of undulated cirro-strati.
4	225	51·0	49·9	1·1	0·1	0·0	17	20 : — : —	10·0	Loose scud; cirrous mass; rain$^{0\cdot2}$
5	241	49·9	49·3	0·6	0·0	0·0	16	19 : — : —	10·0	Scud; dense cirro-stratus.
6	250	46·1	46·0	0·1	0·0	0·0			4·0	Scud and cirro-strati; stratus on the ground.
7	277	44·9	44·7	0·2	0·0	0·0			9·5	Cirro-cumulo-strati; two bats seen.
8	286	45·0	44·9	0·1	0·0	0·0	16		9·9	Id.; cirro-strati.
9	303	44·8	44·5	0·3	0·0	0·0	2		9·8	Id.; id.
10	304	43·8	43·6	0·2	0·0	0·0	24		9·8	Id.; id.; stratus on the ground.
11	305	43·0	42·8	0·2	0·0	0·0	24		9·8	Id.; id.; mist on the ground.
12	302	44·0	43·8	0·2	0·0	0·0	4		3·0	Id.; woolly cirri; id.
23¾	29·295	46·5	46·0	0·5	0·0	0·0			……	Sunday—Cirro-strati; cirri; occasional sunshine; foggy throughout the day.
9 13	29·314	35·3	35·0	0·3	0·0	0·0		— : 16 : —	8·0	Cirro-cumulo-strati; fog on the ground.
14	306	34·6	34·3	0·3	0·0	0·0			6·5	Id.; id.
15	292	36·0	35·6	0·4	0·0	0·0	17		10·0	Id.; id.; drops of rain.
16	282	37·6	37·3	0·3	0·0	0·0			10·0	Dark; clouds homogeneous.
17	266	38·9	38·6	0·3	0·0	0·0			10·0	Id.; id.
18	261	39·1	38·8	0·3	0·0	0·0			10·0	Id.; id.
19	249	39·9	39·6	0·3	0·0	0·0			10·0	Clouds homogeneous.
20	246	41·0	40·7	0·3	0·0	0·0	22	13 : — : —	10·0	Misty scud; cirrous mass; foggy.
21	235	42·2	41·9	0·3	0·0	0·0		13 : — : —	10·0	Scud; slight fog.
22	225	43·4	43·2	0·2	0·0	0·0		13 : — : —	10·0	Id.; id.
23	208	45·3	45·0	0·3	0·0	0·0		14 : — : —	9·9	Scud; cirro-strati; slight fog.
10 0	181	47·2	46·7	0·5	0·0	0·0			9·9	Id.; id.; fog on horizon.
1	164	48·8	48·0	0·8	0·0	0·0	6		9·8	Id.; id.; id.
2	150	49·0	48·1	0·9	0·1	0·0	4	14 : — : —	9·8	Id.; id.; id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
	Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
29·147	49·1	48·2	0·9	0·0	0·0	2	5 : 14 : —	9·8	Misty scud ; cirro-strati ; fog on horizon. ●
131	48·8	48·3	0·5	0·1	0·0	3	5 : — : —	9·6	Id. ; id. ; id.
126	48·3	47·8	0·5	0·1	0·1	4	— : 6 : —	9·5	Cirro-cumulo-strati ; cirro-strati.
126	47·4	47·1	0·3	0·1	0·0	4		10·0	Id. ? drops of rain.
121	47·3	46·9	0·4	0·1	0·0	4		10·0	Id.
124	47·4	47·1	0·3	0·1	0·0	6		10·0	Id. ; rain[1]
119	47·2	46·9	0·3	0·0	0·0			10·0	Id.
119	46·7	46·5	0·2	0·0	0·0	8	— : 15 : —	8·0	Thin cirro-cumulo-strati ; fog on the ground. ☽
116	45·0	44·7	0·3	0·0	0·0		— : 14 : —	9·5	Cirro-cumulo-strati ; stratus in the valleys. ☽
114	44·7	44·4	0·3	0·0	0·0	4		9·9	Scud ; cirro-cumulo-strati.
29·114	45·5	45·0	0·5	0·1	0·0	2		10·0	Scud ; cirro-cumulo-strati.
114	45·5	45·1	0·4	0·0	0·0			10·0	Id. ; id. ; nearly homogeneous.
116	45·6	45·3	0·3	0·0	0·0	4		9·9	Id. ; id.
122	44·8	44·3	0·5	0·0	0·0			9·7	Id. ; id.
136	42·7	42·1	0·6	0·0	0·0	12		8·0	Id. ; id.
152	41·9	41·0	0·9	0·1	0·0	14		0·5	Masses of scud.
170	38·3	37·8	0·5	0·2	0·1	14		0·5	Cirro-cumulo-strati on E. horizon.
189	38·4	38·0	0·4	0·1	0·0	28	14 : 10 : —	5·0	Loose misty scud ; cirro-cumulo-strati.
197	36·7	36·5	0·2	0·0	0·0	17		1·0	Cirro-strati on horizon. ⊙
215	39·0	38·6	0·4	0·0	0·0	4		1·0	Cirro-strati and cirrous haze. ⊙
215	42·1	40·7	1·4	0·1	0·0	3	— : — : 13	2·0	Thick woolly cirri ; cirro-strati ; stratus on horizon. ⊙
223	43·6	42·0	1·6	0·0	0·0	8	13 : 13 : —	1·0	Loose cumulo-stratus and cirro-cumulo-stratus ; haze or
218	45·3	43·3	2·0	0·0	0·0	2	13 : 13 : —	4·0	As before. ⊙ [stratus ? on hor. ⊖
212	46·2	43·9	2·3	0·0	0·0	31	12 : — : —	9·5	Scud ; cumulo-strati ; cirro-strati.
207	46·9	45·1	1·8	0·1	0·0	8	10, 12 : 13 : —	9·5	Misty scud on hor. ; cir.-str. scud ; cum.-str. ; cir.-cum.-str. ; foggy.
207	46·5	45·4	1·1	0·1	0·0	28	11 : — : —	10·0	Scud ; cirro-strati, &c., as before.
206	45·7	44·7	1·0	0·1	0·1	5	— : 12 : —	7·5	Cir.-cum.-str. ; cir.-str. ; cum.-str. ; cir.-str. ; cir. haze.
222	43·6	43·1	0·5	0·0	0·0	28		9·0	As before.
226	42·5	42·1	0·4	0·0	0·0			9·8	Cirro-stratous scud ; cirro-cumulo-strati.
233	40·4	40·1	0·3	0·0	0·0			0·5	Cirro-cumulo-strati ; slight fog on the ground. ☽
239	38·7	38·3	0·4	0·0	0·0	28		9·5	Id. ; id. ; col. lun. cor. ☽
244	36·4	36·1	0·3	0·0	0·0	17		1·0	Patches of cir.-str. ; rather thick fog, causing a colourless lun. cor. ☽
243	33·3	33·0	0·3	0·0	0·0	17	— : 8 : —	2·5	Cirro-cumulo-strati ; dense fog ; lunar corona. ☽
252	34·7	34·2	0·5	0·0	0·0	18	8 : — : —	10·0	Misty scud ; fog clearing off.
29·250	36·7	36·5	0·2	0·0	0·0	17		10·0	Thick mass. [lunar corona. ☽
254	36·8	36·5	0·3	0·0	0·0	8	— : 4 : —	6·0	Cir.-cum.-str. ; woolly cirri ; stratus on hor. ; mist on the ground ;
255	34·9	34·7	0·2	0·0	0·0	2	4 : — : —	9·0	Misty scud ; dense fog. ☽
260	35·4	35·0	0·4	0·0	0·0	28	— : 3 : —	9·0	Cirro-cumulo-strati ; foggy. ☽
266	34·2	34·0	0·2	0·0	0·0	17		9·5	Scud ; dense mist.
271	35·7	35·3	0·4	0·0	0·0	2		3·0	Id. ; woolly cirri.
277	35·6	35·5	0·1	0·0	0·0	20		3·0	Id. ; bands of cirri stretching from N by E. to S by W.
288	36·4	36·2	0·2	0·0	0·0	16	4 : — : —	6·0	Id. ; cirri. [like cirri.
306	37·6	37·2	0·4	0·0	0·1	18	3 : — : 20	1·8	Loose scud and cum., with cum.-str. on hor. ; woolly, linear, and flame-
316	43·0	42·6	0·4	0·0	0·0	30	1 : — : —	9·7	Scud and loose cumuli ; cirro-strati and cirri. ⊖
329	46·0	44·9	1·1	0·0	0·0	0	1 : — : —	9·8	Id.
330	46·2	44·6	1·6	0·3	0·2	0	0 : — : —	2·5	Id. ; patches of cir.-cum.-str. ; cirri. ⊖
339	47·4	45·0	2·4	0·5	0·3	31	0 : — : —	2·5	Id. ; id.
350	47·1	44·3	2·8	0·4	0·3	30	0 : — : —	9·5	Loose cumuli ; cirro-stratous scud ; cirro-cum.-str. ⊙
359	46·7	44·2	2·5	0·2	0·2	30	0 : — : —	7·5	Id. ; id. ; patches of cirri.
378	44·5	42·5	2·0	0·2	0·0	28	31 : — : —	2·5	Id. ; id.
397	42·9	41·1	1·8	0·0	0·0	26	0 : — : —	5·0	Id. ; id. ☽
414	40·2	39·4	0·8	0·0	0·0	26		0·2	Cirro-cumulo-strati and cirro-strati. ☽
430	38·2	37·8	0·4	0·1	0·0	20		0·2	Cirro-strati and haze. ☽
442	35·8	35·5	0·3	0·1	0·0	16		0·2	Id. ☽
454	36·2	36·0	0·2	0·1	0·0	17		2·0	Cirro-cumulo-strati to SE. ; lunar corona. ☽
482	34·4	34·0	0·4	0·1	0·0	14	— : 2 : —	1·0	Id. ; haze on horizon. ☽

e direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The m ons of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Gött. Mean Time.		BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1h.	10m	From			
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
12	11	29·500	34·1	33·8	0·3	0·0	0·0	18		0·0	Sky milky; faintly coloured lunar corona.
	12	508	32·7	32·6	0·1	0·1	0·0	16		0·1	Sky milky; streaks of cir.-str. to N.; faintly coloured lunar cor.
	13	29·518	31·8	31·5	0·3	0·0	0·0	16	— : 0 : —	9·5	Thin cirro-cumulo-stratus; lunar corona.
	14	526	33·7	33·3	0·4	0·0	0·0	18	— : 0 : —	4·5	Id.; faint lunar corona.
	15	531	34·8	34·4	0·4	0·1	0·0	18	— : 0 : —	7·0	Id.
	16	546	34·8	34·4	0·4	0·0	0·0	18	— : 0 : —	9·2	Cirro-cumulo-stratus.
	17	557	35·8	35·4	0·4	0·0	0·0	18	— : 0 : —	8·0	Id.
	18	571	37·4	36·7	0·7	0·0	0·0	18	— : 0 : —	9·0	Id.
	19	581	34·8	34·5	0·3	0·0	0·0	16		8·0	Id.
	20	601	34·4	34·0	0·4	0·0	0·0	18	— : 0 : —	2·0	Id.; bank of cirro-strati to E.
	21	628	32·4	32·2	0·2	0·0	0·0	20	— : 0 : —	2·0	Id.; wild ducks flying west.
	22	646	34·9	34·7	0·2	0·0	0·0	16		1·5	Id.
	23	656	37·0	36·7	0·3	0·0	0·0	28	— : 1 : —	4·0	Id.; cirro-strati.
13	0	661	40·8	39·8	1·0	0·0	0·0	15	— : 2 : —	3·5	Cir.-cum.-str.; scud and loose cum. to W.; cir.-str.
	1	665	45·2	43·0	2·2	0·1	0·0	6	2 : — : —	9·5	Scud and loose cumuli; cirro-strati; haze on horizon.
	2	663	46·0	43·4	2·6	0·2	0·2	30	2 : — : —	9·2	Id.; id.; id.
	3	665	45·4	42·8	2·6	0·2	0·1	0	2 : — : —	9·8	Scud; dense mass of cirro-stratus.
	4	680	44·7	42·3	2·4	0·1	0·1	31		9·8	Id.; id.
	5	693	43·7	41·8	1·9	0·1	0·1	0		9·8	Id.; cumulo-strati.
	6	711	42·6	40·8	1·8	0·0	0·0	0		9·8	Thick cirro-cumulo-strati.
	7	723	42·2	39·9	2·3	0·0	0·0	1		9·9	Id.
	8	736	40·7	39·0	1·7	0·0	0·0	22	— : 0 : —	9·9	Id.; a few drops of fine rain.
	9	746	41·3	39·2	2·1	0·0	0·0	18	— : 0 : —	9·9	Id.
	10	758	40·1	38·6	1·5	0·0	0·0	26		9·9	Id.
	11	763	39·0	38·1	0·9	0·0	0·0			10·0	Id.
	12	776	38·8	38·0	0·8	0·0	0·0	18		10·0	Id.
	13	29·777	38·2	37·4	0·8	0·0	0·0			9·5	Thick cirro-cumulo-strati; moon eclipsed.
	14	773	36·4	36·0	0·4	0·0	0·0	8		6·0	Loose cirro-cumulo-strati.
	15	777	33·2	33·0	0·2	0·1	0·1	18		0·8	Cirro-cumulo-strati on horizon.
	16	776	30·9	30·4	0·5	0·0	0·0	16		0·8	Id.; patches of cirri.
	17	778	28·6	28·4	0·2	0·0	0·0			0·8	Cirro-cumuli and cirro-strati.
	18	783	29·8	29·7	0·1	0·0	0·0	28		7·0	Cirro-cumulo-strati.
	19	798	31·0	30·8	0·2	0·0	0·0	14		9·0	Id.
	20	800	31·3	30·6	0·7	0·0	0·0	24	— : 27 : —	7·0	Id.
	21	809	31·8	31·3	0·5	0·0	0·0		— : 27 : 28	6·0	Id.; woolly cirri. [cir. haze on hor.
	22	808	32·2	31·6	0·6	0·0	0·0	28		7·0	Woolly cir. rad. from NNW.; cir.-cum.-str.; cir.-str.; cum.-str. and
	23	815	35·4	35·0	0·4	0·1	0·0	24	— : — : 24	7·0	Woolly cirri; cirro-cum.-str.; cir. haze; solar halo.
14	0	804	37·2	36·7	0·5	0·1	0·0	17	— : 24 : —	8·5	Cirro-cumulo-strati; woolly cirri; cirrous haze.
	1	789	39·6	38·6	1·0	0·0	0·0		— : 23 : —	9·5	Id.; cir.-cum.; thin cir.-strati; cirri and cirrous haze.
	2	769	41·3	40·2	1·1	0·0	0·0	28		9·2	As before. ⊖ [str. to E.; cir.-str.; cirri.
	3	763	42·2	40·8	1·4	0·1	0·0	8	— : 23 : —	9·9	Cir.-cum.-str., with ragged and mottled cir. scud forming beneath;
	4	758	41·3	39·9	1·4	0·0	0·0		— : 23 : —	10·0	Nearly as before; clouds rather denser.
	5	750	40·3	39·4	0·9	0·1	0·0	4	— : 23 : —	9·8	Id.; foggy to E.
	6	743	39·3	38·5	0·8	0·0	0·0			7·0	Cirro-cumulo-strati; cirro-strati.
	7	741	34·4	34·2	0·2	0·0	0·0			1·0	Loose cirro-cumulo-strati; slight fog on the ground.
	8	737	35·0	34·8	0·2	0·0	0·0	6		8·0	Id.; id.
	9	730	35·2	34·9	0·3	0·0	0·0			10·0	Id.
	10	716	36·3	35·9	0·4	0·0	0·0			9·7	Cirro-cumulo-strati.
	11	706	35·2	34·8	0·4	0·0	0·0	16		9·9	Id.; haze.
	12	700	34·0	33·8	0·2	0·0	0·0	23		0·0	Clear.
	13	29·689	32·5	32·2	0·3	0·0	0·0	18		0·0	Clear.
	14	671	31·8	31·6	0·2	0·0	0·0	18		0·0	Id.
	15	658	29·7	29·5	0·2	0·0	0·0	20		0·0	Id.
	16	631	28·7	28·8	···	0·0	0·0	18		0·2	Cirro-cumulo-strati to W.
	17	618	30·5	30·1	0·4	0·0	0·0	18	— : 19 : —	9·9	Id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
	Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
29·609	30·5	30·6	...	0·1	0·0	31	— : 19 : —	5·0	Cirro-cumulo-strati to W.; cirro-strati and haze. ☽
593	31·2	30·7	0·5	0·0	0·0			9·7	Cirro-cumulo-strati; cirro-strati.
573	32·6	31·5	1·1	0·0	0·0	4		9·7	Id.; id.; slight fog.
568	35·3	34·3	1·0	0·1	0·3	18	— : 20 : —	7·0	Id.; id. ⊙
554	35·3	35·0	0·3	0·1	0·0	30		3·5	Id.; id.
525	38·7	37·7	1·0	0·2	0·3	16	— : 18 : —	4·0	Id.; id. ⊖
516	42·3	40·6	1·7	1·1	0·4	18	— : 18 : —	9·7	Id.; id. ⊖
497	44·3	42·4	1·9	0·6	0·2	17	18 : — : —	10·0	Scud; dense cirro-stratus and haze.
471	45·8	43·4	2·4	0·7	0·7	18	18 : 20 : —	10·0	Patches of scud; cirro-stratus.
438	46·7	44·0	2·7	1·6	0·7	18	18 : 19 : —	10·0	Scud; dense cirro-stratus.
414	46·0	44·0	2·0	0·9	0·8	17	19 : — : —	9·8	Loose scud; cirro-strati; rain$^{0·2}$
408	45·6	44·0	1·6	0·6	0·2	16	17 : — : —	10·0	Thick scud; cirro-strati; rain$^{0·2}$
411	46·1	44·6	1·5	0·3	0·5	17		9·9	Id.
390	46·4	44·6	1·8	0·9	0·9	18		9·0	Id.; cirro-strati. ☽̶
391	47·2	45·4	1·8	1·8	0·9	17		9·8	Id.; id.
391	46·7	45·2	1·5	0·9	0·8	18		9·9	Id.; id.
395	47·2	46·5	0·7	0·9	0·8	18		10·0	Id.; id.; slight drizzle.
392	46·9	45·9	1·0	0·4	0·1	18		10·0	Id.; id.; id.
29·390	46·9	45·9	1·0	0·2	0·2	18		10·0	Id.; id.
28·978	47·3	46·8	0·5	0·3	0·0	9	— : 16 : —	10·0	Scud; cir. mass; rain^1. Sunday—Overcast, nearly as at
803	50·3	48·7	1·6	2·9	1·5	10	15 : — : —	10·0	Scud; cirrous mass. [2h throughout the day.
28·768	43·9	42·2	1·7	3·1	0·4	17		10·0	Scud. [corona; cir.-cum. to S. ☽̶
751	42·4	40·8	1·6	1·2	1·3	17	18 : — : —	6·5	Loose scud, moving rapidly & producing a coloured lunar
753	41·7	40·1	1·6	1·3	0·5	18	21 : — : —	9·7	Loose cirro-stratous scud; coloured lunar corona. ☽̶
758	42·7	41·1	1·6	0·7	0·8	18	21 : — : —	8·0	Scud; cirro-strati. ☽̶
754	42·3	40·6	1·7	0·7	0·4	19	21 : — : —	9·8	Id.; id.; lunar corona. ☽
769	42·5	40·8	1·7	0·6	0·2	19		10·0	Id.; id.
799	42·7	41·0	1·7	0·4	0·1	19		10·0	Id.; id. at 10m; rain$^{0·5}$
829	42·4	40·9	1·5	0·2	0·1	20	26 : — : —	10·0	Loose scud; dense mass of cirro-stratus.
854	43·2	41·1	2·1	0·4	0·3	22		10·0	Dense mass of cirro-stratus.
884	43·7	41·2	2·5	0·5	0·4	22	26 : — : —	9·5	Scud; sheets of cirro-strati; sky looking wild.
921	45·0	41·8	3·2	0·4	1·0	26	28 : — : —	9·5	Patches of scud; cirro-stratous scud; cirro-strati.
933	45·3	41·5	3·8	0·8	0·4	27	28 : 29 : 28	5·0	Id.; woolly cirro-strati; sheets of cir.-str.
945	46·3	42·0	4·3	2·4	2·2	27	28 : 29 : —	8·5	Scud; id.; id.
969	46·2	41·7	4·5	1·6	0·9	24	— : 28 : —	9·5	Cirro-stratous scud; sheets of cirro-strati.
991	46·5	41·5	5·0	1·1	0·7	22	— : 28 : —	9·8	Id.; id.
28·978	46·4	41·8	4·6	0·7	1·0	24	— : 29 : —	9·9	Id.; dense mass of wavy cirro-strati.
29·028	44·8	40·4	4·4	1·9	0·7	23		2·0	Sheets of cirro-strati; thin cirri to W.
050	43·7	39·6	4·1	1·6	1·2	23		0·5	Scud and cirro-strati on horizon.
071	42·0	38·2	3·8	1·9	1·1	22		0·5	Cirro-strati on horizon; aurora.
083	41·0	37·3	3·7	1·0	0·4	21		0·2	Patch of cir.-str. to NE.; auroral arch 12° altitude. ☽
094	38·4	35·5	2·9	0·5	0·2	20		0·5	Woolly cirri scattered over the sky; faint aurora. ☽
087	39·0	36·0	3·0	0·2	0·2	20		0·2	Streaks of cirrus; aurora occasionally. ☽
069	39·4	36·7	2·7	0·8	0·2	20		1·5	Band of woolly cirri lying from NW. to SE.; faint
047	38·7	36·8	1·9	0·7	0·2	18		1·0	Streaks of cirri. ☽ [auroral light. ☽
29·044	38·0	36·3	1·7	0·3	0·4	17		2·0	Streaks of cirri lying from E. to W. ☽
29·022	37·0	35·8	1·2	0·4	0·2	26		7·0	Cirri and cirrous haze; lunar halo. ☽
28·996	34·3	33·8	0·5	0·0	0·0	28		9·5	Sky nearly covered with cir. haze; faint lunar halo; large lun. cor. ☽
955	35·0	34·3	0·7	0·0	0·0	12		10·0	Dense cirrous mas.)
915	35·3	34·7	0·6	0·0	0·0	10		10·0	Scud; slight drizzle.)
887	36·3	35·9	0·4	0·0	0·0	2		10·0	Id.; rain$^{1·5}$
851	36·9	36·5	0·4	0·0	0·0	4		10·0	Rain^1
822	37·3	36·9	0·4	0·0	0·0	2		10·0	Rain^2 [visible two miles off to E.
806	38·1	37·8	0·3	0·1	0·0	4	11 : — : —	10·0	Patches of scud; dense cir. mass; rain$^{0·5}$; objects in-
789	39·0	38·6	0·4	0·0	0·0		17 : — : —	10·0	Loose scud in patches; dense cirro-stratus.

he direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The ions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

ov. 17d 0h. Woolly cirro-strati moving quickest, and as it approaches the sun, exhibiting a beautifully coloured corona of two pinkish ds, with a light blue between, somewhat like diffraction spectra.

Gött. Mean Time.		Barometer at 32°.	Thermometers.			Wind.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
17	23	28·773	40·7	40·2	0·5	0·0	0·0			10·0	Dense, nearly homogeneous, mass of cir.-str.; Scotch mist.
18	0	763	41·7	41·1	0·6	0·0	0·0	18		10·0	As before.
	1	755	44·0	43·2	0·8	0·0	0·0	18	20 : — : —	10·0	Scud; dense cirro-stratus.
	2	756	45·5	44·2	1·3	0·9	0·5	18	24 : — : —	10·0	Thick scud.
	3	772	47·5	46·0	1·5	2·0	0·6	19	24 : — : —	9·8	Scud; cirro-strati; portion of a rainbow.
	4	797	47·6	45·4	2·2	1·8	1·3	22	24 : — : 22	4·0	Id.; woolly cirri.
	5	823	47·6	44·8	2·8	1·6	1·0	20	24 : — : —	8·0	Id.; cirro-strati.
	6	849	47·1	43·8	3·3	1·1	0·8	20		4·0	Id.; id.
	7	852	45·7	44·0	1·7	1·0	0·9	19		2·0	Id.; id. round horizon.
	8	858	47·0	45·2	1·8	1·2	1·2	19		10·0	Id.; dark.
	9	857	47·2	45·6	1·6	1·7	1·3	20		2·0	Clouds on horizon.
	10	859	45·8	43·9	1·9	2·3	1·2	20		1·5	Id.
	11	878	45·7	44·1	1·6	1·9	0·3	18	— : 21 : —	1·0	Thin cirro-cumulo-stratus.
	12	851	47·8	45·6	2·2	0·8	0·4	19		10·0	Scud and thin cirro-stratus.
	13	28·817	48·0	46·3	1·7	0·9	0·1	18		10·0	Scud and dense cirro-stratus.
	14	754	47·8	45·7	2·1	0·4	0·6	18		10·0	Id.
	15	698	48·0	45·4	2·6	1·4	0·2	18		10·0	Id.; rain$^{0\cdot5}$
	16	608	48·9	46·6	2·3	0·9	1·4	17		10·0	Scud; cirro-stratus; drops of fine rain.
	17	533	48·6	47·0	1·6	1·8	2·1	17	18 : — : —	10·0	Id.; id.; id.
	18	461	50·0	48·6	1·4	1·9	1·1	17	18 : — : —	10·0	Id.; id.; rain^{1}
	19	434	49·8	49·0	0·8	2·5	2·5	18		10·0	Id.; id.; rain$^{3-5}$
	20	413	48·8	48·2	0·6	1·8	0·8	17		10·0	Nearly homogeneous; rain^{1}
	21	414	48·4	47·6	0·8	2·0	0·9	20	— : 21 : —	9·0	Cirro-stratus; masses of scud; sky to W.
	22	425	47·9	46·2	1·7	1·2	1·2	20	21 : — : —	9·5	Scud and loose cumuli.
	23	437	48·7	46·2	2·5	2·1	1·0	20	21 : — : —	4·5	Id.; cirro-strati.
19	0	436	48·2	45·8	2·4	2·5	2·0	18	20 : 22 : —	5·0	Loose scud; loose cumuli; cirro-strati; cirri.
	1	403	50·0	46·1	3·9	3·5	2·0	18	20 : 21 : —	5·0	Id.; thick woolly cirro-stratus.
	2	387	49·0	44·7	4·3	3·8	2·8	17	20 : 21 : —	6·5	As before, with nimbi; rain to S.; sky wild-like.
	3	381	47·9	44·3	3·6	3·3	2·7	20	21 : — : —	2·0	Loose cumuli; cumuli; cirri-strati; woolly cirri.
	4	384	46·9	43·4	3·5	4·2	3·1	18	21 : 21 : —	6·0	Scud; thick woolly cir.-str.; woolly cir.-cum.; nimbi.
	5	381	46·7	43·7	3·0	3·6	1·0	18	21 : — : —	8·5	Scud; cirro-stratus; cirri; sky looking wild.
	6	367	47·0	44·6	2·4	4·2	3·6	17		10·0	Id.; id.; rain$^{0\cdot5-1}$
	7	350	46·6	44·0	2·6	3·8	1·2	18		9·5	Id.; id.; cirrous haze; stars dim.
	8	340	46·4	44·6	1·8	3·7	1·3	18		10·0	Dark; rain^{2}
	9	325	46·7	44·6	2·1	4·0	3·6	18		9·5	Id.; rain$^{2-3}$ at intervals.
	10	308	46·4	44·7	1·7	4·1	2·0	18		9·5	Scud; cirrous haze? rain^{1} at intervals.
	11	273	46·0	44·0	2·0	4·3	3·9	18		9·8	Loose scud; shower^{2}
	12	253	45·9	44·3	1·6	3·1	1·5	19		9·8	Scud; cirro-strati.
	13	28·239	46·1	44·0	2·1	2·2	1·4	19		3·5	Scud; cirro-strati.
	14	244	46·2	44·6	1·6	1·9	0·7	20		9·0	Id.; id.; drops of rain.
	15	287	45·7	43·2	2·5	3·3	0·7	19		9·8	Id.
	16	331	45·7	43·6	2·1	2·1	1·9	20		9·8	Id.
	17	354	45·3	43·0	2·3	2·6	1·3	18	22 : — : —	3·5	Id.
	18	395	44·6	43·0	1·6	2·7	1·8	20		9·5	Scud; cir. and cir. haze; drops of rain; lunar corona.
	19	424	43·9	41·6	2·3	2·2	1·7	20		3·7	Id.; id.
	20	451	42·9	40·3	2·6	2·2	1·5	20	23 : 24 : —	5·0	Dense masses of scud to S. and SE.; thin loose cir.-str.;
	21	502	42·6	40·8	1·8	1·0	0·1	18	23 : — : —	9·5	Scud; cirro-strati. [cirri; faint lunar corona.
	22	534	43·8	41·7	2·1	0·4	0·3	18	— : 23 : —	8·5	Cirro-stratous scud; sheets of cirro-strati; woolly cirri.
	23	566	46·3	43·8	2·5	0·9	1·5	21	— : 23 : —	9·5	Id.; cirro-strati; id.
20	0	595	45·7	42·2	3·5	1·5	0·7	20	23 : — : —	9·5	Scud and cirro-stratous scud; cirri.
	1	611	47·6	43·3	4·3	2·3	1·0	20	24 : 23 : —	9·5	Id.; thin cirro-strati; cirri.
	2	636	47·1	43·1	4·0	1·3	1·0	20	23 : — : —	9·5	As before. [from NNE. and SSW.
	3	652	45·3	42·6	2·7	1·6	1·6	20	23 : — : —	8·0	Thin scud; loose-edged cum. to S.; woolly cir. radiating
	4	685	42·5	41·2	1·3	1·7	0·4	20	22 : — : —	8·0	Scud and dark cumuli; woolly cirri; cirro-strati.
	5	713	41·9	39·4	2·5	1·3	0·6	20		1·2	Scud; cumuli; nimbi and cirro-strati on horizon.
	6	729	40·9	38·8	2·1	0·5	0·8	20		1·0	Scud near horizon.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
	Dry.	Wet.	Diff.	Maximum force in 1h.	10m.	From			
in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
28·763	39·9	37·9	2·0	0·7	0·3	21		0·5	Scud near horizon.
777	40·7	38·3	2·4	0·8	0·6	20		6·0	Thin scud.
809	41·1	38·6	2·5	0·7	0·5	20		5·0	Id.; a vivid glare of lightning seen.
850	39·8	37·7	2·1	0·3	0·3	18		3·0	Id.
868	40·5	38·2	1·3	1·2	1·1	20		2·0	Cirro-strati on horizon. ⊁
897	40·0	37·8	2·2	1·8	1·0	20		0·5	Thin scud and cirro-strati. ☽
28·926	39·9	37·7	2·2	1·1	0·4	20		3·0	Thin scud and cirro-strati; lunar corona. ☽
951	38·7	37·2	1·5	1·5	0·4	20		2·5	Cirro-strati and woolly cirri; id. ☽
959	37·6	36·0	1·6	0·5	0·4	21	24 : — : —	3·0	Thin scud; thick woolly cirri; id. ⊁
963	39·0	37·3	1·7	1·2	0·8	21	24 : — : —	2·5	Id.; id.; coloured lunar corona. ⊁
985	38·7	36·9	1·8	0·2	0·1	22		6·0	Thick woolly cirri; cirro-strati; lunar halo and cor. ⊁
28·996	38·9	37·0	1·9	0·2	0·2	21		6·0	As before. ⊁ [halo and corona. ⊁
29·018	38·7	36·8	1·9	0·4	0·3	20		3·0	Cir.-str. on hor.; thin haze over the sky; faint lunar
054	37·0	35·7	1·3	0·6	0·1	19		4·0	Cirro-strati, cirri, and cir. haze; masses of scud: clouds red to SE. ☽
071	37·5	36·2	1·3	0·3	0·6	20	— : — : 16	9·5	Cirri and thin cirro-strati dispersed across the sky; scud on hor. ⊁
083	39·4	37·8	1·6	0·6	0·8	20	— : 20 : —	9·8	Cirro-strati and haze becoming thicker; a few patches of scud.
108	40·7	38·4	2·3	0·4	0·2	19		10·0	Id.
125	41·3	39·3	2·0	0·5	0·2	20	— : 20 : —	9·8	Cirro-strati; cirrous haze; cirro-cumulo-strati.
125	42·6	40·1	2·5	0·4	0·2	20	24 : 20 : —	9·8	Masses of scud; cirro-strati; woolly cirri. ⊖
122	43·1	40·6	2·5	0·7	0·3	20		9·0	Id.; id.; id. ⊖
138	44·2	40·7	3·5	0·7	0·1	20	25 : — : —	2·5	Patches of scud; woolly cirri. ⊙
152	39·6	37·9	1·7	0·2	0·0	18	25 : — : —	1·0	Id.; id; cirro-strati. ⊙
164	36·0	35·0	1·0	0·1	0·0	20		1·5	Scud and cirro-strati on horizon.
177	35·2	34·0	1·2	0·1	0·1	20		0·5	Id.
189	34·2	32·8	1·4	0·1	0·1	28		0·2	Id.
207	34·7	33·3	1·4	0·1	0·2	20		0·2	Clear; haze on horizon.
224	33·7	32·5	1·2	0·2	0·1	20		0·0	Id.
216	33·9	32·8	1·1	0·1	0·1	21		0·0	Id.
231	33·3	32·2	1·1	0·3	0·1	19		0·2	Streaks of cirro-stratus to N.
233	34·3	32·8	1·5	0·3	0·2	19		0·2	Id. ☽
29·238	31·9	30·9	1·0	0·3	0·0			0·2	Streaks of cirro-stratus to N. ☽
239	29·6	29·0	0·6	0·1	0·1	28		0·2	Id. to NE and SE. ☽
237	32·0	31·0	1·0	0·2	0·3	19		0·8	Cirro-stratus; cirri. ☽
245	30·6	30·0	0·6	0·3	0·0	18		0·8	Id.; id. ☽
251	32·8	31·8	1·0	0·2	0·1	20		0·8	Cirri to S. ☽
252	31·2	30·5	0·7	0·1	0·1	19		0·5	Id.; very clear throughout the night. ☽
270	31·5	30·6	0·9	0·1	0·1	20		0·5	Thin scud, cirri, cir.-str., and patches of scud on hor. ☽
270	33·3	32·1	1·2	0·2	0·1	18		0·7	Cirri, cirro-strati, and patches of scud on hor. ☽
289	32·4	31·6	0·8	0·2	0·1	16		1·0	Id., id., id. ⊙
307	33·0	32·2	0·8	0·1	0·2	20		1·7	Id., id., id. ⊙
318	36·6	35·2	1·4	0·2	0·1	21		2·5	Id., id., id.; scud on Cheviot. ⊙
325	39·3	36·7	2·6	0·3	0·1	21		3·0	Id., id., id. ⊙
329	40·7	37·7	3·0	0·2	0·1	22		1·0	Thick woolly cirri; cirrous haze; scud on Cheviot. ⊙
344	41·3	38·3	3·0	0·3	0·1	22		2·0	Id.; id.; cir.-str.; id. ⊙
346	41·4	38·0	3·4	0·2	0·2	21	— : — : 4	3·0	Id.; id.; id.; id. ⊙
355	39·7	37·0	2·7	0·3	0·1	22		5·0	Id.; id.; id.; cum.-str. ⊙
374	37·5	35·7	1·8	0·1	0·1	22		1·0	Cirro-strati, cirri, and cirrous haze on horizon.
397	35·0	33·6	1·4	0·1	0·0	24		1·5	Id., id., id.
417	36·2	34·3	1·9	0·1	0·0	26		9·5	Id., id., id.
435	37·9	35·7	2·2	0·2	0·2	29		10·0	Cirro-stratus?
456	38·5	36·2	2·3	0·2	0·1	28		10·0	Id.
473	38·0	35·9	2·1	0·1	0·1	28		10·0	Thin cirro-stratus; a few stars dimly visible.
492	36·8	35·0	1·8	0·1	0·1	27		4·0	Thin cirro-stratus and cirrous haze.
515	35·5	33·7	1·8	0·1	0·0	26		1·5	Cirro-strati.
29·662	34·6	32·0	2·6	0·4	0·0	22		1·0	Sheets of cirri and cirro-strati; a slight covering of snow on Cheviot.

T direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The mot ns of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

N . 20d 21h. Observation made at 21h 5m.

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
23 13	29·718	35·2	34·7	0·5	0·6	0·6	30		10·0	Scud ; rain$^{0·5}$
14	750	35·7	34·0	1·7	1·0	0·5	29		9·5	Id.
15	762	34·1	31·8	2·3	0·7	0·3	30		0·5	Bank of clouds on SE. horizon
16	765	34·2	31·4	2·8	1·0	0·3	31		9·0	Scud and cirro-strati. ♃
17	780	32·0	30·0	2·0	0·1	0·1	31		1·0	Cirro-strati on E. horizon. ☽
18	796	30·4	28·6	1·8	0·3	0·1	30		1·0	Id. ☽
19	816	29·0	27·6	1·4	0·2	0·0	26		0·5	Id. ☽
20	837	28·9	27·4	1·5	0·2	0·2	26		1·0	Cirri and cirro-strati. ☽ [to E. ; linear cirri. ⊙
21	860	27·4	26·0	1·4	0·2	0·0	22	— : — : 30	1·0	Homogeneous woolly cirri ; loose cum.-str. ; cir.-strati
22	875	30·1	28·0	2·1	0·1	0·1	27	— : — : 30	7·0	Woolly cirri ; cirro-cumuli ; cirro-strati. ⊖
23	874	30·6	28·9	1·7	0·1	0·1	17		2·5	Id. ; cirrous haze ; cumulo-strati on E. hor. ⊙
24 0	872	33·7	30·1	3·6	0·1	0·0	20		3·0	Id. ; id. ; id. ⊙
1	867	35·4	32·0	3·4	0·1	0·1	24		2·0	Cirri and cirro-str. near hor. ; cum.-str. in haze to E. ⊙
2	864	35·5	31·6	3·9	0·1	0·1	21		1·0	As before. ⊙ [horizon. ⊖
3	851	34·8	32·2	2·6	0·1	0·0	20		2·0	Sheets of mottled cir. and cir.-str. ; cum.-str. low on E.
4	845	32·3	30·0	2·3	0·1	0·0	17	— : — : 31	7·0	Mottled and woolly cirri and cirro-strati.
5	835	33·0	30·3	2·7	0·1	0·1	18		10·0	Cirro-stratus becoming thicker, radiating from NNW.
6	832	32·7	31·8	0·9	0·2	0·1	18		10·0	Cirro-stratus.
7	820	33·6	31·1	2·5	0·2	0 1	17		10·0	Id. ; very dark.
8	793	34·7	31·3	3·4	0·1	0·1	18		10·0	Id. ; id.
9	780	34·7	32·0	2·7	0·2	0·1	17		10·0	Id. ; id.
10	736	34·8	32·0	2·8	0·1	0·0			10·0	Id. ; id.
11	694	36·8	34·4	2·4	0·4	0·3	16		10·0	Id. ; id.
12	668	37·3	35·0	2·3	0·6	0·2	18		10·0	Id. ? id.
13	29·609	38·8	36·3	2·5	1·1	1·4	17		10·0	Cirro-stratus ? very dark.
14	546	39·7	37·9	1·8	1·8	1·2	17		10·0	Id. ? id.
15	510	40·8	39·3	1·5	3·0	1·5	17		10·0	Id. ? id.
16	476	41·2	40·3	0·9	1·6	1·1	17		10·0	Id. ? id. ; rain$^{0·5}$
17	447	43·0	42·3	0·7	1·3	0·6	17		10·0	Rain$^{0·5}$
18	443	46·4	45·2	1·2	1·2	0·7	20		10·0	Scud and cirro-stratus ; fine rain$^{0·5}$
19	446	45·3	43·7	1·6	0·4	0·3	20		10·0	Scud and cirro-stratus.
20	471	42·7	41·2	1·5	0·3	0·1	21	24 : — : —	4·0	Loose scud ; cirro-strati ; cirri ; scud on Cheviot. ☽
21	480	41·1	39·7	1·4	0·2	0·3	20	25 : — : —	4·0	Scud ; cirro-strati on E. horizon.
22	486	42·5	40·6	1·9	0·5	0·4	20	24 : — : —	6·0	Id. ; cirro-strati ; rainbow. ⊙
23	500	44·0	42·5	1·5	1·2	0·2	18	24 : — : —	9·5	Id. ; id. ; rain$^{0·2}$
25 0	490	44·7	42·6	2·1	0·6	0·2	20	24 : — : —	9·8	Id. ; id. ; scud on Cheviot.
1	477	45·0	43·0	2·0	0·7	0·8	18	23 : — : 26	9·0	Id. ; thick woolly cirri ; cirro-str. ; scud on Cheviot.
2	474	45·3	42·9	2·4	1·2	0·8	20	23 : — : —	9·9	Id. ; cirro-strati ; scud on Cheviot.
3	472	45·0	43·2	1·8	1·2	0·9	20	23 : — : —	9·8	Id. ; id. ; woolly cirri.
4	472	44·7	43·0	1·7	0·9	0·4	18	24 : 26 : —	9·8	Smoky scud ; cirro-stratous scud ; woolly cirri.
5	478	44·3	43·2	1·1	0·6	0·2	18	23 : — : —	10·0	Id. ; id. ; drops of rain.
6	463	45·3	43·6	1·7	1·1	0·8	17		10·0	Scud ; cirrous mass ; rain$^{0·2}$
7	442	45·7	44·1	1·6	1·1	0·7	18		10·0	Id. ; id. ; id.
8	406	46·5	44·7	1·8	2·3	1·7	18		10·0	Id. ; id. ; Jupiter seen dimly.
9	369	47·1	45·2	1·9	2·6	2·4	19		10·0	Id. ; id. ; id.
10	339	47·9	45·8	2·1	3·2	3·1	19		10·0	Id. ; id.
11	295	48·1	46·6	1·5	2·7	2·3	20		9·8	Id. ; id. ; very slight drizzle.
12	247	48·6	47·0	1·6	3·3	2·8	19		9·8	Id. ; id. ; id.
13	29·217	49·4	47·6	1·8	4·1	3·3	19		10·0	Scud. ; cirrous mass ; very slight drizzle.
14	186	49·8	48·0	1·8	3·8	2·8	19		10·0	Id. ; id. ; id.
15	166	50·2	48·4	1·8	3·7	1·9	19		10·0	Dark ; slight drizzle.
16	149	50·5	48·9	1·6	3·0	1·5	19		10·0	Rain$^{0·2}$
17	114	51·3	49·2	2·1	2·4	0·9	19		10·0	Scud ; cirro-stratus.
18	119	53·5	50·5	3·0	2·1	3·2	21		9·7	Scud.
19	111	54·7	50·8	3·9	3·3	3·3	21	24 : — : —	8·0	Id. ; cirri.
20	132	54·9	50·8	4·1	3·3	2·2	21	24 : — : —	9·8	Id. ; cirro-cumulo-strati.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Nov. 23d 20h. Vane of anemometer found frozen up.

Nov. 24d 4h. The cirri and cirro-stratus, radiating from N by W. and S by E., and having transverse bars.

Barometer at 32°.	Thermometers.			Wind.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
	Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
29·135	54·8	50·4	4·4	3·3	3·7	21	24 : — : —	9·9	Scud; cirro-strati.
150	54·7	50·8	3·9	2·7	1·4	23	24 : — : —	10·0	Id.; id.; drops of rain.
141	55·0	51·1	3·9	1·8	1·0	21	24 : — : —	10·0	Id.; cirrous mass.
150	52·0	49·4	2·6	1·3	0·4	25	23 : — : —	10·0	Id.; id.; rain$^{0\cdot2}$
139	54·6	51·2	3·4	1·1	2·2	20	24 : — : —	9·9	Id.; cirro-strati. [rain$^{0\cdot5}$
145	54·3	50·3	4·0	2·4	1·6	20	24 : 25 : —	10·0	Loose scud; nearly homogeneous mass of cir.-cum.-str.;
134	53·8	49·7	4·1	2·1	2·0	20	24 : — : —	10·0	As before.
146	52·0	49·0	3·0	1·3	2·1	20	24 : — : —	10·0	Loose scud; dense mass of cirro-stratus.
146	51·4	48·3	3·1	1·1	1·7	21		10·0	Id.; id.; rain$^{0\cdot5}$
128	51·4	48·4	3·0	1·5	1·3	20		9·7	Scud and cirro-stratus.
143	52·5	49·2	3·3	2·8	1·3	19		10·0	Id.
131	52·6	49·1	3·5	2·1	2·9	20		10·0	Id.
136	53·1	49·0	4·1	3·2	2·1	20		10·0	Id.
134	53·1	49·0	4·1	4·3	2·3	21		3·0	Scud.
150	51·3	46·9	4·4	4·6	2·2	22		2·0	Id.; 11h 35m, a flash of lightning on NE. horizon.
164	51·5	46·7	4·8	3·2	2·8	22		1·5	Scud on horizon.
29·208	51·1	46·0	5·1	6·2	2·8	21		1·0	Scud on horizon.
226	50·7	46·2	4·5	3·7	2·8	22		0·5	Scud.
253	49·2	44·9	4·3	2·8	1·5	21		0·5	Id.
261	49·3	45·1	4·2	2·0	3·0	21		3·0	Id.
282	48·3	44·7	3·6	2·5	0·7	21		2·5	Id.
321	48·4	44·2	4·2	1·7	1·3	22		9·0	Id.
339	48·5	44·5	4·0	1·0	0·0	20		10·0	Id.; a few drops of rain.
342	47·0	43·7	3·3	0·3	0·2	18	25 : — : —	9·7	Scud and cirro-stratus.
350	47·9	46·8	1·1	0·9	0·3	18	23 : — : —	9·8	Smoky scud; hazy cirro-stratus; cirro-cumuli.
357	48·7	46·3	2·4	0·8	1·3	19	24 : — : —	7·0	Scud. ⊖
368	49·0	45·6	3·4	1·2	0·5	19	— : 23 : —	7·0	Cir.-cum.-str.; scud near hor.; portion of a rainbow. ⊖
377	50·2	46·3	3·9	1·4	0·3	21	24 : 23 : —	8·5	Masses of scud; cir.-cum.-str. & loose cir.-str.; portion of a rainbow.
370	49·4	46·5	2·9	0·4	0·1	19	23 : 23 : —	9·8	Scud; dense cirro-stratus; drops of rain.
371	48·1	46·4	1·7	0·2	0·1	18	23 : — : —	10·0	Id.; id.; slight drizzle.
356	47·6	46·7	0·9	0·3	0·1	18	23 : — : —	10·0	Id.; id.; id.
354	47·4	46·5	0·9	0·2	0·0	20	22 : — : —	9·8	Loose scud; cirro-stratus; id.
330	47·4	46·6	0·8	0·2	0·2	21	21 : — : —	10·0	Scud; drizzling rain$^{0\cdot2}$
319	50·3	48·4	1·9	2·2	2·0	20		10·0	Id.
313	50·8	48·2	2·6	2·7	2·0	20		10·0	Id.
304	50·7	48·3	2·4	2·9	1·8	20		10·0	Id.
314	50·8	48·2	2·6	2·0	1·5	21		10·0	Id.
316	50·6	47·9	2·7	1·6	0·8	21		7·0	Id.; clouds broken.
313	50·2	47·7	2·5	1·1	0·9	21		10·0	Id.; cirrous clouds?
312	50·1	47·5	2·6	1·3	0·7	20		10·0	Id.; id.
29·312	49·7	47·3	2·4	1·3	0·6	21		9·8	Scud; cirrous clouds; clouds broken to S.
306	49·6	47·3	2·3	1·0	0·6	19		10·0	Id.; id.; id.
305	49·6	47·1	2·5	1·4	0·6	19		10·0	Id.; id.
300	49·2	46·4	2·8	1·0	0·4	19		9·5	Id.; id.
284	48·3	45·9	2·4	1·4	0·4	19		7·0	Id.; id.
274	47·0	45·2	1·8	0·3	0·3	18		9·8	Cirro-strati; cirrous haze?
266	47·5	45·6	1·9	0·4	0·1	18		10·0	Scud and cirro-strati.
251	46·9	44·8	2·1	0·4	0·1	18		10·0	Id.; cirrous haze.
255	46·8	45·5	1·3	0·7	0·3	18	21 : — : —	10·0	Id.; dense homogeneous cirro-stratus; rain$^{0\cdot2}$
249	47·0	45·7	1·3	0·3	0·1	16	18 : — : —	10·0	Id.; id.
237	48·0	46·8	1·2	0·1	0·0	16	18 : — : —	10·0	Id.; id.
214	48·4	46·8	1·6	0·2	0·1	16	18 : — : —	10·0	Id.; id.; rain$^{0\cdot2}$
194	48·5	46·8	1·7	0·6	0·3	16	18 : — : —	10·0	Id.; id.; id.
168	49·3	47·1	2·2	0·5	0·3	16	18 : 17 : —	10·0	Loose scud; cir.-str. scud; sheets of cir.-str.; scud lying
149	49·4	46·9	2·5	0·8	0·4	17	18 : — : —	9·9	Scud; masses of cirro-stratus. [on Cheviot.
127	48·7	46·4	2·3	0·5	0·4	17	19 : — : —	9·9	Id.; id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The tions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Gött. Mean Time.		BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc.: C.-s : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1^{h}.	Maximum force in 10^{m}.	From			
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
28	5	29·115	48·7	46·5	2·2	0·4	0·1	17		10·0	Scud; masses of cirro-stratus.
	6	108	48·3	45·9	2·4	0·6	0·4	16		10·0	Id.; id.
	7	103	48·4	46·2	2·2	0·6	0·3	16		10·0	Id.; id.
	8	101	49·1	46·5	2·6	0·8	0·7	16		10·0	Id.; id.
	9	084	48·6	46·0	2·6	0·6	0·7	16		10·0	Id.; id.
	10	067	48·2	45·9	2·3	1·4	0·5	16		10·0	Id.; id.
	11	047	49·3	46·3	3·0	2·2	1·5	16		10·0	Id.
	12	044	49·2	46·6	2·6	2·4	1·8	17		9·8	Id.; passing showers.
	13	29·056	46·3	43·2	3·1	2·2	0·6	18		2·5	Clear.
	14	045	44·3	42·2	2·1	1·0	0·2	16		0·0	Id.
	15	29·020	44·3	41·8	2·5	1·0	0·5	16		0·0	Id. [shower at 16^{h} 30^{m}.
	16	28·977	44·4	41·6	2·8	2·0	2·2	16		0·0	Id.; a few drops of rain; no clouds visible; a heavy
	17	954	44·6	42·5	2·1	3·9	2·0	17		3·5	Scud.
	18	937	45·0	42·3	2·7	7·6	5·7	17		8·0	Id.
	19	960	44·1	41·3	2·8	8·3	2·0	19		2·5	Id.
	20	28·986	43·9	41·4	2·5	2·1	1·4	18	20 : — : —	9·8	Id.; drops of rain.
	21	29·036	43·2	41·2	2·0	3·7	2·3	19	21 : — : —	9·5	Id.; cirro-stratus.
	22	097	45·0	42·2	2·8	3·9	2·4	19	23 : 24 : —	9·0	Id.; woolly cirro-strati; linear cirri.
	23	185	46·3	41·9	4·4	3·8	3·5	20	24 : — : —	9·2	Id.; id.; id. ⊙ [tion of a halo. ⊙
29	0	266	47·0	41·8	5·2	2·5	1·7	21	24 : — : 21	8·0	Id.; little flocks of wo. cir.; linear cir. dispersed over the sky; por-
	1	286	46·3	42·1	4·2	2·1	0·9	21	23 : — : 21	7·0	Patches of scud; woolly cirri; haze. ⊙
	2	312	45·6	40·7	4·9	1·5	1·2	21	23 : — : 21	8·0	Cumulous scud; cirri; cirro-strati.
	3	324	43·4	40·4	3·0	2·0	1·2	18	23 : — : 21	8·0	Scud; woolly cirri; cumuli; cirro-strati. ⊙
	4	339	42·7	38·7	4·0	1·8	1·0	20	— : — : 21	6·5	Woolly cirri radiating from SW. and NE.; sheet of
	5	351	41·3	38·9	2·4	1·4	0·8	19	22 : — : —	1·5	Patches of scud; woolly cirro-strati. [cir.-str. ⊙
	6	375	40·1	38·0	2·1	0·3	0·3	21		1·0	Id.; id.
	7	377	38·7	36·9	1·8	0·4	0·2	17		0·5	Clouds on E. horizon.
	8	382	38·6	36·7	1·9	0·8	0·1	20		0·2	Clear; a patch or two of cloud to E.
	9	376	38·1	36·4	1·7	0·6	0·8	21		0·0	Id.
	10	376	37·7	36·1	1·6	0·5	0·7	20		0·3	Masses of scud to S.
	11	381	37·8	36·2	1·6	0·2	0·1	22		0·5	Clouds on E. horizon.
	12	371	36·7	35·4	1·3	0·2	0·1	22		0·2	Id.
	23½	29·481	38·6	37·4	1·2	1·0	0·2	20	— : 24 : —	……	Dense cirro-stratus; patches of scud; light rain in the morning. P.M., curled cirri and cirro-strati.
30	13	29·047	48·1	46·6	1·5	8·5	2·4	18		10·0	Scud and cirrous clouds? rain$^{0\cdot2}$
	14	012	48·5	47·3	1·2	3·7	1·9	19		10·0	Id.; rain$^{0\cdot5}$ [at intervals.
	15	047	46·3	44·2	2·1	2·9	1·1	20		10·0	Id.; very dark; rain$^{0\cdot8}$, showers$^{2-3}$
	16	058	44·7	42·3	2·4	1·1	1·6	20		2·0	Cirrous scud?
	17	098	41·5	38·9	2·6	3·4	1·7	20		0·8	Id.
	18	135	38·6	37·2	1·4	1·9	0·3	20		9·2	Scud.
	19	157	40·6	37·8	2·8	2·4	1·0	20		9·0	Id.
	20	170	37·7	35·5	2·2	2·1	0·6	21		0·2	Scud lying on Cheviot; streaks of cirri to E.
	21	171	37·9	36·0	1·9	1·6	1·5	19	23 : — : —	1·5	Scud; atmosphere hazy.
	22	179	38·9	36·9	2·0	2·4	2·8	18	22 : — : —	6·0	Id. ⊖
	23	182	41·5	38·4	3·1	3·0	3·2	21	22 : — : 22	4·0	Id.; woolly and mottled cirri. ⊙
1	0	177	42·3	38·4	3·9	3·7	3·3	19	22 : — : —	9·0	Scud and loose cumuli; cum.; cir.-str.; cirrous haze. ⊖
	1	178	42·0	38·3	3·7	3·7	2·2	20	22 : — : —	6·0	Scud; cumuli; cirro-strati. ⊙ [showers. ⊙
	2	182	41·2	38·9	2·3	3·2	2·7	21	22 : — : 24	7·0	Scud; thick woolly cirri; cum.; cirrous haze; passing
	3	198	43·0	39·2	3·8	5·0	2·8	20	22 : — : —	9·5	Id.; rain falling to NE. and W.; stormy-like.
	4	215	40·5	38·2	2·3	3·0	1·8	19	— : 23 : —	2·5	Cirro-stratus; smoky scud on S. horizon.
	5	244	38·6	36·7	1·9	2·5	1·1	20	23 : — : —	6·0	Scud; loose watery cirro-stratus; drops of rain.
	6	266	38·2	36·4	1·8	3·0	2·0	20		6·0	Cirro-stratous scud.
	7	284	37·8	36·4	1·4	1·8	1·2	20		3·0	Id.
	8	312	38·5	36·9	1·6	1·6	1·0	19		1·0	Id.; drops of fine rain.
	9	335	38·5	36·9	1·6	1·1	1·1	19		9·5	Id.
	10	349	37·1	36·3	0·8	2·3	1·1	18		5·0	Id.; heavy showers occasionally.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
	Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
29·355	37·7	36·2	1·5	1·1	1·3	19		4·0	Scud to N.; 11h 5m, a flash of lightning.
408	35·9	34·8	1·1	3·6	0·3	19		10·0	Rain$^{0·2}$; a slight shower of hail lately.
29·415	36·5	35·5	1·0	0·7	1·6	18		2·0	Scud.
393	36·8	35·7	1·1	1·4	1·4	18		0·3	Streaks of cloud to NE.
414	36·4	35·1	1·3	1·4	0·6	18		1·0	Thin clouds near the horizon.
394	37·9	36·3	1·6	1·1	0·5	19		8·0	Thin clouds and haze over the sky.
377	38·0	36·3	1·7	0·8	0·5	18		1·5	Scud on horizon.
367	36·1	34·8	1·3	0·7	0·5	19		1·0	Id.
373	37·6	36·2	1·4	0·8	0·4	19		3·0	Cirro-stratous scud ? drops of fine rain.
383	38·6	36·9	1·7	0·8	0·4	19	24 : — : —	9·2	Scud.
405	37·5	35·4	2·1	0·4	0·1	19	23 : — : —	5·0	Id.; scud on Cheviot, clouds tinged red.
412	36·3	34·9	1·4	0·4	0·1	19	— : 22 : —	2·5	Cirro-stratous scud; scud on Cheviot. ⊙
405	39·2	37·0	2·2	2·5	1·0	20	— : 22 : —	6·5	Id.; id. [part of a halo. ⊖
404	40·6	37·7	2·9	1·8	1·8	20	21 : — : 24	7·0	Scud; woolly, mottled, and linear cirri and cir.-str., rad. from W.;
378	41·4	38·6	2·8	2·3	1·1	20	— : — : 23	9·5	Thick woolly cirri; cirro-strati; scud on horizon. ⊙
342	41·5	38·6	2·9	1·4	0·8	18	— : — : 22	9·0	Thickening woolly cirri and cirro-strati; scud on hor.; solar halo. ●
291	41·2	37·7	3·5	1·3	0·7	19		9·8	Dense mass of cir.-str.; loose scud and cir.-str. on hor.
258	38·6	37·2	1·4	1·1	0·1	19		9·8	As before.
222	38·0	36·5	1·5	0·3	0·6	18	20 : — : —	10·0	Scud; masses of cirro-strati; cirrous mass.
193	37·7	36·3	1·4	0·6	0·2	18		10·0	Scud and cirro-stratus.
152	36·5	35·5	1·0	0·3	0·3	17		3·0	Scud.
114	37·0	36·1	0·9	0·2	0·1	17		7·0	Id.
094	38·4	37·2	1·2	0·3	0·1	18		10·0	Rain$^{0·5}$
076	37·0	36·2	0·8	0·3	0·0	18		10·0	Scud and cirro-stratus.
033	35·9	35·3	0·6	0·0	0·0	22		6·0	Id.
29·011	36·4	35·6	0·8	0·0	0·0	18		4·0	Id.; haze.
28·999	36·5	35·7	0·8	0·1	0·3	18		9·8	Scud and cirro-stratus; rain$^{0·2}$
29·001	36·7	35·4	1·3	0·5	0·3	20		7·0	Id.
28·990	35·2	34·2	1·0	1·1	0·3	20		3·5	Id.
983	35·2	34·3	0·9	0·4	1·1	19		8·0	Id.; rain$^{0·5}$
963	34·6	33·1	1·5	0·8	0·5	20		9·0	Id.; drops of rain.
970	34·0	32·2	1·8	0·7	0·4	22		2·0	Id. on horizon.
971	33·2	31·8	1·4	0·6	0·3	21		1·0	Masses of scud and thin cirro-stratus.
974	33·3	32·1	1·2	0·3	0·1	23		7·0	Scud and cirro-strati. [strati and cirri.
995	31·3	30·5	0·8	0·3	0·0	21	24 : — : —	7·0	Scud, cumuli, and cumulo-strati on hor.; woolly cirro-
982	34·0	32·8	1·2	0·3	0·1	16		9·5	Woolly cirro-strati and cirri; cumuli on NE. horizon. ⊙
983	35·2	33·8	1·4	0·3	0·4	18	— : 22 : 22	7·0	Id.; id. ⊙
28·993	35·4	33·5	1·9	0·4	0·1	20	25 : — : —	5·0	Loose scud; cirro-strati and cirri; cumuli to NE. ⊙
29·000	36·5	34·3	2·2	0·3	0·0	20	24 : — : —	8·0	Scud; cumulo-strati to NE.; cirro-strati. ⊙
000	37·9	35·7	2·2	0·4	0·3	20	23 : 20 : —	6·0	Id.; cirro-strati. ⊙
003	36·6	34·6	2·0	0·6	0·2	20	24 : — : —	8·0	Id.; id.; cum.-str. on NE. hor.; snow on Cheviot.
015	33·6	32·4	1·2	0·3	0·0	8		7·0	Cirro-strati; cumulo-strati on NE. horizon.
050	34·7	32·7	2·0	0·3	0·2	23	24 : — : —	5·0	Scud. ☽
069	34·1	32·1	2·0	0·2	0·1	23		0·5	Cirro-stratous scud to S.; double auroral arch. ☽
091	32·7	31·0	1·7	0·5	0·2	22		0·3	Id.; aurora. ☽
121	33·1	31·3	1·8	0·5	0·2	22		0·2	Id.; black patch of cloud below auroral arch to NNE.
149	34·0	31·4	2·6	0·6	1·2	22		0·1	Clear; aurora. See notes to *Extra Magnetical Obs.* of this date.
177	32·0	30·3	1·7	0·2	0·1	22		0·0	
200	30·7	29·1	1·6	0·1	0·1	24		0·0	Flash of lightning on SSW. horizon; auroral arch still bright.
216	31·6	29·6	2·0	0·2	1·1	22		0·0	
29·235	31·6	29·6	2·0	0·6	0·3	23		0·0	Bright auroral arch about 10° altitude; streamers at 50° altitude.
250	30·3	28·6	1·7	0·2	0·1	23		0·0	Very clear; arch about 8° altitude internally, 8° broad.
268	29·9	28·4	1·5	0·2	0·1	21		0·0	Id.; rapidly pulsating arch.
286	28·6	27·4	1·2	0·3	0·1	21		0·5	Masses of cirro-strati to NNW., radiating from that point; aurora.
298	29·3	27·9	1·4	0·3	0·1	20		0·0	Faint, nearly hom. aurora within 10° of hor.; rows of pulsating brushes.

he direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The
ons of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.
ec. 2d 21h. Observation made at 21h 10m.

Gött. Mean Time.		Barometer at 32°.	Thermometers.			Wind.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
3	18	29·312	30·4	28·9	1·5	0·3	0·2	21		0·0	Clear ; very faint auroral arch about 10° alt., still visible.
	19	326	30·4	29·1	1·3	0·2	0·1	20		0·1	Id. ; patch of scud on Cheviot.
	20	341	30·6	29·6	1·0	0·2	0·2	19		0·2	Id. ; cirro-strati.
	21	352	33·0	31·7	1·3	0·2	0·2	19	— : 26 : —	7·0	Woolly cirro-strati and cirri ; cum.-str. on ENE. hor.
	22	371	34·4	33·1	1·3	0·4	0·2	20	— : 25 : —	5·0	Id. ; cirro-strati and scud. ⊙
	23	371	33·4	32·7	0·7	0·4	0·8	19	— : 26 : —	2·0	Loose cirro-strati ; sheet of cirro-strati. ⊙
4	0	369	36·2	34·4	1·8	0·8	0·4	20	— : 26 : —	9·8	Cirro-cumulo-strati ; loose scud. ⊖
	1	353	37·1	35·2	1·9	0·4	0·7	19	— : 27 : —	9·0	Cir.-cum.-str. and cirro-stratus ; cum.-str. ; wool. cir. ●
	2	342	38·4	35·9	2·5	1·3	0·9	19	— : 27 : —	9·8	Thick cir.-str. ; sheets of cir.-strati ; cir. ; haze ; scud on
	3	323	38·3	36·0	2·3	0·8	0·4	20	— : 26 : —	9·8	As before. [Cheviot, &c.
	4	301	38·8	36·6	2·2	0·5	0·5	19	— : 26 ; —	10·0	Id.
	5	287	39·4	37·4	2·0	1·2	0·5	20		10·0	Dense mass of cirro-stratus ; cirro-strati.
	6	261	39·3	37·7	1·6	0·4	0·1	19		10·0	Patches of scud and sheet of cirro-stratus.)
	7	215	37·1	36·2	0·9	0·0	0·0			10·0	Id. ; clouds broken.
	8	162	39·6	38·1	1·5	0·5	0·4	18		9·5	Cirro-stratus ; clouds broken.
	9	112	39·7	38·4	1·3	0·7	0·5	18		8·8	Scud and cirro-strati ; sky in zenith.
	10	29·030	40·1	38·5	1·6	1·3	0·6	18		10·0	Id. ; clouds broken.
	11	28·989	40·9	39·3	1·6	0·5	0·2	18		10·0	Id.
	12	925	41·0	39·6	1·4	0·5	0·4	18		7·5	Id.
	13	28·865	41·1	40·0	1·1	0·7	0·6	18		9·9	Very slight drizzle.
	14	823	43·9	43·1	0·8	1·4	0·9	19		10·0	Id.
	15	815	44·1	41·9	2·2	1·1	0·5	20		0·5	Clouds on horizon.
	16	809	43·4	39·6	3·8	2·5	1·8	21		10·0	Scud ; occasionally drops of rain.
	17	784	41·4	38·4	3·0	2·9	1·4	19		8·0	Id.
	18	811	42·0	38·6	3·4	2·4	1·4	21		9·9	Id.
	19	812	41·8	38·4	3·4	5·0	2·8	22		0·5	Id. on SE. horizon.
	20	812	41·6	37·7	3·9	3·4	1·8	20		5·0	Dense mass of cirrous fringed scud.
	21	820	41·6	37·8	3·8	4·2	3·1	22	24 : — : —	4·0	Scud ; cirro-strati on E. horizon ; drops of rain.
	22	835	41·4	37·9	3·5	3·4	4·2	21		2·0	Loose cirro-strati ; cirro-strati and haze on horizon. ⊖
	23	855	41·0	38·6	2·4	4·0	2·4	22	— : 24 : —	2·5	Id. ; id. ; nimbi. ⊙
5	0	859	40·9	37·7	3·2	3·9	2·3	19	24 : 24 : —	1·0	Scud and cir. masses of cir.-str. like the tops of nimbi. ⊖
	1	860	39·4	37·2	2·2	2·8	0·8	20		1·5	Loose scud, cirro-strati, cumuli and nimbi. ⊙
	2	876	40·4	37·3	3·1	2·5	2·2	22	24 : — : —	1·5	As before ; cumulo-strati. ⊙
	3	887	39·0	37·0	2·0	3·1	0·5	19		1·5	Id. ; nimbi all round horizon. ⊙
	4	906	40·8	38·0	2·8	1·3	1·2	21	24 : — : —	7·5	Id. ; id. ; sky looking very wild.
	5	914	40·5	37·2	3·3	1·2	1·2	20		5·0	Cirrous masses of cir.-str. ; nimbi ; dense clouds to N. ;
	6	932	38·6	36·3	2·3	1·3	0·5	19		5·0	Scud. ⊁ [stormy-like.
	7	929	38·9	36·9	2·0	0·7	0·4	20		9·8	Id.
	8	929	37·4	35·8	1·6	0·7	0·3	19		0·8	Id.)
	9	931	37·3	35·4	1·9	0·6	0·3	20		1·0	Id.)
	10	937	37·9	36·1	1·8	0·6	0·9	19	25 : — : —	6·5	Id.
	11	948	37·9	35·9	2·0	1·4	0·8	20		7·5	Id. ; rain$^{0·2}$
	12	921	37·7	35·5	2·2	1·4	1·3	20		2·0	Id. and cirro-strati on horizon.
	13	28·921	38·7	36·4	2·3	2·0	1·6	19		3·5	Scud and cirro-strati on horizon.
	14	926	38·7	36·2	2·5	2·2	1·8	20		3 0	Scud and cirro-strati.
	15	910	37·9	35·7	2·2	1·3	1·3	20		1·0	Clear ; clouds on N. horizon.
	16	926	37·6	35·4	2·2	2·0	1·2	21		1·0	Id. ; id.
	17	927	36·7	34·8	1·9	1·3	0·5	20		1·0	Id. ; clouds on NE. and SW. horizon.
	18	942	36·3	34·6	1·7	0·6	0·3	19		4·0	Cirro-strati.
	19	942	37·1	35·1	2·0	1·0	0·3	19		4·0	Scud.
	20	966	39·0	36·6	2·4	0·5	0·7	19	22 : — : —	9·5	Id.
	21	986	36·6	34·9	1·7	0·5	0·1	19	22 : — : —	3·0	Cir.-str. scud with cir. fringes ; woolly and mottled cir.
	22	28·998	36·4	35·1	1·3	0·2	0·1	20	22 : — : —	2·5	Scud ; cirro-strati and woolly cirri.
	23	29·012	40·1	38·6	1·5	0·1	0·0	18	22 : — : —	9·0	As before.
6	0	016	41·0	39·4	1·6	0·1	0·0	16	22 : — : —	9·0	Id.
	1	012	44·1	41·3	2·8	0·3	0·2	18	22 : — : —	9·5	Id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.	
	Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From				
in.	°	°	°	lbs.	lbs.	pt.	pt. pt pt.	0—10.		
29·017	41·0	39·2	1·8	0·2	0·0	19	22 : 22 : —	9·5	As before.	
026	39·9	38·2	1·7	0·3	0·1	17	22 : — : —	9·9	Id.; cumulo-strati on NE horizon.	
048	38·9	37·6	1·3	0·1	0·0	16	22 : — : —	8·0	Id.; id.	
059	36·7	35·7	1·0	0·0	0·0	20	— : 21 : —	9·5	Cirro-stratous scud.	☽̶
079	37·4	36·4	1·0	0·0	0·0	18		10·0	Id.	
100	38·2	37·2	1·0	0·0	0·0	26		10·0	Id.; rain$^{0·2}$	
119	37·6	36·9	0·7	0·0	0·0	4		10·0	Id.	
133	36·5	36·0	0·5	0·0	0·0	26	— : 28 : —	9·0	Cirro-cumulo-strati and cirro-stratous scud.	☽̶
161	34·0	33·6	0·4	0·0	0·0	24		5·0	Id.	☽
181	32·9	32·7	0·2	0·0	0·0			0·5	Cirro-stratous scud on S. horizon.	☽
209	30·6	30·0	0·6	0·0	0·0	20		0·0	Clear.	☽
29·477	36·0	33·7	2·3	0·3	0·1	28	— : 28 : —	2·0	Loose cirro-cumulo-strati; P.M. clear.	
29·732	27·5	27·5	...	0·4	0·0			8·0	Cir.-cum.-str. lying in bands from N by W. to S by E.	
727	30·6	30·0	0·6	0·1	0·0	18		9·5	Cirro-cumulo-strati.	
750	31·9	30·5	1·4	0·0	0·0	19		10·0	Id.	
750	33·1	31·6	1·5	0·1	0·0	22		8·5	Cirro-strati.	
738	32·6	31·5	1·1	0·1	0·0	24		2·0	Id.	
726	32·4	31·4	1·0	0·0	0·0	6		6·0	Id.	
719	31·8	31·0	0·8	0·0	0·0	26		3·5	Thin cirro-strati radiating from about SE.	
725	33·6	32·5	1·1	0·0	0·0	24		10·0	Nearly homogeneous mass of cirro-stratus.	
715	33·4	32·5	0·9	0·0	0·0	26		10·0	Cirro-stratous scud; undulated cirro-strati.	
712	34·0	32·6	1·4	0·0	0·0	31		10·0	Nearly homogeneous mass of cirro-stratus.	
709	35·9	35·0	0·9	0·0	0·0	6		10·0	Id.; foggy.	
673	39·3	38·2	1·1	0·3	0·2	19	20 : — : —	9·9	Misty and cirro-stratous scud.	
656	41·2	39·8	1·4	0·2	0·2	19	— : 20 : —	9·9	Cirro-stratous scud.	⊙
639	40·8	39·3	1·5	0·3	0·3	18	21 : — : —	9·0	Misty and cir.-str. scud; cir.-cum.-str.; particles of the	
622	41·3	39·8	1·5	0·3	0·1	19	21 : — : —	10·0	Id. [finest rain.	
624	40·6	39·8	0·8	0·2	0·1	20	24 : — : 28	7·0	Smoky scud; mottled cirri; cirro-strati.	
616	42·5	41·2	1·3	0·2	0·0	20	— : 25 : —	9·8	Cirro-stratous scud.	
595	42·1	40·9	1·2	0·1	0·0	20		9·7	Scud; cirro-cumulo-strati.	
578	43·1	41·4	1·7	0·6	0·4	18		9·8	Id.; id.	☽̶
593	43·5	41·7	1·8	1·0	1·2	19	24 : — : —	4·0	Id.; cirro-strati.	☽
541	40·8	39·6	1·2	0·9	0·4	19		0·3	Cirro-strati on horizon.	☽
548	42·9	40·7	2·2	2·5	2·0	18		10·0	Overcast.	
556	43·0	41·5	1·5	1·7	1·5	21	24 : — : —	6·5	Scud and cirro-cumulo-strati.	☽̶
571	44·2	42·2	2·0	1·1	0·5	24	24 : — : —	7·5	Scud; woolly cirri; cirrous haze; lunar corona.	☽̶
29·584	44·2	40·7	3·5	1·1	1·2	23	25 : — : —	7·0	Scud; woolly cirri; lunar corona..	☽̶
587	43·9	40·0	3·9	1·6	1·5	22		3·0	Cirro-strati and woolly cirri; lunar corona.	☽̶
608	44·0	40·4	3·6	2·1	1·0	25	— : 26 : —	4·0	Cirro-cumulo-strati; sky milky on horizon.	
612	42·2	38·9	3·3	1·6	1·5	24		0·2	Clear; clouds on S. horizon.	
626	42·2	39·0	3·2	1·7	0·8	24		0·2	Id.; id.	
640	41·6	38·0	3·6	1·7	1·1	24		0·2	Id.; id.	
653	41·2	37·6	3·6	1·6	0·8	22		0·3	Cirro-strati on horizon.	
657	40·7	37·5	3·2	0·9	0·7	21		0·5	Scud and cirro-strati to S. [drops of rain.	
666	41·3	38·0	3·3	0·9	1·7	21	25 : — : 26	3·0	Smoky scud; woolly watery-like cirri, orange tinted;	
656	42·4	39·0	3·4	2·1	2·3	23	26 : 26 : —	3·0	Scud; cirro-cumulo-strati.	
669	43·4	39·3	4·1	1·9	2·0	25		0·5	Loose scud and cirro-strati on horizon.	⊙
670	43·9	40·3	3·6	3·9	1·7	26	26 : — : —	1·0	Loose scud and cumuli.	⊙
679	41·5	38·3	3·2	4·3	1·5	24v.		3·0	Cir.-str. & scud near hor.; loose nimbus; slight shower.	⊖
670	42·7	39·2	3·5	2·5	2·1	23	26 : — : —	4·0	Scud; cirro-strati; slight passing shower.	
675	42·2	38·0	4·2	2·1	1·0	25		2·0	Scud and cirro-strati towards horizon.	⊙
684	41·8	38·4	3·4	1·5	2·1	26	26 : — : —	3·0	Id.	
703	40·9	37·3	3·6	1·9	1·8	25	— : 25 : —	3·0	Loose cirro-cumulo-strati.	☽
713	39·9	36·8	3·1	2·3	1·8	25		0·1	Scud on Cheviot.	☽
741	40·2	37·0	3·2	2·0	1·0	26		1·0	Cirro-strati to W. and SW.	☽

direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The s of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Gött. Mean Time.		Barometer at 32°.	Thermometers.			Wind.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
9	8	29·752	40·4	37·3	3·1	1·5	1·2	25		0·5	Cirro-strati to W. and SW.
	9	779	40·1	37·0	3·1	1·9	1·6	26		0·7	Cirro-strati and cirrous haze on horizon.
	10	810	38·8	36·8	2·0	1·7	0·7	26		1·0	As before. ☽ [corona and halo.
	11	843	40·1	36·9	3·2	1·4	0·8	26		1·5	Thin cir.-str. and streaks of cir. lying E. and W. ; lun
	12	871	40·2	36·8	3·4	1·3	0·8	27		4·0	Nearly as before ; lunar corona and halo.
	13	29·888	39·6	36·6	3·0	0·8	0·5	26	— : — : 29	5·0	Woolly cir. and cir. haze ; lunar cor. and halo ; two sho
	14	906	39·9	36·6	3·3	1·2	0·8	26		5·0	Cirri in streaks and parallel bars. ☽ [ing-stars
	15	933	38·7	35·8	2·9	0·9	0·2	26		5·0	Strips of thin cirri lying NW. and SE., barred across
	16	970	38·1	35·2	2·9	0·0	0·1	19		2·0	Thin cirri and cirrous haze ; lunar corona.
	17	29·990	36·8	34·6	2·2	0·2	0·1	21		2·0	Id.
	18	30·010	35·3	33·7	1·6	0·2	0·1	18		1·8	Cirro-strati.
	19	030	36·2	34·2	2·0	0·2	0·1	18		1·0	Id. [cirro-strati to
	20	044	35·2	33·4	1·8	0·0	0·0	20		1·0	Band of cir.-str. and cir. to E. ; clouds on E. horizo
	21	063	35·0	33·5	1·5	0·1	0·0	20	28 : — : —	2·0	Patches of scud ; woolly cirri ; cir.-str. ; cirrous haz
	22	078	35·2	33·8	1·4	0·1	0·0	28	— : — : 30	6·0	Woolly cir. and cir. haze ; scud ; cir.-str. ; solar halo at 22h 30m
	23	102	36·9	35·1	1·8	0·0	0·0	28	— : — : 30	9·0	Sky nearly covered with woolly cirri and cirrous haze
10	0	100	39·2	37·0	2·2	0·0	0·0	26		10·0	Id.
	1	090	39·5	37·4	2·1	0·0	0·0	8		10·0	Id. ; faint solar halo
	2	071	40·7	38·2	2·5	0·1	0·0	20		10·0	Cirro-stratus and cirrous haze.
	3	059	40·0	37·8	2·2	0·0	0·0	16		10·0	Id.
	4	045	39·8	37·6	2·2	0·0	0·0	18		10·0	Undulated cirro-stratus and cirrous mass.
	5	30·005	38·4	36·8	1·6	0·1	0·1	17		10·0	Id., radiating from N by
	6	29·986	40·3	38·5	1·8	0·3	0·1	20		10·0	Mass of cirro-stratus. [and S by
	7	959	40·0	38·3	1·7	0·2	0·2	18		10·0	Id.
	8	903	40·2	39·0	1·2	0·2	0·1	18		10·0	Id.
	9	839	42·6	41·3	1·3	1·0	0·9	18	— : 22 : —	10·0	Thin cirro-stratus.
	10	793	44·0	42·5	1·5	1·7	1·1	18		10·0	Cirro-stratus.
	11	725	45·5	44·0	1·5	1·5	2·3	19		10·0	Id.
	12	656	46·3	44·8	1·5	1·6	1·4	19		10·0	Scud and cirro-stratus.
	13	29·607	47·4	45·6	1·8	2·1	1·3	19		10·0	Scud and cirro-stratus ; drops of rain.
	14	555	47·7	46·4	1·3	2·2	1·6	18		10·0	Id. ; id.
	15	524	49·2	47·1	2·1	1·3	0·5	19	24 : — : —	9·5	Scud ; coloured lunar corona.
	16	495	50·4	46·5	3·9	2·4	1·3	24	25 : — : —	7·0	Id. ; a patch of cir.-str. producing a diffuse colou
	17	500	47·2	42·0	5·2	4·9	3·2	29	25 : — : —	3·5	Scud ; coloured lunar corona. ☽ [lunar cor-
	18	494	46·4	41·5	4·9	3·3	2·0	26		6·0	Scud and loose cumuli.
	19	485	43·6	38·1	5·5	4·0	1·1	24		0·5	Patches of scud.
	20	459	42·3	37·3	5·0	2·5	2·3	24		0·8	Id. ; long cirrous streaks radiating from S
	21	445	42·8	37·5	5·3	4·9	3·7	25		0·8	Streaks of cirri and patches of scud on horizon.
	22	442	43·2	38·1	5·1	5·7	5·3	28		0·2	Patches of scud and haze on horizon.
	23	485	43·5	39·6	3·9	5·8	4·3	28		1·0	Loose scud.
11	0	507	44·4	39·5	4·9	4·5	3·7	27	28 : — : —	6·0	Scud and loose cumuli.
	1	523	44·0	38·4	5·6	4·9	5·3	29	29 : — : —	4·0	Id.
	2	555	43·6	37·7	5·9	6·2	5·0	29	30 : — : —	2·5	Id.
	3	601	42·7	37·4	5·3	7·7	5·1	29	30 : — : —	5·0	Cirro-stratous scud.
	4	659	41·9	36·7	5·2	5·1	4·2	28	30 : — : —	4·0	Id.
	5	712	40·7	36·4	4·3	5·7	3·6	30	30 : — : —	7·0	Id.
	6	755	40·9	36·3	4·6	4·2	4·1	29		7·5	Scud.
	7	796	40·4	36·6	3·8	3·3	1·5	28		10·0	Id.
	8	842	40·2	36·6	3·6	2·3	1·2	29	31 : — : —	9·8	Id.
	9	878	40·1	36·4	3·7	2·6	1·1	30	31 : — : —	9·9	Id.
	10	917	37·4	34·6	2·8	1·5	0·5	31		2·0	Scud and cirro-stratus on horizon.
	11	951	37·7	34·1	3·6	1·3	0·4	29		1·0	Id.
	12	29·954	37·9	34·0	3·9	1·8	1·6	29		1·0	Scud and cirro-strati on E. horizon.
	13	30·004	37·9	34·2	3·7	1·4	1·5	30		1·5	Scud and cirro-strati on E. horizon.
	14	025	38·3	35·8	2·5	1·0	1·1	29	— : 1 : —	7·0	Cirro-cumulo-strati.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. T motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
1 15	30·058	37·0	35·0	2·0	0·1	0·6	29		2·0	Cirro-strati, cirri, and cirrous haze; small lunar cor. ☽
16	081	37·2	34·2	3·0	0·5	0·4	29		3·0	As before; lunar halo. ☽
17	085	37·2	34·3	2·9	0·7	0·8	30		3·0	Id.; id. ⊁
18	108	37·5	34·7	2·8	0·9	0·6	30		6·0	Thick cirrous haze; lunar halo. ☽
19	127	38·0	35·0	3·0	1·6	0·5	29		4·0	Cirro-strati; thin cirrous haze over the sky.
20	155	37·0	34·6	2·4	1·0	0·7	29		7·0	Cir.-str. and cir. haze, slightly tinged with red to SE.
21	174	36·3	34·2	2·1	0·6	0·3	30	4 : — : 30	5·0 ?	Scud on horizon; cirri and thin cirro-strati.
22	184	37·0	34·6	2·4	0·5	0·2	29	0 : — : 31	8·0	Id.; id.
23	203	38·0	35·6	2·4	0·5	0·5	29	1 : — : —	9·5	Scud; cirro-strati, cirri, and cirrous haze.
2 0	215	39·0	36·3	2·7	0·4	0·2	29	0 : 31 : —	9·8	As before; portion of a solar halo.
1	219	39·2	36·6	2·6	0·3	0·1	28	2 : — : —	9·5	Loose cum. and scud to E.; cirro-strati and cir. haze.
2	236	39·0	36·3	2·7	0·2	0·2	29	2 : 0 : 0	7·0	Id.; cirro-strati and cirri. ⊖
3	251	37·3	35·0	2·3	0·2	0·1	30		2·0	Cum.-str. and cir.-str. on E. and S. hor.; patches of cirri. ⊙
4	252	36·5	34·4	2·1	0·1	0·1	29		2·0	Large cumulo-strati on E. horizon; patches of cirri.
5	261	35·4	33·5	1·9	0·1	0·0	28		0·8	Id.; slight haze. ☽
6	270	33·3	32·0	1·3	0·1	0·1	26		1·0	Cirri and cirrous haze to E. ☽
7	272	31·7	30·7	1·0	0·1	0·1	22		0·2	Id. ☽
8	273	31·2	30·2	1·0	0·1	0·1	20		0·2	Id. ☽
9	275	31·5	30·2	1·3	0·1	0·1	12		0·1	Cirrous haze on horizon. ☽
10	278	27·6	27·0	0·6	0·0	0·1	16		0·1	Id. ☽
11	284	26·7	26·6	...	0·0	0·0	18		0·0	Rather hazy on E. horizon; faint corona. ☽
12	278	25·3	25·8	...	0·0	0·0	18		0·0	Id.; very faint corona. ☽
13	30·273	24·6	25·0	...	0·0	0·0	20		0·0	Rather hazy on E. horizon; very faint corona. ☽
14	261	25·5	25·5	...	0·0	0·0	20		0·2	Cirri ? to E.; very faint corona. ☽
15	257	24·5	24·5	...	0·0	0·0	18		0·0	Very clear; thick hoar-frost; very faint corona. ☽
16	238	25·5	25·0	0·5	0·0	0·0	18		0·0	Id.; id. ☽
17	229	22·8	22·8	...	0·0	0·0	18		1·0	Sheet of thin cirrus to W.; id. ☽
18	229	24·3	23·6	0·7	0·0	0·0	18		1·0	Thin cirri, radiating from NW.; id. ☽
19	214	24·4	24·1	0·3	0·0	0·0	18		1·0	As before; part of a lunar halo. ☽
20	207	25·2	24·8	0·4	0·0	0·0	18		7·0	Cirro-cumulo-strati, cirro-strati, and cirri. ⊁
21	210	25·0	24·7	0·3	0·0	0·0	16		4·0	Cirro-strati; cirri.
22	213	29·9	29·3	0·6	0·0	0·0	18	— : 28 : —	9·5	Id.; id.
23	208	33·4	32·0	1·4	0·0	0·0	20	— : 28 : —	9·5	Id.; id. ●
13 0	199	34·4	32·4	2·0	0·1	0·1	21	— : — : 30	7·0	Woolly and mottled cirri; cirro-strati. ⊙
1	184	36·0	34·5	1·5	0·0	0·0	6	— : 28 : —	9·0	Cirro-stratous scud; linear cirri.
2	173	35·3	34·2	1·1	0·0	0·0	20		3·0	Cirro-cumulo-strati, cirro-strati, and cirri. ⊖
3	161	36·4	34·7	1·7	0·1	0·1	20		1·0	Cirro-strati and cirri round horizon. ⊙
4	152	35·2	33·8	1·4	0·1	0·0	20		2·0	Cirro-strati; clouds tinged red.
5	160	33·3	32·3	1·0	0·0	0·0	18	— : 0 : —	9·5	Cirro-stratous scud; cirri and cirrous haze.
6	168	33·7	32·7	1·0	0·1	0·0			9·5	Id.; cirro-cumulo-stratus.
7	146	32·1	32·6	...	0·0	0·0		— : 1 : —	4·0	Cirro-cumuli. ⊁
8	155	31·0	30·6	0·4	0·0	0·0	22		0·8	Id.; cirrous streaks. ☽
9	141	28·1	28·3	...	0·0	0·0	22		0·2	Patches of cirri. ☽
10	142	26·9	26·6	0·3	0·0	0·0	22		0·0	Very clear; milky light (?) to N. ☽
11	128	26·9	26·7	0·2	0·0	0·0	22		0·0	Id. ☽
12	30·130	25·2	24·9	0·3	0·0	0·0	16		0·2	Id.; streaks of cloud to NW. ☽
14 0½	29·809	40·9	40·0	0·9	0·6	0·6	22	21 : — : —	......	Loose scud; dense homogeneous cirro-stratus.
13	29·250	47·2	46·0	1·2	5·8	1·9	20		10·0	Scud and cirro-strati; rain^{1}
14	223	48·2	46·7	1·5	1·5	0·6	19		10·0	Id.; rain$^{0·5}$
15	234	48·0	45·0	3·0	2·3	1·1	24	26 : — : —	10·0	Scud; dense mass of cirro-stratus. ☽
16	252	46·4	43·0	3·4	1·6	1·6	23	26 : — : —	10·0	Id.; id.
17	263	44·7	41·0	3·7	2·1	1·6	25	27 : — : —	10·0	Id.; id. ☽
18	280	42·7	39·0	3·7	3·0	1·0	24	27 : — : —	9·8	Id.; cir.-cum.-str. rad. from WNW.; cir.-str.; lun. cor. ⊁
19	287	42·8	38·7	4·1	2·7	2·0	24		7·0	Cirro-cumulo-strati; cirro-strati. ⊁
20	301	41·0	37·7	3·3	2·1	0·8	24		6·0	Woolly cirri; cirro-strati. ⊁

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Dec. 13d 6h. Observation made at 6h 5m.

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
14 21	29·332	41·8	37·1	4·7	2·4	1·4	24	26 : — : —	2·0	Scud on hor.; woolly cir. lying from WNW. to ESE.,
22	345	40·9	36·9	4·0	2·0	1·4	24	26 : — : —	1·5	Loose scud; cirro-strati. ⊖ [barred across.
23	357	41·2	37·8	3·4	1·9	1·3	22		1·0	Id.; id. ⊖
15 0	355	43·6	38·9	4·7	2·4	2·1	24	25 : — : —	2·5	Scud; bands of cir. to SW., lying from WNW. to ESE. ⊙
1	350	43·6	38·8	4·8	3·4	2·2	24	25 : — : —	2·0	Patches of scud; id. ⊙
2	329	43·6	39·4	4·2	2·1	0·6	24	25 : — : —	2·5	Id.; id. ⊖
3	319	40·6	38·5	2·1	3·3	2·8	24	25 : — : 26	3·0	Scud; cirri as before; shower$^{0·5}$ at 2h 30m. ⊖
4	332	41·3	39·0	2·3	2·5	3·8	27	25 : — : 26	·6·5	Scud and loose nimbi; bands of cir. and cir.-str.; shower^{2}
5	333	41·0	38·2	2·8	2·1	1·7	24	25 : — : 27	3·5	As before; the cirri barred at right angles to the bands.
6	330	41·8	38·4	3·4	3·3	2·2	24		3·0	Scud and cirro-stratus; drops of rain.
7	329	41·8	39·0	2·8	3·7	3·0	24		5·0	Id.; rain$^{0·5}$; part of a lunar rainbow.
8	320	42·3	39·0	3·3	2·2	1·8	23	27 : — : —	2·0	Loose cumuli.
9	316	41·9	39·0	2·9	2·7	1·6	25	27 : — : —	3·0	Loose scud; cirro-strati and cirri.
10	310	41·9	38·7	3·2	2·3	1·1	25		3·0	Id.; linear cir., rad. from SE.; coloured cor.
11	306	42·7	39·0	3·7	2·7	3·2	23		9·5	Scud on hor.; woolly cirri, rad. from about SE.; lunar
12	303	43·3	39·6	3·7	2·0	1·7	24	26 : — : —	9·2	Scud; cirri nearly as before; lunar cor. ☽ [halo.
13	29·287	43·2	39·5	3·7	2·2	1·9	23		9·5	Scud; cirri nearly as before; halo and corona.
14	273	43·3	39·9	3·4	2·0	2·2	24		8·0	As before; halo indistinct; drops of rain occasionally.
15	244	45·0	40·2	4·8	3·2	2·8	24		9·8	Id.; id.
16	230	44·8	40·5	4·3	5·0	4·1	24		10·0	Id.; id.
17	210	44·1	40·7	3·4	3·6	2·6	24		10·0	Scud; cirri becoming thicker; corona; drops of rain.
18	202	43·3	39·8	3·5	3·7	2·7	24		10·0	Id.; id.; id.; id.
19	207	42·8	39·3	3·5	2·6	2·2	24		9·5	Thick woolly cirri. ☽ [scud; rain$^{0·}$
20	228	42·2	39·0	3·2	3·4	3·2	24		9·8	Id. and cir.-str., rad. from ESE.; loos
21	256	41·7	37·6	4·1	3·8	2·3	26		9·5	Thick ribbed and dappled cirro-stratus.
22	274	41·3	37·2	4·1	2·6	2·5	26	— : 27 : —	9·0	Id.; patches of scud.
23	298	41·6	37·0	4·6	1·8	2·5	25	— : 27 : —	9·0	Thick ribbed and dappled cir. str.; patches of scud; cum. on E. ho
16 0	325	41·6	37·2	4·4	2·5	1·6	26	— : 26 : —	8·5	Cir.-cum.-str.; ribbed & dappled cir.-str.; rad. from WNW. & ESE.
1	337	41·6	36·8	4·8	2·3	1·1	24	— : — : 27	8·0	Reticulated, &c. cir., rad. from NW by W. and SE by E. cum.-st
2	336	41·6	37·0	4·6	2·2	1·3	24	— : — : 27	8·0	As before. ● [on E. hor.; patches of scud.
3	338	40·7	36·7	4·0	2·1	1·4	24	— : — : 27	7·5	Id.; cirri more broken; dappled cirro-strati.
4	340	40·4	36·5	3·9	2·1	1·8	24	— : — : 27	7·0	Woolly cirri and cirro-strati; scud near horizon.
5	338	38·6	36·9	1·7	1·7	1·0	24	— : — : 27	8·0	Nearly as before.
6	354	39·5	36·4	3·1	2·4	0·8	24		3·0	Radiating cirri and cirro-strati.
7	358	39·5	35·7	3·8	2·2	1·0	24		0·5	Cirri to SE.
8	380	38·0	34·6	3·4	1·6	0·6	25		1·0	Woolly cir. lying NW by W. and SE by E. ☽ [halo.
9	401	38·2	34·8	3·4	1·8	0·8	26		2·0	Patches of scud; thin cirri; lunar cor. and portion of
10	414	37·0	34·2	2·8	0·9	1·2	25		1·0	Spotted woolly cirri, with corona; halo and paraselenæ.
11	423	35·7	33·3	2·4	1·3	1·0	28		0·5	Cirri and cir. haze on hor.; very faint lunar corona.
12	459	34·3	32·2	2·1	1·0	0·0	20	— : 29 : —	1·0	Sheets of cirro-stratous scud; very thin cirrous haze.
13	29·477	33·3	30·7	2·6	0·1	0·3	19		0·5	Small tufts of cloud from NW. to SE.; streaks of cir
14	476	35·3	31·7	3·6	0·6	0·5	26		0·5	Bands of cirri lying from NW. to SE.
15	502	34·4	30·8	3·6	0·5	0·3	25		0·3	Streaks of cirri.
16	526	29·6	27·9	1·7	0·4	0·0	22		0·4	Cirri and cirro-strati to SW.
17	536	28·3	26·7	1·6	0·0	0·0	18		3·0	Woolly and mottled cirri; a diffuse lunar corona.
18	540	30·9	28·5	2·4	0·0	0·0	20	— : 28 : —	2·5	Cirro-cumulo-strati.
19	536	27·8	26·8	1·0	0·0	0·0	20		8·0	Id.
20	545	28·8	27·7	1·1	0·0	0·0	18		9·0	Id.; thicker to W.; sky to E.
21	548	29·3	28·3	1·0	0·0	0·0	18	— : 27 : —	9·0	Id.; clouds tinged red to E.
22	552	30·2	28·8	1·4	0·0	0·0	18		9·8	Cir.-str., rad. from NW by W. and SE by E.; cir. mas
23	548	31·3	29·9	1·4	0·1	0·0	23		9·8	Cirro-strati and cirrous haze; solar halo.
17 0	536	32·2	30·7	1·5	0·0	0·0	7	— : 26 : —	9·5	Id.; id.
1	516	32·7	31·2	1·5	0·0	0·0	28	— : 26 : —	8·0	Woolly and mottled cirri; cir.-str., rad. from WN
2	505	35·6	33·0	2·6	0·0	0·0	28	— : 26 : —	8·0	As before. ⊙ [and EN
3	483	34·7	32·7	2·0	0·0	0·0		— : 26 : —	8·0	Id.; stratus on horizon.
4	472	32·5	31·0	1·5	0·0	0·0	4	— : 26 : —	9·8	Id.; id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. T motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Dec. 16d 4h. The cirri radiating from NW by W.; the cirri do not seem to extend far towards the NE., as they terminate abrupt to NE., at an altitude of about 20°; this has been the case all day.

Dec. 16d 19h. Observation made at 19h 10m.

t. an ie.		BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1^{h}.	Maximum force in 10^{m}.	From			
d	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
17	5	29·457	30·9	29·6	1·3	0·0	0·0	2		10·0	Cirro-cumulo-strati; cirrous haze; foggy to E.
	6	448	29·8	28·6	1·2	0·0	0·0	2		7·0	Cirro-strati; cirrous haze over the sky.
	7	446	27·0	26·6	0·4	0·0	0·0	16		3·0	Cirrous haze.
	8	440	26·1	26·4	...	0·0	0·0			3·0	Id.
	9	419	28·3	27·9	0·4	0·0	0·0			10·0	Cirro-strati and cirrous haze. ☽
	10	410	30·0	28·8	1·2	0·0	0·0	2		10·0	Scud and cirro-stratus.
	11	398	29·2	28·6	0·6	0·1	0·0	10		10·0	Id.; dense cirrous haze.
	12	388	28·9	28·2	0·7	0·0	0·0	12		10·0	Id.; id.
	13	29·383	30·5	29·6	0·9	0·0	0·0	6		10·0	Scud and cirro-stratus; fine flakes of snow.
	14	369	30·3	30·0	0·3	0·0	0·0	4		10·0	Id.; snow^{1}
	15	371	32·0	31·8	0·2	0·0	0·0	4		10·0	Id.; id.
	16	359	33·0	32·5	0·5	0·0	0·0	2		10·0	Id.; id.
	17	351	33·7	33·4	0·3	0·3	0·4	2		10·0	Homogeneous mass; sleet.
	18	353	34·8	34·2	0·6	0·9	0·6	2		10·0	Id.; id.)
	19	366	34·6	33·9	0·7	0·6	0·4	3		10·0	Sleet^{1}
	20	371	34·3	33·6	0·7	0·4	0·2	2		10·0	Sleet$^{0·2}$
	21	406	35·5	34·4	1·1	0·3	0·3	2	4 : — : —	10·0	Homogeneous mass of scud; rain$^{0·2}$
	22	406	35·5	34·4	1·1	0·5	0·4	0	3 : — : —	10·0	Id.; id.
	23	416	35·8	34·7	1·1	0·8	0·6	0	3 : — : —	9·8	Clouds broken up; scud; cirro-cumuli and cir.-str.
18	0	424	36·0	34·9	1·1	0·6	0·1	2	4 : — : —	10·0	Patches of scud; cir.-cum.-str., the motion scarcely perceptible.
	1	424	36·1	35·0	1·1	0·2	0·1	1	4 : 20 : —	6·0	Cirro-stratous scud on horizon; id. ⊖
	2	412	36·1	34·9	1·2	0·2	0·1	0		2·5	Id.; cirro-cumuli. ⊙
	3	424	36·0	34·6	1·4	0·6	0·5	31	3 : — : —	4·0	Scud and loose cumuli; cirro-strati. ⊖
	4	429	35·0	34·2	0·8	0·9	0·2	31	3 : — : —	9·5	Scud; cirro-stratous scud; rain$^{0·2}$
	5	443	34·8	33·1	1·7	0·5	0·4	0		9·7	Id.; id.
	6	427	31·8	30·2	1·6	0·2	0·1	2		1·0	Cloud and haze on horizon.
	7	416	28·8	28·4	0·4	0·1	0·1	17		1·0	Id.
	8	410	29·2	27·8	1·4	0·1	0·1	19		1·0	Id.
	9	390	26·2	26·0	0·2	0·1	0·1	20		2·0	Id.
	10	356	27·3	27·1	0·2	0·1	0·1	18		6·0	Cirro-stratus and haze. ☽
	11	331	27·4	26·9	0·5	0·0	0·0	22		10·0	Mass of cir.-str. and cir. haze; a few stars dimly visible.)
	12	283	27·3	27·0	0·3	0·0	0·0	20		10·0	Id.; id.)
	13	29·227	28·3	27·6	0·7	0·0	0·0	18		10·0	Mass of cirro-stratus, denser; moon scarcely visible.)
	14	183	29·2	28·5	0·7	0·0	0·0	18		10·0	Id., id. [about 15^{h} 15^{m}.
	15	141	31·1	30·0	1·1	0·0	0·0	18		10·0	Id., id.; commenced snowing
	16	29·058	31·8	31·0	0·8	0·2	0·3	16		10·0	Homogeneous mass of clouds.
	17	28·943	31·4	30·5	0·9	0·4	0·2	18	— : 24 : —	10·0	Cirro-stratous scud (?) moving rather quickly; cir.-str.;
	18	848	34·8	32·7	2·1	2·1	2·1	18		10·0	Homogeneous mass. [clouds broken.)
	19	787	34·7	33·7	1·0	2·0	1·6	17		10·0	Id.
	20	690	35·3	34·4	0·9	2·1	1·4	16	22 : — : —	10·0	Scud; cirro-strati seen through break to S.)
	21	604	37·4	36·6	0·8	2·5	1·9	18	20 : — : —	10·0	Id.; dense homogeneous cirro-stratus.
	22	563	38·5	37·9	0·6	1·7	0·6	18	20 : 24 : —	9·9	Id.; id.
	23	550	40·7	39·2	1·5	1·7	0·4	21	20 : 24 : —	9·7	Loose scud; cirro-stratous scud; cir.-str.; sky to NW.
1	0	528	41·2	38·3	2·9	0·9	0·6	22	— : 25 : —	4·0	Loose cirro-strati; cirro-strati and cirrous haze. ⊙
	1	539	40·3	37·3	3·0	0·6	0·5	21	— : 25 : —	4·0	Id.; id. ⊙
	2	512	41·0	37·0	4·0	1·0	0·8	20		1·0	Cirro-strati; haze and patches of scud round hor. ⊙
	3	497	39·7	36·7	3·0	0·3	0·4	20		2·0	Id. ⊙ [cirrous haze.
	4	473	38·2	35·9	2·3	1·1	0·8	20	24 : — : —	3·5	Thick scud rising to W.; cir.-cum.-str.; woolly cirri;
	5	458	35·9	34·4	1·5	1·1	0·3	19	— : 24 : —	3·5	Loose cirro-strati and cirro-cumulo-strati; cirro-strati.
	6	433	35·4	33·9	1·5	0·7	0·4	19		0·5	Id.
	7	417	35·7	34·5	1·2	0·9	0·4	20		0·8	Id.
	8	398	35·7	34·5	1·2	0·5	0·7	19		5·0	Cirro-stratous scud? drops of rain.
	9	363	36·9	35·4	1·5	1·6	1·1	19		0·5	Id.?; shooting-star from γ to δ Ursæ Majoris.
	10	343	37·1	35·4	1·7	2·0	1·0	19		2·0	Id.; drops of rain.
	11	314	36·7	35·2	1·5	1·2	0·7	18		2·5	Scud and cirro-stratus.
	12	296	35·5	34·1	1·4	0·7	0·6	19		2·0	Id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The otions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Dec. 18^{d} 17^{h} 11. Wind commenced blowing 0·8 lb., barometer 28·925. 17^{h} 40^{m}. Wind blowing 2·0 lb., barometer 28·876. 19^{h} 30^{m}. ind blowing 1·6 lb., barometer 28·735. 20^{h} 30^{m}. Wind blowing 2·5 lb., barometer 28·647. 21^{h} 30^{m}. Barometer 28·581.

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
19 13	28·292	33·5	32·8	0·7	0·9	0·0	22		3·0	Scud and cirro-stratus. ☽
14	287	35·0	33·9	1·1	0·0	0·0	18		9·7	Id.
15	282	33·4	32·7	0·7	0·1	0·1	18		3·0	Id. ☽
16	283	35·0	34·0	1·0	0·1	0·0	24		3·0	Scud ;, cirro-cumulo-strati. ☽
17	298	34·3	33·4	0·9	0·1	0·0	8		9·8	Id. ; id.
18	319	33·7	33·1	0·6	0·0	0·0	16		10·0	Id. ; id.
19	356	34·0	33·4	0·6	0·0	0·0	22		10·0	Id. ; id.
20	393	35·4	34·1	1·3	0·1	0·1	30		9·5	Id. ; id. ; faint corona. ☽
21	400	36·0	34·4	1·6	0·3	0·3	31	0 : — : —	10·0	Id. ; cirro-strati.
22	469	35·9	33·9	2·0	0·5	0·3	28	0 : — : —	9·9	Cirro-stratous scud ; cirro-strati ; clouds broken.
23	502	35·2	34·6	0·6	0·7	0·6	28	1 : — : —	9·0	Id. ; id. ; woolly cirri to W.
20 0	531	36·6	34·4	2·2	0·6	0·3	28	0 : 2 : —	9·5	Id. ; woolly cirro-cumuli.
1	563	37·8	35·3	2·5	0·4	0·4	28	1 : — : —	9·9	Scud. ; cirro-strati.
2	586	38·4	35·8	2·6	1·1	1·1	31	— : 1 : —	7·5	Loose cirro-strati ; cirro-strati ; woolly cirri. ⊙
3	631	38·7	36·2	2·5	1·1	1·0	31	0 : 2 : 2	6·0	Loose and cirro-stratous scud ; woolly cirri. ●
4	681	39·2	36·3	2·9	2·0	0·3	30	1 : — : —	9·8	Id.
5	722	39·4	36·3	3·1	1·5	1·1	31	0 : — : —	8·0	Cirro-strati and cirro-cumulo-strati.
6	770	38·3	35·5	2·8	1·5	0·6	28		1·5	Scud and cirro-strati.
7	811	35·3	34·9	0·4	0·9	0·7	30		10·0	Rain.
8	854	36·2	35·3	0·9	1·1	0·8	29		10·0	Id.
9	899	39·1	37·1	2·0	2·8	2·9	31		10·0	Dark ; drops of rain.
10	28·951	39·3	36·7	2·6	3·8	4·3	30		10·0	Id.
11	29·010	38·2	35·7	2·5	4·2	4·0	31		10·0	Id.
12	072	38·8	36·4	2·4	4·2	2·2	30		10·0	Id.
23½	29·514	33·7	...	...	8·6	0·8	30	1 : — : —	3·0	Masses of scud and loose cum. ; a slight sprinkling of dry, powdery snow ; Cheviot is quite white.
21 3½	565	32·7	29·3	3·4	...	...			......	
13	29·439	34·0	31·8	2·2	2·3	0·4	18		10·0	Cirro-stratus ; stars dimly visible in zenith.
14	387	34·9	32·7	2·2	0·6	0·9	19		10·0	Id.
15	330	34·3	33·2	1·1	1·0	1·5	19		10·0	Id. ? slight fall of snow since last hour.
16	253	35·1	33·8	1·3	2·2	1·1	19		10·0	Id. ? drops of rain.
17	147	35·5	34·3	1·2	2·3	2·8	20		10·0	Id. ? rain$^{0\cdot2}$
18	29·028	36·5	35·0	1·5	4·8	3·8	20		10·0	Scud ; cirro-stratus ? rain$^{0\cdot2}$
19	28·936	37·5	36·0	1·5	5·2	3·3	18		10·0	Id. ; id. ; id.
20	898	38·3	37·1	1·2	3·8	1·7	19		10·0	Id.
21	832	39·2	38·1	1·1	2·4	0·6	21	25 : — : —	10·0	Id.
22	793	44·2	41·3	2·9	1·5	1·2	22	25 : — : —	9·5	Id. ; sheets of cirro-strati.
23	771	44·7	41·3	3·4	2·5	2·6	25	26 : — : —	9·5	Id. ; id. ; mass of cirro-stratus.
22 0	713	43·3	39·7	3·6	4·5	7·8	26	— : — : 28	3·0	Woolly cirri ; cirro-strati.
1	718	42·5	39·4	3·1	3·9	1·7	27		1·5	Cumulo-strati and cirro-strati round horizon.
2	719	42·7	39·2	3·5	2·8	2·7	25		1·5	Id.
3	685	41·8	38·2	3·6	2·6	2·3	23	25 : 28 : —	3·0	Scud moving rapidly ; loose cirro-strati.
4	668	40·7	37·4	3·3	2·3	0·6	26	— : 28 : —	6·5	Cirro-stratous scud.
5	655	38·5	35·6	2·9	2·8	1·3	23		1·0	Scud and cirro-strati on horizon.
6	637	38·3	35·2	3·1	1·8	1·5	24		0·8	Cirro-strati on horizon.
7	617	38·9	35·5	3·4	2·7	1·8	23		5·0	Thin cirro-stratus ; stars seen dimly through most of it
8	610	37·1	34·3	2·8	2·0	0·9	24		0·0	Clear.
9	590	36·8	34·2	2·6	1·0	0·8	25		0·0	Id.
10	568	37·2	34·1	3·1	2·4	1·9	25		0·0	Id.
11	564	37·3	34·4	2·9	3·2	2·1	26		0·5	Scud on E. horizon.
12	570	37·2	34·3	2·9	3·1	1·6	26		0·3	Id.
13	28·601	37·3	34·1	3·2	2·8	2·9	27		2·0	Scud.
14	639	35·2	34·1	1·1	4·1	1·0	28		3·0	Thin scud ; slight showers lately.
15	661	35·8	34·4	1·4	1·8	1·1	27		10·0	Rain$^{0\cdot5}$
16	689	37·8	35·7	2·1	2·7	2·5	28		10·0	Scud.
17	754	39·3	36·3	3·0	4·1	2·6	28		9·9	Thick scud.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
	Dry.	Wet.	Diff.	Maximum force in 1h.	10m.	From			
in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
28·819	36·7	35·7	1·0	3·8	2·0	29		10·0	Shower$^{1-2}$ of rain and hail.
885	38·0	35·4	2·6	4·3	2·1	29		0·5	Scud on horizon. ☽
28·971	38·3	35·5	2·8	3·3	2·4	29		1·5	Id. ☽
29·040	39·7	36·5	3·2	3·0	2·6	29	31 : — : —	5·0	Id.; cirro-strati. ☽
111	40·5	37·6	2·9	4·0	3·5	29	0 : — : —	6·0	Id.; id.
172	41·6	38·2	3·4	4·2	2·7	29	— : 0 : —	7·0	Loose cirro-strati; loose scud and cirro-strati. ⊙
239	42·7	39·2	3·5	3·0	2·0	31	0 : — : —	8·5	Scud and cirro-strati; cumulo-strati.
292	42·7	39·6	3·1	2·8	2·5	31	0 : — : —	9·5	Id.
351	42·4	39·2	3·2	2·6	2·0	0	0 : — : —	9·5	Id.; passing showers.
408	42·5	39·0	3·5	2·7	1·3	31	0 : — : —	9·8	Id.
457	41·0	38·3	2·7	2·0	0·6	29	31 : — : —	9·0	Id.
509	40·8	37·3	3·5	1·2	1·0	30	31 : — : —	9·0	Scud; cirro-stratus.
552	41·5	37·6	3·9	1·6	1·3	29		9·7	Id.; id.
596	40·7	37·2	3·5	1·6	0·6	29		9·0	Id.
630	39·6	36·5	3·1	0·6	0·4	30		4·0	Id.
663	40·0	36·5	3·5	1·6	0·5	31		5·0	Id.
698	38·9	35·7	3·2	0·9	0·3	29		3·0	Id.
725	37·6	34·8	2·8	0·5	0·4	29		1·5	Id. on horizon.
748	36·9	34·3	2·6	0·7	0·5	28		1·5	Id.
29·769	36·1	33·8	2·3	0·8	0·4	29		2·0	Scud.
792	35·8	33·5	2·3	0·8	0·3	28		1·5	Id.
827	35·3	34·0	1·3	0·8	0·2	28		1·5	Id.
862	34·0	32·0	2·0	0·3	0·2	22		0·5	Clouds on E. horizon. ☽
863	32·8	31·0	1·8	0·1	0·1	22		0·5	Id. ☽
867	30·5	29·4	1·1	0·0	0·0	20		0·0	Clear. ☽
883	28·3	27·4	0·9	0·0	0·0			0·0	Id. ☽
889	29·2	28·2	1·0	0·1	0·0	18		0·5	Thin cirri and cirrous haze; lunar corona. ☽
913	28·6	27·5	1·1	0·1	0·0	18	— : — : 2	3·0	Orange-coloured woolly and linear cir. radiating from NNE. and SSW.
914	31·0	29·4	1·6	0·0	0·0	22	— : — : 1	9·0	Woolly cir. and cir. haze radiating from N by E. and S by W.
920	32·7	30·9	1·8	0·2	0·0	20	— : — : 0	9·5	As before. ⊖
913	34·6	32·1	2·5	0·1	0·0	20		9·5	Cirro-strati and cirrous haze; traces of a solar halo. ⊖
896	36·9	33·9	3·0	0·2	0·3	20		8·0	Id.; id. ⊖
875	37·0	34·1	2·9	0·5	0·3	20		9·5	As before, clouds becoming thicker.
857	37·7	35·1	2·6	0·8	0·2	20	— : 30 : —	10·0	Cirro-strati; cirro-cumulo-strati and cirrous haze.
840	38·0	35·7	2·3	1·6	0·4	19	— : 27 : —	9·7	As before.
815	39·3	37·3	2·0	0·6	0·9	19	20 : 28 : —	10·0	Patches of scud to S.; cir.-str. in dense irregular masses.
819	40·8	38·8	2·0	2·0	0·6	19		9·8	Scud.
865	40·2	38·6	1·6	1·6	0·6	19		9·8	Id.; stars dim.
756	41·5	40·0	1·5	2·9	2·5	19		10·0	Id.; drops of rain.
740	42·6	41·2	1·4	2·1	1·6	19		10·0	Id.; very dark.
740	42·6	41·3	1·3	1·9	1·9	20		10·0	Very dark.
722	43·6	42·2	1·4	1·9	1·8	20		10·0	Id.
699	44·3	42·9	1·4	1·8	1·4	20		10·0	Id.
29·697	44·9	43·7	1·2	2·1	1·3	20		10·0	Very dark.
683	45·6	44·3	1·3	1·3	0·8	20		10·0	Id.
677	46·3	44·7	1·6	1·6	1·0	20		10·0	Id. rain$^{0\cdot8}$
678	46·2	44·8	1·4	1·5	1·1	20		10·0	Stars faintly visible here and there; rain$^{0\cdot8}$
680	46·2	45·1	1·1	1·0	0·5	19		10·0	Dark; rain$^{0\cdot2}$
691	45·6	45·2	0·4	0·4	0·4	18		10·0	Id.; drops of fine rain.
727	46·8	45·7	1·1	0·6	0·3	21		9·8	Scud; clouds broken; rain$^{0\cdot2}$
774	45·7	43·3	2·4	0·4	0·1	19		9·8	Cirro-stratous scud; cirro-strati; cirrous haze. ☽
801	42·5	40·0	2·5	0·2	0·1	20	— : 24 : —	9·5	Cir.-cum. radiating from WSW.; woolly and linear cirri from SW.; scud on horizon.
826	42·2	39·6	2·6	0·3	0·1	20	— : — : 24	9·0	Various cirri; cirro-strati. ⊙
882	43·0	40·5	2·5	0·4	0·3	20		8·5	Id.; id. ⊙
891	43·8	40·4	3·4	0·5	0·2	20	— : — : 24	8·0	Id.; id. ⊙
903	45·0	41·2	3·8	0·4	0·2	21	— : — : 24	8·0	Id.; cirrous haze. ⊙

e direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The ons of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

c. 23^{d} 21^{h}. Sky of a beautifully-green colour to SE.

Gött. Mean Time.		BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1^h.	Maximum force in 10^m	From			
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
25	2	29·913	44·7	41·0	3·7	0·3	0·2	20	24 : — : —	3·0	Masses of loose cumuli ; thin cirri. ⊖
	3	918	44·3	40·6	3·7	0·4	0·4	20	25 : — : —	2·0	Id. ; id. ⊙
	4	934	42·9	39·6	3·3	0·4	0·3	21	25 : — : 25	6·0	Patches of scud ; mottled cirri and small cirro-cumuli.
	5	950	39·1	37·2	1·9	0·2	0·0	20	25 : — : 26	7·5	Id. ; beautifully-mottled and lin. cir., lying
	6	974	41·4	38·6	2·8	0·2	0·2	21		3·0	Scud. [N. and S. ; cir.-str.
	7	973	37·9	36·4	1·5	0·2	0·1	20		1·5	Id. ; cirro-strati.
	8	973	37·4	36·4	1·0	0·2	0·0	20		1·5	Thin cirrous clouds and cirro-strati.
	9	969	36·8	36·0	0·8	0·2	0·1	25		5·0	Cirro-stratus and cirrous haze.
	10	948	38·0	37·1	0·9	0·2	0·1	20		7·0	Id. ; sky very hazy.
	11	926	38·5	37·5	1·0	0·3	0·0	19		5·0	Id.
	12	895	37·0	36·3	0·7	0·1	0·0	19		8·0	Id.
	13	29·860	38·0	37·3	0·7	0·1	0·0	16		10·0	Thick cirro-stratus.
	14	812	40·0	39·0	1·0	0·2	0·1	16		10·0	Id.
	15	766	40·5	38·8	1·7	0·9	1·0	17		9·0	Id.
	16	718	40·1	38·4	1·7	2·4	0·8	18		4·0	Cirro-strati.
	17	662	40·3	38·4	1·9	1·3	0·1	17		10·0	Dark.
	18	601	41·7	39·5	2·2	2·0	1·3	18		10·0	Id. ; drops of rain.
	19	561	40·5	39·7	0·8	0·5	0·0	18		10·0	Id. ; rain$^{0\cdot2}$
	20	492	43·3	42·4	0·9	0·1	0·1	20	20 : — : —	10·0	Scud.
	21	433	46·9	45·2	1·7	2·1	1·8	20	21 : — : —	10·0	Id.
	22	407	46·3	44·7	1·6	3·7	1·9	18	21 : — : —	10·0	Id.
	23	371	46·7	45·0	1·7	1·3	0·9	18	21 : — : —	10·0	Id.
26	0	317	46·8	45·4	1·4	4·8	1·7	18	21 : — : —	10·0	Id.
	1	251	47·4	45·9	1·5	3·8	2·2	19	21 : — : —	10·0	Id. ; drifting rain^1
	2	200	47·6	46·0	1·6	4·2	2·2	20	20 : — : —	10·0	Id. ; id.
	3	162	47·3	46·3	1·0	3·6	2·1	17	20 : 22 : —	9·9	Id. ; mass of cirro-stratus ; rain$^{0\cdot2}$
	4	145	48·0	46·7	1·3	1·9	0·6	20	22 : — : —	10·0	Id. ; cirro-cumulo-strati ; cirro-strati.
	5	168	45·7	41·8	3·9	3·7	1·2	20	24 : 21 : —	7·0	Id. ; id. ; rain$^{0\cdot2}$
	6	162	44·5	41·0	3·5	2·3	2·8	21		1·0	Loose smoky scud ; cirro-strati ; sky looking wild.
	7	170	41·6	38·0	3·6	3·8	2·2	20		4·0	Scud on horizon.
	8	162	40·9	36·8	4·1	4·5	1·8	19		1·0	Id.
	9	165	40·0	36·6	3·4	3·7	3·9	20		0·4	Id. [off soon ; a flash of lightning to W
	10	165	36·5	35·6	0·9	6·6	2·9	20		10·0	Very dark ; shower lately, with heavy gusts of wind ; clouds cleare
	11	172	36·2	35·0	1·2	4·3	2·0	21		2·0	Scud ; rain^2 at 10^h 55^m.
	12	212	36·8	34·8	2·0	2·6	1·6	20		3·0	Scud and cirro-strati.
	13	29·228	37·6	35·3	2·3	1·1	0·2	22		7·5	Scud and cirro-strati.
	14	262	38·2	35·3	2·9	1·3	0·8	21		3·0	Id.
	15	294	36·8	35·0	1·8	3·0	0·2	24		7·5	Id.
	16	324	36·0	34·8	1·2	2·7	0·5	22		2·5	Id. ; drops of rain.
	17	348	37·0	35·2	1·8	1·3	1·5	22		3·0	Id. ; rain$^{0\cdot2}$
	18	389	36·0	34·4	1·6	2·4	1·6	24		10·0	Scud ; rain^1
	19	434	33·6	33·2	0·4	2·3	2·3	22		10·0	Snow^1
	20	445	33·9	33·3	0·6	2·4	0·4	24		9·5	Scud and cirro-strati.
	21	478	36·0	33·9	2·1	1·3	1·7	22		9·8	Id. ; snow^1
	22	512	36·0	33·8	2·2	2·2	1·3	23	25 : — : —	9·8	Loose scud ; cirro-strati ; snow$^{0\cdot5}$
	23	515	35·2	34·0	1·2	0·8	0·4	24	26 : — : —	5·0	Loose nimbi and scud ; cir.-str. ; cirri ; passing showe
27	0	524	36·8	34·8	2·0	2·1	0·3	20		7·0	Thin cirro-strati and cirrous haze. ⊖ [of sno
	1	516	38·6	36·0	2·6	0·6	0·3	20	24 : — : —	10·0	Masses of scud ; cirro-stratus and cirrous haze.
	2	489	37·7	36·0	1·7	0·8	0·1	20	24 : — : —	10·0	Id. ; id. ; becoming thick
	3	449	37·9	36·1	1·8	1·1	0·6	19	23 : — : —	10·0	Id. ; id.
	4	405	38·4	36·7	1·7	1·8	0·3	19	22 : — : —	10·0	Id. ; id.
	5	296	39·6	37·8	1·8	1·2	1·0	17	19 : — : —	10·0	Thick scud ; rain$^{0\cdot5}$
	6	184	40·7	39·4	1·3	1·8	2·2	18		10·0	Id. ; rain$^{2-3}$
	7	29·089	40·6	39·8	0·8	5·0	4·5	18		10·0	Id. ; rain^3 ; very stormy.
	8	28·964	43·0	42·0	1·0	5·1	3·9	17		10·0	Scud ; rain$^{0\cdot2}$; id.
	9	889	46·0	45·2	0·8	4·2	2·6	20		10·0	Id. ; rain^1

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. T motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Gt. Mn Te.		BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
27	0	28·841	48·2	47·0	1·2	4·7	4·2	20		10·0	Scud.
	1	28·828	52·1	47·8	4·3	6·9	7·6	21		6·0	Id.; cirrous scud?
	2	28·865	49·6	44·6	5·0	5·7	3·3	22		4·0	Thin scud? stars very dim.
	3¼	29·268	35·7	33·6	2·1	4·6	0·0			10·0	Sunday—A.M. Dense cirro-stratus, breaking up about 0h. P.M. Sheets of woolly cirri.
28	3	29·577	30·8	29·6	1·2	0·3	0·1	19		0·0	Clear.
	4	577	30·3	29·2	1·1	0·2	0·1	20		0·0	Id.
	5	595	29·1	28·4	0·7	0·2	0·1	20		0·0	Id.
	6	593	27·6	27·6	...	0·1	0·0	30		0·5	Cirro-strati and thin haze.
	7	585	29·6	29·1	0·5	0·1	0·1	17		7·0	Id.
	8	575	29·9	29·5	0·4	0·0	0·0	20		6·0	Cirro-strati and cirrous haze.
	9	541	33·2	31·8	1·4	0·3	0·2	20		3·0	Cirri, radiating from SE.; cir.-str. and cirrous haze.
	10	535	35·2	32·7	2·5	0·7	0·3	19		9·5	Id.; id.; clouds red to SE.
	11	508	35·6	33·8	1·8	0·6	0·5	20	— : — : 28	9·5	As before; patches of scud.
	12	509	37·2	35·3	1·9	1·2	0·5	18	20 : — : 28	9·8	Scud; woolly cirri and cirro-strati; cirrous haze.
	13	483	38·3	36·4	1·9	1·1	0·4	18	20 : — : 28	9·8	Id.; id.; cirro-cumulo-strati; id.
29	0	445	39·6	37·0	2·6	0·7	1·1	20	21 : — : —	9·7	Id.; cir.-str.; mass of cir.-str.; sky looking wild.
	1	392	41·0	38·1	2·9	2·2	1·1	20	19 : — : 28	9·0	Id.; thick woolly cirri and cir.-str.; sheets of cir.-str. ⊙
	2	346	39·4	38·3	1·1	1·3	0·7	18	20 : — : —	10·0	Id.; mass of cirro-stratus; rain^1
	3	275	40·4	39·2	1·2	1·6	1·5	18	20 : — : —	10·0	Id.; id.
	4	190	41·3	39·8	1·5	1·8	0·9	19	20 : — : —	10·0	Id.; id.
	5	143	41·4	40·4	1·0	2·2	2·1	18	20 : — : —	10·0	Id.; id.
	6	103	45·8	44·6	1·3	1·9	2·0	18		10·0	Id.
	7	071	48·2	46·7	1·5	4·8	1·7	18		10·0	Id.
	8	057	49·9	48·6	1·3	3·0	2·7	19		8·0	Stars indistinctly visible.
	9	054	51·1	49·4	1·7	3·1	1·6	20		9·8	Scud and cirro-stratus; drops of rain.
	10	045	50·4	49·0	1·4	3·2	2·1	18		8·5	Id.; id.
	11	064	51·0	49·7	1·3	2·3	1·3	18		10·0	Id.; rain$^{0·2}$
	12	075	52·0	50·0	2·0	1·8	1·4	20		9·9	Id.
	13	29·067	51·6	49·9	1·7	1·6	2·3	20		9·8	Scud and cirro-stratus; drops of rain.
	14	057	51·3	49·8	1·5	3·5	2·0	19		10·0	Id.; rain^1
	15	053	52·3	51·2	1·1	3·6	2·2	18		4·0	Id.
	16	025	51·3	49·7	1·6	6·0	3·0	18		5·0	Id.; stars dim.
	17	29·006	51·9	49·8	2·1	3·5	2·8	19		8·5	Id.; id.; rain$^{0·5}$
	18	28·998	51·7	48·5	3·2	3·1	2·0	19		9·0	Id.
	19	973	49·9	48·6	1·3	3·4	2·2	20		10·0	Rain$^{0·5}$; a few stars occasionally visible.
	20	956	49·4	46·3	3·1	2·8	2·5	19		3·0	Scud and cirro-strati on horizon.
	21	960	49·9	47·1	2·8	4·8	3·1	20	21 : — : —	9·0	Cirro-stratous and loose scud; cirrous haze.
	22	937	49·5	45·6	3·9	4·7	2·2	20	22 : — : —	8·0	Scud; cirro-strati; rain$^{1—2}$
	23	904	49·0	46·1	2·9	3·9	3·4	19	23 : — : —	3·0	Scud and nimbi.
30	0	900	47·2	45·3	1·9	4·2	1·9	19	22 : — : —	8·0	Scud and loose nimbi; passing showers.
	1	885	47·5	46·7	0·8	3·7	4·2	19	22 : — : —	9·8	Scud; cirro-strati and loose nimbi; rain$^{0·5}$
	2	886	48·3	45·7	2·6	3·7	1·9	20	22 : — : —	9·8	Id.; drops of rain.
	3	893	47·6	45·5	2·1	1·4	0·4	19		10·0	Id.; id.
	4	28·945	48·0	44·8	3·2	2·0	6·5	28	28 : — : —	10·0	Thick scud; rain^1
	5	29·166	42·2	38·9	3·3	4·8	0·8	28	28 : — : —	7·0	Scud; cirro-strati; cirro-cumulo-strati. ☽
	6	269	42·6	39·7	2·9	1·3	2·5	28		9·9	Id.; rain^1
	7	359	38·8	34·4	4·4	2·3	1·8	26		2·5	Id.
	8	455	37·7	33·2	4·5	1·8	2·0	26		2·5	Id.
	9	515	36·0	32·0	4·0	1·0	0·2	25		1·0	Scud on E. horizon.
	10	569	35·6	31·4	4·2	0·3	0·2			0·5	Id.
	11	617	33·4	30·3	3·1	0·2	0·1	19		0·0	Hazy on horizon.
	12	630	34·3	30·7	3·6	0·5	0·5	21		0·0	Id.
	13	29·643	32·7	30·2	2·5	0·5	0·1	21		0·0	Hazy on horizon.
	14	645	33·0	30·7	2·3	0·3	0·4	18		2·0	Cirro-strati to E. and N.
	15	618	35·8	32·7	3·1	1·3	0·9	18		2·0	Id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The tions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Dec. 27d 12h 16m. Barometer 28·879.

Dec. 30d 4h. The wind commenced to blow violently at 4h 0m, and changed its direction about the same time; the barometer rising ridly.

Gött. Mean Time.		BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
30	16	29·605	35·9	34·0	1·9	1·3	0·4	18		1·2	Cirro-strati to E. and N.
	17	612	37·2	35·2	2·0	1·0	0·8	20		1·0	Id.
	18	626	37·2	35·1	2·1	1·1	0·2	20		3·0	Loose cirro-strati.
	19	638	36·2	34·7	1·5	0·7	0·6	18		2·0	Cloud radiating from SE.
	20	636	37·4	34·0	3·4	1·3	0·8	19		5·0	Scud and cirro-strati; cirrous haze; clouds tinged red.
	21	617	38·3	36·5	1·8	0·6	0·6	20		8·0	Cirro-strati, cirro-cumulo-strati, and cirrous haze.
	22	613	38·4	36·8	1·6	0·8	0·3	20	20 : 25 : —	10·0	Loose scud; scud; cirro-strati; mass of cirro-stratus.
	23	605	39·3	37·7	1·6	0·4	0·2	19	20 : — : —	10·0	Scud; cirro-strati; mass of cirro-stratus.
31	0	546	41·9	39·7	2·2	0·2	0·5	20	20 : 26 : —	9·9	Id.; cirro-cumulo-strati; cirro-strati.
	1	480	43·3	40·5	2·8	0·7	0·8	20	20 : — : —	10·0	Id.; cirro-strati; mass of cirro-stratus.
	2	420	43·2	40·4	2·8	1·6	1·8	18	19 : — : —	10·0	Id.; id.; id.
	3	366	42·6	40·0	2·6	1·7	0·6	19	19 : — : —	10·0	Id.; id.; id.
	4	290	42·3	39·6	2·7	1·4	0·8	18	19 : — : —	10·0	Id.; id.; id.; rain$^{0·5}$
	5	213	40·7	39·3	1·4	1·8	1·7	18		10·0	Id.; id.; rain^{1}
	6	136	40·1	38·6	1·5	0·5	0·4	18		10·0	Id.; id.
	7	071	41·2	39·4	1·8	0·5	0·4	19		10·0	Id.; id.
	8	29·025	41·7	40·5	1·2	0·2	0·2	20		10·0	Id.; id.
	9	28·971	43·7	42·3	1·4	0·8	0·5	19		9·5	Id.; id.; drops of rain.
	10	970	45·0	42·3	2·7	1·1	0·2	24		10·0	Id.; id.
	11	980	42·2	38·8	3·4	1·5	0·3	23		2·0	Id.
	12	982	41·5	38·0	3·5	1·1	1·1	23		2·0	Id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

DAILY AND EXTRA METEOROLOGICAL OBSERVATIONS.

MAKERSTOUN OBSERVATORY,

1845.

Civil Day.	TEMPERATURE.		RADIATION.		Rain in Gauge at Noon.	TEMPERATURE.		RADIATION.		Rain in Gauge at Noon.	TEMPERATURE.		RADIATION.		Rain in Gauge at Noon.
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.	
	°	°	°	°	in.	°	°	°	°	In.	°	°	°	°	in.
	JANUARY.					MARCH.					MAY.				
1	25·2	33·4	23·5	39·0	0·000	26·7	36·2	22·7	37·7	0·000	48·5	57·2	45·4	76·1	0·103
2	28·2	36·4	24·1	40·9	·000	31·9	45·1	30·7	45·2	·113	42·2	56·2	39·2	81·0	·210
3	29·5	38·8	25·7	38·8	·000	34·5	37·9	33·5	39·5	·175	42·4	55·2	38·7	80·5	·007
4	32·0	44·0 ?	27·3	44·0 ?	·000	29·4	36·9	26·3	39·8	·000	37·2	53·2	30·6	90·0	……
5	44·0 ?	51·2	44·0 ?	51·0	……	19·6	36·5	13·0	59·7	·052	35·8	49·6	29·2	81·0	·065
6	42·0	50·0 ?	39·3	49·1	·000	20·3	36·9	14·3	41·5	·057	36·0	50·8	26·4	73·3	·017
7	29·2	37·9	23·6	55·8	·018	31·9	42·1	28·8	56·7	·000	38·2	47·3	38·0	53·3	·222
8	28·0	44·0	24·0	60·0	·000	35·2	45·3	32·6	54·9	·000	36·5	48·9	33·8	71·4	·261
9	27·8	43·2	24·3	62·4	·000	32·9	44·4	29·2	46·4	……	34·0	50·4	27·4	71·0	·193
10	26·1	47·0	20·4	46·7	·003	37·0	46·4	32·2	47·5	·104	39·3	50·3	36·3	65·8	·025
11	40·1	43·9	36·1	54·5	·052	27·4	36·9	23·0	46·8	·046	35·9	61·0	29·5	96·7	……
12	30·0	40·3	24·8	……	……	21·7	35·0	12·8	48·5	·057	40·2	56·4	33·4	99·0	·000
13	24·4	40·4	21·3	51·5	·014	16·8	34·3	11·0	58·7	·000	38·2	54·8	32·9	77·5	·172
14	33·4	43·0	27·8	44·0	·004	21·0	36·4	15·2	50·4	·000	31·5	59·3	27·8	80·6	·020
15	35·2	45·5	30·7	56·5	·000	17·6	35·9	12·5	55·3	·300	41·2	67·0	33·8	81·2	·077
16	24·1	31·7	21·8	32·2	·000	15·3	33·8	7·7	50·2	……	46·2	65·6	41·6	102·0	·000
17	24·0	44·8	20·1	51·0	·000	24·0	40·2	22·0	51·7	·022	45·4	56·0	43·3	92·5	·065
18	36·2	42·7	32·6	57·5	·008	28·1	42·1	23·4	68·8	·000	36·0 ?	53·5	……	60·4	……
19	29·7	38·7	26·4	50·3	……	26·0	34·2	21·2	54·7	·000	40·6	50·1	34·8	75·0	·143
20	22·8	38·7	19·2	55·5	·050	22·0	37·0	14·5	58·4	·000	40·4	52·9	35·0	75·3	·004
21	27·4	38·9	21·1	57·3	·002	19·8	40·9	13·5	44·2	·000	42·2	54·9	36·4	88·0	·000
22	32·2	45·8	26·8	61·0	……	38·0	55·2	……	62·3	·017	42·9	52·3	42·7	79·7	·000
23	37·3	50·3	31·8	57·7	·078	42·6	54·2	38·9	71·5	……	41·0	53·2	41·2	64·8	·012
24	35·4	43·0	35·2	51·2	·250	33·2	50·3	27·0	72·4	·000	42·4	50·8	42·0	62·5	·000
25	30·4	49·8	24·8	54·0	·000	24·9	51·1	21·3	66·0	·000	40·9	51·9	40·8	61·0	……
26	38·5	39·7	35·3	46·0	·233	32·2	50·6	……	66·5	·000	41·4	45·3	40·8	51·3	·066
27	25·9	36·0	19·8	37·7	·202	41·1	54·0	38·0	71·7	·120	43·2	48·4	42·8	57·0	·658
28	23·9	34·4	21·3	40·4	·310	43·8	48·7	41·4	60·2	·130	41·3	51·8	40·6	84·5	·000
29	12·0	24·8	7·5	42·6	·101	38·0	53·0	32·0	64·3	·000	41·4	52·5	40·8	86·2	·000
30	6·2	25·0	1·5	52·3	·000	29·7	44·7	25·0	64·8	……	34·8	55·4	27·8	98·0	·000
31	− 2·0	23·8	−15·0	55·5	·000	36·6	56·2	31·7	80·6	·090	37·2	61·7	29·8	105·2	·000
	FEBRUARY.					APRIL.					JUNE.				
1	6·7	37·0	− 3·3	51·0	0·000	30·2	56·3	26·2	70·0	0·000	36·6	65·6	31·0	93·5	……
2	10·8	37·0	6·8	……	……	27·1	62·1	24·6	85·7	·000	51·1	62·2	49·7	80·7	·023
3	30·2	44·5	30·1	74·2	·164	26·3	59·8	23·7	81·3	·000	42·7	64·4	35·8	87·5	·000
4	24·9	42·6	20·6	58·5	·000	32·0	43·9	28·4	45·6	·000	40·0	56·9	34·3	82·8	……
5	35·4	42·8	30·1	53·8	·000	36·8	52·7	36·0	72·7	·000	43·2	64·5	39·0	77·6	·330
6	27·8	33·0	23·5	42·2	·020	24·2	59·3	20·0	90·9	……	48·4	61·2	45·0	71·5	·000
7	24·9	32·1	19·7	42·4	·004	35·3	55·4	31·8	76·6	·003	47·4	62·9	44·4	94·5	·000
8	23·3	34·5	16·8	51·5	·000	36·3	50·2	31·0	58·3	·009	47·2	63·3	45·5	98·2	·340
9	24·3	32·6	24·5	32·4	……	26·8	51·1	22·8	81·3	·000	42·4	58·2	39·3	71·2	·070
10	31·0	39·5	30·2	46·2	·083	35·2	42·3	30·1	49·7	·048	51·8	66·9	49·2	88·0	·003
11	28·3	33·8	27·0	35·0	·010	36·0 ?	44·0	32·1	52·3	·104	54·1	73·2	51·4	104·6	·000
12	27·9	33·1	26·2	34·5	·000	27·3	50·5	23·8	67·5	·000	50·1	78·3	47·5	111·6	·000
13	30·2	44·9	30·1	53·3	·104	31·2	48·6	27·5	50·6	……	51·9	75·2	48·5	119·7	·000
14	32·8	38·9	27·3	46·6	·000	32·1	44·1	30·0	47·2	·416	50·9	71·7	44·8	110·6	·000
15	28·7	41·4	21·3	52·5	·000	37·2	47·6	34·7	56·3	·044	49·5	71·6	44·8	83·0	……
16	33·2	43·3	31·3	61·1	……	31·0	54·6	25·3	80·9	·000	53·3	68·6	51·0	72·7	·100
17	35·2	44·0	35·0	46·7	·000	34·7	60·5	30·7	90·1	·000	52·7	67·4	52·5	85·2	·142
18	27·8	44·2	22·4	63·7	·000	46·2	55·5	41·2	62·0	·000	50·2	68·4	48·3	80·0	·309
19	21·8	37·9	18·0	61·8	·000	38·2	51·9	33·7	87·0	·000	47·2	66·0	46·2	95·5	·157
20	30·0	44·2	25·5	64·2	·000	36·3	63·4	32·3	102·6	……	44·6	69·6	37·8	112·5	·000
21	33·1	41·3	28·5	42·9	·000	32·7	63·9	30·5	104·5	·000	50·0	66·7	44·0	106·0	·000
22	25·0	37·2	21·0	51·3	·018	30·2	61·8	26·4	94·3	·000	48·9	66·4	40·8	101·8	……
23	26·9	39·1	25·0	63·1	……	29·6	59·0	26·4	93·2	·000	42·1	65·4	35·5	97·3	·000
24	33·2	39·2	23·8	52·7	·002	32·4	54·3	32·0	91·1	·000	46·0	60·6	41·0	64·8	·122
25	15·7	40·6	8·5	61·7	·000	36·7	65·7	32·6	93·2	·015	44·2	64·2	41·0	109·0	·112
26	34·2	41·6	28·8	42·3	·307	49·4	58·1	49·0	79·0	·300	43·2	62·3	40·0	89·3	·113
27	27·9	42·3	24·0	67·6	·000	45·2	57·7	41·0	73·7	……	37·9	62·3	32·5	81·5	·000
28	31·2	39·3	24·7	48·7	·000	45·7	58·3	42·0	69·2	·111	47·0	51·6	46·5	68·4	·715
29						40·9	59·5	35·8	81·0	·076	38·0	60·4	32·5	95·7	……
30						45·2	62·4	42·8	77·8	·032	46·8	64·1	45·1	93·5	·044
31															

Civil Day.	TEMPERATURE.		RADIATION.		Rain in Gauge at Noon.	TEMPERATURE.		RADIATION.		Rain in Gauge at Noon.	TEMPERATURE.		RADIATION.		Rain in Gauge at Noon.
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.	
	°	°	°	°	in.	°	°	°	°	in.	°	°	°	°	in.
	JULY.					SEPTEMBER.					NOVEMBER.				
1	48·0	62·6	45·7	76·2	0·355	48·9	75·1	45·0	113·5	0·000	38·9	51·6	33·0	58·7	0·000
2	48·7	63·3	44·8	105·2	·168	51·0	59·0	......	71·0	·000	33·5	48·5	28·8	54·3	......
3	47·8	59·1	41·8	62·5	·139	35·0	62·8	32·0	103·4	·000	39·5	47·3	38·1	76·3	·000
4	50·5	62·0	46·2	89·2	·021	46·3	59·7	44·4	76·7	·000	24·7	45·4	22·0	73·2	·002
5	40·7	66·6	33·4	108·4	·000	45·0	58·1	42·5	95·5	·000	26·0	50·8	17·8	75·2	·000
6	47·9	69·1	41·6	96·5	......	34·8	61·3	32·8	94·6	·000	33·2	55·8	29·5	80·7	·000
7	52·7	70·1	51·8	100·5	·076	36·4	61·5	34·3	100·0	......	46·9	51·6	44·0	74·8	·015
8	49·8	69·7	43·2	90·5	·047	38·2	63·2	35·2	90·5	·000	46·0	54·3	42·5	55·7	·087
9	51·2	66·3	47·2	......	·000	49·8	62·8	46·6	69·5	·000	39·0	51·5	35·2	62·3	......
10	49·8	71·6	44·4	117·7	·015	48·8	55·9	44·8	71·5	·002	32·3	48·8	30·2	52·2	·123
11	42·9	60·5	37·8	97·5	·011	46·9	58·8	41·6	89·0	·000	35·5	47·3	31·0	73·5	·056
12	43·8	62·4	36·9	107·3	·202	47·3	64·7	46·8	105·8	·000	31·0	48·2	28·8	72·3	·003
13	39·7	62·7	35·5	69·7	......	40·1	61·5	39·2	68·9	·000	30·0	45·6	27·5	......	·000
14	47·5	62·0	47·5	110·0	·115	51·2	62·3	47·8	89·8	......	26·8	43·3	24·0	57·7	·006
15	42·3	62·1	36·0	110·2	·038	32·0	60·6	31·0	94·4	·063	26·7	46·6	24·6	52·2	·002
16	41·7	63·0	35·5	114·0	·002	37·6	60·6	35·4	89·8	·000	41·9	50·5	40·8	49·2	......
17	39·7	60·2	34·2	67·3	·020	43·7	59·3	40·2	65·5	·125	40·0	46·2	37·0	51·5	......
18	47·8	65·8	44·7	100·2	·149	49·0	61·1	40·0	70·2	·000	32·1	49·8	28·0	46·4	·430
19	45·9	62·3	38·8	80·0	·002	45·4	56·6	44·5	96·4	·610	43·4	50·1	39·0	57·7	·266
20	48·3	54·7	46·7	66·7	......	31·6	58·6	27·6	83·6	·020	39·8	47·0	36·9	53·6	·270
21	50·0	55·5	50·8	61·7	·030	47·2	61·0	46·5	82·6	......	35·0	43·5	31·1	50·0	·057
22	47·7	54·0	48·8	60·0	·033	41·7	51·0	41·0	90·0	·733	26·9	40·6	22·4	60·0	·005
23	46·9	55·9	47·2	70·8	·009	30·3	52·0	26·4	90·7	·000	28·0	39·9	20·5	61·0	......
24	47·6	59·4	47·9	72·0	·032	28·1	55·9	24·8	79·2	·000	25·3	36·0 ?	19·6	55·7	·000
25	51·5	67·8	51·2	95·4	·003	43·3	59·3	41·7	87·7	·000	30·8	48·0	28·8	46·5	·065
26	46·1	64·5	42·8	79·5	·000	36·0	55·6	32·5	89·0	·010	42·9	54·6	40·2	53·6	·035
27	54·0	67·0 ?	51·5	94·2	......	39·5	61·5	37·2	76·9	·030	45·1	50·4	42·5	62·6	·034
28	39·5	62·2	33·6	97·5	·021	43·5	53·8	39·4	80·5	......	45·0	48·6	41·5	48·8	·026
29	35·2	63·0	32·0	112·5	·002	39·1	55·8	35·0	82·6	·047	41·6	47·6	36·4	59·2	·040
30	38·5	66·0	33·5	101·5	·000	41·0	55·1	37·8	77·0	......	31·0	47·8	28·0	47·3	......
31	42·5	64·0	39·0	89·1	·228										
	AUGUST.					OCTOBER.					DECEMBER.				
1	48·8	63·0	47·9	100·7	0·097	38·5	54·3	34·7	76·2	0·198	35·0	42·3	31·8	45·0	0·177
2	46·8	69·0	45·0	91·1	·080	44·2	56·6	40·5	85·5	0·000	34·0	41·0	30·2	43·3	·228
3	47·5	63·2	44·3	89·8	......	41·2	48·2	42·2	53·0	1·170	30·0	37·5	25·7	46·4	·046
4	48·8	65·3	46·0	93·0	·330	43·0	47·8	40·0	57·3	0·607	26·8	41·0	21·8	50·5	·000
5	44·1	70·7	40·2	108·7	·020	30·0	50·0	25·0	88·5	·311	34·0	44·0	32·4	45·6	·077
6	44·8	68·3	41·2	113·0	·020	26·0	53·4	23·7	85·0	·000	33·9	43·7	29·0	50·4	·004
7	51·1	64·8	50·8	99·9	·047	41·9	49·2	37·5	61·1	·146	27·4	36·8	23·8	47·5	......
8	46·5	67·2	43·5	110·7	·000	37·0	54·9	31·8	89·5	·005	23·7	44·8	19·0	46·5	·031
9	50·0	56·3	46·0	59·8	·125	40·6	55·7	35·4	99·3	·043	38·0	43·7	32·2	47·3	·000
10	50·3	60·0	51·2	82·1	·472	35·7	51·3	32·2	87·4	·606	31·4	46·0 ?	25·0	48·5	·000
11	51·9	61·3	48·3	94·5	·138	38·6	54·0	32·8	72·4	·095	38·0	50·0 ?	29·5	52·4	·000
12	50·7	57·1	50·5	69·2	·016	36·2	54·8	32·7	89·2	......	35·1	39·3	30·4	41·5	·000
13	42·8	63·6	38·6	103·0	·020	39·1	56·7	36·0	57·3	·190	20·4	35·5	17·6	46·5	·000
14	46·5	61·4	41·9	76·6	·006	52·2	62·7	49·3	67·6	·013	23·2	48·3	19·9	46·5	......
15	44·3	57·4	39·2	102·6	·035	50·8	58·3	51·0	59·5	·017	38·8	44·0	33·8	51·0	·050
16	45·3	58·8	40·2	91·2	·003	43·9	54·6	39·5	79·5	·050	38·0	41·2	34·4	41·0	·050
17	43·6	62·0	40·5	93·0	......	45·5	58·0 ?	43·6	58·5	·070	25·7	34·8	21·5	49·3	·000
18	47·1	65·6	45·2	103·7	·370	51·7	59·3	51·8	73·3	·036	24·8	35·7	21·1	45·0	·227
19	45·2	56·1	41·0	62·0	·170	43·5	57·5	38·5	59·3	......	24·3	40·2	20·2	47·5	·058
20	46·7	55·1	47·5	58·2	·511	43·6	51·4	39·7	67·4	·510	31·7	38·7	27·6	46·5	·004
21	46·3	58·6	44·6	95·0	·090	38·0	50·9	33·0	55·0	·000	30·1	33·4	26·7	44·5	......
22	35·7	63·9	31·8	90·3	·000	42·7	53·7	37·8	75·4	·002	30·0	44·2	25·8	46·5	·081
23	52·0	63·4	51·8	86·6	·170	41·7	51·1	35·5	57·2	·000	33·1	42·4	29·4	42·0	·054
24	42·7	63·1	40·0	99·0	·280	45·2	53·1	42·2	63·4	·000	25·9	37·5	21·0	38·2	·000
25	47·5	66·8	43·8	82·6	·155	35·9	48·1	30·0	75·8	·000	35·9	46·0	......	55·7	·000
26	46·4	63·1	44·0	87·2	·098	36·9	51·2	28·3	......	......	34·9	47·3	29·6	46·7	·057
27	48·7	61·7	45·8	88·7	·002	......	54·9	43·7	58·5	·017	32·4	52·0	30·8	41·5	·293
28	41·1	70·3	38·8	113·7	·000	......	56·2	......	60·3	·115	33·1	36·0	27·6	56·2	......
29	45·5	73·6	43·4	102·5	·000	49·8	53·2	47·0	53·4	·057	26·3	51·5	21·0	50·6	·103
30	44·7	73·2	42·2	101·0	·000	47·7	53·4	46·8	75·8	·187	45·1	48·0	43·1	51·2	·379
31	48·0	67·1	44·6	110·6	......	36·0	53·3	31·7	66·4	·000	29·9	45·0	23·8	43·8	·053

NOTES TO THE OBSERVATIONS OF THE SELF-REGISTERING THERMOMETERS.

	d.	h.	
Jan.	4	23.	The temperature has risen during the night, so that no minimum could be obtained; the maximum given for Jan. 4^{d} most probably occurred this morning (Jan. 5^{d}.)
Jan.	11		The maximum temperature given occurred between 10^{d} 19^{h} and 10^{d} 22^{h}.
Jan.	22		The minimum temperatnre seems somewhat uncertain.
Jan.	24		The maximum temperature seems somewhat uncertain.
Jan.	31		The minimum radiation thermometer and the standard thermometer immersed in snow, at a temperature of 32° and of 20°, when the former read 0°·1 less than the latter. A new coating of lamp-black varnish put over the minimum radiation bulb, which was afterwards roughened.
Feb.	3		About 1°·5 of alcohol found detached in the minimum radiation thermometer; the thermometer was adjusted Feb. 8^{h} 4^{h}, and the observations previously were corrected for the induced index error, which has been done in all similar cases.
Mar.	15	5.	The temperature has been varying much and irregularly to-day; the reading given is quite accurate; the maximum, therefore, probably occurred before 1^{h}.
Mar.	21	22.	There has been no minimum during the night.
Mar.	23	20.	About 0°·7 of alcohol found detached in the minimum radiator; this must have again joined the column of alcohol, as it could not be seen on the 28th.
Apr.	11		The minimum temperature from the self-registering thermometer lost; the quantity given is estimated from the observations of the dry-bulb thermometer.
Apr.	16		The bulb of the minimum radiator was covered anew with lamp-black, the last coatiug having been nearly washed off by tbe rain. The maximum radiator was placed about 3 inches above the surface of the soil, and a shade from the wind was placed round it: it has been 15 inches above the soil since November.
Apr.	30	20.	About 0°·4 of alcohol found detached in the tube of the minimum radiator; the bleb was near the top of the tube on May 5, and on May 6^{d} 5^{h} it had disappeared.
July	18	7.	2°·6 of mercury found detached from the column in the maximum thermometer.
July	27	22.	The index of the maximum thermometer out of order; the temperature at 27^{d} 2^{h} was 66°·4 by [the dry-bulb thermometer.
Aug.	6	8.	The speculum of the minimum radiator was resilvered.
Sept.	1		The bulb of the minimum radiator was reblackened.
Oct.	30		The mercury and index of the maximum thermometer adhere.
Nov.	10 and 13^{d}.		The index of the maximum thermometer has probably been adhering to the mercury.
Dec.	25		The maximum radiating thermometer raised 18 inches above the soil, in order to allow the sun to shine more perfectly upon it.
Dec.	30	1.	The minimum thermometer was set at $19\frac{1}{2}^{h}$. The maximum is that since Dec. 29^{d} 22^{h}.

TEMPERATURE OF WATER IN PUMP WELLS.

Göttingen Mean Time of Observations.	Temperature of Water.		Göttingen Mean Time of Observations.	Temperature of Water.		Göttingen Mean Time of Observations.	Temperature of Water.	
	Pump Wells.			Pump Wells.			Pump Wells.	
	Cottage.	Garden.		Cottage.	Garden.		Cottage.	Garden.
d. h.	°	°	d. h.	°	°	d. h.	°	°
Jan. 6 5	44·4	47·7	May 12 5	44·0	46·8	Sept. 15 5	49·6	49·7
13 5	44·1	47·6	20 5	44·6	47·2	22 5	49·7	49·7
20 5	43·7	47·3	26 5	44·8	47·4	29 5	49·7	50·0
27 5	43·6	47·1	June 2 5	45·2	47·4	Oct. 6 5	49·6	49·8
Feb. 3 5	43·1	...	9 5	45·4	47·6	13 5	...	50·2
10 5	42·6	...	16 5	46·0	48·0	14 4	49·4	...
17 5	42·3	...	23 5	46·2	47·9	21 5	49·1	50·2
24 5	42·3	...	30 5	46·6	48·1	27 5	49·0	50·2
Mar. 3 5	42·1	46·1	July 7 5	47·3	48·3	Nov. 4 5	49·0	50·0
10 5	42·0	46·1	14 5	47·5	48·4	10 5	48·3	49·8
17 5	41·6	45·7	21 5	47·8	48·6	17 5	47·6	49·4
24 5	41·6	45·9	28 5	48·1	48·7	24 5	47·2	48·9
April 2 5	41·9	46·3	Aug. 4 5	48·4	48·8	Dec. 1 5	47·0	49·0
7 5	42·2	46·5	11 5	48·7	49·1	8 5	46·2	48·5
14 5	42·5	46·6	18 5	49·0	49·2	15 5	45·5	48·1
21 5	...	46·6	26 5	49·1	49·4	22 5	45·0	47·8
28 5	43·1	46·7	Sept. 1 5	49·4	49·9	31 5	44·6	47·7
May 5 5	43·7	46·8	8 5	49·4	49·7			

ACTINOMETER.

MARCH, 11, 12.

kerstoun an Time of t Reading.				In Sun or Shade.	Observation.		Change in 60ˢ.	Effect of Sun.	Mean of Group.	Sun's Altitude.
					Begun.	Ended.				
d.	h.	m.	s.		Sc. div.	Sc. div.	Sc. div.	Sc. div.	Sc. div.	°
11	23	31	0	Sun	25·4	29·0	+3·6			
		32	30	Shade	29·0	28·2	−0·8	4·4	4·50	30·7
		33	30	Sun	28·2	31·9	+3·7	4·6		
		35	0	Shade	31·8	30·8	−1·0			
11	23	38	30	Sun	28·7	32·3	+3·6			
		40	0	Shade	32·1	31·5	−0·6	4·1	4·19	30·9
		41	0	Sun	31·5	35·0	+3·5	4·4		
		42	30	Shade	34·7	33·5	−1·2	4·6		
		44	0	Sun	32·9	36·2	+3·3	4·5		
		45	35	Shade	35·7	34·6	−1·1	4·0		
		46	35	Sun	34·6	37·1	+2·5	3·6		
		48	0	Shade	36·7	35·5	−1·2	4·1		
		49	0	Sun	35·5	38·8	+3·3			
12	0	43	0	Sun	13·9	16·8	+2·9			
		44	30	Shade	16·7	15·9	−0·8	3·7	3·77	30·6
		45	30	Sun	15·9	18·9	+3·0	3·8		
		47	0	Shade	18·7	17·9	−0·8	3·7		
		48	0	Sun	17·9	20·6	+2·7	3·5		
		49	30	Shade	20·3	19·4	−0·9	3·6		
		50	30	Sun	19·4	22·1	+2·7	3·7		
		52	0	Shade	21·8	20·7	−1·1	4·0		
		53	0	Sun	20·7	23·7	+3·0	4·0		
		54	30	Shade	23·3	22·4	−0·9	3·8		
		55	30	Sun	22·4	25·3	+2·9	3·9		
		57	0	Shade	24·9	23·8	−1·1			
12	1	21	0	Sun	10·2	12·7	+2·5			
		22	30	Shade	12·6	11·7	−0·9	3·4	3·39	29·1
		23	30	Sun	11·7	14·3	+2·6	3·4		
		25	0	Shade	14·1	13·4	−0·7	3·4		
		26	0	Sun	13·4	16·2	+2·8	3·4		
		27	30	Shade	16·1	15·6	−0·5	3·3		
		28	30	Sun	15·6	18·4	+2·8	3·4		
		30	0	Shade	18·3	17·6	−0·7	3·4		
		31	0	Sun	17·6	20·1	+2·5	3·2		
		32	30	Shade	20·0	19·2	−0·8	3·5		
		33	30	Sun	19·2	22·0	+2·8	3·5		
		35	10	Shade	21·8	21·2	−0·6			
12	1	44	0	Sun	23·7	26·3	+2·6	3·5	3·50	28·1
		45	30	Shade	26·0	25·1	−0·9			
12	1	59	0	Sun	13·0	15·6	+2·6			
12	2	0	30	Shade	15·3	14·4	−0·9	3·5	3·43	26·6
		1	30	Sun	14·4	17·0	+2·6	3·4		
		3	0	Shade	16·9	16·1	−0·8	3·5		
		4	0	Sun	16·1	18·9	+2·8	3·6		
		5	30	Shade	18·8	18·1	−0·7	3·4		
		7	0	Sun	17·7	20·3	+2·6	3·3		
		8	30	Shade	20·1	19·4	−0·7	3·3		

MARCH 12.

Makerstoun Mean Time of First Reading.				In Sun or Shade.	Observation.		Change in 60ˢ.	Effect of Sun.	Mean of Group.	Sun's Altitude.
					Begun.	Ended.				
d.	h.	m.	s.		Sc. div.	Sc. div.	Sc. div.	Sc. div.	Sc. div.	°
12	2	9	30	Sun	19·4	22·1	+2·7	3·5	3·47	25·8
		11	0	Shade	22·0	21·1	−0·9	3·6		
		12	30	Sun	20·9	23·5	+2·6	3·5		
		14	0	Shade	23·3	22·4	−0·9	3·4		
		15	0	Sun	22·4	24·8	+2·4	3·2		
		16	30	Shade	24·7	23·9	−0·8	3·4		
		17	30	Sun	23·9	26·7	+2·8	3·7		
		19	0	Shade	26·6	25·7	−0·9			

MARCH, 12, 13.

Makerstoun Mean Time of First Reading.				In Sun or Shade.	Observation.		Change in 60ˢ.	Effect of Sun.	Mean of Group.	Sun's Altitude.
					Begun.	Ended.				
d.	h.	m.	s.		Sc. div.	Sc. div.	Sc. div.	Sc. div.	Sc. div.	°
12	21	23	12	Sun	17·1	18·8	+1·7			
		24	42	Shade	18·7	18·2	−0·5	2·2	2·40	23·1
		25	42	Sun	18·2	19·9	+1·7	2·3		
		27	12	Shade	19·7	19·0	−0·7	2·4		
		28	12	Sun	19·0	20·7	+1·7	2·4		
		29	42	Shade	20·4	19·7	−0·7	2·3		
		30	42	Sun	19·7	21·3	+1·6	2·4		
		32	12	Shade	21·2	20·4	−0·8	2·5		
		33	12	Sun	20·4	22·2	+1·8	2·5		
		34	42	Shade	22·0	21·3	−0·7	2·5		
		35	42	Sun	21·3	23·1	+1·8	2·5		
		37	12	Shade	22·9	22·2	−0·7	2·5	2·68	24·3
		38	12	Sun	22·2	24·1	+1·9	2·6		
		39	42	Shade	24·0	23·4	−0·6	2·5		
		40	42	Sun	23·4	25·3	+1·9	2·6		
		42	12	Shade	25·1	24·3	−0·8	2·7		
		43	12	Sun	24·3	26·3	+2·0	2·8		
		44	42	Shade	26·1	25·3	−0·8	2·7		
		45	42	Sun	25·3	27·1	+1·8	2·7		
		47	12	Shade	26·9	26·0	−0·9	2·8		
		48	12	Sun	26·0	28·0	+2·0	2·9		
		49	42	Shade	27·7	26·8	−0·9			
12	22	9	12	Sun	14·1	16·2	+2·1			
		10	42	Shade	16·1	15·3	−0·8	3·0	3·03	27·0
		11	42	Sun	15·3	17·6	+2·3	3·1		
		13	12	Shade	17·3	16·5	−0·8	3·0		
		14	12	Sun	16·5	18·6	+2·1	2·9		
		15	42	Shade	19·0	18·2	−0·8	2·9		
		16	42	Sun	18·2	20·4	+2·2	3·1		
		18	12	Shade	20·1	19·1	−1·0	3·2		
		19	12	Sun	19·1	21·3	+2·2	3·2	3·34	27·7
		20	42	Shade	21·0	20·0	−1·0	3·3		
		21	42	Sun	20·0	22·3	+2·3	3·3		
		23	12	Shade	22·1	21·1	−1·0	3·4		
		24	12	Sun	21·1	23·6	+2·5	3·4		
		25	42	Shade	23·2	22·3	−0·9	3·4		
		26	42	Sun	22·3	24·7	+2·4	3·4		
		28	12	Shade	24·4	23·3	−1·1			

March 11^d 23^h 31^m. Clear near the sun; scud to E. 34^m 30^s. Scud approaching the sun. 35^m 0^s. Scud on sun. 37^m. Clouds over sun. 38^m. Clouds off the sun. 44^m—48^m. Clouds on or near the sun.

March 12^d 0^h 43^m. No clouds within 30° of the sun. 53^m. A very thin haze passing over the sun. 58^m. Clouds coming over the sun.

March 12^d 1^h 28^m. Loose scud within 4° of the sun, and over the sun for 5^s. 33^m. A small patch of vapour near the sun.

March 12^d 2^h 4^m. A cloud over the sun for 10^s. 7^m. Thin cloud over the sun. 19^m. Thin cirrous cloud coming near the sun, and erspreading the whole of the sky, so as to render further observations useless; snow at 24^m.

March 12^h 21^h 23^m. A patch of cirro-stratus 20° to eastward of the sun; no haze visible. Observations made at east end of Observa-y. 27^m. The patch of cirro-stratus has disappeared. 45^m. The sky has been very favourable since about 27^m.

March 12^d 22^h 9^m. Patches of cloud on horizon to south, 25° distant from the sun.

March 12^d 22^h 15^m. The instrument was exposed to the sun a few seconds too long; the observation was taken at the proper time. ^{h} 50^m. Dry thermometer, 28°·7, wet thermometer, 25°·7.

ACTINOMETER.

Makerstoun Mean Time of First Reading.				In Sun or Shade.	Observation.		Change in 60^s.	Effect of Sun.	Mean of Group.	Sun's Altitude.
					Begun.	Ended.				
d.	h.	m.	s.		Sc. div.	Sc. div.	Sc. div.	Sc. div.	Sc. div.	°
					MARCH 12, 13.					
12	23	9	17	Sun	21·4	24·1	+2·7			
		10	42	Shade	23·8	22·7	−1·1	3·6		
		11	42	Sun	22·7	25·1	+2·4	3·5		
		13	12	Shade	24·7	23·6	−1·1	3·5		
		14	12	Sun	23·6	26·0	+2·4	3·6		
		15	42	Shade	25·7	24·4	−1·3	3·8	3·69	30·5
		16	42	Sun	24·4	27·0	+2·6	3·8		
		18	12	Shade	26·8	25·7	−1·1	3·7		
		19	12	Sun	25·7	28·3	+2·6	3·8		
		20	42	Shade	27·9	26·6	−1·3	3·9		
		21	42	Sun	26·6	29·2	+2·6	3·9		
		23	12	Shade	28·9	27·6	−1·3	3·9		
		24	12	Sun	27·6	30·3	+2·7	4·0		
		25	42	Shade	29·9	28·7	−1·2	3·8		
		26	42	Sun	28·7	31·3	+2·6	3·9	4·04	30·9
		28	12	Shade	30·9	29·5	−1·4	4·0		
		29	12	Sun	29·5	32·1	+2·6	4·1		
		30	42	Shade	31·6	30·0	−1·6	4·3		
		31	42	Sun	30·0	32·9	+2·9	4·5		
		33	12	Shade	32·3	30·8	−1·5			
12	23	44	12	Sun	20·2	22·9	+2·7			
		45	42	Shade	22·6	21·1	−1·5	4·1		
		46	42	Sun	21·1	23·7	+2·6	4·1		
		48	12	Shade	23·3	21·9	−1·4	3·9		
		49	12	Sun	21·9	24·3	+2·4	3·9		
		50	42	Shade	23·8	22·2	−1·6	4·0		
		51	42	Sun	22·2	24·6	+2·4	4·0	3·96	31·5
		53	12	Shade	24·0	22·3	−1·7	4·1		
		54	12	Sun	22·3	24·7	+2·4	4·0		
		55	42	Shade	24·0	22·5	−1·5	3·9		
		56	42	Sun	22·5	24·9	+2·4	3·8		
		58	12	Shade	24·3	22·9	−1·4	3·8		
		59	12	Sun	22·9	25·3	+2·4			
13	0	26	12	Sun	9·1	11·3	+2·2			
		27	42	Shade	11·1	10·0	−1·1	3·3		
		28	42	Sun	10·0	12·3	+2·3	3·4		
		30	12	Shade	12·0	10·9	−1·1	3·4	3·42	31·4
		31	12	Sun	10·9	13·2	+2·3	3·5		
		32	42	Shade	12·9	11·7	−1·2	3·5		
		33	42	Sun	11·7	14·0	+2·3			
					MARCH 13.					
13	1	2	12	Sun	20·3	22·7	+2·4			
		3	42	Shade	22·5	21·7	−0·8	3·2		
		4	42	Sun	21·7	24·1	+2·4	3·2		
		6	12	Shade	24·0	23·2	−0·8	3·2		
		7	12	Sun	23·2	25·7	+2·5	3·4		
		8	42	Shade	25·6	24·7	−0·9	3·3		
		9	42	Sun	24·7	27·1	+2·4	3·3	3·33	30·3
		11	12	Shade	26·8	25·9	−0·9	3·3		
		12	12	Sun	25·9	28·3	+2·4	3·3		
		13	42	Shade	28·1	27·2	−0·9	3·4		
		14	42	Sun	27·2	29·7	+2·5	3·4		
		16	12	Shade	29·4	28·4	−1·0	3·6		
		17	12	Sun	28·4	31·0	+2·6			
13	1	30	42	Sun	17·6	20·2	+2·6			
		32	12	Shade	19·8	18·7	−1·1	3·8		
		33	12	Sun	18·7	21·5	+2·8	3·8		
		34	42	Shade	21·3	20·4	−0·9	3·7		
		35	42	Sun	20·4	23·3	+2·9	3·9		
		37	12	Shade	23·2	22·2	−1·0	3·9	3·78	28·8
		38	12	Sun	22·2	25·2	+3·0	3·9		
		39	42	Shade	25·0	24·2	−0·8	3·7		
		40	42	Sun	24·2	27·0	+2·8	3·6		
		42	12	Shade	26·8	26·0	−0·8	3·7		
		43	12	Sun	26·0	29·0	+3·0			
13	1	50	12	Sun	19·4	22·6	+3·2			
		51	42	Shade	22·3	21·2	−1·1	4·3		
		52	42	Sun	21·2	24·5	+3·3	4·4		
		54	12	Shade	24·3	23·3	−1·0	4·3		
		55	12	Sun	23·3	26·6	+3·3	4·3	4·37	27·7
		56	42	Shade	26·3	25·3	−1·0	4·4		
		57	42	Sun	25·3	28·7	+3·4	4·4		
		59	12	Shade	28·3	27·2	−1·1	4·5		
13	2	0	12	Sun	27·2	30·5	+3·3	4·5		
		1	42	Shade	30·2	28·9	−1·3	4·6		
		2	42	Sun	28·9	32·2	+3·3	4·5	4·53	27·
		4	12	Shade	17·4	16·3	−1·1	4·5		
		5	12	Sun	16·3	19·8	+3·5	4·6		
		6	42	Shade	19·4	18·3	−1·1	4·5		
		7	42	Sun	18·3	21·7	+3·4	4·6		
		9	12	Shade	21·3	20·0	−1·3	4·7		
		10	12	Sun	20·0	23·4	+3·4	4·6	4·63	26·
		11	42	Shade	23·0	21·8	−1·2	4·5		
		12	42	Sun	21·8	25·0	+3·2	4·6		
		14	12	Shade	24·6	23·0	−1·6	4·8		
		15	12	Sun	23·0	26·2	+3·2			

March 12^d 23^h 16^m. Small patches of cloud coming near the sun. 21^m. Patches of very thin cloud coming over the sun occasionally; they seem not to affect the indications of the instrument. 33^m. Quite clear since 25^m ; dry thermometer 29°·8 ; wet thermometer 26°·1.

March 13^d 1^h 2^m. Observations made on the south side of the Observatory ; no clouds near the sun. 5^m. A patch of cloud about 10° to eastward of the sun. 6^m. A patch of cloud passed near the sun ; no others passed within 15° of the sun. 18^m. Dry thermometer 33°·1; wet thermometer 27°·7.

March 13^d 1^h 30^m. Observations made within the porch of the Observatory.

March 13^d 2^h 4^m 0^s. The screw of the actinometer withdrawn a little.

March 13^d 2^h 9^m. Very thin clouds about 25° to westward of the sun ; they seem to disappear when within 20° of him. 15^m. Patches of cloud coming within 10° of the sun.

ACTINOMETER.

kerstoun an Time of t Reading.				In Sun or Shade.	Observation.		Change in 60ˢ.	Effect of Sun.	Mean of Group.	Sun's Alti-tude.
					Begun.	Ended.				
d.	h.	m.	s.		Sc. div.	Sc. div.	Sc. div.	Sc. div.	Sc. div.	°
				MARCH 28.						
28	18	27	30	Sun	17·0	17·9	+0·9			
		29	0	Shade	17·8	17·3	−0·5	1·3	1·24	6·5
		30	0	Sun	17·3	18·1	+0·8	1·3		
		31	30	Shade	18·0	17·6	−0·4	1·2		
		32	30	Sun	17·6	18·4	+0·8	1·2		
		34	0	Shade	18·3	17·9	−0·4	1·2		
		35	0	Sun	17·9	18·7	+0·8	1·2		
		36	30	Shade	18·5	18·0	−0·5	1·3		
		37	30	Sun	18·0	18·8	+0·8	1·4	1·57	7·6
		39	0	Shade	18·7	18·0	−0·7	1·7		
		40	0	Sun	18·0	19·1	+1·1	1·7		
		41	30	Shade	19·0	18·4	−0·6	1·7		
		42	30	Sun	18·4	19·4	+1·0	1·5		
		44	0	Shade	19·3	18·9	−0·4	1·4		
		45	0	Sun	18·9	19·9	+1·0			
28	19	54	30	Sun	17·9	20·4	+2·5			
		56	0	Shade	20·5	20·5	0·0	2·5	2·79	18·5
		57	0	Sun	20·5	23·1	+2·6	2·7		
		58	30	Shade	23·2	23·1	−0·1	2·7		
		59	30	Sun	23·1	25·8	+2·7	2·8		
28	20	1	0	Shade	26·0	25·9	−0·1	2·8		
		2	0	Sun	25·9	28·5	+2·6	2·7		
		3	30	Shade	28·6	28·4	−0·2	2·9		
		4	30	Sun	28·4	31·2	+2·8	3·0		
		6	0	Shade	31·2	31·0	−0·2	3·0		
		7	0	Sun	31·0	33·8	+2·8			
				APRIL 21, 22.						
2	18	23	0	Sun	20·6	22·7	+2·1			
		24	30	Shade	22·5	22·0	−0·5	2·6	2·78	14·5
		25	30	Sun	22·0	24·1	+2·1	2·6		
		27	0	Shade	24·0	23·4	−0·6	2·8		
		28	0	Sun	23·4	25·7	+2·3	2·9		
		29	30	Shade	25·5	24·9	−0·6	2·8		
		30	30	Sun	24·9	27·0	+2·1	2·7		
		32	0	Shade	26·9	26·3	−0·6	2·8		
		33	0	Sun	26·3	28·6	+2·3	2·9		
		34	30	Shade	28·4	27·8	−0·6	2·9		
		35	30	Sun	27·8	30·1	+2·3			
2	19	23	0	Sun	16·4	19·7	+3·3			
		24	30	Shade	20·3	20·1	−0·2	3·4	3·52	22·9
		25	30	Sun	20·1	23·2	+3·1	3·3		
		27	0	Shade	23·3	23·0	−0·3	3·5		
		28	0	Sun	23·0	26·2	+3·2	3·5		
		29	30	Shade	26·2	25·9	−0·3	3·4		
		30	30	Sun	25·9	29·0	+3·1	3·4		
		32	0	Shade	29·0	28·7	−0·3	3·6		
		33	0	Sun	28·7	32·1	+3·4	3·7		
		34	30	Shade	32·0	31·6	−0·4	3·9		

Makerstoun Mean Time of First Reading.				In Sun or Shade.	Observation.		Change in 60ˢ.	Effect of Sun.	Mean of Group.	Sun's Alti-tude.
					Begun.	Ended.				
d.	h.	m.	s.		Sc. div.	Sc. div.	Sc. div.	Sc. div.	Sc. div.	°
				APRIL 21, 22.						
21	19	35	30	Sun	31·6	35·1	+3·5	3·8	3·92	24·3
		37	0	Shade	16·7	16·4	−0·3	3·9		
		38	0	Sun	16·4	20·1	+3·7	4·1		
		39	30	Shade	20·1	19·7	−0·4	4·0		
		40	30	Sun	19·7	23·2	+3·5	3·9		
		42	0	Shade	23·1	22·7	−0·4	3·9		
		43	0	Sun	22·7	26·2	+3·5	3·9		
		44	30	Shade	26·1	25·7	−0·4	3·9		
		45	30	Sun	25·7	29·3	+3·6			
21	20	23	0	Sun	10·6	14·0	+3·4			
		24	30	Shade	14·1	14·2	+0·1	3·4	3·84	30·9
		25	30	Sun	14·2	17·8	+3·6	3·5		
		27	0	Shade	18·0	18·1	+0·1	3·6		
		28	0	Sun	18·1	22·0	+3·9	3·8		
		29	30	Shade	22·4	22·5	+0·1	3·9		
		30	30	Sun	22·5	26·7	+4·2	4·1		
		32	0	Shade	26·5	26·7	+0·2	4·0		
		33	0	Sun	26·7	30·9	+4·2	4·1		
		34	30	Shade	31·1	31·1	0·0	4·2		
		35	30	Sun	31·1	35·4	+4·3	4·3	4·65	32·2
		37	0	Shade	35·7	35·7	0·0	4·3		
		38	0	Sun	35·7	40·1	+4·4	4·4		
		39	30	Shade	40·2	40·1	−0·1	4·6		
		40	30	Sun	40·1	44·7	+4·6	4·7		
		42	0	Shade	44·9	44·8	−0·1	4·8		
		43	0	Sun	44·8	49·5	+4·7	5·0		
		44	30	Shade	49·7	49·2	−0·5	5·1		
		45	30	Sun	49·2	53·8	+4·6			
21	21	23	0	Sun	11·1	15·8	+4·7			
		24	30	Shade	15·6	14·8	−0·8	5·3	5·53	38·0
		25	30	Sun	14·8	19·1	+4·3	5·3		
		27	0	Shade	18·8	17·6	−1·2	5·5		
		28	0	Sun	17·6	21·9	+4·3	5·5		
		29	30	Shade	21·5	20·2	−1·3	5·5		
		30	30	Sun	20·2	24·3	+4·1	5·5		
		32	0	Shade	23·9	22·4	−1·5	5·7		
		33	0	Sun	22·4	26·6	+4·2	5·7		
		34	30	Shade	26·0	24·4	−1·6	5·8		
		35	30	Sun	24·4	28·6	+4·2	5·8	5·77	39·0
		37	0	Shade	28·0	26·5	−1·5	5·7		
		38	0	Sun	26·5	30·7	+4·2	5·7		
		39	30	Shade	30·2	28·7	−1·5	5·6		
		40	30	Sun	28·7	32·8	+4·1	5·8		
		42	0	Shade	32·2	30·4	−1·8	5·9		
		43	0	Sun	30·4	34·5	+4·1	5·8		
		44	30	Shade	33·8	32·1	−1·7	5·9		
		45	30	Sun	32·1	36·3	+4·2			

March 28ᵈ 18ʰ 30ᵐ. A few thin sheets of cirrus to east, about 10° above the sun.

April 21ᵈ 18ʰ 25ᵐ. A slight haze to East, like the remains of a fog; a very slight fog in the valleys.

April 21ᵈ 19ʰ 23ᵐ. Thin haze round the horizon. 19ʰ 24ᵐ. The instrument was exposed to the sun's rays a few seconds too long; the ading was taken at the proper time. 36ᵐ 40ˢ. The screw withdrawn.

April 21ᵈ 20ʰ 38ᵐ—46ᵐ. A slight breeze.

April 21ᵈ 21ʰ 23ᵐ. Actinometer removed to west end of Observatory: puffs of wind.

ACTINOMETER.

APRIL 21, 22.

Makerstoun Mean Time of First Reading.				In Sun or Shade.	Observation.		Change in 60^{s}.	Effect of Sun.	Mean of Group.	Sun's Altitude.
					Begun.	Ended.				
d.	h.	m.	s.		Sc. div.	Sc. div.	Sc. div.	Sc. div.	Sc. div.	°
21	22	21	0	Sun	16·3	21·9	+5·6			
		22	30	Shade	21·7	20·9	−0·8	6·5	6·49	43·0
		23	30	Sun	20·9	26·7	+5·8	6·5		
		25	0	Shade	26·5	25·8	−0·7	6·5		
		26	0	Sun	25·8	31·6	+5·8	6·5		
		27	30	Shade	31·3	30·7	−0·6	6·4		
		28	30	Sun	30·7	36·5	+5·8	6·5		
		30	0	Shade	37·1	36·3	−0·8			
21	23	26	0	Sun	6·2	11·9	+5·7			
		27	30	Shade	11·6	10·3	−1·3	6·9	6·96	46·4
		28	30	Sun	10·3	15·9	+5·6	6·9		
		30	0	Shade	15·4	14·1	−1·3	6·9		
		31	0	Sun	14·1	19·7	+5·6	6·9		
		32	30	Shade	19·1	17·8	−1·3	6·8		
		33	30	Sun	17·8	23·2	+5·4	6·9		
		35	0	Shade	22·8	21·2	−1·6	7·0		
		36	0	Sun	21·2	26·7	+5·5	7·2		
		37	30	Shade	26·1	24·4	−1·7	7·1		
		38	30	Sun	24·4	29·8	+5·4	7·2	7·16	46·6
		40	0	Shade	29·1	27·3	−1·8	7·2		
		41	0	Sun	27·3	32·7	+5·4	7·3		
		42	30	Shade	31·9	30·0	−1·9	7·2		
		43	30	Sun	30·0	35·2	+5·2	7·1		
		45	0	Shade	34·3	32·4	−1·9	7·1		
		46	0	Sun	32·4	37·6	+5·2	7·1		
		47	30	Shade	22·0	20·1	−1·9	7·1		
		48	30	Sun	20·1	25·4	+5·3			
21	23	58	0	Sun	16·7	21·5	+4·8			
		59	30	Shade	20·7	18·5	−2·2	7·1	7·20	46·7
22	0	0	30	Sun	18·5	23·5	+5·0	7·2		
		2	0	Shade	22·6	20·3	−2·3	7·4		
		3	0	Sun	20·3	25·5	+5·2	7·3		
		4	30	Shade	24·8	22·9	−1·9	7·1		
		5	30	Sun	22·9	28·1	+5·2	7·1		
		7	0	Shade	27·4	25·5	−1·9	7·2		
		8	0	Sun	25·5	30·8	+5·3			
22	0	37	0	Sun	9·6	15·1	+5·5			
		38	30	Shade	14·2	12·0	−2·2	7·7	7·86	45·7
		40	0	Sun	14·8	20·3	+5·5	7·6		
		41	30	Shade	19·7	17·7	−2·0	7·7		
		43	0	Sun	20·1	26·1	+6·0	8·1		
		44	30	Shade	25·3	23·1	−2·2	8·0		
		46	0	Sun	25·8	31·4	+5·6	7·9		
		47	30	Shade	30·4	28·0	−2·4	7·8		
		49	0	Sun	30·6	35·8	+5·2	7·8		
		50	30	Shade	34·7	31·9	−2·8	8·1		
		52	0	Sun	34·1	39·5	+5·4			

APRIL 22.

Makerstoun Mean Time of First Reading.				In Sun or Shade.	Observation.		Change in 60^{s}.	Effect of Sun.	Mean of Group.	Sun's Altitude.
					Begun.	Ended.				
d.	h.	m.	s.		Sc. div.	Sc. div.	Sc. div.	Sc. div.	Sc. div.	°
22	0	57	0	Sun	7·3	12·8	+5·5			
		58	30	Shade	11·7	9·3	−2·4	7·8	8·19	44·6
22	1	0	0	Sun	11·8	17·2	+5·4	8·0		
		1	30	Shade	16·0	13·2	−2·8	8·3		
		3	0	Sun	15·7	21·2	+5·5	8·2		
		4	30	Shade	20·1	17·5	−2·6	8·2		
		6	10	Sun	20·8	26·5	+5·7	8·4		
		7	30	Shade	25·8	23·0	−2·8	8·4		
		9	0	Sun	25·5	31·0	+5·5			
22	1	25	0	Sun	13·7	19·5	+5·8			
		26	30	Shade	18·8	16·7	−2·1	8·0	8·21	43·0
		28	0	Sun	19·3	25·4	+6·1	8·2		
		29	30	Shade	24·7	22·7	−2·0	8·1		
		31	0	Sun	25·3	31·5	+6·2	8·2		
		32	30	Shade	30·8	28·8	−2·0	8·4		
		34	0	Sun	31·3	37·8	+6·5	8·4		
		35	30	Shade	18·7	16·9	−1·8	8·2		
		37	0	Sun	19·7	26·1	+6·4	8·4	8 27	42·3
		38	30	Shade	25·4	23·3	−2·1	8·2		
		40	0	Sun	26·0	31·8	+5·8	8·2		
		41	30	Shade	30·7	28·0	−2·7	8·4		
		43	0	Sun	30·3	35·8	+5·5	8·1		
		44	30	Shade	34·7	32·1	−2·6	8·3		
		46	0	Sun	34·7	40·6	+5·9			
22	1	55	0	Sun	18·3	23·6	+5·3			
		56	30	Shade	22·3	19·4	−2·9	8·2	8·26	40·7
		58	0	Sun	22·0	27·3	+5·3	8·1		
		59	30	Shade	26·2	23·4	−2·8	8·2		
22	2	1	0	Sun	25·8	31·2	+5·4	8·4		
		2	30	Shade	29·9	26·7	−3·2	8·4		
		4	0	Sun	28·8	33·9	+5·1	8·3	8·46	39·9
		5	30	Shade	32·3	29·1	−3·2	8·6		
		7	0	Sun	31·3	36·9	+5·6	8·5		
		8	30	Shade	35·7	33·0	−2·7	8·4		
		10	0	Sun	35·6	41·3	+5·7	8·5		
		11	30	Shade	40·3	37·4	−2·9	8·5	8·64	39·2
		13	0	Sun	40·1	45·7	+5·6	8·7		
		14	30	Shade	44·3	41·1	−3·2	8·7		
		16	0	Sun	22·1	27·6	+5·5	8·7		
		17	30	Shade	26·3	23·1	−3·2	8·6		
		19	0	Sun	25·3	30·6	+5·3	8·6	8·80	38·4
		20	30	Shade	29·2	25·9	−3·3	8·9		
		22	0	Sun	28·2	34·0	+5·8	8·9		
		23	30	Shade	32·8	29·8	−3·0	8·8		
		25	0	Sun	32·1	37·8	+5·7	8·8		

April 21^{d} 22^{h} 21^{m}. Observations made in front of the Observatory. 29^{m} 30^{s}. The instrument was exposed 5^{s} too long; the reading has been corrected proportionally.

April 21^{d} 23^{h} 26^{m}. Observations made at west end of Observatory. 47^{m} 15^{s}. The screw withdrawn.

April 22^{d} 2^{h} 15^{m} 45^{s}. The screw withdrawn. 2^{h} 30^{m}. There has been a slight condensation of vapour inside the plate-glass cover for some time, probably caused by the currents of air sweeping over the instrument. 38^{m} 15^{s}. The screw withdrawn.

ACTINOMETER.

kerstoun an Time of Reading.	In Sun or Shade.	Observation.		Change in 60ˢ.	Effect of Sun.	Mean of Group.	Sun's Altitude.
		Begun.	Ended.				
. m. s.		Sc. div.	Sc. div.	Sc. div.	Sc. div.	Sc. div.	°
		APRIL 22.					
2 2 26 30	Shade	36·3	33·0	−3·3	8·9		
28 0	Sun	35·3	40·8	+5·5	8·8		
29 30	Shade	39·7	36·4	−3·3	8·7	8·80	37·6
31 0	Sun	38·8	44·0	+5·2	8·7		
32 30	Shade	42·5	38·8	−3·7	8·9		
34 0	Sun	40·9	46·1	+5·2	8·8		
35 30	Shade	44·5	40·9	−3·6	8·8		
37 0	Sun	22·8	28·0	+5·2	8·7	8·58	36·8
38 30	Shade	26·8	23·4	−3·4	8·4		
40 0	Sun	25·6	30·4	+4·8	8·2		
41 30	Shade	29·1	25·7	−3·4	8·3		
43 0	Sun	27·8	32·9	+5·1	8·7		
44 30	Shade	31·4	27·7	−3·7	8·5	8·62	36·0
46 0	Sun	29·7	34·3	+4·6	8·7		
47 30	Shade	32·3	27·8	−4·5	8·9		
49 0	Sun	29·7	33·9	+4·2	8·6		
50 30	Shade	32·0	27·7	−4·3	8·7		
52 0	Sun	29·4	33·9	+4·5	8·9	8·76	35·1
53 30	Shade	31·9	27·4	−4·5	8·9		
55 0	Sun	29·2	33·6	+4·4	8·7		
56 30	Shade	31·9	27·9	−4·0	8·4		
58 0	Sun	29·8	34·3	+4·5	8·6		
59 30	Shade	32·6	28·4	−4·2	8·8	8·58	34·2
22 3 1 0	Sun	30·2	34·8	+4·6	8·6		
2 30	Shade	33·1	29·2	−3·9	8·5		
4 0	Sun	31·1	35·6	+4·5	8·6		
5 30	Shade	33·7	29·3	−4·4	8·8		
7 0	Sun	31·0	35·3	+4·3	8·6	8·74	33·3
8 30	Shade	33·5	29·3	−4·2	8·7		
10 0	Sun	31·2	35·9	+4·7	9·0		
11 30	Shade	34·0	29·7	−4·3	8·9		
13 0	Sun	31·5	36·0	+4·5	8·7		
14 30	Shade	34·2	30·0	−4·2	8·8	8·74	32·4
16 0	Sun	31·9	36·6	+4·7	8·8		
17 30	Shade	34·8	30·9	−3·9	8·5		
19 0	Sun	32·8	37·4	+4·6	8·7		
20 30	Shade	35·7	31·5	−4·2	8·8		
22 0	Sun	33·3	38·0	+4·7	8·7	8·56	31·5
23 30	Shade	36·3	32·6	−3·7	8·3		
25 0	Sun	34·6	39·1	+4·5	8·3		
26 30	Shade	37·6	33·7	−3·9	8·3		
28 0	Sun	35·4	39·8	+4·4	8·4		
29 30	Shade	38·1	34·0	−4·1	8·4	8·36	30·6
31 0	Sun	35·7	39·9	+4·2	8·3		
32 30	Shade	38·3	34·2	−4·1	8·4		
34 0	Sun	35·9	40·3	+4·4			

Makerstoun Mean Time of First Reading.	In Sun or Shade.	Observation.		Change in 60ˢ.	Effect of Sun.	Mean of Group.	Sun's Altitude.
		Begun.	Ended.				
d. h. m. s.		Sc. div.	Sc. div.	Sc. div.	Sc. div.	Sc. div.	°
		APRIL 22.					
22 4 21 0	Sun	21·3	24·7	+3·4			
22 30	Shade	23·3	19·9	−3·4	6·7		
24 0	Sun	21·3	24·6	+3·3	6·8		
25 30	Shade	23·1	19·6	−3·5	6·7		
27 0	Sun	20·8	24·0	+3·2	6·7	6·66	22·9
28 30	Shade	22·7	19·3	−3·4	6·6		
30 0	Sun	20·6	23·8	+3·2	6·6		
31 30	Shade	22·4	19·0	−3·4	6·5		
33 0	Sun	20·0	23·1	+3·1			
22 5 33 0	Sun	22·4	25·3	+2·9			
34 30	Shade	25·0	23·7	−1·3	3·9		
36 0	Sun	24·7	27·0	+2·3	3·7		
37 30	Shade	26·4	24·9	−1·5	3·8		
39 0	Sun	25·8	28·2	+2·4	4·1		
40 30	Shade	27·6	25·8	−1·8	4·1	3·93	12·6
42 0	Sun	26·8	29·0	+2·2	3·9		
43 30	Shade	28·3	26·6	−1·7	4·0		
45 0	Sun	27·4	29·7	+2·3	4·0		
46 30	Shade	28·8	27·0	−1·8	3·9		
48 0	Sun	27·6	29·5	+1·9			
22 5 59 0	Sun	19·6	21·1	+1·5			
22 6 0 30	Shade	20·2	18·1	−2·1	3·5		
2 0	Sun	18·6	19·9	+1·3	3·4		
3 30	Shade	19·0	16·9	−2·1	3·5		
5 0	Sun	17·3	18·9	+1·6	3·8		
6 30	Shade	18·2	16·0	−2·2	4·1	3·48	9·0
8 0	Sun	16·6	18·8	+2·2	4·0		
9 30	Shade	18·4	17·0	−1·4	3·2		
11 0	Sun	17·8	19·3	+1·5	2·9		
12 30	Shade	19·1	17·7	−1·4	2·9		
14 0	Sun	18·4	20·0	+1·6	3·0		
15 30	Shade	19·4	18·0	−1·4	3·0		
17 0	Sun	19·0	20·6	+1·6	3·3		
18 30	Shade	20·1	18·2	−1·9	3·3		
20 0	Sun	18·6	19·8	+1·2	2·9	3·10	7·2
21 30	Shade	19·3	17·7	−1·6	3·0		
23 0	Sun	17·9	19·4	+1·5	3·2		
24 30	Shade	19·0	17·1	−1·9	3·2		
26 0	Sun	17·3	18·3	+1·0	3·0		
27 30	Shade	17·4	15·2	−2·2	2·8		
29 0	Sun	15·1	15·3	+0·2	2·5		
30 30	Shade	14·3	11·9	−2·4	2·5		
32 0	Sun	11·9	11·9	0·0	1·7		
33 30	Shade	22·7	21·7	−1·0	0·5	1·77	5·4
35 0	Sun	21·4	20·4	−1·0	0·6		
36 30	Shade	19·5	17·3	−2·2	1·7		
38 0	Sun	17·0	16·9	−0·1	1·9		
39 30	Shade	15·9	14·0	−1·9	1·7		
41 0	Sun	13·8	13·5	−0·3			

pril 22^d 3^h 20^m. The spot of moisture, which has been inside the plate-glass cover since about the commencement of this series (1^h 55^m), is n the middle of the plate of glass, oval shaped, about 1½ inch long and ¾ inch broad.

pril 22^d 3^h 35^m. At the end of this series of observations it was found that there was a small globule of air in the bulb of the actino-mer about one-tenth of an inch in diameter.

pril 22^d 5^h 36^m. A slight milkiness in the sky to westward; the sun tolerably favourable.

pril 22^d 5^h 59^m. The observations after this time were made on the roof of the Observatory, the actinometer being put into the shade b lowering it below the parapet wall.

pril 22^d 6^h 33^m 15^s. The screw turned in a little. Trees intervened after 6^h 42^m, preventing further observations.

ADDITIONAL METEOROLOGICAL NOTES.

1845.
d. h. m.

Jan. 19 19 19. A meteor considerably brighter than Venus burst at azimuth, N. 38° W., altitude 10°; its course was towards SW., being inclined to the horizon at an angle of about 45°; only a few degrees of its course were seen.

Jan. 19 22 10. Cirri rising in tufts from NNW. and radiating from that point, with the curls of the tufts, on all sides, turned towards the magnetic meridian; very dense on the horizon, like a mass of auroral light, and in single tufts higher.

Jan. 20 11 10. Large corona when the moon is covered by thin, watery cloud, and small bluish corona on the apparently pure sky. Auroral light to N.?

Jan. 20 13 10. When the watery cirro-cumulo-stratus is over the moon it produces a beautiful corona of a very fine light-green colour.

Jan. 20 14 5. Faint lunar corona. The sky seems very clear around the moon, yet the very faint light-green can be detected to a radius of about 4°; inner circle of brownish light, about 10′ broad. 14^{h} 10^{m}. The cirro-cumulo-stratus exhibited the phenomenon previously described (see volume for 1844, p. 324, Sept. 26^{d}.) It moves rapidly, and seems always about to leave the moon, but does not; in fact, the cloud seems to grow at the prime vertical; all to the north of it is sky, and all to the south is cloud. 15^{h} 5^{m}. Faint corona as before. Cirro-cumulo-stratus now on the east and west horizon.

Feb. 5 17 40. Shooting-star to WNW., altitude 40°, moving very rapidly towards NNW.

Feb. 5 20 5. Sky coloured on S. to E. horizon. A beam of reddish light 4° or 5° broad, extends from ESE. to an altitude of about 45°, inclined to E. horizon at an angle of nearly 75°: another, but narrower beam, having the same origin, is inclined 20° to the E. horizon. 20^{h} 12^{m}. A bright beam, about the same dimensions as the first noted above, in fact like its opposite extremity, springs from about NW by W.; also a lower band, which forms the greater part of an arch, its apex having an altitude of 15° above the NNE.; all the bands are rather rose-coloured. 20^{h} 15^{m}—20^{m}. There are now six bands springing from about NW. (or NW by W.?) point of horizon, like broad streamers, with equal or rather less spaces of sky between: all the bands are rose-coloured, and rise from about 4° above horizon; sky dark blue. The bands nearest the vertical (inclined about 75° to the horizon) rise perhaps 20°; the lowest bands extend like arches. 20^{h} 30^{m}. The whole now form a band of rosy light on N. horizon, brightest about NW. (?), like an auroral bank. The sun rose shortly after this about ESE.

Feb. 8 7 Sky rather milky; milky aurora? The new moon is shining; some of the milky spots are undoubtedly cirri, lighted by the moon. The cirro-cumuli now radiate from W.

Feb. 14 7 Beautifully-coloured lunar corona, nearly 8° diameter. The colours are very deep and distinct, much more so than usual. The cloud in which the corona occurs, the watery cirro-cumulus, *grows* about the zenith; at 11^{h} a very faint small corona, although the sky seems perfectly clear.

Feb. 21 12 0. The dry and wet bulb thermometers shewed the same temperature (28°·0); at 12^{h} 40^{m} the wet bulb read 31°·0 when the dry bulb thermometer read 27°·0; at 0^{m} the water in the cistern was not frozen; at 40^{m} it was beginning to freeze; the increase of temperature was therefore probably due to the emission of latent heat during freezing (this has been frequently observed.)

Feb. 27 3 Cirri lying NW and SE. The cirro-stratous scud and scud reaches from Cheviot to NW. in an unbroken mass, with sky on each side; Cheviot covered with snow. The upper current of cirrus appears to move rather quicker than the cirro-stratous scud.

Feb. 28 11 Sky milky (see *Notes to Extra Magnetical Observations*, p. 122). 17^{m}—25^{m}. Three meteors seen, one moving nearly past zenith, the others moving NE. and NW., respectively, from about 60° altitude. 40^{m}. Another meteor from 50° altitude above N., moving N by E.

Mar. 10 7 Very wild-like black masses of scud with a light homogeneous background, perhaps scud falling in showers: the wind commenced suddenly at 7^{h} 10^{m} blowing 2·5 lb.; at 20^{m}, rain^{2}. The wind veered from NW by N. to N by E. at 7^{h} 10^{m}.

Mar. 14 8 58. A fine meteor brighter than Venus to NNE., moving downward very slowly towards NNW., through about 30°, no sparks.

Mar. 20 11 3. Cirri radiating in belts from N. to S.; hazy near horizon; indistinct lunar corona. Cirro-cumuli growing in a few minutes; none seen at 10^{h} 58^{m}.

ADDITIONAL METEOROLOGICAL NOTES.

1845.
d. h. m.

Mar. 20 16 4. Milky-like cirri radiating from N.; if cirri, they are of the very thinnest kind, the sky only appearing milky here and there. 17ʰ 4ᵐ. Cirri radiating from N by W.; sky milky. 17ʰ 20ᵐ. Altitude of crepuscular arch 30°; reddish vapours to E. 18ʰ. Sky pinkish to ESE., blood-red to E., deep purple to ENE; cirri radiating from NNW. 19ʰ. Cirri radiating as before. 20ʰ 30ᵐ. Parhelia seen. The western parhelion very bright.

Mar. 26 10—11ʰ. Several flashes of lightning seen; wind blowing strongly at 12ʰ 10ᵐ; at 12ʰ 15ᵐ, wind blowing 6·0 lbs.; heavy rain. 14ʰ. Sky milky; the moon projects the shadow of the clouds in the air; traces of aurora. 17ʰ 4ᵐ. Crepuscular arch about 8° altitude. 17ʰ 45ᵐ. Beginning to colour on the E. horizon. 18ʰ 20ᵐ. α Lyræ seen quite distinctly with the naked eye.

Mar. 28 12 25. A shooting-star to WNW., altitude about 45°, moving from S. to N.

17 7. Crepuscular arch about 10° altitude. 35ᵐ. Sky colouring to E.

Mar. 29 0 The sky seems very milky near the sun; this has generally been observed when the difference of the dry and wet bulb thermometers was considerable, as to-day; the mixture of vapour with the air rendering it more transparent. At 11ʰ. Sky milky and hazy-like near horizon; faint aurora.

Mar. 30 17 10. Crepuscular arch, 9° altitude.

Mar. 31 3 Patches of cumulo-stratus to N.; woolly and mottled cirri from W by N.; linear and curled cirri from W.; cirri radiating from NW by W.; portion of a halo. 4ʰ. Fine mottled, linear, and cymoid cirri; cirro-strati radiating from NW by N. and SW by S.; halo brighter than before. 5ʰ. A long string of scud, loose cumuli, and cumulo-strati extends from Cheviot to N., moving from SSW.; masses of cirro-strati; mottled and woolly cirri and cirrous haze. The cirro-strati are in rounded cake-like pieces one above another; sky altogether stormy-like. 5ʰ 20ᵐ. The cirro-strati to E. have regular serrated ridges. 6ʰ. Patches of a halo. 7ʰ. Clouds pinkish or slightly claret-coloured to W.

Mar. 31 18 50—19 15. Parhelia seen; they were at no time very bright; the distance of each from the sun, from several measurements, was 22½°; they were sometimes elongated horizontally, and sometimes vertically. The parhelia were coloured red on the side nearest the sun, and greenish-yellow on the opposite side; the clouds in which they were produced were dense cirro-strati and cirrous haze. In the zenith woolly cirri, having a slightly cirro-cumulous disposition. 21ʰ 15ᵐ. Top of a halo seen. 22ʰ. The cirro-stratus is composed of various kinds of cirri; patches of loose cumuli or cirro-stratous scud to N.

Ar. 1 17 10. Bright crepuscular arch, altitude 11°; an arch of reddish vapour 5° altitude. 18ʰ 5ᵐ. α Lyræ seen through cirri with the naked eye. Sky nearly covered with cirri, radiating from ESE. and WNW., coloured orange, red, and yellow; deep-red vapours to E.

Ar. 2 6 Cirri dispersed irregularly over the sky, radiating to some extent from WNW.; hazy on horizon. 7ʰ. Flame-like cirri; atmosphere very hazy to E.; Cheviot invisible. 13ʰ 5ᵐ. Shooting-star to E., altitude 30°, moving slowly towards E by S., magnitude 1 to 2.

Ar. 5 7 Finely-mottled cirri to W., altitude 20°, which shew colours exactly like diffraction spectra from irregularly-striated bodies; deep purple vapours to W.; thick to E.; Cheviot invisible.

Ar. 8 6 Passing showers; clouds falling in cirrous curtains as if bent by the wind; there must be snow in the upper strata, as the rainbow is seen at the extremities only, and the sun is shining on the whole. 8ʰ. Sky of a slate-blue to E. 10ʰ 15ᵐ. Sky very clear; stars of the third magnitude seen within a degree of the horizon; a dark speck of cloud appears about 15° above NW., it rapidly increases, is very thin at first, gradually becomes denser, extending itself; in 5ᵐ it covers two-tenths of the sky, extending from NW. to SE.; throughout it has been surrounded by sky; in about 10ᵐ it becomes much thinner; stars of the second magnitude being visible through it in many places, and is again rapidly disappearing but without any motion. Streaks of cirro-strati to NNW., quite stationary. Zodiacal light very distinct.

Ar. 13 16 25. Sky overcast with a thick hazy-like cloud; rain commenced. 18ʰ 5ᵐ—15ᵐ. A long strip of light to E by N. vertically above the sun, like the sun reflected from rippled water; the strip is slightly broken, like a series of not very regular repetitions of the sun's image; the cirri in which these images are formed radiate from NNW.

Ar. 14 7 Cirri radiating from NNW. and SSE., but moving from N.; ill-defined portion of a solar halo. 8ʰ. Cirro-strati blood-red from NW by W. to W., seen in fiery patches through the gray scud; sky yellowish to N. 9ʰ. Clouds now radiating from N by E.

ADDITIONAL METEOROLOGICAL NOTES.

1845.
d. h. m.

Apr. 16 11 Cirri radiating from about NE by E., but they are formed of bars lying NW by N. and SE by S.; there is a circle of light round the moon of the usual dimensions of the halo, but the interior of the circle is as luminous as the circumference; the corona is not well coloured.

Apr. 21 16 10. Crepuscular arch, 7° altitude; sun's upper limb visible at $17^h\ 20^m$.

Apr. 22 16 7. Crepuscular arch; reddish vapour, 3° altitude; bright yellow, 6° altitude; white, 9° altitude.

17 27. α Lyræ watched till now, when $\frac{1}{3}$ of the sun's diameter is visible above the horizon; had the eye been a little better cared for at first, I have no doubt but it might have been seen when the sun was completely above the horizon; the eye was kept upon the star by placing the eye, the star, and a corner of the Observatory in the same vertical.

Apr. 25 11 Light on horizon to S. $\frac{1}{2}$ W., like from a fire. $13^h\ 58^m$. Very bright to N by E., altitude 10°, as if the moon were shining through the clouds. $14^h\ 6^m$. Bright-red glare, covering a circular space of 10°; the reflection (?) is only from the upper clouds (cirro-strati ?) and there is a black patch in the midst of the glare: this is perhaps the reflection of a fire as it occurs in exactly the opposite point of the horizon from the light seen at 11^h.

May 1 5. Beautiful and vivid double rainbow, the extremities within 150 yards of the observer; four recurrences of the red could be observed in the supplementary bows, but the red or reddish colour only could be detected, forming narrow bows within the primary; the secondary bow very distinct.

May 1 11. Strong twilight (?) to NNW. $11^h\ 6^m$. Meteor to E., altitude 45°, moving towards SE. Thunder-storms to-day 13 miles off to SSW.

May 4 12 59. A meteor moved *up* from about 45° above SE., to 65° above E. Crepuscular light throughout the night.

May 15 19. Many varieties of cirro-strati, chiefly in woolly sheets; a few sheets of mottled cirro-strati, lines of cirro-strati lying N. and S., like lines of very small cumulo-strati; zigzag lines to N.; cumulo-strati to NW.; loose cumuli on Cheviot.

July 31 1 50. Clouds moving up from S. and SE., very thick and black, the clouds have a variety of motions *inter se.* $2^h\ 0^m$. Thunder to SE. 2^m. Rain^3. 4^m. Another peal to SE. Very little rain after 20^m.

2 15—20. Occasional peals from SE.

22. A flash of lightning, thunder in 7^s.

25. A fine streak to E., altitude 45°; thunder in $6\frac{1}{2}^s$.

26. A fine streak to E., from altitude 20° to horizon, having the appearance of waves in a rope shaken.

27. A double flash to E., forming an arch from E by S. to E by N., altitude 15°.

29. A very complex flash to E., altitude 6°, interval 12^s.

30. Streak to E., altitude 6°.

35. A large streak went parallel to the horizon to NE., and then bisected itself at right angles, stretching over about 30° of horizon, interval 12^s., altitude 10°.

38. A streak about 10° long inclined to the horizon at 80° to NE., interval 8^s, like an illuminated serpentine copper wire.

40. About 20 flashes have been seen since 20^m, the rolls have been almost uninterrupted.

40. Flash to NNE., interval 10^s.

41. Flash to NNE., interval 8^s—10^s.

43. Two flashes, one to NE by E., and the other to N., interval 22^s.

44. Flash to NNE., interval 13^s, altitude 5°.

45. Three streaks pendicular to the horizon to N by E., interval 30^s.
Flash to N by E., interval 33^s.
One to NE., altitude 15°, and another to N., interval 11^s from NE.; the thunder continued at intervals to NE. and N.

3 10. A flash to NE by N., altitude 10°, interval 14^s; this is the only flash seen since $2^h\ 45^m$, although the lightning was looked for. All the flashes or streaks had the same character, viz., like the undulations of a slack rope. The thunder like the sound of a cart's wheels moving over very irregular pavement, with many variations of intensity. Thunder heard last about $3^h\ 35^m$.

DATES OF FLOWERING AND LEAFING OF PLANTS, &c.

1845.
eb. 22. Primula acaulis in flower. Crows coming to their nests.
arch 21—23. Ranunculus Ficaria, in flower.
23. Corylus Avellana, with catkins 2 inches long fully open, probably open a week or more ago.
23. A bat seen.
23. Ribes Grossularia, leaves open.
31. Humble bees, tortoise-shell butterfly and toads seen.
pril 1. Fragaria vesca in flower.
1 ? Viola canina in flower.
2. Tussilago Farfara in flower.
3. Petasites vulgaris in flower.
5. Æsculus Hippocastanum in leaf.
5. Ulmus montana in leaf.
5. Alnus glutinosa in flower some days.
6. Larix Europæa in leaf.
6. Corylus Avellana in leaf.
6. Mercurialis perennis in flower.
6. Pulmonaria officinalis in flower.
19. Erodium cicutarium in flower; must have flowered by the 12th.
21. Cerasus Padus in leaf.
27. Lamium album in flower.
27. Prunus spinosa in flower.

1845.
April 27. Fagus sylvatica in leaf for 3 days ?
27. Agraphis nutans in flower.
27. Pyrus aucuparia in leaf about 7 days.
27. Glechoma hederacea in flower about 3 days.
27. Myosotis (arvensis ?) in flower about 2 days.
27. Tilia Europæa in leaf.
27. Erysimum Alliaria in flower.
29. Caltha palustris in flower.
30. The cuckoo heard for the first time.
May 3. Fraxinus excelsior (young tree) in leaf about 3 days.
3. Pyrus Malus, in flower about 2 days.
9. Æsculus Hippocastanum in flower.
12. Quercus Robur in leaf.
April 1. Swallows seen at Kelso. Thrush nest nearly finished.
5. Three swallows seen (Hirundo rustica).
13. Swifts seen (Cypselus apus).
May 4. Young Redbreasts seen.
Oct. 4 5^h. Swallows seen in considerable numbers for the last time this year.
13. Fraxinus excelsior, leaves off one tree.
20. Fraxinus excelsior, Fagus sylvatica, and Platanus occidentalis, have lost the greater part of their leaves.
Nov. 8 7^h. Two bats seen.

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d. h.
Feb. 13 1. P.M. (Mak. M. T.). Temperature of the interior of a large ash-tree, 31°·8; the temperature of the air in the shade being 44°·0. At 4^h the temperature of the ash-tree was 31°·9; when the temperature of the air was 45°·0. The bulb of the thermometer was inserted about 5 inches into the tree, and the aperture closed, leaving the stem of the thermometer outside the tree.

	d.	h.					
Feb.	14	4.	P.M.	(Mak. M. T.)	Temperature of the ash-tree, 32°·7,	of the air,	36°·7.
	15	4.	...	....	.... 32°·4,	....	40°·6.
	17	4½.	...	....	.... 34°·6,	....	41°·4.
	19	4.	...	....	.... 33°·7,	....	36°·6.
	22	4.	...	....	.... 35°·0,	....	35°·0.
Mar.	20	3.	...	....	.... 32°·0,	....	37°·2.
May	16	3.	...	....	.... 51°·9,	....	64°·8.

MAKERSTOUN MEAN TIME OF THE COMMENCEMENT OF THE MORNING SONG OF BIRDS.

1845.	d.	h.	m.		
Feb.	14	7		A.M.	Thrush.
	14	5		P.M.	Blackbird.
	15	6		A.M.	Blackbird or Thrush.
	17	6	50	...	Thrush. 7^{h} 10^{m} A.M. Pigeon.
	17			...	Thrush and Linnet throughout the day.
	19	6	25	...	Blackbird, &c.
	20	5	10	...	Thrush, &c.
	22	6	20	...	Thrush.
	24	6	5	...	Pigeon. 6^{h} 10^{m} A.M. Thrush. 6^{h} 40^{m} A.M. Blackbird, &c.
	25	6	10	...	Birds.
Mar.	4	5	55	...	Thrush.
	17	5	30	...	Thrush and Linnet.
	19	5	15	...	Birds.
	20	5	15	...	Birds, the Redbreast first.
	23	4	40	...	Blackbird, Thrush? Partridge.
	25	4	40	...	Blackbird, Thrush? Partridge.
	26	4	35	...	Blackbird, Thrush? Partridge.
	27	4	55	...	Blackbird, &c.
	29	4	27	...	Lark. 30^{m}. Thrush.
	31	4	25	...	Thrush.
April	1	4	27	...	Thrush.
	2	4	20	...	Thrush.
	3	4	22	...	Thrush.
	5	4	15	...	Pigeon. 25^{m}. Thrush.
	7	4	17	...	Lark and Thrush.
	8	4	14	...	Larks. 25^{m}. Thrush.
	9	3	58	...	Lark.
	11	4	15	...	Birds.
	12	4	0	...	Lark and Thrush.
	14	4	10	...	Lark and Thrush.
	16	3	55	...	Lark and Thrush.
	17	3	50	...	Lark and Thrush.
	18	3	45	...	Lark and Thrush.
	19	3	32	...	Lark. 35^{m}. Thrush.
	21	3	30	...	Lark.
	23	3	14	...	Thrush. 17^{m}. Lark.
	25	3	30	...	Thrush.
	26	3	40	...	Birds singing.
	28	3	27	...	Thrush.
	29	3	45	...	Lark (may have been earlier). Sandpiper throughout the night. 3^{h} 10^{m}. Thrush.
April	30	3	5	A.M.	Larks (probably sooner). 3^{h} 10^{m}. Thrush.
May	4	2	42	...	Lark. 58^{m}. Thrush. Landrails heard.
	6	2	50	...	Larks. 3^{h} 0^{m}. Thrush.
	7	2	50	...	Larks. 3^{h} 9^{m}. Thrush.
	9	2	40	...	Larks. 2^{h} 50^{m}. Thrush.
	12	2	13	...	Larks. 2^{h} 35^{m}. Thrush.
	13	2	20	...	Lark.
	14	6	10	...	Cuckoo.
	15	2	10	...	Lark. 2^{h} 28^{m}. Thrush.
	16	2	1	...	Lark. 2^{h} 25^{m}. Thrush.
	17	1	25	...	Landrail. 2^{h} 15^{m}. Lark.
	19	2	0	...	Lark. 2^{h} 24^{m}. Thrush.
	21	2	28	...	Thrush.
	22	2	25	...	Lark. 2^{h} 43^{m}. Thrush.
	26	2	0	...	Lark. 2^{h} 25^{m}. Thrush.
	27	2	5	...	Lark. 2^{h} 22^{m}. Thrush.
	28	2	14	...	Lark. 2^{h} 22^{m}. Thrush.
	30	1	40	...	Lark. 2^{h} 0^{m}. Thrush.
June	4	2	5	...	Thrush.
	5	2	5	...	Thrush.
	6	1	36	...	Lark. 2^{h} 0^{m}. Thrush.
	7	1	22	...	Lark. 2^{h} 5^{m}. Thrush.
	9	1	33	...	Lark.
	10	1	10	...	Lark. 1^{h} 43^{m}. Thrush.
	12	1	14	...	Lark. 1^{h} 43^{m}. Thrush. 1^{h} 45^{m}. Cuckoo.
	13	1	20	...	Lark. 1^{h} 45^{m}. Thrush.
	14	1	25	...	Lark. 1^{h} 42^{m}. Thrush.
	17	1	38	...	Lark. 2^{h} 0^{m}. Thrush.
	21	1	42	...	Lark. 2^{h} 14^{m}. Thrush.
	26	1	40	...	Lark. 2^{h} 1^{m}. Thrush.
	30	2	0	...	Lark. 2^{h} 15^{m}. Thrush.
July	8	3	0	...	Lark not heard early in the morning after this date.
	9	1	57	...	Swallow. 2^{h} 30^{m}. Thrush.
	10	1	40	...	Swallow. 2^{h} 40^{m}. Thrush.
	15	2	17	...	Swallow.
	28	2	40	...	Swallow.

It has generally been doubtful whether the Thrush or Blackbird was heard at first, owing to the distance of the birds from the observer, but it is believed that the Thrush is generally before the Blackbird.

DAILY OBSERVATIONS

OF

MAGNETOMETERS.

MAKERSTOUN OBSERVATORY,

1846.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
0	13	0	25	08·21	542·5	41·6	409·5	42·3	W
	14	0		09·27	543·9	41·6	407·5	42·3	W
	15	0		09·56	544·1	41·6	407·3	42·2	W
	16	0		09·32	545·5	41·5	406·7	42·1	W
	17	0		11·14	544·6	41·4	405·1	41·9	W
	18	0		08·85	548·2	41·4	404·4	41·8	W
	19	0		08·59	547·8	41·3	406·4	41·8	B
	20	0		08·72	547·8	41·2	404·9	41·7	B
	21	0		08·65	548·1	41·1	404·8	41·7	H
	22	0		08·26	542·3	41·0	404·5	41·5	H
	23	0		08·38	544·1	40·9	400·8	41·2	H
1	0	0		10·18	543·1	40·8	402·4	41·3	H
	1	0		11·88	540·9	40·8	407·3	41·5	H
	2	0		12·01	546·3	40·8	407·6	41·5	H
	3	0		11·55	550·1	40·9	408·8	41·5	H
	4	0		10·09	548·9	41·0	410·0	41·5	W
	5	0		09·10	547·7	41·1	410·0	41·5	H
	6	0		08·86	546·1	40·9	410·0	41·3	W
	7	0		09·08	544·5	40·7	409·6	41·1	H
	8	0		08·41	544·6	40·5	407·5	40·7	H
	9	0		05·38	542·9	40·2	407·9	40·3	H
	10	0		03·06	543·5	39·9	408·9	40·0	W
	11	0		07·60	543·2	39·7	403·7	39·7	H
	12	0		08·52	543·5	39·3	401·7	39·2	H
	13	0	25	08·95	543·9	39·0	403·2	38·8	H
	14	0		08·95	544·1	38·7	403·9	38·5	H
	15	0		09·53	545·6	38·3	405·4	38·2	H
	16	0		10·85	545·0	38·0	404·6	37·7	H
	17	0		08·32	547·4	37·7	406·6	37·5	H
	18	0		08·55	548·2	37·3	408·4	37·2	H
	19	0		08·82	547·0	37·0	410·6	36·8	W
	20	0		08·56	547·3	36·7	411·2	36·6	W
	21	0		08·52	546·0	36·4	412·9	36·2	B
	22	0		08·34	545·3	36·1	410·6	35·9	W
	23	0		08·95	543·8	35·8	408·7	35·7	W
2	0	0		09·69	545·0	35·6	408·6	35·7	W
	1	0		09·76	543·3	35·6	412·5	35·8	B
	2	0		11·10	543·2	35·7	415·5	36·2	W
	3	0		10·16	547·9	36·0	418·0	36·7	W
	4	0		09·35	549·6	36·6	422·0	37·2	W
	5	0		08·79	549·5	36·9	420·6	37·5	W
	6	0		08·08	550·4	37·2	420·4	37·7	H
	7	0		08·41	549·9	37·3	418·8	37·8	H
	8	0		08·55	548·6	37·4	417·9	37·8	H
	9	0		08·18	545·6	37·3	417·6	37·7	H
	10	0		08·01	546·2	37·2	419·2	37·6	H
	11	0		07·60	541·9	37·1	416·6	37·5	B
	12	0		08·16	545·8	37·0	412·4	37·4	B
	13	0	25	08·39	543·3	36·9	411·5	37·3	B
	14	0		08·11	542·9	36·9	410·6	37·2	B
	15	0		09·00	543·7	36·8	411·0	37·2	B
	16	0		08·12	546·4	36·7	404·9	37·2	B
	17	0		08·52	546·3	36·7	409·7	37·2	B
	18	0		08·41	548·2	36·7	413·0	37·2	B
	19	0		08·52	549·0	36·7	413·3	37·2	H
	20	0		08·85	548·6	36·7	414·7	37·3	H
	21	0		08·59	546·8	36·8	414·5	37·4	W
2	22	0	25	08·25	545·4	36·9	413·2	37·5	H
	23	0		09·39	543·7	37·0	411·9	37·6	H
3	0	0		10·50	542·1	37·1	412·6	37·7	H
	1	0		10·97	543·4	37·4	412·9	38·2	H
	2	0		11·10	544·3	37·7	411·8	38·5	H
	3	0		11·14	543·5	38·0	414·6	38·7	H
	4	0		11·14	545·9	38·5	417·5	39·1	H
	5	0		09·39	547·1	39·0	420·5	39·7	H
	6	0		09·13	550·5	39·4	421·7	40·2	B
	7	0		08·68	551·1	39·7	419·1	40·5	B
	8	0		08·45	550·5	40·0	417·5	40·8	B
	9	0		06·77	545·4	40·3	420·8	41·1	B
	10	0		07·67	545·8	40·7	422·7	41·5	B
	11	0		08·05	547·3	40·9	415·0	41·7	W
	12	0		03·23	541·4	41·3	412·5	42·0	W
4	13	0	25	07·78	545·7	40·0	406·2	40·0	H
	14	0		07·37	543·0	39·7	404·8	39·7	H
	15	0		08·12	540·7	39·4	405·8	39·4	H
	16	0		08·48	543·6	39·1	403·2	39·1	H
	17	0		08·39	544·4	39·0	405·6	38·8	H
	18	0		07·79	546·3	38·8	405·9	38·6	H
	19	0		08·38	546·7	38·6	405·5	38·4	W
	20	0		08·11	546·9	38·3	404·5	38·1	W
	21	0		08·08	545·1	38·0	406·9	37·8	B
	22	0		07·55	544·2	37·8	405·9	37·4	W
	23	0		09·62	542·0	37·6	402·6	37·3	W
5	0	0		11·44	544·0	37·4	400·9	37·3	W
	1	0		11·77	544·3	37·4	404·3	37·5	W
	2	0		12·04	547·6	37·5	407·0	37·9	W
	3	0		11·51	548·4	37·7	409·7	38·4	W
	4	0		10·60	547·7	38·2	411·2	39·0	W
	5	0		09·86	550·1	38·6	411·0	39·4	W
	6	0		09·53	550·7	38·9	410·5	39·7	H
	7	0		09·02	550·9	39·0	409·4	39·7	H
	8	0		08·99	550·8	38·9	408·6	39·7	H
	9	0		08·70	550·3	38·9	409·4	39·6	H
	10	0		06·44	541·1	38·9	416·6	39·6	H
	11	0		01·54	540·6	38·9	426·5	39·5	B
	12	0		05·76	545·5	38·9	420·0	39·5	B
	13	0	25	05·77	541·8	38·9	417·7	39·5	B
	14	0		11·75	540·9	38·9	405·3	39·5	B
	15	0		04·73	543·7	38·9	397·3	39·6	B
	16	0		06·86	545·8	38·9	404·5	39·7	B
	17	0		08·48	548·2	39·0	404·8	39·9	B
	18	0		08·28	552·0	39·1	403·1	40·0	B
	19	0		08·36	551·7	39·2	403·9	40·2	H
	20	0		07·64	551·2	39·6	406·3	40·6	H
	21	0		08·41	551·3	39·8	403·5	40·8	W
	22	0		07·94	548·5	40·0	399·2	41·0	H
	23	0		09·12	542·4	40·4	400·5	41·4	H
6	0	0		10·77	545·1	40·7	403·4	41·8	H
	1	0		11·57	543·1	41·1	407·5	42·2	H
	2	0		11·84	545·6	41·3	407·2	42·6	H
	3	0		12·58	549·4	41·7	405·8	43·0	H
	4	0		12·42	548·7	42·0	409·7	43·5	H
	5	0		11·14	545·8	42·5	413·3	43·9	H
	6	0		10·07	553·2	42·9	407·2	44·3	B

DECLINATION. Magnet untouched, Jan. 0^{d}—Feb. 15^{d}.

BIFILAR. Observed 2^{m} after the Declination, $k=0·000135$. BALANCE. Observed 3^{m} after the Declination, $k=0·000010$.

Jan. 1^{d} $3\frac{1}{2}^{h}$. The arms of the bifilar torsion circle were turned through 45′·5: the observations from Jan. 0^{d} 13^{h} till Jan. 1^{d} 3^{h} have been made comparable with those after the latter date; and the observations in 1845 and 1846 have the same zero, though not the same scale unit. See *Introduction*, p. xxxii.

tingen n Time eclina- n Obs.		DECLINATION.	BIFILAR.		BALANCE.		Observer's Initial.
			Corrected.	Thermometer.	Corrected.	Thermometer.	
h.	m.	° ′	Sc. Div.	°	Mic. Div.	°	
7	0	25 09·00	553·3	43·3	403·2	44·7	B
8	0	08·32	552·2	43·7	401·4	45·0	B
9	0	07·74	551·5	44·1	400·3	45·4	B
10	0	07·57	549·5	44·5	398·5	45·7	B
11	0	07·35	549·3	44·8	396·0	45·9	W
12	0	09·59	548·6	45·0	392·7	46·0	W
13	0	25 05·49	550·9	45·2	385·4	46·2	W
14	0	07·04	539·2	45·3	382·9	46·3	W
15	0	08·61	547·1	45·4	384·3	46·4	W
16	0	07·96	544·5	45·6	388·7	46·5	W
17	0	07·51	547·6	45·6	387·2	46·5	W
18	0	06·09	547·4	45·7	386·0	46·6	W
19	0	08·93	540·2	45·8	387·6	46·7	B
20	0	07·40	548·1	45·9	387·6	46·8	B
21	0	07·18	550·3	45·9	388·7	46·8	H
22	0	10·56	550·6	46·0	386·9	46·9	H
23	0	10·33	541·8	46·0	386·9	46·9	H
0	0	11·12	539·0	46·2	384·5	47·0	B
1	0	12·62	547·1	46·4	383·0	47·2	H
2	0	12·36	549·6	46·5	383·0	47·3	H
3	0	12·42	549·2	46·7	384·2	47·5	H
4	0	11·88	547·4	46·8	389·9	47·6	B
5	0	07·98	552·3	46·9	389·6	47·7	H
6	0†	00·28	532·4	47·0	405·4	47·8	W
7	0†	01·18	539·5	47·2	416·9	48·0	W
8	0	07·64	551·5	47·4	398·8	48·3	W
9	0	04·96	544·5	47·5	403·5	48·3	W
10	0	06·93	549·5	47·5	395·1	48·2	W
11	0	08·12	546·1	47·4	390·0	48·2	H
12	0	07·71	543·6	47·4	386·4	48·1	H
13	0	25 09·67	541·4	47·3	370·9	48·0	H
14	0	03·65	545·2	47·3	361·3	48·0	H
15	0	04·81	536·6	47·3	365·2	48·0	H
16	0	10·67	541·3	47·3	365·1	48·0	H
17	0	10·23	543·0	47·3	369·8	48·0	H
18	0	07·07	551·5	47·3	371·2	48·0	H
19	0	08·18	548·9	47·4	374·3	48·0	W
20	0	09·39	543·6	47·4	379·3	48·0	W
21	0	12·75	539·8	47·4	380·2	48·0	B
22	0	12·96	540·6	47·4	381·5	48·0	W
23	0	11·98	536·1	47·5	387·3	48·0	W
0	0	14·38	539·0	47·6	385·4	48·1	W
1	0	11·51	530·7	47·6	393·3	48·3	W
2	0	13·41	539·9	47·7	390·9	48·4	W
3	0	15·20	542·6	47·9	390·6	48·5	W
4	0	14·60	547·4	48·0	395·7	48·8	W
5	0	06·77	551·1	48·2	397·7	49·0	W
6	0	09·30	549·7	48·4	387·7	49·2	H
7	0	09·49	549·0	48·5	383·8	49·2	H
8	0	08·09	546·0	48·7	385·0	49·4	H
9	0	04·41	547·9	48·7	385·6	49·5	H
10	0	06·59	543·0	48·7	384·4	49·3	H
11	0	07·51	546·4	48·7	382·9	49·3	W
12	0	08·34	546·8	48·7	382·1	49·3	D
13	0	25 07·08	546·1	48·7	380·1	49·2	D
14	0	07·92	543·9	48·6	376·4	49·1	D

Göttingen Mean Time of Declination Obs.			DECLINATION.	BIFILAR.		BALANCE.		Observer's Initial.
				Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	° ′	Sc. Div.	°	Mic. Div.	°	
8	15	0	25 08·77	546·4	48·5	373·7	48·9	D
	16	0	08·52	546·3	48·4	373·9	48·8	D
	17	0	08·21	547·6	48·3	371·2	48·5	D
	18	0	08·05	546·5	48·1	370·0	48·3	D
	19	0	08·66	548·9	47·9	370·6	48·2	H
	20	0	08·79	548·8	47·8	371·7	48·1	H
	21	0	08·14	548·1	47·7	373·0	47·9	W
	22	0	07·76	545·1	47·6	374·8	47·7	H
	23	0	08·72	540·4	47·4	373·3	47·5	H
9	0	0	10·43	539·8	47·3	375·5	47·5	H
	1	0	11·46	540·2	47·2	377·2	47·5	H
	2	0	13·05	544·8	47·2	392·9	47·5	H
	3	0	11·24	543·7	47·2	396·6	47·5	H
	4	0	10·36	548·9	47·2	399·3	47·5	H
	5	0	09·69	547·9	47·2	397·9	47·5	H
	6	15	09·33	548·0	47·2	395·2	47·5	B
	7	0	08·23	548·4	47·1	394·3	47·4	B
	8	0	07·44	546·7	47·0	396·2	47·2	B
	9	0	08·05	549·6	46·9	396·3	47·1	B
	10	0	07·47	546·8	46·8	399·5	47·0	B
	11	0	08·79	544·6	46·6	397·1	46·7	W
	12	0	08·95	547·3	46·5	396·2	46·6	W
	13	0	25 08·48	546·5	46·4	396·9	46·5	W
	14	0	08·97	545·5	46·3	396·9	46·3	W
	15	0	08·80	545·6	46·1	397·0	46·2	W
	16	0	08·46	546·7	46·0	396·5	46·2	W
	17	0	08·34	547·5	45·9	395·2	46·1	W
	18	0	08·61	549·1	45·9	392·6	46·0	W
	19	0	08·41	549·3	45·8	392·4	46·0	B
	20	0	07·72	540·4	45·7	392·1	46·0	B
	21	0	07·67	549·8	45·7	393·8	46·0	H
	22	0	07·20	547·9	45·7	395·2	46·0	H
	23	0	07·27	546·7	45·7	393·8	46·0	H
10	0	0	09·15	547·5	45·7	392·8	46·1	H
	1	0	10·38	547·2	45·8	394·2	46·2	H
	2	0	11·00	549·8	46·0	396·3	46·5	H
	3	0	11·41	551·5	46·2	398·6	46·9	H
	4	0	11·05	548·1	46·4	403·6	47·2	H
	5	0	09·56	545·6	46·7	404·1	47·3	H
	6	0	09·24	553·1	46·8	399·8	47·4	W
	7	0	09·62	552·7	46·9	396·2	47·5	W
	8	0	09·46	550·8	47·0	396·1	47·6	W
	9	0	08·52	547·9	47·1	398·0	47·7	W
	10	0	07·29	549·0	47·1	398·3	47·7	W
	11	0	06·16	551·1	47·1	396·4	47·7	H
	12	0	05·72	548·6	47·1	394·6	47·7	H
11	19	0	25 11·48	556·6	43·3	387·1	43·7	H
	20	0	07·04	555·1	43·3	385·8	43·7	H
	22	0	10·33	547·1	43·2	386·4	43·4	W
	23	0	12·25	546·0	43·1	387·6	43·3	H
12	0	0	13·69	541·4	43·0	399·7	43·3	W
	1	0	15·74	535·9	43·0	403·2	43·3	H
	2	0	17·94	549·0	43·0	433·7	43·4	W
	4	0	12·45	541·4	43·1	431·0	43·5	H
	6	0	10·14	546·5	43·0	416·9	43·4	W
	8	0	07·17	538·3	42·7	418·7	42·7	W
	10	0	04·84	543·8	42·1	412·2	41·8	W

DECLINATION. Magnet untouched, Jan. 0d—Feb. 15d.

BIFILAR. Observed 2m after the Declination, k=0·000135. BALANCE. Observed 3m after the Declination, k=0·000010.

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† Extra Observations made.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
12	18	0	25	09·05	545·7	39·3	411·0	38·8	H
	20	0		08·41	545·5	38·8	411·9	38·4	H
	22	0		07·71	543·0	38·3	413·8	37·9	W
	23	0		09·12	542·1	38·1	418·2	37·7	H
13	0	0		09·59	539·7	37·9	424·5	37·5	B
	1	0		10·23	539·9	37·7	424·8	37·5	H
	2	0		12·38	542·3	37·6	418·7	37·5	B
	4	0		11·07	545·1	37·4	413·3	37·5	H
	6	0		08·90	549·3	37·5	413·6	37·7	W
	7	0		09·69	547·8	37·5	413·2	37·8	W
	8	0		09·71	547·6	37·6	412·5	37·9	W
	10	0		04·95	542·9	37·6	418·1	38·0	W
	18	0	25	15·71	546·1	37·9	358·6	38·7	H
	20	0		07·76	555·0	37·9	386·8	38·5	H
	22	0		08·34	542·9	37·9	392·2	38·3	W
	23	0		10·61	542·0	37·9	395·8	38·3	W
14	0	0		12·90	532·2	37·8	405·4	38·4	H
	1	0		11·17	534·2	38·0	416·4	38·7	H
	2	0		12·31	544·5	38·3	416·6	39·1	W
	4	0		10·00	548·2	39·0	425·4	40·0	H
	6	0		09·20	545·8	39·4	419·2	40·4	W
	7	0		06·93	545·6	39·7	416·4	40·7	W
	8	0		04·21	541·0	39·9	420·9	40·9	W
	10	0		04·66	544·4	40·2	380·9	41·1	W
	18	0	25	09·73	550·2	40·8	394·3	41·7	H
	20	0		09·42	548·5	40·8	393·6	41·7	H
	22	0		13·37	545·9	40·9	392·7	41·6	W
	23	0		12·18	547·3	40·9	395·7	41·6	H
15	0	0		11·30	547·8	40·9	396·0	41·5	W
	1	0		09·42	544·9	41·0	396·6	41·7	H
	2	0		12·65	545·6	41·1	403·2	42·0	W
	4	0		09·69	548·5	41·6	407·9	42·6	W
	6	0		09·30	551·6	42·2	401·1	43·2	W
	7	0		09·05	550·5	42·4	399·6	43·4	W
	8	0		08·61	548·3	42·5	400·3	43·5	W
	10	0		08·38	549·6	42·4	395·8	43·1	W
	18	0	25	08·05	546·6	40·7	392·2	40·7	H
	20	0		09·12	547·0	40·1	392·2	40·1	H
	22	0		08·95	548·3	39·7	394·0	39·5	W
	23	0		09·82	547·8	39·4	392·5	39·3	H
16	0	0		12·53	545·0	39·2	397·3	39·0	W
	1	5		13·86	551·8	39·1	397·2	39·0	H
	2	0		14·68	552·3	39·0	399·9	39·0	W
	4	0		09·79	547·8	39·0	407·7	39·0	H
	6	0		09·13	550·4	38·8	405·6	39·0	W
	7	0		09·93	549·4	38·7	404·3	39·0	W
	8	0		08·18	549·1	38·7	403·1	38·9	W
	10	0		05·99	541·0	38·5	405·5	38·6	W
	18	0	25	10·70	555·8	37·3	394·7	37·7	H
	20	0		14·94	540·3	37·0	381·4	37·3	H
	22	0		10·92	541·8	37·0	387·2	37·2	W
	23	0		11·30	540·8	37·0	396·9	37·2	H
17	0	0		13·14	543·5	37·0	406·0	37·5	W
	1	0		12·18	545·0	37·1	406·1	37·7	H
17	2	0	25	12·36	550·7	37·4	410·7	38·2	W
	4	0	25	11·19	538·9	38·0	427·9	38·8	H
	6	0	25	12·92	547·2	38·7	428·8	39·7	W
	7	0	24	55·65	545·8	39·1	442·6	40·1	W
	8	0	25	03·82	542·3	39·3	433·2	40·4	W
	10	0	24	59·06	544·8	39·9	424·4	40·8	W
18	18	0	25	06·16	557·3	40·2	398·9	40·6	H
	20	0		09·29	546·1	40·0	397·7	40·4	H
	22	0		12·15	543·7	39·9	400·3	40·2	W
	23	2		14·03	544·2	39·8	401·0	40·2	H
19	0	0		13·16	543·3	39·9	405·3	40·4	W
	1	0		12·58	549·3	40·1	405·3	40·6	H
	2	0		11·17	549·9	40·1	409·5	40·7	W
	4	0		09·15	548·2	40·3	408·9	41·0	H
	6	0		10·43	547·0	40·7	410·7	41·4	W
	7	4		06·09	538·6	40·8	416·3	41·5	W
	8	0		09·86	548·5	41·0	412·5	41·7	W
	10	0		09·00	547·7	41·2	407·7	42·0	W
	18	0	25	07·98	549·3	42·3	398·1	43·2	H
	20	0		07·79	547·4	42·5	397·1	43·4	H
	22	0		09·29	545·0	42·7	396·6	43·6	W
	23	0		10·20	541·2	42·8	398·7	43·7	H
20	0	0		10·70	543·4	43·0	396·8	43·8	W
	1	0		11·74	544·2	43·1	394·0	43·9	H
	2	0		10·87	547·1	43·1	392·5	43·9	B
	4	0		09·02	546·6	43·3	393·7	44·0	H
	6	0		09·02	548·6	43·4	398·6	44·0	W
	7	0		08·88	548·5	43·4	397·8	44·0	W
	8	0		08·46	550·2	43·4	395·7	44·0	W
	10	0		08·16	548·3	43·4	397·8	44·1	W
	18	0	25	07·24	547·5	43·0	390·5	43·5	H
	20	0		11·27	541·6	42·7	390·1	43·0	H
	22	0		09·69	548·0	42·3	390·0	42·3	W
	23	4		11·00	546·0	42·0	390·3	42·1	H
21	0	0		11·52	544·3	41·9	392·5	42·2	W
	1	0		11·91	547·4	42·0	394·3	42·5	H
	2	0		13·19	551·9	42·1	393·5	42·8	H
	4	0		10·94	551·2	42·7	399·7	43·5	H
	6	0		09·84	549·9	43·0	400·3	43·9	W
	7	0		08·82	551·1	43·2	402·8	44·0	W
	8	0		09·29	551·4	43·3	399·7	44·0	W
	10	0		08·97	558·5	43·2	399·5	43·8	W
	18	0	25	06·93	549·4	42·8	393·6	43·5	H
	20	0		07·40	548·2	42·8	393·2	43·5	H
	22	0		09·29	544·1	42·9	398·4	43·6	W
	23	0		10·43	541·2	43·0	400·3	43·7	H
22	0	0		12·13	539·8	43·0	401·0	43·7	W
	1	0		10·00	542·0	43·1	399·4	43·8	H
	2	0		13·59	546·9	43·2	397·3	43·9	W
	4	0		10·23	549·5	43·5	399·0	44·4	H
	6	0		09·32	550·2	43·7	394·8	44·5	W
	7	0		08·92	552·6	43·9	393·6	44·7	W
	8	0		09·19	552·4	44·0	395·6	44·8	W
	10	0		08·41	553·6	44·1	392·0	44·8	W

DECLINATION. Magnet untouched, Jan. 0d—Feb. 15d.

BIFILAR. Observed 2m after the Declination, k=0·000135. BALANCE. Observed 3m after the Declination, k=0·000010.

Göttingen Mean Time of Declination Obs.			Declination.		Bifilar.		Balance.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
22	18	0	25	07·64	549·8	43·5	384·1	43·9	H
	20	0		07·40	547·1	43·0	386·4	43·2	H
	22	0		08·06	543·9	42·6	388·2	42·7	W
	23	0		09·39	541·5	42·4	388·6	42·4	H
23	0	0		10·03	539·5	42·3	390·6	42·5	W
	1	0		11·05	542·4	42·3	389·4	42·7	H
	2	0		11·44	546·6	42·5	391·7	43·2	W
	4	0		09·64	547·2	43·2	395·7	44·2	H
	6	0		09·08	552·5	43·7	390·4	44·5	W
	7	0		08·61	553·1	44·0	389·9	44·7	W
	8	0		08·38	553·7	44·0	389·0	44·8	W
	10	0		06·84	559·1	44·2	385·1	44·9	W
	18	0	25	08·11	553·2	43·5	374·0	44·0	H
	20	0†		26·37	559·1	43·2	333·0	43·7	H
	22	0		19·86	537·9	43·1	332·7	43·5	W
	23	0		13·99	538·2	43·1	338·0	43·3	H
24	0	0		12·38	536·0	42·9	365·8	43·3	W
	1	0		11·84	534·2	42·8	377·6	43·3	H
	2	0		13·93	538·6	42·9	384·5	43·5	W
	4	0		13·12	538·6	43·7	400·2	44·6	H
	6	0	25	09·08	548·2	44·6	400·6	45·2	W
	7	1†	24	49·54	512·8	44·7	400·0	45·3	W
	8	0	24	53·15	559·9	44·7	403·4	45·3	W
	10	0	25	02·12	533·7	44·7	390·7	45·2	W
25	18	0	25	08·41	547·9	47·0	372·2	47·4	H
	20	0		07·65	545·4	46·9	374·1	47·4	H
	22	0		08·52	543·2	47·0	376·2	47·3	W
	23	0		10·00	542·3	47·0	376·2	47·4	H
26	0	0		11·99	540·8	47·1	382·2	47·7	W
	1	0		12·85	540·1	47·3	383·2	48·0	H
	2	0		12·43	542·1	47·6	385·2	48·3	W
	4	0		09·86	546·2	48·2	381·0	49·0	H
	6	0		08·92	547·7	48·6	374·0	49·3	W
	7	0		08·72	547·7	48·7	371·6	49·3	W
	8	0		08·41	547·3	48·6	370·0	49·1	W
	10	0		08·21	547·0	48·5	371·0	48·9	W
	18	0	25	08·18	548·5	47·5	366·2	47·6	H
	20	0		07·37	546·3	47·3	366·8	47·3	H
	22	0		08·19	541·0	47·1	370·5	47·2	W
	23	0		09·69	538·7	47·1	371·0	47·2	H
27	0	0		10·83	540·2	47·0	370·6	47·2	W
	1	0		12·11	543·0	47·1	369·9	47·5	H
	2	0		14·17	547·9	47·4	370·0	47·9	W
	4	0		11·68	545·6	47·8	375·3	48·5	H
	6	0		06·64	548·2	48·2	378·3	48·7	W
	7	0		08·21	550·5	48·2	372·3	48·7	W
	8	0		07·74	549·7	48·2	370·5	48·6	W
	10	0		02·69	549·8	48·0	371·6	48·2	W
	18	0	25	05·43	547·0	46·3	360·8	46·2	H
	20	0		06·44	546·6	46·0	364·0	45·7	H
	22	0		08·85	543·5	45·7	365·3	45·5	W
	23	0		10·50	541·0	45·6	366·2	45·5	H
28	0	0		13·12	545·2	45·4	367·3	45·4	W
	1	0		15·44	542·7	45·4	375·0	45·5	H
28	2	0	25	15·17	537·4	45·5	379·4	45·8	W
	4	0		13·17	542·3	46·2	412·2	46·6	H
	6	0		10·28	549·5	46·5	397·1	46·9	W
	7	0		09·29	549·1	46·6	390·5	46·9	W
	8	0		08·73	549·0	46·4	383·1	46·7	W
	10	0		07·29	547·9	46·2	376·1	46·3	W
	18	0	25	02·40	546·7	45·0	333·3	45·3	H
	20	0		07·40	543·3	44·9	368·5	45·2	H
	22	0		06·97	538·6	44·9	376·9	45·1	W
	23	0		09·29	536·5	44·8	376·7	45·2	H
29	0	0		11·19	539·7	44·9	373·0	45·3	W
	1	0		11·62	542·9	45·0	371·5	45·5	H
	2	0		12·43	549·4	45·2	372·5	45·7	H
	4	0		10·77	551·7	45·6	383·5	46·2	H
	6	0		10·28	550·2	45·9	381·9	46·5	W
	7	0		10·20	551·2	46·0	380·0	46·6	W
	8	0		09·62	555·5	46·1	377·8	46·7	W
	10	0		08·32	554·5	46·1	375·0	46·5	W
	18	0	25	08·41	553·8	45·7	367·9	46·0	H
	20	0		08·28	546·4	45·6	372·3	45·8	H
	22	0		08·29	543·1	45·4	372·8	45·6	W
	23	0		10·20	543·7	45·3	371·9	45·5	H
30	0	0		10·92	548·1	45·3	373·6	45·5	W
	1	0		10·85	542·6	45·2	374·1	45·5	H
	2	0		11·51	547·3	45·3	377·7	45·9	W
	4	0		09·96	550·4	45·8	385·7	46·5	H
	6	0		10·27	554·6	46·4	385·0	47·0	W
	7	0		09·74	548·8	46·6	385·9	47·2	W
	8	0	25	08·88	548·0	46·7	386·5	47·3	W
	10	0	24	58·05	546·6	46·9	385·1	47·4	W
	18	0	25	05·06	549·7	46·7	367·3	47·0	H
	20	0		08·88	553·3	46·8	366·7	47·3	H
	22	0		09·33	543·2	47·0	371·4	47·5	W
	23	0		10·43	539·0	47·2	375·9	47·7	H
31	0	0		11·08	538·3	47·4	375·9	47·8	W
	1	0		11·77	541·2	47·5	377·1	48·0	H
	2	0		11·27	545·1	47·7	379·1	48·3	W
	4	0		08·86	547·9	48·1	382·3	48·7	H
	6	0		08·85	545·4	48·5	385·2	49·2	W
	7	0		09·29	548·7	48·6	379·5	49·3	W
	8	0		08·63	548·1	48·7	378·4	49·4	W
	10	0		07·78	548·6	48·9	374·6	49·5	W
1	18	0	25	11·77	546·8	43·1	375·2	42·9	H
	20	0		07·52	544·9	42·7	384·1	42·3	H
	22	0		10·65	543·0	42·3	388·2	41·8	W
	23	0		12·31	539·0	42·1	387·9	41·7	H
2	0	0		14·28	538·7	42·0	389·2	41·9	W
	1	0		14·24	542·0	42·1	395·2	42·5	H
	2	0		14·58	545·1	42·4	401·0	43·1	W
	4	0		10·58	546·8	43·7	414·7	44·5	H
	6	0		07·62	544·9	44·4	411·0	45·1	W
	7	0		06·56	541·7	44·6	410·8	45·3	W
	8	0		07·81	545·6	44·7	400·1	45·3	W
	10	0		02·52	556·0	44·7	387·5	45·3	W

Declination. Magnet untouched, Jan. 0ᵈ—Feb. 15ᵈ.

Bifilar. Observed 2ᵐ after the Declination, k=0·000135. **Balance.** Observed 3ᵐ after the Declination, k=0·000010.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
2	18	0	25	06·43	549·8	44·2	375·5	44·7	H
	20	0		08·16	549·4	44·4	377·6	45·0	H
	22	0		09·76	542·1	44·6	382·7	45·2	W
	23	0		11·84	541·9	44·7	382·1	45·3	H
3	0	0		11·21	538·2	44·9	387·0	45·5	W
	1	0		11·86	540·0	45·1	382·4	45·8	H
	2	0		12·08	544·0	45·4	381·7	46·2	W
	4	0		08·72	540·6	46·0	397·7	47·0	H
	6	0		08·61	550·7	46·4	387·9	47·2	W
	7	0		08·41	551·1	46·7	387·4	47·4	W
	8	0		08·59	548·4	46·8	386·7	47·5	W
	10	0		08·19	547·6	46·8	384·1	47·3	W
	18	0	25	07·74	547·2	44·4	378·1	44·3	H
	20	0		08·41	549·1	43·7	379·7	43·2	H
	22	0		10·53	551·4	43·0	395·1	42·4	W
	23	0		11·61	546·3	42·7	390·2	42·2	H
4	0	0		11·34	542·9	42·5	394·1	42·2	W
	1	0		12·85	542·7	42·4	388·8	42·4	H
	2	0		11·28	542·1	42·5	389·7	42·8	W
	4	0		09·15	541·0	42·9	400·6	43·5	H
	6	0		08·18	540·2	43·2	394·7	43·8	W
	7	0		04·22	543·3	43·3	400·1	43·8	W
	8	0		07·99	548·6	43·2	398·8	43·7	W
	10	0		06·86	548·9	43·0	390·6	43·5	W
	18	0	25	08·38	550·0	41·9	382·8	42·2	H
	20	0		08·14	549·0	41·7	385·1	42·0	H
	22	0		07·84	544·7	41·5	394·9	41·7	W
	23	0		09·42	543·8	41·5	394·2	41·7	H
5	0	0		10·36	541·0	41·5	396·1	41·9	W
	1	0		11·22	541·9	41·5	394·2	42·2	H
	2	0		11·61	541·1	41·9	394·1	42·6	W
	4	0		10·30	545·9	42·6	391·1	43·1	H
	6	0		08·66	549·4	43·0	392·7	43·8	W
	7	0		06·63	547·4	43·0	392·0	43·7	H
	8	0		08·45	548·2	43·0	390·7	43·5	H
	10	0		07·24	550·5	42·7	385·0	42·9	W
	18	0	25	08·14	548·9	40·7	386·0	40·7	H
	20	0		07·98	548·4	40·3	391·4	40·2	H
	22	0		07·57	542·8	39·9	399·1	39·7	W
	23	0		08·59	538·9	39·7	398·9	39·5	H
6	0	0		10·68	538·8	39·6	396·4	39·6	W
	1	0		12·01	540·7	39·6	402·4	39·8	H
	2	0		12·22	543·6	39·6	399·1	40·1	W
	4	0		10·03	546·7	40·0	402·1	40·5	H
	6	0		07·85	548·8	40·3	402·9	40·9	W
	7	0		08·45	549·6	40·4	402·9	41·3	W
	8	0		08·43	550·7	40·6	400·0	41·5	W
	10	0		08·80	550·3	41·2	398·3	42·2	W
	18	0	25	04·21	552·5	42·6	368·9	43·2	H
	20	0		08·31	551·3	42·5	368·9	43·2	H
	22	0		10·81	542·0	42·5	380·1	43·2	W
	23	0		11·44	542·8	42·5	381·2	43·2	H
7	0	0		11·64	545·2	42·5	383·0	43·2	W
	1	13		13·52	540·9	42·5	388·8	43·5	H
7	2	0	25	13·59	544·0	42·7	389·1	43·6	W
	4	0		13·46	550·2	43·4	412·9	44·5	H
	6	0		11·66	543·9	43·8	428·5	44·6	W
	7	0		08·95	543·8	43·8	423·3	44·6	W
	8	0		08·52	547·8	43·7	412·3	44·4	W
	10	0		08·75	548·8	43·4	400·0	43·8	W
8	18	0	25	07·05	536·9	37·1	387·1	36·6	H
	20	0		09·44	547·8	36·7	388·6	36·4	H
	22	0		14·84	542·8	36·4	397·1	36·2	W
	23	0†		08·85	556·8	36·4	395·1	36·2	H
9	0	0		11·22	552·0	36·3	400·4	36·3	W
	1	6		09·46	547·8	36·3	407·3	36·5	H
	2	0		15·62	543·0	36·4	414·3	36·7	W
	4	0		11·05	540·7	36·8	457·9	37·2	H
	6	0		09·84	548·5	37·2	424·2	37·7	W
	7	0		11·07	545·1	37·2	415·9	37·6	W
	8	0		09·69	546·1	37·2	413·1	37·5	W
	10	0		07·24	542·5	37·0	410·6	37·1	W
	18	9	25	08·18	540·9	34·7	402·4	34·4	W
	20	0		08·14	542·4	34·3	401·0	33·9	W
	22	0		09·27	543·1	33·8	400·5	33·6	H
	23	0		09·44	544·2	33·7	385·7	33·6	W
10	0	0		08·11	546·1	33·7	389·0	34·0	H
	1	20		10·27	546·8	34·0	392·8	34·6	B
	2	0		09·80	555·9	34·4	388·9	35·2	W
	4	0		10·53	545·5	35·4	395·1	36·3	W
	6	0		03·06	543·4	36·0	412·4	36·7	H
	7	0		07·99	543·9	36·0	407·7	36·7	H
	8	0		09·22	547·5	36·0	398·8	36·6	H
	10	0		08·19	545·3	35·9	396·6	36·5	H
	18	0	25	08·25	548·6	35·5	386·8	36·0	W
	20	0		08·80	550·1	35·6	384·1	36·1	W
	22	0		08·88	549·7	35·6	385·0	36·2	H
	23	0		10·03	549·8	35·9	385·3	36·6	W
11	0	0		10·38	545·0	36·2	389·3	37·0	H
	1	5		10·90	549·1	36·7	390·7	37·7	H
	2	0		11·44	546·5	37·2	389·9	38·4	H
	4	0		09·82	550·2	38·6	393·3	39·9	W
	6	0		08·75	548·0	39·5	390·2	40·7	H
	7	0		08·46	550·4	39·8	386·8	40·9	H
	8	0		07·18	546·5	39·8	387·2	41·0	H
	10	0		07·74	547·1	39·9	385·8	41·0	H
	18	0	25	07·47	549·2	39·5	374·8	39·9	W
	20	0		08·46	548·4	39·0	373·0	39·3	W
	22	0		09·35	547·6	38·7	369·0	38·7	H
	23	0		11·89	544·7	38·6	368·4	38·7	W
12	0	0		15·01	539·5	38·5	369·5	38·5	H
	1	0		13·90	545·1	38·7	379·2	39·3	H
	2	0		13·79	551·0	39·0	385·9	40·2	H
	4	0		10·43	550·0	40·7	391·6	42·2	H
	6	0		09·32	549·3	42·7	382·8	44·0	H
	7	0		08·79	560·8	43·2	377·8	44·5	H
	8	0		08·75	550·9	43·5	373·3	44·6	H
	10	0		02·59	555·3	43·8	366·3	44·7	H

DECLINATION. Magnet untouched, Jan. 0^d—Feb. 15^d.

BIFILAR. Observed 2^m after the Declination, k=0·000135. BALANCE. Observed 3^m after the Declination, k=0·000010.

† Extra Observations made.

öttingen ean Time Declina- ion Obs.		DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
				Cor. rected.	Thermo- meter.	Cor- rected.	Thermo- meter.	
h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
18	0	25	07·32	547·8	42·0	365·9	42·1	W
20	0		07·54	546·2	41·4	367·1	41·1	W
22	0		08·31	542·5	40·9	371·7	40·8	H
23	0		09·53	542·2	40·7	371·2	40·8	W
0	0		11·01	544·7	40·7	373·1	41·2	H
1	0		11·25	544·5	40·9	379·7	41·7	B
2	0		10·83	546·8	41·4	380·4	42·5	H
4	0		09·26	551·1	43·0	382·0	44·5	H
6	0		08·14	550·2	44·5	377·4	45·7	H
7	0		09·22	552·7	44·9	368·8	45·7	H
8	0		09·06	552·7	45·0	365·8	45·7	H
10	0		08·82	547·1	44·8	370·3	45·4	H
18	6	25	04·71	549·7	42·9	356·6	43·0	W
20	0		07·37	552·5	42·6	359·3	42·8	W
22	0		10·88	542·5	42·3	358·7	42·6	H
23	0		12·51	544·5	42·3	355·0	42·6	W
0	0		13·79	550·7	42·3	358·8	42·7	H
1	0		13·76	551·5	42·4	364·7	43·0	H
2	0		14·96	550·6	42·6	368·0	43·4	H
4	0		12·78	572·2	43·2	370·2	44·0	W
6	0		10·18	552·8	43·7	372·1	44·5	H
7	0		09·39	556·0	43·8	368·5	44·6	H
8	0		09·05	558·9	44·0	363·1	44·7	H
10	0		07·81	550·4	44·0	373·0	44·7	H
18	0	25	07·47	547·7	44·8	425·9	45·0	W
20	0		16·65	555·0	44·7	430·8	45·0	W
22	0		10·74	539·8	44·6	400·3	45·0	H
23	0		14·50	528·5	44·7	413·0	45·2	W
0	0		13·61	530·2	44·8	421·4	45·5	H
1	0		11·89	532·0	45·0	420·5	45·7	H
2	0		10·65	537·3	45·5	383·3	46·3	B
4	0		08·10	559·2	46·3	382·8	47·2	B
6	0	25	05·55	551·2	47·2	385·7	47·5	H
7	0†	24	49·48	533·8	47·2	382·4	47·7	H
8	0	24	53·88	561·0	47·2	363·8	48·0	H
10	0	24	57·62	535·0	47·3	354·5	47·7	H
18	0	25	06·97	547·0	45·9	348·8	46·0	W
20	0		07·35	543·4	45·6	352·9	45·6	W
22	0		09·54	543·2	45·2	355·3	45·2	H
23	0		09·71	541·1	45·1	355·1	45·3	W
0	0		09·02	545·7	45·2	357·5	45·7	H
1	0		10·54	547·7	45·4	360·3	46·2	H
2	0		09·64	545·5	45·7	365·4	46·5	H
4	0		10·98	554·2	46·1	366·5	46·8	W
6	0		05·79	551·5	46·3	373·6	47·0	H
7	0		07·13	548·3	46·4	369·7	47·0	H
8	0		08·56	550·5	46·4	367·1	47·0	H
10	0		00·44	542·9	46·4	347·8	46·7	H
18	0	25	05·77	545·6	44·8	353·3	44·8	W
20	0		06·21	547·4	44·4	354·6	44·3	W
22	0		08·34	542·7	43·9	353·9	43·9	H
23	0		09·71	539·6	43·8	360·5	43·9	W
0	0		11·93	541·2	43·8	362·9	44·0	H
1	0		11·91	544·1	43·8	365·9	44·3	H

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Cor- rected.	Thermo- meter.	Cor- rected.	Thermo- meter.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
18	2	0	25	12·82	541·6	44·0	372·7	44·7	H
	4	0	25	12·48	543·7	44·8	385·7	45·7	W
	6	0	24	59·64	555·7	45·7	389·6	46·2	H
	7	0	25	04·51	546·6	45·8	385·6	46·5	H
	8	0	25	04·91	544·8	46·0	385·5	46·6	H
	10	0	24	59·70	546·5	46·5	355·9	46·5	H
	18	0	25	06·83	547·2	44·8	362·2	45·0	H
	20	0		07·18	545·0	44·5	364·0	44·7	H
	22	0		08·05	542·6	44·3	371·1	44·4	W
	23	0		02·84	540·9	44·1	370·6	44·5	H
19	0	0		10·48	540·1	44·1	370·3	44·5	W
	1	0		10·94	542·4	44·1	371·8	44·7	H
	2	0		10·94	544·4	44·3	374·6	44·8	W
	4	0		08·72	548·5	44·5	377·9	45·2	H
	6	0		08·09	550·1	44·7	374·7	45·3	W
	7	0		07·17	550·5	44·7	371·5	45·3	W
	8	0		08·72	551·4	44·7	369·6	45·3	W
	10	0		07·89	551·6	44·6	365·1	45·1	W
	18	0	25	06·37	548·3	43·9	363·1	44·3	W
	20	0		06·81	547·0	43·7	362·9	44·0	W
	22	0		08·58	543·0	43·4	364·5	43·6	H
	23	0		09·56	541·3	43·3	365·0	43·5	W
20	0	0		10·60	543·6	43·1	366·2	43·5	H
	1	0		10·83	546·5	43·1	365·9	43·5	H
	2	0		10·63	550·2	43·2	369·1	43·7	H
	4	0		08·63	549·8	43·4	371·7	44·0	W
	6	0		07·24	552·7	43·6	371·3	44·3	H
	7	0		07·78	553·6	43·7	370·9	44·5	H
	8	0		08·38	553·9	43·7	370·6	44·5	H
	10	0†		00·84	552·6	43·8	370·9	44·5	H
	18	0	25	05·22	549·4	43·9	367·1	44·5	W
	20	0		06·84	552·4	44·1	364·1	44·8	W
	22	0		07·38	548·9	44·4	363·1	45·3	H
	23	0		08·82	544·3	44·9	365·2	45·8	W
21	0	0		09·76	547·3	45·3	367·3	46·4	H
	1	0		10·54	548·8	45·8	368·9	46·7	H
	2	0		10·53	547·8	46·3	372·2	47·3	W
	4	0		09·56	548·7	47·3	376·5	48·3	B
	6	0		08·39	547·5	48·1	380·4	49·0	H
	7	0		02·35	553·0	48·2	382·2	49·2	H
	8	0		09·02	550·8	48·3	371·8	49·2	H
	10	0		05·45	550·0	48·4	369·0	49·2	H
22	18	0	25	05·18	551·7	49·8	343·3	50·1	W
	20	0		05·58	551·8	49·9	342·1	50·2	W
	22	0		06·90	551·6	50·0	347·0	50·3	H
	23	0		07·78	548·6	50·0	349·9	50·4	W
23	0	0		08·79	547·0	50·1	348·5	50·5	H
	1	6		08·68	550·6	50·4	343·4	50·8	H
	2	0		07·98	550·1	50·6	345·1	51·2	H
	4	0		08·36	549·1	51·1	349·1	51·9	W
	6	0		08·43	549·3	51·5	341·5	52·1	H
	7	0		07·94	550·6	51·6	341·8	52·2	H
	8	0		07·60	551·8	51·6	341·2	52·1	H
	10	0		07·07	552·1	51·4	343·8	52·0	H

DECLINATION. Torsion removed, Feb. $15^{\mathrm{d}}\ 23\frac{1}{2}^{\mathrm{h}}$, −9°; $16^{\mathrm{d}}\ 5\frac{1}{2}^{\mathrm{h}}$, +5°. Effect of + 10° of torsion = − 0′·84.

BIFILAR. Observed 2^{m} after the Declination, $k=0·000135$. BALANCE. Observed 3^{m} after the Declination, $k=0·000010$.

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† Extra Observations made.

Feb. $16^{\mathrm{d}}\ 0^{\mathrm{h}}$—$2^{\mathrm{h}}$. Magnet with short scale in the declinometer box. 3^{h}—5^{h}. Deflecting bar vibrated in the declinometer box.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
23	18	0	25	05·89	551·4	50·7	339·0	50·9	W
	20	0		06·16	548·5	50·6	340·0	50·8	W
	22	0		06·86	546·9	50·5	343·4	50·7	H
	23	0		08·08	545·8	50·5	341·8	50·8	W
24	0	0		10·11	548·1	50·6	342·4	51·0	H
	1	0		10·09	549·9	50·8	343·0	51·2	H
	2	0		10·13	551·6	51·0	344·0	51·5	H
	4	0		08·36	551·3	51·6	345·9	52·4	W
	6	0		07·91	550·0	52·2	332·6	52·2	H
	7	0		07·74	551·9	52·3	337·9	52·7	H
	8	0		07·18	552·9	52·3	338·8	52·7	H
	10	0		06·66	550·1	52·1	341·6	52·5	H
	18	0	25	04·76	547·6	51·8	338·1	51·8	W
	20	0		05·27	546·3	51·6	340·2	51·4	W
	22	0		06·06	543·7	51·0	341·1	51·1	H
	23	0		08·46	543·4	51·0	338·7	51·1	W
25	0	0		10·47	545·0	51·1	339·0	51·3	H
	1	0		11·30	549·1	51·1	336·8	51·5	H
	2	0		11·08	550·6	51·3	338·5	51·7	H
	4	0		08·43	556·2	51·7	350·7	52·1	W
	6	0		11·55	559·0	51·7	358·5	52·1	H
	7	0		14·33	551·1	51·6	361·9	52·0	H
	8	0		11·77	545·9	51·6	368·2	51·7	H
	10	0†		15·76	522·6	51·1	416·9	51·0	H
	18	0	25	05·29	544·2	48·3	375·9	47·7	W
	20	0		06·68	540·2	47·7	379·0	47·1	W
	22	0		09·32	540·0	47·2	376·6	46·8	H
	23	0		09·29	542·2	47·1	373·1	46·8	H
26	0	0		10·56	548·9	47·1	369·5	47·1	W
	1	0		10·90	549·0	47·3	365·8	47·5	B
	2	0		11·64	546·4	47·6	371·9	48·2	W
	4	0		11·08	540·0	48·8	400·2	49·6	H
	6	0		08·43	557·2	50·0	401·9	50·6	H
	7	0†		07·37	546·4	50·2	418·0	51·0	H
	8	0		06·86	545·2	50·4	418·3	51·0	H
	10	0		02·35	541·4	50·5	382·4	51·0	H
	18	0	25	05·60	544·6	49·7	353·2	49·8	W
	20	0		09·89	539·6	49·5	352·3	49·6	W
	22	0		11·34	536·5	49·4	348·3	49·7	H
	23	0		09·32	543·5	49·6	348·4	50·0	W
27	0	0		11·10	547·0	49·8	352·4	50·5	H
	1	0		11·30	548·8	50·1	350·6	50·8	H
	2	0		11·39	550·8	50·6	359·6	51·5	H
	4	0		08·68	547·9	51·5	373·8	52·3	W
	6	0		06·86	548·2	52·0	370·1	52·6	H
	7	0	25	05·32	550·6	52·1	365·4	52·6	H
	8	0	24	56·63	551·4	52·0	366·7	52·7	B
	10	0	25	04·86	545·0	52·0	361·7	52·5	B
	18	0	25	03·74	545·9	50·6	359·9	50·5	W
	20	0		05·65	542·9	50·2	363·0	49·9	W
	22	0		07·04	538·8	49·7	366·1	49·5	H
	23	0		08·59	539·7	49·6	367·5	49·7	W
28	0	0		10·40	542·2	49·7	365·6	50·0	H
	1	0		11·74	546·8	50·0	365·7	50·4	H
28	2	0	25	12·87	550·8	50·2	341·9	51·0	H
	4	0		09·32	550·9	51·0	383·1	51·8	W
	6	0		06·79	548·8	51·5	379·2	52·2	H
	7	0		07·37	550·7	51·6	369·5	52·2	W
	8	0		06·76	552·0	51·6	368·0	52·2	H
	10	0		03·47	549·9	51·5	364·4	51·7	H
1	18	0	25	05·94	547·1	48·4	375·4	48·6	W
	20	0		05·49	545·0	48·3	375·2	48·5	W
	22	0		04·89	537·8	48·2	371·5	48·5	H
	23	0		07·78	540·1	48·2	367·6	48·7	H
2	0	0		09·98	534·2	48·4	366·1	49·0	H
	1	0		12·51	535·3	48·8	365·1	49·7	H
	2	0		15·24	544·3	49·4	365·2	50·2	H
	4	0		11·54	545·1	50·2	382·8	50·9	H
	6	0		07·45	549·6	50·4	386·2	50·9	H
	7	0		07·74	551·8	50·4	375·9	50·6	H
	8	0		07·57	552·0	50·2	372·6	50·5	H
	10	0		06·43	555·6	49·8	365·9	49·8	H
	18	0	25	05·76	547·1	47·8	372·3	47·7	H
	20	0		04·48	544·4	47·4	378·5	47·2	H
	22	0		05·35	538·1	47·2	375·7	47·1	W
	23	0		07·98	535·8	47·2	372·1	47·2	H
3	0	0		10·90	536·6	47·2	366·9	47·4	H
	1	0		13·14	541·7	47·4	362·9	47·8	W
	2	10		13·59	547·5	47·7	369·0	48·4	W
	4	0		10·74	552·9	48·4	383·4	49·2	W
	6	0		04·81	548·7	49·0	391·4	49·6	W
	7	0		07·65	553·5	49·2	382·5	49·8	W
	8	0		07·42	552·3	49·3	377·6	49·8	W
	10	0		06·23	553·1	49·4	371·0	49·9	W
	18	0	25	07·34	548·7	49·5	364·8	49·8	W
	20	0		04·91	549·2	49·4	362·1	49·8	W
	22	0		05·38	540·0	49·5	361·4	49·8	H
	23	0		08·28	536·6	49·6	362·0	49·9	W
4	0	0		11·67	539·7	49·6	357·0	50·0	H
	1	0		13·93	536·6	49·7	360·6	50·2	H
	2	0		15·85	543·6	49·8	363·4	50·2	H
	4	0		11·27	553·9	50·1	374·8	50·7	W
	6	0		06·73	553·2	50·4	379·6	51·0	H
	7	0		07·17	554·0	50·5	372·1	50·7	H
	8	0		06·76	553·9	50·4	368·3	50·5	H
	10	0		00·28	562·3	50·0	360·5	50·0	H
	18	0	25	05·77	550·3	47·8	357·5	47·3	W
	20	0		05·50	547·5	47·1	366·1	46·5	W
	22	0		07·91	540·6	46·6	372·7	46·2	H
	23	0		09·86	542·6	46·4	371·9	46·2	W
5	0	0		12·83	542·4	46·4	373·3	46·6	H
	1	2		12·72	546·9	46·7	373·4	47·0	H
	2	3		13·59	556·5	47·0	376·9	47·5	H
	4	0		07·51	553·4	48·4	385·6	49·3	W
	6	0		07·40	553·2	49·8	374·4	50·5	H
	7	0		07·60	552·6	50·3	368·1	50·7	H
	8	0		07·51	551·9	50·2	364·7	50·5	H
	10	0		06·79	550·2	48·8	361·2	49·7	H

DECLINATION. Magnet untouched, Feb. 16^{d}—Apr. 13^{d}.

BIFILAR. Observed 2^{m} after the Declination, $k=0·000135$. BALANCE. Observed 3^{m} after the Declination, $k=0·000010$.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
5	18	0	25	05·13	539·8	45·9	366·7	45·1	W
	20	0		05·02	550·0	44·9	373·4	44·0	W
	22	0		07·54	542·4	44·0	378·4	43·2	H
	23	0		08·75	540·5	43·7	376·7	43·2	W
6	0	0		12·23	544·5	43·5	370·8	43·2	H
	1	3		11·96	542·2	43·5	376·1	43·5	H
	2	0		11·69	547·3	43·6	378·9	44·0	H
	4	0		08·82	552·7	44·7	387·9	45·4	W
	6	0		06·86	552·0	45·6	385·1	46·2	H
	7	0		06·90	553·4	45·8	383·6	46·7	H
	8	0		07·13	554·6	45·8	380·8	46·3	H
	10	0		06·76	550·8	45·7	383·5	46·1	H
	18	0	25	05·79	551·5	44·2	376·4	44·2	W
	20	0		05·35	550·0	43·7	372·8	43·6	W
	22	0		05·82	544·9	43·3	376·9	43·5	H
	23	0		07·94	544·4	43·3	366·2	43·5	W
7	0	0		10·43	546·6	43·3	364·1	44·0	H
	1	0		11·96	549·7	43·8	370·2	44·8	H
	2	0		12·33	552·2	44·4	375·0	45·5	H
	4	0		10·30	551·0	45·9	386·1	46·9	W
	6	0		06·57	552·7	46·7	381·0	47·5	H
	7	0		08·08	555·3	46·9	376·8	47·5	H
	8	0		07·85	554·3	46·9	373·7	47·5	H
	10	0		04·71	547·5	46·9	382·4	46·7	H
	18	0	25	05·63	548·8	42·6	373·6	42·0	H
	20	0		05·06	546·7	41·7	375·9	40·8	H
	22	0		05·49	540·5	40·8	381·5	40·2	W
	23	0		07·00	538·4	40·7	383·4	40·5	H
	0	0		09·73	540·0	40·7	383·1	40·8	W
	1	0		11·74	542·9	40·8	380·2	41·2	H
	2	0		11·88	545·2	41·1	383·4	41·8	W
	4	0		09·29	551·2	42·1	392·9	43·0	H
	6	0		05·08	547·6	43·0	401·2	43·8	W
	7	0		07·34	551·2	43·3	394·7	44·3	W
	8	0		07·02	553·3	43·6	390·3	44·5	W
	10	0		06·63	553·8	43·9	385·9	44·7	W
	18	0	25	05·99	552·2	43·2	377·7	44·0	H
	20	0		05·79	552·5	43·2	376·2	43·8	H
	22	0		06·19	549·6	43·4	376·2	44·0	W
	23	0		08·58	548·5	43·6	376·0	44·5	H
	0	0		11·55	549·6	44·0	370·5	45·0	W
	1	0		12·76	549·1	44·6	367·7	45·7	H
	2	0		13·12	552·2	45·4	372·0	46·7	W
	4	0		10·56	552·8	47·0	382·4	48·4	H
	6	0		07·11	550·4	47·9	381·0	49·0	W
	7	0		08·09	550·3	48·0	375·4	48·9	W
	8	0		07·31	554·7	48·0	371·4	48·9	W
	10	0		06·29	553·4	47·8	367·6	48·5	W
	18	0	25	05·79	552·6	47·0	360·9	47·5	H
	20	0		05·13	550·1	46·8	363·1	47·2	H
	22	0		06·23	544·1	46·7	365·9	47·1	W
	23	0		08·14	546·5	46·8	367·1	47·3	H
	0	0		10·51	546·4	47·0	366·6	47·7	W
	1	0		11·37	550·3	47·4	362·8	48·2	H
11	2	0	25	11·51	552·9	48·0	364·3	49·0	W
	4	0		09·57	558·9	49·2	370·3	50·2	H
	6	0		08·56	555·3	50·4	366·5	51·1	W
	7	0		10·09	559·4	50·7	359·3	51·3	W
	8	0		07·45	556·1	50·7	362·1	51·0	W
	10	0		02·45	549·1	50·3	366·0	50·3	W
	18	0	25	05·79	548·9	46·7	356·3	46·0	H
	20	0		05·35	549·5	46·0	357·6	45·6	H
	22	0		04·98	540·3	45·7	361·8	45·5	W
	23	0		08·38	536·5	45·7	364·9	45·7	H
12	0	0		11·61	543·8	45·8	361·2	46·1	W
	1	0		13·64	547·4	46·1	357·3	46·7	H
	2	0		12·92	554·4	46·7	354·6	47·3	W
	4	0		09·66	555·0	48·1	371·9	49·0	H
	6	0		07·07	550·8	49·1	375·2	49·8	W
	7	0	25	06·56	548·4	49·5	370·7	50·0	W
	8	0	24	58·55	549·8	49·6	370·8	49·9	W
	10	0	25	03·82	553·8	49·5	364·5	49·8	W
	18	0	25	03·37	551·0	48·3	352·4	48·5	H
	20	0		09·39	546·5	48·0	349·8	48·3	H
	22	0		06·53	546·1	48·0	348·8	48·2	W
	23	0		08·58	548·1	47·9	331·7	48·2	H
13	0	0		11·61	549·9	48·0	328·3	48·4	W
	1	0		17·54	534·0	48·2	341·0	48·9	H
	2	0†		22·96	541·4	48·7	363·2	49·4	W
	4	0†		26·18	559·8	49·8	437·1	50·7	H
	6	0†		15·24	561·8	50·7	575·5	51·5	W
	7	0†		09·02	540·9	50·8	472·1	51·5	W
	8	0		05·43	540·9	50·8	454·9	51·5	W
	10	0†		10·11	522·6	50·4	396·5	50·6	W
	18	0†	25	02·32	545·2	48·2	345·3	48·2	H
	20	0†		14·65	531·7	47·9	319·5	48·0	H
	22	0		09·22	531·1	47·8	350·3	47·8	W
	23	0		11·44	529·5	47·8	363·9	48·2	H
14	0	0		17·53	527·4	48·0	368·6	48·6	W
	1	0		15·32	528·1	48·5	381·5	49·2	H
	2	0†		17·56	531·9	49·0	417·8	49·8	W
	4	0†		10·50	561·1	49·9	496·3	50·5	H
	6	0†	25	08·25	548·3	50·4	471·4	51·0	W
	7	0†	24	55·96	548·5	50·6	448·3	51·0	H
	8	0†	24	56·03	543·4	50·5	391·2	51·0	H
	10	0†	25	08·88	543·4	50·3	319·8	50·4	W
15	18	0	25	04·62	543·5	46·5	371·5	46·5	H
	20	0		05·92	546·1	46·2	373·5	46·7	H
	22	0		05·99	538·5	46·4	378·3	46·9	W
	23	0		09·76	539·1	46·6	377·1	47·1	H
16	0	0		11·84	536·7	46·7	372·3	47·2	W
	1	0		15·47	539·9	46·9	370·1	47·4	B
	2	0		19·55	552·8	47·1	368·8	47·7	W
	4	0		12·48	546·1	47·3	381·4	48·0	H
	6	0		08·66	549·5	47·6	396·1	47·8	W
	7	0†	25	03·00	553·2	47·3	411·3	47·3	W
	8	0†	24	59·04	549·0	47·0	407·0	47·1	W
	10	0†	25	10·30	552·8	46·3	264·4	46·5	W

DECLINATION. Magnet untouched, Feb. 16d—Apr. 13d.

BIFILAR. Observed 2m after the Declination, k=0·000135. BALANCE. Observed 3m after the Declination, k=0·000010.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
16	18	0	25	06·19	542·3	43·3	335·8	42·5	H
	20	0		04·64	544·0	42·2	353·6	41·2	H
	22	0		05·85	536·8	41·3	367·3	40·4	W
	23	0		10·23	534·7	41·0	368·1	40·4	H
17	0	0		13·32	529·2	40·8	379·1	40·4	W
	1	0		16·92	524·2	40·7	401·8	40·4	H
	2	0		22·25	537·4	40·6	422·1	40·4	W
	4	0		16·21	556·4	40·6	430·7	40·8	H
	6	0		07·27	544·8	41·0	439·7	41·4	W
	7	0		07·89	552·1	41·2	424·6	41·4	W
	8	0†		05·94	543·6	41·3	423·4	41·3	W
	10	0†		01·85	542·1	40·9	333·0	40·9	W
	18	0	25	07·57	549·4	38·8	352·8	38·5	H
	20	0		07·72	533·0	38·4	379·8	38·2	H
	22	0		04·89	536·3	38·1	390·7	37·8	W
	23	2		06·73	528·9	38·0	381·3	38·0	H
18	0	0		12·04	517·8	38·2	388·3	38·5	W
	1	0		14·64	542·0	38·7	385·8	39·2	H
	2	0		17·09	539·9	39·1	389·9	40·0	W
	4	0		13·39	541·8	40·2	410·0	41·0	H
	6	0		07·67	549·5	40·5	398·3	41·1	W
	7	0		06·79	548·6	40·4	395·7	40·9	W
	8	0	25	06·98	550·7	40·1	387·4	40·5	W
	10	0	24	58·29	574·8	39·6	364·9	39·7	W
	18	0	25	05·27	543·9	35·3	376·8	34·0	H
	20	0		04·61	540·4	33·7	380·7	32·2	H
	22	0		05·58	533·2	32·4	377·5	30·9	W
	23	0		08·85	530·0	32·0	375·5	31·0	H
19	0	0		10·40	531·1	31·9	377·3	31·4	W
	1	0		12·28	534·3	32·0	381·8	32·3	H
	2	0		14·15	543·9	32·6	387·4	33·4	W
	4	0		11·54	550·4	35·0	406·1	36·4	H
	6	0		08·99	550·4	37·3	404·8	38·2	W
	7	0		04·05	554·7	38·0	404·3	38·7	W
	8	0		06·86	550·9	38·2	394·8	38·7	W
	10	0		05·60	557·9	37·9	378·8	38·3	W
	18	0	25	05·15	548·6	35·3	373·8	35·1	H
	20	0		04·17	548·1	34·6	379·1	34·2	H
	22	0		03·52	534·1	34·2	377·7	34·0	W
	23	0		07·05	529·2	34·2	376·9	34·4	H
20	0	0		11·82	527·8	34·3	374·9	34·8	W
	1	6		16·75	534·3	34·8	375·2	35·6	H
	2	0		15·89	539·6	35·4	379·7	36·6	W
	4	0		13·36	552·3	37·2	389·9	38·5	H
	6	0		08·18	555·5	39·1	398·5	40·3	W
	7	0		07·87	553·4	40·0	399·2	41·0	H
	8	0		07·98	552·9	40·2	391·3	41·0	H
	10	0		02·13	556·6	39·8	375·4	40·3	W
	18	0	25	04·64	547·4	35·5	365·8	34·8	H
	20	0		02·30	545·9	34·8	375·1	34·5	H
	22	0		04·01	538·7	34·7	371·9	34·4	W
	23	0		03·77	539·2	34·6	368·4	34·6	W
21	0	0		09·39	540·8	34·7	365·4	35·0	W
	1	6		13·09	540·6	34·9	369·7	35·5	B
21	2	0	25	14·37	539·8	35·1	371·9	35·7	W
	4	0		11·00	547·7	35·4	388·5	36·0	H
	6	0		09·37	552·7	36·0	399·4	36·8	W
	7	4		07·84	558·4	36·3	397·8	37·1	W
	8	0		04·55	552·0	36·5	403·0	37·2	W
	10	10		06·06	548·1	36·6	397·1	37·2	W
22	18	0	25	03·54	551·1	38·3	365·0	38·2	H
	20	0		03·00	547·2	37·8	371·8	37·5	H
	22	0		03·79	534·8	37·4	376·2	37·5	W
	23	0		06·66	533·7	37·5	370·1	37·8	H
23	0	0		10·30	534·5	37·8	365·4	38·5	W
	1	0		12·45	538·3	38·4	365·6	39·5	H
	2	0		13·39	542·8	39·0	371·3	40·3	W
	4	0		10·83	550·7	40·2	380·3	41·5	H
	6	0		08·21	562·0	41·2	377·7	42·4	W
	7	0		07·20	559·9	41·6	375·6	42·6	W
	8	0		07·55	557·7	41·7	376·1	42·8	W
	10	0		06·50	553·4	41·8	373·9	42·6	W
	18	0	25	04·78	549·9	40·7	363·3	41·2	H
	20	0		02·75	548·4	40·4	367·4	40·7	H
	22	0		03·60	531·5	40·3	367·7	40·8	W
	23	0		07·89	534·4	40·5	370·3	41·3	W
24	0	0		11·84	535·0	40·9	363·6	41·9	W
	1	0		14·73	538·9	41·6	364·3	42·7	B
	2	0		15·47	544·8	42·3	363·5	43·6	W
	4	0		15·41	561·0	44·0	370·1	45·5	H
	6	0		07·67	557·9	45·5	378·4	46·6	W
	7	0		07·02	548·7	45·8	384·3	46·8	W
	8	0		05·72	554·9	46·1	385·0	47·0	W
	10	0		06·32	554·5	46·0	370·9	46·7	W
	18	0	25	04·22	550·7	43·2	356·7	43·3	H
	20	0		01·41	551·4	42·7	359·4	42·5	H
	22	0		02·79	537·1	42·2	359·0	42·2	W
	23	0		06·39	532·0	42·0	358·2	42·2	H
25	0	0		10·23	533·9	42·1	349·3	42·6	W
	1	0		13·43	537·4	42·3	345·3	43·0	B
	2	0		14·01	547·0	42·7	350·8	43·7	W
	4	0		09·46	555·7	44·0	362·9	45·2	H
	6	0		06·44	557·6	45·7	368·6	46·8	W
	7	0		05·06	560·9	46·4	363·4	47·3	W
	8	0		06·41	560·2	46·8	356·5	47·5	W
	10	0		06·76	560·4	46·9	353·3	47·3	W
	18	0	25	05·79	553·7	43·5	347·9	43·3	H
	20	0		08·73	553·9	42·7	346·9	42·2	H
	22	0		04·58	544·6	42·1	354·8	41·9	W
	23	0		09·24	543·0	42·0	348·2	42·0	B
26	0	0†		16·36	524·2	42·0	353·7	42·3	B
	1	0		15·81	541·3	42·3	349·0	43·0	H
	2	0†		22·10	565·9	42·8	354·6	43·6	W
	4	0		09·66	556·2	44·0	395·1	45·6	H
	6	0		05·69	555·0	45·3	379·6	46·2	W
	7	0		06·24	551·2	45·6	375·8	46·4	W
	8	0		04·28	553·0	45·6	374·8	46·5	W
	10	5		00·65	553·8	45·6	353·7	46·1	W

DECLINATION. Magnet untouched, Feb. 16^{d}—April 13^{d}.

BIFILAR. Observed 2^{m} after the Declination, $k=0·000135$. BALANCE. Observed 3^{m} after the Declination, $k=0·000010$.

† Extra Observations made.

ingen Time eclina- Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
26	18	0	25	06·29	552·6	43·2	349·5	43·3	H
	20	0		04·58	548·1	42·8	357·4	42·8	H
	22	0		03·20	535·0	42·6	366·3	42·8	W
	23	0		08·01	529·4	42·7	362·8	43·0	H
27	0	0		09·77	536·1	42·8	360·8	43·4	W
	1	0		13·52	542·7	43·1	361·5	43·9	B
	2	0		14·37	549·7	43·7	363·3	44·6	W
	4	0		09·39	550·6	45·0	389·5	46·0	B
	6	0	25	06·01	561·8	46·2	382·1	47·1	W
	7	0	24	59·16	543·0	46·7	388·9	47·4	W
	8	0	25	03·48	554·8	46·9	378·2	47·5	W
	10	0		06·90	554·0	46·8	361·6	47·2	W
	18	0	25	05·02	551·4	44·4	351·6	44·3	H
	20	0		02·45	547·9	43·8	356·8	43·7	H
	22	0		03·50	530·6	43·5	356·7	43·5	W
	23	0		07·47	521·0	43·4	353·6	43·7	H
2	0	0		12·67	526·5	43·6	346·0	44·1	W
	1	0		16·59	535·0	43·8	345·9	44·5	B
	2	0		15·65	545·0	44·2	357·0	45·0	W
	4	0		12·31	548·3	45·0	381·6	46·0	H
	6	0		07·13	556·2	45·7	389·6	46·3	W
	7	0		07·34	557·9	45·9	372·6	46·3	W
	8	0		07·20	556·2	45·9	368·2	46·2	W
	10	0		05·52	553·5	45·4	361·9	45·4	W
2	18	0	25	06·06	554·3	41·8	353·3	41·7	H
	20	0		02·15	549·0	41·3	360·3	41·3	H
	22	0		04·35	533·0	41·2	364·6	41·4	W
	23	0		08·48	526·6	41·2	358·9	41·8	H
3	0	0		10·72	527·5	41·7	352·3	42·7	W
	1	0		18·63	529·1	42·5	350·1	43·9	H
	2	0		19·88	538·5	43·6	351·9	45·0	W
	4	0†		05·32	561·1	45·7	394·3	47·2	H
	6	0		08·68	550·9	47·5	387·8	48·7	W
	7	0		08·18	555·8	47·9	373·4	48·8	W
	8	0		05·62	555·4	48·1	373·3	48·7	W
	10	0		06·23	554·1	47·6	362·2	48·1	W
	18	0	25	05·52	552·4	44·8	357·1	44·7	H
	20	0		01·95	549·3	44·1	364·3	43·5	H
	22	0		02·05	536·1	43·4	363·8	43·2	W
	23	0		05·85	532·4	43·2	360·9	43·3	H
3	0	0		09·76	530·2	43·3	350·8	43·7	W
	1	0		13·64	533·6	43·7	350·1	44·5	H
	2	0		16·75	539·0	44·3	351·3	45·2	W
	4	0		11·98	552·4	45·7	363·9	46·7	H
	6	0		07·74	554·3	46·7	367·0	47·5	W
	7	0		07·74	557·7	46·9	364·8	47·7	W
	8	0		07·38	558·9	47·0	360·3	47·7	W
	10	0		06·83	558·8	47·0	356·5	47·5	W
	18	0	25	04·14	555·5	45·7	348·4	46·0	H
	20	0		03·25	549·8	45·4	349·1	45·7	H
	22	0		02·96	539·4	45·6	352·2	46·0	W
	23	0		03·40	556·5	45·7	352·9	46·2	H
	0	0		11·79	525·6	45·9	339·7	46·4	W
	1	0		16·41	541·5	46·0	332·4	46·6	H

Gottingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
1	2	0	25	16·35	544·0	46·1	332·8	46·7	W
	4	0		12·40	555·1	46·4	350·6	47·2	H
	6	0		07·72	551·7	47·1	372·2	47·8	W
	7	0		06·86	553·5	47·3	374·6	48·0	W
	8	0		07·81	556·1	47·4	366·8	48·0	W
	10	0		06·03	555·2	47·4	361·8	48·0	W
	18	0	25	09·53	562·1	46·2	332·2	46·4	H
	20	0		03·94	552·3	45·8	342·0	46·0	H
	22	0		04·78	536·6	45·9	354·4	46·3	W
	23	3		05·99	534·0	46·3	349·8	46·9	W
2	0	0		10·21	536·1	46·8	340·2	47·7	W
	1	0		14·96	534·9	47·4	332·6	48·5	H
	2	0		16·25	538·4	48·3	341·6	49·5	W
	4	0		11·48	555·3	50·3	356·9	51·5	H
	6	0		07·74	562·3	51·4	349·9	52·5	W
	7	0		06·70	561·3	51·7	346·4	52·6	W
	8	0		06·79	558·8	51·8	345·7	52·5	W
	10	0		06·66	559·8	51·4	332·1	51·8	W
	18	0	25	04·14	554·4	49·0	347·5	48·9	H
	20	0		00·50	553·2	48·5	349·7	48·3	H
	22	0		07·34	543·7	48·0	331·6	47·7	W
	23	0		10·43	535·5	47·9	331·3	47·5	B
3	0	0		13·46	537·7	47·7	318·7	47·4	W
	1	0		14·70	542·2	47·7	324·1	47·2	H
	2	0		16·36	545·9	47·4	326·9	47·1	W
	4	0		13·19	547·1	47·2	346·4	47·0	H
	6	0		07·17	555·7	47·1	364·6	46·9	W
	7	0		06·10	553·8	47·0	362·8	46·8	W
	8	0		06·61	553·1	46·9	355·7	46·6	W
	10	0		05·94	550·9	46·3	361·7	45·7	W
	18	0	25	04·21	550·7	42·2	365·7	41·2	H
	20	0		02·08	548·7	41·2	376·3	40·2	H
	22	0		01·48	534·3	40·7	380·8	40·1	W
	23	0		04·41	532·0	40·7	382·1	40·5	H
4	0	0		07·67	531·5	40·9	375·1	41·1	B
	1	0		14·40	539·8	41·3	358·2	41·8	B
	2	0		17·39	546·7	41·8	355·4	42·4	B
	4	0		13·32	557·0	42·3	371·5	43·0	H
	6	0		06·59	552·6	42·6	397·8	43·0	W
	7	0		04·07	549·2	42·5	412·6	42·8	W
	8	0		06·54	554·7	42·3	397·2	42·5	W
	10	0		02·77	554·2	41·9	389·4	42·0	W
5	18	0	25	04·73	548·1	40·2	338·1	40·2	W
	20	0		02·48	551·2	39·9	340·6	40·0	W
	22	0		03·60	543·7	40·0	358·2	40·4	H
	23	0		07·94	535·4	40·3	361·6	41·0	W
6	0	0		18·60	530·2	40·9	367·3	42·0	H
	1	0		17·09	536·3	41·5	368·0	42·4	B
	2	0		16·33	554·7	42·0	402·4	43·1	W
	4	0†	25	20·90	585·6	42·8	432·3	43·7	H
	6	0†	24	56·37	582·4	43·2	524·4	44·1	H
	7	0	25	11·98	566·0	43·3	507·2	44·1	H
	8	0†	24	46·19	542·7	43·3	462·7	44·0	H
	10	0†	25	15·31	431·3	43·3	84·0	44·3	H

DECLINATION. Magnet untouched, Feb. 16^{d}—April 13^{d}.

BIFILAR. Observed 2^{m} after the Declination, k=0·000135. BALANCE. Observed 3^{m} after the Declination, k=0·000010.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
6	18	0	25	01·66	535·9	42·1	260·7	42·2	W
	20	0		01·86	543·8	41·7	342·1	41·8	W
	22	0†		15·39	516·8	41·4	366·9	41·7	H
	23	0		10·31	538·1	41·6	361·3	41·6	W
7	0	0		12·80	538·0	41·7	366·1	41·7	H
	1	0		13·25	544·4	42·0	374·4	43·0	H
	2	0		13·16	541·2	42·4	376·4	43·3	H
	4	0		06·51	552·8	42·8	391·2	43·7	W
	6	0	25	06·03	551·0	43·3	404·4	44·2	H
	7	0†	24	53·17	561·7	43·4	419·0	44·3	H
	8	0	25	02·19	549·6	43·5	409·4	44·5	H
	10	0		03·50	540·6	43·4	384·3	44·2	H
	18	0	25	07·96	550·3	42·6	301·1	43·0	W
	20	0		04·64	538·3	42·5	350·8	42·9	W
	22	0		06·26	530·1	42·4	375·1	43·0	H
	23	0		06·53	531·9	42·5	373·1	43·2	W
8	0	0		10·27	533·0	42·7	370·9	43·5	H
	1	0		13·32	528·6	43·0	376·1	43·9	H
	2	0		15·44	537·0	43·3	379·8	44·5	H
	4	0		10·63	549·4	44·3	386·3	45·3	W
	6	0		06·79	564·4	44·8	390·1	45·5	H
	7	0	25	03·67	557·4	45·0	399·9	45·6	H
	8	0	24	59·64	550·2	44·9	395·9	45·5	H
	10	0	25	06·19	547·4	44·7	379·8	45·2	H
	18	0	25	04·48	544·3	42·9	354·1	42·7	W
	20	0		00·96	545·4	42·3	365·2	42·3	W
	22	0		02·08	529·3	41·8	364·7	41·9	H
	23	0		05·35	526·0	41·9	367·8	42·3	W
9	0	0		08·83	526·1	42·2	370·2	43·2	H
	1	0		13·16	532·1	42·7	368·8	44·0	H
	2	0		14·15	540·3	43·7	370·7	45·0	H
	4	0		11·34	553·2	45·2	374·3	46·4	W
	6	0		05·90	553·6	46·3	375·7	47·5	H
	7	0		05·03	557·5	46·6	372·0	47·6	H
	8	0		04·51	553·9	46·8	371·0	47·7	H
	10	0		04·95	553·1	46·7	366·5	47·5	H
	18	0	25	05·42	548·7	44·3	355·5	44·0	W
	20	0		02·59	547·4	43·7	363·9	43·4	W
	22	0		02·13	535·2	43·4	370·0	43·7	H
	23	0		05·53	531·1	43·5	367·1	44·2	W
10	0	0		08·65	533·8	44·0	363·8	45·2	H
	1	0		11·12	537·8	44·8	358·7	46·2	H
	2	0		13·22	546·1	45·7	354·2	47·2	H
	4	0		12·96	562·4	47·3	360·1	48·5	W
	6	0		05·83	570·0	48·3	399·7	49·5	H
	7	0		07·84	573·8	48·8	411·7	49·7	H
	8	0†		02·37	548·8	49·0	443·8	50·0	H
	10	0		05·70	556·1	49·0	383·2	49·5	H
	18	0	25	06·64	536·8	45·6	261·0	45·3	W
	20	0		03·25	548·1	44·9	291·1	44·5	W
	22	0		05·72	524·8	44·3	325·7	44·2	H
	23	5		08·28	523·0	44·2	328·8	44·3	W
11	0	0		11·00	526·0	44·2	339·1	44·5	H
	1	0		14·37	527·1	44·3	347·6	44·8	H
11	2	0	25	17·42	533·0	44·5	354·1	45·2	H
	4	0		13·69	540·9	45·3	368·3	46·0	W
	6	0		09·87	568·7	46·0	367·4	46·7	H
	7	0		02·99	555·1	46·3	389·4	47·0	H
	8	0		05·15	561·2	46·4	380·3	47·2	H
	10	0		07·78	555·8	46·6	361·0	47·2	H
12	18	0	25	02·55	549·4	50·2	338·0	50·2	W
	20	0	24	59·98	547·1	50·0	337·9	50·0	W
	22	0	25	03·35	532·2	50·0	336·9	50·0	H
	23	0		05·69	533·4	50·0	332·3	50·3	W
13	0	0		13·30	522·5	50·1	331·6	50·5	H
	1	0		16·52	541·3	50·4	329·7	51·0	H
	2	0		16·75	545·3	50·8	345·9	51·7	H
	4	0		17·89	559·5	52·0	369·8	52·9	W
	6	0		16·28	567·0	53·0	426·0	54·0	H
	7	0†		13·72	555·9	53·4	470·8	54·5	H
	8	0		02·80	553·9	53·4	452·7	54·7	H
	10	0		10·06	553·3	53·2	266·9	54·0	H
	18	0	25	02·40	546·5	51·7	332·0	51·7	W
	20	0		00·60	543·8	51·2	341·7	51·0	W
	22	0		01·54	535·9	50·8	341·9	50·8	H
	23	0		05·98	533·1	50·9	341·4	51·0	W
14	0	0		10·99	533·1	51·2	343·1	51·7	H
	1	0		16·32	531·0	51·5	344·6	52·3	H
	2	0		16·91	536·8	51·8	348·8	52·7	H
	4	0		14·51	561·3	52·8	358·8	54·0	H
	6	0		07·35	551·6	54·0	360·5	55·0	H
	7	0		06·07	559·5	54·2	353·9	55·2	H
	8	0†	25	03·93	562·2	54·4	370·1	55·2	B
	10	0†	24	48·27	554·6	54·6	342·6	55·4	H
	18	0	25	01·04	552·7	52·6	332·6	52·4	W
	20	0		01·49	548·9	52·0	333·7	51·6	W
	22	0		01·68	530·2	51·4	343·6	50·9	H
	23	0		05·35	529·3	51·2	342·9	50·8	W
15	0	0		13·23	533·7	51·1	338·9	50·7	H
	1	0		15·88	530·3	51·8	339·7	50·5	H
	2	0		17·83	546·3	50·7	342·7	50·4	H
	4	0		16·15	540·0	50·4	370·8	50·1	W
	6	0		09·08	554·8	50·1	373·3	49·7	H
	7	0		06·06	561·4	50·0	378·2	49·7	H
	8	0	25	00·87	551·4	49·7	384·3	49·5	H
	10	0	24	59·90	544·0	49·5	374·6	49·3	H
	18	0	25	04·04	549·7	48·1	302·4	47·8	W
	20	0		07·32	546·4	47·8	278·0	47·7	W
	22	0		08·82	515·6	47·7	321·6	47·9	H
	23	0†		08·82	505·9	47·8	340·3	48·0	W
16	0	0		15·02	524·3	48·0	409·4	48·5	H
	1	0		19·10	529·4	48·4	394·0	49·0	H
	2	0		19·51	548·6	48·7	412·5	49·5	H
	4	0†		15·94	566·2	49·7	490·5	50·3	W
	6	0†	25	10·80	560·2	50·6	501·2	51·5	H
	7	0†	24	59·32	591·9	51·1	458·3	52·0	H
	8	0†	25	00·53	557·6	51·3	427·1	52·0	H
	10	0†	24	44·73	585·5	51·6	253·9	52·5	H

DECLINATION. Torsion removed; Apr. $13^{d}\ 22\frac{1}{2}^{h}$, + 3°; $14^{d}\ 8\frac{1}{2}^{h}$, + $8\frac{1}{2}$°; $14^{d}\ 20^{h}$, + $3\frac{1}{4}$°. Effect of + 10° of Torsion, $= -0'\!\cdot\!84$.
BIFILAR. Observed 2^{m} after the Declination, $k = 0{\cdot}000135$. BALANCE. Observed 3^{m} after the Declination, $k = 0{\cdot}000010$.

Apr. $13^{d}\ 23^{h}$—$14^{d}\ 7^{h}$. Magnet with the short scale in the declinometer box; $14^{d}\ 7\frac{1}{2}^{h}$ the deflecting bar vibrated in the declinometer box. See *Introduction*, p. xvi.

† Extra Observations made.

tingen a Time eclina- Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	'	Sc. Div.	°	Mic. Div.	°	
1	18	0	25	03·09	550·1	50·7	288·4	50·8	W
	20	0†		09·27	519·3	50·4	328·0	50·5	W
	22	0		09·35	531·0	50·1	314·8	50·3	H
	23	0		08·95	526·6	50·0	318·8	50·2	W
1	0	0		11·41	524·1	50·0	325·2	50·2	H
	1	0		14·50	531·4	50·0	328·6	50·2	H
	2	0		16·80	539·1	50·0	336·8	50·5	H
	4	0		09·76	555·9	50·0	378·9	50·4	W
	6	0		07·40	566·3	50·0	380·1	50·3	H
	7	0		00·91	560·6	50·0	382·5	50·2	H
	8	0		06·03	556·3	49·9	371·9	50·2	H
	10	0		02·01	547·2	49·7	333·4	50·0	H
	18	0	25	04·64	544·1	48·6	346·9	48·5	W
	20	0		00·84	543·8	48·3	356·4	48·1	W
	22	0		04·44	528·0	48·1	358·4	48·2	H
	23	0		05·27	528·9	48·0	356·2	48·3	W
1	0	0		07·84	525·9	48·0	352·9	48·5	H
	1	0		12·51	527·3	48·3	348·3	49·0	H
	2	0		14·13	528·9	48·7	345·1	49·2	H
	4	0		10·77	543·6	49·4	351·8	49·9	W
	6	0		07·13	554·2	49·8	369·4	50·2	H
	7	0		06·53	556·8	49·9	373·6	50·3	H
	8	0		06·14	558·1	49·8	372·2	50·2	H
	10	0		06·39	551·7	49·7	360·5	49·7	H
1	18	0	25	01·95	544·5	44·7	324·4	44·0	W
	20	0		01·61	549·0	44·1	330·7	43·8	W
	22	0		03·55	535·7	44·1	350·1	44·5	H
	23	0		05·52	532·2	44·3	351·5	44·7	W
2	0	0		08·92	532·3	43·7	350·7	45·0	H
	1	0		12·11	535·0	45·2	345·8	46·0	H
	2	0		13·81	536·4	45·8	346·2	46·7	H
	4	0		11·91	542·7	47·4	358·2	48·3	W
	6	0		09·02	557·0	48·7	357·3	49·5	H
	7	0		10·06	565·4	49·2	368·9	49·7	H
	8	0		00·85	563·5	49·7	390·5	49·8	W
	10	0		04·58	556·8	49·4	370·9	49·2	H
	18	0	25	02·42	547·2	45·8	359·6	45·1	W
	20	0		02·23	543·4	45·0	362·9	44·3	W
	22	0		04·46	534·2	44·6	363·0	44·5	H
	23	0		06·03	531·0	44·6	362·1	44·7	H
2	0	0		09·62	533·2	44·8	364·2	46·5	H
	1	0		12·31	540·1	45·5	343·7	46·2	B
	2	0		14·15	542·3	46·2	344·1	47·2	H
	4	0		11·21	550·5	47·5	357·9	48·3	W
	6	0		07·98	541·1	48·2	357·3	48·8	H
	7	0		05·22	555·1	48·2	365·1	49·0	H
	8	0		06·01	557·9	48·2	363·0	48·8	H
	10	0		06·79	555·3	47·9	359·5	48·3	H
	18	0	25	02·39	543·8	45·0	344·9	44·4	W
	20	0		04·49	552·1	44·3	342·9	43·8	W
	22	0		04·41	538·1	44·0	359·8	44·0	H
	23	4		06·53	532·4	44·0	362·6	44·3	W
2	0	0		10·77	541·8	44·0	347·5	44·6	H
	1	0		15·78	532·6	44·2	350·7	44·7	H

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	'	Sc. Div.	°	Mic. Div.	°	
22	2	0	25	15·27	545·5	44·7	352·5	45·3	W
	4	0		11·69	555·2	45·5	372·8	46·1	W
	6	0		07·08	585·7	46·5	395·0	47·0	H
	7	0		07·07	566·2	47·0	419·9	47·5	H
	8	0		03·60	558·5	47·3	419·4	47·7	H
	10	0		06·32	554·6	47·3	384·4	47·2	H
	18	0	25	02·70	543·6	45·1	368·6	45·0	W
	20	0		01·04	541·1	44·9	369·2	44·8	W
	22	0		02·62	531·4	45·0	364·9	45·2	H
	23	0		05·32	532·4	45·1	358·0	45·5	W
23	0	0		08·95	539·1	45·4	356·5	46·0	H
	1	0		11·95	540·4	45·7	350·3	46·2	H
	2	0		14·84	541·3	46·0	350·1	46·7	H
	4	0		09·82	552·1	47·0	357·2	47·8	W
	6	0		07·40	559·9	47·7	360·9	48·3	H
	7	0		06·17	558·7	47·7	361·5	48·3	H
	8	0		06·04	558·6	47·7	362·2	48·3	H
	10	0		06·90	563·2	47·4	353·1	47·6	H
	18	0	25	04·86	557·7	46·0	349·0	46·0	W
	20	0		02·25	554·0	45·7	357·4	45·8	W
	22	0		02·59	537·0	45·7	360·8	45·8	H
	23	0		04·84	534·1	45·7	360·2	46·0	W
24	0	0		08·92	529·4	45·7	358·6	46·1	H
	1	0		13·29	536·7	45·9	351·4	46·2	B
	2	0		15·38	538·8	46·0	354·2	46·4	H
	4	0		11·54	534·9	46·2	361·0	46·6	W
	6	0		07·47	571·4	46·3	369·2	46·8	H
	7	0		06·43	573·9	46·4	382·2	46·8	H
	8	0		05·72	560·1	46·5	379·7	46·8	H
	10	0		06·23	564·0	46·5	360·6	46·7	H
	18	0	25	08·48	549·6	46·0	285·7	46·1	W
	20	0		05·82	544·1	45·8	313·0	46·0	W
	22	0		06·21	535·0	45·9	340·3	46·5	H
	23	0		05·79	529·5	46·4	348·7	47·0	W
25	0	0		08·86	531·8	46·9	350·6	47·7	B
	1	0		12·38	533·2	47·5	352·6	48·5	H
	2	0		14·64	544·8	48·2	353·7	49·4	H
	4	0		11·81	549·3	49·8	366·4	50·7	W
	6	0		07·40	557·4	51·1	370·0	52·2	H
	7	0		06·21	565·7	51·7	365·8	52·4	H
	8	0		04·51	566·2	51·9	372·2	52·4	H
	10	0		04·42	556·0	51·5	360·0	51·7	H
26	18	0	25	03·09	549·2	43·4	355·4	42·2	W
	20	0		03·06	548·1	42·7	358·4	41·7	W
	22	0		05·13	539·4	42·5	368·6	42·2	H
	23	0		07·89	532·5	42·6	370·6	42·6	W
27	0	0		10·31	528·0	42·8	372·3	43·1	H
	1	0		11·88	537·6	43·2	364·3	43·7	H
	2	0		15·14	552·4	43·5	370·9	44·2	H
	4	0		07·34	550·1	44·3	399·7	45·0	W
	6	0		06·86	547·9	45·0	400·6	45·7	H
	7	0		06·27	562·8	45·2	393·1	46·0	H
	8	0		06·46	561·2	45·2	384·7	46·0	H
	10	0		06·39	555·0	45·2	377·2	45·7	H

DECLINATION. Magnet untouched, April 14d, 1846—May 1847.

BIFILAR. Observed 2m after the Declination, $k=0·000135$. BALANCE. Observed 3m after the Declination, $k=0·000010$.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
27	18	0	25	04·59	547·6	43·1	361·3	43·0	W
	20	0		04·04	540·8	42·7	369·6	42·5	W
	22	0		04·17	532·7	42·7	376·8	43·0	H
	23	0		06·73	526·1	42·9	377·0	43·6	W
28	0	0		08·38	526·9	43·4	373·0	44·4	H
	1	0		11·01	534·2	44·0	366·7	45·2	H
	2	0		12·90	543·5	44·7	362·5	45·7	H
	4	0		09·35	551·7	45·8	371·1	46·7	W
	6	0		06·81	558·1	46·7	376·1	47·5	H
	7	0		05·96	561·5	46·9	377·8	47·7	H
	8	0		06·16	559·9	47·3	375·4	47·8	W
	10	0		05·15	558·7	47·1	365·8	47·5	H
	18	0	25	02·35	550·0	43·8	365·5	43·2	W
	20	0		01·58	546·5	43·3	368·9	42·7	W
	22	0		01·88	539·8	43·0	376·2	43·2	H
	23	0		03·32	532·7	43·3	373·9	43·7	W
29	0	0		14·18	541·3	43·7	369·8	44·7	H
	1	0		10·30	536·4	44·5	368·0	45·6	H
	2	0		12·15	553·0	45·4	367·4	46·5	H
	4	0		12·08	554·3	47·3	360·0	48·3	W
	6	0		09·60	557·4	48·7	373·0	49·7	H
	7	0		08·21	560·1	49·3	374·1	50·4	H
	8	0		08·01	563·8	50·2	360·6	50·7	H
	10	0		06·59	559·7	50·2	355·1	50·7	H
	18	0	25	00·89	553·1	47·5	341·9	47·0	W
	20	0		01·68	552·1	46·9	346·1	46·5	W
	22	0		03·63	550·2	46·7	354·4	46·6	H
	23	0		05·80	541·0	46·7	357·2	46·8	H
30	0	0		10·01	530·0	46·9	361·5	47·3	H
	1	6		11·77	538·2	47·3	350·8	48·0	H
	2	0		13·52	552·6	47·8	347·7	48·5	H
	4	0		10·23	552·9	48·6	368·0	49·3	W
	6	0		09·02	550·2	49·3	373·9	50·0	H
	7	0		07·20	559·9	49·7	369·4	50·3	H
	8	0		06·53	560·4	49·8	368·8	50·5	H
	10	0		05·89	558·6	49·8	358·4	50·2	H
	18	0	25	03·50	555·3	48·6	351·0	48·6	W
	20	0		04·56	552·3	48·3	355·2	48·4	W
	22	0		05·06	541·9	48·4	353·9	48·8	H
	23	0		07·31	533·8	48·7	353·3	49·4	W
1	0	0		09·53	529·8	49·4	349·3	49·8	H
	1	0		12·45	533·6	49·8	339·8	50·7	H
	2	0		13·36	542·4	50·4	336·5	51·3	H
	4	0		10·81	552·6	51·6	350·0	52·6	W
	6	0		06·03	559·2	52·5	358·4	53·5	H
	7	0		06·06	560·0	52·7	357·7	53·7	H
	8	0		06·23	559·7	52·8	353·7	53·8	H
	10	0		05·79	556·3	52·8	346·6	53·7	H
	18	0	25	03·02	553·3	52·9	342·9	53·3	W
	20	0		03·23	552·3	52·9	342·0	53·3	W
	22	0		03·14	543·4	53·0	337·4	53·8	H
	23	0		06·21	531·2	53·3	339·3	54·2	W
2	0	0		08·34	531·9	53·7	333·3	54·7	H
	1	0		11·10	536·7	54·2	321·7	55·2	H
2	2	0	25	11·86	540·6	54·8	312·9	55·9	H
	4	0		10·61	557·4	56·4	340·9	57·5	W
	6	0		08·08	561·1	57·4	366·6	57·7	H
	7	0	25	06·90	568·6	57·4	377·3	58·2	H
	8	0	24	59·83	563·9	57·3	388·5	58·0	H
	10	0	25	05·23	559·0	56·8	376·4	57·2	H
3	18	0	25	07·00	522·4	53·3	300·9	52·5	H
	20	0	24	59·74	545·0	52·7	297·5	51·7	H
	22	0	25	05·32	531·7	52·0	322·9	51·0	W
	23	0		07·78	528·6	51·7	327·4	50·7	H
4	0	0		13·16	532·8	51·4	328·1	50·3	W
	1	0		15·78	537·6	51·1	330·6	50·2	H
	2	0		18·92	551·2	50·7	335·6	49·7	W
	4	0†		21·32	579·3	50·1	418·1	49·3	H
	6	0		12·23	564·0	49·7	487·4	48·8	W
	7	0		08·28	569·4	49·3	460·5	48·5	W
	8	0†	25	04·88	573·1	49·0	504·2	48·2	W
	10	0†	24	51·59	490·4	48·5	291·1	47·8	W
	18	0	25	03·06	529·1	47·2	234·7	46·8	H
	20	0		02·84	543·5	47·0	293·3	46·9	H
	22	0		05·72	535·7	47·4	323·2	47·7	W
	23	0		07·27	533·6	48·0	332·0	48·7	H
5	0	0		10·41	535·8	48·7	327·0	49·5	W
	1	0		13·16	536·7	49·4	327·8	50·2	H
	2	5		15·25	540·5	50·4	338·6	51·5	W
	4	0		13·57	557·2	52·2	356·9	53·5	H
	6	0		09·17	564·9	53·9	419·1	55·0	W
	7	0		07·37	578·4	54·4	427·8	55·2	H
	8	0		04·75	560·9	54·4	420·7	55·2	H
	10	0		03·70	546·4	54·0	393·9	54·7	W
	18	0	25	03·47	544·0	51·4	285·4	51·2	H
	20	0		03·70	533·8	51·0	333·6	50·7	H
	22	0		04·21	533·8	50·8	356·4	50·7	W
	23	0		05·22	530·6	50·8	367·7	51·2	H
6	0	0		08·73	532·7	51·0	365·4	51·4	W
	1	0		10·75	548·4	51·3	362·3	51·8	H
	2	0		11·42	543·1	51·7	371·7	52·4	W
	4	0		09·35	552·0	52·8	389·5	53·8	H
	6	0		07·67	566·6	54·0	401·1	55·1	W
	7	0		07·00	555·9	54·7	400·8	55·5	W
	8	0		02·64	570·5	54·9	392·3	55·7	W
	10	0		03·84	548·7	55·0	388·4	55·5	W
	18	0	24	59·57	544·3	52·2	363·5	51·7	H
	20	0	25	00·57	538·1	51·7	370·5	51·0	H
	22	0		04·66	541·6	51·4	369·6	51·2	W
	23	0		06·76	537·6	51·5	366·5	51·7	W
7	0	0		10·47	541·2	51·7	353·5	52·1	W
	1	0		13·72	536·1	52·0	357·8	52·7	W
	2	0		14·11	548·5	52·4	355·5	53·0	W
	4	0		11·01	557·2	53·0	360·5	53·9	W
	6	0		04·04	577·7	53·7	418·8	54·5	W
	7	0		04·98	564·3	54·0	432·1	54·7	W
	8	0		02·79	559·0	54·1	430·7	54·8	W
	10	0		02·19	547·0	54·0	402·5	54·3	W

DECLINATION. Magnet untouched, April 14d, 1846—May 1847.

BIFILAR. Observed 2m after the Declination, $k=0{\cdot}000135$. BALANCE. Observed 3m after the Declination, $k=0{\cdot}000010$.

† Extra Observations made.

tingen n Time eclina- n Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
	18	0	24	58·42	545·8	51·4	332·1	50·7	H
	20	0	25	00·75	544·5	51·1	353·3	50·7	H
	22	0		05·08	541·9	51·1	358·4	51·0	W
	23	0		05·89	542·5	51·2	353·7	51·7	H
	0	0		10·18	541·3	51·8	352·4	52·3	W
	1	0		11·79	551·1	52·4	350·3	53·2	B
	2	0		11·10	555·5	53·0	352·1	54·1	W
	4	0		09·35	566·2	54·7	364·8	55·7	H
	6	0		07·64	566·3	56·1	393·4	57·0	W
	7	0		07·60	563·3	56·7	414·5	57·5	W
	8	0		07·57	560·2	57·0	404·1	57·7	W
	10	0	25	01·05	556·5	56·8	391·0	57·0	W
	18	0	24	58·69	541·9	52·7	344·8	51·7	H
	20	0	25	00·40	537·6	52·1	362·3	50·7	H
	22	0		04·71	533·1	51·7	369·1	51·3	W
	23	5		07·74	532·7	51·8	370·0	52·2	H
	0	0		08·48	543·9	52·3	353·0	52·8	W
	1	0		13·19	530·2	52·9	359·5	53·8	H
	2	0		13·76	564·4	53·8	367·4	54·9	W
	4	0		13·20	557·8	55·7	410·9	56·7	H
	6	0		07·54	562·6	57·0	457·5	57·9	W
	7	0		06·97	565·8	57·3	415·8	58·0	W
	8	0	25	06·39	564·1	57·4	413·9	58·1	W
	0	0	24	57·56	541·1	57·3	372·6	58·0	W
10	8	0	25	01·70	543·5	53·2	378·3	52·2	H
	20	0		02·01	539·2	52·7	377·8	51·9	H
	22	0		05·40	530·8	52·6	364·5	52·3	W
	23	0		07·81	530·3	52·7	359·2	52·7	H
11	0	0		12·11	536·0	53·0	360·5	53·2	W
	1	0		13·56	536·4	53·4	361·5	53·9	H
	2	0		13·44	551·8	54·0	357·5	54·7	W
	4	0		10·83	555·4	55·4	357·8	56·0	H
	6	0		07·58	566·4	56·6	368·3	57·1	W
	7	0		04·49	567·0	57·0	388·3	57·3	W
	8	0		06·73	570·0	57·2	382·1	57·4	W
	0	0	25	03·55	557·8	56·8	375·4	56·7	W
	8	0†	24	51·10	529·2	52·8	235·7	52·0	H
	0	0†	24	58·63	508·2	52·7	286·7	51·7	H
	2	0	25	11·99	517·7	52·4	282·5	52·3	W
	3	0†		10·43	492·4	52·6	315·8	52·9	W
12	0	0†		19·61	509·1	53·0	324·1	53·8	W
	1	0†		16·41	522·8	53·8	335·3	54·8	H
	2	0		15·45	534·5	54·8	339·9	55·8	W
	4	0		10·06	555·4	56·6	486·5	57·6	W
	6	0†		06·61	643·9	57·6	483·3	58·4	W
	7	0†	25	17·61	572·8	57·8	412·9	58·5	W
	8	0†	24	56·18	577·8	57·8	375·6	58·6	W
	0	0†	24	58·16	520·8	57·6	219·6	58·1	W
	8	0	25	02·39	531·3	55·0	319·8	54·7	H
	0	0		03·82	535·2	54·4	347·4	54·2	H
	2	0		06·06	522·3	54·3	342·0	54·5	W
	3	0		10·87	515·2	54·5	353·2	55·0	W
13	0	0		12·13	530·4	54·8	354·6	55·5	W
	1	0		16·06	534·1	55·4	352·4	56·3	H

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
13	2	0	25	14·26	541·8	56·3	368·0	57·3	W
	4	0		03·87	598·5	57·8	404·6	58·7	H
	6	0		07·92	576·4	58·9	395·2	59·5	W
	7	0		09·15	555·7	59·1	375·3	59·6	W
	8	0		04·10	560·6	59·1	389·7	59·5	W
	10	0		04·34	543·2	58·4	353·8	58·3	W
	18	0	25	01·24	546·5	54·4	310·1	53·5	H
	20	0		00·28	530·9	53·7	360·6	53·0	H
	22	0		01·98	524·5	53·5	364·4	53·2	W
	23	0		05·35	521·3	53·6	362·5	53·5	H
14	0	0		07·71	531·6	53·8	362·7	54·0	W
	1	0		10·00	546·4	54·2	363·9	54·7	H
	2	0		10·09	556·9	54·7	376·9	55·3	W
	4	0		07·51	555·6	55·9	405·8	56·4	W
	6	0		05·72	569·1	57·1	389·1	57·4	W
	7	0		07·07	559·2	57·6	381·0	57·8	W
	8	0		11·41	576·1	57·9	371·5	58·0	W
	10	0		06·37	551·4	57·7	348·2	57·4	W
	18	0	25	01·34	543·3	53·5	309·3	52·5	H
	20	0		00·99	535·9	52·8	340·1	52·0	H
	22	0		05·49	519·8	52·5	348·9	52·0	W
	23	0		08·09	522·5	52·5	347·0	52·2	H
15	0	6		11·64	526·0	52·7	345·7	53·0	W
	1	0		13·56	531·6	53·2	346·3	54·0	H
	2	0		11·77	540·8	53·9	356·6	54·8	W
	4	0		09·42	564·3	55·6	372·5	56·5	H
	6	0		08·28	568·1	57·3	374·2	58·1	W
	7	0		09·08	562·9	57·7	369·3	58·3	W
	8	0		08·39	559·3	57·8	366·8	58·3	W
	10	0		06·97	552·4	57·2	360·8	57·3	W
	18	0	25	03·45	546·4	52·8	372·2	51·7	H
	20	0		00·77	535·1	52·2	386·6	51·2	H
	22	0		00·50	527·9	51·9	379·6	51·5	W
	23	0		03·94	525·6	52·0	373·9	52·0	H
16	0	0		07·37	528·7	52·3	362·8	52·7	W
	1	0		09·39	532·8	52·8	356·7	53·5	H
	2	0		11·10	541·1	53·4	353·6	54·4	W
	4	0		10·61	548·6	55·2	356·0	56·2	H
	6	0		09·37	565·1	56·5	359·1	57·2	W
	7	0		07·67	563·8	56·7	362·9	57·3	W
	8	0		06·19	567·6	56·8	365·8	57·3	W
	10	0	25	04·79	557·7	56·4	369·0	56·4	W
17	18	7	24	59·73	550·5	50·3	366·3	49·8	H
	20	0	25	00·04	546·3	50·2	371·1	49·8	H
	22	0		02·55	537·2	50·4	361·2	50·5	W
	23	0		04·86	536·5	50·7	360·0	51·0	H
18	0	0		07·34	541·2	51·0	344·3	51·5	W
	1	0		09·53	546·6	51·4	339·3	52·0	H
	2	0		11·34	552·3	51·7	336·4	52·2	W
	4	0		11·12	562·5	51·9	346·2	52·2	H
	6	0		11·00	574·0	52·0	363·8	52·3	W
	7	0		08·48	572·8	52·0	380·1	52·3	W
	8	0		08·55	570·4	51·9	375·5	52·3	W
	10	0		06·14	565·8	51·8	365·5	52·0	W

DECLINATION. Magnet untouched, April 14d 1846—May 1847.

FILAR. Observed 2m after the Declination, $k = 0{\cdot}000135$. BALANCE. Observed 3m after the Declination, $k = 0{\cdot}000010$.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
18	18	0	25	12·67	546·1	51·0	296·2	51·2	H
	20	0		02·05	573·0	50·8	317·9	51·2	H
	22	0		04·88	540·1	51·3	351·7	51·9	W
	23	0		07·00	535·0	51·7	357·8	52·5	W
19	0	0		09·29	535·6	52·2	358·8	53·0	W
	1	0		10·83	534·8	52·7	359·9	53·7	H
	2	0		14·99	557·7	53·2	349·7	54·3	W
	4	0		10·97	557·7	54·6	359·9	55·7	H
	6	0		07·15	584·3	55·8	374·9	56·7	W
	7	0		05·58	579·6	56·4	410·1	57·0	W
	8	0		03·74	566·1	56·5	425·4	57·0	W
	10	0		07·92	558·6	56·4	387·0	56·5	W
	18	0	25	08·41	529·2	53·8	334·7	53·5	H
	20	0	24	59·43	546·9	53·9	332·3	53·7	H
	22	0	25	02·48	524·1	54·0	350·5	54·2	W
	23	0		08·52	531·8	54·1	351·4	54·6	W
20	0	0		10·56	529·5	54·5	354·8	55·0	W
	1	0		09·49	549·3	54·9	362·9	55·3	H
	2	0		10·77	547·8	55·3	381·2	56·0	W
	4	0		06·51	559·4	56·1	395·6	56·7	H
	6	0		02·97	578·4	56·6	411·9	57·0	W
	7	0		04·44	574·8	56·6	399·1	57·1	W
	8	0		05·36	587·2	56·5	400·6	56·8	W
	10	0		05·94	557·7	56·1	374·7	56·3	W
	18	0	25	04·22	547·8	53·0	355·8	52·5	H
	20	0		00·31	543·7	52·6	366·6	52·2	H
	22	0		03·92	530·1	52·6	368·9	52·7	W
	23	0		06·48	524·1	53·0	358·8	53·6	W
21	0	0		13·25	516·4	53·6	357·2	54·7	W
	1	0		13·29	538·5	54·8	352·7	56·2	H
	2	0		16·52	559·8	56·2	347·3	57·6	W
	4	0		07·64	566·2	57·7	423·1	58·7	H
	6	0		05·15	570·6	58·6	392·3	59·5	W
	7	0		00·06	570·4	59·1	407·9	60·1	W
	8	0		03·35	569·9	59·7	410·7	60·5	W
	10	0		07·31	559·0	59·8	386·9	60·1	W
	18	0	25	01·14	544·6	56·1	378·5	55·5	H
	20	0	24	57·93	527·0	55·6	393·0	55·3	H
	22	0	25	03·13	513·9	55·6	387·9	55·7	W
	23	0		08·88	517·7	55·7	378·4	56·0	H
22	0	0		11·34	534·9	56·0	376·1	56·4	W
	1	0		09·22	534·6	56·4	377·3	56·7	H
	2	0		15·83	556·6	56·7	397·2	57·2	W
	4	0		13·79	533·1	57·3	401·7	57·9	H
	6	0		05·79	552·2	57·9	405·6	58·3	W
	7	0		03·75	553·2	57·9	412·7	58·3	W
	8	0		01·61	563·4	57·8	410·2	58·0	W
	10	0		06·84	551·9	57·4	382·5	57·3	W
	18	0	25	00·85	546·6	55·5	380·7	55·5	H
	20	0		00·62	527·6	55·2	385·0	55·3	H
	22	0		06·63	523·2	55·2	365·4	55·3	W
	23	0		11·62	533·5	55·1	357·7	55·2	H
23	0	0		13·52	540·6	55·1	352·0	55·3	W
	1	0		16·08	543·9	55·2	356·5	55·5	H
23	2	0	25	17·94	555·5	55·6	362·4	56·0	W
	4	0†		15·14	583·8	56·8	396·4	57·5	H
	6	0		07·10	562·0	58·3	413·2	59·0	W
	7	0		08·77	554·9	59·0	413·9	59·7	W
	8	0		07·49	557·4	59·5	390·9	60·1	W
	10	0		05·94	558·0	59·7	372·8	60·0	W
24	18	0	25	05·11	543·8	57·7	340·5	57·3	H
	20	0		01·12	535·1	57·5	354·3	57·5	H
	22	0		02·69	534·3	57·8	360·3	58·3	W
	23	0		06·64	530·4	58·2	362·4	58·7	H
25	0	0		11·72	537·3	58·7	363·1	59·3	W
	1	0		12·63	529·2	59·2	373·7	59·8	H
	2	0		09·42	565·3	59·7	398·4	60·3	W
	4	0		10·95	558·3	60·7	443·2	61·5	H
	6	0		09·06	573·1	62·0	397·0	62·7	W
	7	0		06·86	552·7	62·5	410·1	63·2	W
	8	0		06·48	564·9	63·0	401·7	63·5	W
	10	0		03·57	555·3	63·1	379·7	63·3	W
	18	0	25	02·79	543·6	58·0	376·8	57·0	H
	20	0	24	59·12	535·7	57·4	376·9	56·5	H
	22	0	25	06·54	533·9	57·1	354·5	56·5	W
	23	0		09·05	538·9	57·0	332·1	57·0	H
26	0	0		11·84	541·4	57·2	328·8	57·2	W
	1	0		14·33	548·2	57·3	331·6	57·5	H
	2	3		14·91	556·4	57·8	344·6	58·2	W
	4	0		10·95	554·4	58·7	375·7	59·2	H
	6	0		08·31	556·2	59·9	373·2	60·4	W
	7	0		07·10	565·4	60·3	367·0	60·7	W
	8	0		05·80	563·6	60·4	366·5	60·8	W
	10	0		06·48	559·1	60·1	355·6	60·0	W
	18	0	25	01·18	546·1	56·3	364·1	55·4	H
	20	0		00·98	539·9	55·7	368·0	55·0	H
	22	0		01·58	535·0	55·3	360·5	54·8	W
	23	0		06·29	534·8	55·2	359·7	55·2	H
27	0	0		09·62	539·7	55·3	347·5	55·3	W
	1	0		12·31	544·0	55·4	358·9	55·5	H
	2	0		13·52	545·7	55·6	361·7	55·8	W
	4	0		11·44	553·0	56·0	384·8	56·2	H
	6	0		05·79	562·1	56·4	389·7	56·7	W
	7	0		05·09	563·4	56·6	387·2	56·7	W
	8	0		05·70	565·7	56·6	377·2	56·7	W
	10	0		06·12	557·7	56·3	373·9	56·3	W
	18	0	25	02·79	548·4	53·2	381·9	52·3	H
	20	0	24	59·36	547·4	53·0	386·5	52·3	H
	22	0	25	03·34	539·3	52·8	376·8	52·5	W
	23	0		04·68	538·1	52·8	322·7	53·0	H
28	0	0		09·05	537·4	53·2	368·8	53·7	W
	1	0		11·17	539·9	53·5	365·2	54·5	H
	2	0		12·72	549·3	54·3	361·8	55·2	W
	4	0		11·41	552·0	55·8	380·7	57·0	H
	6	0		07·45	558·7	57·7	384·1	58·5	W
	7	0		06·50	565·3	58·4	378·7	59·0	W
	8	0		05·52	563·8	58·7	376·7	59·3	W
	10	0		06·26	556·8	59·0	363·8	59·5	W

DECLINATION. Magnet untouched, April 14d, 1846—May 1847.

BIFILAR. Observed 2m after the Declination, $k=0·000135$. BALANCE. Observed 3m after the Declination, $k=0·000010$.

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† Extra Observations made.

öttingen ean Time Declina- ion Obs.		DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
				Corrected.	Thermometer.	Corrected.	Thermometer.	
h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
18	0	25	01·76	549·0	56·0	373·9	55·5	H
20	0	24	57·81	543·9	55·7	375·4	55·4	H
22	0	25	03·30	535·6	55·7	373·5	55·9	W
23	4		06·70	535·0	56·0	372·5	56·5	W
0	0		08·32	539·5	56·6	367·3	57·5	W
1	0		13·67	542·8	57·4	363·1	58·7	H
2	0		14·60	539·3	58·7	362·0	60·2	H
4	0		11·74	560·0	61·2	345·2	62·6	H
6	0		08·29	566·8	63·0	363·8	64·2	W
7	0		07·34	566·1	63·6	367·7	64·6	W
8	0		06·36	567·3	64·0	368·4	65·0	W
10	0	25	06·48	560·6	64·3	358·2	65·2	W
18	0	24	57·37	551·8	59·9	329·5	59·3	H
20	0	25	00·84	548·6	59·7	356·3	59·2	H
22	0		04·71	539·9	59·7	354·0	59·8	W
23	0		10·13	539·7	59·8	347·5	60·3	H
0	0		13·96	546·3	60·3	341·2	60·8	W
1	0		16·92	557·4	60·7	341·3	61·0	H
2	0		15·86	554·5	61·1	349·3	62·0	W
4	0		12·55	559·7	62·7	367·2	63·5	W
6	0		10·56	583·7	64·2	385·7	65·0	W
7	0		00·35	571·8	64·9	425·0	65·6	W
8	0		04·93	565·6	65·4	404·0	66·0	W
10	0		05·58	563·6	65·5	376·6	66·0	W
18	0	25	03·90	530·2	63·0	342·5	61·9	W
20	0		02·42	533·7	62·4	349·4	61·3	W
22	0		06·70	532·6	61·8	347·5	61·3	H
23	0		07·58	533·6	61·9	343·9	61·9	H
0	0		10·81	538·3	62·4	345·9	62·8	H
1	0		11·27	546·3	63·3	357·0	64·2	H
2	0		12·62	539·7	64·4	359·6	65·7	H
4	0		12·29	558·7	67·0	362·2	68·2	H
6	0		09·33	550·6	69·5	379·0	70·7	H
7	0		06·06	568·2	70·6	396·3	71·7	H
8	0		06·43	565·0	71·4	398·4	72·3	H
10	0		07·00	555·2	72·0	402·2	73·5	H
18	0	25	02·37	537·1	67·4	220·5	66·5	H
20	0		00·53	525·4	66·6	288·0	65·7	H
22	0		07·22	512·8	66·3	345·7	66·0	W
23	0		10·60	523·9	66·4	349·7	66·7	H
0	0		14·40	538·3	67·0	350·9	67·8	W
1	0		13·54	544·3	67·8	359·9	68·8	H
2	0		14·98	550·1	69·0	371·2	70·1	W
4	0		11·88	550·4	71·2	367·6	72·5	H
6	0		08·61	563·0	72·8	371·6	73·9	W
7	0		06·98	565·6	73·3	387·5	74·5	W
8	0†		01·09	549·4	73·9	440·5	74·8	W
10	0		01·61	549·4	74·2	387·2	74·7	W
18	0	25	01·65	534·4	69·4	334·4	68·2	W
20	0		00·92	517·4	68·7	389·7	67·5	W
22	0		06·76	533·7	68·0	390·4	67·5	H
23	0		10·47	533·3	68·1	382·8	68·2	H
0	0		12·18	535·5	68·5	369·2	69·0	H
1	0		13·09	543·4	69·4	371·7	70·3	H

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
3	2	0	25	12·56	550·1	70·4	387·6	71·5	H
	4	0		11·61	560·0	72·9	374·0	74·2	W
	6	0		08·79	558·9	75·4	385·9	76·5	H
	7	0		02·08	563·1	76·4	393·3	77·3	H
	8	0		06·63	558·5	77·0	414·3	77·5	H
	10	0		07·24	549·8	77·0	410·4	77·5	H
	18	0	25	03·77	536·4	72·3	408·7	71·0	W
	20	0		01·18	529·5	71·3	428·4	70·2	W
	22	0		01·98	527·0	70·7	415·3	70·0	H
	23	0		04·29	529·5	70·7	407·3	70·5	W
4	0	0		06·98	530·3	70·8	393·1	71·2	H
	1	0		11·14	540·8	71·5	394·4	72·5	H
	2	0		12·01	549·9	72·5	399·3	73·5	H
	4	0		12·02	560·9	74·7	417·6	75·8	W
	6	0		12·23	562·6	76·8	432·2	77·7	H
	7	0		07·00	569·4	77·6	424·9	78·4	H
	8	0		06·73	557·7	78·2	417·0	78·7	H
	10	0		07·17	544·3	78·2	409·8	78·3	H
	18	0	25	00·30	531·1	72·2	430·3	70·4	W
	20	0		03·88	534·2	71·0	401·8	69·3	W
	22	0		05·08	538·2	70·3	381·6	69·3	H
	23	0		08·65	537·7	70·3	380·3	69·9	W
5	0	0		11·17	530·5	70·5	378·1	70·7	H
	1	0		12·95	535·6	71·7	380·7	71·7	H
	2	0		12·58	547·5	72·0	385·5	72·8	H
	4	0		12·70	552·0	74·1	386·6	75·0	W
	6	0		09·51	564·1	76·2	387·0	77·2	H
	7	0		07·07	556·2	76·8	397·8	77·7	H
	8	0		05·69	558·4	77·2	406·1	77·8	H
	10	0	25	06·90	552·4	77·3	413·5	77·5	H
	18	0	24	59·09	542·2	72·7	361·7	71·4	W
	20	0	24	59·23	531·2	71·8	406·7	70·5	W
	22	0	25	02·72	541·3	71·2	398·8	70·5	H
	23	0		06·04	541·1	71·2	404·4	70·8	W
6	0	0		09·89	545·0	71·4	384·9	71·5	H
	1	0		11·74	538·5	71·8	391·4	72·3	H
	2	0		11·64	544·0	72·7	389·3	73·5	H
	4	0		11·88	550·2	74·7	395·0	75·5	W
	6	0		10·67	568·5	76·2	416·8	76·8	H
	7	0		08·06	567·2	76·7	433·1	77·2	H
	8	0		08·11	570·8	77·0	426·7	77·3	H
	10	0		04·21	550·4	76·8	413·8	77·3	H
7	18	20	25	01·52	539·4	66·7	403·5	65·3	W
	20	0		00·40	534·4	66·0	411·8	64·8	W
	22	0		02·62	531·0	65·5	411·9	64·7	H
	23	0		04·14	533·0	65·3	406·6	64·5	W
8	0	0		07·20	536·9	65·2	402·7	64·5	H
	1	0		09·74	545·2	65·0	398·9	64·7	H
	2	0		18·21	544·9	65·0	400·5	65·0	H
	4	0		12·22	547·3	65·4	411·7	65·4	W
	6	0		08·08	552·1	65·8	414·0	65·7	H
	7	0		06·63	554·7	66·0	414·9	66·0	H
	8	0		05·42	558·7	65·9	412·6	66·0	H
	10	0		05·55	556·8	65·7	416·1	65·5	H

DECLINATION. Magnet untouched, April 14^d, 1846—May 1847.

IFILAR. Observed 2^m after the Declination, k=0·000135. BALANCE. Observed 3^m after the Declination, k=0·000010.

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† Extra Observations made.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
8	18	0	25	00·20	531·1	63·4	312·2	62·8	W
	20	0	24	58·67	530·7	63·0	347·7	62·6	W
	22	0	25	05·72	530·1	63·0	371·5	63·0	H
	23	0		04·41	534·0	63·4	393·1	63·7	W
9	0	0		06·46	537·6	63·8	400·7	64·5	H
	1	2		11·01	545·1	64·5	415·4	65·3	H
	2	0		13·27	548·4	65·3	425·3	66·2	H
	4	0	25	12·29	562·6	66·6	431·9	67·5	W
	6	0†	24	59·66	604·0	67·8	507·1	68·7	H
	7	0	25	07·10	571·7	68·3	496·8	69·2	H
	8	0		07·76	564·0	68·8	460·6	69·5	H
	10	0		05·32	547·2	68·9	412·3	69·3	H
	18	0	25	01·49	538·8	65·8	351·9	65·5	W
	20	0	24	58·87	525·3	65·4	407·9	65·0	W
	22	0	25	01·29	521·2	65·2	418·1	65·2	H
	23	0		05·22	520·0	65·3	420·9	65·6	W
10	0	0		08·90	523·0	65·6	411·9	65·9	H
	1	0		11·07	543·1	66·0	402·6	66·5	H
	2	0		12·62	553·8	66·4	405·0	67·2	H
	4	0		10·43	575·4	67·6	440·6	68·2	W
	6	0		09·73	560·8	68·0	460·2	68·5	H
	7	0		09·53	563·0	68·0	441·5	68·5	H
	8	0		08·48	557·3	67·8	423·4	68·2	H
	10	0		07·47	553·7	67·3	412·6	67·3	H
	18	0	25	01·72	538·9	63·7	414·2	62·8	W
	20	0	24	59·46	532·3	63·2	430·8	62·4	W
	22	0	25	00·44	523·2	62·8	424·8	62·4	H
	23	0		03·72	519·2	62·8	416·9	62·7	W
11	0	0		08·12	526·9	62·9	410·9	63·0	B
	1	0		10·70	535·8	63·2	407·0	63·5	B
	2	0		12·72	544·7	63·7	403·7	64·4	H
	4	0		11·84	553·3	65·0	403·0	65·8	W
	6	0		08·86	558·3	66·1	410·9	66·6	H
	7	0		07·07	561·0	66·1	410·2	66·7	H
	8	0		06·39	558·7	66·1	410·2	66·7	H
	10	0		05·85	555·1	65·7	405·4	66·0	H
	18	0	25	00·53	546·1	62·6	414·1	61·9	W
	20	0	25	00·04	538·0	62·0	417·7	61·4	W
	22	0	24	59·88	545·6	62·1	411·3	62·1	H
	23	0	25	03·41	529·1	62·3	402·7	62·8	W
12	0	0		08·77	531·7	62·8	392·7	63·5	H
	1	0		12·72	532·3	63·6	390·8	64·2	B
	2	0		12·11	545·0	64·2	384·9	65·2	H
	4	0		13·12	563·5	65·9	398·0	66·9	W
	6	0		08·28	567·2	67·2	415·2	68·0	H
	7	0		08·46	565·1	67·4	411·2	68·2	H
	8	0		05·85	564·9	67·6	413·2	68·2	W
	10	0		06·51	557·6	67·5	402·2	68·0	H
	18	0	25	00·03	549·9	64·1	415·1	63·8	W
	20	0	24	59·48	543·3	64·0	416·3	63·6	W
	22	0	24	59·43	539·6	63·8	390·4	63·8	W
	23	0	25	11·44	544·9	64·0	378·0	64·2	H
13	0	0		08·48	563·8	64·5	361·5	65·0	W
	1	0		10·06	568·1	65·7	370·9	66·0	H
13	2	0	25	20·90	531·9	66·0	386·8	67·0	H
	4	0		13·86	566·4	68·3	394·3	69·4	B
	6	0		09·53	562·3	70·0	398·2	71·2	H
	7	0		07·37	570·6	70·5	401·8	71·5	H
	8	0		06·21	565·8	70·8	414·2	71·6	H
	10	0	25	06·23	566·6	70·8	400·2	71·5	H
14	18	0	24	57·91	547·3	69·6	334·5	68·3	W
	20	0	24	58·77	540·0	68·5	406·8	67·3	W
	22	0	25	08·45	521·0	67·8	412·0	67·2	H
	23	0		10·09	519·0	67·8	408·1	67·6	W
15	0	0		03·84	527·8	68·0	412·3	68·0	H
	1	0		10·70	532·7	68·3	417·3	69·0	H
	2	0		12·53	546·0	69·0	409·3	69·7	H
	4	0		11·75	559·0	70·7	414·4	71·6	W
	6	0		06·46	595·0	72·6	452·3	73·4	H
	7	0	25	04·98	587·5	73·3	468·8	74·0	H
	8	0	24	58·45	573·2	73·7	466·2	74·3	W
	10	0†	24	53·65	569·5	73·8	412·4	74·0	H
	18	0	25	04·15	542·1	69·0	373·0	67·8	W
	20	0		07·40	526·1	68·3	393·7	67·2	W
	22	0		03·81	531·6	67·8	399·3	67·2	H
	23	0		02·79	527·6	67·8	396·7	67·8	W
16	0	0		08·85	515·9	68·0	410·0	68·5	H
	1	0		07·87	526·9	68·8	418·1	69·7	H
	2	0		08·55	540·8	70·0	425·2	71·2	H
	4	0		12·63	572·0	72·4	461·5	73·7	W
	6	0		11·27	564·4	74·3	410·0	75·2	H
	7	0		09·02	572·5	74·8	407·0	75·5	H
	8	0		07·45	561·8	75·3	416·2	75·8	H
	10	0		07·54	552·3	75·6	405·6	76·2	H
	18	0	25	06·21	545·9	70·5	404·6	69·5	W
	20	0		01·95	537·8	69·8	413·8	68·8	W
	22	0		01·24	518·1	68·7	410·5	68·7	H
	23	0		10·87	529·1	69·2	401·7	69·3	W
17	0	0		11·84	542·6	69·7	380·4	70·2	H
	1	0		13·90	538·2	70·5	394·2	71·5	H
	2	0		12·90	551·9	71·6	386·6	72·8	H
	4	0		14·94	557·6	74·2	395·3	75·3	H
	6	0		08·32	559·7	76·6	413·7	77·7	H
	7	0		06·50	563·6	77·5	414·6	78·3	H
	8	0		07·34	569·5	78·2	418·2	78·8	H
	10	0		06·50	562·8	78·6	419·1	79·1	H
	18	0	25	02·19	546·0	73·7	433·3	72·8	W
	20	0		01·22	535·3	72·9	446·2	72·0	W
	22	0		03·74	533·4	72·4	426·6	72·0	H
	23	0		05·32	532·8	72·4	425·0	72·4	W
18	0	0		04·75	543·6	72·7	414·4	73·3	H
	1	0		11·84	535·4	73·5	411·4	74·3	H
	2	0		11·46	547·5	74·4	406·3	75·5	H
	4	0		09·15	539·4	76·2	416·9	77·1	W
	6	0		06·50	559·1	76·5	404·8	77·2	H
	7	0		07·17	555·1	76·7	402·8	77·5	W
	8	0		05·32	566·1	77·0	402·0	77·5	H
	10	0		06·97	551·8	77·0	394·3	77·2	H

DECLINATION. Magnet untouched, April 14^d, 1846—May 1847.

BIFILAR. Observed 2^m after the Declination, k=0·000135. BALANCE. Observed 3^m after the Declination, k=0·000010.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
18	18	3†	25	12·22	533·0	73·2	386·1	72·3	W
	20	0		08·14	544·3	72·5	351·9	71·7	W
	22	0		04·91	533·0	72·1	395·2	71·7	H
	23	0		05·09	541·6	72·1	394·4	72·2	W
19	0	0		11·07	540·7	72·6	399·7	73·2	H
	1	0		11·24	547·8	73·2	394·1	74·0	H
	2	0		07·49	550·2	74·3	393·7	75·2	H
	4	0		08·23	548·4	76·2	403·1	77·0	W
	6	0		07·67	559·8	77·3	390·1	77·8	H
	7	0		06·36	558·6	77·6	391·6	78·0	W
	8	0		07·08	557·2	77·6	393·2	78·0	W
	10	0		06·59	550·4	77·4	397·0	77·3	W
	18	0	25	02·87	539·6	71·2	416·0	69·3	W
	20	0		00·30	532·4	69·6	403·3	67·5	W
	22	0		03·30	530·0	68·3	390·0	66·4	H
	23	0		06·70	529·4	67·9	389·2	66·3	W
20	0	0		11·91	526·5	67·7	384·8	66·3	H
	1	0		15·01	541·2	67·4	381·8	66·3	H
	2	0		17·67	546·4	67·4	379·6	66·6	H
	4	0		09·22	553·7	67·6	379·0	67·1	W
	6	0		04·98	551·1	67·7	390·5	67·2	H
	7	0		04·98	553·1	67·7	390·1	67·0	H
	8	0		05·08	555·4	67·6	387·6	66·9	H
	10	0		07·20	550·6	67·3	393·1	66·7	H
21	18	0	25	02·28	548·8	65·7	392·0	65·3	W
	20	0		08·95	535·2	65·4	399·5	65·0	W
	22	0		11·00	536·3	65·4	381·5	65·5	H
	23	0		12·49	539·8	65·7	378·3	66·1	W
22	0	0		14·10	546·6	66·3	366·0	67·0	H
	1	0		17·36	544·7	67·2	364·4	68·0	H
	2	0		14·70	555·3	68·0	372·8	69·2	H
	4	0		11·19	562·9	70·0	388·9	71·3	W
	6	0		08·85	559·2	71·8	410·2	73·0	H
	7	0		09·00	566·7	72·4	404·1	73·4	W
	8	0		07·74	566·2	72·6	401·1	73·5	H
	10	0	25	03·99	559·1	72·5	410·8	73·0	B
	18	0	24	58·45	542·9	70·0	375·0	69·7	W
	20	0	25	02·20	535·2	69·3	394·1	69·0	W
	22	0		04·93	532·6	68·9	384·7	68·7	W
	23	0		08·21	538·1	68·7	385·6	68·5	W
23	0	0		08·46	551·2	68·7	379·0	68·5	H
	1	0		10·56	547·7	68·6	386·8	68·6	H
	2	0		09·56	564·9	68·6	384·4	68·7	H
	4	0		09·96	555·4	68·7	426·0	68·8	W
	6	0		07·91	564·5	68·1	432·8	67·7	H
	7	0		06·29	566·7	67·7	434·7	66·9	H
	8	0	25	08·31	564·3	67·0	427·8	66·0	H
	10	0	24	59·74	554·5	66·5	417·3	64·2	H
	18	0	25	00·72	540·5	59·6	382·5	57·7	W
	20	0		02·06	539·5	58·3	377·6	56·6	W
	22	0		04·71	536·4	57·5	379·9	56·2	H
	23	0		07·22	535·0	57·3	374·9	56·5	W
24	0	0		09·84	545·6	57·3	372·0	56·7	H
	1	0		12·51	550·8	57·4	375·4	57·5	H
24	2	0	25	10·77	553·4	58·0	382·5	58·2	W
	4	0		10·03	565·9	59·0	410·5	59·5	H
	6	0		03·09	565·1	60·0	425·0	60·6	W
	7	0		06·70	566·3	60·5	417·9	61·0	W
	8	0		07·69	571·7	60·9	404·5	61·5	W
	10	0		06·24	557·1	61·1	391·8	61·4	W
	18	0	25	00·99	547·0	57·2	395·3	56·5	W
	20	0		01·41	543·0	56·8	396·0	56·3	W
	22	0		03·81	528·6	56·7	377·0	56·7	H
	23	0		05·25	536·8	57·0	376·6	57·7	W
25	0	0		07·54	548·2	57·8	379·5	58·8	W
	1	0		11·21	551·1	58·7	380·1	59·5	B
	2	3		12·35	560·2	59·3	383·0	60·3	W
	4	0		10·20	552·8	60·1	397·0	61·0	H
	6	0		07·76	568·0	60·6	399·8	61·7	H
	7	0		05·06	580·6	60·7	397·4	61·5	H
	8	0		07·52	562·2	60·7	395·9	61·2	H
	10	0		06·26	556·8	60·4	391·2	60·5	H
	18	0	25	01·31	545·7	56·0	367·7	55·0	W
	20	0	25	00·22	542·2	55·2	379·5	54·7	W
	22	0	24	59·14	536·6	55·0	379·7	55·2	H
	23	0	25	02·46	533·6	55·5	375·5	56·0	W
26	0	0		07·17	533·2	56·0	362·7	56·8	H
	1	0		10·00	541·3	56·9	354·4	57·8	H
	2	0		12·45	548·4	57·7	357·6	58·5	H
	4	0		11·99	554·8	58·3	364·6	59·2	H
	6	0		09·42	561·4	58·7	370·4	59·5	H
	7	0		08·36	569·7	58·8	366·6	59·5	H
	8	0		07·05	568·9	58·8	376·5	59·5	H
	10	0	25	06·43	564·5	59·2	376·6	59·2	H
	18	0	24	57·05	538·7	57·2	368·5	57·2	W
	20	0	24	59·88	552·4	57·6	365·0	57·8	W
	22	0	25	01·46	537·3	58·0	372·9	58·7	H
	23	0		04·17	534·4	58·6	373·7	59·3	W
27	0	0		07·10	535·4	59·1	375·5	60·0	H
	1	0		03·68	541·0	59·7	371·8	61·2	H
	2	0		10·83	543·9	60·3	355·9	61·5	H
	4	0		11·64	556·7	62·0	364·3	63·0	W
	6	0		07·79	573·4	63·0	388·6	64·0	H
	7	0		06·64	567·8	63·3	411·4	64·2	H
	8	0		07·71	580·3	63·5	413·8	64·3	H
	10	0		04·17	556·9	63·4	414·5	64·0	H
28	18	0	25	03·94	539·2	61·4	344·3	61·0	H
	20	0	24	58·58	545·1	61·4	378·2	61·5	H
	22	0	25	03·02	524·4	61·7	391·4	61·8	W
	23	0		03·23	531·5	61·8	387·0	62·2	H
29	0	0		06·03	537·1	62·3	376·4	62·8	W
	1	0		09·08	533·5	62·6	374·1	63·2	H
	2	0		12·23	554·3	63·0	378·2	63·8	W
	4	0		10·09	560·9	64·2	384·1	64·9	H
	6	0		09·69	574·4	64·9	384·6	65·4	W
	7	0		07·94	578·7	65·0	394·2	65·4	W
	8	0		07·76	576·5	64·9	409·5	65·1	W
	10	0		01·04	556·6	64·4	397·3	64·3	W

DECLINATION. Magnet untouched, April 14d, 1846—May 1847.

BIFILAR. Observed 2m after the Declination, k=0·000135. BALANCE. Observed 3m after the Declination, k=0·000010.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
29	18	0	24	57·26	551·0	61·7	338·2	61·0	H
	20	0	25	01·72	543·5	61·2	369·4	60·8	H
	22	0		02·33	527·9	61·1	383·4	61·0	W
	23	0		08·01	525·0	61·2	373·8	61·2	H
30	0	0		10·58	534·2	61·2	369·1	61·4	W
	1	0		12·36	547·1	61·5	371·4	62·0	H
	2	0		14·94	552·2	61·9	375·1	62·3	W
	4	0		12·26	561·9	62·5	375·3	62·8	W
	6	0		09·62	560·6	62·4	406·1	62·6	W
	7	0		08·23	569·5	62·2	411·8	62·5	W
	8	0		05·79	573·8	62·1	416·8	62·3	W
	10	0		07·57	559·2	61·6	400·6	61·5	W
	18	0	25	07·44	559·5	58·8	357·8	58·2	H
	20	0	24	58·32	537·3	58·7	387·0	58·2	H
	22	0	25	01·65	530·3	58·6	373·7	58·6	W
	23	0		07·15	534·5	58·8	377·3	59·2	H
1	0	0		09·77	537·0	59·2	370·8	59·6	W
	1	0		11·69	542·4	59·7	350·7	60·5	H
	2	0		12·31	545·0	60·0	……	……	W
	4	0		10·23	566·6	60·5	……	……	H
	6	0		08·50	578·3	61·0	……	……	W
	7	3		07·31	558·6	61·1	……	……	W
	8	0		08·11	559·6	61·3	……	……	W
	10	0		06·44	558·2	61·4	……	……	W
	18	0	24	54·21	546·7	60·8	……	……	H
	20	0	24	52·23	534·7	60·8	……	……	H
	22	0	25	07·98	524·5	61·2	……	……	W
	23	0		11·12	546·3	61·6	……	……	H
2	0	0		14·87	535·7	62·0	……	……	W
	1	0		17·42	533·6	62·6	……	……	H
	2	0		17·15	544·6	63·1	……	……	W
	4	0		16·15	560·2	64·7	……	……	H
	6	0		10·81	578·4	66·0	……	……	W
	7	0		10·43	576·6	66·5	……	……	W
	8	0		09·26	570·3	66·6	……	……	W
	10	0		08·70	559·2	66·6	……	……	W
	18	0	25	03·74	549·2	64·4	312·5	64·5	H
	20	0		11·86	540·1	64·2	340·5	64·2	H
	22	0		11·55	528·1	64·0	364·9	64·3	W
	23	0		11·44	532·1	64·1	366·5	64·8	W
3	0	0		11·30	527·2	64·3	366·2	65·0	W
	1	0		12·18	539·1	64·5	384·7	65·3	H
	2	0		13·94	544·3	64·7	404·2	65·4	W
	4	0		08·65	555·9	65·0	477·4	65·8	H
	6	0		09·89	567·8	65·4	449·5	66·0	W
	7	0		08·43	567·7	65·4	443·4	65·9	W
	8	0		08·21	567·9	65·3	426·2	65·7	W
	10	0		07·47	558·7	65·0	416·0	65·2	W
	18	0	25	02·26	515·4	63·2	207·8	62·5	H
	20	0		01·90	536·8	62·8	300·1	62·5	H
	22	0		05·52	526·3	62·8	356·2	63·1	W
	23	0		10·80	518·4	63·0	364·3	63·7	H
4	0	0		15·02	543·1	63·3	355·0	64·1	W
	1	0		15·41	537·9	63·7	403·1	64·5	H
4	2	0	25	15·79	540·6	64·1	444·6	65·3	W
	4	0		09·32	566·2	65·4	405·5	66·9	H
	6	0		06·83	564·9	66·8	362·4	68·5	W
	7	0		08·08	564·1	67·4	364·6	69·1	W
	8	0		07·78	567·5	68·2	369·6	69·8	W
	10	0		06·68	560·6	68·8	369·3	69·7	W
5	18	0	25	00·82	540·0	66·4	325·7	65·2	H
	20	0		00·91	538·4	65·7	379·2	64·2	H
	22	0		04·51	530·6	64·9	379·1	63·5	W
	23	0		00·96	525·0	64·5	356·8	63·2	H
6	0	0†		19·68	497·2	64·1	397·6	62·9	W
	1	0		12·22	554·7	63·8	371·5	62·7	H
	2	0		16·59	560·1	63·6	385·6	62·6	W
	4	0		08·01	553·8	63·2	397·6	62·7	H
	6	0		08·34	564·1	62·9	472·0	62·2	W
	7	0		02·15	566·6	62·7	465·8	61·9	W
	8	0		05·35	568·9	62·4	442·3	61·6	W
	10	0†	25	01·29	558·2	61·8	404·8	60·4	W
	18	0	24	59·81	533·6	58·4	342·3	56·7	H
	20	0	25	01·05	539·2	57·8	361·5	56·7	H
	22	0		03·79	536·7	57·7	383·5	57·3	W
	23	0		07·07	529·7	57·7	386·8	57·7	H
7	0	0		11·05	536·3	57·9	378·4	58·3	W
	1	0		12·89	544·8	58·2	374·2	59·0	H
	2	0		15·25	559·4	58·7	383·5	59·7	W
	4	0		07·38	569·0	59·8	429·4	61·5	H
	6	0		08·12	566·3	61·1	407·8	62·7	W
	7	0		07·29	568·1	61·5	393·6	62·9	W
	8	0		06·34	570·6	61·9	392·9	63·2	W
	10	0		07·34	549·9	62·0	388·3	62·6	W
	18	0	25	08·73	537·7	59·4	286·6	58·7	H
	20	0	24	58·52	536·6	59·0	366·7	58·5	H
	22	0	25	02·15	527·6	58·9	395·5	58·9	W
	23	0		07·04	532·1	58·9	386·2	59·0	W
8	0	0		09·13	538·6	59·0	370·9	59·5	W
	1	0		12·06	531·8	59·2	373·1	59·7	H
	2	0		11·28	545·8	59·3	353·6	59·7	W
	4	0		09·08	557·0	59·3	379·5	59·7	H
	6	0		06·66	566·2	59·3	385·3	59·5	W
	7	0		06·59	562·6	59·3	387·9	59·3	W
	8	0		02·28	560·6	59·1	403·8	59·0	W
	10	0		05·49	559·6	58·8	394·2	58·5	W
	18	0	25	01·96	547·3	57·0	373·4	56·2	H
	20	0	25	03·57	532·8	56·6	389·7	56·0	H
	22	0	24	59·70	528·0	56·4	391·6	56·1	W
	23	0	25	04·73	523·9	56·4	392·0	56·2	H
9	0	0		08·29	526·1	56·4	373·5	56·3	W
	1	0		11·48	535·9	56·4	374·3	56·4	H
	2	0		12·45	545·9	56·4	378·0	56·5	W
	4	0		12·35	559·3	56·6	390·8	56·9	H
	6	0		08·50	569·0	56·9	402·6	57·4	W
	7	0		06·64	561·4	57·1	405·8	57·7	W
	8	0		06·50	561·2	57·3	394·9	57·8	W
	10	0		02·17	556·7	57·5	393·5	58·0	W

DECLINATION. Magnet untouched, April 14^{d}, 1846—May 1847.

BIFILAR. Observed 2^{m} after the Declination, $k=0{\cdot}000135$. BALANCE. Observed 3^{m} after the Declination, $k=0{\cdot}000010$.

July 1^{d}—2^{d}. Observations of deflection of the balance needle were made for the purpose of determining the value (k) of a micrometer division, in parts of the whole vertical force. The observations after July 2^{d} are reduced to be comparable with those before that date. See *Introduction*, p. xliii.

† Extra Observations made.

ttingen n Time eclina- n Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
	18	0	25	00·47	546·5	56·7	370·7	56·6	H
	20	0		02·59	537·8	56·8	375·4	57·2	H
	22	0		02·97	531·5	57·3	377·0	58·4	W
	23	0		04·82	527·0	57·8	373·3	59·2	H
	0	0		09·20	531·5	58·6	363·4	60·5	W
	1	0		11·07	537·3	59·5	341·0	61·9	H
	2	0		12·45	544·0	60·6	335·4	63·2	W
	4	0		12·04	560·9	62·3	365·3	64·9	H
	6	0		09·62	577·1	63·8	386·3	66·5	W
	7	0		08·85	574·1	64·5	387·6	66·9	W
	8	0		08·05	568·9	65·0	385·5	67·2	W
	10	0	25	06·14	559·7	65·2	373·4	66·3	W
	18	0	24	58·55	547·7	61·0	400·5	60·0	H
	20	0	24	54·92	537·3	60·7	392·9	59·7	H
	22	0	25	02·84	539·4	60·3	358·7	60·3	W
	23	0		08·39	543·9	60·5	329·0	60·9	H
1	0	0		12·06	554·4	60·8	323·6	61·5	W
	1	0		15·92	541·2	61·2	359·9	62·2	H
	2	0†		17·40	508·1	61·5	388·5	62·5	W
	4	0†		15·29	577·7	62·3	568·2	63·7	H
	6	0		13·05	579·8	63·0	533·0	64·2	W
	7	0		10·09	570·5	63·0	511·2	64·0	W
	8	0		02·99	570·7	63·0	533·0	63·8	W
	0	0		06·43	558·9	62·7	381·5	63·0	W
2	8	0	25	04·17	542·8	62·8	353·2	63·2	H
	0	0	24	59·23	544·0	63·4	374·5	63·8	H
	2	0	25	05·15	538·0	63·8	386·9	64·5	W
	3	0		02·62	536·7	64·0	385·5	65·2	H
3	0	0		12·65	526·2	64·6	375·8	65·9	W
	1	0		13·09	536·7	65·1	377·1	66·5	H
	2	0		12·98	541·6	65·6	384·3	67·0	W
	4	0		11·77	565·4	66·7	409·1	68·2	H
	6	0		06·32	596·5	67·6	524·7	69·3	W
	7	0†		14·80	592·9	67·9	547·4	69·4	W
	8	0†		11·34	570·4	68·2	499·6	69·5	W
	0	0		02·19	542·5	68·1	427·3	68·6	W
	8	0	25	03·67	541·0	64·3	364·2	63·0	H
	0	0	25	00·53	532·8	63·6	374·5	62·7	H
	2	0	24	59·73	522·2	63·4	395·2	63·1	W
	3	0	25	03·68	518·1	63·5	390·8	63·9	H
4	0	0		05·77	532·5	64·0	389·6	65·0	W
	1	0		08·46	536·8	64·7	382·3	66·2	H
	2	0		09·80	540·3	65·6	383·5	67·7	W
	4	0		11·01	566·2	67·9	354·9	70·5	H
	6	0		08·41	561·4	69·4	377·4	71·3	W
	7	0		06·79	563·0	69·7	388·1	71·2	W
	8	0	25	06·06	574·1	69·7	387·6	71·0	W
	0	0†	24	57·05	559·6	69·4	399·7	69·7	W
	8	0	25	14·01	546·8	65·7	317·4	64·6	H
	0	0		03·48	549·1	65·2	337·1	64·5	H
	2	0		02·84	538·0	65·0	389·6	65·1	W
	3	0		08·25	526·3	65·2	397·7	65·5	H
15	0	0		09·76	541·4	65·5	374·4	66·0	W
	1	0		13·00	551·5	65·8	372·5	66·5	H

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
15	2	0	25	11·27	550·1	66·2	381·1	67·3	W
	4	0		08·16	565·4	67·2	416·4	68·4	H
	6	0		08·88	557·8	68·0	432·3	69·3	W
	7	0		08·72	565·0	68·2	413·8	69·3	W
	8	0		04·98	560·7	68·3	409·2	69·1	W
	10	0		05·23	558·0	68·1	392·3	68·2	W
	18	0	25	01·78	540·0	65·7	362·0	65·0	H
	20	0	24	58·43	541·2	65·2	382·8	64·7	H
	22	0	25	00·06	531·3	65·0	392·8	65·0	W
	23	0		03·97	530·8	65·2	375·7	65·2	H
16	0	0		07·94	521·7	65·4	363·2	65·9	W
	1	0		12·55	529·2	65·7	360·0	66·5	H
	2	0		12·69	547·3	66·0	340·9	67·0	W
	4	0		11·30	568·2	66·5	381·4	67·2	H
	6	0		06·16	558·8	66·5	394·9	66·9	W
	7	0		05·29	564·0	66·4	396·0	66·9	W
	8	0		04·91	564·4	66·4	388·8	66·7	W
	10	0		07·04	553·5	66·0	393·6	65·8	W
	18	0	25	01·75	548·3	63·4	387·8	62·5	H
	20	0		04·17	539·4	62·8	401·1	62·0	H
	22	0		04·55	529·6	62·7	409·4	62·7	W
	23	0		09·96	535·0	62·8	401·4	63·2	H
17	0	0		08·85	540·1	63·0	367·3	63·6	W
	1	0		09·02	546·9	63·3	372·8	63·8	H
	2	0		09·82	547·9	63·5	371·4	64·0	W
	4	0		09·35	546·9	63·8	402·6	64·5	H
	6	0		08·08	578·8	64·0	421·3	64·5	W
	7	0		03·23	580·9	63·9	429·3	64·3	W
	8	0		06·12	559·7	63·8	419·1	64·1	W
	10	0		06·77	554·1	63·5	393·2	63·5	W
	18	0	25	01·68	545·9	60·0	402·4	58·7	H
	20	0	24	56·85	541·8	59·5	426·3	58·2	H
	22	0	25	06·46	532·0	59·3	401·7	59·0	W
	23	0		08·52	525·5	59·3	404·0	59·4	H
18	0	0		10·50	547·4	59·5	388·4	59·8	W
	1	0		14·17	551·3	59·7	378·0	60·0	H
	2	0		13·16	552·2	59·8	372·0	60·0	W
	4	0		10·41	565·0	59·8	406·7	60·2	H
	6	0		08·46	567·6	60·2	481·3	60·9	W
	7	0		05·92	560·1	60·5	485·4	61·6	W
	8	0		07·20	564·1	60·9	441·7	61·7	W
	10	0		07·31	568·4	60·8	394·8	60·8	W
19	18	0	25	02·93	539·7	59·7	362·4	58·8	H
	20	0		03·43	524·7	59·2	389·1	58·7	H
	22	0		02·45	533·4	59·5	373·6	60·0	W
	23	0		06·73	529·1	59·8	371·5	61·0	H
20	0	0		09·05	547·8	60·4	365·4	61·7	W
	1	0		08·77	552·7	60·9	361·5	62·4	H
	2	0		09·06	554·6	61·6	370·2	63·3	W
	4	0		04·62	570·9	62·8	392·2	64·4	B
	6	0		06·86	566·0	63·8	386·2	65·5	W
	7	0		06·79	565·4	64·2	369·2	65·5	W
	8	0	25	06·50	567·5	64·4	369·1	65·3	W
.	10	0	24	59·83	561·4	64·1	386·1	64·3	W

DECLINATION. Magnet untouched, April 14^d^, 1846—May 1847.

FILAR. Observed 2^m^ after the Declination, $k=0·000135$. BALANCE. Observed 3^m^ after the Declination, $k=0·000010$.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
20	18	0	25	04·78	548·4	61·3	342·5	60·5	H
	20	0		03·09	538·6	60·8	360·4	60·2	H
	22	0		04·93	537·7	60·6	370·3	60·4	W
	23	0		07·24	534·2	60·6	361·7	60·5	W
21	0	0		07·13	547·6	60·7	376·1	61·0	W
	1	0		10·43	557·6	61·0	396·7	61·5	B
	2	0		10·07	555·7	61·3	394·9	62·2	W
	4	0		09·03	559·5	62·4	379·0	63·9	H
	6	0		07·27	569·2	63·6	383·9	64·8	W
	7	15		07·57	561·2	63·9	391·3	64·9	W
	8	0		05·18	561·7	63·9	391·8	64·7	W
	10	0		06·44	555·1	63·6	380·2	63·9	W
	18	0	25	07·51	553·5	61·3	347·2	60·6	H
	20	0		02·96	552·0	60·9	341·4	60·4	H
	22	0		00·96	536·4	60·8	367·3	60·8	W
	23	0		05·58	530·7	60·8	378·3	61·4	H
22	0	0		08·77	533·3	61·2	379·8	62·0	W
	1	0		10·87	539·5	61·7	373·3	62·8	H
	2	0		10·23	547·9	62·2	368·1	63·5	W
	4	0		09·29	560·2	63·2	388·1	64·6	H
	6	0		05·29	583·9	64·0	415·9	65·5	W
	7	0		02·69	569·6	64·3	446·5	65·5	W
	8	0		07·11	561·9	64·5	416·0	65·3	W
	10	0		07·40	560·6	64·2	386·1	64·5	W
	18	0	25	01·41	553·1	61·8	390·5	61·0	H
	20	0		06·01	545·3	61·4	389·7	60·9	H
	22	0		10·03	528·6	61·4	385·9	61·5	W
	23	0		09·91	538·9	61·5	361·9	61·8	H
23	0	0		14·87	547·0	61·7	366·0	62·1	W
	1	0		15·20	552·4	61·8	370·2	62·3	H
	2	0		13·63	565·1	62·0	388·6	62·5	W
	4	0		10·83	565·6	62·4	415·9	63·2	W
	6	0		09·87	552·1	63·0	443·6	63·8	W
	7	0		08·06	561·8	63·0	419·6	63·7	W
	8	0		05·58	564·3	63·1	413·8	63·7	W
	10	0		04·91	549·4	63·0	371·9	63·2	W
	18	0	25	00·20	547·0	61·0	390·2	60·2	H
	20	0		00·01	540·8	60·7	403·7	60·2	H
	22	0		02·46	537·2	60·5	378·3	60·3	W
	23	0		05·42	537·8	60·4	379·3	60·7	H
24	0	0		09·19	545·8	60·6	374·3	61·2	W
	1	0		13·00	551·9	61·0	366·1	61·9	H
	2	0		14·64	556·3	61·5	367·8	62·8	W
	4	0		12·22	575·4	62·8	367·0	64·3	H
	6	0		10·40	587·1	63·7	374·5	65·2	W
	7	0	25	09·10	599·5	64·0	413·7	65·3	W
	8	0†	24	59·34	563·4	64·4	480·9	65·4	W
	10	0	25	04·17	564·3	64·3	410·1	64·3	W
	18	0	24	57·86	539·5	60·8	367·4	59·7	H
	20	0	25	01·01	536·8	60·7	368·6	60·0	H
	22	0		02·52	536·5	60·7	363·8	60·6	W
	23	0		05·62	536·6	60·8	357·3	61·2	H
25	0	0		08·41	540·5	61·1	344·8	61·8	W
	1	0		09·56	552·5	61·6	342·4	62·7	H
25	2	0	25	10·41	544·6	62·1	366·0	63·4	W
	4	0†		12·98	579·5	63·2	383·9	64·7	H
	6	0		10·04	574·8	64·2	414·1	65·5	W
	7	0		07·67	584·0	64·6	406·6	65·8	W
	8	0	25	00·57	581·2	64·8	418·7	65·7	W
	10	0†	24	54·72	573·5	64·5	308·2	64·5	W
26	18	0	25	01·01	548·0	62·5	367·1	62·1	W
	20	0		01·34	538·8	62·4	370·9	62·3	W
	22	2		06·53	534·8	62·5	360·0	63·1	H
	23	0		10·09	534·8	63·0	360·2	63·9	B
27	0	0		11·21	539·2	63·6	356·0	65·0	H
	1	0		12·22	541·6	64·4	343·8	66·2	H
	2	0		14·17	548·8	65·4	350·4	67·2	H
	4	0		12·22	560·4	66·7	404·1	68·7	W
	6	0		07·84	573·3	67·8	412·2	69·5	H
	7	0		02·69	569·7	68·0	423·9	69·5	H
	8	0		05·23	568·7	68·0	403·6	69·2	H
	10	0	25	03·37	556·7	68·0	374·8	68·5	H
	18	0	24	59·16	533·9	66·3	332·6	66·2	W
	20	0	25	01·54	536·3	66·1	357·1	66·0	W
	22	0		02·05	534·2	66·0	362·9	66·3	H
	23	0		03·94	533·2	66·1	360·4	66·8	W
28	0	0		06·63	531·1	66·6	354·1	67·5	B
	1	0		10·58	536·2	67·0	350·8	68·3	B
	2	0		13·32	544·6	67·8	350·3	69·5	H
	4	0		11·81	557·7	69·0	357·9	70·7	W
	6	0		08·21	565·9	69·8	381·5	70·8	H
	7	0		05·38	556·5	69·8	391·2	70·6	H
	8	0		06·26	563·3	69·7	384·0	70·2	H
	10	0	25	05·02	559·7	69·0	372·4	69·2	H
	18	0	24	59·50	545·7	66·7	391·3	66·1	W
	20	0	24	57·01	545·5	66·3	380·8	65·7	W
	22	0	25	00·85	535·4	66·0	374·4	65·7	H
	23	0		05·55	535·5	66·0	377·5	65·9	W
29	0	0		08·75	543·2	66·0	355·7	66·0	H
	1	0		13·27	544·0	66·0	356·0	66·0	H
	2	0		16·55	546·5	66·0	360·4	66·1	H
	4	0†		16·80	575·0	66·1	451·0	66·2	W
	6	0†		14·78	614·9	65·9	656·4	65·8	H
	7	0†		07·20	590·1	65·6	552·2	65·1	H
	8	0		08·41	556·5	65·3	485·0	64·1	H
	10	0		07·64	545·6	64·7	401·0	63·4	
	18	0	25	02·15	545·4	62·4	382·4	61·3	
	20	0		02·12	532·2	62·0	383·3	61·1	
	22	0		04·14	527·3	61·8	374·2	61·7	
	23	0		07·00	528·7	62·0	373·7	62·1	
30	0	0		10·09	529·1	62·2	367·1	62·6	
	1	0		13·02	536·0	62·7	365·7	63·3	
	2	0		12·42	541·0	63·1	356·7	64·2	
	4	0		12·45	571·0	64·4	363·5	65·9	
	6	0		09·19	567·2	65·7	390·1	67·3	
	7	0		07·64	577·7	66·2	393·0	67·7	
	8	0	25	07·27	574·2	66·6	397·9	67·7	
	10	0	24	51·93	550·3	66·7	386·6	66·9	

DECLINATION. Magnet untouched, April 14d, 1846—May 1847.

BIFILAR. Observed 2m after the Declination, k=0·000135. BALANCE. Observed 3m after the Declination, k=0·000010.

† Extra Observations made.

ttingen an Time Declina- on Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
3	18	15	24	57·98	538·3	64·6	303·2	64·0	W
	20	0	25	00·44	533·2	64·2	355·6	63·8	W
	22	0		04·17	530·5	64·0	363·6	63·8	H
	23	0		05·99	542·5	64·0	361·2	64·3	W
3	0	0		11·24	540·8	64·3	358·3	65·0	H
	1	0		13·90	539·5	64·7	347·9	65·7	H
	2	0		11·07	557·0	65·5	344·9	66·9	H
	4	0		09·74	564·8	66·8	375·4	68·3	W
	6	0		02·59	588·8	67·7	434·1	68·7	H
	7	0		03·37	573·5	67·7	434·8	68·3	H
	8	0		08·45	576·4	67·7	389·2	67·7	H
	10	0		05·55	558·0	66·9	378·5	66·7	H
	18	0	25	00·17	534·6	64·4	358·0	63·6	W
	20	0		01·65	538·6	64·0	368·4	63·6	W
	22	0		00·18	529·4	64·2	374·0	64·3	H
	23	0		01·54	534·1	64·4	374·9	65·0	W
	0	0		07·17	530·9	64·8	362·0	65·9	H
	1	0		09·46	538·0	……	334·1	67·2	H
	2	0		10·77	524·9	……	344·1	68·2	H
	4	0		08·58	555·5	……	376·2	70·3	H
	6	0		01·98	586·8	……	434·7	71·8	H
	7	0		06·23	563·2	……	404·5	71·9	H
	8	0†	25	05·45	565·0	……	401·0	71·7	H
	10	0	24	57·78	549·8	……	349·0	70·7	H
	18	0	25	00·45	544·4	……	347·6	66·5	W
	20	0		03·34	534·3	……	355·9	66·5	W
	22	0		00·44	526·8	……	365·8	66·5	H
	23	0		04·58	543·3	……	379·2	66·7	H
	0	0		05·52	537·1	……	385·8	66·9	H
	1	0		07·54	540·1	……	381·1	67·2	H
	2	0		10·11	536·0	……	377·7	67·7	H
	4	0		09·13	561·9	72·0	357·1	68·5	H
	6	0		03·97	574·8	71·5	395·6	71·5	H
	7	0		00·44	565·8	72·0	417·9	72·2	H
	8	0		03·90	560·1	72·5	397·1	72·5	H
	10	0		05·82	562·0	72·6	368·7	72·3	H
	18	0	25	00·04	544·5	67·6	389·7	67·0	W
	20	0	24	59·70	535·8	66·7	399·1	66·3	W
	22	0	25	00·72	530·1	66·4	405·5	66·7	H
	23	0		06·86	523·3	66·6	399·5	67·0	W
4	0	0		11·00	532·3	67·0	378·3	67·7	H
	1	0		11·42	539·0	67·6	360·8	68·2	H
	2	3		12·63	539·8	68·3	367·2	68·9	H
	4	0		08·82	551·2	69·8	375·3	70·3	W
	6	0		04·48	558·4	71·0	389·6	71·2	H
	7	0		03·90	564·8	71·2	384·5	71·5	H
	8	3		03·70	558·1	71·2	391·3	71·5	H
	10	0		04·37	554·8	70·9	379·2	70·8	H
	18	4	25	00·08	544·7	67·0	391·2	66·8	H
	20	0	24	58·90	537·0	66·6	394·6	66·2	H
	22	0	25	02·01	533·7	66·0	385·9	66·0	W
	23	0		03·92	534·5	66·0	387·4	66·3	W
5	0	0		08·41	538·2	66·4	381·6	67·0	W
	1	0		11·32	545·0	67·0	369·4	67·5	H

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
5	2	0	25	11·74	551·0	67·3	364·5	68·0	H
	4	0		08·82	548·8	68·3	380·8	68·8	W
	6	0		05·58	561·6	69·5	370·3	69·9	W
	7	0		04·37	560·2	70·0	378·2	70·5	W
	8	0		04·29	558·0	70·3	382·3	70·5	W
	10	0	25	06·93	562·1	70·4	365·3	70·4	W
	18	0	24	57·31	545·0	66·4	384·1	65·8	W
	20	0	24	57·88	545·4	65·5	380·9	65·1	W
	22	3	25	05·65	540·4	65·0	360·8	65·2	H
	23	0		12·72	528·4	65·1	358·9	65·6	W
6	0	0		12·23	546·0	65·7	335·6	66·5	H
	1	0		18·07	535·4	66·7	335·8	67·7	H
	2	0		18·34	551·7	68·1	331·0	69·2	H
	4	0		05·47	562·7	71·0	418·4	72·0	W
	6	0		06·83	577·7	73·7	418·6	74·3	H
	7	0		05·25	561·9	74·5	418·3	74·8	W
	8	0		06·21	563·5	75·0	420·9	75·2	H
	10	0	25	01·54	550·9	74·8	396·1	74·5	H
	18	6	24	55·02	542·5	69·0	251·5	68·2	W
	20	0†	25	07·20	525·3	68·0	352·6	67·5	W
	22	0†		07·00	504·6	67·2	368·7	66·8	H
	23	0†		15·54	503·3	67·1	365·5	66·8	W
7	0	0†		16·25	513·1	66·8	364·3	66·9	H
	1	6		17·76	528·6	66·8	409·9	67·2	H
	2	0		18·81	535·3	67·0	390·4	67·3	H
	4	0		13·84	553·6	67·2	433·7	67·4	W
	6	0		11·10	589·2	67·2	440·8	67·2	H
	7	0		07·54	571·1	67·0	472·8	67·1	H
	8	0†		09·46	567·2	66·8	443·9	67·0	H
	10	0		04·21	552·7	66·7	344·1	66·8	H
	18	0	25	09·49	544·5	65·7	269·6	65·7	W
	20	0†		13·23	533·5	65·4	288·3	65·5	W
	22	0†		08·41	502·5	65·4	363·8	65·7	H
	23	0		09·49	519·4	65·7	385·1	66·0	W
8	0	0		10·23	530·9	65·8	387·8	66·4	H
	1	0		13·37	529·1	66·5	418·7	67·0	B
	2	0†		07·45	564·4	66·9	448·2	67·3	H
	4	0		10·33	578·2	68·1	412·7	68·7	W
	6	0	25	03·67	573·6	69·4	475·9	69·8	H
	7	0	24	59·93	562·4	69·8	436·0	70·2	H
	8	0†	25	04·96	582·0	70·2	418·3	70·4	H
	10	0		04·42	551·2	70·1	360·2	70·2	H
9	18	0	25	07·24	515·3	64·2	294·2	63·7	W
	20	0		04·39	532·5	63·6	358·9	63·2	W
	22	0		07·62	519·2	63·2	389·7	63·2	H
	23	0		10·16	518·7	63·3	387·3	63·6	W
10	0	0		10·67	532·6	63·7	393·2	64·2	H
	1	0		14·70	532·2	64·2	406·9	65·0	H
	2	0		14·13	544·6	65·0	435·1	65·4	H
	4	0		11·95	550·8	66·3	388·8	66·9	W
	6	0		04·96	551·3	67·3	450·5	67·7	H
	7	0		06·32	563·6	67·7	465·3	67·7	H
	8	0		02·06	566·1	67·5	444·7	67·3	H
	10	0		03·45	550·8	66·7	395·8	66·6	H

DECLINATION. Magnet untouched, April 14^{d}, 1846—May 1847.

IFILAR. Observed 2^{m} after the Declination, $k=0·000135$. BALANCE. Observed 3^{m} after the Declination, $k=0·000010$.

Extra Observations made.

ug. 1^{d}—2^{d}. Observations of deflection of the bifilar magnet made to determine (k) the value of one scale division of the bifilar arts of the whole horizontal force: during these observations the bifilar thermometer was removed, and the observations at the rs have been corrected to the temperature of the balance magnet.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
10	18	0	25	06·24	539·2	62·7	357·4	62·2	H
	20	0		07·22	543·4	61·9	346·4	61·6	H
	22	0		00·82	528·3	61·5	381·2	61·5	W
	23	0		04·69	522·2	61·6	386·3	61·8	H
11	0	0		08·88	528·0	61·7	382·2	62·2	W
	1	0		11·57	534·6	62·0	382·9	62·5	H
	2	0		12·80	544·3	62·3	393·4	62·7	W
	4	0		11·34	555·4	62·8	407·6	63·5	H
	6	0		08·01	564·8	63·6	409·3	64·0	W
	7	0		06·30	563·1	63·9	406·7	64·3	W
	8	0		05·47	565·7	64·0	391·5	64·2	W
	10	0		01·27	547·6	63·7	387·0	63·7	W
	18	0	25	01·63	554·3	61·3	362·7	61·0	W
	20	0		04·58	540·9	61·0	375·8	60·8	W
	22	0		00·74	537·7	60·8	393·1	61·0	H
	23	0		03·99	530·3	60·9	388·1	61·2	W
12	0	0		08·65	525·5	61·2	387·1	61·5	H
	1	0		10·23	541·3	61·6	382·3	62·2	H
	2	0		11·52	551·2	62·1	381·6	62·7	H
	4	0†		02·48	578·0	63·1	495·9	63·7	W
	6	0		08·26	574·9	64·4	510·1	64·8	H
	7	0		08·08	566·4	65·0	485·9	65·2	H
	8	0	25	10·23	568·9	65·1	441·0	65·3	H
	10	0†	24	57·71	539·5	64·8	353·0	64·8	H
	18	0	25	07·57	531·0	62·4	325·4	62·2	W
	20	0		11·75	538·0	61·9	343·2	62·0	W
	22	0		11·89	507·1	61·9	380·4	62·2	H
	23	0		10·56	535·3	61·9	371·2	62·6	W
13	0	0		10·25	542·9	62·4	379·7	63·0	H
	1	0		11·54	529·2	62·7	403·5	63·2	H
	2	0		08·99	543·9	63·0	441·7	63·5	H
	4	0		09·69	554·6	63·5	498·6	64·0	W
	6	0		05·45	568·7	64·6	507·1	65·0	H
	7	0		04·04	562·7	65·0	478·8	65·3	H
	8	0		02·67	562·6	65·2	468·8	65·3	H
	10	0		06·79	557·3	64·8	389·0	64·7	H
	18	0	25	12·35	550·5	60·5	205·9	59·8	W
	20	0		06·88	544·7	59·5	223·6	58·9	W
	22	0		02·01	527·6	59·0	323·9	59·0	H
	23	0		07·27	528·3	59·0	332·5	59·3	W
14	0	0		08·90	530·1	59·3	338·6	60·0	W
	1	0		12·31	542·9	60·1	345·5	61·0	H
	2	0		14·92	558·2	61·1	359·5	62·2	H
	4	0†		12·75	524·2	63·3	540·4	64·0	W
	6	0		08·11	554·0	64·8	439·8	65·3	H
	7	0	25	07·84	562·0	65·2	403·0	65·7	H
	8	0†	24	59·93	564·3	65·4	431·0	65·5	H
	10	0†	24	57·71	532·1	65·0	293·4	64·2	H
	18	0	25	03·14	548·2	61·7	301·6	61·4	W
	20	0		00·42	527·1	61·0	360·8	60·7	W
	22	0		05·69	516·4	60·5	382·6	60·5	H
	23	0		07·60	521·8	60·6	394·5	60·8	W
15	0	0		12·92	524·1	60·7	402·0	61·0	H
	1	0		15·27	528·4	60·9	402·7	61·5	H
15	2	0	25	11·00	552·4	61·2	444·4	61·8	H
	4	0		10·87	573·8	61·9	433·0	62·5	H
	6	0		06·07	553·9	62·2	493·5	62·7	H
	7	0		06·06	559·9	62·3	466·6	62·7	H
	8	0	25	05·58	554·4	62·3	429·8	62·7	H
	10	0	24	57·31	566·3	62·2	365·2	62·5	H
16	18	0†	25	11·03	522·5	62·2	262·6	62·0	W
	20	0		11·37	543·9	61·7	284·2	61·5	W
	22	0		09·54	524·2	61·6	363·7	61·8	H
	23	0		10·30	537·4	61·8	368·5	62·2	H
17	0	0		11·12	539·8	62·2	353·9	62·7	H
	1	0		09·51	536·4	62·6	353·7	63·2	H
	2	0		10·16	541·9	63·2	356·2	63·5	H
	4	0		08·34	547·1	63·6	365·7	64·0	W
	6	0	25	04·37	569·3	64·0	403·1	64·5	H
	7	0†	24	55·53	592·5	64·2	446·8	64·7	H
	8	0	25	04·31	560·1	64·3	412·4	64·7	H
	10	0		04·46	556·1	64·3	373·6	64·5	H
	18	0	25	00·06	541·9	62·2	347·3	62·2	H
	20	0		01·38	541·1	61·6	357·8	61·5	H
	22	0		02·77	535·3	61·2	372·0	61·1	W
	23	0		05·42	530·7	61·1	364·4	61·0	H
18	0	0		09·60	544·4	60·9	355·9	61·1	W
	1	0		11·07	543·2	61·0	362·2	61·2	H
	2	0		13·46	545·2	61·0	353·0	61·2	W
	4	0		10·11	548·5	62·0	375·2	62·7	W
	6	0		05·40	553·8	63·6	412·1	64·1	W
	7	0		02·84	564·8	64·0	417·7	64·4	W
	8	0		04·95	564·0	64·3	392·1	64·5	W
	10	0		04·24	552·8	64·0	369·0	64·0	W
	18	0	25	00·84	545·6	61·1	352·3	60·7	W
	20	0		01·61	536·1	60·3	378·4	60·1	W
	22	0		03·45	529·9	59·9	377·1	60·0	H
	23	0		06·79	531·5	60·0	372·6	60·5	W
19	0	0		10·80	529·2	60·7	371·8	61·5	H
	1	0		11·41	543·5	61·7	364·3	62·6	H
	2	0		11·00	554·3	62·7	365·5	63·4	H
	4	0		08·75	551·6	64·4	369·3	65·0	W
	6	0		02·93	568·3	65·9	436·0	65·5	H
	7	0		01·93	564·5	66·7	445·3	66·7	H
	8	0		03·55	559·1	67·0	426·8	67·0	H
	10	0		01·45	550·5	66·8	371·7	66·7	H
	18	0	25	00·51	542·6	62·6	382·7	62·1	W
	20	0		01·14	534·1	61·7	378·6	61·3	W
	22	0		00·40	533·6	61·3	363·2	61·2	H
	23	0		05·02	536·5	61·2	358·4	61·3	W
20	0	0		09·08	537·8	61·3	355·1	61·5	H
	1	0		13·05	547·3	61·4	348·2	61·7	H
	2	0		14·53	548·4	61·6	355·5	61·9	H
	4	0		07·51	552·5	61·9	385·5	62·3	W
	6	0		04·37	565·3	62·2	385·9	62·7	H
	7	0		04·37	558·5	62·2	386·8	62·7	H
	8	0		05·05	558·1	62·2	374·1	62·7	H
	10	0		05·22	554·8	62·2	367·2	62·5	H

DECLINATION. Magnet untouched, April 14d, 1846—May 1847.

BIFILAR. Observed 2m after the Declination, $k=0·000135$. BALANCE. Observed 3m after the Declination, $k=0·000010$.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
2	18	0	25	02·42	547·4	61·1	370·7	61·1	W
	20	0	24	59·86	535·1	61·0	383·3	61·1	W
	22	0	25	05·52	530·9	60·8	368·1	61·0	H
	23	0		06·14	534·6	61·0	357·0	61·3	W
2	0	0		10·83	542·0	61·2	346·9	61·5	H
	1	0		14·40	540·3	61·7	343·9	62·2	H
	2	0		14·37	541·7	62·2	353·1	63·0	H
	4	0		10·38	551·7	63·7	379·0	64·3	W
	6	0		06·97	562·9	65·2	363·9	65·7	H
	7	0		05·25	571·9	65·6	367·7	66·0	H
	8	0		04·44	558·1	66·0	401·3	66·2	H
	10	0		03·40	552·8	65·7	373·5	65·7	H
	18	0	25	01·98	556·0	62·9	374·1	62·7	W
	20	0		08·65	538·6	62·3	365·5	62·0	W
	22	0		01·75	531·7	61·8	362·5	61·8	H
	23	0		06·73	529·3	61·9	357·3	62·3	W
2	0	0		12·72	533·9	62·3	346·3	63·0	H
	1	0		17·70	538·1	63·1	336·0	64·0	H
	2	0		17·93	552·3	64·1	332·2	65·2	H
	4	0		11·81	566·4	66·5	346·7	67·3	W
	6	0		08·79	563·6	68·7	378·5	69·0	H
	7	0		05·58	566·3	69·2	390·4	69·8	H
	8	0		05·29	558·7	69·6	389·3	69·7	H
	10	0†		16·08	533·7	69·3	206·2	69·2	H
2	18	0	25	00·89	549·3	60·4	386·7	60·0	H
	20	0	24	59·54	543·6	59·8	389·5	59·6	H
	22	0	25	02·46	533·6	59·6	387·0	59·6	W
	23	0		05·25	532·9	59·8	375·3	60·1	H
2	0	0		10·30	533·1	60·2	358·8	60·8	W
	1	0		14·65	539·7	61·0	351·6	62·0	H
	2	0		15·41	544·2	62·3	349·6	63·1	W
	4	0		11·28	556·8	64·0	370·3	64·7	H
	6	0		08·52	569·5	65·0	376·2	65·3	W
	7	0		08·95	577·4	65·3	382·9	65·5	W
	8	0		03·75	555·3	65·4	401·1	65·4	W
	10	0†		01·96	548·4	64·9	325·1	64·5	W
	18	0	25	06·04	526·7	59·1	321·4	58·0	H
	20	0		00·00	537·6	57·6	369·9	56·7	H
	22	0		04·86	521·1	56·9	379·4	56·5	W
	23	0		09·76	523·6	56·8	376·9	57·0	H
25	0	0		13·91	543·9	57·3	364·5	58·0	W
	1	0		10·83	549·4	58·3	378·9	59·5	H
	2	0		12·42	547·4	59·8	377·5	60·8	W
	4	0		11·59	556·8	62·5	381·7	63·3	H
	6	0		07·00	568·5	64·0	371·1	64·7	W
	7	0†	25	03·38	546·0	64·6	410·4	65·0	W
	8	0	24	57·71	567·4	64·8	386·0	65·2	W
	10	0	25	05·11	553·7	64·6	357·6	64·6	W
	18	0	25	00·57	543·9	59·7	349·7	59·0	H
	20	0	24	59·90	531·2	58·4	383·8	58·0	H
	22	0	25	05·36	516·6	57·7	375·4	57·6	W
	23	0		06·97	532·2	57·7	364·6	58·1	H
26	0	0		11·52	534·2	58·0	356·8	58·7	W
	1	0		13·12	549·8	58·8	345·9	59·9	H
26	2	0	25	15·14	551·9	59·7	341·4	61·0	W
	4	3		11·57	554·0	62·2	369·4	63·8	H
	6	0		08·38	559·6	64·4	368·4	65·8	W
	7	0		07·24	560·9	65·0	359·4	66·3	W
	8	0		00·64	563·3	65·6	365·2	66·6	W
	10	0	25	06·59	553·9	65·5	352·7	65·9	W
	18	0	24	57·71	546·8	60·5	296·9	59·5	H
	20	0	25	01·31	534·6	58·2	348·3	58·2	H
	22	0		07·34	525·4	58·5	366·0	57·8	W
	23	0		11·77	532·6	58·2	360·8	58·0	H
27	0	0		15·01	529·1	58·3	368·3	58·4	W
	1	0		13·09	539·0	58·7	367·5	59·5	H
	2	0		12·49	547·9	59·5	359·7	60·5	W
	4	0		08·88	555·8	61·8	362·4	63·5	H
	6	0		05·25	563·2	64·0	348·9	65·3	W
	7	0		03·13	581·4	64·8	357·2	65·8	W
	8	0†	25	01·63	565·1	65·2	410·5	66·0	W
	10	0†	24	57·98	524·7	65·5	318·4	66·2	W
	18	0	25	02·12	544·1	63·0	350·8	62·5	H
	20	0	24	58·85	542·9	62·0	370·5	61·5	H
	22	0	25	01·21	536·6	61·6	360·5	61·5	W
	23	0		05·09	535·1	61·6	348·3	61·9	H
28	0	0		10·88	535·0	61·9	335·8	62·8	W
	1	0		14·87	540·2	62·7	332·8	63·9	H
	2	0		16·13	556·3	63·6	329·9	65·1	W
	4	3		09·29	566·1	65·7	354·6	67·2	H
	6	0	25	08·01	573·7	67·2	432·0	68·3	W
	7	0†	24	56·11	584·2	67·7	462·6	68·5	W
	8	0	25	05·15	558·4	67·9	428·4	68·6	W
	10	0†	25	04·84	549·5	67·6	279·5	67·9	W
	18	0	24	58·85	546·0	65·0	349·4	64·5	H
	20	0	25	01·65	523·7	64·2	350·1	63·9	H
	22	0		04·29	523·8	63·7	355·0	63·5	W
	23	0		10·13	521·6	63·5	351·9	63·5	H
29	0	0		12·04	540·5	63·6	332·3	63·8	W
	1	0		15·36	555·8	63·7	328·7	64·2	H
	2	0		14·94	554·4	64·0	350·0	64·6	W
	4	0		11·44	553·4	65·0	373·7	66·0	H
	6	0†	25	00·60	590·3	65·8	394·8	66·8	W
	7	0	24	58·82	576·3	66·0	413·9	67·2	W
	8	0	25	05·11	562·3	66·3	399·1	67·0	W
	10	0†	25	02·55	594·5	66·1	301·7	66·3	W
30	18	0	25	03·27	541·3	64·0	349·5	63·7	H
	20	0		00·25	541·9	63·4	364·0	63·2	H
	22	0		03·28	533·4	63·1	367·6	63·3	W
	23	0		06·19	529·5	63·2	365·9	63·4	H
31	0	0		07·15	536·2	63·3	347·3	63·7	W
	1	0		09·00	536·5	63·4	345·4	63·7	H
	2	0		11·98	542·8	63·3	343·7	63·5	W
	4	0		09·37	550·2	63·2	362·2	63·5	H
	6	0		06·01	555·5	63·3	371·4	63·8	W
	7	0		05·08	560·3	63·5	372·4	63·9	W
	8	0		04·15	561·2	63·5	371·9	63·8	W
	10	0		02·22	554·0	63·4	344·5	63·2	W

DECLINATION. Magnet untouched, April 14^{d}, 1846—May 1847.

BIFILAR. Observed 2^{m} after the Declination, k=0·000135. BALANCE. Observed 3^{m} after the Declination, k=0·000010.

Extra Observations made.

Aug. 27^{d} 1^{h}. The declination was noted 25°·01′·41, but as it was found to be 25°·14′·80 with little apparent change at 1^{h} 20^{m}, it was eved that the reading at 1^{h} was 20 scale divisions in error, and it has been corrected accordingly.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
31	18	0	25	00·60	543·7	58·8	366·7	57·5	H
	20	0		01·04	538·7	57·7	389·3	56·2	H
	22	0		03·02	532·9	56·8	328·2	55·9	W
	23	0		06·39	537·2	56·7	382·2	56·2	H
1	0	0		09·89	541·4	56·7	370·2	57·0	W
	1	0		13·12	551·8	57·4	354·9	58·2	H
	2	0		14·10	560·0	58·3	352·4	59·5	W
	4	0		09·42	561·1	61·5	346·4	62·0	H
	6	0		06·16	555·3	62·4	362·0	63·6	W
	7	0		05·02	558·0	62·9	375·8	63·8	W
	8	0		05·06	559·3	63·0	373·4	63·8	W
	10	0		04·58	556·9	62·8	362·4	63·2	W
	18	0	25	00·13	547·0	59·8	356·5	59·5	H
	20	0		02·12	543·6	59·2	361·1	59·0	H
	23	0		04·88	536·5	58·9	365·6	58·8	W
	23	0		08·31	539·4	59·0	363·0	59·1	H
2	0	0		10·C0	538·9	59·0	355·7	59·5	W
	1	0		10·25	544·1	59·5	352·6	60·5	H
	2	0		12·36	552·6	60·2	346·3	61·3	W
	4	0		07·98	557·5	61·8	346·8	63·0	H
	6	0		05·38	562·1	62·8	341·1	63·8	W
	7	0		05·82	561·5	63·1	343·7	64·0	W
	8	0		01·54	558·7	63·3	349·3	64·0	W
	10	0		05·52	556·9	63·1	355·6	63·6	W
	18	0	25	00·64	545·2	60·3	364·8	60·0	H
	20	0		03·27	535·5	60·0	370·6	59·7	H
	22	0		04·88	535·8	59·8	357·3	60·0	W
	23	0		08·29	534·4	60·0	350·5	60·5	H
3	0	0		10·06	536·7	60·4	345·0	61·3	W
	1	0		10 61	541·7	61·2	339·3	62·4	H
	2	0		11·19	548·3	62·0	330·6	63·2	W
	4	0		06·84	560·4	63·2	340·5	64·2	H
	6	0		03·88	560·1	63·8	347·3	64·7	W
	7	0		04·75	554·8	64·0	345·9	64·8	W
	8	0		05·08	558·3	64·0	345·6	64·8	W
	10	0		05·50	558·7	63·9	348·6	64·4	W
	18	0†	25	12·51	536·7	61·5	304·5	61·5	H
	20	0		02·03	543·9	61·2	273·7	61·2	H
	22	0†		17·56	530·5	61·1	302·9	61·5	W
	23	0		14·50	539·3	61·4	360·6	62·0	H
4	0	0		16·57	526·8	61·9	353·5	62·7	W
	1	0		18·84	554·0	62·4	361·7	63·4	H
	2	0		18·68	536·9	63·0	406·0	64·0	W
	4	0		14·50	544·5	64·4	415·9	65·4	H
	6	0		06·73	548·5	65·7	401·8	66·7	W
	7	0		06·16	547·3	66·0	387·1	66·8	W
	8	0	25	06·12	552·3	66·0	375·3	66·8	W
	10	0†	24	54·70	549·3	66·0	376·8	66·5	W
	18	0	25	04·14	559·7	63·5	336·9	63·5	H
	20	0†		12·01	527·9	63·0	369·4	63·0	H
	22	0†		13·41	515·3	62·7	379·9	62·7	W
	23	0†		15·04	517·6	62·7	415·1	62·8	H
5	0	0		18·82	521·6	62·8	392·7	63·4	H
	1	0†		20·72	556·1	63·4	418·4	64·2	H

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
2	2	0	25	17·15	557·2	63·9	387·7	65·2	H
	4	0†	24	57·14	634·6	65·9	739·2	67·3	W
	6	0†	25	11·82	625·1	67·4	601·5	68·6	W
	7	0†	24	59·63	560·1	67·8	475·3	69·2	H
	8	0	24	57·34	552·1	67·9	440·2	68·8	W
	10	0†	25	07·51	513·4	67·7	132·7	68·0	W
6	18	0	25	03·06	539·8	66·0	372·1	65·8	H
	20	0		02·42	536·7	65·4	382·1	65·2	H
	22	0		05·80	526·7	65·1	381·4	65·1	W
	23	0		07·60	530·4	65·1	369·4	65·1	B
7	0	0		09·29	536·9	65·7	364·7	66·5	H
	1	0		10·20	538·4	66·3	362·6	67·3	H
	2	0		09·20	541·2	67·0	370·9	68·2	W
	4	0		06·12	550·7	68·8	371·7	70·2	W
	6	0		03·94	547·8	70·6	369·3	71·8	W
	7	0		04·44	548·7	71·2	370·9	72·3	W
	8	0		04·98	548·0	71·5	365·9	72·2	H
	10	0		03·97	545·4	71·3	366·7	71·7	W
	18	0	25	05·29	540·1	67·8	378·9	67·3	H
	20	0†		11·51	530·1	67·2	329·1	66·7	H
	22	0		12·01	527·2	66·6	339·0	66·5	W
	23	0		11·54	528·0	66·6	356·0	66·7	H
8	0	0		14·80	526·8	66·6	380·7	66·9	W
	1	0		14·57	541·5	66·8	395·4	67·0	H
	2	0		13·37	558·7	66·8	431·0	67·0	W
	4	0		10·67	593·6	66·8	532·9	67·2	H
	6	0	25	14·04	588·1	67·2	539·0	67·5	W
	7	0	24	57·02	569·8	67·3	501·5	67·6	W
	8	0†	24	58·42	536·9	67·4	426·6	67·4	W
	10	0	24	59·66	536·8	67·0	390·7	66·8	W
	18	0	25	02·01	538·1	63·0	398·2	61·8	H
	20	0		02·12	533·4	62·2	404·4	61·0	H
	22	0		05·80	519·9	61·6	401·2	61·0	W
	23	0		09·66	526·0	61·5	402·0	61·2	H
9	0	5		12·51	528·7	61·7	396·1	61·9	W
	1	0		12·38	537·9	62·0	389·3	62·5	H
	2	0		11·27	550·6	62·5	381·9	63·1	W
	4	0		04·31	555·6	63·6	432·5	64·2	H
	6	0		04·64	562·3	64·3	489·3	65·0	W
	7	0		01·22	553·9	64·5	453·7	65·0	W
	8	0		03·34	551·7	64·6	415·6	65·0	W
	10	0		08·77	548·8	64·3	385·6	64·3	W
	18	0	25	03·43	540·7	59·0	411·8	57·5	H
	20	0		01·98	533·6	57·5	408·4	56·0	H
	22	0		08·11	529·9	56·6	389·5	55·5	W
	23	0		10·09	529·6	56·4	385·4	55·8	H
10	0	0		12·60	537·8	56·5	379·3	56·5	W
	1	0		12·18	540·0	57·1	380·7	57·7	H
	2	0		11·41	540·5	58·0	375·2	59·0	W
	4	0		08·72	559·4	60·2	393·1	61·5	H
	6	0		06·93	557·3	62·3	431·7	63·3	W
	7	0		03·81	556·8	63·1	457·5	63·7	H
	8	0		01·98	553·6	63·2	465·9	63·7	H
	10	0		01·65	543·1	63·0	404·6	63·3	W

DECLINATION. Magnet untouched, April 14^{d}, 1846—May 1847.

BIFILAR. Observed 2^{m} after the Declination, k=0·000135. BALANCE. Observed 3^{m} after the Declination, k=0·000010.

† Extra Observations made.

ttingen n Time Declina- n Obs.		DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
				Corrected.	Thermometer.	Corrected.	Thermometer.	
h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
18	0	25	00·74	555·9	59·4	368·9	58·8	H
20	0†		04·37	529·2	58·7	372·3	58·2	H
22	0		20·30	534·1	58·4	341·2	58·3	W
23	0		16·55	542·6	58·6	364·6	58·8	H
0	0		17·78	525·4	58·9	392·1	59·5	W
1	0		17·93	534·0	59·6	413·7	60·5	H
2	0†		17·58	563·3	60·5	452·5	61·8	W
4	0	25	12·01	537·0	63·1	477·4	64·8	W
6	0†	24	43·69	589·2	65·5	741·9	67·0	W
7	0	24	57·75	563·2	66·2	529·4	67·5	W
8	0	25	03·77	550·8	66·7	444·7	67·7	W
10	0†		06·50	579·3	66·9	228·1	67·6	W
18	0	25	01·31	532·0	64·4	292·8	64·2	H
20	0		06·44	519·9	63·8	346·6	63·7	H
22	0		08·52	520·3	63·6	378·6	63·7	W
23	0		12·15	527·4	63·6	386·4	64·0	W
0	0		09·98	524·5	63·9	389·7	64·5	W
1	0		11·37	538·5	64·5	401·3	65·7	H
2	0		13·16	558·4	65·1	389·6	66·3	W
4	0		05·15	571·6	66·8	477·2	67·8	H
6	0		05·92	543·7	67·6	417·5	68·3	W
7	0		02·75	558·5	67·6	397·8	68·0	W
8	0		04·71	552·5	67·4	374·1	67·6	W
10	0		09·17	556·7	66·7	287·3	66·8	W
18	0	25	01·68	550·4	63·7	286·0	62·0	H
20	0†		07·81	515·0	62·7	343·0	62·0	H
22	0		13·44	533·6	62·0	326·5	61·5	W
23	0		16·65	554·4	61·9	341·1	61·8	H
0	0		14·91	537·1	62·0	342·6	62·5	W
1	0		12·82	534·1	62·6	372·0	63·2	H
2	0		11·91	546·5	63·1	413·3	63·9	W
4	0		08·58	557·1	64·7	461·5	65·9	H
6	0		04·76	558·1	66·2	402·3	67·3	W
7	0		02·82	554·1	66·8	406·3	67·7	W
8	0		02·33	550·6	67·2	402·3	67·8	W
10	0		02·13	557·6	67·2	355·4	67·5	W
18	0	25	07·52	535·9	63·7	314·5	63·0	H
20	0		08·11	540·3	62·7	334·3	62·0	H
22	0		14·07	507·3	62·2	368·6	61·7	W
23	0		12·98	528·7	62·0	360·4	62·0	W
0	0		12·67	525·5	62·2	366·2	62·6	W
1	6		08·03	535·9	62·8	363·0	63·7	H
2	0		12·75	529·3	63·6	365·6	64·8	W
4	0		09·69	541·0	65·7	407·2	66·8	H
6	0		04·55	556·4	67·2	370·4	68·3	W
7	0		03·02	554·0	67·8	371·1	68·5	W
8	0		03·95	553·8	68·0	373·8	68·6	W
10	0		00·99	546·0	67·7	358·4	67·9	W
18	0	25	02·08	543·5	63·3	369·8	62·5	H
20	0		01·34	537·3	62·2	379·7	61·0	H
22	0		03·57	529·7	61·3	374·5	60·5	W
23	0		06·43	528·8	61·1	374·8	60·7	H
0	0		09·77	534·8	61·1	366·6	61·0	W
1	0		11·48	544·4	61·3	366·9	61·7	H

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
16	2	0	25	12·87	544·3	61·7	369·3	62·3	W
	4	0		08·28	547·8	62·8	362·4	63·5	H
	6	0		05·77	553·0	63·5	359·4	64·2	W
	7	0		05·36	556·2	63·7	357·0	64·3	W
	8	0		05·30	556·8	63·8	355·0	64·3	W
	10	0		04·71	553·2	63·7	357·7	64·2	W
	18	0	25	04·75	548·7	61·5	337·9	61·0	H
	20	0		01·16	546·4	60·7	358·2	60·2	H
	22	0		05·30	528·8	60·3	367·5	60·0	W
	23	0		10·20	527·4	60·2	362·5	60·0	H
17	0	0		12·56	537·2	60·2	354·0	60·3	W
	1	0		14·50	537·7	60·4	361·5	61·0	H
	2	0		13·94	541·4	60·9	368·4	61·5	W
	4	0		07·89	549·9	61·9	365·8	62·7	W
	6	0		06·16	559·3	62·5	380·1	63·2	W
	7	0		05·65	547·1	62·7	396·1	63·2	W
	8	0		03·81	555·7	62·7	389·6	63·2	W
	10	0		07·11	555·0	62·6	312·8	62·8	W
	18	0	25	03·90	548·8	60·2	366·7	59·5	H
	20	0		02·45	543·5	59·4	370·7	58·5	H
	22	0		05·55	543·0	58·7	363·6	58·2	W
	23	0		08·99	538·6	58·5	356·9	58·3	H
18	0	0		12·60	541·7	58·6	362·2	58·9	W
	1	0		14·33	531·5	59·0	365·3	59·7	H
	2	0		12·75	544·1	59·6	360·5	60·5	W
	4	0		08·77	544·4	61·1	370·9	62·0	H
	6	0		05·42	549·4	62·0	374·8	62·7	W
	7	0		05·72	553·1	62·1	365·8	62·7	W
	8	0	25	05·29	555·7	62·0	363·0	62·3	W
	10	0	24	59·61	557·2	61·3	359·7	61·0	W
	18	0	25	03·47	547·7	56·7	368·1	55·6	H
	20	0		01·68	549·1	55·8	377·7	55·0	H
	22	0		04·56	537·0	55·1	382·2	54·7	W
	23	0		07·67	538·7	55·0	373·6	55·0	H
19	0	0		10·47	543·3	55·3	365·6	55·6	W
	1	0		14·20	542·7	55·8	373·3	56·2	H
	2	0		12·85	547·2	56·3	378·2	57·1	W
	4	0		11·41	559·9	57·2	389·0	58·0	H
	6	0	25	11·72	557·1	57·8	422·2	58·4	W
	7	0†	24	54·41	551·0	57·9	477·7	58·4	W
	8	0	25	02·39	555·0	57·9	413·4	58·5	W
	10	0	24	59·56	552·6	57·9	409·2	58·3	W
20	18	0	25	00·00	549·1	56·3	358·7	56·2	H
	20	0		02·79	546·1	56·1	353·5	56·0	H
	22	0		04·44	540·5	55·9	355·0	56·0	W
	23	0		07·40	540·7	56·0	349·1	56·2	H
21	0	0		09·39	538·7	56·4	350·4	57·0	W
	1	0		13·05	545·7	57·0	351·6	57·8	H
	2	0		12·15	544·5	57·6	353·1	58·6	W
	4	0		09·35	558·9	58·9	348·8	60·0	H
	6	0		08·46	564·8	60·0	343·2	60·5	W
	7	0	25	08·73	571·9	60·3	362·2	60·6	W
	8	0†	24	41·23	567·2	60·4	498·7	60·4	W
	10	0†	25	02·32	551·1	60·0	376·8	60·2	W

DECLINATION. Magnet untouched, April 14^{d}, 1846—May 1847.

IFILAR. Observed 2^{m} after the Declination, k=0·000135. BALANCE. Observed 3^{m} after the Declination, k=0·000010.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
21	18	0	24	55·12	518·7	56·6	119·4	55·6	W
	20	0†	25	11·98	505·8	55·2	133·6	54·0	H
	22	0		14·10	472·3	54·0	298·4	53·2	H
	23	0†		18·37	487·7	53·8	395·7	53·2	H
22	0	0†		15·47	532·0	53·8	546·7	53·2	H
	1	0†		15·41	591·2	53·9	664·6	54·2	H
	2	0†		06·86	641·9	54·2	650·9	55·0	H
	4	0†	25	11·74	624·1	55·7	607·5	56·7	H
	6	0†	24	45·40	554·8	56·9	453·3	57·8	B
	7	0†	25	11·57	463·6	57·1	257·6	58·0	B
	8	0†	24	21·92	515·4	57·3	272·2	58·3	B
	10	0†	24	47·59	362·2	57·5	– 21·6	58·5	W
	18	0	25	18·47	540·6	56·4	210·4	57·0	H
	20	0		02·42	536·5	56·4	301·1	57·0	H
	22	0		03·75	532·4	56·5	307·2	57·0	W
	23	0		07·04	532·8	56·6	307·0	57·2	H
23	0	0		08·65	532·7	56·7	304·3	57·3	W
	1	0		09·29	531·6	56·8	306·3	57·4	H
	2	0		09·33	534·2	57·1	310·1	57·9	W
	4	0		06·12	541·1	57·8	313·4	58·7	H
	6	0		05·65	550·1	58·4	316·5	59·3	W
	7	0		05·43	552·0	58·6	317·6	59·3	W
	8	0		06·41	561·8	58·7	323·4	59·4	W
	10	0	25	04·82	544·9	58·7	380·2	59·1	W
	18	30	24	59·17	543·4	56·6	317·2	56·6	W
	20	0	25	02·26	538·9	56·3	329·6	56·3	W
	22	0		04·95	529·3	56·0	331·4	56·2	H
	23	0		08·52	527·8	56·0	328·6	56·3	W
24	0	0		11·84	536·7	56·2	327·4	56·7	H
	1	0		11·41	540·0	56·6	327·7	57·3	H
	2	0		12·58	544·9	57·2	334·3	58·1	H
	4	0		06·84	546·2	58·6	345·7	59·8	W
	6	0		05·32	553·6	59·7	338·4	60·7	H
	7	0	25	05·22	553·2	60·0	364·7	60·8	W
	8	0†	24	52·57	571·3	60·0	344·6	60·7	H
	10	0	25	00·40	548·0	60·1	360·5	60·5	H
	18	0	25	00·98	544·4	58·9	344·3	59·0	W
	20	0		00·98	540·6	58·6	347·6	58·8	W
	22	0		02·45	534·6	58·5	341·9	58·7	H
	23	0		04·91	533·8	58·6	341·2	59·0	W
25	0	0		09·35	533·3	58·8	351·3	59·6	H
	1	0		09·56	541·7	59·4	333·7	60·3	H
	2	0		11·72	541·3	60·0	329·6	61·2	H
	4	0		10·16	545·5	61·3	341·2	62·4	W
	6	0		08·01	572·1	62·0	344·7	63·0	H
	7	0		08·01	558·1	62·2	363·7	63·0	H
	8	0		03·50	553·5	62·2	369·7	62·8	H
	10	0		03·70	549·5	61·8	357·6	62·3	H
	18	0	25	01·68	541·3	58·7	334·7	58·2	W
	20	0		05·27	537·3	57·9	349·1	57·0	W
	22	0		09·66	522·4	57·1	359·7	56·6	H
	23	0		07·65	532·5	56·8	356·8	56·3	W
26	0	0		08·85	533·8	56·6	359·0	56·2	H
	1	0		10·50	532·7	56·5	371·0	56·7	H
26	2	0	25	08·83	548·8	56·5	373·3	56·7	H
	4	0		07·57	551·8	57·0	383·1	57·6	W
	6	0		06·19	553·9	57·7	364·9	58·2	H
	7	0		04·89	556·9	58·0	358·1	58·6	H
	8	0		05·79	556·8	58·2	360·6	58·8	H
	10	0		02·96	550·2	58·3	359·2	58·7	H
27	18	0	25	00·40	547·0	56·6	331·1	54·5	W
	20	0		05·50	549·2	54·4	339·4	53·2	W
	22	0		01·45	534·7	53·3	358·6	52·3	H
	23	0		06·43	535·0	53·0	348·8	52·3	W
28	0	0		07·58	533·5	52·8	338·3	52·5	H
	1	0		09·87	539·6	52·8	340·7	52·7	W
	2	0		09·62	539·0	52·8	333·0	52·8	H
	4	0		07·82	554·6	53·0	351·0	53·2	W
	6	0	25	06·97	558·5	53·2	374·2	53·5	H
	7	0†	24	56·23	581·4	53·2	350·7	53·5	H
	8	0	25	00·94	547·0	53·3	358·8	53·7	H
	10	0		02·01	547·1	53·3	352·6	53·7	H
	18	0	25	02·48	551·0	53·0	343·2	53·2	W
	20	0		01·01	549·8	53·0	344·3	53·1	W
	22	0		02·32	537·9	52·8	342·9	52·9	H
	23	0		04·39	534·3	52·8	335·9	53·0	W
29	0	0		06·63	539·8	52·7	326·1	52·8	H
	1	0		08·21	544·4	52·7	320·4	52·7	H
	2	0		09·15	548·1	52·6	325·7	52·7	H
	4	0		06·14	550·5	52·6	340·9	52·8	W
	6	0		04·34	554·3	52·6	344·5	52·7	H
	7	0		01·41	556·1	52·5	349·8	52·8	H
	8	0		04·04	549·6	52·5	357·2	52·8	H
	10	0		01·01	549·4	52·5	363·3	52·7	H
	18	0	25	01·75	553·1	52·1	341·7	52·3	W
	20	0		00·98	547·1	52·0	351·3	52·2	W
	22	0		00·55	540·7	52·2	339·6	52·4	H
	23	0		02·89	537·4	52·2	337·3	52·8	W
30	0	0		08·68	542·4	52·6	328·3	53·5	H
	1	0		08·88	541·0	53·1	331·3	54·2	H
	2	0		09·49	549·7	54·0	334·4	55·3	H
	4	0		06·32	549·9	55·6	332·7	56·9	W
	6	0		04·59	550·9	57·0	341·9	58·2	H
	7	0		03·77	556·4	57·6	340·1	58·5	H
	8	0		00·17	552·5	57·7	344·3	58·7	H
	10	0	25	01·95	546·2	57·5	351·3	58·2	H
	18	0	24	59·56	550·1	55·5	324·3	55·5	W
	20	0	25	06·74	541·8	55·0	308·3	55·3	W
	22	0		01·18	534·5	54·8	320·4	55·2	H
	23	0		06·93	530·4	54·9	321·4	55·4	W
1	0	0		07·79	534·3	55·0	322·7	55·7	H
	1	0		08·34	540·5	55·2	329·5	56·0	H
	2	0		12·15	554·8	55·7	340·7	56·7	H
	4	0		08·29	555·8	57·2	365·7	58·3	W
	6	0	25	05·53	560·4	58·6	346·2	59·7	W
	7	0	24	59·73	557·1	59·0	390·9	59·7	H
	8	0	24	49·77	545·7	59·0	362·1	59·5	H
	10	0	25	03·85	549·8	58·4	344·7	58·5	H

DECLINATION. Magnet untouched, April 14^{d}, 1846—May 1847.

BIFILAR. Observed 2^{m} after the Declination, k=0·000135. BALANCE. Observed 3^{m} after the Declination, k=0·000010.

† Extra Observations made.

ttingen an Time Declina- n Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
	18	0	25	02·15	546·9	53·9	333·9	52·8	W
	20	0		02·39	539·7	52·7	335·2	51·5	W
	22	0		03·43	535·2	51·8	336·4	50·7	H
	23	0		07·37	526·1	51·6	330·7	51·0	W
	0	0		11·30	535·9	51·6	337·4	51·5	H
	1	0		13·25	547·8	51·9	330·3	52·3	H
	2	0		16·15	541·6	52·7	345·7	53·7	H
	4	0		11·68	551·1	54·5	353·6	55·7	W
	6	0	25	02·01	535·6	55·8	401·9	56·8	H
	7	0†	24	48·30	555·7	56·2	390·4	57·2	H
	8	0	24	57·24	536·9	56·5	377·1	57·2	H
	10	0†	24	53·52	539·7	56·2	258·3	56·6	H
	18	0	25	03·45	538·8	54·2	197·9	54·2	W
	20	0		09·08	540·4	53·5	275·7	53·2	W
	22	0		10·83	532·2	52·8	306·1	52·7	H
	23	4		12·25	533·6	52·7	313·0	52·9	W
3	0	0		11·74	541·4	52·8	315·7	53·4	H
	1	0		12·31	540·5	53·2	321·5	54·2	H
	2	0		11·86	545·0	53·8	327·9	55·2	H
	4	0		09·22	557·4	55·5	327·8	56·8	W
	6	0		07·13	565·7	57·3	315·4	58·2	H
	7	0		03·77	552·0	57·6	350·8	58·3	H
	8	0		05·99	558·0	57·6	340·0	58·0	H
	10	0		04·64	558·0	56·8	331·5	57·0	H
4	18	0	25	03·47	552·5	52·1	339·2	52·4	W
	20	0		03·50	546·6	52·1	342·3	52·6	W
	22	0		02·79	540·6	52·7	348·4	53·2	H
	23	0		04·95	536·7	53·0	347·7	54·0	W
5	0	0		07·84	538·6	53·6	342·0	54·7	H
	1	0		08·92	544·3	54·1	334·1	55·3	W
	2	0		10·77	551·1	54·7	336·1	55·7	H
	4	0		07·02	539·8	55·4	368·7	56·4	W
	6	0		05·65	550·1	56·0	343·5	56·8	H
	7	0		04·44	553·2	56·2	334·7	57·1	H
	8	0		03·82	551·8	56·2	327·7	57·2	H
	10	0		03·60	552·6	56·6	322·3	57·2	H
	18	0	25	02·82	551·8	56·3	321·7	56·8	W
	20	0		02·13	548·6	56·2	322·2	56·7	W
	22	0		04·68	540·7	56·3	326·2	56·9	H
	23	0		06·50	537·4	56·4	324·9	57·0	W
6	0	0		09·47	539·4	56·5	324·9	57·0	H
	1	0		11·84	541·5	56·7	329·2	57·3	H
	2	0		11·91	546·2	57·0	335·1	58·0	H
	4	0		07·92	549·7	57·7	365·0	58·6	W
	6	0	25	03·81	546·5	58·3	371·8	58·7	H
	7	0	24	58·65	554·6	58·3	365·6	58·5	H
	8	0	25	02·35	548·6	58·0	357·3	58·2	H
	10	0	24	55·49	539·5	57·2	329·4	57·2	H
	18	0	25	08·34	556·4	54·6	282·0	54·2	W
	20	0		02·94	550·5	54·0	309·0	53·4	W
	22	0		06·37	537·6	53·5	326·4	53·1	H
	23	0		07·29	534·6	53·4	332·2	53·4	W
7	0	0		08·86	537·5	53·5	336·3	53·9	H
	1	0		09·82	540·6	53·8	342·0	54·4	H

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
7	2	0	25	09·15	545·3	54·3	327·6	55·0	H
	4	0	25	10·67	559·6	55·1	389·9	55·8	W
	6	0	25	04·42	555·0	55·5	432·5	56·0	H
	7	0†	24	53·58	549·8	55·5	443·7	55·8	H
	8	0†	24	56·70	525·8	55·4	253·7	55·7	H
	10	0†	24	55·53	524·0	55·2	311·3	55·7	H
	18	0†	24	50·08	558·4	52·7	–218·6	52·3	W
	20	0	25	06·32	506·0	52·2	+189·8	52·1	W
	22	0		06·56	533·7	51·8	295·9	51·7	H
	23	0		09·62	537·4	51·8	331·3	51·8	W
8	0	0		13·29	540·8	51·8	342·6	52·2	H
	1	0		21·39	500·9	52·0	440·4	52·6	H
	2	0†		20·42	565·1	52·5	516·4	53·2	H
	4	0†	25	14·71	610·1	53·4	666·6	54·5	H
	6	0†	24	51·49	546·0	54·0	544·4	55·0	H
	7	0†	25	02·01	536·9	54·1	472·6	55·0	H
	8	0†		06·21	532·1	54·1	429·2	55·0	H
	10	0		05·18	538·1	54·0	344·1	54·7	H
	18	0	25	07·54	537·0	52·4	298·5	52·3	W
	20	0		06·36	534·7	52·0	327·0	52·1	W
	22	0		04·41	535·6	51·8	349·3	52·0	H
	23	0		06·93	527·9	51·9	350·2	52·2	W
9	0	0		06·39	515·3	51·9	364·8	52·3	H
	1	0		06·06	534·2	52·0	377·4	52·5	H
	2	0		08·63	536·4	52·1	368·1	52·5	H
	4	0		07·49	550·6	52·2	388·1	52·6	W
	6	0	25	04·07	550·5	52·4	399·9	53·2	H
	7	0	24	57·04	549·9	52·7	395·2	53·7	H
	8	0	25	10·67	545·5	53·0	382·7	54·0	H
	10	0	25	01·75	550·1	53·7	329·5	54·7	H
	18	0†	25	04·64	558·5	54·7	95·9	55·4	W
	20	0		11·98	534·5	54·9	189·0	55·7	W
	22	0		11·66	518·4	55·0	301·0	55·8	H
	23	3		11·03	516·7	55·3	335·4	56·2	W
10	0	0		13·46	514·7	55·7	334·4	55·6	H
	1	0		16·79	523·6	56·0	364·8	57·0	H
	2	0		14·26	528·1	56·3	428·2	57·2	H
	4	0		15·27	551·1	56·9	578·7	57·8	W
	6	0		04·91	544·1	57·4	432·1	58·7	H
	7	0		05·49	547·0	57·6	413·6	58·3	H
	8	0		02·39	548·1	57·7	418·4	58·2	H
	10	0		04·68	549·0	57·5	366·3	58·0	H
11	18	0	25	02·89	551·5	54·0	297·4	54·4	W
	20	0		07·13	543·8	53·9	334·6	54·3	W
	22	0		13·12	519·8	53·8	326·9	54·2	H
	23	0		08·46	531·5	53·9	347·2	54·3	W
12	0	0		13·29	539·9	53·8	348·7	54·4	H
	1	0		15·20	535·3	54·0	363·2	54·7	H
	2	0		09·29	544·6	54·0	386·7	54·7	H
	4	0		08·01	540·0	54·1	380·2	54·6	W
	6	0		04·37	553·0	54·0	361·5	54·0	H
	7	0	25	03·63	547·4	53·7	375·4	53·7	H
	8	0	24	56·77	548·5	53·5	381·2	53·3	H
	10	0	25	02·69	550·9	53·0	356·3	52·9	H

DECLINATION. Magnet untouched, April 14^{d}, 1846—May 1847.

IFILAR. Observed 2^{m} after the Declination, k=0·000135. BALANCE. Observed 3^{m} after the Declination, k=0·000010.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
12	18	0	25	03·11	551·4	50·1	349·0	49·1	W
	20	0		02·75	547·2	49·3	360·5	48·3	W
	22	0		04·68	538·5	48·8	363·8	48·0	H
	23	0		09·22	537·8	48·7	362·8	48·2	W
13	0	0		07·60	535·9	48·7	362·7	48·4	H
	1	0		08·65	537·6	48·6	359·8	48·7	H
	2	0		09·42	545·3	48·7	356·2	49·0	H
	4	0		06·71	545·4	49·0	365·6	49·3	W
	6	0	25	04·64	548·5	49·0	371·3	49·2	H
	7	0	24	53·95	565·3	49·0	357·6	49·2	H
	8	0	25	02·66	547·2	48·8	358·7	49·0	H
	10	0		02·99	545·1	48·5	302·1	48·5	H
	18	0	25	02·22	553·1	46·7	326·1	46·5	W
	20	0		04·24	552·9	46·3	330·3	46·1	W
	22	0		04·48	542·3	45·8	345·0	45·7	H
	23	0		06·73	532·9	45·7	347·2	45·6	W
14	0	0		10·00	535·4	45·5	340·9	45·5	H
	1	0		10·56	541·4	45·4	337·4	45·5	H
	2	0		10·03	544·3	45·4	335·5	45·5	H
	4	0		05·99	549·8	45·4	345·4	45·8	W
	6	0		03·16	551·1	45·7	352·1	46·7	H
	7	0		03·02	553·6	45·9	347·5	46·5	H
	8	0		03·35	552·6	45·9	347·2	46·6	H
	10	0		04·02	553·3	46·2	348·8	46·7	H
	18	0	25	02·97	555·5	46·6	329·8	47·0	W
	20	0		02·39	552·4	46·7	335·9	47·2	W
	22	0		03·63	545·5	46·9	338·2	47·5	H
	23	0		06·09	543·8	47·1	334·2	48·0	W
15	0	0		06·56	542·1	47·6	326·4	48·5	H
	1	0		08·68	546·1	48·0	322·3	49·2	H
	2	0		08·99	549·0	48·6	317·5	49·7	H
	4	0		06·83	553·8	49·7	313·8	50·8	W
	6	0		04·31	553·8	50·6	316·7	51·5	H
	7	0		02·43	556·0	50·7	319·2	51·7	H
	8	0		03·09	558·9	50·8	310·8	51·7	H
	10	0		04·07	555·5	50·8	314·9	51·5	H
	18	15	25	02·94	559·9	49·1	262·2	49·3	W
	20	0		01·90	551·9	48·8	295·4	49·0	W
	22	0		04·68	537·3	48·4	329·0	48·5	H
	23	0		08·65	535·6	48·3	329·3	48·6	W
16	0	0		09·57	540·3	48·4	324·4	49·0	H
	1	0		10·28	539·4	48·8	331·0	49·5	H
	2	0		09·47	541·6	49·3	321·9	50·3	H
	4	0		07·57	549·1	50·6	324·5	51·7	W
	6	0		03·06	551·6	51·6	320·3	52·7	H
	7	0		03·09	556·6	52·0	319·0	53·0	H
	8	0		03·43	555·7	52·2	316·7	53·0	H
	10	0		02·42	550·1	52·3	323·4	53·0	H
	18	0	25	02·50	555·8	51·6	302·3	52·0	W
	20	0		02·87	558·6	51·4	299·8	51·8	W
	22	0		02·05	542·9	51·3	313·6	51·7	H
	23	0		04·14	538·2	51·4	316·5	52·1	W
17	0	0		07·07	537·4	51·6	312·9	52·2	H
	1	0		09·19	541·0	51·8	312·7	52·6	H
17	2	0	25	09·54	544·9	52·2	314·4	53·0	H
	4	0		07·29	552·3	52·7	306·7	53·7	W
	6	0		04·71	557·4	53·1	304·7	54·0	H
	7	0		04·07	559·6	53·2	304·2	54·2	H
	8	0		04·34	557·7	53·2	304·6	54·2	H
	10	0		00·06	559·1	53·5	305·8	54·2	H
18	18	0	25	02·62	555·1	52·7	302·4	52·7	H
	20	0		02·19	551·1	52·5	311·9	52·7	H
	22	0		01·72	542·3	52·4	327·5	52·6	W
	23	0		04·82	539·7	52·5	315·8	52·9	H
19	0	0		08·53	539·8	52·7	314·2	53·3	W
	1	0		09·08	545·4	53·0	315·8	53·5	H
	2	0		08·39	550·7	53·0	322·1	53·7	W
	4	0		07·00	560·3	53·4	324·5	54·2	H
	6	0		06·70	549·9	53·6	362·2	54·3	W
	7	0		10·45	551·6	53·6	385·2	54·3	W
	8	0		05·67	556·9	53·6	365·3	54·1	W
	10	0		03·48	553·1	53·4	345·3	53·7	W
	18	10	25	01·09	554·8	52·3	289·9	52·5	H
	20	0		03·88	551·5	52·1	317·2	52·2	H
	22	0		04·96	539·4	51·8	320·9	51·8	W
	23	0		04·34	540·3	51·8	323·2	52·0	H
20	0	0		08·28	542·7	51·7	322·0	52·2	W
	1	0		09·22	541·2	52·1	315·2	52·7	H
	2	0		11·49	549·2	52·4	317·6	53·2	W
	4	0		13·29	550·1	53·2	326·4	54·4	H
	6	0		06·30	553·1	54·1	358·1	55·0	W
	7	0		06·16	557·6	54·3	331·5	55·2	W
	8	0		00·62	554·5	54·4	335·7	55·2	W
	10	0		04·10	552·8	54·3	322·8	54·8	W
	18	0	25	02·53	552·4	51·7	319·9	51·3	H
	20	0		02·40	550·9	51·0	326·6	50·5	H
	22	0		02·26	541·0	50·6	344·0	50·1	W
	23	0		04·89	540·5	50·3	338·9	49·9	H
21	0	0		07·24	534·6	50·2	345·1	50·0	W
	1	0		12·38	546·5	50·2	334·4	50·4	H
	2	0		09·22	549·4	50·3	324·2	50·6	W
	4	0		08·58	557·5	50·9	329·5	51·6	H
	6	0		05·23	555·5	51·5	327·4	52·0	W
	7	0		04·05	553·4	51·6	329·1	52·1	W
	8	0		03·43	555·2	51·6	327·4	52·1	W
	10	0		02·01	566·2	51·5	315·8	51·8	W
	18	0	25	02·87	546·5	50·5	282·3	50·5	H
	20	0		04·01	540·5	50·2	318·6	50·2	H
	22	0		05·45	520·8	50·0	332·6	50·0	W
	23	0		03·74	539·9	50·0	318·5	50·0	H
22	0	0		10·90	545·7	50·0	328·2	50·0	W
	1	0		12·25	545·4	50·0	338·1	50·5	H
	2	0		12·72	545·8	50·1	355·6	50·6	W
	4	0	25	11·03	552·7	50·4	388·0	50·8	H
	6	0†	24	47·66	537·6	50·5	395·6	51·0	W
	7	0	24	53·00	534·4	50·6	375·7	51·2	W
	8	0	25	02·84	541·7	50·6	360·6	51·2	W
	10	0		03·70	555·6	50·5	372·1	50·7	W

DECLINATION. Magnet untouched, April 14^{d}—May 1847.

BIFILAR. Observed 2^{m} after the Declination, $k=0·000135$. BALANCE. Observed 3^{m} after the Declination, $k=0·000010$.

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† Extra Observations made.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
2	18	0	25	03·77	550·7	48·7	301·1	48·5	H
	20	0		01·31	544·7	48·2	324·6	48·0	H
	22	0		05·89	527·3	47·9	335·8	47·7	W
	23	0		07·13	533·1	47·7	328·8	47·7	H
2	0	0		08·25	538·0	47·8	307·8	48·0	W
	1	0		10·16	544·7	47·8	306·1	48·2	H
	2	0		11·07	546·3	48·0	311·8	48·5	W
	4	0		07·34	554·7	48·4	313·7	49·0	H
	6	0		05·00	558·2	48·9	310·6	49·5	W
	7	0		05·29	555·1	49·2	312·9	49·6	W
	8	0		03·65	557·1	49·0	309·9	49·4	W
	10	0		02·52	555·0	48·7	306·6	48·8	W
	18	0	25	06·63	548·7	46·7	290·6	46·5	H
	20	0		03·70	549·1	46·2	310·8	46·2	H
	22	0		01·05	541·0	46·0	324·2	46·1	W
	23	0		02·70	540·4	46·0	311·3	46·2	H
24	0	0		06·16	543·5	46·0	307·3	46·3	W
	1	0		08·08	545·1	46·2	311·3	46·7	H
	2	0		08·77	548·7	46·4	311·4	47·0	W
	4	0		06·63	551·8	47·0	323·5	47·8	H
	6	0		05·72	558·3	47·6	317·7	48·3	W
	7	0	25	06·12	555·9	47·7	317·1	48·3	W
	8	0	24	51·52	566·2	47·7	322·7	48·3	W
	10	0	25	03·20	552·7	47·8	318·8	48·4	W
25	18	0	25	02·25	553·5	46·8	314·5	46·2	H
	20	0		02·55	550·4	46·0	320·3	45·2	H
	22	0		01·34	545·0	45·1	325·1	44·6	W
	23	3		01·68	544·9	44·8	323·9	44·7	H
26	0	0		07·76	544·0	44·9	325·3	45·1	W
	1	0		09·29	540·7	45·0	322·9	45·8	H
	2	0		11·82	548·6	45·3	315·0	46·0	W
	4	2		07·51	556·3	46·7	321·6	47·6	H
	6	0		06·29	551·4	48·1	321·9	49·0	W
	7	0		05·11	558·0	48·5	318·8	49·2	W
	8	0		06·36	559·6	48·5	315·1	49·0	W
	10	0		01·54	553·3	48·2	317·2	48·5	W
	18	0	25	02·80	553·7	44·6	321·2	43·8	H
	20	0		01·98	551·8	43·4	323·6	42·7	H
	22	0		02·39	538·9	42·4	334·9	41·7	W
	23	0		04·78	537·0	42·2	328·6	41·7	H
27	0	0		07·13	540·3	42·0	320·4	42·1	W
	1	0		10·85	548·8	42·2	315·8	42·7	H
	2	0		10·63	545·8	42·6	318·3	43·6	W
	4	0		08·11	551·6	44·4	323·2	45·7	H
	6	0		05·02	553·3	46·3	317·6	47·3	W
	7	0		04·59	559·1	46·7	307·8	47·5	W
	8	0		05·23	560·0	46·9	306·6	47·6	W
	10	0		01·07	550·2	47·0	298·4	47·7	W
	18	0	25	03·37	553·6	46·8	298·5	47·2	H
	20	0		02·72	553·7	46·6	296·9	47·2	H
	22	0		01·52	547·8	46·7	308·3	47·3	W
	23	0		03·94	543·4	46·9	302·8	47·5	W
28	0	0		07·10	541·5	47·1	292·4	48·0	H
	1	0		08·61	544·5	47·4	296·9	48·3	H
28	2	0	25	09·82	548·1	47·8	290·0	48·8	W
	4	0		07·94	552·1	48·7	304·1	49·7	H
	6	0		05·65	557·5	49·3	298·2	50·1	W
	7	0		00·80	554·4	49·5	303·0	50·3	W
	8	0		04·64	560·8	49·5	296·4	50·2	W
	10	0		01·61	562·7	49·5	298·4	50·0	W
	18	0	25	03·00	554·3	47·8	282·1	48·0	H
	20	0		03·87	549·3	47·4	298·6	47·4	H
	22	0		04·86	541·7	47·0	308·1	47·1	W
	23	0		07·63	538·4	46·8	300·6	47·0	H
29	0	0		08·65	541·6	46·8	299·2	47·1	W
	1	0		08·80	539·9	47·0	297·3	47·5	H
	2	0		09·82	551·5	47·5	296·8	48·6	W
	4	0		08·08	557·0	49·2	299·2	50·2	H
	6	0		04·66	556·6	50·5	290·1	51·4	W
	7	0		03·09	559·3	50·8	287·8	51·5	H
	8	0		00·80	558·7	50·8	295·1	51·3	W
	10	0		02·62	550·1	50·3	302·3	50·4	W
	18	0	25	04·58	552·0	46·9	274·6	46·3	H
	20	0		01·45	551·9	46·1	300·5	45·5	H
	22	0		02·25	547·0	45·2	306·5	44·7	W
	23	0		03·99	539·7	44·8	308·2	44·5	H
30	0	0		10·21	532·0	44·8	310·7	44·5	W
	1	0		12·58	536·4	44·7	311·9	44·7	H
	2	0		13·52	540·2	44·7	318·2	45·0	W
	4	0		06·86	549·0	45·4	325·0	46·2	H
	6	0		05·72	554·7	46·3	303·9	47·0	W
	7	0		04·14	556·3	46·7	301·5	47·2	W
	8	0		03·45	556·1	46·9	298·7	47·3	W
	10	0		01·61	553·9	46·7	298·4	47·0	W
	18	0	25	02·69	554·0	45·3	274·0	45·6	H
	20	0		04·05	553·1	45·3	286·0	45·7	H
	22	0		02·72	547·1	45·6	292·3	46·1	W
	23	0		05·69	541·6	45·8	291·3	46·3	H
31	0	0		08·56	539·3	46·0	288·3	46·8	W
	1	0		08·46	548·3	46·4	287·7	47·2	H
	2	0		10·43	557·1	46·9	292·7	47·7	W
	4	0	25	07·87	549·9	47·7	303·6	48·5	H
	6	0	24	58·42	554·3	48·1	299·9	49·1	W
	7	0	25	04·34	561·3	48·4	291·4	49·3	W
	8	0		02·15	557·8	48·7	292·5	49·6	W
	10	0		03·63	558·7	49·1	283·0	49·8	W
1	18	0	25	06·97	555·9	49·9	265·5	50·0	H
	20	0		03·81	552·4	49·9	269·4	49·9	H
	22	0		03·20	542·2	49·8	283·3	49·8	W
	23	0		04·34	537·4	49·8	287·1	50·2	H
2	0	0		08·63	539·8	50·0	287·2	50·5	W
	1	0		12·02	536·7	50·3	300·1	51·0	H
	2	0		12·55	536·4	50·6	322·5	51·2	W
	4	0		07·10	554·7	51·2	329·6	51·9	H
	6	0		03·43	549·2	51·5	337·1	52·0	W
	7	0		02·40	544·6	51·6	320·3	52·1	W
	8	0	25	03·72	545·8	51·6	313·6	52·0	W
	10	0	24	54·45	543·6	51·5	238·1	51·9	W

DECLINATION. Magnet untouched, April 14^d, 1846—May 1847.

IFILAR. Observed 2^m after the Declination, k=0·000135. BALANCE. Observed 3^m after the Declination, k=0·000010.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
2	18	0	25	04·48	549·9	51·0	279·5	51·4	H
	20	0		05·29	555·0	51·1	268·4	51·3	H
	22	0		05·05	534·1	50·9	289·2	51·1	W
	23	0		08·75	541·2	50·8	286·3	51·2	H
3	0	0		09·62	541·2	51·0	283·5	51·5	W
	1	0		11·17	540·2	51·3	293·8	52·0	H
	2	0		13·63	544·0	51·6	304·3	52·4	W
	4	0		07·04	555·1	52·0	308·9	52·7	H
	6	0		04·05	557·2	52·4	287·4	53·0	W
	7	0		03·50	555·3	52·4	282·7	53·0	W
	8	0		03·20	554·6	52·5	284·0	53·0	W
	10	0		03·20	559·2	52·6	277·5	53·2	W
	18	0	25	02·01	555·0	52·5	276·4	52·7	H
	20	0		02·39	550·3	52·1	273·7	52·2	H
	22	0		03·23	545·8	51·8	283·0	52·0	W
	23	0		04·86	541·5	51·8	289·9	52·2	H
4	0	0		06·90	543·1	52·0	285·8	52·5	W
	1	0		07·35	548·3	52·3	281·3	53·1	H
	2	0		06·09	549·9	52·7	279·4	53·5	W
	4	0		03·74	552·8	53·4	273·5	54·3	H
	6	0		04·58	557·1	53·9	270·1	54·8	W
	7	0		03·63	556·1	54·0	272·8	54·8	W
	8	0		03·48	556·8	54·1	273·8	54·9	W
	10	0		03·14	558·5	54·1	275·5	54·9	W
	18	0	25	02·12	552·9	53·1	269·1	53·2	H
	20	0		05·89	547·7	52·7	279·8	52·5	H
	22	0		03·81	546·9	52·1	293·1	51·8	W
	23	0		06·32	540·2	51·9	291·9	51·7	H
5	0	0		07·08	541·8	51·8	290·2	51·8	W
	1	0		09·76	549·7	51·7	287·6	52·0	H
	2	0		09·46	552·9	51·9	297·8	52·4	W
	4	0		06·26	554·0	52·6	307·8	53·2	H
	6	0		04·53	555·0	53·3	301·3	54·0	W
	7	0		02·99	556·0	53·4	297·5	54·0	W
	8	0	25	03·37	557·9	53·4	291·6	53·9	W
	10	0	24	59·39	557·8	53·3	290·0	53·7	W
	18	0	25	04·64	554·3	53·3	282·9	54·0	H
	20	0		03·81	553·4	53·2	280·7	53·8	H
	22	0		02·37	547·3	53·2	288·8	53·6	W
	23	0		03·35	543·7	53·1	278·6	53·5	H
6	0	0		08·08	545·6	53·1	277·3	53·5	W
	1	0		07·67	541·7	53·2	283·2	53·7	H
	2	0		07·74	549·8	53·1	282·6	53·8	W
	4	0		05·79	555·2	53·4	287·7	54·2	H
	6	0		04·22	558·5	53·6	286·9	54·1	W
	7	0		04·95	560·2	53·6	290·7	54·0	W
	8	0		03·63	557·5	53·4	291·7	53·6	W
	10	0		03·84	553·4	52·9	286·9	52·9	W
	18	0	25	00·50	557·4	50·7	275·6	50·2	H
	20	0		02·22	553·8	50·2	286·7	49·7	H
	22	0		01·18	547·0	49·8	293·6	49·5	W
	23	0		03·48	539·9	49·7	296·6	49·5	H
7	0	0		06·50	540·8	49·6	294·8	49·5	W
	1	0		08·61	544·5	49·6	296·5	49·7	H
7	2	0	25	10·18	550·7	49·7	301·1	50·0	W
	4	0		06·32	553·2	50·3	292·8	50·8	H
	6	0		04·62	559·3	51·0	299·9	51·5	W
	7	0		04·71	557·2	51·1	298·2	51·6	W
	8	0†	25	00·74	540·1	51·2	334·9	51·7	W
	10	0	24	46·68	520·6	51·4	251·6	51·9	W
8	18	0	25	01·95	555·0	49·5	294·0	49·5	H
	20	0		03·70	553·0	49·0	302·9	49·0	H
	22	0		03·50	545·9	48·6	301·6	48·2	W
	23	0		04·81	539·3	48·2	305·2	48·0	H
9	0	0		06·84	538·6	48·0	303·7	47·7	W
	1	0		10·09	543·9	47·8	298·0	47·5	H
	2	0		08·72	543·4	47·8	302·2	47·6	W
	4	0		06·09	552·1	47·6	309·9	47·5	H
	6	0		03·90	555·9	47·5	295·8	47·3	W
	7	0		03·97	556·0	47·3	296·5	47·2	W
	8	0		01·52	552·0	47·1	304·5	46·9	W
	10	0		01·21	551·0	46·6	292·4	46·2	W
	18	0	25	03·04	556·4	44·2	307·1	44·0	H
	20	0		01·88	554·6	43·6	306·6	43·2	H
	22	0		01·85	543·4	42·9	309·4	42·3	W
	23	0		04·31	542·0	42·5	308·6	42·2	H
10	0	0		08·43	535·7	42·3	308·2	42·2	W
	1	0		08·41	540·9	42·3	303·0	42·6	H
	2	5		08·34	550·8	42·6	304·2	43·3	W
	4	0		06·06	557·1	44·0	303·5	45·2	H
	6	0		04·55	558·9	45·7	293·0	46·7	W
	7	0		03·88	560·0	46·0	289·8	46·8	W
	8	0		03·70	559·9	46·1	287·9	46·7	W
	10	0		02·19	556·8	45·8	289·8	46·0	W
	18	0	25	03·13	558·7	42·6	296·7	42·3	H
	20	0		01·95	554·2	41·8	299·4	41·5	H
	22	0		02·08	548·9	41·0	309·4	40·6	W
	23	0		03·81	545·1	40·7	304·2	40·2	H
11	0	0		06·10	544·8	40·4	307·5	40·3	W
	1	0		08·34	553·1	41·3	305·4	40·5	H
	2	0		07·94	554·4	40·4	306·2	40·8	W
	4	0		05·62	559·7	40·8	305·5	41·5	H
	6	0		05·32	558·5	41·3	295·5	42·2	W
	7	0		07·34	554·1	41·7	302·8	42·5	W
	8	0	25	04·53	558·5	41·9	302·7	42·8	W
	10	0	24	53·64	544·4	42·2	309·9	43·1	W
	18	0	25	02·96	558·0	42·8	279·6	43·6	H
	20	0		01·75	554·5	43·0	284·3	43·7	H
	22	0		01·73	545·8	43·2	287·6	44·0	W
	23	0		03·74	542·2	43·3	286·2	44·2	H
12	0	0		05·96	544·5	43·4	279·5	44·3	W
	1	0		07·47	546·4	43·7	275·5	44·7	H
	2	0		08·12	550·2	43·9	271·9	44·8	W
	4	0		06·59	556·1	44·3	278·2	45·2	H
	6	0		05·08	558·7	44·6	276·7	45·5	W
	7	0		04·42	560·1	44·8	275·3	45·7	W
	8	0		03·61	560·0	44·9	275·9	45·8	W
	10	0		03·14	561·0	45·1	273·4	46·0	W

DECLINATION. Magnet untouched, April 14^{d}, 1846—May 1847.

BIFILAR. Observed 2^{m} after the Declination, k=0·000135. BALANCE. Observed 3^{m} after the Declination, k=0·000010.

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† Extra Observations made.

ttingen n Time eclina- n Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
	18	0	25	02·17	557·6	45·4	271·6	46·1	H
	20	0		01·85	558·5	45·4	271·3	46·1	H
	22	0		01·68	550·6	45·6	276·6	46·2	W
	23	0		03·14	546·9	45·7	273·3	46·2	H
	0	0		05·80	545·2	45·7	268·3	46·3	W
	1	0		07·81	549·2	45·7	269·6	46·5	H
	2	0		08·70	554·6	45·9	268·1	46·5	W
	4	0		07·00	557·6	46·0	272·2	46·8	H
	6	0		06·09	562·9	46·3	268·1	47·2	H
	7	0		06·39	559·2	46·5	270·4	47·2	H
	8	0	25	05·96	558·5	46·4	279·3	47·2	H
	10	0	24	59·26	558·8	46·7	291·1	47·5	H
	18	0	25	01·92	557·7	46·0	252·3	46·5	H
	20	0		02·67	557·2	45·9	265·6	46·2	H
	22	0		05·25	546·0	45·8	270·3	46·1	W
	23	0		06·29	537·0	45·7	275·6	46·0	W
	0	0		07·65	547·7	45·6	273·4	46·0	W
	1	0		08·95	550·4	45·5	275·3	46·0	W
	2	0		08·11	551·0	45·5	279·2	46·0	W
	4	0		06·06	553·3	45·4	284·5	46·0	H
	6	0		03·90	556·5	45·3	278·4	45·8	W
	7	0		03·67	557·2	45·3	279·1	45·8	W
	8	0	25	03·43	554·6	45·2	280·6	45·6	W
	10	0	24	58·25	551·6	45·0	290·5	45·5	W
15	18	0	25	02·62	557·1	42·3	282·9	42·4	W
	20	0		01·34	557·2	41·9	285·2	41·8	W
	22	0		01·41	550·0	41·5	288·0	41·6	H
	23	0		03·48	547·2	41·4	282·1	41·7	W
16	0	0		06·12	549·6	41·4	283·9	42·0	H
	1	0		07·38	551·3	41·7	284·5	42·4	H
	2	0		07·29	552·2	42·1	287·1	43·5	H
	4	0		06·23	555·9	42·8	278·3	43·9	W
	6	0		04·41	557·3	43·2	273·3	44·2	H
	7	0		03·43	558·5	43·4	271·8	44·2	H
	8	0		03·02	559·7	43·4	270·8	44·2	H
	0	0	25	00·33	556·8	43·3	280·2	44·0	H
	8	0	24	59·26	563·8	42·6	253·5	43·2	W
	0	0	25	01·68	561·2	42·7	258·0	43·3	W
	2	0		02·32	553·1	42·8	269·7	43·5	H
	3	0		03·52	550·6	43·0	270·0	43·8	W
17	0	0		05·92	548·2	43·2	270·5	44·2	H
	1	0		09·79	553·7	43·6	270·7	44·7	H
	2	0		10·09	553·5	44·0	277·4	45·0	H
	4	0		08·31	557·2	44·7	273·0	45·8	W
	6	0†		13·30	564·3	45·5	287·3	46·5	H
	7	0†		05·79	652·7	46·0	823·4	47·0	H
	8	0†		08·11	671·0	46·7	796·8	48·3	H
	0	0†		00·74	539·5	47·8	466·0	49·5	H
	8	15	25	06·26	547·8	48·1	252·7	48·8	W
	0	0		04·42	549·0	47·9	252·9	48·5	W
	2	0		06·76	534·6	47·7	283·6	48·2	H
	3	0		08·88	518·8	47·6	305·4	48·3	W
18	0	0		06·56	538·1	47·8	298·5	48·7	H
	1	0		09·19	542·8	48·1	298·8	49·2	H

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
18	2	0	25	08·16	545·2	48·6	300·9	49·7	H
	4	0		09·33	536·3	49·2	331·4	50·1	W
	6	0		04·73	550·9	49·6	318·0	50·2	H
	7	0		03·35	548·6	49·6	312·5	50·5	H
	8	0		02·69	549·0	49·7	311·1	50·5	H
	10	0		08·18	549·5	49·7	311·2	50·4	H
	18	0	25	03·04	549·4	48·5	307·5	48·5	H
	20	0		02·89	546·7	48·0	307·8	48·3	H
	22	0		03·30	543·2	47·9	318·0	48·0	W
	23	0		05·15	539·1	47·8	320·3	48·0	W
19	0	0		06·04	540·0	47·7	321·7	48·1	W
	1	0		06·91	546·7	47·8	320·6	48·5	H
	2	0		06·17	548·9	48·1	319·0	49·0	W
	4	0		04·05	552·3	49·0	309·5	49·7	H
	6	0		03·48	557·0	49·3	305·6	49·8	W
	7	0		04·48	558·2	49·4	300·2	49·8	W
	8	0		05·25	560·1	49·2	299·1	49·7	W
	10	0		01·81	552·7	49·0	316·0	49·5	W
	18	0	25	02·45	555·2	48·7	299·2	49·0	W
	20	0		02·75	552·9	48·6	297·4	49·0	W
	22	0		02·89	548·0	48·5	300·2	49·0	H
	23	0		03·74	548·2	48·6	303·0	49·1	W
20	0	0		08·99	549·2	48·6	299·7	49·0	H
	1	0		13·63	547·5	48·6	304·0	49·0	H
	2	0		07·76	555·6	48·7	304·3	49·2	H
	4	0		06·43	563·7	49·0	318·8	49·6	W
	6	0		07·96	559·5	49·0	326·6	49·6	W
	7	0		03·04	558·0	49·1	334·4	49·6	W
	8	0	25	04·78	551·9	49·0	336·8	49·5	W
	10	0	24	59·24	567·6	49·1	294·2	49·6	W
	18	0	25	02·84	551·2	48·3	291·9	48·6	W
	20	0		01·75	552·4	48·1	298·8	48·1	W
	22	0		00·57	548·4	47·7	297·3	47·5	H
	23	0		05·35	546·6	47·6	293·8	47·5	W
21	0	0		05·05	547·6	47·5	291·5	47·7	H
	1	0		06·06	549·3	47·6	300·6	48·2	H
	2	0		04·98	547·7	47·8	302·7	48·5	H
	4	0		07·34	545·0	48·1	316·0	48·7	W
	6	0		04·04	559·3	48·2	309·9	48·7	H
	7	0		04·91	555·2	48·0	312·0	48·7	H
	8	0		03·35	555·2	48·0	308·9	48·5	H
	10	0		00·18	559·9	47·8	292·8	48·0	H
22	18	0	25	02·08	553·4	42·8	289·6	42·7	W
	20	0		02·39	556·3	42·4	285·2	42·2	W
	22	0		01·90	550·2	42·0	285·6	41·7	H
	23	0		04·31	546·8	41·7	271·2	41·6	W
23	0	0		05·11	544·9	41·6	269·5	41·7	H
	1	0		06·26	550·6	41·5	273·2	41·7	H
	2	0		06·16	554·5	41·7	279·7	42·0	H
	4	0		04·71	555·9	41·9	285·1	42·4	W
	6	0		04·01	558·4	42·0	287·3	43·0	H
	7	0		03·38	560·0	42·3	282·2	43·2	H
	8	0		03·57	557·6	42·6	283·2	43·7	H
	10	0		02·46	556·3	42·8	279·4	43·7	H

DECLINATION. Magnet untouched, April 14^{d}, 1846—May 1847.

FILAR. Observed 2^{m} after the Declination, $k=0·000135$. BALANCE. Observed 3^{m} after the Declination, $k=0·000010$.

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† Extra Observations made.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
23	18	0	25	02·75	557·3	43·3	273·5	44·1	W
	20	0		02·10	557·1	43·8	276·7	44·7	W
	22	0		01·48	548·2	44·2	283·5	45·4	H
	23	0		04·10	546·1	44·0	277·1	45·8	W
24	0	0		05·58	548·2	45·2	273·7	46·2	H
	1	0		07·64	550·1	45·7	268·1	47·0	H
	2	0		05·80	552·1	46·2	272·0	47·6	H
	4	0		04·17	559·5	47·4	283·3	48·5	W
	6	0		03·38	560·0	48·0	285·1	49·0	W
	7	0		03·23	558·3	48·0	285·0	49·0	H
	8	0		02·70	558·5	47·9	282·0	48·7	H
	10	0		00·77	560·2	47·6	274·3	48·0	H
	18	0	25	02·55	557·8	45·6	292·5	45·6	W
	20	0		02·19	556·7	45·2	299·4	45·3	W
	22	0		02·79	549·1	45·0	293·8	45·2	H
	23	0		04·28	546·5	44·9	271·4	45·1	W
25	0	0		05·89	548·0	44·8	273·4	45·1	H
	1	0		06·46	549·6	44·7	274·8	45·2	H
	2	0		06·83	553·9	44·8	277·7	45·2	H
	4	0		05·18	558·6	44·9	279·5	45·4	W
	6	0		04·12	557·2	44·9	287·0	45·5	H
	7	0		03·63	558·2	44·9	284·2	45·5	H
	8	0		03·27	558·0	45·0	285·1	45·5	H
	10	0		02·03	559·5	45·0	278·1	45·6	H
	18	0	25	01·95	559·7	45·2	271·1	45·7	W
	20	0		01·99	560·2	45·1	269·9	45·5	W
	22	0		01·98	548·8	45·0	269·5	45·5	H
	23	0		04·58	559·5	45·0	262·2	45·5	W
26	0	0		06·12	560·4	45·0	258·3	45·5	H
	1	0		06·30	561·9	45·0	255·3	45·6	W
	2	0		06·83	566·5	45·1	262·3	45·7	H
	4	0†		08·25	548·1	45·2	470·4	45·9	W
	6	0†		11·77	596·2	45·6	557·1	46·5	H
	7	0†	25	10·09	597·4	45·8	832·7	46·2	H
	8	0	24	54·55	535·6	46·0	460·9	46·5	H
	10	0†	24	45·81	575·3	46·0	131·0	46·7	H
	18	0	25	03·37	553·7	45·6	273·2	45·9	W
	20	0†		10·90	538·3	45·3	279·6	45·7	W
	22	0		08·18	553·2	45·2	303·5	45·5	H
	23	0		05·27	547·4	45·2	305·0	45·5	W
27	0	0		08·99	549·2	45·1	311·7	45·4	H
	1	0		10·00	539·2	45·1	324·1	45·3	H
	2	0		09·26	540·7	45·0	353·0	45·2	H
	4	0		08·23	557·3	44·8	332·8	44·9	W
	6	0	25	02·94	550·6	44·3	333·1	44·4	H
	7	0	24	59·19	542·0	44·0	335·8	44·0	H
	8	0	24	58·72	549·6	43·8	322·0	43·7	H
	10	0	25	02·12	552·8	43·2	298·0	43·2	H
	18	0	25	03·16	554·5	40·6	238·5	40·0	W
	20	0		02·64	548·5	39·7	264·4	38·8	W
	22	0		06·79	526·7	38·7	289·7	37·7	H
	23	0		05·60	538·9	38·3	299·3	37·5	W
28	0	0		07·34	549·2	38·1	293·0	37·2	H
	1	0		08·48	551·7	37·8	289·8	37·2	H
28	2	0	25	07·07	550·0	37·6	293·5	37·2	H
	4	0	25	05·02	552·7	37·4	290·2	37·2	W
	6	0	24	59·63	566·3	37·2	303·7	37·3	H
	7	0	24	56·16	543·2	37·2	284·3	37·3	H
	8	0	24	57·78	545·2	37·2	304·8	37·3	H
	10	0	25	03·81	547·8	37·0	294·0	37·2	H
29	18	0	25	02·59	559·9	33·8	246·1	34·0	H
	20	0		07·67	555·4	33·7	247·3	34·0	H
	22	12		03·13	546·1	33·6	266·3	33·7	W
	23	0		04·88	548·5	33·7	274·4	34·2	H
30	0	0		04·34	539·0	33·9	276·9	34·6	W
	1	0		08·48	546·8	34·2	287·6	35·0	H
	2	0		07·62	556·0	34·6	288·2	35·4	W
	4	0		02·01	553·6	35·2	334·0	36·0	H
	6	0		02·20	559·3	35·5	297·5	36·2	W
	7	0		01·34	557·1	35·4	291·6	36·2	W
	8	0		01·48	554·8	35·4	290·5	36·0	W
	10	0		01·75	554·1	35·0	284·3	35·5	W
	18	0	25	02·94	556·3	34·3	267·5	34·8	W
	20	0		08·06	555·3	34·4	261·2	35·2	W
	22	0		03·02	552·4	34·7	267·5	35·5	H
	23	0		03·38	550·0	35·0	269·9	35·8	W
1	0	0		05·29	554·1	35·3	275·1	36·3	H
	1	0		06·39	556·3	35·8	274·1	37·0	H
	2	0		06·32	557·4	36·6	274·7	37·9	H
	4	0		04·24	559·5	37·9	288·2	39·3	W
	6	0	25	01·95	562·1	38·7	279·9	40·0	H
	7	0	24	53·04	576·4	38·8	268·9	40·2	H
	8	0	25	01·51	550·0	38·9	270·1	40·0	H
	10	0		02·01	558·3	38·7	276·4	40·0	H
	18	0	25	05·15	553·8	36·1	266·3	35·8	W
	20	0		03·81	556·3	35·2	260·0	34·8	W
	22	0		03·47	546·8	34·4	271·4	33·7	H
	23	0		06·01	532·8	34·0	278·1	33·3	W
2	0	0		06·83	546·5	33·7	274·1	33·0	H
	1	0		08·05	550·1	33·4	280·5	33·2	H
	2	0		09·49	547·3	33·3	276·3	33·5	H
	4	0		05·42	556·9	33·6	283·7	34·0	W
	6	0		02·66	558·2	33·7	281·4	34·2	H
	7	0		03·57	556·2	33·7	278·7	34·0	H
	8	0		01·41	573·7	33·4	277·6	33·7	H
	10	0		02·01	553·1	32·8	275·2	32·5	H
	18	0	25	02·48	556·7	29·3	266·9	28·5	W
	20	0		02·79	555·3	28·6	265·9	27·8	W
	22	0		02·22	549·6	28·0	269·5	27·5	H
	23	0		02·84	548·8	27·9	264·9	27·6	W
3	0	0		05·72	550·4	28·0	271·6	28·0	H
	1	0		06·56	551·4	28·2	268·2	28·5	H
	2	0		07·67	553·1	28·8	276·3	29·5	H
	4	0		05·09	559·2	30·0	274·9	30·8	W
	6	0		03·40	559·8	31·0	272·9	32·0	H
	7	0		03·00	559·3	31·2	269·7	32·4	H
	8	0		03·00	558·5	31·7	272·0	33·0	H
	10	0		00·33	556·9	32·0	273·1	33·5	H

DECLINATION. Magnet untouched, April 14d, 1846—May 1847.

BIFILAR. Observed 2m after the Declination, k=0·000135. BALANCE. Observed 3m after the Declination, k=0·000010.

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† Extra Observations made.

Nov. 27d 2h. The declinometer was noted 25° 02′·52, but from the steadiness of the instruments during the day it was believed that the reading was 10 scale divisions in error; it has been altered accordingly.

tingen n Time eclina- n Obs.			DECLINATION.	BIFILAR.		BALANCE.		Observer's Initial.	Göttingen Mean Time of Declination Obs.			DECLINATION.	BIFILAR.		BALANCE.		Observer's Initial.
				Corrected.	Thermometer.	Corrected.	Thermometer.						Corrected.	Thermometer.	Corrected.	Thermometer.	
	h.	m.	° ′	Sc. Div.	°	Mic. Div.	°		d.	h.	m.	° ′	Sc. Div.	°	Mic. Div.	°	
	18	0	25 00·47	561·1	32·6	263·0	33·3	W	9	2	0	25 05·90	557·4	40·6	263·8	41·7	H
	20	0	03·70	564·1	32·4	242·8	32·9	W		4	0	05·45	561·7	41·4	270·8	42·6	W
	22	0	04·51	555·7	32·2	258·3	32·5	H		6	0	05·36	565·0	41·8	273·2	42·8	H
	23	0	05·43	554·1	32·0	259·4	32·5	W		7	0	05·72	564·9	41·9	274·1	42·9	H
	0	0	06·79	545·8	32·0	269·3	32·8	H		8	0	25 05·65	561·6	41·8	278·8	42·7	H
	1	0	07·18	549·0	32·2	272·4	33·2	H		10	0	24 40·47	560·5	41·6	302·2	42·4	H
	2	0	09·24	553·7	32·5	277·2	33·5	H									
	4	0	08·93	554·5	33·3	291·6	34·3	W		18	0	25 05·18	561·0	41·5	244·3	42·2	W
	6	0	11·95	552·5	33·8	322·2	34·7	H		20	0	03·20	558·8	41·7	259·6	42·5	W
	7	0	03·81	556·7	33·9	327·7	34·8	H		22	0	02·59	552·1	41·8	271·9	42·5	H
	8	0	02·46	548·7	33·9	331·4	34·5	H		23	0	03·74	548·5	41·9	272·2	42·5	W
	10	0	01·68	556·7	33·3	294·7	33·8	H	10	0	0	06·48	552·6	41·8	270·2	42·3	H
										1	0	06·50	551·6	41·7	273·5	42·2	H
	18	8	25 02·91	563·4	31·7	272·6	31·9	W		2	0	07·37	551·7	41·6	266·4	42·0	H
	20	0	03·37	563·5	31·8	271·8	32·3	W		4	0	25 06·81	555·7	41·2	281·7	41·4	W
	22	0	03·02	556·1	32·1	273·8	32·8	H		6	0	24 59·93	550·9	40·5	304·1	40·3	H
	23	0	02·46	552·7	32·4	273·2	33·3	W		7	0	25 03·35	557·0	40·0	286·3	39·7	H
5	0	0	03·84	551·6	32·8	270·9	33·8	H		8	0	25 03·43	557·1	39·7	290·8	39·0	H
	1	0	05·49	554·0	33·4	271·2	34·5	H		10	0	24 53·17	547·7	38·4	277·7	37·5	H
	2	0	06·06	557·1	34·0	271·0	35·2	H									
	4	0	06·46	557·9	35·1	278·3	36·7	W		18	0	25 01·86	561·0	34·5	235·5	33·5	W
	6	0	04·71	559·9	36·3	275·3	37·6	H		20	0	04·24	556·4	33·8	249·5	32·9	W
	7	0	03·13	560·9	36·6	272·8	37·7	H		22	0	04·68	550·4	33·2	255·8	32·5	H
	8	0	02·99	561·6	36·8	272·4	38·0	H		23	0	05·89	548·5	32·9	260·0	32·2	W
	0	0	02·08	554·3	37·0	286·1	38·2	H	11	0	0	05·72	552·0	32·7	263·1	32·2	H
										1	0	07·35	547·2	32·6	267·5	32·3	H
	8	0	25 02·55	561·8	36·4	269·5	36·8	W		2	0	07·98	551·8	32·4	268·0	32·2	H
	0	0	02·35	561·7	36·3	267·5	36·7	W		4	0	06·66	554·7	32·4	285·0	32·4	W
	2	0	02·23	556·3	36·4	266·5	36·7	H		6	0	04·28	554·0	32·3	286·2	32·5	H
	3	0	03·90	554·7	36·4	270·6	36·9	W		7	0	04·78	555·8	32·2	283·5	32·2	H
7	0	0	04·84	555·8	36·6	270·4	37·2	H		8	0	02·91	555·3	32·0	285·7	32·2	H
	1	0	05·05	553·3	36·8	275·4	37·5	H		10	0	02·06	550·5	31·8	281·2	31·9	H
	2	0	05·52	557·2	37·0	275·8	38·0	H									
	4	0	04·35	561·0	37·7	274·0	38·5	W		18	0	25 01·54	556·7	31·9	253·7	32·1	W
	6	0	04·17	561·9	38·0	274·9	38·8	H		20	0	03·48	559·1	31·9	250·2	32·4	W
	7	0	02·66	558·3	38·0	277·2	39·1	H		22	0	02·72	557·4	32·0	251·6	32·5	H
	8	0	02·89	562·3	38·2	273·3	39·2	H		23	0	04·62	553·0	32·1	257·1	32·6	W
	0	0	02·12	561·3	38·3	270·5	39·2	H	12	0	0	04·48	552·0	32·2	260·1	32·7	H
										1	0	05·58	549·2	32·2	264·9	33·0	H
	8	0	25 02·05	561·0	37·6	267·0	38·0	W		2	0	07·55	555·0	32·5	259·1	33·2	W
	0	0	02·57	560·9	37·5	266·8	37·9	W		4	0	05·35	557·0	32·8	264·0	33·4	W
	2	0	02·70	556·6	37·4	267·7	37·9	H		6	0	04·34	560·9	32·8	262·0	33·3	W
	3	0	03·63	554·7	37·6	269·7	38·0	W		7	0	04·91	561·9	32·7	264·2	33·2	W
8	0	0	04·71	554·1	37·7	269·4	38·2	H		8	0	25 03·37	561·1	32·6	267·3	33·1	W
	1	0	05·40	554·0	37·7	266·4	38·5	H		10	0	24 59·19	553·2	32·3	275·1	32·6	W
	2	0	06·32	559·7	38·0	265·2	38·8	H									
	4	0	05·03	561·7	38·7	269·7	39·7	W	13	18	0	25 02·93	537·0	28·0	261·4	27·7	H
	6	0	03·60	563·5	39·2	267·6	40·3	H		20	0	02·86	538·2	27·5	259·1	27·4	H
	7	0	03·20	564·8	39·5	266·9	40·5	H		22	0	03·41	555·3	27·0	256·7	26·8	W
	8	0	02·43	564·3	39·7	266·7	40·8	H		23	0	03·09	554·3	27·0	258·3	26·8	H
	0	0	01·72	564·3	40·0	267·5	41·2	H	14	0	0	04·53	552·7	27·0	259·3	26·8	W
										1	0	05·58	554·2	27·1	260·3	27·5	H
	8	0	25 01·36	564·9	40·0	253·8	40·8	W		2	0	06·03	556·7	27·4	258·4	27·9	W
	0	0	02·28	565·6	40·1	255·9	40·8	W		4	0	04·71	560·8	28·2	257·6	28·5	H
	2	0	02·28	559·1	40·2	261·1	40·8	H		6	0	05·60	565·4	28·7	256·6	29·3	W
	3	0	03·38	557·4	40·2	266·5	40·8	W		7	0	05·08	560·7	28·8	257·9	29·4	W
9	0	0	04·58	553·2	40·2	266·9	40·8	H		8	0	03·57	559·5	28·9	263·0	29·4	W
	1	0	05·67	553·8	40·3	266·1	41·2	H		10	0	02·13	558·0	28·9	279·9	29·4	W

DECLINATION. Magnet untouched, April 14^d 1846—May 1847.

ILAR. Observed 2^m after the Declination, k=0·000135. BALANCE. Observed 3^m after the Declination, k=0·000010.

Göttingen Mean Time of Declination Obs.			Declination.		Bifilar.		Balance.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
14	18	0	25	01·61	557·5	28·7	272·1	29·3	H
	20	0		02·87	547·3	28·8	259·5	29·5	H
	22	0		05·42	555·2	28·9	260·3	29·5	W
	23	0		05·42	551·5	29·0	260·0	29·5	H
15	0	0		05·49	549·9	29·2	263·5	29·8	W
	1	0		06·63	552·9	29·7	263·0	30·5	H
	2	0		06·79	557·6	30·0	270·3	31·0	H
	4	0		04·84	559·4	30·7	278·4	31·5	H
	6	0		03·30	560·8	30·8	273·5	31·5	H
	7	0		03·41	560·4	30·7	273·4	31·5	H
	8	0		03·02	559·5	30·7	272·9	31·5	H
	10	0		01·81	558·1	30·9	274·2	31·6	W
	18	0	25	02·42	558·6	30·7	267·9	31·7	H
	20	0		02·50	557·2	30·6	266·3	31·2	H
	22	0		02·82	556·8	30·5	265·3	30·8	W
	23	0		04·14	555·1	30·5	271·2	30·9	H
16	0	0		05·02	554·4	30·6	269·8	30·9	W
	1	0		05·45	554·8	30·7	267·0	31·2	H
	2	0		05·92	557·2	31·0	271·2	31·8	W
	4	0		04·84	570·5	31·8	277·0	33·0	H
	6	0		03·70	561·0	32·3	267·9	33·2	W
	7	0		03·30	561·5	32·5	267·2	33·5	W
	8	0		03·55	562·9	32·7	266·5	33·6	W
	10	0		03·16	559·5	32·9	269·0	33·7	W
	18	0	25	02·20	558·3	32·2	262·3	32·7	H
	20	0		01·72	557·8	31·9	263·4	32·2	H
	22	0		02·33	554·2	31·5	269·8	31·5	W
	23	0		04·37	552·5	31·4	267·7	31·5	H
17	0	0		05·60	553·9	31·3	266·6	31·7	W
	1	0		06·63	557·4	31·4	265·8	32·1	H
	2	0		06·64	560·2	31·7	270·8	32·4	W
	4	0		04·34	561·4	32·3	273·6	33·5	H
	6	0		03·54	564·5	32·7	266·2	33·5	W
	7	0		02·80	563·5	32·8	265·7	33·5	W
	8	0		02·89	564·1	32·7	263·7	33·3	W
	10	0		03·94	557·7	32·5	271·5	32·9	W
	18	0	25	02·55	561·0	29·9	262·7	29·3	W
	20	0		01·58	559·5	28·9	258·3	28·2	W
	22	0		03·94	555·3	28·2	256·4	27·5	W
	23	0		03·48	552·7	27·9	257·3	27·4	W
18	0	0		06·81	556·3	27·7	255·4	27·4	W
	1	0		07·94	557·7	27·7	259·4	27·8	W
	2	0		06·06	557·5	27·9	266·1	28·5	W
	4	0		04·71	561·6	29·0	270·0	29·8	W
	6	0		05·55	563·5	30·1	264·6	31·0	W
	7	0		02·96	555·7	30·7	269·0	31·7	W
	8	0	25	03·65	562·6	31·2	264·7	32·5	W
	10	0	24	58·18	550·4	32·3	278·5	33·5	W
	18	0	25	02·67	561·5	36·0	263·1	37·1	W
	20	0		02·26	561·4	36·5	258·7	37·5	W
	22	0		02·13	558·5	36·9	258·4	37·9	W
	23	0		03·21	557·1	37·0	258·6	38·1	W
19	0	0		04·17	555·0	37·2	258·8	38·3	W
	1	0		05·72	557·3	37·5	261·3	38·6	W
19	2	0	25	05·18	558·6	37·8	266·5	39·0	W
	4	0		03·97	562·0	38·7	271·4	40·1	W
	6	0		03·94	563·2	39·6	269·3	40·8	W
	7	0		03·47	564·6	39·9	268·0	41·2	W
	8	0		02·66	563·9	40·2	264·9	41·7	W
	10	0		02·01	560·8	40·9	276·3	42·3	W
20	18	0	25	02·08	560·7	41·3	265·8	41·6	W
	20	0		02·20	562·4	41·1	261·6	41·4	W
	22	0		03·54	560·8	41·0	258·1	41·3	W
	23	0		04·59	558·7	41·0	261·9	41·3	W
21	0	0		06·07	560·9	40·9	265·2	41·3	W
	1	0		04·64	559·4	40·9	269·0	41·4	W
	2	0		04·68	561·5	41·0	269·2	41·5	W
	4	0		04·17	563·8	41·1	273·5	41·7	W
	6	0		02·80	563·5	41·1	273·6	41·7	W
	7	0		02·57	564·0	41·1	271·0	41·6	W
	8	0		02·01	563·7	41·0	270·1	41·5	B
	10	0		01·41	562·1	40·9	262·8	41·3	B
	18	0	25	00·51	561·0	39·5	263·8	39·5	W
	20	0		01·48	560·2	39·1	259·8	39·2	H
	22	0		03·97	560·3	39·0	250·6	39·0	H
	23	0		04·95	559·5	38·8	251·4	38·8	H
22	0	0		04·98	558·9	38·7	252·7	38·7	H
	1	0		05·76	559·9	38·6	249·6	38·7	H
	2	0		04·93	560·9	38·6	253·2	38·8	W
	4	0		03·74	564·3	38·5	259·1	38·8	W
	6	0		03·40	566·4	38·5	260·1	38·8	W
	7	0		03·13	566·2	38·5	260·3	38·8	W
	8	0		02·52	565·7	38·4	259·5	38·7	W
	10	0		01·92	558·6	38·0	262·5	38·3	W
	18	0	25	02·19	566·6	37·0	249·5	37·2	H
	20	0		02·89	563·8	36·6	249·1	36·7	H
	22	0		04·76	566·3	36·6	247·8	36·7	W
	23	0		06·07	558·2	36·5	252·1	36·7	H
23	0	0		04·91	555·8	36·4	259·8	36·7	W
	1	0		07·45	561·7	36·4	258·4	36·7	H
	2	0		07·29	560·1	36·5	262·8	36·9	W
	4	0	25	08·53	555·8	36·6	274·6	37·0	H
	6	0†	24	58·60	552·8	36·6	340·5	36·8	W
	7	0	24	56·67	559·5	36·5	324·0	36·8	W
	8	0	24	59·36	541·8	36·4	393·3	36·8	W
	10	0†	25	08·88	551·9	36·4	272·1	36·6	W
	18	0	25	01·81	554·9	35·7	227·8	36·0	H
	20	0		02·79	558·6	35·5	253·7	35·6	H
	22	0		04·95	550·6	35·0	257·9	34·8	W
	23	0		06·21	548·6	34·7	263·6	34·6	W
24	0	0		06·03	555·6	34·5	268·7	34·4	W
	1	0		06·39	553·5	34·4	269·5	34·4	H
	2	0		05·52	558·2	34·3	275·4	34·4	W
	4	0		00·96	557·6	34·2	281·7	34·4	H
	6	0	25	05·25	558·4	33·9	286·0	34·0	W
	7	0	24	54·12	548·0	33·7	305·7	33·7	W
	8	0	25	04·05	556·7	33·6	289·7	33·5	W
	10	0		01·01	555·7	33·0	276·8	32·9	W

DECLINATION. Magnet untouched, April 14d, 1846—May 1847.

BIFILAR. Observed 2m after the Declination, $k=0·000135$. BALANCE. Observed 3m after the Declination, $k=0·000010$.

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† Extra Observations made.

öttingen an Time Declina- on Obs.		DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
				Cor- rected.	Thermo- meter.	Cor- rected.	Thermo- meter.	
h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
18	0	25	01·43	565·4	31·0	266·1	30·7	H
20	0		07·69	558·2	30·7	270·2	30·7	H
22	0		04·51	559·9	30·7	249·9	30·7	W
23	0		04·78	555·3	30·7	253·6	30·7	H
0	0		05·82	556·9	30·6	260·9	30·7	W
1	3		07·20	554·8	30·7	266·4	31·0	H
2	0		05·87	552·9	30·9	272·8	31·1	W
4	0		02·96	542·9	31·2	290·4	31·7	H
6	0		02·93	556·4	31·3	283·0	31·8	W
7	0	25	02·39	561·0	31·3	282·7	31·9	H
8	0	24	58·08	559·8	31·3	278·0	32·0	H
10	0	25	02·46	553·8	31·3	269·4	31·8	W
18	0	25	02·01	556·8	30·7	255·6	31·1	H
20	0		01·75	554·9	30·4	262·4	30·7	H
22	0		04·37	550·1	30·3	269·6	30·6	W
23	0		04·31	551·2	30·4	272·1	30·7	H
0	0		07·79	552·1	30·5	268·8	31·0	W
1	0		08·01	552·5	30·8	269·8	31·8	H
2	0	25	06·66	556·1	31·4	277·7	32·6	W
4	0	24	59·50	552·5	33·0	303·1	34·5	H
6	0	25	04·46	559·1	34·2	277·4	35·3	W
7	0		02·79	558·6	34·5	272·1	35·5	W
8	0		01·54	557·2	34·6	275·8	35·5	W
10	0		00·65	555·5	34·5	271·5	35·2	W
18	0	25	02·13	559·5	30·8	261·1	30·8	H
20	0		02·99	560·3	30·8	269·1	31·7	H
22	0		03·57	555·9	31·5	273·8	32·3	W
23	0		04·34	551·4	31·8	276·7	32·8	H
0	0		06·19	555·7	32·3	275·2	33·3	W
1	0		06·63	557·0	32·8	268·5	34·2	H
2	0		06·29	557·5	33·6	265·5	34·8	W
4	0	25	04·64	558·5	35·0	271·9	36·5	W
6	0	24	55·78	561·8	36·0	268·2	37·2	W
7	0	25	01·85	562·0	36·4	261·6	37·6	W
8	0	24	55·76	567·1	36·6	257·0	37·7	W
10	0	25	01·18	558·2	36·9	249·2	37·9	W

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Cor- rected.	Thermo- meter.	Cor- rected.	Thermo- meter.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
28	18	0	25	02·75	562·3	37·5	241·0	38·6	H
	20	0		03·23	560·7	37·6	243·2	38·5	H
	22	0		02·91	556·0	37·6	248·8	38·2	W
	23	0		01·78	553·9	37·6	250·3	38·2	H
29	0	0		03·95	554·2	37·7	248·5	38·8	W
	1	0		04·21	556·3	38·2	242·8	39·5	H
	2	0		05·55	568·1	38·6	240·0	39·8	W
	4	0		03·90	559·4	39·2	241·8	40·5	H
	6	0		02·25	560·5	39·5	241·2	40·5	W
	7	0	25	03·02	560·0	39·6	241·0	40·6	H
	8	0	24	56·03	573·4	39·7	232·9	40·7	H
	10	0	25	01·66	559·1	39·8	236·6	40·7	W
	18	0	25	01·78	561·9	38·8	231·0	39·2	H
	20	0		01·34	558·3	38·5	234·7	38·7	H
	22	0		01·97	555·9	38·1	239·9	38·3	W
	23	0		03·30	545·3	38·0	242·6	38·2	H
30	0	0		05·00	557·0	37·9	245·8	38·0	W
	1	0		05·13	556·5	37·8	244·4	38·2	H
	2	0		05·43	558·4	37·9	243·3	38·4	W
	4	0		03·14	560·7	38·6	250·0	39·5	H
	6	0		02·35	558·9	39·2	244·8	40·1	W
	7	0		01·83	557·7	39·3	245·2	40·1	W
	8	0		01·92	560·5	39·4	245·1	40·1	W
	10	0		00·94	560·5	39·4	243·5	40·1	W
	18	0	25	01·98	562·8	39·5	235·4	40·2	H
	20	0		01·68	561·7	39·5	253·8	40·3	H
	22	0		01·78	559·3	39·7	251·5	40·4	W
	23	0		02·61	558·5	39·8	253·0	40·5	H
31	0	0		03·27	558·9	39·9	253·7	40·7	W
	1	0		04·07	557·8	40·1	254·3	41·0	H
	2	0		05·33	560·8	40·4	253·0	41·2	H
	4	2		03·30	560·7	41·0	251·2	42·2	H
	6	0		02·46	563·1	41·6	244·1	42·5	W
	7	0		01·88	563·3	41·8	231·8	43·0	H
	8	0	25	01·76	561·8	42·0	241·0	43·2	H
	10	0	24	59·71	561·2	42·2	240·7	43·1	W

DECLINATION. Magnet untouched, April 14^{d}, 1846—May 1847.

BIFILAR. Observed 2^{m} after the Declination, $k=0·000135$. BALANCE. Observed 3^{m} after the Declination, $k=0·000010$.

EXTRA OBSERVATIONS

OF

MAGNETOMETERS.

MAKERSTOUN OBSERVATORY,

1846.

Gött. Mean Time.	DECLINATION.		BIFILAR Corrected.		BALANCE Corrected.	
d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.
Jan.						
7 6	0	25 00·28	2	532·4	3	405·4
	30	24 55·22	32	545·1	33	411·0
	47	25 01·21	48	533·8	49	418·2
7 7	0	01·18	2	539·5	3	416·9
	15	06·14	17	544·5	18	410·9
7 8	0	07·64	2	551·5	3	398·8
7 13	0	25 09·67	2	541·4	3	370·9
	40	06·06	42	545·2	43	361·7
7 14	0	03·65	2	545·2	3	361·3
23 20	0	25 26·37	2	559·1	3	333·0
	10	26·47	12	562·6	13	331·8
			23	533·4	24	330·9
	25	17·39	27	536·8	28	330·5
	40	11·27	42	546·1	43	328·7
23 22	0	25 19·86	2	537·9	3	332·7
24 7	0	24 49·54	2	512·8	3	400·0
	5	43·52	7	520·3	8	430·6
	10	39·19	12	525·9	13	430·7
	15	34·82	17	535·7	18	429·0
	20	36·99	22	543·2	23	428·5
	25	39·04	27	542·9	28	429·0
	30	39·65	32	541·6	33	428·7
	45	43·42	47	561·0	48	413·9
24 8	0	53·15	2	559·9	3	403·4
24 9	0	24 57·01	2	530·5	3	389·5
24 10	0	25 02·13	2	533·7	3	390·3
Feb.						
8 23	0	25 08·85	2	556·8	3	395·1
	5	10·75	7	554·4	8	395·1
	15	12·38	17	550·2	18	396·2
	20	12·82	22	552·7	23	395·8
	30	12·35	32	552·6	33	395·5
9 0	0	11·22	2	552·0	3	400·4
15 20	0	25 16·65	2	555·0	3	430·8
	25	11·34	27	551·4	28	432·8
15 22	0	10·74	2	539·8	3	400·3
16 7	0	24 49·48	2	533·8	3	382·4
	10	40·96	12	548·0	13	384·7
	20	45·78	22	558·1	23	385·2
	30	53·81	32	561·4	33	381·3
	45	55·76	47	559·9	48	370·6
16 8	0	24 53·88	2	561·0	3	363·8
16 9	0	25 04·91	2	553·4	3	343·8
16 10	0	24 57·62	2	535·0	3	354·5
20 10	0	25 00·84	2	552·6	3	370·9
	10	01·14	12	551·5	13	375·3
	20	02·25	22	550·9	23	377·1
25 8	0	25 11·77	2	545·9	3	368·2
25 9	50	20·52	52	528·0	53	400·0
	55	18·61	57	522·8	58	407·3
25 10	0	15·76	2	522·6	3	416·9
	5	09·13	7	529·4	8	417·7

Gött. Mean Time.	DECLINATION.		BIFILAR Corrected.		BALANCE Corrected.	
d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.
Feb.						
25 10	10	25 06·53	12	531·6	13	421·0
	35	25 06·70	37	532·1	38	415·4
25 12	11	24 58·65	12	543·3	13	398·4
	19	58·11	20	550·8	21	408·7
26 7	0	25 07·37	2	546·4	3	418·0
	30	02·96	32	539·4	33	429·5
	45	05·72	47	539·6	48	427·6
26 8	0	06·86	2	545·2	3	418·3
26 9	5	06·79	7	544·0	8	393·1
26 10	0	02·35	2	541·4	3	382·4
Mar.						
4 10	0	25 00·28	2	562·3	3	360·5
	10	03·70	12	551·9	13	360·9
	20	05·72	22	547·3	23	362·9
12 8	0	24 58·55	2	549·8	3	370·8
12 9	0	25 00·40	2	551·7	3	369·2
12 10	0	03·82	2	553·8	3	364·5
13 2	0	25 22·96	2	541·4	3	363·2
	5	21·09	7	543·5	8	364·2
	15	19·59	17	545·0	18	371·5
	35	17·29	37	546·0	38	385·8
13 3	0	21·09	2	545·2	3	402·8
	25	21·59	27	538·7	28	423·6
	46	25·78	47	559·4	48	431·4
	50	26·30	52	556·5	53	435·3
	55	24·93	57	567·2	58	435·8
13 4	0	26·18	2	559·8	3	437·1
	10	25·96	12	553·2	13	453·6
	20	20·52	22	555·1	23	459·8
	25	20·96	27	564·2	28	458·3
	35	22·53	37	563·0	38	462·5
	50	21·79	52	563·9	53	482·7
13 5	0	19·41	2	556·7	3	489·0
	10	20·52	12	545·7	13	500·8
	15	17·80	17	552·7	18	500·8
	25	19·95	27	558·1	28	490·9
	35	19·98	37	576·2	38	495·0
	45	19·84	47	577·4	48	532·7
	50	18·18	52	578·5	53	551·4
	55	15·98	57	576·7	58	579·7
13 6	0	15·24	2	561·8	3	575·5
	5	02·94	7	559·5	8	564·4
	10	04·39	12	565·0	13	584·9
	15	00·87	17	587·8	18	615·4
	20	05·47	22	635·3	23	670·4
			24	626·6		
	25	25 06·12	26	628·1	27	645·3
			28	602·6	29	627·2
	30	24 53·85	32	570·8	33	569·4
			34	555·0		
	35	25 05·58	36	545·2		
			37	544·6	38	527·4
	40	10·83	42	544·0	43	514·1
	45	10·98	47	535·5	48	503·9
	50	08·14	52	539·4	53	491·6
	55	08·93	57	540·4	58	479·9

Gött. Mean Time.	DECLINATIO	
d. h.	Min.	° ′
March.		
13 7	0	25 09
	30	12
13 8	0	05
13 10	0	10
	5	25 00
	10	24 53
	15	48
	20	51
	25	54
	30	49
	35	48
	40	48
	45	47
	50	47
13 11	0	48
	51	24 56
13 18	0	25 02
13 19	17	10
	25	12
	30	15
	35	16
	40	16
	45	16
	50	17
13 20	0	14
	10	13
	20	11
	30	09
	40	08
13 22	0	09
14 2	0	17
	45	21
14 3	25	25 04
	30	24 59
	35	25 01
	40	02
	45	04
	50	07
14 4	0	10
	10	1
	15	1
	20	1
	30	1
	40	1
	50	1
	55	0
14 5	0	0
	10	1
	15	0
	20	25 0
	26	24 4
	28	5
	30	5
	32	24 5
	35	25 0
	40	0
	45	0
	50	0
14 6	0	0

BIFILAR. $k=0·000135$. BALANCE. $k=0·000010$.

Jan. 7d 6h. Clock 10s fast, set right.
Jan. 24d 7h 10m. Clock 15s slow, set right.
Feb. 27d 19h. Clock 36s slow, set right; rate 1s·5; diminished.
Mar. 13d 8h—10h. The declination magnet was looked at occasionally; there appeared to be little motion.

IFILAR rrected.	BALANCE Corrected.		Gött. Mean Time.	DECLINATION.		BIFILAR Corrected.		BALANCE Corrected.		Gött. Mean Time.	DECLINATION.		BIFILAR Corrected.		BALANCE Corrected.	
Sc. Div.	Min.	Mic. Div.	d. h. March.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.	d. h. March.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.
540·9	3	472·1	14 6	10	25 09·49	12	536·1	13	468·0	16 10	55	24 56·47	57	506·1	58	221·7
543·0	33	447·0		20	08·34	22	539·4	23	464·9	16 11	0	56·40	2	501·3	3	216·1
540·9	3	454·9		30	05·45	32	547·3	33	458·4		5	56·14	7	495·1	8	217·0
522·6	3	396·5		40	08·59	42	552·6	43	452·1		10	52·87	12	499·1	13	221·8
519·4	8	397·5		50	25 05·50	52	539·4	53	453·1		15	50·75	17	503·9	18	230·7
531·1	13	400·3	14 7	0	24 55·96	2	548·5	3	448·3		20	49·98	22	516·4	23	230·0
545·8	18	394·8		5	49·98	7	566·0	8	433·8		25	52·60	27	516·8	28	209·4
542·8	23	393·7		10	48·20	12	598·7	13	417·3				29	509·4		
528·5	28	400·0		15	24 59·93	17	593·7	18	412·5		30	24 58·18	31	520·0		
530·1	33	399·4		20	25 07·81	22	567·0	23	411·9				32	527·9	33	190·9
536·3	38	395·8		25	25 06·23	27	551·8	28	410·3				34	534·5		
532·9	43	392·1		30	25 05·52	32	539·3	33	455·9		35	25 01·27	37	539·6	38	173·5
536·0	48	385·0		35	24 58·80	37	550·6	38	398·5		40	24 58·70	42	549·3	43	155·5
536·2	53	375·8		45	25 01·88	47	546·8	48	392·6				44	560·0		
530·1	3	365·0		55	24 55·51	57	545·0	58	390·4		45	57·51	46	558·5	47	148·6
531·1	53	384·5	14 8	0	24 56·03	2	543·4	3	391·2		48	57·51				
				10	24 59·37	12	528·4	13	399·4		50	56·03	52	564·3	53	168·1
545·2	3	345·3		35	25 00·81	37	542·0	38	397·7		55	50·69	57	559·4	58	171·1
521·8	19	348·8	14 10	0	25 08·88	2	543·4	3	319·8	16 12	0	51·76	2	546·8	3	179·0
517·8	28	345·7		15	24 57·71	17	552·1	18	318·3		5	53·95	7	534·0	8	182·0
518·5	33	339·5		30	25 02·22	32	544·0	33	328·2		10	54·80	12	528·1	13	180·3
518·0	38	332·6									15	24 59·57	17	517·1	18	175·6
520·9	43	327·8	16 7	0	25 03·00	2	553·2	3	411·3		20	25 08·25	22	510·6	23	159·3
524·6	48	324·0		10	24 58·53	12	554·4	13	407·0		25	13·05	27	498·1	28	138·8
525·3	53	322·0		42	25 02·32	43	550·2	44	402·9		30	15·85	32	490·0	33	115·3
531·7	3	319·5	16 8	0	24 59·04	2	549·0	3	407·0		35	14·99	37	480·5	38	84·2
537·0	13	314·9		27	24 55·60	28	536·5	29	421·3				39	487·8		
538·0	23	312·9		40	25 01·18	42	535·7	43	425·1		40	10·16	42	501·9	43	78·4
536·5	33	314·1		50	07·67	52	538·9	53	422·2		45	04·14	47	513·6	48	78·8
537·6	43	318·1	16 9	0	04·07	2	547·2	3	384·6		50	00·71	52	547·5	53	96·0
531·1	3	350·3		5	07·27	7	529·9	8	359·9		55	01·32	57	550·3	58	101·7
531·9	3	417·8		10	05·22	12	526·5	13	347·2	16 13	0	03·75	2	551·3	3	115·1
563·1	48	435·5		15	25 03·67	17	525·7	18	334·6							
544·8	28	553·3				19	541·3			17 2	0	25 22·25	2	537·4	3	422·1
559·9	33	536·1		20	24 58·25	21	565·6	22	308·7	17 3	0	25 21·73	2	544·1	3	439·3
558·8	38	524·9				23	576·9	24	294·4	17 4	0	25 16·21	2	556·4	3	430·7
564·7	43	514·8		25	25 12·51	26	573·6	27	279·9	17 8	0	25 05·94	2	543·6	3	423·4
565·7	48	509·8		28	17·67	29	569·4			17 9	25	24 52·35	27	584·8	28	356·1
562·8	53	506·5		30	22·80	31	544·6	32	254·4		30	24 49·37	32	589·4	33	343·0
561·1	3	496·3		33	26·79	34	504·3				40	25 02·15	42	572·9	43	328·2
561·0	13	494·1		35	23·78	36	490·5	37	244·9		45	09·96	47	553·0	48	330·7
561·6	18	494·1				38	492·0	39	257·6		50	12·35	52	532·0	53	334·6
559·2	23	494·8		40	25 04·68	41	507·0	42	258·4		55	05·22	57	534·2	58	334·3
564·2	33	495·9		43	24 57·55	44	513·1			17 10	0	01·85	2	542·1	3	333·0
557·3	43	499·3		45	55·83	46	526·2	47	246·9		5	01·95	7	548·9	8	333·9
557·5	53	514·0		48	54·46	49	537·2				10	03·37	12	552·4	13	334·1
570·1	58	503·8		50	53·34	51	554·4	52	251·5	17 20	0	07·72	2	533·0	3	379·8
568·9	3	498·2		53	54·73	54	570·4				30	08·34	32	531·3	33	384·2
545·0	13	490·7		55	24 58·29	57	566·3	58	256·0	17 22	0	25 04·89	2	536·3	3	390·7
544·1	18	495·7	16 10	0	25 10·30	2	552·8	3	264·4	18 10	0	24 58·29	2	574·8	3	364·9
543·6	23	513·9		5	25 11·44	7	527·3	8	283·4		15	25 02·75	16	562·5	17	363·9
566·1	28	507·8		10	25 03·50	12	537·8	13	299·9							
				15	24 58·56	17	545·1	18	302·2	26 0	0	25 16·36	2	524·2	3	353·7
580·7				20	24 59·50	22	536·3	23	295·9		20	17·56	22	544·7	23	348·2
	33	497·7		25	25 00·01	27	531·3	28	293·3		35	16·38	37	531·5	38	351·2
577·5	38	493·2		30	24 58·72	32	536·7	33	284·8	26 1	0	15·81	2	541·3	3	349·0
560·8	43	486·7		35	25 01·51	37	524·5	38	265·7	26 2	0	22·10	2	565·9	3	354·6
556·1	48	480·7		40	05·52	42	513·4	43	251·2		45	18·30	47	555·3	48	375·3
551·2	53	477·1		45	03·00	47	506·0	48	238·3	26 3	0	17·10	2	543·2	3	383·8
548·3	3	471·4		50	00·85	52	504·7	53	233·2		15	16·60	17	544·1	18	387·5

BIFILAR. $k=0·000135$. BALANCE. $k=0·000010$.

Gött. Mean Time.		Declination.			Bifilar Corrected.		Balance Corrected.	
d.	h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.
March.								
26	3	30	25	12·98	32	552·0	33	389·4
26	4	0		09·66	2	556·2	3	395·1
27	7	0	24	59·16	2	543·0	3	388·9
		15	24	53·95	17	554·7	18	387·7
27	8	0	25	03·48	2	554·8	3	378·2
30	4	0	25	05·32	2	561·1	3	394·3
		20		06·70	22	558·5	23	404·5
		40		09·69	42	551·5	43	401·0
30	5	0		11·34	2	549·2	3	396·7
30	6	0		08·68	2	550·9	3	387·8
April.								
6	4	0	25	20·90	2	585·6	3	432·3
		10		18·75	12	575·1	13	435·1
		25	25	18·03	27	564·2	28	440·1
6	6	0	24	56·37	2	582·4	3	524·4
		10	25	01·95	12	576·9	13	522·7
		20		04·82	22	571·8	23	517·9
		40		09·42	42	567·0	43	507·8
6	7	0	25	11·98	2	566·0	3	507·2
		55	24	44·23	57	537·9	58	485·8
6	8	0	24	46·19	2	542·7	3	462·7
		5	24	50·18	7	552·4	8	443·0
		11	25	00·71	12	549·6	13	434·8
		15		03·23	17	539·6	18	434·4
		20		03·97	22	535·0	23	425·2
		25		03·43	27	528·7	28	422·7
		30	25	01·88	32	526·8	33	420·0
		46	24	57·41	47	516·7	48	396·1
		50	24	51·32	52	522·9	53	362·6
		55	24	55·73	57	508·2	58	339·2
6	9	0	25	00·00	2	490·6	3	332·7
		5	24	57·37	7	497·2	8	340·2
		10		52·87	12	492·3	13	325·1
		15		54·89	17	487·7	18	305·8
		21		56·37	22	481·3	23	311·5
		25		51·90	27	481·6	28	289·1
		30		51·79	32	475·0	33	257·4
					34	474·1		
		35	24	54·82	37	471·3	38	234·9
					39	455·6		
		40	25	00·27	41	438·9	43	188·9
					44	431·4		
		45		08·34	46	424·7	47	129·6
					48	433·4	49	110·8
		50		12·65	52	411·2	53	68·8
					54	424·6	55	67·8
		55½		14·06	57	437·2	58	68·0
					59	426·2		
6	10	0		15·31	2	431·3	3	84·0
		5		10·30	7	451·8	8	120·9
		10		10·43	12	481·3	13	160·9
		15		07·67	17	490·3	18	172·2
		20		05·52	22	488·3	23	175·2
		25		05·18	27	497·2	28	183·3
		30		07·45	32	487·0	33	198·7
		35		02·89	37	509·1	38	209·9
		40		04·04	42	521·7	43	201·2
		45		10·97	47	510·5	48	156·5

Gött. Mean Time.		Declination.			Bifilar Corrected.		Balance Corrected.	
d.	h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.
April.								
6	10	50	25	16·55	52	470·8	53	140·1
		55		17·60	57	471·7	58	135·5
6	11	0		18·13	2	493·4	3	143·9
		10		15·47	12	497·7	13	83·4
		15		15·51	17	525·8	18	76·7
		25		02·55	27	572·3	28	105·3
		30		14·73	32	558·4	33	124·9
		35		10·90	37	548·2	38	140·7
		40		15·37	42	528·8	43	152·3
		45		12·22	47	521·8	48	160·5
		50		14·85	52	515·0	53	186·1
		55		12·04	57	511·5	58	199·7
6	12	0	25	06·23	2	516·3	3	200·2
		10	24	59·59	12	531·0	13	182·6
		20	25	01·21	22	551·4	23	176·1
		30		09·82	32	532·3	33	187·2
		40		08·68	42	522·3	43	194·6
		50		03·97	52	522·1	53	209·4
6	13	0		00·13	2	528·4	3	211·6
		10		02·01	12	530·1	13	215·5
		20		02·96	22	526·5	23	215·8
6	22	0		15·39	2	516·8	3	366·9
		15		14·40	17	527·1	18	361·3
		30		11·88	32	531·4	33	359·9
6	23	0	25	10·31	2	538·1	3	361·3
7	7	0	24	53·17	2	561·7	3	419·0
		5	24	54·59	7	563·1	8	418·3
		20	24	59·53	22	560·2	23	417·5
7	8	0	25	02·19	2	549·6	3	409·4
7	10	0		03·50	2	540·6	3	384·3
7	11	0		04·51	2	529·4	3	363·5
10	8	0	25	02·37	2	548·8	3	443·8
		15		02·99	17	546·8	18	436·2
		32		05·38	33	555·8	34	424·2
10	9	0		05·29	2	561·1	3	405·7
10	10	0		05·70	2	556·1	3	383·2
13	7	0	25	13·72	2	555·9	3	470·8
		37		04·61	39	538·2	40	478·0
		50		01·51	52	549·8	53	461·8
13	8	0		02·80	2	553·9	3	452·7
13	9	0		02·79	2	551·3	3	414·1
13	10	0		10·06	2	553·3	3	266·9
		15		08·01	17	555·8	18	271·8
14	8	0	25	03·93	2	562·2	3	370·1
14	9	0	24	50·92	2	564·2	3	407·6
		15		56·11	17	574·3	18	379·4
		30		59·56	32	559·5	33	365·8
14	10	0		48·27	2	554·6	3	342·6
		15		48·67	17	540·9	18	336·7
		30		50·62	32	543·3	33	335·4
		45		49·24	47	544·1	48	333·5
14	11	0		52·94	2	544·5	3	332·3
15	8	0	25	00·87	2	551·4	3	384·3
		50	24	56·70	52	575·3	53	376·4
15	9	0	25	01·16	2	566·8	3	375·9

Gött. Mean Time.		Declination.		
d.	h.	Min.	°	′
April.				
15	9	30	25	02·17
15	10	0	24	59·90
15	23	0	25	08·82
		25		13·02
		30		13·19
		40		14·80
16	0	0		15·02
16	4	0		15·9
		15		14·4
		30		14·2
		50		06·1
		55	25	04·2
16	5	0	24	58·5
		5	24	56·9
		10	25	04·1
		15		06·7
		20		08·0
		25		08·7
		30		07·6
		40		08·2
16	6	0		10·8
		30	25	06·4
16	7	0	24	59·3
		10	25	00·9
		20		03·2
		31		15·5
		35		12·6
		40		05·4
		45		00·5
		50	25	00·0
		55	24	59·8
16	8	0	25	00·5
		15	25	03·6
		35	24	57·7
		45	24	59·7
16	9	0	25	01·5
		5		01·9
		10		01·2
		15		13·
		20		17·7
		25		12·
		30		16·4
		35		22·
		40		17·
		45		17·
		50	25	03·
		55	24	43·

BIFILAR. k=0·000135.

BALANCE. k=0·000010.

LAR cted.	BALANCE Corrected.	
c. Div.	Min.	Mic. Div.
551·4	33	372·1
544·0	3	374·6
505·9	3	340·3
518·9	28	368·2
517·8	33	377·2
515·2	43	389·2
524·3	3	409·4
566·2	3	490·5
570·2	18	504·9
573·8	33	512·3
588·7	53	529·3
596·4	58	536·0
513·9	3	540·4
531·2	8	527·2
526·1		
514·1	13	517·5
505·4	18	511·3
501·2	23	509·8
85·2	28	510·3
85·9	33	510·6
74·1	43	504·1
60·2	3	501·2
62·8	33	491·1
91·9	3	458·3
74·6	13	444·3
84·7	23	426·5
46·5	33	423·7
31·7	38	428·3
39·1	43	430·6
50·2	48	430·6
54·8	53	429·4
56·6	58	428·5
57·6	3	427·1
40·2	18	431·1
48·4	38	417·3
35·1	48	417·0
47·2	3	388·9
38·0	8	391·9
48·9	13	380·3
30·4	18	356·4
14·0		
17·5	23	333·3
22·8		
29·2	28	296·9
28·3	33	252·6
19·6		
16·3		
11·7	37½	230·9
03·3		
04·3		
09·7	43	219·0
07·4		
01·5		
36·2	48	217·1
71·4		
81·3		
93·4	53	243·6
15·5		

Gött. Mean Time.		DECLINATION.			BIFILAR Corrected.		BALANCE Corrected.	
d.	h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.
April.								
16	9	56	24	42·81	57	553·6	58	252·1
					59	575·1		
16	10	0	24	44·73	2	585·5	3	253·9
		5	24	53·27	7	576·2	8	254·0
		10	25	01·39	12	560·8	13	256·1
		15	25	01·54	17	555·7	18	258·0
		25	25	01·07	27	546·6	28	260·8
		35	24	59·59	37	533·8	38	254·0
		45	24	58·32	47	522·7	48	258·2
16	11	0	25	02·69	2	516·8	3	263·8
		10	24	47·26	12	544·9	13	251·1
		15	24	51·59	17	557·7	18	222·0
		20	25	02·52	22	546·5	23	199·6
		25		06·09	27	538·4	28	182·7
		30		06·12	32	538·5	33	169·9
		35		05·45	37	534·9	38	149·0
		40	25	05·35	42	525·0	43	173·4
		50	24	53·92	52	521·8	53	177·1
		55	24	56·20	57	517·5	58	175·3
16	12	0	24	56·00	2	518·3	3	166·5
		10	25	00·60	12	508·7	13	155·1
		15	25	00·55	17	500·6	18	155·1
		20	24	57·01	22	535·7	23	159·5
		25	24	52·50	27	512·3	28	159·5
		30	24	57·75	32	494·8	33	146·5
		35	25	05·69	37	483·2		
					38	480·4	39	130·8
		40½		06·12	42	481·1	43	121·1
					44	482·7		
		45		07·94	46	481·4		
					47	482·4	48	114·5
					49	480·4		
		50		07·60	51	476·7		
					52	478·1	53	108·5
					54	481·3		
		55		07·07	56	483·3		
					57	482·7	58	100·4
					59	478·0		
16	13	0		08·32	1	476·3		
					2	472·5	3	72·7
					4	473·0		
		5		09·79	6	476·8		
					7	474·2	8	68·0
					9	477·9		
		10		08·34	11	482·5		
					12	481·5	13	76·8
					14	488·4		
		15		04·71	16	483·7		
					17	481·4	18	82·3
					19	480·7		
		20	25	00·60	21	475·0		
					22	473·8	23	84·5
					24	483·1		
		25	24	55·06	26	485·9		
					27	489·1	28	86·0
					29	498·1		
		30		51·09	32	506·4	33	89·4
		35	24	49·10	37	510·0	38	90·0
16	20	0	25	09·27	2	519·3	3	328·0

Gött. Mean Time.		DECLINATION.			BIFILAR Corrected.		BALANCE Corrected.	
d.	h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.
April.								
16	20	15	25	14·13	17	515·3	18	327·8
		30		15·54	32	514·6	33	323·0
21	10	0	25	06·79	2	555·3	3	359·5
		10		06·76	12	555·4	13	358·2
May.								
4	2	0	25	18·92	2	551·2	3	335·6
4	3	55		22·50	57	582·3	58	408·1
4	4	0		21·32	2	579·3	3	418·1
		10		18·54	12	567·0	13	441·3
		15		19·58	17	551·1	18	410·3
		20		18·34	22	549·6	23	463·8
		25		16·86	27	550·7	28	471·2
		30		16·23	32	553·9	33	479·4
		35		14·17	37	549·0	38	484·7
		40		12·98	42	551·8	43	486·3
		45		12·35	47	558·9	48	484·9
4	5	0		14·46	2	556·9	3	488·0
		15		15·04	17	566·4	18	485·2
		30		15·04	32	577·1	33	483·6
		50		09·76	52	569·9	53	489·5
4	6	0		12·23	2	564·0	3	487·4
4	8	0	25	04·88	2	573·1	3	504·2
4	9	0	24	59·83	2	545·5	3	500·1
		35		49·48	37	550·6	38	421·3
		40		51·72	42	543·8	43	382·6
		45		56·30	47	528·5	48	350·8
		50		58·70	52	514·9	53	331·8
		55		55·40	57	502·7	58	308·7
4	10	0		51·59	2	490·4	3	291·1
					7	489·9	8	268·9
		10		50·13	12	496·7	13	257·2
		15		49·37	17	490·2	18	234·9
					19	478·8		
		20		46·61	21	465·4	22	194·9
					23	459·3		
					24	453·7		
		25		44·90	27	446·5	26	180·5
					28	448·5	29	175·6
		30		43·58	31	451·9	32	170·3
					34	463·0		
		35		43·72	37	485·7	36	167·4
					39	489·4		
		40		44·53	42	491·6	43	137·2
		45		49·14	47	483·2	48	103·4
		50		53·54	52	491·5	53	103·1
		55		54·72	57	495·2	58	115·3
4	11	0		52·67	2	501·0	3	95·5
		5		50·46	7	503·8	8	85·9
		10		50·04	12	504·8	13	79·8
		20		52·87	22	510·2	23	104·5
9	10	0	24	57·56	2	541·1	3	372·6
		10	24	58·72	12	538·0	13	368·8
11	18	0	24	51·10	2	529·2	3	235·7
		10		50·89	12	527·8	13	242·1
		20		53·27	22	531·7	23	245·3
		30		53·79	32	540·9	33	248·2

BIFILAR. $k=0·000135$. BALANCE. $k=0·000010$.

Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.	Declination.	
d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	° ′
May.							May.							May.		
11 18	50	24 54·62	52	554·3	53	258·6	12 4	35	25 16·48	37	565·3	38	446·6	12 11	5	24 47·76
11 19	0	25 00·33	2	554·1	3	261·0	12 5	0	09·66	2	563·3	3	457·1			
	30	24 58·58	32	549·4	33	263·8	12 6	0	06·61	2	643·9	3	483·3		10	53·20
	50	58·89	52	525·0	53	279·5		5	13·29	7	627·3	8	528·1		15	54·62
	55	57·41	57	514·5	58	282·3		10	03·02	12	610·9	13	505·4		20	48·28
11 20	0	58·63	2	508·2	3	286·7		15	08·85	17	602·6	18	482·7		25	40·96
			4	503·0				20	04·91	22	603·1	23	480·2		30	41·97
	5	24 59·76	7	502·8	8	291·1		25	04·44	27	604·7	28	479·0			
	10	25 01·48	12	501·2	13	293·2		30	05·08	32	603·4	33	473·5		35	24 56·82
	15	00·87	17	507·7	18	291·8		35	06·26	37	598·5	38	465·7			
	20	01·27	22	502·5	23	301·2		45	25 10·75	47	603·9	48	484·7		40	25 06·79
	25	03·20	27	494·5	28	294·4		50	24 57·44	52	639·1	53	477·9			
	30	05·29	32	498·6	33	290·9		55	25 06·45	57	637·0	58	413·2		45	24 55·60
	35	08·01	37	502·6	38	291·7	12 7	0	25 17·61	2	572·8	3	412·9		47	55·63
	40	10·47	42	504·8	43	291·4				4	566·9				50	54·89
	45	06·23	47	485·2				5	25 01·75	6	580·9	7	454·4		52	54·32
			48	483·5	49	292·3				8	606·9					
	50	04·51	51	484·5				10	24 45·57	11	632·1	12	427·9		55	49·71
			52	482·5	53	292·5		13	51·14	14	638·3					
			54	476·4				15	54·82			16	407·2	12 12	0	57·21
	55	04·55	56	469·9						17	630·9	18	401·9		2	55·73
			57	466·1	58	293·9		20	24 59·53	22	623·6	23	390·1		4	56·07
			59	462·9				25	25 02·67	27	615·0	28	383·5			
11 21	0	01·19	1	467·3				30	04·37	32	603·9	33	377·2			
			2	472·7	3	292·0		35	06·26	37	604·8	38	366·0		8	24 58·32
			4	477·9				40	16·65	42	566·0	43	367·6		10	25 00·13
	5	01·43	6	478·9				45	14·03	47	546·8	48	380·7		13	06·89
			7	475·7	8	294·3				49	554·7					
	10	03·55	12	482·5	13	294·2		50	25 00·33	52	561·7	53	393·4			
	15	04·61	17	486·2	18	294·5		55	24 54·28	57	574·2	58	387·4		17	17·29
	20	11·44	22	494·5	23	296·1	12 8	0	24 56·18	2	577·8	3	375·6		19	23·07
	25	11·81	27	500·5	28	294·8		11	25 02·69	12	564·4	13	394·2		21	27·04
	30	13·49	32	505·1	33	291·4		20	24 58·47	22	577·3	23	401·2		23	31·18
	35	11·71	37	509·9	38	287·0		30	25 04·98	32	564·0	33	399·9		25	30·04
	40	11·84	42	507·4	43	286·6	12 9	0	25 01·43	2	550·7	3	402·3		27	28·22
	45	13·56	47	516·6	48	283·2		35	24 59·64	37	536·7	38	310·3		29	22·80
11 22	0	11·99	2	517·7	3	282·5		40	25 03·16	42	526·2	43	270·7		31	20·38
	30	11·00	32	517·1	33	290·6		45	07·91	47	512·7	48	246·2		33	17·49
11 23	0	10·43	2	492·4	3	315·8		50	06·63	52	505·8	53	243·9		35	16·75
	10	12·82	12	505·8	13	315·2		55	25 00·94	57	513·8	58	238·0		38	15·09
	15	14·08	17	494·5	18	320·0	12 10	0	24 58·16	2	520·8	3	219·6		40	13·67
	20	17·91	22	500·3	23	320·9		10	25 05·25	12	510·4	13	163·8		45	09·2
	25	16·92	27	504·1	28	320·3		15	09·32	17	503·5	18	122·0		50	07·4
	30	18·95	32	497·0	33	320·6		20	14·33	21	477·4	22	80·4		55	04·51
	35	18·55	37	498·3	38	324·4				23	474·9	24	70·2	12 13	0	03·3
	40	18·97	42	507·8	43	322·7		25	14·03	26	474·1	27	54·2		5	01·1
	45	20·20	47	504·4	48	325·3				28	477·0	29	56·1		16	02·2
	50	19·53	52	511·9				30	14·50	31	510·6	32	78·5			
12 0	0	19·61	2	509·1	3	324·1		35	10·97	37	494·2	38	110·0	12 18	0	02·3
	25	19·31	27	518·9	28	327·4		40	03·23	39	488·8				30	05·7
	40	16·87	42	507·8	43	334·5		41	25 00·58	42	503·1	43	152·5	12 20	0	03·8
	50	17·39	52	509·7	53	335·7		45	24 52·17	44	509·4			12 23	0	10·8
12 1	0	16·41	2	522·8	3	335·3		46	51·76	47	507·7	48	151·6		30	10·7
	10	16·12	12	524·2	13	336·0		50	48·83	49	505·9			13 0	0	12·1
	30	15·07	32	538·4	33	333·4		51	48·36	52	505·0	53	152·8	13 2	0	14·2
	45	15·79	47	530·3	48	337·4		55	46·72					13 3	0	13·7
12 2	0	15·45	2	534·5	3	339·9		56	46·28	57	503·9	58	169·4	13 4	0	03·8
12 3	0	19·17	2	574·1	3	392·2	12 11	0	43·65					13 5	0	08·9
	32	14·98	33	568·4	34	465·2		1	43·82	2	514·7	3	169·4	13 6	0	07·9
12 4	0	10·06	2	555·4	3	486·5				4	518·3			13 8	0	04·1

BIFILAR. k=0·000135. BALANCE. k=0·000010.

May 11^d 22^h 10^m. Clock 23^s slow, set right.

AR ted.	BALANCE Corrected.	
Div.	Min.	Mic. Div.
18·1	8	167·6
25·4		
17·5	13	184·3
13·4	18	197·2
14·8	23	200·8
12·5	28	165·9
39·0	33	98·7
9·3		
7·7	37	91·9
2·7	39	93·3
5·7	42	99·2
6·9	44	102·2
1·5	47	106·7
6·8	49	102·0
1·2	52	102·4
7·2		
9·8		
8·6	57	73·3
4·1	59	52·2
3·2		
	2	39·7
7·0	4	26·2
41·1	6	5·2
43·3		
41·4	8	+ 2·1
49·7	11	− 20·9
41·7	13	− 43·1
49·0	15	− 93·6
41·7	17	−113·6
45·9		
41·6	19	−115·7
42·7		
45·3	23	− 92·5
41·8	26	− 63·0
43·9		
52·4	29	− 18·1
57·9	32	+ 7·3
51·9		
52·5	35	11·8
52·0	37	21·8
50·8	43	41·6
53·4	48	60·0
59·5	53	88·3
56·6	58	95·7
54·1	3	116·1
59·4	8	129·2
59·2	18	148·2
5·3	3	319·8
5·1	33	333·5
5·2	3	347·4
5·2	3	353·2
5·2	33	351·3
5·4	3	354·6
5·8	3	368·0
56·2	3	377·4
59·5	3	404·6
5·1	3	394·4
5·4	3	395·2
56·6	3	389·7

Gött. Mean Time.	DECLINATION.		BIFILAR Corrected.		BALANCE Corrected.	
d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.
May.						
13 9	0	25 00·62	2	561·2	3	361·8
13 10	0	04·34	2	543·2	3	353·8
14 8	0	25 11·41	2	576·1	3	371·5
14 9	0	03·90	2	552·0	3	351·8
14 10	0	06·37	2	551·4	3	348·2
18 18	0	25 12·67	2	546·1	3	296·2
	40	03·70	42	549·7	43	290·8
18 19	0	02·72	2	553·8	3	291·3
18 20	0	02·05	2	573·0	3	317·9
23 4	0	25 15·14	2	583·8	3	396·4
			32	607·0	33	427·2
	35	06·83	37	614·0	38	431·7
	40	08·45	42	614·9	43	438·4
	45	09·19	47	607·0	48	443·9
	50	09·08	52	608·0	53	444·3
23 5	0	02·46	2	592·9	3	459·8
	10	01·11	12	583·5	13	472·6
	20	03·74	22	569·5	23	477·8
	30	03·02	32	570·2	33	478·9
	45	05·69	47	562·3	48	475·6
23 6	0	07·10	2	562·0	3	413·2
June.						
2 8	0	25 01·09	2	549·4	3	440·5
	5	24 55·29	7	545·7	8	453·3
	10	47·62	12	560·2	13	458·5
	15	37·16	17	587·6	18	441·3
	20	38·91	22	606·4	23	430·3
	25	47·79	27	590·8	28	430·0
	30	50·49	32	580·3	33	434·9
	40	54·38	42	567·1	43	436·0
2 9	0	24 58·42	2	561·0	3	422·9
2 10	0	25 01·61	2	549·4	3	387·2
9 6	0	24 59·66	2	604·0	3	507·1
	10	24 59·23	12	593·3	13	519·5
	20	25 00·44	22	598·4	23	517·4
	45	07·54	47	579·1	48	504·0
9 7	0	07·10	2	571·7	3	496·8
15 9	2	25 07·84	3	565·4	4	440·1
	45	24 59·51	47	558·6	48	427·5
15 10	0	24 53·65	2	569·5	3	412·4
	10	25 01·04	12	559·8	13	409·4
	15	02·53	17	556·2	18	404·8
18 18	0	25 12·22	2	533·0	3	386·2
	50	16·21	52	538·4	53	355·3
18 19	0	17·80	2	538·5	3	350·5
	15	19·84	17	542·3	18	345·9
	20	18·94	22	544·0	23	345·0
	30	17·53	32	545·6	33	344·4
	40	15·88	42	544·4	43	345·5
18 20	0	08·14	2	544·3	3	351·9
22 13	0	25 16·15	2	535·5	3	266·9
	16	25 02·48	17	537·4	18	246·4
	25	24 59·01	27	550·4	28	270·8

Gött. Mean Time.	DECLINATION.		BIFILAR Corrected.		BALANCE Corrected.	
d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.
June.						
22 14	0	24 59·44	2	543·3	3	265·7
	35	24 55·06	37	550·4	38	269·7
22 15	0	25 05·15	2	526·0	3	298·9
	10	12·98	12	525·7	13	298·4
	15	14·26	17	530·8		
	20	14·60	22	534·7	23	290·5
	25	13·99	27	538·7	28	284·9
	30	12·08	32	539·8	33	282·1
	45	08·43	47	543·6	48	283·9
22 16	0	25 04·37	2	548·0	3	282·6
22 17	0	24 58·69	2	527·6	3	347·5
22 18	0	24 58·45	2	542·9	3	375·0
July.						
3 18	0	25 02·26	2	515·4	3	207·8
3 19	0	24 59·66	2	529·0	3	262·6
3 20	0	25 01·90	2	536·8	3	300·1
6 0	0	25 19·68	2	497·2	3	397·6
	10	17·81	12	507·7	13	395·6
	20	11·93	22	527·5	23	390·2
	30	14·15	32	538·5	33	389·7
	40	13·64	42	547·9	43	383·9
6 1	0	12·22	2	554·7	3	371·5
6 10	0	25 01·29	2	558·2	3	404·8
	10	24 55·73	12	566·8	13	391·6
	15	54·66	17	571·1	18	387·0
	20	54·77	22	574·6	23	378·7
	25	24 58·63	27	570·0	28	373·7
	30	25 02·13	32	558·4	33	370·2
7 20	0	24 58·52	2	536·6	3	366·7
	25	24 57·64	27	534·0	28	383·7
7 22	0	25 02·15	2	527·6	3	395·5
11 2	0	25 17·40	2	508·1	3	388·5
	10	19·39	12	532·7	13	383·1
	15	19·89	17	566·4	18	372·9
	20	23·07	22	592·0	23	364·6
	25	23·92	27	604·1	28	362·3
	30	22·03	32	571·0	33	385·2
	35	19·58	37	556·1	38	403·1
	40	19·26	42	544·0	43	422·6
	45	23·56	47	531·8	48	443·4
	50	23·61	52	506·5	53	463·4
	55	22·10	57	516·0	58	462·0
11 3	0	24·82	2	552·2	3	454·9
	5	27·62	7	553·5	8	463·6
	10	25·47	12	559·8	13	467·0
	15	25·02	17	573·3	18	475·2
	20	25·80	22	591·3	23	483·1
	25	23·70	27	569·9	28	505·2
	30	21·24	32	565·9	33	516·6
	35	18·82	37	557·1	38	530·6
	40	15·49	42	554·0	43	546·5
	45	16·57	47	555·7	48	558·9
	50	14·33	52	560·3	53	567·7
	55	13·99	57	573·6	58	563·9
11 4	0	15·29	2	577·7	3	568·2

BIFILAR. $k = 0·000135$. BALANCE. $k = 0·000010$.

June 15^{d} 2^{h}. Clock 26^{s} fast, set right.

Gött. Mean Time.	DECLINATION.			BIFILAR Corrected.		BALANCE Corrected.	
d. h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.
July.							
11 4	5	25	17·17	7	585·5	8	566·5
	10		15·24	12	587·4	13	568·1
	15		16·72	17	588·8	18	578·3
	25		15·58	27	570·7	28	608·5
	30		14·87	32	558·6	33	614·3
	35		13·29	37	571·7	38	603·4
	40		13·46	42	575·6	43	599·4
	45		12·75	47	574·7	48	595·2
				52	575·5	53	591·9
	55		14·46	57	572·5	58	585·6
11 5	0		14·40	2	572·6	3	579·8
	5		14·98	7	569·0	8	573·2
	15		12·48	17	564·1	18	559·9
	30		12·72	32	594·9	33	529·6
	35		13·41	37	597·5	38	526·5
11 5	45		13·30	47	572·8	48	539·8
11 6	0		13·05	2	579·8	3	533·0
13 6	0	25	06·32	2	596·5	3	524·7
	15		07·47	17	598·3	18	527·1
13 7	0		14·80	2	592·9	3	547·4
	5		12·78	7	576·0	8	545·1
	10		07·00	12	565·5	13	570·0
	15		02·08	17	577·2	18	575·1
	20	25	00·10	22	578·3	23	560·6
	25	24	56·77	26	586·8	27	552·2
	30		55·73	32	593·7	33	537·8
	35		56·50	37	590·1	38	529·0
	40		56·30	42	597·4	43	517·8
	45	24	58·52	47	601·3	48	506·0
	50	25	03·04	52	595·8	53	499·9
13 8	0		11·34	2	570·4	3	499·6
	10		03·43	12	566·1	13	492·6
	20		05·99	22	573·5	23	481·8
	30		05·79	32	568·0	33	474·0
	45	25	05·45	47	571·1	48	460·8
13 9	30	24	59·50	32	556·5	33	450·3
	40	24	58·79	42	555·7	43	441·8
13 10	0	25	02·19	2	542·5	3	427·3
	10	25	01·72	12	545·3	13	416·3
14 10	0	24	57·05	2	559·6	3	399·7
	10	24	56·10	12	561·1	13	390·2
	20	24	57·64	22	556·2	23	381·7
14 18	0	25	14·01	2	546·8	3	317·4
14 19	0		09·42	2	544·8	3	325·5
14 20	0		03·48	2	549·1	3	337·1
20 10	0	24	59·83	2	561·4	3	386·1
	10	25	02·15	12	558·9	13	385·8
24 8	0	24	59·34	2	563·4	3	480·9
	10	25	02·15	12	568·0	13	470·6
	20		03·37	22	561·8	23	464·2
24 10	0		04·17	2	564·3	3	410·1
25 4	0	25	12·98	2	579·5	3	383·9
	20		10·27	22	561·0	23	397·1
	30		10·06	32	560·7	33	396·4

Gött. Mean Time.	DECLINATION.			BIFILAR Corrected.		BALANCE Corrected.	
d. h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.
July.							
25 6	0	25	10·04	2	574·8	3	414·1
25 8	0		00·57	2	581·2	3	418·7
	10		02·26	12	580·1	13	413·8
25 9	0	25	01·92	2	559·2	3	398·2
25 10	0	24	54·72	2	573·5	3	308·2
	5	25	00·99	7	560·0	8	306·1
	12		03·81	12	552·3	13	308·4
	15		03·34	17	553·0	18	310·9
29 4	0	25	16·80	2	575·0	3	451·0
	15		19·68	17	595·2	18	463·8
	20		17·89	22	611·1	23	460·5
	25		19·17	27	607·7	28	473·1
	30,		16·92	32	590·3	33	487·5
	35		17·42	37	600·0	38	497·5
	40		16·36	42	603·1	43	507·0
	45		15·47	47	606·0	48	511·7
	50		17·33	52	597·4	53	521·5
	55		19·28	57	587·7	58	536·4
29 5	0		18·50	2	595·2	3	554·4
	10		18·84	12	610·2	13	584·6
	25		12·51	27	607·2	28	628·5
	35		13·70	37	618·2	38	638·1
	40		13·12	42	615·4	43	675·1
	50		11·24	52	624·9	53	635·4
29 6	0		14·78	2	614·0	3	656·4
	5		09·42	7	610·3	8	671·6
	10		02·87	12	614·0	13	670·9
	15		05·77	17	610·2	18	681·0
	21	25	02·28	22	609·8	23	702·6
	25	24	59·88	27	583·2	28	658·0
	30		57·89	32	584·5	33	606·5
	35	24	59·66	37	588·7	38	584·4
	40	25	01·99	42	588·8	43	572·0
	45		05·05	47	581·4	48	566·8
	50		06·06	52	584·4	53	562·7
	55		07·61	57	588·6	58	560·0
29 7	0		07·20	2	590·1	3	552·2
	10		09·15	12	575·1	13	538·1
	25		07·92	27	573·7	28	522·4
29 8	0		08·41	2	556·5	3	485·0
Aug.							
1 8	0	25	05·45	2	565·0	3	401·0
	35	24	51·32	37	562·4	38	399·7
	40		46·52	42	581·8	43	388·6
	45		50·04	47	586·8	48	388·8
	50		56·40	52	586·8	53	392·6
1 9	0	24	59·95	2	570·6	3	386·5
	10	25	05·29	12	570·3	13	375·7
	20		03·28	22	564·0	23	364·7
	30	25	03·37	32	562·2	33	352·4
1 10	0	24	57·78	2	549·8	3	349·0
6 20	0	25	07·20	2	525·3	3	352·6
	15		06·16	17	482·7	18	363·1
	20		05·55	22	490·6	23	360·9
	25		10·33	27	510·1	28	356·1
	30		13·81	32	508·2	33	357·0
	40		09·89	42	480·5	43	361·6

Gött. Mean Time.	DECLINATION.		
d. h.	Min.	°	′
Aug.			
6 20	45	25	10·43
	50		07·1
	55		07·40
6 21	5		11·2
	10		14·6
	20		16·8
6 22	0		07·0
	5		11·9
	10		10·1
	15		11·3
	20		12·3
	25		09·7
	30		10·3
	45		11·6
6 23	0		15·5
	5		13·1
	30		09·8
	40		13·9
	50		15·3
7 0	0		16·2
	15		16·7
	30		14·8
	50		19·5
7 1	0		17·7
	20		20·
7 2	0		18·
7 3	0		14·
7 4	0		13·8
7 7	0		07·
	32		01·
7 8	0		09·
	30		00·
	40	25	04·
	45	24	30·
	49		26·
	50		29·
	54		48·
	55	24	53·
7 9	0	25	13·
	5	25	11·
	10	24	59·
	15		55·
	25	24	58·
	35	25	03·
	45		02·
7 10	0		04·
7 20	0	25	13·
	10		10·
	35		05·
7 22	0		08·
	10		07·
	35		05·
7 23	0		09·
8 2	0		07·
	25		08·
	40		10·
8 3	10		11
	30		10·
8 4	0		10

BIFILAR. $k=0{\cdot}000135$. BALANCE. $k=0{\cdot}000010$.

Balance Corrected.	
Min.	Mic. Div.
48	364·0
53	358·8
58	349·0
8	352·2
13	352·7
23	346·8
3	368·7
8	377·1
13	377·4
18	375·9
23	375·0
28	373·0
33	369·4
48	368·3
3	365·5
8	363·7
35	387·9
43	410·6
53	412·8
3	364·3
18	407·6
33	428·6
53	414·7
3	409·9
23	404·1
3	390·4
3	396·3
3	433·7
3	472·8
34	451·6
3	443·9
33	376·3
43	350·2
48	362·9
53	318·8
58	318·7
3	337·0
8	345·6
13	350·6
18	351·1
38	352·1
48	350·8
3	344·1
3	288·3
13	298·7
38	323·1
3	363·8
13	361·2
38	373·4
3	385·1
3	448·2
28	456·6
43	439·9
13	424·7
33	433·8
3	412·7

Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.	
d. h. Aug.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.
8 4	55	24 58·23	57	590·8	58	476·3
8 5	0	25 00·82	2	586·6	3	477·5
	5	01·65	7	579·3	8	477·9
			17	579·4	18	476·8
	25	02·25	27	572·5	28	489·2
8 6	0	03·67	2	573·6	3	475·9
	30	25 05·96	32	569·7	33	454·9
8 7	0	24 59·93	2	562·4	3	436·0
8 8	0	25 04·96	2	582·0	3	418·3
8 9	15	24 58·38	17	566·2	18	361·7
	35	25 02·13	37	544·9	38	362·0
	45	00·42	47	556·9	48	360·4
8 10	0	04·42	2	551·2	3	360·2
12 4	0	25 02·48	2	578·0	3	495·9
	10	03·94	12	582·9	13	505·3
	35	10·01	37	575·8	38	514·8
12 6	0	25 08·26	2	574·9	3	510·1
12 10	0	24 57·71	2	539·5	3	353·0
	15	59·86	17	527·6	18	333·4
			22	507·3	23	331·7
	25	58·92	27	510·9	28	336·0
	30	58·02	32	517·4	33	332·2
	45	53·38	47	535·5	48	300·0
	55	48·97	57	512·2	58	277·1
12 11	0	44·53	2	546·7	3	278·0
	5	43·35	7	558·5	8	267·2
	10	50·42	12	551·8	13	255·5
	15	55·36	17	545·3	18	244·9
	20	24 55·93	22	553·4	23	245·7
	30	25 03·74	32	539·6	33	243·8
12 20	0	25 11·75	2	538·0	3	343·2
	40	10·50	42	534·6	43	348·2
12 22	0	11·89	2	507·1	3	380·4
	30	13·12	32	524·4	33	362·9
12 23	0	10·56	2	535·3	3	371·2
13 4	0	25 09·69	2	554·6	3	498·6
	30	10·00	32	556·0	33	517·4
13 5	0	11·61	2	553·3	3	524·8
13 6	0	05·45	2	568·7	3	507·1
13 18	0	25 12·35	2	550·5	3	205·9
	25	08·99	27	530·2	28	200·3
13 20	0	06·88	2	544·7	3	223·6
14 4	0	25 12·75	2	524·2	3	540·4
	5	03·16	7	589·9	8	536·5
	10	03·84	12	598·1	13	527·4
	15	08·05	17	595·5	18	522·4
	20	12·15	22	592·8	23	514·6
	25	17·63	27	575·5	28	520·9
	30	15·36	32	562·5	33	533·3
	35	08·72	37	560·1	38	531·2
	40	07·47	42	574·9	43	523·5
	45	07·72	47	581·6	48	515·6
	50	05·55	52	578·3	53	508·5
14 5	0	07·84	2	571·7	3	491·3
	15	07·37	17	555·9	18	479·2
14 6	0	25 08·11	2	554·0	3	439·8

Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.	
d. h. Aug.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.
14 8	0	24 59·93	2	564·3	3	431·0
	40	52·94	42	560·3	43	433·5
14 9	0	59·59	2	554·1	3	419·1
	30	24 59·34	32	544·7	33	363·3
	45	25 05·96	47	529·3	48	317·2
	50	06·17	52	523·5	53	310·3
	55	25 03·34	57	524·1	58	307·5
14 10	0	24 57·71	2	532·1	3	293·4
	10	56·43	12	543·3	13	277·8
	15	55·73	17	547·5	18	270·3
15 10	0	24 57·31	2	566·3	3	365·2
	10	24 57·98	12	566·4	13	363·7
16 18	0	25 11·03	2	522·5	3	262·6
	55	18·08	57	517·6	58	270·3
16 19	0	18·40	2	513·8	3	274·2
	5	18·67	7	512·9	8	275·1
	15	18·30	17	515·9	18	279·3
	30	16·68	32	534·6	33	277·1
	50	13·25	52	546·7	53	276·5
16 20	0	25 11·37	2	543·9	3	284·2
17 7	0	24 55·53	2	592·5	3	446·8
	10	25 02·28	12	568·2	13	450·0
	20	04·61	22	545·4	23	446·2
	30	01·01	32	553·3	33	437·6
17 8	0	04·31	2	560·1	3	412·4
22 10	0	25 16·08	2	533·7	3	206·2
	10	24 58·65	12	577·0	13	207·2
	20	25 02·79	22	572·5	23	199·6
	30	09·15	32	548·3	33	201·7
	40	06·27	42	529·6	43	218·1
	45	25 03·11	47	528·8	48	238·5
	50	24 58·92	52	535·7	53	260·8
22 11	0	54·28	2	557·4	3	279·7
	15	58·99	17	549·5	18	289·7
24 10	0	25 01·96	2	548·4	3	325·1
24 11	13	24 42·84				
	15	42·41	17	538·0	18	228·0
	20	45·11	22	548·8	23	223·3
	25	50·75	27	535·9	28	212·6
	30	41·43	32	530·0	33	198·7
	35	47·30	37	534·5	38	182·6
	40	48·30	42	542·4	43	183·1
	45	48·47	47	549·8	48	185·9
	50	48·54	52	554·8	53	187·4
	55	49·34	57	556·3	58	192·3
24 12	0	52·64	2	557·4	3	196·0
25 7	0	25 03·38	2	546·0	3	410·4
	15	24 56·20	17	566·0	18	416·7
	20	55·09	22	576·3	23	412·0
	30	55·19	32	577·2	33	401·6
	40	24 57·17	42	598·4	43	386·6
	45	25 00·71	47	582·7	48	388·8
	55	24 57·81	57	569·8	58	386·5
25 8	0	24 57·71	2	567·4	3	386·0

BIFILAR. $k=0·000135$.

BALANCE. $k=0·000010$.

Gött. Mean Time.	DECLINATION.		BIFILAR Corrected.		BALANCE Corrected.	
d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.
Aug.						
25 9	0	25 01·48	2	554·7	3	366·1
25 10	0	05·11	2	553·7	3	357·6
27 8	0	25 01·63	2	565·1	3	410·5
	30	24 55·94	32	545·4	33	448·4
	40	51·70	42	538·0	43	499·6
	45	40·76	47	554·4	48	520·0
	50	31·54	52	569·7	51	530·5
	53	26·50	54	581·3	54	504·0
	55	30·07	57	579·9	58	457·0
27 9	0	37·41	2	578·0	3	421·6
	5	42·81	7	576·1	8	399·2
	10	49·03	12	563·1	13	388·3
	20	54·89	22	546·4	23	371·9
	30	50·92	32	533·4	33	360·1
	40	55·02	42	535·6	43	342·0
27 10	0	57·98	2	524·7	3	318·4
	10	25 00·31	12	528·6	13	296·6
	20	25 00·51	22	520·8	23	296·6
	30	24 54·95	32	521·3	33	276·0
	35	53·85	37	513·6	38	265·6
	40	53·51	42	519·8	43	246·9
	45	52·33	47	514·4	48	208·5
	50	24 56·87	52	507·2	53	164·4
	55	25 00·87	57	507·2	58	138·4
27 11	0	04·17	2	493·4	3	128·3
	5	04·34	7	499·6	8	131·3
	10	03·30	12	495·6	13	122·2
	15	04·21	17	492·3	18	112·8
	20	25 04·05	22	472·5	23	115·3
	25	24 53·95	27	466·9	28	127·2
	30	40·39	32	491·2	33	142·4
	35	32·25	37	552·2	38	139·4
	36	32·?	39	569·1		
	40	37·74	42	555·4	43	128·2
	45	42·71	47	536·0	48	99·7
	50	45·91	52	536·1	53	76·3
	55	49·61	57	534·4	58	103·5
27 12	0	24 49·00	2	541·5	3	121·5
28 7	0	24 56·11	2	584·2	3	462·6
	10	24 58·18	12	574·7	13	459·8
	35	25 00·30	37	563·7	38	450·0
28 8	0	05·15	2	558·4	3	428·4
28 10	0	04·84	2	549·5	3	279·5
	6	15·27	7	540·0	8	239·1
	10	19·82	12	513·7	13	189·5
	15	24·66	17	499·8	18	135·8
	20	25 12·11	22	489·5	23	122·7
	25	24 54·06	27	542·2	28	158·1
	30	44·12	32	580·3	33	181·7
	35	45·11	37	584·9	38	184·5
	40	49·91	42	591·4	43	190·5
	45	24 56·90	47	581·5	48	199·2
	50	25 00·87	52	567·1	53	199·1
	55	03·94	57	551·3	58	198·1
28 11	0	00·87	2	557·2	3	205·5
	5	03·09	7	545·6	8	209·3
	10	03·70	12	530·3	13	221·1
	15	01·34	17	523·1	18	229·8
Aug.						
28 11	20	24 56·40	22	530·0	23	240·8
	25	54·35	27	532·0	28	248·2
	30	52·60	32	536·7	33	261·2
	35	51·14	37	542·8	38	271·2
	40	51·79	42	547·6	43	277·8
	45	52·53	47	549·6	48	279·0
	50	54·63	52	549·1	53	284·3
	55	57·34	57	545·6	58	294·0
28 12	0	58·18	2	544·3	3	298·3
	5	24 59·01	7	542·8	8	303·9
	32	25 00·74	33	545·3	34	306·4
28 12	35	25 00·80	37	545·1	38	307·9
29 6	0	25 00·60	2	590·3	3	394·8
	25	25 01·24	27	572·2	28	405·5
	50	25 01·45	52	569·2	53	410·6
29 7	0	24 58·82	2	576·3	3	413·9
29 8	0	25 05·11	2	562·3	3	399·1
29 9	52	24 54·68	53	580·1	54	318·4
29 10	0	25 02·55	2	594·5	3	301·7
	5	07·04	7	590·9	8	290·0
	10	10·27	12	576·8	13	282·4
	15	11·24	17	565·2	18	274·0
	20	11·32	22	554·5	23	267·7
	25	10·11	27	549·3	38	262·7
	30	09·19	32	544·4	33	262·4
Sept.						
3 18	0	25 12·51	2	536·7	3	304·5
	20	25 05·87	22	549·8	23	251·2
	40	25 04·58	42	554·8	43	260·4
3 19	0	24 58·42	2	559·4	3	257·8
3 20	0	25 02·03	2	543·9	3	273·7
3 22	0	17·56	2	530·5	3	302·9
	20	16·79	22	537·9	23	320·3
	30	14·98	32	538·0	33	340·4
3 23	0	25 14·50	2	539·3	3	360·6
4 9	55	24 58·74	57	554·0	58	379·7
4 10	0	54·70	2	549·3	3	376·8
	5	50·36	7	559·8	8	368·6
	10	49·34	12	579·5	13	356·3
	15	50·22	17	595·7	18	338·2
	20	24 57·28	22	590·7	23	327·9
	25	25 02·96	27	583·6	28	320·4
	30	25 06·86	32	579·7	33	313·1
4 20	0	25 12·01	2	527·9	3	369·4
	10	14·33	12	511·5	13	372·0
	15	13·91	17	528·9	18	371·0
	30	15·58	32	520·3	33	365·5
	45	08·55	47	536·9	48	374·0
4 21	0	07·62	2	532·2	3	366·7
4 22	0	13·41	2	515·3	3	379·9
	20	17·15	22	515·4	23	394·3
	40	13·88	42	515·2	43	393·1
4 23	0	15·04	2	517·6	3	415·1
	35	16·30	37	519·4	38	402·5
	50	14·94	52	528·8	53	392·3
5 0	0	18·82	2	521·6	3	392·7

Gött. Mean Time.	DECLINATION.	
d. h.	Min.	° ′
Sept.		
5 0	30	25 21·3
5 1	0	20·7
	30	23·5
	40	13·0
5 2	0	25 17·1
5 4	0	24 57·0
	5	44·8
	10	46·6
	15	53·5
	20	55·9
	25	24 58·
	30	25 00·
	35	01·
5 5	1	07·
	30	04·
	45	13·
5 6	0	11·
	10	04·
		1
	15	25 02·
	20	24 54·
	25	55·
	30	50
	35	53
	40	45
	45	49
	50	51
	55	57
5 7	0	59
	5	51
	10	47
	15	45
	20	40
	25	54
5 8	0	24 57
5 9	55	25 04
5 10	0	25 07
	10	24 57
	15	47
	20	44
	25	43
	30	40
	35	5
7 20	0	25 1
	25	1
	40	1
7 22	0	25 1
8 8	0	24 5
	15	5
	30	5
	40	5
	45	24 5
	50	25 0
	55	25 0
8 9	0	24 5
	10	25 0
8 10	0	24 5

BIFILAR. $k=0·000135$. BALANCE. $k=0·000010$.

Aug. 27^{d} 11^{h}. The balance needle has been vibrating the most of the evening.
Aug. 28^{d} 10^{h} 14^{m}. Clock 15^{s} fast, set right.

R d.	Balance Corrected.		Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.	
Div.	Min.	Mic. Div.	d. h. Sept.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.	d. h. Sept.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.
7·7	33	407·0	10 8	0	25 01·98	2	553·6	3	465·9	21 8	20	24 37·53	22	584·4	23	495·6
6·1	3	418·4	10 9	40	25 03·25	42	538·3	43	427·9		25	39·95	27	577·5	28	506·2
1·2	33	473·1		50	24 59·88	52	545·3	53	416·1		30	37·91	32	578·4	33	478·8
7·8	43	487·6	10 10	0	25 01·65	2	543·1	3	404·6		35	37·26	37	555·4	38	404·8
7·2	3	479·7									40	37·56	42	576·8	38	421·5
4·6	3	739·2	10 22	0	25 20·30	2	534·1	3	341·2		45	39·14	47	571·6	48	419·2
4·4	8	705·9		15	17·86	17	535·9	18	358·5		50	35·66	52	579·0	53	400·1
4·5	13	674·0		30	17·31	32	533·4	33	357·1		55	38·15	57	564·4	58	353·7
1·3	18	669·2	10 23	0	16·55	2	542·6	3	364·6	21 9	0	48·16	2	554·1	3	343·9
1·7	23	648·2	11 2	0	17·58	2	563·3	3	452·5		5	24 55·53	7	546·2	8	343·1
·4	28	631·1		10	15·64	12	554·5	13	470·8		10	25 02·12	12	536·2	13	353·2
1·1	33	615·6		30	13·46	32	539·1	33	467·8		15	02·55	17	540·5	18	376·1
·5	38	616·3	11 3	0	10·77	2	566·8	3	459·7		20	25 00·48	22	543·2	23	395·8
·2	3	566·3		30	09·66	32	561·2	33	470·2		25	24 55·26	27	558·7	28	394·0
·7	33	543·5	11 4	0	25 12·01	2	537·0	3	477·4		30	53·98	32	551·7	33	385·0
1·5	48	544·2	11 6	0	24 43·69	2	589·2	3	741·9		35	24 55·53	37	547·1	38	378·5
·1	3	601·5		5	32·28	7	585·3	6	748·0		45	25 01·34	47	551·8	48	375·1
2·4	13	665·7		9	21·89			8	718·2	21 10	0	02·32	2	551·1	3	376·8
·5				10	22·13	11	600·2				15	02·94	17	558·2	18	375·5
·3	18	663·9		12	25·33	14	605·1	13	614·1	21 12	0	25 02·66	2	543·4	3	357·6
·2	23	592·0		15	31·61	17	606·5	18	583·9	21 13	0	24 54·52	2	529·7	3	185·4
·6	28	564·7		20	42·01	22	593·4	23	578·9				7	515·4	8	183·0
·7	33	555·4		25	43·76	27	593·1	28	566·1		10	52·33	12	517·1	13	198·6
·8	38	537·6		30	24 53·74	32	584 3	33	556·6		15	49·17	17	522·1	18	233·6
·6	43	497·0		35	25 00·27	37	552·8	38	564·1		20	47·62	22	529·8	23	248·8
·6	48	464·6		40	24 58·02	42	547·1	43	570·5		25	48·50	27	526·9	28	251·8
·1	53	461·7		45	52·77	47	554·7	48	561·8		30	49·84	32	522·7	33	251·8
·6	58	465·5		50	52·35	52	566·6	53	549·7		40	48·70	42	532·9	43	270·3
·1	3	475·3		55	56·40	57	563·2	58	540·1	21 14	0	52·33	2	532·4	3	279·7
·7	8	475·7	11 7	0	57·75	2	563·2	3	529·4	21 15	0	58·22	2	531·7	3	304·6
·1	13	467·7		20	24 56·27	22	556·4	23	493·8	21 16	0	47·08	2	522·0	3	217·8
·6	18	456·9	11 8	0	25 03·77	2	550·8	3	444·7		30	43·11	32	509·7	33	97·3
·0	23	453·5	11 9	50	02·91	52	556·4	53	289·6		40	45·85	42	525·7	43	24·3
·0	28	459·9	11 10	0	06·50	2	579·3	3	228·1		50	45·67	52	534·6		
·1	3	440·2		5	12·11	7	553·8	8	200·4	21 17	0	46·08	2	525·4	3	141·5
·5	58	117·3		10	25 03·55	12	560·2	13	195·6		30	56·07	32	527·1	33	191·6
·4	3	132·7		15	24 54·43	17	590·6	18	178·0	21 18	0	24 55·12	2	518·7	3	119·4
·7	13	250·8		20	25 03·27	22	582·3	23	173·5	21 20	0	25 11·98	2	505·8	3	133·6
·1	18	273·5		25	12·28	27	552·5	28	183·7		15	07·69	17	496·6	18	147·6
·0	23	257·9		30	10·77	32	533·5	33	186·9		25	10·01	27	492·6	28	218·5
·0	28	248·0		35	07·34	37	529·3	38	182·5		35	09·29	37	479·9	38	235·7
·1	33	235·4		40	04·61	42	536·2	43	186·5		40	11·91	42	482·6	43	234·7
·2	38	226·1		45	04·17	47	545·3	48	193·5		50	15·18	52	493·1	53	205·9
				50	07·07	52	541·7	53	199·8	21 21	0	11·51	2	486·5	3	207·1
·1	3	329·1									10	12·28	12	486·6	13	231·2
·4	28	329·3	13 20	0	25 07·81	2	515·0	3	343·0		20	16·32	22	476·7	23	258·8
·4	43	326·7		15	07·51	17	505·7	18	343·8		30	16·75	32	476·3	33	273·6
·2	3	339·0		35	11·74	37	520·1	38	343·7		40	17·58	42	469·1	43	288·3
			13 21	0	16·43	2	522·6	3	332·4		50	14·44	52	476·6	53	286·3
			13 22	0	13·44	2	533·6	3	326·5	21 22	0	14·10	2	472·3	3	298·4
·9	3	426·6								21 23	0	18·37	2	487·7	3	395·7
·1	18	414·3	19 7	0	24 54·41	2	551·0	3	477·7		15	17·19	17	498·1	18	454·0
·4	33	384·9		20	41·39	22	554·3	23	457·2		25	18·63	27	496·5	28	502·5
·0	43	369·1		30	24 55·63	32	564·0	33	440·3		35	15·11	37	505·4	38	524·1
·0	48	346·0	19 8	0	25 02·39	2	555·0	3	413·4		45	14·87	47	516·5	48	523·8
·7	53	338·6								22 0	0	15·47	2	532·0	3	546·7
·0	58	339·9	21 8	0	24 41·23	2	567·2	3	498·7		10	15·38	12	556·2	13	574·6
·0	3	344·2		5	35·07	7	578·4	8	505·2		20	14·78	22	541·0	23	633·9
·8	13	356·8		10	32·95	12	592·6	13	518·8		25	15·14	27	550·1	28	626·7
·8	3	390·7		15	36·76	17	584·0	18	507·2		30	14·91	32	542·9	33	615·4

Bifilar. k=0·000135.   Balance. k=0·000010.

Gött. Mean Time.	DECLINATION.		BIFILAR Corrected.		BALANCE Corrected.		Gött. Mean Time.	DECLINATION.		BIFILAR Corrected.		BALANCE Corrected.		Gött. Mean Time.	DECLINATION.	
d. h. Sept.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.	d. h. Sept.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.	d. h. Sept.	Min.	° ′
22 0	40	25 19·21	42	571·3	43	636·9	22 3	25	25 04·78	25	646·6	25	668·3	22 5	4	25 24·89
	45	18·84	47	563·8	48	653·9		27	04·28	27	642·7	27	634·5		5	20·69
	50	15·61	52	577·7	53	692·1		29	07·34	29	640·0	29	617·2		6	15·58
	55	14·35	57	581·9	58	678·7		30	07·02	30	635·9	30	615·8		7	17·15
22 1	0	15·41	2	591·2	3	664·6		32	06·53	32	629·1	32	602·5		8	15·61
	10	13·46	12	628·9	13	693·3		34	08·95	34	627·3	34	596·2		9	16·57
	15	08·99	17	680·0	18	779·9		35	09·96	35	626·5	35	599·3		10	19·44
			19	695·2				37	07·78	37	620·2	37	612·5		11	22·44
			21	682·5				40	03·57	40	606·5	40	599·2		12	25·28
	20	02·79	22	677·9	23	758·1		42	05·29	42	599·1	42	581·9		15	19·91
	25	25 07·13	26	708·0	28	776·5		45	05·08	47	595·1	48	577·3		17	14·60
	30	24 57·76	32	735·?	33	698·4		50	06·26	52	607·0	53	574·4		20	06·59
	35	25 04·31	35	707·0				55	08·59	57	605·8	58	572·5		22	05·5
			37	694·9	38	691·1	22 4	0	11·74	2	624·1	3	607·5		25	02·4
	40	11·10	42	715·0	43	655·3						10	596·2		27	07·5
	45	17·63	47	692·5	48	703·2		11	11·44	11	662·6	11	589·2		30	10·6
			49	683·9				12	19·51	12	668·9				35	25 04·4
	50	09·56	52	676·5	53	644·7		13	25·56	13	660·9	13	612·9		40	24 58·9
	55	07·17	57	645·5	58	661·8		14	24·66	14	644·5	14	644·8		45	25 10·0
22 2	0	06·86	2	641·9	3	650·9		15	17·42	15	637·4	15	666·8			
	5	01·78	7	652·5	8	629·8		16	11·03	16	644·4	16	671·4		50	04·5
	10	14·33	12	658·0	13	716·8		17	11·30	17	670·8	17	672·4			
	15	05·13	17	672·2	18	657·6		18	26·97	18	675·3	18	674·5			
	20	17·36	22	663·7	23	759·4		19	31·28	19	651·1	19	680·0		55	25 01·2
	25	05·45	27	645·1	28	673·0		20	32·69	20	640·0	20	689·4		56	24 55·7
	30	17·12	32	671·7				21	30·87	21	639·8	21	714·1			
	35	09·56	36	726·6	36	817·1		22	25·29	22	626·5	22	747·0	22 6	0	24 45·4
			37	700·0	38	785·4		23	12·72	23	632·6	23	767·8			
			39	704·0				24	25 03·20	24	635·8	24	775·4			
	40	03·40	41	706·0	42	732·9		25	24 55·56	25	649·1	25	772·0		4	25 24·4
	42	14·87	43	683·9	44	761·4		26	24 54·99	26	659·3	26	766·0		5	37·3
	44	02·62	45	678·9	46	704·0		27	24 58·72	27	658·4	27	756·4		6	48·4
	45	01·02	47	689·5				28	25 02·62	28	650·5	28	758·2		7	46·5
	47	04·17	48	695·4	48	701·1		29	04·17	29	655·4	29	763·1		8	47·5
			49	700·0				30	07·24	30	658·5	30	770·3		9	45·3
	50	25 06·39			50	731·3		31	09·86	31	659·9	31	774·3		10	42·6
			51	704·0	51	733·0		32	13·72	32	652·4	32	771·9		11	38·
	52	24 59·76	52	704·0	53	688·4		33	13·90	33	639·5	33	763·0		12	36·
	55	25 01·49	54	708·0	55	702·0		34	16·35	34	630·6	34	760·0		13	36·
			56	708·0	56	591·6		35	15·81	35	618·9	35	748·1		14	36·3
	58	08·31	58	690·6	58	657·2		36	13·72	36	614·1	36	743·1		15	32·8
					59	680·5		37	10·16	37	612·2	37	737·2		16	27·
22 3	0	01·14	0	668·9	0	684·0		38	02·52	38	614·0	38	728·8		17	19·
					1	658·9		39	02·89	39	620·2	39	718·8		18	13·7
	2	00·53	2	661·4	2	629·5		40	03·37	40	628·6	40	713·9		19	14·7
			3	669·0	3	603·0		41	03·37	41	632·3	41	715·1		20	15·
	5	13·66	5	674·9	5	564·6		45	14·33	45	639·7	45	754·8		21	15·
	7	19·84	7	673·8	7	596·8		50	11·64	50	621·3	50	757·6		22	14·
			8	672·4	8	533·8		53	13·96	53	665·7	53	762·8		23	13·
	9	12·45	9	669·6	9	559·4				54	694·0				24	15·
	10	11·10	10	666·5	10	663·1		55	33·70	55	700·0	55	750·5		25	14·
	12	08·88	12	673·4	12	685·4		56	47·42	56	680·0	56	755·5		26	12·
	14	09·05	14	686·8	14	700·0		56½	51·11						27	23·
	15	09·62	15	686·4	15	704·2		57	36·59	57	656·9	57	757·2		28	17·
	17	00·98	17	672·2	17	677·8		58	23·54	58	666·8	58	774·2		29	21·
					18	649·9		59	21·93	59	689·7	59	773·9		30	20·
	19	02·99	19	668·0	19	620·6	22 5	0	22·20	0	686·5	0	763·0		31	19·
	20	07·96	20	667·7	20	596·7		1	21·12	1	679·8	1	736·6		32	15·
	22	14·33	22	662·0	22	608·9		2	23·54	2	669·8	2	729·2		33	14·
	24	09·89	24	650·0	24	662·4		3	24·39	3	677·4	3	731·3		34	19·

BIFILAR. $k=0{\cdot}000135$. BALANCE. $k=0{\cdot}000010$.

Sept. 22^d 1^h 26^m. Bifilar magnet out of the field of the reading telescope; highest estimated reading perhaps 740 sc. div.

Sept. 22^d 5^h 46^m. The bifilar magnet went rapidly out of sight; highest estimated reading perhaps 760 sc. div. about 51^m. The scale cam
into view at 52^m 10^s.

BALANCE Corrected.		Gött. Mean Time.		DECLINATION.			BIFILAR Corrected.		BALANCE Corrected.		Gött. Mean Time.		DECLINATION.			BIFILAR Corrected.		BALANCE Corrected.	
Min.	Mic. Div.	d.	h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.	d.	h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.
		Sept.									Sept.								
4	724·9	22	6	35	25	19·10	35	643·2	35	579·1	22	7	35	24	34·20	35	517·2	35	495·7
5	704·4			36		16·06	36	634·9					36		31·51	36	510·1	36	496·2
6	696·0						37	643·8	37	567·6			37		29·63	37	513·2	37	499·7
7	689·4			38		07·25	38	664·0	38	557·1			38		30·13	38	514·3	38	494·8
				39		06·73	39	663·3					39		29·73	39	525·7	39	486·3
9	675·2			40	25	05·96	40	652·5	40	563·6			40		32·99	40	534·9	40	482·4
10	662·8						41	633·5	41	573·2			41		30·78	41	526·8	41	482·9
				42	24	50·38	42	617·0					42		27·21	42	530·2	42	485·4
12	675·8			43		41·43	43	588·3	43	603·8			43		27·68	43	536·9	43	480·9
15	729·3			44		31·54	44	563·3	44	618·3			44		27·51	44	535·6	44	470·9
17	758·3			45		25·36	45	558·4	45	608·8			45		25·96	45	522·3	45	462·5
20	773·2			46		24·18	46	557·8	46	583·9			46		25·90	46	517·2	46	455·0
22	759·9			47		28·38	47	557·3	47	530·9			47		25·53	47	516·0	47	454·1
25	735·3			48		40·29	48	552·1	48	464·4			48		24·68	48	516·5		
27	724·6			49		51·16	49	542·4	49	453·9			49		23·20	49	511·7	49	433·4
30	746·7			50		51·90	50	533·5	50	450·9			50		20·38	50	507·0	50	427·1
38	812·6						51	526·7					51		18·40	51	503·1	51	412·7
43	795·5			52		55·70	52	525·4	52	443·5			52		16·28	52	504·6	52	392·8
48	802·9						53	526·6					53		15·74	53	511·3	53	378·3
				54		57·08	54	521·7	54	397·0			54		16·55	54	513·1	54	356·8
				55	24	57·51	55	522·7	55	411·0			55		17·89	55	514·3	55	335·5
53	768·8						56	512·6	56	391·1			56		19·03	56	514·5	56	332·0
				57	25	08·14	57	481·6	57	374·6			57		18·36	57	511·7	57	326·0
							58	454·9					58		18·36	58	512·6	58	314·0
58	717·9						59	448·6	59	335·2			59		19·50	59	514·2	59	301·6
		22	7	0		11·57	0	446·9	0	320·3	22	8	0		21·92	0	515·0	0	290·2
							1	451·4					1		23·34	1	515·1		
2	491·3			2		20·06	2	463·6	2	268·4			2		24·68	2	515·4	2	279·2
3	453·3						3	370·0	3	257·6			3		26·64	3	515·4	3	272·2
4	432·2			4		26·87	(out	of field)	4	227·0			4		27·80	4	514·6	4	266·3
5	422·3			5		24·55			5	177·0			5		29·80	5	510·9	5	260·8
6	429·8			6		30·91			6	131·5			6		32·12	6	506·4	6	252·4
7	457·8			7		39·35			7	96·1			7		32·89	7	503·1		
				8		50·37			8	162·1			8		33·26	8	502·1	8	236·9
9	489·3			9		52·90			9	300·1			9		33·33	9	499·6	9	231·4
10	499·4			10		43·79	10	461·5	10	382·5			10		33·49	10	494·9	10	223·0
				11		27·24	11	492·5					11		34·40	11	490·7	11	218·0
				12		15·94	12	483·2	12	346·7			12		34·13	12	486·9	12	207·6
13	531·5			13		09·89	13	484·5	13	330·2			13		33·93	13	485·2	13	200·1
14	553·5			14	25	05·69	14	481·7	14	336·8			14		34·08	14	484·6	14	190·1
15	596·6			15	24	58·05	15	478·1	15	342·8			15		34·32	15	482·6	15	184·2
16	630·1			16		53·67	16	475·5	16	358·9			16		35·19	16	480·9	16	172·2
17	648·6			17		51·99	17	483·8	17	365·4			17		37·46	17	479·4	17	163·3
				18		51·91	18	492·2	18	368·4			18		38·91	18	477·8	18	159·3
19	642·6			19		53·17	19	509·7	19	370·9			19		39·21	19	475·1	19	153·9
20	656·5			20		56·90	20	526·3					20		38·80	20	473·5	20	154·0
				21	24	59·26	21	546·8	21	368·5			25		39·41	25	463·3	25	117·3
22	681·2			22	25	04·71	22	560·5	22	388·6			30		41·84	30	439·9	30	76·2
23	686·2			23	25	01·98	23	564·8	23	405·6			32		44·12	32	432·9	32	58·3
				24	24	59·16	24	563·3	24	417·6			35		44·16	35	435·1	35	27·4
25	670·4			25		57·71	25	561·6	25	440·2			37		45·31	37	430·6	37	+ 0·5
26	654·8			26		54·18	26	559·7	26	460·7			40		45·98	40	429·5	40	− 19·9
27	646·8			27		46·90	27	564·9	27	462·3			42		46·48	42	442·1	42	− 22·4
				28		43·65	28	575·4	28	456·8			45		46·95	45	464·0	45	− 13·3
29	665·4			29		43·55	29	574·8	29	440·8			48		52·13	48	479·4	48	+ 2·9
30	682·4			30		45·69	30	564·5	30	448·4			53		49·91	53	492·4	54	+ 47·6
31	672·0			31		41·50	31	547·0	31	463·4			55		58·92	57	495·9	58	+ 62·0
32	637·8			32		41·23	32	542·9	32	474·0	22	9	0		58·47	2	490·8	3	+ 71·6
33	598·5			33		37·46	33	534·9	33	486·0			5		51·22	7	457·9	8	+ 30·8
34	577·0			34		35·42	34	525·7	34	490·6			10		48·30	12	449·7	13	− 2·1

BIFILAR. $k=0·000135$. BALANCE. $k=0·000010$.

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pt. 2^{d} 7^{h} 3^{m} 20^{s}. The bifilar scale went out of sight. The force was least perhaps about 7^{m}, when the estimated scale reading would pro-
y less than 300 sc. div.

Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.	
d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.
Sept.						
22 9	15	24 47·69	17	440·7	18	− 33·3
	20	50·51	22	432·8	23	− 47·6
	25	53·71	27	414·7	28	− 64·3
	30	55·09	32	395·2	33	− 83·7
	35	57·64	37	372·0	38	−116·5
	40	54·95	(out	of field)	43	−135·2
	45	54·12			48	−105·7
	50	51·32			53	− 68·4
	55	47·35			58	− 71·1
22 10	0	47·59	4	374·	3	− 21·6
	5	22·84	(out	of field)	8	− 60·4
	10	24 4·91				
	11	23 57·51				
	12	53·18			12½	− 60·9
	13	57·35				
	14	56·88			14½	− 77·8
	15	51·43				
	16	51·38			16½	−106·3
	17	57·25	(out	of field)	17½	−144·6
	18	55·09				
	19	23 59·17				
			20	515·8	20	−198·8
			22	502·9	22	−287·8
	23	24 25·02	24	476·9	24	−356·3
	25	36·65	26	440·3	26	−361·3
	27	45·60	28	440·4	28	−296·8
	29	49·41	30	476·1	31	−164·8
	32	46·95	33	505·7	33½	− 98·3
	34	39·72	35	511·2	35	−114·3
	36	41·57	37	506·2	37	−124·3
	38	47·62	39	518·2	39	−120·3
	40	49·64	41	513·2	41	− 72·8
	42	47·82	43	518·4	43	− 61·8
	44	49·37	45	523·2	45	− 52·3
	46	49·95	47	525·0	47	− 32·3
	48	50·62	49	520·9	49	− 18·3
	50	51·96	52	519·2	53	− 0·8
	55	54·36	57	517·4	58	+ 2·7
22 11	0	24 55·29	2	504·2	3	− 21·3
	5	25 00·50	7	513·9	8	− 9·3
	10	03·43	12	517·2	13	− 5·4
	15	05·96	17	512·2	18	− 28·0
	20	04·98	22	516·9	23	− 15·3
22 18	0	18·47	2	540·6	3	+210·4
	20	10·20	22	543·8	23	222·2
22 19	5	03·30	7	546·3	8	263·3
22 20	0	25 02·42	2	536·5	3	301·1
24 8	0	24 52·57	2	571·3	3	344·6
	10	25 00·10	12	554·1	13	351·9
	25	24 58·42	27	547·3	28	355·6
24 9	0	25 04·68	2	549·1	3	355·3
24 10	0	25 00·40	2	548·0	3	360·5
28 7	0	24 56·23	2	581·4	3	350·7
	10	52·57	12	563·8	13	348·4
	20	51·39	22	567·4	23	344·9
	30	24 54·43	32	565·0	33	345·1
28 8	0	25 00·94	2	547·0	3	358·8

Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.	
d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.
Sept.						
28 9	0	25 01·95	2	535·3	3	359·9
28 10	0	02·01	2	547·1	3	352·6
30 8	0	25 00·17	2	552·5	3	344·3
30 9	0	24 54·41	2	557·5	3	336·5
30 10	0	25 01·95	2	546·2	3	351·3
Oct.						
1 8	0	24 49·77	2	545·7	3	362·1
	30	24 58·38	32	550·8	33	359·0
1 10	0	25 03·85	2	549·8	3	344·7
2 7	0	24 48·30	2	555·7	3	390·4
	15	55·76	17	545·1	18	384·2
	40	57·58	42	546·8	43	379·7
2 8	0	57·24	2	536·9	3	377·1
2 10	0	53·52	2	539·7	3	258·3
	10	51·86	12	546·6	13	263·5
	20	50·65	22	541·3	23	262·4
	30	48·45	32	534·4	33	262·0
	40	46·31	42	535·1	43	259·2
	50	46·34	52	538·0	53	259·2
2 11	0	46·19	2	539·4	3	256·0
	10	48·23	12	527·3	13	264·0
	20	48·23	22	527·1	23	240·4
7 7	0	24 53·58	2	549·8	3	443·7
	10	50·08	12	553·5	13	444·1
	20	55·83	22	546·4	23	440·5
7 8	0	56·70	2	525·8	3	253·7
	8	30·60	9	538·9		
	10	33·37	12	541·4	13	312·0
	15	34·97			16	290·4
			17	555·8	18	276·8
			19	560·1		
	20	38·71	22	567·2	23	206·9
	25	24 49·27	27	563·3	28	210·6
	30	25 04·08	32	543·0	33	214·0
	35	15·17	37	502·9	38	238·9
			39	499·3		
	40	25 09·46	41	495·7		
			42	497·0	43	308·5
	45	24 44·73	44	505·8		
	46	43·82	47	525·9	48	307·7
	50	44·12	49	534·6		
	51	44·90	52	537·0	53	315·7
	55	43·45	57	537·4	58	314·0
7 9	0	50·51	2	530·5	3	317·2
	5	51·46	7	530·8	8	316·8
	10	51·02	12	538·2	13	317·7
	15	52·33	17	536·7	18	310·6
	30	54·41	32	542·4	33	304·5
	45	56·01	47	524·1	48	309·1
7 10	0	55·53	2	524·0	3	311·3
	15	24 56·03	17	537·9	18	323·0
7 18	0	24 50·08	2	558·4	3	−218·6
	5	24 58·82	7	477·2	8	−187·0
	10	25 04·53	12	488·5	13	−143·2
	15	12·45	17	492·5	18	−123·9

Gött. Mean Time.	Declination.	
d. h.	Min.	° ′
Oct.		
7 18	20	25 11·30
	25	12·92
	30	07·60
	35	08·34
	40	11·71
	45	13·32
	50	20·05
	55	20·32
7 19	0	17·15
	5	13·49
	10	10·47
	45	02·22
7 20	0	06·32
7 22	0	06·5
	10	09·06
7 23	0	09·65
8 0	0	13·29
	30	17·4
8 1	0	21·39
8 2	0	20·4
	15	20·8
	20	23·4
	25	27·3
	30	21·8
	35	18·8
	40	23·7
	45	18·3
	50	16·6
	55	13·5
8 3	0	21·4
	2	16·1
	4	10·2
	5	08·6
	6	06·7
	7	00·7
	8	03·
	9	06·
	10	09·
	11	12·
	12	18·
	14	09·
	15	03·
	16	04·1
	17	03·
	18	04·
	19	08·1
	20	09·
	21	06·
	22	25 01·
	23	24 49·

BIFILAR. $k=0·000135$. BALANCE. $k=0·000010$.

Sept. 22d 9h 35m. The bifilar scale again went out of sight, it just came into sight at 10h 4m, and did not reappear again till 10h 20m.

Balance Corrected.	
Min.	Mic. Div.
23	−120·1
28	−161·3
33	−178·6
38	−147·7
43	−79·3
48	−45·3
53	−34·9
58	−34·9
3	−49·3
8	−27·1
13	+10·9
48	+163·7
3	189·8
3	295·9
13	313·1
3	331·3
3	342·6
33	471·8
3	440·4
3	516·4
18	535·8
23	549·5
28	578·1
33	597·7
37	601·7
43	644·1
44	675·9
48	705·0
53	738·6
58	722·6
0	763·2
3	831·8
4	843·0
5	837·6
6	831·9
7	786·9
8	752·1
9	717·5
10	729·7
11	732·6
12	743·8
13	774·9
14	791·7
15	781·6
16	767·0
17	754·1
18	731·5
19	711·4
20	705·0
21	717·9
22	729·6
23	721·2

Gött. Mean Time.		Declination.			Bifilar Corrected.		Balance Corrected.	
d.	h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.
Oct.								
8	3	24	24	46·33	24	638·4	24	700·4
		25		47·42	25	644·0	25	681·4
		26		48·70	26	647·7	26	664·1
		27		53·47	27	646·7	27	666·0
		29	24	56·97	28	647·3	28	669·9
		30	25	01·04	30	645·5	30	662·3
					32	641·1	32	664·1
		35		04·78	37	654·9	38	766·8
		40		15·91	42	647·0	43	805·1
		45		11·64	47	630·4	48	774·3
		50	25	07·17	52	603·4	53	735·1
		55	24	57·81	57	617·3	58	636·7
8	4	0	25	14·71	2	610·1	3	666·6
		5		20·32	7	593·4	8	717·9
		10		07·20	12	588·7	13	682·4
		15		08·85	17	594·7	18	642·1
		20		11·84	22	583·2	23	631·9
		25		10·83	27	571·5	28	606·9
		30		11·77	32	568·1	33	606·1
		40		17·91	42	572·1	43	640·7
		45		08·80	47	577·6	48	621·5
		55		14·40	57	571·6	58	619·4
8	5	0		16·55	2	590·9	3	707·2
		5		07·79	7	591·9	8	700·4
		10		01·38	12	569·5	13	629·4
		15		00·47	17	559·6	18	596·0
		20		01·58	22	548·6	23	584·5
		25		00·17	27	554·9	28	585·2
		30	25	02·19	32	553·4	33	618·9
		40	24	48·43	42	544·9	43	614·4
		45		49·91	47	541·3	48	578·6
		50		50·38	52	540·5	53	570·8
		55		47·56	57	554·4	58	550·4
8	6	0		51·59	2	546·0	3	544·4
		5		51·59	7	545·5	8	545·6
		10		48·83	12	547·3	13	542·7
		15		45·89	17	567·0	18	519·9
		20		53·54	22	561·7	23	510·1
		25		57·84	27	545·3	28	509·7
		30		55·26	32	539·0	33	502·6
		41		55·76	42	547·9	43	478·0
		50	24	58·49	52	542·3	53	477·4
8	7	0	25	02·01	2	536·9	3	472·6
8	8	0		06·21	2	532·1	3	429·2
		10		03·94	12	546·5	13	402·4
		20		08·82	22	528·7	23	402·3
		25		04·04	27	532·4	28	395·4
		35		03·77	37	534·8	38	390·7
		50		02·22	52	539·8	53	382·4
8	9	0		03·13	2	545·4	3	375·5
		30		05·45	32	534·4	33	352·7
8	10	0		05·18	2	538·1	3	344·1
9	8	0	25	10·67	2	545·5	3	382·7
		40		00·27	42	551·9	43	371·8
9	10	0		01·75	2	550·1	3	329·5
9	18	0	25	04·64	2	558·5	3	95·9
9	19	0		16·72	2	539·5	3	138·0

Gött. Mean Time.		Declination.			Bifilar Corrected.		Balance Corrected.	
d.	h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.
Oct.								
9	19	10	25	16·95	12	535·0	13	147·3
		40		18·77	42	533·8	43	174·0
9	20	0		11·98	2	534·5	3	189·0
10	4	0	25	15·27	2	551·1	3	578·7
		20		13·63	22	552·3	23	550·6
10	5	0		11·66	2	555·6	3	522·0
10	6	0		04·91	2	544·1	3	432·1
13	7	0	24	53·95	2	565·3	3	357·6
		10	24	56·10	12	560·4	13	358·6
13	8	0	25	02·66	2	547·2	3	358·7
22	6	0	24	47·66	2	537·6	3	395·6
		5		38·80	7	543·1	8	383·1
		10		34·63	12	569·2	13	369·3
		15		39·58	17	579·4	18	365·9
		20		46·08	22	573·7	23	365·3
		30		55·29	32	555·3	33	363·0
		45		52·24	47	527·2	48	376·4
22	7	0	24	53·00	2	534·4	3	375·7
		30	25	00·60	32	538·5	33	360·4
22	8	0		02·84	2	541·7	3	360·6
22	9	45		02·15	47	548·7	48	259·9
		50		02·28	52	551·7	53	259·4
22	10	0		03·70	2	555·6	3	266·1
24	8	0	24	51·52	2	566·2	3	322·7
		10	24	54·75	12	581·9	13	315·9
24	9	0	24	59·46	2	550·4	3	319·2
24	10	0	25	03·20	2	552·7	3	318·8
Nov.								
7	8	0	25	00·74	2	540·1	3	334·9
		15	24	56·60	17	536·4	18	348·1
		40		56·61	42	531·6	43	339·0
7	9	50		46·32	52	518·6	53	267·9
		55		46·11	57	517·4	58	256·5
7	10	0		46·68	2	520·6	3	251·6
		10		49·75	12	515·0	13	246·8
17	6	0	25	13·30	2	564·3	3	286·3
		30		37·95	32	544·8	33	457·9
		35		37·64	37	626·9		
		37		31·82	38	655·9	38	673·5
		39		27·17	39	662·2		
					40	646·4	40	704·4
		41		21·53	41	620·2		
					42	622·7	42	688·1
		43		16·90	43	625·0		
					44	620·9	44	685·2
		45		16·77	45	626·0		
		46		26·05	46	654·7		
		47		19·44	47	669·8	47	692·4
		48		20·35	48	688·0	48	695·4
		49		23·34	49	690·5	49	694·5
		50		22·40	50	667·3	50	695·5
		51		19·78	51	648·8	51	697·1
		52		18·16	52	639·3	52	698·6
		53		17·60	53	636·0	53	708·7

BIFILAR. $k=0·000135$. BALANCE. $k=0·000010$.

Gött. Mean Time.		DECLINATION.			BIFILAR Corrected.		BALANCE Corrected.	
d.	h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.
Nov.								
17	8	54	25	15·59	54	636·9	54	714·4
		55		13·72	55	619·0	55	716·9
		56		11·61	56	607·4	56	721·0
		57		08·58	57	603·4		
		58		06·07	58	611·2	58	740·1
		59		05·11	59	621·1	59	756·8
17	7	0		05·79	0	634·2	0	778·9
					1	661·5	1	797·6
		2		02·75	2	652·7	2	811·7
		3		02·12	3	666·8	3	823·4
		4	25	00·40	4	663·1	4	844·8
		5	24	58·92	5	669·8	5	847·8
		6		57·31	6	679·3	6	859·4
		7		58·55	7	689·6	7	869·6
		8	24	59·59	8	698·9	8	877·3
					9	710·	9	883·0
		10	25	00·74	(out	of field)	10	891·6
							11	894·3
		12		08·95			12	899·9
		13		08·68	13	684·0	13	901·7
		14		04·04	14	656·5	14	890·4
		15		01·05	15	651·0	15	873·0
		16		01·11	16	656·6	16	864·7
		17		04·01	17	649·2	17	847·9
		18		05·69	18	652·2	18	825·2
		19		16·19	19	667·5	19	808·8
		20		09·56	20	681·0	20	796·8
		21		13·32	21	681·7	21	801·5
		22		14·51	22	693·2	22	801·2
		23		18·40	23	710·	23	807·4
		24		21·56	24	684·0	24	814·4
		25		27·01	25	666·1	25	812·9
		26		30·04	26	659·6	26	810·9
		27		30·38	27	642·7	27	799·5
		28		29·66	28	637·2	28	790·3
		29		27·84	29	643·2	29	786·9

Gött. Mean Time.		DECLINATION.			BIFILAR Corrected.		BALANCE Corrected.	
d.	h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.
Nov.								
17	7	30	25	29·06	30	627·7		
		31		27·55	32	593·1	33	765·9
		34		23·81				
		35		23·21	35	625·2	35	763·4
		36		22·40	36	631·4		
		37		20·40	37	637·3	37	765·2
		38		18·23	38	639·4	38	777·6
		39		18·90	39	649·9	39	786·2
		40		12·22	40	665·4	40	787·3
		41		11·77	41	672·9	41	782·0
		42		11·71	42	685·0	42	778·2
		43		13·05	43	688·0	43	779·9
					44	692·0	44	776·9
		45		08·75	45	702·0		
					46	704·0	46	761·4
		47		10·28	47	706·0		
					48	695·0	48	786·4
		49		10·36	49	691·0		
					50	692·0	50	780·4
		51		12·15	51	696·0		
					52	695·0	52	787·3
		53		10·70	53	698·0		
					54	704·0	54	792·6
		55		09·93	55	707·0		
					56	695·0	56	797·5
		57		05·92	57	677·0		
					58	674·0	58	796·8
					59	686·0		
17	8	0		08·11	0	682·0		
					1	674·0	1	793·3
		2		11·03	2	671·0		
					3	657·0	3	796·8
		4		08·82	4	648·5		
					5	648·9	5	790·4
		6		05·29	6	647·0		
					7	650·4	7	796·6

Gött. Mean Time.		DECLINATION.		
d.	h.	Min.	°	′
Nov.				
17	8	8	25	06·12
		10		07·67
		12		04·55
		14		04·68
		16		04·41
		22		02·5
		24		05·6
		26		07·3
		30		04·5
		35		05·3
		40	25	00·2
		45	24	57·6
		50		55·1
		55		56·1
17	9	0		54·4
		5		54·8
		10		54·7
		20	24	59·3
		30	25	02·0
		45		01·0
17	10	0		00·7
26	4	0	25	08·
		10		18·
		15		14·
		20		07·
		25		08·3
		30		13·0
		35		15·4
		40		17·2
		45		15·8

BIFILAR. $k=0·000135$. BALANCE. $k=0·000010$.

Nov. 17ᵈ 9ʰ 45ᵐ. Clock 21ˢ slow; set right.

	BALANCE Corrected.		Gött. Mean Time.	DECLINATION.		BIFILAR Corrected.		BALANCE Corrected.		Gött. Mean Time.	DECLINATION.		BIFILAR Corrected.		BALANCE Corrected.	
iv.	Min.	Mic. Div.	d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.
			Nov.							Nov.						
·6			26 4	50	25 10·80	52	564·8	53	394·7	26 20	30	25 06·32	32	547·7	33	288·2
·6	9	801·0	26 5	0	14·91	2	568·7	3	402·8	26 22	0	08·18	2	553·2	3	303·5
·2				15	08·14	17	554·1	18	431·2							
·6	11	803·5		30	07·71	32	559·7	33	426·1	Dec.						
·9			26 6	0	11·77	2	596·2	3	557·1	9 8	0	25 05·65	2	561·6	3	278·8
·3	13	792·1				7	598·3	8	576·9	9 9	15	25 05·11	17	549·1	18	293·7
·7	15	789·5		10	14·50	12	601·2	13	573·4	9 10	0	24 40·47	2	560·5	3	302·2
	17	782·3		15	26·87	17	582·2	18	640·5		5	41·70	7	558·8	8	293·0
·1	20	803·2		20	20·69	22	590·5	23	682·1		10	43·62	12	558·8	13	292·5
·9				25	20·72	27	577·6	28	688·0							
1	23	819·0		30	23·24	32	563·1	33	691·7	23 6	0	24 58·60	2	552·8	3	340·5
4	26	818·3		35	17·73	37	584·7	38	714·2		30	47·76	32	563·7	33	348·8
7	28	764·5		40	16·32	42	576·7	43	707·1		50	52·03	52	561·1	53	332·3
3	33	745·0		45	19·37	47	585·1	48	710·8	23 7	0	24 56·67	2	559·5	3	324·0
6	38	773·4		50	24·12	52	575·4	53	745·4	23 10	0	25 08·88	2	551·9	3	143·3
8	43	806·6		55	14·43	57	594·0	58	787·7		5	25 07·54	7	540·4	8	160·1
3	48	814·4	26 7	0	10·09	2	597·4	3	832·7		10	24 59·53	13	554·8	14	143·3
6	53	818·2		5	25 00·33	7	596·0	8	830·9		15	25 02·72	17	555·9	18	142·6
7	58	806·8		10	24 55·60	12	558·0	13	764·6		20	04·91	22	553·2	23	150·5
5	3	774·7		15	49·07	17	554·0				25	06·12	27	547·7	28	149·9
5	8	749·5		20	48·23	22	533·4	23	622·0		30	05·79	32	543·0	33	137·5
5	13	735·1		25	50·85	27	535·6	28	604·4		35	07·78	37	531·0	38	133·6
9	23	666·1		30	49·71	32	524·4	33	577·8		40	05·90	42	517·4	43	134·8
6	33	579·3		40	41·97	42	525·5	43	507·8		45	25 01·72	47	510·1	48	144·1
8	48	500·4		45	44·90	47	532·7	48	490·7		50	24 53·45	52	519·1	53	158·0
5	3	466·0		55	53·00	57	535·6	58	468·3		55	47·49	57	532·7	58	162·9
			26 8	0	54·55	2	535·6	3	460·9	23 11	0	46·48	2	537·7	3	168·1
1	3	470·4		30	57·31	32	533·2	33	393·2		5	45·98	7	545·3	8	175·8
1	13	459·7	26 10	0	24 45·81	2	575·3	3	231·0		10	47·96	12	542·5	13	177·8
0	18	459·8		10	25 00·64	12	564·2	13	205·9		15	50·38	17	535·9		
1	23	442·7		20	25 00·50	22	541·3	23	188·8		20	51·27	22	533·2	23	176·4
9	28	425·0		30	24 58·62	32	546·9	33	128·4		30	54·77	32	542·2	33	180·3
2	33	419·8		40	25 01·01	42	558·7	43	127·2							
7	38	410·6								24 20	0	25 07·69	2	558·2	3	270·2
9	43	407·5	26 20	0	10·90	2	538·3	3	279·6		15	07·49	17	561·5	18	254·2
4	48	405·5		16	14·10	17	530·5	18	289·2	24 22	0	04·51	2	559·9	3	249·9

BIFILAR. $k=0·000135$.

BALANCE. $k=0·000010$.

NOTES ON THE AURORÆ BOREALES SEEN AT MAKERSTOUN.

Gött. M. T.
d. h. m.

Feb. 25 9 50. Auroral arch, upper margin passing through α Cygni.

55. Auroral arch, lower margin passing through α Cygni.

10 0. Arch 1° higher, steady; reaches from W by N. to NE by N.

10 10. Arch nearly as before; the eastern termination is rounded like portion of a circle, but the weste termination, which is brightest, is sharp, starting in a nearly straight line, making an acute ang with the horizon.

35. Arch much fainter, the lower edge passing through α Cygni.

11 40^{m}—50^{m}. Bright auroral arch like ermine, about 7° altitude; black sky (?) within, ultimately bro up into several small arches with short streamers.

12 15. The arch is rather irregular, and consists solely of pencils.

19. Arch irregular, but light more homogeneous.

Feb. 26 10 30. Auroral light to N., with faint streamers shooting from the horizon.

Mar. 16 8 55. Auroral light to N., to an altitude of 12°; partially obscured by clouds; throwing out fai streamers.

9 0. Aurora obscured by clouds.

9 40. An auroral belt passing through λ Orionis and between Castor and Pollux; rather nearer Cast than Pollux.

34. The belt broken into two; probably the whole semicircle would be visible if the sky were clear, it seen through haze.

42. The arch is 4° broad, it passes south of Pollux through γ Orionis and γ Geminorum to 45° altitu from E. horizon, where it is lost behind clouds; the arch is now single.

45. The arch passes between α and γ Orionis, south of Pollux and through ε Bootis. 50^{m}. The ar has a bend towards the south between the zenith and Orion.

54. The arch fainter, passes through α Orionis and ε Bootis, it is about 3° broad. 55^{m}. It now pass about 4° to south of α Orionis, and 3° to south of ε Bootis.

10 3. Arch disappearing about the zenith. 10^{m}. Arch still visible but very faint. 15^{m}. Arch gone.

11 35. Auroral light seen throughout the night above the clouds on the N. horizon.

April 6 11 40. The sky has been somewhat milky to N., but owing to the moonlight and clouds it could not wi certainty be called aurora. The sky throughout the evening generally covered with rather lar cirro-cumuli, a species of cloud which, if my memory serves, is rather common under the auspic of an increasing or nearly full moon (B.)

13 8. Faint auroral light to NW.? the clouds have moved off in that quarter, the sky merely looks mill there however.

18. There is no doubt that there is a faint aurora.

April 16 10 45. Faint auroral light to N.; it has appeared the same for some time, and no streamers have be observed.

11 35. Sky becoming overcast; light still seen to N. 13^{h} 35^{m}. Sky overcast.

Aug. 24 11 15. Diffuse auroral light with occasional faint streamers. 20^{m}. Faint streamers to NW.

Aug. 27 10 15. Diffuse, faint auroral light seen among the clouds; a faint broad beam to W by S., stretching t wards the zenith; much obscured by clouds.

25. Streamer rises from W by S., pointing south of zenith, another streamer is connected with it about 15° altitude, the latter passes through the zenith. Auroral patches to N.

40. Streamer to W by S., narrow and distinct, making an angle of about 10° or 15° with the circ through the zenith and W by S.

45. The origin of the streamer has moved further south on the horizon, but it is now very fair Auroral bank to N., altitude about 10°. Cloudy to E., S., and N. Sky chiefly from N. to and to SW.

11 10. An auroral arch or bank, rather patchy and irregular; occasionally short dumpy streamers. 15 Arch pulsating. 20^{m}. Only the NW. quadrant visible, continuous and rapid pulsation as hig as Ursa Major.

23. Patches disappeared, to a considerable extent. 26^{m}. Patches reappeared but not so bright as befor

36. Faint streamers from NW. horizon. 39^{m}. Streamers bright.

41. Brightest streamer to WNW. 45^{m}. Much fainter. 55^{m}. Aurora nearly disappeared. Sky b coming overcast.

Aug. 29 10 25. Slight magnetic irregularities; aurora looked for, but none visible.

Sept. 10 9 40. Faint auroral arch about 7° altitude.

Sept. 11 10 34. Auroral beam 2° broad, rising to an altitude of 20° from W by S.; the rest of the aurora very fair 45^{m}. Beam still continues, but fainter and shorter. 50^{m}. Aurora very faint; the beam has di appeared.

NOTES ON THE AURORÆ BOREALES SEEN AT MAKERSTOUN.

Gött. M. T.
d. h. m.

Spt. 21 13 0. Aurora to N., consisting chiefly of patches of light and bundles of streamers to an altitude of 40°, with incessant pulsation throughout the whole extent of the aurora; the aurora is not very bright, and it is obscured to a considerable extent by a black mass of clouds.

15. No material change in the aurora; it has a very confused appearance;—an indescribable mass of bundles of streamers and patches, with incessant and rapid pulsation.

13 30. Aurora become fainter.

Ct. 8 8 20. Auroral light; feint streamers to N. and NW.

Ct. 9 8 5. Several bright streamers sprung up from NNW.

Ct. 22 10 Faint auroral light seen through an opening in the clouds ?

Nv. 17 7 34. Bright aurora over the sky; partially cloudy; quite overcast a little ago. A portion of an arch to south, perhaps 30° (?) altitude from SSE.

36. About this minute a bright patch of auroral light seen to ESE., altitude about 30°.

41. Broad streak of aurora reaching from SW. to SSW.; altitude of the middle of the streak at its termination in azimuth S 20° W, is 18°. Diffused auroral light, mixed with cirrous clouds; hazy and dark spaces; difficult to say where the aurora is bounded, or whether it be cut off by clouds.

43. The aurora forms a bay to SW.; bright to NE., from an altitude of 10°, over zenith to W.; dark space to SW.; bay to W., persistent.

46. Centre of bay, 17° altitude, very bright above W 27° S. There seems no cloud in the dark space at the bay, yet the stars seem dimmer in it than in the bright light of the aurora; cirrous clouds to N., formed of parallel linear cirri.

50. Outline of auroral bay, like a reaping hook, the end of the handle in the horizon about W 30° S.; the top of the handle, altitude 8° above W 44° S.; the middle of the hook, 13° altitude above W 26° S.; and the top of the hook, 27° altitude above W 53° S. The light extends among the clouds to N. and NE. up to the zenith.

51. The auroral light extends to the south of the zenith, about 70° altitude above SSW., where it mixes with a light cloud, from which it can scarcely be distinguished; aurora on SE. horizon, or cloud. ?

56. The clouds are moving off to E. The light to NE. springs from cloud, altitude 9°; its eastern extremity is at E 20° N.

8 0. Incipient streamers amidst light to NE. and to W by N. The light is retrograding towards N., and has nearly attained the W. and NE. points of the horizon.

2. Streamers more distinct to NE.

3. A streak of aurora, unconnected with the horizon, has appeared suddenly to S. The streak is about 2° broad and 10° long, and the middle of it (both as regards length and breadth) is due south, at an altitude of 12°. The streak disappeared in a minute or two.

6. Incipient arch springs from W., altitude of summit 26°.

7. Light about equally luminous to NE. and WSW.; slightly more concentrated at the former. As the clouds clear off, the greater part of the sky found covered with a milky aurora; faint, equally diffused light, excepting that here and there the light, more condensed, has the appearance of arches; the height of the *well-defined* aurora above the south is about 65°; this is only an approximation, as the light *thins off*.

11. The bay to WSW. is nearly obliterated. The southern portion of the light was at one time best defined, but it is now like the rest.

19. Altitude of *well*-defined light from SSW., 65°.

24. Altitude of well-defined light from SSW., 70°.

27. The clouds have moved more eastwards; sky covered to north, from 70° above SSW., with milky aurora.

36. The well-defined aurora now only reaches to the zenith.

43. The altitude of well-defined aurora is now 85° above SSW. The northern semi-hemisphere is covered with milky aurora as before. This milky appearance of the aurora is precisely of the kind observed covering the sky, Feb. 1, 1845, &c. (See page 120.)

58. The auroral light has drawn nearer to the north.

59. Altitude of auroral segment above NNW., 57°.

8 0. Altitude of auroral segment above NNW., 48°.

1. Altitude of auroral segment above NNW., 47°.

5. It again became cloudy, but the aurora crept nearer and nearer the N. horizon.

D. 8 9 15. Auroral arch to N. 10^h 5^m. Auroral arch to N.

OBSERVATIONS OF MAGNETIC DIP,

AND FOR THE

ABSOLUTE HORIZONTAL INTENSITY.

MAKERSTOUN OBSERVATORY,

1846.

Göttingen Mean Time, Middle of Observation.	Duration.	NEEDLE.			FACE OF CIRCLE E.		FACE OF CIRCLE W.		Mean.	Observed Dip.
		Number.	Temperature.	End dipping.	Mark on Needle E.	Mark on Needle W.	Mark on Needle E.	Mark on Needle W.		
d. h. m.	m.		°		° ′	° ′	° ′	° ′	° ′	° ′
Jan. 2 23 35	40	2	39	B	72 37·0	71 19·5	72 9·0	70 44·0	71 42·37	71 29·93*
Jan. 3 4 20	30	2		B	72 44·0	71 17·5	72 6·0	70 47·5	71 43·75	
Jan. 5 23 12	25	2	45	A	70 56·0	72 18·5	70 14·5	71 28·0	71 14·25	
Jan. 6 4 30	20	2		A	70 58·0	72 17·5	70 29·0	71 33·0	71 19·37	
Jan. 8 22 52	25	2	47	B	72 22·0	71 17·5	71 56·5	70 49·5	71 36·37	71 27·34
Jan. 9 4 35	20	2	45	B	72 23·0	71 19·5	71 54·0	70 54·0	71 37·62	
Jan. 12 22 41	22	2	29	A	71 10·0	72 24·0	70 17·0	71 19·0	71 17·50	
Jan. 13 4 38	15	2	35	A	71 5·0	72 23·0	70 15·5	71 28·0	71 17·87	
Jan. 15 22 36	18	2	32	B	72 36·0	71 18·0	71 54·0	70 48·0	71 39·00	71 26·93
Jan. 16 4 40	20	2	35	B	72 30·5	71 18·5	71 57·0	70 53·0	71 39·75	
Jan. 19 22 35	20	2	44	A	71 3·0	71 58·0	70 30·5	71 26·5	71 14·50	
Jan. 20 22 37	25	2	39	A	71 17·5	72 8·5	70 19·5	71 23·0	71 17·12	71 25·84
Jan. 21 4 50	20	2	44	A	71 7·0	72 7·0	70 22·0	71 27·0	71 15·75	
Jan. 23 22 36	22	2	38	B	72 14·0	71 20·0	71 54·5	70 54·5	71 35·75	
Jan. 24 4 32	15	2	44	B	72 10·0	71 23·0	71 49·5	70 56·5	71 34·75	
Feb. 1 22 52	25	2	43	A	71 12·0	72 8·0	70 32·5	71 24·0	71 19·12	71 28·28
Feb. 2 4 43	17	2	47	A	71 8·5	72 3·5	70 35·5	71 35·0	71 20·62	
Feb. 4 22 50	40	2	41	B	72 24·5	71 22·5	71 49·0	70 54·0	71 37·50	
Feb. 5 5 20	30	2	42	B	72 19·5	71 26·0	71 46·0	70 52·0	71 35·87	
Feb. 9 22 52	35	2	31	A	71 20·0	72 18·5	70 24·5	71 17·5	71 20·12	71 26·06
Feb. 11 4 32	25	2	44	A	71 10·0	72 13·0	70 32·5	71 22·5	71 19·50	
Feb. 12 22 37	25	2	44	B	72 18·0	71 16·5	71 45·0	70 51·5	71 32·75	
Feb. 14 4 27	15	2	48	B	72 16·5	71 16·5	71 45·5	70 49·0	71 31·87	

* Unsatisfactory Observations, end B dipping.

Göttingen lean Time of bservation.	DEFLECTING BAR.				DECLINOMETER.		Unifilar Reading.	Deflection corrected for Torsion.	BIFILAR.		Log. $\frac{1}{2} r^3$ tan. u.
	Distance $= r$.		N. Pole.	Temperature.	Observed Reading.	Reduced to Unifilar.			Reading Corrected.	Thermometer.	
d. h. m.	Feet.			°	Sc. Div.	Sc. Div.	Sc. Div.	° ′ ″	Sc. Div.	°	
16 1 17	5·0	E	E	49·1	7·75	8·64	481·15	2 35 42·0	540·1	45·1	0·4515588
2 0			W	49·9	10·56	11·77	20·86		535·2	45·5	
2 54		W	E	49·6	10·12	11·28	481·72		545·3	45·9	
2 8			W	49·5	10·06	11·22	20·94		542·1	45·5	
1 21	5·5	E	E	49·1	5·41	6·03	420·97	1 57 11·4	541·3	45·2	0·4521956
1 57			W	50·2	9·62	10·72	77·07		535·3	45·4	
2 50		W	E	49·6	9·28	10·35	424·16		542·1	45·8	
2 12			W	49·2	10·06	11·22	78·06		543·0	45·5	
1 24	6·0	E	E	49·2	4·36	4·86	379·92	1 30 25·3	538·8	45·2	0·4527909
1 54			W	50·4	8·62	9·61	115·72		533·0	45·4	
2 46		W	E	49·6	8·24	9·18	383·41		540·1	45·8	
2 15			W	49·0	10·70	11·93	118·42		543·8	45·6	
1 27	6·5	E	E	49·3	4·43	4·93	351·36	1 11 10·2	538·3	45·2	0·4530940
1 51			W	50·6	7·50	8·36	143·11		531·5	45·4	
2 42		W	E	49·3	7·16	7·98	353·81		543·6	45·8	
2 18			W	48·8	9·71	10·82	145·91		544·8	45·6	
1 30	7·0	E	E	49·3	4·76	5·31	330·76	0 56 59·6	535·4	45·2	0·4531420
1 48			W	50·7	6·96	7·76	163·51		531·2	45·4	
2 39		W	E	49·1	6·84	7·62	332·57		545·6	45·8	
2 22			W	48·8	10·06	11·22	167·59		545·5	45·6	
1 34	7·5	E	E	49·4	3·16	3·53	313·02	0 46 22·6	534·6	45·3	0·4535303
1 44			W	50·2	5·40	6·02	177·60		533·4	45·3	
2 35		W	E	49·0	7·46	8·32	317·47		546·9	45·7	
2 25			W	48·8	9·15	10·20	182·00		546·3	45·7	
1 37	8·0	E	E	49·6	5·18	5·78	303·19	0 38 15·4	531·5	45·3	0·4538820
1 41			W	49·8	5·21	5·81	189·47		532·9	45·3	
2 31		W	E	48·9	8·96	9·99	307·15		544·1	45·7	
2 28			W	48·8	9·79	10·91	194·75		544·3	45·7	
								(Diff.) Sc. Div.			
0 37	Magnet away.				3·69	4·11	244·77	240·66			
3 4					9·41	10·49	251·09	240·60			
l 14 5 16	5·0	E	E	55·7	13·28	14·80	492·81	2 34 59·8	554·2	53·7	0·4496891
4 42			W	55·7	10·65	11·87	30·06		548·4	53·3	
5 30		W	E	59·0	13·91	15·50	493·01		551·6	53·7	
6 0			W	57·4	15·01	16·73	34·10		552·2	54·0	
5 3	5·5	E	E	54·7	11·78	13·13	434·18	1 56 40·1	552·9	53·6	0·4502303
4 46			W	55·7	11·11	12·38	87·31		546·6	53·4	
5 35		W	E	58·6	14·04	15·66	436·47		550·1	53·8	
5 55			W	56·4	14·89	16·60	91·06		552·4	53·9	
4 59	6·0	E	E	54·6	11·90	13·26	394·86	1 30 1·2	550·5	53·5	0·4508358
4 50			W	55·2	11·53	12·85	127·31		545·9	53·4	
5 39		W	E	58·0	14·19	15·82	397·07		550·6	53·8	
5 51			W	56·5	14·61	16·28	130·37		552·0	53·9	
4 56	6·5	E	E	54·7	11·97	13·34	366·51	1 10 54·0	548·8	53·4	0·4513829
4 53			W	54·8	11·81	13·16	155·88		547·0	53·4	
5 43		W	E	57·4	14·41	16·06	368·91		551·7	53·8	
5 47			W	57·0	14·51	16·17	158·65		551·8	53·9	
								(Diff.) Sc. Div.			
2 50	Magnet away.				3·50	3·90	252·74	248·84			
6 7					15·51	17·29	265·16	247·87			

Date.	N. END OF MAGNET MOVING E.					N. END OF MAGNET MOVING W.					BIFILAR.		
	No. of Vib.	Time of Transit.	No. of Vib.	Time of Transit.	Time of one Vib.	No. of Vib.	Time of Transit.	No. of Vib.	Time of Transit.	Time of one Vib.	Time of Obs.	Reading Cor.	Thermometer.
		h. m. s.		h. m. s.	s.		m. s.		m. s.	s.	h. m.	Sc. Div.	°
Feb. 16	0	3 47 5·7	70	4 5 13·0	15·533	1	47 21·5	71	5 29·0	15·536	3 48	550·2	46·3
	6	48 39·1	76	6 46·2	530	5	48 23·6	75	6 31·2	537	53	552·3	
	10	49 41·2	80	7 48·3	530	11	49 57·1	81	8 4·2	530	58	551·6	
	16	51 14·5	86	9 21·4	527	15	50 59·2	85	9 6·5	533	4 3	555·4	
	20	52 16·7	90	10 23·6	527	21	52 32·4	91	10 39·6	531	8	557·0	
	26	53 50·0	96	11 56·6	523	25	53 34·6	95	11 41·7	530	13	557·7	
	30	54 52·0	100	12 58·8	526	31	55 7·8	101	13 15·0	531	18	552·5	
	36	56 25·0	106	14 31·7	524	35	56 9·9	105	14 17·0	530	23	549·2	
	40	57 27·3	110	15 33·9	523	41	57 43·2	111	15 50·0	526			
	46	59 0·6	116	17 7·0	520	45	58 45·3	115	16 52·1	526	Mean	553·2	
	50	4 0 2·7	120	18 9·0	519	51	0 18·6	121	18 25·2	523			
	56	1 35·8	126	19 42·2	520	55	1 20·6	125	19 27·3	524			
	60	2 37·8	130	20 44·4	523	61	2 53·8	131	21 0·7	527			
	66	4 11·0	136	22 17·7	524	65	3 56·0	135	22 2·7	524			

Mean observed time of one vibration = 15s·5270. Semi-arc of vibration, commencing 8°, ending 2½°. Temperature of magnet, 48°·7. Rate of clock −1s·7

Date.	N. END OF MAGNET MOVING E.					N. END OF MAGNET MOVING W.					BIFILAR.		
	No. of Vib.	Time of Transit.	No. of Vib.	Time of Transit.	Time of one Vib.	No. of Vib.	Time of Transit.	No. of Vib.	Time of Transit.	Time of one Vib.	Time of Obs.	Reading Cor.	Thermometer.
April 14	0	7 38 56·4	60	7 54 30·0	15·560	1	39 12·8	61	54 47·2	15·573	7 43	565·9	54·4
	6	40 30·0	66	56 3·4	557	5	40 15·1	65	55 49·5	573	48	563·7	
	10	41 32·2	70	57 5·4	553	11	41 47·6	71	57 21·6	567	53	562·3	
	16	43 5·6	76	58 38·8	553	15	42 51·0	75	58 25·0	567	58	560·0	
	20	44 7·8	80	59 40·9	552	21	44 24·4	81	59 58·4	567	8 3	562·2	
	26	45 41·2	86	8 1 14·2	550	25	45 26·7	85	1 0·6	565	9	559·4	
	30	46 43·4	90	2 16·3	548	31	47 0·1	91	2 34·0	565			
	36	48 16·8	96	3 49·6	547	35	48 2·5	95	3 36·2	562	Mean	562·3	
	40	49 19·0	100	4 51·7	545	41	49 35·7	101	5 9·6	565			
	46	50 52·3	106	6 24·9	543	45	50 38·0	105	6 11·7	562			
	50	51 54·5	110	7 27·1	543	51	52 11·5	111	7 45·1	560			
	56	53 27·8	116	9 0·4	543	56	53 13·7	115	8 47·4	562			

Mean observed time of one vibration = 15s·5576. Semi-arc of vibration, commencing 7¼°, ending 1¼°. Temperature of magnet, 56°·2.

DEFLECTING BAR.				UNIFILAR.					BIFILAR.		
Distance = r.		N. Pole.	Temperature.	Circle Reading.	Scale Reading.	Declinometer.	Unifilar Circle Reading Reduced.	Deflection.	Reading Corrected.	Thermometer.	Log. $\frac{1}{2} r^3 \sin. u$.
Feet.			°	° ′ ″	Sc. Div.	Sc. Div.	° ′ ″	° ′ ″	Sc. Div.	°	
JUNE 23, 1846.											
Magnet away.				91 44 5	273·90	4·00	91 35 20				
1·0	E	E	71·0	108 46 30	274·30	3·75	108 38 19	17 0 39	575·9	68·7	9·1662338
		W	70·8	74 16 20	291·40	3·15	74 25 33		567·4	68·7	
	W	E	69·8	108 36 20	280·10	5·52	108 32 45		557·2	68·7	
		W	69·8	74 42 30	285·80	8·00	74 42 54		571·7	68·6	
1·1	E	E	71·0	104 11 20	290·20	6·12	104 17 21	12 40 34	573·2	68·7	9·1650658
		W	70·7	78 58 25	272·70	4·55	78 48 6		557·4	68·7	
	W	E	69·8	104 8 20	287·90	4·85	104 12 56		557·7	68·7	
		W	69·8	79 9 40	275·50	7·90	78 59 54		565·4	68·6	
1·2	E	E	71·1	101 26 30	277·40	6·27	101 19 42	9 43 52	568·4	68·7	9·1648515
		W	70·6	81 58 55	272·40	7·12	81 46 35		549·6	68·7	
	W	E	70·0	101 18 40	283·40	6·40	101 17 44		562·1	68·7	
		W	69·8	81 59 40	282·60	10·27	81 55 21		567·0	68·6	
1·3	E	E	71·0	99 21 35	277·50	6·95	99 14 26	7 38 4	560·2	68·7	9·1642171
		W	70·6	84 6 45	271·60	6·45	83 54 5		550·0	68·7	
	W	E	70·0	99 8 30	287·10	5·72	99 11 44		562·5	68·7	
		W	69·7	84 6 10	281·80	12·12	83 59 49		557·8	68·6	
1·4	E	E	70·8	97 46 55	279·60	6·25	97 42 19	6 6 12	555·0	68·7	9·1637963
		W	70·2	85 29 50	281·10	6·40	85 26 37		547·6	68·7	
	W	E	70·4	97 29 30	293·90	4·20	97 40 30		554·6	68·7	
		W	69·6	85 35 30	284·60	12·90	85 31 25		562·8	68·6	
1·5	E	E	70·8	96 31 57	285·50	6·05	96 33 21	4 57 2	553·9	68·7	9·1631516
		W	69·8	86 35 15	285·10	5·40	86 36 42		558·9	68·7	
	W	E	70·8	96 31 57	281·80	3·60	96 31 19		555·3	68·7	
		W	69·5	86 45 10	283·20	12·70	86 39 50		562·2	68·6	
Magnet away.				91 43 40	274·60	5·12	91 34 52				
JANUARY 2, 1847.											
Magnet away.				91 12 0	281·20	7·90	91 7 53				
0·9	E	E	45·2	114 18 30	282·55	11·90	114 13 2	23 5 1	560·3	40·7	9·1553068
		W	41·8	67 58 5	281·20	6·55	67 54 52		557·2	40·7	
	W	E	44·7	114 18 30	281·00	11·67	114 11 39		560·5	40·7	
		W	42·0	67 58 5	295·60	5·70	68 9 46		556·7	40·7	
1·0	E	E	44·3	107 52 5	281·35	11·95	107 45 24	16 37 15	560·8	40·7	9·1553784
		W	42·4	74 34 45	275·55	5·32	74 26 44		558·8	40·7	
	W	E	44·4	107 52 5	279·30	11·82	107 43 25		560·0	40·7	
		W	42·1	74 34 45	283·10	7·00	74 33 7		556·9	40·7	
1·1	E	E	44·2	103 39 5	281·95	11·60	103 33 13	12 24 55	560·5	40·7	9·1554058
		W	43·0	78 46 0	278·20	6·15	78 40 5		557·3	40·7	
	W	E	44·1	103 39 5	281·45	11·80	103 32 35		560·0	40·7	
		W	43·4	78 46 0	285·10	7·52	78 46 1		556·0	40·7	
1·2	E	E	44·1	100 46 10	281·85	11·50	100 40 17	9 31 59	559·9	40·7	9·1552407
		W	43·2	81 39 50	280·75	9·40	81 34 16		555·2	40·7	
	W	E	44·0	100 46 10	281·65	11·97	100 39 45		559·0	40·7	
		W	42·8	81 39 50	283·90	8·75	81 37 50		555·7	40·7	
1·3	E	E	44·4	98 42 45	282·95	12·25	98 37 28	7 29 35	559·3	40·7	9·1556499
		W	43·4	83 44 25	279·00	10·02	83 36 41		555·0	40·7	
	W	E	44·5	98 42 45	282·85	11·92	98 37 34		558·0	40·7	
		W	43·5	83 44 25	282·60	10·42	83 40 0		554·8	40·7	
1·4	E	E	44·4	97 16 10	279·50	11·60	97 7 52	5 59 41	556·4	40·7	9·1556718
		W	43·8	85 16 10	278·50	11·02	85 7 15		555·2	40·7	
	W	E	44·4	97 16 10	279·10	11·70	97 7 24		558·1	40·7	
		W	43·5	85 16 10	280·30	10·67	85 9 17		555·1	40·7	
1·5	E	E	44·1	96 8 0	280·55	11·70	96 0 41	4 52 16	558·0	40·7	9·1556812
		W	43·9	86 22 35	280·00	11·40	86 14 55		555·8	40·7	
	W	E	44·0	96 8 0	280·10	11·67	96 0 15		557·7	40·7	
		W	44·0	86 22 35	282·10	11·45	86 16 58		556·2	40·7	
Magnet away.				91 13 45	281·00	11·80	91 6 49				

MAY 31, 1847.

Gött. Mean Time.	DEFLECTING BAR.				UNIFILAR.		Declinometer.	Unifilar Circle Reading Reduced.	Deflection.	BIFILAR.		Log. $\frac{1}{2} r^3$ sin. u.
	Distance = r.		N. Pole.	Temperature.	Circle Reading.	Scale Reading.				Reading Corrected.	Thermometer.	
d. h.	Feet.			°	° ′ ″	Sc. Div.	Sc. Div.	° ′ ″	° ′ ″	Sc. Div.	°	
3 53	Magnet away.				236 36 47	189·67	3·42	236 34 8				
4 14	0·85	E	E	75·5	266 16 23	192·60	4·02	266 16 20	29 31 46	571·9	65·6	9·1809059
4 3			W	77·5	207 16 13	190·30	3·07	207 14 28		573·0	65·3	
4 26		W	E	74·8	266 16 23	174·30	3·95	265 57 39		569·9	65·8	
4 10			W	76·7	207 16 13	169·02	3·32	206 52 29		573·8	65·5	
4 35	1·10	E	E	73·7	249 44 27	190·35	4·57	249 41 43	13 9 45	574·8	66·0	9·1811979
4 46			W	73·2	223 23 13	191·80	4·77	223 21 51		579·5	66·2	
4 40		W	E	73·4	249 44 27	195·80	4·22	249 47 33		578·3	66·1	
4 50			W	73·1	223 23 13	198·80	5·70	223 28 25		577·4	66·3	
5 4	1·35	E	E	72·6	243 44 33	189·97	6·45	243 40 12	7 4 5	587·5	66·7	9·1808954
4 55			W	72·7	229 37 3	189·52	6·62	229 32 6		580·3	66·4	
5 7		W	E	72·6	243 44 33	186·90	6·00	243 37 21		585·9	66·8	
4 58			W	72·8	229 37 3	186·65	6·70	229 29 7		584·4	66·5	
5 13	1·60	E	E	72·6	240 31 50	210·37	5·85	240 48 47	4 15 5	576·9	66·9	9·1812125
5 23			W	72·6	232 23 13	189·52	5·67	232 18 55		567·5	67·1	
5 17		W	E	72·6	240 31 50	211·70	5·37	240 50 28		570·4	67·0	
5 26			W	72·7	232 23 13	190·65	5·80	232 20 0		562·5	67·1	
5 32	Magnet away.				236 36 50	191·32	5·00	236 34 49				

JUNE 15, 1847.

Gött. Mean Time.	DEFLECTING BAR.				UNIFILAR.		Declinometer.	Unifilar Circle Reading Reduced.	Deflection.	BIFILAR.		Log. $\frac{1}{2} r^3$ sin. u.
	Distance = r.		N. Pole.	Temperature.	Circle Reading.	Scale Reading.				Reading Corrected.	Thermometer.	
d. h.	Feet.			°	° ′ ″	Sc. Div.	Sc. Div.	° ′ ″	° ′ ″	Sc. Div.	°	
4 40	Magnet away.				236 26 3	194·05	1·17	236 29 25				
4 53	0·85	E	E	62·6	265 19 30	191·87	1·10	265 20 41	28 56 24	568·8	58·2	9·1728174
6 23			W	60·9	207 21 17	222·62	4·45	207 51 44		580·7	58·2	
4 57		W	E	62·5	265 19 30	209·52	1·05	265 38 49		567·2	58·2	
6 19			W	61·2	207 21 17	193·65	4·30	207 22 8		580·8	58·2	
5 9	1·10	E	E	62·3	249 27 23	188·32	1·65	249 24 33	12 55 36	566·8	58·2	9·1730075
6 5			W	62·0	223 44 23	189·22	4·45	223 40 26		574·9	58·2	
5 6		W	E	62·3	249 27 23	193·22	1·07	249 29 58		567·8	58·2	
6 11			W	61·5	223 44 23	180·37	4·20	223 31 42		575·0	58·2	
5 15	1·35	E	E	62·2	243 30 7	188·83	1·77	243 27 43	6 57 22	567·0	58·2	9·1732048
5 56			W	62·0	229 34 43	193·92	4·42	229 35 46		572·8	58·2	
5 19		W	E	62·2	243 30 7	190·57	1·57	243 29 38		574·1	58·2	
5 53			W	62·0	229 34 43	190·00	3·87	229 32 7		574·0	58·2	
5 32	1·60	E	E	62·2	240 43 20	189·42	2·60	240 41 0	4 10 22	567·0	58·2	9·1730914
5 40			W	62·1	232 16 47	196·70	3·07	232 21 35		571·6	58·2	
5 23		W	E	62·2	240 43 20	190·38	2·50	240 42 3		565·7	58·2	
5 45			W	62·0	232 16 47	195·17	3·07	232 20 0		575·7	58·2	
6 30	Magnet away.				236 30 17	194·20	5·10	236 31 9				

SEPTEMBER 11, 1847.

Gött. Mean Time.	DEFLECTING BAR.				UNIFILAR.		Declinometer.	Unifilar Circle Reading Reduced.	Deflection.	BIFILAR.		Log. $\frac{1}{2} r^3$ sin. u.
	Distance = r.		N. Pole.	Temperature.	Circle Reading.	Scale Reading.				Reading Corrected.	Thermometer.	
d. h.	Feet.			°	° ′ ″	Sc. Div.	Sc. Div.	° ′ ″	° ′ ″	Sc. Div.	°	
3 30	Magnet away.				237 20 17	45·05	3·07	237 18 18				
3 37	0·85	E	E	58·0	266 20 32	45·30	4·25	266 18 17	28 52 10	566·2	54·1	9·1732091
4 46			W	58·6	208 45 55	35·15	8·85	208 20 6		568·6	54·1	
3 42		W	E	57·9	266 20 32	41·67	4·15	266 11 1		563·2	54·1	
4 42			W	58·6	208 45 55	45·20	8·65	208 40 30		569·0	54·1	
3 54	1·10	E	E	58·2	250 13 30	46·90	5·55	250 13 36	12 53 21	564·5	54·1	9·1733823
4 31			W	58·6	224 27 35	44·93	7·40	224 22 28		572·4	54·1	
3 50		W	E	58·1	250 13 30	45·72	5·15	250 11 29		563·6	54·1	
4 35			W	58·6	224 27 35	48·40	7·72	224 29 15		571·4	54·1	
4 6	1·55	E	E	58·4	241 56 43	45·07	6·02	241 52 49	4 34 29	563·2	54·1	9·1733835
4 24			W	58·6	232 49 47	43·87	7·10	232 42 44		571·0	54·1	
4 10		W	E	58·4	241 56 43	45·00	6·57	241 52 18		572·7	54·1	
4 21			W	58·7	232 49 47	44·72	7·10	232 44 26		570·6	54·1	

Gött. Mean Time.	Deflecting Bar.				Unifilar.		Declinometer.	Unifilar Circle Reading Reduced.	Deflection.	Bifilar.		Log. $\frac{1}{2} r^3$ sin. *u*.
	Distance = *r*.		N. Pole.	Temperature.	Circle Reading.	Scale Reading.				Reading Corrected.	Thermometer.	
d. h.	Feet.			°	° ′ ″	Sc. Div.	Sc. Div.	° ′ ″	° ′ ″	Sc. Div.	°	
						SEPTEMBER 13—14, 1847.						
3 50	0·85	E	E	56·6	260 30 42	56·41	8·00	260 48 20	23 46 15	536·5	50·2	9·0941498
2 53			W	53·2	213 17 5	44·27	12·17	213 7 25		535·4	50·2	
3 46		W	E	56·3	260 30 42	45·12	8·57	260 25 10		535·1	50·2	
2 56			W	53·4	213 17 5	40·65	10·75	213 1 5		536·4	50·2	
3 33	1·10	E	E	55·8	247 46 18	44·55	8·85	247 39 27	10 44 40	535·6	50·2	9·0945213
3 6			W	54·1	226 11 32	46·52	11·07	226 7 9		534·0	50·2	
3 37		W	E	55·9	247 46 18	40·37	8·55	247 31 13		534·5	50·2	
3 2			W	53·8	226 11 32	45·37	11·05	226 4 51		533·6	50·2	
3 26	1·55	E	E	55·3	240 46 30	45·85	9·92	240 41 32	3 49 36	534·1	50·2	9·0948615
3 13			W	54·6	233 6 43	45·96	10·55	233 1 34		534·1	50·2	
3 23		W	E	55·0	240 46 30	44·76	9·87	240 39 23		534·4	50·2	
3 16			W	54·6	233 6 43	45·67	10·62	233 0 55		533·9	50·2	
3 55	Magnet away.				236 56 7	44·74	7·15	236 50 47				

The observations, June 23, 1846 and Jan. 2, 1847, were made with a unifilar magnetometer, by Mr JONES of London, belonging to Professor FORBES. The observations, May 31, June 15, Sept. 11, and Sept. 14, 1847, were made with a theodolite magnetometer, by Mr JONES, belonging to Sir THOMAS BRISBANE.

The following magnets were used in these observations:—

June 23, 1846.	Suspended.	Solid, 2·5 inch.	Deflector.	Solid, 3·65 inch.	F.
Jan. 2, 1847.	....	...... 3·0 inch.	....	Idem.	F.
May 31, 1847.	....	Hollow (with mirror), 3·0 inch B. 6.	....	Collimator, 3·65 inch.	M.
June 15, 1847.	....	Idem.	....	Idem.	M.
Sept. 11, 1847.	....	Collimator, 3·0 inch.	....	Idem.	M.
Sept. 14, 1847.	....	Idem.	....	Collimator marked 4.	B.

The magnets used on the first two days belong to Professor FORBES' instrument; those used afterwards belong to Sir THOMAS BRISBANE's instrument, with the exception of the collimator deflector marked 4, used Sept. 14, 1847, which belongs to an instrument made by Mr JONES for Professor BACHE of New York.

An abstract of the observations for the times of vibrations of the different deflectors is given on the following page, and the final results will be found in the Addendum to the Introduction.

Göttingen Mean Time.	Bar.	Ring on or off.	No. of Vibrations.	Semiarcs of Vibration.	Temp. of Bar.	Observed Time of One Vibration.	BIFILAR.		COEFFICIENTS FOR			Rate of Chron.
							Reading Corrected.	Temperature.	Torsion, = Φ.	Temperature, = q.	Induction, $= \frac{\delta m}{m}$.	
d. h.				′ ′	°	s.	Sc. Div.	°				s.
1846.												
June 24 4	F	On	323	16 to 3	65·4	12·14708	562·4	59·3	0·002143	0·000300	0·00569	−1·6
June 24 7	F	Off	369	23— 4	67·5	4·96988	568·7	60·5	·001112	·000300	·00569	−1·6
Dec. 31 2	F	Off	357	25— 3	48·0	5·01310	560·9	40·5	·000834	·000300	·00569	−4·0
1847.												
Jan. 1 3	F	On	319	23— 5	44·8	12·20431	563·8	41·1	·001431	·000300	·00569	−4·0
May 31 10	M	Off	351	35—10	71·3	5·03812	574·8	69·1	·000300	·000100	·00417	−4·0
June 15 7	M	Off	357	50—15	59·6	5·08227	576·7	58·2	·000300	·000100	·00417	−4·0
Sept. 10 21	M	On	319	53—24	49·7	12·51917	537·3	53·2	·002132	·000100	·00417	−5·0
Sept. 10 23	M	Off	357	42—12	57·1	5·10007	545·0	53·8	·000953	·000100	·00417	−5·0
Sept. 12 22	B	On	219	32—17	55·0	14·17608	527·6	52·2	·001807	·000090	·00627	−5·0
Sept. 12 23	B	Off	357	22—10	60·1	5·75353	524·9	52·1	·000871	·000090	·00627	−5·0

DIMENSIONS OF THE INERTIA RINGS.

	FOR MAGNET F.	FOR MAGNET M.	FOR MAGNET B.
External Diameter, . . .	3·635 inch.	3·515 inch.	3·604 inch.
Internal Diameter, . . .	2·971 inch.	2·912 inch.	2·932 inch.
Thickness, ...	0·142 inch.	0·187 inch.	0·172 inch.
Weight, ...	1074·77 grains.	1254·50 grains.	1299·40 grains.

See footnote to the previous page.

DAILY METEOROLOGICAL OBSERVATIONS.

MAKERSTOUN OBSERVATORY,

1846.

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
0 13	28·998	40·7	37·7	3·0	2·2	1·1	23		1·0	Masses of scud.
14	28·980	41·2	37·5	3·7	2·9	2·3	24		0·5	Id.
15	29·015	40·2	36·9	3·3	2·7	1·2	22		0·2	Id.
16	033	40·7	37·1	3·6	2·9	1·9	24		0·3	Id.
17	077	40·8	37·3	3·5	2·8	1·5	25		0·5	Id.
18	136	40·0	36·9	3·1	2·7	1·2	25		1·5	Id.
19	214	40·6	37·3	3·3	2·1	2·4	26		9·5	Scud and cirro-strati ?
20	287	37·6	36·7	0·9	2·3	1·3	27		9·8	Id. ; rain lately ; sky to E.
21	338	37·4	35·9	1·5	1·7	0·7	27	25 : — : —	3·0	Scud ; cirro-strati and cirri to E. ; clouds tinged red.
22	389	37·3	34·3	3·0	1·6	0·5	27		1·0	Cumulo-strati on E. horizon ; cirro-strati ; scud on
23	414	37·2	34·2	3·0	1·3	0·8	25		0·5	Id. ⊙ [Cheviot.
1 0	433	38·3	34·7	3·6	1·9	0·9	26		0·2	Id. ; cirrous haze.
1	466	38·7	35·7	3·0	2·8	1·6	24		0·1	Id. ; id.
2	481	38·4	34·3	4·1	3·1	1·3	25		0·1	Id. ; patches of scud ; id.
3	502	37·6	34·2	3·4	1·6	0·8	24		0·5	Loose scud ; cumulo-strati ; cirro-strati.
4	526	36·0	32·9	3·1	1·5	1·0	24		0·5	Cumulo-strati on NE. horizon ; cumuli to SE.
5	556	35·6	32·2	3·4	1·7	0·5	24		0·2	Id.
6	584	35·4	32·2	3·2	1·6	0·5	21		0·2	Patches of scud and cumuli ; a slight haze on horizon.
7	602	35·2	31·8	3·4	1·1	0·4	25		0·2	Haze round horizon.
8	623	35·0	31·2	3·8	1·2	2·6	28		0·0	Clear.
9	652	34·8	31·3	3·5	2·3	2·0	25		0·0	Id.
10	678	34·9	31·0	3·9	1·8	0·5	25		0·0	Id. ; haze on horizon.
11	721	33·5	30·4	3·1	1·0	0·8	25		0·0	Id. ; id.
12	741	33·4	30·2	3·2	0·5	0·2	26		0·0	Id. ; id.
13	29·756	33·6	30·1	3·5	0·3	0·2	25		0·0	Clear ; haze on horizon.
14	781	33·8	30·1	3·7	0·6	0·3	25		0·0	Id. ; id.
15	805	33·5	29·8	3·7	0·7	0·9	26		0·0	Id. ; id. ; streak of cloud to SW.
16	847	32·5	29·2	3·3	0·8	0·1	26		0·1	Id. ; id. ; clouds on horizon.
17	869	32·6	29·4	3·2	0·6	0·1	27		0·1	Id. ; id. ; id.
18	903	30·2	27·9	2·3	0·2	0·1	20		0·2	Id. ; id. ; id.
19	939	30·6	28·4	2·2	0·0	0·0	12		0·3	Masses of cirro-strati to E.
20	29·972	32·0	29·1	2·9	0·1	0·0	24		0·3	Cirro-strati and cirri to E. ; cumulo-strati on E. hor.
21	30·018	28·4	27·0	1·4	0·1	0·0	16	— : — : 28	3·0	Thin and barred cirri across the sky ; id.
22	033	30·6	28·4	2·2	0·0	0·0	20		0·8	Cirro-strati and thin cirri.
23	073	30·6	28·9	1·7	0·0	0·0	24		0·8	Id.
2 0	094	33·2	30·8	2·4	0·0	0·0	20		1·0	Thin cirri ; cumulo-strati on E. horizon.
1	109	33·8	31·8	2·0	0·0	0·0	16		0·8	Cumuli and cirri on E. horizon ; cir.-cum.-str. to W
2	118	35·0	32·3	2·7	0·0	0·0	13	— : 30 : 30	3·0	Cirro-cumuli and cirri ; cumulo-strati in haze to E.
3	125	35·3	32·4	2·9	0·0	0·0	24	— : 30 : —	5·0	Id.
4	147	33·6	31·3	2·3	0·0	0·0	18		3·0	Cirro-cumulo-strati. [nearly at right angles
5	153	31·7	30·3	1·4	0·0	0·0	16		9·8	Cir.-str. lying in bands N by W. to S by E., with b
6	168	31·4	30·5	0·9	0·0	0·0	15		10·0	Sky covered with cirrous haze.
7	182	31·4	30·7	0·7	0·0	0·0	1		10·0	Id.
8	189	32·2	30·8	1·4	0·0	0·0	15		10·0	Id.
9	176	31·7	30·8	0·9	0·0	0·0	16		10·0	Cirro-stratus and cirrous haze.
10	178	31·6	30·8	0·8	0·0	0·0	25		10·0	Id.
11	175	32·2	31·2	1·0	0·0	0·0	20		10·0	Id. ; a few stars dimly visibl
12	163	33·0	31·1	1·9	0·0	0·0	20		9·5	Id.
13	30·151	34·0	31·7	2·3	0·0	0·0			10·0	Cirro-stratus and cirrous haze.
14	140	34·6	32·2	2·4	0·0	0·0			10·0	Id.
15	123	34·3	32·2	2·1	0·0	0·0			10·0	Id.
16	118	34·8	32·7	2·1	0·0	0·0	16		10·0	Id. ; shower of hail, afterwards of rain
17	088	33·1	32·6	0·5	0·0	0·0	22		10·0	Id. ; a few stars dimly visible.
18	073	35·2	32·7	2·5	0·0	0·1	17		10·0	Id.
19	052	36·0	34·7	1·3	0·3	0·3	19		10·0	Id. ; rain$^{0·2}$
20	038	36·7	35·3	1·4	0·2	0·1	18		10·0	Id. ; id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. Th motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
	Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
30·007	37·4	36·1	1·3	0·0	0·0	20	— : 20 : —	10·0	Thick cirro-stratus and scud.
003	39·2	37·7	1·5	0·2	0·0	31	— : 20 : —	10·0	Id.
30·000	39·5	38·1	1·4	0·2	0·2	18	— : 20 : —	10·0	Id.
29·978	40·5	39·0	1·5	0·1	0·1	18	— : 20 : —	10·0	Id.
955	41·6	40·0	1·6	0·2	0·0	16	— : 19 : —	10·0	Id.
940	43·4	41·7	1·7	0·1	0·2	17	— : 19 : —	10·0	Id.
909	44·7	43·0	1·7	0·5	0·8	18	19 : — : —	9·9	Scud ; cirro-cumulo-strati.
888	43·8	42·4	1·4	0·5	0·0	16	19 : — : —	10·0	Id. ; cirro-strati.
865	42·7	41·3	1·4	0·3	0·1	17	19 : — : —	10·0	
853	42·7	41·4	1·3	0·2	0·1	16		10·0	Scud ; cirro-strati.
825	44·7	42·9	1·8	0·5	0·5	17		10·0	Id. ; id.
809	43·2	41·8	1·4	0·7	0·2	18		9·5	Id. ; id. ☽
776	43·8	42·4	1·4	1·3	0·5	18	— : 19 : —	9·5	Cirro-cumulo-stratus ; lunar corona. ☽
748	43·2	41·8	1·4	0·8	0·6	17		7·5	Id. ☽
715	43·9	42·6	1·3	1·0	0·5	16		10·0	Thick cirro-stratus and scud.
687	44·0	42·9	1·1	1·5	0·3	16		10·0	Id.
29·560	37·7	36·3	1·4	3·9	0·1	20	— : 19 : —	2·0	Cirri and cirro-strati.
29·766	35·4	33·6	1·8	1·2	0·1	19		9·5	Scud and cirro-strati.
774	33·9	32·4	1·5	0·1	0·0	18		3·0	Id.
779	35·3	33·7	1·6	0·1	0·1	20		6·0	Id.
784	34·3	32·9	1·4	0·1	0·0	16		9·8	Id.
788	37·5	35·3	2·2	0·0	0·0	20		3·5	Id.
798	33·4	32·3	1·1	0·1	0·1	20		3·5	Id.
806	30·7	30·1	0·6	0·1	0·0	20		0·2	Cirro-strati on SE. horizon.
829	29·4	28·8	0·6	0·1	0·0	18		0·3	Id.
849	28·8	……	…	0·0	0·0	17		1·0 ?	Scud on horizon ; thin cirri to N. ; very thin cirri to S.
858	31·2	30·4	0·8	0·0	0·0	20		0·5	Cum.-str. on E. hor. ; clouds on Cheviot ; thin streaks
876	33·3	32·1	1·2	0·1	0·0	20		0·8	As before ; more cirri forming to W. ⊙ [of cirri. ⊙
869	35·1	32·7	2·4	0·1	0·0	16	— : — : 30	2·5	Woolly cirri ; cumulo-strati on E. horizon. ⊙
863	36·5	35·0	1·5	0·0	0·0			3·0	Id. ⊙
855	36·7	35·2	1·5	0·0	0·0	14		0·5	Id. ⊙ [a thin haze. ⊙
850	37·0	35·3	1·7	0·0	0·0			1·0	Cirro and cirro-str. ; Venus is visible, shining through
847	34·0	33·1	0·9	0·0	0·0	4		4·0	Cirro-strati and cirri radiating from NW.
832	34·4	33·3	1·1	0·1	0·0	20		4·0	Woolly cirro-strati and cirri.
823	36·0	35·6	0·4	0·0	0·0	26		9·8	Cirro-strati and cirrous haze.)
805	34·7	33·7	1·0	0·1	0·1	20		10·0	Cirro-strati and thick cirrous haze.
785	37·2	35·7	1·5	0·2	0·1	19		10·0	Id.
782	37·2	35·6	1·6	0·2	0·1	16		10·0	Thick cirrous-haze.)
761	37·0	35·7	1·3	0·1	0·1	20		10·0	Id. ; rain$^{0\cdot5}$
715	36·9	35·7	1·2	0·8	0·4	17		10·0	Scud and mass of cirro-strati ; drops of rain. ☽
687	37·8	36·4	1·4	0·7	0·7	17		10·0	Id.
29·656	39·1	37·7	1·4	1·5	1·4	17		10·0	Scud and mass of cirro-strati.
628	39·5	38·2	1·3	1·7	1·3	17		10·0	Id.
625	41·1	40·0	1·1	1·1	0·3	17		10·0	Id. ; rain$^{0\cdot2}$
595	41·2	40·0	1·2	0·6	0·1	17		10·0	Id.
589	40·9	39·9	1·0	1·4	0·6	17		10·0	Id.
569	41·7	40·4	1·3	0·7	0·5	17		10·0	Id.
576	42·8	41·4	1·4	0·4	0·2	18		10·0	Id.
564	45·6	44·0	1·6	0·2	0·2	18		10·0	Id. ; clouds red to E.
579	44·7	43·6	1·1	0·3	0·2	19	24 : — : —	10·0	Scud ; dense homogeneous cirro-stratus.
596	46·2	43·5	2·7	0·3	0·6	21		10·0	Cirro-cumulo-strati and cirro-str., radiating from SSE.
600	45·6	43·4	2·2	0·6	0·2	20	— : 28 : —	10·0	Ribbed cirro-strati ; patches of scud ; sheets of cir.-str.
605	47·1	44·6	2·5	1·1	0·2	20	20 : — : —	10·0	Cirro-stratous scud ; mass of cirro-stratus.
593	47·0	45·0	2·0	0·8	0·3	19		10·0	Id. ; id.
584	48·0	46·7	1·3	0·4	0·2	18	21 : — : —	10·0	Id. ; id.

e direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The ns of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Gött. Mean Time.		Barometer at 32°.	Thermometers.			Wind.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1^{h}.	Maximum force in 10^{m}.	From			
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
6	3	29·581	48·9	47·3	1·6	0·7	0·3	18	24 : — : —	10·0	Scud ; mass of cirro-stratus.
	4	589	48·9	47·3	1·6	0·4	0·1	18	23 : — : —	10·0	Id. ; id.
	5	600	49·7	47·7	2·0	0·3	0·1	18	22 : — : —	10·0	Id. ; cirro-strati, tinged red to W.
	6	604	50·5	48·2	2·3	0·5	1·1	20		10·0	Id. ; cirro-stratus.
	7	629	50·0	48·0	2·0	1·3	0·8	18		10·0	Id. ; id. ; a few drops of rain.
	8	638	49·2	47·7	1·5	0·9	0·7	18		10·0	Id. ; id. [fully coloured corona
	9	639	49·1	47·5	1·6	0·9	0·9	19	23 : — : —	9·5	Id. ; cir. and cir. haze ; indistinct lunar halo ; beau
	10	639	48·4	46·6	1·8	1·1	1·2	20	23 : — : —	9·2	Id. ; id. ; lunar corona.
	11	632	47·6	45·7	1·9	1·3	0·7	20		9·5	Woolly cirri and cirrous haze ; lunar corona.
	12	630	48·3	46·2	2·1	2·2	2·3	20		9·5	Scud ; cirri and cirro-strati.
	13	29·654	48·1	46·0	2·1	3·0	1·0	20		9·7	Scud ; cirri and cirro-strati.
	14	655	47·7	45·5	2·2	0·9	0·9	20		9·9	Id. ; id.
	15	663	47·9	45·2	2·7	1·2	1·3	19		9·7	Id. ; id.
	16	684	48·0	44·9	3·1	0·8	0·4	18		9·9	Id. ; id.
	17	694	47·5	44·5	3·0	1·2	0·1	20		10·0	Id. ; id.
	18	683	46·6	44·1	2·5	0·7	0·4	18		10·0	Id. ; id.
	19	709	47·6	44·8	2·8	0·8	0·7	18		10·0	Id. ; id.
	20	707	46·8	44·6	2·2	0·5	0·1	17		9·9	Id. ; id. ; the cirri and cir.-str. red to
	21	718	47·0	44·7	2·3	1·3	0·9	18	21 : — : —	9·9	Id. ; cirro-strati.
	22	688	47·0	44·8	2·2	0·9	0·3	20	21 : — : —	9·8	Id. ; id. ; cirri.
	23	729	47·4	45·2	2·2	1·2	1·6	18	22 : — : —	9·6	Id. ; id. ; id.
7	0	733	48·1	45·6	2·5	2·4	2·8	19	22 : 20 : —	9·5	Id. ; id. ; id. ; drops of rain.
	1	728	48·0	45·9	2·1	4·0	2·5	18	22 : — : —	9·5	Id. ; id. ; woolly cirri.
	2	734	48·5	46·1	2·4	4·5	2·3	19	22 : — : —	9·8	Id. ; id. ; id.
	3	748	48·2	45·8	2·4	3·7	2·6	20	22 : — : 24	9·0	Id. ; thick woolly cirri.
	4	785	48·7	46·1	2·6	1·9	0·8	20	21 : — : —	9·8	Id. ; cirro-strati and cumulo-strati to E.
	5	813	48·3	46·0	2·3	1·1	1·0	20	21 : — : —	9·9	Id. ; cirro-strati.
	6	828	48·4	45·8	2·6	1·1	1·7	20		9·8	Id.
	7	842	48·6	46·0	2·6	1·8	2·0	19	22 : — : —	9·8	Id.
	8	852	47·8	45·6	2·2	1·3	1·3	20	22 : — : —	9·0	Id. ; thin haze ; diffuse lunar corona.
	9	854	48·1	45·9	2·2	2·2	1·8	19		9·7	Id.
	10	863	47·0	45·0	2·0	2·8	1·4	20	22 : — : —	5·0	Id. ; thin haze.
	11	880	48·0	45·4	2·6	1·8	1·3	20	22 : — : —	9·0	Id. ; cirri and cir. haze ; lunar corona as before.
	12	859	47·5	45·2	2·3	2·8	3·0	20	22 : — : —	9·0	Id. ; id., radiating from WSW. ; id.
	13	29·852	47·8	45·2	2·6	6·2	3·7	19	22 : — : —	7·0	Scud ; cirri, radiating from WSW. ; the band of blue of corona get
	14	858	48·2	45·4	2·8	3·9	4·5	19	22 : — : —	5·0	Id. ; cir. and cir.-str. ☽ [fainter; the yellow is as bright as ev
	15	862	48·3	45·7	2·6	6·2	4·0	18		6·0	Id. ; id.
	16	877	48·1	45·7	2·4	4·2	2·8	18		3·0	Id. ; cirro-strati and cirri.
	17	882	47·5	45·7	1·8	4·5	2·0	18		9·0	Id. ; id. ; cirrous haze.
	18	926	47·7	46·0	1·7	2·6	1·5	18		10·0	Id.
	19	947	47·9	46·2	1·7	1·6	1·2	20		9·9	Id.
	20	964	48·0	46·3	1·7	1·6	1·2	20		9·5	Id. ; cir.-str. and cir. haze, tinged with red to SE.
	21	29·993	48·0	46·4	1·6	1·9	1·7	20	21 : — : —	9·5	Smoky scud ; fine cirro-strati and cirri.
	22	30·021	48·6	47·1	1·5	2·2	1·3	18	22 : — : —	9·5	Id. ; cirro-strati and cirrous haze.
	23	044	49·4	47·7	1·7	1·7	1·3	19	21 : — : —	10·0	Id. ; id.
8	0	057	49·8	48·0	1·8	1·9	0·4	22	21 : — : —	10·0	Scud.
	1	067	50·3	48·4	1·9	0·8	0·2	20 v.	21 : — : —	9·8	Id.
	2	075	51·0	49·0	2·0	0·3	0·1	20	22 : — : —	9·5	Id. ; cirro-strati.
	3	084	50·8	48·8	2·0	0·1	0·0	20	22 : — : —	9·5	Id. ; id.
	4	109	50·6	48·6	2·0	0·2	0·1	20	22 : — : —	9·8	Id. ; id.
	5	132	49·9	47·9	2·0	0·6	0·3	20	22 : — : —	8·0	Id. ; id., tinged with red.
	6	142	49·6	47·3	2·3	0·7	0·8	20		9·9	Id.
	7	148	48·7	46·8	1·9	1·3	0·8	20	22 : — : —	8·5	Id. ; cirro-strati ; small corona.
	8	184	48·8	46·7	2·1	0·5	0·4	19		8·5	Cirro-cumulo-strati ; id.
	9	187	48·8	46·7	2·1	1·3	0·8	19	— : 22 : —	9·5	Id. ; id.
	10	191	48·2	46·2	2·0	2·0	1·0	20	— : 24 : —	5·0	Id. ; cirri.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Jan. 7^{d} 10^{h}. Lunar corona ; from the moon to about 3½° from it, is a uniform greenish-yellow colour, then a band of yellowish-red a degree broad, and last a band of blue about 1½° broad ; the extreme radius of the corona is about 6° or 7°.

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc.: C.-s : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
8 11	30·215	48·4	46·3	2·1	1·7	1·0	20		9·8	Cirro-cumulo-strati; coloured lunar corona. ☽
12	240	46·6	45·1	1·5	1·0	0·3	19		7·0	Id. ☽
13	239	45·0	43·7	1·3	0·6	0·2	20		2·0	Woolly cirri lying E. and W. ☽
14	247	44·9	43·4	1·5	0·3	0·1	24		7·0	Cirro-strati.
15	251	43·6	42·5	1·1	0·7	0·1	19		4·0	Id. ☽
16	262	43·4	42·3	1·1	0·0	0·0	12		10·0	Id.
17	267	45·4	43·8	1·6	0·3	0·0	20		10·0	Id.
18	256	45·4	44·0	1·4	1·5	1·1	20		10·0	Id.
19	264	45·0	43·4	1·6	1·3	1·4	20		10·0	Scud and cirro-strati.
20	271	44·2	42·2	2·0	1·0	1·2	21	21 : — : —	9·9	Id.; clouds red to E.
21	280	44·0	42·3	1·7	2·2	0·8	21	21 : — : —	8·0	Scud; cirri and cirro-strati.
22	296	45·2	43·2	2·0	0·8	0·7	21	21 : — : —	9·5	Id.; id. ⊖
23	296	46·2	43·7	2·5	1·6	1·3	20	21 : — : —	9·5	Id.; id.
9 0	30·304	46·2	43·8	2·4	1·8	0·4	22	20 : — : —	9·0	Scud; cirri and cirro-strati.
1	285	46·3	44·2	2·1	0·8	0·8	22	20 : — : —	9·9	Id.; dense mass of cirro-stratus.
2	260	46·2	43·9	2·3	1·3	1·4	20	— : 20 : —	9·9	Cirro-stratous scud and cirro-stratus.
3	253	45·7	43·5	2·2	1·1	0·2	21	— : 20 : —	10·0	Id.
4	251	45·0	43·3	1·7	1·2	0·5	21	— : 20 : —	10·0	Id.
5	243	44·3	42·6	1·7	1·5	0·2	20		10·0	Dense mass of cirro-stratus.
6	225	44·0	41·9	2·1	1·0	0·7	18		10·0	Id.
7	229	43·9	41·7	2·2	1·5	0·4	18		10·0	Id.
8	213	44·0	41·4	2·6	2·4	1·6	20		10·0	Scud and cirro-strati.
9	202	43·7	40·9	2·8	2·4	0·8	21		10·0	Id.
10	187	43·7	41·0	2·7	1·0	1·6	20		10·0	Id.
11	155	43·5	41·3	2·2	1·6	1·3	18		10·0	Id.
12	149	44·0	41·6	2·4	2·3	0·6	18		10·0	Id.
13	134	44·3	41·5	2·8	2·6	1·4	19		10·0	Id.
14	109	44·4	41·9	2·5	2·3	1·9	20		9·8	Id.; drops of rain.
15	118	44·6	42·0	2·6	2·3	0·3	21		10·0	Id.
16	093	44·8	41·8	3·0	1·6	1·5	20		10·0	Id.
17	097	45·1	41·7	3·4	1·3	1·0	20		10·0	Id.
18	079	44·9	42·1	2·8	1·6	1·4	18		10·0	Id.
19	060	45·0	42·4	2·6	1·3	0·3	18		9·5	Id.
20	031	45·1	42·7	2·4	1·5	1·5	20		10·0	Id.
21	032	45·0	42·7	2·3	1·2	0·7	20	23 : — : —	10·0	Id.
22	050	45·4	43·2	2·2	1·3	0·7	20	22 : — : —	9·8	Scud; cirro-strati and cirri.
23	045	45·7	43·4	2·3	1·2	1·2	20	25 : — : 22	8·5	Id.; woolly cirri; cirro-strati. ⊖
10 0	30·042	46·7	44·4	2·3	2·7	1·5	22	24 : — : 20	5·5	Scud and cirro-stratous scud; woolly cirri. ⊖
1	031	47·8	45·3	2·5	1·3	1·7	20	20 : 24 : —	8·0	Loose scud; loose cirro-strati; drops of rain.
2	013	48·2	45·8	2·4	2·6	1·3	20	20 : 24 : —	8·5	Id.; id.; woolly cirri. ⊖
3	009	47·8	45·3	2·5	1·4	1·1	21	21 : 20 : —	9·5	Id.; id.; id.
4	018	47·6	45·4	2·2	1·3	0·5	20	21 : 24 : —	9·9	Id.; id.
5	010	47·0	45·4	1·6	1·2	0·3	20	— : 24 : —	10·0	Cirro-stratous scud.
6	011	47·3	45·6	1·7	0·5	0·3	20		9·5	Cirro-cumulo-strati; cirro-strati.
7	007	47·4	45·6	1·8	0·7	0·1	18		10·0	Scud and cirro-strati.
8	017	47·6	46·0	1·6	0·1	0·0	18		9·8	Id.
9	011	48·0	45·8	2·2	0·3	0·3	21	24 : 25 : —	7·0	Scud; cirro-cumulo-strati. ☽
10	026	47·2	45·6	1·6	0·5	0·0	18		9·0	Id.; id.
11	030	47·3	45·0	2·3	0·2	0·2	20		9·0	Cirro-cumulo-strati and cirrous haze. ☽
12	051	46·5	44·7	1·8	0·2	0·1	20	24 : 25 : —	9·0	Scud; cirro-cumulo-strati. ☽
23¾	30·057	38·7	38·0	0·7	0·2	0·0		20 : — : —	3·0	Loose scud; patches of cirri.
11 19	29·765	41·0	39·7	1·3	0·5	0·1	16		10·0	Scud and cirro-strati.
20	752	40·5	39·0	1·5	0·2	0·2	17		10·0	Id.
22	742	39·9	38·5	1·4	0·2	0·1	16	21 : — : —	10·0	Id.; hazy.
12 0	722	40·1	38·2	1·9	0·2	0·1	20	22 : — : —	10·0	Scud; cirro-strati and cirrous haze; traces of a halo.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Jan. 9d 6h. Observations made at 6h 15m.

Gött. Mean Time.	BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
12 2	29·673	41·8	39·6	2·2	0·1	0·0	20	20 : 20 : —	10·0	Scud and cirro-strati.
4	628	36·3	35·3	1·0	0·1	0·1	16	— : — : 18	4·5	Woolly and mottled cir.; cir.-str. and cir. haze on hor.
6	576	34·0	33·5	0·5	0·0	0·0	8		7·0	Cirri, cirro-strati, and cirrous haze.
8	536	30·0	29·7	0·3	0·0	0·0	24		10·0	Loose scud; cirro-strati. [halo. ☽
10	507	28·8	……	…	0·0	0·0			9·5	Woolly cir., cir.-str., and cir. haze; portion of a lunar
18	29·411	30·5	30·0	0·5	0·1	0·0	24	— : 21 : —	5·0	Cirro-strati and cirro-cumulo-strati; cirrous haze. ☽
20	406	31·8	31·4	0·4	0·0	0·0			9·8	Scud, cirro-strati, and cirrous haze.
22	403	30·3	30·1	0·2	0·0	0·0		— : — : 20	7·0	Woolly cirri; cirro-strati; slight fog. [miles off. ●
13 0	384	33·4	32·4	1·0	0·0	0·0	10		9·8	Fog; cir.-str.; cir.; cirrous haze; objects invisible two
2	360	35·1	34·0	1·1	0·0	0·0	24	16 : — : —	10·0	Patches of scud, nearly as at 0h; drops of rain.
4	313	35·1	34·3	0·8	0·0	0·0	6		10·0	Homogeneous mass; rain$^{0·5}$
6	281	36·4	35·7	0·7	0·0	0·0	2		10·0	Scotch mist; cir.-str.; Venus visible through the clouds.
8	252	37·6	37·0	0·6	0·1	0·0	4		9·8	Cirri and cirro-strati.
10	248	38·5	37·7	0·8	0·1	0·0	8	12 : — : —	10·0	Masses of scud to E.; cirro-strati and cirrous haze.
18	29·204	35·9	35·3	0·6	0·1	0·0	9		9·8	Cirro-cumulo-strati and cirro-strati. ☽
20	230	36·0	35·6	0·4	0·0	0·0	4		10·0	Nearly homogeneous; dense fog.
22	244	35·7	35·4	0·3	0·0	0·0	0	15 : 16 : —	9·8	Loose smoky scud; cirro-cumulo-strati; slight fog.
14 0	266	42·2	40·9	1·3	0·0	0·0	1	— : 16 : —	9·0	Cirro-cumulo-strati; cirro-strati; haze.
2	267	44·0	41·4	2·6	0·1	0·0	2	— : 14 : —	10·0	Id.; id.; id.
4	280	43·3	41·3	2·0	0·1	0·0		15 : — : —	9·8	Loose scud; mass of cirro-stratus.
6	290	42·3	40·3	2·0	0·1	0·0	4		10·0	Scud and cirro-stratus.
8	311	41·0	39·7	1·3	0·1	0·0	2		10·0	Id.
10	325	42·9	41·2	1·7	0·7	0·4	12		10·0	Id.; cirrous haze.
18	29·304	40·5	39·7	0·8	0·6	0·2	14	18 : — : —	7·0	Scud; cirro-cumulo-strati; cirrous haze.
20	316	40·0	39·2	0·8	0·6	0·6	17		2·5	Scud and cirro-strati round horizon.
22	343	40·4	39·5	0·9	0·1	0·0	8	16 : — : —	9·5	Scud; varieties of cirro-strati; sheets of cirri.
15 0	360	45·1	43·9	1·2	0·4	0·1	17	16 : — : —	10·0	Id.; dense cirro-strati; shower since last observation
2	364	46·8	45·3	1·5	0·2	0·0	18	18 : — : —	10·0	Id.; id.
4	428	44·7	44·0	0·7	0·1	0·1	22	— : 24 : —	9·8	Cirro-stratous scud; wavy cirro-strati.
6	495	43·6	41·3	2·3	0·2	0·1	20	— : 25 : —	5·0	Id.
8	539	38·0	36·6	1·4	0·1	0·1	16		0·2	Cirro-strati on horizon; clear.
10	592	35·7	34·9	0·8	0·0	0·0			0·5	Cirri.
18	29·617	35·8	35·5	0·3	0·1	0·0	30	— : 20 : —	9·0	Cirro-cumulo-strati.
20	621	30·7	……	…	0·0	0·0	30		10·0	Dense fog; objects invisible at 200 yards.
22	645	33·0	32·6	0·4	0·0	0·0	22		10·0	Id.; id.; apparently blue sky above
16 0	628	34·6	34·3	0·3	0·0	0·0			10·0	Fog; objects invisible at 300 yards.
2	586	34·0	33·9	0·1	0·0	0·0	20		10·0	Id.; id.
4	575	33·2	33·0	0·2	0·1	0·0	28		10·0	Dense fog; objects invisible at 200 yards.
6	560	31·6	31·4	0·2	0·0	0·0			10·0	Id.; id.
8	564	30·4	30·2	0·2	0·0	0·0			9·8	Fog clearing off a little; one or two bright stars visible
10	573	31·0	30·8	0·2	0·0	0·0	0		10·0	Fog.
18	29·518	33·0	32·4	0·6	0·1	0·0	24		8·0	Scud and cirro-cumulo-strati; slight fog.
20	531	34·3	33·7	0·6	0·0	0·0	30		10·0	Fog; objects invisible at 200 yards.
22	544	37·5	37·1	0·4	0·0	0·0	4		10·0	Id.; objects invisible at 400 yards.
17 0	543	43·6	43·3	0·3	0·1	0·0	4	11 : 11 : —	9·9	Scud; cirro-strati.
2	533	43·9	43·0	0·9	0·1	0·1	16	11 : — : —	10·0	Id.; id.
4	535	43·5	42·3	1·2	0·2	0·0	2		8·5	Id.; id.; cirro-cumulo-strati.
6	538	43·0	42·0	1·0	0·1	0·1			10·0	Dense homogeneous mass of clouds.
8	545	42·9	42·1	0·8	0·4	0·1	6		10·0	Id.
10	550	42·6	41·6	1·0	0·4	0·1	4		10·0	Id.
23½	29·515	41·4	40·3	1·1	0·5	0·1	4	9 : — : —	10·0	Thick scud.
18 18	29·197	39·1	37·9	1·2	0·3	0·2	12		10·0	Scud and cirro-strati.
20	139	39·2	37·9	1·3	0·4	0·8	11	12 : — : —	10·0	Id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. Th motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
	Dry.	Wet.	Diff.	Maximum force in 1^{h}.	Maximum force in 10^{m}.	From			
in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
29·077	42·5	40·1	2·4	1·3	1·5	10	12 : — : —	10·0	Thick scud.
28·999	42·9	41·0	1·9	2·6	0·8	8	10 : — : —	10·0	Id.; dense homogeneous cirro-strati.
901	42·9	41·4	1·5	1·5	0·5	8	9 : — : —	10·0	Id.; id.; rain$^{0·5}$
819	43·4	41·4	2·0	1·2	1·3	8	11 : — : —	10·0	Scud; dense mass of cirro-strati.
759	43·6	42·0	1·6	0·9	0·1	10		10·0	Id.; id.; rain$^{0·5}$
682	43·4	42·5	0·9	0·3	0·2	6		10·0	Dark.
625	43·4	42·9	0·5	0·3	0·3	2		10·0	Id.
28·504	45·2	44·9	0·3	0·2	0·0			10·0	Fog, objects invisible at $\frac{1}{4}$ of a mile.
524	44·7	44·5	0·2	0·0	0·0	8		10·0	Id., id. 200 yards.
570	44·8	43·5	1·3	0·4	0·4	19	21 : — : —	10·0	Scud; homogeneous cirro-stratus; rain$^{0·2}$
605	45·0	43·5	1·5	1·7	1·2	20	23 : — : —	10·0	Thick scud; drops of rain.
679	43·7	41·9	1·8	1·4	0·6	21	23 : — : —	10·0	Id.; rain^{1}
754	43·2	41·5	1·7	2·8	1·5	22	24 : — : —	10·0	Id.; id.
810	43·6	41·9	1·7	1·7	1·4	21		10·0	Id.; rain$^{0·2}$
853	44·9	41·9	3·0	2·5	2·0	21		10·0	Id.
28·894	44·9	41·4	3·5	2·6	2·2	19		10·0	Id.
29·015	38·6	37·2	1·4	2·5	0·5	20		0·2	Cirro-strati on S. horizon. ☽
027	37·5	36·4	1·1	0·6	0·2	21		0·5	Scud and cirro-strati on S. and E. horizon. ☽
029	38·3	36·7	1·6	0·3	0·1	19		0·8	Scud and masses of cirro-strati on horizon. ⊙
031	43·0	41·3	1·7	0·1	0·0	16	— : 22 : 22	7·0	Woolly cirro-strati and cirri; scud on horizon. ⊖
29·019	45·8	43·6	2·2	0·0	0·0	15	— : 21 : —	8·5	Cirro-stratous scud; cirro-strati and cirri.
28·987	43·7	41·8	1·9	0·2	0·1	14	— : 21 : —	9·5	Dense mass of cirro-stratus.
946	39·5	38·4	1·1	0·1	0·0	6		7·0	Cir.-str. and cir.-cum.-str., in bands lying from W. to E.
906	40·0	38·7	1·3	0·0	0·0			10·0	Cirro-strati and cirrous haze.
829	41·9	40·9	1·0	0·1	0·0	12		10·0	Id.
28·498	42·6	42·4	0·2	0·2	0·2	3		10·0	Scud; rain^{1}
502	42·9	42·7	0·2	0·2	0·2	3		10·0	Id.; rain$^{1·5}$
513	43·6	43·2	0·4	0·2	0·1	4		10·0	Clouds homogeneous; drizzling rain$^{0·5}$
568	44·4	44·0	0·4	0·2	0·0	1		10·0	Id.; id.
646	44·2	43·7	0·5	0·2	0·2	30	30 : — : —	10·0	Scud; dense cirro-stratus; rain$^{0·5}$
721	43·8	43·3	0·5	0·2	0·1	22	29 : — : —	10·0	Id.; id.; rain$^{0·2}$
772	43·0	42·5	0·5	0·1	0·0	18		10·0	Scud and dense cirro-stratus.
802	43·2	42·6	0·6	0·0	0·0	22		10·0	Id. [clear about 9^{h}.
802	44·0	43·5	0·5	0·0	0·0	20		10·0	Id.; drizzling rain$^{0·2}$; the sky was partially
28·838	36·0	35·5	0·5	0·1	0·0			1·0	Scud and cirro-strati on horizon. ☽
845	38·3	37·7	0·6	0·1	0·0	30	30 : 30 : —	9·5	Scud and cirro-cumulo-strati. ☽
869	39·5	39·0	0·5	0·0	0·0	20	22 : 22 : —	9·8	Scud and cirro-strati; rain$^{0·2}$
868	47·1	46·4	0·7	0·0	0·0		20 : 20 : —	9·8	Id.
857	47·5	46·2	1·3	0·2	0·1	20	21 : — : —	7·0	Scud; cirro-strati; woolly cirri.
860	44·7	43·5	1·2	0·1	0·0	24	24 : — : —	9·0	Id.; id.
879	43·6	43·0	0·6	0·0	0·0			10·0	Cirro-stratous scud.
900	41·7	41·5	0·2	0·0	0·0			10·0	Scud and cir.-str.; a few stars indistinctly visible.
28·911	41·6	41·4	0·2	0·0	0·0	22		9·7	Scud and cirro-strati; rain$^{0·2}$
29·051	39·0	38·6	0·4	0·1	0·0			10·0	Scud.
098	38·8	38·4	0·4	0·1	0·0	20	— : 29 : —	9·8	Cirro-cumulo-strati.
157	38·0	37·6	0·4	0·0	0·0		— : 29 : —	4·0	Id.; patches of cirri.
204	42·4	41·6	0·8	0·0	0·0		— : 28 : —	9·7	Id.
223	45·7	43·7	2·0	0·0	0·0	22	— : 24 : —	3·5	Cirro-strati and cirro-cumulo-strati. ⊙
237	43·3	41·4	1·9	0·3	0·2	19		1·0	Id. on horizon. ⊙
274	39·8	39·0	0·8	0·1	0·0	26		3·0	Scud.
264	39·4	38·5	0·9	0·0	0·0	24		9·7	Id.
220	38·7	38·3	0·4	0·0	0·0	0		4·0	Cirro-strati and haze.
28·815	50·2	48·0	2·2	3·3	0·4	18	21 : — : —	……	Scud and masses of watery cirro-strati.

he direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The ions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Gött. Mean Time.	BARO-METER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1h.	10m.	From	Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
25 18	28·758	47·6	46·5	1·1	1·6	0·0			10·0	Scud and cirro-strati.
20	756	47·2	45·9	1·3	0·1	0·1	16	18 : — : —	10·0	Id.
22	757	48·1	46·5	1·6	0·1	0·1	17	19 : — : —	7·0	Scud; thin cirri and haze.
26 0	753	50·0	47·7	2·3	0·2	0·1	18	19 : — : —	9·8	Scud and cirro-strati; slight shower.
2	743	50·7	49·2	1·5	0·2	0·1	17	20 : — : —	9·8	Id.; id.
4	754	50·3	48·2	2·1	0·3	0·2	19	19 : — : —	9·8	Scud; cirro-strati and cirri seen above.
6	761	46·4	44·9	1·5	0·3	0·1	16	19 : — : —	9·5	Id.
8	775	46·6	45·5	1·1	0·2	0·1	17		10·0	Scud and cirro-stratus.
10	789	46·4	45·3	1·1	0·2	0·1	16		10·0	Id.
18	28·855	45·0	43·3	1·7	1·0	0·8	17		5·0	Scud; hazy.
20	888	45·8	44·3	1·5	1·0	0·2	18	21 : — : —	10·0	Id.; cirro-strati.
22	28·942	47·6	46·0	1·6	0·6	0·7	17	22 : — : —	9·8	Id.; id.
27 0	29·009	49·7	47·4	2·3	1·4	1·0	19	22 : — : —	8·5	Id.; id.
2	054	50·8	48·0	2·8	1·5	0·6	19	22 : — : —	10·0	Id.; id.; drops of rain.
4	088	47·9	46·5	1·4	1·0	0·6	19	22 : — : 24	5·0	Id.; woolly cirri; cirro-strati.
6	137	47·4	45·7	1·7	0·6	0·7	20	23 : — : —	7·0	Id.
8	181	42·1	40·8	1·3	0·3	0·1	16		0·5	Sheets of cirro-strati and scud.
10	192	43·9	42·8	1·1	0·2	0·2	20		2·0	Cirro-strati and haze.
18	29·055	43·8	41·5	2·3	0·7	0·2	16		10·0	Scud; dark.
20	28·997	42·6	41·2	1·4	1·0	0·2	16		10·0	Id.; dense mass of cirro-stratus; rain^{1}
22	967	43·5	42·2	1·3	1·0	0·5	16	19 : — : —	10·0	Id.; continuous rain$^{2-3}$ [halo.
28 0	966	46·2	44·8	1·4	0·5	0·1	20	20 : — : 18	9·0	Id.; woolly cirri, cirrous haze, and cirro-strati; solar
2	965	48·0	45·2	2·8	1·1	0·4	18	21 : — : —	9·0	Id.; cirro-strati and cirri.
4	974	46·7	43·8	2·9	1·7	0·4	18	20 : — : 19	6·0	Id.; thick woolly cirri; cirro-strati.
6	971	44·6	41·9	2·7	1·8	0·7	18		4·0	Scud and cirro-strati.
8	28·987	42·5	40·4	2·1	1·5	0·6	20		2·0v.	Id.
10	29·007	42·7	40·5	2·2	2·4	0·1	18		5·0	Id.
18	28·950	44·9	41·9	3·0	4·0	3·2	20		8·5	Scud and cirro-strati; stars dim.
20	28·970	45·7	43·0	2·7	4·0	0·8	18	22 : — : —	9·8	Scud.
22	29·003	44·8	44·0	0·8	0·7	0·2	20	20 : — : —	10·0	Scud; dense mass of cirro-stratus; drizzling rain$^{0·5}$
29 0	009	46·7	44·9	1·8	0·8	0·9	17	20 : — : —	9·7	Id.; cirro-strati; cirri.
2	057	47·3	45·2	2·1	0·9	0·1	20	22 : — : —	9·0	Id.; woolly cirri; cirro-strati.
4	101	47·0	44·5	2·5	0·5	0·1	20	22 : — : —	9·8	Id.; mass of cirro-strati.
6	142	45·6	43·7	1·9	0·6	0·1	18	23 : — : —	8·0	Id.
8	198	46·6	43·1	3·5	0·9	0·6	20		2·0	Id.; cirro-strati.
10	272	45·7	42·7	3·0	1·8	0·3	20		2·0	Id.; id.
18	29·463	44·8	42·3	2·5	1·0	0·7	23		10·0	Scud. [especially to E
20	467	42·4	41·4	1·0	1·1	0·2	20		10·0	Scud and cir.-str., cloud tinged red over the whole sky,
22	430	43·6	41·7	1·9	1·0	0·2	17		10·0	Dense cirro-stratus, nearly homogeneous.
30 0	371	46·0	43·6	2·4	1·9	0·6	19	20 : — : —	10·0	Scud; cirro-strati.
2	315	49·3	47·1	2·2	3·8	2·3	18	22 : — : —	10·0	Id.; id.
4	301	50·0	48·2	1·8	4·2	0·9	22	23 : — : —	10·0	Scud; mass of cirro-strati and cirrous haze.
6	334	51·5	46·0	5·5	2·5	2·2	22		9·5	Patches of scud, cirro-strati, and cirrous haze.
8	368	49·6	44·6	5·0	3·2	3·0	21		7·0	Cirro-strati and cirrous haze.
10	406	48·5	43·9	4·6	4·7	1·6	21		9·0	Id.
18	29·400	49·0	47·9	1·1	3·6	0·5	18		10·0	Scud and cirro-strati; rain$^{0·2}$
20	401	50·3	47·8	2·5	1·6	1·0	20	23 : — : —	10·0	Id.
22	362	49·0	47·0	2·0	2·8	1·9	17	20 : — : —	10·0	Scud; dense cirro-stratus.
31 0	317	50·9	48·4	2·5	3·4	2·7	19	21 : — : —	10·0	Id.; id.
2	283	51·0	48·9	2·1	3·4	1·5	21	21 : — : —	10·0	Id.; id.; drops of rain.
4	229	50·7	48·7	2·0	3·3	2·8	20	21 : — : 24	9·8	Loose scud moving rapidly; woolly cirri; cirro-strat
6	197	49·7	48·6	1·1	5·4	2·0	21	21 : — : —	10·0	Scud; rain occasionally since last observation.
8	156	50·3	49·0	1·3	3·2	1·9	18		10·0	Id.; rain$^{0·2}$
10	134	50·3	49·6	0·7	2·2	0·1	19		10·0	Id.; rain^{1}

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
	Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
29·390	44·8	40·5	4·3	3·1	0·6	23	24 : — : —	10·0	Thick scud.
29·378	39·5	37·7	1·8	6·1	0·1	22		3·0	Cirro-strati.
421	37·5	36·4	1·1	0·2	0·1	20		6·0	Id. and woolly cirri.
458	40·4	38·4	2·0	0·5	0·7	26		4·0	Cirri and cir.-str., generally lying N by E. to S by W. ⊙
508	44·3	41·0	3·3	1·2	0·3	26	28 : — : —	0·5	Patches of cumuli and sheets of cirro-strati. ⊙
510	46·3	42·2	4·1	0·9	0·8	23	— : 28 : —	4·0	Cir.-str. and cir.-cum.-str.; masses of cum. on hor. ⊙
540	45·8	42·0	3·8	1·0	0·3	24	24 : — : —	9·8	Scud; mass of cirro-strati.
551	44·9	40·1	4·8	0·3	0·2	20		9·9	Dense cirro-stratus.
562	44·5	41·2	3·3	0·4	0·3	23		10·0	Id.
565	42·9	40·6	2·3	0·4	0·1	18		9·8	Cirro-strati and cirro-cumulo-strati.
29·457	45·9	44·4	1·5	0·8	0·1	17		10·0	Scud and cirro-strati; dark.
422	46·6	45·0	1·6	0·5	0·1	28	21 : — : —	10·0	Scud; cirro-stratus.
389	48·1	47·1	1·0	1·7	0·4	18		10·0	Dense homogeneous mass of clouds.
323	50·4	48·3	2·1	1·1	1·0	18	19 : — : —	9·9	Scud.
247	50·7	48·4	2·3	0·8	0·5	19	20 : — : —	10·0	Id.
138	49·3	46·3	3·0	3·4	3·0	19	20 : — : —	10·0	Id.; mass of cirro-stratus.
026	48·4	46·8	1·6	6·8	3·3	20		10·0	Scud; rain$^{0\cdot5}$; stormy.
119	44·8	42·1	2·7	7·0	1·1	22	25 : — : —	3·0	
206	42·8	39·3	3·5	2·3	2·2	21		2·0	
29·453	35·6	34·7	0·9	2·8	0·8	21		10·0	Scud; rain^{1}
472	33·7	33·5	0·2	0·8	0·2	21		1·5	Id. and cumuli on S. horizon; snow on the ground.
513	36·0	34·9	1·1	0·9	1·1	22	24 : — : —	1·0	Loose scud.
543	39·6	37·4	2·2	0·9	1·2	20	— : 26 : 26	1·0	Woolly cirri and cirro-strati. ⊙
547	42·3	38·6	3·7	1·8	1·0	21		2·0	Scud and loose cumuli; cirri and cirrous haze. ⊙
555	41·8	39·0	2·8	1·7	1·4	20	23 : — : —	8·0	Scud; cirro-strati and cirrous haze.
544	41·6	39·0	2·6	1·5	1·0	20	23 : — : —	8·0	Id.; id. ⚸
550	40·4	38·8	1·6	1·0	0·2	21		10·0	Homogeneous cirro-stratus and cirrous haze. ⚸
543	39·5	37·4	2·1	0·9	0·2	21		7·0	Patches of scud; cir. haze; faint lunar halo and cor. ⚸
29·398	40·4	38·6	1·8	1·0	0·2	21		10·0	Scud and cirro-strati.
383	38·3	37·0	1·3	0·8	0·3	20	24 : — : —	6·0	Cirro-stratous scud; loose scud; cir.-str.; drops of rain.
402	40·6	38·4	2·2	0·5	0·2	19	25 : — : —	7·0	Scud; cirro-strati.
422	43·2	39·0	4·2	1·6	0·9	21	24 : — : 26	2·5	Id.; cirri. ⊙
445	43·3	38·8	4·5	1·6	0·3	25	25 : — : —	4·0	Scud and loose cumuli; linear cirri.
452	43·2	38·9	4·3	···	0·5		25 : — : —	7·0	Cirro-stratous scud; cumuli and linear cirri. ⊙
474	39·0	35·7	3·3	1·0	0·2	22		1·0	Cirro-strati on horizon; scud and cumuli to W. ☽
499	36·2	34·3	1·9	0·8	0·2	17		5·0	Woolly and mottled cirri and cirro-strati. ⚸
492	38·9	35·8	3·1	0·5	0·7	22		9·5	Thin cir.-str. and woolly cirri; portion of a lunar halo
29·526	35·7	33·9	1·8	0·9	0·2	19		0·5	Clouds on S. horizon. [and corona. ⚸
547	35·0	33·5	1·5	0·4	···			4·0	Loose scud; cirri and cirro-strati; hazy.
555	36·3	34·7	1·6	0·1	0·1	16		10·0	Cirro-stratus and cirrous haze; patches of scud.
563	40·8	38·7	2·1	0·9	0·8	18		10·0	Scud; thick cirro-strati and cirro-cumulo-strati.
501	43·2	40·7	2·5	1·0	1·1	19	20 : — : —	10·0	Id.; dense cirro-stratus and haze; rain$^{0\cdot2}$
418	40·7	39·3	1·4	2·5	2·4	19		10·0	Loose scud; id.; rain$^{0\cdot5}$
364	46·1	44·0	2·1	2·1	0·9	20	23 : — : —	10·0	Scud; cirro-strati.
331	46·5	44·5	2·0	1·8	0·5	20		10·0	Scud and loose cumuli; cirro-strati; drops of rain.
295	46·3	44·6	1·7	1·4	1·5	19		10·0	Id.; id.; id.
29·105	44·4	40·4	4·0	7·6	4·5	20		2·0	Cloud on horizon. [showers; wind in gusts.
064	43·0	39·6	3·4	7·5	5·9	24	·24 : — : —	9·9	Scud; cum. and cir.-str. on S. and E. hor.; frequent
108	43·0	40·3	2·7	8·2	3·3	25	24 : — : —	10·0	Loose scud; rain$^{1-3}$; very stormy.
156	44·0	41·1	2·9	5·7	2·7	26	25 : — : —	10·0	Scud; the sky has been partially clear occasionally since
152	45·4	41·9	3·5	5·5	2·2	24	26 : — : 25	4·0	Scud; woolly cirri. ⊙ [23h; drops of rain.
222	45·3	41·0	4·3	5·5	4·0	24	— : 25 : —	9·0	Cirro-stratous scud; cirro-strati and cirrous haze. ⊙
412	40·0	38·3	1·7	5·0	1·5	28		10·0	Nearly homogeneous; cir.-str. and scud; drops of rain.
522	39·4	37·2	2·2	0·9	0·4	28	28 : — : —	4·0	Scud; slight showers occasionally. ⚸

T direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The ot s of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

F . 2d 5h. Dense cirro-stratus moved up from about NW., in large regular waves, lying ENE. to WSW.

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
7 10	29·588	36·0	34·0	2·0	1·1	0·0	20		2·5	Cirro-strati.
23	29·719	36·0	32·0	4·0	2·2	1·2	28		0·5	A few cirro-strati on horizon.
8 18	30·022	35·6	34·0	1·6	3·1	0·6	31		9·9	Scud.
20	039	34·5	32·6	1·9	0·7	1·0	31	2 : — : —	2·5	Id.; cumuli on horizon; nimbi on E. horizon.
22	076	36·0	33·0	3·0	2·0	1·0	30	— : 0 : —	9·5	Cirro-stratous scud; shower of snow to E.?
9 0	105	37·0	33·8	3·2	2·3	1·3	31	— : 0 : —	10·0	Id.; heavy shower of snow about 22h 40m
2	110	33·6	32·7	0·9	1·7	0·7	0		8·0	Snowing heavily since 1h, just ceasing, clouds clearing
4	121	35·0	33·5	1·5	2·5	1·6	1		10·0	Scud; hail. [off from N
6	132	33·2	32·6	0·6	2·6	0·4	31		3·0	Scud, nimbi, cum., and cir.-str.; snowing heavily till 5h.
8	163	31·8	31·0	0·8	1·0	0·1	30	2 : — : —	2·0	Scud and loose cumuli; snow about 7h.
10	186	29·3	28·6	0·7	0·1	0·0	4		2·0	Id.
18	30·238	26·3	26·3	...	0·0	0·0	24		4·0	Scud and cir.-cum.-strati; occasionally a few flakes of
20	254	25·8	25·6	0·2	0·0	0·0	24		10·0	Homogeneous; slight snow. [snow
22	268	29·2	29·4	...	0·0	0·0			9·8	Id.; fog to N., objects invisible at ½ a-mile dis
10 0	268	35·0	32·7	2·3	0·0	0·0	22		9·8	Cir.-str. and cir.; foggy. [tance; snow 4¼ in. deep.
2	235	35·3	34·0	1·3	0·0	0·0			9·8	Woolly cirri, cirro-strati, and cirrous haze.
4	204	34·0	32·7	1·3	0·1	0·0			10·0	Cirro-strati and cirrous haze.
6	172	30·4	29·2	1·2	0·1	0·0	18		10·0	Id.
8	122	33·0	31·3	1·7	0·1	0·1	20		10·0	Homogeneous mass.
10	090	33·7	31·8	1·9	0·5	0·2	24		7·0	Cirro-strati and cirrous haze; lunar corona.
18	29·893	37·5	35·6	1·9	1·5	0·2	24		2·5	Scud; cirro-strati.
20	876	37·2	35·7	1·5	0·1	0·0	20	30 : — : —	5·0	Id.; id. [and cum.-strati on E. ho
22	887	40·0	37·4	2·6	0·3	0·2	28		9·0	Dense mass of cirro-str.; streaks of cirri to E.; cir.-st
11 0	896	41·5	38·7	2·8	0·4	0·3	28	— : — : 29	8·5	Woolly cirri; cir.-str. and cir. haze; a few patches
2	896	43·8	40·0	3·8	0·5	0·1	25		9·5	Thick mass of cirro-stratus. ● [scud on hor.
4	888	42·1	38·7	3·4	0·1	0·0	24	— : — : 0	10·0	Woolly cirri and cirro-strati.
6	886	37·9	35·6	2·3	0·0	0·0	26	— : 0 : —	6·0	Cirro-cumulo-strati; cirro-strati and cirrous haze.
8	882	40·0	37·3	2·7	0·1	0·1	21		10·0	Id.; id.
10	884	39·8	38·1	1·7	0·0	0·0	20		10·0	Thick mass of cirro-stratus.
18	29·901	35·2	34·6	0·6	0·1	0·0	24		2·0	Cirro-strati and cirri.
20	896	30·3	30·0	0·3	0·0	0·0	16		3·0	Haze and cirro-strati.
22	914	36·8	35·8	1·0	0·1	0·1	22	— : 0 : —	9·8	Cir.-cum.-str. and thick woolly cir.; cir.-str.; haze.
12 0	926	41·3	39·0	2·3	0·2	0·2	21		2·0	Cirro-strati, woolly cirri, and cirrous haze.
2	930	45·5	42·0	3·5	0·2	0·1	19		3·0	Id.; cumuli.
4	891	46·9	42·6	4·3	0·2	0·1	24		5·0	Woolly cirri and cirrous haze; cumuli.
6	884	43·7	40·4	3·3	0·2	0·1	20	25 : — : —	6·5	Scud and loose cum.; cir.-str., woolly cirri, and cirro
8	880	42·3	39·8	2·5	0·1	0·1	20		10·0	Mass of cirro-stratus. [haze; clouds tinged r
10	873	40·9	38·8	2·1	0·1	0·1	26		10·0	Large cirro-cumulo-strati.
18	29·843	36·0	34·6	1·4	0·1	0·0	22		0·5	Patches of cirro-stratus.
20	858	36·1	34·6	1·5	0·2	0·0	24	31 : — : —	7·0	Scud; patches of cirro-strati and streaks of cirri.
22	863	39·3	37·7	1·6	0·2	0·1	21		3·0	Cirri; cirro-strati; patches of scud.
13 0	874	43·7	41·5	2·2	0·8	0·2	24		2·0	Scud, cirro-strati, and haze on horizon.
2	869	47·3	43·3	4·0	0·3	0·1	24	29 : — : —	3·0	Loose cumuli and cumulo-strati; cirro-str. and haz
4	865	47·0	43·2	3·8	0·3	0·4	26	28 : — : —	3·0	Id.; bands of cir.-str. to NE.; loose sc
6	861	44·1	40·6	3·5	0·3	0·1	26		2·0	As before; clouds tinged red. [cirrous haz
8	863	40·6	38·2	2·4	0·2	0·1	26		1·0	Cirro-strati to NE.
10	850	40·8	38·6	2·2	0·2	0·2	25		3·5	Woolly cirri and cirrous haze.
18	29·850	41·2	38·3	2·9	0·4	0·2	28		10·0	Cirro-stratous scud.
20	864	41·0	38·6	2·4	0·2	0·0	24	— : 30 : —	10·0	Id.
22	897	43·2	39·5	3·7	0·1	0·2	27	— : 31 : —	9·9	Id.
14 0	928	45·3	41·6	3·7	0·3	0·1	29	— : 0 : —	10·0	Id.
2	957	45·7	41·3	4·4	0·4	0·1	28	— : 0 : —	9·9	Id.; bands of cir.-str. to NE.; cum. to
4	958	45·5	41·7	3·8	0·1	0·0	24	— : 31 : —	8·0	Cirro-cumuli. [haze on
6	978	43·5	40·4	3·1	0·1	0·0	22	— : 31 : —	9·9	Id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. T motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Feb. 9d 18h. Observation made at 18h 9m.

Feb. 13d 18h. Observation made at 18h 6m.

BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
	Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m	From			
in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
29·986	43·2	39·8	3·4	0·1	0·1	24		10·0	Scud and cirro-stratus.
29·993	43·2	39·8	3·4	0·2	0·1	26		10·0	Scud.
29·996	44·8	41·8	3·0	0·4	0·1	20		3·0	Masses of scud and loose cumuli; cirro-strati.
29·941	45·6	42·5	3·1	1·5	0·6	26		10·0	Thick cirro-stratus.
29·959	45·0	42·3	2·7	0·8	0·1	20		10·0	Id.
29·973	46·7	43·7	3·0	0·3	0·1	22	— : 0 : —	9·5	Cirro-stratous scud; scud lying on Cheviot.
30·001	47·8	44·3	3·5	0·2	0·1	18	— : 30 : —	9·8	Cirro-strati; patches of scud.
30·013	48·6	44·4	4·2	0·1	0·1	23		9·8	Wavy cirro-strati.
29·992	49·3	45·4	3·9	0·1	0·0	23	— : 28 : —	9·5	Cirro-cumulo-strati.
986	44·0	41·8	2·2	0·0	0·0	20	— : 28 : —	5·0	Id.; cirro-strati; haze.
994	42·6	41·2	1·4	0·0	0·0	10		10·0	Dark.
996	42·9	41·4	1·5	0·0	0·0	0		10·0	Id.
29·956	40·7	39·4	1·3	0·1	0·0	18		9·8	Scud and cirro-strati.
942	41·7	39·3	2·4	0·0	0·0	24	— : 24 : —	9·5	Id.
941	43·5	41·0	2·5	0·1	0·0		— : 25 : —	8·5	Cirro-stratous scud; woolly cirri; patches of scud.
910	47·0	42·2	4·8	0·5	0·3	28	29 : — : —	9·0	Scud and cirro-stratous scud; cumuli and cirri.
880	46·7	42·0	4·7	0·4	0·4	30		9·9	Id.; cirro-strati.
866	46·5	42·4	4·1	0·3	0·1	28	28 : — : —	9·8	Id.; slight shower to E.
847	44·5	41·5	3·0	0·1	0·1	25	— : 29 : —	10·0	Dense mass of wavy cirro-strati.
836	43·2	40·2	3·0	0·1	0·0	23		4·0	Cirro-strati; clear in zenith.
830	42·2	39·8	2·4	0·0	0·0	21		10·0	Id.; dark.
29·776	39·7	37·5	2·2	0·1	0·0	24		9·5	Cirro-stratous scud.
790	40·0	37·9	2·1	0·1	0·0	24	— : 0 : —	10·0	Id.
797	42·0	39·9	2·1	0·1	0·0	18	— : 0 : —	10·0	Id.
809	45·5	41·8	3·7	0·0	0·0	22	— : 0 : —	10·0	Id.
800	49·2	44·3	4·9	0·1	0·0	22	— : 0 : —	9·5	Id.
788	48·5	43·4	5·1	0·1	0·0			9·5	Id.
793	45·0	41·2	3·8	0·1	0·1	21	— : 28 : —	8·5	Id.; clouds tinged red to N.
788	43·9	40·8	3·1	0·1	0·1	23		10·0	Id.; dark.
787	42·1	40·0	2·1	0·1	0·0	21		10·0	Id.; id.
717	41·0	38·6	2·4	0·2	0·1	19		9·9	Cirro-stratous scud; clouds broken.
729	41·0	38·2	2·8	0·2	0·1	19		10·0	Dense mass of cirro-strati.
735	42·9	40·0	2·9	0·0	0·0	24	— : 0 : —	10·0	Cirro-stratous scud.
748	46·0	41·8	4·2	0·0	0·0		— : 30 : —	10·0	Id.
747	45·1	41·6	3·5	0·1	0·1	18		10·0	Id.
749	43·6	40·4	3·2	0·2	0·1	24		10·0	Id.
754	42·5	39·6	2·9	0·1	0·0	0	28 : — : —	10·0	Thick scud; dense cirro-stratous scud and cir.-str. above.
769	41·9	39·1	2·8	0·0	0·0			10·0	Dark.
786	41·9	39·2	2·7	0·0	0·0	20		10·0	Id.
29·796	39·3	37·6	1·7	0·0	0·0			10·0	Dense cirro-stratous scud and cirro-strati.
801	39·0	37·1	1·9	0·0	0·0	16		10·0	Id.
804	39·8	37·9	1·9	0·1	0·0	20		10·0	Id.
806	41·7	39·2	2·5	0·1	0·0	18	— : 24 : —	10·0	Id.
769	44·5	40·3	4·2	0·1	0·0	16		10·0	Id.
750	44·8	40·0	4·8	0·1	0·0	16	— : 24 : —	10·0	Dense cirro-stratus and scud.
754	43·4	40·0	3·4	0·1	0·0	18		10·0	Id.
747	42·8	40·3	2·5	0·1	0·0	22		10·0	Id.; dark.
739	42·3	40·4	1·9	0·0	0·0			10·0	Id.; id.
29·684	46·6	45·4	1·2	0·2	0·2	16		10·0	Densely overcast; some rain has fallen during the night.
681	46·9	45·6	1·3	0·4	0·1	17	20 : — : —	10·0	Thick scud and cirro-stratus.
655	50·3	48·4	1·9	2·2	2·5	19	19 : — : —	9·8	Scud; cirro-strati and woolly cirri.
670	50·6	48·7	1·9	3·1	1·4	18	19 : — : —	10·0	Id.; dense mass of cirro-stratus; slight drizzle.
640	52·4	49·4	3·0	3·0	1·4	19	21 : — : —	10·0	Id.; id.
648	51·3	48·4	2·9	2·8	1·4	19	20 : — : 23	9·0	Id.; woolly, linear, and diffuse cirri; cirrous haze.

e direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The ns of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1^h.	10^m.	From			
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt pt.	0—10.	
21 6	29·703	48·5	46·9	1·6	1·4	0·9	20	21 : — : —	10·0	Scud ; mass of cirro-stratus.
8	713	47·6	46·0	1·6	1·7	0·2	19		9·5	Id. ; clouds broken.
10	697	45·8	44·1	1·7	0·2	0·3	19		8·0	Id. ; cirro-strati and haze ; stars dim.
23¼	29·380	52·3	49·4	2·9	3·6	3·1	16			Scud and cirro-stratus. At 3^h, the maximum pressure of the wind was 9·2 lb. ; and at 7^h, it was 11·0 lb.
22 18	29·363	51·1	48·9	2·2	11·0	0·6	20		10·0	Very slight drizzle.
20	372	51·0	48·7	2·3	1·8	0·1	18	19 : — : —	10·0	Thick scud and cirro-stratus.
22	383	51·1	48·9	2·2	0·3	0·2	22	20 : — : —	10·0	Scud ; cirro-strati above.
23 0	396	51·3	49·0	2·3	1·2	1·1	20	20 : 20 : —	9·0	Id. ; cirro-cumulo-strati and cirro-strati.
2	402	52·6	49·8	2·8	1·4	0·6	19	20 : — : —	9·8	Scud and loose cumuli ; cirro-strati.
4	390	52·3	49·5	2·8	1·1	0·3	20	20 : — : —	8·0	Id.
6	399	50·8	48·9	1·9	0·7	0·2	18	20 : — : —	9·9	Id. ; cirro-strati.
8	396	50·2	48·5	1·7	0·2	0·2	18		10·0	Scud ; a few drops of rain.
10	366	48·2	47·3	0·9	0·1	0·0	20		10·0	Id.
18	29·169	50·2	49·2	1·0	1·7	0·1	18		9·8	Scud.
20	160	48·9	47·6	1·3	0·1	0·1	20	17 : — : —	10·0	Id. ; woolly cirri and cirro-strati.
22	110	53·5	50·6	2·9	0·6	0·4	20	16 : — : —	10·0	Id. ; woolly cirri.
24 0	063	54·0	51·9	2·1	2·3	1·9	20	18 : — : —	10·0	Id. ; id. ; passing showers.
2	077	54·2	52·2	2·0	2·4	1·7	18	17 : — : —	9·0	Scud and loose cum. ; woolly cirri ; showers$^{5-2}$ since las
4	073	54·2	49·5	4·7	3·7	1·9	18	18 : — : 20	9·8	Scud ; woolly cirri and cirro-strati. [observation
6	069	50·4	47·5	2·9	2·4	0·1	18	18 : — : 18	7·5	Id. ; woolly cirri ; cirro-strati.
8	29·052	50·8	48·2	2·6	0·1	0·1	20		10·0	Id. ; dark ; rain^{1}
10	28·974	53·0	51·4	1·6	2·0	1·0	14		10·0	Id. ; id. ; rain$^{0·5}$
18	28·880	49·8	46·6	3·2	2·8	1·2	17		10·0	Scud and cir.-str. ; occasionally a few drops of rain.
20	880	48·1	46·6	1·5	1·9	0·5	17	17 : — : —	9·5	Scud ; cirro-strati.
22	863	49·5	48·2	1·3	2·9	1·6	17	18 : — : —	10·0	Id. ; id.
25 0	28·931	51·7	49·2	2·5	3·8	2·1	18	20 : — : —	9·9	Id. ; id. ; cirri.
2	29·014	51·4	48·6	2·8	2·2	1·2	20	21 : — : —	10·0	Scud and loose cumuli ; cirri and cirro-strati.
4	076	51·2	48·3	2·9	2·6	1·4	20	20 : — : —	10·0	Scud ; cirro-strati ; rain$^{0·5}$
6	157	48·8	47·2	1·6	0·9	0·7	20	22 : — : —	10·0	Id. ; id. ; rain^{3}
8	252	45·0	42·3	2·7	1·8	0·4	20		10·0	Id. ; id. [tremity of an auroral arc
10	295	43·8	42·0	1·8	1·3	0·8	18		0·5	Patches of scud ; long streak of cir.-str. from the E. ex
18	29·386	43·3	41·9	1·4	1·0	0·0	18		9·9	Scud and cirro-strati.
20	380	43·3	41·2	2·1	0·1	0·1	20	20 : 20 : —	9·7	Id.
22	381	47·2	44·0	3·2	0·2	0·4	18	20 : 20 : —	9·0	Id. ; woolly cirri.
26 0	368	51·7	48·1	3·6	1·5	2·1	17	20 : 18 : —	9·5	Scud ; cirro-strati ; drops of rain ; rainbow.
2	366	53·8	49·8	4·0	2·1	0·6	18	19 : — : —	9·5	Scud and loose cumuli.
4	327	54·8	50·6	4·2	1·7	0·6	18	— : 19 : 21	6·0	Cir.-str. scud ; woolly cirri ; cir.-str. ; patches of scud.
6	284	51·5	47·9	3·6	1·8	1·7	16	— : 20 : 20	9·9	Thick woolly cirri and cir.-str. ; cir.-str. ; drops of rain
8	281	50·7	48·2	2·5	1·4	0·8	15		10·0	Scud ; dark ; rain^{1}
10	286	50·9	48·7	2·2	1·2	0·2	15		8·5	Id.
18	29·262	49·2	47·0	2·2	2·6	0·3	16		3·0	Masses of scud and cirro-strati.
20	294	51·2	48·3	2·9	0·8	0·3	18	20 : — : —	7·5	Scud.
22	331	51·3	48·7	2·6	0·6	0·1	16	20 : — : 18	9·5	Id. ; thick woolly cirri ; cirro-strati.
27 0	367	55·2	50·8	4·4	0·4	0·1	16	20 : — : —	10·0	Id. ; dense mass of cirro-stratus and haze.
2	374	57·5	52·6	4·9	0·2	0·1	16		10·0	Thick mass of cirro-stratus ; patches of scud.
4	383	54·7	50·6	4·1	0·1	0·0	16	17 : 17 : —	9·5	Scud and dense homogeneous cir.-str. ; sky to NW.
6	379	51·0	49·0	2·0	0·7	0·1	24	— : 17 : —	9·8	Cir.-str. scud ; wavy cirro-strati ; shower 15^m since.
8	388	50·0	47·3	2·7	0·2	0·1	16		10·0	Scud and cirro-strati.
10	382	48·5	47·2	1·3	0·0	0·0			6·0	Id.
18	29·359	45·9	45·2	0·7	0·0	0·0	19		0·5	Cirro-strati on horizon.
20	366	45·0	44·3	0·7	0·0	0·0	18	17 : — : 18	4·0	Scud ; woolly cirri.
22	382	50·0	48·4	1·6	0·0	0·0	19	— : 17 : —	8·5	Cir.-cum.-str. and cir.-str. ; cum.-str. on E. horizon.
28 0	392	56·6	53·2	3·4	0·0	0·0	18	19 : — : —	10·0	Scud ; cirro-strati ; cumuli and cumulo-strati.
2	393	55·2	52·0	3·2	0·4	0·5	16	20 : — : —	10·0	Id. ; mass of cirro-stratus.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
	Dry.	Wet.	Diff.	Maximum force in 1h.	10m.	From			
in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
29·417	51·2	47·4	3·8	1·1	1·0	20	20 : — : —	9·7	Masses of ragged scud; dense homogeneous cir.-str.; sky
462	50·0	47·3	2·7	1·1	0·1	24	21 : — : —	10·0	Scud; cirro-strati. [on W. horizon.
490	48·7	46·8	1·9	0·5	0·2	22		8·5	Id.; id.; sky in zenith.
518	48·4	46·8	1·6	1·0	0·1	22		10·0	Id.; id.
29·633	49·6	46·5	3·1	1·7	0·3	19	19 : — : —	10·0	Scud and cirro-strati.
29·387	48·8	45·9	2·9	2·8	2·0	20		9·8	Scud.
445	46·1	43·9	2·2	3·2	0·6	20	20 : — : —	4·0	Id.
464	47·7	44·2	3·5	2·6	1·6	20	22 : — : —	3·6	Scud and loose cumuli; cirro-strati. ⊙
497	50·7	46·2	4·5	1·2	0·8	18	21 : — : —	2·5	Id.; id. ⊙
483	52·3	46·7	5·6	1·7	0·2	17	19 : — : —	9·0	Id.; woolly cirri; mass of cir.-str.
423	50·3	45·2	5·1	1·1	0·2	16		9·9	Nearly homogeneous mass of cirro-stratus.
370	47·2	43·6	3·6	2·6	1·7	17	18 : — : 17	8·0	Smoky scud; woolly cir.; sheets of cir.-str.; cum.-str. on S. hor.; cir.
326	45·9	43·2	2·7	1·5	2·3	16	18 : — : —	8·0	Scud; cir-str. ☽ [haze; clouds tinged yellow; sky stormy-looking.
298	45·4	43·3	2·1	1·6	1·4	18		10·0	Id.; id.; rain^1)
29·245	43·0	41·6	1·4	2·2	1·5	17		10·0	Scud; rain$^{0·5}$
219	45·0	43·4	1·6	2·8	0·9	16	18 : — : —	10·0	Loose scud; homogeneous mass of cirro-stratus; rain^1
198	49·4	48·5	0·9	2·7	1·3	18	19 : — : —	10·0	Scud; dense mass of cirro-stratus; rain^1
193	51·7	50·1	1·6	1·6	0·5	18	19 : — : —	10·0	Id.; id.; rain$^{0.2}$
160	52·4	50·1	2·3	3·3	2·2	18	19 : — : —	10·0	Id.; id.
141	52·3	50·0	2·3	3·2	3·8	18	18 : — : —	10·0	Id.; id.; rain$^{0.5}$
128	50·8	49·1	1·7	2·4	0·8	16	18 : — : —	10·0	Id.; id.; id.
100	50·6	48·8	1·8	2·8	1·4	19		10·0	Id.; id.; id.
29·052	50·7	49·0	1·7	2·6	1·8	17		10·0	Id.; id.; id.
28·740	50·3	47·6	2·7	8·4	4·1	16		10·0	Scud and cirro-strati.
708	49·5	47·5	2·0	5·8	2·3	17	18 : — : —	9·7	Scud; rain$^{0·5—2}$; stormy.
705	49·8	44·8	5·0	10·7	9·4	16	19 : — : —	9·0	Id. and loose cumuli. ⊙
787	49·3	44·9	4·4	10·5	4·2	18	20 : 20 : —	8·5	Scud; cirro-stratous scud. ⊖
824	48·3	44·0	4·3	8·0	0·2	18	21 : — : —	8·5	Scud and loose cumuli.
940	48·4	44·0	4·4	3·1	1·6	19	20 : — : —	3·0	Id.; streaks of cirri. ⊙
28·998	44·4	42·0	2·4	2·1	0·4	19	20 : — : —	4·0	Id.; id.; cum. to N.
29·042	43·7	41·4	2·3	0·5	0·6	19		4·0	Scud. ☽
082	43·0	41·6	1·4	0·4	0·1	18	20 : — : —	6·0	Id. ⊁
29·148	38·7	38·2	0·5	0·5	0·0	17		2·5	Scud.
176	41·1	40·3	0·8	0·0	0·0	20	21 : — : —	7·0	Id. ⊙
197	45·3	43·2	2·1	0·1	0·1	19	19 : — : —	8·0	Id.; cirro-strati.
216	47·5	44·2	3·3	0·7	0·4	21	22 : — : —	4·5	Id.; cumuli and cumulo-strati; nimbi to E. ⊙
215	49·5	43·2	6·3	1·0	0·2	20	20 : — : —	2·5	Loose cum.; piles of cum.; cum.-str.; nimbi on S. hor. ⊙
238	49·3	43·4	5·9	0·9	0·3	20	22 : — : —	2·0	Cumuli; streaks of cirro-strati.
254	44·5	41·2	3·3	0·4	0·1	20		0·2	Scud and cumuli on N. horizon; streaks of cirri. ⊙
280	40·0	37·8	2·2	0·2	0·1	22		0·0	Quite clear. ☽
293	35·8	35·0	0·8	0·0	0·0	20		0·2	Cirri to W. ☽
29·256	32·8	32·5	0·3	0·0	0·0	24		10·0	Cirro-strati; fog. [hoar-frost.
272	32·6	32·4	0·2	0·0	0·0	22		10·0	Id.; id.; objects visible at 40 yards; much
278	36·0	35·6	0·4	0·0	0·0	22	— : 20 : —	9·9	Cir.-str. scud; mass of cir.-str. and woolly cir.; cum.-str. and haze on
291	43·6	42·2	1·4	0·0	0·0	20	— : 21 : —	7·0	Cir.-cum.-str. and woolly cir.; cum.-str. and cir. haze. ⊖ [E. hor. ●
282	48·0	42·7	5·3	0·4	0·4	21		1·5	Cumuli and cumulo-strati on horizon; cirri to W. ⊙
284	46·2	41·8	4·4	0·7	0·2	19	21 : — : —	9·5	Thick scud; cirro-strati.
268	43·4	41·2	2·2	0·6	0·2	17	20 : — : —	9·8	Id.; id.
252	41·2	40·0	1·2	0·6	0·1	17	20 : — : —	9·0	Scud and cirro-cumulo-strati; cirro-strati. ⊁
222	41·0	40·0	1·0	0·1	0·3	18		10·0	Scud; rain^2
29·275	39·4	37·5	1·9	1·2	0·3	22		8·0	Scud and cirro-strati.
315	36·8	35·7	1·1	0·3	0·0	20	24 : 28 : 28	3·0	Scud; sheets of cirro-strati and woolly cirri. ⊖
342	42·0	39·0	3·0	0·7	0·5	21	24 : — : —	3·0	Scud; woolly cirri and cirro-strati. ⊙
357	46·4	41·5	4·9	1·4	0·7	19	24 : — : —	6·0	Scud and loose cumuli; woolly cirri. ⊙

The irection of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The tio of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Ma 2d 4h 40m. The clouds were marked with hollows and hanging fragments; heavy gusts of wind and drops of rain.

Ma 3d 2h. Observations made at 2h 10m.

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1^h.	10^m.	From			
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
7 2	29·369	48·5	43·7	4·8	1·1	0·7	22	25 : — : —	7·0	Scud and loose cumuli ; woolly cirri.
4	396	46·1	41·7	4·4	0·8	0·9	25	26 : — : —	8·5	Loose cum. and cum.-str. ; sheets of cir.-str. ; cum.-str.
6	438	43·2	39·8	3·4	1·3	0·1	21		3·0	Bank of cirro-strati and nimbi to W. ; cum.-str. to N.
8	486	39·7	37·0	2·7	0·8	0·2	24		0·5	Cirro-strati on E. horizon.
10	522	36·3	35·0	1·3	0·2	0·0	20		0·1	Haze on E. horizon.
23½	29·625	44·2	40·0	4·2	0·3	0·1	20	28 : — : 28	0·5	Patches of scud ; sheets of cirri.
8 18	29·852	29·2	29·2	...	0·6	0·0	18		0·2	Cirri and cirro-strati on E. horizon.
20	906	32·0	31·5	0·5	0·0	0·0	20	22 : — : —	7·0	Scud and cirro-stratus.
22	930	40·0	38·7	1·3	0·0	0·0	22	— : 25 : —	7·0	Loose cirro-cumulo-stratus.
9 0	945	45·8	43·0	2·8	0·2	0·1	20	22 : — : —	10·0	Scud ; rain$^{0\cdot5}$
2	947	46·6	43·6	3·0	0·4	0·2	20	22 : — : —	9·7	Id. ; cirro-strati.
4	944	48·7	45·2	3·5	0·1	0·0	20	26 : — : —	9·9	Thick smoky scud ; cumuli ; cirro-strati.
6	29·969	47·0	43·5	3·5	0·3	0·0	26	26 : 30 : —	7·0	Scud ; cirro-cumuli.
8	30·012	44·1	41·5	2·6	0·1	0·1	25		7·0	Cirri and cirro-strati ; faint traces of a halo.
10	044	42·1	40·3	1·8	0·1	0·0	20	— : 30 : —	8·0	Cirro-cumulo-stratus.
18	30·087	42·0	40·0	2·0	0·2	0·1	18		9·5	Scud and cirro-strati.
20	091	42·3	40·2	2·1	0·3	0·2	16	— : 24 : —	9·5	Dense mass of wavy cirro-strati and cirro-cum.-strati.
22	089	46·3	43·2	3·1	0·7	0·4	20	— : 26 : —	7·0	Cir.-cum.-str., moving very slowly; sheets of cir.-str. and woolly c
10 0	084	50·2	46·0	4·2	1·4	0·9	20	— : 24 : —	6·0	Cir.-cum.-str., cir.-str. & cir. haze; patches of scud; portion of a halo.
2	064	51·3	46·4	4·9	1·7	1·3	22	23 : — : —	9·5	Masses of scud and loose cum. ; cir.-cum.-str. ; cir. haz
4	056	49·2	44·6	4·6	2·5	1·3	20	20 : — : —	10·0	Loose scud ; sheets of cirro-strati.
6	029	47·0	43·6	3·4	1·1	0·2	22	20 : — : —	10·0	Patches of scud ; dense cirro-stratus and haze.
8	30·016	44·6	42·1	2·5	0·5	0·2	23		10·0	Loose scud, cir.-str., and haze ; fine coloured lunar c
10	29·992	46·3	43·4	2·9	1·0	1·1	22		10·0	Thick scud. [at 7^h 30^m
18	30·070	45·0	44·0	1·0	1·6	0·0	20		10·0	Scud and cirro-strati ; rain^1
20	144	45·0	44·2	0·8	0·0	0·0	22		10·0	Cirro-stratous scud and cirro-stratus. [from N by
22	217	46·5	45·6	0·9	0·6	0·0	4	— : 0 : —	9·8	Cir.-cum.-str. ; patches of loose ragged cum. on hor. ; shower since
11 0	286	48·6	44·4	4·2	0·8	0·3	4	5 : 0 : —	9·5	Scud and loose cumuli ; cirro-cumulo-strati.
2	303	48·5	44·2	4·3	0·2	0·0	4	8 : — : —	4·0	Id.
4	332	48·5	44·0	4·5	0·2	0·1	7	— : — : 28	4·5	Woolly and mottled cirri ; cirro-strati.
6	345	46·3	42·6	3·7	0·0	0·0	14		0·5	Cirro-cumulo strati on horizon ; thin cirri over the s
8	352	39·5	38·1	1·4	0·0	0·0	18		0·3	Thin cir. and cir. haze to eastward ; very faint lun. hal
10	380	35·5	34·9	0·6	0·0	0·0	20		0·0	Clear.
18	30·347	41·7	40·7	1·0	0·0	0·0			10·0	Cirro-stratus.
20	341	46·0	44·8	1·2	0·1	0·1	20	21 : — : —	10·0	Cirro-stratous scud ; mass of cirro-stratus and haze.
22	332	48·1	46·3	1·8	0·4	0·4	20	21 : — : —	10·0	Loose scud ; dense mass of clouds ; slight fog.
12 0	307	52·0	48·3	3·7	0·7	0·4	19	20 : — : —	10·0	Scud ; dense cirro-strati ; hazy.
2	261	52·6	47·4	5·2	1·7	1·1	19	20 : — : —	5·0	Scud and loose cumuli ; hazy.
4	225	50·4	46·4	4·0	2·1	1·2	19	20 : — : —	8·5	Id. id. ; cirro-strati.
6	195	47·8	44·8	3·0	2·4	1·1	19	21 : 24 : 24	4·0	Masses of scud ; woolly cirri and sheets of cirro-str
8	165	45·0	43·1	1·9	3·0	2·1	20		4·0	Id. ; woolly cir. ; paraselene to the north of
10	149	47·1	45·0	2·1	2·3	1·5	19		9·5	Thick scud and loose cumuli. [moon ; broken hal
18	29·996	46·7	44·2	2·5	3·4	0·4	18		9·5	Scud and cirro-strati.
20	979	45·4	44·4	1·0	1·3	0·7	18		10·0	Patches of scud ; homogeneous mass ; rain$^{0\cdot5}$
22	950	47·0	45·1	1·9	2·5	0·8	20	22 : — : —	10·0	Loose scud ; dense cirro-stratus.
13 0	920	52·6	47·9	4·7	2·2	2·0	20	23 : — : —	8·0	Scud and loose cumuli.
2	919	52·9	46·7	6·2	3·7	2·8	21	24 : — : —	4·0	Id.
4	906	52·2	45·5	6·7	3·7	3·0	23	24 : — : —	8·5	Id. ; woolly cirri and cirro-strati.
6	911	47·3	42·3	5·0	3·1	1·3	21	24 : 28 : 28	8·0	Scud ; woolly cirri and cirro-strati.
8	915	45·4	41·4	4·0	1·3	0·4	22		8·0	Cirro-strati and cirrous haze.
10	907	44·5	40·2	4 3	0·3	0·2	19		9·5	Thick scud, cirro-strati, and woolly cirri.
18	29·626	44·3	42·3	2·0	2·5	2·5	19		10·0	Homogeneous mass ; rain^1
20	522	45·6	44·8	0·8	2·8	1·6	20	22 : 24 : —	10·0	Loose scud ; cirro-str. scud ; cir.-str. and cirrous m
22	458	53·1	50·0	3·1	2·5	3·0	23	24 : — : —	10·0	Thick scud.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. T motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Mar. 7^d 3^h. Great piles of cumulo-strati and nimbi ; also masses of nimbus having the appearance of flames, with occasionally small d streaks of cirro-stratus below.

Mar. 11. Humble-bee seen.

BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
	Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
29·510	52·0	47·0	5·0	4·1	2·0	24	25 : — : —	9·7	Scud and loose cumuli; woolly cirri and cirro-strati.
565	51·1	45·6	5·5	3·0	0·8	22	25 : 26 : 26	8·5	Id.; id.
568	49·8	43·4	6·4	3·1	2·6	23	25 : 25 : 25	6·0	Id.; woolly cirri; cirro-strati; cum.
593	46·2	41·2	5·0	3·1	0·5	25	25 : — : —	2·5	Masses of scud and loose cum.; woolly and mottled cirri.
628	43·0	38·4	4·6	1·3	1·2	20		3·5	Scud and cirro-strati. ☽
625	42·8	39·4	3·4	0·9	0·3	22		9·8	Cirro-strati and cirro-cumuli.
29·676	45·5	40·9	4·6	1·6	0·1	28	26 : 28 : —	9·0	Masses of scud and loose cumuli; cirro-cumulo-strati; cirro-strati; milky cirrous haze; causing a solar halo.
28·923	47·0	45·2	1·8	4·1	2·0	19	20 : — : —	10·0	Scud and cirro-strati; rain$^{0\cdot5}$
814	47·0	45·8	1·2	3·7	3·2	19	21 : — : —	10·0	Scud; mass of cirro-stratus; rain^{1}
783	43·6	42·1	1·5	3·8	2·0	22	22 : — : —	10·0	Id.; id.; id.
745	46·2	41·1	5·1	3·5	1·5	20	22 : — : —	9·5	Scud and loose cumuli; cirro-strati and cirrous haze. ⊙
692	40·6	37·6	3·0	5·5	4·8	21	22 : — : —	9·5	Id.; rain$^{0\cdot2}$
591	45·0	39·6	5·4	3·8	5·2	20	22 : — : —	4·0	Id.; nimbi on hor.; rain or hail to W. and N.
535	38·7	36·6	2·1	7·8	4·0	19	21 : — : —	10·0	Scud and nimbi; rain$^{0\cdot5}$ and sleet.
492	39·2	36·2	3·0	7·4	2·8	19	23 : — : —	1·0	Scud.
533	39·8	35·5	4·3	7·0	3·4	26		9·8	Id.; aurora seen through clouds.
28·974	33·2	29·5	3·7	4·2	1·2	24		1·0	Bank of scud on E. horizon. ☽
29·050	32·4	28·7	3·7	1·6	0·2	26		2·0	Scud and cumuli on horizon; woolly cirri; haze. ⊙
118	35·0	30·1	4·9	0·4	0·0	22	— : 24 : —	7·5	Cir.-str. and cir. haze; patches of scud; cum. on E. hor.
144	35·5	30·6	4·9	0·8	0·6	22		8·0	Scud & loose cum. to N.; cir.-str. & cir. haze; sky to N.
150	36·5	30·6	5·9	0·5	0·3	25	26 : 24 : —	6·0	Cum.; cir.-str. and woolly cirri; ill-defined solar halo. ⊖
153	38·4	31·7	6·7	2·1	1·2	26	27 : — : —	6·0	Scud and cumuli; cirro-strati; cirrous haze. ⊖
168	36·2	31·2	5·0	1·7	1·3	25	26 : — : —	1·5	Id. ⊖
195	34·8	32·0	2·8	2·5	0·7	28		10·0	Thick scud; a few flakes of snow. [tion.
237	32·4	31·9	0·5	1·6	0·1	28		10·0	Dark; fine hail and snow occasionally since last observa-
29·306	31·8	31·2	0·6	0·2	0·1	2		10·0	Homogeneous mass; snow 4½ inches deep.
343	30·0	30·4	···	0·1	0·1	3		10·0	Id.; snow^{3}
383	31·4	30·0	1·4	0·5	0·3	0		10·0	Id.; snow$^{0\cdot5}$ ceased in a few minutes.
404	33·0	31·7	1·3	0·6	0·2	0		10·0	Cirro-stratus and cirrous haze.
406	33·0	31·7	1·3	0·7	0·4	0		10·0	Id.
413	31·6	29·7	1·9	0·5	0·1	30		10·0	Id.; snow^{1}
419	31·5	29·9	1·6	0·6	0·1	0		10·0	Id.
422	26·6	25·7	0·9	0·0	0·0	26		9·0	Id.; sky on W. horizon.
427	25·0	24·4	0·6	0·0	0·0	20		3·0	Id.
29·434	12·2	12·3	···	0·0	0·0			1·0	Cir.-str. and cirri on E. horizon; mist above Tweed. ☽
443	9·3	10·0	···	0·0	0·0			1·5	Cum., cirri, cir.-str., and haze on E. hor.; stratus in the
449	17·0	17·0	···	0·0	0·0			0·3	Patches of cumuli on NE. horizon. ⊙ [valleys. ⊙
446	26·3	24·0	2·3	0·0	0·0	26		0·5	Hazy on horizon; streaks of cirro-stratus to E. ⊙
430	31·4	28·5	2·9	0·0	0·0	0		0·5	Loose cumuli and cirro-strati on E. horizon. ⊙
436	32·3	29·2	3·1	0·0	0·0	2		0·8	Cumulo-strati and haze on E. horizon. ⊙
440	31·3	28·9	2·4	0·1	0·0	30	2 : — : —	2·5	Patches of scud and cum.; cum.-str. on E. and N. hor. ⊙
440	27·8	26·2	1·6	0·0	0·0			8·5	Scud, loose cumuli, and cirro-stratous scud.
441	26·5	25·6	0·9	0·0	0·0	24		10·0	Light snow commencing.
29·452	26·3	25·8	0·5	0·2	0·1	26	5 : — : —	9·8	Scud; cirro-strati. ☽
466	25·5	24·2	1·3	0·2	0·1	28	— : — : 4	7·0	Woolly cirri; cum.-str. and cir.-str. on horizon. ⊖
474	29·5	27·6	1·9	0·9	0·3	28		0·8	Cirro-strati towards horizon. ⊙
477	33·9	31·2	2·7	0·5	0·3	30		1·0	Id. ⊙
491	36·4	33·6	2·8	0·9	0·3	30		2·0	Id. ⊙
504	36·7	34·6	2·1	0·4	0·1	2		2·0	Id. ⊙
509	35·0	31·6	3·4	0·1	0·0	2		0·8	A few masses of loose cumuli and scud. ⊙
508	25·7	25·0	0·7	0·0	0·0	17		0·2	Haze round horizon.
489	23·6	22·9	0·7	0·0	0·0	18		0·0	Id.
29·236	30·7	29·0	1·7	1·2	0·4	18		10·0	Dense mass of cirro-stratus.
143	32·8	30·2	2·6	2·7	1·5	16		10·0	Nearly homogeneous.

he direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The ions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

arch 16d 2h. Heavy showers of hail since 1h 30m; rain$^{0\cdot2}$ at present, with occasional flakes of snow.

arch 17d 22h. Anemometer vane found frozen.

Gött. Mean Time.	Baro-meter at 32°.	Thermometers.			Wind.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in		From			
					1^h.	10^m.				
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
20 22	29·042	34·3	31·5	2·8	3·8	3·6	16		9·8	Cirro-stratus and cirrous haze.
21 0	28·950	34·8	34·3	0·5	4·4	3·1	16 v.		10·0	Snow^3
2	882	35·0	33·4	1·6	3·8	1·3	16		10·0	Id.
4	818	35·8	34·8	1·0	6·2	1·3	17	17 : — : —	10·0	Scud ; mass of cirro-stratus. ●
6	776	37·1	35·2	1·9	2·8	2·1	16		3·0	Scud and cirro-strati.
8	785	35·2	34·4	0·8	1·4	0·1	20	20 : — : —	9·8	Scud ; several showers of rain since last observation.
10	759	33·4	32·9	0·5	0·3	0·0	18		0·0	Clear.
23$\frac{3}{4}$	28·684	42·5	40·8	1·7	1·7	0·8	17	18 : 18 : —	10·0	Scud ; woolly cirro-strati ; showers occasionally.
22 7	776	...	...	...	...	...			......	
18	28·786	31·0	32·0	...	1·5	0·0	18	— : — : 18	4·0	Woolly cirri ; cir.-str. and haze ; scud on Cheviot. ☽
20	788	35·8	32·7	3·1	0·0	0·0	18		7·0	Woolly cirri and cirro-stratus ; cirro-strati. ⊖
22	800	39·7	37·3	2·4	0·0	0·0	16	— : 20 : —	7·5	Woolly cirro-strati.
23 0	806	44·8	41·1	3·7	0·3	0·1	16	16 : — : —	5·0	Loose cumuli ; cirro-strati. ⊙
2	813	42·0	39·3	2·7	0·3	0·2	16	18 : — : —	10·0	Scud ; thick cirro-stratus.
4	820	41·7	39·2	2·5	0·2	0·2	14		10·0	Id. ; id.
6	838	42·0	39·8	2·2	0·5	0·1	16	18 : — : —	10·0	Id. ; dense cirro-stratus ; shower$^{0·5}$
8	875	39·1	38·1	1·0	0·3	0·1	15		9·7	Id. ; id. ; id.
10	892	38·6	38·0	0·6	0·1	0·0	20		9·7	Id. ; rain^2
18	28·949	35·2	35·0	0·2	0·1	0·0	14	— : 20 : —	9·8	Cirro-stratous scud and cirro-strati.
20	956	38·6	38·1	0·5	0·0	0·0	20		7·5	Woolly cirri and cirro-strati.
22	975	42·8	41·1	1·7	0·0	0·0	23	19 : 18 : —	9·0	Scud ; woolly cirro-strati.
24 0	983	50·3	46·4	3·9	0·1	0·0	14	15 : 16 : —	9·5	Id. ; id.
2	983	49·4	45·2	4·2	0·2	0·1	16	15 : 16 : —	9·0	Id. ; id. ⊙
4	976	46·5	42·8	3·7	0·2	0·1	18	16 : — : —	9·5	Id. ; cumulo-strati ; cirro-strati ; drops of rain.
6	983	45·8	42·7	3·1	0·2	0·1	18	20 : — : —	9·8	Scud ; nimbi ; loose cum. and cir.-str. ; raining to SW. ;
8	28·998	39·0	38·2	0·8	0·0	0·0			7·0	Scud and loose cumuli. [showers around.
10	29·003	37·0	36·5	0·5	0·0	0·0	20		5·0	Scud and cirro-stratus.
18	29·001	32·5	32·2	0·3	0·0	0·0	11	— : 21 : —	5·0	Cirro-cumulo-strati ; cirro-strati ; mist in the valleys.
20	027	34·2	34·0	0·2	0·0	0·0	18	— : 20 : —	7·5	Id. ; id. ⊖
22	033	42·8	41·0	1·8	0·0	0·0	17	20 : — : —	5·0	Scud ; cirro-cumulo-strati ; drops of rain.
25 0	052	45·5	43·7	1·8	0·0	0·0		20 : — : —	10·0	Loose scud ; thick scud and cir.-str. ; occasional showers.
2	043	46·3	42·3	4·0	0·1	0·1	18	20 : 20 : —	5·0	Scud and loose cum. ; sheets of cir.-str. and wo. cirri. ⊙
4	041	47·7	43·4	4·3	0·1	0·1	18	21 : — : —	7·5	Scud and loose cum. ; nimbi ; cir.-str. ; woolly cirri. ⊖
6	043	48·6	43·6	5·0	0·0	0·0	16	24 : — : —	6·0	Heavy cumuli and scud. ⊖
8	072	40·7	39·1	1·6	0·0	0·0			7·0	Thick woolly cir.-str. rad. from N by W., with the radii curved to-
10	096	34·8	34·2	0·6	0·0	0·0	20		2·0	Scud and cirro-strati. [wards the E. ; patches of scud.
18	29·185	32·6	32·2	0·4	0·0	0·0	18		9·8	Dense mass of cirro-strati ; hoar-frost on the ground.
20	222	35·0	34·7	0·3	0·0	0·0	18	— : 0 : —	10·0	Scud ; mass of cirro-stratus.
22	254	41·9	40·1	1·8	0·0	0·0	24	0 : — : —	9·8	Masses of loose cumulous scud ; cirro-cumulo-strati.
26 0	282	44·7	41·5	3·2	0·0	0·0	26	29 : — : —	5·5	Loose cumuli ; cir.-cum.-str. ; cum.-str. on horizon. ⊙
2	298	46·7	43·7	3·0	0·0	0·0	16	30 : — : —	8·0	Scud, loose cumuli, and cirro-stratous scud. ⊙
4	314	46·0	42·0	4·0	0·1	0·1	21	— : 24 : —	9·0	Cirro-cumulo-strati ; cumuli and cirro-strati.
6	312	44·7	41·8	2·9	0·0	0·0	18	— : 28 : —	9·0	Id. ; hazy.
8	335	41·4	39·4	2·0	0·0	0·0	18		2·5	Cumulo-strati to S.
10	354	37·9	36·1	1·8	0·0	0·0	22		1·0	Cirro-stratus and haze on horizon.
18	29·388	39·2	37·2	2·0	0·2	0·1	22	25 : — : —	9·9	Cirro-stratous scud ; cirro-strati.
20	445	40·7	38·8	1·9	0·1	0·0	20	24 : 25 : 25	9·8	Id. ; woolly cirri and cirro-cumulo strati. ⊙
22	396	44·3	40·6	3·7	0·1	0·1	21	27 : — : —	9·9	Scud ; cirro-strati.
27 0	388	47·3	42·2	5·1	0·3	0·2	24	26 : — : —	9·8	Scud and loose cumuli ; cirro-strati.
2	359	47·8	41·6	6·2	0·5	0·2	20	25 : — : —	9·0	Heavy cumuli ; nimbi ; partial showers to N. ⊖
4	365	43·0	39·7	3·3	1·4	0·1	25	26 : 23 : —	9·2	Scud and nimbi ; cir.-cum.-str. ; cum.-str. on hor. ; heavy shower of hail lately.
6	348	46·2	41·2	5·0	0·6	0·2	24	26 : 25 : —	3·0	Loose cum. ; cum.-str. ; nimbi to E. ; sheets of cir.-str. ⊙
8	359	41·4	38·5	2·9	0·2	0·1	21	26 : — : —	5·0	Scud and sheets of cirro-strati.
10	365	38·9	36·9	2·0	0·1	0·1	18		4·0	Id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

March 21^d 10^h. Observation made at 10^h 10^m.

March 26^d 10^h. Observation made at 10^h 5^m.

BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
	Dry.	Wet.	Diff.	Maximum force in 1^{h}.	Maximum force in 10^{m}.	From			
in.	°		°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
29·374	35·8	35·0	0·8	0·1	0·0		4 : — : —	10·0	Dense mass of cirro-stratous scud.
387	37·8	37·2	0·6	0·0	0·0	17	6 : — : —	4·0	Loose scud; cumulo-strati on E. horizon; cir.-str. ⊙
402	44·0	40·7	3·3	0·2	0·3	5	4 : — : —	8·0	Heavy loose cumuli; cumulo-strati and scud.
410	43·7	40·0	3·7	0·7	0·3	0	4 : — : —	9·0	Id.
409	45·3	40·4	4·9	1·5	0·7	2	4 : — : —	7·0	Scud; loose cumuli; nimbi. ⊙
411	44·2	39·3	4·9	1·9	0·7	3	3 : — : —	6·0	Id.; id.; cumulo-strati and mottled cirri. ⊙
429	40·0	38·0	2·0	1·7	0·4	0	3 : — : —	3·0	Id.; id.; nimb. to SE., with great cir. crown. ⊙
453	38·3	36·6	1·7	0·7	0·1	0		2·0	Cirro-strati; cumuli on horizon. ☽
467	36·1	35·0	1·1	0·1	0·0	30		2·0	Clouds on horizon; a slight shower about 9^{h}.
29·750	44·0	37·9	6·1	1·7	0·3	0	0 : — : —	8·0	Cumuli.
29·905	34·6	33·7	0·9	0·6	0·0			9·0	Cirro-stratous scud and cirro-strati.
909	36·4	35·4	1·0	0·0	0·0	20		6·0	Cirro-cumulo-strati aud woolly cirri; cirro-strati. ⊙
908	43·6	40·7	2·9	0·0	0·0	20		7·5	Cir.-cum.-str. nearly stationary; cum. on hor.; thin lin.
891	48·4	42·1	6·3	0·0	0·0	14	12 : — : —	7·0	Scud and cumuli. [cirri and cirrous haze. ⊙
874	49·7	42·6	7·1	0·0	0·0	10	14 : — : —	9·5	Loose cumuli and cirro-cumulo-strati.
827	51·7	43·3	8·4	0·1	0·1	12	14 : 14 : —	5·5	Id.; woolly cirri. ⊙
786	47·7	40·7	7·0	0·3	0·3	15	14 : 14 : —	7·0	Id.
772	40·9	37·9	3·0	0·5	0·1	14		8·0	Cirro-cumulo-strati; homogeneous to S.
743	41·0	37·9	3·1	0·3	0·1	13		10·0	Cirro-stratous scud.
29·587	30·2	29·6	0·6	0·7	0·0	20		3·0	Cirri and cirrous haze; cirro-strati.
549	35·2	33·8	1·4	0·0	0·0	18		9·0	Mottled and woolly cirri and cirrous haze. ⊙
499	42·3	38·3	4·0	0·0	0·0	20		9·5	Woolly cirri; cirro-stratus and cirrous haze. ⊖
449	47·8	42·4	5·4	0·0	0·0	18		9·5	Id.; id. ⊖
403	50·1	44·1	6·0	0·0	0·0	20		10·0	Cirro-stratus and haze, becoming denser.
331	48·8	42·2	6·6	0·2	0·2	14		10·0	Dense mass of cirro-stratus and haze.
291	47·0	42·1	4·9	0·0	0·0			10·0	Id.
236	44·3	41·3	3·0	0·0	0·0	14	— : 18 : —	10·0	Id., becoming thicker and looser.
190	42·3	41·0	1·3	0·0	0·0	4		10·0	Very thick and dark; rain$^{0\cdot5}$
29·078	42·5	41·2	1·3	0·9	0·3	20		9·8	Cir.-str. scud; cir.-str. and woolly cir.; cloud red to E.
067	44·2	42·7	1·5	0·7	0·6	19	— : — : 22	6·0	Woolly cirri; loose cirro-strati; patches of scud. ⊙
069	46·2	43·2	3·0	0·7	0·4	16	22 : — : —	10·0	Patches of scud; dense homogeneous cir.-str. and haze.
048	44·9	43·1	1·8	0·7	0·0	20		10·0	Rain$^{0\cdot5}$; dense mass of cirro-stratus and scud.
039	46·6	44·8	1·8	0·1	0·1	22	21 : — : —	10·0	Scud; cirro-stratus.
012	50·3	47·4	2·9	0·2	0·1	21	21 : — : —	8·0	Id.; id. ●
29·003	47·0	45·3	1·7	0·1	0·0	18	22 : — : —	10·0	Id.; id.
28·995	45·3	44·6	0·7	0·1	0·1	0		9·5	Id.; id. ☽
988	43·6	43·0	0·6	0·1	0·0	26		8·0	Scud and cirro-cumulo-strati.
28·968	41·6	41·1	0·5	0·1	0·0	20	22 : — : —	10·0	Scud; cirro-strati; mist in the valleys.
965	46·0	44·7	1·3	0·1	0·1	21		4·5	Sheets of cirro-strati; woolly cirri; loose scud to N.
956	52·3	49·0	3·3	0·3	0·1	18	21 : — : —	7·0	Scud and loose cumuli; sheets of woolly cirri. ⊙
941	53·7	48·4	5·3	0·1	0·1	16	15 : — : —	4·0	Id.; linear cirri. ⊖
905	57·0	50·5	6·5	0·1	0·1	4	14 : — : 14	7·0	Large cumuli and masses of scud; thin woolly cirri. ⊙
863	54·8	49·7	5·1	0·9	0·1	10	— : 14 : —	8·5	Cir.-cum.-str. and woolly cirri; cum. and cum.-str. ⊖
845	50·2	46·8	3·4	0·3	0·1	6	8 : — : —	10·0	Scud and loose cumuli; cirro-strati.
852	44·2	43·6	0·6	0·5	0·2	3		10·0	Fog moved up from eastward about 7^{h} 20^{m}.
851	43·8	43·3	0·5	0·4	0·1	4		10·0	Drizzling rain$^{0\cdot2}$
28·823	43·0	42·5	0·5	1·2	1·0	1		10·0	Dense mass of cirro-stratus; drizzling rain.
856	42·4	41·4	1·0	1·5	1·3	0	2 : — : —	10·0	Scud; mass of cirro-stratus; drifting rain$^{0\cdot5}$
900	41·8	40·1	1·7	3·8	3·4	1	1 : — : —	10·0	Id.; id.; drops of rain.
28·951	42·2	40·4	1·8	3·5	3·3	1	0 : — : —	10·0	Id.
29·026	42·0	39·0	3·0	3·5	1·6	0	0 : — : —	10·0	Id.; drizzling rain commencing.
088	43·2	38·2	5·0	3·7	1·7	0	1 : — : —	7·0	Scud and loose cumuli; woolly cirri. ⊙
145	42·4	37·4	5·0	3·1	0·8	1	1 : — : —	3·5	Id.; id., nearly stationary. ⊙
211	36·9	33·6	3·3	1·2	0·1	30	31 : — : —	2·5	Scud. ☽

T direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The ots of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.
Aril 2^{d} 3^{h}. Several peals of thunder heard to S., from 2^{h} 40^{m} till 3^{h} 0^{m}; a shower about 3^{h}.

Gött. Mean Time.	BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1^{h}.	Maximum force in 10^{m}.	From			
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
3 10	29·259	35·6	33·2	2·4	0·2	0·0	28		2·0	Scud and loose cumuli.
18	29·357	30·5	29·7	0·8	0·1	0·0	20		10·0	Dense mass of cirro-stratus; cumuli on E. horizon.
20	366	33·9	32·0	1·9	0·0	0·0	16		10·0	Id.; cirro-strati.
22	351	40·0	37·0	3·0	0·0	0·0	12	— : — : 20	9·5	Woolly and interlaced cirri; cumulo-strati to N. & E.
4 0	319	41·3	38·0	3·3	0·0	0·1	6	9 : 12 : —	9·5	Scud in patches; masses of scud; cirri and cir. haze.
2	272	41·1	37·9	3·2	0·3	0·3	5	8 : — : —	9·9	Scud; nearly homogeneous cir.-str.; slight shower lately.
4	231	39·2	37·3	1·9	0·3	0·3	4	6 : — : —	10·0	Id.; cirro-stratus; rain^{1}
6	216	36·4	35·4	1·0	1·0	0·7	5	6 : — : —	10·0	Id.; dense homogeneous cirro-stratus; drops of rain.
8	189	35·5	35·0	0·5	0·6	0·3	5		10·0	Densely overcast; rain$^{0\cdot5}$; sleet occasionally.
10	178	35·4	34·5	0·9	0·1	0·1	4		10·0	Homogeneous cirrous haze.
23½	29·135	44·1	39·4	4·7	1·2	0·7	6	6 : — : —	10·0	Scud and cum.; cir. haze; solar halo throughout the day
5 18	28·962	36·7	35·7	1·0	1·2	0·1	4	4 : — : —	10·0	Scud and cirro-stratus.
20	29·069	39·6	37·6	2·0	0·1	0·1	3	5 : — : —	9·8	Scud; cirro-cumuli.
22	069	43·0	38·3	4·7	1·2	0·4	4	5 : — : —	6·0	Scud and loose cumuli; woolly and linear cirri.
6 0	070	42·7	38·5	4·2	1·0	0·5	4	5 : — : —	9·8	Scud; cumuli and woolly cirri. [1^{h} 30^{m}
2	078	40·0	39·4	0·6	2·7	0·8	2	4 : — : —	10·0	Id.; dense cirro-str.; shower of rain and sleet abou
4	088	43·0	39·4	3·6	2·7	2·6	4	5 : — : —	10·0	Scud and loose cumuli; dense mass of cirro-stratus.
6	100	41·5	37·1	4·4	3·3	2·2	2	3 : — : —	9·9	Scud; cirro-cumulo-strati; cirro-strati; cirrous mass.
8	114	39·7	36·5	3·2	2·3	1·0	2		4·0	Cirro-cumulo-strati; cirro-strati and woolly cirri.
10	123	39·2	36·2	3·0	1·2	0·6	2		8·0	Id.; id.
18	29·113	37·5	35·9	1·6	1·4	0·9	30	3 : — : —	8·0	Scud; cirro-cumuli and cirro-strati.
20	119	39·2	37·0	2·2	1·0	0·9	0	3 : — : —	9·5	Id.; id.
22	117	42·0	38·3	3·7	2·3	1·6	0	2 : — : —	10·0	Id.; cirro-strati and cirrous haze.
7 0	118	42·3	38·8	3·5	2·3	1·8	1	2 : — : —	10·0	Id.; id.
2	128	41·4	39·6	1·8	2·4	1·7	0	2 : — : —	10·0	Id.; id.; rain$^{0\cdot2}$
4	123	43·7	41·3	2·4	1·9	1·4	0	2 : — : —	10·0	Scud.
6	131	42·4	40·8	1·6	1·3	0·8	0	2 : — : —	10·0	Id.; cirro-cumulo-strati.
8	145	41·7	39·7	2·0	0·9	0·5	2	2 : — : —	10·0	Id.; id.
10	136	40·2	39·0	1·2	0·5	0·3	2	2 : — : —	10·0	Id.; cirrous mass; lunar corona.
18	29·128	40·0	39·5	0·5	0·5	0·3	0	6 : 6 : —	10·0	Dense mass of cirro-stratus and scud; drizzling rain^{0}
20	151	42·0	41·4	0·6	0·3	0·2	3	4 : — : —	10·0	Loose scud; drizzling rain$^{0\cdot2}$
22	169	42·7	42·0	0·7	0·3	0·2	5	5 : — : —	10·0	Id.; id.
8 0	188	44·7	42·0	2·7	0·7	0·6	5	4 : — : —	10·0	Id.; id.
2	215	42·8	41·8	1·0	0·8	0·6	4	4 : — : —	10·0	Scud; id.
4	237	42·1	40·1	2·0	0·9	0·5	4	4 : — : —	10·0	Id.; dense cirro-stratus.
6	280	42·0	40·2	1·8	0·2	0·3	4	4 : — : —	9·8	Id.; id.; cirro-strati; sky to E
8	297	40·0	38·7	1·3	0·2	0·2	5	4 : — : —	10·0	Id.; id.; id.
10	321	39·7	38·5	1·2	0·1	0·0	6		10·0	Id.
18	29·370	29·7	29·7	0·0	0·0	0·0			0·5	Sheets of cirro-cumuli.
20	393	35·5	35·2	0·3	0·1	0·0	20		0·3	Id.
22	410	41·6	39·6	2·0	0·1	0·1	22		0·8	Cumuli, cirro-strati, and haze on horizon.
9 0	413	47·7	42·7	5·0	0·1	0·1	24	24 : — : —	9·5	Scud and cumuli; cirro-strati.
2	409	49·2	43·2	6·0	0·1	0·1	23	24 : — : —	7·5	Id.; id.; hazy on horizon.
4	401	50·9	44·3	6·6	0·1	0·1	24	25 : — : —	8·0	Scud and loose cumuli; cirro-cumulo-strati.
6	405	47·2	44·2	3·0	1·4	0·1	18	24 : — : —	6·0	Scud and cumuli; cumulo-strati; rain falling to E.
8	444	43·4	40·8	2·6	1·0	0·1	19	24 : — : —	7·0	Scud; cumuli and cumulo-strati.
10	439	40·2	38·8	1·4	0·2	0·1	18		2·0	Scud and cirro-strati.
18	29·466	37·0	36·0	1·0	0·4	0·1	20	26 : — : —	5·0	Scud and cirro-strati.
20	482	41·4	40·1	1·3	0·2	0·1	20	— : 26 : —	4·0	Cirro-strati, cirro-cumuli, and cirri.
22	488	45·3	41·7	3·6	0·2	0·1	23		2·0	Loose scud and cumuli, cumulo-strati, and cir.-strati.
10 0	432	48·9	43·0	5·9	0·2	0·1	24	24 : — : —	8·0	Scud and cumuli; cirro-strati.
2	490	50·8	46·2	4·6	0·2	0·3	17	25 : — : —	8·5	Id.; id.
4	473	50·7	45·8	4·9	0·5	0·3	18	25 : — : —	9·5	Cumuli and cirro-stratous scud.
6	459	50·8	45·4	5·4	0·6	0·5	17	24 : — : 23	3·5	Loose cumuli; woolly cir.; piles of cumuli; cir.-str.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Barometer at 32°.	Thermometers.			Wind.			Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
	Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
29·480	43·5	40·7	2·8	0·6	0·2	18	— : — : 24	7·0	Woolly cirri and cir.-cum.-str.; cir. haze; cir.-str.;
468	37·7	37·0	0·7	0·1	0·1	18		8·0	Cirri, cir.-str., and cir. haze; lunar halo. ☽ [lun. cor. ☽
29·359	35·0	34·6	0·4	0·0	0·0	8	— : 18 : —	10·0	Cirro-strati and dense cirrous haze.
335	38·9	37·9	1·0	0·0	0·0			10·0	Dense homogeneous cirro-stratus and haze.
290	46·7	44·0	2·7	0·4	0·9	16	14 : — : —	10·0	Scud; mass of cirro-stratus.
246	47·0	44·2	2·8	3·1	1·3	14	14 : — : —	10·0	Id.; id.
225	49·0	46·0	3·0	3·7	1·3	14	15 : — : —	10·0	Id.; id.; rain$^{0·2}$
189	51·0	47·8	3·2	1·5	0·2	12	14 : — : —	10·0	Id.; id.
153	49·7	47·4	2·3	1·1	0·2	15	14 : — : —	10·0	Id.; id.; rain^{5}
125	46·0	45·2	0·8	0·2	0·1	2	14 : — : —	10·0	Id.; id.; rain$^{1—3}$
103	45·4	44·9	0·5	0·3	0·2	4		10·0	Id.; id.; rain$^{0·2}$
29·086	58·2	53·7	4·5	0·5	0·4	16	18 : — : —	8·0	Scud; cirro-cumulo strati; cirri.
29·205	49·0	46·6	2·4	2·9	0·4	14	13 : 15 : —	10·0	Patches of scud; loose cir.-str. scud; homogeneous cir.-str. and haze.
185	50·3	48·2	2·1	1·2	0·1	14	— : 15 : —	10·0	Cirro-stratous scud; homogeneous cir.-str. and haze.
160	51·8	49·7	2·1	0·5	1·0	16	— : 15 : —	10·0	Id.; id.
187	53·2	50·6	2·6	1·0	0·7	18	18 : — : —	9·8	Patches of scud; id.
188	58·0	52·3	5·7	1·7	1·6	17	16 : 17 : 21	7·0	Thin scud moving rapidly; cum.; woolly & mottled cir. ⊙
186	58·6	53·1	5·5	2·3	0·8	16	18 : — : —	5·0	Cumuli; sheets of cirro-strati. ⊖
231	52·7	50·8	1·9	2·5	0·2	17	18 : — : —	9·9	Scud; cumuli and cirro-stratus; rain$^{0·2}$
289	50·0	48·0	2·0	1·5	0·8	17	18 : — : —	9·5	Scud and cirro-cumulo-strati; cirro-stratus.
341	50·0	48·8	1·2	1·0	1·1	18		10·0	Scud; dark; rain^{1}; smart showers occasionally.
29·463	43·4	42·8	0·6	1·3	0·1	18		1·0	Light cirri over the sky. [gradually thicker since 18^h.
499	47·7	46·0	1·7	0·1	0·0	24		10·0	Dappled woolly cir.-str. and cir. haze, which has become
528	52·2	49·5	2·7	0·0	0·0	16	16 : — : —	10·0	Cirro-stratous scud; dense mass of cirro-stratus.
531	56·9	52·2	4·7	0·0	0·0	14	16 : — : —	9·5	Scud; mass of cirro-stratus.
538	53·4	50·4	3·0	1·1	0·1	4	— : 16 : —	7·5	Cirro-cumulo-strati; cumuli and cirro-strati. ⊖
525	54·6	50·4	4·2	0·1	0·1	7	16 : — : —	10·0	Scud; id.
533	56·2	52·4	3·8	0·3	0·1	11	— : 16 : —	10·0	Cirro-stratous scud; dense mass of cirro-stratus.
564	51·6	49·0	2·6	0·3	0·1	7		10·0	Cirro-stratous scud and cirro-strati.
586	50·7	47·7	3·0	0·0	0·0	7		9·8	Scud; dark.
29·597	45·4	45·1	0·3	1·2	1·3	3	4 : — : —	10·0	Loose misty scud; light drizzle.
619	44·5	44·3	0·2	1·2	0·7	4		10·0	Scotch mist; objects invisible at 500 yards.
637	45·0	44·6	0·4	1·3	0·8	4		10·0	Id.; id. at 1 mile; light drizzle.
675	45·6	44·7	0·9	1·2	0·8	6		10·0	Loose scud and Scotch mist.
694	45·8	45·4	0·4	0·8	0·4	5		10·0	Id.
730	45·1	44·9	0·2	0·9	0·3	4		10·0	Scotch mist; objects invisible at 1 mile; rain$^{0·2}$
740	45·2	44·9	0·3	1·4	0·3	2		10·0	Id.
784	45·0	44·5	0·5	0·5	0·2	6		10·0	Id.; light drizzle.
809	44·8	44·3	0·5	0·9	0·2	5		10·0	Very dark.
29·868	44·7	44·0	0·7	0·3	0·1	4	10 : 8 : —	10·0	Two currents of scud.
872	46·2	45·1	1·1	0·1	0·0	0	11 : — : —	10·0	Scud.
887	49·3	47·1	2·2	0·1	0·1	13	12 : — : —	10·0	Id.
875	51·2	48·6	2·6	0·1	0·1	16	— : 13 : —	10·0	Cirro-stratous scud.
851	55·8	52·5	3·3	0·6	0·1	11	— : 14 : —	9·9	Id.
829	53·3	50·5	2·8	0·3	0·1	13	16 : — : —	7·0	Scud; cirro-strati, cumuli, and cirrous haze. ⊙
805	52·2	49·3	2·9	0·4	0·3	18	18 : — : —	6·0	
815	50·0	47·8	2·2	0·4	0·1	14	18 : — : —	9·0	Scud and cirro-strati; cumuli and cirrous haze.
794	46·2	45·2	1·0	0·7	0·1	14		1·0	Patches of scud to N.; faint auroral light to N.
29·728	47·7	46·6	1·1	1·0	0·0	17	16 : — : —	10·0	Scud; cirro-stratus.
730	47·8	46·6	1·2	0·0	0·0	24	27 : — : —	10·0	Id.; id.; drops of rain; gloomy-looking.
717	48·5	47·6	0·9	0·1	0·0		18 : — : —	10·0	Id.; id.; light drizzle.
707	48·8	47·7	1·1	0·0	0·0	16		10·0	Homogeneous; rain $^{1·5}$
700	49·3	48·2	1·1	0·1	0·0	31		10·0	Cirro-stratous scud; mass of cirro-stratus; rain$^{1·5}$
698	47·6	46·6	1·0	0·0	0·0	0		10·0	Thick scud; rain^{2}; misty.

Th direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The ti s of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Ap l 12^d. At $3^h\ 30^m$, two or three faint peals of thunder heard; from $4^h\ 40^m$ till $5^h\ 30^m$, much thunder was heard, chiefly from black ouc to SE. and N., distance generally more than 3 miles; shower of rain about $4^h\ 40^m$, and of hail about 6^h.

A l $14^d\ 5^h$. The wind blowing from NE by E. (5.)

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1^{h}.	Maximum force in 10^{m}.	From			
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
17 6	29·714	46·2	45·4	0·8	0·0	0·0	0	0 : — : —	10·0	Thick scud; rain$^{0\cdot2}$; misty.
8	730	45·6	45·1	0·5	0·0	0·0	31		10·0	Scotch mist; object invisible at 1 mile.
10	740	45·3	44·8	0·5	0·0	0·0	30		10·0	Id.; rain^{1}
18	29·788	43·0	42·5	0·5	0·0	0·0	4	6 : — : —	10·0	Misty scud; rain$^{0\cdot2}$
20	817	42·7	41·9	0·8	0·1	0·1	3	4 : — : —	10·0	Scud; cirro-stratus.
22	833	44·7	42·2	2·5	0·1	0·0	1	4 : — : —	10·0	Id.; id.
18 0	849	46·7	43·2	3·5	0·1	0·1	2	2 : — : —	10·0	Id.; id.
2	850	47·8	44·4	3·4	0·1	0·2	2	1 : — : —	10·0	Id.; id.
4	860	48·3	44·8	3·5	0·3	0·1	4	2 : — : —	10·0	Id.; id.
6	874	46·0	43·4	2·6	0·2	0·0	3	2 : — : —	10·0	Id.; id.
8	889	44·0	42·3	1·7	0·2	0·1	2	3 : — : —	10·0	Id.; id.
10	918	43·5	42·2	1·3	0·2	0·1	2		10·0	Id.; dark.
23¾	30·022	45·3	41·6	3·7	0·8	0·2	3	7 : — : —	10·0	Scud and loose cumuli; cirro-stratus.
19 18	30·038	39·0	37·8	1·2	0·8	0·0	8	3 : — : —	9·8	Scud.
20	044	43·5	42·3	1·2	0·0	0·0		1 : — : 2	4·0	Scud and cumuli; patches of woolly cirri.
22	038	44·8	42·2	2·6	0·4	0·1	8	7 : — : —	4·5	Id.
20 0	30·027	47·0	42·0	5·0	0·2	0·1	8	8 : — : —	7·0	Id.
2	29·996	49·3	44·3	5·0	0·6	0·2	6	10 : — : —	7·5	Id.
4	974	48·5	43·0	5·5	1·1	0·6	6	10 : — : —	2·5	Cumuli.
6	958	47·2	42·2	5·0	0·7	0·3	8		1·0	Id. on horizon.
8	956	42·5	40·3	2·2	0·4	0·0	4		1·0	Sheets of cirro-strati.
10	947	38·5	37·8	0·7	0·1	0·1	2		0·5	Cirro-strati on W. and NW. horizon.
18	29·882	33·6	33·4	0·2	0·0	0·0			10·0	Fog, objects invisible at 200 yards.
20	880	37·7	37·0	0·7	0·0	0·0			10·0	Id., id. half-a-mile.
22	865	41·2	39·7	1·5	0·0	0·0	12	6 : — : —	3·0	Thin scud; woolly cirri, cumuli, and cumulo-strati.
21 0	841	47·0	43·6	3·4	0·1	0·1	4	8 : 16 : —	8·5	Id.; loose cumuli, cirro-strati, and cirri.
2	828	45·6	43·2	2·4	0·5	0·2	17		9·0	Scud, cumuli, nimbi, cirro-strati, and woolly cirri.
4	800	46·5	42·7	3·8	0·4	0·1	2	10 : 16 : —	7·0	Scud and cumuli; cirro-strati; showers occasionally
6	807	43·3	42·2	1·1	0·6	0·1	22	10 : — : —	9·5	Scud; thick woolly cirri, cir.-str.. and cirri; heavy shower of hail and rain at
8	837	41·3	39·2	2·1	0·1	0·1	5	— : 14 : —	9·5	Cir.-cum.-str.; cirro-stratus, haze, and cum.; thick s
10	822	39·0	37·9	1·1	0·1	0·1	8		2·5	Scud and cirro-strati on horizon. [lying on Chev
18	29·799	35·3	35·0	0·3	0·0	0·0		6 : 8 : —	9·7	Scud; cirro-strati and woolly cirri.
20	805	41·6	40·6	1·0	0·0	0·0	4	5 : — : —	10·0	Id.; drops of rain.
22	807	44·3	42·0	2·3	0·4	0·2	4	6 : — : —	10·0	Id.; id.
22 0	804	44·7	43·7	1·0	0·8	0·8	4	7 : — : —	9·8	Id.; shower^{2}; heavy shower of hail at 23^{h}.
2	812	48·1	44·0	4·1	1·9	0·8	5	7 : — : —	9·8	Id.; cirro-strati; occasional showers.
4	827	48·3	44·3	4·0	1·9	1·0	5	7 : — : —	6·5	Scud and cumuli.
6	834	47·2	42·8	4·4	1·3	1·2	6	7 : — : —	3·0	Loose scud; cir.-cum.-str., cir.-str., and woolly cirri
8	856	43·3	40·3	3·0	1·3	0·2	3	6 : — : —	3·0	Cirro-cumulo-strati; cirro-strati.
10	866	40·7	39·2	1·5	0·3	0·1	2		2·5	Id.; id.
18	29·834	41·3	39·1	2·2	0·5	0·1	5	2 : — : —	9·5	Scud; cirro-strati.
20	824	43·0	40·5	2·5	1·7	2·1	2	2 : 5 : —	4·0	Id.; cirro-cumulo-strati.
22	826	45·2	41·7	3·5	2·2	1·7	2	4 : — : —	9·0	Id.; id.; cumulo-strati.
23 0	815	44·2	42·0	2·2	2·7	1·7	2	3 : — : —	10·0	Id.; dense mass of cirro-stratus.
2	786	48·2	44·7	3·5	2·2	1·6	3	4 : — : —	10·0	Id.; cirro-stratus; woolly cirri.
4	765	48·7	44·7	4·0	2·2	2·3	2	3 : 6 : —	9·9	Id.; cirro-cumulo-strati; cirro-strati.
6	741	43·6	42·7	0·9	2·6	0·4	3	2 : 2 : —	9·5	Thin scud; large cir.-cum.-str.; cir.-str.; heavy shower of rain
8	735	43·0	42·0	1·0	1·6	0·8	1	2 : — : —	10·0	Scud; cirro-stratus; rain$^{2-3}$ [hail at 5^{h}
10	728	42·3	41·7	0·6	0·9	0·6	2		10·0	Id.
18	29·745	43·6	43·0	0·6	1·1	0·1	2		10·0	Homogeneous scud and cirro-stratus; a tendency t
20	754	44·0	42·6	1·4	0·7	0·8	4	5 : — : —	10·0	Scud; rain$^{0\cdot5}$ [drizzl
22	734	43·0	41·7	1·3	1·3	0·9	1	5 : — : —	10·0	Id.; id.
24 0	693	45·2	44·1	1·1	1·4	1·1	4	5 : — : —	10·0	Id.; rain$^{0\cdot2}$
2	688	45·3	43·8	1·5	1·2	0·7	6	5 : — : —	10·0	Id.; drifting rain$^{0\cdot5}$

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. Th motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

tt. an ie.		BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc.: C.-s: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0–10.	
2	4	29·674	46·0	45·3	0·7	1·8	0·7	6	6 : — : —	10·0	Scud; drizzling rain$^{0\cdot5}$
	6	688	45·4	43·8	1·6	1·2	0·5	6	6 : 12 : 8	10·0	Id.; cumulous scud; woolly cirri; drizzling rain$^{0\cdot2}$
	8	728	45·3	44·3	1·0	0·6	0·1	6	9 : 8 : —	9·8	Thick scud; cirro-strati and cirro-cumulo-strati.
	0	772	44·0	43·0	1·0	0·2	0·1	5		10·0	Scud and cirro-stratus.
	8	29·776	43·0	42·8	0·2	0·0	0·0			10·0	Homogeneous mass of clouds; misty.
	20	791	45·0	44·2	0·8	0·0	0·0	4	4 : — : —	10·0	Id.; id.
	22	801	48·7	46·3	2·4	0·0	0·0	31	8 : 11 : —	8·0	Scud; cirro-cumulo-strati; cumulo-strati.
25	0	796	51·0	47·0	4·0	0·1	0·1	5	5 : 8 : —	9·8	Loose scud; loose cum.; cir.-cum.-str.; drops of rain lately.
	2	792	51·0	47·6	3·4	0·5	0·3	3	4 : 8 : —	9.5	Scud and loose cumuli; id.
	4	779	50·1	46·0	4·1	0·6	0·1	2	6 : 8 : —	7·0	Scud; loose cumuli. ⊙
	6	767	49·4	45·8	3·6	0·2	0·2	2	2 : — : —	9·0	Scud and cirro-strati.
	8	773	45·8	43·3	2·5	0·7	0·2	2	2 : — : —	10·0	Id.
	0	776	44·2	43·3	0·9	0·7	0·7	1		10·0	Id.; dark; rain$^{0\cdot5}$
	3¾	29·692	40·5	37·4	3·1	3·7	2·7	1	3 : 3 : —	7·0	{ Cumuli and cirro-strati; occasional showers of rain, hail, and snow throughout the day.
26	8	29·676	35·6	33·3	2·3	4·5	0·1	28	— : 0 : —	7·5	Cirro-cumulo-strati; cumuli on horizon.
	0	685	39·6	35·7	3·9	1·8	0·9	29	— : 0 : —	4·0	Id.; id. ⊙
	2	695	42·5	36·8	5·7	1·5	0·7	29	0 : 0 : —	9·5	Scud and cirro-cumulo-strati; cirro-strati.
27	0	682	45·0	38·4	6·6	1·2	0·4	28	31 : 31 : —	9·8	Id.; id.
	2	680	45·3	39·3	6·0	0·7	0·3	27	— : 29 : —	10·0	Cirro-stratous scud.
	4	656	46·6	40·2	6·4	0·3	0·1	24	29 : 29 : —	10·0	Thick scud and cirro-strati.
	6	643	45·6	39·8	5·8	0·0	0·0	22	29 : 29 : —	9·8	Id.; cirro-cumulo-strati.
	8	633	42·7	39·4	3·3	0·1	0·0	23	— : 28 : —	9·5	Wavy cir.-str. and cir.-cum.; clouds tinged red to W.
	0	634	40·0	38·4	1·6	0·0	0·0	20		8·0	Scud and cirro-strati.
	8	29·653	36·0	35·1	0·9	0·0	0·0		0 : 0 : —	9·5	Thick cir.-str. and scud; a slight shower of rain and hail lately.
	20	672	40·8	38·5	2·3	0·0	0·0	0	28 : — : —	9·5	Cirro-stratous scud.
	22	693	46·2	40·2	6·0	0·1	0·0	0	30 : — : —	9·8	Id.; cumuli on N. and E. horizon.
28	0	711	45·4	39·3	6·1	0·2	0·1	30	30 : 30 : —	9·6	Scud and cirro-cumulo-strati; cum.; rain falling to S.
	2	736	46·3	39·0	7·3	1·1	0·3	30	30 : 30 : —	9·5	Id.; id.; cumulo-strati.
	4	750	46·5	39·4	7·1	0·8	0·9	0	30 : — : —	6·0	Scud and cum.; occasionally a few drops of rain and hail.
	6	782	46·3	40·3	6·0	0·8	0·2	0		0·7	Cumulo-strati and cirro-strati round horizon. ⊙
	8	821	42·2	37·7	4·5	0·3	0·1	4	29 : 29 : —	0·8	Scud and cirro-cumulo-strati. ⊖
	0	848	33·2	32·2	1·0	0·0	0·0	20		0·2	Cirro-strati on N. horizon. ☽
	8	29·885	33·4	32·7	0·7	0·0	0·0	18		0·7	Sheets of woolly cirri and cirro-cumulo-strati. ⊙
	20	899	42·7	38·7	4·0	0·1	0·1	22	— : 28 : —	8·0	Cirro-cumulo-strati.
	22	912	48·0	42·2	5·8	0·5	0·2	23	29 : — : —	6·0	Scud and loose cumuli; cirro-strati. ⊖
29	0	903	51·2	46·2	5·0	1·2	0·2	28	— : 28 : —	9·8	Cirro-stratous scud.
	2	873	52·7	46·6	6·1	1·3	1·6	23	24 : — : —	7·0	Scud and loose cumuli; cirro-strati and woolly cirri.
	4	869	52·0	46·6	5·4	2·3	1·2	24	24 : — : —	6·0	Cumuli.
	6	858	52·5	45·8	6·7	2·6	1·2	25		2·0	Loose cumuli; cumulo-strati and cirro-strati. ⊙
	8	919	44·7	42·7	2·0	1·8	1·2	0		9·5	Dense mass of thick scud.
	0	29·977	40·2	39·5	0·7	0·8	0·1	2		10·0	Scud; rain^{1} since last observation.
	8	30·041	38·5	37·1	1·4	0·3	0·0	2	— : 28 : —	9·8	Cirro-stratous scud and cirro-cumulo-strati.
	0	058	42·4	40·0	2·4	0·0	0·0	17		10·0	Dense cirro-stratus; patches of scud to E.
	2	058	46·0	41·8	4·2	0·0	0·0	17		10·0	Id.
30	0	053	50·3	45·0	5·3	0·0	0·0	18	— : 20 : —	10·0	Id.
	2	035	49·2	44·5	4·7	0·1	0·0	18	— : 19 : —	10·0	Id.
	4	30·007	50·4	47·0	3·4	0·1	0·1	20	23 : — : —	10·0	Scud and dense cirro-stratus; light rain lately.
	6	29·994	48·3	46·0	2·3	0·0	0·0		22 : — : —	10·0	Id.; slight drizzle.
	8	30·002	47·0	44·3	2·7	0·2	0·0	21	20 : — : —	10·0	Cirro-stratous scud; smoky scud to N.; cirro-strati.
	0	020	45·4	43·4	2·0	0·0	0·0	19		10·0	Id.
	8	30·010	44·4	43·4	1·0	0·0	0·0		20 : — : —	10·0	Thick scud and cirro-stratus.
	0	020	48·9	46·0	2·9	0·0	0·0	17	22 : — : —	10·0	Id.
	2	30·007	53·2	49·0	4·2	0·1	0·0	18	20 : — : —	10·0	Id.
1	0	29·982	56·0	51·2	4·8	0·7	0·5	19	20 : — : —	10·0	Scud and cirro-stratus; atmospheric haze.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The tions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

April 29d 8h. A dense mass of thick scud has risen from N. and NE., and is now nearly over the whole sky; there are different shades o colour; the lowest is whitish smoky scud, and is detached from the rest; there is a bluish cloud, and a very black one; they are moving i various directions, but principally from N.

Gött. Mean Time.		BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
1	2	29·971	54·2	50·8	3·4	1·5	0·6	19	21 : — : —	10·0	Scud and cirro-stratus ; atmospheric haze.
	4	935	55·7	52·4	3·3	1·2	1·7	20	22 : — : —	10·0	Scud ; dense cir.-str. and cir. haze ; atmospheric haz
	6	912	53·2	51·2	2·0	1·3	0·4	20	22 : — : —	10·0	Thin scud ; id. ; id.
	8	893	52·0	50·3	1·7	0·7	0·1	18	22 : — : —	10·0	Id. ; id. ; id.
	10	853	51·9	50·9	1·0	1·4	0·4	18		10·0	Id. ; id. ; id.
	18	29·817	51·3	48·4	2·9	2·9	0·1	18	25 : — : —	9·8	Scud ; cirro-strati.
	20	835	53·1	48·4	4·7	1·3	0·8	24	25 : — : —	9·0	Id. ; id. ; cirro-cumuli.
	22	840	54·8	49·0	5·8	2·3	1·8	24	26 : — : —	6·0	Id. ; id.
2	0	865	57·5	50·3	7·2	1·8	1·1	22	26 : — : —	8·5	Scud and loose cumuli ; cirro-strati. ⊖ [of cir.-str
	2	864	59·7	50·7	9·0	1·4	1·5	24	26 : — : 24	6·5	Id. ; woolly cirri ; cum.-str. ; she
	4	865	58·1	50·1	8·0	2·0	1·0	26	25 : 24 : —	9·9	Masses of scud ; cirro-cumulo-strati and cirro-strati
	6	863	55·2	47·5	7·7	1·9	1·1	24		10·0	Dense mass of cirro-stratus ; cirro-cumulo-str. above
	8	894	52·7	46·7	6·0	1·0	0·3	20		10·0	Cir.-str. over the whole sky ; a few patches of scud
	10	906	51·0	44·6	6·4	0·5	0·3	22		10·0	As before.
3	0½	29·898	56·0	49·7	6·3	0·5	0·3	12		8·0	Scud and cumuli.
	18	29·809	44·4	42·8	1·6	1·3	0·0	6		10·0	Nearly homogeneous ; scud on E. horizon.
	20	807	44·8	42·2	2·6	0·6	0·7	12	14 : — : —	10·0	Scud ; dense cirrous mass ; rain$^{0\cdot5}$
	22	792	43·4	41·9	1·5	1·3	0·2	10	10 : — : —	10·0	Id. ; dense mass of cirro-stratus ; rain^{2}
4	0	752	42·8	40·7	2·1	1·2	0·9	10		10·0	Dense cirro-stratus and scud ; rain$^{0\cdot5}$
	2	708	44·0	41·4	2·6	1·2	0·7	10	10 : — : —	10·0	Masses of scud ; cirro-strati ; drops of rain.
	4	661	44·0	41·7	2·3	1·5	0·6	8	— : 13 : —	10·0	Masses of wavy cirro-strati ; loose scud ; rain^{1}
	6	624	41·6	40·6	1·0	2·2	1·0	11	12 : — : —	10·0	Scud ; dense cirro-stratus ; rain^{2} ; rain$^{3-4}$ 15^{m} ago.
	8	578	42·9	41·1	1·8	1·9	0·9	11	12 : — : —	10·0	Id. ; id. ; id.
	10	556	44·0	42·1	1·9	1·9	0·4	12		10·0	Thick scud and cirro-stratus.
	18	29·431	45·5	44·0	1·5	0·9	0·2	12	12 : — : —	10·0	Scud ; mass of cirro-stratus.
	20	420	47·7	46·2	1·5	0·2	0·1	9	14 : — : —	10·0	Id. ; id.
	22	395	53·5	50·0	3·5	0·1	0·1	14	18 : — : —	7·0	Scud and loose cumuli ; woolly cirri.
5	0	386	55·4	50·9	4·5	0·2	0·1	4	20 : — : —	10·0	Thick scud.
	2	347	56·0	52·1	3·9	0·2	0·2	0	20 : — : 19	5·0	Cumuli ; woolly cirri.
	4	324	55·8	52·2	3·6	0·3	0·3	6	17 : — : —	8·0	Scud and cumuli ; cumulo-strati and haze on horiz
	6	305	51·1	50·0	1·1	0·6	0·1	6		10·0	Rain$^{2-4}$; 5^{h} 45^{m}, two peals of thunder, the interval for one of t
	8	292	49·9	48·8	1·1	0·2	0·2	0	9 : — : —	10·0	Scud ; dense cir.-str. ; occasional shower$^{2-4}$ being
	10	271	46·5	46·0	0·5	0·3	0·1	4		10·0	Rain$^{1-2}$
	18	29·194	45·0	44·7	0·3	0·4	0·0	0		10·0	Homogeneous ; rain$^{0\cdot2}$
	20	193	46·2	45·4	0·8	0·1	0·1	23	— : 29 : —	10·0	Cirro-stratous scud.
	22	193	51·4	48·6	2·8	0·1	0·1	26	25 : — : —	10·0	Thick scud and loose cumuli.
6	0	195	51·3	48·4	2·9	0·3	0·1	27	26 : 26 : —	10·0	Thick scud and cirro-strati.
	2	202	53·7	50·0	3·7	0·3	0·2	30	25 : 25 : —	10·0	Id.
	4	204	53·0	48·7	4·3	0·4	0·2	31	— : 24 : —	8·5	Cirro-cumulo-strati ; cumuli ; woolly cirri.
	6	212	53·5	49·2	4·3	0·4	0·1	30	24 : — : —	8·5	Scud, loose cumuli, and cirro-cumulo-strati.
	8	227	51·2	48·3	2·9	0·2	0·0	26	25 : — : —	9·8	Id. ; cirro-strati ; id.
	10	241	50·0	47·0	3·0	0·3	0·1	20		9·8	Scud and cirro-strati ; drops of rain.
	18	29·320	41·7	40·2	1·5	0·5	0·1	20		0·2	Cirro-strati and linear cirri on horizon.
	20	342	47·3	43·7	3·6	0·4	0·3	19	21 : — : —	3·0	Scud and loose cumuli ; cumulo-strati on horizon.
	22	348	52·7	45·2	7·5	1·2	0·8	19	24 : — : —	7·0	Scud and cumuli ; woolly cirri.
7	0	355	56·0	47·8	8·2	2·7	0·9	19	23 : — : —	9·0	Id.
	2	366	53·5	46·6	6·9	2·1	1·4	24	24 : — : —	9·5	Scud, loose cumuli, and cirro-strati.
	4	369	53·1	47·0	6·1	1·9	0·6	18	23 : — : —	9·5	Id.
	6	378	53·9	48·1	5·8	2·2	1·4	20	23 : — : —	7·0	Scud, loose cum., cir.-cum.-str., woolly cir., and cir. h
	8	381	49·8	46·2	3·6	2·0	1·2	20	— : 24 : —	10·0	Masses of cir-str. ; woolly cir. and cir. haze over the
	10	405	48·0	45·6	2·4	1·7	0·7	20		10·0	Thick scud and cirro-stratus.
	18	29·448	46·9	43·9	3·0	0·9	0·2	18	24 : — : —	1·5	Scud ; cirro-strati.
	20	482	50·4	45·3	5·1	0·9	0·8	22	25 : — : —	9·0	Id. ; id.
	22	518	53·0	46·9	6·1	1·9	1·6	21	25 : — : —	4·0	Cumuli.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

May 7d. Cuckoo heard.

tt. an ne.	BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
8 0	29·548	56·0	48·4	7·6	2·3	1·1	26	25 : — : —	5·0	Cumuli. ⊖
2	582	57·9	49·1	8·8	1·6	0·9	25	24 : — : —	5·0	Id. ⊙
4	605	59·2	50·2	9·0	2·2	1·2	23	27 : — : —	6·0	Id. ⊖
6	647	57·6	50·0	7·6	1·1	0·5	22	26 : — : —	5·0	Id.; linear cirri.
8	673	52·1	47·0	5·1	0·4	0·3	26		9·0	Masses of cirro-strati; cirrous haze; solar halo.
10	698	47·0	43·6	3·4	0·3	0·0	22		2·0	Sheets of cirri and cir. haze; traces of a lunar halo. ☽
18	29·730	40·4	39·8	0·6	0·2	0·0	20		0·2	Cirri and haze round horizon. ⊙
20	716	47·7	46·3	1·4	0·2	0·1	18		0·5	Scud, cirro-strati, and cirri round horizon. ⊙
22	680	57·2	51·1	6·1	0·4	0·3	15	15 : — : —	7·0	Cumuli; a few tufts of cirri. ⊙
9 0	640	59·4	51·4	8·0	1·3	1·8	16	15 : — : 20	3·0	Id.; woolly cirri. ⊙
2	612	60·6	51·6	9·0	1·8	1·7	18	18 : — : —	7·0	Masses of cum.; woolly cirri and cir. haze; solar halo. ⊙
4	557	61·3	52·3	9·0	2·1	1·2	18	17 : — : 22	8·0	Id.; woolly and mottled cirri; very hazy on hor. ⊖
6	524	57·9	51·6	6·3	2·0	0·3	20	18 : — : —	10·0	Thick scud and cirro-stratus.
8	488	55·9	51·6	4·3	0·4	0·1	18	17 : — : —	10·0	Id.
10	452	53·0	49·8	3·2	0·5	0·8	19	18 : — : —	9·5	Scud; cir.-str. and cir. haze; portion of a lunar halo. ☽
23¼	29·366	55·3	49·0	6·3	2·8	0·9	19	21 : — : —	3·0	Loose cumuli; showers of rain and hail about 5h.
1 18	29·650	47·0	44·3	2·7	3·9	0·5	20		1·0	Scud and cirro-strati to S.; cirri and haze to N. ⊙
20	674	50·2	46·7	3·5	1·0	0·7	19	21 : — : —	9·0	Scud and loose cumuli; cirri and cirrous haze. ⊖
22	684	54·5	49·6	4·9	2·1	2·0	17	21 : — : —	6·0	Id.; id.
1 0	698	58·5	50·8	7·7	3·0	2·3	18	21 : — : —	8·0	Id.; id. ⊙
2	706	58·2	49·9	8·3	3·6	3·0	19	21 : — : —	2·0	Id. ⊙
4	698	57·8	48·8	9·0	4·0	2·9	20	21 : — : —	6·0	Id. ⊙
6	706	57·0	49·5	7·5	3·6	1·6	18	20 : — : —	2·0	Id.; cirri. ⊙
8	726	51·4	46·5	4·9	2·5	1·0	18	— : — : 22	7·0	Woolly cirri.
10	741	46·6	44·0	2·6	1·2	0·4	18		4·0	Id.; cirro-strati. ☽
18	29·718	43·5	41·4	2·1	0·7	0·1	18	— : 20 : 20	6·0	Thick woolly cirri and cirro-strati. ●
20	711	53·9	48·7	5·2	0·6	0·9	16		8·0	Thick woolly cirri; part of a halo. ⊖
22	717	58·0	50·2	7·8	1·6	0·8	18	— : 22 : 22	9·0	Woolly cirri and cirro-strati; patches of scud. ⊖
1 0	708	60·8	52·0	8·8	2·1	1·7	18		9·8	Masses of cumuli; woolly cirri and cirro-strati.
2	695	63·6	53·7	9·9	2·4	2·0	16	15 : — : —	9·8	Id.; cirrous haze and cirro-stratus. ⊖
4	679	62·2	52·5	9·7	1·7	0·5	17	16 : — : —	10·0	Cum.; cir.-str. and cir. haze; hazy and electric-looking.
6	682	58·4	52·2	6·2	1·4	0·9	15		10·0	Scud and electric-looking cum.; cirro-stratus and haze.
8	696	53·3	50·0	3·3	2·2	0·3	14	16 : — : —	10·0	Thick dark scud; cir.-str. and cir. haze; slight showers [occasionally.
10	722	51·9	48·6	3·3	0·6	0·0			10·0	Thick scud and cirro-stratus.
18	29·758	44·6	43·7	0·9	0·7	0·0	4		8·5	Thick woolly cirri and cirrous haze; patches of scud. ⊖
20	766	49·8	47·8	2·0	0·1	0·1	4	— : — : 10	9·5	Thick woolly cirri; cumulo-strati to NW. ⊖
22	774	56·9	51·6	5·3	0·3	0·7	7	9 : — : —	7·0	Scud and loose cumuli; cirri and cirrous haze.
1 0	777	55·5	50·6	4·9	1·8	1·3	6	10 : — : —	9·0	Masses of cum.; woolly cirri and cir. haze; solar halo ⊖
2	793	57·6	52·4	5·2	1·4	0·8	6	9 : — : 12	9·0	Id.; id. ⊖
4	805	56·3	51·6	4·7	1·6	1·2	6	9 : — : 12	7·5	Thin scud and cumuli; woolly cirri. ⊖
6	831	54·3	50·4	3·9	1·5	0·8	8	10 : — : —	10·0	Scud and cumuli; cirro-stratus and cirrous haze.
8	859	49·3	46·2	3·1	0·6	0·5	4		9·0	Woolly cirri, cirro-strati, and cirrous haze.
10	899	46·4	45·0	1·4	0·5	0·3	3	6 : — : —	10·0	Scud; cirro-stratus and cirrous haze.
18	29·953	46·3	44·8	1·5	0·6	0·7	4	4 : — : —	10·0	Cirro-stratous scud.
20	979	47·5	45·4	2·1	0·8	0·4	2	5 : — : —	9·8	Scud and loose cumuli.
22	984	52·6	48·8	3·8	0·8	0·9	4	7 : — : —	7·0	Id.; woolly cirri. ⊖
1 0	978	54·0	49·7	4·3	0·8	0·4	2	7 : — : —	4·0	Id.; id. ⊙
2	968	55·6	48·5	7·1	0·8	0·5	6		0·8	Masses of scud and cum.; thin cir. and cir. haze; halo. ⊙
4	954	55·2	48·4	6·8	0·8	0·8	5	6 : — : —	0·8	Id.; thin woolly cirri. ⊙
6	952	54·4	48·0	6·4	0·9	0·4	3		0·5	A few small patches of scud and cum.; woolly cirri. ⊙
8	955	50·8	46·5	4·3	0·7	0·1	6		0·3	Cirrous haze and cirri on horizon. ⊙
10	939	44·5	43·0	1·5	0·2	0·0	0		0·3	Cirri on horizon.
18	29·885	41·2	41·0	0·2	0·1	0·0	18		10·0	Homogeneous; misty.
20	876	43·8	42·9	0·9	0·1	0·1	24	22 : — : —	9·8	Cirro-stratous scud; misty. ●

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The tions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

May 12d 20h. Very hazy round horizon; small portion of a halo.

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1^{h}.	Maximum force in 10^{m}.	From			
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
14 22	29·831	50·0	46·2	3·8	0·1	0·1	13	12 : — : —	0·4	Masses of cumuli to S. and SE.
15 0	784	56·7	48·9	7·8	1·3	0·8	12	14 : — : —	0·8	Small detached masses of cumuli.
2	745	59·0	51·1	7·9	0·9	0·3	16	15 : — : —	5·0	Loose cumuli; hazy.
4	702	62·6	52·6	10·0	1·1	0·2	16	21 : — : —	8·5	Id.; id.
6	674	56·9	50·2	6·7	1·1	0·8	14	20 : — : —	8·0	Id.; id.
8	667	50·7	46·3	4·4	0·8	0·4	15		2·5	Cirri and cirrous haze on horizon.
10	671	46·2	41·9	4·3	0·4	0·4	17		4·0	Cirri, cirro-strati, and cirrous haze.
18	29·590	39·4	38·5	0·9	0·4	0·0			2·5	Cir.-cum.-str., cir.-str., woolly cirri, and cirrous haze.
20	575	47·5	43·7	3·8	0·1	0·0	6		2·5	Woolly cirri and cirro-strati; hazy.
22	521	54·0	47·4	6·6	0·2	0·2	14	10 : — : 20	1·0	Masses of loose cumuli; sheets of woolly cirri.
16 0	490	55·0	47·0	8·0	0·8	0·8	15		0·5	Small patches of cumuli.
2	459	55·6	47·9	7·7	1·5	1·5	12	12 : — : —	6·0	Cumuli.
4	422	54·6	48·2	6·4	1·3	1·1	12	13 : — : —	9·0	Scud; cumuli and cirro-strati.
6	373	52·2	46·6	5·6	1·3	1·0	8	11 : — : —	6·5	Cumuli; streaks of cirri.
8	358	48·6	43·2	5·4	1·5	0·9	8	11 : — : 14	3·0	Loose cumuli, woolly cirri, cirrous haze, and sheets o
10	29·326	46·0	44·5	1·5	0·5	0·3	6	9 : — : —	10·0	Scud; rain$^{0·5}$ commenced at 9^{h} 50^{m}. [cir.-str.
$23\frac{1}{2}$	28·909	47·5	47·2	0·3	1·1	0·5	3	6 : — : —	10·0	Misty scud; drizzling rain.
17 3	826	…	…	…	…	…			……	
8	877	51·4	49·4	2·0	0·8	0·3	18	— : 20 : —	10·0	Thick cirro-stratous scud.
18	28·807	47·8	47·2	0·6	0·3	0·0	14	— : 12 : —	7·0	Cirro-cumulo-strati; cirro-strati; patches of scud.
20	824	49·6	47·0	2·6	0·3	0·1	16	15 : — : —	8·5	Scud; cirro-strati. [drops of rain.
22	816	50·5	46·8	3·7	2·0	2·0	15	14 : 14 : —	8·5	Masses of scud and loose cumuli; cirro-strati; a few
18 0	802	54·6	49·6	5·0	1·8	1·7	14	14 : — : —	9·8	Scud, loose cumuli, and cirro-strati.
2	803	50·2	48·8	1·4	1·1	0·2	10	13 : — : —	10·0	Scud and cirro-strati; showers since 1^{h}.
4	793	50·3	47·3	3·0	0·8	0·7	10	12 : — : —	10·0	Id.
6	772	50·8	47·5	3·3	0·7	0·4	6	12 : — : —	10·0	Scud and cirro-stratus.
8	780	48·0	47·5	0·5	0·6	0·2	4	8 : — : —	10·0	Scud; rain$^{0·5}$
10	784	48·4	47·8	0·6	0·2	0·1	2		10·0	Scud and cirro-strati; drops of rain.
18	28·919	47·8	46·3	1·5	0·2	0·0	21		10·0	Cirro-stratous scud and cirro-strati.
20	28·976	48·8	46·2	2·6	0·8	0·4	24	24 : — : —	10·0	Scud; cirro-strati.
22	29·028	53·7	48·0	5·7	1·8	1·0	24	24 : 24 : —	8·0	Scud and loose cum.; sheets of cir.-str. and wool. cirri.
19 0	067	55·9	48·3	7·6	1·9	1·6	21	24 : 26 : 26	8·0	Cumuli; cirri and cirro-strati, moving very slowly.
2	096	59·0	51·2	7·8	2·2	2·4	18	24 : — : —	9·5	Scud, cumuli, and cirro-strati.
4	119	57·0	49·7	7·3	3·1	1·9	19	21 : — : —	6·0	Id, id., and woolly cirri.
6	129	56·1	47·1	9·0	1·9	1·6	18	20 : — : —	2·0	Cumuli; cirro-strati to S.
8	129	51·1	46·9	4·2	1·9	0·1	18	— : — : 20	9·0	Cirri, cirrous haze, and cirro-strati.
10	104	49·8	46·0	3·8	0·5	1·0	15		10·0	Cirro-strati and cirrous haze.
18	29·006	50·2	47·8	2·4	2·5	0·2	16	— : 17 : —	3·0	Cirro-stratous scud; cirro-strati; hazy on horizon.
20	003	53·7	48·4	5·3	2·3	3·0	16	17 : 17 : —	4·5	Scud and cirro-strati; hazy on horizon.
22	037	58·5	51·8	6·7	2·8	2·2	16	18 : — : —	7·5	Scud and cumuli.
20 0	074	58·4	51·1	7·3	2·9	1·3	18	17 : — : —	9·0	Id. [in ragged masses
2	106	56·8	52·2	4·6	1·2	0·3	19	16 : — : —	9·0	Scud, nimbi, and cum.-str.; some of the scud hangin
4	131	58·6	52·3	6·3	0·7	0·5	12	16 : — : —	9·8	Scud and cum.; cir.-str.; a peal of thunder heard to E.
6	169	53·0	49·6	3·4	0·8	0·1	16	15 : — : —	9·8	Scud and cir.-str. [very heavy shower of hail about 3
8	215	52·4	49·2	3·2	0·2	0·2	16	— : 12 : —	9·0	Cirro-strati, cirrous haze, and cirri.
10	254	44·5	43·4	1·1	0·5	0·1	16		4·0	Cirro-strati aud cirri.
18	29·449	45·7	44·8	0·9	0·2	0·1	22		5·5	Cirro-cumulo-strati and cirro-strati; haze on horizon.
20	503	51·2	48·6	2·6	0·1	0·0	28	— : 16 : —	6·0	Id.; haze on horizon.
22	544	56·3	51·8	4·5	0·2	0·1	31	20 : 16 : —	2·0	Masses of scud and loose cumuli in two currents.
21 0	580	60·3	54·0	6·3	0·2	0·1	8	24 : — : —	5·0	Cumuli; two or three peals of thunder to SE. and als
2	615	53·1	52·1	1·0	1·0	0·5	6		9·0	Thunder-storm. [to N.
4	655	58·7	55·2	3·5	0·5	0·2	21		3·5	Cir.-cum.-str., cum., and haze; thunder to S. and SW
6	672	59·0	54·4	†4·6	0·3	0·1	16		1·0	Cumuli and cirro-strati. ⊙ [since 2^{h}
8	722	53·3	50·4	↓2·9	0·3	0·2	20	— : 26 : —	3·0	Cirro-strati and cirri to W.; cumuli to E.

May 15^{d} 0^{h}. Observation made at 0^{h} 6^{m}. 16^{d} 8^{h}. Coloured parhelia and portion of a solar halo. 17^{d} 18^{h}. Observation made at 18^{h} 7^{m}.

May 20^{d} 2^{h}. Between 1^{h} 45^{m} and 2^{h} 0^{m}, three peals of thunder heard towards the SE.; slight shower.

May 21^{d} 2^{h}. Thunder-storm since about 1^{h} 20^{m}, chiefly to northwards; the intervals varying from 2^{s} to 8^{s}, generally about 5^{s}; at 1^{h} 37^{m}, a very brilliant flash to NNE., consisting of three simultaneous streaks, followed immediately by a single one, from the horizon to 20° altitude, the interval being 5^{s}; about 1^{h} 45^{m}, it commenced raining, the drops being very large; at 1^{h} 50^{m}, it commenced to hail very violently, some of the hailstones being about 0·3 inch in diameter, afterwards becoming rain. The clouds are chiefly thick black scud and cumulo-stratus, moving from various directions, but principally from ENE.; the last peal of thunder was heard about 1^{h} 50^{m}.

BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
	Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m	From			
in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
29·750	46·2	45·3	0·9	0·1	0·0	22		2·0	Cirro-strati and cirri.
29·810	49·2	47·8	1·4	0·1	0·0	24	19 : — : —	8·0	Misty scud; woolly cirri and cirrous haze. ⊙
832	53·7	51·3	2·4	0·6	0·2	18	19 : — : —	9·9	Scud; cirro-stratus. [cirro-stratus.
842	57·6	52·2	5·4	0·7	0·3	22	22 : — : —	10·0	Masses of scud and loose cum.; dense homogeneous
862	58·6	53·5	5·1	0·9	0·8	18	22 : — : —	10·0	Patches of scud; dense homogeneous cirro-stratus.
860	57·0	52·4	4·6	1·1	1·0	20	22 : — : —	10·0	Id.; id.
843	58·8	53·2	5·6	1·6	1·8	20	20 : 26 : —	9·9	Scud; cirro-cumulo-strati.
831	53·6	50·1	3·5	2·4	1·3	21	22 : — : —	10·0	Thick scud.
857	52·0	50·0	2·0	1·3	0·8	18	21 : — : —	10·0	Id.
871	51·5	50·2	1·3	0·7	0·2	20	21 : — : —	10·0	Id.
29·920	52·2	50·0	2·2	0·3	0·1	26	— : 28 : —	9·9	Dense mass of cirro-stratus.
29·970	53·2	51·2	2·0	0·1	0·1	29	— : 29 : —	10·0	Cirro-stratous scud; cirro-stratus; drizzling rain.
30·015	49·3	48·6	0·7	0·5	0·3	4	5 : — : —	10·0	Misty loose scud; slight drizzle since 20h.
014	52·3	50·7	1·6	0·2	0·1	3	7 : — : —	10·0	Id.
016	56·7	53·2	3·5	0·2	0·2	2	5 : 20 : —	9·0	Scud; cirro-cumulo-strati.
30·008	56·9	53·0	3·9	0·2	0·2	8	— : 21 : —	6·0	Cirro-cumulo-strati and cirro-strati. ⊙
29·991	58·7	54·4	†4·3	0·2	0·1	2	21 : — : —	8·0	Scud and cumuli. ⊖
998	56·0	52·4	↓3·6	0·2	0·1	2	22 : — : —	9·5	Cirro-stratous scud and cirro-cumulo-strati. ⊖
998	51·3	49·7	1·6	0·1	0·1	18		9·0	Cirro-strati.
29·988	56·4	49·0	7·4	1·1	0·5	22	24 : 27 : 27	4·0	Masses of cumuli; cirro-cumuli and linear cirri. ⊙
29·878	54·4	52·0	2·4	1·7	1·5	24	24 : — : 28	7·0	Scud; woolly cirri; cirro-strati. ⊖
866	57·7	53·8	3·9	1·3	1·1	24	24 : — : —	9·5	Id.; id.; id.
867	58·0	53·7	4·3	2·6	1·4	20	23 : — : —	9·9	Id.; cirro-strati and cirri.
828	60·8	55·3	5·5	2·2	1·8	22	24 : — : —	8·5	Id.; cirro-cumuli and cirro-strati.
811	60·5	54·8	5·7	3·2	2·6	26	25 : 26 : —	7·0	Id.; cirro-cumuli, mottled cirri, and cirro-strati. ⊙
801	62·0	55·2	6·8	4·2	2·0	26	26 : 24 : —	6·5	Id.; id.
778	59·3	53·5	†5·8	3·8	2·7	26	26 : 25 : —	3·5	Id.; sheets of mottled cirro-strati. ⊙
801	56·3	51·3	↓5·0	3·5	0·3	27	25 : — : —	5·0	Id.; id. ⊙
811	50·6	45·8	4·8	1·5	0·4	21	26 : — : —	1·0	Id.; cirro-strati.
29·829	48·8	46·0	2·8	1·8	0·5	22	— : — : 29	8·5	Woolly and mottled cir. and cir.-str.; patches of scud.
836	52·3	46·2	6·1	1·0	0·6	25	27 : — : —	3·5	Scud and loose cumuli; cirro-strati. ⊙
838	54·6	46·9	7·7	1·2	1·2	26	27 : — : —	7·0	Loose cumuli. ⊙
838	57·7	48·8	8·9	1·6	1·1	26	27 : — : —	4·0	Id.
837	59·1	50·0	9·1	1·8	1·0	24	27 : — : —	8·0	Id. ⊙
840	60·7	51·4	9·3	2·6	1·8	24	28 : — : —	8·5	Id. ⊖
835	55·8	48·4	‡7·4	3·4	1·8	24	27 : — : —	3·0	Id.
845	52·4	47·0	5·4	1·7	1·9	22	26 : — : 27	5·0	Scud; woolly and curled cirri.
831	49·9	44·8	5·1	1·6	0·9	21	27 : — : —	5·0	Id.; cirro-strati.
29·793	49·9	46·3	3·6	1·3	0·8	22	26 : — : —	10·0	Scud; cirro-strati above.
795	51·5	46·8	4·7	1·0	0·4	23	26 : — : —	10·0	Id.; id.
773	53·7	47·3	6·4	1·7	1·0	26	26 : — : —	9·5	Id.; cirro-strati and cirro-cumuli.
769	54·1	48·2	5·9	1·9	1·1	25	26 : — : —	10·0	Thick scud; cumuli on horizon to S. and N.; cir.-str.
765	53·6	49·8	3·8	2·0	0·6	26	26 : — : —	8·5	Thick scud; cum. on horizon to S. and N.; cir.-str.; slight shower.
763	56·4	48·0	8·4	2·0	1·7	29	27 : — : —	9·0	Id.; id. to E. and N.; rain$^{0·5}$
801	52·3	46·4	5·9	2·3	0·4	2	27 : — : —	8·0	Thick scud and loose cumuli. [to E. about 7h.
822	51·0	46·8	4·2	0·3	0·1	0	27 : — : —	9·5	Scud and cir.-str.; drops of rain occasionally; a portion of a rainbow
854	47·0	45·0	2·0	0·1	0·0	28	28 : — : —	7·0	
29·948	44·9	42·2	2·7	0·2	0·1	27		2·0	Woolly cirri radiating from SSE.; hazy on horizon. ⊙
974	49·4	43·5	5·9	0·4	0·3	30	29 : — : —	2·0	Loose cumuli. ⊙
982	54·4	46·6	7·8	0·7	0·3	28	1 : — : —	6·0	Cumuli.
29·997	55·3	47·2	8·1	0·5	0·4	0	1 : — : —	3·5	Id. ⊙
30·006	57·7	48·4	9·3	0·6	0·3	29	30 : — : —	3·5	Id. ⊙
30·000	58·9	49·2	9·7	0·6	0·1	26	26 : — : —	4·0	Id.; woolly cirri. ⊙
29·992	60·1	50·7	†9·4	0·4	0·0	27	7 : — — :	3·5	Scud, loose cumuli, and cirro-strati. ⊖

Th direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The moti s of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in		From			
					1h.	10m.				
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
28 8	29·995	56·5	49·3	⸸7·2	0·1	0·0	0	— : 28 : —	9·5	Cirro-cumulo-strati and cirro-strati.
10	30·014	51·3	46·5	4·8	0·2	0·0	16		2·0	Cirro-cumuli and cirro-strati.
18	30·066	47·0	45·2	1·8	0·2	0·0	18		9·0	Thick woolly cirri rad. from SSE. and NNW. ; sol
20	064	54·8	49·7	5·1	0·1	0·0	21	— : — : 28	8·5	Id. ⊖ [halo.
22	057	59·1	51·3	7·8	0·2	0·1	22	— : — : 28	3·5	Woolly and tufted cirri ; masses of cumuli ; a tenden
29 0	047	64·8	55·0	9·8	0·1	0·1	4	24 : — : —	3·5	Cumuli ; cirri. ⊙ [to a halo in the cirri
2	037	68·8	57·5	11·3	0·4	0·3	22	— : 24 : —	9·5	Cirro-cumulo-strati.
4	012	68·3	57·2	11·1	1·1	0·7	22	— : 24 : —	8·5	Large cirro-cumulo-strati and loose cumuli.
6	007	65·0	56·0	9·0	1·6	0·5	22	— : 24 : —	3·0	Cirro-cumulo-strati.
8	009	59·9	54·5	‡5·4	1·4	0·4	20	— : 24 : —	3·0	Id.
10	015	52·3	49·1	3·2	0·6	0·0	18		0·8	Cirro-strati.
18	29·979	52·3	49·2	3·1	0·5	0·0	20		2·5	Cirro-strati, woolly cirri, and cirrous haze.
20	985	60·3	54·3	6·0	0·2	0·2	22	— : 24 : —	7·0	Cirro-cumulo-strati ; cirro-strati.
22	978	60·1	53·1	7·0	1·5	1·3	28	23 : — : —	3·0	Scud and cumuli.
30 0	982	62·0	53·9	8·1	1·2	1·1	28	23 : — : —	5·0	Id.
2	987	63·1	54·4	8·7	2·1	0·5	25	24 : — : —	2·5	Id.
4	969	65·0	55·1	9·9	1·1	0·6	30	25 : 24 : —	2·5	Id. ; haze on horizon.
6	967	64·2	55·5	†8·7	0·8	0·3	24	27 : — : —	3·5	Id. ; id. ; woolly cirri.
8	977	59·3	53·0	⸸6·3	0·5	0·2	23	29 : — : 24	6·0	Scud and masses of cirro-stratus ; woolly cirri.
10	29·984	53·6	50·3	3·3	0·3	0·0	24		1·0	Sheets of cirro-strati and cirri.
23¼	30·002	63·8	56·3	7·5	0·1	0·1	8	22 : — : —	2·0	Detached masses of cumuli ; streaks of cirri.
31 18	29·961	48·7	47·2	†1·5	0·9	0·0	20		0·2	Patches of cir. and cir.-str. ; hazy on hor., like fog cle
20	967	55·0	51·0	⸸4·0	0·1	0·1	22		0·2	Cirri and haze near horizon. ⊙ [ing off ; heavy dew
22	958	65·7	56·0	9·7	0·1	0·0	22		0·2	Id. ; patches of cumuli to SE.
1 0	949	69·4	56·9	12·5	0·1	0·0	20		0·5	Id. ; id.
2	931	72·9	59·2	13·7	0·2	0·1	30		0·2	Id. ; patch of cumulus to E.
4	922	76·2	61·0	15·2	0·2	0·1	16		0·2	A few small patches of cumulus ; milky haze.
6	913	74·6	†60·8	13·8	0·3	0·3	19		0·7	Cum. and cum.-str. to W. ; cum. to S. ; hazy round ho
8	924	70·2	60·4	9·8	0·3	0·0	20		0·7	Cirri and cirrous haze round horizon.
10	949	58·5	⸸56·2	2·3	0·1	0·0	16		1·0	Id.
18	29·969	53·7	51·7	†2·0	0·1	0·0	24		0·5	Misty on horizon.
20	972	61·8	58·2	⸸3·6	0·1	0·0	14		0·2	Hazy.
22	972	72·3	62·6	9·7	0·4	0·1	24		0·4	Small patches of cum. in a brownish haze about the ho
2 0	968	76·6	64·7	11·9	0·5	0·4	18	23 : — : —	2·0	Masses of cum.-str. and small patches of cum. ; hazy
2	953	80·1	65·3	14·8	0·6	0·5	20	24 : — : —	6·0	Cumuli and cumulo-strati. ⊙ [ho
4	953	73·8	66·2	7·6	0·4	0·1	23	20 : — : —	9·8	As before ; a smart shower at 3½h for 10m ; 2 or 3 peals of thunder since 3h 50
6	950	74·3	67·0	†7·3	0·2	0·0	12		2·0	Cumulo-strati and sheets of cirro-strati ; haze on ho
8	955	71·1	66·0	⸸5·1	0·0	0·0	30	— : 24 : —	3·0	Cirro-strati, cirro-cumuli, and masses of cumuli.
10	29·969	61·4	58·8	2·6	0·0	0·0			1·0	Cirro-strati and cirro-cumuli to N.
18	30·010	53·0	51·6	†1·4	0·1	0·0	20		0·0	Clear ; haze on horizon.
20	010	61·4	58·4	⸸3·0	0·1	0·0	26		0·0	Id. ; id.
22	30·000	71·9	64·6	7·3	0·1	0·0	16		0·0	Id. ; id.
3 0	29·987	76·3	61·5	14·8	0·1	0·0	17		0·5	Id. ; cumuli and haze on horizon.
2	975	78·6	64·2	14·4	0·2	0·1	5	21 : — : —	3·0	Cumuli and cumulo-strati; hazy on horizon.
4	953	81·7	66·7	15·0	0·2	0·1	19	20 : — : —	2·5	Id., having an internal motio
6	942	79·7	†65·2	14·5	0·2	0·1	26		2·5	Id. ; cirro-strati ; haze on ho
8	956	71·7	64·0	7·7	0·3	0·1	25		4·0	Cumuli, cumulo-strati, cirri, and cirrous haze.
10	961	63·2	⸸60·2	3·0	0·1	0·0	20		2·0	Cirro-strati, cirri, and cirrous haze.
18	29·960	56·4	55·0	†1·4	0·1	0·0	22		0·3	Haze on horizon, with a few patches of cirro-strat
20	960	63·0	59·5	⸸3·5	0·1	0·0	22		0·0	Haze near horizon. ⊙ [terspers
22	953	72·7	66·2	6·5	0·1	0·0	1		1·5	Cirro-cumulo-strati, cirro-strati, and cirrous haze.
4 0	933	79·8	67·5	12·3	0·1	0·2	22		1·5	Cumuli and cum.-str. ; much haze in the atmosphe
2	913	81·6	65·2	16·4	0·4	0·2	21	16 : — : —	6·5	As before; distant thunder to E., first heard about
4	899	82·0	65·7	16·3	0·4	0·2	21	17 : — : —	2·5	Cumuli and cumulo-strati ; atmosphere very hazy.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

June 3d. The dry thermometer was several times observed as high as 82°·4.

BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
	Dry.	Wet.	Diff.	Maximum force in 1^h.	Maximum force in 10^m	From			
in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
29·895	78·4	†64·5	13·9	0·4	0·1	21		2·5	Cumuli and cumulo-strati ; atmosphere very hazy. ⊙
896	73·8	62·4	11·4	0·2	0·1	21		0·5	Cirro-strati and haze round horizon. ⊙
910	62·8	⸸58·0	4·8	0·1	0·0	15		0·7	Woolly cirri, cirro-strati, and cirrous haze. ☽
29·910	52·8	50·7	†2·1	0·2	0·1	20	— : — : 20	1·0	Sheets of woolly and mottled cirri. ⊙
914	63·6	58·4	⸸5·2	0·1	0·0	26	— : — : 20	3·5	Woolly and linear cirri ; haze on horizon. ⊙
906	73·7	62·8	10·9	0·2	0·2	22	— : — : 22	7·0	Id. ⊙
894	78·2	62·8	15·4	0·4	0·4	25	— : — : 24	7·0	Id. ; cirro-strati and haze on hor. ⊙
886	80·6	64·8	15·8	0·4	0·2	21	— : — : 24	7·5	Thick woolly cirri ; patches of cum. on E. and SE. hor. ⊖
865	81·0	64·0	17·0	0·4	0·1	21		5·0	Cumuli ; woolly cirri and cirro-strati. ⊖
850	78·3	†65·2	13·1	0·2	0·1	22		7·0	As before; Cheviot obscured by the haze; solar halo at 5^h. ⊙
850	72·8	64·5	8·3	0·1	0·0	23	— : — : 20	9·0	Thick woolly cirri ; cum. to E. ; very hazy on horizon. ⊙
856	67·4	⸸61·4	6·0	0·1	0·0	22	— : 20 : —	10·0	Cirro-stratous scud ; mass of cirro-stratus. ⊁
29·850	55·0	51·6	†3·4	0·1	0·0			2·0	Thin cirro-cumuli and cirri over the sky. ⊙
840	62·0	57·2	⸸4·8	0·0	0·0	22	— : 21 : 21	2·5	Cirro-cumuli, cirro-strati, and linear cirri. ⊙
825	74·3	62·4	11·9	0·6	0·4	18	— : — : 21	4·5	Woolly cirri ; cirro-strati and cirrous haze.
815	76·2	60·9	15·3	1·0	1·2	21	— : — : 21	5·0	Id. ; cumulo-strati ; very hazy on horizon. ⊙
804	80·6	62·2	18·4	1·3	0·5	19	— : — : 24	8·5	Wool. & mot. cir. ; cum. & cum.-str. on hor. ; very hazy. ⊙
797	77·6	61·0	16·6	1·2	0·8	20	— : — : 20	8·5	Woolly cirri, becoming thicker ; cumuli. ⊖
784	75·8	61·2	14·6	0·5	0·3	18	— : 21 : 21	7·0	Cir.-cum.-str., cir.-str., and cir. ; cum. and haze on hor. ; halo at 5^h. ⊖
791	70·0	60·7	9·3	0·4	0·1	19	— : 24 : 24	4·0	Cir.-str., cir.-cum., woolly and diffuse cir. ; hazy on hor. ⊙
810	63·7	58·6	5·1	0·2	0·1	20	— : 24 : 24	9·0	As before. ⊁
29·782	69·2	62·6	6·6	0·4	0·3	5	24 : — : —	3·0	Cum. ; patches of cirro-strati ; much atmospheric haze. ⊙
29·673	56·9	55·0	1·9	0·9	0·0	2	12 : — : —	10·0	Thick scud.
667	60·0	56·6	3·4	0·0	0·0	12	12 : — : —	10·0	Id.
658	57·8	55·5	2·3	0·1	0·0	3		10·0	Scud to N. ; dense mass of cirro-stratus.
645	62·0	58·2	3·8	0·2	0·2	13		10·0	Cirro-stratous scud.
629	64·0	59·3	4·7	0·3	0·2	14		10·0	Nearly homogeneous.
598	68·1	62·6	5·5	0·3	0·0	14	18 : — : —	10·0	Dense scud and cirro-stratus.
581	64·2	60·2	4·0	0·1	0·1	6		10·0	Dense scud.
572	59·3	58·1	1·2	0·1	0·1	4		10·0	Id. ; slight drizzle.
561	58·5	57·8	0·7	0·0	0·0	8	— : 18 : —	9·5	Cir.-str. scud and cir.-cum.-str. ; misty on horizon.
29·516	56·4	55·1	1·3	0·2	0·0	18	— : 16 : —	9·8	Cirro-cumulo-strati and cirro-stratous scud.
513	60·3	58·1	2·2	0·0	0·0	10	18 : 14 : —	9·8	Patches of loose scud ; cirro-stratous scud.
499	65·9	60·6	5·3	0·1	0·0	7	— : 17 : —	6·5	Cir.-cum.-str. and loose cum. ; cirro-strati on N. hor. ⊖
488	66·4	60·7	5·7	0·3	0·1	24	— : 16 : —	9·0	Id. and cirro-stratus ; cumulo-strati on hor. ⊖
471	66·7	60·9	5·8	0·3	0·3	3	18 : — : —	9·5	Scud and loose cumuli ; cirro-strati ; cumulo-strati.
459	66·6	60·6	6·0	0·3	0·1	4	19 : — : —	10·0	Thick scud and cumuli ; distant thunder to E.
458	68·0	60·0	†8·0	0·4	0·2	24	— : 18 : —	8·5	Cum. & cir.-cum.-str. ; cum.-str. & haze round hor. ; electric-like to E.
466	65·2	58·0	7·2	0·4	0·4	21	— : 18 : —	6·0	Cir.-cum. and cir.-str. ; ragged cum. and haze on hor. ⊙
485	60·0	56·4	⸸3·6	0·6	0·3	18	— : 18 : —	8·5	Cirro-stratous scud and cirro-cumulo-strati ; cir.-str.
29·510	59·0	57·0	2·0	0·5	0·6	20		10·0	Dense uniform mass of clouds.
524	62·1	58·7	3·4	0·5	0·8	18	20 : — : —	10·0	Scud ; densely overcast.
542	66·3	60·7	5·6	0·9	0·5	18	19 : — : —	10·0	Id. ; cirro-cumulo-strati and cirro-strati. ●
555	66·8	60·8	6·0	0·9	0·6	18	20 : — : —	10·0	Loose scud ; cum. on N. hor. ; dense cir.-str. ; solar halo. ●
556	70·5	60·8	9·7	1·6	1·0	18	— : 20 : —	10·0	Cir.-cum. ; cir.-str. ; cum. to N. and E. ; solar halo. ⊖
553	65·4	57·3	8·1	1·8	0·9	20	19 : — : —	10·0	Masses of scud & loose cum. ; homogeneous cir. haze &
521	64·0	59·0	5·0	1·7	2·2	18	19 : — : —	10·0	Scud ; cir.-str. scud and cir.-str. ; drops of rain. [cir.-str.
493	60·7	58·2	2·5	2·8	1·6	18	19 : — : —	10·0	Scud, moving rapidly ; rain^2 since last observation.
494	59·3	57·8	1·5	2·6	2·1	20	20 : — : —	9·8	Thick smoky scud ; cirro-strati above.
29·720	55·1	51·1	†4·0	3·0	1·0	20	24 : — : 22	7·0	Scud ; woolly cirri. ⊖
774	58·8	53·9	⸸4·9	1·4	0·6	20	24 : — : 22	6·5	Id. ; id. ; cirro-strati. ⊖
793	61·5	58·4	3·1	1·6	0·8	21	23 : — : 22	6·0	Id. ; id. ; id. ⊖
817	65·7	55·7	10·0	2·6	1·1	21	22 : — : 21	8·0	Loose edged cum. ; wool., mot., & diffuse cir. & cir. haze. ⊖
840	66·0	54·8	11·2	1·7	1·0	20	— : 22 : —	8·5	Cirro-cumulo-strati and cumuli ; cirro-strati. ●

direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The ns of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

e 5^d 2^h. Very hazy on horizon ; broken portion of a halo.

e 9^d 4^h. Very thick electric-looking scud and cumuli, some of the scud hanging in detached patches ; uniform to E., distant thunder occasionally since 3^h.

Gött. Mean Time.		BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt pt.	0—10.	
11	4	29·867	63·5	56·0	7·5	2·1	1·2	20	23 : — : —	9·0	Scud ; loose cumuli ; cirro-cumulo-strati.
	6	881	62·7	56·2	6·5	0·8	0·3	19	24 : — : —	9·9	Thick scud, cirro-stratus ; drops of rain.
	8	893	59·2	56·7	2·5	0·4	0·1	20	23 : 22 : —	9·8	Scud ; cirro-cumulo-strati.
	10	905	57·6	54·9	2·7	0·6	0·6	22	23 : — : —	9·8	Cirro-stratous scud ; cirro-strati and haze.
	18	29·939	53·2	52·2	1·0	0·5	0·0	20	20 : — : —	6·5	Loose misty scud. ● [horizon.
	20	944	61·1	57·9	3·2	0·5	0·3	18	21 : — : —	6·0	Scud ; cir.-cum. and patches of light cirri ; cumuli on
	22	932	64·7	58·7	6·0	0·8	0·8	21	22 : — : —	3·5	Loose cumuli ; cirro-strati.
12	0	925	66·7	58·2	8·5	1·4	1·0	17	22 : — : —	9·5	Scud and loose cumuli ; cirro-strati above.
	2	902	68·4	58·2	10·2	1·5	1·1	20	23 : — : —	5·5	Id. ; cumulo-strati on E. horizon.
	4	886	70·3	59·0	11·3	2·0	1·5	20	22 : — : —	5·0	Masses of cumuli ; cirro-cumulo-strati.
	6	877	67·7	59·7	8·0	1·6	0·5	18	22 : — : —	7·5	Id. ; woolly cirri.
	8	878	62·4	57·2	†5·2	1·4	0·4	19		1·0	Cirri.
	10	890	57·0	54·2	⸸2·8	1·0	0·1	3	— : 23 : 23	6·0	Woolly cirri and cirro-cumuli ; cirro-strati and haze
	18	29·876	67·0	55·6	1·4	0·3	0·0	26		5·0	Cirro-strati, cirri, and cirro-cumulo-strati.
	20	897	62·0	58·4	3·6	0·4	0·1	22	25 : — : —	9·9	Thick scud.
	22	898	66·1	59·8	6·3	0·4	0·4	24	24 : — : —	9·0	Scud ; cirri ; cirro-cumuli.
13	0	897	69·0	60·6	8·4	0·9	1·2	24	24 : — : —	7·5	Scud and loose cumuli ; cirro-cumuli and cirro-strati.
	2	882	73·2	60·9	12·3	1·1	0·6	21	24 : — : —	8·0	Id. ; id. ; woolly cirri.
	4	888	71·8	61·7	10·1	0·8	0·5	25	23 : — : —	8·0	Id. ; hazy cirro-strati and cirri.
	6	889	68·6	59·8	8·8	0·9	0·6	21	— : 24 : —	10·0	Cirro-stratous scud ; cirro-strati. [cirro-cumu
	8	884	67·2	59·8	7·4	0·4	0·2	21	— : 26 : 24	5·0	Id. ; wo. and mot. cir. ; cir.-str. with mot. edg
	10	902	62·8	58·0	4·8	0·2	0·2	21	— : — : 24	7·0	Woolly and mottled cirri and cirro-strati.
	23½	29·904	72·7	64·5	8·2	0·4	0·3	22	25 : — : —	4·0	Cumuli ; cirri and cirro-strati ; solar halo at 4h.
14	18	29·944	55·3	53·7	†1·6	1·9	0·0	14	— : 27 : —	7·0	Cirro-cumuli, cirro-strati, and cirri.
	20	949	60·7	56·3	⸸4·4	0·3	0·1	18	24 : 26 : —	4·0	Masses of scud to W, ; cir.-cum., cirri, and cir. haze
	22	971	66·3	59·4	6·9	0·6	0·7	19	— : 25 : —	4·5	Cirro-cumuli, woolly cirri, and cirro-strati ; cir. haze
15	0	988	67·7	59·7	8·0	0·7	0·4	19		3·0	Id. ; cirrous haze.
	2	988	71·6	61·6	10·0	0·5	0·3	24	— : 24 : —	1·5	Id. ; woolly cirri ; cirrous haze.
	4	979	73·7	61·8	11·9	0·4	0·3	20		1·0	Patches of cumuli ; sheets of cirri.
	6	973	70·4	62·0	†8·4	0·4	0·4	20	— : — : 24	7·0	Wo. and mot. cirri ; cum. ; cir.-str. and haze on hor.
	8	29·998	66·9	59·7	7·2	0·6	0·1	22		7·0	Woolly cirri and cirrous haze ; cirro-strati.
	10	30·026	61·7	56·0	⸸5·7	0·3	0·2	2		4·0	Id. ; cirro-strati.
	18	30·077	53·7	50·3	†3·4	0·1	0·0	22		0·5	Patches and sheets of cirri.
	20	091	60·8	54·3	⸸6·5	0·1	0·0	10		0·3	Id.
	22	092	69·8	60·3	9·5	0·2	0·2	11		2·0	Woolly cirri and cirro-cumuli ; hazy on horizon.
16	0	093	74·4	62·0	12·4	0·1	0·1	14	— : — : 24	0·5	Id. ; id.
	2	088	78·4	64·0	14·4	0·3	0·1	16		1·0	Woolly cirri and cirro-strati ; id.
	4	087	74·2	64·1	10·1	0·6	0·3	28	— : — : 22	1·0	Sheets of woolly cirri ; patches of cumuli.
	6	092	72·2	63·9	†8·3	0·4	0·2	28		3·0	Mottled and woolly cirri ; cirro-strati and haze on hor
	8	100	69·2	62·2	7·0	0·2	0·1	24		3·5	As before.
	10	115	61·7	59·0	⸸2·7	0·1	0·0			1·5	Cirri and cirrous haze.
	18	30·114	53·9	52·3	†1·6	0·1	0·0	20		1·5	Woolly and feathered cirri.
	20	113	61·4	58·1	⸸3·3	0·1	0·0	20	— : — : 28	1·0	Id.
	22	104	72·7	64·3	8·4	0·1	0·1	4		0·5	Id.
17	0	094	77·9	64·2	13·7	0·1	0·0	0		0·3	A few cumuli on S. and N. horizon ; haze on horizon
	2	073	79·8	63·5	16·3	0·2	0·1	0		0·5	Id.
	4	045	81·8	63·6	18·2	0·1	0·1	31		1·0	Cumuli and haze. ⊙ [haze on hor
	6	018	79·2	66·8	12·4	0·3	0·3	31		1·5	Loose cum. ; patches of cirro-strati to E. ; atmosphe
	8	029	74·4	65·4	9·0	0·2	0·1	21		1·5	As before.
	10	045	66·0	62·0	4·0	0·1	0·1	4		1·0	Cirro-strati and haze on horizon.
	18	30·008	57·7	56·1	†1·6	0·1	0·0			0·0	Much haze on horizon ; heavy dew on the ground.
	20	30·007	64·3	61·3	⸸3·0	0·0	0·0	30		0·0	Id.
	22	30·000	73·2	64·7	8·5	0·1	0·0	5		0·2	Patches of loose cum. to N. and SE. ; very hazy on hor
18	0	29·982	79·9	68·8	11·1	0·2	0·0	4		1·0	Cumuli and haze on hor.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. Th motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
	Dry.	Wet.	Diff.	Maximum force in 1^{h}.	Maximum force in 10^{m}.	From			
in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
29·944	79·3	69·8	9·5	0·2	0·2	4	16 : — : —	9·5	Cumuli ; thunder-storm. (See footnote.)
943	65·6	63·0	2·6	1·9	0·0	6		8·5	Thunder-storm nearly ended.
913	76·7	†66·7	10·0	0·2	0·1	8		9·0	Dense mass of cirro-stratus. ⊖
908	73·0	66·5	6·5	0·1	0·0	14	— : 16 : —	8·5	Cirro-stratous scud ; cirro-strati and haze. ⊖
910	66·0	⸸63·2	2·8	0·1	0·0	18		10·0	Id. ; id.
29·862	60·3	58·3	†2·0	0·1	0·0	22	— : 18 : —	9·0	Cir.-str. ; cir.-cum. and cirri; parhelia seen at 18^{h} 30^{m}. ⊖
861	67·0	63·5	⸸3·5	0·1	0·0	20		9·5	Cir.-str. and cir. haze becoming thicker ; a few cumuli.
846	74·8	67·4	7·4	0·2	0·1	20	— : — : 16	5·5	Woolly cirri ; cumuli and haze round horizon. ⊙
830	80·5	68·2	12·3	0·3	0·1	21	18 : — : —	5·0	Piles of cumuli to N. and W. ; hazy on hor. ; distant thunder to E. ⊙
821	83·6	68·9	14·7	0·6	0·3	16	21 : — : —	8·0	Cum.-str. ; cirri ; cirro-strati ; distant thunder to E. ⊙
831	75·1	63·7	11·4	1·0	0·1	30	20 : 20 : —	7·5	Cumuli and woolly cirro-stratus. [occasionally till 7^{h}. ⊙
841	71·8	63·7	†8·1	0·6	0·2	18	— : 24 : —	7·5	Cir.-cum.-str. ; large cum.-str. ; cir.-str. and cirri ; distant thunder
850	69·7	64·5	⸸5·2	0·3	0·0	20	— : 28 : —	7·0	Loose scud ; cir.-cum. ; cirri. ; cumulo-strati on hor. ⊖
29·912	59·5	57·5	2·0	1·8	0·8	2	4 : — : —	10·0	Scud ; the wind sprung up about 9^{h} and scud came up about 9^{h} 30^{m}.
30·024	54·1	51·8	2·3	0·8	0·3	2	4 : — : —	10·0	Scud.
053	55·2	51·7	3·5	0·7	0·4	2	3 : — : —	10·0	Id.
078	56·6	52·4	4·2	0·8	0·6	2	3 : — : —	10·0	Id.
095	58·7	53·0	5·7	0·8	0·4	4	3 : — : —	9·8	Id. ; cirro-strati.
086	59·2	53·1	6·1	0·7	0·7	4	4 : — : 24	7·5	Scud and cirro-cumulo-strati ; woolly cirri. ⊖
089	57·5	52·0	5·5	1·1	0·7	4	5 : — : 24	7·0	Scud ; woolly cirri, moving very slowly. ⊖
092	56·8	51·5	5·3	0·7	0·2	2	— : — : 24	7·0	Woolly cirri ; cirrous haze. ⊖
101	54·6	50·3	†4·3	0·3	0·3	7		2·5	Id. ; cirro-cumulo-strati. ⊙
110	51·2	49·2	⸸2·0	0·3	0·1	2	8 : — : —	7·0	Scud and cirro-cumulo-strati.
30·013	68·1	58·4	9·7	0·3	0·2	12		0·0	Clear during the most of the day ; cirri in the evening.
29·798	54·0	50·9	†3·1	1·1	0·0	0	— : — : 18	3·0	Woolly and mottled cirri ; cir.-cum. and cirro-strati. ⊖
779	60·6	54·5	⸸6·1	0·0	0·0	12		7·0	Woolly cirri and cirro-strati. ⊙
742	69·9	57·2	12·7	0·2	0·1	4	— : — : 18	6·0	Id. ⊖
697	75·3	59·4	15·9	0·5	0·4	14	— : — : 18	8·0	Id. ; very hazy on horizon. ⊙
652	77·7	63·5	14·2	1·0	0·7	16	— : — : 18	6·0	Id. ; id. ⊙
593	76·0	65·8	10·2	1·4	0·4	12	19 : 16 : —	8·0	Scud to SW. ; cir.-str. and cir. haze, becoming thicker ; portion of a halo.
554	73·8	†62·8	11·0	1·3	0·4	14	— : — : 21	8·0	Woolly cirri and cir. haze ; scud and cum. to W. ; portion of a halo. ⊖
527	69·5	⸸62·2	7·3	0·5	0·2	15	16 : — : —	9·0	Cumuli ; mass of cirri and cirrous haze ; distant thunder to W.
538	65·3	61·4	3·9	0·9	0·1	18	— : 15 : —	10·0	Loose and spotted cirro-strati ; mass of cirrous haze.
29·345	60·9	60·2	0·7	0·0	0·0	4	14 : — : —	10·0	Loose cum. ; cir.-str. and cir. haze ; portion of a halo. ⊖
327	60·5	60·0	0·5	0·0	0·0	4	14 : — : —	10·0	Scud ; dense mass of clouds ; rain^{3} since 19^{h} 30^{m}.
256	63·3	61·7	1·6	0·2	0·1	6	5 : — : —	10·0	Thick scud ; dense covering of clouds ; rain^{1}
215	64·0	62·6	1·4	0·2	0·2	7	5 : — : —	10·0	Id. ; id. ; rain^{2}
142	63·4	62·1	1·3	0·3	0·3	2	4 : — : —	10·0	Scud ; id. ; misty ; rain$^{0·5}$
097	57·9	57·0	0·9	0·5	0·5	25	26 : — : —	10·0	Thick scud ; rain$^{2—3}$
066	52·7	51·4	1·3	1·8	1·1	26	26 : — : —	10·0	Id. ; id.
055	51·7	49·8	1·9	1·6	1·0	20	24 : — : —	9·9	Id. ; cirro-strati.
29·038	50·4	48·2	2·2	1·1	0·6	22	23 : — : —	10·0	Id.
28·988	47·1	46·0	1·1	2·7	1·7	19	24 : — : —	10·0	Scud ; dense homogeneous mass of clouds ; rain^{1}
29·003	50·0	48·0	2·0	2·1	1·4	22	24 : — : —	10·0	Id. ; id. ; rain$^{0·5}$
030	53·8	50·2	3·6	2·5	1·8	22	24 : — : —	10·0	Id. ; id.
045	58·9	52·7	6·2	2·3	0·9	22	24 : — : —	9·8	Scud and cumuli ; woolly cirri and cirro-strati. ⊖
069	59·2	52·6	6·6	1·8	0·7	22	24 : — : —	10·0	Masses of scud ; dense homogeneous cir.-str. and haze.
080	59·9	52·0	7·9	1·3	0·3	23	24 : — : —	10·0	Id. ; cir.-str. and cir. haze ; portion of a solar halo. ⊖
078	59·8	52·4	†7·4	1·1	0·3	28	24 : — : —	8·0	Masses of scud and loose cum. ; cir. and cir. haze. ⊖

18^{d} 2^{h}—4^{h}. Great piles of electric cumuli ; masses of black scud and cumuli ; uniform to E. ; very hazy ; distant thunder heard first at 1^{h} 50^{m}, many ce ; three flashes of lightning from 1^{h} 55^{m} till 2^{h} 0^{m} to E. from horizon to altitude 5°, followed by irregular and rather faint peals. At 2^{h} 30^{m}, a o SE., thunder in 30^{s}. 2^{h} 55^{m}. There has been a continuous intermitting grumbling to E. and SE. since 2^{h} ; thunder has now commenced to SW. and e flashes seen to SW., altitude 5°, thunder following in about 25^{s}. From this time there was an uninterrupted thundering, sometimes 3 or 4 flashes s in a minute ; the flashes were generally from the horizon to an altitude of 7° or 8°, interval 20^{s} to 25^{s} ; about 3^{h} 25^{m}, the thunder had come nearer, vals being 7^{s} to 9^{s}, and the flashes reaching an altitude of from 20° to 30°, many of the streaks seeming to be repeated four or five times. 3^{h} 25^{m}. Gusts from about W., large drops of rain, clouds moving from N. ; 30^{m}, a streak reaching from SW. to WNW. at an altitude of 20°, interval 10^{s} ; 30^{m}—40^{m}, chiefly to NW., the peals not so very frequent ; 43^{m}, two very loud peals in rapid succession, intervals 3½^{s} and 1½^{s}, large hailstones, with heavy rain. to 4^{h} 0^{m}. Occasional flashes, with thunder in about 12^{s} ; very heavy rain. 4^{h} 0^{m}. Clouds beginning to clear off from SW., rain ceased at 4^{h} 10^{m} ; a al was heard at 4^{h} 15^{m} ; very distant peals were heard occasionally afterwards ; during the storm the temperature fell to 60°·5.

19^{d} 4^{h}. About 3^{h} it was very black to N., and a good deal of rather distant thunder was heard from that quarter, with wind, which lowered the temperabout 8° ; the thunder worked round by E. to SE., where it now is, but rather distant ; dark-looking all round the horizon ; sky in zenith.

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
24 8	29·101	55·7	50·7	↓5·0	0·4	0·1	22		7·0	Nimbi near hor.; cir. and cir.-str.; indistinct parhelion.
10	122	49·5	47·5	2·0	0·3	0·1	20		3·0	Cirro-strati and cirrous haze.
18	29·206	49·2	46·8	†2·4	0·2	0·0	23	— : 21 : —	7·5	Cirro-cumuli.
20	223	52·0	49·8	↓2·2	0·1	0·0	24		3·0	Masses of scud and cumuli ; cirro-cumuli.
22	234	59·6	54·5	5·1	0·1	0·0	20	22 : — : —	3·0	Scud and loose cumuli ; woolly cirri. ⊙ [rain to
25 0	238	62·0	54·4	7·6	0·1	0·0	22	18 : — : —	9·7	Scud and heavy masses of loose cum.; loose cir.-cum.-str
2	272	60·1	54·0	6·1	0·3	0·1	12	16 : — : —	9·8	As before ; a peal of distant thunder to SE. at 1h 55m ; drops of rain
4	306	56·2	52·8	3·4	0·9	0·1	6		9·5	Loose scud ; mass of cir.-str.; cum.-str. on horizon ; rain falling to
6	315	59·0	54·4	4·6	0·1	0·0	12	— : 21 : —	8·5	Cir.-cum.-str. and cir.-str. ; cum.-str. ● [rain$^{2-3}$ since 2h
8	332	52·0	49·4	2·6	0·3	0·0	20	— : — : 20	3·0	Woolly cirri ; cirro-strati and cumuli.
10	356	46·0	45·4	0·6	0·1	0·0	18		0·5	Cirro-strati and haze on horizon.
18	29·402	43·5	43·2	†0·3	0·0	0·0			10·0	Fog ; trees invisible at 250 yards.
20	397	50·1	49·2	↓0·9	0·0	0·0	6	— : 16 : 16	6·0	Sheets of cir.-str. and woolly cir. ⊙ [of a solar halo.
22	384	61·2	54·2	7·0	1·2	1·0	14	18 : — : —	9·0	Scud and loose cum. ; woolly cir. and cir. haze ; porti
26 0	372	63·4	56·0	7·4	1·4	0·6	13	11 : — : —	10·0	Id. ; dense mass of cirrous haze.
2	356	60·0	54·2	5·8	1·6	0·9	10	14 : — : —	10·0	Scud ; mass of cirro-stratus.
4	338	57·7	54·7	3·0	1·2	0·4	12	14 : — : —	10·0	Id. ; id. ; rain$^{1-2}$
6	317	57·6	55·2	2·4	0·4	0·3	14		10·0	Id. to W. ; id. ; rain$^{0·5}$
8	326	55·5	53·4	2·1	0·5	0·2	14	14 : — : —	10·0	Scud ; id. ; rain$^{1-2}$
10	336	53·5	52·3	1·2	0·3	0·1	10	15 : — : —	10·0	Id. ; id.
18	29·318	52·0	51·1	†0·9	0·1	0·0	20		1·0	Sheets of cirro-strati.
20	329	56·7	54·0	↓2·7	0·1	0·0	24	18 : — : —	3·0	Scud and loose cumuli.
22	324	62·5	51·9	10·6	0·3	0·2	19	18 : — : —	8·5	Id. ; cirro-strati.
27 0	344	62·7	53·3	9·4	0·4	0·2	16	18 : — : —	9·5	As before ; shower^{4} about 10m since. [looking to E
2	354	67·8	59·0	8·8	1·0	0·7	22	— : 17 : —	5·0	Cir.-cum.-str. ; cum.-str. on hor.; nimbi to SE.; electr
4	379	60·6	55·8	4·8	0·9	0·1	22	17 : — : —	9·9	Thick scud and cirro-stratus ; loose cumuli on S. hor.
6	364	65·0	57·9	7·1	0·6	0·3	18	18 : — : —	8·5	Scud ; cumuli and cumulo-strati on horizon ; rain$^{0·5}$
8	405	58·0	56·0	2·0	0·3	0·1	19	18 : — : —	9·8	As before ; rain^{2}
10	429	55·5	54·4	1·1	0·1	0·1	22	— : 17 : —	6·5	Cumulo-strati and cirro-strati.
23¼	29·496	65·7	59·0	6·7	1·0	0·3	16	16 : — : —	10·0	Loose cum. ; thick cir.-str. ; heavy rain in the evenir
28 18	29·335	56·7	53·2	†3·5	2·3	0·5	18	19 : — : —	2·0	Scud ; cirro-strati on S. horizon.
20	332	60·6	54·8	↓5·8	2·0	1·5	18	19 : — : —	7·0	Scud and loose cumuli.
22	318	63·8	56·5	7·3	2·6	2·0	18	19 : — : —	6·5	Loose cumuli ; rain falling to SE.
29 0	310	64·3	55·6	8·7	3·3	1·5	19	18 : — : —	8·0	Id. ; sheets of cirro-strati.
2	303	62·8	57·0	5·8	3·5	2·0	17	19 : — : —	7·0	Scud and loose cumuli ; slight shower.
4	268	63·3	56·4	6·9	7·5	3·5	19	19 : — : —	3·0	Scud and cum. ; woolly cirri to E. ; nimbi round hor
6	248	61·3	54·0	7·3	7·1	4·5	19	18 : 21 : 21	7·0	Scud and cumuli ; woolly cirri and cirro-cumuli.
8	275	58·1	55·0	3·1	6·6	1·8	19	20 : — : —	9·0	Scud and cirro-strati.
10	290	57·3	54·2	3·1	2·1	1·3	17	20 : — : —	9·7	Scud.
18	29·296	55·4	53·7	1·7	2·4	0·6	20	20 : — : —	9·5	Thick scud, cirro-cumulo-strati, and woolly cirri.
20	292	59·0	55·3	3·7	2·6	2·4	18	21 : — : —	9·5	Id. ; id. ; showers occasionally
22	320	58·7	54·8	3·9	3·6	1·8	20	21 : — : —	10·0	Id.
30 0	336	62·1	57·2	4·9	2·7	2·1	18	21 : — : —	9·9	Id. ; occasional slight showers.
2	360	60·3	55·7	4·6	6·0	3·0	20	21 : — : —	10·0	Id. ; id.
4	391	58·0	55·1	2·9	3·9	1·0	20	21 : — : —	10·0	Scud ; rain^{2}
6	411	58·0	54·0	4·0	2·4	0·7	20	21 : — : —	9·0	Masses of scud and loose cumuli ; cirro-strati.
8	417	56·5	53·6	2·9	1·9	0·9	22	22 : — : —	8·0	Scud ; sheets of woolly cirri.
10	454	54·4	51·6	2·8	1·6	0·3	19	23 : — : —	5·0	Id.
18	29·532	53·5	50·8	2·7	1·8	0·7	21	25 : — : —	7·5	Scud and cirro-cumulo-strati ; cirro-str. and woolly
20	548	58·3	53·7	4·6	1·2	1·0	21	24 : — : —	9·5	Id. ; id.
22	546	61·9	55·8	6·1	1·2	1·2	20	22 : — : —	10·0	Masses of cumulous scud ; homogeneous cirro-stratu
1 0	537	61·1	56·1	5·0	1·4	0·6	21	21 : — : —	10·0	Scud ; homogeneous cirro-stratus ; drops of rain.
2	504	60·6	57·1	3·5	1·4	1·0	19	20 : — : —	10·0	Id. ; rain^{1}
4	467	61·5	58·4	3·1	1·6	0·5	20	19 : — : —	10·0	Id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. T
motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
	Dry.	Wet.	Diff.	Maximum force in 1^h.	Maximum force in 10^m.	From			
in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
29·440	60·6	58·2	2·4	0·8	0·5	17	20 : — : —	10·0	Scud.; rain$^{0\cdot5}$
432	59·4	57·6	1·8	0·9	0·3	20	21 : — : —	10·0	Id.
443	58·8	57·6	1·2	0·5	0·4	20	24 : — : —	9·5	Id.; cirro-strati.
29·522	59·9	55·7	4·2	0·7	0·1	22	— : 20 : —	9·5	Cirro-stratous scud and cirro-strati; woolly cirri. ⊖
560	61·3	54·8	‡6·5	0·6	0·3	18	24 : — : —	9·0	Scud; cirro-strati and woolly cirri. ⊖
587	63·0	55·6	7·4	1·2	1·0	21	22 : — : —	9·5	Id.; cirro-strati.
626	64·2	57·3	6·9	1·2	0·8	22	23 : — : —	5·0	Scud and loose cumuli; sheets of woolly cirri. ⊙
646	65·8	57·6	8·2	1·4	0·7	24	23 : — : —	8·0	Id.; id.
669	67·5	61·4	6·1	1·2	0·7	22	24 : — : —	8·5	Id.; cir.-str. and woolly cirri; cum.
679	67·0	60·6	†6·4	0·9	0·4	18	24 : — : —	9·0	Scud and cumuli; cirro-cumuli and cirri.
697	62·4	59·0	↓3·4	0·5	0·2	20	25 : — : —	9·7	Thick cirro-stratus and scud.
715	59·8	57·2	2·6	0·5	0·0	20		10·0	Cirro-strati, cirri, and cirrous haze.
29·728	60·0	59·0	1·0	0·3	0·2	20		10·0	Scud; dense mass of cir.-str.; shower^3 10 minutes since.
738	61·2	59·3	1·9	1·1	0·6	20		10·0	Nearly homogeneous.
753	61·5	59·1	2·4	1·7	2·5	17	19 : — : —	10·0	Scud.
776	62·9	59·2	3·7	3·0	1·5	17	20 : — : —	10·0	Id.
786	63·6	59·3	4·3	2·9	1·6	20	20 : — : —	9·7	Scud; cirro-cumuli and cirro-strati.
784	65·7	61·8	3·9	2·6	1·6	23	21 : — : —	9·9	Id.; cir.-cum.-str. and woolly cir.; cum.-str. to E.
793	62·3	58·7	3·6	1·2	0·6	20	20 : — : —	10·0	Id.
797	61·3	57·4	3·9	1·1	0·1	14	20 : — : —	9·0	Scud and cirro-strati.
816	59·8	56·6	3·2	0·3	0·2	0	20 : — : —	10·0	Scud.
29·816	58·8	55·9	2·9	1·3	0·7	16	20 : — : —	9·9	Scud and loose cumuli; Cheviot obscured.
817	61·5	58·7	2·8	1·3	1·0	17	21 : — : —	9·9	Scud; dense mass of cirro-stratus.
832	64·2	60·2	4·0	1·7	1·5	20	20 : — : —	9·8	Id.
845	64·5	60·2	4·3	2·1	0·4	18		10·0	Id.
838	69·2	62·6	6·6	1·5	1·1	16	21 : — : —	6·5	Id.; linear cirri; the clouds broke up at 1^h. ⊙
813	68·8	63·7	5·1	1·1	0·4	22	18 : — : —	2·0	Patches of scud; woolly cirri and cirro-strati. ⊙
798	68·0	62·1	5·9	0·7	0·3	22		1·0	Id.; id. ⊙
790	63·2	58·3	4·9	0·5	0·5	20		0·5	Cirro-strati on horizon. ⊙
787	56·0	54·6	1·4	0·3	0·0	18		0·5	Haze and cirro-strati on horizon. ☽
29·534	76·1	68·3	7·8	0·3	0·0	14	— : 20 : —	2·0	Cirro-cumuli and cirro-strati. ⊙
...	61·6	60·2	1·4	5·8	0·0	8	4 : 15 : —	10·0	
29·074	56·3	54·0	2·3	1·8	0·8	20	21 : — : —	9·5	Scud; cirro-strati and cirro-cumulo-strati.
087	56·5	54·4	2·1	1·7	1·8	20	20 : — : —	10·0	Id.; dense mass of cir.-str.; rain^3 since last observation.
080	54·0	53·3	0·7	1·6	1·3	18	20 : — : —	10·0	Id.; homogeneous mass of clouds; rain$^{2-3}$
096	55·3	54·1	1·2	1·3	1·0	18	18 : — : —	10·0	Id.; id.; id.
100	57·0	55·6	1·4	1·8	0·8	18	19 : — : —	10·0	Id.; id.; rain^1
099	58·5	55·6	2·9	1·3	0·4	18	20 : — : —	10·0	Id.; undulated cirro-strati; stratus on Cheviot.
115	56·3	55·0	1·3	0·6	0·4	20	22 : 25 : —	10·0	Two currents of scud.
172	54·8	52·6	2·2	1·7	1·0	30	0 : — : —	10·0	Scud and cirro-stratus; the wind changed shortly before 7^h.
228	53·4	50·7	2·7	2·3	1·5	0	31 : — : —	9·5	Scud; clearing to NW.
29·368	51·0	46·2	4·8	1·7	0·1	28	27 : — : —	7·5	Scud and loose cirro-strati; scud lying on Cheviot.
399	53·5	47·4	6·1	0·8	0·7	31	30 : — : —	2·0	Loose scud; cumulo-strati and cirro-strati on horizon. ⊙
418	55·9	49·0	6·9	1·3	1·6	31	28 : — : —	6·5	Loose cumuli, cirro-cumuli, and cirro-strati. ⊖
460	59·1	51·0	8·1	1·2	0·4	28	28 : — : —	8·0	Scud and cumuli.
478	61·1	52·1	9·0	0·4	0·1	23	30 : — : —	9·5	Scud, cumuli, and cirro-strati.
496	62·1	52·8	9·3	0·3	0·1	0	25 : — : —	8·0	As before; cumulo-strati; electric-looking to N. ◷
512	58·0	52·9	5·1	0·1	0·1	0	24 : — : —	9·5	Thick dark scud & loose cum., having an internal motion; slight shower.
521	57·2	53·6	3·6	0·3	0·0	22		3·0	Scud and cumuli. ⊙
548	53·2	50·2	3·0	0·1	0·0	24		9·0	Scud and cirro-strati.
29·576	50·7	48·9	1·8	0·1	0·0	4		10·0	Cir.-str. scud; dense cir.-str.; white strati on Cheviot.
587	54·9	51·3	3·6	0·3	0·2	3	12 : — : —	10·0	Scud; cirro-strati; dense mass of black clouds to SW.
599	54·2	51·2	3·0	0·4	0·3	4	12 : — : —	10·0	Thick scud and cumuli; cirro-strati; slight shower.
590	58·4	53·0	5·4	0·5	0·5	6	16 : 12 : —	10·0	Scud; cirro-stratus.

5^d. Between 3^h and 4^h the sky became covered with cirro-stratus and cirrous haze; about 6^h, very thick electric scud and loose cumuli came up from th thunder and high wind; from 6^h till about 7^h 30^m, there was a great deal of thunder and lightning, the intervals between the flashes and the reports from 4^s to 12^s; about 7^h, the storm seemed to have passed off to eastward; about 7^h 15^m, a loud peal was heard to SW., the interval being 11^s; at a brilliant flash, followed in 2^s by a deafening report resembling a rapid succession of discharges of artillery; no loud thunder was heard after this; covered with dense cirro-stratus, uniform to E. and NE., occasional flashes of lightning there; loose white strati creeping over Cheviot. There was ous rain from 6^h till 8^h, and at night after 10^h. July 6^d 4^h. 2·023 in. of rain fell in less than 24 hours.

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in		From			
					1h.	10m.				
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
8 2	29·590	55·6	51·9	3·7	0·5	0·1	8	12 : — : —	10·0	Thick scud and cirro-strati.
4	583	55·7	51·3	4·4	0·4	0·3	4	13 : — : —	10·0	Id.
6	582	54·4	51·8	2·6	0·5	0·1	4	9 : — : —	10·0	Scud and dense cirro-stratus ; rain$^{0\cdot5}$
8	578	52·7	51·7	1·0	0·3	0·2	4		10·0	Id. ; drops of rain.
10	579	51·9	51·2	0·7	0·2	0·1	4	12 : — : —	10·0	Thick scud ; rain$^{1-2}$
18	29·544	52·7	51·7	1·0	0·3	0·2	6	9 : — : —	10·0	Scud ; cirro-stratus ; Cheviot invisible.
20	554	53·5	52·6	0·9	0·3	0·2	2	7 : — : —	10·0	Id ; id. ; id. ; rain$^{0\cdot5}$
22	549	54·0	53·0	1·0	0·5	0·5	4	5 : — : —	10·0	Scud ; rain^{1}
9 0	548	54·3	53·4	0·9	0·7	0·5	4	4 : — : —	10·0	Id.
2	540	56·9	55·7	1·2	0·5	0·2	5	6 : — : —	10·0	Id.
4	547	56·2	54·8	1·4	0·4	0·1	5	10 : — : —	10·0	Id.
6	537	56·4	55·2	1·2	0·4	0·2	4	7 : — : —	10·0	Scud ; rain^{1} from $4^{h}\ 30^{m}$ till $5^{h}\ 40^{m}$.
8	548	56·5	55·1	1·4	0·3	0·1	5	7 : — : —	10·0	Id. ; dense cirro-stratus.
10	576	55·0	53·6	1·4	0·3	0·2	4	7 : — : —	10·0	Id. ; id.
18	29·617	53·7	52·8	0·9	0·2	0·0		— : 28 : —	9·8	Large cir.-cum.-str. ; cir.-str. and haze on hor. ; patc [of scud to
20	651	58·0	56·2	1·8	0·0	0·0	16	4 : — : —	10·0	Scud ; cirro-cumulo-strati and cirro-strati above.
22	665	62·8	58·0	4·8	0·0	0·0	24	28 : 28 : 0	7·0	Masses of cum. and cir.-cum. ; woolly and tufted ci
10 0	673	66·0	58·8	7·2	0·3	0·1	21	26 : 26 : 0	7·0	As before ; woolly cirri and cirro-strati.
2	680	64·8	58·0	6·8	0·1	0·1	26	28 : 28 : —	8·0	Scud, cumuli, and cirro-cumulo-strati.
4	676	65·2	58·8	6·4	0·2	0·1	27	26 : 26 : —	9·8	As before ; very electric-looking.
6	684	65·4	57·0	†8·4	0·5	0·3	26		5·0	Loose cumuli, cirro-strati, and cirrous haze.
8	716	59·0	53·6	⸸5·4	0·7	0·5	26	— : — : 30	3·0	Cirri and cirrous haze.
10	744	54·2	51·4	2·8	0·5	0·1	20		3·0	Id. ; masses of scud to W.
18	29·797	52·7	50·2	2·5	0·2	0·1	20	— : 30 : —	5·5	Cir.-cum.-str. and cir.-str. ; woolly and mottled cirr
20	805	56·0	51·7	4·3	0·6	0·4	21	— : 29 : —	9·5	Cirro-stratous scud and cirro-stratus ; linear cirri.
22	808	59·3	52·7	6·6	1·3	0·9	25	26 : — : —	10·0	Scud and loose cumuli ; cirro-strati and cirrous ha
11 0	808	59·9	54·1	5·8	1·2	0·4	24	24 : — : —	10·0	Thick cirro-stratous scud.
2	812	62·0	54·7	7·3	0·9	0·7	24	26 : — : —	9·9	Thick scud ; cirrous haze ; portion of a solar halo.
4	817	61·7	54·9	6·8	1·5	0·7	24	26 : — : —	10·0	Id. ; id.
6	826	58·4	53·4	5·0	1·0	0·4	21	25 : — : —	10·0	Scud, cirro-stratus, and cirro-cumuli.
8	820	57·6	52·2	5·4	0·4	0·3	20	— : 26 : —	10·0	Cirro-strati and cirro-cumuli.
10	826	56·1	51·6	4·5	0·5	0·3	24		10·0	Cirro-stratus and cirrous haze.
23¼	29·681	58·2	56·0	2·2	3·1	1·4	19	22 : — : —	10·0	Scud, cirro-stratus and cirrous haze.
12 18	29·737	61·9	59·3	†2·6	2·5	0·1	22	— : 24 : 24	5·0	Cir.-cum.-str. ; woolly cir. ; cir.-str. and scud ; scud l [on Chevi
20	751	67·3	63·4	3·9	0·1	0·0	8 v.	— : 24 : —	9·5	Cirro-stratous scud and cirro-cumulo-strati.
22	757	64·4	61·0	⸸3·4	0·5	0·5	18	24 : — : —	10·0	Scud ; cirro-strati.
13 0	749	68·8	64·1	4·7	0·6	0·4	19	22 : — : —	10·0	Id. ; id.
2	736	69·2	64·4	4·8	0·8	0·6	19	22 : — : —	10·0	Id. ; id. ; cirro-cumuli.
4	705	69·3	64·7	4·6	0·8	0·6	18	22 : — : —	9·9	Id. ; id.
6	677	67·6	63·4	4·2	0·9	0·5	20	20 : 22 : —	9·5	Id. ; id. ; cirri.
8	665	64·3	60·3	‡4·0	0·6	0·2	20	20 : 22 : —	6·5	Id. ; cirro-cumuli.
10	660	58·4	56·2	2·2	0·3	0·2	26	20 : — : —	2·0	Masses of scud ; sheets of cirro-cumuli.
18	29·546	54·2	53·0	†1·2	0·3	0·0	24		10·0	Dense mass of cirro-stratus.
20	540	59·5	57·3	⸸2·2	0·1	0·0	20	— : 20 : —	9·9	Cirro-strati and cirro-cumulo-strati.
22	523	64·7	60·7	4·0	0·0	0·0	26	— : 19 : —	9·8	Cirro-cumuli ; a few masses of cumuli on horizon.
14 0	493	71·3	63·0	8·3	0·1	0·1	28	— : 18 : —	6·0	Id. ; masses of cumuli.
2	467	72·0	62·2	9·8	0·2	0·0	8	— : 18 : —	7·0	Id. ; id.
4	460	68·8	63·3	5·5	0·3	0·3	4	— : 21 : —	9·0	Cirro-cumulo-strati ; cumuli and haze round horiz
6	461	65·3	60·5	4·8	0·5	0·1	2	— : 20 : —	9·8	Cirro-cumuli ; cirro-strati ; cumuli ; hazy.
8	476	63·7	59·7	4·0	0·2	0·1	4		10·0	Cirro-cumulo-strati ; cirrous haze and cirro-strati.
10	499	61·8	58·2	3·6	0·2	0·1	22	18 : — : —	10·0	Scud ; cirro-strati and cirri.
18	29·534	57·7	56·0	1·7	0·4	0·2	23	— : 24 : —	6·0	Cirro-cumulo-strati and cirro-strati ; woolly cirri.
20	557	61·1	57·4	3·7	0·5	0·3	22	24 : — : —	9·9	Scud ; cirro-cumulo-strati and cirro-strati.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Gött. Mean Time.	BARO-METER at 32°.	THERMOMETERS. Dry.	THERMOMETERS. Wet.	THERMOMETERS. Diff.	WIND. Maximum force in 1^{h}.	WIND. Maximum force in 10^{m}.	WIND. From	Clouds, Sc.:C.-s.:Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
4 22	29·561	67·2	62·0	5·2	0·6	0·3	20	23 : — : —	10·0	Scud and cumuli.
5 0	578	63·6	60·7	2·9	1·1	0·1	22	24 : — : —	10·0	Scud; cirro-strati; drizzling shower at 23^{h}.
2	568	68·0	61·0	7·0	0·7	0·5	28	23 : — : —	9·5	Id.; cirro-cumulo-strati.
4	575	66·4	59·2	7·2	0·9	0·3	21	22 : — : —	9·8	Id.; id.; cirro-strati.
6	561	67·0	60·1	6·9	0·7	0·1	26	23 : — : —	8·0	Id.; id.
8	553	63·0	59·7	3·3	0·6	0·4	20	23 : — : —	9·5	Id.; id.
10	549	60·6	58·7	1·9	0·6	0·3	18	21 : — : —	10·0	
18	29·397	59·0	58·0	1·0	0·4	0·2	22	21 : — : —	10·0	Scud; dense mass of cirro-stratus.
20	359	63·7	61·1	2·6	0·4	0·2	18	20 : — : —	10·0	Id.; id. ●
22	326	63·4	60·9	2·5	0·7	0·6	18	19 : — : —	10·0	Id.; id.
6 0	296	66·0	60·2	5·8	2·0	1·0	18	19 : — : —	10·0	Id.; cirro-stratus and cirrous haze.
2	265	64·1	58·6	5·5	0·9	0·7	18	19 : — : —	10·0	Id.; id.
4	234	62·0	58·2	3·8	1·6	0·6	18	20 : — : —	10·0	Id.; id. ●
6	186	62·6	58·0	4·6	0·4	0·2	19	20 : — : —	10·0	Id.; id.
8	156	60·0	56·9	3·1	0·6	0·1	19	20 : — : —	10·0	Id.; id.; cirro-cumuli.
10	29·112	57·5	55·6	1·9	0·3	0·0	4	20 : — : —	9·8	Scud and cirro-strati.
18	28·978	55·4	54·6	0·8	0·1	0·0	19	21 : — : —	9·9	Scud; cirro-strati; rain^{2}
20	970	58·8	57·5	1·3	0·0	0·0	20		9·9	Id.; id.; rain^{1}
22	967	61·0	56·2	4·8	0·4	0·3	24	22 : 24 : —	8·0	Scud and loose cumuli; cirro-cumulo-strati. ⊖
7 0	966	60·1	55·0	5·1	1·0	0·5	24	24 : — : —	10·0	Scud and cirro-stratus.
2	970	62·6	58·4	4·2	0·9	0·3	23	24 : — : —	10·0	Thick scud; heavy shower at 1^{h} 30^{m}.
4	977	60·2	56·3	3·9	0·7	0·4	27	24 : — : —	10·0	Id.; wavy cirro-strati; showers occasionally.
6	28·990	59·2	54·2	5·0	0·6	0·3	28	23 : — : —	9·8	Scud, loose cum., and cir.-str.; rather electric-looking.
8	29·000	57·2	53·5	3·7	1·1	0·4	24	24 : 24 : —	9·7	Id. id.; showers occasionally.
10	017	55·4	52·0	3·4	0·5	0·7	20	24 : 24 : —	8·0	Scud and cirro-cumulo-strati.
18	29·034	50·2	48·7	1·5	0·6	0·1	21	— : 22 : —	9·8	Cirro-stratous scud; woolly cirri and cir.-str. [halo. ⊖
20	29·011	56·0	53·0	3·0	0·2	0·1	20	— : 19 : —	9·5	Cir.-cum.-str.; woolly cir. and cir.-str.; portion of a solar
22	28·973	60·6	54·7	5·9	0·3	0·3	15	14 : — : —	10·0	Scud; dense homogeneous cirro-stratus; rain$^{0·5}$
8 0	915	60·5	55·2	5·3	0·2	0·2	12		10·0	Id.; id.; id.
2	860	54·0	53·0	1·0	0·5	0·2	10	12 : 12 : —	10·0	Scud and dense homogeneous cir.-str.; continuous rain$^{1-3}$
4	800	62·2	58·2	4·0	0·3	0·4	15	17 : 17 : —	10·0	Id.
6	778	62·2	58·2	4·0	0·7	0·6	16	19 : 19 : —	10·0	Id.
8	787	53·3	51·6	1·7	1·6	1·5	22	24 : 20 : —	10·0	Two currents of scud; drizzling rain$^{0·2}$
10	28·860	51·2	48·4	2·8	1·8	1·5	23	25 : — : —	6·5	Scud.
23	29·183	59·2	52·8	6·4	2·8	0·5	22	22 : — : —	8·0	Cumuli, scud, and sheets of cirri.
19 18	29·489	51·2	50·2	1·0	2·8	0·0	12	20 : — : —	9·5	Scud; cumuli and cirro-strati.
20	519	61·2	56·0	5·2	0·3	0·3	16	20 : — : —	7·0	Scud and cumuli; cumulo-strati on horizon. ⊙
22	541	61·9	56·3	5·6	1·2	0·6	20	20 : — : —	7·0	Id.; sheets of cirro-strati and cirri. ⊖
20 0	549	64·4	57·0	7·4	1·5	1·0	20	20 : — : —	6·0	Id.; cirro-cumuli.
2	572	63·4	57·1	6·3	2·4	0·4	22	20 : — : —	7·0	Id.; id.
4	584	64·3	55·9	8·4	2·5	1·5	20	19 : — : 23	2·7	Id.; cirri. ⊙
6	594	62·5	56·2	†6·3	2·4	1·0	21	21 : — : 20	6·0	Id.; id. ⊖
8	614	57·3	55·3	⸸2·0	1·1	0·3	20	21 : — : —	9·8	Id.; cirro-strati and cirrous haze.
10	614	54·6	53·0	1·6	0·3	0·1	20	21 : — : —	10·0	Id.; id.
18	29·515	53·5	52·7	0·8	0·9	0·1	14	— : 18 : —	10·0	Cirro--stratous scud and cirro-stratus; rain$^{0·5}$
20	479	57·2	55·2	2·0	0·2	0·1	16	— : 20 : —	10·0	Id. [rain$^{0·2}$
22	444	59·6	57·5	2·1	0·5	0·1	16	16 : — : —	10·0	Scud; dense uniform mass of clouds above; drizzling
21 0	418	64·0	61·2	2·8	0·2	0·2	20	18 : — : —	9·9	Id.; cir.-str.; heavy rain at intervals since last obser-
2	390	65·0	61·4	3·6	0·6	0·4	21	20 : — : —	9·5	Id.; id.; id. [vation.
4	355	65·4	59·4	6·0	1·3	0·9	18	22 : 22 : —	9·5	Scud and cirro-cumulo-strati; cum.-str. and cirro-strati.
6	349	62·1	59·0	3·1	1·8	0·6	20	22 : — : —	9·8	Scud, loose cumuli and cirro-cumulo-strati.
8	338	59·6	57·4	2·2	1·4	0·5	20	20 : — : —	10·0	Scud; cirro-strati; rain occasionally.
10	329	57·6	56·6	1·0	0·6	0·3	21		10·0	Scud and cirro-stratus; rain$^{0·5}$
18	29·386	54·5	50·6	†3·9	2·1	1·0	21	24 : — : 28	4·5	Patches of scud; woolly cirri; cirro-strati. ⊙

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Gött. Mean Time.	Baro-meter at 32°.	Thermometers.			Wind.			Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in		From			
					1^h.	10^m.				
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
21 20	29·417	58·2	53·2	⸸5·0	1·4	0·7	23	26 : 26 : —	8·5	Scud and cirro-cumulo-strati; woolly cirri.
22	446	60·9	54·8	6·1	2·5	2·4	22	25 : — : —	6·0	Scud and loose cumuli.
22 0	483	62·9	56·5	6·4	2·5	0·9	26	25 : — : —	8·0	Id.
2	510	62·3	56·4	5·9	2·0	1·1	20	24 : — : —	6·0	Id.
4	530	63·2	56·4	6·8	1·8	0·6	22	23 : — : —	8·0	Id.; cumulo-strati on horizon.
6	540	63·5	55·5	8·0	2·1	0·8	21	24 : — : —	9·5	Scud, loose cum., cir.-str., and cir. haze; solar halo at
8	553	59·3	55·4	3·9	0·6	0·2	19	22 : 22 : —	10·0	Thick cirro-stratus and scud.
10	555	56·7	55·4	1·3	0·3	0·1	18		10·0	Id.; rain$^{0·2}$
18	29·496	57·2	56·3	0·9	0·5	0·1	19	19 : — : —	10·0	Scud; wavy cirro-strati.
20	470	61·1	58·0	3·1	0·4	0·1	16		10·0	Cirro-stratous scud and cirro-strati.
22	430	62·5	58·3	4·2	1·3	1·3	16	17 : — : —	10·0	Scud; dense cirro-stratus.
23 0	379	62·1	58·1	4·0	1·8	2·2	15	17 : — : —	10·0	Id.; id.; rain^1
2	346	61·7	58·5	3·2	2·7	1·3	17	17 : — : —	10·0	Id.; id.
4	305	65·2	60·6	4·6	3·8	2·4	16	17 : — : —	10·0	Id.; id.
6	286	60·6	60·0	0·6	3·0	1·0	18	18 : — : —	10·0	Id.; slight drizzle.
8	282	60·5	57·0	3·5	3·0	2·0	17	19 : 20 : 20	9·8	Id.; cirri and cirro-cumuli.
10	327	59·0	56·3	2·7	3·1	1·4	18	20 : — : —	9·7	Id.; cirro-strati and cirrous haze.
18	29·410	54·5	51·9	2·6	2·2	0·5	20	19 : — : 20	9·0	Scud; woolly cir.; cum. on hor.; portion of a halo.
20	424	57·7	53·8	3·9	1·3	0·4	19	20 : 20 : 20	9·8	Id.; woolly cirri and cirro-stratus.
22	439	59·5	54·5	5·0	1·6	1·0	18	18 : 20 : —	9·5	Id.; thick cirro-stratus and cirrous haze.
24 0	440	64·0	57·0	7·0	2·5	1·2	18	19 : — : —	3·0	Scud and cumuli; woolly cirri to W.
2	448	63·7	54·5	9·2	2·7	1·3	19	18 : — : —	9·8	Patches of scud; woolly cirri and cirro-strati.
4	447	62·5	53·8	8·7	2·1	2·3	19	— : — : 18	8·5	Woolly cirri; scud and cumuli on horizon.
6	454	61·5	53·4	†8·1	1·8	1·3	18	19 : — : 18	2·0	Masses of scud and cumuli; tufts of cirri.
8	465	57·6	52·3	⸸5·3	1·8	1·1	20		0·5	Patches of scud; cirro-strati on horizon.
10	477	52·2	50·4	1·8	0·6	0·0	16		0·5	Cirro-strati on horizon.
18	29·535	54·2	51·6	†2·6	0·1	0·1	20	— : — : 19	6·0	Woolly cir.; cir.-str.; patches of scud on S. horizo
20	550	57·2	53·0	⸸4·2	1·3	0·7	20	21 : — : —	5·0	Scud and cumuli; woolly cirri and cirro-strati.
22	573	60·0	53·4	6·6	1·7	1·2	22	20 : — : —	3·0	Cumuli.
25 0	597	63·6	56·3	7·3	1·8	0·9	22	20 : — : —	4·0	Scud and cumuli; occasional slight showers.
2	610	63·5	55·9	7·6	1·7	1·5	20	22 : — : —	3·0	Id.; id.
4	628	63·1	55·6	7·5	2·2	1·5	22	22 : — : —	1·5	Id.; woolly cirri and cirro-strati.
6	639	61·5	55·9	5·6	2·5	0·9	21	22 : — : —	3·5	Id.; id. ⊙ [the S. of the
8	677	57·3	54·2	3·1	1·6	0·3	18		6·5	Cir.-str. and woolly cir.; cum. on S. hor.; parhelio
10	707	55·9	53·9	2·0	0·4	0·0	20		9·0	Scud; cir.-str.; cir. haze; cum. on S. hor.; drops of
23	29·826	62·3	54·6	7·7	0·2	0·2	20	20 : — : —	7·0	Cumuli; linear cirri.
26 18	29·661	61·4	60·1	1·3	2·0	1·2	18	20 : — : —	10·0	Scud; light drizzling rain.
20	668	62·1	60·2	1·9	1·5	0·5	20	21 : 22 : —	9·9	Id.; cir.-cum. and cir.-str.; rain occasionally since
22	695	66·6	63·2	3·4	0·9	1·3	21	21 : — : —	10·0	Id.; cirro-stratus.
27 0	709	66·7	63·2	3·5	2·3	1·7	18	— : 21 : —	10·0	Cirro-stratous scud and cirro-strati.
2	726	70·2	65·8	4·4	2·6	1·7	19	21 : — : —	9·9	Scud moving quickly; cir.-strati with mottled edges to W.; Cl
4	735	69·6	64·6	5·0	3·0	1·4	22	22 : — : —	9·8	Scud; cirro-strati and cirri. [covered with mist; drops of ra
6	756	67·7	63·7	4·0	1·6	1·5	20	21 : — : 24	7·0	Scud; woolly and mottled cirri; cirro-strati.
8	764	65·4	63·2	2·2	2·4	1·0	20	21 : — : —	6·5	Misty scud; cirro-strati.
10	773	63·4	61·7	1·7	1·8	1·2	20	21 : 20 : —	8·0	Id.; cirro-cumulo-strati; cirro-strati.
18	29·809	63·7	61·4	2·3	1·6	0·9	18	20 : — : —	9·8	Scud.
20	825	63·2	61·6	1·6	1·6	0·1	18	21 : — : —	10·0	Id.; slight drizzling rain.
22	832	68·6	64·8	3·8	1·4	0·6	18	21 : — : —	9·9	Id.; cirro-strati.
28 0	841	70·3	65·3	5·0	1·9	1·4	19	20 : — : —	9·9	Id.; cumulo-strati on E. horizon.
2	838	70·2	64·8	5·4	2·4	2·2	22	20 : — : 21	8·0	Id.; thick woolly cirri; cum.-str. on hor.; portio
4	825	68·3	63·5	4·8	1·8	1·3	20	20 : — : —	9·7	Id.; cirro-strati. [a ha
6	828	67·8	62·6	5·2	3·5	1·1	21	20 : 20 : —	9·5	Id.; cirro-stratus.
8	823	65·2	61·2	4·0	1·9	0·1	18	— : 21 : —	9·9	Cirro-stratous scud and cirro-strati; woolly cirri.
10	824	62·7	60·2	2·5	1·3	0·2	18		9·9	Scud and cirro-strati.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

ött. ean me.	BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
18	29·848	61·1	59·7	1·4	0·1	0·0	24	19 : — : —	10·0	Scud.
20	874	57·5	55·6	1·9	0·2	0·0	31		10·0	Id.
22	886	63·4	59·4	4·0	0·0	0·0	4	20 : — : —	10·0	Scud and cirro-stratus.
2 0	891	61·5	59·6	1·9	0·0	0·0	4	20 : — : —	10·0	Id.; rain^2
2	905	61·3	59·7	1·6	0·2	0·2	4	4 : — : —	10·0	Cirro-stratous scud. ●
4	904	59·1	57·8	1·3	0·3	0·3	3	5 : — : —	10·0	Scud; rain^2
6	901	56·6	55·8	0·8	0·3	0·2	4		10·0	Nearly homogeneous.
8	896	56·0	55·6	0·4	0·3	0·2	4	5 : — : —	10·0	Scud; rain$^{2-4}$
10	907	55·6	55·2	0·4	0·3	0·1	4		10·0	Id.; rain$^{0\cdot5}$
18	29·900	57·3	57·1	0·2	0·4	0·1	4		10·0	Rain^3; mist.
20	905	59·3	59·0	0·3	0·5	0·1	4		10·0	Rain$^{0\cdot2}$; id.; no rain fell after 20^h.
22	917	62·2	61·3	0·9	0·2	0·1	7		10·0	Homogeneous mass.
3 0	942	62·9	62·0	0·9	0·2	0·2	3		10·0	Id.; misty, objects invisible at 3 miles.
2	952	67·2	64·7	2·5	0·2	0·2	6	3 : — : —	10·0	Scud; misty on horizon.
4	947	68·2	65·1	3·1	0·8	0·8	2	6 : — : —	7·0	Id.; cirri. ⊖
6	954	64·4	62·3	†2·1	0·6	0·4	6	7 : 9 : —	5·0	Misty scud; cum. and cir.-cum.-str.; woolly cirri; very
8	972	61·6	60·6	⸸1·0	0·7	0·5	6		10·0	Dense mass of cirro-stratus. [hazy on E. hor. ⊙
10	986	60·2	59·7	0·5	0·4	0·2	6		10·0	Id.
18	29·963	58·3	57·9	0·4	0·2	0·2	6		10·0	Scotch mist; objects invisible at ¾ of a mile.
20	971	58·8	58·0	0·8	0·2	0·1	6		10·0	Id.; id.
22	958	61·2	59·6	1·6	0·2	0·1	2	6 : — : —	10·0	Misty scud.
3 0	937	65·2	62·2	3·0	0·2	0·2	8	5 : — : —	5·5	Scud and loose cum.; woolly cirri; very hazy on hor. ⊙
2	917	63·9	61·4	2·5	0·7	0·4	5		9·9	Scud and cirro-stratus; hazy on horizon.
4	882	62·4	60·1	2·3	0·9	0·5	7	5 : — : —	9·8	Misty scud.
6	871	61·2	59·2	2·0	0·4	0·4	2	5 : — : —	10·0	Scud; cirro-stratus.
8	864	58·3	57·8	0·5	0·4	0·3	4		10·0	Misty scud; misty, objects invisible at 2 miles.
10	855	56·7	56·6	0·1	0·3	0·1	4		10·0	Very misty, objects invisible at 1 mile.
18	29·779	58·7	58·5	0·2	0·2	0·0	3		10·0	Mist, objects invisible at 500 yards.
20	774	62·0	60·5	1·5	0·3	0·1	3	5 : — : —	9·5	Scud; mist cleared off.
22	746	64·7	62·4	2·3	0·2	0·1	6	5 : — : —	2·5	Id.; cumuli and haze on E. horizon. ⊙
0	728	70·0	64·4	5·6	0·4	0·3	8		0·5	Sheets of cirro-strati to S. ⊙
2	707	70·6	64·4	6·2	0·6	0·2	6	— : 10 : —	6·0	Cirro-cumulo-strati and cirro-strati. ⊖
4	667	70·0	64·8	5·2	3·0	0·4	2		0·5	Cumulo-strati and haze on E. and S. horizon. ⊙
6	646	68·2	64·9	†3·3	0·8	0·3	5	— : 8 : —	4·5	Cirro-cumulo-strati; cirro-strati and haze. ⊙
8	657	63·4	62·3	⸸1·1	0·5	0·3	5		10·0	Misty scud; mist coming on.
10	676	61·6	61·4	0·2	0·4	0·2	4		10·0	Very misty, objects invisible at ¼ of a mile.
22¾	29·641	64·2	62·6	1·6	0·3	0·1	2	6 : — : —	10·0	Thick foggy clouds.
18	29·630	62·3	62·0	0·3	0·5	0·0	4		10·0	Fog, objects invisible at 500 yards.
20	637	63·3	62·9	0·4	0·1	0·0	4		10·0	Id., id.; slight drizzling rain.
22	645	65·0	64·2	0·8	0·2	0·1	4		10·0	Id., id. 1½ miles.
0	662	67·6	65·2	2·4	0·1	0·1	6		10·0	Id., id. 3 miles.
2	663	71·8	67·7	4·1	0·1	0·1	3	14 : 10 : —	4·5	Scud and cumuli; woolly cirro-cumuli; hazy on hor. ⊙
4	661	76·5	66·7	9·8	0·3	0·4	8v.	13 : — : —	5·0	Cumuli; woolly cirri; cumuli and haze on horizon. ⊙
6	666	74·3	†61·7	12·6	0·3	0·2	12		2·0	Woolly cir.; cum.-str. on S. hor.; cir.-str. and haze on
8	676	68·6	⸸62·8	5·8	0·3	0·1	11		1·5	Woolly cirri and cirro-strati. ⊙ [hor. ⊙
10	709	62·8	60·4	2·4	0·1	0·1	0		0·7	Woolly cirro-cumuli, cirri, and cirro-strati. ☽
18	29·711	59·1	58·9	0·2	0·1	0·0	4		10·0	Fog, trees invisible at ¾ of a mile.
20	729	63·1	60·6	2·5	0·2	0·2	4	7 : — : —	9·5	Scud.
22	734	65·8	62·1	3·7	0·2	0·2	4	9 : — : —	2·5	Id.; cumuli and cirro-strati. ⊙
0	724	69·8	63·8	6·0	0·3	0·2	6	10 : 13 : —	6·5	Two currents of cumuli; woolly cirri and cirro-strati. ⊖
2	723	71·1	62·5	8·6	0·5	0·3	8	11 : — : —	7·5	Loose cumuli; woolly cirri; cirro-strati.
4	717	71·6	63·5	8·1	0·3	0·2	4	10 : 14 : —	7·5	Scud; loose cumuli; cirro-cumuli.
6	710	67·8	61·0	6·8	0·2	0·2	12	8 : 16 : —	8·0	Id.; id.; woolly cirri.
8	721	66·0	60·4	5·6	0·2	0·1	10	12 : — : —	7·0	Scud and cumuli; id. ⊖

July 29^d 11^h. Severe thunder-storm from 11^h till 13^h, the lightning chiefly sheet, and the nearest distance of the thunder about half-a-ile; heavy rain all night, sometimes excessively heavy.

July 29^d 20^h. 3·063 in. of rain fell in about 19 hours.

July 30^d 18^h. Observation made at 18^h 15^m.

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1^h.	Maximum force in 10^m.	From			
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
4 10	29·738	61·3	59·8	1·5	0·2	0·1	4		7·0	Scud and cirro-cumulo-strati.
18	29·737	58·3	57·8	0·5	0·1	0·0	1		10·0	Homogeneous ; misty.
20	747	60·0	59·2	0·8	0·0	0·0			10·0	Id. ; id.
22	741	64·0	61·0	3·0	0·1	0·1	4	6 : 12 : —	9·5	Loose scud and cumuli ; cirro-cumulo-strati.
5 0	741	69·0	63·6	5·4	0·1	0·1	8	16 : — : —	9·9	Scud ; loose cumuli ; cirro-strati. [rain^{1-}
2	731	64·0	62·5	1·5	0·1	0·1	4		10·0	Cir.-str. scud ; cum. ; several peals of thunder since 0^h
4	722	70·5	65·2	5·3	0·3	0·1	14	12 : — : 20	4·0	Scud ; loose cum. and cir.-cum.-str. ; patches of cirri.
6	722	69·9	64·9	5·0	0·1	0·0	16	22 : 22 : —	9·7	Id. ; id.
8	729	66·7	63·8	2·9	0·1	0·1	18	— : 24 : —	9·5	Cirro-cumulo-strati.
10	745	60·0	59·4	0·6	0·1	0·0	20		1·0	Cirro-strati and cirrous haze ; stratus on the ground.
18	29·756	53·0	52·8	0·2	0·1	0·0	18		2·0	Stratus.
20	762	59·0	57·8	1·2	0·0	0·0	20		0·5	Patches of cirro-strati ; fog on horizon.
22	754	68·0	64·2	3·8	0·1	0·1	20		0·5	Cirro-strati and haze on horizon ; cumuli on NE. hor
6 0	757	72·0	63·8	8·2	0·1	0·1	12	— : — : 24	5·0	Woolly cirri ; loose cumuli ; cumuli and haze on hor
2	733	74·7	65·3	9·4	0·1	0·1	14	— : — : 23	4·0	Id. ; id. ; id.
4	707	76·9	66·6	10·3	0·1	0·0	30		7·0	Id. ; masses of cumuli.
6	695	73·3	68·0	†5·3	0·2	0·2	3		3·0	Id. ; cumuli and fog on horizon.
8	700	68·5	63·0	↓5·5	0·3	0·1	1	— : 22 : —	3·5	Cir.-cum.-str. ; woolly and mottled cirri ; fog on hor.
10	700	61·2	60·0	1·2	0·1	0·1	2		2·5	Mottled and woolly cirri and cirrous haze.
18	29·642	58·1	57·4	0·7	0·2	0·1	4	6 : — : —	10·0	Misty scud.
20	647	62·4	60·4	2·0	0·1	0·1	3	6 : — : —	9·9	Scud ; patches of cirri and cirro-cumuli.
22	635	60·8	60·3	0·5	0·0	0·0	4	5 : — : —	10·0	Scud ; rain$^{2-3}$; distant thunder to E. ; frequent hea
7 0	620	63·0	62·0	1·0	0·3	0·6	4	5 : — : —	10·0	Scud. [showers since 2
2	589	63·3	62·1	1·2	0·9	0·4	8	— : 5 : —	10·0	Cirro-stratous scud. [then, distance about a m
4	592	63·1	63·0	0·1	0·8	0·3	2		10·0	Very thick and dark ; rain$^{4-7}$ commenced at 3^h 54^m ; a peal of thun
6	536	63·8	63·2	0·6	0·4	0·5	4		10·0	Nearly homogeneous ; misty ; rain^4
8	518	63·2	63·0	0·2	0·5	0·4	6		10·0	Thick mist, objects invisible at ¼ of a mile ; rain^1
10	515	62·8	62·6	0·2	0·5	0·3	6		10·0	{ Id., id. ; rain 0·5 ; several p of thunder heard since 9h ; there was thunder occasionally throughout the
18	29·406	62·4	62·2	0·2	0·6	0·1	4	7 : — : —	10·0	Misty scud.
20	427	64·8	64·3	0·5	0·1	0·0	8	6 : — : —	10·0	Id.
22	427	67·2	65·2	2·0	0·0	0·0			10·0	Id.
8 0	426	69·2	66·2	3·0	0·1	0·0	31	13 : 13 : —	10·0	Scud and cirro-cumulo-strati.
2	418	67·8	65·0	2·8	0·4	0·1	8 v.	13 : — : —	9·9	Thick black mass to N. ; cir.-cum.-str. and cir.-str.
4	405	72·4	69·0	3·4	0·1	0·1	30	18 : — : —	8·0	Scud and loose cumuli ; cir.-str. ; occasional thunder to NE. and
6	404	71·2	67·2	4·0	0·1	0·1	4	— : 18 : —	8·5	Cir.-cum.-str. ; cum. round hor. ; thunder to NE.
8	404	65·6	63·4	2·2	0·1	0·1	18		4·0	Id. ; cumuli and fog on horizon.
10	423	61·8	61·2	0·6	0·1	0·1	18		7·5	Id. ; cirro-strati and fog.
22¾	29·508	67·3	62·3	5·0	0·5	0·3	20	20 : — : —	9·0	Scud and loose cumuli ; cirro-cumulo-strati and cir.-
9 18	29·648	55·0	54·5	0·5	1·3	0·1	20	20 : — : —	3·5	Scud, loose cumuli, cirro-strati, cir.-cum., and cirri.
20	653	58·1	55·7	2·4	0·5	0·3	20	20 : — : —	3·0	Id., id., cirri.
22	645	63·2	58·2	5·0	1·5	0·7	21	20 : — : —	3·0	Id., id., id.
10 0	643	64·7	58·7	6·0	1·3	1·2	20	20 : — : —	9·5	Scud ; cirro-strati.
2	641	66·3	59·4	6·9	2·8	1·2	19	19 : — : —	7·0	Scud and loose cumuli ; woolly cirri and cirro-strat
4	628	64·6	59·8	4·8	1·9	1·0	19	18 : — : —	8·0	Id. ; id.
6	605	63·2	58·6	4·6	1·1	0·6	18	18 : — : —	9·5	Id. ; id.
8	602	58·8	56·2	2·6	0·7	0·2	19	19 : 18 : —	6·0	Scud ; wool. cir.-cum. ; cir.-str. ; drizzling rain sinc
10	605	55·2	53·5	1·7	0·5	0·2	20		0·2	Cir.-str. on hor. ; two flashes of lightning to SE. since
18	29·580	55·0	53·5	1·5	1·1	1·2	21	— : 21 : 22	6·5	Cirro-stratous scud ; woolly and mottled cirri.
20	592	57·0	53·7	3·3	2·1	1·1	20	22 : — : —	9·8	Scud ; cirro-strati and woolly cirri.
22	600	59·9	55·3	4·6	1·8	1·2	22	22 : — : —	10·0	Id. ; id.
11 0	611	62·0	57·4	4·6	2·1	1·3	20	21 : — : —	9·8	Id. ; cirro-strati and cirro-cumulo-strati.

Aug. 6^d 18^h. Observation made at 18^h 6^m.

Aug. 6^d 20^h. The tops of cumuli seen occasionally to S. beyond the scud ; several peals of distant thunder heard to SSW. since 19^h 45^m. The thu gradually came nearer till 21^h when its distance was about 1½ miles, it then passed off towards NE. ; nearly continuous heavy rain from 20^h 25^m till 21^h 1 ; rain$^{2-3}$ afterwards.

Aug. 8^d 0^h. From 0^h 20^m frequent distant thunder was heard to the S. and SW. ; about 1^h 15^m, it had approached nearer, when the thunder followed lightning in 20^s ; about 1^h 30^m, a black mass of cloud came up over the zenith, when loud peals of thunder followed the lightning in 5^s to 8^s ; at 1^h 35^m, rain began to fall in spoonfuls, and when it ceased at 1^h 55^m it was found that 0·590 inch had fallen in 20^m. The storm moved off to NE., with occasional of thunder afterwards. 2^h 0^m. Thick black mass to N., with loose detached patches below.

ött. ean me.	BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
2	29·620	61·5	56·6	4·9	2·4	1·3	20	22 : — : —	9·8	Scud ; cirro-strati and cirro-cumulo-strati.
4	636	62·5	57·0	5·5	2·2	1·7	20	22 : 24 : —	8·0	Id. ; cirro-cumulo-strati ; sheets of cir.-str. on hor.
6	648	61·4	56·7	4·7	2·6	0·9	20	22 : — : —	9·5	Id. ; cirro-strati. ⊖
8	655	58·2	55·1	3·1	1·3	0·4	19	23 : 22 : —	7·0	Id. ; id.
10	691	57·4	54·8	2·6	0·7	0·2	20		9·9	Id.
18	29·754	55·0	52·6	2·4	0·5	0·2	18	24 : 24 : —	7·0	Scud and cirro-cumulo-strati. ⊙
20	777	58·2	54·8	3·4	0·2	0·1	20	23 : — : —	9·8	Scud.
22	789	60·7	55·7	5·0	0·4	0·1	22	23 : — : —	10·0	Id.
0	781	62·3	57·5	4·8	0·3	0·3	22	23 : — : —	9·5	Cirro-stratous scud ; cumuli on N. horizon.
2	785	63·7	58·2	5·5	0·6	0·1	21	22 : — : —	9·9	Id.
4	762	64·2	57·1	7·1	0·6	0·6	21	24 : — : —	9·0	Scud ; loose cumuli ; cirro-cumuli.
6	755	64·6	56·2	8·4	0·8	0·2	22	— : 23 : 24	4·0	Cirro-strati ; woolly and mottled cirri. ⊖
8	732	59·2	55·8	3·4	0·3	0·1	22	22 : — : —	10·0	Cirro-stratous scud and cirro-strati.
10	697	56·8	54·2	2·6	0·3	0·1	8		9·9	Id.
18	29·358	57·6	56·8	0·8	0·3	0·2	18	19 : — : —	9·8	Scud ; cirro-strati ; rain$^{0\cdot5}$
20	299	60·7	59·2	1·5	1·7	0·6	17	18 : — : —	10·0	Id. ; id. ; rain^{1}
22	226	65·7	62·8	2·9	1·2	2·1	16	18 : — : —	10·0	Id. ; id. ●
0	172	61·0	60·7	0·3	2·2	0·8	16	21 : — : —	10·0	Id. ; rain^{5}
2	118	64·3	62·8	1·5	0·5	0·1	18	18 : — : —	9·9	Id. ; dense cirro-stratus ; rain$^{2—3}$
4	157	66·0	61·1	4·9	1·1	0·3	21	25 : — : —	7·0	Scud and loose cumuli ; woolly cirri. ⊙
6	215	63·2	57·8	5·4	1·1	1·3	30	— : 28 : —	3·0	Cirro-cumulo-strati ; cumulo-strati to SE. ; cir.-str. ⊙
8	331	59·4	54·7	4·7	1·8	0·6	30	— : 27 : —	9·5	Cirro-stratous scud and dense undulated cirro-strati.
10	415	56·2	52·8	3·4	1·6	0·2	29		10·0	As before.
18	29·589	46·7	45·0	↑1·7	0·5	0·2	22	— : — : 25	2·0	Patches of cirri scattered over the sky ; cirro-strati. ⊙
20	614	52·9	50·0	↓2·9	0·2	0·2	22	26 : — : —	2·0	Patches of scud ; loose cum. on Cheviot ; patches of cir.-
22	617	57·8	51·4	6·4	0·2	0·3	23	24 : 24 : —	3·0	Loose cum. and cir.-str. ; woolly cir. ⊙ [str. and cir. ⊙
0	642	62·3	55·5	6·8	0·2	0·2	22	24 : 24 : —	8·0	Loose cumuli and cirro-strati ; woolly cirri. ⊖
2	650	65·9	57·8	8·1	0·4	0·3	18	22 : 22 : —	9·5	Loose cumuli ; woolly cirro-cumuli and cumulo-strati. ⊖
4	649	63·8	56·7	7·1	0·9	0·1	18	22 : — : —	7·0	Id. ; cirri and cirro-strati.
6	640	62·6	56·0	6·6	0·4	0·1	18	— : 18 : 23	5·0	Cir.-str. scud ; woolly and mottled cirri ; cir.-str. ⊙
8	652	58·3	54·0	4·3	0·1	0·1	18	— : 20 : —	9·0	Cirro-cumulo-strati ; woolly cirri and sheets of cir.-str.
10	619	53·0	51·0	2·0	0·1	0·1	30		9·0	
18	29·504	53·6	52·9	0·7	0·0	0·0	30	14 : 14 : —	10·0	Scud and thick cirro-stratus ; rain$^{0\cdot2}$
20	461	57·0	55·3	1·7	0·3	0·2	12	14 : — : —	9·9	Id.
22	426	62·0	58·6	3·4	0·5	0·3	15	17 : — : —	10·0	Id.
0	401	64·2	60·2	4·0	0·8	1·1	18	18 : — : —	10·0	Id. ; drops of rain.
2	374	62·4	60·7	1·7	0·8	0·2	17	17 : — : —	10·0	Id. ; rain^{2}
4	357	62·2	60·2	2·0	0·3	0·2	16	18 : — : —	10·0	Id.
6	337	58·4	57·0	1·4	0·5	0·1	17	— : 16 : 16	7·0	Cirro-cumulo-strati and woolly cirri ; cirro-strati.
8	339	56·9	55·1	1·8	0·3	0·3	20		0·5	Cumulo-strati and cirro-strati on horizon.
10	349	54·5	53·2	1·3	0·2	0·2	22		0·5	Scud and cirro-strati round horizon.
22¾	29·425	62·4	57·6	4·8	1·4	0·7	20	22 : — : —	8·0	Scud and cumuli.
18	29·514	56·4	55·0	1·4	1·6	0·1	18	18 : 18 : —	10·0	Thick scud and cirro-stratus.
20	523	60·4	58·3	2·1	0·1	0·1	17	20 : 20 : —	9·8	Scud ; cirro-cumuli.
22	520	64·0	60·1	3·9	0·4	0·3	20	20 : 20 : —	10·0	Id. ; id.
0	510	65·6	59·6	6·0	0·7	0·8	16	— : 20 : —	4·0	Cirro-cumulo-strati and cum. ; woolly cir. and cir.-str. ⊙
2	508	61·8	57·8	4·0	0·8	0·1	20	— : 20 : —	10·0	Cirro-stratous scud and wavy cirro-strati.
4	489	62·6	59·9	2·7	0·4	0·2	17	18 : — : —	9·9	Scud ; loose cumuli ; cirro-strati ; rain about 3h.
6	463	63·8	60·3	3·5	0·2	0·1	8	21 : — : —	9·8	Id. ; id. ; id. ; drops of rain.
8	456	61·0	58·7	2·3	0·1	0·1	12	— : 18 : —	9·8	Cirro-cumulo-strati ; cirro-strati and cumuli.
0	446	58·0	56·2	1·8	0·1	0·1	8		10·0	Scud and cirro-strati.
8	29·316	56·0	55·5	0·5	0·4	0·4	3	12 : — : —	10·0	Scud ; mass of cirro-strati.
20	305	57·0	55·6	1·4	0·4	0·2	6	12 : — : —	10·0	Id. ; id.
22	295	58·0	57·2	0·8	0·5	0·4	7	12 : — : —	10·0	Id. ; id. ; rain$^{0\cdot5}$

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The tions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Gött. Mean Time.	BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
18 0	29·274	58·8	58·4	0·4	0·4	0·1	6	11 : — : —	10·0	Scud ; mass of cirro-strati ; rain^2
2	265	63·6	61·0	2·6	0·2	0·1	4	11 : — : —	9·5	Id. ; loose cumuli ; cirro-cumulo-strati.
4	261	66·7	61·4	5·3	0·1	0·1	11	14 : — : —	5·0	Loose cumuli.
6	273	62·6	59·5	3·1	0·1	0·1	18	14 : — : —	7·5	Electric clouds to S. and W. ; cumuli ; woolly cirri.
8	307	56·2	55·0	1·2	0·2	0·0	10	10 : — : 14	5·0	Scud ; cirri.
10	339	55·8	55·6	0·2	0·1	0·1	2		10·0	Overcast ; slight fog.
18	29·406	52·0	51·6	0·4	0·2	0·0	14		10·0	Fog, rendering trees invisible at ⅛ of a mile.
20	439	53·0	52·5	0·5	0·1	0·0	24	22 : 6 : —	8·5	Loose foggy scud clearing off ; scud and woolly cir.-s
22	456	62·8	60·3	2·5	0·1	0·1	6	3 : 0 : —	8·5	Misty scud ; loose cumuli ; woolly cirri.
19 0	468	64·0	58·8	5·2	0·3	0·4	2	2 : — : —	8·5	Scud and loose cumuli ; large piles of cumuli to W.
2	478	65·0	59·2	5·8	0·5	0·2	4	31 : — : —	3·5	Loose cumuli.
4	483	65·4	59·0	6·4	0·4	0·2	2	1 : — : —	4·0	Id.
6	503	64·0	59·0	5·0	0·2	0·1	7		1·5	Cum., cum.-str., cirri, and cirrous haze round horizon
8	512	59·2	57·9	1·3	0·1	0·1	31		0·2	Stratus and haze round horizon.
10	536	54·8	54·2	0·6	0·1	0·1	18		7·5	Scud and cirro-strati ; misty.
18	29·514	52·8	52·3	0·5	0·1	0·0	20	— : 30 : —	9·8	Cirro-cumulo-strati and cirro-strati.
20	512	57·0	55·3	1·7	0·2	0·2	20	24 : 30 : —	10·0	A few patches of scud ; cir.-str., cir.-cum., and cir. ha
22	509	59·7	56·0	3·7	0·5	0·4	22		10·0	Id. ; dense mass of cirro-stratus.
20 0	498	59·6	57·8	1·8	0·4	0·1	18	18 : — : —	10·0	Loose scud ; dense mass of cir.-str. ; rain$^{1-2}$ since la
2	481	60·6	58·8	1·8	0·4	0·3	20	20 : — : —	10·0	Scud ; rain$^{1\cdot5}$ [observatio
4	460	62·1	60·0	2·1	0·2	0·1	17	21 : — : —	10·0	Id. ; cirro-strati.
6	457	60·8	58·6	2·2	0·2	0·1	21	21 : — : —	9·9	Id. ; id.
8	471	59·6	58·0	1·6	0·1	0·1	22	24 : — : —	10·0	Id. ; cirro-stratus.
10	488	58·3	57·5	0·8	0·1	0·1	19		10·0	Id. ; id.
18	29·564	59·0	57·5	1·5	0·1	0·1	24	2 : — : —	10·0	Scud ; cirro-stratus.
20	621	60·1	58·2	1·9	0·5	0·1	0	2 : — : —	10·0	Id.
22	671	60·0	57·3	2·7	0·5	0·7	1	2 : — : —	10·0	Id. ; id.
21 0	705	62·2	58·0	4·2	0·4	0·3	1	1 : 1 : —	9·9	Scud and cirro-cumulo-strati ; cirro-stratus.
2	733	65·0	60·2	4·8	0·3	0·1	5	0 : 0 : —	9·9	Id. ; id.
4	741	66·7	61·6	5·1	0·1	0·1	18	14 : 30 : —	7·0	Scud and loose cumuli ; loose cirro-cumulo-strati.
6	755	66·7	60·8	5·9	0·1	0·1	1	— : 30 : —	9·0	Cirro-cumulo-strati.
8	793	59·2	57·0	2·2	0·1	0·1	4	28 : — : —	3·0	Scud ; woolly cirri.
10	815	58·0	56·5	1·5	0·1	0·0			9·0	Scud and cirro-strati.
18	29·819	54·0	53·0	1·0	0·1	0·0	20	— : 26 : —	6·0	Cirro-cum.-strati. [from about WSW. an hour a
20	836	54·2	53·2	1·0	0·2	0·1	30		10·0	Fog, trees are invisible at 400 yards. The fog came
22	836	60·4	57·6	2·8	0·1	0·1	20		1·0	Cumulo-strati ; cumuli and haze round horizon.
22 0	828	66·5	62·2	4·3	0·3	0·2	18	24 : — : —	6·0	Loose cumuli.
2	827	67·8	62·8	5·0	0·7	0·3	18	21 : — : —	5·0	Id.
4	819	69·4	63·9	5·5	0·5	0·3	20	29 : — : —	2·5	Scud and loose cumuli ; streaks of cirro-stratus.
6	825	66·0	62·0	4·0	0·2	0·1	3	29 : 24 : —	4·5	Loose cum. ; cir.-cum.-str. ; cirri rad. from SW by
8	843	63·0	60·0	3·0	0·1	0·1	4	— : 29 : —	10·0	Cirro-stratous scud. [very hazy on ho
10	858	61·7	60·0	1·7	0·1	0·1	20		10·0	Id.
23 0	29·995	56·0	55·7	0·3	1·0	0·4	4	4 : — : —	10·0	Scud ; drizzling rain.
18	30·051	50·3	50·1	0·2	0·6	0·0	18	— : 31 : 21	8·0	Cirro-cumulo-strati ; woolly cirri.
20	067	55·2	53·5	1·7	0·1	0·1	15	— : 31 : —	9·8	Id. ; id. ; loose scud on S. h
22	065	59·2	54·7	4·5	0·1	0·0	8	2 : 1 : —	9·8	Scud ; cirro-cumulo-str. ; both currents moving slow
24 0	080	64·0	57·7	6·3	0·2	0·1	16	4 : 30 : —	9·0	Masses of cumuli ; cirro-cumulo-strati.
2	081	63·7	57·1	6·6	0·3	0·1	4	— : 31 : —	10·0	Id. ; id.
4	077	61·7	55·5	6·2	0·2	0·2	5	0 : 28 : —	5·0	Id. ; id.
6	083	60·0	54·2	5·8	0·5	0·3	5		1·0	Cumuli.
8	095	55·7	53·1	2·6	0·3	0·3	4		0·5	Haze and cirro-strati on horizon.
10	117	47·3	46·6	0·7	0·1	0·0	20		0·0	Very clear.
18	30·124	42·0	41·7	†0·3	0·1	0·0	16		0·1	Streak of cloud on N. hor. ; mist in the valleys.
20	132	48·8	48·1	⸸0·7	0·1	0·0	20		1·5	Cirri radiating from NW. ; cum. and haze on N. ho

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. T motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Aug. 18h 6h. Two or three peals of thunder since 5h from S. and SW.

tt. an ne.	Barometer at 32°.	Thermometers.			Wind.			Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1^h.	Maximum force in 10^m.	From			
h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
2 22	30·123	56·9	54·0	2·9	0·1	0·1	19		1·0	Detached masses of cumuli on hor.; patches of cirri. ⊙
2 0	121	65·0	58·6	6·4	0·2	0·1	20	30 : — : —	8·0	Scud and cumuli; cirrous haze.
2	101	65·9	58·6	7·3	0·1	0·1	12	30 : 28 : 28	9·5	Id.; woolly cirri, cir.-cum., and cir. haze; solar
4	091	65·4	57·2	8·2	0·1	0·1	12	31 : — : —	9·9	Scud; cirro-strati and cirri. ● [halo. ⊖
6	082	61·7	57·0	4·7	0·3	0·1	6	— : 26 : 26	8·0	Woolly cirri, cirro-cumuli, and cirro-strati. ⊖
8	076	57·4	55·1	2·3	0·2	0·0	2		2·5	Cirro-strati and cirrous haze.
10	079	51·3	50·0	1·3	0·0	0·0	16		0·5	Clouds and haze on horizon; stars rather dim.
18	30·040	44·8	44·4	0·4	0·1	0·0	17	— : 0 : —	8·0	Cirro-cumulo-strati; very misty. ●
20	047	49·7	48·8	0·9	0·1	0·0	6	— : 2 : —	3·0	Id.; mist clearing off. ⊖
22	039	58·7	55·8	2·9	0·0	0·0	24	— : 6 : —	6·0	Id. ⊙
2 0	30·019	63·0	58·0	5·0	0·0	0·0	0		2·0	Cumuli. ⊙
2	29·991	66·4	58·8	7·6	0·1	0·1	8	10 : — : —	5·0	Id. ⊙
4	965	67·2	59·3	7·9	0·2	0·2	4	9 : — : —	3·0	Id.; very hazy round horizon. ⊙
6	951	65·3	58·8	6·5	0·4	0·3	10		0·5	Id.; id. ⊙
8	950	58·4	55·7	2·7	0·2	0·0	0		1·0	Cirro-strati and cirrous haze on horizon.
10	959	51·2	50·6	0·6	0·0	0·0			0·5	Haze on horizon.
18	29·920	43·7	43·4	0·3	0·1	0·0	17		8·0	Woolly and mottled cirri; fog, objects invisible at 200
20	927	48·7	48·2	0·5	0·1	0·0	20		8·0	As before. ● [yards.
22	921	55·6	53·7	1·9	0·0	0·0	30	— : 8 : —	7·0	Cirro-cumuli. ⊖
2 0	907	61·2	56·4	4·8	0·1	0·1	0		3·0	Cum.; cir.-cum.; the motion of the clouds is scarcely
2	889	65·9	57·0	8·9	0·2	0·1	16		4·0	Id., moving very slowly. ⊙ [perceptible. ⊙
4	870	65·6	57·2	8·4	0·3	0·2	20	16 : — : 16	3·0	Id.; woolly cirri. ⊙
6	851	64·9	59·5	5·4	0·4	0·2	12	20 : 20 : —	6·0	Scud, cumuli, and cirro-cumulo-strati; woolly cirri. ⊙
8	865	61·6	58·1	3·5	0·3	0·1	20	— : 20 : —	7·0	Thick cirro-stratous scud.
10	882	59·3	56·4	2·9	0·2	0·0	20		8·0	Scud.
18	29·908	49·5	48·8	0·7	0·1	0·1	18	— : — : 16	4·5	Woolly cirri, cirro-cumulo-strati and cir.-str.; misty. ⊙
20	907	53·2	50·7	2·5	0·1	0·1	25		0·5	Cirri and haze on horizon. ⊙
22	922	60·3	57·4	2·9	0·1	0·0	28		2·0	Cirri and cirro-strati, chiefly to S.; cum. on N. hor. ⊙
2 0	936	65·1	58·9	6·2	0·2	0·1	2	— : — : 12	3·0	Woolly cirri; large piles and ranges of cum. on N. and
2	920	67·3	62·0	5·3	0·4	0·3	6	10 : — : 14	4·0	Cumuli; cirri. ⊙ [S. hor. ⊙
4	917	67·7	60·4	7·3	0·4	0·3	2	— : — : 16	3·0	Woolly and mottled cirri; cumuli round horizon. ⊙
6	915	64·9	60·3	4·6	0·4	0·1	4		2·0	Cumuli and cirri. ⊙
8	927	60·0	58·2	1·8	0·2	0·1	3		2·0	Cirro-strati and cirri.
10	933	57·0	56·4	0·6	0·1	0·0	4		10·0	Overcast.
18	29·923	55·3	54·7	0·6	0·1	0·0			10·0	Homogeneous; misty.
20	901	56·7	55·4	1·3	0·1	0·0	4	— : 8 : —	10·0	Cirro-stratous scud and cirro-stratus.
22	906	58·8	56·9	1·9	0·1	0·0	4 v.	— : 4 : —	10·0	Thick cirro-stratus and scud.
2 0	889	64·5	59·3	5·2	0·1	0·1	8	— : 4 : —	10·0	Id.
2	880	65·9	60·7	5·2	0·1	0·1	28	2 : — : —	9·0	Masses of scud and loose cum.; cir. haze; solar halo.
4	854	64·2	60·3	3·9	0·1	0·2	2	4 : — : —	10·0	Masses of scud; cirro-stratus. ●
6	845	62·4	59·0	3·4	0·3	0·2	3	— : 0 : —	7·0	Cirro-cumuli; patches of cumuli; cirrous haze. ⊖
8	853	57·6	56·0	1·6	0·2	0·1	4		6·0	Id.; cirrous haze.
10	853	53·0	52·6	0·4	0·2	0·0	8		1·0	Cirro-strati and haze near horizon.
23	29·858	62·7	59·0	3·7	0·6	0·5	20	20 : — : 28	5·0	Masses of loose cumuli; cirri and cirrous haze. ⊙
3 18	29·880	57·3	55·2	2·1	1·0	0·0	8	— : 18 : —	9·9	Cirro-stratous scud and wavy cirro-strati.
20	876	60·7	58·2	2·5	0·6	0·4	16	17 : — : —	9·9	Scud; cirro-strati.
22	872	64·3	60·3	4·0	0·8	0·8	18	20 : — : —	10·0	Id.; id.
3 0	878	57·7	53·1	4·6	0·8	0·4	26	18 : — : —	10·0	Thick scud; rain[1]
2	908	56·2	54·5	1·7	0·5	0·2	17	20 : 20 : —	10·0	Scud and cirro-strati; rain[1]
4	945	61·0	57·1	3·9	0·3	0·3	22	28 : — : —	9·8	Scud; cirro-strati; cirrous haze; solar halo. ●
6	29·950	60·2	54·4	5·8	0·4	0·3	28	26 : — : —	6·0	Scud and loose cumuli; cirro-cumulo-strati; cir.-str. ⊖
8	30·000	54·0	51·3	2·7	0·4	0·1	28	30 : — : —	3·0	Id. ☽
10	30·038	51·6	49·2	2·4	0·2	0·2	24		1·0	Id. ☽
18	30·106	40·1	39·7	0·4	0·2	0·1	17		1·0	Woolly cirri, cum., and haze to E.; patch of scud to N. ⊙

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The
tions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.
Aug. 25d 10h 5m. A very brilliant meteor was seen moving from about β Herculis to Arcturus, exploding about 2° N. of Arcturus; its
ameter was about 10′ or 12′; it was of a bright white light, leaving a train of reddish sparks; its form changed rapidly during its course
d after its disappearance, a small red ball continued for 5° or 6° in the same direction; the meteor moved over about 30° in about 3s.

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
31 20	30·122	47·9	46·4	‡1·5	0·2	0·0	20		0·5	Woolly cirri and haze round horizon.
22	121	54·6	51·2	3·4	0·2	0·1	25		1·0	Cumuli and cirri near horizon.
1 0	106	60·4	53·6	6·8	0·2	0·4	16	20 : — : —	3·0	Cumuli; cirri.
2	086	63·4	55·0	8·4	0·5	0·3	24	20 : 30 : —	7·0	Id.; id.
4	072	65·8	58·2	7·6	0·5	0·1	21	24 : — : —	8·0	Scud and cumuli; woolly cirri; cirro-strati.
6	076	60·1	54·4	5·7	0·8	0·1	23	26 : 26 : —	9·5	Scud; cirro-strati and cirro-cumulo-strati; cir. haze
8	082	56·0	51·3	4·7	0·2	0·2	22		7·0	Cirro-strati and cirrous haze.
10	078	53·8	51·4	2·4	0·2	0·2	24	— : 28 : —	9·8	Cirro-strati and cirro-cumulo-strati.
18	30·038	52·7	51·5	1·2	0·4	0·3	22	— : 25 : —	6·0	Cir.-cum.-str.; cir.-str.; hazy on hor.; scud on Cheviot
20	047	54·8	52·2	2·6	0·4	0·3	20	— : 24 : —	10·0	Cirro-cumulo-strati and cirro-strati.
22	056	58·8	55·4	3·4	0·4	0·3	21	24 : 24 : —	9·9	Patches of scud, cirro-strati, cir.-cum. and cir. haze.
2 0	043	65·1	59·4	5·7	0·9	0·7	22	23 : — : —	9·5	Patches of scud and cumuli, woolly cirri, and cir.-str
2	041	65·0	59·2	5·8	0·8	0·5	22	24 : — : —	10·0	Scud, cirro-strati, and cirrous haze.
4	029	65·0	58·6	6·4	0·8	0·3	20	24 : — : —	9·8	Id., id., and cirro-cumuli.
6	023	63·0	58·2	4·8	0·6	0·3	20	23 : 23 : —	7·0	Id.; cirro-cumuli; cirro-strati.
8	034	58·6	56·0	2·6	0·5	0·2	20	24 : 24 : —	7·0	Masses of scud; cirro-strati; cirro-cumuli.
10	046	54·5	53·4	1·1	0·3	0·1	20		2·0	Cirro-strati.
18	30·021	55·0	53·2	1·8	0·3	0·4	28	26 : — : —	9·2	Scud; cirro-strati.
20	032	58·8	56·0	2·8	0·6	0·5	26	— : 26 : —	9·0	Cirro-stratous scud; sheets of cirro-strati; cir. haze
22	051	63·6	59·8	3·8	0·7	0·8	20	— : 24 : —	9·5	Masses of cirro-stratous scud; milky cirrous haze.
3 0	044	66·6	60·8	5·8	1·4	0·7	21	— : 26 : —	9·5	Cirro-stratous scud; woolly cirri; cirrous haze.
2	039	65·3	60·8	4·5	1·1	0·6	20	— : 25 : —	10·0	Id.
4	036	64·2	61·0	3·2	0·9	0·5	20	— : 24 : —	9·0	Id.; cirrous haze.
6	019	64·1	60·6	3·5	0·5	0·3	18	21 : — : —	10·0	Scud.
8	038	60·3	57·6	2·7	0·5	0·2	20		6·0	Masses of scud; cirrous haze.
10	045	55·8	54·2	1·6	0·3	0·2	21		2·0	Id.; id.
18	30·065	60·0	58·0	2·0	0·2	0·1	3	— : 4 : —	10·0	Cirro-stratous scud.
20	080	61·3	59·2	2·1	0·1	0·0	4	— : 6 : —	10·0	Id.
22	080	65·7	61·7	4·0	0·1	0·1	3	5 : — : —	9·5	Scud; cirrous haze.
4 0	074	67·3	62·0	5·3	0·1	0·1	6	5 : — : —	10·0	Id.
2	062	64·0	61·6	2·4	0·3	0·3	8	6 : — : —	7·0	Id.
4	043	65·9	60·9	5·0	0·3	0·2	8	6 : — : —	5·0	Id.
6	037	64·0	60·4	3·6	0·3	0·2	4	5 : — : —	10·0	Id.
8	035	60·4	59·0	1·4	0·2	0·2	4		10·0	Id.
10	028	58·6	57·5	1·1	0·2	0·2	3		10·0	Id.
18	30·000	55·4	54·9	0·5	0·1	0·0	8		10·0	Dense mist, objects invisible at 500 yards.
20	009	56·4	55·9	0·5	0·1	0·0	8		10·0	Id., id. at ½ a mile.
22	30·006	62·5	60·2	2·3	0·1	0·1	14		10·0	Scud and cirro-strati; remains of a fog.
5 0	29·986	68·4	64·4	4·0	0·1	0·1	30	19 : — : —	7·0	Loose cumuli; cumuli and haze on horizon.
2	955	70·2	64·2	6·0	0·1	0·1	22	17 : — : —	7·0	Id.; id.
4	929	69·3	63·3	6·0	0·2	0·1	8	17 : — : —	9·5	Scud and cirro-cumulo-strati; much haze.
6	905	67·4	61·8	5·6	0·1	0·1	16	17 : — : —	3·0	Id.; id.
8	904	58·8	56·7	2·1	0·1	0·1	16		3·0	Cirro-strati and thick haze on horizon.
10	903	56·3	54·5	1·8	0·1	0·1	20		2·0	Id.
22¾	29·790	65·6	61·2	4·4	0·4	0·5	16	18 : — : —	5·0	Scud and loose cumuli.
6 18	29·685	56·2	55·9	0·3	1·0	0·1	19	— : 18 : —	5·0	Cir.-cum.-str.; cirro-strati; foggy; mist in the valle
20	689	59·2	58·5	0·7	0·1	0·1	28		2·0	Cirro-strati and fog round horizon.
22	690	66·0	63·7	2·3	0·2	0·2	21	20 : — : —	4·0	Scud and loose cumuli.
7 0	680	70·5	64·7	5·8	0·3	0·2	19	17 : — : —	6·0	Id.
2	661	72·3	65·8	6·5	0·4	0·2	22	18 : — : —	4·0	Id.
4	626	72·4	64·9	7·5	0·3	0·3	18	17 : — : —	4·0	Id.
6	597	70·6	63·9	6·7	0·4	0·1	22		3·5	Cumuli and cumulo-strati; much haze.
8	597	65·5	61·6	3·9	0·1	0·1	20	— : 16 : —	8·5	As before; very electric-looking to E.
10	591	59·0	57·5	1·5	0·1	0·1	20		2·0	Cirri and cirrous haze; diffuse lunar corona.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. T motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
	Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m	From			
in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
29·526	58·4	57·4	1·0	0·2	0·1	12		10·0	Homogeneous; misty.
516	61·7	59·9	1·8	0·1	0·1	15	18 : — : —	9·5	Scud and cumuli; misty. ⊖
502	64·9	60·9	4·0	0·4	0·4	18	— : 18 : 18	9·0	Woolly cirri and cirro-strati; scud and loose cumuli. ⊖
517	65·0	59·5	5·5	1·4	1·1	20	19 : 19 : —	10·0	Scud and thick cirro-stratus.
528	62·5	59·4	3·1	0·7	0·3	18	18 : 18 : —	10·0	Id.; slight rain since 1h.
528	66·5	61·6	4·9	2·1	0·8	20	22 : — : —	2·5	Loose cumuli; cumulo-strati and cirro-strati. ⊙
578	63·8	57·0	6·8	1·2	0·3	20	22 : — : —	3·0	Id. ⊙
631	57·0	54·7	2·3	0·4	0·3	18		3·0	Cirro-strati; cirro-cumuli and cirrous haze.
660	53·8	52·7	1·1	0·3	0·2	19		3·0	Cirro-strati and cirri. ☽
29·688	49·8	49·0	0·8	0·4	0·1	17	— : 18 : —	8·0	Cirro-stratous scud; woolly cirri and cirro-strati.
713	56·5	54·0	2·5	0·3	0·3	17	— : 18 : —	9·5	Woolly cirri and cirro-stratus. ⊖
758	62·4	58·2	4·2	0·7	0·5	20	19 : — : —	10·0	Scud and loose cumuli; woolly cirri and cir.-str. ⊖
786	64·7	58·7	6·0	0·8	0·8	20	19 : — : —	9·0	Id.; id.; solar
830	66·9	59·0	7·9	1·1	0·5	20	20 : — : —	9·5	Scud and loose cum.; cir.-cum. and cir.-str. [halo. ⊖
864	62·7	56·8	5·9	0·4	0·1	24	21 : — : —	9·8	Scud; cirro-strati and cumulo-strati.
902	62·6	56·7	5·9	0·3	0·1	18	20 : — : —	3·0	Id. ⊙
29·958	54·0	50·5	3·5	0·2	0·1	22		0·5	Cirro-strati to SE.
30·006	46·7	45·8	0·9	0·1	0·0	16		0·2	Patches of cloud to E. ☽
30·106	39·2	38·9	0·3	0·1	0·0			2·0	Woolly and linear cirri on horizon; mist in the valleys.
137	45·4	44·7	0·7	0·1	0·0	17	— : — : 30	4·0	Id.
151	55·6	53·3	2·3	0·1	0·1	20	— : — : 30	1·0	Cirri. ⊙
146	61·6	54·8	6·8	0·7	0·7	20	23 : — : —	0·3	Patches of scud. ⊙
140	62·6	56·0	6·6	1·3	0·5	20	22 : — : —	0·3	Id. ⊙
129	64·4	56·3	8·1	0·9	0·8	18		0·2	Woolly and mottled cirri. ⊙
124	62·7	55·6	7·1	1·0	0·4	19	— : — : 28	3·0	
148	55·6	51·6	4·0	0·6	0·2	17		7·5	Woolly cirri and cirro-strati.
171	50·5	48·5	2·0	0·3	0·2	18		2·0	Cirri and cirro-strati. ☽
30·174	53·4	52·0	1·4	0·3	0·1	18	— : 29 : —	6·0	Cirro-cumulo-strati and cirro-strati.
194	56·8	54·8	2·0	0·2	0·1	20		9·9	Cirro-stratous scud; slight drizzling rain.
199	63·0	59·1	3·9	0·2	0·2	22	— : 28 : —	9·0	Cirro-strati and cirro-stratous scud.
193	68·6	63·2	5·4	0·3	0·3	20	— : 24 : —	6·0	Cirro-strati and cirro-cumulo-strati. ⊙
182	72·8	65·6	7·2	0·4	0·2	24		3·0	Masses of cirro-strati; woolly cirri. ⊙
185	73·0	65·4	7·6	0·5	0·3	28	— : 28 : —	8·5	Cirro-strati; cirro-cumuli and woolly cirri. ⊖
184	69·3	64·2	5·1	0·4	0·1	26	— : 28 : —	9·8	Cirro-strati; cirri; cirrous haze.
211	63·1	61·3	1·8	0·1	0·1	18		9·5	Cirro-strati and woolly cirri.
229	59·2	58·3	0·9	0·0	0·0	22		3·0	Cirro-strati and cirrous haze; faint aurora.
30·247	56·0	55·4	0·6	0·1	0·1	20		9·0	Scud; woolly cirri.
272	59·5	58·4	1·1	0·1	0·0	16		8·5	Cirro-cumulo-strati and cir.-str.; motion imperceptible.
298	64·7	61·5	3·2	0·0	0·0	0		9·5	Id., moving very slowly.
301	68·8	63·1	5·7	0·1	0·1	8	— : 2 : —	6·0	Woolly cir.-cum.-str.; cirro-cumuli; detached cumuli. ⊖
306	67·7	62·6	5·1	0·5	0·3	6	28 : — : —	9·7	Scud and loose cumuli; cirro-strati.
311	65·0	61·2	3·8	0·4	0·4	6	4 : 0 : —	10·0	Scud; cirro-cumnlo-strati.
317	59·9	58·2	1·7	0·4	0·3	4	5 : — : —	10·0	Uniform mass of scud and cirro-stratus.
337	57·6	55·6	2·0	0·4	0·1	6	6 : — : —	10·0	Id.
351	57·0	55·0	2·0	0·2	0·0	0		10·0	Overcast.
30·288	59·0	56·1	2·9	0·1	0·1	16		0·5	
30·099	46·8	46·5	0·3	0·2	0·2	20	24 : — : —	2·0	Misty scud; cirri; fog in the valleys.
094	51·2	50·8	0·4	0·2	0·1	20		0·5	Fog on horizon. ⊙
091	60·7	59·0	1·7	0·2	0·1	6	26 : — : —	9·0	Loose scud.
076	67·0	62·6	4·4	0·2	0·2	0	27 : — : —	8·0	Scud and loose cumuli.
053	67·0	63·1	3·9	0·3	0·2	4	26 : — : —	4·0	Scud, cumuli, and haze. ⊙
025	69·0	64·7	4·3	0·2	0·1	16	26 : — : —	8·5	Cumuli; very hazy on horizon. ⊙
000	68·5	64·3	4·2	0·3	0·2	28	25 : — : —	5·0	Scud and cumuli; much haze. ⊖
008	60·4	59·1	1·3	0·1	0·0	28	25 : — : —	2·5	Scud.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Sept. 9d 0h. Observation made at 0h 5m.

Gött. Mean Time.	BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
14 10	30·023	57·1	56·7	0·4	0·0	0·0	26		1·0	Scud.
18	30·012	49·3	49·1	0·2	0·1	0·0	20	28 : — : —	9·0	Misty scud ; cirro-strati ; mist on the ground.
20	020	57·2	56·5	0·7	0·1	0·1	18	— : 27 : —	9·5	Cirro-cumulo-strati and cirro-strati ; fog on horizon.
22	028	62·7	60·6	2·1	0·0	0·0	14	27 : — : —	7·5	Scud.
15 0	019	66·5	61·6	4·9	0·2	0·1	0	26 : — : —	7·0	Scud and cumuli.
2	30·005	68·6	63·0	5·6	0·2	0·1	4	25 : — : —	7·0	Id. ; hazy.
4	29·990	67·5	62·3	5·2	0·2	0·1	3	25 : — : 24	7·0	Id. ; woolly cirri ; very hazy.
6	983	67·0	60·1	6·9	0·3	0·2	0	26 : — : —	2·0	Id. ; sheets of cirri and cirro-strati.
8	997	58·9	57·4	1·5	0·3	0·0	4		0·4	Sheets of cirro-cumuli.
10	998	51·5	51·4	0·1	0·0	0·0			0·2	Haze on horizon ; stratus in the valleys.
18	29·985	46·2	46·0	0·2	0·1	0·0	18	— : 24 : —	6·0	Cirro-cumulo-strati ; woolly cirri ; fog, objects invis
20	30·006	50·1	49·7	0·4	0·1	0·1	17		7·5	Thick woolly cirri ; fog in the valleys. [at 300 ya
22	30·001	58·3	56·2	2·1	0·1	0·0	28	— : 25 : —	9·8	Loose cirro-cumulo-strati.
16 0	29·991	64·0	60·3	3·7	0·0	0·0	30		10·0	Id.
2	967	68·7	64·2	4·5	0·1	0·1	16	— : 24 : —	10·0	Cirro-stratous scud.
4	942	65·3	61·9	3·4	0·1	0·0	20	— : 24 : —	10·0	Id.
6	925	64·0	59·3	4·7	0·1	0·0	26	— : 22 : —	10·0	Id.
8	932	60·4	58·4	2·0	0·0	0·0	24		10·0	Id.
10	914	58·2	57·0	1·2	0·0	0·0	16		9·5	Id.
18	29·847	52·4	51·5	0·9	0·1	0·0	17	— : 24 : —	9·9	Cirro-cumulo-strati.
20	847	55·0	54·0	1·0	0·1	0·1	8	— : 26 : —	10·0	Cirro-stratous scud.
22	849	59·0	57·0	2·0	0·1	0·0	22		10·0	Id. ; hazy ; clouds nearly uniform.
17 0	829	63·0	58·6	4·4	0·1	0·1	28	— : 30 : —	10·0	Id.
2	808	65·8	60·0	5·8	0·1	0·1	4	— : 30 : —	10·0	Id.
4	792	63·0	58·6	4·4	0·1	0·1	8	— : 30 : —	9·8	Id.
6	780	61·2	57·0	4·2	0·0	0·0	8		10·0	Id.
8	789	57·3	54·0	3·3	0·2	0·1	2		10·0	Id.
10	792	55·8	53·6	2·2	0·1	0·0	2		10·0	Dark.
18	29·799	47·8	46·3	1·5	0·4	0·1	28	4 : — : —	4·5	Scud ; woolly cirri.
20	793	48·0	46·3	1·7	0·1	0·1	30		0·5	Cirro-cumulo-strati and cirro-strati on E. horizon.
22	795	53·5	50·3	3·2	0·1	0·1	8	6 : — : —	1·5	Loose cumuli.
18 0	790	57·0	52·1	4·9	0·2	0·1	2	10 : — : —	9·5	Id.
2	754	57·7	53·1	4·6	0·2	0·2	3	10 : — : —	7·0	Id.
4	738	58·2	52·6	5·6	0·3	0·2	4	— : 16 : —	8·5	Cirro-cumulo-strati.
6	708	55·6	50·6	5·0	0·2	0·1	4	— : 18 : —	3·0	Id.
8	706	47·0	45·6	1·4	0·1	0·0	20		0·5	Patches of cirri.
10	699	44·4	43·6	0·8	0·0	0·0	18		9·8	Scud.
18	29·584	45·9	45·0	0·9	0·2	0·0	23	26 : — : —	10·0	Scud.
20	560	49·0	48·0	1·0	0·0	0·0	17	— : 26 : —	10·0	Cirro-cumulo-strati and scud.
22	527	58·0	54·0	4·0	0·2	0·1	20	— : 26 : —	10·0	Cirro-cumulo-strati ; cirrous haze.
19 0	492	61·2	55·5	5·7	0·3	0·2	22	28 : — : —	10·0	Scud and cirro-stratus ; haze.
2	461	61·1	56·1	5·0	0·2	0·1	20		10·0	Thick covering of cirro-stratus ; much haze.
4	444	56·8	55·0	1·8	0·2	0·1	20		10·0	Id. ; id. ; rain[1]
6	423	55·0	54·0	1·0	0·2	0·2	18		10·0	Densly overcast ; rain[1]
8	415	54·1	53·4	0·7	0·2	0·1	18		10·0	Id. ; id.
10	402	53·7	53·3	0·4	0·1	0·0	2		10·0	Id. ; very light rain.
$22\frac{3}{4}$	29·367	59·2	56·6	2·6	0·0	0·0	0	4 : 30 : —	10·0	Masses of loose cumulous scud ; cirro-cumulo-strati ; both cu moving very slowly.
20 18	29·531	51·7	51·0	0·7	1·1	0·0	2		9·9	Cirro-stratous scud ; sky to E. ; slight drizzling
20	557	52·5	51·2	1·3	0·2	0·1	3	— : 4 : —	9·8	Cirro-cumulo-strati and cirro-strati.
22	572	56·5	52·0	4·5	0·6	1·0	5	7 : — : —	3·5	Cumuli ; cirro-cumulo-strati to SW.
21 0	578	58·2	52·3	5·9	0·5	0·4	6	7 : — : —	3·0	Id.
2	570	58·5	51·3	7·2	0·4	0·4	4	9 : — : —	3·0	Id.
4	556	57·2	50·0	7·2	0·4	0·3	6		2·5	Id.
6	566	55·0	49·0	6·0	0·3	0·2	6	8 : — : —	2·0	Scud and cumuli.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.
Sept. 17d. The most of the swallows seem to have gone off to-day.

G M Ti	BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1ʰ.	Maximum force in 10ᵐ	From			
d.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
21	29·585	51·3	48·9	2·4	0·1	0·1	6		9·5	Scud.
	588	50·6	48·6	2·0	0·1	0·1	2		9·0	Id.; stars dim.
	29·561	35·0	34·7	0·3	0·0	0·0	24	— : 16 : —	3·0	Cir.-cum. and cir.-str.; str. in the valleys; much dew.
	574	41·2	41·1	0·1	0·1	0·0	22	— : 16 : —	2·0	Cir.-cum.-str.; cir.-str. on N. & E. hor.; str. clearing off. ⊙
	575	51·0	48·6	2·4	0·2	0·1	12	14 : 14 : —	8·0	Loose cumuli and cirro-cumulo-strati. ⊙
22	560	57·0	51·5	5·5	0·4	0·4	10	11 : 11 : —	9·5	Scud; cirro-cumulo-strati and cirro-strati. ⊙
	523	58·7	53·8	4·9	0·3	0·8	10	12 : 12 : —	7·0	Id.; woolly cirri to W.; cumulo-strati to N. and E. ⊙
	499	58·2	52·8	5·4	0·8	0·7			4·0	
	468	55·4	51·2	4·2	0·8	0·2	6		7·0	Cirro-strati and scud.
	471	54·7	50·7	4·0	0·4	0·4	12		10·0	Scud and cirro-cumulo-stratus.
	440	54·4	49·7	4·7	1·5	0·5	12		8·0	Cirro-strati and scud.
	29·289	54·3	53·1	1·2	0·6	0·8	6	13 : — : —	10·0	Scud; cirro-strati.
	244	55·1	54·8	0·3	1·7	1·3	6	11 : — : —	10·0	Id.; mass of cirro-stratus; rain^2
	204	57·6	56·4	1·2	0·9	0·3	4	10 : — : —	10·0	Id.; dense uniform cir.-str.; stormy-looking; rain^1
23	154	58·6	58·0	0·6	0·5	1·0	12	13 : — : —	10·0	Id.; dense cirro-stratus. [commenced at 22ʰ 10ᵐ.
	135	63·4	61·0	2·4	0·9	0·2	12	16 : — : —	9·5	Id.; cumuli; cirro-stati; rain till 0ʰ 50ᵐ.
	125	60·9	59·4	1·5	0·4	0·2	14	16 : — : —	10·0	Id.; dense cirro-stratus; distant thunder to E.; rain$^{1\cdot5}$
	124	58·6	58·0	0·6	0·2	0·1	28	15 : — : —	10·0	Id.; id.; cum. on hor.; drops of rain.
	131	55·6	55·5	0·1	0·0	0·0	28		4·0	Cirro-strati; slight fog.
	133	51·2	50·9	0·3	0·0	0·0			2·0	Fog.
	29·138	50·7	50·6	0·1	0·0	0·0			10·0	Fog, objects invisible at 200 yards.
	159	51·6	51·4	0·2	0·0	0·0			10·0	Id., id. 400 yards.
	174	55·7	55·3	0·4	0·1	0·0	10		10·0	Id., id. 1½ mile.
24	189	59·4	57·6	1·8	0·1	0·1	8	14 : — : —	9·9	Misty scud; cumuli and cirro-strati; fog on horizon.
	190	63·2	59·3	3·9	0·1	0·1	8	— : 14 : —	5·5	Cir.-cum.-str.; cum.-str. on hor.; very hazy on S. and
	181	63·4	60·3	3·1	0·1	0·1	10	16 : — : —	9·7	Thick scud and cumuli; cirro-cumulo-strati. [E. hor. ⊖
	218	57·7	56·8	0·9	0·3	0·3	4	5 : — : —	10·0	Misty scud; fog coming on.
	258	55·3	55·1	0·2	0·3	0·1	2		10·0	Misty.
	282	54·8	54·6	0·2	0·1	0·1	1		10·0	Id.; very dark.
	29·361	55·4	54·9	0·5	0·0	0·0	22	28 : — : —	10·0	Scud and cirro-stratus.
	392	55·5	54·0	1·5	0·2	0·1	21	26 : — : —	8·0	Id. ⊖
	430	58·6	55·3	3·3	0·3	0·3	20	— : 23 : —	6·0	Cirro-cumulo-strati; cirro-strati; cumulo-strati to E.
25	440	61·7	55·8	5·9	0·5	0·6	20	26 : — : —	7·0	Cumuli; cirro-strati and cumuli. ⊖
	448	62·6	56·4	6·2	0·6	0·2	21	— : 24 : —	9·9	Cirro-stratous scud and cirro-strati.
	447	63·2	57·6	5·6	0·5	0·1	24	24 : 24 : —	9·5	Scud and cirro-cumulo-strati.
	454	59·7	55·4	4·3	0·3	0·1	22	24 : — : —	8·0	Scud; loose scud and cumuli.
	480	55·1	52·8	2·3	0·1	0·1	20		7·0	Id.
	483	54·9	53·3	1·6	0·3	0·1	19		6·0	Scud and cirro-strati.
	29·407	46·0	45·7	0·3	0·2	0·0	4		9·5	Scud and cirro-strati.
	390	48·9	48·2	0·7	0·0	0·0	4	18 : — : —	10·0	Thick scud and cirro-stratus.
	360	52·3	51·2	1·1	0·0	0·0	3		10·0	Id.; rain^1
26	311	56·3	54·5	1·8	0·4	0·2	18		10·0	Thick cirro-stratus; id.
	277	58·6	55·9	2·7	1·4	0·8	17	— : 17 : —	9·9	Cirro-stratous scud and cirro-stratus; fog on horizon.
	227	61·4	57·7	3·7	1·5	0·5	14	18 : — : —	6·5	Scud; cumuli; cirro-strati.
	223	58·6	57·3	1·3	0·8	0·3	16	19 : — : —	10·0	Id.; id.; id.; rain$^{1\cdot5}$
	220	56·5	55·4	1·1	0·6	0·3	18		9·0	Scud and cirro-strati; stars dim.
	238	56·2	55·0	1·2	0·5	0·2	18		7·0	Id.; clear in zenith.
	29·343	57·0	54·6	2·4	1·2	0·2	18	24 : 14 : —	8·0	Scud and cumuli; cirro-cumulo-strati.
27	29·362	38·0	37·8	0·2	1·2	0·0	16		3·0	Cirro-strati; stratus in the valleys.
	379	39·6	39·3	0·3	0·0	0·0	18	— : — : 20	3·0	Cirri; id. ⊖
	363	47·3	46·5	0·8	0·1	0·1	6	— : 14 : —	8·5	Cirro-strati and cir.-cum.-str.; scud lying on Cheviot. ⊖
28	338	53·2	51·7	1·5	0·1	0·1	2	8 : — : —	9·9	Loose scud; dense mass of cirro-stratus and cir. haze.
	305	53·4	52·6	0·8	0·4	0·3	4	11 : — : —	10·0	Scud; dense mass of cirro-stratus; rain^1
	296	52·0	51·4	0·6	0·5	0·4	4	9 : — : —	10·0	Id.; rain^2

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ept. 22ᵈ 10ʰ. There is evidently a bright aurora, but it is almost wholly obscured by clouds.

ept. 23ᵈ 0ʰ. About 23ʰ the wind changed for a short time, the clouds moving from WSW., shortly afterwards two currents were observed; rain$^{2-5}$ since 22ʰ.

ept. 23ᵈ 18ʰ. Observation made at 18ʰ 30ᵐ.

Gött. Mean Time.	BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
28 6	29·295	48·4	47·9	0·5	0·5	0·1	0	10 : — : —	10·0	Scud ; rain^5
8	280	49·2	49·0	0·2	0·2	0·2	0		10·0	Id. ; rain$^{3-5}$
10	256	49·8	49·3	0·5	0·2	0·1	14		10·0	Id. ; rain$^{0\cdot5}$
18	29·105	50·0	49·5	0·5	0·5	0·1	0		10·0	Scud ; rain$^{0\cdot2}$
20	092	48·8	48·4	0·4	0·1	0·0	0	0 : — : —	10·0	Loose scud near horizon ; uniform mass above ; rai
22	075	48·2	47·9	0·3	0·2	0·1	24		10·0	Scud ; uniform mass above ; rain^4
29 0	046	49·0	48·5	0·5	0·6	0·4	1	2 : - : --	10·0	Id. ; id. ; rain^2
2	050	49·4	49·2	0·2	0·7	0·1	28	0 : — : —	10·0	Id. ; rain^3
4	027	50·3	49·9	0·4	0·5	0·7	23	26 : — : —	10·0	Id. ; rain$^{0\cdot5}$
6	069	50·8	49·6	1·2	1·6	1·1	27	29 : — : —	10·0	Id. ; rain$^{0\cdot2}$
8	063	51·8	50·2	1·6	2·4	1·5	30		10·0	Id.
10	149	51·2	49·8	1·4	0·2	0·2	31		10·0	Cirro-strati.
18	29·383	51·0	49·5	1·5	0·4	0·1	30	1 : — : —	9·5	Scud ; cirro-strati.
20	435	50·6	48·6	2·0	0·4	0·1	31	2 : 2 : —	7·0	Id. ; cirro-cumulo-strati.
22	478	53·0	51·4	1·6	0·1	0·1	31	2 : — : —	7·5	Id.
30 0	491	57·3	53·6	3·7	0·3	0·2	4	2 : — : —	7·0	Scud and loose cumuli ; woolly cirri.
2	516	57·7	53·2	4·5	0·2	0·1	4	0 : — : —	9·0	Id. ; id.
4	527	57·7	52·6	5·1	0·2	0·1	4	— : — : 31	9·0	Cirri ; masses of scud and cumuli.
6	547	54·2	52·3	1·9	0·1	0·1	12	— : 30 : 30	9·5	Cirro-strati and cirri.
8	572	51·0	50·2	0·8	0·1	0·0	30		10·0	Dense mass of cirro-strati.
10	581	49·4	48·8	0·6	0·1	0·0	6		10·0	Cirro-strati and cirro-cumulo-strati.
18	29·563	51·6	50·6	1·0	0·2	0·1	16	22 : — : —	10·0	Scud.
20	573	53·1	51·7	1·4	0·5	0·4	20	23 : 22 : —	9·5	Id. ; cirro-cumulo-strati.
22	593	55·5	53·4	2·1	0·5	0·1	22	21 : — : —	10·0	Id. ; cirro-strati.
1 0	578	57·7	55·4	2·3	0·3	0·3	22	22 : — : —	9·9	Id. ; cirro-cumulo-strati.
2	586	62·8	59·0	3·8	0·4	0·4	19	24 : 21 : —	9·5	Id. ; id.
4	607	60·6	53·6	7·0	0·6	0·6	25	24 : — : 23	3·0	Scud and loose cumuli ; cirri.
6	638	55·2	50·0	5·2	0·9	0·1	20		0·3	Cirri.
8	666	49·7	47·6	2·1	0·3	0·1	22		1·0	Thin cirri and cirrous haze.
10	676	44·2	43·8	0·4	0·1	0·1	16		0·5	Id.
18	29·621	38·7	38·3	0·4	0·1	0·1	16		2·0	Cirri ; cirro-strati ; stratus in the valleys ; much d
20	616	40·5	40·2	0·3	0·1	0·0	22	— : — : 20	4·0	Id. ; id. ; stratus.
22	583	49·6	49·0	0·6	0·1	0·1	18	— : 19 : —	8·0	Woolly cir.-cum. ; fog, objects invisible at 1½ mile.
2 0	517	56·9	52·3	4·6	0·1	0·1	31	— : 18 : —	9·0	Id. ; stratus ; patches of scud on E. and S. h
2	453	60·3	55·3	5·0	0·4	0·3	18	16 : 17 : —	7·5	Scud and cumuli ; woolly cirro-cumuli ; haze on h
4	387	59·7	54·2	5·5	0·4	0·3	18	20 : — : —	7·0	Id. ; cirro-cumuli.
6	363	55·4	51·4	4·0	0·4	0·1	20	18 : 18 : —	9·0	Scud and cirro-cumulo-strati ; cirro-strati.
8	348	47·2	46·5	0·7	0·2	0·1	20		0·5	A few patches of scud ; cirro-strati and stratus.
10	324	45·8	45·6	0·2	0·1	0·0	18	— : 24 : —	6·0	Cirro-cumulo-strati and cirro-strati ; foggy on hor.
18	29·384	42·0	41·0	1·0	0·4	0·1	20		0·5	Cirro-strati on horizon.
20	413	43·3	41·7	1·6	0·2	0·1	18		0·2	A few patches of cirro-stratus.
22	423	50·9	48·2	2·7	0·2	0·2	22		0·5	Patches of scud ; cirro-strati and haze.
3 0	433	55·0	49·4	5·6	0·4	0·3	22	24 : — : —	8·0	Scud and cumuli ; cumuli and cirro-strati.
2	435	56·0	50·4	5·6	0·9	0·2	26	23 : — : —	3·0	Id. ; cumulo-strati on E. hor.
4	445	58·0	51·1	6·9	1·0	0·5	22	22 : — : —	2·0	Cumuli ; cirri.
6	466	51·2	47·2	4·0	0·5	0·2	16		0·2	Cirro-strati and haze on horizon.
8	496	46·2	44·4	1·8	0·8	0·0	22		0·1	Id.
10	505	44·1	43·2	0·9	0·2	0·1	26		0·1	Id.
23	29·472	52·2	48·5	3·7	1·0	0·4	14	— : 20 : —	10·0	Cirro-stratus and haze.
4 18	29·322	55·0	52·6	2·4	2·0	0·3	11	11 : — : —	10·0	Scud ; cirro-stratus and cirrous haze.
20	326	56·9	53·6	3·3	0·4	0·2	12	11 : — : —	10·0	Id. ; id.
22	303	59·1	55·2	3·9	1·3	0·9	14	13 : 14 : —	9·9	Loose scud ; cirro-strati and cir.-cum.-str. ; cir. ha
5 0	277	61·6	56·4	5·2	1·6	0·8	10	11 : — : —	9·9	Scud ; cirro-strati.
2	241	59·3	56·5	2·8	1·7	1·4	14	11 : — : —	10·0	Id. ; id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. T motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
	Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
29·209	58·7	56·4	2·3	1·3	0·5	10	11 : — : —	10·0	Scud ; cirro-strati.
180	57·8	56·4	1·4	0·7	0·1	10	11 : — : —	10·0	Id. ; id.
166	55·9	54·0	1·9	0·6	0·2	16	14 : 14 : —	5·0	Scud and cirro-cumulo-strati. ☽
29·146	56·0	54·0	2·0	0·2	0·2	16	14 : 14 : —	5·0	Id. ☽
28·986	56·0	53·8	2·2	1·0	0·4	13		9·5	Scud and cirro-strati.
930	55·9	53·7	2·2	0·8	1·0	14	14 : 15 : —	6·0	Scud ; cirro-cumuli. ⊙
880	57·3	54·3	3·0	2·0	0·8	14	16 : — : —	9·9	Id. ; cirro-strati.
845	57·6	55·4	2·2	1·6	1·7	18	18 : — : —	6·0	Id. ; cumuli and cumulo-strati ; cirro-strati. ⊖
916	58·4	51·2	7·2	3·8	2·0	18	21 : — : —	4·0	Scud and loose cumuli ; cirro-strati. ⊙
28·965	56·1	50·0	6·1	2·3	1·4	18	22 : — : —	1·5	Id. ⊙
29·002	51·0	47·6	3·4	1·7	0·2	18		2·0	Patches of scud ; cirro-strati and cirrous haze.
037	49·8	47·3	2·5	0·8	0·4	17		2·0	Scud and loose cumuli. ☽
29·043	49·0	46·8	2·2	0·5	0·2	18	19 : — : —	5·0	Id. ☽
28·981	46·9	45·6	1·3	1·9	0·4	17		2·5	Scud and cirri. ☽
980	47·8	46·4	1·4	1·3	0·4	18	— : 18 : 18	7·0	Cirro-strati and woolly cirri ; cumuli on horizon.
963	52·8	49·7	3·1	2·1	1·5	18	— : — : 18	6·0	Thick woolly cirri ; cirro-strati ; scud lying on Cheviot.
943	54·2	49·7	4·5	2·3	1·3	18	17 : — : 18	3·0	Scud and loose cum. ; woolly cirri ; cir.-str. on hor. ⊙
901	56·0	50·2	5·8	2·8	0·7	20	17 : — : —	9·0	Scud ; cumuli and cirro-strati ; rain$^{0\cdot2}$
858	54·6	49·6	5·0	2·5	1·2	18	18 : 22 : 22	5·0	Scud and cumuli ; cirri and cirro-strati.
804	52·2	47·7	4·5	1·5	0·3	12	17 : — : —	10·0	Thick scud ; id.
748	49·7	48·2	1·5	2·3	1·6	16		10·0	Dark ; rain$^{2\cdot5}$
745	46·0	45·2	0·8	1·2	0·2	18		3·0	Cirro-strati to N. ☽
28·850	46·7	45·4	1·3	0·9	0·1	21		2·0	Scud and cirro-strati. ☽
879	47·1	46·0	1·1	0·6	0·7	19		6·0	Cirro-strati and cirrous haze.
902	51·2	49·2	2·0	1·1	0·8	20	— : 24 : —	10·0	Cirro-stratous scud and cirro-strati ; cirrous haze. ●
921	54·2	50·7	3·5	1·6	0·8	20	23 : — : —	9·9	Scud ; cirro-stratus and cirrous haze ; rain$^{0\cdot5}$
932	54·8	50·4	4·4	1·7	0·7	22	22 : — : —	9·7	Id. ; id. ; cum. on hor. ●
954	53·2	50·2	3·0	1·6	0·7	18	24 : — : —	9·7	Id. ; id. ; id.
28·997	51·0	48·3	2·7	0·8	0·7	20	23 : — : —	9·5	Loose scud ; loose cir.-str. ; dense cir.-str. in variously-coloured and
29·042	49·5	47·7	1·8	1·1	1·0	18		6·5	Cir.-str. and haze on N. and E. hor. ☽ [contorted sheets.
083	48·0	46·7	1·3	1·0	0·3	20	24 : — : —	2·5	Scud ; cirro-strati and haze. ☽
29·186	50·0	48·7	1·3	1·3	0·3	22	22 : — : —	3·5	Scud and cir.-str. ; thin haze, causing a faint lunar
196	50·1	49·0	1·1	0·4	0·3	18	20 : — : —	10·0	Scud ; cirro-stratus. [halo. ☽
192	52·4	50·8	1·6	0·4	0·1	16		10·0	Loose scud ; dense mass of cirro-stratus.
142	51·7	50·4	1·3	0·5	0·2	10	16 : — : —	10·0	Id. ; id. ; rain$^{1\cdot5}$
29·042	50·9	49·5	1·4	0·4	0·1	12	16 : — : —	10·0	Id. ; id. [rain.
28·930	54·9	54·0	0·9	0·3	0·2	19	20 : — : —	10·0	Scud ; cir.-str. ; bank of white clouds to E. ; drops of
896	58·2	57·3	0·9	1·5	1·7	20	19 : — : —	10·0	Scud moving rapidly ; cirro-stratus.
887	57·0	54·8	2·2	1·8	1·0	18		2·5	Scud and cirro-strati.
880	56·0	53·8	2·2	1·7	1·3	18		5·0	
28·730	54·9	53·3	1·6	3·5	0·9	19		9·8	Scud ; cirro-cumuli ; drops of rain.
713	56·4	55·2	1·2	1·1	1·2	18	20 : — : —	9·5	Id. ; cirro-strati ; rain occasionally.
742	59·3	57·2	2·1	1·1	0·8	18	20 : — : —	9·5	Id. ; id.
820	58·0	57·1	0·9	2·0	1·2	20	21 : — : —	9·9	Id. ; id.
891	59·0	57·6	1·4	1·8	0·7	22	23 : — : —	10·0	Id. ; id.
28·949	60·0	54·3	5·7	1·6	1·7	20	24 : 24 : —	3·0	Scud and cumuli ; sheets of cirro-strati and cirri. ⊙
29·053	56·7	52·6	4·1	1·9	0·6	20	25 : — : —	6·0	Scud ; bank of cir.-str. to E. ; cir.-str. and cirri to W.
171	54·7	51·2	3·5	1·0	0·5	22		3·0	Scud and cirro-strati ; principally to E.
262	54·2	50·6	3·6	0·9	0·4	24		10·0	Id. ; dark.
29·422	50·3	49·7	0·6	0·6	0·1	6	14 : 14 : —	9·5	Scud ; cirro-cumuli and cirro-strati.
29·251	52·1	51·6	0·5	1·7	1·7	2		10·0	Scud ; rain$^{0\cdot5}$
282	52·3	51·8	0·5	2·1	1·8	3	5 : — : —	10·0	Id. ; rain^{2}
342	52·8	51·9	0·9	1·9	1·4	3	4 : — : —	10·0	Id. ; id.
381	53·3	52·0	1·3	3·1	3·8	2	4 : — : —	10·0	Id. ; rain^{1} ●

he direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The ons of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Gött. Mean Time.	Baro-meter at 32°.	Thermometers.			Wind.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1^{h}.	Maximum force in 10^{m}.	From			
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
12 2	29·433	51·0	49·0	2·0	5·2	2·6	2	4 : — : —	10·0	Scud.
4	493	51·9	47·1	4·8	4·7	3·2	2	3 : — : —	10·0	Id. ; cir.-str. and cir.-cum. ; parhelion seen about
6	554	49·2	46·0	3·2	4·2	2·8	2	3 : — : —	10·0	Id.
8	619	49·0	44·4	4·6	4·5	3·0	2		9·8	Id. ; dark.
10	686	44·5	42·8	1·7	3·3	2·6	0		9·9	Id. ; rain^{1}
18	29·786	43·7	40·1	3·6	5·1	1·2	31	3 : — : —	7·5	Scud.
20	814	43·9	40·3	3·6	2·1	1·0	0	2 : — : —	7·0	Id.
22	834	45·7	42·2	3·5	2·2	1·2	31	2 : — : —	3·0	Id. ; cirro-strati.
13 0	812	47·6	43·0	4·6	2·6	1·5	0	— : 3 : —	7·5	Cirro-strati and cirro-cumulo-strati.
2	801	47·8	43·3	4·5	1·7	0·7	31	0 : — : —	10·0	Scud.
4	781	47·6	41·4	6·2	1·7	0·6	0	2 : — : —	9·5	Id.
6	745	44·8	41·0	3·8	0·6	0·3	0	2 : — : —	7·0	Id.
8	698	41·6	38·8	2·8	0·2	0·2	20		6·5	Id.
10	642	40·5	38·7	1·8	0·1	0·1	18		8·0	Id. ; stars dim.
18	29·244	41·6	39·0	2·6	0·5	0·5	18		10·0	Scud ; a few spits of rain.
20	29·115	39·5	38·4	1·1	0·8	0·3	13	14 : — : —	10·0	Id. ; rain$^{1-2}$ since 18^{h} 20^{m}.
22	28·956	40·6	39·7	0·9	1·8	1·0	14	14 : — : —	10·0	Id. ; rain$^{1-2}$
14 0	866	43·0	42·0	1·0	2·4	1·1	14	14 : — : —	10·0	Id. ; rain^{2}
2	776	44·7	43·6	1·1	1·2	0·2	20	16 : — : —	9·9	Id. ; rain^{1}
4	698	48·4	47·0	1·4	0·3	0·1	2	18 : — : —	9·5	Scud ; cirro-strati.
6	664	45·3	43·8	1·5	0·1	0·1	3	16 : — : —	10·0	Id. ; id.
8	638	45·2	44·8	0·4	0·1	0·1	8		10·0	Slight drizzle ; very dark.
10	616	45·3	44·9	0·4	0·1	0·0	3		10·0	Very dark.
18	28·596	44·8	44·6	0·2	0·0	0·0			10·0	Scud ; misty.
20	637	45·1	45·0	0·1	0·0	0·0	18		10·0	Fog, trees invisible at 200 yards ; scud and cir.-st
22	665	48·0	47·4	0·6	0·1	0·1	24	— : 15 : —	9·5	Cirro-cumulo-strati and cirro-strati ; foggy.
15 0	700	53·0	50·5	2·5	0·1	0·1	7	— : 13 : —	7·5	Large cir-cum.-str. and cir.-str. ; cum.-str. on hor.
2	725	52·8	50·4	2·4	0·1	0·1	2	13 : — : —	9·0	Scud and cumuli ; id.
4	750	52·6	49·9	2·7	0·1	0·0	8	15 : — : —	9·5	Id.
6	792	48·0	46·9	1·1	0·1	0·0	6	— : 15 : —	6·5	Cirro-cumulo-strati ; cumulo-strati and cirro-strati.
8	835	47·7	47·0	0·7	0·1	0·1	6		8·5	Scud and cirro-strati.
10	854	43·5	43·2	0·3	0·1	0·1	18		5·0	Id. ; misty.
18	28·959	42·0	41·8	0·2	0·0	0·0	6		10·0	Fog, trees invisible at 200 yards.
20	28·996	41·8	41·6	0·2	0·0	0·0	8		10·0	Id., id.
22	29·015	45·6	45·2	0·4	0·1	0·0	6		10·0	Id., id., 1 mile.
16 0	031	51·8	51·0	0·8	0·1	0·0	28	— : 13 : —	9·0	Misty scud and cirro-cumulo-strati ; cirro-strati.
2	035	53·7	51·3	2·4	0·1	0·1	8		9·8	Id. ; id.
4	047	54·2	52·1	2·1	0·1	0·1	4	6 : 12 : —	9·5	Scud ; cirro-strati and cirro-cumuli ; cumulo-strati.
6	085	51·6	50·9	0·7	0·2	0·1	4	5 : — : —	10·0	Scud ; rain$^{0·5}$
8	107	50·8	50·4	0·4	0·2	0·1	2		10·0	Id. ; misty.
10	133	43·2	42·8	0·4	0·1	0·1	8		3·0	Scud and cirro-strati near horizon.
18	29·210	47·9	47·6	0·3	0·1	0·0	20		10·0	Scud ; slight mist.
20	242	48·9	48·6	0·3	0·1	0·0	0	6 : — : —	10·0	Id. ; id.
22	261	52·8	51·2	1·6	0·2	0·2	7	6 : — : —	10·0	Id.
17 0	263	53·8	52·8	1·0	0·4	0·2	2	5 : — : —	10·0	Id. ; drops of rain.
2	258	55·6	53·7	1·9	0·6	0·3	2	5 : — : —	10·0	Smoky scud, very low, moving rather quickly.
4	269	53·5	53·1	0·4	0·6	0·3	1	4 : — : —	10·0	Scud. ; rain^{2}
6	282	53·2	52·8	0·4	0·5	0·3	2	4 : — : —	10·0	Id. ; rain^{1}
8	306	53·8	53·2	0·6	0·4	0·2	3		10·0	Id.
10	333	52·4	52·2	0·2	0·3	0·1	3		7·0	Id. ; clear in zenith.
23	29·389	52·3	51·5	0·8	0·2	0·1	6	6 : — : —	10·0	Uniform misty scud.
18 18	29·262	50·8	50·3	0·5	0·3	0·2	20		10·0	Scud ; rain^{1}
20	290	50·8	50·0	0·8	0·6	0·2	22		10·0	Dense mass of cirro-stratus.
22	317	55·2	53·3	1·9	0·3	0·2	20	— : 18 : —	8·0	Cirro-cumulo-strati ; scud and loose cum. near ho

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Oct. 15^{d} 18^{h}. Observation made at 18^{h} 15^{m}.

ött. an ne.	BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1^{h}.	Maximum force in 10^{m}.	From			
h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
0	29·335	52·7	51·1	1·6	0·6	0·2	19	18 : — : —	10·0	Thick scud ; rain^{2}
2	323	54·0	52·3	1·7	0·8	0·4	18	19 : 19 : —	9·8	Scud ; cirro-strati and cirro-cumuli.
4	314	53·5	51·2	2·3	0·8	0·9	18	18 : 20 : —	8·0	Id. ; cirro-strati.
6	302	52·2	49·8	2·4	1·3	0·8	18	18 : — : —	10·0	Id. ; id.
8	295	49·0	47·8	1·2	0·7	0·2	16		2·0	Clouds near horizon ; stars dim.
10	258	50·0	48·2	1·8	1·0	0·6	17		3·0	Scud and cirro-stratus ; faint auroral light.
18	29·201	46·7	46·0	0·7	1·8	0·0	21		9·9	Scud and cirro-cumulo-strati.
20	225	46·0	45·3	0·7	0·1	0·1	2	— : 15 : —	9·0	Cirro-cumulo-strati and cirro-strati.
22	227	49·3	47·4	1·9	0·1	0·0	28	— : 16 : —	6·0	Cirro-strati and thin cirri. ⊙
0	215	53·5	50·1	3·4	0·2	0·1	21	— : 14 : 14	9·5	Woolly cirri and cirro-strati. ⊖
2	193	56·0	51·2	4·8	0·3	0·3	18	14 : — : 16	8·0	Cumuli ; woolly cirri. ⊖
4	192	53·3	49·3	4·0	0·3	0·1	20	18 : 17 : —	9·0	Scud and cumuli ; cirro-cumulo-strati ; cirro-strati.
6	172	49·6	47·7	1·9	0·1	0·1	18	18 : — : —	10·0	Thick cirro-stratous scud.
8	149	48·4	47·0	1·4	0·1	0·1	22		8·0	Scud and cirro-stratus.
0	29·126	46·6	45·7	0·9	0·1	0·0	28		9·0	Id.
8	28·828	44·2	42·3	1·9	0·7	0·8	12		9·9	Dense clouds ; break to SE.
0	748	44·5	43·4	1·1	1·3	0·2	6	12 : — : —	10·0	Scud ; rain^{1}
2	679	46·6	45·3	1·3	1·5	0·9	14	13 : — : —	10·0	Id. ; uniform mass of cir.-str. ; rain till 21^{h} 40^{m}.
1 0	625	54·0	51·6	2·4	1·8	0·5	13	14 : 13 : —	9·5	Id. ; woolly cirro-cumuli.
2	585	52·2	49·6	2·6	0·3	0·1	6	— : 12 : —	9·8	Cir.-cum.-str. and cir.-str. ; scud and cumuli on hor.
4	582	51·3	48·2	3·1	0·2	0·1	1	13 : 14 : —	9·8	Scud ; cirro-cumulo-strati ; cirro-strati.
6	587	49·0	47·6	1·4	0·1	0·1	4	12 : — : —	9·8	Thick dark scud and cum. ; at 6^{h} 15^{m}, a peal of thunder
8	613	46·6	46·0	0·6	0·0	0·0	16		10·0	Dark ; rain$^{0·2}$ [was heard ; rain$^{1—2}$ after 6^{h} 20^{m}.
0	613	46·7	45·9	0·8	0·1	0·1	4		10·0	Rain^{2}
8	28·667	46·3	45·6	0·7	0·2	0·1	29		10·0	Scud.
0	697	46·6	45·7	0·9	0·1	0·0	0	— : 2 : —	9·8	Cirro-stratous scud and cirro-strati.
2	736	48·0	46·3	1·7	0·3	0·2	2	2 : 2 : —	10·0	Scud ; cirro-strati ; rain$^{0·5}$
2 0	763	51·1	49·2	1·9	0·3	0·2	31	1 : — : —	9·0	Id. ; id. ; cumuli.
2	779	49·9	47·5	2·4	0·7	0·5	27	0 : — : —	9·8	Id. ; id. ; id.
4	802	48·3	47·9	0·4	0·7	0·7	30	31 : — : —	1·0	Loose scud ; dense cir.-str. ; white scud on SE. hor. ; rain^{1}
6	847	47·9	46·1	1·8	1·2	1·1	29	30 : 30 : —	9·5	Cirro-strati and scud.
8	893	48·1	45·9	2·2	1·9	1·7	29		10·0	Id. ; occasional showers.
0	28·940	47·4	44·2	3·2	1·9	0·9	28		9·8	Id.
8	29·165	44·7	40·3	4·4	3·2	1·3	28		9·5	Cirro-stratous scud.
0	241	42·5	38·5	4·0	1·3	0·6	26	29 : — : —	2·5	Thin scud ; cirro-strati and cumulo-strati.
2	298	44·7	40·5	4·2	0·5	0·2	21	29 : — : —	2·5	Thin cirro-stratous scud. ⊙
23 0	352	46·5	40·7	5·8	1·4	0·4	27	29 : — : —	3·0	Id. ⊙
2	381	46·0	40·2	5·8	1·1	0·3	24	26 : — : —	4·0	Scud and loose cumuli. ⊖
4	403	46·3	40·3	6·0	0·4	0·2	28	25 : — : 29	6·0	Scud ; woolly cirri, radiating from N. and S.
6	424	43·5	39·3	4·2	0·1	0·1	20	23 : — : —	7·5	Thick scud.
8	418	40·1	37·5	2·6	0·2	0·2	23		4·0	Cirro-strati and scud.
0	396	39·6	37·5	2·1	0·1	0·1	24		10·0	Id.
8	29·192	41·0	39·9	1·1	0·5	0·3	14		10·0	Scud ; rain$^{1·5}$
0	183	41·7	41·0	0·7	0·3	0·0	0		10·0	Id.
2	191	44·4	43·1	1·3	0·0	0·0	10		10·0	Uniform cirro-stratus ; loose scud below near horizon.
24 0	197	46·8	45·3	1·5	0·1	0·0	21	22 : — : —	8·5	Scud and loose cirro-stratus ; slight rain occasionally.
2	190	49·0	46·7	2·3	0·0	0·0	28	22 : — : —	9·8	Id.
4	209	45·8	43·7	2·1	0·3	0·4	30		10·0	Cirro-stratous scud.
6	243	44·2	42·5	1·7	0·4	0·1	16	28 : — : —	10·0	Id.
8	278	44·8	43·2	1·6	0·2	0·1	27		10·0	Id.
0	345	46·0	44·8	1·2	1·9	2·8	0		10·0	Rain$^{2—3}$; the wind and rain commenced about 9^{h} 30^{m}.
2¾	29·715	49·5	46·7	2·8	3·7	1·8	2	3 : — : —	7·0	Scud and loose cumuli.
25 8	29·708	32·0	31·7	0·3	1·8	0·0			0·1	Cirri on E. horizon ; mist on the ground.
0	706	32·5	32·5	0·0	0·0	0·0	17		6·5	Woolly and linear cirri ; bank of cirro-strati to W. ⊙

he direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The
m ons of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.
ct. 19^{d} 18^{h}. Observation made at 18^{h} 10^{m}.

Gött. Mean Time.	BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
25 22	29·727	40·6	40·3	0·3	0·1	0·0	30	23 : — : —	9·5	Scud; cirro-strati.
26 0	737	46·6	45·3	1·3	0·1	0·1	24		7·5	Woolly cirri and cirro-strati; scud and cum. on hor.
2	746	51·6	48·2	3·4	0·2	0·1	24	20 : — : —	4·0	Loose cumuli; wooly cirri.
4	790	50·7	47·2	3·5	0·3	0·1	24		1·5	Cumuli and cumulo-strati round horizon.
6	837	39·8	39·3	0·5	0·2	0·0	20		1·0	Scud and cirro-strati.
8	881	37·0	36·8	0·2	0·1	0·0	20		0·0	Clear; slight fog on the ground.
10	29·935	36·1	35·9	0·2	0·1	0·1	23		0·0	Id.
18	30·026	30·0	29·7	0·3	0·1	0·0	16		0·1	Cirri on E. horizon.
20	051	28·5	28·2	0·3	0·0	0·0	18		1·5	Cirri and cir.-cum.; stratus in the valleys; hoar-frost.
22	060	37·0	36·4	0·6	0·1	0·1	22	20 : — : —	9·0	Cirro-stratus scud.
27 0	061	44·0	42·9	1·1	0·1	0·0	24	20 : — : —	8·0	Id.
2	048	48·8	47·3	1·5	0·0	0·0	2	20 : — : —	7·0	Id.; cumuli to E.
4	036	47·8	46·8	1·0	0·1	0·0		20 : — : 30	8·0	Id.; woolly cirri.
6	028	41·5	41·3	0·2	0·1	0·1	20	21 : — : 30	7·0	Scud; woolly cirri.
8	021	42·5	42·1	0·4	0·0	0·0	2		10·0	Scud and cirro-stratus.
10	005	44·6	43·6	1·0	0·0	0·0	16		10·0	Id.
18	29·939	44·2	43·5	0·7	0·3	0·0	20		10·0	Scud and cirro-stratus.
20	928	44·8	43·8	1·0	0·3	0·1	22	— : 0 : —	8·0	Cirro-cumulo-strati; cir.-str.; cir. and cirrous haze.
22	916	49·0	46·4	2·6	0·3	0·3	18	— : 0 : —	8·0	Cirro-cumulo-strati and cirro-strati.
28 0	896	51·2	48·2	3·0	0·3	0·1	18	19 : — : —	9·5	Scud; cirro-cumulo-strati.
2	859	52·8	48·9	3·9	0·3	0·3	18	20 : 3 : —	7·5	Id.; id.
4	842	51·6	48·6	3·0	0·2	0·2	18	19 : 3 : —	8·0	Id.; id. and woolly cir.; hazy on h
6	831	47·0	45·3	1·7	0·2	0·2	18	— : 2 : —	8·0	Cirro-cumulo-strati.
8	841	45·7	43·9	1·8	0·3	0·1	16		7·0	Id.
10	849	44·5	43·2	1·3	0·1	0·0	16		10·0	Scud, cirro-strati, and cirro-cumulo-strati.
18	29·890	39·8	39·5	0·3	0·0	0·0	16		6·5	Scud and cirro-strati.
20	907	41·4	41·0	0·4	0·0	0·0	16		9·0	Id.
22	939	42·0	41·7	0·3	0·1	0·0	8		2·5	Cirro-cumulo-strati; haze on horizon.
29 0	942	47·2	45·7	1·5	0·1	0·0	6		0·5	A few clouds on S. horizon; much haze on horizon.
2	925	51·0	47·4	3·6	0·1	0·1	31		0·5	Cumuli and cirro-strati on horizon; haze on horizon
4	924	50·2	47·5	2·7	0·1	0·1	4		0·5	Id.; id.
6	936	40·4	40·0	0·4	0·2	0·1	18		2·0	Cirri and cirro-strati near horizon; haze on horizon
8	970	38·5	38·0	0·5	0·0	0·0	26		6·0	Cirro-strati and cirri.
10	971	37·7	37·4	0·3	0·0	0·0	24		8·0	
18	29·941	33·3	33·3	0·0	0·1	0·0			0·5	Band of cirro-strati to E.; misty.
20	928	32·2	32·1	0·1	0·1	0·1	17		0·5	Linear cirri on E. horizon; stratus in the valleys.
22	959	41·8	41·0	0·8	0·1	0·1	26	20 : — : —	9·8	Scud; cirro-strati.
30 0	938	47·4	46·6	0·8	0·1	0·1	24	21 : — : —	10·0	Id.; id.; hazy.
2	901	50·3	48·5	1·8	0·2	0·1	18		2·0	Scud on horizon.
4	902	49·0	47·0	2·0	0·6	0·3	18	23 : — : —	4·0	Scud and cirro-strati; woolly cirri.
6	898	45·2	44·0	1·2	0·4	0·1	22	21 : — : —	9·5	Scud; cirro-strati.
8	888	40·0	39·7	0·3	0·2	0·1	16		1·0	Patches of cirro-strati and cirro-cumuli.
10	881	37·9	37·6	0·3	0·1	0·0	22		3·0	Sheets of cirro-cumuli.
18	29·786	46·7	44·9	1·8	0·6	0·5	18		7·5	Scud and cirro-strati.
20	785	46·7	44·9	1·8	0·7	0·3	18		9·5	Scud; cirro-strati; woolly cirri and cirrous haze.
22	774	49·5	47·6	1·9	0·4	0·3	18	20 : — : —	10·0	Id.
31 0	754	50·7	48·5	2·2	1·5	0·7	18	20 : — : —	10·0	Id.
2	725	52·1	49·6	2·5	2·2	0·9	20		9·9	Id.; cirro-strati.
4	702	51·7	49·2	2·5	1·0	0·4	20	19 : — : —	9·5	Id.; sheets of cirro-strati.
6	684	52·2	49·8	2·4	1·9	1·1	18		10·0	Id.; uniform mass of cirro-stratus; drops of rai
8	681	51·6	49·6	2·0	1·0	0·4	18		10·0	Id.; id.
10	670	51·8	49·6	2·2	1·0	0·6	18		10·0	Id.; drops of rain.
$22\frac{3}{4}$	29·644	51·9	49·5	2·4	1·8	0·3	17	19 : — : —	10·0	Scud; cirro-stratus.
1 18	29·608	49·4	47·2	2·2	1·7	0·3	20		10·0	Scud and cirro-strati.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

ött. ean me.	BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc.:C.-s.:Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
20	29·611	49·8	47·3	2·5	0·8	0·5	18	16 : — : —	9·5	Cir.-str. scud; cir.-str.; scud on Cheviot; clouds tinged
22	617	51·1	48·1	3·0	1·0	0·4	18	— : 15 : —	9·0	Cirro-strati and cirro-cumuli. ⊙ [red to E.
0	626	52·7	49·1	3·6	1·9	0·9	16	17 : 15 : —	8·0	Scud; cirri and cirro-strati.
2	599	54·0	50·1	3·9	1·2	0·8	16	16 : — : —	9·0	Id.; id. ⊖
4	586	50·7	47·8	2·9	2·4	2·1	16	17 : 16 : —	9·5	Id.; id.; hazy round horizon.
6	598	51·0	48·0	3·0	1·6	1·7	16	17 : 17 : —	9·5	Scud and cirro-cumulo-strati.
8	585	50·3	47·6	2·7	1·7	1·1	16		9·0	Id.
10	570	50·4	48·0	2·4	2·2	1·0	16		10·0	Id.
18	29·619	51·3	50·0	1·3	1·5	0·1	20	17 : 17 : —	7·5	Scud and cirro-cumulo-strati.
20	659	49·2	47·6	1·6	0·1	0·1	23	18 : 18 : —	6·0	Id.
22	693	48·0	47·0	1·0	0·1	0·0	16	18 : — : —	1·0	Scud and loose cumuli. ⊙
0	714	53·3	50·4	2·9	0·3	0·1	16	18 : — : —	8·5	Masses of loose cumuli near the hor.; woolly cir.-str.
2	717	53·4	49·6	3·8	0·4	0·3	16		9·8	Thick cirro-stratus.
4	704	53·0	49·0	4·0	0·5	0·1	16	— : 18 : —	10·0	Id.
6	693	50·8	48·9	1·9	0·2	0·1	10		10·0	Thick scud; slight rain.
8	667	54·1	52·2	1·9	1·4	0·7	16	18 : 18 : —	5·0	Scud and cirro-cumulo-strati. ☽
10	654	53·0	51·5	1·5	1·8	1·5	18		3·0	Id. ☽
18	29·722	48·3	46·3	2·0	2·0	0·3	16		0·2	Cirro-strati on W. horizon. ☽
20	714	47·9	46·2	1·7	0·4	0·2	16		2·0	Cirro-stratus and cirrous haze.
22	731	52·7	50·3	2·4	1·7	1·0	16		2·0	Clouds on horizon. ⊙
4 0	735	55·8	52·3	3·5	1·8	1·3	16	16 : — : —	7·0	Scud, loose cumuli, and sheets of cirro-strati. ⊖
2	713	56·0	52·5	3·5	1·3	1·1	16	16 : — : 16	3·5	Id., id.; woolly cirri. ⊙
4	710	54·7	51·6	3·1	2·7	0·9	16	17 : — : —	10·0	Id.; rain$^{0\cdot5}$
6	714	54·0	52·0	2·0	1·2	0·8	14		10·0	Id.
8	727	53·6	52·2	1·4	0·8	0·2	16		9·5	Id.
0	758	52·7	51·9	0·8	0·5	0·0	18		10·0	Scud and cirro-strati; rain$^{0\cdot2}$
8	29·888	45·9	45·5	0·4	0·5	0·1	16		9·5	Cirro-strati and cirrous haze; lunar halo. ☽
20	922	41·5	41·3	0·2	0·1	0·1	0		4·0	Cirri and cirrous haze; mist in the valleys.
22	935	46·4	45·4	1·0	0·1	0·0	2	— : — : 16	4·0	Woolly cirri. ⊙
5 0	941	50·6	49·0	1·6	0·1	0·0	4	— : — : 16	7·0	Id. ⊙
2	928	52·6	50·0	2·6	0·1	0·1	6	— : — : 18	5·0	Id. ⊙
4	906	53·0	50·6	2·4	0·3	0·5	12	— : — : 18	9·0	Id.; haze on horizon. ⊖
6	899	49·4	47·6	1·8	0·5	0·3	14	16 : — : —	7·0	Scud; cirro-strati.
8	897	52·0	50·0	2·0	0·8	0·5	16		9·8	Id.
0	897	53·2	51·8	1·4	0·6	0·1	16		10·0	Scud; slight drizzle.
8	29·892	52·8	51·3	1·5	1·1	0·9	16		9·5	Scud, cirro-strati, and woolly cirri; lunar corona. ☽
0	912	49·5	47·7	1·8	1·3	0·3	16	— : 18 : —	9·0	Cirro-stratous scud; woolly cirri and cirrous haze.
2	922	50·3	48·0	2·3	1·7	0·3	14	15 : 16 : —	10·0	Scud; cirro-strati; cirrous haze.
6 0	925	51·5	48·4	3·1	0·8	0·1	20	— : 16 : —	10·0	Cirro-strati and cirrous haze.
2	905	53·4	49·7	3·7	1·1	0·2	16	— : 17 : —	9·8	Cirro-strati and cirro-cumuli.
4	911	49·4	47·4	2·0	1·5	0·2	2	14 : 17 : —	9·0	Thin scud; woolly cirri and cirro-strati.
6	907	46·3	44·5	1·8	0·4	0·3	12		9·0	Cirro-strati; cirrous haze.
8	918	46·4	44·2	2·2	0·7	0·1	8		9·8	Id.; id.
0	926	45·6	43·7	1·9	0·3	0·2	14		9·5	Id.; id.
8	29·939	44·7	43·0	1·7	0·9	0·1	18		9·5	Thick cirro-stratus and cirrous haze. ☽
0	950	42·0	41·3	0·7	0·1	0·1	18		9·5	Id.
2	982	45·0	43·8	1·2	0·1	0·0	20	— : 20 : —	7·0	Cirro-strati, cirro-cumuli, and cirri.
7 0	994	50·3	47·2	3·1	0·3	0·2	18	20 : — : —	10·0	Patches of ragged scud; dense cirro-stratus.
2	29·992	52·2	49·0	3·2	0·3	0·3	16	— : 22 : —	8·0	Cirro-cumulo-strati. ⊖
4	30·012	51·2	48·2	3·0	0·4	0·2	22	— : 22 : —	6·0	Id.; haze round horizon. ⊙
6	036	48·6	47·2	1·4	0·1	0·0	18		9·8	Scud and cirro-cumulo-strati.
8	056	48·1	47·0	1·1	0·0	0·0	16		5·0	Id.; clouds breaking up.
0	071	48·6	47·7	0·9	0·1	0·0	24		10·0	Id.
2½	30·174	50·7	49·6	1·1	0·0	0·0			10·0	A uniform mass of cloud.

he direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The ons of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Gött. Mean Time.	Baro-meter at 32°.	Thermometers.			Wind.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
8 18	30·234	42·5	41·6	0·9	0·4	0·2	18		10·0	Mass of cirro-stratus.
20	253	40·0	39·0	1·0	0·4	0·2	18		10·0	Id.
22	271	40·0	39·0	1·0	0·5	0·3	18		10·0	Misty uniform mass of clouds.
9 0	289	42·1	40·8	1·3	0·2	0·2	17		10·0	Id.
2	276	40·7	38·8	1·9	0·3	0·1	20	16 : — : —	5·0	Misty loose scud.
4	278	40·8	39·3	1·5	0·2	0·1	28	14 : — : —	4·0	Id.; hazy on horizon.
6	288	36·4	35·9	0·5	0·1	0·0	18	16 : — : —	9·0	Thin misty scud.
8	301	34·0	33·7	0·3	0·0	0·0	18		3·0	Id.
10	309	35·1	34·9	0·2	0·0	0·0	18		10·0	Id.
18	30·309	31·2	30·9	0·3	0·1	0·0			10·0	Mist, objects invisible at 100 yards.
20	326	29·8	31·9	…	0·0	0·0			10·0	Id.
22	347	31·0	30·8	0·2	0·1	0·1	20		0·0	Clear.
10 0	352	39·0	38·0	1·0	0·1	0·1	22		0·0	Id.
2	327	45·7	43·8	1·9	0·1	0·1	8		0·2	Id.; a few patches of cloud to S.
4	307	45·8	43·6	2·2	0·1	0·1	4		0·2	Id.; id.
6	321	40·4	39·9	0·5	0·1	0·0	26		1·0	Cirro-strati and haze on horizon.
8	316	33·8	33·5	0·3	0·1	0·0	20		0·5	Haze on horizon.
10	324	30·6	……	…	0·1	0·0	18		2·0	Id.; slight fog coming on.
18	30·319	31·2	31·2	…	0·1	0·0		— : 12 : —	3·0	Cirro-cumulo-strati.
20	334	28·8	29·2	…	0·1	0·0			1·0	Scud and cirro-strati on S. and E. horizon; misty.
22	328	32·6	32·0	0·6	0·1	0·0	28	— : 12 : —	6·0	Cirro-stratous scud.
11 0	318	39·1	38·4	0·7	0·1	0·1	17	— : 12 : —	9·0	Id.
2	305	44·0	42·4	1·6	0·1	0·1	30	— : 12 : —	9·0	Id.
4	305	43·3	42·3	1·0	0·1	0·1	4	— : 12 : —	9·8	Id.
6	301	42·3	41·7	0·6	0·0	0·0	30		9·5	Id.
8	300	41·5	41·0	0·5	0·0	0·0	18		10·0	Id.
10	307	41·1	40·7	0·4	0·0	0·0	28		10·0	Id.
18	30·303	42·1	41·9	0·2	0·1	0·0			10·0	Scud; mass of cirro-stratus.
20	321	42·5	42·1	0·4	0·1	0·0	4	4 : — : —	10·0	Id.; id.
22	341	45·1	43·2	1·9	0·1	0·1	4	4 : — : —	10·0	Id.
12 0	348	45·6	43·2	2·4	0·3	0·1	2	4 : — : —	10·0	Id.
2	333	46·0	43·6	2·4	0·3	0·2	0	4 : — : —	10·0	Id.
4	322	45·6	43·7	1·9	0·1	0·1	6	5 : — : —	10·0	Id.
6	324	45·0	43·6	1·4	0·0	0·0	6		10·0	Id.
8	335	45·1	43·6	1·5	0·0	0·0	8		10·0	Dark.
10	329	43·9	43·1	0·8	0·0	0·0	0		10·0	Id.
18	30·286	43·8	42·8	1·0	0·1	0·1	12		10·0	Scud and cirro-stratus.
20	276	44·6	42·9	1·7	0·1	0·0	14		10·0	Id.
22	282	45·1	43·5	1·6	0·0	0·0	12		10·0	Id.
13 0	280	45·9	43·7	2·2	0·0	0·0	22		10·0	Id.
2	253	45·7	43·4	2·3	0·0	0·0			10·0	Id.
4	235	44·8	42·7	2·1	0·0	0·0	31		10·0	Id.
6	220	43·8	42·5	1·3	0·0	0·0			10·0	Id.
8	216	43·7	42·4	1·3	0·0	0·0			10·0	Very dark.
10	212	43·3	42·2	1·1	0·0	0·0			10·0	Id.
18	30·148	42·2	41·3	0·9	0·1	0·0			10·0	Very dark.
20	162	41·6	39·2	2·4	0·1	0·0			10·0	Homogeneous.
22	161	41·8	40·0	1·8	0·1	0·0	24		10·0	Id.
14 0	145	42·5	40·3	2·2	0·1	0·0			10·0	Id.
2	128	42·0	39·8	2·2	0·0	0·0			10·0	Id.
4	114	41·2	39·2	2·0	0·1	0·0			10·0	Id.
6	112	40·5	38·7	1·8	0·1	0·0			10·0	Id.
8	114	40·1	38·2	1·9	0·1	0·0	26		10·0	Id.
10	102	40·0	38·3	1·7	0·0	0·0	8		10·0	Id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. T motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
	Dry.	Wet.	Diff.	Maximum force in 1^{h}.	Maximum force in 10^{m}.	From			
in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
30·028	40·6	39·5	1·1	0·1	0·0			10·0	Homogeneous.
29·918	34·7	33·9	0·8	0·4	0·1	14		2·0	Patches of scud and cirro-strati. ☽
914	40·0	38·2	1·8	0·1	0·1	2		7·0	Cirro-strati and patches of scud.
908	42·5	40·3	2·2	1·8	0·4	16	14 : 16 : —	3·0	Loose scud ; cirro-strati and woolly cirri. ⊖
875	46·0	43·0	3·0	1·3	1·5	16	14 : — : —	4·5	Scud ; cirro-strati and cirrous haze. ⊙
836	46·9	43·2	3·7	4·6	2·3	14	14 : — : —	7·0	Id. ; woolly cirri and cirrous haze. ⊖
783	45·2	42·3	2·9	2·4	2·2	14	14 : — : 24	7·0	Id. ; id.
761	41·3	38·8	2·5	2·5	0·7	14		2·0	Id., and cirro-strati.
764	42·2	39·8	2·4	2·8	1·8	14		3·0	Id.
757	41·5	39·2	2·3	3·2	0·3	14		5·0	Scud and cirro-strati.
29·524	44·3	42·9	1·4	1·6	0·2	14		9·0	Thin clouds ; slight shower.
502	45·6	43·9	1·7	0·4	0·2	20		10·0	Patches of scud ; dense cirro-stratus.
491	45·3	43·8	1·5	1·9	0·3	18		10·0	Id. ; id.
448	48·7	46·6	2·1	1·9	0·8	16	16 : — : —	10·0	Scud ; dense mass of cirro-stratus.
416	48·8	46·7	2·1	1·8	1·7	16	17 : — : —	10·0	Id. ; id. ; drops of rain.
420	52·6	50·4	2·2	2·0	0·9	17	18 : — : —	10·0	Id. ; id.
456	50·7	49·0	1·7	1·0	0·2	18		9·9	Scud and cirro-strati.
464	48·6	47·1	1·5	0·3	0·2	18		3·5	Id. ; auroral arch.
480	48·0	47·0	1·0	0·6	0·4	18		9·8	Scud ; slight drizzling rain.
29·455	45·3	44·0	1·3	0·7	0·2	26		1·0	Masses of scud.
455	45·0	43·8	1·2	0·6	0·3	20		3·0	Scud.
441	46·6	44·9	1·7	0·6	0·4	18		0·5	Patches of scud ; cirro-strati and cirrous haze on hor. ⊙
420	50·7	48·0	2·7	1·6	1·3	18	— : 20 : —	4·0	Cirro-cumulo-strati ; cirro-strati. ⊙
383	51·5	48·3	3·2	0·9	0·7	18	20 : — : —	9·0	Scud ; id.
332	50·7	47·9	2·8	1·7	0·5	16	20 : — : —	9·0	Id.
309	50·0	47·1	2·9	1·3	0·8	16		7·0	Id.
312	49·5	47·2	2·3	1·5	1·0	18		8·5	Id. ; drops of rain.
316	48·6	46·3	2·3	0·9	0·2	18		8·5	Id.
29·254	45·7	44·3	1·4	1·4	1·0	18		10·0	Scud ; slight drizzle.
270	44·3	43·3	1·0	1·4	0·3	18	22 : — : —	3·5	Id. ; cirro-strati.
287	46·1	44·6	1·5	1·2	0·8	20	21 : — : —	2·5	Scud and loose cumuli.
300	49·2	46·0	3·2	1·8	2·6	20	22 : — : —	1·0	Id. ⊙
310	49·7	45·1	4·6	2·9	1·2	21	22 : — : 22	2·0	Id. ; mottled cirri. ⊙
314	47·2	44·1	3·1	2·3	0·7	18		1·5	Patches of scud ; woolly cirri. ⊙
304	45·1	43·3	1·8	1·3	0·3	18		3·0	Scud ; cirro-strati.
273	47·8	45·5	2·3	2·0	1·1	18		1·0	Id.
256	49·4	46·5	2·9	2·2	3·3	18		3·0	Id. ; a flash of lightning to SW.
29·101	49·6	47·0	2·6	4·2	0·6	15		9·0	Scud ; cirro-strati.
29·014	48·8	46·5	2·3	1·8	2·7	16		10·0	Id. ; id. ; drops of rain.
28·916	48·6	46·3	2·3	3·4	2·2	15	14 : — : —	10·0	Id. ; id. ; rain$^{0·5}$
792	49·0	47·0	2·0	5·2	2·5	14	14 : — : —	10·0	Id. ; id.
668	51·0	48·0	3·0	4·4	2·5	14	17 : 15 : —	9·8	Id., two currents.
529	49·8	46·3	3·5	3·8	2·0	13	14 : — : —	10·0	Id.
372	47·9	45·8	2·1	4·5	4·1	15		10·0	Id. ; slight rain.
286	50·0	49·0	1·0	5·1	4·6	18		10·0	Id. ; id.
544	48·6	45·1	3·5	3·2	1·0	20		10·0	Id.
28·965	44·9	42·5	2·4	5·8	2·2	19		3·0	Scud.
29·024	43·1	40·5	2·6	2·7	1·7	20		1·0	Patches of scud ; cirro-strati.
095	44·6	42·2	2·4	1·6	0·9	20	— : — : 21	3·0	Woolly cirri ; scud to W. ; scud and cir.-str. on hor. ⊙
148	46·9	43·7	3·2	1·7	0·9	21	22 : — : —	4·5	Scud ; woolly cirri and cirro-strati. ⊙
155	46·3	42·8	3·5	1·6	0·6	19	21 : — : —	5·0	Scud and cumuli ; woolly cirri. ⊙
144	47·2	44·2	3·0	0·7	0·3	18	20 : — : —	8·0	Scud.
124	42·9	41·9	1·0	0·4	0·5	16		4·0	Id. and cirro-strati. ☽
104	44·0	42·6	1·4	0·5	0·2	18		10·0	Dark ; rain^{2}

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ie direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The mons of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

ov. 17^{d} 18^{h}. Observation made at 18^{h} 15^{m}.

ov. 20^{d}. Additional observations of the barometer, 7^{h} 0^{m}, 28·304 ; 7^{h} 50^{m}, 28·267 ; 8^{h} 0^{m}, 28·286 ; 8^{h} 40^{m}, 28·387.

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1^h.	Maximum force in 10^m.	From			
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
21 10	29·047	43·4	42·5	0·9	0·6	0·3	18		5·0	Scud and cirro-strati.
22$\frac{3}{4}$	28·965	40·2	38·7	1·5	0·9	0·2	20	24 : 22 : —	3·0	Scud; sheets of cirro-strati.
22 18	29·379	37·8	35·6	2·2	1·7	0·5	20		0·5	Haze and cirro-strati on horizon.
20	414	34·5	33·5	1·0	0·5	0·3	19		0·3	Id.
22	444	36·0	34·7	1·3	0·3	0·1	11	— : — : 27	2·0	Woolly cirri; cirro-strati on horizon.
23 0	441	41·2	39·3	1·9	0·1	0·1	16	— : 26 : —	9·9	Cirro-cumulo-strati and cirro-stratus; cirrous haze.
2	423	43·2	41·2	2·0	0·1	0·1	17		10·0	Dense mass of cirro-stratus.
4	401	43·4	42·1	1·3	0·2	0·1	16	— : 26 : —	10·0	Cirro-stratus; drops of rain.
6	384	42·0	41·2	0·8	0·1	0·1	15		10·0	Id.
8	370	42·3	41·4	0·9	0·1	0·0			10·0	Id.
10	320	42·3	41·4	0·9	0·0	0·0			10·0	Id.; rain$^{0\cdot5}$
18	29·177	48·0	47·6	0·4	0·3	0·0			9·0	Scud.
20	204	50·4	49·8	0·6	0·4	0·1	18	22 : — : —	10·0	Id.
22	228	51·2	50·5	0·7	0·1	0·4	19	23 : — : —	10·0	Id.
24 0	248	53·2	52·0	1·2	0·5	0·1	22	— : 23 : —	6·0	Cirro-cumulo-strati and cirro-strati.
2	262	52·4	50·2	2·2	0·3	0·3	21	— : 22 : —	8·0	Id.
4	283	50·7	47·0	3·7	0·4	0·3	20	— : 22 : —	5·0	
6	312	45·6	42·9	2·7	0·3	0·0	18		0·5	Clouds on horizon.
8	369	40·3	39·3	1·0	0·1	0·0	18		0·2	Id.
10	359	38·0	37·8	0·2	0·2	0·0	17		1·0	Cirro-cumulo-strati to SW.
18	29·323	42·0	41·3	0·7	0·5	0·1	24		9·5	Scud.
20	289	42·5	42·0	0·5	0·3	0·1	16	22 : — : —	9·5	Id.; cirro-stratus.
22	273	44·0	43·4	0·6	0·1	0·1	25		9·8	Id.; id.
25 0	240	43·2	42·8	0·4	0·1	0·0	6		9·9	Mass of cirro-stratus.
2	185	44·0	43·4	0·6	0·1	0·0			10·0	Id.; misty on horizon.
4	131	43·6	43·0	0·6	0·1	0·1	10		10·0	Patches of scud; dense uniform cirro-stratus.
6	088	42·8	42·6	0·2	0·1	0·0	3		10·0	Scud and cirro-strati; rain^{1}
8	29·016	43·4	43·0	0·4	0·1	0·0			10·0	Id.
10	28·952	43·7	42·9	0·8	0·1	0·0	2		10·0	Scud and cirro-strati; rain^{1}
18	28·829	44·3	43·1	1·2	1·0	0·4	30		10·0	Rain^{1}
20	851	43·7	42·5	1·2	0·7	0·4	30		10·0	Id.
22	886	43·8	41·4	2·4	0·7	0·6	28	— : 30 : —	10·0	Cirro-stratous scud and cirro-stratus.
26 0	916	45·2	41·8	3·4	0·5	0·3	28		10·0	Id.
2	925	46·0	42·7	3·3	0·6	0·5	28		10·0	Id.
4	945	45·6	42·7	2·9	0·6	0·5	28		10·0	Id.
6	28·983	44·5	42·5	2·0	0·5	0·4	26		10·0	Id.; rain^{1}
8	29·010	43·8	42·4	1·4	0·5	0·4	28		10·0	Id.
10	027	44·3	42·9	1·4	0·6	0·4	28		10·0	Clouds broken.
18	29·137	43·0	42·5	0·5	1·6	1·5	0		10·0	Rain^{1}
20	185	43·0	41·8	1·2	2·4	1·9	0		10·0	Showers.
22	242	43·7	40·9	2·8	3·1	1·6	0	2 : — : —	10·0	Scud; cirro-strati.
27 0	274	40·7	38·8	1·9	4·0	0·7	0	0 : — : —	9·9	Id.; id.; rain$^{0\cdot5}$
2	287	41·0	39·2	1·8	3·0	1·0	0	0 : — : —	9·5	Id.; id.; cumuli on N. horizon.
4	299	38·0	36·6	1·4	3·8	2·4	0	0 : — : —	9·0	Id.; frequent showers of drifting rain and hail.
6	325	38·5	36·3	2·2	2·6	0·6	0		6·0	Id.
8	334	37·5	35·0	2·5	1·8	1·2	31	1 : 1 : —	4·0	Id. and cirro-cumulo-strati.
10	338	36·4	34·0	2·4	1·5	1·0	30		2·0	Scud and cirro-strati on horizon.
18	29·270	28·6	27·3	1·3	1·8	0·1	26		1·0	Clouds on horizon.
20	279	24·9	24·8	0·1	0·3	0·1	20		1·0	Id.
22	305	29·8	28·0	1·8	0·2	0·2	29		0·7	Id.
28 0	319	33·0	32·2	0·8	1·0	0·7	31		9·8	Scud; snow$^{0\cdot5}$
2	330	33·5	32·9	0·6	0·7	0·2	20		10·0	Id.; showers of snow.
4	365	36·2	33·6	2·6	0·3	0·2	0	2 : — : —	10·0	Scud and loose cumuli; occasional showers of snow
6	427	37·7	36·0	1·7	3·3	1·2	30		6·0	Cirro-strati; cirri and cumuli; lunar corona and portion of a h

Nov. 26^d 1^h 25^m. A portion of a halo 23° vertically above the sun, with the *horns* turned *from* the sun.

Nov. 26^d $4\frac{1}{2}^h$. New silk put on wet thermometer.

Nov. 28^d. Thunder said to have been heard to-day. Two flashes of lightning were seen by an individual at Sprouston (6 miles E by from Makerstoun.) There were two or three showers of a sort of hail at Makerstoun.

tt. an ne.	BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	10m.	From			
d h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
2 8	29·469	36·6	35·2	1·4	2·7	0·7	29		0·2	Clouds on horizon. ☽
10	500	36·0	35·8	0·2	1·3	0·3	2		1·5	Scud and cirro-strati. ☽
22½	29·571	32·6	31·8	0·8	2·9	1·0	30	30 : 2 : —	6·0	Scud; cirrous-crowned nimbi. About an inch of snow has fallen during the night.
2 18	29·756	31·0	30·6	0·4	2·2	0·2	31		6·0	Slight snow.
20	778	30·6	30·2	0·4	0·2	0·2	30		9·8	Scud and cirro-strati.
22	812	30·9	30·0	0·9	1·0	0·5	29	1 : — : —	8·0	Scud; shower of snow; snow 6½ inches deep.
3 0	823	32·6	30·7	1·9	0·7	0·2	30	1 : — : —	7·0	Id.
2	808	31·7	29·3	2·4	0·5	0·3	18	1 : — : —	4·0	Id.; woolly cirri; slight showers of snow. ⊙
4	811	28·2	26·7	1·5	0·2	0·1	19		5·0	Woolly cirri and cirrous haze.
6	793	26·5	25·5	1·0	0·3	0·1	16		8·0	Cirro-cumulo-strati.
8	759	28·8	26·6	2·2	0·4	0·3	22	— : 28 : —	10·0	Id.; cirrous haze. ♃
10	707	30·4	28·0	2·4	0·8	0·5	22		9·5	Cirro-strati and cirrous haze. ♃
18	29·503	36·0	35·0	1·0	2·8	0·8	20		10·0	Cirro-stratus.
20	469	36·6	35·9	0·7	2·4	0·8	21		10·0	Id.
22	429	37·7	37·0	0·7	1·3	1·0	20		9·9	Scud and cirro-stratus.
0	384	40·2	38·7	1·5	0·8	0·4	20	— : 26 : —	7·0	Cirro-cumulo-strati. ⊖
2	355	40·3	38·4	1·9	0·7	0·2	20		0·5	Cumulo-strati on E. horizon; cumulo-strati. ⊙
4	326	39·1	37·0	2·1	0·3	0·3	24		0·5	Cirro-strati on horizon; cumulo-strati to NE.
6	348	36·8	35·2	1·6	0·3	0·2	25		0·2	Id. ☽
8	354	33·5	31·8	1·7	0·1	0·2	29		0·0	Very clear. ☽
10	360	31·2	29·6	1·6	0·3	0·1	22		0·5	Cirro-strati on E. horizon. ☽
18	29·319	22·8	23·0	...	0·4	0·0	18		3·0	Cirri. ☽
20	317	21·3	22·0	...	0·0	0·0			2·5	Id.
22	311	19·5	19·7	...	0·1	0·1	15		1·0	Id. ⊙
0	311	26·3	24·5	1·8	0·1	0·1	20		0·2	Cumulo-strati and haze on E. horizon. ⊙
2	297	27·5	26·0	1·5	0·1	0·1	21		0·5	Cumulo-strati. ⊙
4	298	24·7	24·0	0·7	0·1	0·0			0·5	Cir.-str. to S.; cum.-str. on E. hor.; haze on horizon.
6	298	18·5	18·5	...	0·1	0·1	15		0·5	Id. ☽
8	328	16·8	17·2	...	0·1	0·1	20		0·2	Id. ☽
10	331	16·0	16·0	...	0·1	0·0	21		0·0	Very clear. ☽
8	29·339	19·0	19·0	...	0·0	0·0			0·2	A few variable patches of cirri to E. ☽
20	350	24·0	23·2	0·8	0·2	0·2	14		1·0	Cirri and cirro-strati on horizon. ♃
22	375	28·6	27·4	1·2	0·1	0·0		— : — : 29	2·5	Woolly cirri; cirro-strati and haze on horizon. ⊙
0	389	34·4	31·8	2·6	0·4	0·2	27	— : — : 29	6·0	Id.; cumulo-strati on E. horizon. ⊙
2	418	35·3	34·2	1·1	0·4	0·1	27	27 : 0 : —	9·5	Scud; cirro-stratus; nimbus to NE.; shower of snow at 1h 45m.
4	447	35·4	34·6	0·8	0·4	0·2	28	28 : 0 : —	10·0	Id.; id.; slight shower of sleet.
6	479	35·2	34·7	0·5	0·4	0·4	29		8·5	Id.
8	501	36·0	33·8	2·2	0·8	0·6	28	0 : — : —	7·5	Id.; cirro-stratus. ☽
0	550	36·2	33·5	2·7	0·9	0·8	28	1 : — : —	7·0	Id. ♃
8	29·669	30·6	29·2	1·4	0·6	0·2	27		0·5	Cirro-strati on horizon. ☽
20	699	28·7	27·8	0·9	0·2	0·1	26		1·0	Scud to SE.; cirro-strati on horizon. ☽
22	726	31·3	30·3	1·0	0·4	0·3	28		0·7	Bank of cumulo-strati and cirro-strati to E. and SE. ⊙
0	764	33·5	31·0	2·5	0·5	0·4	29	— : — : 1	5·0	Wool. cirri and cum.-str.; cum.-str. and haze on E. and [S. hor. ⊙
2	761	33·8	30·6	3·2	0·4	0·1	28		0·5	Cirro-strati and haze on horizon. ⊙
4	786	31·7	29·3	2·4	0·1	0·1	18		0·5	Id.
6	801	23·8	22·9	0·9	0·1	0·0	18		0·5	Id.
8	801	23·9	23·7	0·2	0·1	0·0	20		0·5	Clouds to N. ☽
0	795	22·5	22·0	0·5	0·1	0·0	20		9·5	Sky nearly covered with cirro-cumulo-strati. ♃
8	29·648	35·4	32·6	2·8	0·2	0·0	23		10·0	Cirro-stratus.
20	599	36·1	35·0	1·1	0·2	0·1	24		10·0	Id.; rain$^{0·5}$
22	540	39·3	38·0	1·3	0·3	0·4	20	21 : — : —	10·0	Scud; cirro-stratus.
0	464	42·0	40·6	1·4	0·8	0·7	20	21 : — : —	10·0	Id.; id.
2	378	42·0	40·9	1·1	1·4	0·8	20	24 : — : 27	9·5	Misty scud; woolly and mottled cirri; cirro-strati.
4	373	43·0	41·9	1·1	1·3	0·2	18	24 : — : —	10·0	Scud; slight showers.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The tions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Dec. 4d. A new vane, composed of oiled silk stretched on a light frame of wood, erected instead of the turkey-feather one.

Dec. 4h 18h. Observation made at 18h 8m.

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
5 6	29·358	39·8	37·5	2·3	0·7	0·2	22		2·0	Cirro-strati.
8	378	36·9	35·5	1·4	0·2	0·1	22		0·5	Cirro-strati and haze round horizon.
10	397	38·2	36·0	2·2	0·4	0·2	24		8·0	Cirro-cumulo-strati.
22½	29·566	37·2	34·5	2·7	0·7	0·5	28		1·0	Scud near horizon.
6 18	29·848	37·0	34·4	2·6	1·9	0·7	29		8·0	Cirro-cumulo-strati and woolly cirri; lunar corona.
20	888	37·5	34·7	2·8	2·3	0·6	29	— : 0 : —	9·0	Cumulo-strati; scud to E.
22	934	38·7	35·7	3·0	1·3	0·5	30	— : 1 : —	9·0	Id.; cirro-strati.
7 0	968	38·3	36·0	2·3	0·4	0·1	27		2·5	Woolly cirri, cirro-strati, and cirrous haze.
2	977	39·6	37·2	2·4	0·3	0·2	30	— : — : 1	8·0	Woolly and mottled cirri; cirro-strati.
4	29·999	38·7	36·2	2·5	0·3	0·0	26		10·0	Cirro-strati, cirro-cumulo-strati, and cirrous haze.
6	30·014	37·0	35·3	1·7	0·2	0·0	22		10·0	Cirro-stratus.
8	048	35·1	33·9	1·2	0·1	0·1	20		3·0	Clouds on horizon; stars dim.
10	060	33·0	32·0	1·0	0·1	0·0	24		1·5	Id.
18	30·089	36·0	35·5	0·5	0·0	0·0			10·0	Scud.
20	115	36·6	36·0	0·6	0·0	0·0	20		10·0	Id.
22	146	38·0	37·4	0·6	0·1	0·0	16		9·8	Scud and cirro-strati.
8 0	148	40·7	39·8	0·9	0·1	0·1	22		9·9	Id.
2	123	42·8	41·6	1·2	0·1	0·1	22		9·9	Id.
4	132	41·8	40·9	0·9	0·0	0·0	20	28 : 28 : —	10·0	Id.
6	137	40·7	39·6	1·1	0·1	0·1	24		9·8	Id.
8	138	40·2	39·1	1·1	0·1	0·0	22		10·0	Id.; dark.
10	135	38·8	37·7	1·1	0·2	0·1	20		8·5	Id.; stars dim.
18	30·076	41·0	39·2	1·8	0·2	0·0	24		10·0	Thick scud.
20	070	40·6	39·0	1·6	0·5	0·1	24		10·0	Id.
22	059	41·9	41·1	0·8	0·2	0·1	20	0 : — : —	9·5	Scud.
9 0	30·030	40·6	38·8	1·8	0·2	0·2	22		3·0	Woolly cirri; bank of cirro-strati to E.
2	29·998	44·6	42·2	2·4	0·2	0·1	22	— : 0 : —	8·0	Cirro-cumulo-strati; woolly cirri.
4	962	42·4	40·2	2·2	0·3	0·3	24	0 : — : —	7·0	Scud.
6	937	36·5	35·6	0·9	0·3	0·1	15		0·5	Clouds on S. horizon.
8	903	37·0	36·3	0·7	0·2	0·2	25		0·2	Clouds on horizon.
10	866	38·8	37·8	1·0	0·2	0·2	22		0·5	Id.; auroral arch to N.
18	29·555	45·8	43·8	2·0	1·3	0·8	24		3·0	Scud; in passing over the moon it produces a coloure
20	555	39·4	38·4	1·0	1·9	0·6	0		10·0	Scud; shower at 19h 45m. [corona.
22	564	38·8	36·6	2·2	1·2	2·0	0	0 : 24 : —	9·0	Id.; cirro-cum.-str.; ragged cum. on N. and E. ho
10 0	573	37·7	34·8	2·9	1·9	1·9	31	— : 28 : —	8·5	Cirro-cumulo-strati and cirro-strati; loose scud.
2	574	36·1	32·4	3·7	1·3	0·6	31	31 : 28 : —	8·0	Scud; cirro-cumulo-strati; cum. on N. and E. hor.
4	560	33·7	29·5	4·2	2·0	2·0	0	0 : — : —	4·0	Scud and cumuli.
6	569	29·2	26·6	2·6	2·8	1·0	30		0·5	Clouds on horizon.
8	560	28·2	25·6	2·6	2·5	1·5	30		0·5	Id.
10	545	27·8	25·2	2·6	2·8	1·2	30		0·2	Id.
18	29·531	29·2	26·6	2·6	2·4	1·0	29		5·0	Cirrous haze over the sky; a sprinkling of snow o
20	513	27·9	25·4	2·5	2·5	0·6	28		7·0	Cir.-str. and cir. haze; cum. on hor. ☽ [the ground.
22	484	28·4	26·0	2·4	1·8	3·3	27		7·0	Woolly cirri and cir.-str.; scud and cum. on N. and E
11 0	492	29·0	27·4	1·6	2·9	1·2	29	— : 4 : 4	8·0	Id.; snow$^{0·5}$ ● [hor.
2	472	30·2	27·4	2·8	2·2	1·1	29	0 : — : 4	8·0	Scud; woolly cirri; cirro-strati.
4	469	29·4	26·8	2·6	1·6	1·3	29	0 : — : —	8·5	Masses of scud, cirro-strati, and cirri.
6	476	29·8	27·6	2·2	0·9	0·5	28		9·0	Scud and cirro-strati.
8	491	30·1	27·8	2·3	1·7	0·8	29		3·0	Id.
10	505	32·0	29·5	2·5	3·5	2·0	30		9·5	Id.
18	29·575	30·9	29·9	1·0	4·7	1·1	30		10·0	Heavy shower of snow.
20	580	32·3	30·5	1·8	1·3	1·2	30		10·0	Cirro-str. and cir. haze; occasional showers of snow.
22	625	32·3	31·3	1·0	1·0	0·6	30		9·9	Id.; id.
12 0	647	31·9	30·6	1·3	1·5	0·5	0		10·0	Snow^3
2	627	31·4	29·2	2·2	0·9	0·6	30	2 : — : —	4·0	Scud and loose cumuli; snow about 4½ inches deep.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Gt. Mn Te.		BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
2	4	29·626	31·0	28·6	2·4	0·9	0·6	29	1 : — : —	8·0	Scud and cumuli.
	6	625	29·4	27·4	2·0	1·3	1·0	28		2·0	Id.
	8	654	29·0	27·0	2·0	1·5	0·9	29		1·0	Patches of scud.
	0	657	28·6	26·6	2·0	1·5	0·6	30		1·0	Clouds on horizon.
	3	29·617	28·4	……	…	1·3	0·4	30		2·0	
3	8	29·382	23·0	……	…	…	0·1	23		0·2	Clouds on E. horizon. ☽
	0	359	24·7	22·7	2·0	0·1	0·0	20		1·0	Bank of cirro-strati on E. horizon. ☽
	2	355	27·2	25·0	2·2	…	0·4	28	0 : — : 0	4·0	Scud and woolly cirri; cumuli on horizon. ⊙
4	0	343	28·6	26·4	2·2	…	0·5	27	— : 30 : —	4·0	Woolly cirro-strati; cumulo-strati on horizon. ⊙
	2	331	29·7	27·2	2·5	…	0·3	28	— : 31 : —	2·5	Id.; cumuli and nimbi to E. ⊙
	4	305	29·2	26·3	2·9	…	0·2	28		2·5	Id.; id.
	6	299	29·2	26·6	2·6	…	0·4	28		0·5	Clouds near horizon.
	8	300	28·8	27·0	1·8	…	0·5	28		2·0	Id.
	0	294	26·6	24·9	1·7	…	0·5	28		0·5	Id.
	8	29·256	30·3	28·3	2·0	1·0	1·0	0		9·8	Scud; snowing.
	0	288	29·0	28·0	1·0	1·0	0·3	0		9·8	Id.
	2	360	29·2	28·4	0·8	…	0·2	31		10·0	Shower of snow.
5	0	397	31·6	30·3	1·3	…	0·2	28	0 : — : —	7·0	Scud and nimbi; occasional showers of snow.
	2	409	28·3	27·4	0·9	0·2	0·1	28		2·0	Scud to S. and E. ⊙
	4	411	29·0	27·4	1·6	0·6	0·3	27		2·5	Cumuli, cirro-strati, and haze on E. horizon.
	6	426	30·6	29·5	1·1	0·9	0·8	28		1·0	Clouds on horizon.
	8	441	31·0	29·8	1·2	2·2	1·2	28		0·2	Id.
	0	459	32·0	30·6	1·4	1·8	0·8	0		2·0	Id.
	8	29·502	30·2	28·2	2·0	2·3	0·8	28		0·5	Clouds on horizon. ☽̶
	0	517	31·2	28·7	2·5	1·2	0·5	28		5·0	Cirri and cirro-strati. ☽̶
	2	540	30·6	28·0	2·6	0·7	0·4	27		2·0	Scud and cirro-strati on horizon. ⊙
16	0	541	32·1	29·5	2·6	0·5	0·3	27		2·0	Id. ⊙
	2	523	34·8	31·6	3·2	0·3	0·2	28	— : 1 : —	7·0	Cirro-cumulo-strati.
	4	496	34·7	31·8	2·9	0·3	0·2	24		10·0	Mass of cirro-stratus.
	6	487	32·8	32·2	0·6	0·3	0·1	24		10·0	Snowing.
	8	456	32·5	32·1	0·4	0·1	0·0	20		10·0	Id.
	0	436	31·6	31·6	…	0·0	0·0	20		10·0	A few flakes of snow falling.
	8	29·447	24·8	23·6	1·2	0·1	0·0			0·5	Clouds on S. horizon.
	0	448	20·8	19·7	1·1	0·1	0·1	23		1·0	Bank of scud and cirro-strati to N. ☽
	2	478	29·0	28·0	1·0	0·1	0·1	28	31 : — : —	8·0	Scud.
17	0	501	33·3	31·1	2·2	0·8	0·4	28	0 : — : —	3·0	Id. ⊙
	2	565	34·6	32·6	2·0	1·5	0·3	0	1 : — : —	10·0	Heavy snow showers since 1h.
		643	32·2	……	…	1·2	0·1	31		3·0	Cumuli and nimbi.
	6	713	29·7	27·8	1·9	0·2	0·1	2		3·0	Scud and cumuli.
	8	781	27·4	26·7	0·7	0·5	0·0	22		1·0	Clouds on E. horizon.
		825	25·6	24·8	0·8	0·1	0·0	18		1·0	Id.
		29·864	13·0	13·0	…	0·0	0·0	18		1·0	Cirro-strati and thin haze.
		852	18·5	18·0	0·5	0·2	0·1	20		3·0	Id.
		826	25·5	24·4	1·1	0·2	0·1	24		5·0	Cirro-strati and cirrous haze.
18		773	34·4	32·3	2·1	0·6	0·4	22	— : 28 : —	10·0	Cirro-strati; a parhelion at 23h.
		714	36·8	34·6	2·2	1·5	1·0	20	— : 26 : —	10·0	Id.
		639	38·5	35·6	2·9	3·4	1·7	20	24 : 30 : —	9·5	Scud; cirro-strati.
		556	38·6	36·8	1·8	1·8	1·3	19		9·5	Id.; id.
		520	39·6	38·4	1·2	1·6	1·0	20		10·0	Id.
		480	41·0	39·5	1·5	1·5	0·3	19		10·0	Id.
		29·475	39·4	39·1	0·3	0·9	0·0	12		3·0	Scud and thin haze.
		492	38·9	38·6	0·3	0·1	0·0	20		10·0	Scud; the snow is disappearing rapidly.
		505	38·8	38·4	0·4	0·0	0·0	0		10·0	Fog, trees invisible at 200 yards; slight drizzling rain.
19		485	40·7	40·3	0·4	0·0	0·0	8	26 : — : —	10·0	Scud; cirro-strati; fog clearing off.

he direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The ons of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

ec. 12d 10h. Three bright flashes of lightning seen to E.

ec. 15d 10h. About 10h 7m, it had become overcast and a shower of snow commenced.

Gött. Mean Time.	BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
19 2	29·456	46·0	45·1	0·9	0·6	0·3	18	21 : — : —	9·9	Scud.
4	452	45·9	45·0	0·9	0·7	0·5	18	19 : 22 : 22	9·0	Loose driving scud ; scud ; cirri and cirro-strati.
6	427	45·0	44·3	0·7	1·1	0·1	20		10·0	Scud.
8	414	45·4	44·4	1·0	0·8	0·3	22		9·5	Id.
10	407	45·7	44·1	1·6	0·8	0·6	23		5·0	Id.
23	29·176	43·9	41·5	2·4	2·3	1·0	23	22 : — : —	6·0	Scud.
20 18	28·851	39·8	39·4	0·4	2·2	0·0	2		10·0	Scud ; rain$^{0\cdot5}$
20	778	39·3	39·0	0·3	0·0	0·0	2		10·0	Id. ; rain^{2}
22	745	38·7	38·4	0·3	0·1	0·1	6	4 : — : —	10·0	Misty scud ; rain$^{0\cdot5}$
21 0	708	41·8	41·3	0·5	0·1	0·1	20		10·0	Thick cirro-stratus and cirrous haze.
2	683	41·5	41·0	9·5	0·5	0·3	30	31 : — : —	10·0	Scud ; rain^{1}
4	690	40·3	39·1	1·2	0·4	0·2	28	0 : — : —	10·0	Scud ; cirro-stratus.
6	689	38·0	37·1	0·9	0·7	0·9	28		10·0	Scud and dense cirro-stratus.
8	708	37·9	36·8	1·1	0·2	0·1	22		10·0	Id., breaking slightly to N.
10	717	35·2	34·6	0·6	0·1	0·1	21		7·5	Cirro-stratus.
18	28·788	34·4	33·5	0·9	0·1	0·1	26		10·0	Scud and cirro-stratus.
20	822	34·8	34·1	0·7	0·1	0·1	27		10·0	Id.
22	848	34·5	33·2	1·3	0·1	0·1	28	— : 0 : —	9·0	Cirro-cumulo-strati ; cirro-stratous scud and cirro-strat
22 0	861	35·2	33·6	1·6	0·1	0·1	26	— : 0 : —	9·9	Cirro-stratous scud ; cirro-strati.
2	861	37·0	34·7	2·3	0·2	0·1	28	28 : 28 : —	9·5	Scud and cirro-stratus.
4	859	35·7	33·8	1·9	0·2	0·1	26	28 : 28 : —	9·0	Id.
6	847	33·9	32·2	1·7	0·1	0·1	28		8·0	Scud and cirro-cumulo-strati.
8	820	33·3	31·6	1·7	0·1	0·0	12		3·0	Id.
10	801	33·3	32·6	0·7	0·1	0·0	26		10·0	Scud and cirro-stratus.
18	28·681	34·0	32·8	1·2	2·7	0·9	0		3·0	Scud ; snow on the ground.
20	689	33·0	32·6	0·4	2·8	2·1	0		10·0	Snow^{2}
22	748	35·3	33·7	1·6	3·7	1·5	2		10·0	Scud ; shower of snow.
23 0	787	36·9	33·4	3·5	2·4	2·0	2	2 : — : —	10·0	Id.
2	819	36·5	33·0	3·5	2·4	1·6	0	4 : — : —	10·0	Id.
4	849	33·8	33·2	0·6	2·8	2·7	1		10·0	Id. ; snow^{1}
6	870	33·4	33·0	0·4	3·4	2·1	0		10·0	Heavy snow and sleet.
8	899	33·9	33·4	0·5	4·4	2·3	2		10·0	Continuous snow and sleet.
10	949	33·2	32·7	0·5	2·9	0·4	2		10·0	Id.
18	29·096	30·0	28·0	2·0	1·3	0·2	2		9·0	Scud and cirro-strati.
20	126	26·0	25·3	0·7	0·1	0·0			6·0	Cirro-cumulo-strati and woolly cirri.
22	174	27·8	26·6	1·2	0·0	0·0	30	4 : — : —	6·0	Scud, cumuli, and nimbi ; cirro-strati.
24 0	207	31·1	30·0	1·1	0·1	0·1	2	4 : — : —	7·0	Id.
2	213	28·6	27·6	1·0	0·4	0·3	28		3·0	Cumuli and nimbi ; parhelion at 1^{h}.
4	221	28·7	27·5	1·2	0·5	0·4	28		2·0	Id. [the zenith from about N
6	251	27·1	26·6	0·5	0·4	0·3	30		3·0	Cum. and scud on hor. ; masses of clouds occasionally passing o
8	274	23·7	23·0	0·7	0·2	0·1	20		0·5	Clouds on horizon.
10	295	23·4	22·5	0·9	0·2	0·1	24		0·0	Clear.
18	29·438	29·9	28·4	1·5	1·0	0·4	31		4·0	Scud.
20	498	31·0	29·6	1·4	0·3	0·2	31		9·5	Id. ; snow^{2}
22	568	27·6	26·2	1·4	0·4	0·3	28	0 : — : —	4·0	Scud and loose cumuli.
25 0	636	29·2	28·1	1·1	0·7	0·4	28		2·0	Cumulo-strati and nimbi on horizon.
2	672	28·2	26·7	1·5	0·9	0·4	28		2·0	Id.
4	707	28·3	26·4	1·9	0·4	0·5	28		2·0	Id. ; haze round hor
6	743	31·0	28·4	2·6	0·6	0·3	28		1·0	Masses of cirro-stratus to SE.
8	792	31·3	29·0	2·3	0·5	0·3	26		0·2	Cirro-strati and haze on E. horizon.
10	832	31·4	29·3	2·1	0·6	0·3	28		0·3	Sheets of thin cirro-strati and cirri.
18	29·930	25·2	24·6	0·6	0·4	0·0	22		0·0	Clear.
20	29·925	32·4	30·8	1·6	0·3	0·2	22		0·2	Cirro-strati on E. horizon.
22	30·010	34·8	32·3	2·5	0·3	0·3	20		0·4	Cirro-strati on N. horizon.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. Tl motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

Gt. Mn Te.	BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.	
		Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From				
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.		
26 0	30·045	34·3	32·4	1·9	0·1	0·1	16		0·5	Cirri and cirro-strati.	⊙
2	065	36·6	34·8	1·8	0·1	0·1	16		1·0	Id.	⊙
4	089	34·2	33·2	1·0	0·1	0·0	19	— : — : 0	5·0	Woolly cirri, cirro-strati, and cirrous haze.	
6	119	31·6	...	...	0·1	0·0	18		3·0	Woolly cirri.	☽
8	154	29·0	28·6	0·4	0·1	0·0	16		2·0	Cirrous haze and woolly cirri; lunar corona.	☽
0	167	24·1	23·9	0·2	0·0	0·0	18		0·0	Clear.	☽
2½	30·214	17·3	...	...	0·0	0·0			10·0	Woolly cirri and cirro-strati.	
27 8	30·104	36·6	35·0	1·6	...	0·1	22		10·0	Homogeneous.	
0	115	38·2	37·5	0·7	0·1	0·1	21		9·5	Scud and cirro-strati.	
2	130	37·5	36·7	0·8	0·2	0·2	18	26 : — : —	3·0	Scud.	
28 0	141	37·9	37·0	0·9	0·3	0·2	17		0·5	Scud on horizon.	⊙
2	140	39·7	38·2	1·5	0·2	0·1	16	28 : — : —	3·0	Scud.	⊙
4	134	38·3	37·2	1·1	0·4	0·3	18	28 : — : —	9·5	Id.; cirro-stratus.	
6	147	37·0	36·3	0·7	0·2	0·1	18		10·0	Id.; id.	
8	147	36·5	36·1	0·4	0·0	0·0	16		10·0	Thin cirro-stratus and scud; drops of rain.	⊁
0	133	37·0	36·6	0·4	0·0	0·0	20		10·0	Cirro-stratus and scud.	
8	30·100	36·9	36·6	0·3	0·2	0·0	20		3·0	Cirro-strati and scud.	
0	105	36·8	36·3	0·5	0·1	0·1	21		5·0	Woolly and linear cirri; scud on E. horizon.	
2	131	37·6	37·2	0·4	0·3	0·1	18	21 : — : —	2·0	Loose scud; linear cirri.	⊙
29 0	125	40·0	39·1	0·9	0·3	0·2	18		9·0	Woolly cirri and cirrous haze.	⊖
2	111	41·0	40·1	0·9	0·2	0·2	20	20 : — : —	10·0	Misty scud; cirro-strati.	
4	125	40·2	39·3	0·9	0·5	0·1	20	24 : — : —	9·9	Scud; cirro-strati.	
6	147	39·1	38·3	0·8	0·4	0·0	14		10·0	Scud and thick cirro-strati.	
8	161	38·9	38·2	0·7	0·2	0·1	20		10·0	Id.	⊁
0	186	37·8	37·5	0·3	0·2	0·0	0	— : 24 : —	3·0	Cirro-cumulo-strati.	⊁
8	30·232	33·5	33·3	0·2	0·3	0·1	18		5·0	Cirro-strati; misty.	☽
0	242	32·7	32·5	0·2	0·1	0·1	18		10·0	Id. id.	
2	260	34·3	34·0	0·3	0·3	0·1	22	22 : — : 26	4·0	Loose scud; cirri.	
30 0	278	34·8	34·4	0·4	0·3	0·1	18		0·5	A few clouds near horizon.	⊙
2	256	36·5	36·2	0·3	0·1	0·0	20		0·5	Id.	⊙
4	261	39·2	38·3	0·9	0·2	0·2	22	— : — : 0	2·5	Woolly cirri; hazy round horizon.	
6	274	35·6	35·2	0·4	0·3	0·1	16		3·0	Clouds and haze on horizon.	☽
8	274	36·6	36·2	0·4	0·1	0·0	20		10·0	Scud and cirro-stratus.	
0	263	37·4	37·0	0·4	0·0	0·0	18		10·0	Id.	
8	30·269	39·2	38·8	0·4	0·3	0·1	19		10·0	Scud and cirro-stratus.	
0	271	40·8	40·3	0·5	0·1	0·1	18		10·0	Id.	
2	304	41·1	40·6	0·5	0·1	0·1	22	— : 28 : —	8·0	Cirro-stratous scud.	
31 0	299	42·0	41·5	0·5	0·2	0·1	20	30 : — : —	6·0	Scud.	
2	276	43·8	43·2	0·6	0·1	0·1	5		9·8	Cirro-cumulo-strati and cirro-strati.	
4	280	43·6	42·8	0·8	0·1	0·1	22		9·9	Wavy cirro-strati; loose scud on E. horizon.	
6	272	42·4	41·8	0·6	0·1	0·0	20		10·0	Thick scud.	
8	283	40·2	39·8	0·4	0·0	0·0	22		10·0	Homogeneous.	
0	284	39·8	39·6	0·2	0·1	0·0	26		10·0	Id.	

he direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The tions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Ci. (cirrus), are indicated in a similar manner.

DAILY AND EXTRA
METEOROLOGICAL OBSERVATIONS.

MAKERSTOUN OBSERVATORY,

1846.

Civil Day.	TEMPERATURE.		RADIATION.		Rain in Gauge at Noon.	TEMPERATURE.		RADIATION.		Rain in Gauge at Noon.	TEMPERATURE.		RADIATION.		Rain in Gauge at Noon.
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.	
	°	°	°	°	in.	°	°	°	°	in.	°	°	°	°	in.
	JANUARY.					MARCH.					MAY.				
1	34·6	39·5	31·0	44·5	0·058	40·5	50·3	37·6	51·0	……	42·0	57·6	40·3	66·6	0·000
2	25·4	34·6	19·2	54·5	·000	44·5	52·3	41·4	67·4	0·000	50·2	59·6	49·0	98·0	·000
3	29·4	44·6	25·4	44·8	·010	41·8	52·9	38·6	52·8	·170	43·6	58·3	43·2	104·4	……
4	35·8	39·9	33·6	49·6	……	46·6	49·5	44·6	59·7	·154	40·9	43·7	33·9	44·0	·200
5	27·4	35·9	23·6	52·9	·000	35·6	50·3	33·9	68·5	·146	40·0	59·0	40·6	96·7	0·610
6	30·6	49·8	27·9	50·0	·065	29·7	48·0	26·9	66·5	·000	43·0	54·9	43·9	101·8	1·042
7	45·1	48·0	42·9	50·0	·000	35·3	49·1	33·1	67·7	·122	35·9	56·5	29·8	82·6	0·000
8	45·7	50·7	43·0	54·5	·000	30·2	48·6	24·7	66·2	……	40·0	58·7	34·4	100·7	·000
9	40·1	45·6	34·8	53·0	·000	26·4	48·2	24·2	66·2	·000	33·9	62·3	28·2	93·8	·000
10	42·3	49·0	41·8	56·5	·000	38·0	51·0	33·2	66·7	·000	47·7	57·8	47·3	90·2	……
11	31·3	43·4	28·3	58·0	……	42·1	49·5	37·1	72·3	·042	39·9	58·8	36·8	85·2	·080
12	38·8	41·7	38·0	47·2	·000	31·9	53·0	29·1	67·8	·003	38·8	65·5	32·2	90·8	·005
13	26·7	38·6	24·0	……	·000	43·1	53·4	39·8	66·8	·045	41·6	58·3	35·4	96·7	·007
14	33·1	43·0	27·9	48·8	·034	41·4	53·7	37·2	65·0	·047	43·9	55·2	40·8	97·6	·000
15	36·5	46·3	34·5	46·6	·023	36·9	51·0	32·0	75·9	……	36·1	63·8	28·1	95·5	·000
16	28·8	35·5	26·2	37·3	·000	38·5	46·9	38·8	65·0	·356	33·5	59·3	27·9	92·5	·000
17	29·5	43·2	29·4	43·5	·000	30·3	38·5	25·2	61·0	·048	42·6	56·0	39·1	68·5	·295
18	39·5	41·5?	39·5	42·5	……	29·3	35·7	28·7	51·5	·335	38·3	58·2	33·1	68·0	·128
19	34·7	44·3	32·9	44·3	·210	5·4	32·5?	−0·3	75·5	·000	45·0	60·2	45·2	86·8	·124
20	40·8	44·7	40·5	44·0	·428	22·8	36·7	15·8	75·2	·016	44·5	61·2	41·4	87·4	·059
21	35·6	46·5	32·0	59·4	·250	16·6	39·4	9·4	40·5	·000	40·9	65·8	34·4	111·2	·095
22	37·0	44·0	33·1	44·5	·428	31·0	47·1	29·0	62·3	……	40·9	59·5	35·7	76·0	·268
23	33·3	48·2	31·6	61·5	·088	28·8	45·1	25·1	73·2	·258	48·1	60·6	49·9	93·0	·026
24	36·1	46·2	33·8	66·6	·030	31·7	50·8	29·4	88·4	·239	43·7	61·5	39·2	103·5	……
25	36·0	51·2	32·4	56·6	……	30·7	50·5	28·3	82·8	·065	50·2	62·9	49·7	96·5	·004
26	44·9	49·5	41·9	60·8	·154	29·5	46·1	27·1	85·4	·043	45·5	60·9	37·9	100·4	·000
27	43·0	50·5	40·0	63·3	·018	34·2	49·2	31·2	86·0	·004	45·9	57·2	40·8	81·0	·000
28	39·1	48·7	34·9	56·6	·114	32·5	46·1	28·2	76·2	·008	36·5	61·0	29·6	108·3	·032
29	40·4	47·0	37·4	49·8	·025	33·3	45·4	28·5	86·1	……	39·6	71·0	35·9	117·2	·000
30	40·0	51·4	35·6	55·0	·011	32·2	52·5	28·6	92·0	·024	44·4	64·8	40·7	104·7	·000
31	45·1	51·0	42·1	52·3	·013	27·8	52·0	22·6	79·0	·000	39·7	68·7	35·7	119·2	……
	FEBRUARY.					APRIL.					JUNE.				
1	38·9	44·2	34·2	53·8	……	39·8	50·5	38·0	59·3	0·160	40·3	76·8	39·6	124·0	0·000
2	35·3	46·5	30·2	58·4	0·171	38·6	57·1	31·5	96·5	……	47·4	81·7	45·4	116·5	·000
3	39·2	50·1	36·6	51·2	·006	39·6	43·3	41·8	60·3	·305	47·7	82·2	45·4	130·0?	·017
4	31·9	41·7	29·6	57·8	·254	28·0	43·1	24·1	66·5	·000	51·3	84·0	50·2	120·1	·000
5	36·2	43·3	32·6	54·5	·007	29·6	43·7	25·1	61·6	……	47·0	81·3	43·9	121·7	·000
6	31·9	46·5	28·0	……	·000	31·8	44·4	25·7	74·0	·053	51·7	81·6	48·2	116·7	·000
7	39·3	46·3	35·6?	54·7	·446	35·1	43·7	30·5	54·0	·030	52·2	69·2	49·7	113·2	……
8	31·6	37·6	27·6	47·2	……	38·0	46·3	33·6	58·0	·080	53·5	69·3	54·2	75·8	·000
9	31·2	36·7	26·7	44·3	·018	27·1	51·7	25·8	89·6	·006	52·0	73·0	50·9	114·0	·005
10	21·5	38·1	17·6	47·1	·423	32·4	52·6	27·2	94·0	·026	54·7	72·5	52·2	96·5	·000
11	29·0	43·5	25·2	55·0	·000	31·5	51·0	27·6	51·0	·026	51·0	68·4	47·7	102·0	·025
12	28·6	45·7	26·2	64·0	·000	42·5	61·2	39·6	83·7	……	48·0	71·1	45·9	103·7	·025
13	30·6	47·5	26·0	63·5	·000	41·3	60·4	37·9	80·2	·248	51·8	75·3	45·6	115·7	·000
14	36·2	45·7	31·4	54·6	·000	41·1	59·5	37·9	79·5	·194	50·1	76·7	46·4	120·0	……
15	36·8	47·5	31·7	64·5	……	43·0	46·5	43·6	49·4	·169	48·0	73·7	42·6	121·2	·00
16	41·6	49·0?	37·0	……	·000	43·3	56·7	43·5	73·2	·010	48·1	77·6	42·1	135·0	·025
17	39·2	47·5	34·6	66·7	·000	43·3	49·4	39·4	49·3	·060	47·7	82·2	44·9	134·0	·025
18	35·5	49·3	31·6	57·2	·000	40·9	49·6	39·9	60·5	·458	52·3	81·5	49·6	130·0	·39
19	39·1	44·7	35·6	47·4	·000	35·5	48·3	29·6	59·0	……	54·8	85·4	53·4	119·0	·00
20	37·6	45·7	35·2	48·3	·000	31·2	49·5	26·6	89·2	·012	52·0	62·5	53·9	102·0	·00
21	40·8	52·5	40·4	57·7	·000	30·1	50·5	26·4	90·5	·000	38·3	72·8	35·5	111·5	……
22	41·5	55·2	37·1	63·7	·000	30·9	48·4	28·2	68·0	·166	46·9	78·2	40·4	108·4	·00
23	49·0	53·3	46·2	63·7	·000	37·2	49·4	29·9	72·7	·011	57·3	64·8	55·2	74·0	0·52
24	46·4	55·1	43·5	63·8	·220	39·4	45·2	38·2	50·2	·233	44·2	62·1	44·4	84·0	1·15
25	46·2	52·8	41·9	60·0	·180	41·2	53·3	39·4	83·1	·072	38·3	64·5	35·2	102·0	0·00
26	38·5	54·3	33·9	66·2	·060	35·0	45·1	34·6	87·3	……	37·0	64·5	33·8	77·8	·04
27	44·5	58·0	43·9	61·8	·008	30·7	47·9	26·4	78·2	·075	48·4	69·0	45·2	99·0	·18
28	40·4	57·2	38·2	69·0	·034	30·7	47·4	26·4	91·5	·007	45·4	71·0	41·8	94·5	……
29						29·2	54·1	23·4	93·1	·000	49·5	68·2	47·6	92·2	·23
30						36·4	53·3	34·4	63·3	·031	51·7	63·6	49·6	79·0	·04
31															

TEMPERATURE.		RADIATION.		Rain in Gauge at Noon.	TEMPERATURE.		RADIATION.		Rain in Gauge at Noon.	TEMPERATURE.		RADIATION.		Rain in Gauge at Noon.
Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.	
°	°	°	°	in.	°	°	°	°	in.	°	°	°	°	in.
JULY.					SEPTEMBER.					NOVEMBER.				
50·5	64·3	48·0	83·7	0·058	37·8	65·1	34·9	106·0	0·121	49·0	53·2	49·1	56·0	0·005
52·7	68·3	45·6	102·3	·052	49·2	67·4	44·6	93·5	·000	44·9	54·0	41·6	70·2	·000
55·2	66·5	51·8	78·8	·059	47·8	68·4	45·2	92·0	·000	43·3	54·4	39·1	75·6	·013
55·4	71·3	53·3	100·7	·003	49·6	68·0 ?	46·7	……	·000	43·0	55·8	35·3	71·4	·000
44·7	80·5	41·9	114·0	0·000	53·3	74·3	52·2	105·0	·000	39·0	52·3	33·6	71·2	·092
52·1	60·5	44·4	61·4	1·895	52·1	74·2	47·2	102·5	……	46·0	53·2	41·1	72·8	·004
48·0	64·5	45·6	107·2	0·150	53·9	74·1	51·7	105·7	·087	40·4	53·5	36·8	66·4	·000
47·0	59·5	44·7	87·2	·000	53·3	68·7	50·6	80·8	·000	46·7	51·5	42·1 ?	53·0	……
48·7	56·7	50·1	60·4	·266	48·0	67·3	43·2	97·0	·005	38·5	43·1	34·1	57·2	·000
49·4	70·2	48·1	112·3	·053	36·5	63·5	33·6	94·3	·000	28·2	45·3	26·8	76·5	·000
46·5	64·5	42·7	88·5	·000	45·8	74·4	42·3	110·5	·000	26·4	44·5	23·2	51·8	·008
52·0	68·3	51·1	86·8	……	54·2	71·2	50·7	103·3	·000	38·4	45·3	34·1	46·5	·000
57·7	72·7	55·6	100·8	·036	41·5	68·5	38·5	112·5	……	42·1	45·5	41·9	46·8	·000
50·6	78·0	48·3	119·2	·000	46·9	71·7	44·5	116·8	·000	40·1	42·3	39·4	43·2	·000
53·3	71·0	50·7	108·8	·006	47·4	71·3	44·5	115·8	·000	38·2	41·5	37·9	42·0	……
55·9	70·0	56·5	82·0	·011	44·8	70·0	43·0	79·7	·000	32·0	46·5	27·2	53·5	·000
52·4	64·3	52·7	88·3	·230	46·1	67·5	44·6	86·7	·010	37·0	52·1	30·2	51·0	·010
45·6	67·1	42·1	75·0	·132	42·5	60·1	37·4	104·8	·000	40·9	51·6	38·4	64·5	·020
45·5	63·9	42·1	95·7	……	40·0	64·0	34·9	79·5	·005	41·1	49·5	38·5	65·0	·036
47·4	65·1	46·2	95·8	·383	51·2	62·1	51·9	90·8	·245	43·0	52·5	39·2	62·2	·064
50·7	69·5	48·7	88·2	·360	50·0	58·3	50·6	104·7	·103	41·6	46·7	39·1	62·2	·070
50·8	65·7	47·6	101·3	·211	33·2	59·0	29·8	……	·000	36·0	42·3	32·2	59·0	……
50·4	67·6	47·7	75·0	·016	51·2	64·7	46·9 ?	75·2	·644	33·0	42·8	28·6	46·6	·160
52·4	65·9	49·4	98·0	·021	47·1	65·0	43·9	99·0	·053	40·3	54·9	40·2	69·8	·293
47·4	64·7	44·6	96·0	·010	53·3	64·3	52·9	103·8	·005	36·3	44·5 ?	31·1	……	·000
48·6	68·8	45·2	102·3	……	40·5	62·8	36·5	71·8	·040	41·1	45·6	40·8	47·5	·288
52·4	72·3	52·2	96·2	·077	47·9	61·2	46·2	94·5	·130	40·0	44·5	40·4	44·5	·172
58·9	75·1	59·2	105·5	·000	34·7	55·4	30·9	61·0	0·003	23·0	37·1	19·4	42·0	·050
55·8	65·3	54·6	74·0	0·085	46·3	51·2	45·2	51·6	2·750	26·2	34·5	22·4	40·6	……
53·4	70·1	55·1	93·5	3·063	47·4	60·3	43·1	98·7	0·490	28·1	32·3	23·2	40·8	·750
55·8	68·7	58·1	114·0	0·005										
AUGUST.					OCTOBER.					DECEMBER.				
54·0 ?	72·3	……	120·5	0·000	44·7	65·5	40·1	99·6	0·016	25·4	40·9	22·4	51·0	0·024
58·5	71·5	57·1	91·2	……	34·4	61·9	30·7	96·0	·000	17·6	26·4	14·2	41·5	·000
59·5	77·3	60·6	114·8	·058	38·8	58·8	33·2	92·0	·000	14·4	37·6	10·2	48·5	·000
51·2	73·2	46·4	113·5	·000	36·9	55·7	31·4	60·3	……	26·5	33·2	19·9	44·5	·000
54·3	72·1	48·3	105·1	·184	49·7	61·9	43·0	67·9	·000	20·6	43·1	16·2	42·3	·013
50·3	80·3	48·7	118·6	·056	50·7	58·5	46·9	85·0	·049	30·4	38·4	25·2	46·5	……
51·3	68·2	45·9	79·8	0·491	44·2	57·2	42·1	76·6	·095	34·5	39·6	30·6	46·5	·000
58·0 ?	75·2	……	89·9	1·815	41·7	56·1	38·9	71·9	·147	30·1	42·7	26·2	44·5	·000
54·7	72·3	50·8	96·5	……	45·2	57·5	40·8	56·7	·158	34·7	44·2	31·2	54·0	·000
52·3	68·6	48·1	99·7	0·014	52·3	60·4	49·4	69·7	·152	31·1	45·7 ?	25·6	……	·020
49·2	65·8	45·2	88·2	·000	42·3	59·1	35·6	89·0	……	24·8	30·2	18·9	32·2	·000
52·0	67·5	46·2	89·0	·000	49·7	53·5	50·2	59·0	·530	27·7	32·2	25·4	34·0 ?	·360
52·1	67·4	52·1	77·0	·880	40·3	49·6	36·4	75·5	·080	23·9	29·5	19·6	39·0	……
43·7	69·1	39·3	105·5	·195	37·3	48·7	33·1	52·5	·410	16·0	29·7	7·6	39·5	·000
50·3	65·2	47·1	70·0	·068	42·5	54·3	41·3	79·4	·055	24·1	32·1	17·7	37·0	·140
47·7	66·5	45·4	99·5	·160	38·5	55·2	34·4	79·1	·002	27·6	34·3	24·2	45·5	·000
50·3	67·6	44·7	99·4	·003	45·3	56·1	39·7	67·7	·000	19·4	38·7	15·2	42·2	·070
53·8	69·4	52·6	92·5	·263	48·7	55·3	44·6	60·4	……	10·6	42·3	5·4	43·0 ?	·050
46·1	67·6	41·7	111·0	·037	48·2	56·1	48·3	69·0	·638	36·9	45·8	34·7	45·0	·000
48·3	64·7	43·5	65·6	·024	44·2	56·1	42·3	81·0	·032	39·7	44·7	36·6	53·4	……
55·7	70·4	55·6	94·6	·076	36·5	54·9	31·9	68·0	·077	37·5	41·7	35·1	44·0	·262
49·4	70·3	45·9	106·5	·000	43·5	52·3	39·4	66·5	·239	30·7	36·3	28·2	46·5	·062
53·3	57·3	57·6	65·0	……	39·7	47·3	35·4	75·3	·211	29·7	36·2	26·1	36·5	·102
48·0	66·4	43·2	114·0	·148	36·7	49·3	32·1	67·8	·294	21·0	30·5	18·4	33·0	·738
37·0	69·9	33·4	107·0	·000	40·5	51·5	39·6	68·8	·300	18·4	30·0 ?	12·8	33·5	·000
39·8	66·7	36·2	110·8	·000	29·4	52·1	25·8	78·2	·026	23·7	35·6	18·8	54·2	·000
39·7	66·7	36·2	114·6	·003	25·5	48·7	23·3	80·5	·010	15·0	26·8	13·3	35·0	……
47·1	68·3	41·6	112·2	·000	38·2	52·8	32·5	59·4	·001	18·2	38·6	14·6	49·6	·000
53·3	69·1	43·2	84·8	·000	37·5	50·5	32·7	82·8	·000	34·0	41·3	31·8	44·5	·000
46·0	70·7	44·4	102·3	……	30·9	50·7	27·9	64·4	·000	30·7	38·6	27·2	53·5	·000
54·2	66·5	51·1	73·5	·200	35·2	52·1	31·1	53·7	·000	35·6	44·0	……	47·5	·000

ACTINOMETER.

MAY 15, 16, 1846.

Makerstoun Mean Time of First Reading.				In Sun or Shade.	Observation.		Change in 60^s.	Effect of Sun.	Mean of Group.	Sun's Altitude.
					Begun.	Ended.				
d.	h.	m.	s.		Sc. div.	Sc. div.	Sc. div.	Sc. div.	Sc. div.	°
15	23	31	0	Sun	13·8	20·3	+6·5			
		32	30	Shade	20·7	20·8	+0·1	6·4		
		34	0	Sun	23·8	30·3	+6·5	6·6		
		35	30	Shade	30·3	30·0	−0·3	6·7		
		37	0	Sun	33·0	39·4	+6·4	6·9		
		38	30	Shade	39·1	38·5	−0·6	6·9	6·80	53·4
		40	0	Sun	41·4	47·7	+6·3	6·9		
		41	30	Shade	47·5	46·9	−0·6	6·9		
		43	0	Sun	49·7	55·9	+6·2	6·9		
		44	30	Shade	18·3	17·5	−0·8	7·0		
		46	0	Sun	20·3	26·5	+6·2			
16	0	27	30	Sun	22·3	27·0	+4·7			
		29	0	Shade	24·8	22·4	−2·4	5·9	6·00	53·0
		30	30	Sun	24·6	27·0	+2·4	6·1		
		32	0	Shade	24·8	19·8	−5·0			

MAY 31, 1846.

d.	h.	m.	s.	In Sun or Shade.	Begun.	Ended.	Change in 60^s.	Effect of Sun.	Mean of Group.	Sun's Altitude.
31	21	26	45	Sun	17·9	26·6	+8·7			
		28	15	Shade	27·2	28·0	+0·8	8·0		
		29	45	Sun	31·9	40·7	+8·8	8·2		
		31	15	Shade	41·3	41·8	+0·5	8·0		
		32	45	Sun	45·6	53·8	+8·2	7·9		
		34	15	Shade	54·1	54·3	+0·2	8·1	8·21	47·4
		35	45	Sun	16·5	24·9	+8·4	8·4		
		37	15	Shade	25·2	25·1	−0·1	8·4		
		38	45	Sun	28·7	36·9	+8·2	8·4		
		40	15	Shade	37·0	36·7	−0·3	8·5		
		41	45	Sun	40·3	48·6	+8·3			
31	22	9	45	Sun	12·3	20·5	+8·2			
		11	15	Shade	20·1	19·0	−1·1	9·0		
		12	45	Sun	22·7	30·4	+7·7	9·1		
		14	15	Shade	29·9	28·3	−1·6	9·5		
		15	45	Sun	31·8	39·9	+8·1	9·6		
		17	15	Shade	39·3	37·9	−1·4	9·4	9·39	51·7
		18	45	Sun	15·9	23·8	+7·9	9·7		
		20	15	Shade	23·0	20·8	−2·2	9·7		
		21	45	Sun	23·7	30·8	+7·1	9·3		
		23	15	Shade	29·9	27·7	−2·2	9·2		
		24	45	Sun	30·8	37·8	+7·0			
31	22	31	45	Sun	5·3	14·5	+9·2			
		33	21	Shade	16·0	10·2	−5·8	13·7		
		34	45	Sun	11·6	18·2	+6·6	12·7		
		36	15	Shade	16·9	10·4	−6·5	12·3		
		37	45	Sun	12·9	17·9	+5·0	12·1	11·97	53·4
		39	15	Shade	15·3	7·6	−7·7	11·6		
		40	45	Sun	8·0	10·7	+2·7	10·4		
		42	15	Shade	20·1	12·3	−7·8	11·0		
		43	45	Sun	14·2	17·8	+3·6			

MAY 31—JUNE 1, 1846.

Makerstoun Mean Time of First Reading.				In Sun or Shade.	Observation.		Change in 60^s.	Effect of Sun.	Mean of Group.	Sun's Altitude.
					Begun.	Ended.				
d.	h.	m.	s.		Sc. div.	Sc. div.	Sc. div.	Sc. div.	Sc. div.	°
31	22	47	45	Sun	33·2	39·9	+6·7			
		49	15	Shade	38·7	35·8	−2·9	9·8		
		50	45	Sun	38·8	46·0	+7·2	10·2		
		52	15	Shade	44·8	41·7	−3·1	9·5	9·70	54·4
		53	45	Sun	44·7	50·3	+5·6	9·3		
		55	15	Shade	48·3	44·0	−4·3	9·8		
		56	45	Sun	22·2	27·6	+5·4	9·6		
		58	15	Shade	25·7	21·6	−4·1	9·7		
		59	45	Sun	24·2	29·9	+5·7	9·8		
31	23	1	15	Shade	27·9	23·7	−4·2	9·6	9·64	54·9
		2	45	Sun	25·8	30·8	+5·0	9·4		
		4	15	Shade	28·7	24·1	−4·6	9·7		
		5	45	Sun	26·4	31·6	+5·2			
1	0	54	45	Sun	36·7	45·8	+9·1			
		56	15	Shade	46·0	45·7	−0·3	9·1		
		57	45	Sun	49·4	58·0	+8·6	9·3		
		59	15	Shade	58·0	57·0	−1·0	9·5		
1	1	0	45	Sun	31·0	39·4	+8·4	9·4	9·36	54·4
		2	15	Shade	39·2	38·1	−1·1	9·4		
		3	45	Sun	41·7	49·8	+8·1	9·3		
		5	15	Shade	49·3	47·9	−1·4	9·5		
		6	45	Sun	51·6	59·8	+8·2	9·6		
		8	15	Shade	59·5	58·2	−1·3	9·3		
		9	45	Sun	61·6	69·5	+7·9	9·4		
		11	15	Shade	69·0	67·4	−1·6	9·5	9·53	53·8
		12	45	Sun	30·7	38·6	+7·9	9·7		
		14	15	Shade	38·0	36·0	−2·0	9·6		
		15	45	Sun	39·5	46·9	+7·4	9·6		
		17	15	Shade	45·9	43·5	−2·4	9·5		
		18	45	Sun	46·5	53·3	+6·8	9·5		
		20	25	Shade	51·8	48·9	−2·9	9·6		
		21	45	Sun	50·7	57·4	+6·7	9·8	9·77	53·
		23	15	Shade	56·1	52·8	−3·3	10·3		
		24	45	Sun	55·8	63·0	+7·2	10·0		
		26	15	Shade	62·1	59·7	−2·4	9·7		
		27	55	Sun	63·9	71·3	+7·4			
1	1	50	45	Sun	17·5	22·3	+4·8			
		52	15	Shade	19·8	14·8	−5·0	10·3		
		53	45	Sun	17·2	23·0	+5·8	10·4		
		55	15	Shade	21·1	16·9	−4·2	9·7	10·24	49·
		56	45	Sun	19·5	24·8	+5·3	10·1		
		58	15	Shade	57·4	52·1	−5·3	10·7		
		59	45	Sun	54·5	60·0	+5·5	10·6		
1	2	1	15	Shade	58·0	53·0	−5·0	10·7		
		2	45	Sun	55·5	61·3	+5·8	10·9	10·70	49·
		4	15	Shade	59·1	53·9	−5·2	10·7		
		5	45	Sun	56·4	61·6	+5·2	10·6		

May 15^d 23^h 44^m. Screw withdrawn.
May 16^d 0^h 30^m. Clouds near the sun.
May 31^d 21^h 35^m. 30^s. Screw withdrawn.
May 31^d 22^h 10^m. Dry thermometer, 67°·5, wet thermometer, 55°·5.
May 31^d 22^h 31^m—45^m. Glass plate removed from the instrument, replaced after 22^h 45^m.
May 31^d 22^h 34^m 30^s. Screw turned in.
May 31^d 22^h 42^m 0^s. Screw turned in.
May 31^d 22^h 58^m. Sky somewhat milky.
May 31^d 23^h 6^m. During the preceding observations, there was a small bubble of air about 0·1 inch in diameter in the bulb attached to small piece of sediment.
June 1^d 1^h 58^m 0^s. Screw turned in.

ACTINOMETER.

JUNE 1, 1846.

rstoun Time f Reading.	In Sun or Shade.	Observation.		Change in 60s.	Effect of Sun.	Mean of Group.	Sun's Altitude.
		Begun.	Ended.				
m. s.		Sc. div.	Sc. div.	Sc. div.	Sc. div.	Sc. div.	°
7 15	Shade	59·0	53·3	− 5·7	11·1		
8 45	Sun	55·3	60·9	+ 5·6	11·1		
10 15	Shade	58·7	53·5	− 5·2	10·6	10·70	48·4
11 45	Sun	55·2	60·4	+ 5·2	10·4		
13 15	Shade	58·1	52·8	− 5·3	10·3		
14 45	Sun	55·0	59·7	+ 4·7	10·2		
16 15	Shade	57·1	51·4	− 5·7	10·5		
17 45	Sun	53·4	58·3	+ 4·9	10·4	10·40	47·6
19 15	Shade	56·0	50·6	− 5·4	10·4		
20 45	Sun	52·8	57·8	+ 5·0	10·5		
22 15	Shade	55·4	49·7	− 5·7	10·7		
23 45	Sun	51·5	56·5	+ 5·0	10·3		
25 15	Shade	54·2	49·3	− 4·9	10·1	10·38	46·8
26 45	Sun	51·6	57·1	+ 5·5	10·5		
28 15	Shade	54·4	49·3	− 5·1	10·3		
29 45	Sun	51·0	55·8	+ 4·8	10·2		
31 15	Shade	53·2	47·4	− 5·8	10·3		
32 45	Sun	49·2	53·4	+ 4·2	10·1	10·12	45·9
34 15	Shade	50·7	44·7	− 6·0	10·0		
35 45	Sun	46·4	50·3	+ 3·9	10·0		
37 15	Shade	57·6	51·4	− 6·2	10·1		
38 45	Sun	52·7	56·6	+ 3·9	9·9		
40 15	Shade	53·9	48·2	− 5·7	10·0	9·92	44·9
41 45	Sun	49·9	54·6	+ 4·7	9·9		
43 15	Shade	52·3	47·6	− 4·7	9·7		
44 45	Sun	49·7	54·9	+ 5·2	9·8		
46 15	Shade	52·8	48·3	− 4·5	9·9		
47 45	Sun	50·6	56·3	+ 5·7	10·3	10·02	44·0
49 15	Shade	54·4	49·7	− 4·7	10·1		
50 45	Sun	51·7	56·7	+ 5·0	10·0		
52 15	Shade	54·2	48·8	− 5·4	9·8		
53 45	Sun	50·6	54·4	+ 3·8	9·6		
55 15	Shade	51·6	45·5	− 6·1	9·8	9·72	43·1
56 45	Sun	46·8	50·4	+ 3·6	9·6		
58 15	Shade	47·6	41·7	− 5·9	9·8		
59 45	Sun	43·2	47·4	+ 4·2			
34 45	Sun	51·6	57·2	+ 5·6			
36 15	Shade	55·9	52·8	− 3·1	8·7		
37 45	Sun	55·0	60·7	+ 5·7	8·7		
39 15	Shade	59·5	56·7	− 2·8	8·4		
40 45	Sun	59·1	64·7	+ 5·6	8·8		
42 15	Shade	63·4	59·9	− 3·5	9·1	8·79	36·9
43 45	Sun	62·3	67·9	+ 5·6	8·9		
45 15	Shade	66·6	63·4	− 3·2	9·0		
46 45	Sun	65·9	71·8	+ 5·9	8·9		
48 15	Shade	70·6	67·8	− 2·8	8·6		
49 45	Sun	70·2	76·0	+ 5·8			

JUNE 1, 1846.

Makerstoun Mean Time of First Reading.	In Sun or Shade.	Observation.		Change in 60s.	Effect of Sun.	Mean of Group.	Sun's Altitude.
		Begun.	Ended.				
d. h. m. s.		Sc. div.	Sc. div.	Sc. div.	Sc. div.	Sc. div.	°
1 4 0 45	Sun	57·3	62·8	+ 5·5			
2 15	Shade	61·8	58·7	− 3·1	8·7		
3 45	Sun	61·2	66·9	+ 5·7	8·7		
5 15	Shade	65·8	62·8	− 3·0	8·5		
6 45	Sun	64·9	70·2	+ 5·3	8·5	8·61	33·3
8 15	Shade	68·9	65·6	− 3·3	8·6		
9 55	Sun	68·7	74·1	+ 5·4	8·6		
11 15	Shade	73·4	70·3	− 3·1	8·7		
12 45	Sun	72·8	78·6	+ 5·8			
1 5 4 45	Sun	51·3	56·1	+ 4·8			
6 15	Shade	55·0	52·1	− 2·9	7·6		
7 45	Sun	54·0	58·7	+ 4·7	7·7		
9 15	Shade	57·4	54·4	− 3·0	7·4		
10 45	Sun	55·7	59·8	+ 4·1	7·2		
12 15	Shade	58·6	55·4	− 3·2	7·3		
13 45	Sun	57·2	61·3	+ 4·1	7·4	7·25	24·1
15 15	Shade	60·1	56·8	− 3·3	7·2		
16 45	Sun	58·3	62·0	+ 3·7	7·0		
18 15	Shade	60·6	57·2	− 3·4	7·0		
19 45	Sun	58·7	62·1	+ 3·4	6·9		
21 15	Shade	60·7	57·0	− 3·7	7·1		
22 45	Sun	58·6	62·0	+ 3·4			
1 6 24 45	Sun	53·9	57·2	+ 3·3			
26 15	Shade	56·9	55·6	− 1·3	4·5		
27 45	Sun	56·8	59·9	+ 3·1	4·5		
29 15	Shade	59·4	57·9	− 1·5	4·6		
30 45	Sun	59·0	62·1	+ 3·1	4·6		
32 15	Shade	61·6	60·0	− 1·6	4·5	4·43	13·3
33 45	Sun	61·2	63·9	+ 2·7	4·4		
35 15	Shade	63·2	61·4	− 1·8	4·3		
36 45	Sun	62·5	64·8	+ 2·3	4·2		
38 15	Shade	64·1	62·1	− 2·0	4·3		
39 45	Sun	63·0	65·2	+ 2·2			
1 7 6 45	Sun	33·4	34·8	+ 1·4			
8 15	Shade	34·1	32·8	− 1·3	2·7		
9 45	Sun	54·3	55·8	+ 1·5	2·8		
11 15	Shade	55·3	54·1	− 1·2	2·5		
12 45	Sun	54·8	56·0	+ 1·2	2·4		
14 15	Shade	55·4	54·2	− 1·2	2·4	2·43	7·9
15 45	Sun	54·8	55·9	+ 1·1	2·3		
17 15	Shade	55·3	54·0	− 1·3	2·3		
18 45	Sun	54·6	55·4	+ 0·8	2·2		
20 15	Shade	54·9	53·4	− 1·5	2·3		
21 45	Sun	53·7	54·5	+ 0·8			

June 1d 2h 25m. There has been a very thin cirrous haze over a considerable portion of the sky the most of the day.

June 1d 2h 37m 0s. Screw turned in.

June 1d 6h 25m. No clouds near the sun; hazy near south horizon.

June 1d 6h 34m. Light breeze.

June 1d 7h 9m 30s. Screw turned in.

ACTINOMETER.

Makerstoun Mean Time of First Reading.	In Sun or Shade.	Observation.		Change in 60^s.	Effect of Sun.	Mean of Group.	Sun's Altitude.
		Begun.	Ended.				
d. h. m. s.		Sc. div.	Sc. div.	Sc. div.	Sc. div.	Sc. div.	°
JUNE 1, 2, 1846.							
1 20 19 50	Sun	45·4	52·4	+7·0			
21 20	Shade	53·3	54·7	+1·4	5·4	5·92	38·9
22 50	Sun	57·7	64·4	+6·7	5·7		
24 20	Shade	66·3	67·0	+0·7	5·8		
25 50	Sun	70·1	76·4	+6·3	5·8		
27 20	Shade	77·0	77·3	+0·3	6·1		
28 50	Sun	80·2	86·7	+6·5	6·2		
30 20	Shade	87·0	87·4	+0·4	6·1		
31 50	Sun	54·3	60·8	+6·5	6·3		
33 20	Shade	61·2	61·3	+0·1	6·3	6·53	40·5
34 50	Sun	64·7	71·0	+6·3	6·3		
36 20	Shade	71·2	71·2	0·0	6·4		
38 0	Sun	75·0	81·5	+6·5	6·6		
39 20	Shade	81·6	81·3	−0·3	6·7		
40 50	Sun	53·7	60·0	+6·3	6·7		
42 20	Shade	60·0	59·6	−0·4	6·7		
43 50	Sun	62·3	68·6	+6·3			
1 21 36 50	Sun	41·8	47·1	+5·3			
38 20	Shade	46·1	43·8	−2·3	7·4	7·56	48·4
39 50	Sun	46·0	50·9	+4·9	7·4		
41 20	Shade	49·4	46·7	−2·7	7·5		
42 50	Sun	48·4	53·1	+4·7	7·6		
44 20	Shade	51·7	48·6	−3·1	7·9		
45 50	Sun	50·4	55·3	+4·9	7·6		
47 20	Shade	54·4	52·0	−2·4	7·5		
48 50	Sun	54·3	59·5	+5·2			
JUNE 2, 3, 1846.							
2 17 30 0	Sun	44·3	46·9	+2·6			
31 30	Shade	46·6	45·7	−0·9	3·3	3·62	15·8
33 0	Sun	46·7	49·0	+2·3	3·3		
34 30	Shade	48·6	47·5	−1·1	3·4		
36 0	Sun	48·4	50·8	+2·4	3·5		
37 30	Shade	50·4	49·3	−1·1	3·5		
39 0	Sun	50·3	52·9	+2·6	3·6		
40 30	Shade	52·4	51·4	−1·0	3·6		
42 0	Sun	52·5	55·0	+2·5	3·7		
43 30	Shade	54·4	53·0	−1·4	4·0		
45 0	Sun	54·0	56·7	+2·7	4·0		
46 30	Shade	56·1	54·8	−1·3	3·9		
48 0	Sun	55·9	58·4	+2·5			

Makerstoun Mean Time of First Reading.	In Sun or Shade.	Observation.		Change in 60^s.	Effect of Sun.	Mean of Group.	Sun' Alti- tude
		Begun.	Ended.				
d. h. m. s.		Sc. div.	Sc. div.	Sc. div.	Sc. div.	Sc. div.	°
JUNE 2, 3, 1846.							
2 18 21 0	Sun	46·8	50·5	+3·7			
22 30	Shade	50·1	48·8	−1·3	4·9	5·24	22·
24 0	Sun	50·0	53·6	+3·6	5·2		
25 30	Shade	53·0	51·2	−1·8	5·3		
27 0	Sun	52·7	56·1	+3·4	5·1		
28 30	Shade	55·4	53·7	−1·7	5·3		
30 0	Sun	55·0	58·7	+3·7	5·4		
31 30	Shade	57·9	56·1	−1·8	5·4		
33 0	Sun	57·7	61·1	+3·4	5·1		
34 30	Shade	60·5	58·9	−1·6	5·2		
36 0	Sun	60·4	64·3	+3·9	5·4		
37 30	Shade	63·7	62·4	−1·3	5·3		
39 0	Sun	64·5	68·5	+4·0			
2 19 15 0	Sun	45·9	51·1	+5·2			
16 30	Shade	51·0	50·4	−0·6	5·9	6·08	30
18 0	Sun	52·9	58·4	+5·5	6·2		
19 30	Shade	58·2	57·5	−0·7	6·0		
21 0	Sun	59·7	64·8	+5·1	5·8		
22 30	Shade	64·5	63·7	−0·8	6·0		
24 0	Sun	66·0	71·3	+5·3	6·2		
25 30	Shade	71·0	70·1	−0·9	6·1		
27 0	Sun	72·6	77·8	+5·2	6·2		
28 30	Shade	77·6	76·5	−1·1	6·3		
30 0	Sun	78·6	83·8	+5·2			
2 20 35 0	Sun	39·0	46·1	+7·1			
36 30	Shade	46·2	45·7	−0·5	7·7	7·89	41
38 0	Sun	48·9	56·2	+7·3	7·8		
39 30	Shade	56·1	55·6	−0·5	7·6		
41 0	Sun	58·7	65·6	+6·9	7·5		
42 30	Shade	65·5	64·7	−0·8	7·8		
44 0	Sun	67·7	74·7	+7·0	7·9		
45 30	Shade	74·5	73·4	−1·1	8·2		
47 0	Sun	76·3	83·4	+7·1	8·2		
48 30	Shade	83·3	82·2	−1·1	8·3		
50 0	Sun	85·1	92·4	+7·3			
2 21 45 0	Sun	51·3	59·0	+7·7			
46 30	Shade	58·6	56·8	−1·8	9·3	9·29	49
48 0	Sun	60·0	67·3	+7·3	9·3		
49 30	Shade	66·8	64·6	−2·2	9·3		
51 0	Sun	67·4	74·4	+7·0	9·1		
52 30	Shade	73·7	71·8	−1·9	9·1		
54 0	Sun	75·0	82·5	+7·5	9·4		
55 30	Shade	82·1	80·2	−1·9	9·5		
57 0	Sun	83·4	91·0	+7·6	9·4		
58 30	Shade	90·6	88·8	−1·8	9·2		
2 22 0 0	Sun	66·7	73·8	+7·1			

June 1^d 21^h 37^m. Breeze; a few patches of cloud, none near the sun; hazy from horizon to 20° altitude.

June 2^d 17^h 35^m. Cloudless; haze on horizon.

June 2^d 20^h 35^m. Sky very favourable.

June 2^d 21^h 50^m. Splendid sky.

June 2^d 21^h 59^m 45^s. Screw withdrawn.

ACTINOMETER.

erstoun n Time of Reading.	In Sun or Shade.	Observation.		Change in 60s.	Effect of Sun.	Mean of Group.	Sun's Altitude.
		Begun.	Ended.				
m. s.		Sc. div.	Sc. div.	Sc. div.	Sc. div.	Sc. div.	°
		JUNE 2, 1846.					
7 0	Sun	37·9	43·8	+5·9			
8 30	Shade	40·7	34·0	−6·7	12·5		
10 0	Sun	69·2	75·0	+5·8	12·3		
11 30	Shade	71·3	65·1	−6·2	11·6		
13 0	Sun	66·7	71·8	+5·1	12·3	12·83	51·5
14 30	Shade	68·6	60·4	−8·2	13·7		
16 0	Sun	62·6	68·4	+5·8	13·9		
17 30	Shade	65·7	57·7	−8·0	13·5		
19 0	Sun	59·9	65·1	+5·2			
28 0	Sun	63·7	71·6	+7·9			
29 30	Shade	70·9	68·8	−2·1	9·8		
31 0	Sun	72·1	79·7	+7·6	9·8		
32 30	Shade	79·0	76·7	−2·3	9·8		
34 0	Sun	79·8	87·1	+7·3	9·8	9·81	53·3
35 30	Shade	86·1	83·3	−2·8	10·0		
37 0	Sun	62·3	69·3	+7·0	9·7		
38 30	Shade	68·4	65·7	−2·7	9·8		
40 0	Sun	69·0	76·2	+7·2			
43 0	Sun	80·6	87·4	+6·8			
44 30	Shade	84·6	78·2	−6·4	11·8		
46 0	Sun	78·4	82·4	+4·0	12·5		
47 30	Shade	78·9	68·2	−10·7	13·9		
49 0	Sun	68·4	70·8	+2·4	13·4		
50 30	Shade	65·7	54·4	−11·3	14·8		
52 0	Sun	75·3	79·8	+4·5	13·8	12·89	54·6
53 30	Shade	76·0	68·7	−7·3	13·2		
55 0	Sun	71·5	78·6	+7·1	13·2		
56 30	Shade	76·3	71·3	−5·0	11·7		
58 0	Sun	74·2	80·4	+6·2	11·5		
59 30	Shade	78·3	72·6	−5·7	12·0		
2 1 0	Sun	74·5	80·8	+6·3			
2 5 0	Sun	68·6	75·8	+7·2			
6 30	Shade	75·0	72·7	−2·3	9·8		
8 0	Sun	75·8	83·6	+7·8	10·2		
9 30	Shade	82·6	80·0	−2·6	10·5		
11 0	Sun	83·3	91·3	+8·0	10·6	10·33	55·6
12 30	Shade	65·4	62·9	−2·5	10·5		
14 0	Sun	66·3	74·4	+8·1	10·5		
15 30	Shade	73·9	71·6	−2·3	10·2		
17 0	Sun	74·7	82·3	+7·6			

Makerstoun Mean Time of First Reading.	In Sun or Shade.	Observation.		Change in 60s.	Effect of Sun.	Mean of Group.	Sun's Altitude.
		Begun.	Ended.				
d. h. m. s.		Sc. div.	Sc. div.	Sc. div.	Sc. div.	Sc. div.	°
		JUNE 2, 1846.					
2 23 38 0	Sun	43·8	50·2	+6·4			
39 30	Shade	49·2	46·3	−2·9	9·6		
41 0	Sun	49·1	56·2	+7·1	10·0		
42 30	Shade	55·2	52·3	−2·9	10·0		
44 0	Sun	55·4	62·4	+7·0	9·5	9·79	56·6
45 30	Shade	61·5	59·3	−2·2	9·5		
47 0	Sun	62·7	70·3	+7·6	10·0		
48 30	Shade	69·7	67·2	−2·5	9·9		
50 0	Sun	70·7	78·0	+7·3			
		JUNE 16, 17, 1846.					
16 23 39 15	Sun	31·6	40·7	+9·1			
40 45	Shade	41·4	41·4	0·0	8·6		
42 15	Sun	45·1	53·3	+8·2	8·4		
43 45	Shade	53·5	53·1	−0·4	7·9		
45 15	Sun	56·6	63·3	+6·7	7·3	8·13	57·7
46 45	Shade	63·2	62·4	−0·8	7·9		
48 15	Sun	65·5	73·1	+7·6	8·5		
49 45	Shade	72·9	72·0	−0·9	8·3		
51 15	Sun	75·6	82·9	+7·3			
17 0 27 15	Sun	12·6	18·1	+5·5			
28 45	Shade	16·4	12·2	−4·2	9·5		
30 15	Sun	14·6	19·8	+5·2	9·6		
31 45	Shade	73·3	68·8	−4·5	9·5		
33 25	Sun	71·6	76·4	+4·8	9·4		
34 45	Shade	75·1	70·3	−4·8	9·9	9·48	57·2
37 15	Sun	77·4	82·7	+5·3	9·8		
38 45	Shade	81·0	76·8	−4·2	9·3		
40 15	Sun	79·0	84·0	+5·0	9·1		
41 45	Shade	82·1	78·2	−3·9	9·2		
43 15	Sun	80·7	86·3	+5·6			
17 1 17 15	Sun	66·1	71·9	+5·8			
18 45	Shade	70·5	66·7	−3·8	9·3		
20 15	Sun	69·3	74·6	+5·3	9·1		
21 45	Shade	72·9	69·1	−3·8	9·5		
23 15	Sun	71·7	77·7	+6·0	10·0	9·51	54·3
24 45	Shade	76·3	72·0	−4·3	9·6		
26 15	Sun	74·0	78·6	+4·6	9·3		
27 45	Shade	76·3	71·3	−5·0	9·8		
29 15	Sun	73·3	78·3	+5·0			

June 2^{d} 22^{h} 7^{m}—20^{m}. Glass plate removed from the instrument; replaced after 20^{m}.
June 2^{d} 22^{h} 9^{m} 45^{s}. Screw turned in.
June 2^{d} 22^{h} 13^{m}. Two very small patches of cloud formed to SE.; sun very clear.
June 2^{d} 22^{h} 36^{m} 45^{s}. Screw withdrawn.
June 2^{d} 22^{h} 43^{m}—23^{h} 2^{m}. Glass plate removed from the instrument; replaced after 2^{m}.
June 2^{d} 23^{h} 8^{m}. Patches of cumuli appearing on various parts of the horizon.
June 2^{d} 23^{h} 12^{m} 15^{s}. Screw withdrawn.
June 2^{d} 23^{h} 43^{m}. Cumuli increasing; dry thermometer 77°·5; wet thermometer 62°·4.
June 16^{d} 23^{h} 44^{m}. A few cumuli about the horizon.
June 17^{d} 0^{h} 31^{m} 30^{s}. Screw turned in.
June 17^{d} 0^{h} 36^{m}. One set of observations missed.

ACTINOMETER.

Makerstoun Mean Time of First Reading.	In Sun or Shade.	Observation. Begun.	Observation. Ended.	Change in 60^s.	Effect of Sun.	Mean of Group.	Sun's Altitude.
d. h. m. s.		Sc. div.	Sc. div.	Sc. div.	Sc. div.	Sc. div.	°
JULY 2, 3, 1847.							
2 21 23 12	Sun	43·2	57·7	+14·5			
24 42	Shade	58·2	57·9	− 0·3	14·7		
26 12	Sun	63·5	77·8	+14·3	14·9		
27 42	Shade	81·3	80·4	− 0·9	15·0		
29 12	Sun	11·7	25·7	+14·0	15·0	15·04	46·9
30 42	Shade	25·9	24·8	− 1·1	15·0		
32 12	Sun	30·0	43·7	+13·7	15·2		
33 42	Shade	43·6	41·7	− 1·9	15·5		
35 12	Sun	46·7	60·3	+13·6			
2 21 57 12	Sun	28·8	40·2	+11·4			
58 42	Shade	38·0	30·8	− 7·2	18·8		
2 22 0 12	Sun	34·8	46·6	+11·8	19·2		
1 42	Shade	45·7	38·1	− 7·6	18·7		
3 12	Sun	41·5	52·0	+10·5	18·7		
4 42	Shade	48·9	40·2	− 8·7	18·2	18·78	50·8
6 17	Sun	44·2	52·8	+ 8·6	18·1		
7 42	Shade	49·2	39·0	−10·2	19·6		
9 12	Sun	42·1	52·3	+10·2	19·4		
10 42	Shade	49·4	41·1	− 8·3	18·3		
12 12	Sun	43·8	53·6	+ 9·8			
2 22 39 12	Sun	25·0	35·2	+10·2			
40 42	Shade	32·1	23·3	− 8·8	18·4		
42 12	Sun	26·7	35·7	+ 9·0	17·8	18·10	54·2
43 42	Shade	32·1	23·3	− 8·8	18·1		
45 12	Sun	26·2	35·8	+ 9·6			
2 22 50 12	Sun	38·1	46·7	+ 8·6			
51 42	Shade	43·7	34·0	− 9·7	18·3		
53 12	Sun	37·0	45·6	+ 8·6	17·9	18·07	55·0
54 52	Shade	40·7	31·8	− 8·9	17·9		
56 12	Sun	34·3	43·8	+ 9·5			
2 22 59 12	Sun	36·8	42·4	+ 5·6			
2 23 0 42	Shade	37·2	23·8	−13·4	18·6		
2 12	Sun	45·8	50·7	+ 4·9	19·4		
3 42	Shade	45·6	30·0	−15·6	18·8	18·38	55·6
5 12	Sun	30·4	31·8	+ 1·4	16·0		
6 42	Shade	24·0	10·4	−13·6	19·1		
8 12	Sun	13·2	22·7	+ 9·5			

Makerstoun Mean Time of First Reading.	In Sun or Shade.	Observation. Begun.	Observation. Ended.	Change in 60^s.	Effect of Sun.	Mean of Group.	Su A tu
d. h. m. s.		Sc. div.	Sc. div.	Sc. div.	Sc. div.	Sc. div.	°
JULY 2, 3, 1847.							
2 23 12 12	Sun	39·9	49·0	+ 9·1			
13 42	Shade	46·1	38·1	− 8·0	17·6		
15 12	Sun	41·2	51·3	+10·1	18·1		
16 42	Shade	49·0	41·0	− 8·0	17·5	17·70	56
18 12	Sun	43·8	52·7	+ 8·9	17·3		
19 42	Shade	49·1	40·2	− 8·9	18·0		
21 12	Sun	43·0	52·3	+ 9·3			
2 23 40 12	Sun	44·1	54·5	+10·4			
41 42	Shade	52·9	47·8	− 5·1	15·9		
43 12	Sun	51·9	63·1	+11·2	16·6		
44 42	Shade	61·6	55·9	− 5·7	16·6		
46 12	Sun	59·5	70·2	+10·7	16·6	16·69	57
47 42	Shade	68·3	62·2	− 6·1	17·3		
49 12	Sun	66·2	77·8	+11·6	17·4		
50 42	Shade	76·4	70·9	− 5·5	16·4		
52 12	Sun	36·0	46·1	+10·1			
3 1 17 12	Sun	40·6	55·9	+15·3			
18 42	Shade	55·2	51·0	− 4·2	18·5		
20 12	Sun	55·7	69·1	+13·4	18·1		
21 42	Shade	67·9	62·7	− 5·2	18·0		
23 12	Sun	66·3	78·5	+12·2	17·9	18·36	5
24 42	Shade	77·1	71·0	− 6·1	18·0		
26 12	Sun	75·4	87·0	+11·6	18·4		
27 42	Shade	85·4	77·9	− 7·5	19·6		
29 12	Sun	81·4	94·1	+12·7			
3 2 15 12	Sun	19·7	30·4	+10·7			
16 42	Shade	28·8	22·9	− 5·9	17·3		
18 12	Sun	26·9	39·1	+12·2	18·3		
19 42	Shade	37·8	31·6	− 6·2	17·7		
21 12	Sun	35·0	45·9	+10·9	18·3	18·33	4
22 42	Shade	44·0	35·4	− 8·6	19·6		
24 12	Sun	37·8	48·8	+11·0	19·0		
25 42	Shade	47·2	39·7	− 7·5	18·1		
27 12	Sun	41·8	52·0	+10·2			
3 2 56 12	Sun	23·4	34·7	+11·3			
57 42	Shade	32·9	27·0	− 5·9	17·2		
59 12	Sun	30·7	42·1	+11·4	16·5		
3 3 0 42	Shade	41·0	36·7	− 4·3	16·2		
2 12	Sun	40·9	53·2	+12·3	17·1	16·81	48
3 42	Shade	52·0	46·7	− 5·3	16·9		
5 12	Sun	50·7	61·7	+11·0	16·6		
6 42	Shade	59·8	53·9	− 5·9	17·2		
8 12	Sun	58·2	69·8	+11·6			

July 2^{d}, 1847. The cylinder of the actinometer having burst in the previous winter, the broken parts have been replaced by new or
July 2^{d} 21^{h} 23^{m}. Observations made at east end of Observatory.
July 2^{d} 21^{h} 30^{m}. Dry thermometer, 63°·7; wet thermometer, 59°·7.
July 2^{d} 21^{h} 57^{m}. Observations made on the south side of Observatory.
July 2^{d} 22^{h} 10^{m}. Barometer, 29·945 in.; dry thermometer, 65°·2; wet thermometer, 58°·7.
July 2^{d} 22^{h} 39^{m}. Observations made at west end of Observatory.
July 2^{d} 22^{h} 52^{m}. Dry thermometer, 68°·3; wet thermometer, 61°·0.
July 2^{d} 22^{h} 59^{m}—23^{h} 9^{m}. Glass plate removed from the instrument; replaced after 9^{m}.
July 2^{d} 23^{h} 44^{m}. Dry thermometer, 71°·6; wet thermometer, 62°·5.
July 3^{d} 1^{h} 22^{m}. Dry thermometer, 75°·0; wet thermometer, 61°·7; too much wind.
July 3^{d} 2^{h} 17^{m}. Dry thermometer, 75°·6; wet thermometer, 61°·9.

ACTINOMETER.

JULY 3, 1847.

Makerstoun Mean Time of First Reading.	In Sun or Shade.	Observation.		Change in 60ˢ.	Effect of Sun.	Mean of Group.	Sun's Altitude.
		Begun.	Ended.				
. h. m. s.		Sc. div.	Sc. div.	Sc. div.	Sc. div.	Sc. div.	°
3 3 26 12	Sun	29·7	39·6	+ 9·9			
27 42	Shade	37·0	29·3	− 7·7	17·6	17·76	39·9
29 12	Sun	31·9	41·8	+ 9·9	18·0		
30 42	Shade	38·3	29·7	− 8·6	18·2		
32 12	Sun	31·8	41·1	+ 9·3	17·4		
33 42	Shade	38·4	30·8	− 7·6	17·4		
35 12	Sun	33·9	44·1	+10·2	18·0		
36 42	Shade	41·7	33·7	− 8·0	17·7		
38 12	Sun	36·8	46·0	+ 9·2			
3 4 14 12	Sun	39·6	51·8	+12·2			
15 42	Shade	50·9	45·8	− 5·1	16·6	16·44	33·3
17 12	Sun	49·4	60·2	+10·8	16·3		
18 42	Shade	58·7	52·7	− 6·0	16·8		
20 12	Sun	55·9	66·6	+10·7	16·8		
21 42	Shade	65·2	59·0	− 6·2	16·4		
23 12	Sun	62·2	72·0	+ 9·8	16·2		
24 42	Shade	70·2	63·7	− 6·5	16·0		
26 12	Sun	66·5	75·7	+ 9·2			
3 5 3 12	Sun	50·3	61·0	+10·7			
4 42	Shade	60·2	56·3	− 3·9	14·2	14·40	26·4
6 12	Sun	59·9	69·8	+ 9·9	14·3		
7 42	Shade	68·3	63·4	− 4·9	14·6		
9 12	Sun	66·6	76·2	+ 9·6	14·5		
10 42	Shade	74·8	70·0	− 4·8	14·2		
12 12	Sun	37·7	46·9	+ 9·2	14·2		
13 42	Shade	45·6	40·4	− 5·2	14·8		
15 12	Sun	43·5	53·6	+10·1			
3 6 13 12	Sun	51·0	59·7	+ 8·7			
14 42	Shade	59·1	55·8	− 3·3	11·3	11·23	16·7
16 12	Sun	58·0	65·3	+ 7·3	10·9		
17 42	Shade	64·6	60·6	− 4·0	11·2		
19 12	Sun	62·8	69·8	+ 7·0	11·1		
20 42	Shade	68·9	64·6	− 4·3	11·3		
22 12	Sun	66·7	73·6	+ 6·9	11·4		
23 42	Shade	72·2	67·5	− 4·7	11·4		
25 12	Sun	69·2	75·8	+ 6·6			

JULY 3, 1847.

Makerstoun Mean Time of First Reading.	In Sun or Shade.	Observation.		Change in 60ˢ.	Effect of Sun.	Mean of Group.	Sun's Altitude.
		Begun.	Ended.				
d. h. m. s.		Sc. div.	Sc. div.	Sc. div.	Sc. div.	Sc. div.	°
3 7 16 12	Sun	55·0	59·3	+4·3			
17 42	Shade	58·6	54·8	−3·8	7·8	7·49	8·3
19 12	Sun	55·8	59·6	+3·8	7·9		
20 42	Shade	58·6	54·3	−4·3	7·9		
22 12	Sun	55·0	58·4	+3·4	7·6		
23 42	Shade	57·3	53·2	−4·1	7·3		
25 12	Sun	53·8	56·8	+3·0	7·1		
26 42	Shade	55·8	51·6	−4·2	7·3		
28 12	Sun	52·0	55·2	+3·2	7·5		
29 42	Shade	53·9	49·6	−4·3	7·0		
31 12	Sun	50·0	52·3	+2·3			
3 7 40 12	Sun	46·2	47·4	+1·2			
41 42	Shade	46·0	41·4	−4·6	5·5	4·67	5·3
43 12	Sun	41·3	41·9	+0·6	5·4		
44 42	Shade	40·3	35·4	−4·9	5·4		
46 12	Sun	35·1	35·5	+0·4	5·1		
47 42	Shade	33·8	29·2	−4·6	4·8		
49 12	Sun	29·1	29·2	+0·1	4·6		
50 42	Shade	27·3	23·0	−4·3	4·3		
52 12	Sun	22·8	22·8	0·0	4·2		
53 42	Shade	53·4	49·3	−4·1	4·0		
55 12	Sun	49·0	48·8	−0·2	4·2		
56 42	Shade	46·8	42·1	−4·7	3·9		
58 12	Sun	41·3	39·8	−1·5			
3 8 3 12	Sun	24·4	23·2	−1·2			
4 42	Shade	21·2	16·6	−4·6	3.2	2·29	3·0
6 12	Sun	15·4	13·7	−1·7	2·5		
7 42	Shade	47·1	43·2	−3·9	2·0		
9 12	Sun	42·2	40·0	−2·2	1·9		
10 42	Shade	38·2	33·8	−4·4	2·3		
12 12	Sun	32·5	30·5	−2·0	2·8		
13 42	Shade	28·8	23·6	−5·2	3·0		
15 12	Sun	23·4	21·0	−2·4	2·1		
16 42	Shade	19·2	15·4	−3·8	0·8		
18 12	Sun	13·8	10·1	−3·7	0·0		
19 42	Shade	8·3	4·7	−3·6	0·0		
21 12	Sun	3·0	−0·6	−3·6			

July 3^{d} 3^{h} 32^{m}. Dry thermometer, 76°·0 ; wet thermometer, 62°·8.
July 3^{d} 4^{h} 19^{m}. Dry thermometer, 74°·6 ; wet thermometer, 62°·6 ; barometer, 29·859 in.
July 3^{d} 6^{h} 21^{m}. Dry thermometer, 71°·7 ; wet thermometer, 60°·7.
July 3^{d} 7^{h} 24^{m}. Dry thermometer, 68°·4 ; wet thermometer, 59°·7 ; barometer, 29·825 in.
July 3^{d} 7^{h} 40^{m}. Observations made near the rain-guage. 58^{m}. The last sun observation not good ; the sun near trees.
July 3^{d} 8^{h} 11^{m}. The sun is about $1\frac{1}{4}$° distant from a ridge of land. 15^{m}. The sun just touches the projecting branch of a tree, the readings probably not affected by this. 18^{m}. About 0·4 of the sun's face visible. 21^{m} 12^{s}. Sun invisible.

DATES OF FLOWERING AND LEAFING OF PLANTS, &c.

Feb.	15.	Primula acaulis in flower. Crows coming.
	15.	Ranunculus Ficaria in flower.
	15.	Cratægus oxyacantha in leaf.
	15.	Corylus Avellana, catkins open.
	23.	Cratægus oxyacantha, leaves more developed.
	24.	Two bats seen; one seen by the gardener 10 days ago. Toads coupling.
	29.	Pulmonaria officinalis in flower.
March	1.	Buxus sempervirens in flower.
	1.	Larix Europæa in leaf.
	1.	Mercurialis perennis in flower.
	1.	Lychnis diurna in flower.
	1.	Sambucus nigra in leaf a week at least.
	1.	Larix Europæa in flower.
	1.	Ulmus montana in flower.
	1.	Fragaria vesca in flower.
	1.	Lamium purpureum in flower.
	1.	Prunus spinosa in leaf.
March	1.	Æsculus Hippocastanum in leaf.
	1.	Viola canina in flower.
	1.	Frogs coupling.
	11.	Humble bee seen.
	29.	Cerasus Padus in leaf at least a week.
April	3.	Swallows seen at Kelso.
	11.	Two swallows seen (Hirundo rustica.)
	12.	Agraphis nutans in flower; flower-stal very short, having been stunted by th late frost.
	12.	Pyrus aucuparia in leaf two or three day
Sept.	17.	The most of the swallows seem to hav gone off to-day.
Oct.	20.	Fraxinus excelsior, majority of leaves o one tree.
	31.	Platanus occidentalis, majority of leav off.
Nov.	3.	Fagus sylvatica, majority of leaves off.
	3.	Ulmus montana, id.

TEMPERATURE OF WATER IN THE COTTAGE AND GARDEN PUMP-WELLS, AND IN THE RIVER TWEED.

Gött. M. T.			Cottage.	Garden.
	d.	h.	°	°
March	9	5	44·4	46·6
	15	5	44·4	...
	23	5	44·3	46·9
	30	5	44·1	47·0
April	6	5	44·05	46·95
	20	5	44·5	47·7
	27	5	44·6	48·1
May	10	5	45·2	48·6

Gött. M. T.			Tweed.
	d.	h.	°
June	3	7	73·7
	4	8	73·3
	4	19½	67·6
	5	7½	73·9
	5	19	68·6
	6	9	73·4
	7	19	66·7
	16	8	75·2

Gott. M. T.			Tweed
	d.	h.	°
June	17	9	76·6
	17	19	71·5
	18	8	75·7
	18	18½	70·7
	19	18½	68·8
	20	7	69·2
	21	18½	66·

* June 18^{d} 18^{h}. River Tweed slightly discoloured by rain.

OBSERVATIONS

IN

MAGNETISM AND METEOROLOGY,

MADE AT

MAKERSTOUN IN SCOTLAND,

IN THE OBSERVATORY OF THE LATE

GENERAL SIR THOMAS MAKDOUGALL BRISBANE, BART., G.C.B., F.R.S.,

PRESIDENT OF THE ROYAL SOCIETY OF EDINBURGH,

FROM 1847 TO 1855,

PRINCIPALLY UNDER THE DIRECTION OF

JOHN ALLAN BROUN, F.R.S.,

ASTRONOMER TO HIS HIGHNESS THE RAJAH OF TRAVANCORE.

BEING A SUPPLEMENT TO VOLUME XXII. OF THE TRANSACTIONS OF THE
ROYAL SOCIETY OF EDINBURGH.

EDITED BY

BALFOUR STEWART, M.A.,

DIRECTOR OF THE KEW OBSERVATORY.

EDINBURGH:
PRINTED BY NEILL AND COMPANY.

MDCCCLX.

PREFACE.

THE Makerstoun Observations down to the commencement of 1847 were published at length in Vols. XVII. XVIII. and XIX. of the "Edinburgh Transactions."

Some time before the lamented decease of Sir T. MAKDOUGALL BRISBANE, the munificent founder of the Makerstoun Observatory (which took place on the 27th January 1860), it had been determined to continue the publication of the "Observations" down to the year 1855. This was carried into effect at the joint expense of the Royal Society of Edinburgh and of Sir T. M. BRISBANE, who had the satisfaction of seeing these sheets in proof before his death.

The Editor thinks it right to state somewhat more explicitly than has been done in the "Introduction" which follows, the names of those who have been from the first connected with the Makerstoun Observatory, and more especially during the period to which the following pages refer; and this not only in token of acknowledgment to those whose skill and labour produced valuable results, but as a guarantee to men of science that the observations treated of in this volume were carefully made and faithfully recorded.

The following statement is partly taken from a Report on the Makerstoun Observatory, made to General Sir T. M. BRISBANE by Mr JOHN ALLAN BROUN, and dated 1850.

The building was commenced early in 1841, but no observations were made till July of that year. The system adopted was limited, in the first instance, to a few daily observations, together with a participation in the complete series on term days.

In April 1842, the original observer, Mr RUSSELL, having resigned, the Observatory was placed under the direction of Mr JOHN ALLAN BROUN. In the beginning of 1843 Mr JOHN WELSH was, at Mr BROUN's recommendation, appointed as assistant, and the scheme of the observations was very largely expanded. It was next thought desirable to obtain the diurnal laws of magnetism and meteorology, in consequence of which Mr BROUN suggested the addition of another observer, and Mr Alexander Hogg, an ingenious mechanic who had been engaged in the construction of the Observatory (which was performed chiefly under his superintendence), and who had been afterwards employed as an observer on Term days, was in consequence appointed in the end of 1843.

In 1844 and 1845, a series of observations of all the magnetical and meteorological instruments was made hourly except on Sundays. It was originally proposed that this hourly series should extend through only two years; in 1846, therefore, the same system was adopted as in 1843. A more limited series of observations was made in the years 1847, 1848, and 1849.

After 1845 the ordinary observations at Makerstoun were chiefly made by Messrs Welsh and Hogg. The latter continued the observations in 1849, and thereafter, in accordance with instructions left by Mr Broun for his use, who also examined the Observatory in 1851.

In the autumn of 1849 Messrs Broun and Welsh left Makerstoun for Edinburgh, where the former continued the preparation of the last volume of the Makerstoun Results* for the press, Mr Welsh aiding in the reductions and preparations of tables; and with this work they were occupied till the spring of 1850.

In that volume the observations were fully discussed until the beginning of 1847, while certain results were obtained extending to November 1849.

It is the observations from 1847 to 1855 that are chiefly discussed in this Appendix; while, at the same time, certain general conclusions are drawn from the whole series of observations.

From 1849 Mr Hogg was almost entirely responsible for the accuracy of the observations—a duty for which his experience and fidelity rendered him well qualified. Mr Broun and Mr Welsh occasionally inspected the instruments. The former left England for India in November 1851. Mr Welsh had already, in 1850, been appointed to the charge of the Kew Observatory, and continued, so far as his other duties permitted, to take an interest in the Makerstoun Observations, and aided the Editor of this Appendix with his valuable advice down to the period of his premature decease in May 1859.

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* Edin. Trans., Vol. XIX.

TABLE OF CONTENTS.

CORRIGENDA IN THIS VOLUME OF GENERAL RESULTS.

Page xvi., Table 6, heading of last column, *for* mean *read* year
— 21, Table xxxviii., column "March" mean for 22^h, *for* 448·5 *read* 548·5
— 22, Table xxxix., column "Winter" mean for 10^h, *for* 0008 *read* 0036
— 33, Heading of page, *for* Magnetic Declination *read* Horizontal Component of Magnetic Force

CORRIGENDA IN THE VOLUME OF OBSERVATIONS FOR 1845 AND 1846.

Page 111, column "Gött. Mean Time," *for* October 1^d 5^h *read* October 1^d 17^h
— 116, Dec. 3^d 11^h 40^m Declination, *for* 25° 57′·51 *read* 24° 57′·51
— 153, Feb. 14^d 18^h wet Thermometer, *for* 33°·3 *read* 30°·3
— 153, Feb. 16^d 18^h, wet Thermometer, *for* 36°·5 *read* 35°·5
— 166, March 21^d 9^h, Diff., *for* 1°·4 *read* 2°·4
— 220, Aug. 14^d 14^h, dry Thermometer, *for* 56°·3 *read* 50°·3
— 245, Oct. 21^d 13^h, Barometer, *for* 29·045 *read* 30·045
— 312, 2d division, column "Gött. Mean Time," *for* 2^d 2^h 0^m *read* 5^d 2^h 0^m
— 312, column "Gött Mean Time," *for* Sept. 1^d 23^h 0^m *read* 1^d 22^h 0^m
— 340, first column, first line, *for* Nov. 17^d 8^h *read* Nov. 17^d 6^h
— 342, heading of page, *for* 1845 *read* 1846
— 343, last line, *for* Dec. 8^d 9^h 15^m *read* Dec. 9^d 9^h 15^m
— 380, June 12^d 18^h, Dry Thermometer, *for* 67°·0 *read* 57°·0

Note.—All the *hourly* observations of the bifilar magnetometer, from Dec. 4^d 3^h 1845 to the end of the year 1845, must be increased one scale division, the correction of -1 scale division (see Introduction, 1845, No. 43) having been accidentally applied twice. All the other Observations were corrected aright, and daily, monthly, and other mean values, are unaffected by the error.

CORRIGENDA IN THE VOLUME OF OBSERVATIONS FOR 1844.

Page 342, Table xi., transpose headings "Summer" and "Winter"
— 352, Table xix., first column opposite January, *for* 528 *read* 522
— 404, 3d line from bottom, *for* 36°·63 *read* 35°·63.
— 424, 2d line after Table xxiii., *for* Range =6·774 in. *read* Range =1·774 in.

CORRIGENDA IN THE VOLUME OF OBSERVATIONS FOR 1843.

Page 61, 4th line from bottom, *for* April 7^d 14^h 0^m *read* April 6^d 14^h 0^m
— 241, last line, *for* 0·00003 *read* 0·000030
— 276, Table xv., mean for Jan. 31, *for* 28·316 *read* 29·316
— 276, Table xv., mean for June 3, *for* 26·189 *read* 29·189

MAKERSTOUN, *May* 1850.

GENERAL RESULTS OF THE MAKERSTOUN OBSERVATIONS.

1. The detailed results of the Makerstoun Observations for each of the years 1842, 1843, and 1844, have already been given in the volumes containing the observations for these years; the detailed Tables of Results for the years 1845 and 1846 are given in pages 1 to 86 of this volume: general conclusions from the whole series of observations from 1841 to 1846, together with those from the monthly mean values till the end of 1849, are given in the pages immediately following.

2. In considering the following investigations, it will be of importance to bear in mind the numbers of Observations made daily, upon which the separate results depend; these are noted in the following scheme:—

Year.	No. of Daily Obs.	Intervals and Times of Daily Observations.	
1841 and 1842,	4,	Three hourly, between 20^h and 5^h,	Göttingen Mean Time,
1843,	9,*	Two hourly, between 18^h and 10^h	....
1844 and 1845,	24,	Hourly,	....
1846,	9,*	Two hourly, between 18^h and 10^h	....
1847,	5,	Three hourly, between 20^h and 8^h	....
1848 and 1849,	2,	At 23^h and 5^h,	....

3. All the monthly means from incomplete diurnal series have been reduced to means from hourly observations; the corrections having been deduced from the means for the corresponding hours in 1844 and 1845.

MAGNETIC DECLINATION.

TABLE 1.—Monthly Means of Magnetic Declination at Makerstoun.

Month.	1841.	1842.	1843.	1844.	1845.	1846.	1847.	1848.	1849.
	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
January	......	25 27·50	25 25·50	25 20·60	25 14·09	25 08·95	25 02·74	24 55·73	24 47·90
February	......	30·44	24·91	18·93	13·88	08·06	02·54	54·47	47·74
March	......	29·54	24·35	17·84	13·14	07·44	02·60	54·66	47·36
April	......	33·40	23·79	18·28	11·34	06·67	02·47	53·67	46·31
May	......	29·86	23·51	17·30	11·35	06·02	25 00·60	53·16	46·21
June	......	29·30	25·25	16·58	11·22	06·12	24 59·69	51·43	45·85
July	......	28·54	23·59	16·51	11·10	06·08	59·52	51·59	44·14
August	25 35·87	27·02	22·33	17·36	10·65	05·62	59·11	50·56	43·72
September	32·21	28·04	20·92	17·10	10·37	05·40	57·20	49·11	42·75
October	29·86	26·89	21·75	15·49	10·76	04·54	56·62	49·26	43·30
November	31·09	26·19	19·09	14·47	09·57	03·68	56·81	48·83	43·56
December	......	24·64	19·20	14·21	08·34	03·08	55·91	49·24	

* In the months of November and December 1843, an observation was made at 23^h Göttingen Mean Time. In 1846, 12 Observations were made daily; the intermediate observations (at 23^h, 1^h, and 7^h, Göttingen Mean Time) are employed for the diurnal period and ranges only.

Mean Westerly Declination and its secular change.—The mean declination for each month in each year, from August 1841 till November 1849, is given in Table I.; it diminishes generally from month to month; in the mid-summer months, however, it frequently increases.

4. The mean declination for each year, with the yearly value of secular change and its mean value for each four years are given in Table 2: the mean for 1841 has been deduced in assuming the change from 1841 to 1842 the same as that obtained from a comparison of the observations for four months of 1841 with the observations for the corresponding months of 1842; and the mean for 1849 has been found similarly from the comparison of the observations in the first eleven months of the years 1848 and 1849.

5. The mean yearly value of the secular change from the last column of Table 2 = 5′·92. Some irregularity appears in the values of the secular change from year to year, especially in those for the years 1846–1849, compared with the values for the preceding years; this marked difference, it is conceived, is not due to instrumental error, because no such amount of torsion in the suspension thread of the declination magnet has existed to produce it; and the observations of the bifilar and balance magnetometers indicate a similar variation in the value of the secular change for the year 1847–8. In that year, great magnetic convulsions occurred, the effects of which seem to have extended into the years 1848–9.

6. The last column of Table 2 appears to exhibit the *variation* of the yearly value of secular change; its increase as the needle moves farther from its greatest westerly position. Between 1842 and 1847 the secular motion from year to year is moderately equable. This is not the case with the motion from month to month, which is occasionally retrograde. We are induced to conclude, therefore, either that the secular motion varies from month to month, while nearly constant from year to year; or that the secular motion being uniform from month to month other motions are superposed: in either case, by reducing the mean positions for the several months to one epoch, the residual variations will be more clearly exposed, and it may be determined whether they obey any law related to season. Since we are aware that the secular motion for the same place is sometimes eastwards and sometimes westwards, it does not appear necessary to form any other hypothesis than that the secular change is the excess of the motions in one direction over those in the other, and to determine whether the amounts and directions of motion have any relation to season.

TABLE 2.—Yearly Means of Magnetic Declination and the Secular Change.

Year.	Mean W. Declination.		Secular Change.	
			Each Year.	Mean of 4 Years.
	°	′	′	′
1841	25	33·68		
1842	25	28·45	5·23	
1843	25	22·85	5·60	
1844	25	17·06	5·79	
1845	25	11·32	5·74	5·59
1846	25	5·97	5·35	5·62
1847	24	59·65	6·32	5·80
1848	24	51·81	7·84	6·31
1849	24	45·12	6·69	6·30

7. *Annual Period of Magnetic Declination.*—In the discussions for 1844 the apparent law of annual variation has been offered with some confidence, and that chiefly because of the considerable agreement of four years' observations where the variations were of the smallest order. In the means for 1843–6, the proportional parts of the yearly secular change being eliminated, the variation of the monthly means is under *one minute*; since the variations from month to month are so small, it is evident that, in order to detect any relation to season, the greatest care must be taken to avoid all instrumental errors; for this reason it appears proper to consider at first the results from those years only (1843–6), during which a sufficient number of daily observations were made to give the monthly means without any considerable error. The means for the first of these years (1843) are affected to some extent with torsion of the suspension thread, which broke gradually in June; on which account the mean of May and July has been substituted for June in Table 3.

TABLE 3.—Monthly Variations of Magnetic Declination free from Regular Secular Change.

Month.	1843.	1844.	1845.	1846.	Mean of 1843 and 1844.	Mean of 1845 and 1846.	Mean of 4 Years, 1843–6.	1847, Corrected by		1848.	1849.	Mean of 3 Years, 1847-9.
								Makerstoun.	Greenwich.			
	′	′	′	′	′	′	′	′	′	′	′	′
January	+0·15	+0·90	+0·13	+0·34	+0·53	+0·24	+0·38	−0·38	−0·44	+0·51	−0·34	−0·08
February	+0·04	−0·29	+0·40	−0·07	−0·12	+0·17	+0·02	+0·05	+0·33	−0·13	+0·06	+0·04
March	−0·04	−0·90	+0·14	−0·21	−0·46	−0·03	−0·25	+0·74	+0·75	+0·68	+0·24	+0·55
April	−0·12	+0·02	−1·18	−0·50	−0·04	−0·84	−0·44	+1·24	+1·17	+0·31	−0·25	+0·42
May	+0·08	−0·48	−0·69	−0·67	−0·19	−0·68	−0·44	0·00	+0·18	+0·42	+0·21	+0·24
June	+0·60	−0·72	−0·34	−0·09	−0·05	−0·21	−0·14	−0·28	−0·20	−0·69	+0·41	−0·17
July	+1·12	−0·31	+0·02	+0·35	+0·41	+0·19	+0·30	+0·18	+0·10	+0·09	−0·74	−0·17
August	+0·34	+1·02	+0·05	+0·37	+0·69	+0·21	+0·45	+0·40	+0·27	−0·32	−0·60	−0·20
September	−0·59	+1·24	+0·25	+0·63	+0·33	+0·44	+0·38	−0·88	−1·03	−1·15	−1·01	−1·04
October	+0·72	+0·11	+1·12	+0·25	+0·42	+0·69	+0·55	−0·83	−0·25	−0·38	+0·10	−0·27
November	−1·46	−0·43	+0·41	−0·13	−0·94	+0·14	−0·40	−0·01	−0·48	−0·19	+0·92	+0·16
December	−0·87	−0·21	−0·34	−0·25	−0·53	−0·29	−0·41	−0·28	−0·36	+0·84	[+1·06]	+0·53

8. Table 3 has been formed from Table 1 in the following manner; the monthly means for 1843, 4, 5, and 6 were reduced for mean secular change to January of their respective years by the correction

$$M_n + 0'{\cdot}48 \times n$$

where M_n is the mean for the n^{th} month after January, and 0′·48 is the approximate mean value of secular change for one month. If m be the mean of the twelve resulting quantities for any year, the numbers μ in Table 3 are obtained by the formula

$$\mu_n = M_n + 0'{\cdot}48 \times n - m$$

The numbers for 1847, 8, and 9, were obtained in a similar manner; 0′·63 being used instead of 0′·48 for 1847, 0′·62 for 1848, and 0′·56 for 1849; the value of the secular change for 1847 has been obtained by comparing the last six months of 1846 with the corresponding months of 1847, and the first six of 1847 with the corresponding months of 1848; that for 1848 was obtained similarly. The means for 1841–2 are not inserted, as they were too much affected by torsion and broken suspension-threads to be of use in this investigation.

9. The interpolated epochs of maximum and minimum, from the mean of 4 years in column 8 of Table 3, are,—

A minimum of westerly declination in the end of April;
A maximum .... in September;
A minimum .... in the beginning of December;
A maximum .... in the end of January.

This result is shewn with considerable fidelity in each of the four years; the greatest variations from it can be traced to torsion of the suspension thread removed at the particular epochs: the means for 1846 give accurately the result of the means for the other three years.

10. The year 1847 was one of great magnetic disturbance, and as only 5 observations were made daily, the effect of the disturbed observations on the monthly means is the more considerable. Thinking it possible that corrections for the 5 observations might be obtained with greater accuracy from complete series made elsewhere during the *same* year, I applied to Mr AIRY, the Astronomer-Royal, for this end. I have to thank him for furnishing me with corrections obtained from the Greenwich Observations for that year. These corrections having been applied, the resulting variations, obtained as previously indicated, will be found column 10 of Table 3; they give almost exactly the same result as the quantities corrected by the Makerstoun Observations for 1844 and 1845: according to both, there is a slight maximum exhibited in August, but otherwise the result differs considerably from that given by the preceding years. The observations for 1848 and 1849 on the whole indicate a result not differing greatly from that for 1847; and when we examine the mean for the 3 years 1847–9, as in the last column of Table 3 (where the mean of columns 9 and 10 has been taken for 1847), we find a similar but more regular result. The value of the conclusions from the observations for 1843–6 depends upon the consistency of the partial results and the regularity of the secular motion from year to year: when it is pointed out that the means for 1847, 8, and 9, are deduced from but few daily observations, it should

also be stated as very probable, that the errors in the corrections employed (to reduce the means obtained to those derivable from complete series) are insufficient to account for the differences of these variations from those for the preceding years; as is evident for the year 1847, corrected by two very different methods. The only evident explanation remaining is to be found in the varying secular change for these years; and it does not appear at all improbable that the difference is connected with this variation. It has been shewn that the annual period has appeared inverted when the sign of the secular motion was opposite; it is the most remarkable fact in connection with the differences of the results for the two periods 1843–6 and 1847–9 that they are *exactly the inverse of each other* (see columns 8 and 13 of Table 3): the completeness of the opposition in the double maxima and minima appears too curious to be accidental. If the latter result be a true exposition of the annual law for these 3 years, it will follow that the inversal of the law observed at the same time with an opposite secular motion is not necessarily a consequence of that opposition.*

Differences of the Daily Means of Declination from the Means for the corresponding Months.—The discussion for 1844 will be found in the volume for that year, page 332, the results for 1845 and 1846 are obtained from Tables I. and LI. of this volume.

TABLE 4.—Means of the Westerly and Easterly Departures of the Daily Mean Magnetic Declination from the Monthly Means, with their Differences.

Month.	Mean Westerly Departures.				Mean Easterly Departures.				Diff. of Mean Depart.	Mean Departures, without reference to Direction.				
	1844.	1845.	1846.	Mean.	1844.	1845.	1846.	Mean.		1844.	1845.	1846.	Means of each	
													Month.	3 Months.
	′	′	′	′	′	′	′	′	′	′	′	′	′	′
Jan.	0·48	0·59	0·51	0·53	0·69	1·00	0·48	0·72	−0·29	0·56	0·74	0·49	0·60	0·64
Feb.	0·70	0·64	0·92	0·75	0·75	0·54	0·92	0·74	+0·01	0·72	0·59	0·92	0·74	0·63
Mar.	0·35	0·43	0·80	0·53	0·41	0·80	0·59	0·60	−0·07	0·38	0·56	0·68	0·54	0·64
April	0·77	0·53	0·80	0·70	0·41	1·00	0·59	0·67	+0·03	0·53	0·70	0·68	0·64	0·59
May	0·44	0·58	0·83	0·62	0·65	0·54	0·61	0·60	+0·02	0·53	0·56	0·70	0·60	0·59
June	0·40	0·34	0·88	0·54	0·37	0·37	0·88	0·54	0·00	0·38	0·35	0·88	0·54	0·58
July	0·61	0·45	0·94	0·67	0·49	0·31	0·87	0·56	+0·11	0·54	0·37	0·90	0·60	0·64
Aug.	0·70	0·76	1·34	0·93	0·41	0·65	0·98	0·68	+0·25	0·52	0·70	1·13	0·78	0·75
Sept.	0·87	0·56	1·35	0·93	0·58	0·48	1·35	0·80	+0·13	0·70	0·52	1·35	0·86	0·80
Oct.	1·31	0·55	1·19	1·02	0·66	0·60	0·60	0·62	+0·40	0·87	0·58	0·79	0·75	0·80
Nov.	0·40	1·05	0·91	0·79	0·63	1·14	0·71	0·83	−0·04	0·49	1·09	0·80	0·79	0·70
Dec.	0·38	0·64	0·52	0·51	0·72	0·60	0·65	0·66	−0·15	0·50	0·62	0·58	0·57	0·60

11. The conclusions from this Table are:—

1*st*, The daily mean declination departs farthest to the west of the monthly mean in August, September, and October, on the average about 0′·96: the average departure for each three of the remaining nine months is nearly constant; about 0′·60.

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* I have pointed out in a paper on the magnetic declination read before the Royal Society of Edinburgh, May 3, 1847, that the annual variation is inverted when the secular motion has an opposite sign. M. ARAGO made an indistinct approximation to this fact in comparing the observations of CASSINI with those of BOWDITCH (1810), *Annales de Chimie*, xvi., p. 66. M. KAEMTZ also alludes to the fact in comparing CASSINI'S observations with observations by M. KUPFFER and M. GAUSS (*Kämtz Lehrbuch*, iii., 426). In both cases the fewness of the latest observations are considered to render the conclusion doubtful. Dr LLOYD has recently distinctly stated the fact from the comparison of CASSINI'S observations with his own (*Trans. Roy. Ir. Ac.* xxii., May 1846). The following is from the abstract of my paper:—" The *annual period* of magnetic declination consists of a double oscillation, having nearly the fol-" lowing epochs of maxima and minima:—

" A max. Jan. 30. The min. April 30. The max. Sept. 10. A min. Dec. 10.

" The author examines CASSINI'S observations (1783–7). Although they confirm this law to some extent, it is not conceived that " they can be trusted for such a determination. The author also verifies his result by grouping a large mass of modern observations. " The observations at Washington [1840–42], and Toronto [1841–42], [discussed in the paper] with other facts, prove that the oscilla-" tion is inverted, when the secular motion of the needle has an opposite sign; and Colonel BEAUFOY'S observations [1817–20] seem to " prove, that when the secular motion is zero, the annual period is a combination of the oscillations for a positive and negative secular " motion." (*Proceedings Roy. Soc. Edin.* May 1847.)

2*d*, The daily mean declination departs farthest to the east of the monthly mean in the months from August to February; the means for 1844 and 1845 (which are most to be depended on for this investigation) indicate November, December, and January, as the three months with the greatest average departure to the east, about 0′·80: the least mean departures to the east occur in June and July; the average being 0′·55, or, by the means for 1844 and 1845, 0′·38.

3*d*, The mean westerly departures are most in excess of the mean easterly departures in August, September, and October, and the latter are most in excess of the former in December and January.

4*th*, The mean departures, without reference to direction, are greatest in August, September, and October; the average being 0′·80: they are least in April, May, and June; the average is 0′·60 nearly, the means of each three months in the last column of Table 4 being under consideration. This result was generalized in the volume for 1844, p. 332, as follows: "The average difference of the daily means from the monthly means in 1844, was a minimum when the mean westerly declination was least, and a maximum when it was greatest."

5*th*, The mean departure of daily mean declination from the monthly means for 1844 = 0′·56
....1845 = 0′·62
....1846 = 0′·82
.... 3 years = 0′·67

The mean for 1846 is probably too high, owing to the incompleteness of the diurnal series of observations.

Annual Variation of the Diurnal Ranges of Magnetic Declination.—The diurnal range of motion of the declination magnet varies from month to month: the following Table contains the mean of all the diurnal ranges for each month, as deduced from the usual daily observations: the means for 1844 and 1845 only are comparable with each other.

TABLE 5.—Mean Diurnal Range of Magnetic Declination, as deduced from the Ordinary Daily Observations.

Year.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Mean.
	′	′	′	′	′	′	′	′	′	′	′	′	′
1843	5·66	10·09	10·12	12·38	11·00	12·13	12·30	11·78	12·67	9·65	5·85	7·63	10·10
1844	9·00	10·28	16·21	15·88	13·48	12·41	12·36	14·02	15·22	15·69	15·91	11·22	13·47
1845	13·98	12·98	14·20	16·57	14·07	13·77	13·09	16·65	16·66	13·51	10·98	10·91	13·95
1846	9·10	9·21	13·70	15·83	14·70	13·60	14·69	14·89	17·03	13·81	10·31	8·16	12·92
1843 } 1846 }	7·38	9·65	11·91	14·10	12·85	12·86	13·50	13·34	14·85	11·73	8·08	7·90	11·51
1844 } 1845 }	11·49	11·63	15·20	16·22	13·78	13·09	12·72	15·33	15·94	14·60	13·44	11·06	13·71
Mean } of all }	9·43	10·64	13·55	15·16	13·31	12·97	13·11	14·33	15·39	13·16	10·76	9·48	12·61

12. From the means for 1844 and 1845 in Table 5 we find, that the mean diurnal range of the hourly observations is greatest in the months of March and April (= 15′·70), and in the months of August and September (= 15′·68); that it is least in the months of December and January (= 11′·27), and in the months of June and July (= 12′·90). This result may be stated generally thus:—The angle, including the diurnal oscillations of the declination magnet, is greatest immediately after the vernal and before the autumnal equinox, and it is least at the winter and at the summer solstices. The means from the incomplete diurnal series of 1843 and 1846 indicate the same law. The quantities given in Table 5 are obtained from the ordinary daily observations, and while they are sufficiently comparative to indicate the variation of range with season, the daily observations are in no year sufficiently numerous to give the absolute diurnal ranges: in 1844 so careful a watch was kept over the smallest variations, and so many additional observations were made, as to render it probable, that Table LX. for 1844, p. 400, contains very nearly the absolute ranges for all the three magnetometers: a similar remark will apply to Table L., p. 28 of this volume, for 1845, although not to the same

extent; the smaller disturbances not having been observed with the same completeness in that year. The mean diurnal ranges for each month from these two Tables are as follow:—

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
1844,	11′·63	13′·63	19′·36	19′·10	14′·83	12′·60	13′·36	16′·58	17′·74	19′·26	19′·66	12′·95	15′·89
1845,	17′·81	15′·31	16′·52	17′·01	14′·67	13′·82	13′·72	17′·79	18′·20	14′·48	12′·64	15′·01	15′·58
Mean,	14′·72	14′·47	17′·94	18′·05	14′·75	13′·21	13′·54	17′·18	17′·97	16′·87	16′·15	13′·98	15′·74

These means give the same law of variation as that already found from Table 5, but the values are considerably higher. From the means for both years we may conclude, that the mean angle, including the diurnal oscillations in years of *moderate* disturbance at Makerstoun, is about 18′ at the equinoxes, about 14′ at the solstices, and about 16′ for the whole year.

Annual Variation of the Ranges of the Monthly Mean Diurnal Variation.—We have considered above the annual variation of the mean ranges for each *day*, we now give in Table 6 the ranges of the mean diurnal variation for each *month*. The first four lines contain the diurnal ranges of the means of all the regular daily observations made in each month; and, as in Table 5, only 1844 and 1845 are comparable with each other: the last line contains the range of the hourly means for each month, as deduced from the observations for the 4 years given in Table 12.

13. From the last line of Table 6 it appears that when a sufficient number of observations is employed, the range of the mean diurnal variation is nearly constant for the six months, April to September, being on the whole rather larger for the first three than for the last three of that half-year: the mean range for the whole six months is about 11′·0. The range is nearly of equal value for pairs of the remaining six months, namely, for March and October (=9′·2); for February and November (=7′·3); and for January and December (=5′·9).

TABLE 6.—Ranges of the Mean Diurnal Variation of Magnetic Declination.

Year.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Mean.
	′	′	′	′	′	′	′	′	′	′	′	′	′
1843	4·92	8·35	7·93	10·52	9·93	11·14	9·95	10·83	10·75	7·90	4·63	5·73	7·54
1844	5·26	6·36	9·94	10·20	8·96	11·05	10·06	10·31	9·95	10·94	9·28	5·96	7·67
1845	6·95	7·31	9·92	13·08	12·42	12·52	10·86	12·67	10·53	9·42	7·50	6·43	8·40
1846	6·54	6·05	10·56	12·58	12·79	11·41	11·94	10·62	11·99	9·24	8·67	5·77	8·52
Mean of all	5·85	7·11	9·28	11·29	11·02	11·61	10·60	10·83	10·45	9·50	7·55	6·02	8·03

14. When we examine the range for each month of the mean diurnal variation as deduced from any single year's observations, we observe a similar result to that obtained from the means of the diurnal ranges (Table 5); namely, that the range is, on the whole, greater for the months near the equinoxes than for those near the summer solstice; but as we combine a larger number of observations the difference gradually disappears, till (as we see in the mean of four years' observations, Table 6) the only difference appears in the slightly greater range for the months immediately before the summer solstice than for those immediately after it. The difference betwixt the two results is, therefore, in all probability, due to irregular causes, which shift the epochs of the extreme positions of the magnet. That this is the case will be rendered nearly evident by the ranges of the diurnal variation as deduced from the 17 days' observations with least irregular disturbance (see 1844, p. 339, and p. 5 of this volume); they are as follow,

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
3′·43	4′·54	7′·81	11′·55	9′·66	11′·41	11′·11	11′·18	9′·64	7′·70	5′·31	4′·11

These, with the exception of the range for May, indicate generally the constancy of the regular diurnal range in the months from April till August. The exception of May is easily explained by the fewness of the observations, and the method by which the observations were selected (see volume for 1844, p. 339).

15. Since, then, the means of the diurnal ranges differ from the diurnal ranges of the means, chiefly because of irregular disturbing causes which shift the epochs of the extremes, the differences of the results will give some measure of these disturbances. Taking the differences betwixt the last line of Table 5, and the last of Table 6, we have,

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
3′·58	3′·53	4′·27	3′·87	2′·29	1′·36	2′·51	3′·50	4′·94	3′·66	3′·21	3′·46

The difference is greater for March and September than for the winter months, and it is least for June. From this then we conclude (as in the volume for 1844, p. 334) that those irregular disturbances which render the mean diurnal range greater than the range of the mean diurnal variation, have their maximum effect about the equinoxes, and their minimum at the summer solstice. We are still ignorant of the law of disturbances as affecting the position of the declination magnet at all portions of its diurnal motion; to determine this, we may consider the differences of the positions of the magnet at each hour, from its mean position at the same hour for each month.

Annual Variation of the Mean Difference of a Single Observation of Magnetic Declination from the Monthly Mean at the corresponding Hour.—These differences have been obtained for the years 1844 and 1845 only, and the means for each month (from Table XIV., 1844, p. 346; and Table XIII., p. 8 of this volume) are as follow:—

TABLE 7.—Mean Difference of a Single Observation of Magnetic Declination from (1) the Hourly Means of all the Observations, and from (2) the Hourly Means of Observations on Days selected free from disturbance.

Series.	Year.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Mean.
		′	′	′	′	′	′	′	′	′	′	′	′	′
1	1844	1·34	1·40	2·22	1·87	1·60	1·12	1·43	1·71	1·93	2·26	2·30	1·40	1·71
	1845	2·02	1·82	1·76	1·63	1·46	1·20	1·41	1·86	2·06	1·66	1·75	1·63	1·69
	Mean	1·68	1·61	1·99	1·75	1·53	1·16	1·42	1·78	1·99	1·96	2·02	1·51	1·70
2	1844	1·31	1·42	2·15	1·90	1·63	1·18	1·51	1·77	1·88	2·15	2·15	1·34	1·70
	1845	2·00	1·72	1·87	1·56	1·52	1·18	1·40	1·88	2·11	1·58	1·78	1·55	1·68
	Mean	1·65	1·57	2·01	1·73	1·57	1·18	1·45	1·82	1·99	1·86	1·96	1·44	1·69

16. The mean differences from both series give nearly the same result, which is, on the whole, similar to that deduced from the diurnal ranges; it may be stated thus;—the mean departure of the declination magnet from its normal position for any hour is greatest near the equinoxes, and least at the summer solstice. When we examine the means for the separate years, we find that those for 1844 give the result with considerable distinctness, the chief difference consisting in the occurrence of the autumnal maximum in October and November; in 1845, on the contrary, the spring maximum is ill defined at best (as in the 2d series,) while January is a month of considerable disturbance. It appears evident that two years' observations are too few to exhibit a law of this character free from all irregularity. The year 1844 appears to have been remarkably adapted for exhibiting all the usual laws of magnetic and meteorological variation; it is on this account, that it will be found generally in these discussions, that the combination of another year's observations, does not serve to make the results already obtained in the volume for 1844 more regular.

Annual Variation of the Number *of Observations of the Magnetic Declination which were Positive (West) of the Monthly Means for the Corresponding Hours.*—The following Table contains the numbers for each month of 1844 and 1845, with reference (1) to the hourly means of all the observations, and (2) to the hourly means of days selected free from irregular disturbance.

TABLE 8.—Number of Observations of Magnetic Declination in 100 to the West of their Hourly Means as obtained (1) from all the Hourly Observations, and (2) from those for Selected Days.

Series.	Year.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Mean.
1	1844	52·7	51·8	51·4	48·4	49·7	52·8	50·0	49·9	53·0	46·0	48·9	55·3	50·8
	1845	54·5	53·0	54·6	54·6	53·2	47·8	49·2	51·9	52·1	47·8	48·0	51·2	51·5
	Mean	53·6	52·4	53·0	51·5	51·4	50·3	49·6	50·9	52·5	46·9	48·4	53·3	51·2
2	1844	51·5	55·3	59·8	49·5	51·1	52·2	45·5	50·8	54·7	47·2	58·0	60·4	53·0
	1845	62·2	55·4	58·8	61·2	45·7	46·7	48·0	46·8	48·2	53·9	50·0	50·3	52·3
	Mean	56·8	55·4	59·3	55·3	48·4	49·4	46·8	48·8	51·4	50·6	54·0	55·4	52·6

17. From the first series, the number of observations to the west of the monthly means for the corresponding hours was greatest in the 4 months December to March, there being on an average 6 more to the west than to the east in 100: the number was least in the months of October and November, there being on an average 7 less to the west than to the east in 100. July is the only other month, in the mean of the two years, for which the number of observations to the west of the mean was greater, than the number to the east. The number for each of the months from April till September varies little.

18. From the second series, for which the mean hourly position is deduced from days selected as nearly free from disturbance, the number of observations to the west of the hourly means was greatest in the 6 months from November to April, there being an average of 12 observations in 100 more to the west than to the east; in the remaining 6 months, May to October, there is an average of about 2 less to the west than to the east.

The number of observations to the west of the hourly means (whether these are obtained from all the observations, or from the undisturbed observations only) is greatest about the months December to March.

19. By both series, each year shews more observations to the west than to the east of the hourly mean positions, however obtained; so that the greatest *departures* from the mean position are to the east, the direction of the secular motion: the 2d series shews this fact most distinctly, as might be expected, since the mean positions are nearly unaffected by disturbance.

20. *Annual Variation of the Probable Error of an Observation of Magnetic Declination from the Monthly Mean for the corresponding Hour.*—It has been already shewn in the volume for 1844, p. 351, that the probable error cannot be deduced on the assumption that the differences from the mean position are analogous to the errors in the observation of a constant quantity, since that assumption is inaccurate; the differences do not occur equally to the east and west of the mean, as is shewn in the following discussion; nor is the number occurring within certain limits satisfied by the usual function of the errors obtained from the calculus of probabilities, as will be found from Table XIX., p. 352, 1844, and Table XVI., p. 10 of this volume. In consequence, a graphic interpolation has been employed to determine the probable error, that is to say, the departure from the hourly mean position, for which there were as many observations with a greater, as there were with a less departure; these, deduced from the two tables last referred to, for each month are:—

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Mean.
1844,	0′·93	0′·94	1′·35	1′·20	1′·16	0′·78	1′·04	1′·20	1′·36	1′·58	1′·51	0′·90	1′·16
1845,	1′·38	1′·25	1′·24	1′·08	1′·08	0′·91	1′·05	1′·35	1′·56	1′·14	1′·27	1′·09	1′·20
Mean,	1′·15	1′·09	1′·29	1′·14	1′·12	0′·84	1′·04	1′·27	1′·46	1′·36	1′·39	0′·99	1′·18

These numbers on the whole follow the same law as the mean difference: The probable error of an observation of magnetic declination from the monthly mean of the corresponding hour (without reference to which hour) is least in June (=0′·84) and in December (=0′·99), and it is greatest in September (=1′·46) of the autumn months, and in March (=1′·24) of the spring months. The remarks already made in the case of the annual variation of the mean disturbance apply equally here, see No. 16.

MONTHLY VARIATIONS FOR THE MAGNETIC DECLINATION.

TABLE 9.—Mean Variations of Westerly Declination free from Regular Secular Change, with reference to the Moon's Age and Declination.

Moon's Age.	1843.	1844.	1845.	1846.	Mean.	After Moon farthest North.	1843.	1844.	1845.	1846.	Mean.
d. d.	′	′	′	′	′	d. d.	′	′	′	′	′
14—16	+0·24	−0·04	+0·06	+0·32	+0·15	27— 1	+0·25	+0·19	+0·07	+0·35	+0·22
17—20	+0·42	+0·24	−0·08	+0·09	+0·17	2— 5	+0·15	−0·05	−0·12	−0·04	−0·01
21—24	−0·34	+0·15	−0·12	+0·03	−0·07	6— 8	+0·03	−0·18	−0·14	+0·11	−0·04
25—28	−0·14	+0·01	−0·08	+0·04	−0·04	9—12	+0·08	−0·24	+0·01	+0·01	−0·03
29— 1	−0·33	0·00	+0·04	+0·22	−0·01	13—15	+0·20	+0·02	+0·06	−0·35	−0·05
2— 5	−0·08	+0·03	+0·09	−0·36	−0·07	16—19	−0·15	+0·13	+0·02	−0·19	−0·05
6— 9	+0·01	−0·16	+0·08	−0·05	−0·02	20—22	−0·60	+0·01	+0·01	+0·01	−0·14
10—13	+0·21	−0·23	+0·01	−0·32	−0·08	23—26	+0·06	+0·12	+0·18	+0·07	+0·11

21. *Variations of Daily Mean Westerly Declination with reference to the Moon's Age and Declination.*—Table 9 has been formed from the Tables given in the former volumes of observations, and in this volume, pages 2 and 29; the means of groups of 3 or 4 days are given positive when west, and negative when east of the mean.

From Table 9 it appears,—

1*st*, That the westerly declination is greatest about two days after full moon.

2*d*, That it is greatest when the moon is farthest north.

In both cases, the epoch of maximum only is well marked; in the 3 or 4 days before it and after it, the declination is most westerly; in all the rest of the periods the variations are inconsiderable. When the smallness of the variations and the large effect of considerable disturbances are considered, the results of the separate years are sufficiently consistent, to give a considerable probability to the truth of the conclusions: in each year, the declination was more westerly *about* the time of the moon's greatest north declination, than for any other time.

TABLE 10.—Diurnal Range of Magnetic Declination with reference to the Moon's Age and Declination.

Moon's Age.	1843.	1844.	1845.	1846.	Mean.	After Moon farthest North.	1843.	1844.	1845.	1846.	Mean.
d. d.	′	′	′	′	′	d. d.	′	′	′	′	′
14—16	9·73	16·22	14·80	13·41	13·54	27— 1	10·84	11·22	13·99	11·56	11·90
17—20	9·73	15·90	16·20	15·12	14·24	2— 5	12·60	15·48	16·83	12·16	14·27
21—24	9·25	11·59	13·64	12·94	11·85	6— 8	9·21	14·11	14·69	13·42	12·86
25—28	11·20	10·13	12·44	11·20	11·24	9—12	9·36	12·39	13·47	15·10	12·58
29— 1	9·68	11·53	13·15	12·56	11·73	13—15	10·19	12·05	12·16	14·01	12·10
2— 5	10·07	11·13	13·68	13·88	12·19	16—19	8·91	12·53	14·70	11·70	11·96
6— 9	11·92	14·08	13·89	12·96	13·21	20—22	9·75	13·16	12·10	13·82	12·21
10—13	10·42	17·44	12·31	12·49	13·17	23—26	11·00	16·08	12·00	13·16	13·06

22. *Variation of the Diurnal Range of Magnetic Declination with reference to the Moon's Age and Declination.*—The means for groups of days given in Table 10 have been deduced from the tables in the present and former volumes. It results from Table 10,—

1*st*, That the diurnal range is greatest (from the mean of 1844 and 1845, = 16′·05) about 2 or 3 days after the sun and moon are in opposition: that it is least about 3 days before they are in conjunction; the mean of 1844 and 1845 giving for that epoch 11′·28.

2*d*, That the diurnal range is greatest about 4 days after the moon is farthest north; the mean at that epoch for 1844 and 1845 being 16′·15: that it is least when the moon is farthest north, and about three days after it is farthest south; the value from the means of 1844 and 1845 in both cases being about 12′·30: that a secondary maximum of diurnal range occurs about 3 days before the moon is farthest north; the mean from 1844 and 1845 being 14′·04.

The *value* of the means of ranges is in all cases taken from the observations for 1844 and 1845, as the value for 1843 and 1846 is imperfect.

23. The means for 1843 and 1846 give the same results as the means for 1844 and 1845 for both arguments. The observations for 1844 exhibited these laws (see No. 16.) with remarkable distinctness: several single lunations shewed the law with reference to the moon's age very clearly; from these it appeared, that the variation of the diurnal range was greatest for the lunations about the equinoxes and, in connection with the first of the conclusions above, when the sun and moon were in opposition near the equator. (See volume for 1844 p. 336.) The conclusions from the 2d part of Table 10 are analogous to those already found, No. 12. for the sun's declination, and the results for both bodies may be stated thus:—The diurnal range of magnetic declination is less when the body (sun or moon) has its greatest northerly and southerly declination than at the intermediate periods; being greatest at the two epochs when the body is rather north of the equator. The variation of diurnal range in the lunar periods is as great as, or greater than, for the year, the means of 12 parts of the period in the former being compared with those for the 12 months of the latter.

24. *Variation of the Mean Difference of a Single Observation* from the Monthly Mean for the corresponding Hours, *with reference to the Moon's Age and Declination.*—The results for the two years 1844 and 1845 from Table XV., 1844, p. 347, and Table XII., p. 7 of this volume, are given in Table 11.

The conclusions from Table 11 are almost identical with those from Table 10.

1*st*, The departure of the declination magnet, at any hour, from the monthly mean position, for the same hour, is greatest two or three days after opposition, and it is least about the time of conjunction.

2*d*, The departure of the declination magnet, at any hour, from its monthly mean position, for the same hour, is least when the moon is farthest north, a minimum also occurring after the greatest southerly declination; it is greatest about 4 days after the moon is farthest north, a maximum also occurring about 4 days before that epoch.

25. There are slight irregularities in the resulting means of Table 11, which are to be expected where only two years' observations are considered. The variations of these differences are rather less for the period comprehending the moon's changes of declination, than for that comprehending the sun's; the means for 2 or 3 days of the former being compared with those for the 12 months in the latter; if the mean difference for June, however, be neglected, the variations for the lunar period are quite as great as those for the solar period.

TABLE 11.—Mean Difference of a Single Observation of Magnetic Declination from the Monthly Mean, for the corresponding hour, with reference to the Moon's Age and Declination.

Moon's Age.	1844.	1845.	Mean.	Variations.	After Moon farthest North.	1844.	1845.	Mean.	Variations.
d. d.	′	′	′	′	d. d.	′	′	′	′
14—16	2·18	1·59	1·89	+0·18	27— 1	1·46	1·52	1·49	−0·21
17—20	2·04	1·87	1·96	+0·25	2— 5	1·97	2·02	2·00	+0·30
21—24	1·45	1·81	1·63	−0·08	6— 8	1·80	1·91	1·86	+0·16
25—28	1·22	1·79	1·51	−0·20	9—12	1·64	1·71	1·68	−0·02
29— 1	1·47	1·67	1·57	−0·14	13—15	1·53	1·59	1·56	−0·14
2— 5	1·35	1·63	1·49	−0·22	16—19	1·58	1·78	1·68	−0·02
6— 9	1·82	1·72	1·77	+0·06	20—22	1·69	1·42	1·56	−0·14
10—13	2·25	1·49	1·87	+0·16	23—26	2·08	1·47	1·78	+0·08

DIURNAL VARIATIONS FOR THE MAGNETIC DECLINATION.

26. *Diurnal Variation of Westerly Declination.*—The discussions for 1843 and 1844 will be found in the volumes for these years; the tables for 1845 and 1846 are contained in this volume, pages 4 and 31. Table 12 is formed from a combination of all the ordinary daily observations made in these years in the following manner. Let A and C be the means from the 4 years' observations for two hours at i hours interval, the intermediate hours having less than 4 years' observations, a and c the means from the observations for 1844 and 1845 at the corresponding hours; b_n the mean for the n^{th} hour after a, for which there are less than 4 years' observations; then B_n the mean for the same hour referred to the means A and C has been obtained by the formula

$$B_n - b'_n = \left(\overline{a-c} - \overline{A-C}\right)\frac{n}{i}$$

where $b'_n = b_n - \overline{a - A}$.

27. Between $17^{\text{h}}\ 10^{\text{m}}$ and $9^{\text{h}}\ 10^{\text{m}}$, Makerstoun mean time, only the *even* hours have not had observations for 4 years; for these even hours, therefore, $i = 2$, $n = 1$, and the formula is reduced to

$$B - b = \frac{A - a + C - c}{2}.$$

For $22^{\text{h}}\ 10^{\text{m}}$, $0^{\text{h}}\ 10^{\text{m}}$, and $6^{\text{h}}\ 10^{\text{m}}$, b depends on 3 years' observations, 1844, 1845, and 1846, and so therefore do a and c in the formula for these hours; and in November and December the mean for $22^{\text{h}}\ 10^{\text{m}}$ is deduced from 4 years' observations (see foot-note, p. xi.) This reduction is evidently the simplest and least exacting that could be made.

TABLE 12.—Diurnal Variations of Westerly Declination for each Month, as deduced from the Regular Daily Observations made during the Four Years 1843 to 1846.

Mak. Mean Time.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
h. m.	′	′	′	′	′	′	′	′	′	′	′	′
12 10	0·96	0·74	0·26	1·90	1·90	4·21	2·35	1·53	1·57	0·99	1·22	0·94
13 10	1·02	1·82	0·73	1·08	2·18	4·00	1·97	1·55	1·23	1·19	1·84	1·00
14 10	0·91	1·99	1·56	0·32	2·77	3·56	1·67	2·07	1·48	1·50	3·09	1·92
15 10	1·11	2·16	0·45	0·88	2·69	3·01	2·43	1·69	0·74	2·54	2·79	2·41
16 10	1·49	1·83	0·54	1·78	2·11	1·79	1·61	0·53	1·13	2·65	2·36	2·57
17 10	1·68	1·78	0·89	1·05	1·21	0·68	0·48	0·30	1·55	2·89	2·44	2·13
18 10	2·46	2·21	1·19	0·73	0·22	0·00	0·24	0·00	2·13	3·40	2·57	2·53
19 10	2·62	2·51	0·95	0·00	0·00	0·32	0·00	0·12	2·06	3·00	2·90	2·47
20 10	2·54	2·86	0·68	0·02	1·31	1·13	1·04	1·23	3·01	2·52	3·01	2·68
21 10	3·00	3·50	1·40	1·70	2·93	3·11	2·62	2·85	4·41	3·49	3·45	2·81
22 10	4·00	4·63	3·43	3·96	5·70	5·79	5·02	5·41	6·82	5·72	4·92	3·71
23 10	4·96	6·23	6·13	7·37	8·60	8·92	7·90	8·32	9·26	8·07	6·43	4·94
0 10	5·53	6·88	8·18	10·40	10·33	10·83	9·82	10·47	10·45	9·50	7·55	5·97
1 10	5·85	7·11	9·28	11·29	11·02	11·61	10·60	10·83	10·18	9·41	7·10	6·02
2 10	4·89	6·53	8·02	10·32	10·30	11·21	9·76	9·79	8·89	8·30	6·44	5·27
3 10	4·16	5·03	6·48	8·44	8·67	9·80	8·63	7·36	6·54	6·65	5·20	4·03
4 10	3·76	4·08	4·77	6·57	7·17	8·05	7·14	5·59	4·34	4·65	4·28	3·48
5 10	2·69	3·31	2·37	4·24	5·65	6·45	6·08	3·77	3·28	3·43	3·63	2·77
6 10	1·97	2·28	1·31	2·82	4·98	5·53	4·97	2·03	1·87	2·71	1·96	1·89
7 10	1·55	1·88	1·39	1·76	4·21	5·26	4·08	2·28	0·69	2·39	1·38	1·41
8 10	0·83	0·70	0·77	1·56	3·32	5·02	3·45	2·30	0·00	0·64	0·48	0·01
9 10	0·28	0·32	0·27	1·52	3·30	4·65	2·80	1·54	0·68	0·74	0·18	0·29
10 10	0·36	0·00	0·51	1·51	3·14	4·38	2·57	1·38	0·95	0·29	0·00	0·23
11 10	0·00	0·89	0·00	1·11	2·42	4·04	2·29	1·81	0·94	0·00	0·30	0·00

28. From Table 12 we find that the north end of the declination magnet is most westerly throughout the year between $0^h\ 20^m$ P.M., and $1^h\ 25^m$ P.M., the epochs in *apparent* time for each month being as follow :—

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
$0^h\ 50^m$	$0^h\ 50^m$	$0^h\ 55^m$	$1^h\ 10^m$	$1^h\ 15^m$	$1^h\ 25^m$	$1^h\ 0^m$	$0^h\ 50^m$	$0^h\ 30^m$	$0^h\ 45^m$	$0^h\ 35^m$	$0^h\ 50^m$

It appears, therefore, that the maximum westerly declination occurs farthest after *apparent* noon in the months of April, May, and June; and that it occurs soonest after apparent noon in September, October, and November.

29. The north end of the declination magnet is most easterly from April to August, from 6^h to 8^h in the morning, and from September to March from 8^h to 11^h in the evening: the approximate epochs in *apparent* time are as follow :—

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
$10^h\ 50^m$	$9^h\ 45^m$	$10^h\ 50^m$	$19^h\ 40^m$	$18^h\ 50^m$	$18^h\ 20^m$	$19^h\ 5^m$	$18^h\ 25^m$	$8^h\ 10^m$	$11^h\ 10^m$	$10^h\ 20^m$	$9^h\ 50^m$

30. These epochs are considerably less certain than those for the maximum, especially when they occur between $9^h\ 10^m$ and $17^h\ 10^m$, as they depend upon only two years' observations. The principal minimum occurs between 8^h and 11^h P.M. in the months from September till March, in the latter month the westerly declination at 8^h A.M. differs little from that at 11^h P.M.: in the remaining months the minimum occurs between $6^h\ 20^m$ and $7^h\ 40^m$ A.M. The morning minimum occurs earliest in June and August; the evening minimum occurs earliest in September.

31. Secondary maxima and minima of westerly declination are shewn with moderate distinctness in some months, but the epochs vary so much from one month to the next as to render it doubtful whether they are otherwise than accidental: clearer results may be expected from the combinations of the means for two or three months, if sufficient care be taken that only those months are combined which exhibit separately similar characteristics. A careful examination of the projected means, seems to shew the combinations employed for the following Table, as those best fitted for exhibiting distinctly the changing character of the diurnal variation.

TABLE 13.—Diurnal Variations of Westerly Declination for different periods deduced from Table 12.

Mak. Mean Time.	Dec. Jan. Feb.	March. April.	May. June.	July. Aug.	Sept. Oct. Nov.	Six Months.		Twelve Months.
						Sept. to Feb.	March to Aug.	
h. m.	′	′	′	′	′	′	′	′
12 10	−1·78	−1·92	−1·73	−1·90	−2·16	−1·97	−1·85	−1·91
13 10	−1·38	−2·10	−1·69	−2·08	−2·00	−1·69	−1·96	−1·82
14 10	−1·05	−2·06	−1·62	−1·97	−1·40	−1·22	−1·88	−1·55
15 10	−0·77	−2·34	−1·93	−1·78	−1·40	−1·08	−2·02	−1·55
16 10	−0·70	−1·84	−2·83	−2·77	−1·37	−1·03	−2·48	−1·75
17 10	−0·80	−2·03	−3·84	−3·45	−1·13	−0·96	−3·11	−2·03
18 10	−0·26	−2·04	−4·67	−3·72	−0·72	−0·49	−3·48	−1·98
19 10	−0·13	−2·53	−4·62	−3·78	−0·77	−0·45	−3·64	−2·04
20 10	+0·03	−2·65	−3·56	−2·70	−0·57	−0·27	−2·97	−1·62
21 10	+0·44	−1·45	−1·76	−1·11	+0·36	+0·40	−1·44	−0·52
22 10	+1·45	+0·69	+0·96	+1·37	+2·40	+1·92	+1·01	+1·46
23 10	+2·72	+3·75	+3·98	+4·27	+4·50	+3·61	+4·00	+3·80
0 10	+3·47	+6·29	+5·80	+6·30	+5·75	+4·61	+6·13	+5·37
1 10	+3·67	+7·28	+6·53	+6·87	+5·48	+4·57	+6·89	+5·73
2 10	+2·90	+6·17	+5·97	+5·93	+4·46	+3·68	+6·02	+4·85
3 10	+1·75	+4·46	+4·45	+4·16	+2·71	+2·23	+4·36	+3·29
4 10	+1·11	+2·67	+2·83	+2·52	+1·00	+1·05	+2·67	+1·86
5 10	+0·26	+0·30	+1·27	+1·09	+0·03	+0·14	+0·89	+0·51
6 10	−0·61	−0·94	+0·47	−0·34	−1·24	−0·92	−0·27	−0·59
7 10	−1·05	−1·43	−0·05	−0·66	−1·93	−1·49	−0·71	−1·10
8 10	−2·15	−1·84	−0·61	−0·96	−3·05	−2·60	−1·14	−1·87
9 10	−2·36	−2·11	−0·81	−1·67	−2·89	−2·62	−1·53	−2·07
10 10	−2·46	−1·99	−1·02	−1·87	−3·01	−2·73	−1·63	−2·18
11 10	−2·36	−2·45	−1·55	−1·79	−3·01	−2·68	−1·93	−2·30

32. The following are the epochs of maximum and minimum westerly declination from Table 13 in apparent time:

	Dec. Jan. Feb.	Mar. April.	May. June.	July. Aug.	Sept. Oct. Nov.
Max.	0^{h} 50^{m} P.M.	1^{h} 5^{m} P.M.	1^{h} 15^{m} P.M.	0^{h} 50^{m} P.M.	0^{h} 35^{m} P.M.
Min.	8^{h} P.M.—11^{h} P.M.	8^{h} 0^{m} A.M.	6^{h} 30^{m} A.M.	6^{h} 40^{m} A.M.	8^{h} P.M.—11^{h} P.M.

33. The form of the diurnal curve is the same for each of the periods of three months; the westerly declination decreases regularly from the maximum till about 8^{h} P.M., whereas in the curves for the summer months, the rate of decrease receives a check about 5^{h} or 6^{h} P.M. (see Plate I.) No secondary maximum or minimum is shewn in these means, but the magnet is nearly stationary for several hours in each case, namely from 8^{h} to 11^{h} P.M. in the months from September to February; from 8^{h} P.M. till 6^{h} A.M. in the mean for March and April, from midnight till 3^{h} A.M. in May and June; and from 9^{h} P.M. till 3^{h} A.M. in June and July. The magnet is stationary for nearly twelve hours about the 23d of March: the transposition of the minimum of westerly declination from before midnight till about 8^{h} A.M. takes place very gradually in March and April; this does not appear to be the case, however, in the return of the minimum from 7^{h} A.M. to before midnight, which occurs about three weeks *before* the autumnal equinox.

34. When we examine the diurnal curve deduced from the observations for the whole year (Plate I.), we observe a secondary maximum of westerly declination occurring at 2^{h} 40^{m} A.M., nearly equal minima occurring at 11^{h} P.M. and 6^{h} A.M.; this secondary maximum is evidently due to the occurrence of the minimum for one-half of the year about 10^{h} P.M., and for the other half about 7^{h} A.M.; The mean for the year therefore does not represent, as far as these results are concerned, a real phenomenon; it is a combination of two distinct results.

35. The previous conclusions are obtained from the means of all the regular daily observations; no observation has been rejected how ever much affected by magnetic irregularity; we have still to inquire therefore to what extent irregular causes change the diurnal variation. A method has been already proposed and employed

(Makerstoun Observations for 1844, p. 339) for the determination of this question; namely, by the selection of those days in each month which appear to have been nearly unaffected by irregular disturbance; a method which it is conceived is considerably preferable to that of rejecting only those days affected with large magnetic irregularity. The variations for ten days in each month of 1844 will be found p. 339 in the volume for that year, and for seven days in each month of 1845, p. 5 of the present volume; from these two Tables the following Table has been formed :—

TABLE 14.—Diurnal Variations of Westerly Declination for different periods, deduced from Days selected as free from irregular disturbance, in the Years 1844 and 1845.

Mak. Mean Time.	Dec. Jan. Feb.	March. April.	May. June.	July. Aug.	Sept. Oct. Nov.	Six Months.		Twelve Months.
						Sept. to Feb.	March to Aug.	
h. m.	′	′	′	′	′	′	′	′
12 10	−0·72	−1·27	−0·78	−1·13	−1·13	−0·92	−1·06	−0·99
13 10	−0·55	−1·28	−0·86	−1·35	−1·09	−0·82	−1·16	−0·99
14 10	−0·50	−1·47	−1·10	−1·40	−1·06	−0·78	−1·32	−1·05
15 10	−0·54	−1·83	−1·50	−1·78	−1·17	−0·85	−1·70	−1·28
16 10	−0·70	−1·91	−2·54	−2·58	−1·24	−0·97	−2·34	−1·66
17 10	−0·67	−2·24	−3·90	−3·97	−1·42	−1·04	−3·37	−2·21
18 10	−0·70	−2·50	−4·68	−4·70	−1·77	−1·23	−3·96	−2·60
19 10	−0·68	−3·30	−4·73	−4·73	−2·00	−1·34	−4·25	−2·80
20 10	−0·49	−3·46	−4·08	−3·79	−1·87	−1·18	−3·78	−2·48
21 10	−0·22	−2·50	−2·38	−1·69	−0·76	−0·49	−2·19	−1·34
22 10	+0·73	−0·15	+0·39	+1·16	+1·55	+1·14	+0·47	+0·80
23 10	+2·03	+2·89	+3·57	+4·08	+3·73	+2·88	+3·51	+3·20
0 10	+2·61	+5·39	+5·37	+5·90	+4·95	+3·78	+5·55	+4·67
1 10	+2·59	+6·21	+5·77	+6·38	+4·83	+3·71	+6·12	+4·92
2 10	+1·80	+5·34	+5·16	+5·41	+3·39	+2·60	+5·30	+3·95
3 10	+0·98	+3·71	+3·89	+3·60	+1·76	+1·37	+3·73	+2·55
4 10	+0·25	+1·90	+2·23	+2·04	+0·51	+0·38	+2·06	+1·22
5 10	+0·07	+0·57	+0·92	+0·88	−0·14	−0·04	+0·79	+0·37
6 10	−0·20	+0·07	+0·31	+0·13	−0·35	−0·28	+0·17	−0·05
7 10	−0·47	−0·23	+0·10	−0·03	−0·86	−0·67	−0·05	−0·36
8 10	−0·78	−0·79	−0·08	−0·25	−1·28	−1·03	−0·37	−0·70
9 10	−1·19	−1·03	−0·11	−0·29	−1·61	−1·40	−0·48	−0·94
10 10	−1·38	−0·96	−0·35	−0·66	−1·46	−1·42	−0·66	−1·04
11 10	−1·15	−1·26	−0·62	−1·10	−1·47	−1·31	−0·99	−1·15

36. The numbers in Table 14 will be found projected in dotted lines, Plate I., where the differences of the results from the whole series, and from the undisturbed series, will be at once apparent. The following are the epochs, in apparent time, of maximum and minimum westerly declination, deduced from the series of Table 14.

	Dec. Jan. Feb.	March. April.	May. June.	July. Aug.	Sept. Oct. Nov.
Maximum,	0h 35m P.M.	1h 5m P.M.	0h 55m P.M.	0h 50m P.M.	0h 30m P.M.
Minimum,	5h 40m A.M.	7h 40m A.M.	6h 45m A.M.	6h 35m A.M.	7h 30m A.M.
Secondary Maximum,	2h 5m A.M.	....	....	....	2h 0m A.M.
Minimum,	10h 0m P.M.	....	....	....	9h 30m P.M.

37. The principal results from the undisturbed series for the diurnal variation are as follow :—

In the quarter, September to November, the minimum of westerly declination is shewn with nearly equal distinctness at night and in the morning; a well-marked secondary maximum occurring at 2h A.M. : a similar result is exhibited in the following quarter; the morning minimum, however, being less distinctly marked than that in the evening. In both cases we find, in opposition to what has been previously conjectured, that the removal of days of disturbance causes the distinct exhibition of a morning maximum previously masked by disturbance. The means for each month from September to February shew the secondary maximum; it is seen with least distinctness in January. In the couples of months from March till August, no secondary maximum is shewn, the north end of the magnet moves eastwards from about 1h P.M. till 7h or 8h A.M., but with less velocity between 5h P.M. and 3h A.M., than before the former and after the latter hour.

38. *Diurnal Variation of the Effect of Disturbance on the Mean Declination.*—When we deduce the yearly mean declination from the days selected as free from intermittent disturbance (No. 35.) we obtain the following results :—

Mean Declination from all the hourly observations in 1844, = 25° 17′·06, 1845, = 25° 11′·32
………………… from the hourly observations in the selected 120 days of 1844, = 25° 17′·08
…………………………………………………………………… 60 …………… = 25° 17′·06
…………………………………………………………………… 84 days of 1845, = 25° 11′·39

The effect of disturbances, therefore, on the *yearly* mean position may be considered zero. When we compare the *monthly* means, as deduced from the 10 days selected in each month of 1844 and the 7 days selected in each month of 1845, with those deduced from all the hourly observations, we find that the average difference (independent of sign) for the monthly means in these two years is about 0′·2 ; a difference which may be referred with more probability to the effects of regular laws, or the fewness of the observations, than to the effect of intermittent disturbance, which is zero on the yearly mean. It is evident, therefore, that, for the purpose of the present discussion, we may assume, with little probable error, that the monthly mean from both series has the same value (as in Tables 13 and 14), and take the differences of the hourly means in the two series as measures of the effect of disturbance; any possible error in this assumption can affect the values of the differences but slightly ; the epochs of the maximum and minimum would still remain unaltered. In this manner the following Table has been formed :—

TABLE 15.—Differences of Disturbed and Undisturbed Diurnal Variations of Westerly Declination, as deduced from Tables 13 and 14, exhibiting the effect of Irregular Disturbance on the Hourly Mean Positions.

Mak. Mean Time.	Dec. Jan. Feb.	March. April.	May. June.	July. Aug.	Sept. Oct. Nov.	Sept. to Feb.	March to Aug.	Year.
h. m.	′	′	′	′	′	′	′	′
12 10	−1·06	−0·65	−0·95	−0·77	−1·03	−1·05	−0·79	−0·92
13 10	−0·83	−0·82	−0·83	−0·73	−0·91	−0·87	−0·80	−0·83
14 10	−0·55	−0·59	−0·52	−0·57	−0·34	−0·44	−0·56	−0·50
15 10	−0·23	−0·51	−0·43	0·00	−0·23	−0·23	−0·32	−0·27
16 10	0·00	+0·07	−0·29	−0·19	−0·13	−0·06	−0·14	−0·09
17 10	−0·13	+0·21	+0·06	+0·52	+0·29	+0·08	+0·26	+0·18
18 10	+0·44	+0·46	+0·01	+0·98	+1·05	+0·74	+0·48	+0·62
19 10	+0·55	+0·77	+0·11	+0·95	+1·23	+0·89	+0·61	+0·76
20 10	+0·52	+0·81	+0·52	+1·09	+1·30	+0·91	+0·81	+0·86
21 10	+0·66	+1·05	+0·62	+0·58	+1·12	+0·89	+0·75	+0·82
22 10	+0·72	+0·84	+0·57	+0·21	+0·85	+0·78	+0·54	+0·66
23 10	+0·69	+0·86	+0·41	+0·19	+0·77	+0·73	+0·49	+0·60
0 10	+0·86	+0·90	+0·43	+0·40	+0·80	+0·83	+0·58	+0·70
1 10	+1·08	+1·08	+0·76	+0·49	+0·65	+0·86	+0·77	+0·81
2 10	+1·10	+0·83	+0·81	+0·52	+1·07	+1·08	+0·72	+0·90
3 10	+0·77	+0·75	+0·56	+0·56	+0·95	+0·86	+0·63	+0·74
4 10	+0·86	+0·77	+0·60	+0·48	+0·49	+0·67	+0·61	+0·64
5 10	+0·19	−0·26	+0·35	+0·21	+0·17	+0·18	+0·10	+0·24
6 10	−0·41	−1·01	+0·16	−0·47	−0·89	−0·64	−0·44	−0·54
7 10	−0·58	−1·20	−0·15	−0·63	−1·07	−0·82	−0·66	−0·74
8 10	−1·37	−1·05	−0·53	−0·71	−1·77	−1·57	−0·77	−1·17
9 10	−1·17	−1·08	−0·70	−1·38	−1·28	−1·22	−1·05	−1·13
10 10	−1·08	−1·03	−0·67	−1·21	−1·55	−1·31	−0·97	−1·14
11 10	−1·21	−1·19	−0·93	−0·69	−1·54	−1·37	−0·94	−1·15

39. The conclusions from this Table are,—

1*st*, That the greatest effect of disturbance in increasing the westerly declination occurs

In	Dec. Jan. Feb.	March, April.	May, June.	July, Aug.	Sept. Oct. Nov.
About	1^h 40^m P.M.	9^h A.M. to 1^h P.M.	1^h 40^m P.M.	8^h A.M.	8^h A.M.

Throughout the year, therefore, the effect of disturbance in increasing the westerly declination is greatest between 8^h A.M. and 2^h P.M.; being near the latter hour for the months about mid-summer and mid-winter, and near the former hour for the intermediate months.

2d, That the greatest effect of disturbance in decreasing the westerly declination occurs

In	Dec. Jan. Feb.	March, April.	May, June.	July, Aug.	Sept. Oct. Nov.
About	8^h P.M.—12^h P.M.	6^h P.M.—11^h P.M.	11^h P.M.—12^h P.M.	9^h P.M. 10^h P.M.	8^h P.M.—11^h P.M.

3d, That the effect on the hourly mean westerly declination is zero

In	Dec. Jan. Feb.	March, April.	May, June.	July, Aug.	Sept. Oct. Nov.
About	$5\frac{1}{2}^h$ A.M. and $5\frac{1}{4}^h$ P.M.	4^h A.M. and 5^h P.M.	5^h A.M. and $6\frac{1}{2}^h$ P.M.	4^h A.M. and $5\frac{1}{2}^h$ P.M.	$4\frac{1}{2}^h$ A.M. and $5\frac{1}{2}^h$ P.M.

Diurnal Variation of frequency *of Positive and Negative Excursions from the Hourly Mean Position.*—The number of observations which were to the west of the hourly mean for each month in 1844 and 1845 having been obtained, the following Table was formed, containing the numbers per cent. for quarterly groups of months.

TABLE 16.—Numbers of Excursions of the Declination Magnet in 100 which were to the West; 1st, of the Hourly Means, as deduced from all the Hourly Observations in each Month of 1844 and 1845; and, 2d, of those deduced from the Selected Days.

Mak. Mean Time.	With reference to Mean of all.					With reference to Mean of Selected Days.				
	Nov. Dec. Jan.	Feb. March. April.	May. June. July.	Aug. Sept. Oct.	Year.	Nov. Dec. Jan.	Feb. March. April.	May. June. July.	Aug. Sept. Oct.	Year.
h. m.										
12 10	63·9	66·7	55·1	60·1	61·4	39·9	47·1	36·1	32·3	38·8
13 10	67·7	63·4	60·8	59·5	62·8	43·7	49·0	31·0	31·6	38·8
14 10	57·6	60·8	57·6	53·8	57·4	46·2	51·0	40·5	42·4	45·0
15 10	58·9	59·5	47·5	48·7	53·6	53·8	51·0	44·9	42·4	48·0
16 10	50·6	50·3	44·3	50·0	48·8	46·8	53·6	36·1	38·0	43·5
17 10	53·2	49·7	42·4	35·4	45·1	46·2	55·6	43·0	47·5	48·0
18 10	34·8	45·8	43·7	26·6	37·6	58·2	66·7	50·6	56·2	57·7
19 10	37·3	45·1	42·4	32·9	39·4	66·5	65·4	47·5	58·2	59·3
20 10	33·5	39·9	41·1	36·1	37·6	67·7	59·5	56·3	62·0	61·4
21 10	36·7	42·5	43·7	37·3	40·0	71·5	70·6	65·2	61·4	67·1
22 10	36·7	34·6	47·5	43·7	40·7	70·9	64·7	69·6	58·2	65·9
23 10	40·5	42·5	46·8	45·6	43·9	60·8	62·1	61·4	66·5	62·7
0 10	38·6	39·2	45·6	45·6	42·3	67·7	65·4	65·2	68·4	66·7
1 10	40·5	43·1	44·3	47·5	43·9	63·3	68·0	58·2	65·8	63·8
2 10	36·1	43·1	44·9	41·8	41·5	64·6	64·7	63·3	64·1	64·1
3 10	46·2	39·2	47·5	45·0	44·5	65·8	66·7	58·2	53·8	61·1
4 10	43·7	41·8	49·4	45·6	45·1	62·0	70·6	56·3	57·0	61·4
5 10	53·8	53·6	48·7	50·6	51·7	59·5	52·3	41·8	53·2	51·7
6 10	65·2	68·6	47·5	63·3	61·1	58·2	49·0	43·0	53·8	51·0
7 10	70·9	69·3	57·6	63·9	65·4	48·7	47·1	38·6	50·6	46·3
8 10	72·8	68·6	61·4	63·9	66·7	38·0	45·1	34·2	38·6	38·9
9 10	69·6	65·4	67·1	69·0	67·8	54·4	44·4	40·5	34·2	43·4
10 10	69·0	63·4	61·4	67·7	65·4	39·2	44·4	38·6	29·1	37·8
11 10	67·1	60·8	63·3	67·7	64·8	36·7	47·1	35·5	41·1	40·0

40. The following are the epochs of maximum and minimum frequency of the positive or westerly excursions.

	From the Means of all the Observations.		From the Means of the Undisturbed Days.	
	Min.	Max.	Min.	Max.
Nov. Dec. Jan.	8^h A.M.	8^h P.M.	11^h P.M.	$9\frac{1}{2}^h$ A.M.
Feb. March, April.	10^h A.M.	$6\frac{1}{2}^h$ P.M.	9^h P.M.	9^h A.M.—4^h P.M.
May, June, July,	$6\frac{1}{2}^h$ A.M.	9^h P.M.	8^h P.M.—1^h A.M.	10^h A.M.
Aug. Sept. Oct.	6^h A.M.	$9\frac{1}{2}^h$ P.M.	10^h P.M.—1^h A.M.	0^h Noon.

41. If we consider the mean position as deduced from *all* the observations in each month, we find that the number of observations for which the declination was to the west, is least from 6^h A.M. to 10^h A.M., and greatest from 6^h P.M. to 10^h P.M.; the reverse of course holding for the deviations to the east: if, however, we consider the hourly mean position deduced from the days selected free from disturbance, we find that the number of westerly observations is *greatest* from about 9^h A.M. till noon, and that it is least from 8^h P.M. till 1^h A.M.; which result is nearly the reverse of the other. As the maximum effect of disturbance, in increasing the westerly declination (No. 36), occurs about the same time as the maximum frequency of westerly excursions from the undisturbed position (as seen in the second result), the displacement westerly of the mean position, by disturbance, reduces the number of westerly excursions from that position to a minimum (as seen in the first result). The same explanation applies to the other epoch.

Diurnal Variation of the Sums of Disturbances of the Hourly values of Magnetic Declination in 1844 *and* 1845.—The following table contains the sums, for 100 observations, of the deviations of the north end of the declination magnet from the monthly mean positions at the corresponding hours, the latter being deduced from the days selected as free from irregular disturbance.

TABLE 17.—Hourly sums, for 100 Observations of Westerly Declination in 1844 and 1845, of the Positive and Negative Excursions from the Approximate Normal Positions for each Hour.

Mak. Mean Time.	Positive (W.) Disturbances.					Negative (E.) Disturbances.				
	Nov. Dec. Jan.	Feb. March. April.	May. June. July.	Aug. Sept. Oct.	Year.	Nov. Dec. Jan.	Feb. March. April.	May. June. July.	Aug. Sept. Oct.	Year.
h. m.	′	′	′	′	′	′	′	′	′	′
12 10	77	138	73	101	97	272	305	259	339	294
13 10	87	144	73	107	102	277	300	253	313	286
14 10	114	159	88	157	129	198	264	215	270	237
15 10	135	146	135	177	148	178	208	159	225	193
16 10	128	190	138	141	149	147	171	172	190	170
17 10	109	167	157	225	164	123	110	134	135	126
18 10	178	189	176	286	207	69	72	116	83	85
19 10	209	203	164	294	218	43	55	118	78	74
20 10	236	218	216	344	254	38	69	80	48	59
21 10	275	258	252	335	281	40	56	77	73	62
22 10	249	230	261	260	251	51	59	66	92	67
23 10	217	206	243	260	232	66	72	98	67	76
0 10	294	241	219	250	251	55	79	88	67	73
1 10	288	250	224	250	253	72	66	99	94	83
2 10	279	257	219	268	256	64	77	81	91	78
3 10	260	243	188	244	234	112	91	109	131	111
4 10	233	213	159	197	201	122	93	108	109	108
5 10	160	149	95	157	141	150	212	113	127	150
6 10	159	108	71	123	116	294	309	125	251	244
7 10	97	108	56	97	89	274	292	168	240	243
8 10	62	95	40	70	67	382	304	194	364	311
9 10	76	120	42	52	72	303	348	170	399	305
10 10	77	101	48	62	72	345	312	158	393	302
11 10	52	94	45	87	70	374	311	220	355	315

42. The results from the Table are as follows:—

1*st*, The sum of positive or westerly disturbances

In	Nov. Dec. Jan.	Feb. March, April.	May, June, July.	Aug. Sept. Oct.
Is a maximum at	0^h Noon.	9^h A.M. and 2^h P.M.	10^h A.M.	$8\frac{1}{2}^h$ A.M.
Is a minimum at	11^h P.M.	8^h P.M.—11^h P.M.	$8\frac{1}{2}^h$ P.M.	9^h P.M.

2*d*, The sum of negative or easterly disturbances

Is a maximum at	8^h—11^h P.M.	9^h P.M.	$12\frac{1}{2}^h$ A.M.	$9\frac{1}{4}^h$ P.M.
Is a minimum at	8^h A.M.	7^h A.M.—10^h A.M.	10^h A.M.	8^h A.M.—0^h Noon.

TABLE 18.—Mean *Difference* of the Observations of Magnetic Declination in 1844 and 1845 from the Monthly Means, at the corresponding Hour in each Year, as deduced from all the Regular Observations.

Mak. Mean Time.	Mean Westerly Difference.					Mean Easterly Difference.					Mean Difference.				
	Nov. Dec. Jan.	Feb. Mar. April.	May. June. July.	Aug. Sept. Oct.	Year.	Nov. Dec. Jan.	Feb. Mar. April.	May. June. July.	Aug. Sept. Oct.	Year.	Nov. Dec. Jan.	Feb. Mar. April.	May. June. July.	Aug. Sept. Oct.	Year.
h. m.	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′
12 10	1·43	1·77	1·47	1·80	1·62	2·54	3·54	1·80	2·71	2·58	1·83	2·36	1·62	2·16	1·99
13 10	1·51	1·84	1·33	1·71	1·60	3·16	3·18	2·07	2·51	2·70	2·04	2·33	1·62	2·03	2·01
14 10	1·33	1·98	1·30	2·01	1·66	1·80	3·07	1·77	2·34	2·23	1·53	2·41	1·50	2·16	1·90
15 10	1·38	1·53	1·51	2·04	1·60	1·98	2·25	1·36	1·94	1·85	1·63	1·82	1·43	1·99	1·72
16 10	1·35	1·76	1·70	1·63	1·61	1·39	1·78	1·36	1·63	1·53	1·37	1·77	1·51	1·63	1·57
17 10	1·05	1·36	1·91	2·73	1·67	1·20	1·34	1·41	1·49	1·37	1·12	1·35	1·62	1·93	1·51
18 10	1·81	1·35	1·61	3·84	1·98	0·97	1·14	1·25	1·39	1·19	1·26	1·24	1·41	2·04	1·49
19 10	1·53	1·31	1·64	3·00	1·81	0·91	1·08	1·21	1·47	1·17	1·14	1·18	1·39	1·97	1·42
20 10	1·94	1·72	1·84	2·90	2·09	0·98	1·14	1·28	1·64	1·26	1·30	1·37	1·51	2·09	1·57
21 10	2·00	1·68	1·76	2·67	2·01	1·16	1·24	1·37	1·59	1·34	1·47	1·43	1·54	1·99	1·61
22 10	1·98	1·99	1·45	1·93	1·82	1·15	1·06	1·31	1·50	1·25	1·45	1·38	1·38	1·69	1·48
23 10	1·80	1·48	1·72	1·64	1·66	1·23	1·10	1·51	1·38	1·30	1·46	1·26	1·61	1·50	1·46
0 10	2·22	1·93	1·54	1·59	1·73	1·39	1·24	1·29	1·33	1·32	1·71	1·51	1·40	1·45	1·52
1 10	2·16	1·62	1·75	1·73	1·80	1·47	1·23	1·39	1·56	1·41	1·75	1·40	1·55	1·64	1·58
2 10	2·37	1·80	1·59	2·12	1·95	1·34	1·36	1·30	1·52	1·38	1·71	1·55	1·43	1·77	1·62
3 10	2·04	2·07	1·52	2·04	1·91	1·76	1·33	1·37	1·67	1·53	1·89	1·62	1·44	1·84	1·70
4 10	1·99	1·73	1·31	1·62	1·65	1·55	1·25	1·27	1·36	1·36	1·74	1·45	1·29	1·48	1·49
5 10	1·47	1·79	1·04	1·38	1·43	1·71	2·07	0·98	1·42	1·53	1·58	1·92	1·01	1·40	1·48
6 10	1·98	1·74	0·98	1·61	1·62	3·71	3·79	0·88	2·78	2·54	2·58	2·38	0·93	2·04	1·98
7 10	1·46	1·60	0·95	1·37	1·36	3·56	3·60	1·29	2·42	2·57	2·07	2·21	1·09	1·75	1·78
8 10	1·72	1·61	0·90	1·84	1·53	4·60	3·52	1·44	3·25	3·06	2·50	2·21	1·11	2·35	2·04
9 10	1·54	1·87	0·80	1·73	1·48	3·52	3·54	1·64	3·84	3·12	2·14	2·45	1·08	2·38	2·01
10 10	1·64	1·65	0·86	1·69	1·47	3·65	2·86	1·37	3·54	2·77	2·26	2·09	1·06	2·29	1·92
11 10	1·66	1·72	1·05	1·74	1·54	3·39	2·67	1·81	3·64	2·84	2·23	2·09	1·33	2·35	2·00

43. *Diurnal Variation of the Mean Excursions of the Declination Magnet, from the Monthly Mean Positions for each Hour, from the Observations for* 1844 *and* 1845.—In the previous investigations, we have considered the *effect* of irregular disturbance on the hourly mean position, the *frequency* of positive and negative excursions, and the *sums* of the latter referred to the hourly means of selected days ; we have still to consider the *mean* values of the excursions which may evidently follow different laws from the sums, as the latter may depend upon both the number and mean value. Table 18 has been formed in the following manner : Half the sums of the differences of the hourly observations from the monthly means for the corresponding hours being positive and half negative, half the sums were divided by the number of positive excursions to obtain the first portion of Table 18, and by the number of negative excursions to obtain the second portion ; the third portion is obtained by dividing the whole sums by the whole number of observations. Table 19 has been formed similarly, excepting that the sums of the positive and negative disturbances are unequal (See Makerstoun Observations for 1844, p. 350). The quantities in Table 18 have been termed mean differences, those in Table 19, mean disturbances ; the former being related to the means for all the observations, the latter to the means of the undisturbed days. The epochs of maximum and minimum are nearly the same for both Tables ; those from Table 19 only are given, as it is the best exponent of the laws with reference to approximate normal mean positions.

	Mean Westerly Disturbance.		Mean Easterly Disturbance.		Mean Disturbance.	
	Max.	Min.	Max.	Min.	Max.	Min.
Nov., Dec., Jan.,	1^{h} P.M.	10^{h} P.M.	6^{h}–9^{h} P.M.	8^{h} A.M.	6^{h}–11^{h} P.M.	5^{h} A.M.
Feb., Mar., April,	2^{h} P.M.	6^{h}–11^{h} P.M.	9^{h} P.M.	7^{h}–10^{h} A.M.	9^{h} P.M.–1^{h} A.M.	6^{h} A.M.
May, June, July,	8^{h}–11^{h} A.M.	9^{h} P.M.	$12\frac{1}{2}^{h}$ A.M.	8^{h} A.M. & 5^{h} P.M.	$12\frac{1}{2}^{h}$ A.M. & 11^{h} A.M.	5^{h}–10^{h} P.M.
Aug., Sept., Oct.,	$8\frac{1}{2}^{h}$ A.M.	9^{h} P.M.	10^{h} P.M.	8^{h} A.M.	10^{h} P.M.	5^{h} P.M.

44. The epochs given above can be considered only roughly approximative, since the value of the average excursion for the hours about the times noted often varies very slowly. The points of most consequence in these results are as follow :—

1*st*, The average westerly excursion from the mean position for the hour is greatest in the winter and spring quarters about 1^h or 2^h P.M.; and about 8^h A.M. in the summer and autumn quarters, although the values vary little in the summer quarter from 4^h A.M. to 1^h P.M., and in the autumn quarter a secondary maximum occurs at 3^h P.M.

2*d*, The average easterly excursion is least about 8^h A.M. in each quarter, with the exception of summer, in which it is equally small at 5^h P.M.: the average easterly excursion from the hourly mean of *all* the observations (Table 18) has the minimum decidedly marked at 6^h P.M.

3*d*, The minimum westerly excursion occurs about 9^h P.M. in all the quarters.

4*th*, The maximum easterly excursion occurs earliest in winter, about 6^h P.M., and latest in summer, namely after midnight; while in the equinoctial quarters it occurs betwixt these epochs, the values varying little from 6^h P.M. till midnight.

5*th*, The mean excursion, without reference to direction, has its greatest value earliest in winter, about 6^h P.M.; about 9^h and 10^h P.M. in the equinoctial quarters; and in summer there are two maxima of nearly equal value, immediately after midnight and at 11^h A.M., with a secondary minimum about 6^h A.M.

6*th*, The mean excursion has its least value about 5^h to 6^h A.M. in winter and spring; a secondary minimum, as noted above, occurs about the same hour in summer, and 4^h in autumn; but the actual minimum occurs, distinctly marked, between 6^h and 10^h P.M. in summer, and, less distinctly marked, about 5^h P.M. in autumn.

45. It appears from these results, that the diurnal law of mean disturbance is *not constant throughout the year*, as has been supposed; in fact *the law for summer is nearly the reverse of that for winter*, while that for autumn is nearly intermediate between the two, a secondary maximum occurring in the latter at 9^h A.M. In the winter and spring quarters there is a tendency to a secondary minimum about 4^h or 5^h P.M.

TABLE 19.—Mean *Disturbances* of Magnetic Declination, or Differences from the Monthly Means, at the corresponding Hours in 1844 and 1845, as deduced from the selected series in each Year.

Mak. Mean Time.	Mean Westerly Disturbance.					Mean Easterly Disturbance.					Mean Disturbances.				
	Nov. Dec. Jan.	Feb. Mar. April.	May. June. July.	Aug. Sept. Oct.	Year.	Nov. Dec. Jan.	Feb. Mar. April.	May. June. July.	Aug. Sept. Oct.	Year.	Nov. Dec. Jan.	Feb. Mar. April.	May. June. July.	Aug. Sept. Oct.	Year.
h. m.	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′
12 10	0·96	1·47	1·02	1·56	1·25	2·26	2·88	2·02	2·50	2·40	1·74	2·22	1·66	2·21	1·95
13 10	1·00	1·47	1·17	1·68	1·32	2·45	2·94	1·98	2·29	2·33	1·82	2·22	1·63	2·10	1·94
14 10	1·23	1·56	1·09	1·85	1·44	1·84	2·69	1·81	2·34	2·15	1·56	2·12	1·52	2·14	1·83
15 10	1·25	1·43	1·50	2·09	1·54	1·92	2·12	1·44	1·96	1·85	1·56	1·77	1·47	2·01	1·70
16 10	1·37	1·77	1·92	1·86	1·71	1·38	1·84	1·34	1·53	1·51	1·38	1·81	1·55	1·66	1·60
17 10	1·18	1·56	1·82	2·37	1·71	1·14	1·24	1·18	1·29	1·21	1·16	1·39	1·46	1·80	1·45
18 10	1·53	1·39	1·74	2·57	1·79	0·82	1·08	1·18	0·93	1·01	1·24	1·29	1·46	1·85	1·46
19 10	1·57	1·55	1·72	2·52	1·83	0·64	0·80	1·12	0·93	0·90	1·26	1·29	1·41	1·86	1·46
20 10	1·74	1·83	1·92	2·77	2·07	0·59	0·86	0·92	0·63	0·76	1·37	1·43	1·48	1·96	1·56
21 10	1·92	1·83	1·94	2·73	2·09	0·69	0·95	1·11	0·95	0·93	1·58	1·57	1·65	2·04	1·71
22 10	1·76	1·78	1·88	2·23	1·90	0·87	0·84	1·08	1·11	0·99	1·50	1·45	1·64	1·76	1·59
23 10	1·78	1·66	1·98	1·96	1·85	0·84	0·95	1·26	1·00	1·02	1·42	1·39	1·71	1·64	1·54
0 10	2·17	1·84	1·68	1·83	1·89	0·86	1·14	1·27	1·06	1·08	1·75	1·60	1·54	1·59	1·62
1 10	2·27	1·84	1·92	1·90	1·98	0·98	1·03	1·18	1·38	1·14	1·80	1·58	1·62	1·72	1·68
2 10	2·16	1·98	1·73	2·10	1·99	0·90	1·08	1·11	1·26	1·09	1·72	1·67	1·50	1·80	1·67
3 10	1·98	1·82	1·61	2·27	1·91	1·63	1·36	1·31	1·42	1·42	1·86	1·67	1·49	1·88	1·72
4 10	1·88	1·51	1·41	1·74	1·63	1·60	1·58	1·23	1·27	1·39	1·78	1·53	1·34	1·53	1·54
5 10	1·34	1·43	1·14	1·48	1·36	1·85	2·23	0·97	1·36	1·55	1·55	1·81	1·04	1·42	1·45
6 10	1·37	1·10	0·82	1·14	1·13	3·52	3·03	1·09	2·72	2·49	2·27	2·09	0·98	1·87	1·80
7 10	0·99	1·15	0·72	0·95	0·96	2·67	2·75	1·37	2·43	2·26	1·85	2·00	1·12	1·69	1·66
8 10	0·82	1·05	0·58	0·91	0·86	3·08	2·77	1·48	2·96	2·54	2·22	2·00	1·17	2·17	1·89
9 10	0·70	1·35	0·51	0·77	0·83	3·33	3·13	1·43	3·03	2·69	1·90	2·34	1·06	2·26	1·89
10 10	0·99	1·14	0·62	1·07	0·95	2·84	2·80	1·29	2·77	2·43	2·11	2·06	1·03	2·28	1·87
11 10	0·71	1·00	0·64	1·05	0·86	2·95	2·94	1·70	3·02	2·63	2·13	2·03	1·33	2·21	1·92

46. *Diurnal Variation of the probable error of an Observation of Magnetic Declination.*—It appears from the previous conclusions, that the best hour to make an observation of magnetic declination in winter and spring, is about 6^h A.M.; in the summer quarter, from 5^h P.M. to 10^h P.M.; and in autumn from 4^h to 5^h P.M.

The least and greatest values of the probable error of an observation from the monthly mean of the hour, for Makerstoun in 1844 and 1845, were approximately as follow :—

Winter, Least Probable Error,	5^{h} A.M. = 0′·8	Greatest Probable Error,	6^{h} P.M. = 1′·8
Spring, ...	7^{h} A.M. = 0′·8	....	9^{h} P.M. = 1′·7
Summer, ...	6^{h} P.M. = 0′·6	....	1^{h} A.M. & 11^{h} A.M. = 1′·1
Autumn, ...	5^{h} P.M. = 0′·9	....	9^{h} P.M. = 1′·6

It is obvious, however, that even at the same place the probable error will vary with the year. In 1847, the probable error of an observation would have been greatly increased by the excessive magnetic storms of that year : neglecting these rare and excessive disturbances however, the values given above cannot be far from the truth.

Variation of Magnetic Declination with reference to the Moon's Hour-Angle.—The following Table has been constructed from Table XI. 1844, p. 342, and Table IX., p. 6, of the present volume.

TABLE 20.—Variations of Magnetic Declination with reference to the Moon's Hour-Angle for the Winter and Summer Lunations, and for all the Lunations of the Years 1844 and 1845.

Moon's Hour-Angle.	Winter Lunations.			Summer Lunations.			All the Lunations.		
	1844.	1845.	Mean.	1844.	1845.	Mean.	1844.	1845.	Mean.
h. m.	′	′	′	′	′	′	′	′	′
0 0	−0·35	−0·11	−0·23	+0·03	+0·36	+0·19	−0·21	+0·10	−0·05
2 25	−0·07	−0·02	−0·04	+0·29	+0·27	+0·28	+0·11	+0·11	+0·11
4 20	+0·30	−0·03	+0·13	+0·06	+0·34	+0·20	+0·19	+0·13	+0·16
6 15	+0·30	+0·02	+0·16	−0·04	+0·18	+0·07	+0·13	+0·09	+0·11
8 10	+0·38	+0·17	+0·27	−0·18	−0·39	−0·29	+0·10	−0·08	+0·01
10 5	+0·40	+0·27	+0·33	+0·16	−0·11	+0·03	+0·33	+0·10	+0·21
12 0	+0·49	+0·28	+0·36	+0·40	−0·28	+0·06	+0·45	+0·02	+0·23
13 55	+0·23	+0·16	+0·19	+0·02	−0·08	−0·03	+0·13	+0·05	+0·09
15 50	−0·03	−0·02	−0·03	−0·49	−0·33	−0·41	−0·25	−0·15	−0·20
17 45	−0·54	−0·26	−0·40	−0·32	−0·14	−0·23	−0·43	−0·21	−0·34
19 40	−0·69	−0·15	−0·42	+0·08	−0·16	−0·04	−0·30	−0·16	−0·23
21 35	−0·35	−0·28	−0·32	−0·04	+0·31	+0·13	−0·24	−0·01	−0·12

47. It appears from this Table, that the mean declination varies with the moon's hour-angle, as follows :—

1st, In winter (when the moon is in opposition north of the equator) the maximum of westerly declination, for this variation, occurs when the moon is on the meridian of 11^{h}, or about an hour before the inferior transit; the minimum occurs between 4^{h} and 5^{h} before the superior transit. The group for each year gives almost exactly the same result, but the range of the variation in 1844 was 1′·2, while in 1845 it was under 0′·6.

2d, In summer the declination needle has a double easterly and westerly motion.

The maximum westerly declination occurs about 2½ hours after the superior transit.
The minimum westerly declination occurs about 6 hours before the superior transit.
A maximum westerly declination occurs at the inferior transit.
A minimum westerly declination occurs about 8 hours after the superior transit.

The results for the summer lunations in the two years agree to a considerable extent; the maximum at the inferior transit, however, is not nearly so distinctly marked in 1845 as in 1844. The range of the variations for the summer lunations in the two years, is for 1844 = 0′·9, for 1845 = 0′·8 nearly.

3d, The result from the lunations during the whole year, is a combination of the two results previously given. The principal maximum occurs at the inferior transit, and the principal minimum about 6 hours after it.

Several *single* lunations confirm the accuracy of these conclusions. See the volume for 1844, pp. 342, 343.

HORIZONTAL COMPONENT OF MAGNETIC FORCE.

48. The observations in connection with this element are of two classes :—1*st*, Observations for the absolute value of the component, made by the method of GAUSS ; and, 2*d*, Observations of the bifilar magnetometer for the variations of the component. The observations for the absolute value were made with two different instruments ; first, from 1843 till April 1846, with a 15-inch deflecting bar, by GAUSS's original method ; and second, after April 1846, with 3·65-inch deflecting cylinders, by Dr LAMONT's modification of GAUSS's method : the whole processes have been already described in the Introductions to the different volumes of Makerstoun Observations. The following Table contains the computed values of (X) the horizontal component corresponding to the reading of the bifilar magnetometer at the time of vibration, and also the values reduced to the mean reading of the bifilar for the year of the observations ; to these are affixed approximate weights, depending upon the number and agreement of the partial results, and employed in obtaining the mean in the last column :—

TABLE 21.—Results of Observations for the Absolute Value of the Horizontal Component of Magnetic Force, made in the Years 1843—1849, with the Resulting Mean Value, corresponding to the Mean Reading of the Bifilar Magnetometer for the respective Years in which the Observations were made.

	Date.	During Observation.		X Reduced to the Mean Bifilar for the Year.	Weight.	Mean Value of X for the Mean Bifilar Reading of each Year.
		Values of X.	Mean Bifilar Reading.			
15-inch Deflecting Bar.	1843.					
	August 11	3·3556	511.5	3·3512	1	3·3752
	August 21	3·3849	511·1	3·3807	3	
	November 8	3·3773	510·9	3·3732	3	
	November 14	3·3792	507·6	3·3757	2	
	December 18	3·3840	515·2	3·3813	2	
	1844.					
	February 17	3·3836	524·6	3·3851	1	3·3801
	March 23	3·3759	520·8	3·3793	2	
	May 29	3·3853	535·7	3·3816	2	
	August 5	3·3913	540·7	3·3852	2	
	December 26	3·3844	539·5	3·3789	2	
	December 30	3·3760	534·9	3·3727	2	
	1845.					
	December 29	3·3921	548·9	3·3870	2	3·3832
	December 30	3·3812	539·1	3·3807	3	
	1846.					
	February 16	3·3929	553·2	3·3910	3	3·3883
	April 14	3·3904	562·3	3·3843	2	
3·65-inch Deflecting Bar.	1847.					
	May 31	3·3918	574·8	3·3842	3	3·3846
	June 15	3·3927	576·7	3·3843	3	
	September 11	3·3791	545·0	3·3852	3	
	1849.					
	June 19	3·3963	598·0	3·3873	3	3·3917
	October 11	3·3913	568·0	3·3961	3	

49. The results for the large bar indicate an increase of absolute horizontal force from year to year between 1843 and 1846 ; those for the small bar exhibit a similar fact, although the considerable difference between the results for June 19 and October 11, 1849, throw some doubt on the amount of increase.

From these observations the increase of the horizontal component in *absolute measure* (see No. 53.)

From 1843 to 1845, = 0·0080 = 0·00400 yearly.
From 1844 to 1846, = 0·0082 = 0·00410 .. ... Mean of all, = 0·00388 yearly.
From 1847 to 1849, = 0·0071 = 0·00355 ......

50. The following Tables have been deduced from the observations of the bifilar magnetometer in the same manner as the Tables already given for the magnetic declination. The variations are expressed in terms of the whole horizontal component, the latter being equal to unity.

TABLE 22.—Monthly Means of the Variations of the Horizontal Component of Magnetic Force at Makerstoun.

Month.	1842.	1843.	1844.	1845.	1846.	1847.	1848.	1849.
January	·005055	·008747	·012663	·014943	·016211	·017925	·017805	·019392
February	·005230	·008826	·012845	·015013	·016316	·017573	·017649	·019620
March	·005627	·008584	·012661	·014988	·016354	·017806	·018064	·019638
April	·005439	·008760	·012976	·014890	·016354	·017731	·018406	·020070
May	·006492	·009769	·013679	·015340	·016716	·017751	·019054	·020833
June	·006786	·010233	·014425	·015645	·016570	·018455	·019316	·021738
July	·006714	·010104	·014584	·015572	·016939	·018146	·019305	·021358
August	·006796	·010257	·014376	·015407	·016388	·018016	·019116	·020921
September	·007054	·010542	·014360	·015078	·016233	·017857	·018552	·020647
October	·007482	·010774	·014344	·015461	·016480	·016981	·019230	·020540
November	·007692	·011579	·014740	·015851	·017161	·017584	·019029	·020975
December	·008239	·012065	·015212	·015895	·017775	·018591	·019010	·021600

51. *Monthly Mean Values of the Variations of the Horizontal Component.*—The horizontal force has increased in the greater number of cases from month to month; in March or April, and in August or September, the mean is generally less than in the immediately preceding months. The means for 1848 and 1849 are considerably less accurate than those for the preceding years, depending as they do on only two daily observations; and the means for the end of 1846 and for 1847 are much affected by excessive disturbance.

TABLE 23.—Yearly Means of the Variations of the Horizontal Component of Magnetic Force, with the Secular Change.

Year.	Horizontal Component.	Secular Increase.	
		Each Year.	Mean of 4 Years.
1842	0·006550		
1843	·010020	·003470	
1844	·013905	·003885	
1845	·015340	·001435	
1846	·016625	·001285	·002519
1847	·017868	·001243	·001962
1848	·018711	·000843	·001202
1849	·020611	·001900	·001318

52. Table 32 contains the yearly means of the quantities in Table 22, together with the resulting yearly values of the secular change. The secular change appears to have been very large in the years 1842 to 1844, and considerably smaller and more regular in the years from 1844 to 1847; the change from 1847 to 1848 is smaller, and that from 1848 to 1849 is greater, than for each of the preceding three years. It is not improbable that the change from 1842 to 1844 is increased by instrumental causes, such as stretching of the suspension wires of the magnet, while the variation of the changes in 1847–9 is evidently connected with the great disturbances of the year 1847–8. If we take the mean yearly secular change from 1845 till 1849, as probably unaffected by instrumental error, we find it = 0·001318, the horizontal component being unity; or, if we take the absolute value of the horizontal component, = 3·388, we find—

53. The mean yearly secular change of the horizontal force in absolute measure,

By the observations of the bifilar magnetometer, = + 0·00446
By the observations for the absolute force (Table 21), = + 0·00388

Such a near agreement is, perhaps, more than could have been expected: if the observations with the small deflecting bar were neglected (No. 49), the agreement would be even greater.

54. It has been shewn, No. 38, that when we deduce the yearly mean declination from the days which were selected as little affected by intermittent disturbances, the result is almost precisely the same as that deduced from the whole ordinary observations, and therefore from the days disturbed; a similar comparison being made for the horizontal component, we find as follows:—

The yearly mean of the horizontal component, as deduced from the 120 days selected as nearly free from disturbance,

In 1844, is greater than that deduced from all the hourly observations of the year by 0·000189.
In 1845, ...0·000154.

The effect of disturbance in both years was to diminish the mean value of the horizontal component on the average by 0·000172 of the whole component. It was found for 1844 (see the volume for that year, p. 365) that a more careful selection of 60 days (5 in each month) shewed even a greater effect of disturbance, namely 0·000251 for that year.

TABLE 24.—Monthly Variations of the Horizontal Component of Magnetic Force, free from Regular Secular Change.

Month.	1842.	1843.	1844.	1845.	1846.	1847.	1848.	1849.	1842 to 1845.	1846 to 1849.	1842 to 1849.	1842 to 1847.
Prefix.	0·000	0·000	0·000	0·000	0·000	0·00	0·000	0·00	0·000	0·000	0·000	0·000
January	+100	+470	+050	+114	+213	+0409	−219	−0339	+183	+016	+100	+339
February	−015	+232	−003	+091	+204	−0007	−500	−0271	+076	−143	−034	+125
March	+092	−327	−422	−027	+128	+0162	−210	−0413	−171	−084	−127	−098
April	−386	−468	−342	−218	+014	+0023	+007	−0141	−353	−024	−189	−344
May	+377	+224	+126	+139	+262	−0021	+530	+0462	+216	+308	+262	+277
June	+381	+371	+637	+351	+002	+0619	+667	+1207	+435	+624	+530	+590
July	+019	−075	+561	+185	+257	+0246	+531	+0667	+172	+425	+299	+298
August	−189	−239	+118	−073	−408	+0052	+217	+0070	−096	−017	−056	−185
September	−221	−271	−133	−495	−677	−0171	−472	−0364	−280	−421	−350	−492
October	−083	−356	−384	−205	−544	−1111	+081	−0631	−257	−551	−404	−671
November	−163	+132	−223	+092	+023	−0572	−245	−0356	−041	−287	−164	−178
December	+094	+301	+014	+043	+523	+0371	−389	+0109	+113	+153	+133	+336

55. *Annual Period of the Horizontal Component.*—Table 24 has been formed in the same manner as Table 3 (see p. xiii.) The secular changes employed in the reduction for each year, obtained in the same manner as for the magnetic declination in 1847–8 (No. 8), are as follow:—

	1842.	1843.	1844.	1845.	1846.	1847.	1848.	1849.
Yearly increase,	0·003480	0·003804	0·002820	0·001116	0·001368	0·000768	0·001500	0·001920

56. The mean result for the six years 1842 to 1847, given in the last column of Table 24, is probably to be most depended on for an accurate exhibition of the mean annual law, the means for 1848 and 1849 being deduced from too few observations. The mean for the six years 1842 to 1847 shews, that *the horizontal component at Makerstoun was a maximum at the summer solstice, and also at the winter solstice; that it was a minimum shortly after the autumnal, and shortly after the vernal equinox.*[*] This result is shewn with

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[*] This law, as deduced from the Makerstoun Observations for 1842, was stated to the Physical Section of the British Association in June 1845, confirmed by a rediscussion of observations made at Toronto in 1842: it has since been confirmed by the observations made in the successive years at Makerstoun, and, as has been shewn in the Makerstoun Observations for 1844 (foot-note p. 357), by Dr

considerable distinctness in each of the six years ; the variations from it are not greater than might be expected when we take into account the large effect of disturbances, the irregular value of the secular change in some years, and in others the fewness of the daily observations, and consequent imperfect nature of the corrections. These corrections, as deduced from the observations for 1844 and 1845, vary so much as to account fully for many of the minor differences from the mean law in the years 1842 to 1847, and for even the larger differences in the years 1848 and 1849. Upon the whole the summer maximum appears rather greater than the winter maximum, and the autumnal minimum than the spring minimum ; although as this is not the case in the mean for the first four years (column 10, Table 24), and as very large disturbances occurred in the end of the years 1846 and 1847, which probably increased the autumn minimum of these years, this difference in the minima is perhaps accidental, and might be removed or considerably diminished in a larger series of observations.

57. When we compare the monthly means, as deduced from the 10 days selected in each month as least affected by irregular disturbances, with those deduced from all the hourly observations in the same months, we find the latter less (–) or greater (+) than the former, by the following quantities :—

Year.	Prefix.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1844,	0·000	–109	–346	–399	–315	–029	+018	–021	–108	–062	–507	–164	–234
1845,	0·000	–301	–160	–260	–143	–032	+021	+003	–119	–109	–251	–111	–377
Mean,	0·000	–205	–253	–329	–229	–030	+019	–009	–113	–085	–379	–137	–305

In each month, with the exception of June, the mean deduced from the undisturbed days is greater than that deduced from all the observation days ; and the excess is greatest in March and October, the months of greatest disturbance : the effect of disturbance on the means for the months of May, June, and July, is very small, nearly zero.

58. As the above effects of disturbance seem to obey a law similar to that of the annual period of the mean, it will be interesting to consider the law for the latter, as deduced from the nearly undisturbed 10 days selected in each month of the years 1844 and 1845. The following are the mean variations, deduced from all the daily observations in 1844 and 1845, as in Table 24.

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Mean of all, 0·000	+082	+044	–224	–280	+132	+494	+373	+022	–314	–294	–065	+028

Correcting these by the mean quantities in No. 57, we obtain the variations of the monthly means from the nearly undisturbed days of 1844 and 1845.

Means of 20 days, 0·000	+116	+126	–066	–222	–009	+304	+211	–036	–400	–086	–099	+162

The monthly means, deduced from 10 nearly undisturbed days in each month of the two years, give the same law as has already been deduced from the means of all the observations (as in Table 24) : in the undisturbed means, the maximum at the winter solstice is rendered more marked, and it appears probable that the difference between the values of the two maxima may be wholly a result of disturbance, which appears to diminish the winter means considerably, while it rather tends to increase those at midsummer. When a more careful selection of undisturbed days is made, as in that of *five* days in each month of 1844, (see p. 365 of the volume for that year) it is found, that the effect of disturbance in diminishing the winter means, and in increasing the summer means, is even more considerable than that found above No. 57.

Differences of the Daily Means of the Horizontal Component from the Means for the corresponding Months.— The discussion for 1844, will be found in the volume for that year, page 357, the results for 1845 and 1846, are obtained from Tables XVIII. and LVII. of this volume.

Lamont's observations at Munich (1843–5), although by the combinations which he had employed he had failed in detecting the fact. The following are the variations of the Munich numbers as corrected for secular change in the note cited, the horizontal component at the place being taken as unity.

Prefix.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
0·000	+172	–029	–086	–029	–158	+265	+238	+280	+136	–421	–328	–045	+172

The value of this confirmation of the Makerstoun law is increased by the fact, that the Munich instrument has a unifilar suspension, and that the processes of observation, reduction, and correction, are completely different from those employed at Makerstoun.

TABLE 25.—Means of the Positive and Negative Departures of the Daily Means from the Monthly Means of the Horizontal Component of Magnetic Force, with their Differences.

Month.	Mean Positive Departures.				Mean Negative Departures.				Diff. of Mean Depart.	Mean Departures, without reference to Sign.			
	1844.	1845.	1846.	Mean.	1844.	1845.	1846.	Mean.		1844.	1845.	1846.	Mean.
Prefix.	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00
Jan.	0172	0316	0159	0216	0215	0538	0171	0308	−0092	0191	0398	0165	0251
Feb.	0317	0303	0284	0301	0404	0303	0171	0293	+0008	0356	0303	0213	0291
Mar.	0445	0214	0299	0319	0712	0250	0299	0420	−0101	0548	0231	0299	0359
April	0404	0285	0314	0334	0472	0641	0428	0514	−0180	0436	0394	0362	0397
May	0355	0228	0346	0310	0330	0387	0403	0373	−0063	0342	0287	0372	0334
June	0193	0177	0441	0270	0178	0225	0514	0306	−0036	0185	0198	0475	0286
July	0217	0204	0314	0245	0271	0297	0393	0320	−0075	0241	0242	0349	0277
Aug.	0353	0386	0393	0377	0380	0241	0288	0303	+0074	0366	0297	0332	0332
Sept.	0248	0315	0463	0342	0316	0315	0540	0390	−0048	0278	0315	0499	0364
Oct.	0459	0285	0345	0363	0194	0307	0586	0462	−0099	0476	0296	0434	0402
Nov.	0280	0330	0496	0369	0382	0357	0390	0376	−0007	0323	0343	0437	0368
Dec.	0258	0358	0311	0309	0413	0608	0335	0452	−0143	0318	0451	0323	0364

59. The following are the conclusions from Table 25.

1*st*, The daily mean value of the horizontal component is both most in excess and most in defect of its monthly mean value in April, and in the months from August to November; while the smallest departures from the monthly means occur about the solstices.

2*d*, The average negative departure is greater than the average positive departure, in every month of the year with two exceptions, February and August, and the excess of the former over the latter is greatest in April and December.

3*d*, As both the positive and negative departures obey nearly the same law, we in consequence find, as in the last column of Table 25, that the greatest departures of the daily means from the monthly means occur immediately after the equinoxes, and the least departures immediately after the solstices. We may generalize this result (as in the case of the magnetic declination, No. 11, 4th) thus :—The differences of the daily means of the horizontal component of magnetic force from the monthly means were a maximum when the horizontal component was least, and a minimum when it was greatest.

TABLE 26.—Mean Diurnal Range of the Horizontal Component of Magnetic Force, as deduced from the Ordinary Daily Observations.

Year.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Mean.
Prefix.	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00
1843	1396	1567	2333	4102	4119	3815	4846	4128	3268	2932	1682	1609	2983
1844	1920	2750	4980	4990	4510	3710	4290	4600	4020	3690	3140	2510	3760
1845	4095	2672	3276	5695	4512	4010	4151	4597	4441	3164	2480	3565	3888
1846	1988	2051	3520	5663	6711	5886	6807	6750	5986	3947	3597	2048	4579
1843 1846	1692	1809	2926	4882	5415	4850	5826	5439	4627	3439	2639	1828	3781
1844 1845	3007	2711	4128	5342	4511	3860	4220	4598	4230	3427	2810	3037	3824
Mean of all	2350	2260	3527	5112	4963	4355	5023	5019	4429	3433	2725	2433	3802

60. *Annual Variation of the Diurnal Range of the Horizontal Component of Magnetic Force.*—The means for 1844 and 1845 only, in Table 26, are comparable with each other. From the last line of Table 26 we find that the mean daily range was least in the months of December, January, and February, and less in May and June than in April, July, and August. These mean ranges are deduced from the ordinary daily observations. When we seek for the absolute ranges, as obtained from all the extra observations made in the years 1844 and 1845 (Table LX. 1844, p. 400, and Table L. p. 28 of this volume), we obtain the following numbers (prefix 0·00) :—

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1844,	2943	3811	6193	6234	5088	3802	4538	5319	4538	5134	6556	2965
1845,	5758	3009	4268	6138	4733	4054	4174	5270	5062	3759	2864	3995
Mean,	4355	3410	5230	6186	4910	3928	4356	5294	4800	4446	4710	3480

These numbers follow the same law as those in Table 26, they are, however, considerably larger; the increase is most marked in the winter months. From the means of both years we may conclude that the mean value of the diurnal change of the horizontal component of magnetic force at Makerstoun in years of *moderate disturbance* is about 0·0057 in April and August, and about 0·0038 at the solstices, the whole horizontal component being unity.

TABLE 27.—Ranges of the Mean Diurnal Variation of the Horizontal Component of Magnetic Force.

Year.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Mean.
	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0.00	0·00
1843	0928	0862	1674	3209	3409	3615	3867	3541	2698	2203	1051	0724	2128
1844	0690	0875	2195	3378	3644	3179	3657	3501	2948	2313	1305	0760	2212
1845	1742	1008	2247	3585	3623	3458	3651	3374	3282	1877	1537	1845	2387
1846	1027	0956	2333	4099	5504	4822	5550	5573	4427	2395	2392	1099	3152
Mean of all	1062	0840	2185	3482	3969	3685	4148	3997	3100	2169	1431	0897	2452

61. *Annual Variation of the Ranges of the Monthly Mean Diurnal Variation.*—From the last line of Table 27, it appears that the range of the monthly mean diurnal variation is least in December, January, and February, and that it is less in June than in May, July, or August. The following are the diurnal ranges of the monthly mean diurnal variations, as deduced from the 20 days selected as free from irregular disturbance in the years 1844 and 1845 :—

Prefix.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
0·00	0547	0682	1833	3154	3279	3209	3417	3080	2988	2030	1291	0875

62. When we examine the mean diurnal ranges as deduced from all the observations (extra and ordinary) made in 1844 and 1845, we find that the means for March and April, and for August and September, are greater than the means for May, June, and July; when we deduce the mean diurnal range from the regular daily observations, as in Table 26, then we find only the mean for April greater than the means for May, June, and July, the means for July and August being greater than those for May and June. So when we consider the range of the monthly mean variation as in Table 27, we find the mean for June less than the means for May, July and August only; and, finally, in the ranges last given, deduced from the mean variations of undisturbed days, the differences for the months from April to September almost altogether disappear, the excess for July being in all probability accidental. This result is similar to that already found for the magnetic declination, and we may draw from it a similar conclusion, that the excess of the diurnal range in the equinoctial months over that for the midsummer months is due to irregular disturbance.

63. *Annual Variation of the Mean Difference of a Single Observation of the Horizontal Component from the Monthly Mean at the corresponding Hour.*—The mean differences for 1844 and 1845 (from Table XXXIV., 1844, p. 368, and Table XXX., p. 17, of this volume) are as follow (Prefix 0·000) :—

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Mean.
1844,	350	533	823	770	568	400	469	645	587	689	591	521	579
1845,	697	515	477	650	503	421	447	577	610	473	501	699	547
Mean,	523	524	650	710	535	410	458	611	598	581	546	610	563

The conclusion deduced from the numbers for 1844, and which has been deduced from those for the magnetic declination, No. 16, is also to be obtained from the numbers for 1845, though with less distinctness, owing to the large effect of disturbance in January and December of the latter year (See No. 16.) In the mean of both years March and April shew the greatest mean difference in the first six months (and for the whole year), and August and December the greatest in the second six months: the least values are those for June and July, and for January and February.

64. From this result, June and July appear the months best fitted for observations of the horizontal component of magnetic force; the probable error of an observation from the mean for the corresponding hour in these months being under 0·0003 of the whole horizontal force.

65. *Annual Variation of the Number of Observations which were greater than the Monthly Means for the corresponding Hour.*—The numbers of observations in 100 which were greater than the monthly means for each month of the years 1844 and 1845 are as follow:—

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Mean.
1844,	53·1	54·8	60·1	52·1	52·5	45·7	47·1	49·8	54·3	61·2	55·6	59·6	53·8
1845,	59·6	56·8	56·9	55·0	53·2	48·3	50·8	53·0	53·0	56·2	56·3	57·3	54·7
Mean,	56·3	55·8	58·5	53·5	52·8	47·0	48·9	51·4	53·6	58·7	55·9	58·4	54·2

From these numbers it appears, that in the year there are, in 100 observations, upwards of 8 more in excess than in defect of the monthly means for the corresponding hour; that June and July were the only months which shewed more observations less than there were greater than the monthly means; that in March, October, and December, the number of observations in excess of the monthly means was greatest, being 17 in 100 more than those in defect. Upon the whole it appears probable in this, as in the other cases, that the numbers for 1844 exhibit the mean annual law with greatest truth, and that the number of positive observations is least at the summer solstice, and is greatest near the equinoxes.

MONTHLY VARIATIONS FOR THE HORIZONTAL COMPONENT.

TABLE 28.—Mean Variations of the Horizontal Component of Magnetic Force, free from Regular Secular Change, with reference to the Moon's Age and Declination.

Moon's Age.	1843.	1844.	1845.	1846.	Mean.	After Moon farthest North.	1843.	1844.	1845.	1846.	Mean.
d. d.	0·00	0·00	0·00	0·00	0·00	d. d.	0·00	0·00	0·00	0·00	0·00
14—16	−0113	−0229	+0015	−0005	−0083	27— 1	+0059	+0121	+0078	−0019	+0060
17—20	−0021	−0250	−0065	−0139	−0119	2— 5	−0064	+0008	−0048	+0076	−0007
21—24	+0090	−0001	−0042	−0072	−0006	6— 8	−0070	−0127	−0154	+0037	−0078
25—28	+0142	+0203	+0085	+0088	+0129	9—12	+0026	+0012	−0034	−0060	−0014
29— 1	+0043	+0224	+0040	+0120	+0107	13—15	+0041	+0157	+0093	−0048	+0061
2— 5	+0112	+0221	−0047	+0049	+0084	16—19	−0029	+0106	−0064	+0065	+0019
6— 9	−0074	+0095	−0068	+0039	−0002	20—22	+0034	−0092	+0035	+0013	−0002
10—13	−0179	−0259	+0084	−0079	−0108	23—26	0000	−0186	+0094	−0062	−0038

66. *Variations of the Daily Mean Horizontal Component with reference to the Moon's Age and Declination.*—Table 28 has been formed from the detailed Tables in former volumes, and from the Tables pp. 11 and 32 of this volume. From the means in Table 28 we conclude:—

1*st*, That the mean horizontal component is greatest about the time of conjunction, and least about opposition, or immediately before and after that epoch. This result is shewn with great distinctness in several single lunations in 1844, (see volume for 1844, p. 358 and Plate XIV).

2*d*, That the mean horizontal component is a maximum, both when the moon is farthest north, and when it is farthest south, and that it is a minimum when the moon is near the equator. This result is shewn with considerable distinctness in the variations for both 1844 and 1845 and with some irregularity in 1843 and 1846; the less value of conclusions from the observations of the two latter years should always be borne in mind.

TABLE 29.—Diurnal Range of the Horizontal Component of Magnetic Force, with reference to the Moon's Age and Declination.

Moon's Age.	1843.	1844.	1845.	1846.	Mean.	After Moon farthest North.	1843.	1844.	1845.	1846.	Mean.
d. d.	0·00	0·00	0·00	0·00	0·00	d. d.	0·00	0·00	0·00	0·00	0·00
14—16	3105	4710	3683	4906	4101	27— 1	3527	3267	3686	4209	3672
17—20	2846	4235	3959	5489	4132	2— 5	3792	4481	4429	4285	4247
21—24	2504	3127	3685	4634	3487	6— 8	3031	4115	4019	4197	3840
25—28	3282	2936	2986	4510	3428	9—12	2907	3401	3615	5377	3825
29— 1	2771	3436	3920	4434	3640	13—15	2998	3248	3491	5394	3783
2— 5	2792	3058	4492	4429	3693	16—19	2634	3546	4712	4080	3743
6— 9	3792	3874	4076	4729	4118	20—22	2795	3682	3290	5271	3759
10—13	3145	4982	3706	4370	4051	23—26	2665	4311	3137	4620	3683

Variation of the Diurnal Range of the Horizontal Component with reference to the Moon's Age and Declination.—Table 29 has been formed from the Tables in former volumes, and the Tables pages 12 and 33 of this volume.

67. The conclusions from Table 29 are :—

1*st*, That the diurnal range of the horizontal component is greatest about the time of opposition, and least about the time of conjunction; in the mean of the 4 years the range varies little from the time that the moon is 6 days till it is 20 days old; it also varies little during the remaining half lunation, but the value for the former is considerably greater than for the latter.

2*d*, In the mean of the 4 years the diurnal range is a maximum about 4 days after the moon has attained its greatest north declination; it is a minimum when the moon is farthest north. The means for 1844 and also for 1845 indicate a minimum, both when the moon was farthest north and when farthest south, with maxima during the intermediate periods; this result seems to deserve the greatest value, agreeing as it does with the conclusion deducible from a comparison of the laws of mean values and ranges, namely, that the range of the horizontal component is a maximum when its mean value is least, and *vice versa*.

TABLE 30.—Mean Difference of a Single Observation of the Horizontal Component of Magnetic Force from the Monthly Mean, at the corresponding Hour, with reference to the Moon's Age and Declination.

Moon's Age.	1844.	1845.	Mean.	Variations.	After Moon farthest North.	1844.	1845.	Mean.	Variations.
d. d.	0·00	0·00	0·00	0·00	d. d.	0·00	0·00	0·00	0·00
14—16	0668	0498	0583	+0018	27— 1	0533	0519	0526	−0036
17—20	0682	0591	0636	+0071	2— 5	0655	0643	0649	+0087
21—24	0441	0578	0509	−0056	6— 8	0588	0577	0582	+0020
25—28	0484	0539	0511	−0054	9—12	0510	0536	0523	−0039
29— 1	0539	0571	0555	−0010	13—15	0519	0484	0501	−0061
2— 5	0497	0568	0532	−0033	16—19	0560	0647	0603	+0041
6— 9	0605	0556	0580	+0015	20—22	0570	0472	0521	−0041
10—13	0731	0493	0612	+0047	23—26	0675	0507	0591	+0029

68. *Variation of the Mean Difference of a Single Observation from the Monthly Mean for the corresponding Hour with reference to the Moon's Age and Declination.*—The results for two years 1844 and 1845 from Table XXXV., 1844, p. 369, and Table XXIX., p. 16 of this volume, are given in Table 30. The conclusions from this Table, which are nearly the same as those from Table 29, are as follow :—

1*st*, The departure of the horizontal component from its monthly mean value for the corresponding hour, is greatest about the time of opposition, and least about the time of conjunction; the actual epochs are immediately before and after those stated, a secondary minimum occurring at conjunction, and a secondary maximum at opposition; but these secondary points are probably accidental.

2*d*, The departure of the horizontal component from its monthly mean position for the corresponding hour is least when the moon is farthest south and also when farthest north; maxima occurring at the intermediate periods (see No. 16).

DIURNAL VARIATIONS FOR THE HORIZONTAL COMPONENT OF MAGNETIC FORCE.

Diurnal Variation of the Horizontal Component.—The discussions for 1843 and 1844 will be found in the volumes for these years, the Tables for 1845 and 1846 are given in this volume, pages 13 and 34. Table 31 has been formed from all the ordinary daily observations made in the 4 years, in the manner already described for the declination (Nos. 26, 27.)

TABLE 31.—Diurnal Variations of the Horizontal Component of Magnetic Force for each Month, as deduced from the Regular Daily Observations made during the Four Years 1843 to 1846.

Mak. Mean Time.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
h. m.	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00
12 12	0456	0358	1576	1746	1816	2191	2346	2476	1751	1672	0843	0098
13 12	0404	0202	0995	1758	1743	1991	2158	2182	1875	1694	0884	0221
14 12	0000	0077	0893	1158	1630	1856	2012	2023	1592	1648	0855	0227
15 12	0630	0129	1285	1572	1557	1770	1918	2031	1770	1918	1039	0327
16 12	0855	0252	1271	1651	1476	1655	1745	2029	1816	1945	1162	0607
17 12	1062	0521	1329	1890	1521	1480	1574	1745	1978	1842	1227	0791
18 12	1054	0614	1575	1805	1421	1151	1435	1584	1708	1654	1330	0897
19 12	1022	0641	1275	1521	1008	0831	1080	1027	1047	1419	1125	0764
20 12	0769	0519	0709	0757	0420	0329	0560	0316	0550	0752	0740	0573
21 12	0616	0105	0308	0145	0119	0004	0094	0000	0023	0180	0183	0278
22 12	0348	0000	0000	0000	0000	0000	0000	0140	0000	0000	0000	0001
23 12	0444	0042	0208	0132	0414	0518	0502	0718	0531	0284	0104	0000
0 12	0556	0268	0632	0782	1102	1284	1249	1417	1268	0753	0566	0097
1 12	0932	0535	1324	1557	1978	1949	1915	2380	2082	1484	0835	0332
2 12	1027	0784	1756	2201	2530	2549	2764	2781	2524	1744	1028	0521
3 12	1007	0840	2071	2691	2947	2891	3444	3349	2860	2122	1131	0604
4 12	1057	0726	2185	3003	3722	3185	3753	3558	3100	2078	1027	0668
5 12	0995	0658	2132	3456	3969	3487	4049	3997	2982	2109	1431	0648
6 12	0868	0658	1958	3482	3875	3685	4148	3888	2827	2169	1428	0888
7 12	0819	0729	2049	3026	3825	3667	3847	3740	2780	2059	1139	0670
8 12	0933	0714	1966	2706	3177	3297	3459	3402	2352	2034	1111	0366
9 12	0830	0586	1769	2386	2574	2933	2957	3010	2314	1961	0866	0249
10 12	0623	0212	1575	2484	2308	2711	2654	2939	2123	1875	0878	0200
11 12	0598	0264	1808	2197	2004	2344	2543	2625	2123	1715	0776	0241

69. The following are the approximate epochs of maxima and minima in *apparent* time, as deduced from the numbers in Table 31; the principal maximum is distinguished by +, the principal minimum by −,

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.
Min.	22 10	−22 15	−22 15	−22 15	22 0	21 50	21 40	21 25	−21 50	−22 10	−22 40	−22 40
Max.	+ 4 0	+ 2 45	+ 4 15	+ 5 45	5 15	6 45	5 50	5 10	+ 4 20	+5	+ 6 0	+ 6 15
Min.	−14 0	−14 0	14 0	14 0	......	......	......	.....	14 0	13 0	11 0	−12 0
Max.	+18 0	18 45	18 0	17 30	......	......	......	......	17 15	16 0	+18 30	+18 0

The diurnal variation of the horizontal component, at Makerstoun, consists of one maximum and one minimum in the four months May till August, and of two maxima and two minima in the eight months September till April; in each of the four months November till February, the two maxima have nearly equal values, and in each of the last three of these, the two minima are also nearly equal; from March till April, and from October to September, the morning maximum becomes smaller in comparison with the afternoon maximum; and in May and August there are traces of the former which wholly disappear in June and July. The forenoon minimum occurs earliest in August, and before 10^{h} A.M. in the four months from June till September; it occurs latest in November and December, and after 10^{h} A.M. in the seven months October till April: the afternoon maximum occurs earliest for the first six months of the year, in February, and for the last six months, in September; it occurs latest in June and December. In order to destroy the smaller irregularities, means for groups of months have been taken; the same groups have been used as those already adopted for the magnetic declination (No. 31).

TABLE 32.—Diurnal Variations of the Horizontal Component of Magnetic Force for Different Periods, deduced from Table 31.

Mak. Mean Time.	Dec. Jan. Feb.	March. April.	May. June.	July. Aug.	Sept. Oct. Nov.	Six Months.		Twelve Months.
						Sept. to Feb.	March to Aug.	
h. m.	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00
12 12	−0232	+0062	+0026	+0212	−0006	−0119	+0100	−0010
13 12	−0260	−0223	−0110	−0029	+0056	−0102	−0121	−0112
14 12	−0435	−0574	−0234	−0182	−0063	−0249	−0330	−0290
15 12	−0174	−0171	−0314	−0225	+0148	−0013	−0237	−0125
16 12	+0035	−0138	−0412	−0312	+0213	+0124	−0287	−0082
17 12	+0255	+0010	−0477	−0540	+0254	+0254	−0336	−0040
18 12	+0319	+0091	−0691	−0690	+0136	+0227	−0430	−0101
19 12	+0273	−0201	−1058	−1146	−0231	+0021	−0802	−0390
20 12	+0084	−0866	−1603	−1761	−0747	−0332	−1410	−0871
21 12	−0203	−1373	−1916	−2152	−1299	−0751	−1814	−1283
22 12	−0420	−1599	−1977	−2129	−1428	−0924	−1902	−1413
23 12	−0374	−1429	−1511	−1589	−1122	−0748	−1510	−1129
0 12	−0229	−0892	−0784	−0866	−0566	−0398	−0847	−0623
1 12	+0064	−0159	−0014	−0052	+0039	+0051	−0075	−0012
2 12	+0241	+0379	+0562	+0573	+0337	+0289	+0505	+0397
3 12	+0281	+0782	+0942	+1197	+0610	+0445	+0974	+0709
4 12	+0281	+0995	+1476	+1456	+0640	+0460	+1309	+0884
5 12	+0231	+1195	+1751	+1824	+0746	+0488	+1590	+1039
6 12	+0269	+1121	+1803	+1819	+0713	+0491	+1581	+1036
7 12	+0203	+0938	+1769	+1594	+0565	+0384	+1434	+0909
8 12	+0135	+0737	+1260	+1231	+0404	+0269	+1076	+0673
9 12	+0019	+0478	+0776	+0784	+0286	+0152	+0679	+0416
10 12	−0191	+0430	+0532	+0597	+0197	+0003	+0520	+0261
11 12	−0168	+0403	+0197	+0385	+0110	−0029	+0328	+0149

70. The following are the approximate epochs of maxima and minima in *apparent* time from Table 32. (See also Plate II.)

	Dec. Jan. Feb.	March, April.	May, June.	July, Aug.	Sept. Oct. Nov.
Minimum,	10^{h} 20^{m} A.M.	10^{h} 10^{m} A.M.	10^{h} 0^{m} A.M.	9^{h} 35^{m} A.M.	10^{h} 0^{m} A.M.
Maximum,	4^{h} 0^{m} P.M.	5^{h} 15^{m} P.M.	6^{h} 20^{m} P.M.	5^{h} 45^{m} P.M.	5^{h} 50^{m} P.M.
Minimum,	2^{h} 0^{m} A.M.	2^{h} 0^{m} A.M.	....	....	2^{h} 0^{m} A.M.
Maximum,	6^{h} 10^{m} A.M.	5^{h} 45^{m} A.M.	....	....	5^{h} 30^{m} A.M.

From these means of groups, the forenoon minimum occurs earliest in July and August, and latest in December to February; the afternoon maximum occurs earliest in December to February, and latest in May and June; the morning maximum occurs earliest in September to November, and latest in the three months thereafter; the after-midnight minimum appears to occur generally about 2^{h} A.M.

The previous conclusions are obtained from the means of all the daily observations; the following Table contains means for the same groups of months, deduced from the 10 days selected in each month of 1844 as free from intermittent disturbance, and the 10 days similarly selected for each month of 1845. See Table XXVIII., p. 362, 1844, and Table XXV., p. 14, of this volume.

TABLE 33.—Diurnal Variations of the Horizontal Component of Magnetic Force for Different Periods, deduced from Days selected as free from Irregular Disturbances, in the Years 1844 and 1845.

Mak. Mean Time.	Dec. Jan. Feb.	March. April.	May. June.	July. Aug.	Sept. Oct. Nov.	Six Months.		Twelve Months.
						Sept. to Feb.	March to Aug.	
h. m.	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00
12 12	−0098	+0283	+0244	+0287	+0190	+0046	+0271	+0159
13 12	−0168	+0181	+0106	+0160	+0131	−0018	+0149	+0065
14 12	−0158	+0073	−0002	+0044	+0138	−0010	+0038	+0014
15 12	−0066	+0007	−0104	+0002	+0180	+0057	−0032	+0012
16 12	+0038	+0034	−0152	−0072	+0240	+0139	−0063	+0037
17 12	+0176	+0153	−0313	−0236	+0279	+0227	−0132	+0047
18 12	+0206	+0072	−0555	−0512	+0151	+0178	−0332	−0076
19 12	+0210	−0163	−0880	−0945	−0138	+0036	−0663	−0313
20 12	+0057	−0687	−1363	−1514	−0734	−0338	−1188	−0763
21 12	−0142	−1230	−1723	−1908	−1217	−0679	−1620	−1149
22 12	−0380	−1610	−1815	−1948	−1434	−0907	−1791	−1349
23 12	−0422	−1471	−1461	−1506	−1107	−0764	−1479	−1122
0 12	−0251	−1030	−0846	−0848	−0706	−0478	−0908	−0693
1 12	+0025	−0464	−0159	−0116	−0138	−0056	−0246	−0152
2 12	+0134	+0019	+0232	+0472	+0138	+0136	+0241	+0188
3 12	+0115	+0448	+0681	+0887	+0303	+0209	+0672	+0440
4 12	+0145	+0488	+0962	+0898	+0438	+0291	+0783	+0536
5 12	+0236	+0671	+1321	+1155	+0485	+0360	+1049	+0705
6 12	+0217	+0796	+1410	+1241	+0601	+0409	+1149	+0779
7 12	+0120	+0884	+1368	+1276	+0573	+0346	+1176	+0761
8 12	+0060	+0735	+1105	+1129	+0510	+0285	+0990	+0637
9 12	−0024	+0607	+0873	+0877	+0459	+0217	+0786	+0501
10 12	−0016	+0665	+0628	+0660	+0386	+0185	+0651	+0418
11 12	−0016	+0545	+0450	+0507	+0277	+0130	+0501	+0315

71. The following are the approximate epochs in *apparent* time deduced from Table 33. (See also the dotted curves, Plate II.)

	Dec. Jan. Feb.	March, April.	May, June.	July, Aug.	Sept. Oct. Nov.
Minimum,	10^h 45^m A.M.	10^h 25^m A.M.	9^h 55^m A.M.	9^h 50^m A.M.	10^h 10^m A.M.
Maximum,	5^h 30^m P.M.	7^h 0^m P.M.	6^h 30^m P.M.	6^h 55^m P.M.	6^h 35^m P.M.
Minimum,	1^h 30^m A.M.	3^h 20^m A.M.	....	....	1^h 55^m A.M.
Maximum,	6^h 35^m A.M.	5^h 30^m A.M.	....	....	5^h 30^m A.M.

A comparison of these epochs with those deduced from Table 32 will shew, that the effect of disturbance is to accelerate the epochs of the forenoon minimum and afternoon maximum, those of the latter being most affected. In the undisturbed diurnal variation the afternoon maximum occurs latest in March and April, and in July and August.

72. *Diurnal Variation of the Effect of Disturbance on the Horizontal Component.*—The following result is obtained upon the assumption, that intermittent disturbance which affects the hourly mean position does not affect the monthly mean of the 24 hours; or, that the differences found No. 57, between the monthly means of the undisturbed days, and of all the days, is due to continuous and regular laws, which have little effect on the relative hourly positions; it appears very probable from No. 58, that this assumption is not quite accurate, but that the negative quantities in the following Table are too small, and the positive ones too large; those for the summer months, however, must be near the truth, as disturbance had little or no effect on the mean for that group: the error in the values for the other periods cannot affect the *epochs* of positive and negative maxima.

TABLE 34.—Differences of Disturbed and Undisturbed Diurnal Variations of the Horizontal Component of Magnetic Force, as deduced from Tables 32 and 33, exhibiting the effect of Irregular Disturbance on the Hourly Mean Positions.

Mak. Mean Time.	Dec. Jan. Feb.	March. April.	May. June.	July. Aug.	Sept. Oct. Nov.	Six Months.		Twelve Months.
						Sept. to Feb.	March to Aug.	
h. m.	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00
12 12	−0134	−0221	−0218	−0075	−0196	−0165	−0171	−0169
13 12	−0092	−0404	−0216	−0189	−0075	−0084	−0270	−0177
14 12	−0277	−0647	−0232	−0226	−0201	−0239	−0368	−0304
15 12	−0108	−0178	−0210	−0227	−0032	−0070	−0205	−0137
16 12	−0003	−0172	−0260	−0240	−0027	−0015	−0224	−0119
17 12	+0079	−0143	−0164	−0304	−0025	+0027	−0204	−0087
18 12	+0113	+0019	−0136	−0178	−0015	+0049	−0098	−0025
19 12	+0063	−0038	−0178	−0201	−0093	−0015	−0139	−0077
20 12	+0027	−0179	−0240	−0247	−0013	+0006	−0222	−0108
21 12	−0061	−0143	−0193	−0244	−0082	−0072	−0194	−0134
22 12	−0040	+0011	−0162	−0181	+0006	−0017	−0111	−0064
23 12	+0048	+0042	−0050	−0083	−0015	+0016	−0031	−0007
0 12	+0022	+0138	+0062	−0018	+0140	+0080	+0061	+0070
1 12	+0039	+0305	+0145	+0064	+0177	+0107	+0171	+0140
2 12	+0107	+0360	+0330	+0101	+0199	+0153	+0264	+0209
3 12	+0166	+0334	+0261	+0310	+0307	+0236	+0302	+0269
4 12	+0136	+0507	+0514	+0558	+0202	+0169	+0526	+0348
5 12	−0005	+0524	+0430	+0669	+0261	+0128	+0541	+0334
6 12	+0052	+0325	+0393	+0578	+0112	+0082	+0432	+0257
7 12	+0083	+0054	+0401	+0318	−0008	+0038	+0258	+0148
8 12	+0075	+0002	+0155	+0102	−0106	−0016	+0086	+0036
9 12	+0043	−0129	−0097	−0093	−0173	−0065	−0107	−0085
10 12	−0175	−0235	−0096	−0063	−0189	−0182	−0131	−0157
11 12	−0152	−0142	−0253	−0122	−0167	−0159	−0173	−0166

73. The conclusions from Table 34 are,—

1*st*, That the greatest effect of disturbance in increasing the horizontal component occurs

In	Dec. Jan. Feb.	March, April.	May, June.	July, Aug.	Sept. Oct. Nov.
About	3^h 20^m P.M. and 6^h A.M.	4^h 40^m P.M.	5^h 0^m P.M.	5^h 15^m P.M.	3^h 40^m P.M.

In the months December to February there are two maxima of the positive effect of disturbance, the second maximum occurring about 6^h A.M.; this is also shewn, though less distinctly, in the quantities for March and April. The greatest positive effect of disturbance occurs latest in July and August, and earliest in the months from September to February; occurring throughout the year betwixt 3^h P.M. and 5^h P.M.

2*d*, That the greatest effect of disturbance in diminishing the horizontal component occurs

In	Dec. Jan. Feb.	March, April.	May, June.	July, Aug.	Sept. Oct. Nov.
About	1^h A.M.	2^h A.M.	2^h 30^m A.M.	5^h 40^m A.M.	11^h P.M.

A secondary negative maximum occurs in December to February, about 9^h 30^m A.M., and in March and April about 8^h 30^m A.M. The greatest negative effect of disturbance on the hourly mean position, occurs earliest in the months September to November, namely about 11^h P.M., it occurs farther and farther after that hour in the months following, till July and August, when it occurs about 5^h 40^m A.M.

3*d*, From what has been said, No. 72, the hours when the effect of disturbance is zero must be less certain, they are from Table 34.

In	Dec. Jan. Feb.	March, April.	May, June.	July, Aug.	Sept. Oct. Nov.
About	4^h A.M. 10^h A.M. 8^h P.M.	10^h A.M. 8^h P.M.	$11\frac{1}{2}^h$ A.M. $8\frac{1}{2}^h$ P.M.	$0\frac{1}{2}^h$ P.M. $8\frac{1}{2}^h$ P.M.	11^h A.M. 7^h P.M.

The hours for the months December to February are very uncertain, owing to the irregularity and smallness of the variations. Throughout the year the effect of disturbance is zero *about* 11^h A.M. and *about* 8^h P.M.

Diurnal Variation of frequency of the Positive Departures from the Hourly Mean Positions.—The number of observations having been obtained for each month in 1844 and 1845, which shewed a greater value of the horizontal component than the monthly means at the corresponding hours, the means of quarterly groups were formed, and the numbers per cent. are given in the following Table.

TABLE 35.—Numbers of Observations of the Horizontal Component of Magnetic Force in 100, which were greater than the Monthly Mean at the corresponding Hour in the Years 1844 and 1845, for each Quarter, and for the Year.

Mak. Mean Time.	Nov. Dec. Jan.	Feb. March. April.	May. June. July.	Aug. Sept. Oct.	Year.	Mak. Mean Time.	Nov. Dec. Jan.	Feb. March. April.	May. June. July.	Aug. Sept. Oct.	Year.
h. m.						h. m.					
12 12	63·3	59·7	49·4	59·5	58·0	0 12	52·5	51·9	50·6	51·9	51·7
13 12	62·0	64·3	50·6	55·7	58·1	1 12	52·5	48·7	51·3	47·5	50·0
14 12	65·8	68·8	50·0	58·9	60·9	2 12	55·7	46·1	46·2	53·2	50·3
15 12	60·8	60·4	50·6	56·3	57·0	3 12	55·7	39·0	47·5	45·0	46·8
16 12	55·7	58·5	56·3	53·2	55·9	4 12	63·3	45·5	46·2	41·8	49·2
17 12	57·0	57·1	54·4	62·7	57·8	5 12	57·6	49·4	51·9	44·9	50·9
18 12	50·6	53·2	51·3	57·0	53·0	6 12	48·1	51·9	44·9	51·3	49·0
19 12	51·9	57·1	48·7	56·3	53·5	7 12	59·5	50·6	46·8	53·2	52·5
20 12	51·9	59·1	48·7	57·6	54·3	8 12	55·7	56·5	42·4	55·7	52·6
21 12	55·7	61·7	51·3	55·1	55·9	9 12	58·2	57·8	45·6	57·0	54·6
22 12	56·3	59·7	51·3	61·4	57·2	10 12	65·2	60·4	48·7	58·9	58·3
23 12	54·4	57·1	48·1	57·6	54·3	11 12	59·5	59·1	52·5	60·1	57·8

74. The following are the approximate epochs of maximum and minimum frequency of positive departures, as deduced from Table 35.

	Nov. Dec. Jan.	Feb. March, April.	May, June, July.	Aug. Sept. Oct.	Year.
Maximum,	1^h A.M.	2^h A.M.	4^h A.M.	11^h P.M. to 11^h A.M.	2^h A.M.
Minimum,	7^h A.M. and 1^h P.M.	3^h P.M.	8^h P.M.	4^h P.M.	3^h P.M.

The numbers in Table 35 present considerable irregularities; two years' observations appear too few to remove these. In the winter and spring quarters, there is a secondary maximum of frequency of positive departures about 9^h A.M., a secondary minimum occurring in the winter quarter about noon, and in the spring quarter about 6^h A.M. The variation of the numbers is greatest in the spring and autumn quarters, it is least in summer. Every hour in winter, with one exception, had more observations greater than the montbly mean for the hour, than there were less; in spring and autumn, all the hours had a greater number of positive than of negative departures, excepting those from 1^h to 5^h P.M. The minimum of positive frequency occurs about 7^h A.M. in winter, but in summer it occurs nearer 7^h P.M. The hours of maximum frequency of the positive departures, are obviously those of minimum frequency of negative departures.

75. It may be remarked here, that these departures are from the mean position of all the ordinary observations, which mean position is more or less affected by disturbance; could the undisturbed mean position be well ascertained it would probably be found, as it has been in the case of the declination, No. 41, that the hour of maximum frequency of the positive departures from the disturbed mean position, is nearly that of their minimum frequency from the undisturbed mean position; this, it will be seen, was the case when the selected days were assumed as the normal means, as in 1844. (See volume for 1844, page 372).

76. *Diurnal Variation of the Mean Differences of the Values of the Horizontal Component from the Monthly Mean Values for the corresponding Hours.*—Table 36 has been formed in the manner already indicated, No. 43, for Table 18. The numbers in Table 36 exhibit such considerable irregularities, that it is difficult in some cases to determine real secondary points of maximum and minimum from those which may be merely accidental, and which might have disappeared in the combination of a larger series of observations; the following however, are the approximate epochs as nearly as they can be determined.

TABLE 36.—Mean Difference of the Observations of the Horizontal Component of Magnetic Force, in 1844 and 1845, from the Monthly Means, at the corresponding Hour in each Year, as deduced from all the Regular Observations.

Mak. Mean Time.	Mean Positive Difference.					Mean Negative Difference.					Mean Difference.				
	Nov. Dec. Jan.	Feb. Mar. April.	May. June, July.	Aug. Sept. Oct.	Year.	Nov. Dec. Jan.	Feb. Mar. April.	May. June, July.	Aug. Sept. Oct.	Year.	Nov. Dec. Jan.	Feb. Mar. April.	May. June, July.	Aug. Sept. Oct.	Year.
h. m.	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00
12 12	0496	0650	0425	0538	0531	0863	0956	0417	0790	0733	0630	0774	0421	0640	0616
13 12	0431	0702	0413	0512	0522	0704	1276	0421	0638	0721	0535	0906	0417	0568	0606
14 12	0568	0807	0385	0505	0589	1103	1840	0385	0727	0921	0750	1141	0385	0596	0718
15 12	0395	0567	0463	0415	0461	0618	0868	0675	0539	0612	0482	0686	0468	0469	0526
16 12	0392	0536	0410	0436	0444	0489	0755	0532	0491	0565	0435	0627	0463	0462	0497
17 12	0405	0583	0369	0487	0461	0537	0875	0442	0812	0637	0462	0665	0402	0609	0535
18 12	0416	0403	0414	0534	0443	0424	0454	0439	0708	0500	0420	0427	0426	0609	0470
19 12	0404	0451	0472	0527	0464	0437	0598	0445	0684	0534	0420	0514	0458	0595	0497
20 12	0425	0475	0506	0606	0502	0460	0684	0477	0820	0601	0442	0561	0491	0697	0547
21 12	0482	0529	0429	0573	0504	0601	0845	0456	0700	0641	0535	0651	0442	0630	0564
22 12	0484	0503	0510	0546	0513	0629	0740	0541	0873	0680	0547	0599	0525	0672	0585
23 12	0495	0506	0555	0554	0524	0593	0671	0512	0749	0627	0540	0577	0533	0637	0571
0 12	0513	0529	0544	0588	0547	0567	0573	0555	0637	0580	0539	0550	0549	0612	0563
1 12	0459	0492	0529	0608	0521	0507	0463	0562	0550	0521	0482	0477	0545	0578	0521
2 12	0422	0528	0592	0607	0530	0526	0450	0505	0684	0540	0468	0486	0545	0643	0535
3 12	0401	0692	0620	0723	0591	0500	0443	0561	0591	0525	0445	0540	0589	0651	0556
4 12	0435	0632	0592	0837	0606	0756	0528	0462	0606	0582	0552	0575	0545	0703	0594
5 12	0488	0611	0472	0591	0536	0660	0599	0511	0484	0558	0561	0605	0491	0532	0547
6 12	0794	0552	0512	0456	0592	0733	0598	0512	0485	0569	0762	0574	0512	0470	0580
7 12	0600	0482	0480	0539	0530	0881	0492	0425	0607	0585	0714	0487	0451	0571	0556
8 12	0568	0527	0433	0540	0521	0708	0684	0320	0673	0576	0630	0595	0368	0599	0547
9 12	0607	0615	0426	0533	0553	0838	0849	0356	0707	0663	0704	0713	0388	0608	0603
10 12	0541	0591	0411	0465	0505	1004	0905	0387	0670	0712	0703	0715	0399	0549	0591
11 12	0559	0558	0400	0514	0508	0821	0914	0442	0771	0701	0665	0658	0420	0617	0589

1*st*, The average *positive* difference of an observation of the horizontal component has its maximum and minimum values at the following hours in the means of the four quarters, the times of the principle values being distinguished by + and —

	Nov. Dec. Jan.	Feb. March, April.	May, June, July.	Aug. Sept. Oct.	Year.
Minimum,	— 6^{h} A.M.	-7^{h} A.M.	-2^{h} A.M.	-3^{h} A.M	-5^{h} A.M.
Maximum,	$11\frac{1}{2}^{h}$ A.M.	$3\frac{1}{2}^{h}$ P.M.	$+3^{h}$ P.M.	$+4^{h}$ P.M.	$+4\frac{1}{2}^{h}$ P.M.
Minimum,	— 3^{h} P.M.	7^{h} P.M.	…………	…………	…………
Maximum,	+ $6\frac{1}{2}^{h}$ P.M.	$+2^{h}$ A.M.	…………	…………	…………

A maximum occurs in each quarter between 3^{h} P.M. and 6^{h} P.M., and *the* minimum occurs in each quarter between 2^{h} A.M. and 6^{h} A.M.; there are, however, several points of opposition: thus, the principal minimum in summer and autumn occurs at the hour of the principal maximum in spring; and one of the two equally-marked minima of winter occurs at the same hour as the principal maximum in summer and autumn, and as the well-marked secondary maximum in spring.

2*d*, The average *negative* difference has the following epochs of maxima and minima.

	Nov. Dec. Jan.	Feb. March, April.	May, June, July.	Aug. Sept. Oct.	Year.
Maximum,	$+11\frac{1}{2}^{h}$ P.M.	$+2^{h}$ A.M.	$+3^{h}$ A.M.	$+11\frac{1}{2}^{h}$ P.M.	+ 2^{h} A.M.
Minimum,	— $6\frac{1}{2}^{h}$ A.M.	6^{h} A.M.	7^{h} A.M.	— $3\frac{1}{2}^{h}$ A.M.	— 6^{h} A.M.
Maximum,	10^{h} A.M.	9^{h} A.M.	$+1^{h}$ P.M.	$+10^{h}$ A.M.	10^{h} A.M.
Minimum,	2^{h} P.M.	-2^{h} P.M.	$-8\frac{1}{2}^{h}$ P.M.	— $5\frac{1}{2}^{h}$ P.M.	— 2^{h} P.M.

A principal maximum occurs in each quarter betwixt 11^{h} P.M. and 3^{h} A.M.; a secondary or principal maximum occurs betwixt 9^{h} A.M. and 1^{h} P.M. The least values of the negative mean difference occurs about the same hours in summer as the greatest values occur in winter, namely, between 8^{h} P.M. and midnight.

3*d*, The mean difference, independent of sign, has the following epochs of maximum and minimum.

	Nov. Dec. Jan.	Feb. March, April.	May, June, July.	Aug. Sept. Oct.
Maximum,	$+8^{h}$ P.M.	$+2^{h}$ A.M.	$+2^{h}$ P.M.	11^{h} P.M.
Minimum,	$-6\frac{1}{2}^{h}$ A.M.	-6^{h} A.M. to 6^{h} P.M.	-9^{h} P.M.	$3\frac{1}{2}^{h}$ A.M.
Maximum,	10^{h} A.M.	....	....	10^{h} A.M.
Minimum,	3^{h} P.M.	....	....	6^{h} P.M.

77. The opposition in the epochs of maximum and minimum is even more considerable for the mean difference than for its positive and negative elements. We find, as has already been found for the magnetic declination, No. 45, that the diurnal law of disturbance of the horizontal component varies with season, and that the law for summer is nearly the reverse of that for winter. In summer, the minimum disturbance occurs about 8^{h} P.M., which is the hour of the maximum disturbance in winter; in summer, the maximum disturbance occurs about 3^{h} P.M., which is the hour of a minimum in winter, which differs little in value from the principal minimum; the law for autumn also differs considerably from that for spring, the least values of the disturbance occur in the latter between 6^{h} A.M and 6^{h} P.M., while the greatest values occur in the former between 8^{h} A.M. and 4^{h} P.M.

78. *Probable Error of Observations of the Horizontal Component.*—At Makerstoun, in years of moderate disturbance, the probable error of an observation of the horizontal component from the monthly mean for the hour of observation has its least values as follow :—

Winter, between 4^{h} A.M. and 4^{h} P.M., the probable error being less than 0·0004 of the whole component.
Spring, ... 6^{h} A.M. ... 6^{h} P.M. .... 0·0005 ....
Summer, ... 8^{h} P.M. ... 8^{h} A.M. .... 0·0003 ....
Autumn, 3^{h} and 4^{h} A.M. and 6^{h} P.M. .... 0·0004 ....

Variation of the Horizontal Component with reference to the Moon's Hour-Angle.—The following Table has been formed from Table XXXI., 1844, p. 391, and Table XXVI., p. 15, of the present volume.

TABLE 37.—Variations of the Horizontal Component of Magnetic Force with reference to the Moon's Hour-Angle for the Winter and Summer Lunations, and for all the Lunations of the Years 1844 and 1845.

Moon's Hour Angle.	Winter Lunations.			Summer Lunations.			All the Lunations.		
	1844.	1845.	Mean.	1844.	1845.	Mean.	1844.	1845.	Mean.
h. m.	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00
0 0	−0066	−0018	−0042	+0029	+0050	+0039	−0019	+0014	−0002
2 25	−0132	+0131	0000	+0021	+0163	+0091	−0056	+0147	+0045
4 20	−0059	−0107	−0083	+0018	+0081	+0049	−0021	−0019	−0020
6 15	−0046	−0046	−0046	−0028	−0004	−0016	−0037	−0026	−0031
8 10	+0004	−0112	−0054	−0060	−0182	−0121	−0028	−0143	−0085
10 5	−0036	−0021	−0028	−0012	+0029	+0008	−0023	+0003	−0010
12 0	+0122	+0029	+0075	+0086	+0102	+0093	+0104	+0063	+0083
13 55	+0099	+0074	+0086	+0157	+0092	+0124	+0128	+0083	+0105
15 50	−0001	+0123	+0061	+0030	−0039	−0005	+0014	+0049	+0031
17 45	+0093	+0047	+0070	−0053	−0102	−0078	+0014	−0021	−0003
19 40	+0065	−0025	+0020	−0126	−0130	−0128	−0031	−0073	−0052
21 35	−0028	−0081	−0054	−0056	−0055	−0056	−0044	−0068	−0056

79. The following are the conclusions from Table 37.

There are four independent results in this Table, two for the winter lunations of 1844 and 1845, and two for the summer lunations of the same years; the other columns are derived from these: of the four results three give the same law so nearly, that the result for the two years may be derived from either with but little error in epochs; that result from the last column of the Table is as follows :—

A maximum of the horizontal component about $1\frac{1}{4}$ hours after the inferior transit.
A minimum .... 3 hours before the superior transit.
A maximum .... 2 hours after the superior transit.
A minimum .... 8 hours after the superior transit.

80. The result for the winter lunations of 1844 agrees with this, in shewing a maximum immediately after the inferior transit; but differs from it in having the minimum about the hour of the second maximum for the other periods; this difference, it is conceived, is chiefly the effect of disturbances, as has been found when the larger disturbances were eliminated. (See the volume for 1844, p. 365.)

VERTICAL COMPONENT OF MAGNETIC FORCE.

81. Observations for the absolute value of the vertical component were made in 1846 in the manner described in the Introduction to the Observations for 1844, p. liii. (foot-note), but they have not been reduced; indeed, it is doubtful whether the dimensions of the magnets employed, and the errors of the instrument were likely to admit a sufficiently accurate result. We may deduce the absolute value of the vertical component from the observations for the horizontal component and magnetic dip; assuming the latter $=71^\circ\ 15'$ for the year 1845, we find the mean value of the former from the observations with the large deflecting bar (last column of Table 21) for the year 1845 $=3{\cdot}3837$;—whence the absolute value of the vertical component of magnetic force for 1845 $=9{\cdot}9680$. The following results are deduced wholly from the observations of the balance magnetometer: the variations are given in parts of the whole vertical component assumed equal to unity.

TABLE 38.—Monthly Means of the Variations of the Vertical Component of Magnetic Force at Makerstoun.

Month.	1842.	1843.	1844.	1845.	1846.	1847.	1848.	1849.
January	·012155	·009905	·007838	·005904	·003917	·002523	[·001880]	·001157
February	·011988	·009708	·007458	·005616	·003737	·002636	·001800	·001004
March	·011495	·009325	·007341	·005475	·003663	·002659	·001684	·000747
April	·011446	·008992	·007384	·005361	·003526	·002668	·001379	·000537
May	·011323	·008804	·007062	·005192	·003603	·002599	·001085	·000472
June	·011167	·008878	·006847	·005034	·003936	·002488	·000936	·000467
July	·010883	·008732	·006552	·004740	·003839	·002415	·001561	·000314
August	·010797	·008562	·006341	·004643	·003678	·002184	·001197	·000079
September	·010672	·008158	·006267	·004534	·003584	·002141	·000705	·000129
October	·010471	·008138	·006129	·004310	·003206	·002299	·001354	·000127
November	·010355	·008109	·006155	·004307	·002899	·002344	·001361	·000109
December	·010129	·007992	·006003	·004315	·002643	·002168	·001346	·000017

82. Table 38 contains the monthly means of the balance magnetometer readings, as deduced from the regular daily observations; these in 1848 and 1849 were only two daily. From 1842 to 1847 the balance needle occupied a position *at right angles to* the magnetic meridian; in 1848 and 1849 its position was *in* the magnetic meridian. The monthly means diminish with a few exceptions from month to month throughout the whole period. The yearly means of the variations and secular changes are given in Table 39.

TABLE 39.—Yearly Means of the Variations of the Vertical Component of Magnetic Force, with the Secular Change.

Year.	Mean of Variations of Vertical Component.	Secular Change.		
		Year to Year.	Mean of Each Four Years.	During Each Year.
1842	0·011073			0·002327
1843	·008774	0·002299		2108
1844	·006781	1993		1966
1845	·004953	1828		1733
1846	·003519	1434	0·001888	1151
1847	·002427	1092	1587	1077
1848	·001357	1070	1356	0867
1849	·000430	0927	1131	1125

83. The numbers in the last column of Table 39 have been obtained by comparing the mean of the first six months of the year, for which the secular change is sought, with that for the corresponding six months of the following year, and the mean for the last six months with the corresponding months of the preceding year ; the mean of the two is taken for the secular change during the year : only one comparison could be made for 1842 and for 1849.

84. The vertical component has diminished from year to year ; the value of the secular change has also diminished since 1842 ; the greatest diminution occurring in the year 1846, after which year the value of the secular change has not varied greatly : it was least in 1848, and appears as large in 1849 as in 1846. It is probable that the apparent secular change is partially, if not wholly, due to loss of magnetism in the needle, especially in the first four years. (See the Section *Magnetic Dip.*)

85. When we deduce the yearly value of the vertical component of magnetic force from the days selected as nearly free from irregular disturbance in 1844 and 1845 (see volume for 1844, p. 384, and Table XXXVII., p. 21, of this volume), and compare these values with those obtained from all the ordinary observations in each year, we find, that the yearly mean of the vertical component deduced from the nearly undisturbed days

In 1844 is greater than that deduced from all the hourly observations of the year, by 0·000021
In 1845 .... 0·000039

The effect of disturbance in both years was to diminish the mean value of the vertical component on the average by 0·000030. See Nos. 38 and 54.

86. *Annual Period of the Vertical Component.*—In the discussion of the observations for 1844 it was found that the result for the annual period differed considerably from that obtained for the previous year ; separate discussions of the observations for the different years shewed so many differences, that it was concluded that the instrument was incapable of exhibiting the law, if any such existed ; this conclusion was quite in accordance with that previously made by those who had examined the instrument with the greatest care. A combination of the results for several years, however, has rendered it probable that the errors of the instrument or irregularities in the law have been eliminated to a considerable extent, and that the true law has been obtained ; this will appear from the following discussion.

TABLE 40.—Monthly Variations of the Vertical Component of Magnetic Force, free from Regular Secular Change.

Years.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Prefix.	0·000	0·000	0·000	0·000	0·000	0·000	0·000	0·000	0·000	0·000	0·000	0·000
1843–6	+086	−030	−064	−054	−060	+094	+031	+016	−009	−054	+013	+028
1842–7–8–9	−014	+027	−071	−097	−121	−113	+028	−088	−127	+137	+229	+215
1842–9	+036	−001	−068	−075	−090	−010	+030	−036	−068	+041	+121	+122
1842–7	−007	−046	−099	−052	−040	+065	+011	−005	−002	+008	+088	+079

Table 40 has been formed in the following manner: The monthly means for the different groups of years having been obtained from Table 38, the means for each group were corrected for secular change in the manner described No. 8, the secular change employed being the mean for the respective years in the last column of Table 39 ; the numbers in Table 40 are the variations about the yearly mean for each corrected group.

87. The four years 1843–6 are those best fitted for exhibiting the annual law, the diurnal series of observations being sufficiently large to give the monthly mean without any considerable error. The result from this group is as follows : The vertical component is a maximum in June and January, and it is a minimum in April and October. The remaining four years, especially the years 1848 and 1849, though but indifferently fitted to exhibit a law liable to so many irregularities, (owing to the fewness of the observations made daily, and to the great magnetic disturbances in the last two years,) yet they exhibit a rough approximation to the same result : for this group, the vertical component is a maximum in November and December, a secondary maximum occurring in July ; and it is a minimum in May and September. The group of six years, 1842–7, includes all the years during which a sufficient number of daily observations were made to give moderate approximations to the monthly means, and this group indicates a law similar to that from the four years 1843–6. Neglecting at present the considerations in favour of the law obtained from the four best years, the chief source of doubt as to the value of the result, is to be found in the irregularity and great variation of the secular change to be eliminated. In order to examine the monthly means free from this objection the following Table has been formed.

TABLE 41.—Mean Change of the Value of the Vertical Component from Month to Month for different Groups of Years, as deduced from Table 38.

Years.	Dec. to Jan.	Jan. to Feb.	Feb. to March.	March to April.	April to May.	May to June.	June to July.	July to Aug.	Aug. to Sept.	Sept. to Oct.	Oct. to Nov.	Nov. to Dec.	Mean.
Prefix.	0·000	0·000	0·000	0·000	0·000	0·000	0·000	0·000	0·000	0·000	0·000	0·000	0·000
1843–6	−219	−261	−178	−135	−150	+008	−208	−160	−170	−190	−078	−129	−156
1842–9	−205	−166	−194	−137	−144	−048	−090	−194	−161	−019	−049	−128	−128
1842–7	−194	−183	−197	−097	−132	−039	−196	−159	−141	−134	−064	−153	−141

88. Considering the numbers for the years 1843–6, we find that the mean change of the vertical component from one month to the next = 0·000156, that the diminution in the months from December to March and from June to October was *greater* than the mean, while those from March to June and from October to December were *less*; the other groups give nearly the same result, which is quite in accordance with that from Table 40. From both Tables we feel entitled to state the following as the annual law,—*That the vertical component of magnetic force is a maximum near the solstices and a minimum near the equinoxes.* It will be observed *that this is precisely the law* already deduced for the horizontal component No. 56; had it not been for this remarkable coincidence in a law with two maxima and two minima, obtained from two instruments of the most different principles, the conclusions deduced from the observations of the balance magnet would have been left with whatever weight they might appear to physicists to deserve; but it is conceived that the agreement is too considerable and too remarkable to omit adducing it as evidence in estimating the accuracy of this result for the vertical component.

89. If we compare the monthly means deduced from the days selected in each month as nearly free from intermittent disturbance, with those deduced from all the hourly observations in the corresponding months, we find the latter less (−) or greater (+) by the following quantities.

Year. Prefix.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1844, 0·000	−039	+096	−124	+003	−071	−031	−031	−020	−048	−043	+006	+051
1845, 0·000	−068	−036	−039	−086	−061	+018	−049	−091	−049	−046	+008	+024
Mean, 0·000	−053	+030	−081	−041	−066	−006	−040	−055	−048	−044	+007	+037

The numbers differ considerably in some cases for the same month in the two years; a greater number of partial results are therefore evidently required for a good mean. The mean of both years shews, that the disturbed means were greater than the undisturbed in November, December, and February (or, about the winter solstice), and less in all the other months, the diminution being greatest in March, May, and August.

Differences of the Daily Means of the Vertical Component from the Means for the corresponding Months.—The discussion for 1844 will be found in the volume for that year, p. 374, the results for 1845 and 1846 are obtained from Tables XXXI. and LXIII., pages 18 and 35 of this volume.

90. The conclusions from Table 42 are:—

1*st*, That the positive departures of the daily mean vertical component from the monthly mean value are greatest in September and in February, and that they are least in January and June.

2*d*, That the negative departures of the daily mean from the monthly mean are greatest in September, January, and May, and least in March and July.

3*d*, That the mean positive departure is most in excess of the mean negative departure in February, while the latter is most in excess of the former in January, and in the months from March to June; with the exception of February, the mean negative departure is greater than the mean positive departure in the first six months of the year; and, with the exception of August, the reverse is the case for the last six months.

4*th*, That the mean departure of the daily mean from the monthly mean (without reference to sign) is greatest in September, and least in March.

5*th*, The mean departure of the daily mean vertical component from the monthly mean for 1844 = 0·000105
.... 1845 = 0·000117
.... 1846 = 0·000131
.... 3 years = 0·000118

TABLE 42.—Means of the Positive and Negative Departures of the Daily Means from the Monthly Means of the Vertical Component of Magnetic Force, with their Differences.

Month.	Mean Positive Departures.				Mean Negative Departures.				Diff. of Mean Depart.	Mean Departures, without reference to Sign.			
	1844.	1845.	1846.	Mean.	1844.	1845.	1846.	Mean.		1844.	1845.	1846.	Mean.
Prefix.	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00
Jan.	0068	0112	0110	0097	0128	0164	0138	0143	−0046	0089	0133	0122	0115
Feb.	0140	0134	0167	0147	0119	0097	0142	0119	+0028	0123	0112	0153	0129
Mar.	0109	0048	0098	0085	0175	0077	0079	0110	−0025	0135	0059	0088	0094
April	0079	0090	0098	0089	0107	0171	0099	0126	−0037	0091	0118	0099	0103
May	0124	0110	0104	0113	0155	0176	0088	0140	−0027	0138	0136	0095	0123
June	0091	0082	0123	0099	0162	0088	0144	0131	−0032	0117	0084	0133	0111
July	0092	0098	0191	0127	0115	0091	0127	0111	+0016	0102	0094	0153	0116
Aug.	0084	0090	0161	0112	0078	0168	0116	0121	−0009	0081	0117	0135	0111
Sept.	0066	0124	0292	0161	0118	0144	0183	0148	+0013	0085	0133	0225	0148
Oct.	0117	0114	0158	0130	0126	0084	0172	0127	+0003	0121	0097	0165	0128
Nov.	0115	0109	0168	0131	0084	0194	0112	0130	+0001	0097	0140	0134	0124
Dec.	0113	0209	0053	0125	0070	0167	0105	0114	+0011	0087	0186	0071	0115

TABLE 43.—Mean Diurnal Range of the Vertical Component of Magnetic Force, as deduced from the Ordinary Daily Observations.

Year.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Mean.
Prefix.	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00
1843	0330	0374	0480	0684	0562	0396	0490	0473	0502	0444	0305	0364	0450
1844	0481	0584	1202	1164	0830	0433	0522	0944	0936	1058	1034	0489	0806
1845	0812	0630	0849	0859	0662	0461	0537	0797	0924	0601	0497	0504	0678
1846	0251	0310	0501	0811	0876	0681	1096	1204	1445	1098	0871	0332	0793
1843 1846	0290	0342	0490	0747	0719	0538	0793	0838	0973	0771	0588	0348	0621
1844 1845	0646	0607	1025	1011	0746	0447	0529	0870	0930	0829	0765	0496	0742
Mean of all	0468	0474	0758	0879	0732	0493	0661	0854	0952	0800	0677	0422	0682

91. *Annual Variation of the Diurnal Ranges of the Vertical Component of Magnetic Force.*—From the numbers in Table 43, it appears, that the diurnal range of the vertical component is greatest at the equinoxes, and that it is least at the solstices. The values in Table 43 are deduced from the ordinary daily observations in the various years. When we consider the diurnal ranges from *all* the observations made in each of the years 1844 and 1845 (in the manner already noted for the magnetic declination No. 12), we obtain the following means for the several months in each year, (prefix 0·00.)

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Mean.
1844,	0496	0729	1373	1327	0964	0442	0545	1064	1050	1171	1182	0522	0905
1845,	0943	0686	0934	0924	0697	0464	0546	0820	0961	0634	0540	0560	0726
Mean,	0719	0707	1153	1125	0830	0453	0545	0942	1005	0902	0861	0541	0815

These means give the same law as has already been deduced from Table 43; the values are greater than those for the same years deduced from the ordinary daily observations, but the increase is considerably less than in the cases of the magnetic declination and horizontal component.

Annual Variation of the Ranges of the Monthly Mean Diurnal Variation of the Vertical Component.—In the previous Table we have given the monthly means of the diurnal ranges observed for each day, the following Table contains the diurnal range of the hourly means for each month, those for 1844 and 1845 only being comparable with each other.

TABLE 44.—Ranges of the Mean Diurnal Variation of the Vertical Component of Magnetic Force.

Year.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00
1843	0210	0239	0284	0594	0302	0259	0289	0282	0301	0297	0195	0292	0252
1844	0271	0273	0688	0705	0516	0233	0298	0587	0616	0702	0588	0292	0419
1845	0440	0412	0629	0581	0432	0284	0293	0464	0677	0365	0296	0355	0399
1846	0181	0168	0360	0588	0606	0403	0776	0807	0740	0863	0601	0177	0479
Mean of all	0250	0258	0540	0716	0522	0257	0412	0608	0666	0561	0363	0269	0422

92. The last line of Table 44, which is deduced from observations for the four years, as in Table 48, shews the law already obtained from Table 43, but in a more marked manner. In the corresponding discussions for the declination (No. 14) and for the horizontal component (No. 62), it was found that in the combination of four years' observations, the differences between the diurnal range at the summer solstice, and for the preceding and succeeding months, was considerably diminished; this is not the case for the vertical component; the range at the equinoxes of the hourly mean variation is nearly three times the range at the solstices. When, however, we consider the ranges of the hourly mean variation, as deduced from days selected nearly free from disturbances, we obtain a result similar to that for the other elements. The following are the ranges of the hourly means for each month deduced from the selected days in 1844 and 1845 (see 1844, p. 379, and p. 21 of this volume):—

Prefix.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
0·00	0124	0124	0180	0186	0223	0238	0196	0190	0257	0209	0167	0132	0136

From these it appears, that the diurnal range of the mean variation, when unaffected by intermittent disturbance, varies little from March to October, the irregularities in the values being due in all probability to disturbance remaining in the selected days.

93. On the whole it is evident for all the three elements, that the law of the variation with season of the range of the hourly variations when unaffected by intermittent disturbance is as follows:—A gradual increase from the winter solstice till the vernal equinox, little variation from the vernal till the autumnal equinox, and a gradual decrease from thence till the winter solstice. Intermittent disturbances increase the diurnal range greatly at the equinoxes, and more at the winter solstice than at the summer solstice.

94. *Annual Variation of the Mean Difference of a Single Observation of the Vertical Component from the Monthly Mean at the corresponding Hour.*—The following mean differences have been obtained from Table L. 1844, p. 389, and Table XLI. p. 23 of this volume:—

Year.	Prefix.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Mean.
1844,	0·000	123	157	294	224	203	144	137	172	191	247	199	123	184
1845,	0·000	192	157	156	175	174	117	137	167	210	139	168	208	167
Mean,	0·000	157	157	225	200	188	130	137	170	200	193	183	165	175

These numbers give the same law as has already been obtained for the other two elements. The mean difference of an observation of the vertical component is greatest at the equinoxes, and least at the solstices (see No. 16).

95. *Annual Variation of the Number of Observations of the Vertical Component which were greater than the Monthly Means for the corresponding Hours.*—The numbers in 100 observations for each month of the years 1844 and 1845 are as follow:—

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Mean.
1844,	53·0	49·5	57·7	49·8	52·5	55·7	55·4	52·0	55·0	50·0	46·5	40·7	51·5
1845,	55·7	54·9	55·8	59·3	54·8	51·5	54·3	57·4	50·6	56·3	53·5	43·2	53·9
Mean,	54·4	52·2	56·7	54·5	53·6	53·6	54·8	54·7	52·8	53·1	50·0	41·9	52·7

In the mean of both years, each month, with the exception of November and December, has more observations greater than the monthly mean than it has less, the excess being from 5 to 13 in 100; in November the numbers of positive and negative departures are equal, and in December the greatest difference occurs between the positive and negative departures, the latter being greater than the former by 16 in 100.

MONTHLY VARIATIONS FOR THE VERTICAL COMPONENT.

TABLE 45.—Mean Variations of the Vertical Component of Magnetic Force free from Regular Secular Change, with reference to the Moon's Age and Declination.

Moon's Age.	1843.	1844.	1845.	1846.	Mean.	After Moon farthest North.	1843.	1844.	1845.	1846.	Mean.
d. d.	0·00	0·00	0·00	0·00	0·00	d. d.	0·00	0·00	0·00	0·00	0·00
14—16	−0016	−0062	−0010	+0020	−0017	27— 1	+0053	+0038	−0005	−0005	+0020
17—20	+0012	−0002	+0012	+0066	+0022	2— 5	+0044	−0008	−0064	+0010	−0004
21—24	+0013	+0044	+0005	+0046	+0027	6— 8	+0008	−0004	+0006	−0047	−0009
25—28	+0031	+0015	−0027	−0031	−0003	9—12	−0018	−0026	+0001	+0003	−0010
29— 1	−0027	+0008	−0022	−0004	−0011	13—15	+0020	+0012	+0011	+0005	+0012
2— 5	−0010	+0010	+0052	−0057	−0001	16—19	−0036	+0004	+0050	−0048	−0007
6— 9	+0027	+0031	+0006	−0023	+0010	20—22	−0048	−0015	+0025	+0034	−0001
10—13	−0028	−0042	−0019	−0016	−0026	23—26	−0028	0000	−0023	+0048	−0001

Variations of the Daily Mean Vertical Component, with reference to the Moon's Age and Declination.—Table 45 has been formed from the Tables in previous volumes, and in this volume, pages 18 and 35; the means for 3 or 4 days are given, positive when greater than the mean for the year, and negative when less.

96. The conclusions from the means of 4 years in Table 45, are,—

1*st*, That the vertical component is a maximum at the quadratures, and a minimum at conjunction and at opposition; the principal maximum occurs about 7 days after opposition, and the secondary maximum about 7 days after conjunction; the difference of the values of the two maxima is due chiefly to the year 1846, the only year which does not exhibit two maxima and two minima.

2*d*, That the vertical component is a maximum when the moon is farthest north, and also when it is farthest south, and between these epochs it is a minimum; the minima occurring when the moon is rather south of the equator. This result is shewn, though with some irregularity, in the numbers for each year. It should be remembered, in glancing over these Tables, that the number which indicates a maximum may have the negative sign, and that which indicates a minimum may have the positive sign; thus, in 1845 the principal maximum occurs about 4 days after the moon's greatest south declination, the secondary maximum occurs when the moon is farthest north, and the minima occur when the moon is about 3 days *north* of the equator.

Variation of the Diurnal Range of the Vertical Component, with reference to the Moon's Age and Declination.—The means of groups of days given in Table 46, have been deduced from the Tables in former volumes, and in this volume, pages 19 and 36.

TABLE 46.—Diurnal Range of the Vertical Component of Magnetic Force, with reference to the Moon's Age and Declination.

Moon's Age.	1843.	1844.	1845.	1846.	Mean.	After Moon farthest North.	1843.	1844.	1845.	1846.	Mean.
d. d.	0·00	0·00	0·00	0·00	0·00	d. d.	0·00	0·00	0·00	0·00	0·00
14—16	0423	1238	0617	0943	0805	27— 1	0535	0578	0587	0829	0632
17—20	0406	1149	0737	1141	0858	2— 5	0596	0930	0976	0637	0785
21—24	0316	0544	0700	0870	0607	6— 8	0465	0850	0776	0738	0707
25—28	0502	0446	0658	0568	0543	9—12	0384	0657	0681	1113	0709
29— 1	0374	0540	0610	0731	0564	13—15	0503	0626	0482	0637	0562
2— 5	0395	0463	0627	0640	0531	16—19	0382	0773	0767	0518	0610
6— 9	0678	0688	0710	0875	0738	20—22	0349	0872	0475	1068	0691
10—13	0505	1221	0618	0761	0776	23—26	0426	0946	0478	0952	0700

97. From Table 46 we conclude,

1*st,* That the diurnal range of the vertical component is greatest immediately after opposition, and that it is least about conjunction; there is the appearance of a secondary maximum at conjunction in three of the years, and in the means of all.

2*d,* That the diurnal range is a minimum when the moon is farthest south, and also when it is farthest north, and that it is a maximum when the moon is north of the equator.

TABLE 47.—Mean Difference of a Single Observation of the Vertical Component of Magnetic Force, from the Monthly Mean at the corresponding Hour, with reference to the Moon's Age and Declination.

Moon's Age.	1844.	1845.	Mean.	Variations.	After Moon farthest North.	1844.	1845.	Mean.	Variations.
d. d.	0·00	0·00	0·00	0·00	d. d.	0·00	0·00	0·00	0·00
14—16	0219	0143	0181	+0006	27— 1	0171	0148	0159	−0016
17—20	0229	0152	0190	+0015	2— 5	0204	0178	0191	+0016
21—24	0156	0173	0164	−0011	6— 8	0176	0166	0171	−0004
25—28	0151	0186	0168	−0007	9—12	0158	0182	0170	−0005
29— 1	0173	0188	0180	+0005	13—15	0162	0147	0154	−0021
2— 5	0134	0163	0148	−0027	16—19	0206	0193	0199	+0024
6— 9	0185	0166	0175	0000	20—22	0181	0150	0165	−0010
10—13	0240	0157	0198	+0023	23—26	0220	0156	0188	+0013

98. *Variation of the Mean Difference of a Single Observation from the Monthly Mean for the corresponding Hour, with reference to the Moon's Age and Declination.*—Table 47 has been formed from Table 41, p. 386, 1844, and Table XLII., p. 23, of this volume. The conclusions from Table 47 are nearly the same as those already made for the diurnal range, No. 97, they are as follow:—

1*st,* The mean difference of an observation of the vertical component from the monthly mean for the corresponding hour is a maximum about the time of opposition, and a minimum before and after conjunction, a secondary maximum occurring at conjunction.

2*d,* The mean difference is a minimum when the moon is farthest north, and also when farthest south, maxima occurring between these epochs.

The differences of the results for the single years from those for the mean of both are not greater than might be expected in such an investigation; the general agreement of the results, however, with those for the diurnal ranges deduced from four years' observations is a confirmation of their accuracy.

DIURNAL VARIATIONS FOR THE VERTICAL COMPONENT OF MAGNETIC FORCE.

Diurnal Variation of the Vertical Component.—The following Table has been formed in the manner already described for the magnetic declination, No. 26; the means from which it has been formed will be found in the previous volumes, and in this volume, pages 20 and 37.

99. The following are the approximate epochs of the maxima and minima in *apparent* time, as deduced from Table 48.

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.
Max.	+ 7 5	+ 5 25	+ 5 10	+ 6 0	+ 6 0	+ 6 20	+ 5 20	+ 6 0	+ 5 5	+ 4 0	+ 6 15	+ 6 45
Min.	−14 0	−14 0	−14 0	−12 15	−13 45	13 45	−14 10	−13 15	−13 15	−16 30	−13 0	−16 20
Max.			20 15	21 0	19 50	20 0	20 30	20 40	22 0	?		
Min.			0 0	0 15	0 0	− 0 10	23 55	23 40	23 30	?		

The principal maximum occurs between 4^h P.M. and 7^h P.M. in each month of the year; it occurs earliest in February and March of the first six months of the year, and in October and September of the remaining months; it occurs latest in January and December; and later in June than in the immediately preceding and succeeding months. A minimum occurs between midnight and 4^h A.M. throughout the year, which is the principal minimum excepting in June.

Only one maximum and minimum occur in the diurnal variation for the four winter months, November to February; in the other months a secondary minimum occurs about noon, which becomes more distinct the nearer the time is to the summer solstice, when that minimum is better marked than the other near midnight.

TABLE 48.—Diurnal Variations of the Vertical Component of Magnetic Force, as deduced from the Regular Daily Observations made during the Four Years 1843 to 1846.

Mak. Mean Time.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
h. m.	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00
12 13	0035	0008	0061	0000	0036	0044	0051	0002	0033	0118	0000	0051
13 13	0046	0001	0017	0079	0001	0011	0018	0010	0000	0088	0002	0045
14 13	0000	0000	0000	0091	0000	0012	0000	0000	0042	0060	0008	0016
15 13	0011	0001	0023	0156	0014	0048	0012	0044	0040	0040	0014	0001
16 13	0007	0013	0095	0137	0107	0071	0046	0118	0093	0000	0021	0002
17 13	0008	0010	0125	0194	0181	0091	0059	0179	0144	0048	0031	0000
18 13	0031	0020	0159	0271	0247	0141	0110	0232	0212	0132	0039	0006
19 13	0045	0037	0223	0323	0283	0175	0146	0295	0291	0232	0059	0019
20 13	0067	0044	0280	0374	0286	0183	0165	0327	0329	0304	0092	0040
21 13	0076	0059	0278	0391	0263	0140	0158	0330	0352	0350	0116	0047
22 13	0098	0060	0260	0372	0214	0087	0140	0296	0367	0351	0110	0055
23 13	0128	0072	0241	0358	0182	0012	0082	0240	0344	0350	0129	0078
0 13	0139	0090	0227	0352	0178	0000	0076	0238	0372	0397	0176	0099
1 13	0169	0111	0269	0368	0216	0015	0113	0297	0435	0423	0208	0126
2 13	0203	0151	0358	0446	0286	0058	0169	0381	0529	0481	0242	0166
3 13	0220	0216	0417	0532	0390	0126	0274	0471	0618	0560	0317	0231
4 13	0221	0246	0464	0590	0448	0211	0365	0550	0656	0561	0363	0235
5 13	0241	0258	0540	0696	0513	0243	0412	0596	0666	0536	0340	0249
6 13	0241	0254	0518	0716	0522	0257	0402	0608	0544	0487	0428	0269
7 13	0250	0220	0457	0654	0502	0247	0385	0537	0486	0440	0332	0253
8 13	0244	0204	0383	0518	0432	0227	0319	0434	0380	0373	0242	0181
9 13	0198	0139	0260	0396	0321	0176	0221	0259	0253	0308	0159	0162
10 13	0063	0122	0093	0308	0244	0100	0161	0187	0177	0248	0077	0133
11 13	0018	0023	0120	0224	0176	0055	0102	0041	0108	0172	0029	0086

TABLE 49.—Diurnal Variations of the Vertical Component of Magnetic Force for Different Periods, deduced from Table 48.

Mak. Mean Time.	Dec. Jan. Feb.	March. April.	May. June.	July. Aug.	Sept. Oct. Nov.	Six Months.		Twelve Months.
						Sept. to Feb.	March to Aug.	
h. m.	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00
12 13	−0075	−0270	−0143	−0196	−0201	−0138	−0203	−0171
13 13	−0075	−0252	−0177	−0208	−0222	−0148	−0212	−0181
14 13	−0101	−0255	−0177	−0222	−0214	−0157	−0218	−0188
15 13	−0102	−0211	−0152	−0194	−0220	−0161	−0186	−0173
16 13	−0099	−0184	−0094	−0140	−0213	−0156	−0139	−0148
17 13	−0100	−0141	−0047	−0103	−0177	−0138	−0097	−0118
18 13	−0087	−0085	+0011	−0051	−0123	−0105	−0042	−0074
19 13	−0072	−0027	+0046	−0002	−0057	−0064	+0006	−0030
20 13	−0056	+0027	+0051	+0024	−0009	−0032	+0034	0000
21 13	−0045	+0034	+0018	+0022	+0022	−0011	+0025	+0006
22 13	−0035	+0016	−0033	−0004	+0025	−0005	−0007	−0007
23 13	−0013	−0001	−0086	−0061	+0023	+0005	−0049	−0022
0 13	+0003	−0011	−0094	−0065	+0064	+0033	−0057	−0012
1 13	+0029	+0018	−0068	−0017	+0104	+0066	−0022	+0022
2 13	+0067	+0102	−0011	+0053	+0166	+0116	+0048	+0082
3 13	+0116	+0174	+0075	+0150	+0247	+0181	+0133	+0157
4 13	+0128	+0227	+0146	+0235	+0276	+0202	+0203	+0202
5 13	+0143	+0318	+0195	+0282	+0263	+0203	+0265	+0234
6 13	+0149	+0317	+0206	+0283	+0235	+0192	+0269	+0230
7 13	+0135	+0255	+0191	+0239	+0168	+0151	+0228	+0190
8 13	+0104	+0150	+0146	+0154	+0081	+0092	+0150	+0121
9 13	+0060	+0028	+0065	+0018	−0011	+0024	+0037	+0031
10 13	0000	−0100	−0011	−0048	−0084	−0042	−0053	−0048
11 13	−0064	−0128	−0068	−0151	−0148	−0106	−0116	−0111

100. When we combine the means in groups in the manner already adopted for the magnetic declination, No. 31, we obtain the following epochs of maxima and minima in *apparent* time (see Plate III.)

	Dec. Jan. Feb.	March, April,	May, June,	July, Aug.	Sept. Oct. Nov.
Maximum,	$5^{h}\ 50^{m}$ P.M.	$5^{h}\ 40^{m}$ P.M.	$6^{h}\ 0^{m}$ P.M.	$5^{h}\ 40^{m}$ P.M.	$4^{h}\ 25^{m}$ P.M.
Minimum,	$3^{h}\ 40^{m}$ A.M.	$12^{h}\ 10^{m}$ A.M.	$1^{h}\ 45^{m}$ A.M.	$2^{h}\ 10^{m}$ A.M.	$2^{h}\ 30^{m}$ A.M.
Maximum,		$8^{h}\ 40^{m}$ A.M.	$8^{h}\ 0^{m}$ A.M.	$8^{h}\ 35^{m}$ A.M.	
Minimum,		$0^{h}\ 0^{m}$ Noon.	$0^{h}\ 0^{m}$ Noon.	$11^{h}\ 45^{m}$ A.M.	

The conclusions from the epochs for these groups are quite similar to those already obtained from the epochs for the single months. The afternoon maximum occurs earliest in September to November.

TABLE 50.—Diurnal Variations of the Vertical Component of Magnetic Force for Different Periods, deduced from Days selected as free from Irregular Disturbances, in the Years 1844 and 1845.

Mak. Mean Time.	Dec. Jan. Feb.	March. April.	May. June.	July. Aug.	Sept. Oct. Nov.	Six Months.		Twelve Months.
						Sept. to Feb.	March to Aug.	
h. m.	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00
12 13	−0018	−0065	−0063	−0069	−0079	−0048	−0066	−0057
13 13	−0023	−0069	−0056	−0071	−0081	−0052	−0065	−0058
14 13	−0028	−0038	−0038	−0060	−0070	−0049	−0045	−0047
15 13	−0035	−0026	−0003	−0031	−0067	−0051	−0020	−0035
16 13	−0040	−0032	+0030	+0011	−0063	−0051	+0003	−0024
17 13	−0045	−0022	+0060	+0038	−0057	−0051	+0025	−0013
18 13	−0049	+0003	+0077	+0068	−0043	−0046	+0049	+0001
19 13	−0050	+0029	+0083	+0075	−0013	−0031	+0062	+0016
20 13	−0035	+0058	+0071	+0058	+0014	−0010	+0062	+0026
21 13	−0034	+0052	+0017	+0030	+0021	−0006	+0033	+0013
22 13	−0025	+0017	−0047	−0004	+0002	−0011	−0011	−0011
23 13	−0014	−0034	−0112	−0071	−0012	−0013	−0072	−0043
0 13	−0003	−0084	−0126	−0099	−0018	−0010	−0103	−0057
1 13	+0015	−0058	−0099	−0081	+0014	+0014	−0079	−0032
2 13	+0043	−0008	−0053	−0040	+0068	+0055	−0034	+0010
3 13	+0065	+0026	−0007	+0018	+0106	+0085	+0012	+0049
4 13	+0066	+0070	+0045	+0071	+0119	+0092	+0062	+0077
5 13	+0049	+0083	+0072	+0086	+0100	+0074	+0080	+0077
6 13	+0040	+0070	+0078	+0077	+0072	+0056	+0075	+0065
7 13	+0039	+0051	+0065	+0049	+0049	+0044	+0055	+0049
8 13	+0036	+0033	+0051	+0031	+0038	+0037	+0038	+0037
9 13	+0038	+0020	+0018	−0005	+0004	+0021	+0011	+0016
10 13	+0019	−0021	−0022	−0029	−0026	−0003	−0024	−0014
11 13	−0014	−0053	−0052	−0063	−0072	−0043	−0056	−0049

101. When we consider the diurnal variation as deduced from days selected as nearly free from intermittent disturbance (No. 85), and as exhibited in the means, Table 50, and the dotted curves, Plate III., we find that the epochs of maximum are considerably altered as well as the whole form of the diurnal curve. The epochs of maxima and minima in *apparent* time are as follow :—

	Dec. Jan. Feb.	March, April,	May, June,	July, Aug.	Sept. Oct. Nov.
Maximum,	$3^{h}\ 40^{m}$ P.M.	$5^{h}\ 10^{m}$ P.M.	$6^{h}\ 0^{m}$ P.M.	$5^{h}\ 10^{m}$ P.M.	$4^{h}\ 10^{m}$ P.M.
Minimum,	$6^{h}\ 40^{m}$ A.M.	$1^{h}\ 0^{m}$ A.M.	$12^{h}\ 20^{m}$ A.M.	$12^{h}\ 40^{m}$ A.M.	$12^{h}\ 55^{m}$ A.M.
Maximum,		$8^{h}\ 30^{m}$ A.M.	$7^{h}\ 0^{m}$ A.M.	$6^{h}\ 55^{m}$ A.M.	$9^{h}\ 10^{m}$ A.M.
Minimum,		$0^{h}\ 20^{m}$ P.M.	$0^{h}\ 0^{m}$ Noon.	$0^{h}\ 20^{m}$ P.M.	$0^{h}\ 5^{m}$ P.M.

Hence, in the undisturbed diurnal variation, the maximum of the vertical component occurs earliest in the months December to February, and latest in the months May and June.

The form of the diurnal curve is quite different in the months November to February, from that for the other months : in the four winter months the diurnal curve is single, having but one maximum and minimum, the latter occurring about 7ʰ A.M., which is nearly the epoch of a maximum in the other months : in the months from March to September the diurnal curve is double, the maxima having nearly the same value in each month, and the minima also being nearly equal ; the form of the diurnal curve from March to September is nearly constant ; in October the morning maximum becomes less marked, and it wholly disappears in November. In June the minima occur almost exactly at apparent midnight and noon, that at the latter time being on the whole best marked ; the maxima occur when the sun is near the prime vertical.

102. *Diurnal Variation of the Effect of Disturbance on the Mean Vertical Component.*—The following Table contains the mean effect of disturbance upon the hourly means in each group of months, the assumption being made that the effects of disturbance upon the means of the groups of months are zero ; it will be seen from Nos. 89 and 85 that the means of the days selected as free from disturbance, are rather greater than the means for all the days ; while this difference may be partially due to regular laws, it is also so small, compared with the actual differences in the following Table, that the epochs for the zero of effect would be little altered if it were taken into account. It will be seen also that the epochs for each group vary little, though the effect of disturbance, as found No. 89, differs considerably in the different groups ; thus, for the group December to February, the mean for all the selected days is 0·000005 greater than the mean for all the days, while the mean of the selected days in March and April is 0·000061 less than the mean for all.

TABLE 51.—Differences of Disturbed and Undisturbed Diurnal Variations of the Vertical Component of Magnetic Force, as deduced from Tables 49 and 50, exhibiting the effect of Irregular Disturbance on the Hourly Mean Positions.

Mak. Mean Time.	Dec. Jan. Feb.	March. April.	May. June.	July. Aug.	Sept. Oct. Nov.	Six Months.		Twelve Months.
						Sept. to Feb.	March to Aug.	
h. m.	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00
12 13	−0057	−0205	−0080	−0127	−0122	−0090	−0137	−0114
13 13	−0052	−0183	−0121	−0137	−0141	−0096	−0147	−0123
14 13	−0073	−0217	−0139	−0162	−0144	−0108	−0173	−0141
15 13	−0067	−0185	−0149	−0163	−0153	−0110	−0166	−0138
16 13	−0059	−0152	−0124	−0151	−0150	−0105	−0142	−0124
17 13	−0055	−0119	−0107	−0141	−0120	−0087	−0122	−0105
18 13	−0038	−0088	−0066	−0119	−0080	−0059	−0091	−0075
19 13	−0022	−0056	−0037	−0077	−0044	−0033	−0056	−0046
20 13	−0021	−0031	−0020	−0034	−0023	−0022	−0028	−0026
21 13	−0011	−0018	+0001	−0008	+0001	−0005	−0008	−0007
22 13	−0010	−0001	+0014	0000	+0023	+0006	+0004	+0004
23 13	+0001	+0033	+0026	+0010	+0035	+0018	+0023	+0021
0 13	+0006	+0073	+0032	+0034	+0082	+0043	+0046	+0045
1 13	+0014	+0076	+0031	+0064	+0090	+0052	+0057	+0054
2 13	+0024	+0110	+0042	+0093	+0098	+0061	+0082	+0072
3 13	+0051	+0148	+0082	+0132	+0141	+0096	+0121	+0108
4 13	+0062	+0157	+0101	+0164	+0157	+0110	+0141	+0125
5 13	+0094	+0235	+0123	+0196	+0163	+0129	+0185	+0157
6 13	+0109	+0247	+0128	+0206	+0163	+0136	+0194	+0165
7 13	+0096	+0204	+0126	+0190	+0119	+0107	+0173	+0141
8 13	+0068	+0117	+0095	+0123	+0043	+0055	+0112	+0084
9 13	+0022	+0008	+0047	+0023	−0015	+0003	+0026	+0015
10 13	−0019	−0079	+0011	−0019	−0058	−0039	−0029	−0034
11 13	−0050	−0075	−0016	−0088	−0076	−0063	−0060	−0062

103. The following are the conclusions from Table 51.

1*st*, The greatest effect of disturbance in increasing the vertical component occurs

In	Dec. Jan. Feb.	March, April.	May, June.	July, Aug.	Sept. Oct. Nov.
About	6ʰ 15ᵐ P.M.	6ʰ 0ᵐ P.M.	6ʰ 30ᵐ P.M.	6ʰ 0ᵐ P.M.	5ʰ 30ᵐ P.M.

Throughout the year, therefore, the greatest effect of disturbance in increasing the vertical component occurs near 6^h P.M. or about the epoch of the maximum for the mean value, No. 100.

2*d*, The greatest effect of disturbance in diminishing the vertical component occurs

In	Dec. Jan. Feb.	March, April.	May, June.	July, Aug.	Sept. Oct. Nov.
About	$2^h\ 30^m$ A.M.	$1^h\ 40^m$ A.M.	$2^h\ 50^m$ A.M.	$2^h\ 45^m$ A.M.	$3^h\ 30^m$ A.M.

The greatest effect in diminishing the vertical component occurs throughout the year between $1\frac{3}{4}^h$ and $3\frac{1}{2}^h$ A.M., or rather after the epoch of the principal minimum for the mean value, No. 100. Irregular disturbance, therefore, has the same effect on the value of the vertical component as the cause producing the regular diurnal variation.

3*d*, The effect of disturbance on the vertical component is zero

In	Dec. Jan. Feb.	March, April.	May, June.	July, Aug.	Sept. Oct. Nov.
About	11^h A.M. & $9\frac{3}{4}^h$ P.M.	10^h A.M. & $9\frac{1}{2}^h$ P.M.	9^h A.M. & $10\frac{1}{2}^h$ P.M.	$10\frac{1}{4}^h$ A.M. & $9\frac{3}{4}^h$ P.M.	$9\frac{1}{4}^h$ A.M. & 9^h P.M.

The effect of disturbance on the hourly mean appears to be zero about the time the sun is on the magnetic meridian.

Diurnal Variation of Frequency of the Positive Departures from the Hourly Mean Positions.—The number of observations which were in excess of the hourly mean for each month in 1844 and 1845 having been obtained, the means for groups of months were taken, and the following Table was formed.

TABLE 52.—Numbers in 100 Observations of the Vertical Component of Magnetic Force which were greater than the corresponding Hourly Means, deduced from all the Hourly Observations in 1844 and 1845.

Mak. Mean Time.	Nov. Dec. Jan.	Feb. March. April.	May. June. July.	Aug. Sept. Oct.	Year.	Mak. Mean Time.	Nov. Dec. Jan.	Feb. March. April.	May. June. July.	Aug. Sept. Oct.	Year.
h. m.						h. m.					
12 13	55·7	70·1	58·2	67·1	62·8	0 13	46·8	45·5	49·4	40·5	45·5
13 13	56·3	66·2	58·2	67·1	61·9	1 13	47·5	46·1	51·9	40·5	46·5
14 13	62·0	71·4	62·0	67·1	65·6	2 13	43·0	42·9	54·4	41·8	45·5
15 13	58·2	70·8	62·0	66·5	64·4	3 13	34·8	36·4	51·3	39·2	40·4
16 13	58·9	72·7	63·3	64·6	64·9	4 13	34·8	35·1	46·8	39·2	39·0
17 13	57·0	70·1	62·0	65·8	63·7	5 13	32·3	33·1	45·6	35·4	36·6
18 13	57·0	64·9	58·9	66·5	61·8	6 13	29·7	35·7	48·1	35·4	37·2
19 13	53·2	57·8	55·7	58·2	56·2	7 13	32·9	38·3	46·2	41·1	39·6
20 13	51·3	59·1	53·8	54·4	54·6	8 13	38·6	45·5	49·4	50·0	45·9
21 13	53·8	56·5	57·0	50·6	54·5	9 13	44·3	54·5	52·5	62·0	53·3
22 13	53·8	52·6	53·2	51·9	52·9	10 13	53·8	60·4	53·8	62·7	57·7
23 13	50·0	50·0	48·7	48·7	49·3	11 13	57·0	64·3	54·4	68·4	61·0

104. The following are the epochs of maximum and minimum *frequency* of the positive departures for each quarter.

	Nov. Dec. Jan.	Feb. Mar. April.	May, June, July.	Aug. Sept. Oct.
Maximum,	11^h P.M.—2^h A.M.	2^h—4^h A.M.	2^h—5^h A.M.	11^h P.M.—6^h A.M.
Minimum,	5^h P.M.	5^h P.M.	5^h P.M.	$5\frac{3}{4}^h$ P.M.

It appears, therefore, that the number of positive departures from the mean of all the observations for the hour is least about 5^h P.M., or about the time that the effect of disturbance in increasing the hourly mean is greatest, and that the number is greatest when the effect of disturbance in diminishing the hourly mean is least, No. 103 : the effect of disturbance on the hourly mean position is so considerable when compared with the whole diurnal variation, that it is evident that the number of departures from the *undisturbed* positions must have their maximum about 5^h P.M. and their minimum about 2^h—3^h A.M.

Diurnal Variation of the Mean Differences of the Value of the Vertical Component from its Monthly Mean Value at the corresponding Hour.—Table 53 has been formed from Table LIII., for 1844, p. 387, and Table XLIII., p. 24 of this volume, in the manner already described, No. 43, for Table 18.

TABLE 53.—Mean Difference of the Observations of the Vertical Component of Magnetic Force, in 1844 and 1845, from the Monthly Means at the corresponding Hours in each Year, as deduced from all the Regular Observations.

Mak. Mean Time.	Mean Positive Difference.					Mean Negative Difference.					Mean Difference.				
	Nov. Dec. Jan.	Feb. Mar. April.	May. June. July.	Aug. Sept. Oct.	Year.	Nov. Dec. Jan.	Feb. Mar. April.	May. June. July.	Aug. Sept. Oct.	Year.	Nov. Dec. Jan.	Feb. Mar. April.	May. June. July.	Aug. Sept. Oct.	Year.
h. m.	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00
12 13	0159	0229	0151	0187	0183	0199	0533	0208	0379	0311	0177	0320	0175	0250	0230
13 13	0147	0222	0183	0187	0185	0191	0431	0252	0379	0303	0166	0293	0212	0250	0230
14 13	0138	0226	0173	0197	0185	0259	0567	0283	0400	0352	0171	0323	0215	0264	0243
15 13	0142	0203	0180	0206	0184	0196	0497	0293	0409	0334	0165	0288	0223	0274	0237
16 13	0136	0185	0151	0214	0172	0195	0487	0263	0389	0320	0160	0268	0192	0276	0224
17 13	0139	0173	0145	0181	0161	0185	0403	0237	0351	0281	0159	0242	0180	0239	0205
18 13	0135	0148	0140	0153	0144	0179	0274	0201	0304	0236	0154	0192	0165	0204	0179
19 13	0134	0124	0134	0143	0134	0151	0171	0167	0198	0170	0142	0144	0149	0166	0150
20 13	0133	0101	0131	0130	0124	0141	0145	0154	0156	0148	0137	0119	0142	0142	0135
21 13	0125	0097	0121	0120	0116	0147	0126	0160	0122	0138	0135	0110	0138	0121	0126
22 13	0120	0101	0122	0111	0113	0141	0112	0137	0120	0128	0130	0106	0129	0115	0120
23 13	0120	0115	0132	0112	0119	0120	0115	0124	0106	0117	0120	0115	0128	0109	0118
0 13	0137	0157	0123	0163	0145	0122	0131	0121	0111	0121	0129	0143	0122	0132	0132
1 13	0140	0146	0115	0180	0143	0127	0124	0125	0123	0124	0133	0134	0120	0146	0133
2 13	0163	0174	0113	0183	0156	0123	0132	0135	0133	0130	0140	0150	0123	0154	0142
3 13	0289	0251	0131	0246	0220	0155	0144	0139	0157	0151	0202	0183	0135	0192	0178
4 13	0333	0260	0166	0282	0254	0179	0140	0147	0180	0162	0233	0182	0156	0220	0198
5 13	0392	0368	0182	0359	0315	0189	0181	0152	0198	0181	0255	0243	0166	0255	0230
6 13	0447	0341	0164	0285	0292	0187	0188	0151	0157	0171	0264	0242	0157	0202	0216
7 13	0336	0227	0152	0213	0225	0166	0142	0130	0148	0147	0222	0175	0140	0175	0178
8 13	0209	0153	0124	0131	0151	0131	0128	0122	0131	0129	0161	0139	0123	0131	0139
9 13	0172	0131	0108	0110	0127	0138	0157	0119	0180	0146	0153	0143	0113	0137	0136
10 13	0150	0160	0103	0114	0132	0176	0246	0121	0189	0179	0162	0194	0111	0142	0152
11 13	0150	0150	0115	0148	0142	0199	0273	0137	0322	0222	0171	0194	0125	0203	0173

105. The approximate epochs of maxima and minima for the mean positive and negative differences, the principal being indicated by + and –, are as follow :—

	Mean Positive Difference.				Mean Negative Difference.			
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
Nov. Dec. Jan.	$-10\frac{1}{2}^{h}$ A.M.	$+6\frac{1}{4}^{h}$ P.M.	....	....	$-\ 0^{h}$ Noon.	$5\frac{3}{4}^{h}$ P.M.	$8\frac{1}{2}^{h}$ P.M.	$+2\frac{1}{4}^{h}$ A.M.
Feb. Mar. April,	$-\ 9\frac{1}{4}^{h}$ A.M.	$+5\frac{1}{2}^{h}$ P.M.	9^{h} P.M.	1^{h} A.M.	$-10\frac{1}{2}^{h}$ A.M.	6^{h} P.M.	$8\frac{1}{4}^{h}$ P.M.	$+2\frac{1}{4}^{h}$ A.M.
May, June, July,	2^{h} P.M.	$+5^{h}$ P.M.	-10^{h} P.M.	$+2^{h}$ A.M.	$-\ 0^{h}$ Noon.	$5\frac{3}{4}^{h}$ P.M.	-9^{h} P.M.	$+2\frac{3}{4}^{h}$ A.M.
Aug. Sept. Oct.	$-10\frac{1}{2}^{h}$ A.M.	$+5^{h}$ P.M.	$-\ 9\frac{1}{2}^{h}$ P.M.	4^{h} A.M.	$-11\frac{1}{2}^{h}$ A.M.	5^{h} P.M.	8^{h} P.M.	$+3^{h}$ A.M.

106. The mean positive difference has two maxima and two minima in each quarter excepting winter; the principal maximum occurs between 5^{h} and 6^{h} P.M.; in summer the two maxima have an equal value; the values of the two minima differ little.

107. The mean negative difference has two maxima and two minima in each quarter; the principal maximum occurs between 2^{h} and 3^{h} A.M.; in winter the two maxima differ little in value; in the other quarters the secondary maximum is very small compared with the other; the values of the two minima in each quarter differ little.

108. It appears, therefore, that the principal maximum of the mean positive difference occurs at the same time as the secondary maximum of the mean negative difference, and *vice versa*. It seems probable that if differences were taken with reference to mean *undisturbed* positions, the secondary maximum would disappear in each case; thus, if we consider that the effect of disturbance is to increase the mean vertical component to a large extent about 6^{h} P.M. (No. 103, 1*st*), it is obvious that both the value and the number of the negative departures from this increased mean will be greater than if the undisturbed mean were taken as the zero. It was accordingly found in the discussion of the observations for 1844, (pp. 388, 389), when the mean position was employed as deduced from the days selected nearly free from intermittent disturbance, that the maximum of

the mean positive disturbance occurred about 6^h P.M., the minimum between 11^h P.M. and 8^h A.M.; that the maximum of the mean negative disturbance occurred about 2^h A.M. and the minimum about 6^h P.M., although the values varied little between noon and 8 P.M.

109. The approximate epochs of maxima and minima for the mean disturbance, independent of sign, (indicating the principal maximum by + and minimum by −), are as follow :—

	Min.	Max.	Min.	Max
Winter—Nov. Dec. Jan.	-11^h A.M.	$+6^h$ P.M.	9^h P.M.	1^h A.M.
Spring—Feb. March, April,	-10^h A.M.	$5\frac{1}{2}^h$ P.M.	$8\frac{1}{2}^h$ P.M.	$+1\frac{1}{2}^h$ A.M.
Summer—May, June, July,	1^h P.M.	5^h P.M.	-10^h P.M.	$+3^h$ A.M.
Autumn—Aug. Sept. Oct.	-11^h A.M.	5^h P.M.	$8\frac{1}{2}^h$ P.M.	$+3\frac{3}{4}^h$ A.M.

It has been seen that the positive disturbance has its maximum about 5^h—6^h P.M., and the negative disturbance its maximum about 2^h A.M., so it appears now that the mean disturbance, independent of sign, has a maximum near both hours.

110. In winter the secondary maximum, about 1^h A.M., is very indistinctly marked; in summer the secondary maximum, about 5^h P.M., is very small compared with the other; the principal minimum occurs in winter about 11^h A.M.; that at 10^h P.M. is best marked in summer. In this case also, as in the cases of the magnetic declination, No. 45, and the horizontal component, No. 77, the diurnal variation of the magnetic disturbance in summer *is nearly the reverse of that in winter.* The diurnal variation of the disturbance is very nearly the same in spring as in autumn.

TABLE 54.—Variations of the Vertical Component of Magnetic Force with reference to the Moon's Hour-Angle for the Winter and Summer Lunations, and for all the Lunations of the Years 1844 and 1845.

Moon's Hour-Angle.	Winter Lunations.			Summer Lunations.			All the Lunations.		
	1844.	1845.	Mean.	1844.	1845.	Mean.	1844.	1845.	Mean.
h. m.	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00
0 0	−0054	+0002	−0026	+0017	+0007	+0012	−0019	+0005	−0007
2 25	−0086	+0013	−0036	−0009	+0015	+0003	−0047	+0014	−0016
4 20	−0069	−0039	−0054	−0014	+0013	0000	−0042	−0015	−0028
6 15	−0071	−0029	−0050	−0022	+0002	−0010	−0046	−0014	−0030
8 10	−0058	−0031	−0044	−0031	−0019	−0025	−0045	−0025	−0035
10 5	−0007	+0002	−0002	−0009	−0001	−0005	−0008	+0001	−0003
12 0	+0059	+0030	+0045	−0018	+0010	−0004	+0020	+0021	+0020
13 55	+0107	+0038	+0072	+0007	+0020	+0013	+0058	+0030	+0044
15 50	+0094	+0036	+0065	+0039	+0001	+0020	+0067	+0020	+0043
17 45	+0049	+0021	+0035	+0017	−0020	−0001	+0033	+0002	+0017
19 40	+0043	−0014	+0014	+0007	−0028	−0010	+0025	−0021	+0002
21 35	−0004	−0025	−0014	+0015	0000	+0007	+0006	−0013	−0003

111. *Variation of the Vertical Component with reference to the Moon's Hour-Angle.*—There are four independent results in Table 54, namely two for the winter lunations, and two for the summer lunations of 1844 and 1845, the others depend on these. In all the four the maximum vertical component occurs between 2 and 4 hours after the moon's transit of the inferior meridian; in three cases a secondary maximum occurs at, or shortly after the superior transit,—minima occurring during the intermediate period, from 6 to 8 hours after, and from 2 to 4 hours before, the superior transit; in the winter lunations for 1844, only the principal maximum and minimum are shewn (see the similar case for the horizontal component No. 80), and, as the variations for this group are much greater than for any of the others, it is probable that the difference is due to disturbances. See the volumes for 1844, p. 382, where the elimination of the larger disturbances leaves traces of a secondary maximum and minimum.

112. From the means of all the winter lunations in Table 54

The vertical component is a maximum about 2 hours after the moon's inferior transit.
.................................minimum.........5 hours after the moon's superior transit.

The means of all the summer lunations indicate that

The vertical component is a principal maximum about 3½ hours after the moon's inferior transit.
…………………… …………………minimum………8 hours…………………superior transit.
………………………… a secondary maximum near the moon's superior transit.
……………………………………minimum about 5 hours before the moon's superior transit.

This last result serves very nearly for the mean of all the lunations in 1845, and for the mean of all the lunations in 1844, when the larger disturbances have been rejected as in the place cited above.

MAGNETIC DIP.

113. Observations for the absolute value of the magnetic dip were made with an instrument by Robinson in the years from 1841 to 1849; those till May 1843 were made with the instrument on a pillar near the declinometer (see Introduction, 1843, p. liv.); from June 1843 till February 1846, the observations were made in a small wooden house erected for the purpose about 19 yards north of the Observatory dip-pillar. The observations after June 1843 were in general very unsatisfactory; and ultimately, in February 1846, the observations were discontinued (see section Inclinometer, in the Introductions to the various volumes, for details.) In order to determine the annual change of dip, the inclinometer was placed on the original dip-pillar in the Observatory in September 1849; previously, it was found, that both needles belonging to the instrument were much disfigured by rust; the rust was removed as carefully as possible and the needles rebalanced.

114. The following are the results of the observations, which were very satisfactory:—

Sept. 28d 23h	Needle No. 1.	Dip = 71° 15′·93
29d 0h	……………	Dip = 71° 14′·87
29d 2h	Needle No. 2.	Dip = 71° 16′·96
29d 5h	……………	Dip = 71° 16′·27

115. The dip resulting from these observations differing to a considerable extent from that obtained previously in the dip-house, the inclinometer was removed to that place in order to determine the value of the difference. It was found that the dip obtained on the Observatory pillar, was nearly five minutes less than that shewn in the dip-house. Other observations were made immediately outside the Observatory, on the top, and at the NW. foot of the Observatory hill, which agreed almost exactly with those made on the Observatory pillar. The details of these observations must be reserved for another occasion; it is believed, however, that the difference found for the first two places of observation is due to the wall of a sunk fence built of trap stones, which passes within about 2 yards of the instrument when in the dip-house, the top of the wall being on a level with the surface of the ground. The following then are the means of all the observations of magnetic dip made with the Makerstoun inclinometer; the observations made in the dip-house between June 1843 and February 1846, having been corrected by − 5′.

TABLE 55.—Mean Value of the Observations of Magnetic Dip.

Dates.	Mean Epoch.	No. of Observations.	Position of Inclinometer.	Mean of Observed Dips.
				° ′
July —Dec. 1841	1841·8	27	Observatory Dip-Pillar	71 25·90
Jan. —Dec. 1842	1842·5	86		23·95
Jan. —June 1843	1843·2	36		22·14
June—Dec. 1843	1843·7	48	Dip-house	20·20
Jan. —Dec. 1844	1844·5	67		23·69
Jan. —Dec. 1845	1845·5	82		23·10
Jan. —Feb. 1846	1846·1	12		22·40
Oct. 1849	1849·7	4	Observatory Dip-Pillar	16·00

116. The observations made in the years 1841–2–3 on the Observatory dip-pillar, give for the mean epoch 1842·5, the mean dip = 71° 24′·0; those made on the same pillar 1849·7, give the mean dip = 71° 16′·0; whence the change in 7·2 years = − 8′·0, or = − 1′·11 a year.

117. The observations made in different azimuths already noticed, render it probable that the dip deduced above is inaccurate from instrumental causes; the mean dip from observations in all the azimuths was less than that from the observations in the magnetic meridian by upwards of 10′.

118. In order if possible to determine the true dip, the inclinometer belonging to the Royal Society of Edinburgh was obtained, and observations were made with it on the Observatory dip-pillar as follow:—

Sept. 25d 5h	Needle No. 1.	Dip = 71° 11′·38	Mean Dip = 71° 10′·36
26d 1h	....	Dip = 71° 10′·83	
26d – 27d	Needle No. 2.	Dip = 71° 8′·88	

The instrument was not in good order and a considerable time was spent on the observations; but the results agree very well. Observations with needle No. 2, were also made in the azimuths 30° and 120°, which gave the following values:—

By the Formula for single Azimuths.
Azimuth 30° Dip = 71° 9′·87
.... 120° Dip = 70° 47′·7

By the Formula for both Azimuths.
Azimuths 30° and 120°, Dip = 71° 4′·2

The observations with the Royal Society's inclinometer in the magnetic meridian give the magnetic dip about 6′ less than those with the Makerstoun instrument. It cannot be said that the true dip for Makerstoun is yet accurately determined, as the observations with the Royal Society's inclinometer in different azimuths will scarcely permit the assumption that it is free from instrumental error.

119. The following results are deduced from those already obtained for the horizontal and vertical components of magnetic force. (See 1844, p. 390.) It may be remarked here, that the epochs for the horizontal component and magnetic dip agree very nearly in every case where both have been determined; maxima of the horizontal component being equivalent to minima of dip, and *vice versa*; therefore, when investigations have not been made similar to those for the horizontal component for the magnetic dip (such as for the mean difference or disturbance), the law for the former may be assumed for the latter, and the values of the variations of dip in minutes may be obtained approximately from the numbers for the horizontal component by multiplying the latter by 1000.

120. *Secular Change of Magnetic Dip.*—If we assume the secular change for the horizontal component = + 0·001318 (No. 52), and for the vertical component, as deduced from the years 1845–9, = – 0·001055, we find the secular change of dip = – 2′·47; this is considerably greater than that obtained from the observations of absolute dip No. 116; since the secular change for the horizontal component must be near the truth (No. 53), and that obtained for the dip, No. 116, cannot be far from it, it is probable that the secular change for the vertical component is still considerably in error, that in fact the balance needle is still losing magnetism.

121. *Effect of Disturbance on the Yearly Mean.*—From the means for the days selected as nearly free from disturbance in the years 1844 and 1845, we find from Nos. 54 and 85, that the yearly mean of magnetic dip deduced from the undisturbed days is less than that from all the observations by 0′·15. The effect of disturbance, therefore, is to increase the magnetic dip, although the effect on the magnetic declination is nearly zero. (No. 38.)

122. *Annual Period of Magnetic Dip.*—This result depends chiefly on that for the horizontal component; adopting the annual period for the vertical component, deduced from the observations for the years 1843–6, as the best representative of that variation, and employing the annual variations for the horizontal component, deduced from the observations in the years 1843–6, 1842–5, and 1842–7, we obtain the following numbers:

TABLE 56.—Monthly Variations of Magnetic Dip, free from Regular Secular Change.

Years.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	′	′	′	′	′	′	′	′	′	′	′	′
1843–6	–0·131	–0·167	+0·102	+0·207	–0·258	–0·256	–0·209	+0·174	+0·400	+0·331	+0·020	–0·200
1842–5	–0·101	–0·110	+0·111	+0·311	–0·287	–0·355	–0·147	+0·116	+0·282	+0·211	+0·056	–0·088
1842–7	–0·263	–0·161	+0·035	+0·302	–0·350	–0·516	–0·278	+0·209	+0·502	+0·642	+0·199	–0·320

The variations of each of these groups of years exhibit a law which may be thus stated :—*The magnetic dip is greatest near the eqinoxes, and it is least near the solstices.* The variations for the years 1842–5 are perhaps least affected by disturbances ; for these years the two maxima have nearly equal values, but the minimum at the summer solstice is greater than that at the winter solstice : in the variations for the years 1843–6 the two minima have nearly equal values, but the two maxima are unequal, the maximum at the autumnal equinox being greatest (See Plate VI.) : and in the variations for the years 1842–7, both maxima and minima are unequal ; the greatest maximum occurring at the autumnal equinox, and the greatest minimum at the summer solstice. The same results are to be obtained for the annual period of the horizontal component, the differences depending upon the amount of disturbance in the different groups of years.

123. When we deduce the monthly means of magnetic dip from the observations of the two component magnetometers, made on the days selected as nearly free from irregular disturbance, in the years 1844 and 1845, we find the means from all the hourly observations in those years greater (+) or less (–) than the former by the following quantities. (See Nos. 57 and 59.)

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
+ 0′·158	+ 0′·294	+ 0′·258	+ 0′·196	– 0′·037	– 0′·026	– 0′·032	+ 0′·060	+ 0′·038	+ 0 ·348	+ 0′·150	+ 0′·356

The effect of disturbance on the monthly mean magnetic dip is negative in the three months May to July, and is positive in the remaining months. If these means be subtracted from those for the corresponding months in Table 56, it will be found that the annual period from the undisturbed days has the same epochs as that from the disturbed days. (See No. 58.)

124. *Annual Variation of the Ranges of the Monthly Mean Variation of Dip.*—The following are the ranges of the mean variation for each month, from four years' observations, as obtained from Table 57.

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1′·10	0′·72	2′·06	3′·26	3′·82	3′·71	4′·04	3′·88	2′·92	2′·39	1′·46	1′·01

The range of dip was least in February, and in the three months December, January, and February; it was greatest in July, and in the months from May to August, the range for June being slightly less than for May, July, and August. The following are the ranges of the mean variation, obtained from the observations on the selected days of 1844 and 1845.

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
0′·53	0′·62	1′·85	3′·27	3′·25	3′·26	3′·04	3′·23	3′·10	1′·94	1′·38	1′·05

The range of the nearly undisturbed mean diurnal variation is least in January, and it is nearly constant in the months from April to September. (See No. 93.)

125. *Variations of the Daily Mean Magnetic Dip with reference to the Moon's Age.*—The following numbers, the means for groups of days from four years' observations, are obtained from the last column of the first parts of Tables 28 and 45.

Moon's Age.	14^d—16^d	17^d—20^d	21^d—24^d	25^d—28^d	29^d—1^d	2^d—5^d	6^d—9^d	10^d—13^d
Variations,	+ 0′·069	+ 0′·147	+ 0′·034	– 0′·137	– 0′·123	– 0′·088	+ 0′·012	+ 0′·085

These numbers shew that the magnetic dip was greatest immediately after opposition, and that it was least immediately before conjunction.

126. *Variations of the Daily Mean Magnetic Dip with reference to the Moon's Declination.*—The following numbers, also derived from four years' observations, are obtained from the last columns of Table 28 and 45.

Day after Moon farthest North.	27^d—1^d	2^d—5^d	6^d—8^d	9^d—12^d	13^d—15^d	16^d—19^d	20^d—22^d	23^d—26^d
Variations,	– 0′·043	+ 0′·003	+ 0′·072	+ 0′·004	– 0′·051	– 0′·027	+ 0′·001	+ 0′·038

It appears therefore, that a minimum of magnetic dip occurred when the moon was farthest north, another minimum occurred when it was farthest south, and maxima occurred when the moon was near the equator. This law is exactly the same as that for the annual variations. No. 122.

127. *Monthly Variations of the Range of Dip.*—These and the analogous results for the mean difference cannot be derived from Tables 29, 30, and 46, 47, but require the conversion of all the hourly observations

into dip, reductions which have not been performed, the laws for the dip however are quite the same as those for the horizontal component, to which we refer. See also No. 141.

Diurnal Variation of the Magnetic Dip.—The following Table is deduced from Tables 31 and 48.

TABLE 57.—Diurnal Variations of Magnetic Dip for each Month, as deduced from the Regular Daily Observations made during the Four Years 1843 to 1846.

Mak. Mean Time.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
h. m.	′	′	′	′	′	′	′	′	′	′	′	′
12 12	0·658	0·294	0·214	1·061	1·743	1·332	1·509	0·964	0·755	0·407	0·466	0·878
13 12	0·724	0·449	0·773	1·131	1·782	1·506	1·670	1·278	0·592	0·352	0·426	0·744
14 12	1·096	0·578	0·861	1·767	1·899	1·647	1·804	1·433	0·930	0·371	0·462	0·708
15 12	0·452	0·525	0·478	1·404	1·989	1·774	1·914	1·470	0·743	0·070	0·277	0·588
16 12	0·214	0·409	0·567	1·303	2·170	1·918	2·129	1·550	0·750	0·000	0·156	0·298
17 12	0·000	0·127	0·538	1·113	2·200	2·120	2·320	1·908	0·635	0·157	0·099	0·104
18 12	0·032	0·040	0·317	1·282	2·373	2·515	2·518	2·131	0·986	0·440	0·000	0·000
19 12	0·080	0·030	0·696	1·631	2·840	2·883	2·925	2·776	1·756	0·789	0·234	0·152
20 12	0·366	0·164	1·344	2·479	3·455	3·413	3·485	3·548	2·312	1·557	0·669	0·373
21 12	0·534	0·610	1·759	3·133	3·744	3·706	3·963	3·880	2·884	2·200	1·273	0·687
22 12	0·836	0·720	2·060	3·264	3·817	3·655	4·042	3·699	2·924	2·388	1·457	0·983
23 12	0·767	0·689	1·824	3·112	3·353	3·039	3·459	3·040	2·348	2·092	1·369	1·008
0 12	0·662	0·473	1·369	2·430	2·633	2·230	2·676	2·311	1·610	1·653	0·937	0·929
1 12	0·302	0·217	0·693	1·640	1·762	1·554	2·022	1·371	0·829	0·920	0·693	0·713
2 12	0·239	0·000	0·336	1·052	1·260	0·974	1·197	1·041	0·467	0·710	0·527	0·558
3 12	0·278	0·009	0·070	0·632	0·935	0·689	0·599	0·544	0·210	0·399	0·496	0·539
4 12	0·227	0·159	0·000	0·368	0·189	0·472	0·372	0·409	0·000	0·445	0·652	0·477
5 12	0·312	0·242	0·134	0·007	0·000	0·191	0·114	0·000	0·133	0·387	0·208	0·512
6 12	0·444	0·238	0·292	0·000	0·107	0·000	0·000	0·126	0·168	0·274	0·303	0·283
7 12	0·505	0·129	0·135	0·410	0·138	0·008	0·296	0·206	0·156	0·339	0·504	0·493
8 12	0·379	0·128	0·144	0·601	0·739	0·372	0·630	0·450	0·491	0·296	0·440	0·735
9 12	0·439	0·193	0·221	0·807	1·251	0·698	1·051	0·676	0·399	0·304	0·608	0·837
10 12	0·514	0·564	0·249	0·614	1·447	0·850	1·303	0·675	0·518	0·331	0·512	0·857
11 12	0·493	0·407	0·034	0·825	1·693	1·184	1·357	0·850	0·446	0·418	0·566	0·766

128. The following are the approximate epochs of maxima and minima in *apparent* time as deduced from Table 57, distinguishing the epoch of the principal maximum by + and of the principal minimum by − ,

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.
Max.	22 20	+22 5	+22 5	+22 12	22 5	21 30	21 45	21 20	+21 55	+22 15	+22 40	+22 55
Min.	3 10	− 2 30	− 3 50	− 5 45	5 45	6 40	5 55	5 25	− 4 35	8 15	5 55	5 55
Max.	+14 0	12 45	14 0	14 30	...	...	...	...	14 35	12 25	10 30	11 15
Min.	−17 40	−18 40	17 50	17 0	...	...	...	...	17 5	−16 25	−18 15	−18 15

These epochs are very nearly the same as those obtained for the horizontal component No. 69. The diurnal variation of magnetic dip at Makerstoun has only one maximum and minimum in the four months May to August, and it has two maxima and two minima in the remaining eight months. The morning minimum near 6^h A.M., is the principal minimum in the four months October to January, in February the two minima are equal; in the other months the principal or only minimum, occurs near 6^h P.M.; the principal maximum of dip occurs in each month with the exception of January near 10^h A.M. It is only in the four winter months November to February that the 2^h A.M. maximum is well marked. The variations of the epochs of maxima and minima will be found with most accuracy from Table 58, which contains the diurnal variations for groups of months.

TABLE 58.—Diurnal Variations of Magnetic Dip for different periods, deduced from Table 57.

Mak. Mean Time.	Dec. Jan. Feb.	March. April.	May. June.	July. Aug.	Sept. Oct. Nov.	Six Months.		Twelve Months.
						Sept. to Feb.	March to Aug.	
h. m.	′	′	′	′	′	′	′	′
12 12	+0·163	−0·346	−0·176	−0·424	−0·202	−0·019	−0·315	−0·168
13 12	+0·192	−0·031	−0·069	−0·186	−0·288	−0·048	−0·095	−0·072
14 12	+0·347	+0·331	+0·060	−0·042	−0·157	+0·095	+0·116	+0·105
15 12	+0·075	−0·042	+0·168	+0·032	−0·382	−0·153	+0·053	−0·051
16 12	−0·140	−0·048	+0·331	+0·179	−0·443	−0·291	+0·154	−0·069
17 12	−0·370	−0·158	+0·447	+0·454	−0·448	−0·409	+0·248	−0·081
18 12	−0·423	−0·184	+0·731	+0·664	−0·270	−0·346	+0·404	+0·029
19 12	−0·360	+0·180	+1·148	+1·190	+0·181	−0·089	+0·839	+0·375
20 12	−0·146	+0·928	+1·721	+1·856	+0·768	+0·311	+1·502	+0·906
21 12	+0·163	+1·463	+2·012	+2·261	+1·374	+0·768	+1·912	+1·340
22 12	+0·399	+1·679	+2·023	+2·210	+1·511	+0·955	+1·971	+1·463
23 12	+0·374	+1·485	+1·483	+1·589	+1·191	+0·782	+1·519	+1·151
0 12	+0·241	+0·916	+0·718	+0·833	+0·655	+0·448	+0·822	+0·635
1 12	−0·036	+0·183	−0·055	+0·036	+0·069	+0·016	+0·055	+0·035
2 12	−0·181	−0·289	−0·596	−0·541	−0·177	−0·179	−0·475	−0·328
3 12	−0·172	−0·632	−0·901	−1·089	−0·377	−0·274	−0·874	−0·574
4 12	−0·159	−0·799	−1·383	−1·270	−0·379	−0·269	−1·151	−0·710
5 12	−0·092	−0·913	−1·618	−1·603	−0·502	−0·297	−1·378	−0·838
6 12	−0·125	−0·837	−1·660	−1·597	−0·497	−0·311	−1·365	−0·838
7 12	−0·071	−0·711	−1·640	−1·409	−0·412	−0·241	−1·253	−0·748
8 12	−0·033	−0·611	−1·158	−1·120	−0·336	−0·184	−0·963	−0·574
9 12	+0·043	−0·469	−0·739	−0·797	−0·308	−0·132	−0·668	−0·401
10 12	+0·198	−0·552	−0·565	−0·671	−0·291	−0·046	−0·596	−0·321
11 12	+0·108	−0·554	−0·275	−0·557	−0·268	−0·080	−0·462	−0·271

129. The approximate epochs of maxima and minima in *apparent* time, from Table 58, are :—

	Dec. Jan. Feb.	March, April.	May, June,	July, Aug.	Sept. Oct. Nov.
Maximum,	+ $10^{h}\ 20^{m}$ A.M.	+ $10^{h}\ 15^{m}$ A.M.	$9^{h}\ 50^{m}$ A.M.	$9^{h}\ 35^{m}$ A.M.	+ $10^{h}\ 0^{m}$ A.M.
Minimum,	$2^{h}\ 50^{m}$ P.M.	− $5^{h}\ 0^{m}$ P.M.	$6^{h}\ 20^{m}$ P.M.	$5^{h}\ 30^{m}$ P.M.	− $5^{h}\ 35^{m}$ P.M.
Maximum,	$2^{h}\ 5^{m}$ A.M.	$2^{h}\ 10^{m}$ A.M.	....	....	$1^{h}\ 55^{m}$ A.M.
Minimum,	− $6^{h}\ 5^{m}$ A.M.	$5^{h}\ 45^{m}$ A.M.	....	....	$4^{h}\ 55^{m}$ A.M.

The principal maximum, near 10^{h} A.M., occurs earliest in July and August, and latest in December to February : the afternoon minimum occurs earliest in the three winter months, and latest in May and June : the other maximum and minimum occur earliest in the months September to November. (See the Continuous Curves, Plate IV., where it is to be remembered that the apparent minima of the curves are the maxima of dip.) The following Table contains the diurnal variations for the days selected as nearly free from intermittent disturbance.

130. The approximate epochs of maxima and minima in *apparent* time for the undisturbed diurnal variations, are as follow :—

	Dec. Jan. Feb.	March, April.	May, June.	July, Aug.	Sept Oct. Nov.
Maximum,	+ $10^{h}\ 45^{m}$ A.M.	+ $10^{h}\ 20^{m}$ A.M.	$9^{h}\ 50^{m}$ A.M.	$9^{h}\ 45^{m}$ A.M.	+ $10^{h}\ 15^{m}$ A.M.
Minimum,	$5^{h}\ 25^{m}$ P.M.	− $7^{h}\ 5^{m}$ P.M.	$6^{h}\ 30^{m}$ P.M.	$7^{h}\ 0^{m}$ P.M.	− $6^{h}\ 45^{m}$ P.M.
Maximum,	$1^{h}\ 35^{m}$ A.M.	$3^{h}\ 20^{m}$ A.M.	....	....	$1^{h}\ 55^{m}$ A.M.
Minimum,	− $6^{h}\ 25^{m}$ A.M.	$5^{h}\ 15^{m}$ A.M.	....	....	$5^{h}\ 5^{m}$ A.M.

In the undisturbed, as in the disturbed variations, the principal maximum occurs earliest in July and August, and latest in December to February ; but, unlike the disturbed variations, the afternoon minimum occurs latest near the equinoxes ; it occurs rather earlier at the winter than at the summer solstice. (See the Dotted Curves, Plate IV.)

TABLE 59.—Diurnal Variations of the Magnetic Dip for different Periods, deduced from Days selected as free from Irregular Disturbance in the Years 1844 and 1845.

Mak. Mean Time.	Dec. Jan. Feb.	March. April.	May. June.	July. Aug.	Sept. Oct. Nov.	Six Months.		Twelve Months.
						Sept. to Feb.	March to Aug.	
h. m.	′	′	′	′	′	′	′	′
12 12	+0·084	−0·362	−0·319	−0·370	−0·280	−0·098	−0·350	−0·225
13 12	+0·151	−0·260	−0·168	−0·240	−0·221	−0·035	−0·223	−0·129
14 12	+0·136	−0·115	−0·037	−0·108	−0·217	−0·041	−0·086	−0·064
15 12	+0·033	−0·034	+0·106	−0·034	−0·257	−0·112	+0·012	−0·051
16 12	−0·081	−0·068	+0·190	+0·087	−0·316	−0·198	+0·069	−0·064
17 12	−0·229	−0·182	+0·388	+0·285	−0·350	−0·289	+0·163	−0·063
18 12	−0·265	−0·071	+0·658	+0·604	−0·202	−0·233	+0·396	+0·081
19 12	−0·270	+0·200	+1·002	+1·061	+0·132	−0·070	+0·754	+0·342
20 12	−0·095	+0·775	+1·492	+1·635	+0·777	+0·341	+1·300	+0·820
21 12	+0·113	+1·334	+1·810	+2·016	+1·287	+0·700	+1·719	+1·208
22 12	+0·370	+1·693	+1·839	+2·022	+1·495	+0·932	+1·851	+1·391
23 12	+0·425	+1·495	+1·403	+1·493	+1·138	+0·781	+1·463	+1·122
0 12	+0·258	+0·984	+0·749	+0·779	+0·715	+0·487	+0·837	+0·661
1 12	−0·010	+0·423	+0·063	+0·037	+0·158	+0·073	+0·174	+0·124
2 12	−0·094	−0·028	−0·296	−0·532	−0·073	−0·084	−0·286	−0·185
3 12	−0·052	−0·438	−0·715	−0·903	−0·205	−0·129	−0·686	−0·407
4 12	−0·082	−0·434	−0·953	−0·860	−0·332	−0·207	−0·750	−0·477
5 12	−0·194	−0·611	−1·298	−1·111	−0·401	−0·297	−1·008	−0·653
6 12	−0·184	−0·755	−1·385	−1·210	−0·551	−0·367	−1·117	−0·742
7 12	−0·084	−0·866	−1·355	−1·276	−0·546	−0·314	−1·166	−0·741
8 12	−0·024	−0·730	−1·096	−1·142	−0·491	−0·258	−0·990	−0·624
9 12	+0·065	−0·610	−0·889	−0·917	−0·474	−0·204	−0·806	−0·504
10 12	+0·037	−0·713	−0·676	−0·716	−0·429	−0·196	−0·702	−0·449
11 12	+0·003	−0·621	−0·522	−0·592	−0·364	−0·180	−0·579	−0·380

TABLE 60.—Differences of Disturbed and Undisturbed Diurnal Variations of Magnetic Dip, as deduced from Tables 58 and 59, exhibiting the Effect of Irregular Disturbance on the Hourly Mean Position.

Mak. Mean Time.	Dec. Jan. Feb.	March. April.	May. June.	July. Aug.	Sept. Oct. Nov.	Six Months.		Twelve Months.
						Sept. to Feb.	March to Aug.	
h. m.	′	′	′	′	′	′	′	′
12 12	+0·079	+0·016	+0·143	−0·054	+0·078	+0·079	+0·035	+0·057
13 12	+0·041	+0·229	+0·099	+0·054	−0·067	−0·013	+0·128	+0·057
14 12	+0·211	+0·446	+0·097	+0·066	+0·060	+0·136	+0·202	+0·169
15 12	+0·042	−0·008	+0·062	+0·066	−0·125	−0·041	+0·041	0·000
16 12	−0·059	+0·020	+0·141	+0·092	−0·127	−0·093	+0·085	−0·005
17 12	−0·141	+0·024	+0·059	+0·169	−0·098	−0·120	+0·085	−0·018
18 12	−0·158	−0·113	+0·073	+0·060	−0·068	−0·113	+0·008	−0·052
19 12	−0·090	−0·020	+0·146	+0·129	+0·049	−0·019	+0·085	+0·033
20 12	−0·051	+0·153	+0·229	+0·221	−0·009	−0·030	+0·202	+0·086
21 12	+0·050	+0·129	+0·202	+0·245	+0·087	+0·068	+0·193	+0·132
22 12	+0·029	−0·014	+0·184	+0·188	+0·016	+0·023	+0·120	+0·072
23 12	−0·051	−0·010	+0·080	+0·096	+0·053	+0·001	+0·056	+0·029
0 12	−0·017	−0·068	−0·031	+0·054	−0·060	−0·039	−0·015	−0·026
1 12	−0·026	−0·240	−0·118	−0·001	−0·089	−0·057	−0·119	−0·089
2 12	−0·087	−0·261	−0·300	−0·009	−0·104	−0·095	−0·189	−0·143
3 12	−0·120	−0·194	−0·186	−0·186	−0·172	−0·145	−0·188	−0·167
4 12	−0·077	−0·365	−0·430	−0·410	−0·047	−0·062	−0·401	−0·233
5 12	+0·102	−0·302	−0·320	−0·492	−0·101	0·000	−0·370	−0·185
6 12	+0·059	−0·082	−0·275	−0·387	+0·054	+0·056	−0·248	−0·096
7 12	+0·013	+0·155	−0·285	−0·133	+0·134	+0·073	−0·087	−0·007
8 12	−0·009	+0·119	−0·062	+0·022	+0·155	+0·074	+0·027	+0·050
9 12	−0·022	+0·141	+0·150	+0·120	+0·166	+0·072	+0·138	+0·103
10 12	+0·161	+0·161	+0·111	+0·045	+0·138	+0·150	+0·106	+0·128
11 12	+0·105	+0·067	+0·247	+0·035	+0·096	+0·100	+0·117	+0·109

131. *Diurnal Variation of the Effect of Disturbance on the Magnetic Dip.*—A remark, similar to that made No. 72, with reference to the horizontal component, will apply to Table 60. The conclusions from this Table are as follow :—

1*st*, The greatest effect of disturbance in increasing the magnetic dip occurs

In	Dec. Jan. Feb.	March, April.	May, June.	July, Aug.	Sept. Oct Nov.
About	$12\frac{1}{2}^{h}$ A.M. $9\frac{1}{2}^{h}$ A.M.	$1\frac{1}{2}^{h}$ A.M. $8\frac{1}{2}^{h}$ A.M.	11^{h} P.M. and $8\frac{1}{2}^{h}$ A.M.	9^{h} A.M. 9^{h} P.M.	9^{h} P.M. 10^{h} P.M.

There are two epochs in May and June at which the positive effect of disturbance is a maximum, and there are two similar epochs for each group of months, for one of which either the positive effect is a secondary maximum, or the negative effect is a minimum ; the times of these are given above, in the second line.

2*d*, The greatest effect of disturbance in diminishing the magnetic dip occurs

In	Dec. Jan. Feb.	March, April.	May, June.	July, Aug.	Sept. Oct. Nov.
About	6^{h} A.M. and 3^{h} P.M.	4^{h} P.M. 6^{h} A.M.	4^{h} P.M. 4^{h} A.M.	5^{h} P.M. 12^{h} P.M.	$3\frac{1}{2}^{h}$ A.M. and 3^{h} PM.

In the winter groups there are two nearly equal maxima for the negative effect of disturbance, and in each of the others there is, besides the principal maximum, either a secondary maximum of the negative effect, or a minimum of the positive effect ; the times of these are given above in the second line.

3*d*, The effect of disturbance upon the hourly mean magnetic dip is zero

In	Dec. Jan. Feb.	March, April.	May, June.	July, Aug.	Sept. Oct. Nov.
About	10^{h} A.M., 7^{h} P.M., 3^{h} A.M.	7^{h} A.M., 10^{h} A.M., 7^{h} P.M.	Noon, 9^{h} P.M.	1^{h} P.M., 8^{h} P.M.	10^{h} A.M., 6^{h} P.M., 1^{h} A.M.

The best defined hours are those from 6^{h} P.M. to 9^{h} P.M., and from 10^{h} A.M. to 1^{h} P.M.

See No. 76 for the probable law of mean disturbance for the magnetic dip, substituting for positive disturbance of the horizontal component, negative disturbance of dip, and *vice versa*.

TABLE 61.—Variations of the Magnetic Dip with reference to the Moon's Hour-Angle for the Winter and Summer Lunations, and for all the Lunations of the Years 1844 and 1845.

Moon's Hour-Angle.	Winter Lunations.			Summer Lunations.			All the Lunations.		
	1844.	1845.	Mean.	1844.	1845.	Mean.	1844.	1845.	Mean.
h. m.	′	′	′	′	′	′	′	′	′
0 0	+·012	+·021	+·017	−·012	−·045	−·028	·000	−·009	−·005
2 25	+·048	−·123	−·037	−·031	−·154	−·092	+·009	−·138	−·063
4 20	−·010	+·071	+·030	−·033	−·071	−·051	−·022	+·004	−·008
6 15	−·026	+·018	−·004	+·006	+·006	+·006	−·009	+·012	+·001
8 10	−·064	+·084	+·010	+·030	+·170	+·100	−·018	+·123	+·052
10 5	+·030	+·024	+·027	+·003	−·031	−·014	+·016	−·002	+·007
12 0	−·066	+·001	−·031	−·108	−·096	−·101	−·087	−·044	−·066
13 55	+·008	−·037	−·015	−·156	−·075	−·115	−·073	−·055	−·063
15 50	+·099	−·090	+·004	+·009	+·042	+·026	+·055	−·030	+·012
17 45	−·046	−·027	−·036	+·073	+·085	+·080	+·020	+·024	+·021
19 40	−·023	+·011	−·006	+·138	+·106	+·123	+·058	+·054	+·056
21 35	+·025	+·058	+·042	+·074	+·057	+·066	+·052	+·057	+·055

132. *Variations of the Magnetic Dip with Reference to the Moon's Hour-Angle.*—The four independent columns of Table 61, give results quite analogous to those obtained for the horizontal component of magnetic force, No. 79 : the results for the winter lunations of 1844, and for the summer lunations of both years, agree very nearly with that for the mean of both years in the last column of Table 61,—which may be stated as follows :—

The magnetic dip is a minimum about 1 hour after the moon's inferior transit.
…………………… maximum about $3\frac{1}{2}$ hours before the moon's superior transit.
…………………… minimum about $2\frac{1}{2}$ hours after the moon's superior transit.
…………………… maximum about 8 hours after the moon's superior transit.

The winter lunations for 1844 agree with this result, in having a minimum immediately after the inferior transit, but not otherwise: this difference, it is considered, is due to disturbances. (See No. 80.)

TOTAL MAGNETIC FORCE.

133. *Absolute Value of the Total Magnetic Force.*—The absolute value of the total magnetic force deduced from the value of the horizontal component, and the magnetic dip, as in No. 81, is as follows:—
Total magnetic force at Makerstoun for the mean epoch 1845 = 10·5267.

134. *Secular Change of the Total Magnetic Force.*—The determination of this depends chiefly on the balance magnetometer, and it is probable that the secular change from that instrument is not to be trusted (No. 84); indeed it is probable that the total force remains nearly constant, and this is the more likely the nearer the secular change deduced for the magnetic dip is considered to be to the truth. (See No. 116.)

135. *Effect of Disturbance on the Yearly Mean Value of the Total Magnetic Force.*—By Nos. 54 and 85, we find that the yearly mean deduced from the selected undisturbed days, is greater than that obtained from all the observations by 0·000045, the total force here and in the following discussions being considered equal to unity.

136. *Annual Period of the Total Magnetic Force.*—This result depends chiefly on that for the vertical component and is entitled to the same weight. The following are the variations of the monthly means of the total force, deduced from the observations of the balance and bifilar magnetometers for the four years 1843–6. (See Nos. 56 and 87.)

Prefix.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
0·000	+099	−013	−074	−075	−034	+120	+052	−001	−049	−087	+011	+048

From these numbers, *the total magnetic force at Makerstoun is a maximum about the solstices, and a minimum immediately after the equinoxes* (See Plate VI.)

137. The monthly means deduced from all the hourly observations in 1844 and 1845, were greater (+) or less (−) than those obtained from the days selected as nearly free from disturbance by the following quantities. (See Nos. 57 and 89.)

Prefix.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
0·000	−069	+001	−106	−060	−062	−003	−037	−061	−052	−078	−008	+002

The effect of disturbance on the monthly mean was nearly zero in the months of February, June, and December, and it was greatest in March and October. When these numbers are subtracted from those in No. 136 it is found that the annual period obtained from the undisturbed days in each month, has the same epochs as that obtained from all the days.

138. *Annual Variation of the Ranges of the Monthly Mean Diurnal Variation of the Total Magnetic Force.* The following are the ranges of the mean diurnal variation for each month, as obtained from Table 62, deduced from four years' observations.

Prefix.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
0·000	319	291	612	821	701	546	663	738	715	521	443	298

The diurnal range of the total force was least in the three months, December, January, and February, and it was greatest in April and August: the ranges for March and September were greater than the range for June. The following are the ranges of the mean variations obtained from the selected days of 1844 and 1845.

Prefix.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
0·000	112	151	277	398	489	449	448	389	409	321	176	154

The range of the nearly undisturbed mean diurnal variation was least in January 1844–5, and it was greatest in May, but it is probable that the range is nearly constant while the sun is north of the equator, and that the differences exhibited here are due to the greater or less amount of disturbance remaining in the selected days. (See Nos. 92 and 93.)

139. *Variations of the Daily Mean Total Magnetic Force, with Reference to the Moon's Age.*—The fol-

lowing quantities, the means for groups of days from four years' observations, are obtained from the last column of the first parts of Tables 28 and 45. (Prefix 0·000.)

Moon's Age,	14^d—16^d	17^d—20^d	21^d—24^d	25^d—28^d	29^d—1^d	2^d—5^d	6^h—9^d	10^d—13^d
Variations,	− 024	+ 007	+ 024	+ 011	+ 001	+ 008	+ 009	− 034

The total force, therefore, is least near opposition, and it is greatest near the quadratures. (See No. 96, 1*st.*)

140. *Variations of the Daily Mean Total Magnetic Force, with Reference to the Moon's Declination.*—The following variations are derived from the final columns of Tables 28 and 45. (Prefix 0·000.)

Day after Moon farthest North.	27^d—1^d	2^d—5^d	6^d—8^d	9^d—12^d	13^d—15^d	16^d—19^d	20^d—22^d	23^d—26^d
Variations,	+ 024	− 004	−016	− 010	+ 017	− 004	− 001	−005

These variations indicate that the total force is a maximum when the moon is farthest north, and also when it is farthest south, and that is a minimum between these epochs. This result is quite analogous to that for the sun's position in declination (see No. 136). In both cases, the total force is greatest when the body (sun or moon) has its greatest north and south declinations, and it is least during the intermediate positions, or when the body is near the equator.

141. *Monthly Variations of the Range of the Total Force.*—This law is the same as that for the vertical component (No. 97), but has not been deduced for the total force, for the reason given No. 127. It may be stated generally, whether the position of the sun or the moon be under consideration, that the diurnal range of all the magnetic elements is greatest when the body is rather north of the equator, and that the range is least when the body is farthest south and farthest north. It has been found, generally, that when undisturbed mean variations are examined, the diminution of diurnal range, when the sun is most northerly, disappears, and it is probable that the same would be true with respect to the moon; the excess of range, when the bodies are near the equator, being due to the greater amounts of disturbance which occur at these times. (See No. 23.)

TABLE 62.—Diurnal Variations of the Total Magnetic Force for each Month, as deduced from the Regular Daily Observations made during the Four Years 1843 to 1846.

Mak. Mean Time.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
h. m.	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00
12 13	0078	0036	0125	0000	0051	0201	0162	0049	0017	0078	0000	0021
13 13	0083	0014	0026	0072	0012	0151	0113	0026	0000	0053	0006	0028
14 13	0000	0000	0000	0021	0000	0138	0082	0000	0009	0024	0008	0003
15 13	0075	0006	0061	0122	0005	0161	0083	0041	0025	0033	0033	0000
16 13	0094	0030	0124	0113	0080	0170	0096	0107	0077	0000	0052	0029
17 13	0116	0055	0157	0189	0151	0170	0090	0132	0140	0033	0067	0046
18 13	0136	0073	0213	0249	0200	0181	0121	0163	0173	0089	0085	0063
19 13	0146	0091	0239	0266	0190	0178	0117	0162	0176	0154	0082	0061
20 13	0139	0085	0232	0233	0132	0134	0081	0118	0159	0150	0072	0060
21 13	0132	0056	0189	0186	0080	0062	0026	0088	0125	0133	0036	0036
22 13	0124	0046	0141	0154	0024	0014	0001	0072	0136	0115	0012	0014
23 13	0161	0061	0146	0155	0038	0000	0000	0081	0170	0143	0039	0035
0 13	0182	0100	0177	0216	0105	0068	0072	0151	0271	0234	0129	0064
1 13	0248	0147	0286	0310	0229	0150	0174	0303	0412	0332	0185	0112
2 13	0288	0208	0410	0447	0349	0251	0311	0420	0541	0411	0237	0167
3 13	0301	0272	0495	0574	0485	0347	0475	0559	0656	0521	0314	0234
4 13	0307	0287	0549	0658	0517	0453	0589	0652	0715	0517	0344	0245
5 13	0319	0291	0612	0800	0701	0513	0662	0738	0712	0498	0365	0255
6 13	0306	0288	0574	0821	0699	0546	0663	0738	0586	0460	0443	0298
7 13	0309	0264	0529	0718	0676	0535	0616	0659	0529	0407	0328	0261
8 13	0315	0248	0454	0563	0547	0479	0517	0532	0390	0344	0245	0165
9 13	0263	0177	0323	0421	0385	0396	0378	0334	0272	0278	0145	0136
10 13	0121	0123	0154	0352	0289	0305	0293	0262	0184	0216	0072	0105
11 13	0078	0040	0202	0247	0196	0227	0228	0099	0123	0131	0019	0067

142. *Diurnal Variation of the Total Magnetic Force.*—Table 62 has been computed from Tables 31 and 48. The following are the approximate epochs of maxima and minima in *apparent* time, distinguishing those of the principal maximum by +, and of the principal minimum by −.

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.
Max.	+ 5 35	+ 5 0	+ 5 5	+ 5 55	+ 5 45	+ 6 30	+ 5 35	+ 5 35	+ 4 55	+ 3 40	+ 6 25	+ 6 20
Min.	−14 5	−14 0	−13 45	−13 0	−14 35	14 15	14 40	−14 5	−13 35	−16 15	−12 45	−14 45
Max.	19 5	19 15	19 30	19 0	18 40	18 35	18 30	18 35	18 50	19 45	18 50	19 5
Min.	22 0	21 55	22 30	22 45	−22 45	−23 0	−22 45	22 20	21 35	22 35	−22 50	−22 15

The principal maximum of the total magnetic force occurs between 3ʰ 40ᵐ and 6ʰ 30ᵐ P.M. in each month of the year; it occurs latest in June and November; it occurs earliest in February and March, of the first six months, and in October and September of the last six months of the year. The principal minimum occurs near 2ʰ A.M. in each month, with the exceptions of June and July, in which months it occurs near 11ʰ A.M.; in May, November, and December, the two minima are nearly equal. The secondary maximum occurs between 6½ʰ and 7¾ʰ A.M., and it is best marked in the months of March, April, and May, August, and September.

TABLE 63.—Diurnal Variations of the Total Magnetic Force for Different Periods, deduced from Table 62.

Mak. Mean Time.	Dec. Jan. Feb.	March. April.	May. June.	July. Aug.	Sept. Oct. Nov.	Six Months.		Twelve Months.
						Sept. to Feb.	March to Aug.	
h. m.	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00
12 13	−0091	−0236	−0123	−0154	−0180	−0135	−0171	−0154
13 13	−0094	−0249	−0168	−0190	−0192	−0143	−0202	−0173
14 13	−0135	−0288	−0180	−0218	−0198	−0166	−0229	−0198
15 13	−0109	−0207	−0166	−0197	−0182	−0145	−0190	−0168
16 13	−0085	−0180	−0124	−0158	−0169	−0127	−0154	−0141
17 13	−0064	−0125	−0089	−0148	−0132	−0098	−0121	−0110
18 13	−0045	−0067	−0059	−0117	−0096	−0070	−0081	−0076
19 13	−0037	−0046	−0065	−0120	−0075	−0056	−0077	−0067
20 13	−0041	−0066	−0116	−0160	−0085	−0063	−0114	−0089
21 13	−0061	−0111	−0178	−0202	−0114	−0087	−0164	−0126
22 13	−0075	−0151	−0230	−0223	−0124	−0099	−0201	−0151
23 13	−0050	−0148	−0230	−0219	−0095	−0072	−0199	−0136
0 13	−0021	−0102	−0163	−0148	−0001	−0011	−0138	−0074
1 13	+0033	.0000	−0060	−0021	+0098	+0065	−0027	+0019
2 13	+0085	+0130	+0051	+0106	+0184	+0134	+0096	+0115
3 13	+0133	+0236	+0167	+0258	+0285	+0209	+0220	+0214
4 13	+0144	+0305	+0236	+0361	+0313	+0228	+0301	+0264
5 13	+0152	+0408	+0358	+0441	+0313	+0232	+0402	+0317
6 13	+0161	+0399	+0373	+0441	+0284	+0222	+0404	+0313
7 13	+0142	+0325	+0356	+0378	+0209	+0175	+0353	+0264
8 13	+0107	+0210	+0264	+0265	+0114	+0110	+0246	+0178
9 13	+0056	+0074	+0141	+0097	+0020	+0038	+0104	+0071
10 13	−0020	−0045	+0048	+0018	−0055	−0037	+0007	−0015
11 13	−0074	−0074	−0038	−0096	−0121	−0097	−0069	−0084

143. The means for groups of months having been obtained, as for the other magnetic elements, we find the approximate epochs for the mean diurnal variation in *apparent* time as follow:—

	Dec. Jan. Feb.	March, April.	May, June.	July, Aug.	Sept. Oct. Nov.
Maximum,	+6ʰ 10ᵐ P.M.	+ 5ʰ 25ᵐ P.M.	+ 5ʰ 45ᵐ P.M.	+ 5ʰ 35ᵐ P.M.	+ 4ʰ 50ᵐ P.M.
Minimum,	−2ʰ 10ᵐ A.M.	− 2ʰ 10ᵐ A.M.	1ʰ 45ᵐ A.M.	− 2ʰ 10ᵐ A.M.	− 2ʰ 20ᵐ A.M.
Maximum,	7ʰ 10ᵐ A.M.	7ʰ 5ᵐ A.M.	6ʰ 35ᵐ A.M.	6ʰ 35ᵐ A.M.	7ʰ 35ᵐ A.M.
Minimum,	9ʰ 55ᵐ A.M.	10ʰ 35ᵐ A.M.	−10ʰ 45ᵐ A.M.	−10ʰ 35ᵐ A.M.	10ʰ 20ᵐ A.M.

In the disturbed diurnal variation of total magnetic force, the principal maximum occurred latest in the quarter December to February, and earliest in the quarter September to November: the epoch of the after-midnight minimum varied little, being slightly nearer midnight in May and June than in the other groups; the secondary maximum occurred earliest in May and June, and latest in September to November; and the forenoon minimum occurred earliest in the quarter December to February, and latest in May and June. In May and June, therefore, the one minimum occurred nearest noon, the other nearest midnight. (See the Continuous Curves, Plate V.)

TABLE 64.—Diurnal Variations of the Total Magnetic Force for Different Periods, deduced from Days selected as free from Irregular Disturbances, in the Years 1844 and 1845.

Mak. Mean Time.	Dec. Jan. Feb.	March. April.	May. June.	July. Aug.	Sept. Oct. Nov.	Six Months.		Twelve Months.
						Sept. to Feb.	March to Aug.	
h. m.	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00
12 13	−0016	−0029	−0031	−0032	−0051	−0033	−0031	−0034
13 13	−0037	−0043	−0039	−0047	−0059	−0048	−0043	−0045
14 13	−0041	−0027	−0034	−0049	−0049	−0045	−0037	−0040
15 13	−0038	−0023	−0014	−0027	−0042	−0040	−0021	−0030
16 13	−0031	−0025	+0011	+0003	−0032	−0031	−0004	−0018
17 13	−0022	−0004	+0021	+0010	−0022	−0022	+0009	−0007
18 13	−0022	+0010	+0012	+0009	−0023	−0022	+0010	−0006
19 13	−0023	+0009	−0016	−0030	−0024	−0023	−0012	−0018
20 13	−0025	−0019	−0077	−0103	−0063	−0044	−0066	−0055
21 13	−0045	−0080	−0162	−0169	−0107	−0076	−0137	−0106
22 13	−0061	−0151	−0229	−0204	−0146	−0103	−0195	−0149
23 13	−0056	−0182	−0251	−0218	−0125	−0090	−0217	−0154
0 13	−0028	−0181	−0200	−0176	−0089	−0058	−0186	−0122
1 13	+0017	−0100	−0105	−0084	−0002	+0007	−0096	−0044
2 13	+0053	−0005	−0024	+0013	+0075	+0064	−0005	+0029
3 13	+0071	+0069	+0064	+0108	+0126	+0098	+0080	+0089
4 13	+0075	+0113	+0139	+0157	+0152	+0113	+0136	+0125
5 13	+0069	+0143	+0201	+0196	+0140	+0104	+0180	+0142
6 13	+0059	+0145	+0215	+0197	+0126	+0092	+0186	+0139
7 13	+0048	+0137	+0199	+0176	+0103	+0075	+0171	+0123
8 13	+0039	+0105	+0160	+0145	+0086	+0062	+0137	+0099
9 13	+0032	+0080	+0106	+0086	+0051	+0041	+0091	+0066
10 13	+0016	+0050	+0045	+0042	+0016	+0016	+0046	+0030
11 13	−0014	+0008	0000	−0004	−0036	−0025	+0001	−0012

144. When we consider the diurnal variation, as deduced from days selected as nearly free from intermittent disturbance, and as exhibited in Table 64, and in the dotted curves, Plate V., we find the approximate epochs in *apparent* time as follow:—

	Dec. Jan. Feb.	March, April.	May, June.	July, Aug.	Sept. Oct. Nov.
Maximum,	+ 4^{h} 0^{m} P.M.	+ 5^{h} 40^{m} P.M.	+ 6^{h} 0^{m} P.M.	+ 5^{h} 35^{m} P.M.	+ 4^{h} 15^{m} P.M.
Minimum,	1^{h} 40^{m} A.M.	1^{h} 10^{m} A.M.	1^{h} 30^{m} A.M.	1^{h} 40^{m} A.M.	1^{h} 25^{m} A.M.
Maximum,	5^{h} 35^{m} A.M.	6^{h} 45^{m} A.M.	5^{h} 15^{m} A.M.	5^{h} 35^{m} A.M.	6^{h} 20^{m} A.M.
Minimum,	−10^{h} 35^{m} A.M.	−11^{h} 45^{m} A.M.	−10^{h} 55^{m} A.M.	−10^{h} 55^{m} A.M.	−10^{h} 30^{m} A.M.

The undisturbed diurnal variation of the total magnetic force differs considerably from that affected by disturbances, as may be seen at a glance in Plate V.; the whole variations of the epochs of maxima and minima, with season, are different from those obtained, No. 143. In each group of months, the forenoon minimum is the principal, and the after-midnight minimum is quite secondary. The principal maximum occurs earliest in winter, about 4^{h} P.M., and latest in May and June, about 6^{h} P.M.; the principal minimum occurs earliest in the six months, September to February, and latest in March and April: the secondary maximum occurs nearest noon, and the secondary minimum nearest midnight, in the equinoctial months.

TABLE 65.—Differences of Disturbed and Undisturbed Diurnal Variations of the Total Magnetic Force, as deduced from Tables 63 and 64, exhibiting the effect of Irregular Disturbance on the Hourly Mean Positions.

Mak. Mean Time.	Dec. Jan. Feb.	March. April.	May. June.	July. Aug.	Sept. Oct. Nov.	Six Months.		Twelve Months.
						Sept. to Feb.	March to Aug.	
h. m.	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00
12 13	−0075	−0207	−0092	−0122	−0129	−0102	−0140	−0120
13 13	−0057	−0206	−0129	−0143	−0133	−0095	−0159	−0128
14 13	−0094	−0261	−0146	−0169	−0149	−0121	−0192	−0158
15 13	−0071	−0184	−0152	−0170	−0140	−0105	−0169	−0138
16 13	−0054	−0155	−0135	−0161	−0137	−0096	−0150	−0123
17 13	−0042	−0121	−0110	−0158	−0110	−0076	−0130	−0103
18 13	−0023	−0077	−0071	−0126	−0073	−0048	−0091	−0070
19 13	−0014	−0055	−0049	−0090	−0051	−0033	−0065	−0049
20 13	−0016	−0047	−0039	−0057	−0022	−0019	−0048	−0034
21 13	−0016	−0031	−0016	−0033	−0007	−0011	−0027	−0020
22 13	−0014	0000	−0001	−0019	+0022	+0004	−0006	−0002
23 13	+0006	+0034	+0021	−0001	+0030	+0018	+0018	+0018
0 13	+0007	+0079	+0037	+0028	+0088	+0047	+0048	+0048
1 13	+0016	+0100	+0045	+0063	+0100	+0058	+0069	+0063
2 13	+0032	+0135	+0075	+0093	+0109	+0070	+0101	+0086
3 13	+0062	+0167	+0103	+0150	+0159	+0111	+0140	+0125
4 13	+0069	+0192	+0097	+0204	+0161	+0115	+0165	+0139
5 13	+0083	+0265	+0157	+0245	+0173	+0128	+0222	+0175
6 13	+0102	+0254	+0158	+0244	+0158	+0130	+0218	+0174
7 13	+0094	+0188	+0157	+0202	+0106	+0100	+0182	+0141
8 13	+0068	+0105	+0104	+0120	+0028	+0048	+0109	+0079
9 13	+0024	−0006	+0035	+0011	−0031	−0003	+0013	+0005
10 13	−0036	−0095	+0003	−0024	−0071	−0053	−0039	−0045
11 13	−0060	−0082	−0038	−0092	−0085	−0072	−0070	−0072

145. *Diurnal Variation of the Effect of Disturbance on the Total Magnetic Force.* The remark made No. 102, for the vertical component, will apply also to the following conclusions obtained from Table 65.

1*st*, The greatest effect of disturbance in increasing the total magnetic force occurs

In	Dec. Jan. Feb.	March, April.	May, June.	July, Aug.	Sept. Oct. Nov.
About	$6^h\ 30^m$ P.M.	$5^h\ 30^m$ P.M.	$6^h\ 15^m$ P.M.	$5^h\ 40^m$ P.M.	$5^h\ 10^m$ P.M.

The hours, it will be seen, agree very nearly with those found as the epochs of the maximum total force in the disturbed diurnal variation. The maximum positive effect of disturbance on the total force, occurs latest near the solstices and earliest near the equinoxes.

2*d*, The greatest effect of disturbance in diminishing the total magnetic force occurs

In	Dec. Jan. Feb.	March, April.	May, June.	July, Aug.	Sept. Oct. Nov.
About	$2^h\ 0^m$ A.M.	$2^h\ 15^m$ A.M.	$3^h\ 0^m$ A.M.	$2^h\ 45^m$ A.M.	$2^h\ 10^m$ A.M.

These hours are nearly the same as those for the after-midnight minimum of the diurnal variation; the difference is greatest in the summer months when the maximum negative effect occurs latest.

3*d*, The effect of disturbance on the total magnetic force is zero

In	Dec. Jan. Feb.	March, April.	May, June.	July, Aug.	Sept. Oct. Nov.
About	$10^h\ 45^m$ A.M. $9^h\ 40^m$ P.M.	$10^h\ 15^m$ A.M. $9^h\ 10^m$ P.M.	$10^h\ 10^m$ A.M. $10^h\ 15^m$ P.M.	$11^h\ 15^m$ A.M. $9^h\ 30^m$ P.M.	$9^h\ 45^m$ A.M. $8^h\ 45^m$ P.M.

The one of these epochs is nearly the same as that of the principal minimum in the undisturbed diurnal variation; the other occurs about twelve hours after.

TABLE 66.—Variations of the Total Magnetic Force with reference to the Moon's Hour-Angle for the Winter and Summer Lunations, and for all the Lunations of the Years 1844 and 1845.

Moon's Hour-Angle.	Winter Lunations.			Summer Lunations.			All the Lunations.		
	1844.	1845.	Mean.	1844.	1845.	Mean.	1844.	1845.	Mean.
h. m.	0·000	0·000	0·000	0·000	0·000	0·000	0·000	0·000	0·000
0 0	−055	000	−028	+018	+011	+015	−019	+006	−007
2 25	−091	+025	−032	−006	+030	+012	−048	+028	−010
4 20	−068	−046	−057	−011	+020	+005	−040	−015	−027
6 15	−068	−031	−050	−023	+001	−011	−045	−015	−030
8 10	−052	−039	−045	−034	−036	−035	−043	−037	−040
10 5	−010	000	−005	−009	+002	−004	−010	+001	−004
12 0	+066	+030	+048	−007	+020	+006	+029	+025	+027
13 55	+106	+042	+073	+023	+027	+024	+065	+035	+050
15 50	+084	+045	+065	+038	−003	+017	+062	+023	+042
17 45	+054	+024	+039	+010	−028	−009	+031	000	+015
19 40	+045	−015	+015	−007	−039	−022	+019	−026	−004
21 35	−006	−031	−018	+008	−006	000	+001	−019	−008

146. *Variation of the Total Magnetic Force with Reference to the Moon's Hour-Angle.*—Of the four independent results in Table 66, that for the winter lunations of 1844 has the greatest range, and only one maximum and minimum, the maximum occurring about 2 hours after the moon's inferior transit, and the minimum about 2½ hours after the superior transit: the three other results shew two maxima and two minima as follow:—

A maximum from 2 to 4 hours after the moon's inferior transit.
A minimum from 4 to 2½ hours before the moon's superior transit.
A maximum from 0 to 2½ hours after the moon's superior transit.
A minimum from 6 to 8 hours after the moon's superior transit.

In the mean of all, as shewn in the last column of Table 66, the first minimum and second maximum noted above, are scarcely visible, owing to the effect of the great range of the exceptional result for the winter lunations of 1844. The epochs from the means of all are—

The maximum of total force 2¾ hours after the moon's inferior transit.
A minimum .... 2 hours before .... superior transit.
A maximum .... near .... superior transit.
The minimum .... 8 hours after .... superior transit.

It is probable that the mean of all the lunations is vitiated by the winter lunations of 1844, and that the epochs given above for the remaining lunations of the two years are near the truth.

COMBINED MOTIONS OF THE MAGNETIC NEEDLE.

147. *Motions of the North End of a Magnetic Needle supposed freely suspended in the direction of the Magnetic Force.*—These motions have been represented in Plates VI.–VIII. by projecting the variations of dip, given in the previous Tables, as ordinates to the abscissæ deduced from the variations of declination for the same epochs multiplied by the cosine of the dip (=0·32). As great care has been bestowed on the determination and verification of the coefficients of reduction for the bifilar and balance magnetometers, upon which the element of dip depends, it is conceived that considerable confidence may be placed in the accuracy of these figures as representatives of the motions of the north end of a needle supposed freely suspended in the direction of dip at Makerstoun. No attempt has been made in these discussions to introduce theoretical views, but a consideration of the figures in the Plates will probably show the futility of many of the theories brought forth to explain the motion in declination.

148. *Annual Motions.*—The annual motion deduced from the observations of the three magnetometers for the four years 1843–6 is shown in figure A, Plate VI. In order to exhibit a more symmetrical form of the annual

motion, the magnetic dip, deduced from the observations of the bifilar magnetometer for the years 1842–5 and the balance magnetometer for the years 1843–6, has been employed to construct figure B; the same declination being used as in figure A. For both figures the monthly mean values for the three magnetometers have been obtained from the curves (Plate VI.) passed freely through or among the projected points.

149. From near the vernal till the autumnal equinox the annual motion forms the half of an ellipse whose major axis, passing at the vertex through June, makes an angle of about + 11° in figure A and of + 16° in figure B with the projection of the magnetical meridian. At the autumnal equinox the north end of the needle again ascends till the winter solstice, after which it descends till the vernal equinox. In its descent, the north end of the needle having crossed its previously ascending path, it forms a loop which, when untwisted and continued downwards from the equinoxes, completes the ellipse; the portion formed by the loop having almost exactly the same perimeter as that regularly formed when the sun is north of the equator; the completed portion is indicated by dotted lines in figures A and B. It does not seem improbable that in southern latitudes the figure will be inverted, and that it will be a simple ellipse near the equator.

150. *Monthly Motions.*—The motion corresponding to the moon's varying phase has not been projected, chiefly because of the irregularities still existing in the result of the four years' observations for the magnetic declination, the epoch of minimum being ill-determined; it is conceived that the figure is a simple ellipse with its major axis in the astronomical meridian, the northern extremity being at conjunction, the epoch of minimum dip, and the southern extremity at opposition, the epoch of maximum dip; this, however, is doubtful.

151. The motion for the moon's position in declination has been obtained in the following manner:—Having first projected the means of magnetic declination for *each* three days of the moon's position in declination, as obtained from the Tables for the years 1843–6, the day after the farthest northerly position being the abscissa, a curve was passed freely among the points; the values of the ordinates at the points of intersection by the curve were then taken as the interpolated values of magnetic declination for the corresponding abscissæ: a similar operation was performed for the magnetic dip. In both cases very satisfactory curves, agreeing nearly with the true points, were obtained. These values are projected in figure C, Plate VI. From this figure the north end of the dipping-needle commences its ascent about two days after the moon is north of the equator, attains its highest point about two days after the moon is farthest north, and afterwards it descends till the moon is again near the equator; thus forming a figure like a portion of an ellipse with its vertex about one day after the moon is farthest north, the major axis making an angle of about − 30° with the magnetic meridian. It will be remarked that so far this motion is quite similar to that for the sun's position in declination, with the exception of the axis of the figure being on the opposite side of the magnetic meridian; when we trace the figure farther the analogy still subsists;—as the moon proceeds south of the equator the north end of the needle again ascends till the moon is farthest south, thereafter descending, and, in crossing its previously ascending path, a loop is formed lying partially out of the principal figure, as in the case of the annual motion.

152. The correspondence of the two results gives a great weight to the accuracy of both; this will be more evident when it is remembered, that the whole motion of the dipping-needle for the moon's varying declination is included by a small circle with a diameter of little more than *one-tenth of a minute of space*, and, that no observation in the sixty thousand employed for this result has been rejected, however greatly affected by disturbance; although the graphic interpolation to remove slight irregularities may be considered an equivalent operation.

153. *Diurnal Motions.*—The monthly mean diurnal variations for the magnetic declination and magnetic dip in Tables 12 and 57, still present irregularities, especially from 10^h P.M. till 4^h A.M., the hourly positions for this time depending on only two years' observations. For this reason, the values from these Tables having been projected, curves were passed freely among the points, and the interpolated ordinates thus formed, were taken for the projections in Plate VII.: the interpolated quantities differ very little from the actual values, and this is especially the case for the summer months.

154. The diurnal motions for the 4 winter months November to February, are of the same class, and they differ considerably from those for the other months (see Plate VII.); in each of these months the motion consists of a figure of two closed loops: the north end of the needle moves eastwards with little change of dip from about 1^h P.M. till 9^h or 10^h P.M., after which it turns westwards, and begins to ascend about 4^h A.M., crossing near its position at 6^h P.M., thus forming an eastern loop, which is small compared with the western loop, excepting in December. After 6^h A.M., the north end of the needle having moved a little westwards, again descends, crossing a second time the afternoon track near 5^h P.M., still moving westwards, it ascends about 11^h A.M. till it meets the position of 1^h P.M., thus completing the western loop. The eastern loop is not formed in March, the north end of the needle not rising sufficiently high to cross the afternoon track. The change in the figure from February to March is very great; in April and May the remains of the eastern loop are still visible, but in June and July its position is indicated by a simple inflection in the figure; in August and September the germ of the eastern loop becomes more distinct, and in October the loop is actually formed. The transition in form from autumn to winter is quite gradual, unlike that from winter to

spring. In the winter months, the principal or western loop is formed by the motion from 8^{h} A.M. till 5^{h} P.M.; in the months from April to August, three-fourths of the whole diurnal motion occur between 6^{h} A.M. and 6^{h} P.M., the remaining fourth forming a slightly inflected side to each of the figures: it is this side which is gradually twisted up to form the eastern loop of the winter months. The figures for means of groups of months, as in Tables 13 and 58, have been projected in Plate VIII. on a larger scale, the diurnal motions from the days selected as nearly free from irregular disturbance have been projected with dotted outlines along with the others. In these figures the actual values in Tables 13, 14, 58, 59 have been employed. In the winter months the undisturbed diurnal variation presents a series of convolutions instead of the eastern loop, and in the other months the general form of the figures is not much altered.

155. It is evident that no proper comparison can be made of the areas of these figures, on account of the involved forms in the winter months; the areas, however, of the figures from April to August, differ very little.*

156. *Perimeters of the Figures.*—The twisting of the perimeters, which renders a comparison of the areas of little value, does not appear to affect the length of the motion, and this therefore seems a fair subject for examination. The following are the values of the angular motion, or length of the perimeter, for each month, as obtained approximately from Plate VII.

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
5′·60	6′·16	9′·22	12′·18	12′·04	12′·00	11′·56	11′·64	10′·48	9′·78	7′·22	5′·84

December and January shew the least perimeters, April, May, and June, the greatest, though the perimeters for the months from April to August are nearly constant.

157. The following are the approximate perimeters of the five independent figures of Plate VIII.:—

	Dec.–Feb.	March, April.	May, June.	July, Aug.	Sept.–Nov.
Mean of all,	6′·19	11′.58	11′·88	11′·92	9′·04
Mean of undisturbed days,	4′·34	9′·86	10′·68	11′·28	7′·76

158. *Hourly Angular Motions.*—Having obtained the approximate motion from hour to hour for each of the monthly figures of Plate VII., we find that, on the whole, they follow nearly the same law, that indicated in the following numbers, which are the means of the motions from the 12 separate months, and from other groups of months.

TABLE 67.—Mean Angular Motions, from Hour to Hour, of the north end of a Needle supposed freely suspended in the direction of the Magnetic Force, as obtained (1.), from the Monthly Figures of Plate VII. (2.), from the 5 Independent Continuous Figures of Plate VIII.; and (3.), from the 5 Independent Dotted Figures of Plate VIII.

Time.	Means from			Time.	Means from		
	12 Figures.	5 Continuous Figures.	5 Dotted Figures.		12 Figures.	5 Continuous Figures.	5 Dotted Figures.
h. h.				h. h.			
12—13	0′·19	0′·10	0′·20	0— 1	0′·64	0′·59	0′·62
13—14	·23	·10	·20	1— 2	·49	·48	·50
14—15	·25	·14	·16	2— 3	·59	·53	·60
15—16	·22	·18	·25	3— 4	·51	·51	·53
16—17	·24	·24	·23	4— 5	·48	·34	·48
17—18	·25	·23	·24	5— 6	·40	·19	·35
18—19	·37	·28	·38	6— 7	·20	·14	·28
19—20	·58	·53	·55	7— 8	·36	·19	·30
20—21	·61	·58	·63	8— 9	·21	·17	·22
21—22	·69	·76	·69	9—10	·15	·13	·13
22—23	·91	·85	·88	10—11	·14	·17	·14
23— 0	·70	·67	·73	11—12	·24	·22	·16

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* It may not be unimportant to remark here, that the processes usually adopted in order to determine the epochs of maxima and minima for the separate elements of declination and dip, are not strictly accurate; and that is the case whether the process be one of interpolation from graphic projection, where the time is the abscissa, or one of computation, where the variable is a function of the hour angle. This is evident, when we examine the figures in Plates VII. and VIII., where the dip and declination are the co-ordinates. The error, however, will not affect any of the comparative conclusions for these elements in the previous pages. A similar exception may be taken to the accuracy of comparisons of areas of declination curves, where time is the abscissa.

159. These numbers give the following curious result;—That the velocity of motion of the north end of a magnet freely suspended in the direction of the magnetic force is a maximum when the sun makes its superior transit of the magnetic meridian (between 10^h and 11^h A.M.), and a minimum when it makes its inferior transit of the same meridian (between 10^h and 11^h P.M.). This result is the more curious that the epoch of the minimum velocity of the diurnal motion is an epoch of maximum disturbance, and, in as far as the declination is concerned, the epoch of maximum velocity of the diurnal motion is also an epoch of minimum disturbance.

160. When we compare the results for the irregular disturbance, with reference to the separate elements of magnetic declination and magnetic dip (see horizontal component), with the velocities of motion as deduced from these figures, we find, that *when the diurnal motion is most rapid the departures from the direction of that motion are least*, and *when the diurnal motion is slowest the irregular departures from the hourly mean position are greatest.*

161. It is scarcely possible to connect the previous facts of area, perimeter, or velocity of motion with the laws of variation of temperature. In the mean for the whole year, the temperature changes most rapidly between 8^h and 9^h A.M.; but it changes with nearly equal rapidity between 5^h and 6^h P.M. There is no corresponding fact in the previous numbers. When we compare the variations of temperature with the variations of position for the suspended magnet in the summer months, we find the difference between the two classes of facts even more marked: in summer, the temperature changes most rapidly about 7^h A.M. and 7^h P.M., the change for May, June, and July, from 6^h–8^h A.M. being $+3^\circ{\cdot}80$, and from 6^h–8^h P.M. being $-3^\circ{\cdot}54$; for the same months the mean angular motion of the needle from 6^h–8^h A.M. $=1'{\cdot}00$, from 9^h–11^h A.M. $=2'{\cdot}12$, and from 6^h–8^h P.M. $=0'{\cdot}74$. There is a diminution in the velocity of the motion between 1^h and 2^h P.M.; there is also a slight diminution at the turning point, 6^h–7^h P.M. and between 2^h and 3^h A.M. These diminutions appear to be connected with the fact, that they occur at turning points in the figures.

162. It may be remarked that the line representing the astronomical meridian, and passing through the centre of gravity of the figures for the months during which the sun is north of the equator, also passes through the position of greatest velocity, and nearly through that of least velocity, of the diurnal motion.

163. *General Form and Turning Points of the Diurnal Motions.*—The general forms of the diurnal motion vary between rude ellipses and circles. In the winter months, the principal portion, or loop of the figures, is elliptical with the major axis horizontal; near the equinoxes the figure becomes somewhat circular, and in the midsummer months it again becomes rudely elliptical, with the major axis inclined about 20° or 30° west of the magnetic meridian. In the usual investigations of the conventional element of declination, it has been remarked that the turning from the farthest westerly position occurs near the time of maximum temperature; a coincidence which has been supposed to indicate a real connection, though there is no similar coincidence between the epoch of minimum temperature and the eastern turning point. If, however, we examine the figures indicating the diurnal motions of a needle in its *true* position, such as those for the months of April, August, October, &c., we might find it difficult to say, where is a turning point and where not; and it is difficult to see why the turning points at the extremities of the horizontal diameters of these rude circles, or at the extremities of *a* horizontal line, in the ruder ellipses, should be chosen, in preference to the turning points at the extremities of other lines drawn in the figures, as tests for a theory; unless, indeed, it be explained by the accident that a horizontal suspension of a magnetic needle is a convenient one for observing a certain portion of the motion of a magnet, which, independently of gravity, would rest in the direction of the magnetic force.

164. It may be noticed, chiefly with reference to the months from March to October, that a line passing through the positions of noon and midnight also passes through, or nearly through, the mean position, or the centre of gravity, each hour having equal weight: also a line passing through the positions about four hours before and four hours after noon, passes nearly through the centre of gravity of the figures; the former of these lines lies nearly in the direction of the minor axis, the latter nearly in that of the major axis of the rude ellipses for the midsummer months. The horizontal line passing through the centre of gravity, also passes nearly through the positions of 1^h A.M. and 1^h P.M., which, therefore, are the epochs of mean dip. (See also No. 162.)

165. *Angular Distances between the Hourly Positions from the Mean of all, and from the Undisturbed Days.*—It has been already stated, in considering the *effect* of disturbance on the hourly mean values of the magnetic elements, that it is assumed that the mean of all the hourly values is unaffected, which, in the present case, is equivalent to assuming, as has been done in Plate VIII., that the centre of gravity of the disturbed and undisturbed figures is the same; this must be very nearly true, as regards its position in declination (No. 38), but it is probable that there is some error with reference to its position in dip: it will be seen from No. 123, that this error in the figures for May–June and July–August is very small; it will also be seen from No. 123, that the dotted figures for the other months should be raised somewhat in the page, since the centre of gravity of the dotted figure has a less dip than that of the continuous figure; the effect of this elevation would be chiefly to diminish the distance between the points about 4^h and 5^h P.M. on the figures for March and April:

these remarks may be kept in view, in considering the numbers in the following Table, which are obtained from Plate VIII.

TABLE 68.—Angular Distances between the Disturbed and Undisturbed Positions for each Hour in the motion of a freely-suspended Dipping-Needle, as obtained from Plate VIII.

Mak. Mean Time.	Dec. Jan. Feb.	March. April.	May. June.	July. Aug.	Sept. Oct. Nov.	Sept. to Feb.	March to Aug.	Year.	
								From Mean Curve.	Mean of first 5 Columns.
h.									
12	0′·36	0′·20	0′·34	0′·28	0′·36	0′·35	0′·25	0′·32	0′·32
13	·26	·32	·26	·24	·28	·28	·31	·26	·27
14	·28	·46	·20	·18	·14	·18	·28	·24	·24
15	·09	·16	·16	·06	·12	·08	·12	·08	·12
16	·06	·04	·18	·08	·12	·09	·09	·04	·09
17	·15	·08	·08	·24	·14	·13	·14	·08	·14
18	·21	·20	·08	·32	·34	·25	·18	·22	·24
19	·20	·24	·14	·32	·40	·29	·22	·26	·27
20	·18	·30	·30	·46	·42	·29	·34	·28	·33
21	·22	·36	·28	·30	·40	·30	·32	·32	·31
22	·24	·28	·26	·20	·26	·28	·22	·28	·25
23	·24	·30	·16	·36	·26	·24	·18	·24	·26
0	·28	·28	·12	·14	·30	·26	·18	·22	·23
1	·35	·24	·28	·16	·24	·28	·24	·28	·26
2	·36	·36	·40	·16	·38	·34	·30	·34	·34
3	·29	·32	·26	·24	·36	·30	·28	·28	·30
4	·28	·44	·46	·44	·16	·40	·44	·32	·33
5	·12	·30	·34	·50	·12	·04	·35	·18	·26
6	·15	·36	·30	·42	·32	·19	·28	·16	·30
7	·18	·42	·30	·26	·38	·27	·22	·24	·30
8	·43	·36	·16	·24	·58	·50	·24	·38	·38
9	·38	·38	·24	·44	·44	·38	·34	·38	·38
10	·39	·38	·30	·36	·52	·45	·34	·40	·40
11	·42	·26	·38	·22	·50	·45	·32	·38	·37

166. The following are the conclusions from Table 68 :—

1*st*, In the two figures for the months from September to February, the effect of disturbance in displacing the needle is a *minimum* about 4^h A.M. and 4^h P.M., the values for these hours being nearly equal, or *near the hours when the sun is on the magnetic prime vertical.* The maximum effect of disturbance occurs in both about 10^h P.M., when the sun is on the magnetic meridian, a secondary maximum occurring in the figure December to February about 1½^h P.M., and in the figure September to November about 8^h A.M.

2*d*, In the figure for March–April, the minimum occurs about 4^h A.M., and the maximum probably about 8^h–10^h P.M., the value, however, varying little for the 18 hours from 8^h A.M. till 2^h A.M.

3*d*, The mean of the two results for the figures May–June and July–August is to some extent the reverse of the result for December to February. The effect of disturbance is a minimum about 4^h A.M., and about noon ; it is a maximum about 8^h A.M. and 4^h P.M. It would appear, therefore, that the diurnal law of the *effect* of disturbance varies with season as well as the law of the amount of disturbance (see Nos. 45, 77, 110): a minimum is also shewn about 8^h P.M.

4*th*, In all months of the year the effect of disturbance is a minimum about 4^h A.M. In the winter months a minimum occurs at 4^h P.M., the maximum occurs at the same hour in the summer months.

5*th*, In the mean figure for the year, minima occur at 4^h A.M. and about 5½^h P.M., the maximum occurs about 10^h P.M., and a maximum occurs between 8^h A.M. and 4^h P.M. If, making allowance for the effect of disturbance on the position of the centre of gravity with reference to dip (No. 121), we suppose the centre of gravity of the dotted figure for the year (Plate VIII.) raised 0′·15 on the line of mean declination, or that of the continuous figures lowered as much, we find the maximum effect of disturbance to occur about 10^h P.M. and 10^h A.M., and the minimum effect about 4^h A.M. and 5^h P.M. This result was obtained for the magnetic declination in 1844. See the Volume for that year, p. 345.

167. *Motions with reference to the Moon's Hour-Angle.*—These, as obtained from the means of all the lunations in the years 1844 and 1845, and as deduced from winter lunations for 1845 only, are shewn in Plate VII. The resulting figures, especially that for the winter lunations of 1845, bear some resemblance to the diurnal motion for the month of December.

THE AURORA BOREALIS.

168. The results for the aurora borealis are placed between the magnetical and meteorological discussions, because the appearances of this meteor are distinctly connected with magnetic disturbances; the frequency of the one and the magnitude of the other, it will be seen, are governed by the same laws.

169. The following Table contains a list of all the auroræ seen at Makerstoun, between January 1843 and June 1849. A very careful outlook for auroræ was kept throughout the whole period, but especially during the first five years; an outlook warned by magnetic disturbance in circumstances unfavourable to the visibility of the meteor, and assisted by a practical acquaintance with the faintest auroral indications. In several cases, the auroral appearances were very faint; these are entered in the Table as "Traces," and, in others, there was doubt whether the appearance was truly auroral; these are indicated by "Trace?" It should be noted that, with the exception of the years 1844 and 1845, auroræ were seldom looked for after midnight.

TABLE 69.—List of Auroræ Boreales seen at Makerstoun in the years 1843–9.

Date, Göttingen Mean Time.	Moon's Age.	Sky Clouded.	Species of Clouds.	Character of Magnetic Disturbance.	General Remarks.	Page of Reference.
1843.						(1843.)
d. h.—h.	d.					
Jan. 28 8	28	0·0		Slight	Traces. (Seen at Christiania.)	93
Feb. 24 10—13	25	9·7	Scud	Moderate	Traces. (Seen at Christiania and in United States.)	201
Mar. 6 14	5	2·0	Cum.-scud	Moderate	Seen through clouds.	203
7 8	6	0·0		Moderate	Arch 10° altitude.	54
12 9—13	11	2·0	Scud	Considerable	Distinct.	54
29 9—12	28	0·0		Moderate	Segment of circle 15° alt. $10\frac{1}{2}^h$, equatorial beam.	111, 61
Apr. 5 9—14	6	0·0		Considerable	Bright arches and streamers.	61
6 14—16	7	0·0		Considerable	14^h; arch 10° broad, 15° altitude. Corruscations.	205
Sept. 18 10—12	24	2·5	Cirro-str.	Moderate	Bright. 14^h 35^m; 12° altitude.	213
19 10	25	9·8	Cirrous	Moderate	11^h; band 10° altitude; seen through clouds.	69
20 14—15	26	1·0	Scud		Traces. (Seen at Christiania.)	69
Oct. 15 10	21				Auroral arch 15° altitude. Streamers.	173
16 10	22	9·8	Cirrous	Slight	Traces through clouds.	175
26 8—10	3	0·5	Loose cum.	Moderate	9^h 50^m; arch 8° altitude.	177
Nov. 2 10	10	0·2		Slight	Traces.	70
13 8—10	21	9·8	Various	Slight	Distinct. [places.	183
14 10	22	8·0	Cir.-strati	Slight	Traces. 12^h; magnets slightly disturbed at other	183
Dec. 11 10	19	5·0	Sc.; cir.-str.	Moderate	Distinct.	71
12 8	20	10·0	Scud	Moderate	Traces; through clouds. (Appearances at Parma.)	191
27 6	6	0·8	Scud	Slight	Traces.	72
1844.						(1844.)
Jan. 5 10	15	9·0	Scud	Moderate	Traces.	174
10 10—11	20	2·0	Cirri	Moderate	Traces.	175
Feb. 7 9	19	0·5	Loose scud	Moderate	Faint.	186
11 13—14	23	5·5	Cirri	Slight	Traces. (Suspected at New Haven, Connecticut.)	187
22 8	4	5·0	Cirri	Slight	Traces.	158
Mar. 2 9	13	1·0	Scud; cir.	Moderate	Trace. (Bright moonlight.)	158
7 8—10	18	1·0	Cir.-str.	Moderate	Rather bright. Arch and streamers.	158
9 13	20	2·0	Sc.; cirri	Moderate	Rather bright.	158
12 11	23	0·1	Cirri	Slight	Faint.	158
29 11—16	12	0·1	Cirri	Moderate	Bright. Arches and streamers.	158
Apr. 5 12—14	19	0·2	Cir.-str.	Moderate	Streamers, arch and band.	158
10 13	23	0·9	Cir.-str.	Slight	Traces.	209
17 11—12	0	5·0	Cirri	Considerable	Faint streamers and homogeneous light.	158
May 8 11—12	21	1·2	Cirri	Moderate	Faint.	158

TABLE 69.—*continued.*

Date, Göttingen Mean Time.	Moon's Age.	Sky Clouded.	Species of Clouds.	Character of Magnetic Disturbance.	General Remarks.	Page of Reference.
1844.						(1844.)
d. h.—h.	d.					
May 21 12	4	2·0	Cirri	Slight	Traces.	158
22 11	5	0·2	Haze	Moderate	Trace. (Seen at New Haven.)	158
Aug. 2 14	18	0·5	Cirri	Moderate	Faint.	252
9 14	25	3·0	Scud	Moderate	Traces. (Seen at Whitehaven, and at Nantucket, Mas.)	158
Oct. 2 8—10	20	1·0	Cirri	Moderate	Belt of light 5° altitude.	158
5 10—11	23	0·0		Slight	Faint.	158
7 11—12	25	0·5	Cirri	Slight	Faint.	277
20 14—18	10	0·5	Cir.-str.	Considerable	Bright. Arches and streamers.	159
Nov. 11 6—14	1	0·5	Cir.-str.	Moderate	Distinct. Arch and streamers.	159
12 14	2	10·0	Scud	Moderate	Traces through clouds.	159
13 10	3	8·0	Scud	Slight	Trace. (Seen at Christiania.)	159
16 10—11	6	7·0	Cirri	Large	Arch 5°–8° altitude. Patches and streamers.	159
18 9	8	10·0	Scud	Moderate	Faint.	159
24 13	14	1·0	Cirri		Portion of an arch 10° altitude.	159
Dec. 4 8	24	0·2	Cir.-str.	Moderate	Faint.	160
29 6—14	20		Cirri	Large	Brilliant. Arches, patches, and streamers.	160
1845.						(1845.)
Jan. 0 15—16	22	5·0	Cir.-cum.	Slight	Faint.	118
9 7—14	1	0·5	Cirri	Large	Bright. Arches, brushes, and streamers.	118
19 12	11	9·0	Cir.-cum.	Moderate	Traces.	119
20 11	12	2·5	Cir.-cum.	Slight	Traces. (Seen in Orkney.)	119
21 8	13	9·5	Scud	Moderate	Traces.	119
23 15	15	10·0	Cir.-str.	Moderate	Seen through a break in the clouds.	119
24 13	16	0·5	Cirri	Moderate	Traces.	119
26 13—15	18	4·0	Cirri	Moderate	Auroral appearances between the clouds.	120
28 8—12	20	6·0	Cir.-str.	Moderate	Distinct.	120, 146
29 7— 9	21	1·5	Cir.-str.	Moderate	Faint.	120
30 8—10	22	0·5	Haze	Moderate	Traces.	120, 147
Feb. 1 12—13	24	0·8	Cirri	Slight	Milky aurora.	120
5 8—13	28	2·0	Cirrous	Moderate	Arch and streamers.	121
7 14—15	1	2·5	Cirrous	Slight	Milky aurora.	121
24 8—13	18	0·0		Moderate	Arch 8° altitude, and streamers.	122
26 15	20	3·0	Cir.-cum.	Moderate	Trace?	157
28 12—14	22	4·5	Cirri	Moderate	Faint; milky aurora.	122
Mar. 9 16	1	10·0	Scud	Moderate	Seen through clouds.	161
14 11	6	4·0	Scud	Moderate	Traces?	163
18 10	10	2·0	Cir.-cum.	Slight	Faint.	123
19 10—13	11	0·5	Cir.-str.	Slight	Faint.	123
20 14—15	12	0·5	Cirri	Moderate	Faint.	165
23 13—14	15	5·0	Cirri	Moderate	Faint.	123
24 15	16	4·0	Cirri	Considerable	Traces.	123
25 9	17	9·8	Cir.-str.	Moderate	Trace?	167
26 11—14	18	4·0	Scud	Moderate	Traces.	123
28 10—11	20	0·8	Cir.-str.	Moderate	Faint.	168
29 11—12	21	0·8	Cirri	Slight	Faint.	123
Apr. 13 11—16	7	7·0	Cir.-str.	Considerable	Brilliant. Arches and streamers.	123
15 11	9	8·0	Cir.-cum.	Slight	Trace?	175
19 11	13	4·5	Scud	Moderate	Trace.	123
30 11—14	24	7·0	Scud	Moderate	Faint.	123
May 11 13—14	5	1·5	Cir.-str.	Slight	Faint.	184
Aug. 29 10—13	26	0·3	Cir.-str.	Moderate	Distinct. Belts and streamers.	123
30 12	27	1·0	Cirri	Slight	Faint. Seen through clouds.	226
Sept. 2 10—12	1	0·2	Cir.-str.	Moderate	Distinct. Streamers.	124
25 16	24	0·8	Cir.-cum.	Moderate	Faint.	236
27 9—10	25	5·0	Scud	Moderate	Faint. 9^h arch 7° altitude. 10^h; streamers.	237

TABLE 69.—*continued.*

Date, Göttingen Mean Time.	Moon's Age.	Sky Clouded.	Species of Clouds.	Character of Magnetic Disturbance.	General Remarks.	Page of Reference.
1845. d. h.—h.	d.					(1845.)
Oct. 1 16	0	6·0	Scud	Slight	Trace. (Seen at Christiania.)	238
20 13	19	0·0		Moderate	Faint. Patches and streamers.	124
21 15—17	20	2·0	Cirrous	Moderate	Faint.	245
31 11—12	0	5·0	Cirrous	Slight	Traces. (Seen at Christiania.)	249
Nov. 4 11—12	5	0·0		Slight	Faint. Diffuse light, with streamers.	124
5 7	5	0·5	Cirri	Moderate	Arch 12° altitude.	124
17 7—11	17	0·5	Cirri	Moderate	Bright. Arches, streamers, and brushes.	124
Dec. 3 6—18	4	0·0		Very large	Brilliant. Arches, streamers, and brushes.	125, 261
13 10	14	0·0		Moderate	Trace.	265
1846.						(1846.)
Feb. 25 9—12	0	0·5	Sc.; cir.str.	Moderate	Arch and short streamers.	342
26 10—11	1	8·5	Scud	Moderate	Diffuse light and faint streamers.	342
Mar. 16 9—12	19	9·8	Scud	Considerable	Faint light, arch, and streamers.	342
Apr. 6 11—13	10		Cir.-str.	Moderate	Faint.	342
16 10—11	20	1·0	Scud	Considerable	Faint.	342
Aug. 24 11—12	3	0·0		Moderate	Diffuse light, with faint streamers.	342
27 10—12	6	8·0	Scud	Considerable	Distinct. Patches and streamers.	342
Sept. 10 9—10	19	5·0	Cirri	Moderate	Faint. Arch 7° altitude.	342
11 10—11	20	3·0	Cir.-str.	Considerable	Faint. Beam.	342
21 13—16	1	8·0	Scud	Considerable	Distinct. Incessant pulsations of patches. 15^{h}; bank 5° alt.	343
22 10	2	8·0	Cir.-str.	Very large	Evidently bright, but obscured by clouds.	395
Oct. 8 8— 9	18	6·0	Cir.-str.	Considerable	Aurora. Faint streamers.	343
9 8	19	2·5	Sc.; cir.-str.	Moderate	Bright streamers.	343
19 10	29	3·0	Sc.; cir.-str.	Slight	Faint.	399
22 10	2	9·8	Cir.-str.	Moderate	Traces; through clouds.	343
Nov. 17 7— 8	28	4·0	Sc.; cir.-str.	Large	Bright. Arches and streamers.	343
Dec. 9 9—10	21	0·5		Moderate	Arch.	343
1847.					N.B.—*See additional Notes after Table* 69.	
Jan. 30 9	13			Moderate	Faint.	
Feb. 6 8—10	20		Cirrous	Slight	Faint light. Arch and streamers; cirrous-fan-like clouds from NW.	
Mar. 19 8—12	3		Cirrous	Very large	Bright. Corona borealis. 8^{h} 50^{m}; arch about 10° alt. from NNW. 9^{h} 20^{m}; arch about 20° alt. from SSE.	
Apr. 3 10—11	17		Cir.-cum.	Considerable	Pulsations seen to 20° altitude above clouds.	
Aug. 22 14	12			Slight	Faint. Varying patches.	
Sept. 26 7—11	17				Beautiful. Streamers, arches, brushes, waves, &c.	
29 8—12	20		Cir.-str.	Large	Pulsating patches, diffuse light, arches, streamers, &c.	
Oct. 8 8	29		Sc.; cir.-str.		Traces.	
16 8	7	0·0		Moderate	Faint, with streamers.	
19 11	10		Scud	Slight	Low band. Streamers close to horizon.	
24 14	15		Cir.-str.	Excessive	11^{h} 7^{m}; Splendid corona, &c.	
29 7—11	20		Scud	Moderate	Faint. 8^{h}; arch 8° alt. 11^{h}; streamers on horizon.	
Nov. 1 7	23		Scud	Slight	Traces.	
19 9—11	11		Scud	Large	Fine red-coloured patches and streamers. 10^{h} 12^{m}; corona borealis centre 71° alt., azimuth S. 25° E.	
25 10	17		Sc.; cir.-str.	Moderate	Faint.	
26 10	18		Cir.-str.	Slight	Faint.	
27 10—11	19		Stratus	Moderate	Distinct.	
Dec. 20 8	13		Scud	Excessive	Splendid crimson aurora, with corona borealis, &c.	
1848.						
Feb. 20 10—12	15				Brilliant. Coloured; streamers and corona bor.	
21 9—10	16				Id. Much concealed by clouds.	
22 7—10	17				Id. 8^{h} 50^{m}; arch passing through zenith. 8^{h} 55^{m}; lower edge of arch 42° above SSE.	

TABLE 69.—*continued.*

Date, Göttingen Mean Time.	Moon's Age.	Sky Clouded.	Species of Clouds.	Character of Magnetic Disturbance.	General Remarks.	Page of Reference.
1848.						
d. h.—h.	d.					
Mar. 17 9—10	12				Traces; through clouds.	
19 8—13	14				Bright arch of brushes.	
21 12—13	16				Bright and rapidly pulsating.	
24 10	19				Faint.	
Apr. 17 10	14				Coloured, but sky overcast with *growing* clouds.	
29 9—13	26				Faint. $11^h 10^m$; streamers.	
May 10 11	7				Faint. Streamers.	
18 13	15				Bright. Streamers to 80° alt.; coloured red.	
Sept. 5 12	8				Faint. Lightning. [and thunder.	
Oct. 18 7—11	21				Coloured. $10\frac{1}{2}^h$; corona borealis. 11^h; lightning	
19	22				Faint. Streamers.	
20	23				Traces.	
21	24				Traces.	
22 12	25				Aurora, with streamers. [the 23d?)	
24 10	27				Traces. Overcast. (This may have been on	
26 11	29				Faint.	
Nov. 17 7—13	21				Magnificent, whole sky crimsoned.	
18 9—11	22				10^h; arch about 10° altitude.	
21 7—10	25				Bright. $8^h 10^m$; large wing-like patches about the anti-dip.	
22 8—11	26				Bright, but sky overcast with clouds.	
30 10	5				Traces.	
Dec. 17 7—13	22				Brilliant. $8^h 40^m$; corona borealis. $11^h 40^m$; beautiful wings about its centre.	
21 10	26				Faint. Low on north horizon.	
1849.						
Jan. 5 12—13	11				Aurora, with streamers. [arch 15° alt.	
14 6—11	20				$6^h 10^m$; streamers. $9^h 40^m$; arch 4° alt. $10^h 40^m$;	
15 8—11	21				Diffuse light.	
16 7	22				Traces; through clouds.	
25 8—11	1				Faint diffuse light.	
26 8—11	2				Very faint.	
31 10	7				Trace.	
Feb. 11 10	18				Very faint.	
13 11	20				Very faint. [to N. by E.	
18 8—11	25				$9^h 40^m$; rather bright, with pink or red patches	
19 9—12	26				$8^h 40^m$; bank to N. $9^h 54^m$–58^m; magnificent bow.	
20 9—10	27				$10^h 0^m$; bank, or red streamers. Diffuse light.	
21 9	28				Very faint.	
22 7—12	29				$7^h 20^m$; finely coloured to N. $11^h 48^m$; corona bor.	
24 10	1				Very faint, with low arch.	
26 10	3				Faint.	
28 10	5				Trace. [and streamer.	
Mar. 18 10—11	23				$10^h 25^m$; fine arch 73° alt. $10^h 32^m$; low light	
19 11—12	24				Faint arch to N.	
Apr. 16 8—11	23				Streamers, and pulsating wings about the centre of the corona borealis.	
17 11	24				Faint.	

After this time little watch was kept for Auroræ.

Sept. 17 9—11	1				Distinct traces on N. horizon.	
18 13	2				Faint.	
19 11—12	3				Faint.	
Oct. 14 10	28				Faint, with short streamers.	
18	2				Faint streamers.	

170. The detailed notes on the auroræ seen till January 1847, will be found in the volumes referred to in the last column of the previous Table: in order to render the series more complete, the following additional notes for the year 1847–9 are given. Göttingen mean time has been employed, as in the former volumes, in order that the notes might be comparable with the magnetic observations.

ADDITIONAL NOTES ON AURORÆ BOREALES SEEN IN 1847–9.

1847.	Gött. M. T. d.	h.	
March	19	8	40^{m}. Aurora of irregular streamers converging to the anti-dip. 44^{m}. A bright beam from NW., through α and β Aurigæ; persistent for some time. Masses of light at about 10° altitude. The aurora terminates about NE. Cirro-cumulo-strati spreading from NW. 47^{m}. Diffuse and hazy-like aurora to SW.; patches 20° south of zenith, to SE., &c. 50^{m}. Arch about 10° altitude, but not very distinct, the moon appears as if in a cirrous haze. 52^{m}. Patch reaching from zenith to 10° over NNW., becomes a beam immediately. Aurora becoming less bright. The clouds during auroræ often assume a curious brushy appearance. 56^{m}. Sky nearly covered with auroral haze, which is less bright to S., and more patchy.
		9	20^{m}. Faint auroral arch nearly complete, 20° altitude from S. 39^{m}. Sky covered with patches of hazy or milky aurora, both to N. and S.
		10	15^{m}. Milky aurora over the sky.
Sept.	29		This aurora appeared in amorphous patches, jets, pulsations, and in bands, like portions of arches at 9^{h} 9^{m}.
		9	25^{m}. Aurora not bright, arches with pulsations; broad pencilly patches; about 30^{m} a long and broad streamer reached from near the horizon to near the zenith, passing through the body of the Great Bear. At 10^{h} 40^{m}, the aurora was diffuse, extending to an altitude of 70° or 80°.
Oct.	24	11	The corona very beautiful and perfect at this time, found by carefully examining the position of the centre of the corona with reference to certain stars that it was S. $23\frac{1}{2}$ E., with an altitude of $70\frac{1}{2}$°. Bright pencils and streamers seen till near 14^{h}; lunar halo at 13^{h} 6^{m}.
Nov.	19		Fine coloured aurora; made a few notes about 9^{h} P.M. as follows:—
		8	$58\frac{1}{2}^{m}$. White patches in Cygnus; a very persistent red patch on the Pointers, it has moved perhaps 2° eastwards since $52\frac{1}{2}^{m}$; about 48^{m} very irregular white streamers on N. horizon.
		9	$1\frac{1}{2}^{m}$. Bright-red streamers east of Pointers. $2\frac{1}{2}^{m}$. White patch to WSW. $3\frac{1}{2}^{m}$. Streaky aurora and streamers; air very clear; stars very distinctly seen and well defined; clouds growing and dissolving. $4\frac{1}{2}^{m}$. Patch 240° azimuth, 13° altitude. $22\frac{1}{2}^{m}$. Corona; estimated the position of the centre among the stars, and found it to be S. 25° E. altitude 71°. Considerable magnetic disturbance.
1848. Feb.	22	8	50^{m}. Arch of aurora passed through zenith, and at 8^{h} 55^{m}, the arch had reached southwards till its south edge had an altitude of 42°, as found from the position of the arch among the stars: the sky soon clouded over. The aurora was observed about 7^{h} 20^{m}; about 8^{h} 50^{m} it was very brilliant with green, white, and red streamers. Several flashes of lightning seen about 10^{h}. Arches to the south always very faint.
March	19	8	13^{m}. Very cloudy. Total eclipse of moon at midnight, when there was a very fine arch of aurora, made up of brushes, very bright to NW. by N. Clouds of the growing and dissolving species so common during auroræ.
	21	12	25^{m}. Sky quite clear, excepting near the horizon, stars bright. Rapidly pulsating and vivid aurora first seen; pulsations seen in the space between NW. and NNW., clouds to N. and W. Slight rain falling, though no cloud near the zenith, and not a breath of wind. About 28^{m}, cirro-cumulous scud (the growing and dissolving cloud) came moving up from W.; wondered whether the rain would cease or increase when the cloud reached the zenith; found that the rain *ceased* immediately when the cloud crossed the zenith; the pulsations of the aurora at the same time became less frequent; at first they reached from an altitude of 30° to past the zenith. After a portion of the cloud had passed the zenith, leaving a little sky, a few drops of rain were again felt, but the cloud quickly *grew* over the zenith again. The usual growing cloud obscuring the moon becoming more general and denser. Pulsations much less at 32^{m}.
	24	10	Faint aurora to NNW., mostly covered with thin hazy cloud, radiating from *that* point to an altitude of 45°.
Oct.	18	7	10^{m}. The sky, where free from clouds, has a reddish tinge, as if from aurora. About 8^{h} the sky still nearly covered with clouds; beams seen in different parts of the sky, some reaching nearly to zenith, a bright mass of aurora with streamers to W., little or no aurora to N. 9^{h} 10^{m}. Sky nearly clear, faint diffuse auroral light over most of the sky. About 10^{h} 20^{m}, sky nearly clear, brilliant corona, beams rising from all parts of the sky; mostly white; rapid pulsations. Clouds speedily covered the sky. About 11^{h} 0^{m}, a vivid flash of lightning followed in about two seconds by a peal of thunder; heavy shower of hail or snow. The magnets considerably disturbed about 7^{h}.

Auroræ were seen at Inveresk by Mr Milne's gardener on the following days, when none were observed at Makerstoun, viz., April 24; July 1, 2, 23; and August 8, 1848.

Gött. M. T.
1849. d. h.

Feb. 19 8 40^{m}. Homogeneous auroral bank to N. with slight appearance of an arch.

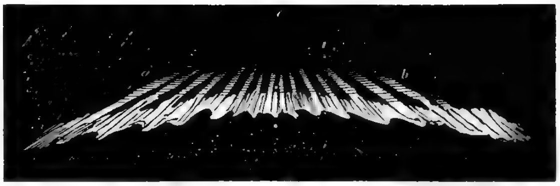
9 54^{m}–58^{m}. Magnificent bow of aurora passing between Castor and Pollux, as in Fig. 1; shortly afterwards a series of waves seemed to move along the lower edge of the bow from east to west, and in a direction opposite to the very violent wind then blowing from west; the appearance of the waves is shewn in Fig. 2.

Fig. 1

Fig. 2

10 10^{m}. The source of the waves was observed as in Fig. 3; the bow was seen to be at the base of a series of beams, which converged to the anti-dip; the beams were but faintly visible, but they were observed to rotate about the point *c*, the centre of the corona, the beam *a*, appearing to occupy successive positions, till it arrived at the position *b*; in this rotation the wave-like motion observed in Fig. 2, was produced. The sky was quite clear, and the wind blowing very violently. It is not a little curious that on the following evening, Feb. 20th, Professor Forbes observed a similar arch in almost the same position. He has obliged me with the following note of his observation :—

Fig. 3



"Edinburgh, 20th February 1849.—At 10^{h} 10^{m}, P.M. [Greenwich mean time], my attention was called to a splendid auroral arch; the brightest I ever saw. Sky clear and calm blue, diffuse light in N. At 10^{h} 11^{m}. Centre of band over northermost of two bright stars in Gemini (Castor and Pollux). Motion at first a little northwards, but returned to its former position. Undulations of brightness from E. to W. passed along the zone. Began to break up from the E. end about 10^{h} 18^{m}; figure became irregular, and, on the whole, to the S. of its first position. 10^{h} 22^{m}. Only streaks in the west remaining."

March 18 10 25^{m}. The arch passed between the stars, 38 and 40 of the Lynx, which were nearly on the meridian; at 10^{h} 32^{m}, the arch passed over the two stars, λ and μ Ursæ Majoris.

Diurnal Variation of Visible Frequency of the Aurora Borealis.—When we note from the preceding Table the hours at which auroræ were seen at Makerstoun, we obtain the numbers in the following Table.

TABLE 70.—Number of times that the Aurora Borealis was seen at Different Hours in the Years 1843–9, as deduced from Table 69.

Mak. Mean Time.	Jan.	Feb.	March.	April.	May.	Aug.	Sept.	Oct.	Nov.	Dec.	Nov. Dec. Jan.	Feb. March. April.	Aug. Sept. Oct.	Year.
5 P.M.	1	0	0	0	0	0	0	0	1	3	5	0	0	5
6 ...	4	2	0	0	0	0	1	2	7	3	14	2	3	19
7 ...	10	7	4	1	0	0	2	8	7	6	23	12	10	45
8 ...	9	12	9	3	0	0	5	6	9	4	22	24	11	57
9 ...	10	17	12	6	0	1	10	12	16	7	33	35	23	91
10 ...	8	10	13	12	3	2	7	8	9	3	20	35	17	75
11 ...	4	9	10	7	2	3	5	3	4	3	11	26	11	50
12 ...	4	6	8	7	2	1	2	1	3	3	10	21	4	37
1 A.M.	2	3	5	5	1	3	2	2	2	2	6	13	7	27
2 ...	3	2	3	2	0	0	2	2	0	1	4	7	4	15
3 ...	1	0	2	2	0	0	2	3	0	1	2	4	5	11
4 ...	0	0	0	0	0	0	0	2	0	1	1	0	2	3
5 ...	0	0	0	0	0	0	0	1	0	1	1	0	1	2

171. It is probable that the numbers for midnight, and the hours thereafter, are too small, for the reason given, No. 169. The greatest number of auroræ were seen at 9^h P.M.; this result is independent of the effect of twilight, since 9^h P.M. is also the hour of maximum frequency for the winter months. This hour is nearly the hour of maximum disturbance for the magnetic declination and dip; as, however, the maximum disturbance of the total magnetic force and a maximum of the magnetic dip appear to occur about 5^h P.M., this also may be an epoch of maximum frequency or intensity, though this can only be determined in higher latitudes. It should also be remarked, that, since the epoch of maximum disturbance varies with season, so, therefore, it is probable will that of frequency of the aurora; some traces of this may be deduced from the previous table. In the winter quarter, November–January, four-fifths of the times at which auroræ were seen were for the hours *before* 10^h P.M., whereas in the spring quarter there were only three-fifths seen before 10^h P.M. (See No. 172).

TABLE 71.—Numbers of Auroræ Boreales seen at Makerstoun in each Month of the Years 1843–49.

Years.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Sum.
1843	1	1	4	2	0	0	0	0	3	3	3	3	20
1844	2	3	5	3	3	0	0	2	0	4	6	2	30
1845	11	6	11	4	1	0	0	2	3	4	3	2	47
1846	0	2	1	2	0	0	0	2	4	4	1	1	17
1847	1	1	1	1	0	0	0	1	2	5	5	1	18
1848	0	3	4	2	2	0	0	0	1	7	5	2	26
1849	7	10	2	2	0	0	0	* *	3	2	* *	* *	26
Sum,	22	26	28	16	6	0	0	7	16	29	23	11	184

172. *Annual Variation of Frequency of the Aurora Borealis.*—The first line following contains the numbers of auroræ observed in each month during the six complete years 1843–8, and the second line gives the numbers of hours at which the auroræ were seen.

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
15	16	26	14	6	0	0	7	13	27	23	11
50	62	65	43	8	0	0	10	32	44	58	38

The greatest number of auroræ was observed in March for the first six months, and in October for the last six months of the year: none were observed in June and July. When the six months of 1849 are included, the number for February is 26, and for March, 28. The law of visible frequency of the aurora is the same as that deduced already for magnetic disturbance, namely, maxima near the equinoxes, and minima near the solstices, the minimum at the summer solstice being the principal.* As, however, the shortness of night during the summer months must diminish the number of visible auroræ, it is by no means certain from these numbers that a minimum occurs at the summer solstice; the fact of the minimum at the winter solstice is involved in no such difficulty. If we could assume that the auroræ had the same diurnal law of frequency at all seasons of the year, the existence of the summer minimum could be satisfactorily determined, by comparing the numbers of times which auroræ were seen at the five hours, 10^h P.M.–2^h A.M., during

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* It has been stated in the volume for 1844, p. 401, that this result was long ago obtained by Mairan; this statement, made chiefly on the authority of Kæmtz and Hansteen, is not quite accurate. It is true that Mairan's numbers give a rough indication of the law, as will be seen below; but when it is remembered that his table includes all the observations (229) of which he could find a record for upwards of 1000 years, it will be evident, that the conclusion that a greater number of auroræ occurred at both equinoxes than at the winter solstice would have been hasty; this conclusion, however, is *not* made by Mairan, and, though he has combined the numbers of auroræ in a great variety of ways, he has made no combination exhibiting this fact. It did not enter into the necessities of his theory (that auroræ are the product of the solar atmosphere) to shew that a greater number of auroræ happened in the northern hemisphere, at the vernal equinox than at the winter solstice; he shews, indeed, that the number for one equinox is, and, in accordance with his theory, ought to be, greater than for the other. Some other philosopher has the merit of first pointing out this fact.

The following are the numbers of auroræ by Mairan (Traité Physique et Historique de l'Aurore Boreale, par M. de Mairan, which (even in the months of August and May) there is little twilight to extinguish auroræ. The numbers are as follow, for these five hours in each month of the years 1843–8 :—

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
15	24	38	31	8	0	0	9	14	16	18	12

From these it is evident that the numbers in May and August are certainly less than for April and September; but it has been already mentioned as probable that the diurnal law of frequency varies with season, of which, indeed, a proof is to be found in the great excess of the numbers above for the spring months, compared with those for the autumn months, shewing the later epoch of the maximum frequency in the former. An examination of Table 18, however, will shew, that, though the maximum disturbance occurs after midnight, in the months of May, June, and July, yet in August and the two following months it occurs about 10^{h} P.M., so that there can be no doubt of the less number for August than for September and October, if there should be a doubt in the case of May compared with April. The difference, however, even in the latter case is too great to be explained by any slight shift of the epoch of maximum frequency in the two months. Upon the whole, it appears certain that a minimum of actual as well as of visible frequency occurs in summer; a result quite in accordance with that for the amount of magnetic disturbance, which accordance is sufficiently close to permit us to complete it, by assuming that the number of auroræ is a *principal* minimum in summer.

173. *Variation of Frequency of the Aurora Borealis with the Moon's Age.*—This investigation is evidently beset with considerable difficulty, since the moonlight existing nearly extinguishes the appearances of all the fainter class of auroræ, and it renders the faintest wholly invisible; the careful watch, however, which was kept for auroral appearances at Makerstoun, probably renders Table 69 better fitted for such a question than any previous series of observations.*

174. Combining the numbers of auroræ observed at each day of the moon's age into six groups of 5 days (the first group, 4½ days), we find the average number of auroræ for one day of the moon's age in each group as follows, from the 6½ years' observations :—

Moon's Age.	28^{d}—2^{d}	3^{d}—7^{d}	8^{d}—12^{d}	13^{d}—17^{d}	18^{d}—22^{d}	23^{d}—27^{d}
Number.	5·8	5·2	3·6	5·0	10·2	6·6

Did auroræ *occur* indifferently at all ages of the moon, we should expect to *see* the greatest number at conjunction, and the least number at opposition; this however is not the case, the greatest number was seen about two days before the end of the third quarter, and the least number about two days after the first quarter, or the visible maximum and minimum occurred at times *equidistant* from the epoch of opposition. The frequency of auroræ, therefore, is a function of the moon's age. In order to determine the actual law, we may consider the probable effect of moonlight in obliterating the auroral appearances; remarking, first, that 9^{h} P.M., is the epoch of maximum frequency for the aurora, and that upwards of five-sixths are seen before midnight. When the moon is about three days old, in the months from September to March, it begins to set sufficiently late, and to have sufficient light to render the earlier of the faint auroræ invisible; about the end of the first quarter, it does not set till midnight, and thus shines throughout the period of the occurrence of five-sixths of the auroræ; afterwards it increases in brightness, and the maximum effect in extinguishing faint auroræ is evidently attained at opposition, when the moon begins to rise late enough to allow the earlier auroræ to be visible; towards the end of the

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1733, p. 199); by Kæmtz (Complete Course of Meteorology, translation by Walker, p. 458); and by Hansteen (Mem. de l'Acad. Roy. de Belgique, t. xx., p. 117).

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Sum.
Mairan, .	21	27	22	12	1	5	7	9	34	50	26	15	229
Kæmtz,	229	307	440	312	184	65	87	217	405	497	285	225	3253
Hansteen,	29	31	47	34	2	0	0	17	35	33	34	23	285
J. A. Broun,	22	26	28	16	6	0	0	7	16	29	23	11	184
Sum of last three,	280	364	515	362	192	65	87	241	456	559	342	259	3722

Mairan's numbers are probably included by Kæmtz; a few of the auroræ, included in M. Hansteen's list, are identical with those in my own.

* It should be remarked, that the latitude of Makerstoun, or perhaps even a lower latitude, is better fitted for this investigation, than much higher latitudes; at least this is the case as long as only frequency of visibility can be considered. The French *Commission du Nord*, during their stay in Lapland, found auroræ existing, or probably existing, almost every night. In such places variation of frequency there is none, and variation of intensity alone remains for investigation. It is obvious, that till some better mode of measuring this intensity can be devised for these high latitudes, we are forced to perform this operation in a rude manner, by moving to lower latitudes, where the fainter auroræ become invisible, and where, therefore, frequency is a test of intensity beyond a certain limit.

third quarter, when the moon does not rise till midnight, it is also evident that the number of faint auroræ rendered invisible must be very small. From the beginning of the fourth quarter, therefore, till conjunction, the numbers *seen* will obey nearly the true law of frequency; and as the visible maximum occurred before the end of the third quarter, the true maximum must have occurred even nearer to opposition. On the whole, it appears very certain, that the hypothesis of an actual maximum of frequency at opposition and minimum at conjunction, is satisfied by the previous numbers of auroræ, seen under the conditions of the varying duration of moonlight for the hours of maximum frequency. This hypothesis is in unison with the law of magnetic disturbance, which is a maximum at opposition, and a minimum at conjunction.

NOTE ON THE THEORY OF THE AURORA.

175. Although temptations to frame hypotheses have been avoided hitherto, I cannot refrain from repeating here, the opinion, that the phenomena of the aurora borealis are chiefly optical. After watching the various phases of the aurora for some years, the hypothesis of self-luminous beams and arches appeared to me unsatisfactory, and the strongest argument in its favour, that obtained from the computed height of the auroral arches, seemed of a very doubtful character. I was quite prepared, therefore, to adopt the idea, first I believe proposed by M. Morlet to the French Academy, in May 1847, that the auroral arch is an optical phenomenon of position. M. Morlet has pointed out that the arch appears generally as a segment of a circle, whereas, in these latitudes, it ought invariably to appear as the segment of an ellipse, if the hypothesis be true, of a real luminous ring, with its centre on the continuation of the magnetic pole. He has also, among many other very obvious objections to that hypothesis, shewn that the summit of the arch is generally in the magnetic meridian of the place, the plane of which rarely passes through the magnetic pole, and seldom passes through the same point, for three different places. I have, however, felt even more persuaded, that the aurora is, partly at least, an optical phenomenon, from a consideration of that phase of the aurora constituting the corona borealis, a persuasion that I stated, in the Literary Gazette of the time, in giving an account of the beautiful corona of October 24, 1847. Mairan and, more lately, Dalton, have explained this phase of the aurora by a hypothesis of polar beams, long fiery rods of solar atmosphere, according to the one, of red-hot ferruginous particles according to the other, seen in perspective, as they lie in the direction of the magnetic force. A little acquaintance with the phenomenon—the rushing and tilting of the beams against each other, one beam occasionally rising from the horizon, passing through the centre of the crown and beyond it—would shew the improbability of this hypothesis. I am persuaded, that the phenomenon of the corona borealis is produced in a narrow horizontal stratum of the earth's atmosphere. Thanks to the discoveries of Dr Faraday, we do not now require a ferruginous sea, in order to have polarized particles; the watery crystals that inhabit the upper regions of the atmosphere can themselves assume a polar state, determined by the passage of electric currents; and we have only to complete this fact by a hypothesis of luminous electric discharges seen refracted by these crystals, the position of visibility of the refracted rays depending on the angles of the crystals, and the deflections from the direction of magnetic force, which they suffer by the electric currents. Such a hypothesis, which occurs at once when an optical phenomenon has to be accounted for, would explain these remarkable auroral clouds, so often seen in connection with the aurora itself; it would also serve to explain the appearance of the arch at certain altitudes, lower for lower altitudes, determined by the position of the source of light, direction of the magnetic force at the place, and the effect of the electric current in deflecting the crystals. The crystals successively deflected by electric currents, would also exhibit the rushing pencils or beams. It need scarcely be remarked that differently formed crystals might give rise to different phases of the phenomenon, while reflection might be combined with refraction in certain cases, especially in the case of arches seen south of the anti-dip. Such a hypothesis evidently assumes a source of light, independent of these optical resultants, and the pulsations seen in many auroræ may be real luminosities. It is hazardous, in the present ill-arranged state of auroral observation, to offer so rude a sketch of a new hypothesis, although we may suffer a considerable defeat in very good company.

Since the previous note was written, I find that M. Morlet has published a theory of the auroral arch (Ann. de Ch., t. xxvii., 3me Série). The ideas above were stated by me two years ago, to different persons.

METEOROLOGICAL RESULTS.

TEMPERATURE OF THE AIR.

TABLE 72.—Monthly Means of the Temperature of the Air at Makerstoun, for the Years 1841–9.

Month.	1841.	1842.	1843.	1844.	1845.	1846.	1847.	1848.	1849.	Mean 1842–9.	Monthly Variations.
	°	°	°	°	°	°	°	°	°	°	°
January		33·90	38·43	37·35	34·71	41·06	33·70	32·54	36·68	36·05	− 9·98
February		38·74	32·92	32·48	32·96	42·52	33·85	38·67	39·86	36·50	− 9·53
March		41·06	39·40	38·36	35·39	39·96	40·77	39·99	40·81	39·47	− 6·56
April		45·32	44·79	46·77	44·33	42·32	41·25	41·08	39·06	43·11	− 2·92
May		50·82	46·54	48·49	46·37	51·15	50·76	56·60	50·42	50·14	+ 4·11
June		57·09	51·35	54·14	55·66	61·20	55·71	54·50	53·24	55·36	+ 9·33
July		56·10	56·55	55·55	54·14	58·65	60·67	58·11	56·27	57·00	+10·97
August	55·05	59·90	57·12	54·08	54·60	59·16	56·58	53·20	56·23	56·38	+10·35
September	52·28	53·08	55·67	52·30	50·06	55·69	49·11	51·73	51·82	52·43	+ 6·40
October	43·32	44·49	42·93	45·74	47·86	47·58	47·50	45·99	45·49	45·95	− 0·08
November	36·45	39·98	39·38	42·85	41·94	43·02	44·38	40·20	41·05	41·60	− 4·43
December	……	45·47	45·50	32·04	37·08	32·53	38·37	39·22	36·71	38·36	− 7·67
Year.	……	47·17	45·88	45·01	44·59	47·90	46·05	45·99	45·64	46·03	

176. *Mean Temperature at Makerstoun.*—The mean temperature of the air in the shade, as deduced from observations in the 8 years, 1842–9,

= 46°·03, with a probable error of 0°·24.

The year 1845 had the lowest mean temperature and the year 1846 had the highest, the former being 1°·44 less than the mean of the 8 years, and the latter being 1°·87 more.

The mean temperature at Makerstoun for any future year = 46°·0, with a probable error of 0°·7.

Naming the three coldest months, the meteorological winter, the three hottest, summer, and the intermediate quarters, spring and autumn, we find their mean temperatures at Makerstoun, as follows :—

Meteorological Winter, Dec., Jan., Feb., Mean Temperature = 36°·97
Spring, March, April, May, ... = 44°·24
Summer, June, July, Aug., ... = 56°·25
Autumn, Sept., Oct., Nov., ... = 46°·66

177. *Annual Variation of Temperature.*—By the monthly means from the 8 years' observations

The maximum temperature occurred approximately July 22
The minimum temperature .... January 27
The mean temperature .... April 29 and October 14

The lowest monthly mean temperature occurred in 4 years in January, in 2 years in December, and in 2 years in February. The highest monthly mean temperature occurred in 4 years in July, in 2 years in June, and in 2 years in August.

The highest monthly mean temperature occurred June 1846, = 61°·20
The lowest monthly mean temperature occurred December 1844, = 32°·04
The range of the monthly mean temperature in 8 years therefore = 29°·16

The greatest yearly range of monthly mean temperature occurred in 1846, = 28°·67
The least .... 1849, = 19°·59

The difference between the temperatures of the hottest and coldest months in the mean of 8 years = 20°·95
.... 2 months .... = 20°·42
.... 3 months .... = 19°·28

178. We may employ the monthly means in the 11th column of Table 72, for the purpose of predicting the mean temperature for a coming month, the probable error of the predicted temperature for each month as deduced approximately from the Table, being as follows :*—

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
2°·0	2°·9	1°·1	1°·9	1°·9	1°·7	1°·4	1°·5	1°·5	1°·1	1°·2	3°·2

Thus, at Makerstoun, there are equal chances that the mean temperature of any month of March will not be more than 1°·1 from 39°·5. The months of March, October, and November, shew the least variation of monthly mean temperature ; the months of December, January, and February shew the greatest variation.

TABLE 73.—Monthly Means of the Diurnal Ranges of Temperature, as deduced from the Observations of the Register Thermometers, for the Years 1843–6.

Year.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Mean.
	°	°	°	°	°	°	°	°	°	°	°	°	°
1843	9·0	7·8	14·1	15·2	13·3	13·6	16·7	20·2	20·8	13·6	12·4	8·1	13·7
1844	10·9	11·7	13·1	18·4	19·4	18·2	18·7	19·5	15·9	13·4	8·4	6·8	14·5
1845	11·9	12·1	14·0	20·2	14·2	18·7	17·1	17·1	17·9	12·0	12·6	11·0	14·9
1846	8·6	10·6	14·7	14·3	18·1	24·9	16·6	18·8	19·3	13·9	9·0	11·0	15·0
Mean	10·1	10·5	14·0	17·0	16·2	18·8	17·3	18·9	18·2	13·2	10·6	9·2	14·5

179. *Annual Variation of the Diurnal Range of Temperature.*—From the last line of Table 73, the mean of the diurnal ranges of temperature was least in December, and it was greatest in June and August. It appears probable, however, that when a sufficient number of years' observations is considered, the mean of the diurnal ranges will be found to vary little from April till September. This result is analogous to that obtained for the ranges of the mean undisturbed diurnal variations of the magnetic elements.

The ranges of the monthly mean diurnal variations, from the hourly observations in the two years 1844–5, are as follow :—

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
5°·60	7°·05	9°·30	14°·70	11°·80	12°·15	12°·00	12°·35	12°·60	8°·20	5°·05	3°·70

These quantities indicate a result quite similar to that obtained from Table 73, though, as might be expected, the ranges are considerably smaller. December has the least range, and May, June, and July have rather less ranges than April, August, and September.

TABLE 74.—Mean Differences of the Daily Mean Temperature from the Monthly Mean for each Month in the Years 1843–6.

Year.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Mean.
	°	°	°	°	°	°	°	°	°	°	°	°	°
1843	5·45	4·40	4·63	4·21	2·08	3·44	1·57	2·48	4·42	6·98	4·44	2·69	3·90
1844	4·30	4·20	4·43	2·62	2·69	3·00	3·33	1·62	2·07	4·50	3·90	3·20	3·32
1845	6·02	3·21	6·08	3·97	2·46	3·34	2·16	1·86	3·32	3·04	4·69	3·12	3·61
1846	4·21	4·20	4·67	2·85	2·15	4·47	2·57	2·80	3·61	3·87	4·82	4·60	3·73
Mean	5·00	4·00	4·95	3·41	2·34	3·56	2·40	2·19	3·35	4·62	4·46	3·40	3·64

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* These numbers divided by 3 will give approximately the probable errors of the monthly means in the 11th column of Table 72 as the true monthly mean temperatures at Makerstoun.

180. *Differences of the Daily Mean Temperature from the Monthly Means.*—From the means of the results for the four years 1843–6 in the last line of Table 74, the differences of the daily mean temperature from the monthly mean temperature are greatest in the six months October to March, and they are least in the remaining six months; there are irregularities in the value of the mean difference from month to month; the mean difference is less in December than in the immediately preceding and succeeding months, and it has nearly the same value as in June. The mean difference is greatest in January, and it is least in August. From the four years' observations the mean temperature of a civil day differs on the average 3°·6 from the mean temperature for the corresponding month.

181. The irregularity of the monthly mean temperature does not seem to be connected with that of the daily mean temperature; thus, March and October, which have the least variation of monthly mean temperature, have the greatest variation of daily mean temperature, with the exception of January.

182. *Diurnal Variation of Temperature.*—Table 75 has been formed in the manner already described for Table 12. The approximate epochs deduced from Table 75 are given in Table 76.

TABLE 75.—Diurnal Variation of the Temperature of the Air for each Astronomical Season and for the Year, deduced from the Observations of the Years 1843–6.

Mak. Mean Time.	Nov. Dec. Jan.	Feb. Mar. April.	May. June. July.	Aug. Sept. Oct.	Year.	Mak. Mean Time.	Nov. Dec. Jan.	Feb. Mar. April.	May. June. July.	Aug. Sept. Oct.	Year.
h. m.	°	°	°	°	°	h. m.	°	°	°	°	°
12 10	−0·99	−3·06	−4·82	−3·84	−3·18	0 10	+2·60	+4·72	+5·42	+5·84	+4·64
13 10	−0·98	−3·32	−5·22	−4·24	−3·44	1 10	+3·04	+5·30	+5·88	+6·42	+5·16
14 10	−1·10	−3·56	−5·61	−4·58	−3·71	2 10	+2·86	+5·43	+5·72	+6·61	+5·16
15 10	−1·15	−3·67	−6·01	−4·86	−3·92	3 10	+1·99	+5·04	+5·50	+6·08	+4·65
16 10	−1·22	−3·87	−5·72	−5·04	−3·96	4 10	+0·92	+4·11	+4·83	+4·98	+3·71
17 10	−1·26	−3·80	−4·65	−5·12	−3·71	5 10	+0·24	+2·62	+3·96	+3·28	+2·52
18 10	−1·34	−3·30	−2·81	−4·31	−2·94	6 10	−0·31	+1·14	+2·49	+1·55	+1·22
19 10	−1·33	−2·35	−0·93	−2·82	−1·86	7 10	−0·40	−0·16	+0·90	−0·04	+0·07
20 10	−1·18	−0·99	+0·99	−0·53	−0·43	8 10	−0·54	−0·99	−1·05	−1·14	−0·93
21 10	−0·32	+0·87	+2·51	+1·62	+1·17	9 10	−0·67	−1·66	−2·35	−2·18	−1·72
22 10	+0·77	+2·70	+3·72	+3·59	+2·69	10 10	−0·76	−2·29	−3·48	−2·93	−2·36
23 10	+1·84	+3·88	+4·88	+5·03	+3·91	11 10	−0·70	−2·71	−4·15	−3·32	−2·72

TABLE 76.—Principal Epochs in the Diurnal Curve of Temperature, deduced from Table 75.

Period.	Minimum A.M.	Mean A.M.	Maximum P.M.	Mean P.M.	Intervals.			
					A.M. Mean to Maximum.	P.M. Mean to Maximum.	A.M. Mean to P.M. Mean.	Minimum to Sunrise.
	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.
Nov. Dec. Jan.	6 40	9 30	1 33	5 39	4 3	4 6	8 9	1 26
Feb. Mar. Apr.	4 32	8 34	1 45	6 55	5 11	5 10	10 21	1 35
May June July	3 35	7 39	1 15	7 38	5 36	6 23	11 59	0 2
Aug. Sept. Oct.	5 10	8 30	2 0	7 13	5 30	5 13	10 43	0 30
Year	3 45	8 26	1 40	7 14	5 14	5 34	10 48	2 8

The following are the conclusions from the previous table:—

1*st*, The minimum temperature occurs immediately before sunrise in summer, about 1½ hours before it in winter and spring, and about half-an-hour before sunrise in autumn; it is evident, however, that accuracy in the determination of the interval is not increased by combining several months together, since, in the result for the year, the minimum appears to occur at a greater interval from sunrise than in any of the quarters.

2*d*, The maximum temperature occurs latest after noon before the autumnal and after the vernal equinox; it occurs nearest noon in summer, but the temperature changes very slowly in that quarter from 1^h to 3^h P.M.

3*d*, The intervals between the epochs of mean temperature and of the maximum temperature are nearly equal in spring and autumn; the afternoon interval is greatest in summer, and it is least in winter. If we except summer, the temperature increases as rapidly from the mean to the maximum, as it diminishes from the maximum to the mean; the slight difference in autumn between the values of the intervals, and even that in summer may be due to error in the epoch of maximum resulting from the fewness of the observations. In each quarter, with the exception of summer, the temperature diminishes more rapidly after the maximum till sunset than it increased during equal time before the maximum.* It will be seen from the column for the year, in Table 75, that the mean temperature for the pairs of hours before and after 1^h and 2^h P.M., are equal or nearly equal till the pair 9^h 10^m A.M. and 6^h 10^m P.M., which are also nearly equal, so that the mean diurnal curve for the year from 9^h 10^m A.M. till 6^h 10^m P.M. is symmetrical about a vertical axis.

PRESSURE OF AQUEOUS VAPOUR.

TABLE 77.—Mean Pressure of Aqueous Vapour for each Month in the Years 1843–6.

Year.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Mean.
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
1843	0·220	0·184	0·223	0·253	0·281	0·320	0·387	0·409	0·382	0·245	0·238	0·280	0·283
1844	·216	·180	·209	·258	·273	·354	·367	·355	·351	·276	·258	·187	·274
1845	·203	·181	·185	·251	·276	·374	·358	·366	·317	·297	·252	·207	·272
1846	·251	·249	·222	·254	·298	·409	·425	·443	·397	·306	·269	·187	·309
Mean	·222	·198	·210	·254	·282	·364	·384	·393	·362	·281	·254	·215	·285

183. *Annual Variation of the Pressure of Aqueous Vapour.*—The pressure of aqueous vapour, as deduced from the observations of the dry and wet bulb thermometers, is least in February, being in the mean of 4 years = 0·198 inch of mercury, and it is greatest in August = 0·393 inch, the difference between the greatest and least monthly means being nearly two-tenths of an inch. The mean pressure for each of the four months December to March varies little; so also for the four months June to September.

The mean pressure for the four months December to March from 4 years' observations = 0·211 inch.
.... June to September................................ = 0·381 ...
The mean pressure of aqueous vapour for the 4 years 1843–6 = 0·285 ...

TABLE 78.—Variations of the Pressure of Aqueous Vapour with reference to the Moon's Age and Declination for the Years 1843–6.

Moon's Age.	1843.	1844.	1845.	1846.	Mean.	After Moon farthest North.	1843.	1844.	1845.	1846.	Mean.
d. d.	in.	in.	in.	in.	in.	d. d.	in.	in.	in.	in.	in.
14—16	·000	+·004	+·007	+·012	+·006	27— 1	−·030	−·001	−·017	−·001	−·012
17—20	+·008	+·011	−·005	+·002	+·004	2— 5	−·003	−·002	+·001	−·020	−·006
21—24	+·009	+·015	−·021	−·011	−·002	6— 8	−·022	−·010	+·017	+·002	−·003
25—28	−·001	−·005	+·010	+·003	+·002	9—12	+·016	+·001	+·007	+·003	+·007
29— 1	−·003	−·013	+·007	+·002	−·002	13—15	+·002	+·007	−·003	+·001	+·002
2— 5	−·020	−·004	−·010	−·008	−·010	16—19	+·017	−·006	−·004	+·008	+·004
6— 9	+·006	+·008	+·007	+·002	+·006	20—22	−·003	+·007	·000	+·006	+·002
10—13	−·001	−·017	+·008	−·005	−·004	23—26	+·021	+·003	−·004	·000	+·005

184. *Variations of the Pressure of Aqueous Vapour with Reference to the Moon's Age.*—Though it has not been possible to determine by our apparatus the heating effect of the moon, yet it is believed that it has some

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* The difference betwixt this result and that obtained by others is due, it is conceived, to the want of proper precautions to avoid the effects of radiation or reflection of the sun's heat from the soil or surrounding objects in the afternoon. It will be seen, in the Introductions to the several volumes, that this source of error was cared for at Makerstoun.

effect, especially on the aqueous contents of our atmosphere; in order if possible to determine this, the discussions, of which the results are contained in Table 78, were made for each year; the means of the 4 years indicate as follows,—

1*st*, That on the whole, the pressure of aqueous vapour was greater about opposition than about conjunction; the average pressure of each of the 15 days forming the second and third quarters being 0·003 inch above the mean, and of each of the 15 days forming the fourth and first quarters being 0·003 inch below the mean.

2*d*, That the pressure of aqueous vapour was greatest from about the period of the moon's farthest southerly position, till near its farthest northerly position; that it was least from its farthest northerly position till it was nearly farthest south.

3*d*, If the first result be considered true, then the aqueous vapour pressure varies with the moonlight; as this pressure is greatest in the months from June to September (No. 183), during which the moon is in conjunction in its ascent from its most southerly declination, and least in the months from December to March, during which it is in conjunction in its descent from its most northerly position, the second result is probably a consequence of the first.

TABLE 79.—Diurnal Variation of the Pressure of Aqueous Vapour for each Astronomical Season and for the Year, deduced from the Observations of the Years 1843-6.

Mak. Mean Time.	Nov. Dec. Jan.	Feb. March. April.	May. June. July.	Aug. Sept. Oct.	Year.	Mak. Mean Time.	Nov. Dec. Jan.	Feb. March. April.	May. June. July.	Aug. Sept. Oct.	Year.
h. m.	in.	in.	in.	in.	in.	h. m.	in.	in.	in.	in.	in.
12 10	−0·005	−0·007	−0·013	−0·015	−0·010	0 10	+0·011	+0·012	+0·015	+0·024	+0·015
13 10	− ·005	− ·009	− ·016	− ·018	− ·012	1 10	+ ·013	+ ·011	+ ·015	+ ·024	+ ·016
14 10	− ·005	− ·010	− ·020	− ·024	− ·015	2 10	+ ·012	+ ·011	+ ·016	+ ·023	+ ·015
15 10	− ·005	− ·012	− ·024	− ·025	− ·017	3 10	+ ·009	+ ·008	+ ·013	+ ·021	+ ·013
16 10	− ·005	− ·014	− ·024	− ·028	− ·018	4 10	+ ·005	+ ·007	+ ·012	+ ·019	+ ·011
17 10	− ·005	− ·012	− ·017	− ·030	− ·016	5 10	+ ·002	+ ·006	+ ·013	+ ·017	+ ·009
18 10	− ·004	− ·010	− ·005	− ·024	− ·011	6 10	− ·001	+ ·002	+ ·009	+ ·014	+ ·006
19 10	− ·005	− ·005	+ ·001	− ·011	− ·005	7 10	− ·002	+ ·001	+ ·008	+ ·010	+ ·004
20 10	− ·004	·000	+ ·006	+ ·003	+ ·001	8 10	− ·003	·000	+ ·004	+ ·004	+ ·001
21 10	− ·001	+ ·004	+ ·008	+ ·014	+ ·006	9 10	− ·003	− ·003	− ·002	− ·004	− ·003
22 10	+ ·004	+ ·007	+ ·010	+ ·019	+ ·010	10 10	− ·004	− ·004	− ·006	− ·009	− ·006
23 10	+ ·008	+ ·010	+ ·012	+ ·022	+ ·013	11 10	− ·005	− ·004	− ·010	− ·015	− ·008

185. *Diurnal Variation of the Pressure of Aqueous Vapour.*—The following are the approximate epochs of the minimum and maximum, as deduced from Table 79.

Winter,	Nov., Dec., Jan.,	Minimum,	11^{h} P.M.—7^{h} A.M.	Maximum,	$1^{h}\ 30^{m}$ P.M.
Spring,	Feb., March, April,	....	$4^{h}\ 10^{m}$ A.M.	....	$0^{h}\ 40^{m}$ P.M.
Summer,	May, June, July,	....	$3^{h}\ 50^{m}$ A.M.	....	$1^{h}\ 30^{m}$ P.M.
Autumn,	Aug., Sept., Oct.,	....	$5^{h}\ 10^{m}$ A.M.	....	$0^{h}\ 40^{m}$ P.M.
	Year,	....	$4^{h}\ 0^{m}$ A.M.	....	$1^{h}\ 10^{m}$ P.M.

These epochs do not differ greatly from those for the temperature of the air, the principal difference is to be found in the variation of the epochs of maximum with season; the maximum pressure of aqueous vapour occurs earliest near the equinoxes, and latest near the solstices, whereas the reverse is the case for the temperature of the air. In the mean for the year, the mean pressure of aqueous vapour occurs at $8^{h}\ 0^{m}$ A.M., and at $8^{h}\ 25^{m}$ P.M., the interval being $12^{h}\ 25^{m}$.

The range of the diurnal variation for the Winter quarter = 0·018 inch.
.... Spring ...... = 0·026 ...
.... Summer ...... = 0·040 ...
.... Autumn ...... = 0·054 ...

.... Year = 0·034 ...

The range of the mean diurnal variation, therefore, gradually increases from the winter quarter till the autumn, when it is largest, the ratio of the ranges for the four quarters being as 6 : 9 : 13 : 18 nearly. This variation of the range is neither related to the range of temperature, nor to the absolute value of the pressure of aqueous vapour.

RELATIVE HUMIDITY.

TABLE 80.—Mean Relative Humidity of the Air for each Month in the Years 1843–6, Saturation being equal to Unity.

Year.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Mean.
1843	0·852	0·873	0·855	0·800	0·845	0·803	0·820	0·850	0·837	0·860	0·904	0·878	0·848
1844	·935	·882	·828	·775	·768	·819	·808	·818	·852	·848	·882	·941	·846
1845	·919	·857	·811	·811	·831	·813	·834	·835	·842	·841	·875	·851	·843
1846	·896	·844	·836	·859	·766	·736	·834	·861	·874	·890	·897	·901	·850
Mean	·900	·864	·832	·811	·802	·793	·824	·841	·851	·860	·889	·900	·847

186. *Annual Variation of the Relative Humidity.*—The relative humidity is least in June, and it is greatest in December and January; the three months, April, May, and June, have the least mean, = 0·802; the three months, November, December, and January, have the greatest mean, = 0·896. The means for the astronomical seasons are as follow:—

Winter, Nov., Dec., Jan., = 0·896 Summer, May, June, July, = 0·806
Spring, Feb., March, April, = 0·836 Autumn, Aug., Sept., Oct., = 0·851
Year, = 0·847, Saturation being equal to Unity.

TABLE 81.—Variations of the Relative Humidity with reference to the Moon's Age and Declination, for the Years 1843–6.

Moon's Age.	1843.	1844.	1845.	1846.	Mean.	After Moon farthest North.	1843.	1844.	1845.	1846.	Mean.
d. d.						d. d.					
14—16	−·008	+·009	+·008	+·011	+·005	27— 1	−·010	−·016	−·007	−·006	−·010
17—20	+·012	+·012	+·014	−·014	+·006	2— 5	−·003	−·003	−·008	+·003	−·003
21—24	+·010	+·001	−·010	−·006	−·001	6— 8	−·001	−·001	+·002	+·001	·000
25—28	+·009	+·001	·000	+·022	+·008	9—12	−·010	+·017	+·009	−·016	·000
29— 1	−·005	−·014	−·003	+·003	−·006	13—15	+·013	+·012	−·001	+·003	+·007
2— 5	−·006	+·007	−·003	−·020	−·005	16—19	−·025	−·015	·000	+·024	−·004
6— 9	+·002	−·008	+·002	+·013	+·002	20—22	+·018	+·006	+·014	−·005	+·008
10—13	−·014	−·009	−·005	−·011	−·010	23—26	+·017	−·001	−·007	−·004	+·001

187. *Variations of the Mean Relative Humidity, with Reference to the Moon's Age and Declination.*—The object of this discussion has been already stated, No. 184; the results here are considerably more indistinct than in the former case; they agree on the whole, however; the pressure of aqueous vapour and the relative humidity following nearly the same law; which might be expected if the temperature of the air be supposed not to vary with the moon's position. The relative humidity is greatest at and after conjunction; it is least at and after opposition. It is greatest while the moon is ascending from its most southerly position, and least when most northerly. (See No. 184 3*d*).

TABLE 82.—Diurnal Variation of the Relative Humidity of the Air, for each Astronomical Season and for the Year, deduced from the Observations of the Years 1843–6.

Mak. Mean Time.	Nov. Dec. Jan.	Feb. March. April.	May. June. July.	Aug. Sept. Oct.	Year.
h. m.					
12 10	+0·013	+0·061	+0·103	+0·072	+0·062
13 10	+ ·014	+ ·065	+ ·105	+ ·075	+ ·065
14 10	+ ·012	+ ·069	+ ·105	+ ·072	+ ·064
15 10	+ ·014	+ ·065	+ ·109	+ ·078	+ ·066
16 10	+ ·017	+ ·064	+ ·101	+ ·075	+ ·064
17 10	+ ·018	+ ·066	+ ·087	+ ·072	+ ·061
18 10	+ ·022	+ ·058	+ ·062	+ ·064	+ ·051
19 10	+ ·019	+ ·050	+ ·023	+ ·052	+ ·036
20 10	+ ·021	+ ·027	− ·017	+ ·019	+ ·012
21 10	+ ·007	− ·010	− ·054	− ·019	− ·019
22 10	− ·005	− ·054	− ·077	− ·057	− ·048
23 10	− ·027	− ·073	− ·103	− ·085	− ·072
h. m.					
0 10	−0·035	−0·090	−0·109	−0·106	−0·085
1 10	− ·043	− ·107	− ·118	− ·122	− ·097
2 10	− ·044	− ·110	− ·112	− ·130	− ·099
3 10	− ·027	− ·106	− ·112	− ·120	− ·091
4 10	− ·009	− ·090	− ·102	− ·096	− ·074
5 10	+ ·001	− ·052	− ·079	− ·058	− ·047
6 10	+ ·003	− ·027	− ·051	− ·016	− ·023
7 10	+ ·003	+ ·009	− ·012	+ ·018	+ ·004
8 10	+ ·007	+ ·028	+ ·031	+ ·038	+ ·026
9 10	+ ·009	+ ·037	+ ·059	+ ·051	+ ·039
10 10	+ ·007	+ ·053	+ ·078	+ ·060	+ ·049
11 10	+ ·004	+ ·060	+ ·088	+ ·057	+ ·052

188. *Diurnal Variation of the Relative Humidity.*—The following are the approximate epochs of maxima and minima, as obtained from Table 82.

Winter,	Nov., Dec., Jan.,	Maximum 7h A.M.	Minimum 1h 50m P.M.
Spring,	March, April, May,	.... 3h A.M.	.... 1h 50m P.M.
Summer,	June, July, Aug.,	.... 3h A.M.	.... 1h 20m P.M.
Autumn,	Sept., Oct., Nov.,	.... 3h A.M.	.... 2h 10m P.M.
	Year,	.... 3h A.M.	.... 1h 40m P.M.

The diurnal variation of relative humidity is nearly the inverse of that of the temperature of the air.

The mean relative humidity occurs at 8h 33m A.M., and at 7h 1m P.M., the interval being 10h 28m.

The range of the diurnal variation is least in winter, = 0·066; it is greatest in summer, = 0·227; the values of the range for spring being 0·179, and for autumn being 0·208.

ATMOSPHERIC PRESSURE.

189. *The Mean Pressure of the Atmosphere at Makerstoun,* 213 feet above the mean level of the sea, as deduced from the observations in the 8 years 1842–9, =29·615 inches of mercury at 32° Fahrenheit, measured on brass at 62° Fahrenheit; with a probable error of 0·009 inch, each year's mean receiving an equal weight.

The mean pressure for any future year = 29·615 inches, with a probable error of 0·026 inch.*

TABLE 83.—Monthly Means of the Atmospheric Pressure at Makerstoun, for the Years 1841–9.

Month.	1841.	1842.	1843.	1844.	1845.	1846.	1847.	1848.	1849.	Mean of 8 Years.	
										Height of 213 feet.	Mean Level of Sea.
		in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
Jan.		29·584	29·357	29·693	29·512	29·392	29·604	29·722	29·508	29·547	29·786
Feb.		·611	·499	·321	·704	·617	·625	·194	·819	·549	·788
March		·485	·662	·529	·741	·406	·775	·354	·755	·588	·826
April		·946	·487	·805	·642	·535	·455	·595	·450	·614	·850
May		·626	·620	·980	·703	·648	·599	·770	·796	·718	·951
June		·764	·619	·627	·597	·706	·672	·475	·735	·649	·879
July		·665	·635	·625	·622	·556	·794	·619	·583	·637	·865
Aug.	29·567	·723	·656	·489	·578	·691	·751	·526	·658	·634	·863
Sept.	·483	·652	·935	·817	·645	·732	·605	·717	·792	·737	·970
Oct.	·372	·682	·401	·397	·602	·312	·646	·551	·606	·525	·758
Nov.	·453	·448	·471	·563	·323	·655	·643	·601	·530	·529	·765
Dec.	......	·649	·962	·892	·369	·599	·490	·542	·723	·653	·892
Mean		·653	·609	·645	·586	·571	·638	·555	·663	·615	·846

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* All the observations are reduced to the *mean* of the flint and crown glass barometer of the Royal Society of London. In comparing these results with others reduced to the flint-glass barometer only, a correction of + 0·003 in. should be applied. See Introduction 1844, page lv.

190. *Annual Variation of the Atmospheric Pressure.*—Eight years' observations appear insufficient for an accurate determination of this law. If we give the monthly means for each year equal weight, we find the probable error of the means in the last column of Table 83 to be

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
0·043	0·045	0·037	0·040	0·028	0·020	0·016	0·021	0·024	0·030	0·025	0·044

The probable errors of the means for the five months December to April are greatest, and they are least for the months June, July, and August. The irregularity of the monthly mean pressure is therefore least at the hottest season, and greatest at the coldest season of the year; it does not vary, however, with the irregularity of the monthly mean temperature. (See No. 178.) It is evident from these probable errors that the accurate epochs cannot be obtained from the last column of Table 83. If we take the means of each couple of months, the probable error of each mean will be reduced to about a half (the probable error of the mean of December and January, = 0·024 inch, of January and February, = 0·019 inch, &c.), and the annual law will be more certain; these means are as follow:—

Prefix	Jan.—Feb.	Feb.—March	March—April	April—May	May—June	June—July	July—Aug.	Aug.—Sept.	Sept.—Oct.	Oct.—Nov.	Nov.—Dec.	Dec.—Jan.
29 in.	·548	·568	·601	·666	·683	·643	·636	·685	·631	·527	·581	·600

These numbers give nearly the same result as that derivable from the simple means in the last column of Table 83. It is probable, therefore, that at Makerstoun the atmospheric pressure is a maximum from May to September, being rather less for the intermediate months than for the first and last of that period; that it is a minimum in the end of October and in the beginning of February, a secondary maximum occurring in the end of December.*

191. The quarterly groups which give the greatest range of mean pressure are the following,—

Jan. Feb. Mar.	April, May, June,	July, Aug. Sept.	Oct. Nov. Dec.	Oct.–Mar.	Apr.–Sept.
in.	in.	in.	in.	in.	in.
29·561	29·660	29·669	29·569	29·565	29·665

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* Having examined the excellent series of barometric observations made under the direction of the Astronomer Royal at Greenwich, simultaneously with the Makerstoun series, for the purpose of comparing the annual law at the two places, the conclusions are given briefly in this note.

1*st*, From the means of 9 years' observations (1841–9) at Greenwich, the atmospheric pressure is a maximum from May to September, the secondary minimum seen between these months at Makerstoun being wholly wanting; it is also a maximum in December, and, unlike the Makerstoun result, the mean for December is the greatest; it is a minimum in October and November, as at Makerstoun; and it is a minimum again in April, about two months after the corresponding minimum for Makerstoun.

2*d*, When we compare the Greenwich monthly means for the 8 years 1842–9 with the Makerstoun monthly means for the same years, both being reduced to the level of the sea, and to 32° Fahrenheit, we find the barometer at Greenwich higher than at Makerstoun in each month, and for the whole period as follows:—

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
0·167	0·133	0·097	0·031	0·014	0·087	0·114	0·097	0·035	0·112	0·140	0·146	0·098

Whence it appears that for the same (sea) level, the barometer, on the average of 8 years, is *one-tenth of an inch* lower at Makerstoun than at Greenwich, 4° 6′ farther south; and that this difference of pressure varies with the month. The excess of the atmospheric pressure at Greenwich over that at Makerstoun is a principal maximum in January, the *coldest* month; and it is a maximum again in July, the *hottest* month; it is a minimum in April and May, and again in September. It may be remarked, with reference to this curious result, that the positions of Greenwich and Makerstoun are much alike; nearly on the same meridian, and nearly equi-distant from the eastern coast of the island. There is no doubt that the greater proximity of Greenwich to the Continent has an effect upon its temperature, the mean temperature of Greenwich being only 2° higher than that of Makerstoun in winter, while it is 5° higher in summer.

3*d*, From the mean of 8 years the atmospheric pressure at Greenwich is 0·098 inch greater than at Makerstoun, but the excess is by no means constant for each year; the excesses for each year are,—

1842.	1843.	1844.	1845.	1846.	1847.	1848.	1849.
in.	in.	in.	in.	in.	in.	in.	in.
0·119	0·096	0·070	0·096	0·102	0·116	0·104	0·079

The excess varies as much as half its mean value, and appears, on the whole, greatest in the hottest years and least in the coldest.

4*th*, The following coincidences may be mentioned. The epochs of the annual law of mean atmospheric pressure (especially those for Greenwich) are nearly the same as for the annual law of magnetic declination (No. 9); and the law of differences of pressure for the two places has nearly the same epochs as the annual law for the magnetic force (No. 136).

The mean pressure for the six months October to March is 0·100 inch less than that for the six months April to September, while the range of the *quarterly* groups for the *meteorological* seasons is only 0·057 in. Neglecting therefore the minor variations, the law of atmospheric pressure is distinguished by a maximum for the six months during which the sun is north of the equator, and a minimum for the six months during which it is south of the equator. The means for the separate quarters show no direct connection with temperature, since April to June, and July to September have nearly the same mean pressure.

TABLE 84.—Mean Differences of the Daily Mean Atmospheric Pressure from the Monthly Mean, for each Month in the Years 1843–6.

Year.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Mean.
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
1843	0·412	0·281	0·261	0·217	0·218	0·270	0·184	0·237	0·167	0·262	0·274	0·126	0·242
1844	·279	·274	·310	·192	·142	·127	·126	·216	·151	·304	·323	·224	·222
1845	·257	·145	·208	·323	·189	·258	·197	·214	·329	·250	·302	·313	·249
1846	·373	·255	·325	·301	·256	·273	·195	·176	·306	·337	·394	·327	·293
Mean	·330	·239	·276	·258	·201	·232	·175	·211	·238	·288	·324	·247	·252

192. *Annual Variation of the Differences of the Daily Mean from the Monthly Mean Pressure.*—From the means for four years in Table 84, the daily mean pressure of the atmosphere varied most in the months of November and January, and it varied least in July. The following groups give the greatest and least quarterly means,—

Nov. Dec. Jan.	Feb. Mar. April,	May, June, July,	Aug. Sept. Oct.
in.	in.	in.	in.
0·300	0·258	0·203	0·246

The daily mean height of the barometer differs on the average *three* tenths of an inch from the monthly mean in the winter quarter, Nov.–Jan., and only *two* tenths of an inch in the summer quarter.

TABLE 85.—Monthly Means of the Diurnal Ranges of the Atmospheric Pressure for the Years 1843–6.

Year.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Mean.
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
1843	0·342	0·180	0·206	0·235	0·151	0·169	0·194	0·166	0·165	0·285	0·355	0·207	0·221
1844	·224	·282	·298	·185	·124	·148	·156	·181	·134	·234	·196	·145	·192
1845	·320	·243	·236	·222	·131	·184	·181	·164	·223	·208	·269	·452	·236
1846	·283	·202	·269	·160	·183	·142	·172	·149	·165	·294	·223	·217	·205
Mean	·292	·227	·252	·200	·147	·161	·176	·165	·172	·255	·261	·255	·214

193. *Annual Variation of the Diurnal Range of the Atmospheric Pressure.*—From the means of the diurnal ranges for each month in the four years 1843–6, the diurnal range is least in May, and it is greatest in January; the following groups give the greatest and least quarterly means,—

Nov. Dec. Jan.	Feb. Mar. April,	May, June, July,	Aug. Sept. Oct.
in.	in.	in.	in.
0·269	0·226	0·161	0 197

The monthly mean diurnal range does not vary greatly in the six months for which the sun is south of the equator, nor in the six months for which it is north of the equator; thus, the mean range for the six months October to March = 0·257 in., and for the six months April to September = 0·170 in. On the whole, the diurnal range varies inversely with the monthly mean pressure. See No. 197 where the ranges of the mean diurnal variations are considered.

TABLE 86.—Variations of the Diurnal Range of Atmospheric Pressure, with reference to the Moon's Age and Declination for the Years 1843–6.

Moon's Age.	1843.	1844.	1845.	1846.	Mean.	After Moon farthest North.	1843.	1844.	1845.	1846.	Mean.
d. d.	in.	in.	in.	in.	in.	d. d.	in.	in.	in.	in.	in.
14—16	+·012	−·032	−·063	−·027	−·027	27— 1	+·031	+·019	+·026	+·022	+·025
17—20	−·014	·000	+·049	·000	+·009	2— 5	+·010	+·022	−·006	+·004	+·008
21—24	−·034	+·017	+·069	+·030	+·021	6— 8	−·001	+·009	−·005	−·053	−·012
25—28	+·001	−·001	−·009	−·003	−·003	9—12	+·010	−·018	−·021	+·010	−·005
29— 1	+·030	+·024	+·005	+·005	+·016	13—15	−·032	−·026	+·019	+·009	−·008
2— 5	+·010	+·011	+·002	+·019	+·011	16—19	−·028	−·007	−·003	−·002	−·010
6— 9	+·001	+·026	−·011	+·008	+·008	20—22	+·015	−·015	−·033	−·005	−·010
10—13	−·007	−·044	−·045	−·033	−·032	23—26	−·003	+·016	+·026	+·019	+·015

194. *Variation of the Diurnal Range of Atmospheric Pressure with the Moon's Age.*—Investigations have been entered into by different meteorologists for the purpose of exhibiting the effect of the varying position of the moon upon the mean daily pressure of the atmosphere; their success has been on the whole very doubtful. In our latitudes it is not easy to extricate the laws of these variations on account of the magnitude of the irregular changes; it was for this reason that, after discussing the daily mean pressures for the year 1843 with reference to the lunar arguments, the discussion of the diurnal ranges was substituted for that of the daily means; as it was conceived that the variation of the diurnal range might be considerable (as in the case of the oceanic tides, &c.), though the variation of the mean should be nearly or altogether zero; such had been found to be the case for the magnetic declination. The results of these discussions for each year, and for the mean of four years, are given in the first part of Table 86. The results for the four years are wonderfully consistent, and that of the mean of the four years may be expressed thus.—The diurnal range of the barometer is a minimum near opposition, and it is a maximum about the beginning of the second quarter, and immediately after conjunction; perhaps the intermediate minimum near conjunction is accidental and might disappear in a larger series. The range of these mean numbers is very considerable, upwards of half-a-tenth of an inch, and it is probable that had the means for single days of the argument been given, the range would have been nearly twice as great. This result is wholly different from what we should have expected when comparing the oscillation of the atmosphere with that of the ocean, and it appears difficult to offer an explanation for it; we shall find however when we examine Table 91, that it is probably connected with the force of the wind; at least *that* obeys the same law, the diurnal range of the barometer being greatest when the force of the wind is greatest.

195. *Variation of the Diurnal Range of the Atmospheric Pressure with Reference to the Moon's Declination.*—The values for four years for this argument are given in the second part of Table 86; the results for each year agree here also to a remarkable extent with that shewn by the mean of the whole four years. The diurnal range of the barometer is a maximum when the moon is farthest north, it is a minimum when the moon is south of the equator. This result is also connected with that for the force of the wind (see No. 201), the diurnal range of the barometer being greatest when the force of the wind is greatest, and *vice versa*.

TABLE 87.—Diurnal Variation of the Atmospheric Pressure for each Astronomical Season and for the Year, deduced from the observations of the Years 1843–6.

Mak. Mean Time.	Nov. Dec. Jan.	Feb. March. April.	May. June. July.	Aug. Sept. Oct.	Year.	Mak. Mean Time.	Nov. Dec. Jan.	Feb. March. April.	May. June. July.	Aug. Sept. Oct.	Year.
h. m.	in.	in.	in.	in.	in.	h. m.	in.	in.	in.	in.	in.
12 10	+·0026	+·0040	+·0040	+·0041	+·0037	0 10	+·0043	+·0051	+·0029	+·0008	+·0033
13 10	−·0041	−·0013	+·0010	+·0013	−·0008	1 10	−·0005	+·0011	+·0003	−·0036	−·0007
14 10	−·0055	−·0057	−·0028	−·0023	−·0041	2 10	−·0029	−·0038	−·0035	−·0073	−·0043
15 10	−·0108	−·0112	−·0047	−·0058	−·0081	3 10	−·0010	−·0062	−·0080	−·0106	−·0064
16 10	−·0159	−·0135	−·0025	−·0073	−·0098	4 10	+·0017	−·0059	−·0117	−·0113	−·0068
17 10	−·0179	−·0122	+·0016	−·0043	−·0082	5 10	+·0034	−·0030	−·0136	−·0097	−·0057
18 10	−·0158	−·0092	+·0049	+·0009	−·0048	6 10	+·0060	+·0013	−·0103	−·0047	−·0019
19 10	−·0096	−·0043	+·0075	+·0057	−·0002	7 10	+·0073	+·0078	−·0060	+·0004	+·0024
20 10	−·0012	+·0008	+·0091	+·0082	+·0042	8 10	+·0085	+·0108	−·0006	+·0051	+·0059
21 10	+·0060	+·0036	+·0082	+·0091	+·0067	9 10	+·0095	+·0107	+·0024	+·0068	+·0073
22 10	+·0122	+·0059	+·0071	+·0074	+·0081	10 10	+·0078	+·0092	+·0044	+·0072	+·0071
23 10	+·0098	+·0075	+·0056	+·0048	+·0069	11 10	+·0066	+·0075	+·0051	+·0060	+·0063

Table 87 has been formed thus :—The hourly means for each quarter were obtained for each year ; those for 1844 and 1845 were corrected for continuous barometric change as described in the volume for 1844, p. 422, excepting that the change of pressure from 11^h to 12^h, was considered equal to the mean of the changes from 10^h to 11^h and from 12^h to 1^h, (instead of from 10^h to 11^h only): the hourly means for each quarter were then combined in the manner already described for the magnetic declination, No. 26.

TABLE 88.—Daily Epochs of Maximum and Minimum Atmospheric Pressure, with the Intervals from Epoch to Epoch, for each Quarter, and for the Year.

Period.	Minimum A. M.	Interval from Min. to Max.	Maximum A. M.	Interval from Max. to Min.	Minimum P. M.	Interval from Min. to Max.	Maximum P. M.	Interval from Max. to Min.	Mean Epoch betwixt the Two Maxima.	Mean Epoch betwixt the Two Minima.
	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.
Nov. Dec. Jan.	5 15	5 10	10 25	3 40	2 5	6 55	9 0	8 15	3 42	9 40
Feb. Mar. Apr.	4 5	7 0	11 5	4 15	3 20	5 10	8 30	7 35	3 47	9 42
May June July	3 15	4 55	8 10	8 45	4 55	6 5	11 0	4 15	3 35	10 5
Aug. Sept. Oct.	4 15	4 45	9 0	6 50	3 50	6 10	10 0	6 15	3 30	10 2
Year	4 10	6 10	10 20	5 30	3 50	5 40	9 30	6 40	3 55	10 0

196. *Diurnal Variation of the Atmospheric Pressure.*—From Table 87, this consists of two maxima and two minima in each quarter of the year: the approximate epochs in apparent time, as deduced from the projections of Table 87 (see Plate IX.), are given in Table 88.

1*st*, The principal maximum occurs in the evening in spring, and in the forenoon in the other quarters; the principal minimum occurs in the morning in winter and spring, and in the afternoon in summer and autumn.

2*d*, The morning minimum occurs earliest in summer and latest in winter, obeying something like the law of sunrise, though the difference of epochs is variable, the minimum occurring about 3 hours before sunrise in winter, and immediately before sunrise in summer: the epoch of minimum temperature had a nearly similar relation to that of sunrise, but the similarity of the relations of the two classes of facts is more apparent than real, since the temperature of the air varies little in winter from 6^h P.M. till 8^h A.M.

3*d*, The morning maximum occurs latest in spring and earliest in summer, the difference of the epochs for the two seasons being nearly three hours.

4th, The afternoon minimum occurs earliest in winter and latest in summer, the difference of the epochs being nearly three hours. The epochs of this minimum have some relation to those for sunset as the morning minimum epochs had to sunrise, thus :—In winter, the morning minimum occurs about three hours before sunrise, in summer the afternoon minimum occurs about three hours before sunset; in winter the afternoon minimum occurs about one hour and a half before sunset, in summer the morning minimum occurs about half-an-hour before sunrise.

5th, The afternoon maximum occurs latest in summer and earliest in spring; the difference of the epochs is two and a half hours.

6th, It is not easy to relate the variations of the epochs of the maxima to those of any other facts; it is to be observed, however, that the morning maximum occurs nearest noon in spring and farthest from noon in summer, while the afternoon maximum occurs farthest from midnight in spring and nearest midnight in summer.

TABLE 89.—Whole Amount and Hourly Rate of the Change of Atmospheric Pressure from Epoch to Epoch in the Diurnal Variation for each Quarter, and for the Year.

Period.	A. M. Minimum to A. M. Maximum.		A. M. Maximum to P. M. Minimum.		P. M. Minimum to P. M. Maximum.		P. M. Maximum to A. M. Minimum.		Whole Oscillations.	
	Total.	Per Hour.	Total.	Per Hour.	Total.	Per Hour.	Total.	Per Hour.	Sum.	Per Hour.
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
Nov. Dec. Jan.	0·0308	0·0060	0·0160	0·0044	0·0126	0·0018	0·0275	0·0033	0·0869	0·0036
Feb. Mar. Apr.	·0210	·0030	·0140	·0033	·0180	·0035	·0250	·0033	·0780	·0033
May June July	·0139	·0018	·0230	·0026	·0191	·0031	·0100	·0024	·0660	·0027
Aug. Sept. Oct.	·0166	·0035	·0208	·0030	·0188	·0031	·0146	·0023	·0708	·0030
Year	·0180	·0029	·0150	·0027	·0145	·0026	·0173	·0026	·0648	·0027

197. The total oscillations from one turning point to the next are given in Table 89, with the hourly rate of change; from these, we find that the change of pressure, from the morning minimum to the morning maximum, is greatest in winter and least in summer; from the afternoon minimum to the evening maximum, it is least in winter and greatest in summer; from the morning maximum to the afternoon minimum, it is least in spring and greatest in summer; from the evening maximum to the morning minimum, it is greatest in winter and least in summer. On the whole, when we compare the diurnal variations with respect to season, both as to the epochs and relative amounts of the oscillations, from turning point to turning point, we arrive at the following conclusion:—*1st,* That the law of diurnal variation of atmospheric pressure at Makerstoun, is almost precisely the same in winter as it is in summer, *if we substitute noon for midnight, and* P.M. *for* A.M. *in the former.** *2d,* As the diurnal variation for spring is analogous to that for winter, and the diurnal variation for autumn is similar to that for summer, the same law of opposition holds for spring and autumn as for summer and winter. See Plate IX.

3d, The whole diurnal oscillation is greatest in winter, and it is least in summer.

PRESSURE OF THE WIND.

198. In the volumes for the years 1843 and 1844, both the maximum pressures of the wind occurring *betwixt* the hours of observations and the observed pressures within 7^m to 10^m *at* the hours of observation were discussed; as both discussions gave the same results, and as the latter make an approximation to the actual continuous mean pressures, only the means of the pressures occurring within 7^m to 10^m *at* the hours of observation will be considered here.

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* This curious fact, it seems to me, is wholly opposed to what may be termed the temperature theory of the regular diurnal variation of atmospheric pressure; the best marked barometric oscillation at Makerstoun occurs while the temperature and pressure of aqueous vapour are nearly constant, namely, in winter between 6^h P.M. and 9^h A.M.

TABLE 90.—Monthly Means of the Maximum Pressure of the Wind within 10^m at the Observation Hours for the Years 1843–6.

Year.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Mean.
	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.
1843	1·29	0·87	0·32	0·49	0·39	0·40	0·35	0·17	0·16	0·42	0·48	0·72	0·50
1844	0·34	0·37	0·52	0·41	0·20	0·50	0·16	0·37	0·34	0·57	0·63	0·09	0·37
1845	0·45	0·52	0·81	0·61	0·67	0·56	0·39	0·38	0·28	0·63	0 51	0·97	0·56
1846	0·48	0·47	0·61	0·35	0·54	0·36	0·49	0·19	0·18	0·42	0·46	0·36	0·41
Mean	0·64	0·56	0·56	0·46	0·45	0·45	0·35	0·28	0·24	0·51	0·52	0·53	0·46

199. *Annual Variation of the Approximate Mean Pressures of the Wind.*—From the means of 4 years' observations, the wind blew with the greatest mean force in January, and with the least mean force in September. The mean pressure, however, varies little for the six months October to March, while the sun is south of the equator; it is nearly constant for the three months, April, May, and June, diminishing gradually from June to September. September is the month of least pressure in each year, excepting 1844; the month of maximum pressure is more variable, January in 1843, November in 1844, December in 1845, and March in 1846.

TABLE 91.—Variations of the Pressure of the Wind with reference to the Moon's Age and Declination for the Years 1843–6.

Moon's Age.	1843.	1844.	1845.	1846.	Mean.	After Moon farthest North.	1843.	1844.	1845.	1846.	Mean.
d. d.	lb.	lb.	lb.	lb.	lb.	d. d.	lb.	lb.	lb.	lb.	lb.
14—16	+0·03	−0·16	−0·09	−0·08	−0·07	27— 1	−0·06	+0·32	+0·06	+0·05	+0·09
17—20	−0·18	+0·04	+0·17	+0·03	+0·02	2— 5	−0·11	−0·01	+0·02	−0·04	−0·03
21—24	−0·06	+0·18	−0·01	−0·03	+0·02	6— 8	−0·01	−0·02	−0·10	−0·01	−0·03
25—28	+0·05	+0·10	+0·05	−0·10	+0·02	9—12	+0·02	−0·07	−0·06	+0·08	−0·01
29— 1	+0·20	0·00	+0·17	+0·07	+0·11	13—15	+0·08	−0·17	+0·04	−0·03	−0·02
2— 5	+0·07	−0·08	−0·03	+0·13	+0·02	16—19	+0·12	−0·04	+0·04	−0·12	0·00
6— 9	−0·04	+0·04	−0·07	−0·01	−0·02	20—22	+0·05	−0·10	−0·15	+0·03	−0·04
10—13	−0·08	−0·15	−0·15	−0·01	−0·10	23—26	−0·09	+0·07	+0·16	+0·07	+0·05

200. *Approximate Mean Pressure of Wind with Reference to the Moon's Age.*—The mean result from the first portion of Table 91 shews, *that the pressure of the wind was a maximum at conjunction and a minimum near opposition.* The result for each year shews a well-marked minimum near opposition, and a maximum near conjunction. It has already been noticed (No. 194), that the diurnal range of the atmospheric pressure obeys a similar law; that is to say, for this argument, the diurnal oscillation of the statical pressure of the atmosphere is a maximum when its dynamical pressure is a maximum.

201. *Approximate Mean Pressure of the Wind with Reference to the Moon's Declination.*—From the last column of Table 91, the mean result of 4 years' observations, it appears *that the pressure of the wind is a maximum when the moon is farthest north.* This result is shewn with some distinctness in each year, excepting in 1843, for which the maximum occurs when the moon is farthest south; there is, however, the appearance of a maximum near the time of the moon's farthest southerly position in the years 1845 and 1846; and, indeed, in the mean for the 4 years; it is probable therefore that the minimum pressure of the wind occurs when the moon is near the equator. The same relation, between the diurnal oscillation of the statical pressure of the atmosphere and its dynamical pressure, holds as in No. 200.

TABLE 92.—Diurnal Variation of the Maximum Pressure of the Wind within 10^{m} at the Observation Hours, for each Astronomical Season and for the Year, deduced from the Observations of the Years 1843–6.

Mak. Mean Time.		Nov., Dec., Jan.	Feb., March, April.	May, June, July.	August, Sept., Oct.	Year.	Mak. Mean Time.		Nov., Dec., Jan.	Feb., March, April.	May, June, July.	August, Sept., Oct.	Year.
h.	m.	lb.	lb.	lb.	lb.	lb.	h.	m.	lb.	lb.	lb.	lb.	lb.
12	10	−0·07	−0·21	−0·20	−0·12	−0·15	0	10	+0·13	+0·25	+0·23	+0·17	+0·19
13	10	−0·10	−0·15	−0·19	−0·08	−0·13	1	10	+0·11	+0·29	+0·27	+0·22	+0·22
14	10	−0·13	−0·14	−0·21	−0·09	−0·14	2	10	+0·06	+0·32	+0·28	+0·19	+0·21
15	10	−0·03	−0·08	−0·22	−0·10	−0·11	3	10	+0·02	+0·26	+0·25	+0·14	+0·17
16	10	−0·05	−0·10	−0·18	−0·10	−0·11	4	10	−0·03	+0·14	+0·18	+0·11	+0·10
17	10	−0·02	−0·12	−0·15	−0·09	−0·09	5	10	+0·02	+0·03	+0·14	+0·02	+0·05
18	10	−0·05	−0·08	−0·11	−0·09	−0·08	6	10	−0·03	−0·05	+0·03	−0·05	−0·02
19	10	−0·05	−0·10	−0·03	−0·10	−0·07	7	10	−0·01	−0·15	−0·06	−0·07	−0·07
20	10	−0·03	+0·03	+0·13	−0·04	+0·02	8	10	+0·02	−0·19	−0·13	−0·10	−0·10
21	10	+0·04	+0·11	+0·17	+0·07	+0·10	9	10	−0·02	−0·14	−0·19	−0·10	−0·11
22	10	+0·07	+0·21	+0·19	+0·15	+0·15	10	10	+0·02	−0·16	−0·21	−0·13	−0·12
23	10	+0·11	+0·24	+0·23	+0·20	+0·19	11	10	0·00	−0·21	−0·19	−0·08	−0·12

202. *Diurnal Variation of the Mean Pressure of the Wind.*—It is evident from the means in Table 92, that 4 years' observations are too few to destroy the irregularities produced by the large atmospheric disturbances; the following, however, are the approximate epochs of maximum and minimum :—

		Minimum.	Mean.	Maximum.	Mean.
Winter,	Nov., Dec., Jan.,	2^{h} 10^{m} A.M.	8^{h} 36^{m} A.M.	0^{h} 10^{m} P.M.	3^{h} P.M.—11^{h} P.M.
Spring,	Feb., March, April,	11^{h} 40^{m} P.M.	7^{h} 56^{m} A.M.	1^{h} 55^{m} P.M.	5^{h} 32^{m} P.M.
Summer,	May, June, July,	9^{h} P.M.—4^{h} A.M.	7^{h} 21^{m} A.M.	1^{h} 45^{m} P.M.	6^{h} 30^{m} P.M.
Autumn,	Aug., Sept., Oct.,	8^{h} P.M.—7^{h} A.M.	8^{h} 32^{m} A.M.	1^{h} 0^{m} P.M.	5^{h} 27^{m} P.M.
	Year,	1^{h} A.M.	7^{h} 57^{m} A.M.	1^{h} 30^{m} P.M.	5^{h} 53^{m} P.M.

It will be seen that the variation of the pressure of the wind obeys a law analogous to that of the variation of temperature, while the sun is above the horizon; it follows the ascent and descent of the sun, however, more closely than the temperature: thus, in winter the mean pressure of the wind occurs almost exactly at sunrise and at sunset, and the maximum occurs immediately after mid-day, in all instances anticipating the corresponding epochs for the temperature by an hour or more. A similar difference is observable in each quarter; this will be seen most satisfactorily in Plate IX., where the dotted curves of wind pressure are projected on the same mean or zero lines; as the curves for the temperature of the air: while the day portions of the curves are evidently connected with each other, this is not the case during the night; the minimum pressure of wind has upon the whole the same relation to midnight that the maximum has to mid-day. In winter the pressure varies irregularly from hour to hour during the night; in summer and autumn the pressure is nearly constant for some hours before and after midnight. When we consider the mean for the year, we find the ordinates of equal value in the day portion of the curve at times equidistant from 1^{h} P.M., and in the night portion of the curve, from 1^{h} A.M.: the pressure of the wind, therefore, is related more directly to the position of the sun than to the temperature of the place, especially during the night.

The range of the mean diurnal variation is least in winter, and it is greatest in spring and summer—the ranges are—

Winter = 0·26 lb. Spring 0·53 lb. Summer 0·50 lb. Autumn 0·35 lb. Year 0·37 lb.

Table 93.—Number of Observation Hours in 24 at which (within 10^m) the Wind blew with a force of 0·1 lb. or upwards, for each Month in the Years 1843–6.

Year.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Mean.
1843	18·0	16·2	11·6	12·9	15·3	17·7	14·7	9·3	10·2	15·5	12·4	16·8	14·2
1844	8·6	12·3	14·7	14·3	10·2	16·0	11·3	16·1	17·7	17·0	17·7	6·8	13·6
1845	14·4	18·7	20·3	16·2	20·7	18·3	17·8	18·2	15·8	21·1	15·2	19·6	18·0
1846	15·9	16·8	14·6	17·2	19·5	15·7	21·0	17·8	17·5	18·8	17·7	17·7	17·5
Mean	14·2	16·0	15·3	15·1	16·4	16·9	16·2	15·3	15·3	18·1	15·7	15·2	15·8

203. *Annual Variation of the Number of Observation Hours at which the Wind was observed to blow with a force of* 0·1 *lb. or upwards.*—Four years' observations are evidently insufficient to shew this annual variation free from irregularity. The wind blew during the greatest number of hours in October and in June, and it blew during the least number of hours in January. See Table 93.

Table 94.—Mean Pressure of the Wind while blowing, for each Month in the Years 1843–6.

Year.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Mean.
	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.
1843	1·66	1·27	0·65	0·89	0·62	0·55	0·56	0·45	0·38	0·58	0·92	1·00	0·79
1844	0·96	0·73	0·85	0·69	0·46	0·75	0·33	0·56	0·46	0·80	0·86	0·33	0·65
1845	0·76	0·66	0·95	0·91	0·77	0·73	0·53	0·50	0·43	0·72	0·80	1·19	0·75
1846	0·70	0·67	0·99	0·48	0·67	0·56	0·56	0·26	0·25	0·55	0·63	0·49	0·57
Mean	1·02	0·84	0·86	0·74	0·65	0·65	0·50	0·44	0·38	0·66	0·80	0·75	0·69

204. *Annual Variation of the Mean Pressure of the Wind while blowing.*—We have in No. 199 considered the annual variation of the mean pressure of the wind with reference to time, the sums of the observed pressures being divided by the whole number of observations; in the present case the sums of the observed pressures are divided only by the number of observations for which the wind was blowing: thus, in November 1843, the wind was observed blowing at little more than half the whole number of observation hours; consequently the mean pressure with reference to the whole number of observations for that month (Table 90) is only a half of the mean pressure with which the wind was observed blowing (Table 94). The law is the same for both means, but it is better marked in the present case than in that of No. 199. *The wind blows with the greatest force in January, and with the least force in September.*

205. *Diurnal Variation of the Number of Observation Hours at which the Wind was observed blowing.*—The following are the mean numbers of times, at which the wind was observed blowing 0·1 lb. or upwards, in the four years 1843–6 :—

12^h	1^h A.M.	2^h	3^h	4^h	5^h	6^h	7^h	8^h	9^h	10^h	11^h	0^h	1^h P.M.	2^h	3^h	4^h	5^h	6^h	7^h	8^h	9^h	10^h	11^h
150	156	155	164	162	163	176	190	214	224	242	251	262	266	266	258	249	240	225	211	186	169	162	160

The wind blew most frequently at 1^h 40^m P.M., the epoch of maximum temperature; it blew seldomest about 1^h A.M.

206. *Diurnal Variation of the Mean Pressure of the Wind while blowing* (see No. 204). The following are the means for each hour, as deduced from the observations for the four years 1843–6 :—

12^h	1^h A.M.	2^h	3^h	4^h	5^h	6^h	7^h	8^h	9^h	10^h	11^h	0^h	1^h P.M.	2^h	3^h	4^h	5^h	6^h	7^h	8^h	9^h	10^h	11^h
lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.
0·67	0·67	0·65	0·69	0·70	0·71	0·67	0·64	0·70	0·77	0·78	0·80	0·78	0·80	0·80	0·75	0·70	0·67	0·61	0·58	0·61	0·65	0·67	0·69

These numbers still present several irregularities; on the whole, however, the wind blows with the greatest force about 1^h P.M., and with the least force about 7^h P.M., or about an hour after noon and an hour after sunset respectively; another minimum of force occurs at 7^h A.M., an hour after sunrise, and a secondary maximum occurs between 11^h P.M. and 5^h A.M., the exact epoch is not deducible from these means; the means for 1844 and 1845 only, place it near midnight.

207. *Yearly Mean Value and Direction of the Resultant Wind.*—From the last line of Table 95, it appears that the direction of the resultant wind was nearly constant in each of the three years, 1843, 1844, and 1845.—1846 appears to have been quite anomalous; in each of the former years there are eight or nine months in which the resultant wind blows from between west and south, for only two or three of these months is the resultant nearer south than west; but in 1846 there are ten months, for which the resultant wind blows from between south and west, and for eight of these it is nearer south than west.

If we neglect the year 1846, the winds at Makerstoun are equivalent to one continuous wind blowing from nearly WSW. with a force approximately of about two-tenths of a pound on a square foot of surface.

TABLE 95.—Values and Directions of the Resultant Winds, with the Sums of the Pressures of the Wind resolved into the four Cardinal Points of the Compass, for each Month of the Years 1843–6.

Month.	1843.		1844.		1845.		1846.		1843–6.				1843–6.	
	Resultant.		Resultant.		Resultant.		Resultant.		Sums of Pressures observed at the 24 Observation Hours for 100 Days in each Month, resolved into				Resultant.	
	Mean.	Direction.	Mean.	Direction.	Mean.	Direction.	Mean.	Direction.	N.	E.	S.	W.	Mean.	Direction.
	lb.	°	lb.	°	lb.	°	lb.	°	lb.	lb.	lb.	lb.	lb.	°
Jan.	0·93	W. 17 S.	0·27	W. 8 S.	0·36	S. 29 W.	0·37	S. 43 W.	172	45	700	933	0·43	W. 29·5 S.
Feb.	0·43	N. 8 W.	0·14	W. 37 N.	0·22	W. 9 S.	0·38	W. 34 S.	534	161	408	565	0·18	W. 17·3 N.
Mar.	0·04	S. 31 E.	0·20	W. 5 N.	0·39	W. 2 S.	0·52	S. 38 W.	332	153	580	667	0·24	W. 26·3 S.
April	0·26	W. 23 S.	0·35	W. 32 S.	0·15	N. 7 E.	0·21	N. 24 E.	423	174	406	423	0·10	W. 3·9 N.
May	0·20	E. 4 N.	0·16	N. 24 E.	0·28	N. 11 E.	0·32	S. 44 W.	446	377	313	317	0·06	N. 24·2 E.
June	0·12	N. 4 E.	0·34	W. 30 S.	0·34	S. 44 W.	0·30	S. 39 W.	223	133	540	549	0·22	W. 37·4 S.
July	0·29	W. 37 S.	0·06	W. 4 N.	0·13	W. 43 S.	0·38	S. 44 W.	140	88	445	451	0·20	W. 40·0 S.
Aug.	0·18	S. 26 W.	0·18	W. 15 S.	0·16	W. 29 N.	0·07	S. 30 W.	186	79	292	332	0·11	W. 22·7 S.
Sept.	0·06	W. 24 N.	0·07	W. 33 S.	0·15	W. 29 S.	0·05	S. 34 W.	161	111	238	267	0·07	W. 26·1 S.
Oct.	0·19	W. 1 S.	0·23	S. 43 W.	0·45	W. 34 S.	0·08	W. 35 S.	249	156	543	613	0·23	W. 32·8 S.
Nov.	0·33	W. 24 S.	0·14	S. 23 E.	0·44	S. 32 W.	0·28	S. 15 W.	176	192	705	505	0·26	S. 30·7 W.
Dec.	0·69	W. 40 S.	0·06	E. 30 S.	0·69	W. 16 S.	0·24	N. 40 W.	262	42	546	790	0·33	W. 20·8 S.
Year	0·20	W. 21 S.	0·13	W. 21 S.	0·23	W. 23 S.	0·19	W. 41 S.	274	143	477	535	0·18	W. 27·3 S.

208. *Annual Variation of the Force and Direction of the Resultant Winds.*—The details of these discussions will be found in pages 64 and 84 of this volume, p. 295, 1843, and p. 434, 1844. From Table 95, it appears that—

1*st*, The sums of pressures of the northerly winds are greatest in the months of February, March, April, and May; they are least in the months of July, August, September, and November.

2*d*, The sums of pressures of the easterly winds are twice a maximum and twice a minimum in the year; they are a principal maximum in May, and a secondary maximum in November; they are a minimum in July and August, and in December and January.

3*d*, The sums of pressures of the southerly winds are greatest in November and January, and they are least in September.

4*th*, The sums of pressures of the westerly winds are greatest in December and January, and they are least in September.

5*th*, When we examine the approximate mean forces of the resultant wind for each month, we find that on the whole they exhibit two maxima and two minima in the course of the year. The resultant wind is a principal maximum in January, and a secondary maximum in June and July; it is a minimum in May and in September.

6*th*, The direction of the resultant wind is from 17° north of west in February, from 4° north of west in April, from 24° east of north in May, and from between west and south in the remaining nine months of the year.

Of the nine months in which the resultant wind is from between west and south, there are eight, for which it occurs between W. 20° S., and W. 40° S., or nearly between WSW. and SW.; in November the resultant wind is most southerly, coming from W. 59° S. nearly SW by S.

209. If we compare the mean of the pressures observed in all directions (last line of Table 90), in each month, with the resultant mean pressure of the wind, the ratio will evidently give some measure of the variability of the wind; where, by variability is meant the amount of opposedness of the masses of air in motion during the period considered, without relation to the frequency of the oppositions; the ratios are for each month as follow:—

Jan.	Feb.	Mar.	April,	May,	June,	July,	Aug.	Sep.	Oct.	Nov.	Dec.
1·5	3·1	2·3	4·6	7·5	2·0	1·7	2·5	3·4	2·2	2·0	1·6

Of the whole amount of air in motion during each month, the greatest proportions proceed from one quadrant or direction in December and January, the coldest period of the year, and also in July, the hottest month of the year; the winds are most equally distributed in all the quadrants in the months of April and May; a secondary maximum of variability occurring again in September.

210. *Diurnal Variation of the Resultant Mean Pressure of the Wind.*—The following are the values of the resultant mean pressure for each hour, as deduced from the observations for the years 1843–6:—

12^h	1^h A.M.	2^h	3^h	4^h	5^h	6^h	7^h	8^h	9^h	10^h	11^h	0^h	1^h P.M.	2^h	3^h	4^h	5^h	6^h	7^h	8^h	9^h	10^h	11^h
lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.
0·15	0·15	0·16	0·17	0·17	0·17	0·16	0·16	0·21	0·23	0·25	0·25	0·25	0·27	0·24	0·21	0·19	0·18	0·15	0·15	0·15	0·15	0·15	0·16

From these means the maximum occurs before 1^h P.M., and the minimum occurs between 6^h P.M. and 1^h A.M.

211. *Diurnal Variation of the Direction of the Resultant Wind.*—It was first pointed out in the volume of Makerstoun Observations for 1843, p. 300, that the direction of the resultant wind had a diurnal variation, being more towards the south of west in the morning and evening than about mid-day; this result was confirmed with great distinctness in the discussion of the Observations for 1844 (vol. 1844, p. 438, and Plate XVI.); an equally distinct result has been obtained from the observations for 1845 (p. 64 of this volume); this has not been the case with the observations for 1846, a year which, when compared with the others, was anomalous in all its resultant directions (see No. 207). The following Table contains the means of the resultant directions of each month for the years 1844 and 1845, and for the four years 1843–6, each year receiving an equal value, and the means for the four years being obtained, as described No. 26.

TABLE 96.—Diurnal Variation of the Direction of the Resultant Wind.

Mak. Mean Time.	Mean of		Mak. Mean Time.	Mean of	
	1844–5.	1843–6.		1844–5.	1843–6.
h.	°	°	h.		°
12	W. 30 S.	W. 28 S.	0	W. 15 S.	W. 25 S.
13	W. 36 S.	W. 35 S.	1	W. 12 S.	W. 24 S.
14	W. 34 S.	W. 34 S.	2	W. 9 S.	W. 19 S.
15	W. 31 S.	W. 32 S.	3	W. 8 S.	W. 17 S.
16	W. 35 S.	W. 36 S.	4	W. 16 S.	W. 23 S.
17	W. 31 S.	W. 33 S.	5	W. 21 S.	W. 26 S.
18	W. 30 S.	W. 30 S.	6	W. 22 S.	W. 25 S.
19	W. 28 S.	W. 27 S.	7	W. 25 S.	W. 27 S.
20	W. 18 S.	W. 22 S.	8	W. 39 S.	W. 39 S.
21	W. 13 S.	W. 23 S.	9	W. 38 S.	W. 35 S.
22	W. 10 S.	W. 19 S.	10	W. 38 S.	W. 35 S.
23	W. 11 S.	W. 20 S.	11	W. 30 S.	W. 28 S.

The range of the variation for the four years 1843–6 is somewhat diminished by the anomalous numbers for 1846; but both series agree in shewing the resultant wind to be most westerly about 3^h P.M., and most southerly between 8^h P.M. and 4^h A.M.

212. The following numbers are the ratios for each second hour of the hourly mean pressures observed in all directions (obtained from the year-column of Table 92, by the addition of 0·46, the mean pressure for the 4 years), to the resultant mean pressures, No 210.

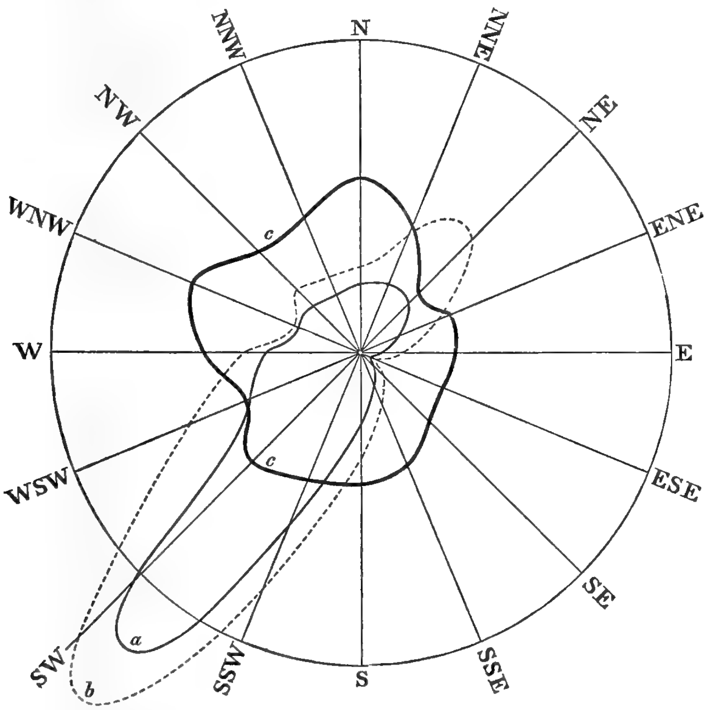
12^{h}	2^{h} A.M.	4^{h}	6^{h}	8^{h}	10^{h}	0^{h}	2^{h} P.M.	4^{h}	6^{h}	8^{h}	10^{h}
2·1	2·1	2·1	2·3	2·3	2·4	2·6	2·8	2·9	2·8	2·4	2·2

We may conclude, as in No. 209, that of the total mass of air in motion at each hour, the greatest proportion was from the *same* quadrant or direction at 2^{h} A.M., and the greatest proportion was from *opposite* directions at 4^{h} P.M.

213. *Times which the Wind blew from the* 16 *Principal Points of the Compass.*—The times which the wind was observed blowing from *each* point of the compass, at the observation hours, are given for each year in the previous and in the present volume; for 1843 and 1846 the sums for 12 two-hourly observations are given, having doubled these to make them comparable with the means from the hourly observations of 1844 and 1845, the sums for four years for each point were obtained: the sums for each of the 16 principal points were then formed in this manner;—the sum of the times in the north was made equal to half the sum of the times in N by W., *plus* half the sum of the times in N by E., *plus* the sum of the times observed in N.; and similarly for each of the other 16 points.* The sums thus obtained from the four years' observations are as follow:—

N.	NNE.	NE.	ENE.	E.	ESE.	SE.	SSE.	S.	SSW.	SW.	WSW.	W.	WNW.	NW.	NNW.
779	1318	1668	867	431	177	329	575	1088	2672	4212	1949	1198	726	932	866

The wind blew most frequently with a pressure of 0·1 lb., or upwards, from a few degrees south of SW., the number of times diminishes rapidly to WNW., increases slightly in NW., diminishes from thence to N., it then increases considerably to a few degrees north of NE., where the secondary maximum occurs almost diametrically opposite to the principal maximum of frequency; from NE. the frequency diminishes to a few degrees south of ESE., where it is a principal minimum, a secondary minimum occurring in the opposite point; from ENE. the number increases rapidly to the maximum at SW. See curve *b* in the figure.



Radial scales. *a*, 1 inch = 2000 lbs. *b*, 1 inch = 2000 times. *c*, 1 inch = 1 lb.

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* The combination into the 16 principal points was rendered necessary by the fact, that in observing the direction of the wind from an oscillating vane-index, there is a tendency in all cases of doubt to prefer the principal to the secondary point, for which reason the numbers of observations for each of the 16 principal points were always greater than for either of the two adjacent points.

214. *Sums of the Pressures with which the Wind blew from each of the* 16 *Principal Points of the Compass.*—Following the same procedure as in No. 213, we obtain the following sums of pressure from four years' observations, of 24 a-day, the sums being of the maximum pressures observed within 10^m at the hours of observation. (See No. 198.)

N.	NNE.	NE.	ENE.	E.	ESE.	SE.	SSE.	S.	SSW.	SW.	WSW.	W.	WNW.	NW.	NNW.
lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.
711	757	722	442	217	84	163	362	749	1945	3411	1262	990	693	689	654

The sums of pressures obey nearly the same laws as the frequency with which the wind blew; the greatest sum of pressures occurred a few degrees south of SW.; the sum then diminishes to W., varies little from WNW. to N. being, on the whole, less at NNW. than for the adjacent points; it becomes a secondary maximum about NE. by N., a principal minimum at ESE. (See curve *a* in the figure, p. ci.)

215. *Mean Pressure with which the Wind blew from each of the* 16 *Principal Points of the Compass.*—Dividing the sums of pressures for each of these points (No. 214) by the number of observations for which the wind was observed blowing at 0·1 lb., or upwards (No. 213), we obtain the following mean pressures with which the wind blew from each of the 16 points:—

N.	NNE.	NE.	ENE.	E.	ESE.	SE.	SSE.	S.	SSW.	SW.	WSW.	W.	WNW.	NW.	NNW.
lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.
0·91	0·57	0·43	0·51	0·50	0·47	0·50	0·63	0·69	0·73	0·81	0·65	0·82	0·95	0·74	0·75

The wind blew with the greatest force from WNW. and N., and with the least force from NE. and ESE., but the mean force was nearly constant between NE. and SE. The mean force with which the wind blew between NNE. and SSE. = 0·52 lb., between NNW. and SSW. = 0·78 lb., or in the ratio of 2 to 3. When the projection of the previous values upon the directional radii are connected, a very symmetrical figure is formed, having three minima at intervals of about 80°, namely, at NE., NW by N., and WSW. (See curve *c* in the figure, p. ci.)

MOTIONS OF DIFFERENT CURRENTS OF AIR.

216. *Difference of the Directions of Motion of the Upper and Lower Currents of Air.*—The mode in which the directions of motion of the clouds were observed is described in the introductions to the previous volumes in the section, "State of the Sky." The process by which the results for the differences of motion of the different currents were obtained by the combination of simultaneous observations, will be found stated in the volume for 1844, p. 440. The detailed results for each of the four years 1843–6 are given in separate tables in the present and in the previous volumes. The total number of comparisons of the currents of scud, cirro-stratus, and cirrus, with the surface-current, and of the cirro-stratous and cirrous-currents with the scud-current, was in 1843, 865; the numbers of results (each of from five to two comparisons) were in 1844, 995; in 1845, 964; and in 1846, 541. In the discussion for 1843 only one or two simultaneous observations were termed a comparison; from five to two simultaneous observations were termed a result for the three following years (see 1844, p. 440); but as the values of the final results for each year were not considered greatly different, the numbers of comparisons of 1843, diminished by a tenth, have received the weight of the results in the following years, and the numbers of results for 1846 were increased by a half in the combinations given below. The weights of the four years 1843, 1844, 1845, and 1846, were taken on the whole, therefore, as 779 : 995 : 964 : 811.

217. The scud-current includes the cumulus; the cirro-stratous current includes also the cloud termed in the Makerstoun Observations the cirro-cumulo-stratus: this cloud, so frequently seen, has received no name in Mr HOWARD's classification; it belongs to the region of the cirro-strati, and is composed of great numbers of clouds like small cirro-strati, arranged with a cirro-cumulous disposition. After this name had been applied to this cloud for some time, I discovered that Mr HOWARD had given it already to the Nimbus. The cirrous current includes the cirro-cumulus. The order of reckoning being from north, by the east, south, and west, one current is considered positive of another when it proceeds from a point more southerly in the eastern semi-circle and more northerly in the western semi-circle.

218. When we consider the results for each quadrant, we find they present differences, both in the values and signs of the mean differences of the directions of motion; in three of the quadrants, however, namely E to S., S to W., and W to N., the signs are the same; in every case the mean upper currents proceed from points positive of the currents below them. In the quadrant S to W. by far the greatest number of results have been obtained, and they are by far the most regular and distinct. Thus, in 774 results, each obtained from several comparisons of the current of scud with the surface-wind, 664 shewed the scud-current to proceed from a point

24° more northerly than the surface wind; while there were only 58 results shewing a more southerly motion, and 19 in which both currents proceeded from the same point. It might be supposed that the regular difference of these currents was due to some peculiar configuration of the surface of the country around the Observatory, but this is disproved by the results of the comparison of the upper currents with each other; thus, the cirro-stratous current, compared with the scud-current, shews on the average of 255 results that the upper current proceeds from a point 14° more northerly than the lower current: a similar result is obtained from a comparison of the cirrous current with the scud-current.

TABLE 97.—Differences of the Directions of Motions of the Lower and Upper Currents of Air, as deduced from the Comparisons of the Direction of the Wind, and the Motions of the Clouds, for the Years 1843–6.

Currents.	Quadrant N. to E.			Quadrant E. to S.			Quadrant S. to W.			Quadrant W. to N.		
	No. of Results.	Mean Diffs. of Motion.	Mean Result.	No. of Results.	Mean Diffs. of Motion.	Mean Result.	No. of Results.	Mean Diffs. of Motion.	Mean Result.	No. of Results.	Mean Diffs. of Motion.	Mean Result.
		°	°		°	°		°	°		°	°
Scud *minus* Wind.	227	+23	+7	76	+24	+13	664	+24	+20	166	+20	+ 9
	111	−25		20	−23		58	−13		57	−18	
	12	0		9	0		19	0		15	0	
Cir.-str. *minus* Wind.	64	+40	+2	46	+31	+20	371	+40	+33	113	+27	+11
	46	−51		11	−25		43	−19		38	−35	
	3	0		1	0		12	0		6	0	
Cir.-str. *minus* Scud.	50	+36	−1	41	+21	+ 9	190	+27	+14	107	+26	+ 1
	52	−37		11	−26		61	−18		79	−33	
	16	0		15	0		34	0		27	0	
Cirrus *minus* Wind.	20	+58	+6	15	+60	+57	190	+45	+36	51	+31	+15
	16	−59		0	...		26	−23		13	−41	
	0	0		1	0		10	0		7	0	
Cirrus *minus* Scud.	20	+35	−2	18	+54	+38	107	+36	+20	81	+27	+ 7
	17	−45		2	−84		33	−26		33	−41	
	2	0		1	0		12	0		13	0	

219. It happens frequently that comparisons of the motions of two currents are obtained when the others do not exist, or are not evident from the absence of clouds within them or from the masses of clouds in the lower current; it is for this reason that the comparison of motions above, obtained from observations partly simultaneous and partly not, are to a considerable extent independent of each other; yet it will be seen that they in general confirm each other. Thus, the differences of the mean results for the first two comparisons (in Table 97) should give the difference for the third; so in the quadrant S. to W. we have 33°—20° = +13°; and the partly independent comparisons for the cirro-stratous *minus* the scud-current, give +14°; and as the differences of the first and fourth comparisons should give the fifth (in Table 97), we have 36°—20° = +16°; and the partly independent comparisons for the cirrus *minus* scud, give +20°. We obtain similar results in the quadrants E. to S. and W. to N., but the differences of the motions are less marked. This appears to be due chiefly to the greater proportion of negative results in these two quadrants. The means for the *positive* results do not differ greatly in any of the quadrants. In the quadrant N. to E. we find all the three cloud-currents positive of the surface-current, but only to the extent of 2° in the case of the cirro-stratous current; while the cirro-stratous and cirrous currents appear on the whole 1° or 2° negative of the scud-current. These differences appear due to causes belonging chiefly to the sudden appearances of the north-east winds, which are chiefly surface-winds, and are nearly or altogether unconnected with the upper currents.

220. When we combine the results in the four quadrants for each class of comparisons, we have the following means:—

Scud-current *minus* surface-current,	mean of 1434 results,	= +14°·5
Cirro-stratous current *minus* surface-current,	mean of 754 results,	= +22°·8
Cirrous current *minus* surface-current,	mean of 349 results,	= +29°·6
Cirro-stratous current *minus* scud-current,	mean of 683 results,	= + 6°·9
Cirrous current *minus* scud-current,	mean of 339 results,	= +13°·7

It appears, then, that if we take the mean direction of the surface-current as W. 21° S., the directions of the four currents will be nearly as follow :—

Resultant direction of the surface-wind (No. 207),	W. 21° S.
.... scud-current,	W. 7° S.
.... cirro-stratous current,	W. 2° N.
.... cirrous current,	W. 9° N.

The mean resultant direction for the three cloud-currents, giving each an equal value, is W. 1° N. The mean resultant direction of all the currents, giving each an equal value, is W. 4° S.

221. If we neglect the distinctions of the upper currents, and consider merely the differences of all the results for the cloud-currents compared with the surface-wind, we obtain the following numbers :—

Quadrant N. to E.,	499	results, mean upper current *minus* surface-current,	= + 5°·8
.... E. to S.,	179	....	= + 19°·1
.... S. to W.,	1393	....	= + 26°·6
.... W. to N.,	466	....	= + 10°·6

The mean upper current, therefore, is least positive of the surface-current in the quadrant N. to E., and it is most positive in the quadrant S. to W.; the mean result for each couple of *opposite* quadrants is nearly the same, namely, 15° and 16°.

222. If we compare in a similar manner the mean cirro-stratous and cirrous current with the scud-current in each quadrant, we have,—

Quadrant N. to E.,	157	results, mean cirro-stratous and cirrous current *minus* scud-current,	= − 1°·2
.... E. to S.,	88	....	= + 15°·9
.... S. to W.,	437	....	= + 16°·1
.... W. to N.,	340	....	= + 3°·2

In the quadrant N. to E. the mean of the two upper currents seems to differ nothing from the scud-current, and nearly the same seems to hold for the quadrant W. to N.; but in the southern quadrants the mean upper current is positive of the scud-current 16°.

223. It appears, then, from the previous numbers, that the mean upper current always proceeds from a point positive of the direction of the *surface*-current, and that the motion of the mean of the higher currents, compared with the motion of the scud-current, obeys the same law in the southern quadrants. These results are in accordance with the conclusions from the causes of the oblique motions of the aërial currents. Currents of air proceeding northwards from more southerly positions retain a portion of the excess of eastward velocity of the places from which they start; hence the south-easterly winds become more southerly, and the south winds become more south-westerly, as they proceed northwards; the extent of the change of direction depending on the greater or less rapidity with which they lose their excess of eastward velocity and acquire that of the more northerly latitudes on which they move. This loss of eastward velocity will depend upon the proximity of the aërial stratum to the surface of the earth, and therefore the lower currents of air will lose more of their eastward velocity than the higher currents, and the upper current of southerly winds will become more westerly than the lower currents. If, in considering the currents of air which proceed southwards from more northern latitudes, we remember that the lower currents, from their proximity to the surface of the earth, acquire the greater eastward velocity of the lower latitudes more quickly than the upper currents, it will be evident that the lowest current from the north-west should become less northerly than the upper current, and that the lower current from the north should become less easterly than the upper current. This, it will be observed, agrees with the results previously obtained; we find, however, in the northern quadrants, that the scud-current differs less from the surface-current than it does in the southern quadrants; this, it is conceived, is due to the fact that this current is nearer the surface in the northern than in the southern quadrants: it may, however, be due also to the greater proximity of the *origin* of the currents. We find also that the mean upper currents differ little or nothing from the scud-current in the northern quadrants; it is only necessary to examine the numbers in Table 97 to see that this is not due to the smallness of the differences of motions of these currents, but to the numbers of positive and negative results being more nearly equal. It has been frequently observed that when the lower current of scud is from a north-easterly point the current of cirri is from a north-westerly point; these currents could not have had the same origin, and therefore the explanation of the differences of motions given above cannot apply; this difference of origin occurs in all the quadrants, and diminishes the apparent effect of the variable velocity of the earth's surface; it occurs seldomest in the south-west quadrant.

EXTENT OF SKY CLOUDED.

224. *The Mean Extent of Sky Clouded*, from 8 years' observations, $=6 \cdot 98$, totally clouded, being $=10 \cdot 0$.

TABLE 98.—Monthly Means of the Estimated Extent of Clouded Sky, the whole Sky covered being 10, for the Years 1842–50.

Year.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Mean.
1842					6·32	5·80	7·36	7·15	7·42	5·99	7·46	6·30	
1843	6·40	7·38	6·88	7·77	7·82	7·72	7·87	6·33	5·26	6·20	6·10	6·94	6·89
1844	6·01	6·50	6·30	6·50	6·77	8·12	7·83	7·36	6·95	6·97	8·24	6·96	7·04
1845	7·17	6·69	6·41	6·54	8·34	7·68	8·03	7·97	7·37	7·64	6·56	6·08	7·21
1846	8·06	7·80	7·05	8·27	7·00	5·98	8·71	7·05	7·27	7·21	7·34	5·76	7·29
1847	7·95	5·55	7·45	6·55	7·39	7·03	6·88	7·14	6·04	7·38	6·33	5·96	6·81
1848	6·04	7·67	7·07	7·74	6·45	7·81	7·47	7·03	6·19	6·95	6·76	5·58	6·90
1849	7·17	6·98	7·24	7·77	7·11	5·99	7·23	7·78	6·68	5·98	6·77	5·61	6·86
1850	7·26	6·40	7·01	7·59									
Mean	7·01	6·87	6·93	7·35	7·15	7·02	7·67	7·25	6·65	6·79	6·94	6·15	6·98

225. *Annual Variation of the Extent of Clouded Sky.*—In the mean of 8 years the sky was most clouded in July and least clouded in December; the change from month to month is by no means regular; on the whole, however, the extent of sky clouded is greatest for the 5 months April to August, and it is least in the 4 months September to December. The means for these groups of months are as follow:—

Jan.—Mar. $=6 \cdot 94$. April—August $=7 \cdot 29$. Sept.—Dec. $=6 \cdot 63$.

The means for the meteorological quarters are,—

Winter, Dec.–Feb. $=6 \cdot 68$. Spring, Mar.–May $=7 \cdot 14$. Summer, June–Aug. $=7 \cdot 31$. Autumn, Sept.–Nov. $=6 \cdot 79$

The least extent of sky clouded for any month in the 8 years occurred September 1843 $=5 \cdot 26$.
The greatest extent of sky clouded for any month in the 8 years occurred July 1846 $=8 \cdot 71$.
The mean for the month of December in each year was less than the mean for the year; and the mean for the month of July in each year was greater than the mean for the year.

226. *Variation of the extent of Clouded Sky, with the Moon's Age.*—It is well known that no heat has been detected in the moon-light even with the aid of the largest parabolic reflectors; it was conceived possible, however, that though no thermal indication could be obtained at the surface of the earth, yet there might be some found in the dissipation or formation of clouds in the upper regions of the atmosphere; the observations of the extent of clouded sky for 1843 were accordingly discussed for this purpose in the volume for that year, page 303: the result was very indefinite; it was remarked, however, that as no observations were made in that year between 9^h P.M. and 5^h A.M., the period when the moon's heating effect must be greatest, little else could have been expected. In the volume for 1844, p. 443, the discussion was repeated; from it the extent of clouded sky appeared on the whole greater about full moon than about new moon;—thus, the daily mean for the 15 days about full moon $= 7 \cdot 05$, whereas the daily mean for the 15 days about new moon $= 7 \cdot 14$; and the daily mean for the 7 days about full moon $= 6 \cdot 94$, and about new moon $= 7 \cdot 24$. The difference of these numbers is still very small, and it was remarked (1844, p. 443), on account of the irregularities introduced by the sun's cloud-forming power, that it might be desirable to limit the investigation to the hours of the night; this has been done for the years 1844 and 1845 in the present volume, Table XXXIX., page 66, where the extent of clouded sky is given for each day of the moon's age and position in declination in each year, as deduced from the 6-hourly observations between 9^h P.M. and 2^h A.M. It will be seen from No. 229 that the variation of the extent of clouded sky in the mean of the year is small for these hours, which include the epoch

of the minimum in the diurnal variation; they are also the night-hours during which the effect of the full moon must be greatest: upon the whole, this mode of determining the fact, from a short series of observations, seems open to the fewest objections. The following Table contains the means for groups of 3 or 4 days.

TABLE 99.—Variations of the Extent of Clouded Sky for the Six Observation Hours 9^h P.M. to 2^h A.M., with reference to the Moon's Age and Declination for the Years 1844–5.

Moon's Age.	1844.	1845.	Mean.	After Moon farthest North.	1844.	1845.	Mean.
d. d.				d. d.			
14—16	+0·16	+0·55	+0·35	27— 1	+0·63	−0·37	+0·13
17—20	+0·58	+0·59	+0·58	2— 5	+0·21	−0·56	−0·17
21—24	−0·33	−0·51	−0·42	6— 8	−0·03	−0·14	−0·08
25—28	−0·33	−0·51	−0·42	9—12	−0·28	−0·12	−0·20
29— 1	−0·29	−0·39	−0·34	13—15	+0·44	+0·42	+0·43
2— 5	+0·22	−0·62	−0·20	16—19	−0·23	−0·06	−0·15
6— 9	+0·51	+0·02	+0·26	20—22	−0·85	+0·80	−0·02
10—13	−0·52	+0·76	+0·12	23—26	+0·12	+0·01	+0·06

227. The values for each year indicate that the extent of sky clouded was greatest about full moon, and least about new moon; this is shewn with greatest distinctness in the means for 1845. We obtain the same result if we take from Table XXXIX., p. 66, the means for the 15 days with full moon in the middle, and for 15 days with new moon in the middle; these are, for 1844, 6·72 and 6·37; for 1845, 7·10 and 6·23 respectively.

$$\text{For the years 1844 and 1845, } \begin{cases} \text{the mean 15 days about full moon} = 6{\cdot}91 \\ \text{the mean 15 days about new moon} = 6{\cdot}30. \end{cases}$$

It may be a question still, how far error of estimating the extent of clouded sky in the presence and in the absence of the moon may enter into the production of this result. It is conceived that the effect of error in estimation must be nearly constant: in dark nights the extent of clouded sky was estimated by the space shewing *clear* stars; and it is not improbable that the extent of cloud might be rather over than under estimated during the absence of moon-light; an error which could only have diminished the distinctness of the result obtained. Before we refer the result to the heating effect of the moon, there are other co-ordinate facts to be considered with reference to the motion of the atmosphere. (See No. 200.) We may inquire, however, how far it agrees with the heating effect of the sun, thus;—the extent of clouded sky appears greatest in summer, and least in winter, it appears greatest near noon, and least near midnight; apparently, therefore, the heating effect is to *increase* the amount of cloud, and, *by analogy, we should have the greatest amount of cloud about full moon.**

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* Since the previous investigation was performed, I have met with a passage in Sir JOHN HERSCHEL'S very excellent "Outlines "of Astronomy," page 261, in which he supposes that the lunar heat is extinguished in the upper regions of the atmosphere; and adds, "Some probability is given to this by the *tendency to disappearance of clouds under the full moon*, a meteorological *fact* (for as such "we think it fully entitled to rank) for which it is necessary to seek a cause, and for which no other rational explanation seems to "offer." He adds as a note to the parenthesis,—"From my own observation, made quite independently of any knowledge of such "tendency having been observed by others. Humboldt, however, in his personal narrative, speaks of it as well known to the pilots "and seamen of Spanish America (H)."

Sir JOHN'S observations were probably purely *qualitative* not quantitative. I have much difficulty in making any objection to the conclusions of so accurate an observer, at the same time if his observations were not of comparative measurement, I must point to the previous conclusions from two years' estimations, and add my own *qualitative* observation for a considerable period, that the clouds are both *formed* and *dissipated* under the influence of full moon, and that they are chiefly cirro-cumuli, or of that kind which I have termed cirro-cumulo-stratus (See No. 217), noticed frequently during the existence of the aurora borealis as the growing and dissipating cloud. Whether the resultant is an excess or defect of cloud during full moon, as compared with other periods, I have no *impression*, and think it extremely difficult to have any. Sir JOHN refers, in an addendum, page xv. of his "Outlines," to what he conceives a fact confirmatory of his conclusion, thus:—"M. ARAGO has shown, from a comparison of rain registered, as having "fallen during a long period, that a slight preponderance in respect of quantity falls near new moon over that which falls near the "full. This would be a natural and necessary consequence of the preponderance of cloudless sky about the full, and forms, therefore, "part and parcel of the same meteorological fact." It will be seen, No. 235, that this result has also been obtained from the Makerstoun Observations, but it may still be a question whether it is confirmatory of Sir JOHN'S conclusion. When we compare the annual extent of sky clouded with the annual fall of rain, we do not find any direct connection: I do not know whether the diurnal

228. *Variation of the Extent of Clouded Sky with reference to the Moon's Position in Declination.*—The discussion has been performed for this argument also, and the resulting means are given Table XXXIX., p. 66; and for groups of days, in Table 99. The two years do not agree well. If the cloud depends upon the heating influence of the moon we should expect the greatest value for the most northerly position of the moon; the result, however, would only indicate the excess due to the higher positions of full moon over the lower positions, and as the latter occur in summer, the epoch of maximum cloud, the result becomes complicated with other causes of variation. From the mean of both years the numbers indicate an equal extent of sky clouded for the 14 days about the moon's farthest northerly, and for the 14 days about its farthest southerly positions. When four periods, of seven days each, are considered, the extent of sky clouded is on the whole 0·20 less for the mean of the groups for which the moon is near the equator than for either the northerly or southerly groups.

TABLE 100.—Diurnal Variation of the Estimated Extent of Clouded Sky, for each Astronomical Season and for the Year, deduced from the Observations of the Years 1843–6.

Mak. Mean Time.	Nov. Dec. Jan.	Feb. March. April.	May. June. July.	Aug. Sept. Oct.	Year.	Mak. Mean Time.	Nov. Dec. Jan.	Feb. March. April.	May. June. July.	Aug. Sept. Oct.	Year.
h. m.						h. m.					
12 15	-0·41	-0·43	-0·76	-0·53	-0·52	0 15	+0·59	+0·53	+0·49	+0·57	+0·57
13 15	-0·33	-0·62	-0·63	-0·53	-0·53	1 15	+0·52	+0·60	+0·38	+0·69	+0·55
14 15	-0·46	-0·41	-0·41	-0·53	-0·45	2 15	+0·58	+0·56	+0·20	+0·41	+0·45
15 15	-0·39	-0·30	-0·18	-0·17	-0·27	3 15	+0·64	+0·63	+0·26	+0·28	+0·44
16 15	-0·41	-0·49	-0·21	+0·08	-0·28	4 15	+0·55	+0·31	+0·03	+0·28	+0·30
17 15	-0·14	-0·23	-0·18	+0·28	-0·05	5 15	-0·09	+0·29	-0·06	+0·18	+0·08
18 15	-0·23	+0·02	+0·22	+0·32	+0·09	6 15	-0·38	-0·04	-0·15	+0·01	-0·14
19 15	+0·43	+0·26	+0·41	+0·41	+0·38	7 15	-0·57	-0·33	-0·15	-0·31	-0·34
20 15	+0·54	+0·29	+0·52	+0·35	+0·43	8 15	-0·40	-0·57	-0·34	-0·90	-0·56
21 15	+0·60	+0·52	+0·57	+0·28	+0·50	9 15	-0·43	-0·56	-0·33	-0·78	-0·53
22 15	+0·60	+0·52	+0·53	+0·52	+0·57	10 15	-0·86	-0·75	-0·36	-0·78	-0·69
23 15	+0·65	+0·52	+0·54	+0·60	+0·58	11 15	-0·63	-0·29	-0·48	-0·63	-0·52

229. *Diurnal Variation of the Extent of Clouded Sky.*—The variations in Table 100 have been obtained from the detailed tables for each year in the manner already described for the other meteorological variations. The following are the epochs of the maxima and minima, and mean extent of clouded sky for each quarter and for the year:—

		Maximum.	Mean.	Minimum.	Mean.
Winter,	Nov., Dec., Jan.,	9^h A.M.—3^h P.M.	6^h 35^m A.M.	10^h P.M.	5^h 25^m P.M.
Spring,	Feb., March, April,	9^h A.M.—3^h P.M.	6^h 10^m A.M.	10^h P.M.	6^h 10^m P.M.
Summer,	May, June, July,	9^h A.M.	5^h 40^m A.M.	12^h P.M.	4^h 35^m P.M.
Autumn,	Aug., Sept., Oct.,	1^h P.M.	3^h 55^m A.M.	8^h P.M.	6^h 15^m P.M.
	Year,	11^h 15^m A.M.	5^h 35^m A.M.	10^h 15^m P.M.	5^h 35^m P.M.

law of the amount of rain agrees with that of the extent of clouded sky. There is no doubt, however, that the way in which cloud is generated by the solar heat must be different from that in which it is generated by the lunar heat, the former is due chiefly to heating at the base of the atmosphere, the latter to heating in the upper region; in any case, however, it does not seem evident, from the above considerations, that the lunar heat should generate more cloud than it dissipates.

I may remark, in addition to the above, that the relation of the amount of rain to the amount of cloud must be chiefly a relation to certain kinds of cloud; those formed and dissipated in moonshine are not rain-clouds at all. May it not be for this reason, the conversion of a certain portion of aqueous vapour into clouds which are not rain-clouds that the least rain falls at full moon, while at new moon the same aqueous vapour is probably deposited below as rain-cloud? The cirri, the highest of all clouds, are, I am persuaded, clouds of *crystallization*; are they the least frequent in moonlight? does the moon heat not tend to dissipate them, and to convert them into watery cirro-cumulo-stratus?

I am strongly of opinion that the effect of the lunar influences in the upper regions of our atmosphere is of much greater importance than might seem at all probable: previous investigations have shown that the laws of magnetic disturbance vary more with the positions and age of the moon than with any other argument, and this is especially obvious when we regard the diurnal oscillations. It has also been shewn from the Makerstoun Observations for 8 years, that the frequency of the aurora borealis is greatest near full moon. Scattered throughout the Makerstoun Observations, there will be found frequent reference to remarkable operations occurring in the upper regions of the air near full moon, chiefly among the cirrus, cirro-cumulus, and cirro-cumulo-stratus; this frequency, it is believed, is not wholly due to the better opportunity of observing these processes by moonlight, although that may be partially the case.

I have used throughout the term "extent of clouded sky," because although there is a considerable probability that during a large series of observations the extent of sky clouded will be a measure of the amount of cloud, yet this is not absolutely certain.

The maximum extent of clouded sky occurs earliest in summer, at 9^h A.M., and latest in autumn, about 1^h P.M.; in the other two quarters, however, the value from 9^h A.M. till 3^h P.M. is nearly constant: the minimum occurs earliest in autumn, about 8^h P.M., and latest in summer, near midnight. In the mean for the year the maximum occurs near 11^h A.M. and the minimum near 10^h P.M. The morning mean value occurs earliest in autumn and latest in winter: the afternoon mean value occurs latest in autumn and earliest in summer.

230. *The ranges of the Diurnal Variations of the Extent of Clouded Sky* are as follow :—

Winter = 1·51, Spring = 1·38, Summer = 1·05, Autumn = 1·59. Year = 1·27.

The diurnal range is therefore least in summer and greatest in autumn and winter.

QUANTITY OF RAIN.

TABLE 101.—Quantity of Rain fallen at Makerstoun, according to the Observatory Rain-Gauge, for each Month in the Years 1832–1849.

Year.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Sum.
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
1832	1·58 ?	1·33	0·73	0·93	2·09	4·70	0·57	3·96	1·27	3·71	3·21	1·89	25·97
1833	0·42	2·03	2·85	1·27	0·87	3·67	1·96	1·39	2·30	2·03	1·30	4·40	24·49
1834	3·37	1·08	0·75	1·38	0·71	1·93	3·80	3·91	3·20	2·21	1·84	1·42	25·60
1835	0·04	2·93	1·29	0·76	1·79	0·51	0·92	2·12	2·96	3·20	3·90	1·50	21·92
1836	1·99	2·61	2·29	1·62	0·49	2·30	4·24	3·08	2·08	3·33	3·25	4·98	32·26
1837	3·03	1·47	1·99	3·18	1·09	2·21	5·67	3·13	2·22	1·35	1·55	2·13	29·02
1838	2·12	1·22	1·90	1·68	1·94	4·39	2·54	2·67	3·13	2·43	2·14	0·71	26·87
1839	1·68	0·98	1·98	0·31	0·43	2·86	2·14	2·13	4·25	3·34	2·82	2·22	25·14
1840	3·05	1·50	0·82	0·09	3·75	3·41	3·10	2·25	3·16	1·97	2·72	0·91	26·73
1841	2·46	1·17	1·39	1·99	1·60	1·87	2·65	4·07	3·68	5·95	2·63	2·14	31·60
1842	1·73	1·35	2·30	0·09	2·27	1·60	1·800	2·201	3·080	1·319	1·846	2·102	21·688
1843	1·978	1·926	0·934	2·231	3·237	1·311	2·676	2·752	1·080	3·645	2·038	0·949	24·757
1844	1·904	2·081	1·632	0·681	0·546	3·083	2·553	1·511	3·104	1·541	2·780	0·363	21·779
1845	1·325	0·712	1·283	1·261	2·217	2·935	1·460	3·158	1·838	4·247	1·699	1·853	23·988
1846	1·901	1·827	2·293	2·272	2·975	2·761	7·124	4·738	4·586	3·506	2·054	1·817	37·854
1847	0·624	0·484	0·330	1·201	4·335	1·970	2·099	1·035	1·375	2·778	1·839	4·006	22·076
1848	1·166	3·780	3·350	1·028	0·350	3·826	1·294	3·223	1·182	4·152	2·252	1·627	27·230
1849	2·775	1·305	0·929	2·480	2·831	2·379	2·383	2·547	1·973	2·417	1·309	2·000	25·328
Monthly Mean.	1·841	1·655	1·613	1·359	1·862	2·651	2·721	2·771	2·582	2·951	2·288	2·056	26·350
Daily Mean.	·0594	·0585	·0520	·0453	0·601	·0884	·0878	·0894	·0861	·0952	·0762	·0663	0·0722

231. The quantities in Table 101, from July 1842 till December 1849, were obtained from the Observatory gauge, which has its funnel-mouth 8 inches above the soil; the quantities from January 1832 till June 1842 are the amounts of rain found in the garden gauge (6½ feet above the soil), multiplied by factors, constant for each month, which express the ratios of the amounts of rain found in the Observatory gauge to those found in the garden gauge during 6 years; these ratios are as follow :—

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1·056	1·030	1·029	1·118	1·071	1·076	1·070	1·058	1·078	1·081	1·061	1·172

The amounts of rain, therefore, in Table 101 were either obtained directly from the Observatory gauge, or they are such as would have been obtained in that gauge.

232. The mean yearly amount of rain at Makerstoun by the Observatory gauge from 18 years' observations = 26·350 inches.

233. The least amount of rain for any of the 18 years was obtained in 1842, when it was 21·688 inches; the amounts for 1835 and 1844 were little more. The greatest amount of rain occurred in 1846, being 37·854 inches. The least monthly fall of rain occurred January 1835, being only 0·04 inch. The greatest monthly fall of rain occurred July 1846, being = 7·124 inches.

234. *Annual Variation of the Fall of Rain.*—From the means for 18 years at the foot of Table 101, the greatest amount of rain fell in October, and the least fell in April, the daily average for the latter month being rather less than half that for the former. The amounts of rain for the months of June, July, August, September, and October, differ little, the average daily fall for these 5 months being 0·0894 inch. The daily means for the quarterly groups with the greatest range of values are as follow :—

		in.			in.
Winter,	Nov., Dec., Jan.,	=0·0673	Summer,	June, July, Aug.,	= 0·0788
Spring,	March, April, May,	=0·0519	Autumn,	Sept., Oct., Nov.,	= 0·0902

Year, = 0·0722 in.

235. *Amount of Rain with reference to the Moon's Age.*—This discussion was given in the volume for 1844, p. 447. The result, as obtained from 6 years' observations of the Observatory gauge, may be stated shortly thus :—

The average daily fall of rain during the second and third quarters = 0·0654 inch.
.... fourth and first .... = 0·0750 inch.

So that a greater amount of rain fell about new than about full moon. (See Foot-note to No. 227.)

TABLES OF RESULTS

FROM THE

MAGNETICAL OBSERVATIONS

MADE AT THE OBSERVATORY OF

GENERAL SIR T. M. BRISBANE, BART.,

MAKERSTOUN.

1845 AND 1846.

TABLE I.—Mean Westerly Declination for each Civil Week-Day and Week in 1845.

Civil Day.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	25° ′	25° ′	25° ′	25° ′	25° ′	25° ′	25° ′	25° ′	25° ′	25° ′	25° ′	25° ′
1	12·78	15·12	13·48	11·48	11·19	[11·52]	10·70	11·16	09·81	11·53	08·93	08·21
2	13·78	[14·88]	[13·39]	12·16	10·65	11·32	10·55	11·51	11·63	11·41	[10·16]	09·10
3	14·20	14·55	13·34	11·77	10·17	11·26	11·76	[11·21]	10·25	11·43	11·10	10·29
4	13·47	14·38	13·52	12·17	[10·88]	12·46	11·34	12·33	10·85	11·31	09·77	06·86
5	[14·07]	16·13	13·28	11·52	10·90	11·43	10·99	10·44	09·89	[11·01]	11·64	10·21
6	14·27	14·73	13·52	[11·79]	10·81	10·86	[11·33]	11·36	10·41	11·41	10·77	08·51
7	14·00	14·17	13·83	12·17	11·57	11·31	10·81	10·88	[10·22]	10·44	12·06	[09·42]
8	14·73	13·77	14·10	11·76	11·59	[11·36]	11·96	12·57	11·25	10·07	11·00	08·75
9	11·87	[13·98]	[13·61]	11·38	11·43	11·01	11·10	11·82	09·26	08·40	[10·64]	08·22
10	11·04	13·35	13·41	11·84	11·04	11·01	10·85	[10·83]	10·04	10·79	10·08	08·99
11	14·60	13·79	13·12	11·46	[11·53]	12·56	11·04	09·99	09·89	11·04	09·63	08·16
12	[13·61]	14·05	13·66	11·53	11·31	11·39	12·02	09·54	10·87	[10·27]	10·28	08·90
13	15·53	13·39	14·84	[10·68]	11·71	10·40	[11·17]	10·19	09·79	10·50	09·91	07·57
14	14·77	14·04	13·18	06·59	12·09	10·76	10·97	09·21	[10·00]	10·22	10·19	[08·02]
15	13·84	13·57	13·83	11·38	11·48	[10·83]	11·16	11·43	09·70	10·70	10·07	06·96
16	14·88	[13·62]	[13·61]	11·30	12·19	11·23	11·00	10·51	10·17	10·88	[09·83]	08·01
17	14·65	13·52	13·48	11·00	11·45	11·03	11·07	[10·72]	09·59	11·89	11·53	08·55
18	15·26	13·59	13·18	11·05	[11·81]	10·19	11·13	11·39	10·15	10·29	08·31	08·43
19	[14·58]	13·59	13·13	09·66	12·78	11·21	11·28	11·13	10·77	[10·95]	08·99	08·32
20	13·31	13·86	13·02	[11·02]	12·22	10·93	[11·13]	10·63	09·89	11·37	09·09	07·53
21	14·58	13·55	13·25	11·20	10·72	11·64	11·45	10·16	[10·55]	10·73	08·10	[08·25]
22	14·82	14·42	13·23	11·39	10·68	[11·20]	11·32	10·67	10·75	10·56	08·62	08·18
23	14·38	[13·42]	[12·67]	11·84	11·55	11·42	10·55	10·66	10·81	11·08	[08·44]	08·37
24	14·21	11·37	13·53	13·00	11·97	10·71	10·33	[10·38]	10·94	11·73	08·53	08·68
25	14·38	13·33	11·04	12·44	[11·20]	11·28	12·47	10·39	10·66	11·39	08·30	08·05
26	[14·14]	13·98	11·96	12·51	11·01	10·97	10·93	10·03	11·82	[10·98]	07·98	07·97
27	13·21	12·61	12·33	[11·69]	11·27	11·11	[11·03]	10·39	09·71	11·13	08·03	08·47
28	13·52	14·12	11·69	09·57	10·71	11·42	11·01	09·73	[10·74]	10·47	09·07	[08·08]
29	15·16		12·33	11·28	11·08	[11·04]	10·97	09·07	10·45	10·08	07·20	06·60
30	14·30		[12·07]	11·34	09·85	11·49	10·45	09·68	10·25	10·36	[08·65]	07·79
31	14·83		12·46		13·14		10·44	[10·09]		09·18		09·62

TABLE II.—Mean Variations of Westerly Declination, after Eliminating the Secular Change, with reference to the Moon's Age, Declination, and Distance from the Earth, for 1845.

Moon's Age.	Variations of West Declination.	Moon's Age.	Variations of West Declination.	After Moon farthest North.	Variations of West Declination.	After Moon farthest North.	Variations of West Declination.	Before and after Perigee.	Variations of West Declination.	Before and after Apogee.	Variations of West Declination.
Day.	′	Day.	′	Day.	′	Day.	′	Day.	′	Day.	′
15	0·34	0	0·41	0	0·45	14	0·56	7	0·17	7	0·01
16	0·47	1	0·27	1	0·57	15	0·45	6	0·43	6	0·59
17	0·28	2	0·00	2	0·31	16	0·48	5	0·09	5	0·45
18	0·55	3	0·61	3	0·08	17	0·33	4	0·33	4	0·25
19	0·10	4	0·59	4	0·63	18	0·33	3	0·09	3	0·25
20	0·22	5	0·65	5	0·43	19	0·86	2	0·03	2	0·72
21	0·24	6	0·83	6	0·60	20	0·57	1	0·10	1	0·14
22	0·15	7	0·43	7	0·42	21	0·49	P	0·36	A	0·22
23	0·35	8	0·10	8	0·00	22	0·42	1	0·40	1	0·16
24	0·25	9	0·43	9	0·51	23	0·56	2	0·50	2	0·00
25	0·64	10	0·43	10	0·58	24	0·71	3	0·10	3	0·21
26	0·02	11	0·43	11	0·48	25	0·58	4	0·37	4	0·41
27	0·07	12	0·30	12	0·38	26	0·81	5	0·26	5	0·25
28	0·42	13	0·36	13	0·26	27	0·64	6	0·25	6	0·43
29	0·55	14	0·47					7	0·40	7	0·23

TABLE III.—Diurnal Range of Magnetic Declination for each Civil Day, as deduced from the Hourly Observations, with the Mean for each Week in 1845.

Civil Day.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	′	′	′	′	′	′	′	′	′	′	′	′
1	9·71	6·68	14·08	10·34	21·21	[15·50]	14·43	29·87	15·44	13·52	18·17	5·18
2	10·65	[10·37]	[14·69]	12·99	9·53	10·76	8·70	19·87	20·00	8·50	[14·92]	12·13
3	3·81	7·73	9·53	16·86	12·17	10·76	10·87	[17·36]	19·74	15·78	12·56	31·83
4	3·74	11·70	7·24	14·23	[13·36]	17·54	14·59	16·88	15·20	8·39	12·91	20·17
5	[5·57]	15·54	6·58	13·94	9·93	13·22	9·87	10·97	16·34	[10·73]	23·98	10·51
6	2·62	14·84	7·40	[14·34]	13·19	13·39	[12·59]	13·03	13·65	11·62	4·87	8·80
7	7·73	13·11	11·36	13·89	14·14	16·46	15·06	11·42	[14·50]	10·59	16·27	[9·51]
8	4·89	5·69	9·06	13·18	12·36	[14·88]	14·76	21·60	20·69	9·49	7·18	6·86
9	37·83	[9·96]	[9·84]	13·97	14·56	19·31	10·39	18·79	11·06	30·88	[9·76]	3·79
10	31·14	13·33	10·38	12·34	11·17	15·76	14·69	[14·65]	10·05	26·76	13·95	6·95
11	9·86	6·76	13·34	14·95	[13·22]	11·16	13·86	11·63	16·42	9·21	9·18	5·28
12	[18·78]	6·05	7·48	15·35	14·41	14·03	9·38	11·44	13·36	[14·94]	7·11	6·67
13	9·38	8·07	12·24	[22·48]	12·71	12·28	[12·70]	13·03	14·90	6·31	4·15	32·87
14	9·82	5·00	19·71	67·37	14·14	15·86	12·52	9·37	[16·02]	6·58	5·06	[15·63]
15	14·65	3·26	15·38	15·11	17·26	[12·56]	13·60	19·75	7·58	9·89	4·63	27·56
16	5·80	[5·90]	[16·20]	9·77	18·44	12·83	12·15	15·49	13·89	9·22	[11·48]	12·79
17	6·76	7·86	15·59	10·10	11·20	9·24	15·14	[14·86]	30·00	20·70	25·30	8·61
18	6·92	5·54	16·25	18·30	[15·81]	11·14	13·99	18·52	27·22	13·16	21·02	15·49
19	[13·70]	5·67	18·05	17·56	19·31	14·16	16·15	13·36	18·84	[19·52]	8·70	3·50
20	40·16	15·26	19·12	[14·58]	15·76	15·21	[14·14]	12·65	13·29	22·61	6·82	8·21
21	16·35	22·74	11·32	13·44	12·91	18·42	11·03	14·78	[15·47]	36·57	6·33	[7·60]
22	6·20	14·81	14·49	12·63	18·07	[14·20]	13·05	15·71	10·71	14·85	9·74	5·49
23	19·98	[20·66]	[18·64]	15·47	12·44	13·39	15·48	18·49	9·08	5·52	[8·13]	6·73
24	17·56	33·12	20·68	15·11	14·38	13·88	12·02	[15·63]	13·71	11·69	10·47	6·20
25	17·84	17·84	26·63	18·34	[11·91]	10·17	26·07	16·15	29·96	13·26	8·44	4·22
26	[19·81]	20·20	19·59	14·90	8·19	11·92	11·00	16·77	11·74	[9·69]	6·98	5·01
27	18·34	29·63	13·88	[16·51]	9·01	13·86	[13·38]	11·91	34·57	8·20	9·91	6·39
28	19·68	21·06	22·25	22·18	9·38	18·28	9·06	12·41	[19·25]	11·27	10·19	[8·17]
29	25·48		17·51	14·39	10·87	[13·08]	10·90	37·11	11·12	8·23	10·56	4·07
30	15·00		[14·50]	14·16	14·40	11·29	11·23	22·00	14·60	7·70	[13·30]	16·99
31	5·58		10·02		28·70		13·55	[21·12]		14·19		12·36

TABLE IV.—Means of the Diurnal Ranges of Magnetic Declination, with reference to the Moon's Age and Declination, for 1845.

Moon's Age.	Mean Range.	Moon's Age.	Mean Range.	After Moon farthest North.	Mean Range.	After Moon farthest North.	Mean Range.
Day.	′	Day.	′	Day.	′	Day.	′
15	14·33	0	12·07	0	13·97	14	12·33
16	16·75	1	14·54	1	15·57	15	11·07
17	15·51	2	14·51	2	17·90	16	12·10
18	17·29	3	12·90	3	18·86	17	18·82
19	16·24	4	14·54	4	13·88	18	15·09
20	15·74	5	12·78	5	16·68	19	12·79
21	17·28	6	13·65	6	13·14	20	11·32
22	12·93	7	12·94	7	15·62	21	11·03
23	11·82	8	16·92	8	15·30	22	13·95
24	12·54	9	12·05	9	14·54	23	14·15
25	12·25	10	11·30	10	14·52	24	10·41
26	13·75	11	12·11	11	13·56	25	11·50
27	11·37	12	13·98	12	11·25	26	11·94
28	12·39	13	11·85	13	13·08	27	12·43
29	12·83	14	13·31				

TABLE V.—Hourly Means of Westerly Declination for each Month in 1845.

Mean Time.		Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
Gött.	Mak.													
h.	h.	25° ′	25° ′	25° ′	25° ′	25° ′	25° ′	25° ′	25° ′	25° ′	25° ′	25° ′	25° ′	25° ′
13	12	12·11	11·33	11·24	09·86	09·62	10·13	09·54	08·48	08·78	07·74	08·44	06·64	09·49
14	13	12·17	12·50	11·20	09·29	09·21	09·96	08·69	07·89	07·81	08·59	08·73	06·80	09·40
15	14	11·97	12·84	12·19	07·31	09·68	09·53	08·31	09·57	08·24	08·39	09·48	07·73	09·60
16	15	11·71	13·31	11·15	08·63	09·48	08·82	09·55	08·98	07·18	09·53	09·11	07·89	09·61
17	16	12·93	12·99	10·29	10·31	08·49	07·23	08·48	07·28	08·10	09·59	08·69	08·64	09·42
18	17	13·47	12·53	11·41	08·83	07·33	05·96	07·37	06·57	07·83	10·02	08·57	07·79	08·97
19	18	14·47	13·17	11·27	08·10	06·25	05·38	06·90	06·22	08·91	10·17	09·14	08·21	09·01
20	19	14·84	13·23	11·26	06·90	05·97	05·83	06·57	07·05	08·73	09·57	09·02	08·22	08·93
21	20	15·17	13·75	11·50	06·61	07·87	06·84	07·76	08·32	10·40	09·05	09·33	08·45	09·59
22	21	15·76	14·59	12·36	08·29	09·86	09·16	09·52	10·08	11·38	09·91	10·37	08·30	10·80
23	22	16·57	15·56	13·76	11·46	13·11	12·37	11·66	12·46	13·44	12·43	11·77	09·42	12·83
0	23	17·03	17·58	16·41	14·99	16·09	16·08	14·25	15·73	15·98	14·93	12·71	10·91	15·22
1	0	17·37	18·48	19·08	18·21	17·84	17·74	16·57	18·04	17·71	16·30	13·39	12·06	16·90
2	1	17·63	18·64	19·96	19·69	18·39	17·90	17·43	18·89	17·20	16·51	13·38	12·36	17·33
3	2	16·57	17·54	19·18	18·66	17·60	17·53	16·88	17·77	15·60	15·42	12·68	11·23	16·38
4	3	16·02	15·53	17·51	16·56	15·62	15·86	15·85	15·40	13·12	13·63	11·36	10·55	14·75
5	4	15·53	15·09	15·14	14·97	13·94	14·24	14·44	13·24	10·92	11·70	10·25	09·03	13·21
6	5	13·97	13·74	12·69	12·82	12·00	12·49	13·06	11·06	09·97	10·79	09·22	07·78	11·63
7	6	13·96	12·01	11·67	11·11	11·11	11·55	11·69	08·59	08·49	10·84	09·23	07·09	10·61
8	7	12·53	11·99	11·71	10·05	10·83	11·36	11·33	09·28	08·47	10·44	07·49	07·13	10·22
9	8	12·39	11·56	11·59	09·10	10·75	11·24	10·62	09·68	07·64	09·87	07·34	06·04	09·82
10	9	11·57	11·73	10·04	09·69	10·30	10·91	10·16	08·56	07·38	08·18	06·85	05·94	09·28
11	10	11·68	11·36	11·11	10·22	10·78	10·76	10·15	07·97	08·08	07·44	05·89	06·13	09·30
12	11	10·68	12·00	11·70	10·48	10·38	10·31	09·60	08·46	07·50	07·09	07·19	05·93	09·28

TABLE VI.—Diurnal Variations of Westerly Declination for each Month in 1845.

Mak. M. T.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
h.	′	′	′	′	′	′	′	′	′	′	′	′	′
12	1·43	0·00	1·20	3·25	3·65	4·75	2·97	2·26	1·60	0·65	2·55	0·71	0·56
13	1·49	1·17	1·16	2·68	3·24	4·58	2·12	1·67	0·63	1·50	2·84	0·87	0·47
14	1·29	1·51	2·15	0·70	3·71	4·15	1·74	3·35	1·06	1·30	3·59	1·80	0·67
15	1·03	1·98	1·11	2·02	3·51	3·44	2·98	2·76	0·00	2·44	3·22	1·96	0·68
16	2·25	1·66	0·25	3·70	2·52	1·85	1·91	1·06	0·92	2·50	2·80	2·71	0·49
17	2·79	1·20	1·37	2·22	1·36	0·58	0·80	0·35	0·65	2·93	2·68	1·86	0·04
18	3·79	1·84	1·23	1·49	0·28	0·00	0·33	0·00	1·73	3·08	3·25	2·28	0·08
19	4·16	1·90	1·22	0·29	0·00	0·45	0·00	0·83	1·55	2·48	3·13	2·29	0·00
20	4·49	2·42	1·46	0·00	1·90	1·46	1·19	2·10	3·22	1·96	3·44	2·52	0·66
21	5·08	3·26	2·32	1·68	3·89	3·78	2·95	3·86	4·20	2·82	4·48	2·37	1·87
22	5·89	4·23	3·72	4·85	7·14	6·99	5·09	6·24	6·26	5·34	5·88	3·49	3·90
23	6·35	6·25	6·37	8·38	10·12	10·70	7·68	9·51	8·80	7·84	6·82	4·98	6·29
0	6·69	7·15	9·04	11·60	11·87	12·36	10·00	11·82	10·53	9·21	7·50	6·13	7·97
1	6·95	7·31	9·92	13·08	12·42	12·52	10·86	12·67	10·02	9·42	7·49	6·43	8·40
2	5·89	6·21	9·14	12·05	11·63	12·15	10·31	11·55	8·42	8·33	6·79	5·30	7·45
3	5·34	4·20	7·47	9·95	9·65	10·48	9·28	9·18	5·94	6·54	5·47	4·62	5·82
4	4·85	3·76	5·10	8·36	7·97	8·88	7·87	7·02	3·74	4·61	4·36	3·10	4·28
5	3·29	2·41	2·65	6·21	6·03	7·11	6·49	4·84	2·79	3·70	3·33	1·85	2·70
6	3·28	0·68	1·63	4·50	5·14	6·17	5·12	2·37	1·31	3·75	3·34	1·16	1·68
7	1·85	0·66	1·67	3·44	4·86	5·98	4·76	3·06	1·29	3·35	1·60	1·20	1·29
8	1·71	0·23	1·55	2·49	4·78	5·86	4·05	3·46	0·46	2·78	1·45	0·11	0·89
9	0·89	0·40	0·00	3·08	4·33	5·53	3·59	2·34	0·20	1·09	0·96	0·01	0·35
10	1·00	0·03	1·07	3·61	4·81	5·38	3·58	1·75	0·90	0·35	0·00	0·20	0·37
11	0·00	0·67	1·64	3·87	4·41	4·93	3·03	2·24	0·32	0·00	1·30	0·00	0·35

TABLE VII.—List of Seven Days in each Month of 1845 upon which the Magnetic Declination was least irregular.

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.
3	8	4	5	2	3	5	11	6	6	6	1
4	11	5	10	3	6	14	12	10	13	8	9
6	12	6	12	7	12	15	13	15	14	12	11
8	14	8	17	9	13	16	16	16	16	13	19
16	15	12	23	26	18	23	19	22	23	14	24
18	18	13	24	27	19	26	20	23	24	15	25
31	19	31	26	28	27	30	21	24	30	20	27

TABLE VIII.—Hourly Means of Magnetic Declination for the Seven Days least disturbed in each Month of 1845, corrected so that the Mean of each Seven Days equals the Monthly Mean.

Mak. M. T.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
h.	25° ′	25° ′	25° ′	25° ′	25° ′	25° ′	25° ′	25° ′	25° ′	25° ′	25° ′	25° ′	25° ′
12	13·71	12·63	12·41	09·85	11·15	10·61	10·04	09·80	09·94	09·71	09·08	07·62	10·55
13	13·36	13·79	12·05	10·21	10·93	10·89	09·62	09·13	09·43	09·48	09·02	07·91	10·48
14	13·69	13·72	11·65	10·08	10·70	10·14	09·05	09·52	08·83	09·74	09·05	08·15	10·36
15	13·38	13·26	11·28	09·42	10·28	08·96	08·76	08·98	07·80	10·05	09·30	08·22	09·97
16	13·51	12·79	11·33	08·99	09·50	07·59	07·81	08·33	08·07	09·67	09·12	07·94	09·55
17	13·38	12·76	11·31	07·96	08·05	06·26	06·22	06·73	07·41	09·51	09·06	08·07	08·89
18	13·22	12·80	11·24	07·66	06·91	05·50	05·89	05·83	06·93	09·47	08·77	07·74	08·50
19	13·25	12·94	11·26	06·26	06·13	05·39	06·14	05·60	07·08	08·91	08·46	07·58	08·25
20	13·68	13·19	11·14	06·26	07·24	06·05	07·30	05·73	07·80	08·64	08·46	07·63	08·59
21	14·36	13·77	11·67	07·51	09·27	08·11	09·15	08·33	09·44	09·32	09·09	07·32	09·78
22	15·32	14·83	12·85	10·67	12·23	11·54	11·50	12·09	12·01	12·19	10·87	08·36	12·04
23	16·42	16·20	15·34	14·53	15·11	15·37	14·50	15·15	15·19	14·36	12·35	09·92	14·54
0	15·88	16·95	17·90	18·02	16·46	17·50	16·84	17·46	16·94	15·74	12·44	11·05	16·10
1	16·13	17·00	18·32	19·62	16·87	17·70	17·65	18·23	16·71	15·75	12·28	11·19	16·45
2	15·11	16·21	17·81	18·25	15·71	17·37	16·37	17·22	14·54	14·07	11·20	10·59	15·37
3	14·98	14·98	16·18	16·52	14·39	16·26	15·22	14·74	12·42	12·60	10·26	09·43	14·00
4	14·46	14·13	14·05	14·89	12·84	14·26	14·15	12·23	10·98	10·80	09·97	08·33	12·59
5	14·05	13·83	13·05	13·16	11·63	12·21	13·51	10·28	10·23	10·70	09·48	08·24	11·70
6	13·78	13·43	13·26	11·69	10·99	11·56	12·37	09·52	09·76	10·06	09·31	08·28	11·17
7	13·73	13·31	12·77	10·90	10·94	11·55	11·75	09·95	09·75	09·57	08·76	08·05	10·92
8	13·46	12·93	12·39	09·74	11·28	11·26	11·51	10·31	09·97	09·70	08·56	07·43	10·71
9	13·05	12·77	11·76	09·93	11·39	11·22	10·92	10·41	09·00	09·55	07·94	06·81	10·40
10	13·22	12·20	12·33	10·14	11·25	11·25	10·26	10·29	09·49	09·28	08·42	07·06	10·43
11	13·05	12·78	12·14	09·96	11·20	10·67	09·94	09·66	09·18	09·44	08·42	07·25	10·31

TABLE IX.—Variations of Magnetic Declination with reference to the Moon's Hour-Angle for each Lunation, for the Six Summer and Seven Winter Lunations, and for the whole Thirteen Lunations of 1845.

Moon's Hour-Angle.	LUNATIONS.															
	1st.	2d.	3d.	4th.	5th.	6th.	7th.	8th.	9th.	10th.	11th.	12th.	13th.	Summer.	Winter.	Year.
h.	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′
0	0·94	0·17	1·04	0·68	0·92	2·50	1·45	1·51	1·08	2·03	0·72	1·18	0·96	0·81	0·55	0·34
1	0·95	0·01	1·40	1·54	0·43	2·27	0·86	1·58	0·91	2·60	0·75	0·58	0·54	0·71	0·52	0·28
2	1·46	0·68	0·69	3·04	0·54	1·99	0·57	1·75	1·21	2·05	1·02	1·93	1·23	0·97	0·84	0·57
3	0·00	0·48	1·37	2·83	0·23	1·61	0·24	1·35	1·16	0·79	0·89	1·02	0·80	0·69	0·31	0·15
4	0·60	1·20	0·00	3·07	0·47	1·80	0·72	1·36	1·45	1·07	0·94	0·88	1·00	0·93	0·36	0·29
5	0·96	1·46	1·42	2·84	0·85	1·73	0·45	0·87	1·76	1·66	1·24	0·97	0·75	0·87	0·75	0·47
6	0·64	0·89	0·71	2·79	1·04	1·89	0·89	0·26	1·80	2·02	0·94	0·61	0·25	0·90	0·41	0·30
7	1·53	0·77	0·86	2·20	0·35	1·36	1·03	0·65	1·25	2·32	1·13	0·93	1·25	0·59	0·80	0·37
8	1·66	1·29	1·67	2·04	0·00	0·97	0·75	0·87	0·78	2·20	0·88	0·89	0·94	0·35	0·90	0·32
9	1·46	1·03	1·50	0·00	0·01	0·89	1·24	0·50	0·66	1·03	1·07	0·68	0·74	0·00	0·62	0·00
10	0·81	1·33	2·06	1·08	0·26	0·53	1·42	0·47	1·31	1·03	0·99	0·96	1·21	0·29	0·74	0·20
11	1·29	1·14	2·15	1·93	0·97	0·24	0·85	1·73	1·17	1·60	1·23	1·02	1·23	0·60	0·92	0·44
12	0·93	1·25	0·37	1·86	1·38	0·00	0·91	0·00	0·00	2·61	1·08	0·98	1·52	0·14	0·79	0·16
13	1·81	0·71	2·31	1·77	1·35	0·52	1·12	0·22	0·91	2·28	0·76	0·76	1·00	0·43	0·92	0·36
14	1·29	0·13	1·79	1·83	1·62	0·54	1·20	0·84	1·06	1·61	1·02	0·61	0·87	0·63	0·59	0·28
15	1·12	1·46	1·38	2·04	0·96	0·37	0·18	1·19	0·52	1·70	1·16	1·61	1·10	0·33	0·90	0·31
16	1·16	1·34	0·84	1·36	1·41	0·56	0·26	0·23	0·94	1·45	1·13	1·48	0·67	0·24	0·70	0·16
17	1·83	0·00	0·57	1·16	0·71	0·83	0·19	0·57	1·15	1·62	0·41	1·21	0·68	0·22	0·45	0·01
18	1·70	0·30	0·56	2·17	0·76	0·60	0·55	0·55	1·38	1·05	1·01	1·30	0·00	0·45	0·39	0·09
19	2·20	0·44	1·03	2·87	1·14	0·30	0·00	0·25	1·10	0·00	0·51	0·00	0·96	0·39	0·28	0·00
20	2·04	0·17	1·13	2·53	0·70	0·41	0·19	0·43	0·94	1·30	0·23	1·58	0·05	0·32	0·47	0·07
21	1·27	0·25	1·14	2·66	0·97	0·58	0·62	0·05	1·29	0·77	0·73	1·20	0·66	0·48	0·40	0·11
22	0·04	1·90	0·33	2·45	1·09	1·37	0·85	0·63	1·77	0·37	0·00	0·31	0·25	0·81	0·00	0·04
23	1·23	0·21	1·94	1·78	0·93	1·96	1·74	1·37	1·13	1·83	0·37	1·19	0·62	0·93	0·60	0·42
24	1·12	0·20	0·10	2·15	1·36	2·18	1·47	1·74	1·76	2·22	0·06	1·42	0·55	1·23	0·35	0·43

TABLE X.—Differences of the Hourly Means of Westerly Declination, as deduced from the whole Series, and the Seven-Day Series selected in each Month; or Table V. *minus* Table VIII.

Mak. M. T.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
h.	′	′	′	′	′	′	′	′	′	′	′	′	′
12	−1·60	−1·30	−1·17	+0·01	−1·53	−0·48	−0·50	−1·32	−1·16	−1·97	−0·64	−0·98	−1·06
13	−1·19	−1·29	−0·85	−0·92	−1·72	−0·93	−0·93	−1·24	−1·62	−0·89	−0·29	−1·11	−1·08
14	−1·72	−0·88	+0·54	−2·77	−1·02	−0·61	−0·74	+0·05	−0·59	−1·35	+0·43	−0·42	−0·76
15	−1·67	+0·05	−0·13	−0·79	−0·80	−0·14	+0·79	0·00	−0·62	−0·52	−0·19	−0·33	−0·36
16	−0·58	+0·20	−1·04	+1·32	−1·01	−0·36	+0·67	−1·05	+0·03	−0·08	−0·43	+0·70	−0·13
17	+0·09	−0·23	+0·10	+0·87	−0·72	−0·30	+1·15	−0·16	+0·42	+0·51	−0·49	−0·28	+0·08
18	+1·25	+0·37	+0·03	+0·44	−0·66	−0·12	+1·01	+0·39	+1·98	+0·70	+0·37	+0·47	+0·51
19	+1·59	+0·29	0·00	+0·64	−0·16	+0·44	+0·43	+1·45	+1·65	+0·66	+0·56	+0·64	+0·68
20	+1·49	+0·56	+0·36	+0·35	+0·63	+0·79	+0·46	+2·59	+2·60	+0·41	+0·87	+0·82	+1·00
21	+1·40	+0·82	+0·69	+0·78	+0·59	+1·05	+0·37	+1·75	+1·94	+0·59	+1·28	+0·98	+1·02
22	+1·25	+0·73	+0·91	+0·79	+0·88	+0·83	+0·16	+0·37	+1·43	+0·24	+0·90	+1·06	+0·79
23	+0·61	+1·38	+1·07	+0·46	+0·98	+0·71	−0·25	+0·58	+0·79	+0·57	+0·36	+0·99	+0·68
0	+1·49	+1·53	+1·18	+0·19	+1·38	+0·24	−0·27	+0·58	+0·77	+0·56	+0·95	+1·01	+0·80
1	+1·50	+1·64	+1·64	+0·07	+1·52	+0·20	−0·22	+0·66	+0·49	+0·76	+1·10	+1·17	+0·88
2	+1·46	+1·33	+1·37	+0·41	+1·89	+0·16	+0·51	+0·55	+1·06	+1·35	+1·48	+0·64	+1·01
3	+1·04	+0·55	+1·33	+0·04	+1·23	−0·40	+0·63	+0·66	+0·72	+1·03	+1·10	+1·12	+0·75
4	+1·07	+0·96	+1·09	+0·08	+1·10	−0·02	+0·29	+1·01	−0·06	+0·90	+0·28	+0·70	+0·62
5	−0·08	−0·09	−0·36	−0·34	+0·37	+0·28	−0·45	+0·78	−0·26	+0·09	−0·26	−0·46	−0·07
6	+0·18	−1·42	−1·59	−0·58	+0·12	−0·01	−0·68	−0·93	−1·27	+0·78	−0·08	−1·19	−0·56
7	−1·20	−1·32	−1·06	−0·85	−0·11	−0·19	−0·42	−0·67	−1·28	+0·87	−1·27	−0·92	−0·70
8	−1·07	−1·37	−0·80	−0·64	−0·53	−0·02	−0·89	−0·63	−2·33	+0·17	−1·22	−1·39	−0·89
9	−1·48	−1·04	−1·72	−0·24	−1·09	−0·31	−0·76	−1·85	−1·62	−1·37	−1·09	−0·87	−1·12
10	−1·54	−0·84	−1·22	+0·08	−0·47	−0·49	−0·11	−2·32	−1·41	−1·84	−2·53	−0·93	−1·13
11	−2·37	−0·78	−0·44	+0·52	−0·82	−0·36	−0·34	−1·20	−1·68	−2·35	−1·23	−1·32	−1·03

TABLE XI.—Mean Difference of a Single Observation of the Magnetic Declination, from the Monthly Mean at the corresponding Hour, for each Civil Day and Week in 1845.

Civil Day.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	′	′	′	′	′	′	′	′	′	′	′	′
1	1·57	1·64	1·32	1·13	3·00	[1·94]	1·45	3·23	1·94	1·33	2·51	1·07
2	1·91	[1·55]	[1·75]	1·10	1·35	1·22	1·64	2·53	3·21	0·92	[2·07]	1·51
3	1·35	1·13	1·27	1·49	1·66	1·11	1·14	[2·06]	2·71	1·64	2·01	5·05
4	1·53	1·20	1·47	1·30	[1·63]	2·14	1·42	2·53	1·88	1·12	1·45	3·10
5	[1·63]	2·39	1·30	0·91	1·32	0·93	0·73	1·95	1·55	[1·22]	3·40	2·16
6	1·74	1·81	1·54	[1·24]	1·45	0·73	[1·38]	1·12	1·33	1·55	1·31	1·00
7	1·48	1·20	1·32	1·40	1·01	1·42	1·53	1·40	[1·92]	0·98	3·04	[1·52]
8	1·79	0·94	1·24	1·35	0·72	[1·30]	1·71	2·64	2·93	1·09	1·69	0·89
9	4·04	[1·13]	[1·29]	0·99	0·72	2·03	1·73	2·01	1·73	3·01	[1·65]	1·21
10	3·82	1·36	1·08	0·90	0·84	1·05	1·59	[1·75]	2·10	3·02	1·23	0·77
11	1·70	0·95	1·07	1·11	[1·00]	1·62	1·29	1·15	1·22	1·46	1·52	0·80
12	[2·28]	0·53	1·52	0·83	1·10	0·77	1·10	1·84	1·21	[1·97]	1·10	1·12
13	1·70	1·28	1·78	[1·98]	1·11	1·38	[1·20]	1·46	1·39	1·42	0·98	3·77
14	1·21	1·16	2·71	6·47	1·49	1·35	1·21	1·66	[1·37]	1·47	1·03	[1·91]
15	1·23	1·24	1·54	1·62	1·90	[1·09]	1·25	1·83	1·56	1·45	1·02	2·60
16	1·38	[1·22]	[1·90]	0·93	1·64	0·64	0·78	1·35	0·70	0·93	[1·67]	1·56
17	1·01	1·63	2·01	1·14	1·34	1·19	1·26	[1·50]	2·12	2·36	2·96	1·62
18	1·44	0·95	1·35	1·81	[1·60]	1·24	1·00	2·42	2·70	1·28	2·13	1·68
19	[2·00]	1·05	1·99	2·07	2·53	0·49	1·49	0·85	1·74	[2·25]	1·88	0·95
20	5·05	1·78	2·62	[1·50]	1·21	1·00	[1·11]	0·87	1·66	2·34	1·24	1·22
21	1·80	3·50	1·32	1·72	1·01	1·88	0·96	1·27	[1·89]	4·80	1·74	[1·18]
22	1·35	2·01	1·17	1·22	1·70	[1·05]	0·53	1·23	1·39	1·81	1·12	1·04
23	1·68	[2·99]	[2·38]	1·04	0·92	0·78	1·40	1·70	1·92	1·30	[1·47]	1·24
24	2·07	5·15	3·72	2·10	1·14	1·12	2·15	[1·35]	1·91	1·39	1·28	0·98
25	2·39	2·92	2·56	2·07	[1·17]	1·03	5·58	1·34	5·47	1·80	1·79	0·93
26	[2·40]	2·58	2·90	1·29	1·16	0·64	0·99	1·68	2·13	[1·29]	1·64	0·97
27	2·34	2·74	2·00	[1·97]	0·97	0·58	[1·97]	0·90	3·68	0·94	1·59	0·71
28	1·81	2·43	2·07	3·56	1·11	1·64	1·15	1·24	[2·67]	1·29	1·47	[1·45]
29	4·14		1·89	1·08	0·85	[1·32]	1·02	4·43	1·79	1·01	2·57	1·89
30	1·77		[1·55]	1·73	2·16	2·00	0·93	3·78	1·62	1·03	[2·21]	2·17
31	1·18		1·11		4·16		1·00	[2·88]		2·05		2·05

TABLE XII.—Mean Difference of a Single Observation of the Magnetic Declination from the Monthly Mean at the corresponding Hour, with reference to the Moon's Age and Declination, for 1845.

Moon's Age.	Mean Difference.	Moon's Age.	Mean Difference.	After Moon farthest North.	Mean Difference.	After Moon farthest North.	Mean Difference.
Day.	′	Day.	′	Day.	′	Day.	′
15	1·57	0	1·57	0	1·38	14	1·55
16	1·72	1	1·78	1	1·71	15	1·38
17	1·61	2	1·72	2	1·89	16	1·44
18	2·03	3	1·34	3	2·33	17	2·32
19	1·84	4	1·82	4	1·79	18	1·73
20	2·02	5	1·62	5	2·09	19	1·62
21	2·28	6	1·67	6	1·80	20	1·40
22	1·69	7	1·44	7	1·93	21	1·29
23	1·40	8	2·11	8	2·01	22	1·57
24	1·87	9	1·66	9	1·90	23	1·81
25	1·78	10	1·32	10	1·90	24	1·22
26	1·84	11	1·40	11	1·57	25	1·44
27	1·69	12	1·75	12	1·48	26	1·43
28	1·75	13	1·47	13	1·85	27	1·48
29	1·65	14	1·48				

TABLE XIII.—Mean Difference of a Single Observation of the Magnetic Declination from the Monthly Mean at the corresponding Hour, for each Hour in each Month of 1845.

Mak. M. T.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
h.	′	′	′	′	′	′	′	′	′	′	′	′	′
12	3·12	2·61	1·88	2·17	2·31	0·86	1·64	2·06	2·59	2·33	1·34	1·58	2·04
13	3·52	2·65	3·03	2·20	2·21	1·14	1·49	2·23	1·98	2·10	1·13	1·59	2·11
14	2·35	1·82	2·10	5·13	1·36	1·04	1·59	2·29	2·41	2·04	1·66	1·11	2·07
15	3·18	1·21	2·44	2·62	1·66	1·11	1·29	1·92	2·42	1·83	1·58	1·02	1·86
16	2·06	1·36	1·99	1·50	0·95	1·27	1·95	1·41	1·68	1·03	1·36	1·45	1·50
17	1·29	1·09	1·46	1·56	1·27	1·38	2·47	1·09	1·98	1·36	0·83	0·72	1·37
18	1·41	1·38	0·95	1·28	1·13	1·28	1·93	1·38	2·57	1·37	1·17	1·11	1·41
19	1·56	0·71	0·96	1·35	1·22	1·32	1·58	2·30	2·07	1·34	1·09	0·99	1·37
20	1·56	1·28	1·41	0·93	1·83	1·50	1·52	3·13	2·81	1·45	1·50	1·23	1·68
21	1·34	1·33	1·57	0·84	1·44	1·47	1·86	2·37	2·02	1·80	2·15	1·31	1·62
22	1·27	1·26	1·28	0·87	1·53	1·35	1·57	1·88	1·69	1·49	1·93	1·37	1·46
23	1·40	1·60	1·28	0·83	1·73	1·78	1·45	1·46	1·52	1·53	1·55	1·65	1·48
0	1·40	1·58	1·24	1·34	1·77	1·40	1·30	1·46	1·48	1·47	1·97	1·80	1·52
1	1·81	1·89	1·39	1·48	2·02	1·54	1·46	2·03	1·59	1·85	2·00	2·10	1·76
2	1·77	1·47	1·46	1·52	2·22	1·47	1·30	1·94	1·53	1·96	2·04	1·88	1·71
3	1·55	2·34	1·37	1·60	1·75	1·70	1·38	1·94	1·87	1·81	1·82	2·02	1·76
4	1·20	1·67	1·24	1·37	1·71	1·42	1·10	1·69	1·54	1·33	2·52	1·58	1·53
5	1·64	1·90	1·70	1·16	1·10	1·23	0·91	1·17	1·10	1·23	2·67	1·73	1·46
6	1·52	3·40	2·64	1·50	0·87	0·78	0·96	2·55	2·43	0·66	1·33	3·45	1·84
7	2·46	3·02	1·95	1·47	0·78	0·75	0·92	1·30	2·38	0·64	2·38	1·53	1·63
8	1·96	2·52	1·64	2·20	0·92	0·60	1·02	0·89	2·50	0·82	1·48	2·39	1·58
9	2·79	2·46	3·25	1·60	1·22	0·70	1·36	2·57	2·65	2·36	1·67	1·94	2·05
10	2·62	1·59	2·55	1·21	0·88	0·79	0·68	1·99	2·23	2·80	2·90	1·93	1·85
11	3·68	1·39	1·55	1·39	1·26	0·92	1·10	1·63	2·40	3·20	1·84	1·71	1·84

TABLE XIV.—Number of Positive and Negative Differences which occur between the limits of successive Minutes, for each Month, and for the Year 1845.

Month.		0′ to 1′.	1′ to 2′.	2′ to 3′.	3′ to 4′.	4′ to 5′.	5′ to 6′.	6′ to 7′.	7′ to 8′.	8′ to 9′.	9′ to 10′.	10′ to 15′.	15′ to 20′.	20′ to 25′.	25′ to 30′.	Above 30′.
Jan.	+	121	90	92	27	11	5	1	2	2	2	1	...	...	...	...
	−	130	85	33	11	5	4	4	5	5	2	4	3	...	3	...
Feb.	+	114	107	41	16	11	9	2	2	1	...	2	...	...	...	...
	−	120	87	22	15	6	5	2	3	2	2	3	2	2	...	...
March	+	135	115	49	27	4	3	4	2	2	...	1	...	...	...	...
	−	126	64	42	13	11	6	7	8	2	...	2	1	...	...	...
April	+	146	112	44	23	7	5	3	...	...	...	1	...	...	...	...
	−	147	70	34	12	2	3	5	1	1	2	3	1	1	...	1
May	+	171	111	35	14	3	3	1	2	1	1	3	...	...	...	...
	−	134	83	43	27	6	4	3	1	...	...	2	...	...	...	...
June	+	160	72	27	15	7	3	2	1	...	...	...	...	...	...	...
	−	162	97	40	10	3	...	1	...	...	...	...	...	...	...	...
July	+	147	124	29	5	4	1	1	1	3	...	4	1	...	...	...
	−	163	94	35	20	9	2	1	1	1	...	2	...	...	...	...
Aug.	+	120	120	31	18	10	8	8	2	3	1	1	1	...	...	...
	−	115	86	42	32	8	7	3	3	...	...	3	1	1	...	...
Sept.	+	97	108	61	32	9	3	4	1	7	...	2	...	...	...	...
	−	108	72	65	24	8	2	9	3	2	...	5	1	...	1	...
Oct.	+	123	93	46	24	8	5	3	2	1	1	3	...	...	...	...
	−	168	98	42	13	2	3	3	1	3	2	2	...	2	...	...
Nov.	+	120	78	43	19	7	8	4	2	3	...	4	...	...	...	...
	−	126	98	41	27	8	3	2	2	1	2	2	...	...	...	...
Dec.	+	147	110	37	19	5	4	5	1	3	1	...	1	...	...	...
	−	153	108	20	6	7	4	5	3	1	1	2	5	...	...	...
Year	+	1601	1240	535	239	86	57	38	18	26	6	22	3	...	...	...
	−	1652	1042	459	210	75	43	45	31	18	11	30	14	6	4	1

TABLE XV.—Number of Positive and Negative Differences which occur between the limits of successive Minutes, for each Hour in 1845.

Makerstoun Mean Time. h.		0′ to 1′.	1′ to 2.′	2′ to 3′.	3′ to 4′.	4′ to 5′.	5′ to 6′.	6′ to 7′.	7′ to 8.′	8′ to 9.′	9′ to 10.′	10′ to 15′.	15′ to 20′.	20′ to 25′.	25′ to 30′.	Above 30′.
12	+	69	84	27	10	4	3	1	1	1	…	1	…	…	…	…
	−	49	25	11	2	4	3	6	2	1	1	4	3	…	1	…
13	+	72	97	24	9	2	…	2	1	…	1	2	…	…	…	…
	−	38	19	14	8	2	5	3	4	1	2	4	2	…	1	…
14	+	73	58	24	13	4	2	3	…	4	…	…	1	…	…	…
	−	54	34	13	8	7	2	3	3	4	…	2	…	…	…	1
15	+	65	50	30	14	3	3	1	2	1	…	1	…	…	…	…
	−	64	40	16	9	1	3	1	3	1	…	3	1	1	…	…
16	+	76	40	16	2	4	5	2	…	2	…	2	…	…	…	…
	−	78	50	15	10	5	3	3	…	…	…	…	…	…	…	…
17	+	83	32	10	9	3	1	1	3	1	…	…	1	…	…	…
	−	88	49	16	9	4	2	1	…	…	…	…	…	…	…	…
18	+	60	27	15	9	5	2	2	…	2	1	1	…	…	…	…
	−	96	64	18	7	3	1	…	…	…	…	…	…	…	…	…
19	+	63	22	17	8	4	4	2	…	2	…	2	…	…	…	…
	−	95	69	19	5	1	…	…	…	…	…	…	…	…	…	…
20	+	37	23	15	12	4	3	3	4	2	2	1	…	…	…	…
	−	95	69	29	11	2	1	…	…	…	…	…	…	…	…	…
21	+	57	29	11	13	8	4	3	1	1	…	2	…	…	…	…
	−	71	69	30	10	3	1	…	…	…	…	…	…	…	…	…
22	+	53	45	16	9	4	4	1	…	1	…	1	…	…	…	…
	−	83	50	32	12	…	…	…	…	…	…	…	…	…	…	…
23	+	58	50	14	10	8	2	1	…	1	…	…	…	…	…	…
	−	79	41	34	13	1	1	…	…	…	…	…	…	…	…	…
0	+	59	42	25	14	5	1	…	2	…	…	…	…	…	…	…
	−	63	59	30	12	…	1	…	…	…	…	…	…	…	…	…
1	+	52	33	28	13	7	3	2	1	1	…	1	…	…	…	…
	−	61	58	33	16	2	2	…	…	…	…	…	…	…	…	…
2	+	44	40	12	9	3	9	2	3	1	…	2	…	…	…	…
	−	81	64	26	13	3	…	…	…	…	1	…	…	…	…	…
3	+	48	39	17	13	3	7	3	…	1	2	1	…	…	…	…
	−	83	52	28	8	2	1	3	…	…	1	1	…	…	…	…
4	+	58	42	13	6	4	2	4	1	1	…	2	…	…	…	…
	−	88	57	20	7	4	1	1	1	…	1	…	…	…	…	…
5	+	88	51	19	7	…	2	1	…	1	…	2	…	…	…	…
	−	76	40	7	7	2	…	4	2	1	1	2	…	…	…	…
6	+	84	66	32	9	5	…	…	…	…	…	…	1	…	…	…
	−	62	28	5	3	2	2	3	1	2	…	3	3	1	1	…
7	+	86	71	31	7	3	…	…	…	…	…	…	…	…	…	…
	−	54	25	9	6	8	2	1	3	1	3	2	…	1	…	…
8	+	82	78	28	7	1	…	…	…	…	…	…	…	…	…	…
	−	62	17	14	5	6	4	3	2	1	…	1	2	…	…	…
9	+	79	83	41	11	…	…	1	1	…	…	…	…	…	…	…
	−	33	16	13	10	5	1	3	7	2	1	3	1	2	…	…
10	+	77	66	37	11	…	1	1	…	1	…	1	…	…	…	…
	−	48	26	14	10	3	3	6	1	3	…	2	1	1	…	…
11	+	76	72	33	14	2	1	…	…	…	…	…	…	…	…	…
	−	51	21	13	9	5	4	4	2	1	…	3	1	…	1	…

TABLE XVI.—Number of Differences in 1000 (without reference to sign) which occur between the limits of successive Minutes, for each Month, and for the Year 1845.

Month.	0′ to 1′.	1′ to 2′.	2′ to 3′.	3′ to 4′.	4′ to 5′.	5′ to 6′.	6′ to 7′.	7′ to 8′.	8′ to 9′.	9′ to 10′.	10′ to 15′.	15′ to 20′.	20′ to 25′.	25′ to 30′.	Above 30′.
January	387	270	193	59	25	14	8	11	11	6	8	5	...	5	...
February	406	337	109	54	30	24	7	9	5	3	9	3	3	...	...
March	418	287	146	64	24	14	18	16	6	...	5	2	...	...	...
April	470	292	125	56	15	13	13	2	2	3	6	2	2	...	2
May	471	299	120	63	14	11	6	5	2	2	8	...	...	...	...
June	537	282	112	42	17	5	2	...	...	...	...	...	...	...	...
July	478	336	99	39	20	5	3	3	6	...	9	2	...	...	...
August	377	330	117	80	29	24	18	8	5	2	6	3	2	...	...
September	329	288	202	90	27	8	21	6	14	...	11	2	...	2	...
October	449	295	136	57	15	12	9	5	6	5	8	...	3	...	...
November	410	293	140	77	25	18	10	7	7	3	10	...	...	...	...
December	463	336	88	39	19	12	15	6	6	3	3	9	...	...	...
Year	433	304	132	60	21	13	11	7	6	2	7	2	1	1	...

TABLE XVII.—Number of Differences in 1000 (without reference to sign) which occur between the limits of successive Minutes, for each Hour in 1845.

Mak. Mean Time.	0′ to 1′.	1′ to 2′.	2′ to 3′.	3′ to 4′.	4′ to 5′.	5′ to 6′.	6′ to 7′.	7′ to 8′.	8′ to 9′.	9′ to 10′.	10′ to 15′.	15′ to 20′.	20′ to 25′.	25′ to 30′.	Above 30′.
h.															
12	377	348	121	38	26	19	22	10	6	3	16	10	...	3	...
13	351	371	121	54	13	16	16	16	3	10	19	6	...	3	...
14	406	294	118	67	35	13	19	10	26	...	6	3	...	...	3
15	412	288	147	73	13	19	6	16	6	...	13	3	3	...	...
16	492	288	99	38	29	26	16	...	6	...	6	...	...	...	...
17	546	259	83	58	22	10	6	10	3	...	...	3	...	...	...
18	498	291	105	51	26	10	6	...	6	3	3	...	...	...	...
19	505	291	115	42	16	13	6	...	6	...	6	...	...	...	...
20	422	294	141	73	19	13	10	13	6	6	3	...	...	...	...
21	409	313	131	73	35	16	10	3	3	...	6	...	...	...	...
22	441	304	153	67	13	13	3	...	3	...	3	...	...	...	...
23	438	291	153	73	29	10	3	...	3	...	...	...	...	...	...
0	390	323	176	83	16	6	...	6	...	...	...	...	...	...	...
1	361	291	195	93	29	16	6	3	3	...	3	...	...	...	...
2	399	332	121	70	19	29	6	10	3	3	6	...	...	...	...
3	419	291	144	67	16	26	19	...	3	10	6	...	...	...	...
4	466	316	105	42	26	10	16	6	3	3	6	...	...	...	...
5	524	291	83	45	6	6	16	6	6	3	13	...	...	...	...
6	466	300	118	38	22	6	10	3	6	...	10	13	3	3	...
7	447	307	128	42	35	6	3	10	3	10	6	...	3	...	...
8	460	304	134	38	22	13	10	6	3	...	3	6	...	...	...
9	358	316	173	67	16	3	13	26	6	3	10	3	6	...	...
10	399	294	163	67	10	13	22	3	13	...	10	3	3	...	...
11	406	297	147	73	22	16	13	6	3	...	10	3	...	3	...

TABLE XVIII.—Mean Values of the Variations of the Horizontal Component of Magnetic Force, the whole Horizontal Component being Unity, for each Civil Week-Day and Week of 1845.

Civil Day.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00
1	4476	4890	4756	5030	4479	[5555]	5503	5999	4997	5167	5061	6035
2	4831	[4903]	[5031]	5306	4827	5629	5638	5296	4423	5426	[5548]	6048
3	5184	5141	5158	5114	4882	5471	5607	[5364]	4876	5194	5456	6497
4	5307	5096	5352	5025	[4927]	5792	5897	4980	4759	5405	5407	3591
5	[5368]	5193	5326	5034	5134	5593	5880	5107	5118	[5492]	5365	5053
6	5573	4385	5327	[5144]	5083	5748	[5701]	5120	5005	5610	5828	5412
7	5645	4984	5523	5249	5155	5809	5824	5383	[5028]	5618	5404	[5359]
8	5669	4987	5279	5067	5429	[5772]	5677	5103	4739	5701	5782	5743
9	4095	[4938]	[5248]	5373	5468	5699	5320	5300	5127	5389	[5841]	6160
10	3605	5005	5030	5433	5436	6199	5477	[5424]	5422	4445	5996	6278
11	4970	5086	5005	5260	[5520]	5586	5438	5352	5372	5193	6023	6334
12	[4686]	5179	5324	5506	5610	5100	5768	5341	5347	[5330]	6014	5996
13	4812	5366	5162	[4625]	5625	4999	[5682]	6063	5268	5695	6187	5106
14	5309	5314	5082	2008	5552	5449	5790	5886	[5340]	5663	6238	[5707]
15	5327	5317	4957	4714	5460	[5322]	5880	5685	5218	5597	6311	5564
16	5166	[5367]	[4981]	4829	5432	5586	5739	5390	5501	5256	[5841]	5670
17	5383	5383	4833	4784	5449	5456	5771	[5467]	5334	5646	5460	5575
18	5230	5365	5113	5124	[5320]	5340	5566	4932	4763	5737	5309	5600
19	[4971]	5456	4742	5019	4789	5744	5853	5390	4761	[5316]	5544	6065
20	3602	5904	4803	[4831]	5548	5853	[5669]	5517	4719	5762	5897	6289
21	5198	4718	4847	4332	5244	5663	5373	5375	[5243]	4585	5912	[6209]
22	5247	4663	4803	4567	5404	[5774]	5502	5806	5356	4908	5998	6486
23	5019	[4762]	[4707]	5158	5569	5719	5947	5516	5632	5412	[6165]	6506
24	4637	4312	4719	5407	5029	5760	5869	[5543]	6226	5396	5991	6306
25	4883	4479	4186	4960	[5520]	5905	4326	5670	4704	5144	6558	6481
26	[4955]	4498	4886	5054	5470	5401	5109	5947	4556	[5566]	6632	6525
27	5039	4886	4416	[4866]	5715	5986	[5221]	4942	4700	5697	6579	6213
28	5033	4708	5004	4305	5933	5705	5222	5403	[4869]	6052	5810	[6163]
29	5121		4917	4452	5902	[5691]	5201	5842	4904	5695	5498	6244
30	4542		[4971]	5022	5638	5912	5601	4246	5183	6062	[6068]	5897
31	4557		5156		4900		5683	[4964]		5940		5617

TABLE XIX.—Mean Variations of the Horizontal Component of Magnetic Force, after eliminating the Secular Change, with reference to the Moon's Age, Declination, and Distance from the Earth, for 1845.

Moon's Age.	Variations of Horizontal Component.	Moon's Age.	Variations of Horizontal Component.	After Moon farthest North.	Variations of Horizontal Component.	After Moon farthest North.	Variations of Horizontal Component.	Before and after Perigee.	Variations of Horizontal Component.	Before and after Apogee.	Variations of Horizontal Component.
Day.	0·00	Day.	0·00	Day.	0·00	Day.	0·00	Day.	0·00	Day.	0·00
15	0241	0	0311	0	0441	14	0497	7	0209	7	0377
16	0256	1	0239	1	0381	15	0503	6	0321	6	0186
17	0231	2	0111	2	0443	16	0510	5	0241	5	0416
18	0164	3	0265	3	0209	17	0329	4	0315	4	0393
19	0200	4	0370	4	0312	18	0000	3	0177	3	0305
20	0214	5	0135	5	0249	19	0310	2	0289	2	0437
21	0118	6	0291	6	0227	20	0339	1	0423	1	0344
22	0230	7	0246	7	0150	21	0394	P	0482	A	0391
23	0336	8	0000	8	0213	22	0426	1	0424	1	0230
24	0217	9	0260	9	0286	23	0370	2	0167	2	0095
25	0199	10	0399	10	0258	24	0429	3	0000	3	0253
26	0431	11	0367	11	0391	25	0496	4	0227	4	0370
27	0370	12	0294	12	0332	26	0486	5	0358	5	0171
28	0409	13	0346	13	0331	27	0464	6	0311	6	0255
29	0372	14	0350					7	0234	7	0294

TABLE XX.—Diurnal Range of the Horizontal Component of Magnetic Force for each Civil Day, as deduced from the Hourly Observations, with the Mean for each Week in 1845.

Civil Day.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0
1	0157	0203	0174	0336	0602	[0377]	0435	0420	0476	0281	0533	0148
2	0151	[0218]	[0222]	0290	0252	0242	0472	0386	0588	0328	[0299]	0249
3	0081	0183	0220	0426	0358	0351	0354	[0477]	0487	0309	0260	3538
4	0073	0164	0136	0417	[0411]	0346	0368	0745	0889	0336	0221	1193
5	[0119]	0252	0172	0431	0409	0438	0323	0448	0407	[0341]	0343	0262
6	0095	0370	0193	[0434]	0400	0384	[0377]	0445	0416	0445	0200	0221
7	0225	0182	0227	0473	0448	0427	0269	0340	[0506]	0312	0358	[0349]
8	0088	0134	0269	0386	0412	[0446]	0582	0508	0540	0316	0150	0146
9	1687	[0215]	[0232]	0472	0447	0526	0368	0427	0468	0727	[0203]	0123
10	1375	0221	0315	0307	0405	0514	0421	[0395]	0316	0693	0127	0150
11	0169	0143	0214	0344	[0416]	0385	0451	0370	0347	0308	0210	0130
12	[0661]	0241	0172	0347	0339	0454	0398	0353	0399	[0401]	0171	0231
13	0230	0325	0244	[0872]	0427	0340	[0403]	0374	0423	0265	0153	0336
14	0249	0127	0346	3542	0469	0367	0477	0392	[0375]	0207	0154	[0245]
15	0259	0105	0351	0398	0543	[0377]	0361	0699	0319	0209	0161	0392
16	0126	[0176]	[0340]	0297	0799	0316	0311	0521	0319	0311	[0260]	0150
17	0203	0214	0323	0351	0609	0374	0377	[0513]	0445	0378	0654	0230
18	0218	0118	0447	0413	[0578]	0414	0364	0445	0545	0328	0245	0300
19	[0479]	0167	0332	0683	0599	0356	0377	0503	0326	[0359]	0196	0101
20	1715	0375	0668	[0469]	0475	0473	[0418]	0519	0336	0276	0141	0115
21	0106	0360	0389	0540	0441	0444	0493	0475	[0396]	0405	0188	[0157]
22	0504	0378	0307	0416	0493	[0401]	0434	0402	0308	0455	0302	0143
23	0335	[0439]	[0488]	0409	0386	0438	0462	0337	0364	0213	[0182]	0153
24	0452	0627	0559	0599	0573	0431	0479	[0388]	0496	0232	0153	0132
25	0378	0406	0528	0619	[0404]	0266	0813	0360	0872	0335	0210	0143
26	[0473]	0490	0475	0571	0312	0428	0344	0444	0368	[0203]	0099	0119
27	0479	0360	0487	[0588]	0337	0349	[0448]	0308	0571	0158	0139	0230
28	0361	0269	0274	0875	0321	0473	0389	0374	[0436]	0133	0508	[0197]
29	0833		0384	0384	0314	[0441]	0337	0770	0266	0146	0323	0172
30	0277		[0347]	0480	0585	0490	0329	0588	0256	0182	[0817]	0370
31	0231		0311		0427		0419	[0547]		0256		0148

TABLE XXI.—Means of the Diurnal Ranges of the Horizontal Component of Magnetic Force, with reference to the Moon's Age and Declination, for 1845.

Moon's Age.	Mean Range.	Moon's Age.	Mean Range.	After Moon farthest North.	Mean Range.	After Moon farthest North.	Mean Range.
Day.	0·00	Day.	0·00	Day.	0·00	Day.	0·00
15	3538	0	3310	0	3481	14	3731
16	3976	1	5104	1	4383	15	3281
17	3895	2	4401	2	3637	16	3216
18	4513	3	3537	3	6304	17	7364
19	3945	4	6065	4	3565	18	4982
20	3485	5	3967	5	4209	19	3286
21	4553	6	3315	6	3890	20	3433
22	3444	7	3822	7	4159	21	3301
23	3161	8	5964	8	4008	22	3135
24	3582	9	3205	9	3937	23	3422
25	2996	10	3396	10	3911	24	2731
26	3125	11	3394	11	3126	25	3276
27	2875	12	4643	12	3486	26	3119
28	2950	13	3393	13	3461	27	3194
29	3346	14	3536				

TABLE XXII.—Hourly Means of the Scale Readings of the Bifilar Magnetometer, corrected for Temperature, for each Month in 1845.

Mean Time.		Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
Gött.	Mak.													
h.	h.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.
13	12	531·97	535·40	537·80	535·40	539·33	542·27	541·59	541·57	536·77	539·26	541·97	538·78	538·51
14	13	531·27	534·91	534·51	533·75	538·18	540·78	539·92	539·37	538·01	540·23	542·76	539·54	537·77
15	14	526·11	533·87	532·13	526·60	537·21	539·95	539·07	537·89	535·62	539·81	542·87	541·01	536·01
16	15	533·93	533·95	535·32	534·97	537·07	539·57	538·84	538·85	536·65	541·74	543·99	541·93	538·07
17	16	535·94	535·63	533·77	533·65	536·85	539·49	537·58	538·95	536·96	542·74	544·91	543·86	538·36
18	17	537·67	536·03	536·24	535·38	535·54	537·68	536·07	537·22	538·12	542·07	545·64	545·51	538·60
19	18	538·25	537·63	536·03	534·45	534·76	535·72	535·00	534·65	535·81	541·46	546·32	546·32	538·03
20	19	538·55	537·30	534·73	532·88	530·52	532·90	532·82	530·03	530·13	540·21	544·91	544·58	535·80
21	20	536·89	535·91	530·90	527·70	526·57	529·20	529·00	526·02	526·43	535·22	540·36	543·52	532·31
22	21	536·46	532·50	528·22	522·76	524·59	526·90	526·68	523·63	523·59	530·66	535·61	541·06	529·39
23	22	534·06	531·56	525·01	520·52	524·77	525·94	526·04	524·09	521·87	529·50	535·74	538·49	528·13
0	23	535·25	531·93	527·75	522·09	526·59	529·37	529·88	527·32	526·60	530·20	535·34	536·76	529·92
1	0	535·72	533·43	531·71	525·44	530·88	535·78	533·73	533·11	531·47	532·61	538·35	537·72	533·33
2	1	537·44	535·52	533·96	530·97	536·34	540·03	538·20	539·80	537·02	537·59	540·99	540·44	537·36
3	2	536·70	537·34	539·03	536·23	540·00	543·74	542·86	541·36	538·58	538·91	542·10	542·14	539·91
4	3	536·92	538·76	540·26	540·35	544·30	546·29	546·43	546·13	540·49	540·77	543·11	542·97	542·23
5	4	536·84	537·56	541·06	543·61	548·14	547·55	548·13	547·30	541·90	540·72	542·24	544·45	543·29
6	5	536·94	537·43	540·32	545·40	549·39	549·32	549·89	547·73	543·10	541·30	543·64	545·01	544·12
7	6	536·80	537·70	540·37	546·13	550·47	550·32	552·12	547·21	545·31	542·82	543·06	549·94	545·18
8	7	535·31	538·17	540·63	545·44	549·24	550·64	549·97	548·39	543·89	542·91	542·25	546·16	544·41
9	8	535·94	537·82	538·25	542·56	546·57	548·64	549·39	545·73	540·40	542·43	541·90	539·68	542·44
10	9	536·04	537·64	540·11	541·40	544·59	546·88	545·80	544·00	541·83	542·46	541·43	540·22	541·86
11	10	533·37	535·03	538·45	540·88	542·35	545·34	543·12	543·46	539·66	540·61	541·70	540·25	540·35
12	11	533·00	536·35	538·67	539·69	541·07	543·26	543·19	543·18	540·20	539·99	541·70	540·18	540·04

TABLE XXIII.—Diurnal Variations of the Horizontal Component of Magnetic Force in 1845.

Mak. M. T.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00
12	0820	0538	1791	2083	2064	2286	2177	2512	2086	1366	0928	0283	1453
13	0722	0469	1330	1852	1903	2078	1943	2204	2260	1502	1039	0389	1350
14	0000	0323	0997	0851	1767	1961	1824	1996	1925	1443	1054	0595	1103
15	1095	0335	1443	2023	1747	1908	1798	2131	2069	1714	1211	0724	1392
16	1376	0570	1226	1838	1716	1897	1616	2145	2113	1854	1340	0994	1432
17	1618	0626	1572	2080	1533	1644	1404	1903	2275	1760	1442	1225	1466
18	1700	0850	1543	1950	1424	1369	1254	1543	1952	1674	1537	1338	1386
19	1742	0804	1361	1730	0830	0974	0949	0896	1156	1499	1340	1095	1074
20	1509	0609	0825	1005	0277	0456	0414	0335	0638	0801	0703	0946	0585
21	1449	0132	0449	0314	0000	0134	0090	0000	0241	0162	0038	0602	0176
22	1113	0000	0000	0000	0025	0000	0000	0064	0000	0000	0056	0242	0000
23	1280	0052	0384	0220	0280	0480	0538	0517	0662	0098	0000	0000	0251
0	1345	0262	0938	0689	0881	1378	1077	1327	1344	0435	0421	0134	0728
1	1586	0554	1253	1463	1645	1973	1702	2264	2121	1133	0791	0515	1292
2	1483	0809	1963	2199	2157	2492	2355	2482	2339	1317	0946	0753	1649
3	1513	1008	2135	2776	2759	2849	2855	3150	2607	1578	1088	0869	1974
4	1502	0840	2247	3233	3297	3025	3093	3314	2804	1571	0966	1076	2122
5	1516	0822	2143	3483	3472	3273	3339	3374	2972	1652	1162	1154	2239
6	1497	0860	2150	3585	3623	3413	3651	3301	3282	1863	1081	1845	2387
7	1288	0925	2187	3489	3451	3458	3350	3466	3083	1877	0967	1315	2279
8	1376	0876	1854	3086	3077	3178	3269	3094	2594	1810	0918	0408	2003
9	1390	0851	2114	2923	2800	2932	2766	2852	2794	1814	0853	0484	1922
10	1016	0486	1882	2850	2486	2716	2391	2776	2491	1555	0890	0488	1711
11	0965	0671	1912	2684	2307	2425	2401	2737	2566	1469	0890	0478	1667

TABLE XXIV.—List of Ten Days in each Month of 1845 upon which the Horizontal Component of Magnetic Force was least disturbed.

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.
3	1	3	1	2	3	3	7	5	13	3	1
4	3	4	3	5	13	10	11	6	14	6	2
6	4	5	4	6	14	11	12	9	16	8	9
7	7	6	5	7	19	15	14	10	17	10	10
8	8	7	7	8	20	16	16	11	23	12	11
13	12	8	10	10	21	17	20	12	27	13	19
15	14	10	11	23	24	21	21	16	28	14	20
16	15	11	16	26	25	22	25	20	29	15	22
21	18	12	17	27	26	28	26	22	30	24	25
31	19	13	22	29	27	31	28	29	31	28	26

TABLE XXV.—Hourly Means of the Bifilar Magnetometer Scale Readings corrected for Temperature, for the Ten Days least disturbed in each Month of 1845, corrected so that the Mean of each Ten Days equals the Monthly Mean.

Mak. M. T.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
h.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.
12	34·16	35·93	38·06	39·14	40·33	42·69	42·48	42·42	38·40	41·06	42·28	40·69	39·81
13	33·05	35·15	36·21	37·71	39·79	40·98	40·67	40·22	39·70	39·73	41·91	41·19	38·86
14	33·93	34·80	35·80	36·53	39·11	39·88	39·24	39·99	37·72	40·16	42·58	42·04	38·48
15	34·29	35·65	36·30	35·22	38·79	39·41	39·41	39·25	38·48	41·40	43·79	42·19	38·68
16	35·00	36·24	36·59	35·67	38·38	38·97	38·24	39·99	37·28	43·01	44·18	43·03	38·88
17	36·48	36·62	36·99	37·07	36·35	37·34	36·19	38·40	38·31	42·88	44·83	44·70	38·85
18	36·47	37·27	36·55	35·20	34·95	35·52	34·44	35·61	37·08	41·64	44·66	45·20	37·89
19	36·92	37·53	35·89	32·35	31·91	32·76	32·81	31·08	31·30	40·10	42·93	44·52	35·84
20	35·87	36·13	32·49	27·52	27·38	30·13	28·06	27·25	26·54	35·90	38·00	43·40	32·39
21	35·40	34·64	29·29	23·04	24·61	27·31	25·85	23·07	23·30	31·15	35·40	40·74	29·49
22	33·46	32·62	26·34	19·24	24·51	25·64	26·04	23·04	22·14	28·88	33·63	38·59	27·85
23	33·89	31·79	26·89	20·74	26·09	29·17	29·67	26·15	25·83	30·45	34·78	37·48	29·41
0	35·08	32·09	30·73	24·13	30·44	34·94	33·55	32·28	30·32	32·60	38·40	38·46	32·75
1	36·12	35·12	32·71	29·48	35·34	40·64	37·44	38·08	36·13	36·46	41·22	40·58	36·61
2	35·10	36·16	36·02	35·37	39·57	42·58	43·27	42·08	39·13	38·07	42·60	42·58	39·38
3	35·81	36·22	38·31	38·08	44·04	46·44	46·61	46·14	38·35	40·31	44·27	42·93	41·46
4	36·85	36·37	38·77	39·99	45·46	47·60	48·38	45·86	40·22	40·00	44·69	44·03	42·35
5	37·12	37·62	38·32	42·79	48·14	49·54	49·50	45·97	42·74	41·49	44·67	44·26	43·52
6	36·51	37·56	38·61	43·81	48·63	50·46	51·17	46·31	43·72	42·25	43·98	44·21	43·94
7	35·22	36·99	39·87	43·88	47·37	50·56	50·53	46·91	43·47	42·27	43·55	43·10	43·65
8	34·97	37·07	38·32	41·34	45·72	49·16	49·11	45·76	42·18	41·71	43·39	42·28	42·59
9	34·98	36·59	38·54	40·19	44·95	47·01	45·37	45·17	39·68	42·85	42·06	41·34	41·56
10	35·93	36·30	38·56	40·07	42·47	45·07	44·28	43·47	39·87	41·62	42·36	40·98	40·92
11	34·76	36·97	38·96	39·67	41·08	43·77	42·85	42·47	38·53	40·27	42·80	40·33	40·21

TABLE XXVI.—Mean Variations of the Horizontal Component of Magnetic Force, with reference to the Moon's Hour-Angle for each Lunation, for the Six Summer and Seven Winter Lunations, and for the whole Thirteen Lunations of 1845.

Moon's Hour-Angle.	LUNATIONS.															
	1st.	2d.	3d.	4th.	5th.	6th.	7th.	8th.	9th.	10th.	11th.	12th.	13th.	Summer.	Winter.	Year.
h.	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00
0	0697	0210	0122	1064	0441	0337	0270	0490	0475	0112	0209	0045	0364	0300	0050	0155
1	0722	0274	0412	0960	0423	0575	0276	0581	0707	0244	0039	0648	0379	0374	0187	0263
2	0760	0113	0000	1064	0421	0630	0409	0687	0363	0326	0014	1711	0402	0383	0274	0314
3	0938	0272	0300	1121	0346	0459	0448	0868	0644	0109	0140	1000	0270	0450	0231	0322
4	0626	0239	0246	1231	0269	0276	0287	0721	0493	0000	0136	0134	0118	0334	0013	0151
5	0589	0228	0179	1263	0265	0241	0421	0778	0311	0071	0084	0088	0287	0334	0017	0153
6	0665	0258	0370	1256	0203	0171	0316	0654	0399	0200	0112	0171	0000	0287	0052	0151
7	0809	0342	0339	1131	0105	0000	0218	0641	0444	0190	0097	0125	0200	0211	0099	0140
8	0469	0412	0262	0679	0031	0160	0287	0461	0515	0192	0000	0000	0074	0143	0000	0056
9	0028	0318	0116	0000	0000	0126	0216	0605	0328	0599	0231	0087	0164	0000	0019	0000
10	0000	0403	0207	1254	0246	0123	0232	0518	0353	0654	0301	0106	0175	0242	0062	0135
11	0750	0263	0410	1247	0286	0265	0286	0634	0487	0344	0280	0326	0018	0322	0140	0214
12	0529	0323	0377	1485	0416	0220	0200	0864	0287	0490	0305	0322	0265	0366	0172	0251
13	0244	0179	0339	1323	0255	0272	0330	0603	0560	0280	0486	0514	0266	0345	0129	0218
14	0574	0134	0448	1452	0434	0356	0283	0580	0381	0612	0402	0452	0312	0368	0218	0277
15	0227	0137	0347	1296	0351	0270	0251	0676	0371	0647	0445	0538	0284	0323	0174	0232
16	0816	0312	0291	1470	0413	0246	0231	0500	0158	0535	0399	0517	0214	0290	0239	0253
17	0647	0489	0420	1366	0181	0127	0169	0218	0046	0515	0318	0507	0260	0139	0250	0188
18	0400	0302	0489	1320	0267	0024	0000	0466	0059	0419	0413	0489	0248	0143	0193	0160
19	0477	0154	0329	1484	0273	0032	0025	0260	0153	0262	0406	0566	0232	0159	0145	0141
20	0479	0064	0182	1212	0213	0041	0158	0143	0085	0325	0340	0307	0206	0096	0071	0072
21	0582	0000	0202	1413	0594	0034	0097	0041	0000	0258	0482	0465	0281	0151	0123	0125
22	0538	0134	0078	1406	0214	0218	0280	0000	0109	0451	0234	0386	0097	0159	0073	0102
23	0386	0080	0148	1238	0291	0428	0269	0283	0196	0070	0206	0279	0294	0238	0008	0104
24	0678	0000	0095	1175	0190	0321	0259	0470	0263	0119	0248	0384	0391	0234	0072	0137

TABLE XXVII.—Differences between the Hourly Means of the Bifilar Scale Readings for the whole Series in each Month and those for the selected Ten Days; or Table XXII. *minus* Table XXV.

Mak. M. T.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
h.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.
12	−2·19	−0·53	−0·26	−3·74	−1·00	−0·42	−0·89	−0·85	−1·63	−1·80	−0·31	−1·91	−1·30
13	−1·78	−0·24	−1·70	−3·96	−1·61	−0·20	−0·75	−0·85	−1·69	+0·50	+0·85	−1·65	−1·09
14	−7·82	−0·93	−3·67	−9·93	−1·90	+0·07	−0·17	−2·10	−2·10	−0·35	+0·29	−1·03	−2·47
15	−0·36	−1·70	−0·98	−0·25	−1·72	+0·16	−0·57	−0·40	−1·83	+0·34	+0·20	−0·26	−0·61
16	+0·94	−0·61	−2·82	−2·02	−1·53	+0·52	−0·66	−1·04	−0·32	−0·27	+0·73	+0·83	−0·52
17	+1·19	−0·59	−0·75	−1·69	−0·81	+0·34	−0·12	−1·18	−0·19	−0·81	+0·81	+0·81	−0·25
18	+1·78	+0·36	−0·52	−0·75	−0·19	+0·20	+0·56	−0·96	−1·27	−0·18	+1·66	+1·12	+0·14
19	+1·63	−0·23	−1·16	+0·53	−1·39	+0·14	+0·01	−1·05	−1·17	+0·11	+1·98	+0·06	−0·04
20	+1·02	−0·22	−1·59	+0·18	−0·81	−0·93	+0·94	−1·23	−0·11	−0·68	+2·36	+0·12	−0·08
21	+1·06	−2·14	−1·07	−0·28	−0·02	−0·41	+0·83	+0·56	+0·29	−0·49	+0·21	+0·32	−0·10
22	+0·60	−1·06	−1·33	+1·28	+0·26	+0·30	0·00	+1·05	−0·27	+0·62	+2·11	−0·10	+0·28
23	+1·36	+0·14	+0·86	+1·35	+0·50	+0·20	+0·21	+1·17	+0·77	−0·25	+0·56	−0·72	+0·51
0	+0·64	+1·34	+0·98	+1·31	+0·44	+0·84	+0·18	+0·83	+1·15	+0·01	−0·05	−0·74	+0·58
1	+1·32	+0·40	+1·25	+1·49	+1·00	−0·61	+0·76	+1·72	+0·89	+1·13	−0·23	−0·14	+0·75
2	+1·60	+1·18	+3·01	+0·86	+0·43	+1·16	−0·41	−0·72	−0·55	+0·84	−0·50	−0·44	+0·53
3	+1·11	+2·54	+1·95	+2·27	+0·26	−0·15	−0·18	−0·01	+2·14	+0·46	−1·16	+0·04	+0·77
4	−0·01	+1·19	+2·29	+3·62	+2·68	−0·05	−0·25	+1·44	+1·68	+0·72	−2·45	+0·42	+0·94
5	−0·18	−0·19	+2·00	+2·61	+1·25	−0·22	+0·39	+1·76	+0·36	−0·19	−1·03	+0·75	+0·60
6	+0·29	+0·14	+1·76	+2·32	+1·84	−0·14	+0·95	+0·90	+1·59	+0·57	−0·92	+5·73	+1·24
7	+0·09	+1·18	+0·76	+1·56	+1·87	+0·08	−0·56	+1·48	+0·42	+0·64	−1·30	+3·06	+0·76
8	+0·97	+0·75	−0·07	+1·22	+0·85	−0·52	+0·28	−0·03	−1·78	+0·72	−1·49	−2·60	−0·15
9	+1·06	+1·05	+1·57	+1·21	−0·36	−0·13	+0·43	−1·17	+2·15	−0·39	−0·63	−1·12	+0·30
10	−2·56	−1·27	−0·11	+0·81	−0·12	+0·27	−1·16	−0·01	−0·21	−1·01	−0·66	−0·73	−0·57
11	−1·76	−0·62	−0·29	+0·02	−0·01	−0·51	+0·34	+0·71	+1·67	−0·28	−1·10	−0·15	−0·17

TABLE XXVIII.—Mean Difference of a Single Observation of the Bifilar Magnetometer from the Monthly Mean at the corresponding Hour, for each Civil Day and Week in 1845.

Civil Day.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.
1	4·12	1·97	2·12	1·92	6·86	[4·15]	4·23	5·14	4·31	2·49	7·55	2·04
2	2·81	[2·97]	[2·89]	3·39	4·43	3·55	3·30	3·49	6·07	2·58	[4·54]	2·43
3	2·09	1·78	2·29	3·71	3·68	2·81	1·34	[4·28]	3·45	3·19	3·28	24·36
4	2·88	2·32	2·90	5·39	[3·71]	5·00	2·37	6·92	5·61	1·66	3·86	17·03
5	[3·92]	3·78	2·90	2·42	2·24	2·99	3·50	3·56	3·23	[2·66]	4·22	6·06
6	4·52	4·73	2·72	[3·60]	2·20	2·87	[2·69]	3·70	2·85	3·92	1·99	3·84
7	6·04	2·44	4·00	3·06	2·83	2·75	3·67	2·20	[3·97]	2·39	4·30	[5·90]
8	5·20	1·59	2·99	3·13	1·66	[3·02]	2·48	4·16	4·81	2·20	1·59	2·65
9	14·28	[2·67]	[2·70]	3·87	2·55	3·08	2·77	2·95	4·31	5·86	[2·32]	2·52
10	11·05	2·42	2·17	4·46	2·48	4·32	1·54	[3·18]	3·03	7·63	1·88	3·28
11	1·72	1·81	1·87	3·51	[2·88]	2·10	2·22	2·28	3·63	3·35	1·91	3·32
12	[6·36]	3·04	2·44	4·75	3·29	3·95	3·10	2·67	4·03	[3·87]	2·28	3·09
13	3·20	3·07	2·90	[6·84]	3·34	4·60	[2·55]	4·85	3·50	1·85	2·65	6·14
14	4·19	2·32	4·86	22·47	3·98	2·99	2·87	3·44	[3·33]	2·12	2·98	[3·98]
15	3·70	2·65	2·99	3·07	3·90	[3·19]	2·63	5·45	1·72	2·42	3·45	5·64
16	2·36	[3·00]	[3·52]	2·81	5·20	2·13	2·93	3·33	3·81	2·43	[4·11]	2·38
17	4·21	4·19	3·55	2·35	3·67	2·76	2·05	[3·88]	3·30	3·22	7·65	3·29
18	3·93	2·52	2·92	4·55	[4·00]	2·74	2·75	4·84	5·43	3·85	4·97	2·98
19	[5·11]	3·25	3·90	5·53	5·43	1·75	3·35	2·92	4·15	[4·08]	2·98	2·41
20	11·75	7·02	5·11	[3·94]	3·20	3·14	[2·80]	3·32	3·46	3·87	1·68	3·02
21	2·76	4·80	2·64	5·00	2·60	1·71	3·00	2·91	[4·65]	6·32	2·62	[3·63]
22	5·63	3·89	2·43	3·47	3·82	[2·30]	1·87	3·20	2·05	4·80	1·98	4·50
23	4·52	[6·22]	[4·50]	2·75	2·47	2·71	3·81	3·85	4·36	1·00	[3·18]	5·30
24	5·47	8·52	4·94	4·65	3·86	2·01	5·43	[3·74]	8·27	2·71	1·97	3·57
25	4·23	7·06	7·39	3·91	[3·30]	2·48	10·76	3·36	9·50	3·86	5·26	4·46
26	[5·03]	6·04	4·52	3·50	2·38	2·59	3·75	5·50	5·03	[2·78]	5·59	4·58
27	4·84	3·55	5·90	[4·86]	3·03	3·03	[4·60]	3·63	6·12	2·38	5·33	4·27
28	5·61	3·59	2·52	7·86	4·24	3·66	2·60	2·48	[5·08]	4·40	3·59	[4·13]
29	5·50		3·11	5·17	4·03	[3·41]	2·67	8·27	3·97	2·35	3·84	3·12
30	4·06		[3·23]	4·07	4·80	3·63	2·37	8·75	3·40	4·29	[6·93]	5·90
31	3·90		2·57		4·74		2·87	[5·55]		4·07		2·43

TABLE XXIX.—Mean Difference of a Single Observation of the Bifilar Magnetometer from the Monthly Mean at the corresponding Hour, with reference to the Moon's Age and Declination, for 1845.

Moon's Age.	Mean Difference.	Moon's Age.	Mean Difference.	After Moon farthest North.	Mean Difference.	After Moon farthest North.	Mean Difference.
Day.	Sc. Div.	Day.	Sc. Div.	Day.	Sc. Div.	Day.	Sc. Div.
15	3·61	0	3·61	0	3·30	14	3·78
16	3·44	1	4·86	1	4·21	15	3·08
17	4·03	2	3·74	2	4·09	16	3·32
18	4·48	3	3·11	3	5·88	17	6·20
19	4·09	4	4·96	4	4·01	18	5·36
20	4·28	5	4·44	5	4·37	19	3·62
21	4·78	6	3·61	6	3·54	20	3·50
22	3·98	7	3·51	7	4·74	21	3·37
23	4·05	8	5·41	8	4·09	22	3·24
24	3·72	9	3·37	9	4·37	23	3·71
25	3·41	10	3·38	10	4·24	24	3·07
26	4·04	11	3·37	11	3·42	25	3·36
27	4·31	12	4·14	12	3·29	26	3·71
28	3·64	13	3·21	13	3·53	27	3·61
29	3·76	14	3·63				

TABLE XXX.—Mean Difference of a Single Observation of the Bifilar Magnetometer from the Monthly Mean at the corresponding Hour, for each Hour in each Month in 1845.

Mak. M. T.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
h.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.
12	5·82	4·31	3·59	8·02	3·91	2·04	2·53	3·40	5·72	5·62	2·52	6·94	4·54
13	6·11	4·86	4·03	8·93	3·57	2·70	2·68	3·60	4·51	3·20	2·63	6·32	4·43
14	14·29	4·37	6·14	18·24	3·44	2·47	2·08	4·87	4·11	3·30	2·23	5·19	5·89
15	4·46	4·00	3·67	4·38	4·34	2·84	2·89	3·38	4·05	2·50	2·44	4·48	3·62
16	4·31	3·05	5·29	5·14	3·19	2·80	3·69	2·63	3·78	2·61	2·80	3·28	3·55
17	3·50	3·63	3·27	3·90	3·55	2·07	2·65	3·42	4·48	3·03	2·46	3·87	3·32
18	2·63	2·93	2·42	3·61	3·81	2·27	2·92	3·77	4·89	3·30	2·94	3·24	3·23
19	2·95	3·10	3·10	3·38	4·62	2·60	2·81	4·35	5·48	1·99	4·17	3·04	3·47
20	3·19	3·28	3·58	3·42	4·41	3·00	3·46	5·22	5·58	3·43	3·49	3·30	3·78
21	3·80	5·59	2·95	3·53	3·25	3·10	3·12	4·38	3·49	3·47	4·99	3·84	3·79
22	4·73	3·62	3·65	3·72	2·58	3·61	4·49	5·12	4·51	2·89	3·82	3·88	3·88
23	4·10	3·40	2·56	4·16	3·46	3·94	4·57	5·05	4·19	4·29	4·64	4·39	4·06
0	4·79	4·77	2·80	2·98	3·70	4·04	3·58	4·90	3·32	4·07	3·61	5·43	4·00
1	3·82	3·52	2·41	3·67	3·30	3·35	4·33	5·70	3·77	4·48	3·65	4·11	3·84
2	3·94	2·90	2·39	4·08	4·03	3·91	3·31	6·50	4·80	3·60	3·93	3·96	3·95
3	2·53	2·99	2·27	4·42	4·12	3·76	3·98	6·36	4·77	3·20	2·73	3·21	3·70
4	3·33	2·90	4·42	4·61	4·66	3·56	2·66	4·77	5·31	3·13	4·73	3·53	3·97
5	3·63	3·08	1·77	2·93	3·68	3·80	3·65	2·97	3·16	2·68	3·82	4·09	3·27
6	3·43	4·22	3·00	2·27	3·55	3·50	2·98	2·22	2·32	2·71	3·70	13·27	3·93
7	5·11	2·55	3·22	2·54	3·04	3·28	3·17	2·62	4·06	2·53	4·76	6·62	3·62
8	4·53	3·42	4·02	3·63	2·61	2·05	3·00	3·33	5·73	2·20	4·69	6·69	3·82
9	7·32	4·39	4·19	3·01	3·19	2·34	2·61	4·34	3·38	3·29	4·65	5·71	4·03
10	8·07	3·82	3·77	3·80	2·74	2·20	2·99	2·83	4·91	4·54	3·55	5·82	4·09
11	9·25	3·66	3·33	3·17	3·40	3·09	2·52	3·20	4·39	5·00	2·92	5·41	4·11

TABLE XXXI.—Mean Values of the Variations of the Vertical Component of Magnetic Force, the whole Vertical Component being Unity, for each Civil Week-Day and Week of 1845.

Civil Day.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	0·00	0·00	0·00	0.00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00
1	6201	5760	5601	5468	4717	[5100]	4573	4771	4489	4493	4319	4264
2	6150	[5786]	[5555]	5401	5305	5082	4912	4369	4505	4326	[4398]	4295
3	6089	5774	5560	5517	5275	5090	4813	[4626]	4905	4475	4330	5219
4	6014	5712	5525	5492	[5262]	5262	4883	4693	4842	4381	4535	4683
5	[6036]	5993	5524	5475	5425	5164	4737	4635	4744	[4415]	4766	4703
6	5983	5823	5478	[5481]	5419	5061	[4746]	4651	4843	4523	4436	4577
7	5977	5712	5487	5460	5432	5056	4685	4662	[4698]	4427	4264	[4547]
8	6001	5708	5525	5412	5462	[5063]	4694	4525	4673	4361	4150	4535
9	5977	[5710]	[5520]	5533	5329	5019	4662	4654	4581	4262	[4294]	4419
10	6068	5643	5525	5378	5279	5011	4743	[4701]	4504	4297	4359	4365
11	6032	5677	5569	5481	[5199]	5066	4766	4812	4625	4478	4195	4295
12	[5987]	5698	5536	5523	5001	4980	4936	4760	4566	[4283]	4360	4317
13	6018	5582	5528	[5324]	5057	4996	[4829]	4793	4543	4376	4423	4506
14	5957	5588	5507	4848	5069	4957	4897	4687	[4582]	4155	4398	[4315]
15	5872	5593	5455	5325	5119	[5083]	4892	4800	4638	4131	4381	4315
16	5912	[5562]	[5472]	5387	5158	5171	4739	4887	4575	4267	[4379]	4213
17	5955	5587	5356	5431	5194	5187	4732	[4732]	4548	4288	4405	4247
18	5856	5542	5474	5458	[5149]	5210	4648	4537	4168	4237	4392	4333
19	[5750]	5478	5511	5245	4905	4881	4620	4724	4345	[4237]	4273	4322
20	5131	5450	5424	[5368]	5318	4895	[4728]	4756	4543	4214	4200	4256
21	5815	5562	5418	5330	5202	4816	4764	4737	[4422]	4287	4326	[4249]
22	5834	5580	5322	5384	5227	[4948]	4759	4758	4474	4128	4408	4239
23	5887	[5464]	[5387]	5359	5162	5051	4845	4567	4584	4299	[4307]	4187
24	5757	5320	5391	5407	5219	4988	4918	[4646]	4418	4414	4453	4155
25	6016	5387	5282	5462	[5226]	5055	4249	4508	4301	4291	4370	3974
26	[5846]	5484	5488	5252	5259	4991	4681	4646	4340	[4304]	4083	3919
27	5853	5531	5438	[5245]	5274	4986	[4675]	4662	4435	4413	3906	4029
28	5909	5588	5422	4966	5218	5047	4715	4555	[4379]	4236	3980	[4011]
29	5654		5509	5142	5111	[4891]	4769	4326	4381	4174	3967	4122
30	5766		[5457]	5243	5084	4837	4716	4253	4322	4159	[4272]	3975
31	5711		5502		4970		4636	[4505]		4278		4048

TABLE XXXII.—Mean Variations of the Vertical Component of Magnetic Force, after Eliminating the Secular Change, with reference to the Moon's Age, Declination, and Distance from the Earth, for 1845.

Moon's Age.	Variations of Vertical Component.	Moon's Age.	Variations of Vertical Component.	After Moon farthest North.	Variations of Vertical Component.	After Moon farthest North.	Variations of Vertical Component.	Before and after Perigee.	Variations of Vertical Component.	Before and after Apogee.	Variations of Vertical Component.
Day.	0·00	Day.	0·00	Day.	0·00	Day.	0·00	Day.	0·00	Day.	0·00
15	0051	0	0052	0	0170	14	0170	7	0133	7	0127
16	0069	1	0061	1	0106	15	0132	6	0129	6	0093
17	0044	2	0100	2	0128	16	0160	5	0115	5	0147
18	0068	3	0104	3	0000	17	0237	4	0117	4	0137
19	0109	4	0142	4	0065	18	0190	3	0101	3	0137
20	0101	5	0135	5	0123	19	0186	2	0159	2	0158
21	0045	6	0144	6	0152	20	0138	1	0138	1	0156
22	0077	7	0069	7	0134	21	0198	P	0130	A	0096
23	0103	8	0037	8	0161	22	0168	1	0168	1	0026
24	0069	9	0045	9	0158	23	0089	2	0243	2	0000
25	0021	10	0089	10	0102	24	0136	3	0193	3	0060
26	0034	11	0069	11	0166	25	0150	4	0152	4	0084
27	0000	12	0003	12	0152	26	0105	5	0166	5	0103
28	0029	13	0037	13	0160	27	0137	6	0142	6	0110
29	0025	14	0053					7	0063	7	0127

TABLE XXXIII.—Diurnal Range of the Vertical Component of Magnetic Force for each Civil Day, as deduced from the Hourly Observations, with the Mean for each Week in 1845.

Civil Day.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00
1	0398	0231	0724	0209	4177	[0580]	1075	1650	0945	0435	0984	0217
2	0243	[0585]	[0514]	0343	0190	0313	0405	1223	0835	0608	[0786]	0362
3	0089	0147	0247	0692	0224	0407	0430	[0932]	1783	0521	0611	4401
4	0165	0275	0183	0240	[0904]	0826	0313	1091	0847	0715	0525	1063
5	[0186]	1821	0254	0331	0282	0517	0420	0643	0775	[0515]	2124	0496
6	0185	0329	0135	[0417]	0256	0311	[0580]	0524	0435	0533	0465	0264
7	0290	0282	0421	0252	0298	0469	0781	0499	[0717]	0283	0790	[0382]
8	0147	0214	0314	0444	0355	[0555]	0873	0889	1099	0429	0325	0161
9	4313	[0275]	[0316]	0542	0292	0643	0664	1071	0642	2122	[0437]	0117
10	0781	0339	0555	0336	0298	0780	0609	[0579]	0502	1802	0216	0192
11	0407	0259	0253	0241	[0471]	0612	0359	0417	0451	0524	0587	0178
12	[1085]	0228	0219	0189	0451	0433	0458	0201	0936	[0873]	0241	0300
13	0407	0493	0361	[1429]	0431	0591	[0390]	0400	0520	0227	0182	0881
14	0352	0165	0715	6551	1000	0446	0269	0258	[0534]	0261	0185	[0461]
15	0248	0117	0672	0775	1237	[0440]	0242	1042	0373	0305	0167	0432
16	0335	[0234]	[0724]	0483	0746	0424	0406	0445	0223	0326	[0467]	0508
17	0251	0361	0876	0359	0446	0297	0269	[0593]	0700	0659	1141	0467
18	0145	0105	0694	0727	[0862]	0451	0248	1313	2219	0159	0698	0442
19	[1051]	0166	1029	0797	1739	0324	0378	0259	1017	[0768]	0429	0165
20	4769	0535	3361	[0649]	0346	0348	[0326]	0244	0403	0658	0279	0178
21	0471	0987	0944	1242	0659	0231	0293	0258	[0783]	1196	0190	[0210]
22	0336	1083	0758	0467	0878	[0331]	0492	0329	0279	1611	0281	0056
23	0514	[1320]	[1894]	0301	0454	0381	0278	0425	0397	0225	[0266]	0210
24	1732	1588	2383	0721	0378	0393	0951	[0464]	0383	0468	0271	0211
25	0992	1720	2629	1074	[0419]	0309	2319	0591	4499	0851	0154	0307
26	[1092]	2005	1292	0342	0204	0399	0296	0937	0904	[0395]	0421	0215
27	0923	0736	1638	[1136]	0333	0383	[0798]	0247	1659	0221	0208	0326
28	0986	0940	0420	3602	0270	0602	0497	0339	[1449]	0236	0460	[0385]
29	1403		0759	0512	0365	[0583]	0286	2689	0577	0372	0493	0240
30	0609		[0602]	0564	0530	0634	0440	2737	0621	0174	[1023]	0779
31	0426		0245		1040		0459	[1555]		0301		0441

TABLE XXXIV.—Means of the Diurnal Ranges of the Vertical Component of Magnetic Force, with reference to the Moon's Age and Declination, for 1845.

Moon's Age.	Mean Range.	Moon's Age.	Mean Range.	After Moon farthest North.	Mean Range.	After Moon farthest North.	Mean Range.
Day.	0·00	Day.	0·00	Day.	0·00	Day.	0·00
15	0668	0	0435	0	0532	14	0572
16	0729	1	0792	1	0757	15	0348
17	0796	2	0640	2	0642	16	0424
18	0763	3	0522	3	1469	17	1566
19	0707	4	0822	4	0741	18	0573
20	0682	5	0524	5	1053	19	0505
21	0874	6	0617	6	0792	20	0677
22	0721	7	0548	7	0713	21	0315
23	0477	8	1110	8	0822	22	0434
24	0726	9	0564	9	0744	23	0659
25	0732	10	0406	10	0973	24	0368
26	0654	11	0519	11	0463	25	0426
27	0570	12	1029	12	0544	26	0460
28	0685	13	0518	13	0526	27	0471
29	0602	14	0455				

XXXV.—Hourly Means of the Micrometer Readings of the Balance Magnetometer, corrected for Temperature, for each Month, and for the Year 1845.

Mean Time.		Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
Gött.	Mak.													
h.	h.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.
13	12	578·3	547·2	529·8	500·7	507·5	495·1	464·2	443·5	433·0	416·8	422·8	425·9	480·4
14	13	576·8	546·4	524·4	508·2	498·6	495·9	462·9	443·5	421·5	414·7	422·0	421·7	478·0
15	14	569·2	545·8	523·5	507·0	499·3	497·9	461·0	445·0	426·5	414·7	418·1	421·1	477·4
16	15	574·5	547·7	520·1	521·2	497·3	502·4	461·3	444·8	425·3	416·0	418·8	418·4	479·0
17	16	577·4	548·4	528·6	519·2	512·0	507·6	465·4	451·6	429·8	418·2	419·6	419·7	483·1
18	17	578·6	548·7	534·7	528·9	519·8	511·4	467·6	458·2	433·1	419·3	420·3	419·8	486·7
19	18	581·1	548·6	541·3	537·5	524·5	514·5	472·4	465·2	441·2	422·3	420·2	420·3	490·8
20	19	581·7	550·5	545·6	541·6	526·4	515·0	474·6	469·3	450·0	427·2	422·0	420·7	493·7
21	20	582·5	552·7	550·4	544·1	522·4	513·9	477·2	469·0	452·9	431·5	425·4	422·5	495·4
22	21	582·2	555·7	550·5	543·4	517·0	507·9	474·0	467·9	454·5	432·5	426·5	423·4	494·6
23	22	586·1	557·7	550·2	541·0	511·9	500·4	473·8	465·8	455·7	429·3	425·6	424·3	493·5
0	23	590·5	558·4	545·6	535·6	508·2	490·3	468·9	461·8	454·8	430·2	428·9	426·6	491·6
1	0	591·3	561·4	542·6	531·1	507·9	486·6	466·1	460·2	455·5	433·2	432·9	429·8	491·5
2	1	595·9	566·4	545·5	534·8	513·8	489·7	468·9	465·0	465·7	436·7	435·8	433·0	495·9
3	2	602·2	572·4	552·1	541·6	519·3	493·8	472·4	473·5	477·1	443·2	440·9	439·5	502·3
4	3	607·9	581·9	560·1	549·2	528·8	500·6	479·0	481·1	483·3	447·4	445·5	450·0	509·6
5	4	609·1	583·5	570·1	551·9	534·1	509·4	485·9	487·9	485·8	451·2	447·7	450·7	513·9
6	5	610·7	587·0	583·0	555·5	540·5	513·4	489·7	489·9	489·2	448·0	447·4	453·9	517·3
7	6	610·3	583·2	579·0	558·8	540·5	514·3	490·3	487·3	475·0	444·0	447·1	453·8	515·3
8	7	613·2	576·2	569·3	556·6	535·5	512·4	489·6	478·8	470·0	440·9	443·3	449·5	511·3
9	8	611·1	572·8	562·2	549·9	531·6	510·3	486·0	472·7	464·1	438·2	439·8	437·1	506·3
10	9	601·2	566·3	552·4	543·8	525·4	505·1	479·3	459·3	455·6	436·0	433·7	434·9	499·4
11	10	582·5	563·2	541·9	535·8	521·6	499·4	474·8	458·1	445·1	432·2	428·9	431·9	492·9
12	11	574·3	555·2	538·1	528·6	517·7	494·9	471·0	444·8	437·6	420·0	424·4	428·0	486·2

TABLE XXXVI.—Diurnal Variations of the Vertical Component of Magnetic Force in 1845.

Mak. M. T.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
h.	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00
12	0091	0014	0097	0000	0102	0085	0032	0000	0115	0021	0047	0075	0030
13	0076	0006	0043	0075	0013	0093	0019	0000	0000	0000	0039	0033	0006
14	0000	0000	0034	0063	0020	0113	0000	0015	0050	0000	0000	0027	0000
15	0053	0019	0000	0205	0000	0158	0003	0013	0038	0013	0007	0000	0016
16	0082	0026	0085	0185	0147	0210	0044	0081	0083	0035	0015	0013	0057
17	0094	0029	0146	0282	0225	0248	0066	0147	0116	0046	0022	0014	0093
18	0119	0028	0212	0368	0272	0279	0114	0217	0197	0076	0021	0019	0134
19	0125	0047	0255	0409	0291	0284	0136	0258	0285	0125	0039	0023	0163
20	0133	0069	0303	0434	0251	0273	0162	0255	0314	0168	0073	0041	0180
21	0130	0099	0304	0427	0197	0213	0130	0244	0330	0178	0084	0050	0172
22	0169	0119	0301	0403	0146	0138	0128	0223	0342	0146	0075	0059	0161
23	0213	0126	0255	0349	0109	0037	0079	0183	0333	0155	0108	0082	0142
0	0221	0156	0225	0304	0106	0000	0051	0167	0340	0185	0148	0114	0141
1	0267	0206	0254	0341	0165	0031	0079	0215	0442	0220	0177	0146	0185
2	0330	0266	0320	0409	0220	0072	0114	0300	0556	0285	0228	0211	0249
3	0387	0361	0400	0485	0315	0140	0180	0376	0618	0327	0274	0316	0322
4	0399	0377	0500	0512	0368	0228	0249	0444	0643	0365	0296	0323	0365
5	0415	0412	0629	0548	0432	0268	0287	0464	0677	0333	0293	0355	0399
6	0411	0374	0589	0581	0432	0277	0293	0438	0535	0293	0290	0354	0379
7	0440	0304	0492	0559	0382	0258	0286	0353	0485	0262	0252	0311	0339
8	0419	0270	0421	0492	0343	0237	0250	0292	0426	0235	0217	0187	0289
9	0320	0205	0323	0431	0281	0185	0183	0158	0341	0213	0156	0165	0220
10	0133	0174	0218	0351	0243	0128	0138	0146	0236	0175	0108	0135	0155
11	0051	0094	0180	0279	0204	0083	0100	0013	0161	0053	0063	0096	0088

TABLE XXXVII.—List of Days in each Month of 1845 upon which the Vertical Component of Magnetic Force was least disturbed.

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.
1	1	3	1	2	2	2	7	6	1	4	1
2	3	4	2	3	3	3	11	11	3	7	5
3	4	5	4	5	6	4	12	15	6	8	6
4	7	6	5	6	7	5	13	16	7	10	8
6	8	7	7	9	12	12	14	20	8	12	9
7	10	8	11	13	13	14	16	22	11	13	10
8	11	11	12	21	14	15	19	23	13	14	11
13	12	12	17	23	16	17	20	29	15	15	12
15	14	13	22	24	17	18	21		16	19	15
17	15	28	23	26	19	21	22		17	20	16
18	17	31		27	20	22	23		18	21	17
21	18			29	21	23	27		23	22	18
31	19				23	26			24	24	19, 20
					25	29			27	25	22, 23
					26	30			30	27	24, 26
					27	31				28	27, 29

TABLE XXXVIII.—Hourly Means of the Balance Magnetometer Micrometer Readings corrected for Temperature, for the least disturbed days in each Month of 1845, corrected so that the Mean of each Monthly Series equals the true Monthly Mean.

Mak. M. T.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
h.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Dlv.	Mic. Div,	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.
12	588·3	559·8	542·7	526·2	513·9	496·6	468·5	454·4	441·0	421·0	424·5	428·8	488·8
13	587·9	558·3	543·6	528·0	514·6	497·4	468·4	454·4	439·9	422·0	424·3	427·9	488·9
14	587·5	556·2	545·1	531·8	516·8	499·9	470·2	456·5	444·8	423·5	422·7	426·0	490·1
15	586·3	556·8	544·8	533·3	519·5	505·2	472·0	459·0	444·7	423·1	422·7	425·0	491·0
16	585·3	557·2	545·0	533·3	523·5	510·6	476·2	463·2	446·9	423·2	422·0	424·0	492·5
17	583·3	557·5	545·7	534·5	525·5	514·6	478·1	466·1	447·3	422·5	422·3	423·7	493·4
18	584·5	556·6	546·3	536·9	525·6	517·8	479·9	469·7	451·0	423·2	422·1	425·0	494·9
19	584·9	557·1	548·0	542·1	526·8	517·6	477·6	473·1	457·5	426·8	423·6	425·4	496·7
20	586·3	557·8	550·5	545·1	522·3	517·0	477·5	470·0	459·3	429·0	427·3	427·0	497·4
21	585·3	557·9	550·0	543·9	518·3	510·3	473·3	470·2	458·7	430·6	428·0	428·1	496·2
22	587·8	559·4	448·5	541·5	512·2	501·9	473·0	465·3	456·7	428·6	428·3	428·1	494·3
23	589·5	559·1	544·0	534·1	507·3	491·7	466·3	459·2	454·0	428·4	431·3	430·1	491·2
0	589·7	560·4	540·8	527·6	503·9	488·7	462·5	457·6	449·1	428·9	435·2	432·4	489·7
1	593·4	561·7	542·1	529·8	509·4	491·3	463·2	460·3	454·8	431·9	437·5	434·3	492·5
2	596·6	564·9	545·7	535·2	515·7	494·9	466·3	465·8	464·8	438·0	440·7	439·3	497·3
3	597·9	569·3	551·8	538·7	522·6	498·9	473·6	471·8	470·1	444·5	442·0	442·9	502·0
4	598·0	570·7	556·0	540·3	526·8	504·6	480·0	476·5	469·7	448·9	441·7	441·6	504·6
5	595·7	569·8	555·9	541·1	529·6	506·4	483·4	476·2	464·8	447·4	439·9	439·8	504·2
6	595·2	568·4	553·8	542·2	529·3	507·7	484·3	471·7	459·5	443·7	438·1	439·2	502·8
7	596·6	566·4	551·6	542·9	526·2	506·5	482·8	465·7	454·9	440·2	436·3	437·2	500·6
8	595·8	565·6	551·8	540·1	523·6	505·5	480·4	462·5	453·6	436·2	435·2	435·2	498·8
9	595·4	565·1	548·1	537·3	518·8	502·0	476·1	460·4	452·3	431·4	432·3	432·3	496·0
10	591·7	562·7	545·7	533·0	515·5	498·4	472·8	458·3	445·9	428·1	430·8	432·2	492·9
11	587·9	559·6	543·1	528·3	513·4	495·8	468·7	454·7	439·7	423·1	428·3	429·3	489·3

TABLE XXXIX.—Mean Variations of the Vertical Component of Magnetic Force, with reference to the Moon's Hour-Angle, for each Lunation, for the Six Summer and Seven Winter Lunations, and for the whole Thirteen Lunations of 1845.

Moon's Hour-Angle.	LUNATIONS.															
	1st.	2d.	3d.	4th.	5th.	6th.	7th.	8th.	9th.	10th.	11th.	12th.	13th.	Summer.	Winter.	Year.
	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00
0	0168	0051	0128	0198	0189	0032	0078	0017	0218	0048	0097	0160	0048	0046	0055	0041
1	0172	0052	0077	0181	0213	0036	0100	0054	0218	0101	0097	0212	0057	0058	0065	0052
2	0176	0039	0064	0117	0208	0043	0094	0058	0248	0162	0103	0203	0051	0052	0069	0051
3	0140	0014	0028	0161	0202	0068	0094	0055	0209	0173	0070	0177	0047	0056	0048	0041
4	0079	0019	0005	0162	0164	0097	0093	0061	0198	0109	0067	0072	0048	0054	0012	0021
5	0014	0017	0000	0163	0166	0105	0081	0060	0180	0129	0042	0071	0042	0050	0000	0013
6	0040	0065	0012	0176	0135	0107	0085	0085	0139	0178	0034	0048	0036	0046	0014	0019
7	0086	0055	0042	0099	0161	0114	0066	0105	0122	0177	0030	0044	0013	0036	0019	0017
8	0091	0026	0076	0060	0217	0096	0066	0091	0101	0177	0036	0031	0018	0030	0020	0014
9	0000	0023	0126	0000	0226	0099	0066	0061	0068	0157	0056	0000	0017	0011	0009	0000
10	0017	0043	0152	0148	0243	0095	0041	0048	0090	0243	0073	0020	0020	0035	0008	0026
11	0146	0058	0175	0228	0245	0078	0046	0036	0069	0197	0095	0016	0036	0041	0058	0040
12	0144	0078	0255	0271	0239	0091	0050	0027	0000	0166	0092	0075	0034	0037	0076	0048
13	0179	0097	0233	0293	0250	0100	0049	0073	0053	0121	0075	0085	0049	0061	0075	0058
14	0215	0129	0236	0290	0262	0086	0033	0078	0060	0120	0073	0071	0052	0059	0083	0062
15	0200	0131	0245	0320	0252	0086	0033	0078	0042	0129	0084	0061	0045	0060	0083	0062
16	0187	0114	0269	0298	0248	0081	0038	0056	0032	0122	0084	0085	0044	0050	0084	0058
17	0182	0096	0268	0212	0211	0079	0029	0057	0046	0131	0089	0080	0024	0030	0079	0047
18	0209	0075	0244	0226	0146	0061	0027	0050	0062	0147	0084	0078	0029	0020	0079	0041
19	0178	0056	0219	0240	0118	0050	0005	0058	0089	0114	0057	0060	0011	0018	0054	0027
20	0157	0030	0229	0233	0000	0047	0000	0051	0122	0093	0044	0031	0008	0000	0040	0011
21	0180	0035	0167	0242	0092	0046	0015	0040	0151	0064	0000	0025	0000	0022	0022	0012
22	0221	0004	0176	0294	0185	0018	0041	0017	0156	0054	0010	0040	0005	0043	0028	0025
23	0172	0000	0126	0254	0188	0000	0049	0000	0176	0017	0036	0037	0010	0036	0012	0013
24	0162	0041	0057	0225	0126	0012	0069	0021	0203	0000	0079	0114	0016	0034	0022	0017

TABLE XL.—Differences between the Hourly Means of the Balance Micrometer Readings for the whole Series in each Month, and those for the selected Days; or Table XXXV. *minus* Table XXXVIII.

Mak. M. T.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
h.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.
12	−10·0	−12·6	−12·9	−25·5	− 6·4	−1·5	− 4·3	−10·9	− 8·0	−4·2	−1·7	− 2·9	− 8·4
13	−11·1	−11·9	−19·2	−19·8	−16·0	−1·5	− 5·5	−10·9	−18·4	−7·3	−2·3	− 6·2	−10·9
14	−18·3	−10·4	−21·6	−24·8	−17·5	−2·0	− 9·2	−11·5	−18·3	−8·8	−4·6	− 4·9	−12·7
15	−11·8	− 9·1	−24·7	−12·1	−22·2	−2·8	−10·7	−14·2	−19·4	−7·1	−3·9	− 6·6	−12·0
16	− 7·9	− 8·8	−16·4	−14·1	−11·5	−3·0	−10·8	−11·6	−17·1	−5·0	−2·4	− 4·3	− 9·4
17	− 4·7	− 9·0	−11·0	− 5·6	− 5·7	−3·2	−10·5	− 7·9	−14·2	−3·2	−2·0	− 3·9	− 6·7
18	− 3·4	− 8·0	− 5·0	+ 0·6	− 1·1	−3·3	− 7·5	− 4·5	− 9·8	−0·9	−1·9	− 4·7	− 4·1
19	− 3·2	− 6·6	− 2·4	− 0·5	− 0·4	−2·6	− 3·0	− 3·8	− 7·5	+0·4	−1·6	− 4·7	− 3·0
20	− 3·8	− 5·1	− 0·1	− 1·0	+ 0·1	−3·1	− 0·3	− 1·0	− 6·4	+2·5	−1·9	− 4·5	− 2·0
21	− 3·1	− 2·2	+ 0·5	− 0·5	− 1·3	−2·4	+ 0·7	− 2·3	− 4·2	+1·9	−1·5	− 4·7	− 1·6
22	− 1·7	− 1·7	+ 1·7	− 0·5	− 0·3	−1·5	+ 0·8	+ 0·5	− 1·0	+0·7	−2·7	− 3·8	− 0·8
23	+ 1·0	− 0·7	+ 1·6	+ 1·5	+ 0·9	−1·4	+ 2·6	+ 2·6	+ 0·8	+1·8	−2·4	− 3·5	+ 0·4
0	+ 1·6	+ 1·0	+ 1·8	+ 3·5	+ 4·0	−2·1	+ 3·6	+ 2·6	+ 6·4	+4·3	−2·3	− 2·6	+ 1·8
1	+ 2·5	+ 4·7	+ 3·4	+ 5·0	+ 4·4	−1·6	+ 5·7	+ 4·7	+10·9	+4·8	−1·7	− 1·3	+ 3·4
2	+ 5·6	+ 7·5	+ 6·4	+ 6·4	+ 3·6	−1·1	+ 6·1	+ 7·7	+12·3	+5·2	+0·2	+ 0·2	+ 5·0
3	+10·0	+12·6	+ 8·3	+10·5	+ 6·2	+1·7	+ 5·4	+ 9·3	+13·2	+2·9	+3·5	+ 7·1	+ 7·6
4	+11·1	+12·8	+14·1	+11·6	+ 7·3	+4·8	+ 5·9	+11·4	+16·1	+2·3	+6·0	+ 9·1	+ 9·3
5	+15·0	+17·2	+27·1	+14·4	+10·9	+7·0	+ 6·3	+13·7	+24·4	+0·6	+7·5	+14·1	+13·1
6	+15·1	+14·8	+25·2	+16·6	+11·2	+6·6	+ 6·0	+15·6	+15·5	+0·3	+9·0	+14·6	+12·5
7	+16·6	+ 9·8	+17·7	+13·7	+ 9·3	+5·9	+ 6·8	+13·1	+15·1	+0·7	+7·0	+12·3	+10·7
8	+15·3	+ 7·2	+10·4	+ 9·8	+ 8·0	+4·8	+ 5·6	+10·2	+10·5	+2·0	+4·6	+ 1·9	+ 7·5
9	+ 5·8	+ 1·2	+ 4·3	+ 6·5	+ 6·6	+3·1	+ 3·2	− 1·1	+ 3·3	+4·6	+1·4	+ 2·6	+ 3·4
10	− 9·2	+ 0·5	− 3·8	+ 2·8	+ 6·1	+1·0	+ 2·0	− 0·2	− 0·8	+4·1	−1·9	− 0·3	0·0
11	−13·6	− 4·4	− 5·0	+ 0·3	+ 4·3	−0·9	+ 2·3	− 9·9	− 2·1	−3·1	−3·9	− 1·3	− 3·1

TABLE XLI.—Mean Difference of a Single Observation of the Balance Magnetometer from the Monthly Mean at the corresponding hour, for each Civil Day and Week in 1845.

Civil Day.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.
1	29·7	14·4	15·2	12·9	65·6	[14·8]	20·4	23·7	14·7	18·3	14·6	8·3
2	24·6	[19·0]	[12·2]	8·7	13·8	7·1	17·1	31·0	30·2	5·6	[19·4]	4·8
3	18·7	17·2	13·8	15·7	11·4	8·9	11·0	[16·6]	40·2	16·7	8·4	91·9
4	13·7	11·7	13·4	13·1	[26·8]	23·2	14·3	13·2	30·8	8·5	22·8	41·4
5	[16·1]	37·8	13·5	16·9	23·3	14·1	14·2	11·2	21·7	[11·7]	47·5	38·8
6	13·9	21·6	14·5	[14·1]	22·7	4·6	[11·8]	7·9	30·9	21·3	24·8	26·1
7	11·0	11·7	14·2	10·3	24·0	6·7	10·9	6·3	[20·7]	11·8	11·2	[25·1]
8	14·5	10·3	10·6	9·2	27·0	[10·2]	9·6	12·2	20·3	6·1	15·7	22·0
9	44·5	[11·2]	[12·3]	19·6	13·6	16·2	10·6	12·9	9·8	14·9	[12·7]	14·2
10	19·4	5·5	8·6	10·6	10·8	12·3	12·8	[13·1]	10·7	29·4	6·2	8·4
11	13·6	7·9	11·8	13·4	[16·5]	7·2	3·5	16·9	12·5	16·9	11·3	11·7
12	[18·4]	10·1	14·0	16·2	19·3	8·9	19·6	14·4	13·2	[18·0]	7·0	5·7
13	12·6	7·4	8·4	[23·1]	14·9	13·2	[13·9]	15·9	8·5	8·7	11·8	20·1
14	11·2	8·6	9·4	85·6	13·6	9·3	16·6	13·0	[12·7]	20·1	10·9	[10·3]
15	9·4	9·4	10·4	6·7	18·4	[13·0]	15·2	20·2	15·7	17·9	9·2	6·6
16	9·6	[10·0]	[9·7]	6·0	13·3	13·7	15·9	24·4	15·4	4·6	[11·1]	10·6
17	11·8	7·4	11·9	12·4	12·3	15·2	4·8	[16·8]	10·7	12·1	18·2	7·4
18	9·6	10·2	8·1	14·3	[16·8]	17·8	13·5	20·1	36·6	11·9	10·7	5·6
19	[23·3]	17·0	10·2	15·6	33·0	15·4	12·0	12·0	21·5	[14·3]	5·6	8·4
20	89·4	19·2	44·0	[12·4]	14·4	15·1	[10·3]	11·4	14·9	13·2	10·9	7·2
21	10·5	16·1	17·9	12·7	9·2	21·8	4·8	14·1	[19·9]	19·6	6·3	[10·0]
22	9·2	11·2	16·2	10·3	8·5	[12·0]	12·3	11·5	11·4	24·3	10·2	10·0
23	8·4	[25·1]	[27·4]	9·3	11·4	4·4	14·2	12·6	17·1	6·5	[12·9]	12·8
24	25·7	34·4	35·9	9·0	10·0	8·7	19·6	[12·5]	17·7	10·4	14·5	16·0
25	14·8	41·0	33·7	23·1	[9·9]	6·6	58·6	14·1	69·3	14·5	11·4	34·1
26	[17·8]	28·6	16·6	12·0	9·2	6·4	6·3	13·2	19·8	[11·8]	23·9	39·6
27	10·6	8·8	16·0	[22·7]	10·0	5·7	[17·4]	9·4	15·4	10·4	40·1	28·7
28	14·8	8·3	9·9	51·2	10·3	9·8	5·2	13·7	[26·6]	15·4	32·8	[30·4]
29	32·8		11·3	21·8	12·2	[13·2]	9·5	33·2	15·4	13·6	34·0	19·3
30	13·8		[12·3]	19·2	12·2	19·8	5·3	46·7	21·3	15·9	[35·3]	34·2
31	19·4		14·9		25·5		12·5	[29·8]		7·4		26·7

TABLE XLII.—Mean Difference of a Single Observation of the Balance Magnetometer from the Monthly Mean at the corresponding hour, with reference to the Moon's Age and Declination, for 1845.

Moon's Age.	Mean Difference.	Moon's Age.	Mean Difference.	After Moon farthest North.	Mean Difference.	After Moon farthest North.	Mean Difference.
Day.	Mic. Div.	Day.	Mic. Div.	Day.	Mic. Div.	Day.	Mic. Div.
15	13·3	0	17·6	0	12·5	14	17·2
16	14·5	1	17·8	1	17·5	15	11·4
17	15·8	2	15·3	2	14·2	16	14·5
18	15·4	3	13·5	3	25·7	17	29·6
19	14·9	4	18·8	4	15·4	18	17·8
20	14·6	5	17·5	5	16·1	19	15·2
21	20·2	6	18·2	6	14·3	20	18·2
22	14·7	7	14·0	7	16·7	21	13·3
23	16·0	8	19·8	8	18·7	22	13·4
24	18·3	9	14·5	9	19·3	23	18·5
25	20·0	10	12·4	10	21·2	24	11·3
26	15·4	11	12·8	11	17·5	25	13·8
27	17·9	12	22·2	12	14·9	26	13·3
28	21·0	13	15·5	13	15·5	27	14·3
29	21·0	14	15·2				

TABLE XLIII.—Mean Difference of a Single Observation of the Balance Magnetometer from the Monthly Mean at the corresponding hour, for each Hour in each Month in 1845.

Mak. M. T.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
h.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.
12	25·3	26·5	23·4	49·4	22·5	9·2	14·1	24·3	18·8	18·1	13·1	18·1	21·9
13	23·3	24·3	30·1	36·1	35·9	9·5	16·0	24·5	25·7	18·3	14·1	15·8	22·8
14	36·3	22·6	31·5	44·2	36·8	9·7	20·8	25·5	25·0	19·1	17·7	15·2	25·4
15	30·3	19·5	32·8	25·9	42·1	10·0	23·3	28·2	28·8	17·4	17·8	16·8	24·4
16	26·5	18·2	24·0	31·5	27·7	10·6	22·1	25·1	27·8	15·8	16·5	16·1	21·8
17	21·8	18·4	17·9	18·7	20·7	11·7	22·0	20·7	29·0	13·9	16·3	17·8	19·1
18	19·7	17·7	11·2	10·9	16·7	11·3	18·4	16·7	27·1	12·5	16·9	17·3	16·4
19	18·3	15·1	8·4	12·3	15·2	11·4	15·2	15·7	22·1	11·6	16·7	16·1	14·8
20	18·1	13·4	7·4	12·3	13·7	11·7	12·7	14·5	22·2	9·9	16·5	16·0	14·0
21	17·0	11·1	7·2	12·5	15·5	10·9	11·6	13·8	18·1	10·9	15·4	15·8	13·3
22	14·5	10·8	7·4	12·4	15·1	10·4	10·4	11·5	15·0	10·8	15·1	15·7	12·4
23	11·2	10·7	7·1	9·7	13·7	10·1	9·5	10·5	13·0	9·4	13·4	15·4	11·1
0	11·4	10·7	7·5	9·8	13·8	9·2	9·8	10·4	13·3	10·1	12·4	15·7	11·2
1	11·8	10·9	7·7	11·6	13·9	10·0	9·4	11·9	19·9	10·5	13·1	15·6	12·2
2	12·7	11·6	7·2	10·8	13·3	11·6	11·1	12·6	23·3	11·0	14·8	16·5	13·0
3	14·9	15·8	8·8	15·0	13·2	13·0	10·9	12·6	23·3	13·5	18·2	28·0	15·6
4	14·9	14·3	12·4	13·6	12·7	15·7	12·9	16·6	21·8	17·1	20·9	31·8	17·1
5	15·1	19·6	28·1	14·6	13·4	16·0	13·6	18·7	31·5	18·2	22·5	39·4	20·9
6	16·8	17·1	24·8	15·7	14·0	14·8	13·1	14·8	19·4	16·3	26·0	39·7	19·4
7	17·1	10·5	16·6	12·9	11·3	15·1	12·2	10·8	17·2	15·3	23·0	35·6	16·5
8	16·5	9·7	12·6	9·3	9·1	13·9	10·5	7·1	14·5	13·9	19·9	21·6	13·2
9	15·5	13·7	11·1	6·6	7·8	11·9	10·4	18·3	11·2	12·2	16·1	21·9	13·1
10	24·2	14·3	14·2	11·1	7·9	10·9	9·8	13·5	16·0	10·5	13·4	18·4	13·7
11	26·7	19·3	14·0	13·9	11·5	11·7	9·2	23·5	19·6	17·8	13·3	18·4	16·6

VARIATIONS OF MAGNETIC DIP.

TABLE XLIV.—Variations of Magnetic Dip, with reference to the Moon's Age, Declination, and Distance from the Earth, as deduced from Tables XIX. and XXXII.

Moon's Age.	Variations of Magnetic Dip.	Moon's Age.	Variations of Magnetic Dip.	After Moon farthest North.	Variations of Magnetic Dip.	After Moon farthest North.	Variations of Magnetic Dip.	Before and after Perigee.	Variations of Magnetic Dip.	Before and after Apogee.	Variations of Magnetic Dip.
Day.	′	Day.	′	Day.	′	Day.	′	Day.	′	Day.	′
15	0·215	0	0·144	0	0·114	14	0·056	7	0·287	7	0·106
16	0·219	1	0·228	1	0·110	15	0·010	6	0·166	6	0·270
17	0·219	2	0·402	2	0·068	16	0·032	5	0·235	5	0·087
18	0·313	3	0·246	3	0·178	17	0·300	4	0·160	4	0·100
19	0·318	4	0·175	4	0·139	18	0·594	3	0·287	3	0·192
20	0·295	5	0·413	5	0·265	19	0·267	2	0·231	2	0·076
21	0·337	6	0·260	6	0·318	20	0·187	1	0·069	1	0·171
22	0·254	7	0·229	7	0·379	21	0·191	P	0·000	A	0·059
23	0·171	8	0·451	8	0·342	22	0·128	1	0·100	1	0·154
24	0·259	9	0·189	9	0·263	23	0·104	2	0·445	2	0·267
25	0·228	10	0·091	10	0·234	24	0·091	3	0·567	3	0·166
26	0·000	11	0·103	11	0·162	25	0·036	4	0·288	4	0·069
27	0·028	12	0·110	12	0·209	26	0·000	5	0·167	5	0·296
28	0·018	13	0·092	13	0·218	27	0·056	6	0·199	6	0·215
29	0·052	14	0·104					7	0·188	7	0·192

TABLE XLV.—Diurnal Variations of the Magnetic Dip in 1845, as deduced from Tables XXIII. and XXXVI.

Mak. M. T.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
h.	′	′	′	′	′	′	′	′	′	′	′	′	′
12	0·924	0·310	0·101	0·958	1·279	1·039	1·261	0·625	0·807	0·493	0·661	1·334	0·609
13	1·010	0·373	0·524	1·276	1·353	1·264	1·491	0·945	0·507	0·330	0·537	1·180	0·692
14	1·682	0·519	0·861	2·304	1·502	1·406	1·595	1·177	0·907	0·391	0·481	0·959	0·941
15	0·598	0·526	0·362	1·233	1·502	1·508	1·631	1·034	0·745	0·123	0·325	0·797	0·658
16	0·336	0·289	0·676	1·405	1·687	1·574	1·857	1·091	0·746	0·000	0·199	0·530	0·659
17	0·097	0·234	0·380	1·254	1·959	1·876	2·100	1·411	0·612	0·103	0·100	0·291	0·661
18	0·038	0·000	0·479	1·479	2·121	2·194	2·306	1·858	1·032	0·230	0·000	0·178	0·786
19	0·000	0·068	0·713	1·750	2·758	2·610	2·646	2·573	1·951	0·463	0·224	0·435	1·142
20	0·251	0·293	1·320	2·530	3·292	3·138	3·230	3·154	2·520	1·234	0·922	0·609	1·667
21	0·310	0·821	1·712	3·242	3·524	3·410	3·534	3·491	2·950	1·909	1·625	0·976	2·085
22	0·700	0·979	2·176	3·543	3·445	3·472	3·625	3·402	3·213	2·044	1·597	1·360	2·256
23	0·572	0·932	1·729	3·258	3·141	2·867	3·015	2·890	2·515	1·951	1·689	1·635	1·976
0	0·513	0·745	1·121	2·724	2·513	1·895	2·425	2·031	1·813	1·632	1·293	1·529	1·479
1	0·310	0·493	0·824	1·957	1·780	1·308	1·804	1·106	1·111	0·942	0·938	1·166	0·938
2	0·470	0·290	0·154	1·262	1·304	0·811	1·161	0·968	1·003	0·819	0·830	0·987	0·631
3	0·511	0·182	0·059	0·741	0·777	0·511	0·710	0·352	0·788	0·591	0·730	0·975	0·370
4	0·535	0·373	0·046	0·294	0·273	0·419	0·534	0·252	0·610	0·638	0·880	0·767	0·262
5	0·537	0·429	0·288	0·072	0·157	0·203	0·318	0·211	0·470	0·520	0·673	0·719	0·176
6	0·553	0·350	0·240	0·000	0·000	0·067	0·000	0·259	0·000	0·259	0·754	0·000	0·000
7	0·800	0·209	0·100	0·077	0·127	0·000	0·306	0·000	0·155	0·212	0·833	0·506	0·070
8	0·687	0·225	0·373	0·426	0·476	0·269	0·352	0·323	0·602	0·254	0·848	1·320	0·306
9	0·569	0·183	0·000	0·532	0·699	0·471	0·806	0·435	0·306	0·227	0·852	1·218	0·318
10	0·764	0·531	0·132	0·525	0·986	0·636	1·149	0·502	0·512	0·457	0·764	1·183	0·472
11	0·731	0·255	0·062	0·623	1·132	0·892	1·099	0·404	0·356	0·419	0·717	1·153	0·447

TABLE XLVI.—Variations of Magnetic Dip, with reference to the Moon's Hour-Angle, for 1845, as deduced from Tables XXVI. and XXXIX.

Moon's Hour-Angle.	LUNATIONS.			Moon's Hour-Angle.	LUNATIONS.			Moon's Hour-Angle.	LUNATIONS.		
	Summer.	Winter.	Year.		Summer.	Winter.	Year.		Summer.	Winter.	Year.
h.	′	′	′	h.	′	′	′	h.	′	′	′
0	0·146	0·218	0·173	8	0·292	0·234	0·248	16	0·160	0·052	0·089
1	0·081	0·086	0·073	9	0·421	0·203	0·292	17	0·297	0·035	0·145
2	0·066	0·000	0·018	10	0·195	0·157	0·179	18	0·282	0·094	0·168
3	0·000	0·023	0·000	11	0·118	0·128	0·111	19	0·263	0·118	0·173
4	0·119	0·212	0·157	12	0·068	0·113	0·081	20	0·310	0·181	0·229
5	0·115	0·195	0·146	13	0·115	0·157	0·126	21	0·276	0·108	0·174
6	0·159	0·173	0·155	14	0·089	0·073	0·068	22	0·289	0·166	0·212
7	0·228	0·130	0·164	15	0·136	0·118	0·115	23	0·200	0·217	0·197
								24	0·202	0·161	0·167

TABLE XLVII.—Variations of the Total Magnetic Force, with reference to the Moon's Age, Declination, and Distance from the Earth, as deduced from Tables XIX. and XXXII.

Moon's Age.	Variations of Total Force.	Moon's Age.	Variations of Total Force.	After Moon farthest North.	Variations of Total Force.	After Moon farthest North.	Variations of Total Force.	Before and after Perigee.	Variations of Total Force.	Before and after Apogee.	Variations of Total Force.
Day.	0·00	Day.	0·00	Day.	0·00	Day.	0·00	Day.	0·00	Day.	0·00
15	0038	0	0046	0	0176	14	0182	7	0131	7	0143
16	0055	1	0046	1	0112	15	0148	6	0139	6	0093
17	0030	2	0068	2	0138	16	0174	5	0118	5	0165
18	0045	3	0088	3	0000	17	0225	4	0127	4	0153
19	0085	4	0133	4	0068	18	0148	3	0099	3	0144
20	0080	5	0102	5	0114	19	0177	2	0162	2	0177
21	0020	6	0126	6	0138	20	0137	1	0157	1	0165
22	0060	7	0054	7	0114	21	0196	P	0156	A	0116
23	0094	8	0000	8	0144	22	0173	1	0184	1	0037
24	0051	9	0034	9	0149	23	0096	2	0225	2	0000
25	0006	10	0088	10	0096	24	0144	3	0163	3	0070
26	0042	11	0067	11	0167	25	0164	4	0150	4	0103
27	0005	12	0000	12	0149	26	0122	5	0176	5	0100
28	0035	13	0036	13	0156	27	0149	6	0149	6	0115
29	0028	14	0051					7	0071	7	0134

TABLE XLVIII.—Diurnal Variations of the Total Magnetic Force in 1845, as deduced from Tables XXIII. and XXXVI.

Mak. M. T.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
h.	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00
12	0166	0035	0138	0070	0177	0229	0138	0052	0085	0029	0065	0026	0063
13	0143	0021	0043	0114	0081	0214	0102	0020	0000	0024	0069	0000	0031
14	0000	0000	0000	0000	0073	0220	0073	0012	0010	0018	0035	0015	0000
15	0160	0019	0016	0248	0053	0255	0072	0024	0014	0057	0058	0005	0044
16	0215	0049	0070	0211	0182	0301	0091	0086	0059	0091	0078	0044	0085
17	0251	0057	0160	0323	0233	0309	0089	0121	0105	0093	0095	0069	0121
18	0282	0080	0216	0387	0263	0308	0116	0147	0145	0110	0104	0085	0149
19	0292	0092	0236	0401	0220	0272	0105	0117	0142	0135	0100	0063	0143
20	0275	0092	0224	0349	0127	0209	0073	0056	0114	0102	0065	0064	0108
21	0266	0069	0186	0271	0050	0122	0011	0012	0088	0045	0006	0037	0059
22	0266	0074	0137	0218	0007	0041	0000	0000	0074	0000	0000	0008	0031
23	0323	0085	0135	0192	0000	0000	0011	0010	0134	0018	0024	0004	0040
0	0337	0134	0165	0200	0059	0059	0042	0079	0210	0080	0103	0046	0088
1	0403	0209	0224	0313	0190	0148	0131	0219	0382	0183	0167	0114	0185
2	0450	0289	0356	0449	0293	0238	0230	0318	0507	0260	0229	0196	0280
3	0503	0395	0445	0577	0440	0336	0340	0455	0590	0325	0285	0302	0378
4	0513	0392	0547	0648	0543	0433	0427	0533	0632	0358	0292	0330	0432
5	0528	0421	0652	0706	0618	0494	0486	0557	0680	0338	0309	0367	0475
6	0523	0391	0617	0746	0634	0517	0524	0526	0585	0324	0298	0437	0472
7	0527	0335	0534	0717	0571	0505	0486	0467	0520	0297	0253	0344	0425
8	0517	0299	0436	0615	0498	0457	0446	0374	0416	0266	0216	0139	0352
9	0430	0238	0374	0544	0413	0385	0334	0228	0361	0247	0155	0127	0281
10	0224	0173	0256	0464	0347	0312	0255	0210	0235	0186	0115	0101	0202
11	0145	0120	0225	0383	0294	0241	0222	0087	0176	0068	0075	0065	0137

TABLE XLIX.—Variations of the Total Magnetic Force with reference to the Moon's Hour-Angle for 1845, as deduced from Tables XXVI. and XXXIX.

Moon's Hour-Angle.	LUNATIONS.			Moon's Hour-Angle.	LUNATIONS.			Moon's Hour-Angle.	LUNATIONS.		
	Summer.	Winter.	Year.		Summer.	Winter.	Year.		Summer.	Winter.	Year.
h.	0·00	0·00	0·00	h.	0·00	0·00	0·00	h.	0·00	0·00	0·00
0	0062	0053	0053	8	0032	0016	0018	16	0065	0098	0078
1	0081	0076	0074	9	0000	0008	0000	17	0031	0095	0062
2	0076	0088	0078	10	0046	0012	0037	18	0023	0089	0053
3	0087	0065	0070	11	0060	0064	0058	19	0023	0061	0039
4	0073	0010	0034	12	0061	0084	0069	20	0000	0041	0017
5	0069	0000	0027	13	0080	0079	0074	21	0025	0030	0024
6	0061	0016	0033	14	0081	0095	0084	22	0045	0031	0033
7	0044	0025	0030	15	0077	0090	0079	23	0047	0010	0022
								24	0045	0025	0029

TABLE L.—Ranges for each Civil Day of the Magnetic Declination, and of the Horizontal and Vertical Components of Magnetic Force, as deduced from all the Observations (Hourly, Term-Day, or Extra) made in 1845.

Civil Day.	Declination.	Hor. Comp.	Vert. Comp.	Declination.	Hor. Comp.	Vert. Comp.	Declination.	Hor. Comp.	Vert. Comp.	Declination.	Hor. Comp.	Vert. Comp.	Declination.	Hor. Comp.	Vert. Comp.	Declination.	Hor. Comp.	Vert. Comp.
	′	0·0	0·0	′	0·0	0·0	′	0·0	0·0	′	0·0	0·0	′	0·0	0·0	′	0·0	0·0
	JANUARY.			MARCH.			MAY.			JULY.			SEPTEMBER.			NOVEMBER.		
1	16·11	0322	0044	14·63	0251	0074	21·21	0602	0418	14·43	0435	0107	15·44	0476	0097	19·92	0561	0109
2	10·65	0151	0024	…	…	…	9·53	0252	0019	8·70	0472	0040	26·46	0763	0083	…	…	…
3	3·81	0081	0009	14·07	0451	0025	12·17	0358	0022	10·87	0354	0043	22·94	0487	0182	12·56	0225	0071
4	4·55	0073	0016	7·24	0199	0018	…	…	…	14·59	0368	0032	15·20	0889	0085	13·46	0248	0066
5	…	…	…	6·58	0172	0025	9·93	0409	0028	9·87	0323	0042	16·34	0407	0077	34·39	0417	0214
6	2·62	0095	0018	7·40	0193	0013	13·19	0400	0026	…	…	…	13·65	0416	0043	4·87	0200	0046
7	7·73	0225	0029	11·36	0227	0043	14·14	0448	0030	15·06	0269	0081	…	…	…	16·45	0358	0079
8	5·35	0088	0015	9·06	0269	0031	12·36	0412	0035	14·76	0582	0098	20·75	0540	0110	7·18	0161	0032
9	64·96	2622	0570	…	…	…	14·56	0447	0029	14·53	0368	0066	11·06	0468	0064	…	…	…
10	32·09	2321	0133	12·20	0505	0055	11·17	0405	0030	14·69	0421	0061	10·21	0351	0050	18·24	0175	0022
11	9·86	0193	0043	14·30	0235	0026	…	…	…	13·86	0451	0036	16·42	0347	0045	9·87	0210	0059
12	…	…	…	7·48	0172	0022	14·41	0339	0045	9·38	0398	0046	13·36	0399	0094	7·11	0171	0024
13	10·21	0295	0041	12·24	0244	0036	12·71	0427	0043	…	…	…	14·90	0423	0052	4·15	0153	0018
14	10·56	0263	0037	20·99	0480	0072	14·14	0469	0100	12·52	0477	0027	…	…	…	5·06	0154	0018
15	16·28	0449	0033	17·61	0351	0067	17·26	0543	0124	13·60	0361	0024	7·58	0319	0037	4·63	0161	0017
16	5·95	0126	0033	…	…	…	18·44	0799	0082	12·15	0311	0041	13·89	0319	0023	…	…	…
17	11·53	0273	0027	16·96	0587	0092	11·20	0609	0045	15·17	0377	0027	35·27	0682	0107	30·61	0692	0169
18	6·92	0218	0014	16·66	0447	0069	…	…	…	13·99	0364	0025	28·90	1182	0245	21·85	0351	0070
19	…	…	…	18·50	0414	0122	27·30	0885	0253	16·15	0392	0038	20·72	0419	0102	12·30	0217	0043
20	42·00	1715	0479	23·48	0792	0382	15·76	0475	0035	…	…	…	20·39	0545	0040	6·82	0141	0028
21	21·50	0227	0049	17·65	0581	0100	12·91	0441	0066	11·03	0493	0029	…	…	…	6·33	0188	0019
22	20·96	0819	0036	14·80	0322	0084	18·07	0493	0088	13·05	0434	0049	10·71	0308	0028	12·94	0368	0028
23	20·40	0493	0066	…	…	…	12·44	0386	0045	15·48	0462	0028	9·08	0364	0040	…	…	…
24	21·38	0813	0181	31·15	0973	0343	14·38	0573	0038	15·17	0552	0097	22·95	0496	0038	15·14	0381	0027
25	30·14	0785	0121	27·75	0715	0269	…	…	…	35·64	0788	0239	35·05	1002	0461	8·44	0210	0015
26	…	…	…	25·63	0563	0137	8·19	0312	0020	11·00	0344	0030	11·74	0368	0090	7·36	0316	0042
27	18·34	0479	0092	26·67	0934	0176	9·01	0337	0033	…	…	…	34·57	0668	0185	9·91	0139	0021
28	26·70	0664	0135	24·24	0326	0042	9·38	0321	0027	9·06	0389	0050	…	…	…	10·19	0571	0050
29	29·95	0994	0193	20·94	0384	0082	10·87	0314	0036	10·90	0337	0029	11·12	0266	0058	16·11	0392	0064
30	24·67	0532	0065	…	…	…	16·99	0585	0053	11·23	0329	0044	14·60	0256	0062	…	…	…
31	5·58	0231	0043	10·02	0311	0024	34·27	0739	0112	13·55	0419	0046						
	FEBRUARY.			APRIL.			JUNE.			AUGUST.			OCTOBER.			DECEMBER.		
1	9·55	0228	0024	10·34	0336	0021	..	…	…	34·40	1142	0173	13·52	0281	0043	5·18	0148	0022
2	…	…	…	12·99	0290	0034	10·76	0242	0031	19·93	0396	0122	8·50	0328	0061	12·13	0249	0036
3	7·73	0183	0015	17·24	0426	0069	10·76	0351	0041	…	…	…	16·45	0309	0055	125·61	4090	0543
4	11·70	0164	0027	14·23	0417	0024	17·66	0407	0083	16·95	0745	0109	8·39	0336	0079	25·12	1275	0128
5	16·35	0315	0224	13·94	0431	0033	13·22	0438	0052	10·97	0448	0064	…	…	…	10·51	0262	0050
6	21·69	0370	0036	…	…	…	13·37	0384	0031	13·03	0445	0052	11·62	0445	0057	8·80	0221	0026
7	13·11	0200	0035	13·89	0473	0025	16·46	0427	0047	11·42	0340	0050	10·59	0312	0028	…	…	…
8	5·69	0136	0021	13·18	0386	0044	…	…	…	21·60	0508	0108	9·49	0316	0043	6·86	0146	0016
9	…	…	…	13·97	0472	0054	19·31	0526	0068	18·97	0427	0107	32·16	1650	0215	3·79	0123	0012
10	13·33	0217	0035	12·34	0307	0034	15·76	0514	0082	…	…	…	27·83	0693	0197	6·95	0150	0019
11	10·15	0189	0028	14·95	0344	0024	11·16	0385	0061	11·63	0370	0042	9·21	0308	0052	5·28	0130	0018
12	6·05	0241	0023	15·35	0347	0019	14·03	0454	0043	11·44	0353	0020	…	…	…	6·67	0231	0030
13	8·36	0325	0049	…	…	…	12·28	0340	0059	13·03	0374	0040	6·31	0265	0023	33·62	0514	0101
14	5·00	0127	0016	67·37	4200	0697	15·86	0367	0045	9·37	0392	0026	6·58	0207	0026	…	…	…
15	3·26	0105	0012	15·11	0398	0077	…	…	…	19·75	0825	0104	14·61	0209	0030	30·62	0508	0050
16	…	…	…	9·77	0297	0048	12·83	0316	0042	15·49	0521	0044	9·22	0311	0033	18·64	0363	0051
17	10·73	0214	0039	10·10	0351	0036	9·24	0374	0030	…	…	…	20·70	0378	0066	8·61	0230	0047
18	5·54	0118	0010	19·57	0413	0090	11·14	0414	0046	22·60	0575	0132	13·16	0328	0016	15·59	0300	0044
19	5·67	0167	0017	17·59	0729	0133	15·14	0405	0032	13·36	0503	0026	…	…	…	3·50	0101	0016
20	31·51	0413	0055	…	…	…	15·21	0473	0035	12·65	0519	0024	22·61	0430	0068	8·21	0115	0018
21	26·84	0360	0103	13·44	0540	0131	18·42	0444	0023	14·78	0475	0026	52·34	0710	0142	…	…	…
22	20·00	0452	0127	12·63	0416	0047	…	…	…	15·71	0402	0033	15·63	0535	0186	5·49	0143	0006
23	…	…	…	15·47	0424	0030	13·39	0438	0038	19·09	0337	0042	7·02	0251	0026	6·73	0153	0021
24	35·10	0734	0184	16·61	0669	0074	13·88	0431	0039	…	…	…	11·69	0232	0047	7·54	0132	0024
25	24·13	0805	0180	18·38	0619	0107	10·17	0266	0031	16·15	0360	0066	13·26	0335	0085	4·51	0164	0034
26	21·72	0526	0204	14·90	0571	0034	11·92	0428	0040	16·77	0444	0094	…	…	…	5·01	0119	0021
27	32·12	0364	0081	…	…	…	13·86	0349	0038	11·91	0308	0025	8·20	0158	0022	6·39	0230	0033
28	22·00	0269	0102	27·56	1240	0377	18·28	0473	0060	12·41	0374	0034	11·27	0147	0024	…	…	…
29				14·39	0384	0051	…	…	…	53·05	1145	0288	8·23	0146	0037	4·07	0172	0024
30				16·90	0480	0090	11·29	0490	0063	26·16	0974	0280	7·70	0182	0017	16·99	0370	0078
31										…	…	…	14·67	0347	0033	12·76	0148	0044

TABLE LI.—Mean Westerly Declination for each Civil Week-Day and Week in 1846.

Civil Day.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	25° ′	25° ′	25° ′	25° ′	25° ′	25° ′	25° ′	25° ′	25° ′	25° ′	25° ′	25° ′
1	8·94	[8·47]	[7·17]	7·40	6·60	7·39	6·37	3·05	5·24	3·09	[4·38]	3·54
2	8·92	9·20	7·62	7·95	5·32	6·42	7·33	[4·36]	4·80	3·65	4·35	4·08
3	8·77	8·58	7·04	7·65	[6·37]	7·04	9·02	4·04	4·95	7·44	5·65	3·24
4	[8·72]	8·55	7·14	6·24	7·63	6·57	7·30	4·35	9·18	[4·42]	3·43	5·14
5	8·62	8·50	7·65	[6·93]	7·00	6·98	[6·95]	4·50	8·07	4·60	4·14	3·55
6	9·05	8·58	7·25	6·52	5·52	5·83	6·68	5·02	[6·72]	3·73	4·38	[3·19]
7	8·01	9·61	7·02	6·36	4·88	[6·10]	6·08	8·51	4·67	4·00	1·58	3·06
8	9·62	[8·86]	[7·15]	6·89	5·07	6·25	5·32	7·32	8·11	5·25	[3·42]	3·07
9	8·96	10·17	6·65	5·71	5·03	4·93	5·57	[6·35]	5·34	5·59	3·64	1·09
10	8·69	7·78	7·55	5·89	[5·34]	6·04	6·46	6·69	5·56	8·47	3·93	2·74
11	[9·14]	8·53	6·81	8·30	6·43	5·61	6·46	6·19	6·67	[5·60]	2·85	4·10
12	10·06	8·96	5·98	[6·52]	4·70	5·57	[6·05]	4·39	6·40	5·62	3·81	3·17
13	8·59	8·42	11·65	8·57	5·93	6·58	6·71	7·64	[6·35]	4·17	3·76	[3·41]
14	8·95	9·67	8·78	4·52	5·20	[5·92]	4·07	6·36	6·76	4·50	3·62	3·58
15	9·77	[7·86]	[8·47]	6·16	6·53	2·98	7·02	5·19	7·51	3·98	[4·19]	3·52
16	9·10	6·64	8·05	6·76	5·41	7·41	4·99	[6·01]	5·22	4·22	3·12	3·38
17	9·39	7·08	8·62	7·70	[5·96]	7·37	6·01	7·60	6·21	3·71	5·01	3·30
18	[9·34]	6·37	7·74	6·27	5·81	5·15	6·29	5·07	5·51	[4·25]	5·82	3·28
19	9·54	8·04	7·45	[6·60]	7·57	7·61	[5·58]	4·23	5·71	4·36	3·48	2·83
20	8·53	7·06	7·36	5·59	5·22	6·40	4·37	4·61	[4·64]	5·22	4·29	[3·11]
21	9·72	7·52	6·64	6·56	6·24	[6·39]	5·84	5·77	2·60	3·99	2·82	2·83
22	9·11	[7·60]	[6·99]	6·69	5·77	8·65	6·01	8·74	1·29	3·80	[3·28]	2·66
23	8·22	6·82	6·80	6·05	7·75	4·95	7·97	[6·03]	6·54	4·64	3·08	3·77
24	10·40	7·20	7·51	6·57	[6·37]	5·58	5·25	5·31	3·24	2·93	2·67	3·21
25	[9·01]	8·96	6·20	7·37	6·07	5·88	3·68	5·82	4·90	[4·03]	3·35	3·14
26	8·88	7·52	7·99	[6·60]	6·81	5·58	[5·98]	5·93	5·56	4·49	1·62	2·80
27	8·11	6·87	6·45	6·44	5·61	4·74	6·39	4·59	[4·02]	4·15	5·34	[2·53]
28	9·33	6·84	7·28	6·19	5·82	[5·70]	5·40	5·58	3·95	4·15	3·17	1·67
29	8·32		[7·21]	6·95	5·91	5·27	7·21	5·02	3·37	4·37	[3·48]	2·08
30	7·79		7·01	6·17	6·76	6·35	5·15	[4·97]	3·08	4·74	3·12	2·26
31	8·36		7·11		[6·56]		5·09	4·60		3·72		1·97

TABLE LII.—Mean Variations of Westerly Declination, after eliminating the Secular Change, with reference to the Moon's Age and Declination, for 1846.

Moon's Age.	Variations of West Declination.	Moon's Age.	Variations of West Declination.	After Moon farthest North.	Variations of West Declination.	After Moon farthest North.	Variations of West Declination.
Day.	′	Day.	′	Day.	′	Day.	′
15	0·93	0	1·05	0	1·19	14	0·15
16	1·38	1	0·66	1	0·78	15	0·23
17	0·78	2	0·00	2	0·70	16	0·27
18	0·83	3	0·37	3	0·74	17	0·00
19	0·71	4	0·30	4	0·28	18	0·39
20	0·72	5	0·59	5	0·36	19	0·84
21	0·66	6	0·83	6	0·78	20	0·39
22	0·66	7	0·54	7	0·38	21	1·05
23	0·78	8	0·34	8	0·86	22	0·26
24	0·71	9	0·75	9	0·51	23	0·57
25	0·93	10	0·32	10	0·46	24	0·94
26	0·44	11	0·30	11	0·69	25	0·40
27	0·54	12	0·17	12	0·63	26	0·63
28	0·93	13	0·60	13	0·25	27	0·76
29	0·95	14	0·65				

TABLE LIII.—Diurnal Range of Magnetic Declination for each Civil Day, as deduced from the 12 Daily Observations, with the Means for each Week in 1846.

Civil Day.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	′	′	′	′	′	′	′	′	′	′	′	′
1	8·95	[9·42]	[11·41]	13·45	9·86	10·20	13·99	12·99	13·50	22·38	[11·16]	13·35
2	3·09	12·06	10·35	12·31	12·03	14·45	25·19	[14·24]	12·23	27·85	18·10	8·08
3	3·47	5·65	9·11	15·86	[14·24]	12·17	10·20	9·67	10·55	8·86	10·43	7·34
4	[6·74]	8·63	15·57	12·91	29·73	11·05	13·89	12·93	24·14	[16·76]	5·34	11·48
5	5·60	4·37	8·09	[18·23]	12·41	12·65	[16·19]	12·84	23·58	7·98	10·37	4·38
6	7·01	4·65	7·21	32·41	8·78	12·79	18·86	21·03	[15·85]	16·42	5·37	[9·44]
7	12·34	9·38	7·62	20·08	14·54	[13·77]	15·44	23·79	7·78	17·09	23·50	3·40
8	8·01	[6·45]	[7·69]	15·80	13·37	17·81	13·54	13·44	17·78	31·31	[11·57]	4·60
9	5·61	8·57	6·82	13·19	16·20	14·60	12·75	[16·11]	11·29	13·63	8·88	25·43
10	3·85	7·47	7·33	11·09	[16·36]	13·75	11·98	12·64	10·95	14·40	6·58	14·20
11	[8·25]	4·26	9·06	14·43	11·86	13·26	22·48	11·98	36·61	[16·93]	14·70	6·12
12	13·10	12·42	15·09	[17·20]	28·51	13·24	[14·65]	13·81	11·85	18·43	6·39	8·36
13	7·43	3·93	22·81	17·91	13·67	21·47	15·57	9·22	[16·50]	15·47	9·44	[6·88]
14	11·50	10·25	21·57	28·64	11·13	[14·89]	13·96	17·21	14·97	8·34	10·70	3·90
15	4·99	[12·91]	[19·86]	17·93	12·57	18·88	11·17	17·96	13·08	6·60	[9·04]	5·18
16	8·69	27·17	20·51	34·78	10·33	9·84	14·26	[14·03]	11·53	8·38	7·05	3·50
17	19·29	10·54	20·40	15·89	[11·65]	12·66	8·21	15·84	13·34	9·48	14·04	4·92
18	[8·47]	13·18	18·80	13·29	11·61	10·62	17·32	13·40	14·72	[9·37]	6·64	9·76
19	7·94	8·10	10·10	[17·04]	12·94	7·31	[11·04]	10·57	19·79	8·73	5·10	3·71
20	3·95	9·99	14·62	12·96	11·34	17·37	9·23	14·13	[25·36]	12·67	14·39	[6·75]
21	5·95	8·19	12·07	11·92	16·46	[12·38]	7·34	14·54	31·82	10·37	7·16	4·66
22	6·66	[7·52]	[12·08]	13·39	17·90	15·08	9·91	16·18	56·45	25·06	[7·11]	5·25
23	4·60	3·61	10·39	13·80	17·32	12·11	13·79	[15·36]	16·05	9·76	4·36	12·21
24	36·83	4·24	12·72	13·13	[15·25]	11·79	15·30	15·87	20·01	17·25	6·87	12·27
25	[12·46]	11·00	12·60	10·22	11·51	11·36	18·26	16·20	10·74	[13·56]	4·80	9·12
26	5·20	9·29	21·45	[11·78]	15·79	13·31	[15·74]	15·24	8·82	10·48	25·96	8·51
27	11·48	14·76	15·21	12·08	12·54	14·59	13·16	17·30	[11·78]	9·78	12·18	[9·13]
28	10·01	9·40	14·14	8·86	13·36	[14·10]	14·16	20·02	13·64	9·02	12·32	10·87
29	10·03		[16·13]	12·60	16·79	13·65	19·79	16·54	8·14	9·02	[13·17]	9·52
30	13·46		17·73	12·63	19·55	17·68	21·09	[15·22]	9·32	12·07	7·14	4·49
31	6·71		14·80		[14·42]		15·92	11·73		12·01		5·62

TABLE LIV.—Means of the Diurnal Ranges of Magnetic Declination, with reference to the Moon's Age and Declination, for 1846.

Moon's Age.	Mean Range.	Moon's Age.	Mean Range.	After Moon farthest North.	Mean Range.	After Moon farthest North.	Mean Range.
Day.	′	Day.	′	Day.	′	Day.	′
15	13·22	0	12·83	0	10·58	14	12·31
16	13·75	1	12·90	1	12·43	15	15·51
17	14·16	2	17·93	2	11·22	16	11·43
18	16·66	3	12·22	3	11·82	17	10·21
19	13·34	4	12·95	4	11·26	18	11·73
20	16·31	5	12·44	5	14·33	19	13·44
21	15·74	6	12·58	6	13·08	20	16·01
22	13·05	7	12·49	7	12·45	21	13·36
23	11·55	8	14·42	8	14·73	22	12·10
24	11·42	9	12·37	9	14·34	23	12·86
25	10·14	10	12·71	10	18·68	24	11·64
26	10·43	11	12·92	11	13·01	25	12·30
27	12·52	12	12·59	12	14·37	26	15·86
28	11·71	13	11·75	13	14·20	27	11·66
29	11·94	14	13·25				

TABLE LV.—Means of Westerly Declination at the Observation Hours, for each Month in 1846.

Mean Time.		Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
Gött.	Mak.													
h.	h.	25° ′	25° ′	25° ′	25° ′	25° ′	25° ′	25° ′	25° ′	25° ′	25° ′	25° ′	25° ′	25° ′
18	17	8·09	6·61	5·36	4·01	2·15	1·70	2·21	2·58	2·97	2·85	2·83	2·28	3·64
20	19	9·16	7·86	5·10	2·80	0·84	1·46	1·02	3·18	4·04	3·96	3·28	3·03	3·81
22	21	9·52	9·12	5·12	4·60	4·43	3·68	3·80	4·05	7·48	4·48	3·14	3·33	5·23
23	22	10·30	9·75	8·04	6·38	7·37	6·61	6·80	7·48	9·64	6·35	4·81	4·15	7·31
0	23	11·48	11·08	11·58	10·92	10·76	9·09	10·41	10·62	11·60	9·00	6·79	5·37	9·89
1	0	11·79	11·50	14·10	13·86	12·71	11·40	12·35	12·79	12·45	10·78	8·57	6·17	11·54
2	1	12·64	11·75	15·66	15·38	13·63	12·87	12·96	13·20	12·16	11·10	8·14	6·43	12·16
4	3	10·82	9·95	11·47	12·25	10·99	11·52	10·83	9·78	8·06	8·70	6·12	4·67	9·60
6	5	9·09	7·77	7·65	7·56	7·56	8·18	8·48	5·96	4·86	3·54	4·81	3·42	6·57
7	6	7·37	6·94	6·45	5·76	6·71	6·95	6·99	4·02	3·48	1·86	3·75	2·31	5·22
8	7	7·68	7·21	5·58	3·92	5·11	6·35	6·13	4·22	0·46	2·19	2·81	2·02	4·47
10	9	6·10	5·70	5·36	4·44	4·22	5·19	4·25	3·28	2·63	2·06	−0·10	0·66	3·65

TABLE LVI.—Diurnal Variations of Westerly Declination for each Month in 1846.

Mak. M. T.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
h.	′	′	′	′	′	′	′	′	′	′	′	′	′
17	1·99	0·91	0·26	1·21	1·31	0·24	1·19	0·00	2·51	0·99	2·93	1·62	0·00
19	3·06	2·16	0·00	0·00	0·00	0·00	0·00	0·60	3·58	2·10	3·38	2·37	0·17
21	3·42	3·42	0·02	1·80	3·59	2·22	2·78	1·47	7·02	2·62	3·24	2·67	1·59
22	4·20	4·05	2·94	3·58	6·53	5·15	5·78	4·90	9·18	4·49	4·91	3·49	3·67
23	5·38	5·38	6·48	8·12	9·92	7·63	9·39	8·04	11·14	7·14	6·89	4·71	6·25
0	5·69	5·80	9·00	11·06	11·87	9·94	11·33	10·21	11·99	8·92	8·67	5·51	7·90
1	6·54	6·05	10·56	12·58	12·79	11·41	11·94	10·62	11·70	9·24	8·24	5·77	8·52
3	4·72	4·25	6·37	9·45	10·15	10·06	9·81	7·20	7·60	6·84	6·22	4·01	5·96
5	2·99	2·07	2·55	4·76	6·72	6·72	7·46	3·38	4·40	1·68	4·91	2·76	2·93
6	1·27	1·24	1·35	2·96	5·87	5·49	5·97	1·44	3·02	0·00	3·85	1·65	1·58
7	1·58	1·51	0·48	1·12	4·27	4·89	5·11	1·64	0·00	0·33	2·91	1·36	0·83
9	0·00	0·00	0·26	1·64	3·38	3·73	3·23	0·70	2·17	0·20	0·00	0·00	0·01

TABLE LVII.—Mean Values of the Variations of the Horizontal Component of Magnetic Force, the whole Horizontal Component being Unity, for each Civil Week-Day and Week in 1846.

Civil Day.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	0·00	0·00	0·00	0.00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00
1	6098	[6212]	[6222]	6484	6743	6092	7116	6248	6791	6449	[6800]	7537
2	6248	6116	6103	6924	6944	5671	6854	[6569]	6859	5480	6317	7344
3	6202	6099	6253	6625	[6504]	6007	6629	6576	6637	6594	6771	7447
4	[6234]	6109	6611	6455	5849	6011	6360	6090	5592	[6174]	7056	7348
5	6191	6234	6634	[6183]	6211	6158	[6581]	6541	7655	6397	7021	7836
6	6484	6224	6454	5547	6378	6686	6208	7265	[6341]	6206	7142	[7835]
7	6184	6323	6704	5545	6820	[6325]	6954	5767	5650	5916	6361	8044
8	5893	[6205]	[6670]	6001	7174	6054	6484	6927	6626	6495	[6936]	8147
9	6214	5943	6350	5988	6698	6867	6434	[6461]	5888	5376	6721	8190
10	6514	6090	6954	6726	[6667]	6172	6908	5464	5991	5238	7121	7269
11	[6094]	6414	6925	5928	6764	5903	7148	6265	7015	[5950]	7249	7246
12	6166	6556	6638	[6251]	5950	6926	[6846]	7078	5746	5922	7349	7641
13	5895	6375	6243	6452	6597	7376	7050	6106	[6006]	6108	7581	[7488]
14	5880	7143	5395	6386	6640	[6713]	6491	5801	6142	6563	7150	7209
15	6417	[6438]	[5979]	6029	6149	7214	7048	6264	5085	7038	[7459]	7534
16	6290	6184	6168	6811	6274	6137	6435	[6177]	6058	6603	7454	8027
17	5957	6296	5591	5839	[6877]	6720	6711	6089	6388	7033	9194	7936
18	[6304]	6076	5841	5673	7504	6365	7305	6419	6469	[6891]	6026	7870
19	6354	6252	5975	[6295]	7789	6287	[7001]	6384	6786	6929	6768	8128
20	6266	6554	6176	6267	6904	5818	7028	6423	[6095]	6763	7572	[8043]
21	6543	6580	6139	6075	6953	[6620]	7141	6355	6965	6981	7018	8347
22	6389	[6505]	[6335]	7128	5666	7076	7384	6538	4294	5845	[7287]	8299
23	6469	6755	6455	6453	6821	7014	7097	[6390]	5667	6521	7330	7678
24	5956	6700	6512	6708	[6632]	7160	7799	6522	6236	6941	7534	7550
25	[6158]	6191	6752	6511	7012	7034	7642	6361	6274	[6702]	7499	7547
26	5992	5990	6847	[6571]	6666	6867	[7285]	6144	5996	6972	8279	7369
27	6137	6103	6584	6468	6674	7156	7070	5904	[6294]	6725	6698	[7772]
28	6004	6271	6177	6298	6797	[7038]	6439	6954	6211	7208	6631	7973
29	6322		[6468]	6987	6931	7060	7664	7348	6508	6953	[7280]	8260
30	6452		6300	6900	7707	6997	6604	[6686]	6540	6593	7190	7936
31	6172		6414		[6534]		7356	6263		7111		8209

TABLE LVIII.—Mean Variations of the Horizontal Component of Magnetic Force, after eliminating the Secular Change, with reference to the Moon's Age and Declination, for 1846.

Moon's Age.	Variations of Horizontal Component.	Moon's Age.	Variations of Horizontal Component.	After Moon farthest North.	Variations of Horizontal Component.	After Moon farthest North.	Variations of Horizontal Component.
Day.	0·00	Day.	0·00	Day.	0·00	Day.	0·00
15	0352	0	0329	0	0204	14	0259
16	0281	1	0478	1	0249	15	0187
17	0067	2	0229	2	0344	16	0152
18	0311	3	0388	3	0217	17	0302
19	0260	4	0495	4	0386	18	0427
20	0137	5	0415	5	0347	19	0368
21	0311	6	0424	6	0349	20	0447
22	0000	7	0414	7	0293	21	0232
23	0279	8	0484	8	0210	22	0100
24	0455	9	0166	9	0412	23	0154
25	0232	10	0113	10	0003	24	0090
26	0368	11	0317	11	0335	25	0085
27	0348	12	0189	12	0000	26	0410
28	0736	13	0397	13	0150	27	0230
29	0552	14	0351				

TABLE LIX.—Diurnal Range of the Horizontal Component of Magnetic Force for each Civil Day, as deduced from the 12 Daily Observations, with the Means for each Week in 1846.

Civil Day.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0
1	0124	[0196]	[0248]	0417	0408	0513	0648	0836	0381	0405	[0290]	0356
2	0097	0234	0289	0382	0505	0713	0728	[0649]	0346	0400	0263	0552
3	0121	0174	0239	0273	[0621]	0617	0549	0648	0351	0452	0339	0148
4	[0145]	0151	0347	0344	1200	0572	0703	0560	0344	[0365]	0229	0247
5	0132	0128	0215	[0695]	0666	0454	[0670]	0383	1636	0223	0239	0161
6	0138	0161	0200	2083	0539	0535	0968	0666	[0688]	0232	0250	[0165]
7	0258	0157	0147	0606	0562	[0613]	0552	1160	0324	0481	0522	0121
8	1281	[0165]	[0177]	0483	0337	0374	0521	1073	0902	1474	[0297]	0146
9	0123	0269	0208	0424	0481	0998	0609	[0808]	0572	0477	0235	0167
10	0171	0202	0084	0576	[0848]	0748	0676	0652	0402	0591	0328	0180
11	[0215]	0073	0207	0617	0536	0564	0968	0587	0861	[0611	0207	0186
12	0279	0288	0250	[0512]	2045	0514	[0748]	0709	0698	0448]	0254	0171
13	0130	0142	0529	0601	1125	0522	0949	0832	[0597]	0397	0239	[0220]
14	0308	0401	0455	0421	0740	[0681]	0756	0541	0582	0279	0279	0383
15	0090	[0277]	[0444]	0433	0652	1026	0528	0775	0663	0227	[0525]	0182
16	0153	0439	0223	1161	0567	0764	0628	[0680]	0378	0328	0169	0217
17	0228	0177	0435	0634	[0664]	0694	0693	0945	0431	0300	1775	0162
18	[0179]	0217	0770	0435	0506	0450	0579	0460	0347	[0301]	0433	0177
19	0252	0155	0377	[0627]	0668	0362	[0619]	0528	0309	0278	0283	0130
20	0121	0170	0389	0448	0852	0390	0624	0428	[0725]	0246	0271	[0163]
21	0228	0117	0266	0363	0732	[0430]	0472	0553	0448	0427	0201	0072
22	0186	[0183]	[0367]	0720	0668	0425	0718	0501	2407	0470	[0221]	0105
23	0265	0069	0382	0429	0818	0460	0499	[0559]	0408	0417	0204	0335
24	0636	0096	0398	0601	[0609]	0495	0841	0601	0587	0348	0190	0143
25	[0252]	0491	0390	0495	0593	0702	0641	0640	0524	[0348]	0175	0304
26	0105	0232	0563	[0482]	0425	0493	[0674]	0630	0466	0255	0834	0121
27	0159	0201	0437	0470	0417	0526	0520	0765	[0462]	0310	0256	[0211]
28	0163	0178	0498	0479	0377	[0627]	0470	0664	0647	0286	0535	0212
29	0256		[0461]	0420	0436	0733	1073	0984	0294	0282	[0469]	0263
30	0162		0466	0410	0594	0659	0680	[0593]	0256	0328	0282	0224
31	0202		0387		[0542]		0787	0428		0297		0065

TABLE LX.—Means of the Diurnal Ranges of the Horizontal Component of Magnetic Force, with reference to the Moon's Age and Declination, for 1846.

Moon's Age.	Mean Range.	Moon's Age.	Mean Range.	After Moon farthest North.	Mean Range.	After Moon farthest North.	Mean Range.
Day.	0·00	Day.	0·00	Day.	0·00	Day.	0·00
15	5892	0	4419	0	3982	14	5249
16	4915	1	4277	1	4301	15	5015
17	5922	2	5674	2	3651	16	3915
18	6215	3	3801	3	3999	17	3576
19	4459	4	3951	4	4091	18	4185
20	5362	5	4292	5	5401	19	4645
21	5567	6	4463	6	4052	20	6172
22	4509	7	4212	7	3938	21	5153
23	4495	8	5359	8	4602	22	4487
24	3967	9	4884	9	4753	23	4520
25	4333	10	5617	10	5975	24	4427
26	4475	11	4222	11	5777	25	4057
27	3927	12	4186	12	5004	26	5478
28	5307	13	3457	13	5919	27	4344
29	4607	14	3911				

TABLE LXI.—Means of the Scale Readings of the Bifilar Magnetometer, corrected for Temperature, at the Observation Hours, for each Month in 1846.

Mean Time.		Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
Gött.	Mak.													
h.	h.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.
18	17	549·57	547·45	549·02	548·68	543·22	540·90	543·74	542·03	543·94	552·11	555·58	559·39	547·97
20	19	547·59	547·46	546·76	546·10	540·26	535·67	538·65	536·96	536·75	546·21	553·46	558·43	544·52
22	21	544·23	543·83	538·30	533·86	532·03	530·90	532·08	526·15	528·20	537·56	545·74	555·66	537·38
23	22	542·24	543·07	536·20	531·72	529·75	532·04	532·12	528·86	531·94	536·28	543·22	552·56	536·67
0	23	541·96	543·71	535·86	531·36	534·27	537·17	536·36	534·26	534·15	537·48	544·82	553·94	538·78
1	0	542·37	545·36	539·07	535·38	539·37	542·23	542·78	539·35	542·78	540·06	547·45	554·58	542·56
2	1	546·14	546·70	545·98	543·19	549·74	548·67	547·38	547·17	550·50	546·84	550·60	557·17	548·34
4	3	546·96	549·18	553·02	553·04	559·91	557·77	564·58	556·14	559·57	554·02	554·28	558·95	555·62
6	5	548·77	549·64	553·14	559·72	570·52	564·93	573·19	567·43	560·99	552·21	559·36	560·30	560·02
7	6	547·17	548·87	552·88	561·72	565·29	566·62	570·56	566·62	553·76	553·74	560·94	560·70	559·07
8	7	548·96	550·15	552·59	556·87	566·47	564·47	566·62	562·58	552·96	551·77	558·50	560·53	557·71
10	9	547·27	547·06	552·71	550·87	551·26	555·41	557·42	552·17	542·90	551·08	553·95	556·96	551·59

TABLE LXII.—Diurnal Variations of the Horizontal Component of Magnetic Force for each Month in 1846.

Mak. M. T.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
h.	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00
17	1027	0591	1777	2338	1818	1350	1574	2144	2125	2137	1669	0922	1526
19	0760	0593	1471	1990	1419	0644	0887	1459	1154	1341	1382	0792	1061
21	0306	0103	0329	0337	0308	0000	0000	0000	0000	0173	0340	0418	0096
22	0038	0000	0046	0049	0000	0154	0005	0366	0505	0000	0000	0000	0000
23	0000	0086	0000	0000	0610	0846	0578	1095	0803	0162	0216	0186	0285
0	0055	0309	0433	0543	1299	1530	1444	1782	1968	0510	0571	0273	0796
1	0564	0490	1366	1597	2699	2399	2065	2838	3010	1426	0996	0622	1576
3	0675	0825	2317	2927	4072	3627	4387	4049	4235	2395	1493	0863	2558
5	0919	0887	2333	3829	5504	4594	5550	5573	4427	2151	2179	1045	3152
6	0703	0783	2298	4099	4798	4822	5195	5463	3451	2357	2392	1099	3025
7	0945	0956	2259	3444	4957	4532	4663	4918	3343	2091	2063	1076	2840
9	0717	0539	2275	2634	2904	3309	3421	3513	1984	1998	1449	0594	2014

TABLE LXIII.—Mean Values of the Variations of the Vertical Component of Magnetic Force, the whole Vertical Component being unity, for each Civil Week-Day and Week in 1846.

Civil Day.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00
1	4066	[3793]	[3657]	3451	3448	3637	……	3677	3534	3310	[2861]	2710
2	4128	3915	3655	3364	3433	3477	……	[3710]	3453	3360	2895	2716
3	4145	3814	3683	3373	[3494]	3825	3927	3659	3422	2980	2825	2691
4	[4060]	3882	3579	3713	3594	4120	3497	3796	3489	[3261]	2723	2810
5	4084	3872	3624	[3545]	3396	3952	[3778]	3731	4122	3349	2867	2723
6	4038	3942	3705	3603	3592	3978	3956	3764	[3799]	3331	2806	[2706]
7	3901	3906	3686	3593	3749	[4054]	3827	3702	3638	3237	2878	2690
8	3813	[3932]	[3672]	3625	3611	4079	3681	3740	4086	3394	[2912]	2651
9	3843	4073	3774	3605	3778	4062	3850	[3818]	4038	3502	2963	2672
10	3963	3952	3671	3696	[3611]	4131	3677	3880	3988	3431	2966	2717
11	[3958]	3849	3572	3312	3634	4112	4285	3775	4165	[3437]	2991	2654
12	4043	3731	3559	[3498]	3314	4040	[3921]	4046	3648	3464	2741	2579
13	4117	3695	3928	3487	3582	3959	4124	4084	[3758]	3482	2696	[2646]
14	3971	3613	3788	3413	3598	[4059]	3781	3442	3625	3351	2705	2589
15	3947	[3694]	[3740]	3474	3471	4119	3807	3949	3543	3165	[2879]	2670
16	3961	3912	3602	3699	3615	4090	3752	[3724]	3582	3069	2766	2666
17	4069	3563	3793	3322	[3565]	4032	3944	3463	3516	3010	3457	2651
18	[3973]	3651	3768	3496	3532	4146	4102	3640	3580	[3148]	2911	2617
19	4021	3668	3792	[3517]	3522	3885	[3839]	3767	3817	3244	3071	2629
20	3927	3647	3744	3457	3650	3900	3745	3655	[3424]	3172	3041	[2651]
21	3915	3671	3741	3516	3731	[3957]	3729	3646	3631	3227	2966	2643
22	3925	[3549]	[3674]	3613	3868	3899	3763	3381	3003	3420	[2901]	2555
23	3854	3415	3652	3528	3742	4008	3936	[3584]	2996	3073	2782	2809
24	3725	3378	3621	3537	[3717]	3903	3915	3651	3288	3079	2737	2662
25	[3775]	3515	3495	3383	3763	3890	3680	3612	3397	[3124]	2807	2688
26	3726	3831	3544	[3559]	3557	3691	[3855]	3560	3526	3134	3233	2711
27	3675	3567	3597	3689	3640	3784	3751	3468	[3383]	3120	3072	[2580]
28	3748	3626	3554	3627	3700	[3796]	3588	3537	3408	2919	2813	2633
29	3678		[3541]	3588	3596	3812	4258	3497	3353	2906	[2885]	2392
30	3749		3588	3504	3569	3801	3754	[3501]	3328	2979	2767	2396
31	3721		3515		[3634]		3644	3515		2841		2448

TABLE LXIV.—Mean Variations of the Vertical Component of Magnetic Force, after eliminating the Secular Change, with reference to the Moon's Age and Declination, for 1846.

Moon's Age.	Variations of Vertical Component.	Moon's Age.	Variations of Vertical Component.	After Moon farthest North.	Variations of Vertical Component.	After Moon farthest North.	Variations of Vertical Component.
Day.	0·00	Day.	0·00	Day.	0·00	Day.	0·00
15	0080	0	0028	0	0066	14	0111
16	0116	1	0069	1	0086	15	0113
17	0088	2	0006	2	0087	16	0055
18	0119	3	0016	3	0144	17	0055
19	0134	4	0004	4	0109	18	0000
20	0182	5	0006	5	0071	19	0069
21	0155	6	0059	6	0014	20	0179
22	0087	7	0000	7	0043	21	0119
23	0117	8	0044	8	0082	22	0083
24	0084	9	0064	9	0169	23	0185
25	0019	10	0040	10	0060	24	0125
26	0034	11	0035	11	0073	25	0086
27	0018	12	0084	12	0081	26	0169
28	0066	13	0036	13	0071	27	0113
29	0087	14	0060				

TABLE LXV.—Diurnal Range of the Vertical Component of Magnetic Force for each Civil Day, as deduced from the 12 Daily Observations, with the Means for each Week in 1846.

Civil Day.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00
1	0092	[0286]	[0319]	0422	0219	0597	......	1006	0611	0826	[0442	0270
2	0136	0395	0211	0248	0756	2200	......	[0697]	0145	1436	0990	0237
3	0109	0222	0285	0459	[1086]	0799	1649	0703	0400	1529	0405	0114
4	[0157]	0225	0226	0572	2131	0391	2368	0447	1422	[1109]	0198	0886
5	0157	0133	0281	[1240]	1931	0522	[1505]	0301	6065	0464	0387	0152
6	0112	0169	0212	4404	1157	0714	1463	0899	[1876]	0501	0144	[0296]
7	0339	0596	0220	0769	0786	[0805]	0871	2213	0195	1900	0833	0093
8	0265	[0327]	[0208]	0988	0824	0172	1172	2063	2099	8852	[0308]	0045
9	0295	0708	0276	0216	1127	1949	0324	[1514]	1074	1014	0128	0484
10	0115	0267	0148	0896	[1094]	1083	0522	1711	0907	4828	0215	0598
11	[0327]	0092	0110	1284	0308	0278	2094	0629	5138	[2756]	0144	0507
12	0479	0253	0206	[0889]	2669	0328	[1080]	1571	1899	0893	0157	0249
13	0138	0162	2472	2039	0848	0548	1942	1817	[1812]	0692	0230	[0315]
14	0668	0180	1768	0381	0957	[0628]	0448	3345	1755	0260	0382	0233
15	0152	[0330]	[1259]	0517	0649	1343	1149	1919	0927	0274	[1238]	0189
16	0155	0763	1469	2473	0330	0885	0551	[1743]	0247	0688	0172	0117
17	0612	0258	1067	0941	[0743]	0387	0620	1842	0833	0167	5699	0113
18	[0216]	0363	0572	0285	0437	0519	1134	0704	0179	[0489]	0787	0231
19	0186	0157	0306	[0891]	1292	0512	[0701]	0930	1121	0828	0226	0179
20	0062	0088	0254	0661	0796	0370	0307	0386	[2041]	0682	0426	[0379]
21	0128	0191	0376	0214	0758	[0499]	0542	0574	1555	0293	0245	0155
22	0090	[0243]	[0264]	0770	0366	0464	1051	1842	6862	1133	[0258]	0142
23	0116	0087	0253	0191	0619	0597	0817	[0805]	1698	0347	0201	1455
24	0707	0133	0217	0332	[0612]	0530	1148	0760	0475	0336	0170	0779
25	[0283]	0801	0178	0865	1027	0232	1105	0890	0401	[0412]	0280	0405
26	0152	0525	0482	[0369	0481	0253	[1244]	0379	0484	0108	7017	0475
27	0121	0255	0400	0452	0422	0586	0801	1136	[0408]	0365	0798	[0383]
28	0514	0412	0437	0165	0638	[0502]	0586	1831	0431	0183	0663	0275
29	0502		[0392]	0211	0302	0652	3007	1122	0429	0260	[1644]	0174
30	0186		0442	0320	0955	0786	0412	[0855]	0230	0504	0879	0190
31	0185		0169		[0915]		1316	0287		0296		0225

TABLE LXVI.—Means of the Diurnal Ranges of the Vertical Component of Magnetic Force, with reference to the Moon's Age and Declination for 1846.

Moon's Age.	Mean Range.	Moon's Age.	Mean Range.	After Moon farthest North.	Mean Range.	After Moon farthest North.	Mean Range.
Day.	0·00	Day.	0·00	Day.	0·00	Day.	0·00
15	1207	0	0740	0	0874	14	0631
16	0948	1	0650	1	0860	15	0659
17	1132	2	1082	2	0583	16	0448
18	1502	3	0573	3	0542	17	0322
19	0753	4	0382	4	0505	18	0505
20	1177	5	0523	5	0917	19	0796
21	1268	6	0711	6	0685	20	1779
22	0850	7	0610	7	0711	21	0947
23	0658	8	1356	8	0817	22	0479
24	0703	9	0825	9	1043	23	0819
25	0542	10	1012	10	1179	24	0662
26	0494	11	0751	11	1270	25	0755
27	0408	12	0674	12	0961	26	1572
28	0827	13	0607	13	0650	27	0752
29	0802	14	0673				

TABLE LXVII.—Means of the Micrometer Readings of the Balance Magnetometer corrected for Temperature, at the Observation Hours, for each Month in 1846.

Mean Time.		Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
Gött.	Mak.													
h.	h.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.
18	17	385·2	369·6	361·5	333·1	336·9	373·8	351·3	335·9	334·5	273·8	276·9	257·3	332·5
20	19	386·4	371·1	365·2	344·8	353·5	391·2	372·1	356·6	346·9	307·1	280·5	258·3	344·5
22	21	388·1	373·0	369·0	354·3	355·3	392·0	378·3	372·0	353·2	325·4	289·4	260·4	350·9
23	22	389·2	372·7	366·7	355·0	353·2	389·5	374·1	370·5	361·7	326·5	288·7	262·7	350·9
0	23	392·2	374·5	364·4	356·0	351·2	384·0	367·4	364·3	365·7	325·8	287·3	264·2	349·7
1	0	394·3	376·0	366·0	352·7	351·9	386·0	368·0	365·1	373·8	331·4	288·9	264·8	351·6
2	1	397·3	375·8	371·8	356·7	356·7	388·0	373·0	371·0	377·8	338·2	293·5	266·3	355·5
4	3	403·3	386·4	392·1	374·3	384·4	398·6	402·5	396·7	407·5	360·1	306·3	273·6	373·8
6	5	401·5	384·8	397·5	388·1	397·2	409·9	428·9	414·5	406·7	352·5	306·5	274·7	380·2
7	6	400·9	383·3	388·9	391·9	397·5	412·4	426·5	416·6	387·6	349·7	337·0	272·8	380·4
8	7	399·3	380·0	383·0	387·8	394·9	414·1	417·8	408·5	380·9	336·8	322·9	275·0	375·1
10	9	396·5	375·9	362·8	345·4	364·1	404·1	387·1	349·5	333·5	321·0	286·7	270·9	349·8

TABLE LXVIII.—Diurnal Variations of the Vertical Component of Magnetic Force, for each Month in 1846.

Mak. M. T.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
h.	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00
17	0000	0000	0000	0000	0000	0000	0000	0000	0010	0000	0000	0000	0000
19	0012	0015	0037	0117	0166	0174	0208	0207	0134	0333	0036	0010	0120
21	0029	0034	0075	0212	0184	0182	0270	0361	0197	0516	0125	0031	0184
22	0040	0031	0052	0219	0163	0157	0228	0346	0282	0527	0118	0054	0184
23	0070	0049	0029	0229	0143	0102	0161	0284	0312	0520	0104	0069	0172
0	0091	0064	0045	0196	0150	0122	0167	0292	0403	0576	0120	0075	0191
1	0121	0062	0103	0236	0198	0142	0217	0351	0443	0644	0166	0090	0230
3	0181	0168	0306	0412	0475	0248	0512	0608	0740	0863	0294	0163	0413
5	0163	0152	0360	0550	0603	0361	0776	0786	0732	0787	0296	0174	0477
6	0157	0137	0274	0588	0606	0386	0752	0807	0541	0759	0601	0155	0479
7	0141	0104	0215	0547	0580	0403	0665	0726	0474	0630	0460	0177	0426
9	0113	0063	0013	0123	0272	0303	0358	0136	0000	0472	0098	0136	0173

TABLE LXIX.—Variations of Magnetic Dip with reference to the Moon's Age and Declination for 1846, as deduced from Tables LVIII. and LXIV.

Moon's Age.	Variations of Magnetic Dip.	Moon's Age.	Variations of Magnetic Dip.	After Moon farthest North.	Variations of Magnetic Dip.	After Moon farthest North.	Variations of Magnetic Dip.
Day.	′	Day.	′	Day.	′	Day.	′
15	0·414	0	0·385	0	0·300	14	0·290
16	·525	1	·272	1	·274	15	·367
17	·719	2	·467	2	·177	16	·343
18	·497	3	·310	3	·368	17	·187
19	·566	4	·186	4	·156	18	·000
20	·744	5	·272	5	·157	19	·133
21	·535	6	·317	6	·096	20	·165
22	·787	7	·266	7	·184	21	·326
23	·529	8	·239	8	·311	22	·426
24	·311	9	·591	9	·191	23	·476
25	·475	10	·621	10	·503	24	·480
26	·350	11	·404	11	·172	25	·445
27	·354	12	·588	12	·528	26	·193
28	·000	13	·322	13	·362	27	·322
29	·213	14	·394				

TABLE LXX.—Diurnal Variations of Magnetic Dip for each Month in 1846, as deduced from Tables LXII. and LXVIII.

Mak. M. T.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
h.	′	′	′	′	′	′	′	′	′	′	′	′	′
17	0·000	0·271	0·504	1·219	3·206	3·210	3·328	2·749	1·643	0·000	0·222	0·023	1·195
19	0·290	0·285	0·861	1·703	3·794	4·125	4·259	3·677	2·782	1·174	0·558	0·169	1·803
21	0·780	0·814	2·088	3·521	4·968	4·803	5·246	5·354	4·048	2·579	1·734	0·580	2·873
22	1·070	0·918	2·358	3·828	5·267	4·617	5·197	4·958	3·611	2·770	2·081	1·038	2·973
23	1·141	0·848	2·382	3·889	4·611	3·840	4·531	4·136	3·332	2·594	1·842	0·860	2·664
0	1·105	0·631	1·948	3·290	3·902	3·150	3·637	3·429	2·215	2·291	1·489	0·776	2·152
1	0·607	0·441	1·038	2·236	2·496	2·267	3·043	2·392	1·173	1·409	1·095	0·429	1·382
3	0·554	0·203	0·261	1·035	1·356	1·100	0·935	1·400	0·208	0·629	0·711	0·254	0·551
5	0·282	0·122	0·300	0·241	0·000	0·212	0·000	0·000	0·000	0·804	0·000	0·076	0·000
6	0·500	0·213	0·247	0·000	0·737	0·000	0·344	0·137	0·817	0·560	0·095	0·000	0·134
7	0·232	0·000	0·226	0·638	0·545	0·320	0·807	0·619	0·859	0·703	0·291	0·047	0·271
9	0·440	0·391	0·000	1·040	2·360	1·488	1·780	1·467	1·780	0·635	0·553	0·506	0·867

TABLE LXXI.—Variations of the Total Magnetic Force, with reference to the Moon's Age and Declination for 1846, as deduced from Tables LVIII. and LXIV.

Moon's Age.	Variations of Total Force.	Moon's Age.	Variations of Total Force.	After Moon farthest North.	Variations of Total Force.	After Moon farthest North.	Variations of Total Force.
Day.	0·00	Day.	0·00	Day.	0·00	Day.	0·00
15	0079	0	0030	0	0036	14	0082
16	0104	1	0082	1	0059	15	0077
17	0057	2	0000	2	0069	16	0021
18	0110	3	0025	3	0108	17	0036
19	0118	4	0026	4	0094	18	0000
20	0148	5	0019	5	0055	19	0056
21	0142	6	0068	6	0005	20	0163
22	0049	7	0014	7	0025	21	0087
23	0105	8	0060	8	0051	22	0041
24	0093	9	0046	9	0150	23	0138
25	0012	10	0019	10	0010	24	0077
26	0039	11	0035	11	0056	25	0042
27	0023	12	0066	12	0029	26	0150
28	0106	13	0044	13	0035	27	0081
29	0106	14	0061				

TABLE LXXII.—Diurnal Variations of Total Magnetic Force for each Month in 1846, as deduced from Tables LXII. and LXVIII.

Mak. M. T.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
h.	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00
17	0066	0033	0157	0039	0041	0000	0000	0000	0051	0000	0066	0047	0000
19	0049	0046	0159	0108	0149	0083	0116	0115	0062	0217	0069	0042	0060
21	0017	0013	0075	0023	0051	0024	0080	0103	0000	0261	0039	0023	0017
22	0000	0000	0025	0000	0000	0018	0043	0123	0128	0253	0000	0000	0008
23	0023	0025	0000	0003	0045	0040	0042	0146	0186	0263	0009	0033	0026
0	0048	0061	0059	0030	0122	0128	0136	0224	0387	0349	0060	0047	0096
1	0127	0079	0208	0174	0310	0235	0245	0386	0530	0504	0145	0097	0212
3	0192	0208	0487	0469	0699	0457	0749	0741	0923	0801	0311	0187	0477
5	0201	0200	0537	0686	0962	0658	1106	1058	0936	0707	0384	0216	0596
6	0173	0176	0456	0748	0892	0704	1048	1065	0664	0704	0679	0204	0584
7	0184	0164	0400	0643	0885	0689	0915	0937	0592	0560	0519	0222	0517
9	0135	0084	0220	0180	0397	0474	0511	0263	0027	0409	0131	0135	0206

TABLE LXXIII.—Ranges for each Civil Day of the Magnetic Declination, and of the Horizontal and Vertical Components of Magnetic Force, as obtained from all the Observations (Daily or Extra) made in 1846.

Civil Day.	Declination.	Hor. Comp.	Vert. Comp.	Declination.	Hor. Comp.	Vert. Comp.	Declination.	Hor. Comp.	Vert. Comp.	Declination.	Hor. Comp.	Vert. Comp.	Declination.	Hor. Comp.	Vert. Comp.	Declination.	Hor. Comp.	Vert. Comp.
	′	0·0	0·0	′	0·0	0·0	′	0·0	0·0	′	0·0	0·0	′	0·0	0·0	′	0·0	0·0
	JANUARY.			MARCH.			MAY.			JULY.			SEPTEMBER.			NOVEMBER.		
1	8·95	0124	0009	…	…	…	9·86	0408	0022	13·99	0648	…	13·50	0381	0061	…	…	…
2	3·50	0115	0019	10·35	0289	0021	12·03	0505	0076	25·19	0728	…	12·23	0346	0014	18·10	0263	0099
3	7·91	0131	0018	9·11	0239	0028	…	…	…	10·20	0549	0165	10·55	0351	0040	10·43	0339	0040
4	…	…	…	15·57	0347	0023	38·92	1833	0424	16·13	0703	0237	29·50	0930	0165	5·34	0229	0020
5	10·50	0139	0026	8·09	0215	0028	12·41	0666	0193	…	…	…	43·02	1767	0622	10·37	0239	0039
6	7·85	0167	0025	7·21	0200	0021	8·78	0539	0116	25·02	1045	0146	…	…	…	5·37	0250	0014
7	17·40	0269	0057	7·62	0147	0022	14·54	0562	0079	15·44	0552	0087	7·78	0324	0019	24·07	0598	0101
8	11·55	0281	0036	…	…	…	13·37	0337	0082	14·42	0521	0117	24·76	1015	0210	…	…	…
9	5·97	0132	0029	6·82	0208	0028	16·20	0481	0113	12·75	0609	0032	11·29	0572	0107	8·88	0235	0013
10	5·69	0171	0012	7·33	0084	0015	..	…	…	11·98	0676	0052	12·72	0402	0091	6·58	0328	0021
11	…	…	…	9·06	0207	0011	11·86	0536	0031	32·70	1296	0291	58·41	1095	0575	14·70	0207	0014
12	13·10	0279	0048	15·09	0250	0021	50·22	3485	0644	…	…	…	11·85	0698	0190	6·39	0254	0016
13	7·43	0130	0014	39·22	1565	0342	15·44	1125	0085	19·07	1014	0222	…	…	…	9·44	0239	0023
14	11·50	0308	0067	33·24	0849	0240	11·13	0740	0096	14·91	0756	0045	14·97	0707	0175	10·70	0279	0038
15	4·99	0090	0015	…	…	…	12·57	0652	0065	11·17	0528	0115	13·08	0663	0093	…	…	…
16	8·69	0153	0015	36·81	1301	0333	10·33	0567	0033	14·26	0628	0055	11·53	0378	0025	7·05	0169	0017
17	19·29	0228	0061	32·88	0880	0344	…	…	…	8·21	0693	0062	13·34	0431	0083	43·54	1775	0648
18	…	…	…	18·80	0770	0057	11·61	0506	0044	17·32	0579	0113	14·72	0347	0018	6·64	0433	0079
19	7·94	0252	0019	10·10	0377	0031	12·94	0668	0135	…	…	…	32·81	0364	0112	5·10	0283	0023
20	3·95	0121	0006	14·62	0389	0025	11·34	0852	0080	9·23	0624	0031	…	…	…	14·39	0271	0043
21	5·95	0228	0013	12·07	0266	0038	16·46	0732	0076	7·34	0472	0054	40·10	0728	0176	7·16	0201	0024
22	6·66	0186	0009	…	…	…	17·90	0668	0037	9·91	0718	0105	121·52	4995	1178	…	…	…
23	4·60	0265	0012	10·39	0382	0025	17·32	1238	0127	13·79	0499	0082	16·05	0408	0170	4·36	0204	0020
24	51·65	0672	0100	12·72	0398	0022	…	…	…	15·30	0841	0115	20·01	0587	0047	6·87	0190	0017
25	…	…	…	12·60	0390	0018	11·51	0593	0103	18·26	0641	0113	10·74	0524	0040	4·80	0175	0028
26	5·20	0105	0015	21·45	0563	0048	15·79	0425	0048	…	…	…	8·82	0466	0048	44·90	1037	0705
27	11·48	0159	0012	20·42	0437	0040	12·54	0417	0042	13·16	0520	0080	…	…	…	15·38	0362	0080
28	10·01	0163	0051	14·14	0498	0044	13·36	0377	0064	14·16	0470	0059	19·48	0647	0043	12·32	0535	0066
29	10·03	0256	0050	…	…	…	16·79	0436	0030	22·67	1211	0347	8·14	0294	0043	…	…	…
30	13·46	0162	0019	17·73	0466	0054	19·55	0594	0095	21·09	0680	0041	15·08	0271	0023	7·14	0282	0088
31	6·71	0202	0018	14·80	0387	0017	…	…	…	15·92	0787	0132						
	FEBRUARY.			APRIL.			JUNE.			AUGUST.			OCTOBER.			DECEMBER.		
1	…	…	…	13·45	0417	0042	10·20	0513	0060	24·25	0836	0101	22·38	0405	0083	13·35	0356	0027
2	12·06	0234	0039	12·31	0382	0025	37·82	1304	0238	…	…	…	29·96	0400	0161	8·08	0552	0024
3	5·65	0174	0022	15·86	0273	0046	12·17	0617	0080	9·67	0648	0070	8·86	0452	0153	7·34	0148	0011
4	8·63	0151	0022	12·91	0344	0057	11·05	0572	0039	12·93	0560	0045	…	…	…	11·48	0247	0089
5	4·37	0128	0013	…	…	…	12·65	0454	0052	12·84	0383	0030	7·98	0223	0046	4·38	0161	0015
6	4·65	0161	0017	36·67	2355	0457	12·79	0535	0071	21·03	0666	0090	16·42	0232	0050	…	…	…
7	9·38	0157	0060	20·08	0625	0210	…	…	…	54·89	2078	0221	44·57	0965	0237	3·40	0121	0009
8	…	…	…	15·80	0483	0099	17·81	0374	0017	15·14	1231	0220	41·42	3197	1062	4·60	0146	0004
9	8·57	0269	0071	13·19	0424	0022	14·60	0998	0207	…	…	…	13·63	0494	0101	25·43	0223	0048
10	7·47	0202	0027	11·09	0576	0090	13·75	0748	0108	12·64	0652	0171	16·38	0591	0483	14·20	0180	0060
11	4·26	0073	0009	14·43	0617	0128	13·26	0564	0028	11·98	0587	0063	…	…	…	6·12	0186	0051
12	12·42	0288	0025	…	…	…	13·24	0514	0033	28·17	1021	0271	18·43	0448	0089	8·36	0171	0025
13	3·93	0142	0016	17·91	0601	0211	21·47	0522	0055	10·45	0832	0199	15·47	0397	0069	…	…	…
14	10·25	0401	0018	28·64	0585	0076	…	…	…	24·69	0998	0340	8·34	0279	0026	3·90	0383	0023
15	…	…	…	21·13	0621	0052	18·88	1026	0134	17·96	0775	0192	6·60	0227	0027	5·18	0182	0019
16	35·69	0444	0089	39·39	2157	0426	9·84	0764	0088	…	…	…	8·38	0328	0069	3·50	0217	0012
17	10·54	0177	0026	27·70	1266	0314	12·66	0694	0039	23·14	1075	0187	9·48	0300	0017	4·92	0162	0011
18	13·18	0217	0036	13·29	0435	0028	10·62	0450	0052	13·40	0460	0070	…	…	…	9·76	0177	0023
19	8·10	0155	0016	…	…	…	14·93	0362	0059	10·57	0528	0093	8·73	0278	0083	3·71	0130	0018
20	9·99	0170	0014	12·96	0448	0066	17·37	0390	0037	14·13	0428	0039	12·67	0246	0068	…	…	…
21	8·19	0117	0019	11·92	0363	0021	…	…	…	14·54	0553	0057	10·37	0427	0029	4·66	0072	0015
22	…	…	…	13·39	0720	0077	15·08	0425	0046	23·65	0644	0191	38·09	0791	0136	5·25	0105	0014
23	3·61	0069	0009	13·80	0429	0019	21·09	0553	0188	…	…	…	9·76	0417	0035	22·90	0763	0260
24	4·24	0096	0013	13·13	0601	0033	11·79	0495	0053	33·98	0640	0218	17·25	0560	0034	12·27	0143	0078
25	22·41	0491	0083	10·22	0495	0086	11·36	0702	0023	18·82	1044	0095	…	…	…	9·12	0304	0040
26	9·29	0240	0064	…	…	…	13·21	0493	0025	15·24	0630	0038	10·48	0255	0011	8·51	0121	0047
27	14·76	0201	0025	12·08	0470	0045	14·59	0526	0059	48·51	1546	0454	9·78	0310	0036	…	…	…
28	9·40	0178	0041	8·86	0479	0016	…	…	…	40·54	1376	0340	9·02	0286	0018	10·87	0212	0027
29				12·60	0420	0021	13·65	0733	0065	20·68	0984	0151	9·02	0282	0026	9·52	0263	0017
30				12·63	0410	0032	17·68	0659	0079	…	…	…	12·07	0328	0050	4·49	0224	0019
31										11·73	0428	0029	12·01	0297	0030	5·62	0065	0022

TABLES OF RESULTS

FROM THE

METEOROLOGICAL OBSERVATIONS

MADE AT THE OBSERVATORY OF

GENERAL SIR T. M. BRISBANE, BART.,

MAKERSTOUN.

1845 AND 1846.

TABLE I.—Daily and Weekly Means of the Temperature of the Air, as deduced from the readings of the Dry Bulb Thermometer, for 1845.

Civil Day.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	°	°	°	°	°	°	°	°	°	°	°	°
1	30·2	28·9	31·4	42·9	50·5	[50·2]	52·5	54·2	60·6	49·5	46·2	39·8
2	32·6	[27·4]	[32·3]	42·0	48·5	55·2	55·1	56·1	52·8	49·4	[41·7]	37·2
3	35·1	37·0	35·5	38·6	47·7	53·7	53·5	[55·3]	49·6	45·9	38·6	33·4
4	38·5	34·8	30·9	38·4	[46·0]	49·2	55·0	56·2	51·5	44·2	32·9	34·5
5	[36·3]	37·9	27·5	39·8	42·6	54·7	55·6	55·9	49·8	[45·2]	37·9	39·6
6	42·1	29·5	30·4	[40·5]	44·3	54·8	[56·4]	56·1	47·7	39·8	51·0	36·9
7	33·4	28·1	36·7	45·2	42·2	55·3	59·8	56·7	[51·7]	45·7	49·8	[37·9]
8	36·3	27·6	39·8	42·4	41·6	[56·5]	57·8	57·0	52·0	46·0	48·8	36·8
9	32·8	[30·0]	[34·5]	38·9	42·5	52·8	56·6	53·2	57·4	45·4	[45·3]	40·9
10	39·7	34·1	40·2	39·0	44·4	59·0	59·1	[54·8]	51·9	44·5	43·0	38·5
11	41·5	30·2	31·9	38·6	[44·7]	62·4	52·4	55·6	50·5	45·5	41·1	42·4
12	[37·3]	30·7	27·9	39·0	47·7	64·5	51·3	52·9	53·2	[49·5]	38·3	34·4
13	34·4	39·6	26·5	[40·5]	46·6	63·9	[53·2]	53·2	52·2	51·8	38·0	28·3
14	39·8	34·7	26·9	40·8	45·7	61·0	52·7	53·5	[50·7]	56·8	34·6	[36·2]
15	35·7	36·5	23·2	42·5	54·2	[60·5]	52·0	51·6	46·3	53·2	39·0	42·3
16	28·2	[35·3]	[28·4]	43·2	55·1	58·8	51·7	51·0	49·0	49·4	[40·4]	40·0
17	38·6	37·9	30·6	48·8	50·1	58·1	52·8	[52·2]	53·0	52·2	42·2	29·8
18	39·0	33·3	34·1	48·6	[49·6]	57·0	57·0	54·2	54·5	53·6	41·2	31·7
19	[35·6]	30·1	29·4	44·8	45·2	56·2	54·4	51·2	49·8	[49·6]	47·2	35·1
20	30·9	36·3	29·0	[47·0]	46·3	57·6	[53·1]	51·8	47·4	47·3	42·8	35·7
21	35·0	36·0	34·6	48·5	46·9	58·6	52·2	52·1	[46·3]	46·2	37·2	[35·8]
22	41·9	30·9	47·4	47·0	45·6	[55·4]	50·8	52·4	43·8	47·8	34·7	37·8
23	46·5	[33·5]	38·4	44·6	45·8	53·8	51·5	56·0	39·9	47·7	[40·4]	38·7
24	39·3	31·4	40·4	41·6	44·4	52·8	53·1	[54·2]	42·4	48·9	32·3	35·6
25	43·6	28·4	37·8	49·1	[45·0]	53·6	56·9	54·8	49·3	42·9	43·6	41·8
26	[34·5]	38·0	41·4	52·2	43·7	51·3	55·8	55·3	46·8	[49·0]	52·0	41·9
27	30·1	35·0	47·1	[49·4]	45·0	50·1	[53·6]	54·7	51·1	50·5	48·6	38·6
28	30·0	33·7	45·3	50·6	45·3	48·0	52·0	56·5	[48·3]	53·2	47·8	[40·8]
29	17·7		43·5	50·2	45·6	[52·0]	51·0	59·6	46·6	51·0	42·0	38·7
30	16·0		[44·0]	52·5	47·1	55·3	52·6	59·4	46·3	49·2	[41·5]	45·0
31	9·6		43·5		50·2		53·1	[56·4]		45·7		38·8

TABLE II.—Hourly Means of the Temperature of the Air for each Month in 1845.

Mak. M. T.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
h.	°	°	°	°	°	°	°	°	°	°	°	°
12	32·5	31·7	32·4	38·5	43·2	50·4	49·7	50·1	45·0	47·0	40·8	36·7
13	32·1	31·4	31·9	38·0	43·1	50·0	49·1	49·6	44·5	47·0	40·5	37·2
14	32·1	31·1	31·8	37·9	42·7	49·9	48·8	49·3	44·4	46·8	40·1	37·2
15	32·4	31·1	31·7	37·8	42·1	49·7	48·2	49·1	44·5	46·5	40·2	36·9
16	32·8	31·3	31·3	37·3	42·3	50·1	48·5	49·5	44·3	46·3	40·0	36·5
17	32·7	31·2	31·1	37·6	43·2	51·3	49·4	49·8	44·3	45·8	40·3	36·3
18	33·0	31·2	31·5	39·0	44·4	53·4	51·1	51·0	44·8	45·9	40·0	36·1
19	32·9	31·1	32·5	40·8	45·9	55·2	52·8	52·9	46·9	45·8	40·0	36·3
20	32·5	31·5	34·3	43·1	47·4	57·3	54·4	55·1	49·8	46·8	39·9	36·6
21	32·9	32·9	36·1	45·5	48·7	59·1	55·8	57·0	52·0	48·3	41·4	37·4
22	34·3	34·6	37·7	47·6	49·8	59·8	57·4	58·6	54·3	49·9	43·2	38·4
23	35·8	35·5	39·0	49·4	50·6	60·5	58·5	59·7	55·4	51·2	44·6	39·4
0	36·9	36·7	39·8	50·9	50·4	61·4	59·5	60·4	55·6	51·9	45·8	39·9
1	38·0	37·7	40·1	52·4	51·2	62·0	59·5	60·7	56·8	52·5	46·4	40·0
2	37·9	37·8	40·2	52·8	50·8	61·9	59·5	61·1	57·3	52·2	46·2	39·6
3	37·0	37·3	40·1	53·0	50·9	61·5	59·3	60·3	56·6	51·5	44·8	39·0
4	35·7	36·8	38·8	52·2	50·1	60·5	59·0	59·6	55·3	50·2	43·4	38·0
5	33·9	34·9	37·8	50·4	49·2	60·1	57·7	58·5	53·6	49·0	42·5	38·0
6	33·4	33·7	36·0	48·1	47·5	58·4	56·9	56·9	51·1	48·2	41·7	37·2
7	33·0	33·0	34·8	45·1	46·1	57·2	55·1	55·2	49·4	47·8	41·5	37·2
8	33·1	32·5	34·0	43·1	44·7	55·4	53·2	53·4	49·0	47·3	41·5	37·4
9	33·2	32·1	33·5	41·6	43·8	53·7	51·8	52·4	47·5	47·1	41·4	37·0
10	33·6	32·0	32·8	40·1	43·5	52·1	50·7	51·2	46·7	46·9	41·1	36·9
11	33·6	31·2	32·5	39·4	43·1	51·1	50·2	50·5	46·4	46·9	41·2	36·6

TABLE III.—Hourly Means of the Temperature of the Air for each Astronomical Quarter, and for the year 1845.

Mak. M. T.	Nov. Dec. Jan.	Feb. March. April.	May. June. July.	Aug. Sept. Oct.	Year.	Mak. M. T.	Nov. Dec. Jan.	Feb. March. April.	May. June. July.	Aug. Sept. Oct.	Year.
h.	°	°	°	°	°	h.	°	°	°	°	°
12	36·67	34·20	47·77	47·37	41·50	0	40·87	42·47	57·10	55·97	49·10
13	36·60	33·77	47·40	47·03	41·20	1	41·47	43·40	57·57	56·67	49·77
14	36·47	33·60	47·13	46·83	41·01	2	41·23	43·60	57·40	56·87	49·77
15	36·50	33·53	46·67	46·70	40·85	3	40·27	43·47	57·23	56·13	49·27
16	36·43	33·30	46·97	46·70	40·85	4	39·03	42·60	56·53	55·03	48·30
17	36·43	33·30	47·97	46·63	41·08	5	38·13	41·03	55·67	53·70	47·13
18	36·37	33·90	49·63	47·23	41·78	6	37·43	39·27	54·27	52·07	45·76
19	36·40	34·80	51·30	48·53	42·76	7	37·23	37·63	52·80	50·80	44·62
20	36·33	36·30	53·03	50·57	44·06	8	37·33	36·53	51·10	49·90	43·72
21	37·23	38·17	54·53	52·43	45·59	9	37·20	35·73	49·77	49·00	42·92
22	38·63	39·97	55·67	54·27	47·13	10	37·20	34·97	48·77	48·27	42·30
23	39·93	41·30	56·53	55·43	48·30	11	37·13	34·37	48·13	47·93	41·89

TABLE IV.—Errors of the Approximate Mean Temperatures, deduced from one or two Daily Observations, for each Month, and the Year 1845.

Months and Year.	Mean of 24 Hours.	Approximate Means (+) greater, or (−) less than true Means.								
		Max. and Min.	$17^h 10^m$ and $4^h 10^m$.	$21^h 40^m$ and $10^h 10^m$.	$21^h 40^m$ and $9^h 40^m$.	$22^h 10^m$ and $11^h 10^m$.	$22^h 10^m$ and $10^h 10^m$.	$17^h 10^m$ and $23^h 10^m$.	$21^h 10^m$ and $9^h 10^m$.	$7^h 10^m$.
	°	°	°	°	°	°	°	°	°	°
January	33·97	−0·37	+0·23	−0·37	−0·47	−0·02	−0·02	+0·28	−0·92	−0·97
February	33·35	+0·34	+0·65	−0·48	−0·45	−0·45	−0·05	0·00	−0·85	−0·35
March	35·07	+0·64	−0·12	−0·22	−0·05	+0·03	+0·18	−0·02	−0·27	−0·27
April	44·23	+0·71	+0·67	−0·91	−0·53	−0·73	−0·38	−0·73	−0·68	+0·87
May	46·45	+0·56	+0·20	−0·08	0·00	0·00	+0·20	+0·45	−0·20	−0·35
June	55·92	+0·32	−0·02	−0·15	+0·25	−0·47	+0·03	−0·02	+0·48	+1·28
July	54·00	+0·41	+0·20	−0·35	−0·08	−0·20	+0·05	−0·05	−0·20	+1·10
August	54·67	+0·43	+0·03	−0·17	+0·13	−0·12	+0·23	+0·08	+0·03	+0·53
September	49·81	+0·50	−0·01	+0·11	+0·31	+0·54	+0·69	+0·04	−0·06	−0·41
October	48·28	−0·05	−0·28	−0·28	−0·23	+0·12	+0·12	+0·22	−0·58	−0·48
November	42·02	−0·33	−0·17	−0·32	−0·25	+0·18	+0·13	+0·43	−0·62	−0·52
December	37·57	−0·27	−0·42	−0·17	−0·15	−0·07	+0·08	+0·28	−0·37	−0·37
Year	44·61	+0·24	+0·08	−0·28	−0·13	−0·10	+0·10	+0·08	−0·36	+0·01
The 12 Months.										
Mean of Errors		0·41	0·25	0·30	0·24	0·24	0·18	0·22	0·44	0·62
Range of Errors		1·08	1·09	1·02	0·84	1·27	1·07	1·16	1·40	2·25

TABLE V.—Diurnal Ranges of Temperature, as deduced from the Hourly Observations of the Dry Bulb Thermometer, on each Civil Day of 1845.

Civil Day.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	°	°	°	°	°	°	°	°	°	°	°	°
1	7·4	16·7	7·4	22·9	11·6	(29·0)	9·6	13·9	19·8	10·9	8·9	12·6
2	6·3	(26·0)	(13·0)	32·1	10·6	12·6	12·8	18·1	15·4	10·4	(15·0)	5·6
3	7·9	11·3	9·6	32·0	11·7	16·8	9·2	(15·0)	23·9	14·4	17·8	7·2
4	9·9	16·2	9·7	10·0	(16·0)	13·0	16·9	14·9	9·3	6·9	20·2	12·4
5	(7·0)	9·4	10·6	21·3	10·0	16·8	22·9	21·8	17·1	(20·0)	16·3	6·8
6	19·0	7·6	13·7	(35·0)	8·5	11·1	(21·0)	18·8	21·5	25·3	10·7	13·5
7	7·4	5·6	6·6	15·3	7·0	14·1	17·0	13·8	(25·0)	7·0	4·6	(9·0)
8	12·3	9·4	7·9	15·0	11·3	(16·0)	15·3	17·1	21·6	14·1	11·9	16·7
9	14·6	(8·0)	(11·0)	20·6	13·4	11·1	14·7	4·5	9·2	17·3	(16·0)	5·4
10	18·2	9·0	13·5	4·9	7·7	12·3	15·7	(10·0)	7·3	11·7	14·5	11·3
11	13·0	3·2	7·7	12·3	(25·0)	17·5	11·7	7·1	8·4	14·8	13·6	13·0
12	(13·0)	4·4	14·7	21·1	13·8	26·5	15·5	7·8	21·5	(18·0)	14·7	13·9
13	14·7	11·3	16·1	(17·0)	17·3	21·7	(23·0)	17·0	18·1	15·6	14·2	13·6
14	6·7	5·9	12·4	11·0	24·1	15·9	12·2	11·8	(25·0)	8·7	13·6	(25·0)
15	14·4	11·6	14·4	9·6	24·2	(22·0)	16·9	10·5	25·8	11·9	18·5	7·6
16	8·5	(10·0)	(18·0)	21·9	16·7	11·6	19·4	10·6	18·7	8·4	(8·0)	10·7
17	8·9	11·3	13·7	23·0	12·0	11·2	18·8	(18·0)	13·3	9·6	8·1	9·5
18	7·7	17·7	12·9	11·9	(17·0)	14·3	15·0	15·3	9·4	12·7	13·5	9·9
19	(9·0)	13·1	8·2	12·3	5·4	15·4	11·7	7·3	15·8	(14·0)	4·1	12·9
20	13·6	12·5	14·3	(27·0)	10·0	19·9	(6·0)	6·7	24·1	10·9	7·8	6·0
21	9·3	13·8	21·6	30·1	10·5	14·9	4·2	12·4	(14·0)	11·1	9·8	(8·0)
22	7·4	10·2	9·3	30·9	8·0	(20·0)	4·5	25·2	16·6	9·3	11·8	10·7
23	11·6	(12·0)	(16·0)	27·5	9·5	18·3	6·2	14·1	19·9	7·6	(12·0)	7·5
24	12·4	15·8	18·3	20·6	5·4	11·2	9·3	(20·0)	24·9	5·6	9·9	16·0
25	17·9	23·9	21·8	27·9	(11·0)	17·0	17·7	15·0	13·9	13·1	9·8	10·0
26	(16·0)	6·2	16·3	10·2	2·8	15·3	14·6	13·9	17·0	(14·0)	5·6	11·8
27	5·9	12·4	9·7	(12·0)	4·2	19·5	(20·0)	11·3	18·7	4·6	4·1	18·5
28	6·5	10·6	8·4	11·5	8·8	8·0	21·3	26·7	(10·0)	4·5	2·9	(18·0)
29	23·3		16·9	15·8	9·1	(22·0)	23·4	22·8	12·9	3·8	10·3	24·4
30	21·6		(15·0)	15·0	18·1	13·5	23·1	25·7	13·0	13·8	(17·0)	18·9
31	28·9		21·2		21·6		16·7	(19·0)		14·8		12·3

TABLE VI.—Extremes of Temperature for each Month from the Register Thermometers; Extremes of Daily Mean Temperature, and of Diurnal Ranges, obtained from the Hourly Observations for 1845.

Month.	Extreme Temperatures.						Extremes of Daily Mean Temperature.						Extreme Diurnal Ranges.			
	Highest.		Lowest.		Range.	Mean.	Highest.		Lowest.		Range.	Mean.	Greatest.		Least.	
	d.	°	d.	°	°	°	d.	°	d.	°	°	°	d.	°	d.	°
Jan.	5	51·2	31	−2·0	53·2	24·6	23	46·5	31	9·6	36·9	28·0	31	28·9	27	5·9
Feb.	13	44·9	1	6·7	38·2	25·8	13	39·6	8	27·6	12·0	33·6	2	26·0	11	3·2
March	31	56·2	16	15·3	40·9	35·7	22	47·4	15	23·2	24·2	35·3	25	21·8	7	6·6
April	25	65·7	6	24·2	41·5	45·0	30	52·5	4	38·4	14·1	45·4	6	35·0	10	4·9
May	15	67·0	14	31·5	35·5	49·2	16	55·1	8	41·6	13·5	48·3	11	25·0	26	2·8
June	12	78·3	1	36·6	41·7	57·4	12	64·5	28	48·0	16·5	56·2	1	29·0	28	8·0
July	10	71·6	29	35·2	36·4	53·4	7	61·5	22	50·8	10·7	56·1	29	23·4	21	4·2
Aug.	29	73·6	22	35·7	37·9	54·6	29	59·6	16	51·0	8·6	55·3	28	26·7	9	4·5
Sept.	1	75·1	24	28·1	47·0	51·6	1	60·6	23	39·9	20·7	50·2	15	25·8	10	7·3
Oct.	14	62·7	6	26·0	36·7	44·3	14	56·8	6	39·8	17·0	48·3	6	25·3	29	3·8
Nov.	6	55·8	4	24·7	31·1	40·2	26	52·0	24	32·3	19·7	42·1	4	20·2	28	2·9
Dec.	27	52·0	13	20·4	31·6	36·2	30	45·0	13	28·3	16·7	36·6	14	25·0	9	5·4

TABLE VII.—Daily and Weekly Means of the Temperature of Evaporation, as deduced from the readings of the Wet Bulb Thermometer, in 1845.

Civil Day.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	°	°	°	°	°	°	°	°	°	°	°	°
1	30·0	27·6	30·2	39·3	48·0	[47·1]	50·8	51·9	57·5	46·4	43·6	37·9
2	32·4	[26·2]	[30·9]	38·9	44·2	52·3	50·3	53·5	51·0	46·8	[39·5]	35·8
3	34·2	36·0	34·2	36·7	43·9	50·3	53·0	[52·6]	46·3	45·5	36·7	32·0
4	37·1	33·5	29·6	37·6	[42·9]	46·2	50·8	53·6	49·0	43·1	30·9	33·1
5	[35·4]	35·1	26·3	37·9	39·1	52·1	50·9	52·8	47·2	[43·5]	35·7	37·2
6	39·9	26·6	28·8	[38·5]	42·0	51·1	[53·4]	53·3	45·5	37·9	48·9	35·5
7	33·0	26·3	35·0	42·8	40·5	50·9	56·9	53·8	[49·4]	44·2	47·1	[36·0]
8	35·7	26·3	38·2	39·9	39·5	[53·1]	55·1	53·2	49·6	43·8	47·7	35·7
9	31·8	[28·2]	[32·5]	36·2	41·0	49·4	53·6	52·2	55·1	43·5	[44·1]	37·7
10	37·8	33·1	37·9	37·1	42·2	56·6	54·7	[52·0]	49·8	43·3	42·8	36·7
11	39·8	28·3	29·1	36·0	[42·3]	58·4	50·3	53·3	48·6	43·7	40·5	38·3
12	[36·1]	28·9	26·1	36·7	44·3	60·0	48·9	49·9	50·5	[47·1]	37·7	32·5
13	33·7	37·7	24·1	[37·9]	42·9	58·8	[49·9]	49·4	50·6	49·7	37·1	27·8
14	38·6	32·3	25·0	38·5	43·8	57·5	50·1	50·5	[48·7]	52·1	34·2	[33·8]
15	34·8	33·6	22·5	39·3	51·7	[57·4]	47·4	47·2	44·0	50·4	38·1	39·2
16	28·1	[33·6]	[26·3]	40·1	51·3	57·1	48·1	46·5	46·4	45·7	[39·0]	36·6
17	36·8	36·2	27·8	45·2	46·1	56·9	51·6	[49·5]	52·2	50·1	39·4	28·5
18	37·2	32·2	31·1	46·9	[46·6]	54·0	54·0	52·6	52·6	49·9	40·1	31·1
19	[34·4]	29·4	27·1	42·6	42·4	52·4	52·3	50·2	46·2	[46·1]	45·2	33·7
20	29·8	34·6	25·9	[43·6]	43·8	53·2	[51·4]	50·0	44·9	43·4	40·6	34·2
21	33·5	35·0	32·7	43·5	44·6	53·8	51·5	48·2	[43·5]	42·7	35·7	[34·1]
22	40·9	29·2	45·9	42·4	43·6	[51·6]	49·3	48·9	40·8	44·8	33·2	35·5
23	44·9	[32·0]	[36·1]	41·2	44·0	49·5	49·9	53·7	36·6	44·9	[38·4]	36·0
24	38·2	29·6	36·8	40·1	43·2	50·7	50·9	[51·2]	39·9	45·5	30·2	33·9
25	42·2	26·9	36·5	45·6	[43·4]	50·0	53·1	53·3	45·8	39·8	42·1	40·0
26	[33·6]	36·9	38·6	49·1	43·2	47·2	52·6	51·6	44·3	[46·5]	48·9	40·2
27	29·4	33·6	43·4	[46·6]	44·0	47·8	[50·2]	51·3	48·3	48·3	45·9	37·0
28	29·4	31·3	41·0	47·6	42·6	46·2	47·9	52·9	[45·5]	51·0	45·8	[39·0]
29	17·4		38·5	47·2	43·1	[49·1]	47·6	56·8	44·3	49·6	39·4	37·5
30	15·7		[40·1]	49·8	43·8	52·1	49·2	56·4	44·1	46·6	[39·5]	42·4
31	9·2		39·4		46·8		50·5	[53·5]		43·6		36·8

TABLE VIII.—Hourly Means of the Temperature of Evaporation for each Month in 1845.

Mak. M. T.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	°	°	°	°	°	°	°	°	°	°	°	°
12	31·7	30·5	31·0	37·6	42·2	49·2	48·7	49·0	44·1	45·1	39·3	35·1
13	31·4	30·2	30·5	37·2	42·0	48·9	48·1	48·6	43·6	45·3	39·1	35·7
14	31·3	30·0	30·5	37·1	41·5	48·7	47·7	48·2	43·5	44·9	38·7	35·5
15	31·7	30·0	30·3	36·9	40·9	48·4	47·2	48·3	43·7	44·5	38·7	35·2
16	32·1	30·1	29·8	36·5	41·1	48·7	47·5	48·4	43·5	44·4	38·8	34·7
17	32·0	30·1	29·8	36·7	41·7	49·7	48·2	48·7	43·4	44·0	39·0	34·5
18	32·2	30·0	30·2	37·9	42·7	51·3	49·7	49·5	43·9	44·0	38·8	34·4
19	32·1	29·9	31·0	39·4	43·7	52·3	50·8	50·9	45·7	44·0	38·6	34·5
20	31·8	30·2	32·3	41·2	44·6	53·7	51·7	52·2	47·9	44·8	38·8	34·7
21	32·1	31·3	33·7	42·8	45·4	54·6	52·4	53·2	49·4	46·0	39·9	35·4
22	33·3	32·4	34·4	44·1	46·1	54·9	53·3	54·0	50·7	47·0	41·2	36·4
23	34·4	33·4	35·2	45·2	46·5	55·4	53·8	54·6	51·3	47·8	42·2	36·9
0	35·4	34·2	35·6	46·0	46·2	55·9	54·4	55·2	51·3	48·3	43·2	37·4
1	36·3	34·9	35·8	46·7	47·0	56·0	54·1	55·2	51·8	48·3	43·4	37·5
2	36·1	35·1	35·8	46·8	46·8	56·1	54·3	55·3	51·7	48·3	43·4	37·2
3	35·4	34·7	35·9	46·8	46·6	55·8	54·0	54·8	51·2	47·9	42·5	36·9
4	34·4	33·9	35·4	46·2	46·1	55·3	54·0	54·7	50·8	47·1	41·6	36·0
5	33·1	32·8	34·7	45·3	45·6	55·1	53·4	54·4	49·8	46·3	40·8	36·0
6	32·4	32·0	33·6	44·0	44·5	54·2	52·9	53·9	48·5	45·8	40·1	35·5
7	32·1	31·5	32·9	42·3	43·7	53·7	52·0	52·8	47·4	45·5	39·9	35·5
8	32·2	31·1	32·3	41·1	42·8	52·7	51·0	51·6	47·0	45·2	39·8	35·7
9	32·3	30·8	31·8	39·9	42·3	51·5	50·2	50·8	46·0	45·0	39·8	35·5
10	32·6	30·6	31·4	38·9	42·1	50·5	49·4	50·0	45·4	44·8	39·5	35·2
11	32·5	29·9	31·1	38·4	41·9	49·7	49·0	49·3	45·1	44·8	39·7	34·8

TABLE IX.—Hourly Means of the Temperature of Evaporation for each Astronomical Quarter, and for the Year 1845.

Mak. M. T.	Nov. Dec. Jan.	Feb. March. April.	May. June. July.	Aug. Sept. Oct.	Year.	Mak. M. T.	Nov. Dec. Jan.	Feb. March. April.	May. June. July.	Aug. Sept. Oct.	Year.
h.	°	°	°	°	°	h.	°	°	°	°	°
12	35·37	33·03	46·70	46·07	40·29	0	38·67	38·60	52·17	51·60	45·26
13	35·40	32·63	46·33	45·83	40·05	1	39·07	39·13	52·37	51·77	45·58
14	35·17	32·53	45·97	45·53	39·80	2	38·90	39·23	52·40	51·77	45·57
15	35·20	32·40	45·50	45·50	39·65	3	38·27	39·13	52·13	51·30	45·21
16	35·20	32·13	45·77	45·43	39·63	4	37·33	38·50	51·80	50·87	44·62
17	35·17	32·20	46·53	45·37	39·82	5	36·63	37·60	51·37	50·17	43·94
18	35·13	32·70	47·90	45·80	40·38	6	36·00	36·53	50·53	49·40	43·12
19	35·07	33·43	48·93	46·87	41·07	7	35·83	35·57	49·80	48·57	42·44
20	35·10	34·57	50·00	48·30	41·99	8	35·90	34·83	48·83	47·93	41·87
21	35·80	35·93	50·80	49·53	43·02	9	35·87	34·17	48·00	47·27	41·32
22	36·97	36·97	51·43	50·57	43·98	10	35·77	33·63	47·33	46·73	40·87
23	37·83	37·93	51·90	51·23	44·72	11	35·67	33·13	46·87	46·40	40·52

TABLE X.—Daily and Weekly Means of the Pressure of Aqueous Vapour, in inches of Mercury, for the Year 1845, as deduced from Tables I. and VII.

Civil Day.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
1	0·184	0·157	0·175	0·218	0·321	[0·305]	0·364	0·372	0·446	0·295	0·271	0·225
2	·200	[·159]	[·177]	·219	·258	·371	·323	·392	·366	·306	[·239]	·212
3	·206	·219	·201	·214	·260	·339	·408	[·378]	·292	·316	·214	·183
4	·223	·195	·170	·234	[·260]	·294	·336	·393	·333	·283	·170	·191
5	[·215]	·192	·151	·225	·217	·372	·332	·376	·310	[·283]	·202	·213
6	·238	·135	·162	[·229]	·257	·347	[·386]	·387	·295	·225	·336	·210
7	·203	·145	·203	·264	·250	·336	·439	·392	[·341]	·289	·308	[·209]
8	·220	·150	·230	·235	·236	[·379]	·414	·373	·341	·277	·333	·215
9	·188	[·157]	[·185]	·201	·257	·328	·388	·391	·418	·278	[·294]	·208
10	·224	·196	·220	·218	·260	·440	·389	[·368]	·347	·283	·289	·215
11	·244	·156	·152	·201	[·259]	·451	·353	·392	·335	·281	·262	·203
12	[·218]	·160	·143	·209	·269	·473	·333	·338	·350	[·314]	·237	·182
13	·204	·223	·126	[·217]	·251	·446	[·337]	·323	·363	·346	·229	·167
14	·238	·174	·136	·225	·281	·442	·346	·346	[·337]	·348	·212	[·189]
15	·210	·178	·135	·222	·368	[·445]	·290	·290	·278	·348	·237	·222
16	·172	[·192]	[·141]	·230	·347	·456	·310	·282	·301	·281	[·242]	·197
17	·216	·212	·144	·277	·282	·458	·380	[·338]	·393	·351	·228	·163
18	·220	·189	·163	·317	[·302]	·394	·394	·390	·387	·331	·253	·187
19	[·206]	·175	·144	·264	·256	·362	·380	·365	·288	[·291]	·295	·196
20	·173	·200	·129	[·262]	·274	·367	[·373]	·353	·285	·254	·245	·199
21	·193	·211	·183	·243	·284	·371	·385	·307	[·272]	·251	·210	[·196]
22	·262	·163	·307	·235	·278	[·355]	·348	·321	·238	·278	·191	·200
23	·295	[·186]	[·209]	·238	·284	·319	·354	·397	·198	·282	[·234]	·200
24	·236	·165	·196	·268	·282	·358	·360	[·355]	·235	·282	·166	·194
25	·269	·151	·219	·282	[·281]	·333	·372	·401	·284	·228	·267	·244
26	[·211]	·225	·221	·327	·290	·293	·372	·353	·279	[·305]	·325	·247
27	·175	·195	·257	[·305]	·293	·320	[·339]	·352	·321	·327	·294	·220
28	·176	·170	·226	·310	·259	·308	·302	·372	[·290]	·361	·301	[·235]
29	·115		·195	·305	·267	[·329]	·306	·439	·281	·352	·230	·228
30	·107		[·221]	·341	·265	·365	·325	·430	·280	·303	[·241]	·258
31	·083		·213		·297		·351	[·391]		·276		·214

TABLE XI.—Pressure of Aqueous Vapour, with reference to the Moon's Age and Declination, for 1845.

Moon's Age.	Mean Pressure of Vapour.	Moon's Age.	Mean Pressure of Vapour.	After Moon farthest North.	Mean Pressure of Vapour.	After Moon farthest North.	Mean Pressure of Vapour.
Day.	in.	Day.	in.	Day.	in.	Day.	in.
15	0·273	0	0·282	0	0·249	14	0·262
16	·277	1	·271	1	·250	15	·275
17	·279	2	·271	2	·254	16	·261
18	·252	3	·269	3	·277	17	·260
19	·257	4	·257	4	·271	18	·268
20	·272	5	·245	5	·281	19	·275
21	·254	6	·270	6	·289	20	·269
22	·250	7	·278	7	·301	21	·262
23	·241	8	·275	8	·271	22	·278
24	·253	9	·285	9	·278	23	·268
25	·261	10	·282	10	·280	24	·264
26	·283	11	·284	11	·271	25	·270
27	·289	12	·277	12	·278	26	·262
28	·287	13	·270	13	·265	27	·260
29	·279	14	·282				

TABLE XII.—Hourly Means of the Pressure of Aqueous Vapour for each Month in 1845, as deduced from Tables II. and VIII.

Mak. M. T.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
h.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
12	0·189	0·177	0·178	0·233	0·274	0·349	0·346	0·349	0·295	0·295	0·241	0·205
13	·188	·175	·175	·231	·271	·348	·339	·345	·290	·299	·240	·210
14	·186	·175	·176	·230	·265	·343	·333	·339	·289	·292	·237	·207
15	·190	·175	·174	·227	·259	·339	·328	·343	·292	·287	·236	·204
16	·192	·174	·169	·225	·261	·341	·332	·342	·290	·287	·239	·199
17	·191	·175	·171	·225	·264	·352	·337	·345	·288	·284	·240	·198
18	·192	·174	·174	·234	·271	·366	·354	·350	·293	·283	·239	·198
19	·191	·173	·177	·243	·276	·371	·361	·363	·308	·284	·236	·198
20	·191	·174	·179	·255	·279	·383	·366	·369	·327	·290	·241	·198
21	·191	·178	·185	·261	·282	·387	·367	·373	·337	·300	·246	·203
22	·198	·177	·180	·266	·286	·386	·372	·376	·342	·304	·254	·211
23	·201	·186	·180	·270	·285	·392	·372	·380	·344	·308	·258	·209
0	·208	·188	·180	·271	·281	·394	·377	·387	·342	·312	·267	·213
1	·213	·190	·180	·269	·290	·391	·368	·383	·341	·305	·264	·214
2	·211	·193	·179	·268	·290	·394	·374	·382	·333	·308	·267	·213
3	·207	·190	·182	·265	·284	·391	·369	·378	·328	·308	·262	·213
4	·202	·180	·187	·261	·282	·389	·372	·383	·333	·303	·260	·208
5	·198	·181	·184	·261	·281	·388	·371	·388	·328	·299	·253	·208
6	·191	·180	·184	·258	·275	·384	·367	·392	·326	·296	·247	·207
7	·190	·181	·185	·255	·274	·384	·365	·384	·320	·294	·245	·207
8	·191	·179	·182	·253	·270	·379	·361	·374	·315	·293	·244	·208
9	·191	·178	·181	·244	·269	·368	·358	·365	·309	·291	·245	·209
10	·193	·176	·181	·240	·268	·362	·351	·359	·304	·288	·242	·204
11	·191	·172	·179	·239	·268	·354	·347	·351	·301	·288	·245	·200

TABLE XIII.—Hourly Means of the Pressure of Aqueous Vapour for each Astronomical Quarter, and for the Year 1845.

Mak. M. T.	Nov. Dec. Jan.	Feb. March. April.	May. June. July.	Aug. Sept. Oct.	Year.
h.	in.	in.	in.	in.	in.
12	0·212	0·196	0·323	0·313	0·261
13	·213	·194	·319	·311	·259
14	·210	·194	·314	·307	·256
15	·210	·192	·309	·307	·254
16	·210	·189	·311	·306	·254
17	·210	·190	·318	·306	·256
18	·210	·194	·330	·309	·261
19	·208	·198	·336	·318	·265
20	·210	·203	·343	·329	·271
21	·213	·208	·345	·337	·276
22	·221	·208	·348	·341	·279
23	·223	·212	·350	·344	·282
h.	in.	in.	in.	in.	in.
0	0·229	0·213	0·351	0·347	0·285
1	·230	·213	·350	·343	·284
2	·230	·213	·353	·341	·284
3	·227	·212	·348	·338	·281
4	·223	·209	·348	·340	·280
5	·220	·209	·347	·338	·278
6	·215	·207	·342	·338	·276
7	·214	·207	·341	·333	·274
8	·214	·205	·337	·327	·271
9	·215	·201	·332	·322	·267
10	·213	·199	·327	·317	·264
11	·212	·197	·323	·313	·261

TABLE XIV.—Mean Relative Humidity of the Air for each Week-Day and Week in 1845, Saturation being = 1.

Civil Day.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	0·984	0·882	0·897	0·747	0·845	[0·808]	0·894	0·863	0·835	0·804	0·826	0·856
2	·980	[·894]	[·873]	·774	·727	·834	·727	·854	·891	·836	[·835]	·883
3	·924	·920	·889	·849	·754	·801	·969	[·847]	·793	·975	·849	·871
4	·888	·886	·885	·936	[·798]	·810	·760	·852	·847	·925	·825	·876
5	[·924]	·781	·888	·856	·751	·849	·735	·825	·836	[·890]	·821	·816
6	·838	·742	·862	[·847]	·837	·789	[·832]	·843	·855	·856	·870	·886
7	·967	·838	·864	·833	·877	·752	·844	·836	[·855]	·898	·830	[·851]
8	·948	·882	·875	·819	·843	[·809]	·852	·789	·852	·850	·930	·911
9	·917	[·842]	[·838]	·791	·892	·798	·831	·940	·871	·871	[·920]	·762
10	·855	·912	·827	·855	·844	·870	·766	[·838]	·872	·916	·986	·857
11	·875	·834	·768	·798	[·831]	·795	·872	·867	·882	·878	·953	·707
12	[·903]	·842	·831	·820	·780	·779	·854	·820	·841	[·856]	·952	·839
13	·940	·854	·768	[·808]	·756	·750	[·808]	·776	·903	·872	·931	·954
14	·905	·795	·819	·827	·873	·817	·846	·822	[·876]	·740	·968	[·818]
15	·925	·761	·931	·771	·854	[·836]	·725	·736	·845	·837	·929	·776
16	·989	[·856]	[·804]	·777	·782	·907	·783	·728	·834	·768	[·902]	·746
17	·857	·862	·758	·774	·752	·933	·925	[·836]	·949	·873	·800	·886
18	·863	·904	·758	·890	[·812]	·833	·833	·905	·890	·784	·917	·949
19	[·901]	·941	·791	·846	·808	·785	·876	·938	·776	[·790]	·870	·879
20	·901	·862	·721	[·777]	·833	·760	[·900]	·889	·833	·747	·842	·877
21	·869	·917	·836	·685	·845	·743	·958	·766	[·810]	·765	·875	[·861]
22	·929	·849	·898	·697	·866	[·783]	·909	·793	·788	·803	·872	·816
23	·891	[·875]	[·812]	·768	·879	·751	·901	·867	·753	·817	[856]	·791
24	·915	·846	·731	·957	·916	·871	·867	[·822]	·819	·783	·826	·855
25	·897	·863	·894	·779	[·895]	·789	·788	·911	·778	·781	·890	·865
26	[·926]	·915	·795	·813	·963	·751	·818	·790	·833	[·837]	·812	·876
27	·941	·878	·760	[·835]	·930	·853	[·803]	·804	·827	·861	·826	·873
28	·946	·802	·711	·814	·814	·883	·755	·800	[·823]	·868	·870	[·863]
29	·966		·652	·811	·832	[·821]	·793	·851	·846	·912	·813	·901
30	·955		[·726]	·838	·784	·817	·797	·838	·851	·835	[·853]	·819
31	·943		·712		·790		·846	[·835]		·857		·846

TABLE XV.—Mean Relative Humidity, Saturation being = 1, with reference to the Moon's Age and Declination, for 1845.

Moon's Age.	Mean Relative Humidity.	Moon's Age.	Mean Relative Humidity.	After Moon farthest North.	Mean Relative Humidity.	After Moon farthest North.	Mean Relative Humidity.
Day.		Day.		Day.		Day.	
15	0·846	0	0·835	0	0·843	14	0·825
16	·854	1	·847	1	·834	15	·863
17	·861	2	·839	2	·826	16	·844
18	·854	3	·846	3	·829	17	·837
19	·865	4	·848	4	·839	18	·848
20	·859	5	·839	5	·859	19	·855
21	·837	6	·842	6	·846	20	·875
22	·844	7	·852	7	·863	21	·850
23	·842	8	·853	8	·836	22	·854
24	·822	9	·844	9	·844	23	·841
25	·837	10	·829	10	·862	24	·844
26	·851	11	·843	11	·856	25	·824
27	·847	12	·845	12	·859	26	·847
28	·851	13	·849	13	·848	27	·840
29	·848	14	·863				

TABLE XVI.—Hourly Means of the Relative Humidity of the Air for each Month in 1845, Saturation being = 1.

Mak. M. T. h.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
12	0·931	0·898	0·881	0·928	0·926	0·921	0·935	0·931	0·937	0·875	0·886	0·872
13	·940	·897	·884	·939	·919	·933	·936	·937	·935	·887	·892	·875
14	·930	·907	·889	·935	·914	·922	·930	·929	·938	·872	·894	·862
15	·941	·907	·883	·927	·912	·916	·934	·948	·945	·867	·887	·861
16	·937	·897	·871	·937	·913	·909	·935	·932	·945	·872	·905	·850
17	·936	·902	·886	·926	·892	·903	·921	·930	·938	·879	·899	·853
18	·928	·897	·888	·918	·880	·874	·912	·907	·939	·873	·905	·857
19	·927	·896	·872	·893	·852	·834	·878	·881	·917	·879	·894	·853
20	·941	·888	·829	·864	·816	·801	·843	·831	·881	·866	·916	·843
21	·927	·864	·801	·816	·790	·762	·807	·789	·842	·852	·885	·842
22	·917	·808	·738	·773	·771	·742	·775	·754	·792	·817	·858	·844
23	·882	·823	·706	·738	·748	·737	·747	·734	·766	·792	·832	·807
0	·878	·800	·684	·704	·741	·719	·732	·730	·757	·784	·827	·810
1	·866	·779	·679	·664	·746	·699	·715	·715	·726	·749	·800	·811
2	·858	·788	·673	·652	·757	·707	·726	·703	·697	·766	·814	·816
3	·870	·792	·687	·640	·738	·711	·722	·716	·702	·784	·840	·835
4	·890	·763	·739	·649	·752	·731	·735	·742	·745	·806	·872	·846
5	·930	·819	·751	·692	·774	·739	·765	·779	·777	·828	·878	·846
6	·910	·849	·800	·737	·802	·774	·778	·831	·840	·843	·879	·862
7	·918	·874	·841	·807	·838	·807	·822	·863	·877	·850	·878	·862
8	·923	·882	·850	·858	·868	·844	·868	·893	·873	·862	·875	·863
9	·918	·890	·862	·871	·891	·870	·902	·901	·901	·861	·881	·878
10	·915	·884	·883	·906	·896	·903	·919	·923	·913	·857	·880	·861
11	·905	·887	·882	·923	·908	·912	·923	·924	·912	·857	·888	·851

TABLE XVII.—Hourly Means of the Relative Humidity for each Astronomical Quarter, and for the year 1845.

Mak. M. T. h.	Nov. Dec. Jan.	Feb. March. April.	May. June. July.	Aug. Sept. Oct.	Year.	Mak. M. T. h.	Nov. Dec. Jan.	Feb. March. April.	May. June. July.	Aug. Sept. Oct.	Year.
12	0·896	0·902	0·927	0·914	0·910	0	0·838	0·729	0·731	0·757	0·764
13	·902	·907	·929	·920	·914	1	·826	·707	·720	·730	·746
14	·895	·910	·922	·913	·910	2	·829	·704	·730	·722	·746
15	·896	·906	·921	·920	·911	3	·848	·706	·724	·734	·753
16	·897	·902	·919	·916	·909	4	·869	·717	·739	·764	·772
17	·896	·905	·905	·916	·905	5	·885	·754	·759	·795	·798
18	·897	·901	·889	·906	·898	6	·884	·795	·785	·838	·825
19	·891	·887	·855	·892	·881	7	·886	·841	·822	·863	·853
20	·900	·860	·820	·859	·860	8	·887	·863	·860	·876	·872
21	·885	·827	·786	·828	·831	9	·892	·874	·888	·888	·885
22	·873	·773	·763	·788	·799	10	·885	·891	·906	·898	·895
23	·840	·756	·744	·764	·776	11	·881	·897	·916	·898	·898

TABLE XVIII.—Daily and Weekly Means of the Height of the Barometer, for 1845.

Civil Day.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
1	30·031	29·727	29·699	29·937	29·257	[29·555]	29·055	29·256	30·094	29·405	29·964	29·198
2	29·886	[29·594]	[29·770]	29·889	29·383	29·559	29·411	29·230	30·066	29·439	[29·815]	29·288
3	29·614	29·788	29·642	29·791	29·469	29·153	29·468	[29·336]	30·057	29·322	30·103	29·037
4	29·741	29·922	29·789	29·857	[29·502]	29·049	29·588	29·323	30·062	29·320	29·881	29·253
5	[29·798]	29·677	29·957	29·908	29·682	29·105	29·950	29·496	30·044	[29·343]	29·502	28·870
6	29·691	29·783	30·166	[29·537]	29·638	29·038	[29·626]	29·506	30·090	29·641	29·271	29·026
7	29·964	29·873	30·185	29·628	29·585	29·462	29·688	29·463	[29·966]	29·237	29·116	[29·411]
8	29·894	29·882	30·159	29·130	29·340	[29·603]	29·567	29·480	29·899	29·099	29·220	29·659
9	29·760	[29·798]	[30·020]	28·910	29·322	29·957	29·495	29·275	29·729	29·052	[29·224]	29·689
10	29·370	29·421	30·035	29·030	29·408	30·047	29·415	[29·535]	29·970	29·122	29·193	29·969
11	29·230	29·826	29·848	29·406	[29·610]	30·008	29·458	29·497	29·931	29·286	29·195	29·631
12	[29·458]	30·006	29·726	29·463	29·524	29·970	29·656	29·708	29·830	[29·515]	29·352	30·190
13	29·397	29·522	29·610	[29·557]	29·944	29·990	[29·643]	29·787	29·606	29·904	29·650	30·191
14	29·507	29·510	29·540	29·208	30·123	29·957	29·695	29·663	[29·475]	29·972	29·767	[29·686]
15	29·482	29·717	29·758	29·978	30·089	[29·775]	29·866	29·611	29·227	29·757	29·508	29·306
16	29·725	[29·686]	[29·594]	30·255	30·047	29·566	29·770	29·686	29·279	29·683	[29·191]	29·313
17	29·656	29·667	29·545	30·234	29·957	29·610	29·677	[29·454]	28·979	29·519	28·924	29·488
18	29·329	29·801	29·497	30·116	[29·873]	29·556	29·828	29·393	28·839	29·618	28·855	29·388
19	[29·622]	29·899	29·617	30·053	29·705	29·683	29·952	29·244	29·297	[29·742]	28·441	28·632
20	29·370	29·789	29·941	[29·988]	29·746	29·899	[29·871]	29·126	29·573	29·546	28·580	28·583
21	29·857	29·573	29·993	29·972	29·693	29·829	29·976	29·571	[29·516]	29·973	29·101	[29·082]
22	29·798	29·285	29·769	29·854	29·717	[29·713]	29·935	29·804	29·505	30·116	29·341	28·839
23	29·410	[29·566]	[29·760]	29·702	29·744	29·841	29·857	29·597	29·970	30·139	[29·237]	29·217
24	29·389	29·532	29·831	29·570	29·778	29·574	29·792	[29·650]	29·912	29·939	29·804	29·835
25	29·353	29·755	29·643	29·430	[29·751]	29·450	29·682	29·505	29·396	29·983	29·452	29·845
26	[29·180]	29·405	29·381	29·006	29·579	29·549	29·582	29·509	29·436	[29·801]	29·144	29·381
27	28·951	29·756	29·221	[29·395]	29·772	29·426	[29·548]	29·916	29·301	29·586	29·319	29·274
28	28·876	29·778	29·051	29·297	29·918	29·199	29·426	30·102	[29·368]	29·616	29·190	[29·393]
29	29·101		29·782	29·558	29·796	[29·347]	29·464	30·127	29·421	29·546	29·199	29·347
30	29·036		[29·625]	29·508	29·851	29·445	29·342	30·146	29·252	29·577	[29·205]	29·126
31	29·417		29·871		29·920		29·206	[30·099]		29·863		29·388

TABLE XIX.—Diurnal Range of the Barometer for each Civil Week-Day and Week for 1845.

Civil Day.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
1	0·053	0·249	0·130	0·076	0·066	[0·229]	0·706	0·061	0·123	0·161	0·092	0·396
2	·313	[·268]	[·193]	·067	·265	·198	·581	·145	·042	·093	[·231]	·404
3	·162	·333	·338	·181	·123	·565	·300	[·117]	·084	·237	·077	·253
4	·332	·217	·057	·177	[·147]	·289	·540	·226	·032	·174	·370	·446
5	[·246]	·219	·268	·070	·073	·245	·132	·117	·044	[·218]	·289	·164
6	·524	·240	·087	[·220]	·099	·434	[·230]	·089	·039	·199	·263	·299
7	·040	·051	·068	·400	·257	·200	·125	·074	[·110]	·409	·227	[·308]
8	·103	·072	·119	·354	·152	[·195]	·210	·075	·158	·198	·148	·209
9	·235	[·201]	[·127]	·140	·026	·177	·076	·241	·143	·197	[·206]	·287
10	·541	·147	·228	·330	·215	·056	·105	[·138]	·244	·090	·200	·446
11	·377	·472	·171	·259	[·197]	·061	·176	·238	·130	·373	·138	·512
12	[·385]	·222	·092	·090	·310	·076	·141	·173	·092	[·183]	·258	·280
13	·303	·433	·196	[·350]	·395	·043	[·163]	·030	·397	·109	·258	·145
14	·284	·325	·200	·684	·084	·120	·344	·204	[·205]	·185	·115	[·249]
15	·570	·067	·158	·670	·039	[·085]	·075	·108	·110	·142	·299	·134
16	·163	[·184]	[·169]	·069	·146	·106	·140	·045	·146	·096	[·311]	·257
17	·156	·091	·088	·125	·061	·055	·061	[·172]	·358	·186	·343	·164
18	·391	·146	·095	·072	[·079]	·112	·201	·053	·149	·369	·289	·160
19	[·272]	·045	·278	·087	·081	·352	·036	·283	·721	[·229]	·564	·931
20	·671	·172	·301	[·116]	·083	·060	[·078]	·342	·321	·364	·658	·790
21	·170	·288	·294	·128	·067	·065	·034	·397	[·405]	·229	·307	[·687]
22	·081	·151	·160	·099	·079	[·167]	·059	·143	·568	·131	·278	0·875
23	·527	[·357]	[·269]	·185	·027	·065	·080	·140	·275	·094	[·320]	1·147
24	·527	·568	·114	·095	·056	·375	·083	[·275]	·397	·325	·207	0·221
25	·730	·523	·297	·342	[·113]	·085	·082	·296	·327	·333	·362	·297
26	[·431]	·441	·432	·225	·125	·082	·176	·297	·228	[·184]	·106	·715
27	·481	·333	·334	[·250]	·323	·383	[·115]	·378	·368	·069	·169	·696
28	·198	·031	·559	·314	·068	·353	·034	·044	[·229]	·077	·268	[·613]
29	·125		·618	·216	·123	[·358]	·043	·035	·207	·209	·445	·550
30	·177		[·350]	·311	·143	·046	·275	·042	·083	·489	[·322]	·745
31	·414		·443		·058		·067	[·062]		·067		·675

TABLE XX.—Diurnal Range of the Barometer, with reference to the Moon's Age and Declination, for 1845.

Moon's Age.	Mean Diurnal Range.	Moon's Age.	Mean Diurnal Range.	After Moon farthest North.	Mean Diurnal Range.	After Moon farthest North.	Mean Diurnal Range.
Day.	in.	Day.	in.	Day.	in.	Day.	in.
15	0·159	0	0·270	0	0·256	14	0·292
16	·190	1	·226	1	·263	15	·243
17	·261	2	·265	2	·210	16	·229
18	·277	3	·218	3	·226	17	·219
19	·285	4	·229	4	·271	18	·261
20	·316	5	·240	5	·220	19	·232
21	·337	6	·227	6	·267	20	·182
22	·254	7	·275	7	·221	21	·203
23	·309	8	·224	8	·212	22	·231
24	·322	9	·174	9	·211	23	·248
25	·149	10	·197	10	·246	24	·242
26	·270	11	·194	11	·203	25	·252
27	·234	12	·222	12	·208	26	·314
28	·255	13	·150	13	·239	27	·274
29	·227	14	·169				

TABLE XXI.—Hourly Means of the Height of the Barometer for each Month, and the Year 1845.

Mak. M. T.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
h.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
12	29·525	29·693	29·711	29·648	29·695	29·608	29·623	29·564	29·660	29·589	29·329	29·384	29·5857
13	·518	·690	·712	·641	·693	·604	·619	·563	·657	·585	·319	·375	·5813
14	·518	·688	·710	·642	·691	·600	·613	·564	·652	·583	·312	·377	·5792
15	·511	·681	·706	·638	·689	·598	·612	·561	·647	·584	·301	·372	·5750
16	·504	·680	·709	·637	·690	·600	·613	·560	·644	·585	·294	·366	·5735
17	·501	·681	·714	·640	·693	·603	·617	·566	·648	·586	·293	·366	·5757
18	·502	·683	·720	·646	·699	·603	·621	·570	·658	·593	·296	·368	·5799
19	·508	·689	·731	·649	·701	·606	·625	·575	·658	·603	·305	·371	·5851
20	·519	·700	·740	·650	·704	·607	·629	·577	·659	·611	·317	·375	·5907
21	·526	·704	·747	·653	·703	·607	·629	·580	·658	·613	·328	·381	·5941
22	·529	·708	·756	·653	·702	·605	·630	·580	·653	·615	·337	·388	·5963
23	·528	·716	·759	·651	·702	·602	·628	·580	·647	·613	·338	·384	·5957
0	·524	·713	·761	·648	·700	·598	·627	·580	·643	·608	·332	·378	·5927
1	·514	·709	·756	·643	·700	·595	·624	·580	·634	·601	·330	·370	·5880
2	·509	·704	·753	·633	·699	·592	·622	·578	·628	·600	·328	·363	·5841
3	·510	·704	·748	·627	·697	·587	·616	·578	·624	·597	·328	·361	·5814
4	·511	·705	·748	·626	·696	·585	·612	·577	·624	·599	·331	·367	·5818
5	·510	·711	·751	·628	·698	·584	·612	·577	·630	·604	·334	·366	·5837
6	·510	·716	·753	·630	·705	·586	·618	·580	·636	·609	·337	·365	·5871
7	·509	·721	·759	·638	·713	·587	·622	·588	·641	·614	·336	·360	·5907
8	·510	·724	·760	·646	·722	·593	·626	·592	·646	·616	·337	·354	·5938
9	·505	·724	·757	·645	·726	·592	·629	·597	·646	·617	·334	·354	·5938
10	·500	·726	·756	·647	·730	·592	·632	·599	·643	·615	·327	·355	·5935
11	·501	·725	·756	·647	·731	·591	·633	·598	·640	·617	·322	·357	·5932

TABLE XXII.—Reduced Hourly Variations of the Height of the Barometer for each Astronomical Quarter, and for the Year 1845.

Mak. M. T.	Nov. Dec. Jan.	Feb. March. April.	May. June. July.	Aug. Sept. Oct.	Year.	M. T. Mak.	Nov. Dec. Jan.	Feb. March. April.	May. June. July.	Aug. Sept. Oct.	Year.
h.	in.	in.	in.	in.	in.	h.	in.	in.	in.	in.	in.
12	0·0210	0·0126	0·0166	0·0126	0·0131	0	0·0316	0·0241	0·0121	0·0124	0·0175
13	·0133	·0086	·0130	·0095	·0085	1	·0260	·0186	·0098	·0065	·0126
14	·0126	·0066	·0086	·0070	·0062	2	·0223	·0116	·0074	·0030	·0085
15	·0060	·0007	·0066	·0040	·0017	3	·0230	·0069	·0027	·0002	·0055
16	·0003	·0000	·0075	·0025	·0000	4	·0273	·0059	·0000	·0000	·0057
17	·0000	·0020	·0106	·0057	·0020	5	·0286	·0086	·0000	·0032	·0074
18	·0030	·0057	·0135	·0122	·0060	6	·0303	·0107	·0046	·0072	·0106
19	·0100	·0114	·0162	·0167	·0110	7	·0290	·0160	·0087	·0127	·0140
20	·0200	·0175	·0185	·0198	·0164	8	·0286	·0190	·0146	·0159	·0169
21	·0290	·0211	·0178	·0206	·0195	9	·0270	·0167	·0163	·0174	·0166
22	·0363	·0245	·0168	·0191	·0215	10	·0243	·0167	·0182	·0159	·0161
23	·0360	·0265	·0148	·0159	·0207	11	·0246	·0153	·0183	·0146	·0156

TABLE XXIII.—Extreme Readings of the Barometer for each Month in 1845; Extreme Daily Heights for each Month; and Extreme Diurnal Ranges for each Month, together with the Ranges and Means of the Extremes.

Month.	Extreme Readings.								Extreme Daily Means.						Extreme Diurnal Ranges.			
	Highest.			Lowest.			Range.	Mean.	Highest.		Lowest.		Range.	Mean.	Greatest.		Least.	
	d.	h.	in.	d.	h.	in.	in.	in.	d.	in.	d.	in.	in.	in.	d.	in.	d.	in.
Jan.	0	23	30·052	27	18	28·809	1·243	29·430	1	30·031	28	28·876	1·155	29·453	25	0·730	7	0·040
Feb.	11	22	30·077	25	17	29·213	0·864	29·645	12	30·006	22	29·285	0·721	29·645	24	0·568	28	0·031
March	8	23	30·244	27	21	28·839	1·405	29·541	7	30·185	28	29·051	1·134	29·618	29	0·618	4	0·057
April	16	20	30·289	9	4	28·860	1·429	29·574	16	30·255	9	28·910	1·345	29·582	14	0·684	2	0·067
May	13	19 20	30·161	1	6	29·225	0·936	29·693	14	30·123	1	29·257	0·866	29·690	13	0·395	9	0·026
June	9 10	22 2	30·072	3	11	28·874	1·198	29·473	10	30·047	6	29·038	1·009	29·542	3	0·565	13	0·043
July	5	10	30·003	1	5	28·727	1·276	29·365	21	29·976	1	29·055	0·921	29·515	1	0·706	21 28	0·034
Aug.	31	0	30·175	19	20	29·008	1·167	29·591	30	30·146	20	29·126	1·020	29·636	21	0·397	13	0·030
Sept.	0	13	30·162	18	2	28·781	1·381	29·471	1	30·094	18	28·839	1·255	29·466	19	0·721	4	0·032
Oct.	22	9	30·177	8	16	28·946	1·231	29·561	23	30·139	9	29·052	1·087	29·595	30	0·489	31	0·067
Nov.	2	13	30·138	19	13	28·239	1·899	29·188	3	30·103	19	28·441	1·662	29·272	20	0·658	3	0·077
Dec.	12	11	30·284	19	15	28·282	2·002	29·283	13	30·191	20	28·583	1·608	29·387	23	1·147	15	0·134

TABLE XXIV.—Hourly Variations of the Pressure of Dry Air for each Astronomical Quarter, and for the Year 1845.

Mak. M. T.	Nov. Dec. Jan.	Feb. March. April.	May. June. July.	Aug. Sept. Oct.	Year.	Mak. M. T.	Nov. Dec. Jan.	Feb. March. April.	May. June. July.	Aug. Sept. Oct.	Year.
h.	in.	in.	in.	in.	in.	h.	in.	in.	in.	in.	in.
12	0·019	0·022	0·042	0·040	0·028	0	0·013	0·016	0·009	0·005	0·008
13	·010	·020	·042	·038	·025	1	·006	·011	·008	·003	·005
14	·013	·018	·043	·040	·026	2	·002	·004	·002	·002	·000
15	·006	·014	·046	·037	·024	3	·006	·000	·003	·002	·000
16	·000	·016	·044	·036	·022	4	·014	·002	·000	·000	·002
17	·000	·017	·041	·040	·022	5	·019	·005	·001	·005	·005
18	·003	·017	·031	·043	·021	6	·025	·009	·011	·009	·011
19	·012	·018	·028	·039	·022	7	·025	·014	·016	·020	·016
20	·020	·019	·023	·031	·021	8	·025	·019	·026	·029	·022
21	·026	·018	·021	·024	·019	9	·022	·021	·032	·035	·026
22	·025	·021	·017	·018	·018	10	·021	·023	·039	·039	·028
23	·023	·019	·013	·012	·015	11	·023	·023	·043	·042	·031

TABLE XXV.—Daily and Weekly Means of the Pressure of Wind, in Pounds on the Square Foot of Surface, deduced from the greatest pressures occurring between the Hourly Observations, in 1845.

Civil Day.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.
1	0·02	0·51	0·56	0·56	3·76	[1·00]	1·90	0·20	0·14	1·68	0·09	2·66
2	0·00	[0·61]	[0·43]	0·21	1·73	1·21	0·74	0·18	0·13	0·28	[0·32]	0·87
3	0·28	0·33	0·38	0·10	1·39	1·55	0·35	[0·29]	0·10	1·41	0·10	0·42
4	1·32	0·80	0·13	0·22	[1·83]	1·74	2·57	0·65	0·06	0·60	0·10	0·51
5	[0·52]	1·92	0·21	0·15	0·92	1·30	0·35	0·11	0·13	[0·54]	0·20	2·19
6	1·36	3·02	0·48	[0·30]	0·69	3·55	[0·92]	0·18	0·05	0·12	0·87	0·53
7	0·04	0·61	0·66	0·28	2·47	1·05	0·38	0·25	[0·29]	0·44	1·41	[1·00]
8	0·11	0·08	0·79	0·82	0·53	[1·49]	0·55	0·46	0·26	0·39	0·50	0·41
9	0·09	[0·91]	[0·93]	0·24	0·46	1·74	1·32	0·71	0·87	0·22	[0·49]	1·90
10	1·69	0·16	0·96	2·15	0·26	0·75	0·14	[0·49]	0·35	0·14	0·02	0·43
11	1·32	0·78	2·12	1·99	[0·55]	0·57	0·29	0·82	0·13	0·24	0·04	3·76
12	[0·63]	0·80	0·60	0·40	0·99	0·30	0·17	0·54	0·09	[0·45]	0·09	0·44
13	0·23	2·90	0·31	[1·89]	0·82	0·15	[0·32]	0·14	0·06	0·73	0·03	0·02
14	0·30	0·64	0·94	3·11	0·22	0·12	0·70	0·37	[0·15]	0·57	0·02	[1·52]
15	0·14	0·51	0·30	3·57	0·29	[0·13]	0·45	1·22	0·12	0·78	0·47	2·43
16	0·07	[0·76]	[0·50]	0·13	0·57	0·06	0·19	0·42	0·24	1·72	[0·81]	2·42
17	0·72	0·31	0·35	0·12	0·77	0·06	0·12	[0·78]	0·27	1·67	0·95	0·07
18	1·21	0·07	0·14	0·23	[0·79]	0·10	0·22	0·13	0·50	2·89	0·71	0·31
19	[0·58]	0·11	0·95	0·40	1·42	0·46	0·20	0·75	0·72	[1·99]	2·71	1·05
20	0·39	0·47	0·45	[0·27]	0·55	0·13	[0·46]	1·82	0·37	4·27	1·55	1·17
21	0·34	0·35	2·05	0·17	1·13	0·49	0·67	0·38	[0·58]	0·86	0·45	[1·41]
22	0·73	0·20	2·44	0·36	1·14	[0·35]	0·87	1·04	1·28	0·55	0·18	2·58
23	2·69	[0·44]	[1·29]	0·32	0·44	0·33	0·66	1·57	0·24	0·69	[1·10]	2·50
24	0·56	0·42	0·35	0·23	0·58	0·25	0·21	[0·87]	0·37	1·37	0·29	0·88
25	2·76	0·40	0·61	0·75	[0·87]	0·45	0·20	0·59	0·93	0·60	1·42	0·56
26	[1·13]	0·83	1·83	1·75	1·33	0·30	0·81	1·13	0·42	[0·91]	2·69	2·68
27	0·29	0·18	3·44	[1·08]	0·74	0·53	[0·35]	0·52	1·43	1·27	1·65	2·57
28	0·35	1·12	5·83	1·09	0·99	2·30	0·37	0·06	[1·08]	1·02	0·83	[1·84]
29	0·12		1·34	0·74	0·89	[1·13]	0·12	0·15	0·93	0·49	2·24	1·45
30	0·02		[2·05]	1·90	0·42	1·02	0·38	0·24	1·10	0·81	[1·44]	2·84
31	0·08		0·90		0·19		0·40	[0·14]		0·62		0·93

TABLE XXVI.—Daily and Weekly Means of the Pressure of Wind in Pounds on the Square Foot of Surface, deduced from the greatest pressures observed within 10^m at the Observation Hours, in 1845.

Civil Day.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.
1	0·00	0·33	0·35	0·35	2·81	[0·66]	1·18	0·11	0·11	1·15	0·05	1·67
2	0·01	[0·42]	[0·30]	0·13	1·04	0·83	0·48	0·09	0·12	0·15	[0·18]	0·54
3	0·17	0·17	0·20	0·05	1·03	0·94	0·27	[0·17]	0·05	0·97	0·04	0·32
4	0·92	0·55	0·09	0·12	[1·32]	1·19	2·24	0·42	0·04	0·36	0·06	0·33
5	[0·35]	1·40	0·14	0·08	0·57	1·01	0·20	0·05	0·07	[0·35]	0·07	1·40
6	0·97	2·18	0·34	[0·18]	0·47	2·25	[0·71]	0·12	0·03	0·09	0·63	0·34
7	0·01	0·43	0·39	0·20	2·01	0·77	0·29	0·17	[0·19]	0·29	0·94	[0·68]
8	0·03	0·06	0·64	0·49	0·38	[1·05]	0·37	0·34	0·19	0·27	0·27	0·29
9	0·05	[0·65]	[0·66]	0·16	0·33	1·27	0·87	0·55	0·58	0·09	[0·32]	1·36
10	1·20	0·09	0·65	1·81	0·16	0·58	0·08	[0·35]	0·26	0·07	0·00	0·34
11	0·84	0·59	1·58	1·25	[0·35]	0·40	0·22	0·54	0·09	0·13	0·01	2·66
12	[0·42]	0·55	0·37	0·28	0·62	0·17	0·15	0·35	0·04	[0·27]	0·05	0·35
13	0·17	2·19	0·22	[1·44]	0·50	0·10	[0·20]	0·18	0·02	0·43	0·02	0·01
14	0·18	0·42	0·63	2·45	0·12	0·08	0·35	0·23	[0·08]	0·40	0·00	[1·10]
15	0·06	0·32	0·19	2·78	0·23	[0·08]	0·27	0·92	0·05	0·49	0·32	1·73
16	0·05	[0·54]	[0·34]	0·07	0·43	0·04	0·13	0·24	0·12	1·08	[0·52]	1·77
17	0·47	0·24	0·27	0·07	0·50	0·03	0·06	[0·51]	0·17	1·14	0·62	0·05
18	0·75	0·04	0·07	0·16	[0·56]	0·07	0·12	0·05	0·30	2·13	0·42	0·20
19	[0·35]	0·06	0·68	0·26	1·03	0·30	0·15	0·54	0·47	[1·29]	1·77	0·70
20	0·19	0·37	0·32	[0·19]	0·35	0·09	[0·30]	1·10	0·25	2·58	0·95	0·88
21	0·25	0·20	1·51	0·13	0·85	0·32	0·50	0·24	[0·37]	0·52	0·25	[0·99]
22	0·41	0·20	1·73	0·30	0·76	[0·22]	0·56	0·73	0·82	0·27	0·10	1·95
23	2·15	[0·31]	[0·93]	0·20	0·32	0·24	0·43	1·03	0·15	0·52	[0·76]	1·62
24	0·40	0·25	0·20	0·17	0·43	0·11	0·15	[0·60]	0·21	0·79	0·15	0·57
25	2·38	0·28	0·35	0·55	[0·61]	0·25	0·15	0·41	0·60	0·33	1·04	0·32
26	[0·91]	0·55	1·45	1·26	0·90	0·19	0·57	0·83	0·29	[0·58]	2·09	1·47
27	0·22	0·13	2·62	[0·77]	0·54	0·39	[0·25]	0·33	1·05	0·82	1·04	1·74
28	0·26	0·88	4·47	0·75	0·70	1·57	0·30	0·03	[0·72]	0·71	0·46	[1·20]
29	0·06		1·00	0·45	0·63	[0·76]	0·09	0·08	0·53	0·33	1·33	0·94
30	0·02		[1·51]	1·42	0·26	0·73	0·22	0·15	0·72	0·49	[0·89]	2·11
31	0·07		0·52		0·09		0·25	[0·09]		0·38		0·61

TABLE XXVII.—Mean Pressure of Wind with reference to the Moon's Age and Declination, for 1845.

Moon's Age.	Pressure of Wind.	Moon's Age.	Pressure of Wind.	After Moon farthest North.	Pressure of Wind.	After Moon farthest North.	Pressure of Wind.
Day.	lb.	Day.	lb.	Day.	lb.	Day.	lb.
15	0·53	0	0·86	0	0·56	14	0·55
16	0·49	1	0·67	1	0·63	15	0·53
17	0·79	2	0·70	2	0·60	16	0·42
18	0·51	3	0·52	3	0·68	17	0·49
19	0·69	4	0·51	4	0·76	18	0·54
20	0·94	5	0·38	5	0·34	19	0·59
21	0·49	6	0·42	6	0·51	20	0·50
22	0·55	7	0·55	7	0·54	21	0·45
23	0·59	8	0·50	8	0·37	22	0·32
24	0·57	9	0·48	9	0·50	23	0·65
25	0·48	10	0·44	10	0·51	24	0·55
26	0·59	11	0·33	11	0·44	25	0·82
27	0·68	12	0·48	12	0·58	26	0·92
28	0·70	13	0·40	13	0·75	27	0·69
29	0·66	14	0·39				

TABLE XXVIII.—Maximum Pressure of Wind in each Civil Day in 1845.

Civil Day.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.
1	0·1	1·0	1·4	1·7	6·2	1·5	6·0	1·1	0·6	3·5	0·4	5·0
2	0·1	0·5	0·8	0·8	3·1	2·6	1·8	0·8	0·5	1·8	0·3	2·5
3	1·2	1·1	1·2	0·5	2·5	3·5	2·0	4·0	0·4	3·1	0·4	1·1
4	3·8	3·2	0·4	0·5	4·5	4·3	5·9	1·5	0·2	1·6	1·2	1·3
5	5·2	6·5	1·0	0·5	3·5	4·1	1·0	0·3	0·3	0·4	0·9	5·0
6	3·8	5·8	1·6	0·7	1·8	6·6	1·4	0·6	0·1	0·5	2·2	2·2
7	0·1	1·3	1·7	1·3	4·0	2·3	1·0	0·7	0·5	1·0	3·7	0·4
8	0·5	0·1	1·7	2·9	1·7	2·1	2·1	0·9	0·7	1·4	1·9	2·5
9	0·4	0·6	0·9	0·8	1·4	4·0	3·8	2·0	2·0	1·3	0·0	4·3
10	5·2	1·0	3·7	4·1	0·7	1·2	0·4	3·1	1·1	0·6	0·1	2·3
11	3·8	1·8	3·8	3·7	1·9	1·5	1·3	1·4	0·4	0·8	0·2	7·7
12	0·5	3·7	1·7	1·6	3·1	1·1	1·3	1·2	0·3	0·7	0·5	1·6
13	0·6	6·1	0·5	2·6	2·0	0·4	0·5	0·4	0·5	2·8	0·2	0·1
14	0·8	1·1	2·9	6·7	0·7	0·4	2·7	1·1	1·1	1·6	0·1	5·8
15	0·6	1·2	0·7	6·5	0·9	0·2	1·5	2·7	0·7	2·0	1·8	3·8
16	0·4	0·5	0·9	0·3	1·4	0·2	0·8	1·8	0·9	3·1	3·1	5·0
17	1·7	0·7	0·8	0·3	1·7	0·2	0·5	0·8	1·2	3·4	2·4	0·6
18	1·9	0·3	1·3	0·8	2·4	0·5	0·3	1·1	1·9	7·3	2·3	0·9
19	1·7	0·2	2·5	1·2	2·6	0·8	0·5	2·5	2·0	3·9	4·3	2·5
20	3·2	1·4	1·3	0·6	1·4	0·7	1·3	5·0	1·2	8·9	3·3	4·3
21	2·0	0·6	5·3	0·8	2·1	1·1	1·4	1·5	3·3	2·2	1·5	8·6
22	1·6	0·6	6·2	1·3	2·0	2·4	1·6	2·4	3·6	1·7	0·3	7·8
23	6·3	0·5	3·5	1·2	0·5	0·6	1·3	2·7	0·9	1·7	0·6	4·3
24	1·8	2·2	0·9	0·8	1·0	1·0	0·6	1·5	1·1	2·4	1·0	2·9
25	4·6	1·2	2·5	2·1	0·5	1·0	0·6	1·7	2·6	1·7	3·3	2·1
26	8·7	3·1	5·2	4·3	2·5	1·0	2·0	2·8	1·3	3·6	4·6	6·6
27	0·7	0·6	6·3	4·2	1·3	1·8	2·8	1·6	4·3	3·5	6·2	7·6
28	1·5	2·3	13·3	2·2	1·4	7·0	0·9	0·1	3·2	1·8	2·4	4·6
29	0·7		3·6	1·9	1·5	2·2	0·4	0·3	2·2	1·7	8·3	4·8
30	0·2		4·1	4·6	1·2	2·5	1·3	0·7	2·7	2·4	8·5	6·0
31	1·0		3·0		0·6		1·3	0·6		1·7		1·8

TABLE XXIX.—Means of the Maximum Pressure of Wind between the Hours of Observation, for each Month in 1845.

Mak. M. T.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
h. h.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.
11—12	0·54	0·52	1·20	0·53	0·72	0·46	0·29	0·35	0·32	1·07	0·99	1·05
12—13	0·47	0·50	1·03	0·59	0·72	0·37	0·25	0·38	0·35	1·00	0·84	1·18
13—14	0·36	0·62	0·95	0·70	0·67	0·46	0·23	0·35	0·32	0·99	0·88	1·21
14—15	0·44	0·62	0·97	0·69	0·66	0·40	0·30	0·33	0·30	1·03	0·72	1·43
15—16	0·48	0·69	1·04	0·64	0·62	0·42	0·34	0·27	0·34	0·93	0·82	1·42
16—17	0·43	0·68	0·90	0·48	0·66	0·47	0·38	0·30	0·32	0·90	0·88	1·48
17—18	0·39	0·80	0·96	0·59	0·70	0·53	0·45	0·36	0·34	0·97	0·88	1·58
18—19	0·49	0·74	0·91	0·70	0·91	0·80	0·51	0·35	0·31	0·79	0·63	1·29
19—20	0·50	0·83	0·95	0·67	1·15	0·99	0·56	0·47	0·42	0·71	0·67	1·41
20—21	0·59	0·90	1·28	0·92	1·24	1·06	0·67	0·60	0·49	0·91	0·62	1·53
21—22	0·69	1·02	1·36	0·97	1·29	1·23	0·64	0·74	0·60	1·09	0·62	1·49
22—23	0·77	0·95	1·36	1·05	1·39	1·26	0·77	0·82	0·83	1·25	0·63	1·74
23— 0	0·83	0·86	1·37	1·05	1·32	1·50	0·81	0·81	0·76	1·29	0·71	1·66
0— 1	0·79	0·90	1·39	1·21	1·29	1·40	0·95	1·03	0·65	1·51	0·74	1·58
1— 2	0·80	0·88	1·47	1·36	1·38	1·44	0·91	0·87	0·68	1·33	0·80	1·66
2— 3	0·87	0·86	1·26	1·25	1·32	1·19	0·96	0·78	0·65	1·34	0·70	1·37
3— 4	0·87	0·84	1·16	1·32	1·27	1·15	0·98	0·83	0·67	1·17	0·65	1·44
4— 5	0·66	0·70	1·19	1·25	1·09	0·98	1·03	0·79	0·45	1·02	0·69	1·26
5— 6	0·63	0·67	1·00	1·07	1·10	0·80	0·70	0·63	0·33	0·70	0·80	1·47
6— 7	0·70	0·63	1·05	0·75	0·90	0·71	0·56	0·64	0·28	0·73	0·84	1·27
7— 8	0·66	0·47	1·08	0·61	0·81	0·67	0·43	0·48	0·29	0·64	0·88	1·35
8— 9	0·70	0·67	1·13	0·63	0·63	0·41	0·38	0·49	0·28	0·70	1·02	1·57
9—10	0·80	0·61	1·02	0·61	0·56	0·50	0·27	0·45	0·22	0·67	0·90	1·47
10—11	0·87	0·55	0·88	0·65	0·43	0·50	0·26	0·40	0·27	0·77	0·91	1·36

TABLE XXX.—Means of the Maximum Pressure of Wind between the Hours of Observation, for each of the Astronomical Quarters, and for the year 1845.

Mak. M. T.	Nov. Dec. Jan.	Feb. March. April.	May. June. July.	Aug. Sept. Oct.	Year.	Mak. M. T.	Nov. Dec. Jan.	Feb. March. April.	May. June. July.	Aug. Sept. Oct.	Year.
h. h.	lb.	lb.	lb.	lb.	lb.	h. h.	lb.	lb.	lb.	lb.	lb.
11—12	0·86	0·75	0·49	0·58	0·67	23— 0	1·07	1·09	1·21	0·95	1·08
12—13	0·83	0·71	0·45	0·58	0·64	0— 1	1·04	1·17	1·21	1·06	1·12
13—14	0·82	0·76	0·45	0·55	0·64	1— 2	1·09	1·24	1·24	0·96	1·13
14—15	0·86	0·76	0·45	0·55	0·66	2— 3	0·98	1·12	1·16	0·92	1·05
15—16	0·91	0·79	0·46	0·51	0·67	3— 4	0·99	1·11	1·13	0·89	1·03
16—17	0·93	0·69	0·50	0·51	0·66	4— 5	0·87	1·05	1·03	0·75	0·93
17—18	0·95	0·78	0·56	0·56	0·71	5— 6	0·97	0·91	0·87	0·55	0·82
18—19	0·80	0·78	0·74	0·48	0·70	6— 7	0·94	0·81	0·72	0·55	0·75
19—20	0·86	0·82	0·90	0·53	0·78	7— 8	0·96	0·72	0·64	0·47	0·70
20—21	0·91	1·03	0·99	0·67	0·90	8— 9	1·10	0·81	0·47	0·49	0·72
21—22	0·93	1·12	1·05	0·81	0·98	9—10	1·06	0·75	0·44	0·45	0·67
22—23	1·05	1·12	1·14	0·97	1·07	10—11	1·05	0·69	0·40	0·48	0·65

TABLE XXXI.—Hourly Means of the Maximum Pressure of Wind within 10^m at the Observation Hours, for each Month in 1845.

Mak. M. T.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
h.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.
12	0·36	0·40	0·71	0·35	0·45	0·24	0·15	0·18	0·20	0·60	0·58	0·86
13	0·30	0·35	0·80	0·52	0·53	0·28	0·16	0·26	0·20	0·66	0·51	0·78
14	0·26	0·40	0·60	0·48	0·49	0·24	0·14	0·23	0·18	0·63	0·37	0·69
15	0·29	0·57	0·70	0·47	0·50	0·23	0·19	0·16	0·26	0·60	0·59	0·93
16	0·29	0·51	0·76	0·47	0·42	0·32	0·32	0·21	0·20	0·57	0·40	0·95
17	0·26	0·53	0·63	0·38	0·58	0·32	0·34	0·19	0·19	0·69	0·63	0·91
18	0·24	0·64	0·71	0·56	0·58	0·52	0·30	0·23	0·18	0·53	0·48	0·91
19	0·40	0·55	0·60	0·48	0·67	0·67	0·32	0·25	0·16	0·40	0·40	0·80
20	0·34	0·64	0·89	0·52	0·91	0·67	0·63	0·41	0·25	0·45	0·49	1·03
21	0·46	0·73	0·86	0·59	0·94	0·86	0·52	0·45	0·39	0·68	0·42	1·17
22	0·52	0·79	1·13	0·81	0·99	0·86	0·48	0·58	0·49	0·79	0·46	1·14
23	0·60	0·65	1·11	0·80	0·97	1·01	0·63	0·56	0·57	0·94	0·35	1·26
0	0·63	0·60	1·04	0·86	0·90	0·95	0·64	0·60	0·45	0·85	0·50	1·10
1	0·63	0·67	0·98	0·87	0·83	0·99	0·70	0·55	0·49	1·05	0·51	1·12
2	0·54	0·66	0·93	0·97	1·01	0·85	0·57	0·57	0·44	0·84	0·51	0·99
3	0·52	0·65	0·92	0·99	0·96	0·81	0·59	0·53	0·43	0·71	0·47	1·04
4	0·52	0·47	0·81	0·96	0·80	0·69	0·74	0·66	0·37	0·76	0·34	0·87
5	0·41	0·32	0·79	0·92	0·81	0·54	0·69	0·53	0·25	0·53	0·60	0·99
6	0·51	0·54	0·62	0·62	0·73	0·55	0·36	0·40	0·19	0·43	0·46	0·90
7	0·48	0·37	0·77	0·38	0·51	0·40	0·36	0·35	0·15	0·49	0·55	0·90
8	0·55	0·29	0·74	0·45	0·49	0·32	0·20	0·33	0·21	0·41	0·72	0·91
9	0·56	0·41	0·88	0·41	0·34	0·34	0·17	0·33	0·14	0·52	0·65	1·06
10	0·57	0·38	0·73	0·43	0·32	0·34	0·13	0·27	0·17	0·44	0·61	1·18
11	0·66	0·31	0·65	0·39	0·34	0·35	0·19	0·25	0·20	0·55	0·56	0·86

TABLE XXXII.—Hourly Means of the Maximum Pressure of Wind within 10^m at the Observation Hours, for each of the Astronomical Quarters, and for the Year 1845.

Mak. M. T.	Nov. Dec. Jan.	Feb. March. April.	May. June. July.	Aug. Sept. Oct.	Year.	Mak. M. T.	Nov. Dec. Jan.	Feb. March. April.	May. June. July.	Aug. Sept. Oct.	Year.
h.	lb.	lb.	lb.	lb.	lb.	h.	lb.	lb.	lb.	lb.	lb.
12	0·60	0·49	0·28	0·33	0·42	0	0·74	0·83	0·83	0·63	0·76
13	0·53	0·56	0·32	0·37	0·45	1	0·75	0·84	0·84	0·70	0·78
14	0·44	0·49	0·29	0·35	0·39	2	0·68	0·85	0·81	0·62	0·74
15	0·60	0·58	0·31	0·34	0·46	3	0·68	0·85	0·79	0·56	0·72
16	0·55	0·58	0·35	0·33	0·45	4	0·58	0·75	0·74	0·60	0·67
17	0·60	0·51	0·41	0·36	0·47	5	0·67	0·68	0·68	0·44	0·61
18	0·54	0·64	0·47	0·31	0·49	6	0·62	0·59	0·55	0·34	0·53
19	0·53	0·54	0·55	0·27	0·47	7	0·64	0·51	0·42	0·33	0·48
20	0·62	0·68	0·74	0·37	0·60	8	0·73	0·49	0·34	0·32	0·47
21	0·68	0·73	0·77	0·51	0·67	9	0·76	0·57	0·28	0·33	0·48
22	0·71	0·91	0·78	0·62	0·75	10	0·79	0·51	0·26	0·29	0·46
23	0·74	0·85	0·87	0·69	0·79	11	0·69	0·45	0·29	0·33	0·44

TABLE XXXIII.—Number of Times which the Wind blew from each Point of the Compass at the together with the sums of the Pres-

Wind blowing from	January.		February.		March.		April.		May.		June.	
	Times.	Press.	Times.	Press.	Times.	Press.	Times.	Press.	Times.	Press.	Times.	Press.
		lb.		lb.		lb.		lb.		lb.		lb.
N.	1	0·1	7	4·7	28	21·1	18	45·2	19	22·8	10	18·1
N by E.	3	0·7	5	1·4	14	11·4	26	59·4	18	20·1	3	10·3
NNE.	2	0·2	6	2·4	28	15·8	31	43·2	86	68·2	1	2·0
NE by N.	4	3·0	2	0·3	14	8·6	16	12·7	109	67·1	2	0·3
NE.	6	0·9	3	0·4	15	5·1	36	11·0	104	65·7	16	7·6
NE by E.	1	1·2	3	0·9	5	1·6	15	4·6	18	10·7	2	1·4
ENE.	1	0·6	6	3·1	7	1·7	26	7·8	18	9·3	10	2·1
E by N.	5	1·0	3	0·4	11	5·9	31	10·5	13	6·4	2	1·0
E.	4	0·7	4	0·9	11	5·9	8	1·8	7	4·2	10	2·8
E by S.	3	0·5	...	...	2	0·8	2	0·5	2	2·0	5	2·0
ESE.	6	1·2	3	0·8	5	1·5	3	1·2	1	1·1	4	1·1
SE by E.	3	1·2	2	0·4	...	...	3	0·9	...	...	...	...
SE.	11	2·8	5	1·0	5	0·8	4	1·5	2	0·3	4	0·8
SE by S.	5	1·5	2	1·8	...	...	5	2·9	...	...	...	...
SSE.	8	3·1	17	10·2	8	1·2	15	17·6	...	...	3	0·4
S by E.	8	6·3	19	17·6	6	5·2	11	13·6	...	...	5	5·6
S.	41	33·4	23	13·6	11	2·9	12	5·9	...	...	13	17·4
S by W.	39	31·9	23	9·1	7	1·9	15	9·3	2	0·4	11	5·6
SSW.	64	66·6	51	24·5	41	50·1	40	35·2	9	10·7	47	56·2
SW by S.	26	43·8	21	11·1	34	54·3	12	12·0	6	8·9	47	55·3
SW.	58	60·2	63	43·7	35	34·6	36	29·0	24	49·4	89	66·6
SW by W.	15	4·4	15	13·2	15	39·7	14	10·2	19	23·6	35	29·5
WSW.	12	4·3	18	4·0	30	31·5	7	2·6	16	9·6	38	17·3
W by S.	10	3·9	11	4·3	13	18·6	2	0·2	7	2·7	8	1·7
W.	9	3·5	12	4·0	20	36·0	3	0·6	13	5·9	21	6·3
W by N.	6	0·8	15	16·3	17	26·3	...	...	3	1·7	7	2·6
WNW.	7	1·7	14	9·1	20	19·0	1	0·1	15	11·3	24	7·2
NW by W.	1	0·9	4	3·7	10	12·6	...	...	7	3·3	1	0·2
NW.	16	9·4	21	13·8	31	18·4	3	1·9	15	11·9	18	5·0
NW by N.	6	2·6	22	20·4	30	19·0	8	16·8	9	4·2	4	1·3
NNW.	5	2·1	32	44·9	23	17·0	2	0·2	12	7·8	13	3·4
N by W.	2	0·7	17	16·1	33	35·0	15	24·0	6	4·2	5	2·7

Observation Hours, with a Pressure of one-tenth of a pound or upwards on a square foot of surface, sures, for each Month in 1845.

July.		August.		September.		October.		November.		December.		Wind blowing from
Times.	Press.	Times.	Press.	Times.	Press.	Times.	Press.	Times.	Press.	Times.	Press.	
	lb.		lb.		lb.		lb.		lb.		lb.	
9	3·0	35	26·4	10	10·0	3	0·8	3	0·4	5	3·5	N.
5	2·2	21	10·8	1	0·5	3	1·2	...	...	1	0·1	N by E.
31	12·2	21	13·5	5	1·6	25	9·5	...	...	6	1·7	NNE.
50	19·0	15	9·7	12	4·1	10	5·7	...	...	1	0·4	NE by N.
59	22·7	14	3·1	29	6·0	8	6·3	1	0·1	...	...	NE.
10	2·9	2	0·8	3	0·6	6	7·2	1	0·2	...	...	NE by E.
17	6·8	6	0·8	13	1·7	4	3·9	...	...	...	...	ENE.
2	0·7	4	0·4	10	1·5	...	...	1	0·2	...	...	E by N.
4	0·9	4	0·5	9	1·2	3	0·3	...	...	...	...	E.
...	...	1	0·1	2	0·2	1	0·1	...	...	...	...	E by S.
1	0·4	3	0·3	4	0·4	3	1·0	...	...	...	...	ESE.
...	...	...	...	...	...	3	2·5	3	0·9	...	...	SE by E.
7	2·2	2	0·3	4	0·5	10	2·2	4	2·5	1	0·1	SE.
1	0·3	1	0·1	...	...	2	0·4	6	4·4	...	...	SE by S.
15	4·5	5	0·9	10	3·5	10	2·4	14	11·3	...	...	SSE.
3	2·0	...	...	4	1·6	11	2·4	13	9·0	...	...	S by E.
15	21·8	6	1·7	11	2·9	15	2·8	35	18·5	5	2·0	S.
3	1·5	8	3·3	3	2·0	11	4·5	35	36·7	12	10·5	S by W.
26	19·6	32	17·4	48	17·3	56	26·5	68	49·2	66	70·1	SSW.
18	24·1	24	19·8	37	19·7	67	45·3	37	39·9	89	85·2	SW by S.
52	42·4	43	20·1	74	34·1	147	109·6	66	63·7	102	101·3	SW.
23	19·9	16	7·8	33	22·2	64	62·6	40	39·7	30	37·4	SW by W.
47	23·4	41	11·9	22	13·1	39	30·8	19	14·0	24	28·0	WSW.
15	3·8	16	5·2	5	0·5	12	13·3	4	3·4	18	23·0	W by S.
15	5·0	29	9·6	16	5·2	33	31·1	4	2·1	44	67·6	W.
8	1·4	9	3·0	...	...	9	15·4	1	0·4	21	29·9	W by N.
10	3·8	21	12·6	8	2·8	6	12·4	4	1·5	22	35·1	WNW.
2	0·5	7	1·5	1	1·2	...	...	4	2·8	6	14·0	NW by W.
12	3·0	26	16·3	15	7·4	4	5·7	4	0·4	20	35·5	NW.
3	0·6	14	10·7	7	7·8	...	...	2	0·7	31	50·1	NW by N.
11	3·8	33	18·1	12	5·5	2	0·3	6	1·7	14	17·0	NNW.
6	1·7	16	9·7	2	1·1	4	1·8	4	0·8	13	17·9	N by W.

TABLE XXXIV.—Number of Times which the Wind blew from each Point of the Compass with the *sums* of the Pres-

Mak. M. T.	Number of times which the Wind blew from each															
	N.	N by E.	NNE.	NE by N.	NE.	NE. by E.	ENE.	E by N.	E.	E by S.	ESE.	SE by E.	SE.	SE by S.	SSE.	S by E.
h.																
12	2	3	8	8	10	…	…	2	1	…	1	…	3	…	2	3
13	6	1	5	13	10	…	…	…	1	…	…	1	1	…	1	3
14	7	1	10	9	3	2	2	…	1	…	…	1	1	1	3	3
15	6	3	12	7	5	2	1	1	1	2	2	…	…	2	2	2
16	7	4	10	4	5	…	2	3	…	…	…	…	2	1	1	4
17	6	4	6	8	8	…	1	…	…	…	1	…	3	…	4	3
18	5	3	10	11	4	1	1	2	1	…	1	…	2	2	5	3
19	3	5	10	11	8	3	1	1	2	1	…	…	2	…	3	1
20	3	4	15	9	13	…	3	3	2	…	1	…	1	1	5	5
21	9	4	11	8	14	1	7	4	4	3	…	…	2	1	5	3
22	10	7	8	12	16	5	6	3	2	2	3	…	3	1	10	3
23	9	10	10	11	18	1	12	5	3	…	2	1	5	1	6	6
0	5	5	15	9	19	3	8	5	3	…	6	2	4	…	9	4
1	5	7	9	10	15	8	9	4	5	2	1	2	2	1	3	7
2	7	9	7	11	13	8	8	6	7	1	3	1	4	…	6	5
3	9	3	19	6	13	7	7	11	4	3	1	1	5	1	4	2
4	10	3	12	11	14	7	13	9	7	1	3	…	3	2	6	1
5	6	2	9	12	21	6	9	9	6	…	3	1	3	2	7	2
6	9	2	13	14	18	1	8	3	6	1	1	1	1	2	4	3
7	6	5	15	12	13	3	5	5	4	…	2	…	2	2	3	3
8	2	2	9	15	18	2	2	2	1	1	2	…	5	…	8	2
9	2	10	6	8	14	4	2	1	1	…	…	1	2	…	3	2
10	10	…	7	7	11	…	1	2	2	1	…	1	2	1	2	4
11	4	3	6	9	9	2	1	1	…	…	…	1	1	1	3	6
Sums	148	100	242	235	292	66	109	82	64	18	33	14	59	22	105	80
	Sums of Pressures with which the Wind blew from															
h.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.
12	2·3	2·4	4·3	3·5	3·8	…	…	0·3	0·1	…	0·1	…	0·5	…	1·9	3·4
13	9·9	2·4	2·6	5·4	4·5	…	…	…	0·1	…	…	0·4	0·2	…	0·4	5·5
14	7·1	1·7	4·2	3·3	2·3	0·5	0·8	…	0·1	…	…	0·4	0·1	0·1	3·3	2·3
15	3·7	5·2	6·3	3·0	2·0	0·3	0·1	0·7	0·1	0·2	0·6	…	…	0·9	2·2	1·5
16	8·0	2·8	3·6	2·0	1·7	…	1·2	1·0	…	…	…	…	0·2	0·4	0·7	4·8
17	8·2	1·3	3·2	2·5	4·0	…	0·3	…	…	…	0·1	…	1·1	…	1·9	1·9
18	2·7	7·9	4·4	4·3	1·5	0·6	0·3	0·3	0·1	…	…	…	0·8	0·6	0·7	3·2
19	3·1	5·2	5·9	4·4	3·7	2·0	0·1	0·1	0·2	0·1	…	…	0·4	…	1·3	0·3
20	4·4	7·7	7·0	6·6	5·3	…	0·7	0·3	0·2	…	0·1	…	0·1	0·3	2·2	3·3
21	12·3	8·7	9·5	4·6	6·9	0·2	1·8	0·7	0·9	0·5	…	…	0·3	0·2	2·2	1·1
22	11·6	10·0	8·9	7·5	9·2	2·2	1·4	0·4	0·7	0·2	0·4	…	0·4	0·1	4·5	0·4
23	4·0	15·4	9·3	12·0	7·6	0·7	3·1	1·6	2·0	…	0·3	0·2	0·8	1·3	1·5	3·5
0	6·3	6·3	13·7	7·7	8·9	2·2	4·4	2·2	0·4	…	2·1	0·5	0·8	…	2·6	1·9
1	5·6	10·5	8·3	5·8	7·8	3·9	3·8	1·6	0·5	1·4	0·1	0·2	1·0	0·3	0·7	5·5
2	2·3	6·7	9·6	12·2	5·6	3·7	2·7	3·7	2·3	0·2	2·1	0·7	0·9	…	2·1	3·3
3	9·0	1·2	17·2	3·2	10·0	2·7	1·6	4·4	2·4	2·9	0·1	0·2	0·8	1·7	1·9	2·5
4	12·2	0·7	11·5	7·3	7·8	5·4	7·8	3·3	2·8	0·3	1·1	…	0·6	0·4	4·1	1·4
5	8·4	2·6	8·0	9·1	8·3	2·2	3·6	2·0	3·7	…	0·8	0·5	0·4	2·0	3·2	1·9
6	8·6	3·6	8·9	6·0	6·6	0·1	1·9	2·9	1·1	0·2	0·1	0·3	0·5	0·8	2·4	2·0
7	4·0	4·6	8·9	5·4	3·0	0·3	1·4	2·0	0·8	…	0·8	…	1·0	1·7	1·5	1·3
8	0·9	1·7	5·9	8·2	3·3	1·0	0·5	0·2	0·2	0·1	0·2	…	2·0	…	6·2	2·3
9	2·7	6·9	4·5	1·9	4·5	1·5	0·2	0·1	0·1	…	…	0·9	0·7	…	4·4	0·8
10	13·1	…	3·0	2·4	5·4	…	0·1	0·2	0·4	0·1	…	0·5	1·3	0·3	1·6	6·0
11	5·7	2·7	1·8	2·6	5·5	2·5	0·1	0·1	…	…	…	1·1	0·1	0·3	1·6	3·2
Sums	156·1	118·2	170·5	130·9	129·2	32·0	37·9	28·1	19·2	6·2	9·1	5·9	15·0	11·4	55·1	63·3

with a Pressure of one-tenth of a pound or upwards upon a square foot of surface, together sures for each Hour in 1845.

Point of the Compass at each Hour in 1845.

S.	S by W.	SSW.	SW by S.	SW.	SW by W.	WSW.	W by S.	W.	W by N.	WNW.	NW by W.	NW.	NW by N.	NNW.	N by W.	Mak. M. T.
																h.
6	9	21	16	36	14	10	6	1	1	2	2	6	4	9	3	12
14	6	14	15	32	10	13	5	9	1	7	2	8	3	5	3	13
9	6	17	19	30	16	7	4	13	4	3	2	4	4	6	4	14
6	10	21	14	30	17	16	6	8	1	1	1	6	3	6	4	15
5	10	20	22	33	9	16	2	15	3	5	1	9	3	7	2	16
6	6	19	14	26	17	8	5	15	9	4	2	6	8	7	2	17
9	7	21	16	31	13	15	4	15	3	3	1	5	11	8	3	18
12	4	20	21	34	11	16	7	15	3	3	1	3	11	7	3	19
4	2	28	24	36	11	17	4	6	5	10	2	4	8	8	5	20
10	8	21	12	32	16	12	11	10	2	9	1	8	11	5	4	21
6	10	26	17	25	18	15	7	8	7	10	1	12	6	8	2	22
9	5	27	12	39	11	8	6	13	4	11	4	12	6	8	3	23
9	11	24	20	32	14	12	6	11	7	6	3	15	3	7	8	0
8	7	24	12	41	12	22	4	10	5	11	...	13	6	7	14	1
6	7	19	24	37	19	7	6	10	5	11	1	8	3	11	15	2
6	9	24	18	35	17	6	4	8	4	8	3	19	8	5	5	3
6	8	26	18	33	17	12	5	8	4	10	3	8	3	11	4	4
11	4	23	21	28	12	14	8	12	4	7	...	8	8	5	4	5
11	8	29	18	29	15	18	3	3	5	4	4	7	3	8	3	6
8	8	23	23	34	10	17	7	7	5	8	1	6	5	8	3	7
4	4	31	16	39	8	13	1	6	6	7	1	3	5	8	9	8
9	9	33	15	27	11	9	4	5	6	2	3	3	4	6	9	9
7	5	23	15	32	9	15	3	6	2	6	2	8	4	2	7	10
7	5	14	16	35	12	15	3	5	...	4	2	4	6	3	4	11
188	168	548	418	786	319	313	121	219	96	152	43	185	136	165	123	Sums

each Point of the Compass at each Hour in 1845.

lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	h.
4·9	6·6	9·9	19·3	26·4	11·3	3·6	4·5	0·1	1·2	0·6	3·1	4·6	2·7	7·3	4·4	12
3·8	4·9	9·9	16·9	25·4	12·5	8·2	1·3	9·3	0·3	2·5	2·6	3·3	2·1	3·9	1·3	13
5·4	3·3	9·6	17·6	21·6	12·7	2·4	0·9	9·2	2·5	0·4	1·3	0·9	2·9	2·7	4·7	14
5·5	7·5	11·8	12·4	18·9	21·8	7·7	2·7	11·5	0·8	0·4	0·2	4·9	1·0	6·5	3·4	15
5·6	9·2	7·2	16·2	28·9	11·0	6·2	0·9	9·5	1·8	1·7	0·1	6·3	4·7	5·5	0·4	16
8·6	7·6	14·5	9·2	25·7	14·8	4·4	0·9	10·2	7·6	3·4	1·4	2·9	6·9	4·3	1·1	17
5·7	4·0	14·7	10·5	22·4	18·6	11·7	0·9	10·8	1·7	2·9	0·7	2·4	11·2	5·9	1·8	18
10·0	2·0	14·0	12·5	23·4	9·4	12·4	1·2	12·8	2·3	1·0	1·6	0·7	12·9	4·1	1·8	19
1·9	0·4	15·3	19·1	32·8	11·6	21·1	2·2	2·5	8·3	7·6	2·2	2·4	11·6	6·4	5·1	20
5·6	3·5	19·8	15·4	28·7	16·3	7·8	14·4	4·9	0·5	8·5	0·1	11·1	16·6	4·5	3·3	21
5·4	2·7	18·9	24·9	26·9	17·9	14·0	12·9	2·6	7·8	6·1	0·3	15·5	5·8	9·4	7·2	22
3·9	3·6	30·1	17·8	37·2	8·3	6·8	3·4	17·4	10·5	14·0	5·7	7·4	2·3	9·5	6·0	23
4·7	6·0	27·9	24·0	31·5	14·3	7·2	1·5	17·6	3·8	2·8	4·4	9·2	6·0	10·5	7·2	0
7·0	6·3	22·3	15·3	42·5	11·4	17·0	8·2	12·8	7·3	7·2	...	4·7	10·1	2·8	14·0	1
2·1	7·6	19·9	20·3	40·5	12·8	6·8	4·1	10·0	7·3	12·8	0·2	4·7	7·6	3·7	13·8	2
2·7	6·1	29·0	10·0	29·6	20·0	2·6	1·2	6·3	4·7	8·9	8·5	21·8	2·8	2·4	6·3	3
1·9	2·5	18·8	32·2	18·9	23·0	6·6	3·0	5·8	2·5	6·9	2·6	4·8	3·2	7·3	2·8	4
4·0	5·0	25·2	22·1	17·5	9·9	9·2	3·8	9·4	4·2	4·8	...	6·2	10·0	3·5	2·1	5
4·7	3·1	26·5	14·4	21·9	9·0	8·4	2·0	4·5	6·4	3·4	1·0	6·1	1·0	4·6	1·6	6
4·2	9·1	17·7	26·9	16·9	5·3	4·6	4·2	2·2	5·6	5·6	1·2	1·3	2·8	3·6	1·8	7
4·5	1·3	26·2	14·6	30·9	5·5	3·8	0·1	0·9	3·9	7·2	0·2	0·5	2·9	3·7	8·3	8
8·5	5·4	31·4	16·8	23·2	8·2	3·0	0·7	1·6	6·5	0·8	1·9	0·4	1·7	6·6	6·2	9
8·3	1·2	17·6	17·2	21·7	16·0	5·5	3·6	2·1	0·2	3·3	0·5	4·7	1·6	0·5	7·2	10
4·6	7·7	5·2	13·8	40·2	8·6	10·0	2·0	2·9	...	3·8	0·9	1·9	3·8	2·9	3·7	11
123·5	116·6	443·4	419·4	653·6	310·2	191·0	80·6	176·9	97·7	116·6	40·7	128·7	134·2	122·1	115·5	Sums

TABLE XXXV.—Sums of the Pressures of the Wind in Table XXXIII., resolved into the Four Cardinal Points of the Compass, together with the Value and Direction of the Resultant, for each Month, for each of the Astronomical Quarters, and for the Year 1845.

Period 1845.	Sums of Pressures resolved into				Resultant.			
						Means with reference to		
	N.	E.	S.	W.	Sums.	Whole No. of Obs.	No. of Obs., Wind blowing.	Directions.
	lb.	lb.	lb.	lb.	lb.	lb.	lb.	°
January	18·0	13·6	223·6	125·7	234·2	0·36	0·60	S. 29 W.
February	103·5	16·6	124·2	140·1	125·2	0·22	0·28	W. 9 S.
March	158·6	35·6	166·1	281·4	245·9	0·39	0·46	W. 2 S.
April	208·4	80·5	118·9	69·7	90·1	0·15	0·21	N. 7 E.
May	248·0	144·9	70·9	110·3	180·4	0·28	0·32	N. 11 E.
June	51·1	20·2	198·5	164·0	205·9	0·34	0·45	S. 44 W.
July	62·5	46·3	120·4	107·5	84·2	0·13	0·18	W. 43 S.
August	113·4	18·2	62·8	106·6	101·9	0·16	0·21	W. 29 N.
September	40·6	14·6	84·2	93·7	90·3	0·15	0·22	W. 29 S.
October	39·3	27·7	204·3	269·4	292·7	0·45	0·51	W. 34 S.
November	6·1	11·5	231·5	150·2	264·7	0·44	0·70	S. 32 W.
December	132·5	1·0	255·6	431·3	447·6	0·69	0·84	W. 16 S.
Astron. Qrs.								
Winter	156·6	26·1	710·7	707·2	878·0	0·46	0·68	W. 39 S.
Spring	470·5	132·7	409·2	491·2	363·7	0·20	0·26	W. 10 N.
Summer	361·6	211·4	389·8	381·8	172·7	0·09	0·11	W. 9 S.
Autumn	193·3	60·5	351·3	469·7	438·6	0·24	0·30	W. 21 S.
The Year.	1182·0	430·7	1861·0	2049·9	1755·8	0·23	0·31	W. 23 S.

TABLE XXXVI.—Sums of the Pressures of Wind in Table XXXIV., resolved into the four Cardinal Points of the Compass, with the Value and Direction of the Resultant, for each Hour in 1845.

Mak. M. T.	Sums of Pressures resolved into				Resultant.			
						Means with reference to		
	N.	E.	S.	W.	Sums.	Whole No. of Obs.	No. of Obs., Wind blowing.	Directions.
h.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	°
12	33·0	9·0	69·3	64·6	66·4	0·21	0·35	W. 33 S.
13	33·8	9·5	66·2	70·9	69·4	0·22	0·37	W. 28 S.
14	29·1	8·7	61·3	60·4	60·9	0·19	0·32	W. 32 S.
15	32·9	10·0	67·4	74·3	73·0	0·23	0·37	W. 28 S.
16	32·7	7·8	69·6	72·0	74·0	0·24	0·36	W. 30 S.
17	34·0	7·3	69·2	77·4	78·4	0·25	0·40	W. 27 S.
18	39·8	9·8	67·5	81·6	77·0	0·25	0·36	W. 21 S.
19	39·6	11·4	63·7	76·8	69·7	0·22	0·31	W. 20 S.
20	56·0	14·4	75·9	102·1	89·9	0·29	0·38	W. 13 S.
21	71·7	18·1	78·9	104·7	86·9	0·28	0·35	W. 5 S.
22	79·7	23·1	88·3	116·2	93·5	0·30	0·35	W. 5 S.
23	77·4	28·9	90·9	121·5	93·6	0·30	0·34	W. 8 S.
0	73·7	29·8	95·7	110·4	83·5	0·27	0·29	W. 15 S.
1	70·1	26·7	98·2	120·8	98·2	0·31	0·34	W. 17 S.
2	68·6	32·0	90·9	110·7	81·8	0·26	0·29	W. 16 S.
3	74·0	31·9	84·0	104·3	73·1	0·23	0·27	W. 8 S.
4	61·7	35·6	84·3	92·5	61·2	0·20	0·22	W. 22 S.
5	55·5	29·4	80·2	85·4	61·2	0·20	0·23	W. 24 S.
6	45·4	20·5	73·8	73·2	59·9	0·19	0·24	W. 28 S.
7	36·6	16·9	74·4	66·5	62·4	0·20	0·25	W. 29 S.
8	36·0	15·7	78·0	65·0	64·8	0·21	0·28	W. 40 S.
9	35·9	12·0	84·9	64·3	71·7	0·23	0·34	W. 43 S.
10	35·5	10·4	75·9	65·2	68·1	0·22	0·35	W. 36 S.
11	30·3	11·2	71·4	70·2	73·3	0·23	0·40	W. 35 S.

TABLE XXXVII.—Differences of the Directions of Motions of the Lower and Upper Currents of Air, as deduced from the Comparisons of the Direction of the Wind and the Motions of the Clouds.

Currents.	Quadrant N. to E.			Quadrant E. to S.			Quadrant S. to W.			Quadrant W. to N.		
	No. of Results.	Mean Diffs. of Motion.	Mean Result.	No. of Results.	Mean Diffs. of Motion.	Mean Result.	No. of Results.	Mean Diffs. of Motion.	Mean Result.	No. of Results.	Mean Diffs. of Motion.	Mean Result.
		°	°		°	°		°	°		°	°
Scud *minus* Wind	42	+14		16	+19		162	+25		47	+16	
	40	−10	+ 2	3	− 9	+14	14	− 8	+22	15	−10	+ 9
	7	0		1	0		3	0		9	0	
Cir.-str. *minus* Wind	14	+32		12	+24		110	+41		41	+29	
	22	−44	−14	4	−18	+13	10	−14	+36	8	−25	+19
	1	0		0	0		3	0		3	0	
Cir.-str. *minus* Scud	15	+27		14	+18		51	+23		23	+24	
	22	−30	− 6	7	−32	+ 1	20	−17	+10	23	−27	− 1
	4	0		3	0		10	0		6	0	
Cirrus *minus* Wind	8	+56		4	+43		40	+49		16	+32	
	5	−79	+ 4	...	...	+35	9	−21	+36	4	−37	+18
	0	0		1	0		1	0		1	0	
Cirrus *minus* Scud	5	+45		5	+69		31	+33		21	+25	
	6	−54	− 9	1	−11	+55	11	−32	+15	8	−32	+ 9
	0	0		0	0		1	0		1	0	

TABLE XXXVIII.—Daily and Weekly Means of the Estimated Extent of Clouded Sky, the whole Sky covered being 10, for 1845.

Civil Day.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	7·2	3·5	9·2	6·0	5·3	[7·9]	9·9	9·2	9·2	6·1	7·7	5·9
2	9·5	[3·3]	[7·9]	5·4	6·7	9·3	5·0	9·0	8·6	9·4	[4·6]	6·0
3	8·5	3·3	9·6	3·7	7·7	8·7	9·3	[8·3]	8·1	10·0	6·5	4·6
4	6·1	4·1	8·5	10·0	[7·6]	6·5	3·9	8·1	10·0	9·6	1·0	5·8
5	[7·6]	3·1	6·3	6·1	6·0	9·5	3·7	8·1	7·1	[8·5]	2·4	4·7
6	7·5	1·6	9·5	[6·1]	9·7	7·7	[6·9]	8·3	7·9	5·0	7·2	5·9
7	7·7	7·8	9·8	6·4	10·0	8·3	8·2	8·1	[8·6]	9·9	7·4	[5·6]
8	6·2	8·9	9·9	6·9	9·0	[8·2]	7·8	5·8	8·3	7·2	9·4	8·0
9	5·1	[7·9]	[7·5]	3·3	9·0	8·2	8·6	9·7	9·2	7·6	[7·3]	1·9
10	8·9	9·8	9·4	9·9	8·8	9·0	8·8	[8·6]	9·0	8·9	9·6	7·1
11	5·0	10·0	2·7	7·4	[7·5]	6·3	9·0	9·9	9·5	8·1	5·9	5·0
12	[7·4]	9·2	3·9	7·2	6·1	4·3	8·3	9·8	6·2	[8·8]	4·6	3·7
13	9·2	8·3	3·1	[7·4]	4·9	1·1	[8·0]	8·4	9·3	10·0	7·7	3·3
14	9·0	5·3	4·9	9·1	7·1	7·2	8·8	9·6	[7·5]	9·5	6·8	[5·1]
15	7·0	9·0	6·4	6·4	9·2	[7·1]	6·5	8·4	4·7	8·6	7·4	5·5
16	5·7	[7·1]	[6·0]	4·2	8·3	10·0	6·8	9·7	5·7	4·9	[7·4]	6·7
17	9·8	9·6	9·8	8·4	7·6	10·0	9·4	[9·4]	9·6	10·0	6·3	6·6
18	8·2	6·5	6·8	10·0	[8·8]	10·0	8·8	9·0	8·8	6·5	7·5	7·6
19	[7·2]	3·7	4·7	5·3	8·8	7·6	9·9	9·9	7·6	[6·3]	8·5	5·9
20	3·6	8·2	1·1	[4·6]	9·1	7·8	[9·7]	10·0	7·7	4·0	6·0	8·3
21	8·0	7·4	7·7	0·3	9·8	7·0	10·0	8·2	[6·6]	7·2	3·9	[6·7]
22	7·8	8·5	9·9	0·1	9·9	[7·3]	10·0	6·5	7·4	5·1	3·0	5·5
23	9·6	[7·2]	[6·1]	3·5	10·0	5·7	10·0	7·3	1·8	8·5	[6·1]	6·4
24	6·3	5·4	3·5	6·9	10·0	8·7	10·0	[7·5]	6·4	9·1	5·7	6·4
25	8·5	3·9	7·5	9·3	[9·9]	7·0	9·0	9·3	7·5	2·5	9·2	7·2
26	[8·0]	9·7	6·9	8·3	10·0	7·8	9·8	6·5	3·7	[8·1]	8·9	7·6
27	9·1	6·9	6·4	[8·4]	10·0	8·6	[7·8]	7·3	7·6	9·9	7·7	8·1
28	8·9	6·9	5·0	8·9	9·3	8·7	5·2	1·7	[5·9]	8·5	9·8	[7·2]
29	5·5		1·8	7·7	9·6	[7·8]	7·0	3·6	5·9	10·0	4·0	7·5
30	4·3		[4·5]	9·3	6·8	7·0	5·7	5·9	4·7	4·6	[6·3]	6·3
31	1·3		2·3		6·6		7·4	[6·2]		5·6		6·6

TABLE XXXIX.—Mean Extent of Clouded Sky, with reference to the Moon's Age and Declination, as deduced from the Six Hourly Observations nearest Midnight, for the years 1844 and 1845.

Moon's Age.	Extent of Clouded Sky.		Moon's Age.	Extent of Clouded Sky.		After Moon farthest North.	Extent of Clouded Sky.		After Moon farthest North.	Extent of Clouded Sky.	
	1844.	1845.		1844.	1845.		1844.	1845.		1844.	1845.
Day.			Day.			Day.			Day.		
15	6·28	6·62	0	5·99	6·55	0	7·49	6·22	14	7·00	7·03
16	8·30	7·32	1	6·63	5·29	1	7·24	6·61	15	6·65	7·09
17	6·37	6·87	2	6·81	6·42	2	7·64	5·47	16	5·63	6·76
18	7·26	8·07	3	7·47	6·14	3	6·57	6·75	17	5·76	6·92
19	7·34	5·83	4	6·03	7·65	4	6·43	5·96	18	7·20	5·51
20	7·51	8·28	5	6·74	4·38	5	6·61	6·36	19	6·88	7·32
21	5·94	7·06	6	7·59	6·82	6	6·53	5·64	20	6·80	7·16
22	8·02	6·17	7	6·45	7·11	7	6·86	7·05	21	5·34	7·13
23	6·15	5·04	8	7·60	5·61	8	6·33	6·96	22	5·11	8·19
24	4·74	6·39	9	6·57	7·22	9	6·09	6·62	23	6·10	7·68
25	5·74	5·52	10	5·74	8·36	10	5·79	6·54	24	6·61	6·03
26	7·66	5·48	11	6·16	7·20	11	5·90	6·66	25	7·24	6·42
27	6·42	6·91	12	5·25	7·52	12	7·52	6·48	26	6·92	6·67
28	5·04	6·74	13	6·93	6·63	13	7·47	7·22	27	6·97	6·14
29	6·14	7·01	14	5·51	7·71						

TABLE XL.—Hourly Means of the Estimated Extent of Clouded Sky, for each Month in 1845.

Mak. M. T.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
h.												
12	6·1	6·1	6·2	6·0	7·6	6·7	7·7	7·0	6·3	7·4	6·6	6·0
13	6·6	5·2	5·4	6·0	7·9	6·8	7·6	6·5	6·0	8·2	6·2	6·0
14	7·1	5·7	6·3	6·5	7·7	7·1	7·6	7·5	6·6	7·7	6·2	5·3
15	8·0	6·8	6·5	6·7	7·9	7·7	7·4	8·6	6·3	7·6	6·5	5·1
16	8·0	6·5	6·2	6·8	8·0	7·1	7·6	8·7	6·8	8·2	6·4	5·4
17	7·9	6·3	6·1	7·4	7·8	7·1	8·0	8·9	7·6	7·9	6·7	6·2
18	7·3	6·3	6·5	7·6	8·8	7·7	8·1	8·3	7·6	7·6	6·1	5·1
19	7·7	6·8	6·2	8·0	9·0	7·8	8·4	7·8	8·0	7·8	6·4	6·3
20	7·3	6·9	6·9	7·6	9·0	8·0	8·1	7·5	8·3	8·3	6·4	6·5
21	7·6	6·9	6·6	7·8	9·3	8·9	8·2	7·8	8·5	8·3	7·0	7·2
22	7·6	6·0	7·0	8·0	9·4	8·6	8·1	8·1	8·9	7·9	7·0	7·1
23	7·8	6·7	6·8	7·1	9·2	8·1	8·4	8·5	8·8	7·4	6·7	7·5
0	7·7	7·2	6·9	6·7	9·3	8·2	8·2	8·7	8·2	7·7	7·1	7·5
1	7·7	7·7	6·9	6·5	9·4	8·0	8·5	8·7	8·3	7·8	7·8	6·7
2	8·0	7·9	6·9	6·3	8·7	8·3	8·3	8·8	7·4	7·6	7·2	6·8
3	7·8	7·7	7·1	6·4	8·6	8·3	8·2	8·7	7·5	7·8	7·2	7·4
4	7·5	7·7	6·8	5·7	8·2	8·0	8·2	8·7	7·5	7·7	6·8	7·4
5	6·9	7·6	7·1	5·5	7·8	7·7	7·9	8·5	7·0	8·3	5·7	5·9
6	6·2	6·4	6·8	5·6	7·8	7·8	8·5	7·9	7·3	7·7	6·1	5·7
7	5·4	6·2	6·3	5·3	7·5	7·6	8·2	8·0	7·3	7·0	6·7	4·5
8	6·4	6·6	5·7	5·2	7·7	7·7	8·1	8·0	7·0	6·9	7·1	5·1
9	6·4	6·7	5·5	5·6	8·0	7·1	8·0	7·1	6·5	6·3	6·1	5·6
10	6·3	6·3	5·5	6·0	7·8	7·2	7·5	6·6	6·6	7·1	5·9	4·7
11	6·7	6·2	5·8	6·7	7·8	6·7	7·9	6·9	6·6	7·3	5·6	4·7

TABLE XLI.—Hourly Means of the Estimated Extent of Clouded Sky for each of the Astronomical Quarters, and for the Year 1845.

Mak. M. T.	Nov. Dec. Jan.	Feb. March. April.	May. June. July.	Aug. Sept. Oct.	Year.	Mak. M. T.	Nov. Dec. Jan.	Feb. March. April.	May. June. July.	Aug. Sept. Oct.	Year.
h.						h.					
12	6·2	6·1	7·3	6·9	6·64	0	7·4	6·9	8·6	8·2	7·78
13	6·3	5·5	7·4	6·9	6·53	1	7·4	7·0	8·6	8·3	7·83
14	6·2	6·2	7·5	7·3	6·77	2	7·3	7·0	8·4	7·9	7·68
15	6·5	6·7	7·7	7·5	7·09	3	7·5	7·1	8·4	8·0	7·72
16	6·6	6·5	7·6	7·9	7·14	4	7·2	6·7	8·1	8·0	7·52
17	6·9	6·6	7·6	8·1	7·32	5	6·2	6·7	7·8	7·9	7·16
18	6·2	6·8	8·2	7·8	7·25	6	6·0	6·3	8·0	7·6	6·98
19	6·8	7·0	8·4	7·9	7·52	7	5·5	5·9	7·8	7·4	6·67
20	6·7	7·1	8·4	8·0	7·57	8	6·2	5·8	7·8	7·3	6·79
21	7·3	7·1	8·8	8·2	7·84	9	6·0	5·9	7·7	6·6	6·57
22	7·2	7·0	8·7	8·3	7·81	10	5·6	5·9	7·5	6·8	6·46
23	7·3	6·9	8·6	8·2	7·75	11	5·7	6·2	7·5	6·9	6·57

TABLE XLII.—Quantity of Rain for each Month of 1845, by the Observatory, Garden, and Greenhouse Gauges.

Month.	Observatory Gauge.	Garden Gauge.	Greenhouse Gauge.
	in.	in.	in.
January	1·325	1·13	0·94
February	0·712	0·81	0·57
March	1·283	1·05	0·90
April	1·261	1·12	0·85
May	2·217	1·70	1·82
June	2·935	2·59	2·38
July	1·460	1·30	0·99
August	3·158	2·89	2·41
September	1·838	1·65	1·47
October	4·247	3·97	3·54
November	1·699	1·53	1·14
December	1·853	1·40	0·85
Sums	23·988	21·14	17·86

TABLE XLIII.—Daily and Weekly Means of the Temperature of the Air, as deduced from the Readings of the Dry Bulb Thermometer, for 1846.

Civil Day.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	°	°	°	°	°	°	°	°	°	°	°	°
1	36·7	[44·3]	[48·3]	44·2	50·2	61·7	57·9	63·5	52·4	52·5	[47·1]	35·4
2	31·4	41·6	47·5	46·9	53·3	65·8	62·0	[62·8]	57·5	47·5	50·1	20·4
3	39·1	46·1	47·9	40·1	[48·2]	66·9	60·9	66·3	59·4	47·2	51·2	29·0
4	[38·9]	37·6	46·9	35·0	43·0	68·6	61·8	64·1	61·6	[51·1]	51·5	27·7
5	33·9	39·4	41·3	[40·2]	49·3	68·2	[57·9]	62·7	60·4	56·6	48·5	37·7
6	45·2	39·9	38·5	39·0	49·0	67·1	55·1	64·0	[59·9]	53·7	49·1	[34·7]
7	47·1	41·3	40·3	39·7	48·3	[64·6]	54·9	61·0	63·1	49·4	46·7	36·0
8	48·1	[37·0]	[41·2]	40·5	51·1	59·7	52·9	65·4	59·7	49·1	[42·2]	38·1
9	44·0	33·0	38·9	39·6	51·7	61·8	54·1	[61·0]	55·4	52·5	38·5	39·5
10	45·6	29·8	45·1	42·4	[50·9]	62·1	58·6	58·9	51·6	55·8	34·2	35·5
11	[41·0]	38·7	43·3	42·9	51·2	59·2	56·5	57·9	61·5	[48·9]	36·5	28·8
12	36·1	38·7	46·1	[45·0]	53·1	60·7	[59·5]	58·7	59·8	49·8	43·3	29·7
13	33·2	39·8	47·0	51·2	49·9	64·1	64·0	59·9	[57·4]	43·5	43·6	[30·0]
14	39·0	42·4	45·9	49·7	49·2	[63·4]	62·1	55·2	57·6	42·8	40·6	25·7
15	40·2	[41·8]	[40·8]	44·5	49·0	63·4	62·0	57·1	57·7	46·7	[43·6]	29·4
16	32·2	44·8	42·7	48·1	47·5	64·9	60·6	[57·9]	56·5	46·1	40·1	31·0
17	38·6	42·6	33·6	46·6	[49·7]	68·2	57·4	59·8	57·2	51·1	46·8	26·8
18	[39·3]	42·4	29·3	44·0	48·9	67·8	54·5	57·9	50·2	[48·4]	47·4	28·5
19	41·0	41·7	21·3	[43·6]	51·4	68·3	[57·8]	57·6	52·8	51·0	46·4	41·8
20	43·9	40·8	28·2	42·3	52·0	54·7	57·5	57·3	[52·9]	48·5	48·6	[33·7]
21	39·8	47·6	32·8	39·3	51·2	[61·1]	58·4	60·5	53·2	46·9	44·0	38·1
22	42·7	[46·6]	[33·0]	41·3	52·9	65·9	58·3	60·5	48·5	47·1	[44·5]	33·7
23	40·3	50·1	37·1	43·0	52·9	57·5	59·7	[56·9]	55·7	42·8	39·2	33·4
24	39·3	51·3	40·2	43·7	[52·7]	52·5	57·3	54·8	55·1	43·6	46·3	26·6
25	[43·1]	47·9	38·6	45·8	56·0	52·8	57·8	53·5	57·1	[42·7]	42·3	29·0
26	47·2	48·1	38·7	[42·6]	52·6	53·0	[60·6]	54·9	53·0	38·1	43·8	28·8
27	45·5	50·7	41·4	40·4	50·8	57·8	64·5	55·5	[52·1]	38·3	39·5	[32·2]
28	43·5	48·6	38·6	39·9	51·9	[56·2]	65·5	57·8	45·7	46·3	31·6	36·6
29	45·1		[40·7]	43·0	56·6	59·3	58·6	57·9	49·4	41·3	[33·3]	37·5
30	46·3		41·2	44·3	57·6	56·7	60·9	[56·3]	52·2	39·3	29·4	34·6
31	49·3		40·1		[60·1]		59·3	56·8		49·2		40·1

TABLE XLIV.—Mean Temperature of the Air at the Observation Hours for each Month, for each Astronomical Quarter, and for the Year 1846.

Makerstoun Mean Time.	17^h.	19^h.	21^h.	23^h.	1^h.	3^h.	5^h.	7^h.	9^h.
	°	°	°	°	°	°	°	°	°
January	39·8	39·7	40·3	42·9	44·0	42·9	42·0	41·3	41·2
February	40·7	40·0	42·4	45·4	46·6	45·9	43·6	42·6	41·9
March	35·9	36·8	40·9	44·4	45·2	44·7	42·6	39·1	37·6
April	38·7	41·6	44·8	46·6	47·5	47·8	46·1	43·1	41·1
May	45·9	50·0	53·7	55·9	56·5	57·1	55·0	51·7	48·2
June	53·7	59·0	65·8	69·3	70·9	68·9	67·9	63·7	58·3
July	55·5	58·5	60·9	62·6	63·2	63·3	61·7	58·8	56·3
August	53·5	56·8	61·1	63·9	65·1	66·2	64·4	60·0	56·4
September	49·3	52·2	57·6	61·6	62·8	62·5	60·1	55·8	53·2
October	44·2	44·5	48·3	51·3	52·6	52·1	48·7	46·7	45·3
November	41·8	41·0	42·5	45·2	46·2	45·4	43·4	43·2	42·8
December	31·1	31·3	32·6	34·7	35·6	34·8	32·9	32·2	31·6
Nov., Dec., Jan.,	37·57	37·33	38·47	40·93	41·93	41·03	39·43	38·90	38·53
Feb., Mar., Apr.,	38·43	39·47	42·70	45·47	46·43	46·13	44·10	41·60	40·20
May, June, July,	51·70	55·83	60·13	62·60	63·53	63·10	61·53	58·07	54·27
Aug., Sept., Oct.,	49·00	51·17	55·67	58·93	60·17	60·27	57·73	54·17	51·63
The Year	44·17	45·95	49·24	51·98	53·02	52·63	50·70	48·18	46·16

TABLE XLV.—Diurnal Ranges of Temperature for each Day in 1846, as deduced from the Observations of the Maximum and Minimum Register Thermometers.

Civil Day.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	°	°	°	°	°	°	°	°	°	°	°	°
1	4·9	5·3	9·8	10·7	15·6	36·5	13·8	18·3	27·3	20·8	4·2	15·5
2	9·2	11·2	7·8	18·5	9·4	34·3	15·6	13·0	18·2	27·5	9·1	8·8
3	15·2	10·9	11·1	3·7	14·7	34·5	11·3	17·8	20·6	20·0	11·1	23·2
4	4·1	9·8	2·9	15·1	2·8	32·7	15·9	22·0	18·4	18·8	12·8	6·7
5	8·5	7·1	14·7	14·1	19·0	34·3	35·8	17·8	21·0	12·2	13·3	22·5
6	19·2	14·6	18·3	12·6	11·9	29·9	8·4	30·0	22·1	7·8	7·2	8·0
7	2·9	7·0	13·8	8·6	20·6	17·0	16·5	16·9	20·2	13·0	13·1	5·1
8	5·0	6·0	18·4	8·3	18·7	15·8	12·5	17·2	15·4	14·4	4·8	12·6
9	5·5	5·5	21·8	24·6	28·4	21·0	8·0	17·6	19·3	12·3	4·6	9·5
10	6·7	16·6	13·0	20·2	10·1	17·8	20·8	16·3	27·0	8·1	17·1	14·6
11	12·1	14·5	7·4	19·5	18·9	17·4	18·0	16·6	28·6	16·8	18·1	5·4
12	2·9	17·1	21·1	18·7	26·7	23·1	16·3	15·5	17·0	3·8	6·9	4·5
13	11·9	16·9	10·3	19·1	16·7	23·5	15·0	15·3	27·0	9·3	3·4	5·6
14	9·9	9·5	12·3	18·4	11·3	26·6	27·4	25·4	24·8	11·4	2·2	13·7
15	9·8	10·7	14·1	3·5	27·7	25·7	17·7	14·9	23·9	11·8	3·3	8·0
16	6·7	7·4	8·4	13·4	25·8	29·5	14·1	18·8	25·2	16·7	14·5	6·7
17	13·7	8·3	8·2	6·1	13·4	34·5	11·9	17·3	21·4	10·8	15·1	19·3
18	2·0	13·8	6·4	8·7	19·9	29·2	21·5	15·6	17·6	6·6	10·7	31·7
19	9·6	5·6	27·1	12·8	15·2	30·6	18·4	21·5	24·0	7·9	8·4	8·9
20	3·9	8·1	13·9	18·3	16·7	10·5	17·7	16·4	10·9	11·9	9·5	5·0
21	10·9	11·7	22·8	20·4	24·9	34·5	18·8	14·7	8·3	18·4	5·1	4·2
22	7·0	13·7	16·1	17·5	18·6	31·3	14·9	20·9	25·8	8·8	6·3	5·6
23	14·9	4·3	16·3	12·2	12·5	7·5	17·2	4·0	13·5	7·6	9·8	6·5
24	10·1	8·7	19·1	5·8	17·8	17·9	13·5	18·4	17·9	12·6	14·6	9·5
25	15·2	6·6	19·8	12·1	12·7	26·2	17·3	32·9	11·0	11·0	8·2	11·6
26	4·6	15·8	16·6	10·1	15·4	27·5	20·2	26·9	22·3	22·7	4·5	11·9
27	7·5	13·5	15·0	17·2	11·3	20·6	19·9	27·0	13·3	23·2	4·5	11·8
28	9·6	16·8	13·6	16·7	24·5	25·6	16·2	21·2	20·7	14·6	14·1	20·4
29	6·6		12·1	24·9	31·4	18·7	9·5	15·8	4·9	13·0	8·3	7·3
30	11·4		20·3	16·9	20·4	11·9	16·7	24·7	12·9	19·8	4·2	7·9
31	5·9		24·2		29·0		12·9	12·3		16·9		8·4

TABLE XLVI.—Extremes of Temperature for each Month in 1846, from the Register Thermometers; Extremes of Daily Mean Temperature for each Month, deduced from the Daily Observations; and Extreme Diurnal Ranges for each Month, from the Register Thermometers.

Month.	Extreme Temperatures.						Extremes of Daily Mean Temperature.						Extreme Diurnal Ranges.			
	Highest.		Lowest.		Range.	Mean.	Highest.		Lowest.		Range.	Mean.	Greatest.		Least.	
	d.	°	d.	°	°	°	d.	°	d.	°	°	°	d.	°	d.	°
Jan.	30	51·4	2	25·4	26·0	38·4	31	49·3	2	31·4	17·9	40·3	6	19·2	18	2·0
Feb.	27	58·0	10	21·5	36·5	39·7	24	51·3	10	29·8	21·5	40·5	12	17·1	23	4·3
March	14	53·7	19	5·4	48·3	29·5	3	47·9	19	21·3	26·6	34·6	19	27·1	4	2·9
April	12	61·2	9	27·1	34·1	44·1	13	51·2	4	35·0	16·2	43·1	29	24·9	15	3·5
May	29	71·0	16	33·5	37·5	52·2	30	57·6	4	43·0	14·6	50·3	29	31·4	4	2·8
June	19	85·4	26	37·0	48·4	61·2	4	68·6	24	52·5	16·1	60·5	1	36·5	23	7·5
July	5	80·5	5	44·7	35·8	62·6	28	65·5	8	52·9	12·6	59·2	5	35·8	9	8·0
Aug.	6	80·3	25	37·0	43·3	58·6	3	66·3	25	53·5	12·8	59·9	25	32·9	23	4·0
Sept.	5	74·3	22	33·2	41·1	53·7	7	63·1	28	45·7	17·4	54·4	11	28·6	29	4·9
Oct.	1	65·5	27	25·5	40·0	45·5	5	56·6	26	38·1	18·5	47·3	2	27·5	12	3·8
Nov.	4	55·8	28	23·0	32·8	39·4	4	51·5	30	29·4	22·1	40·4	11	18·1	14	2·2
Dec.	19	45·8	18	10·6	35·2	28·2	19	41·8	2	20·4	21·4	31·1	18	31·7	21	4·2

TABLE XLVII.—Daily and Weekly Means of the Temperature of Evaporation, as deduced from the Readings of the Wet Bulb Thermometer, in 1846.

Civil Day.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	°	°	°	°	°	°	°	°	°	°	°	°
1	33·7	[42·2]	[45·9]	42·8	48·1	54·5	55·0	61·5	48·9	50·4	[45·5]	34·2
2	29·4	39·0	44·2	44·7	47·6	59·8	56·9	[60·7]	54·6	45·8	47·5	20·2
3	37·7	44·1	46·4	38·1	[45·4]	59·6	58·3	62·9	56·6	44·6	49·4	27·9
4	[37·0]	36·1	44·0	33·6	41·3	60·6	58·2	60·5	59·1	[48·8]	49·6	26·6
5	32·8	36·9	39·2	[38·4]	47·4	59·4	[54·4]	60·6	58·0	54·1	47·4	36·0
6	43·7	38·3	37·2	36·6	46·7	57·7	53·3	60·2	[57·2]	50·8	47·1	[33·4]
7	44·8	38·4	37·8	37·8	44·2	[58·4]	49·4	60·6	60·1	46·9	45·2	34·0
8	46·3	[35·1]	[39·2]	39·5	45·8	57·2	50·5	63·8	57·1	47·2	[41·2]	37·4
9	42·2	31·7	37·3	37·4	47·4	57·7	53·1	[58·3]	52·3	51·2	37·8	38·3
10	43·4	29·0	42·2	39·8	[46·5]	58·1	54·7	56·0	48·4	53·5	33·7	33·1
11	[39·6]	36·6	41·5	41·6	46·4	54·2	51·9	54·8	58·4	[46·9]	36·1	26·6
12	35·2	37·0	43·9	[43·2]	47·9	55·8	[56·1]	54·7	57·7	48·1	42·3	28·3
13	32·7	37·7	43·3	48·7	47·2	58·2	60·6	57·5	[55·1]	40·0	42·3	[28·3]
14	38·0	39·2	42·5	47·3	45·8	[57·3]	58·1	51·1	56·0	41·6	39·1	24·2
15	39·3	[39·2]	[38·0]	44·2	44·9	57·4	58·4	55·6	55·6	45·9	[42·1]	28·2
16	32·1	42·2	39·9	46·5	43·5	57·9	57·9	[55·6]	54·8	45·6	38·2	29·4
17	38·1	39·9	29·9	45·9	[46·1]	60·2	54·5	57·3	54·7	50·6	45·4	25·8
18	[38·4]	39·5	28·5	42·3	47·2	62·6	51·8	56·7	47·6	[47·3]	45·5	27·4
19	39·9	39·0	20·2	[42·0]	46·9	62·1	[54·7]	55·4	51·1	49·8	44·3	41·2
20	42·5	38·4	26·9	39·8	48·3	51·1	53·8	56·0	[50·6]	46·8	46·2	[32·8]
21	38·6	46·0	31·5	38·0	48·9	[56·5]	56·5	57·8	50·0	45·4	42·0	37·7
22	42·5	[44·5]	[31·7]	39·5	50·1	58·0	53·8	58·0	45·6	45·7	[42·9]	32·6
23	39·9	48·3	35·7	41·0	50·7	56·4	57·3	[54·4]	54·9	38·8	38·0	32·3
24	38·8	49·4	38·8	42·8	[49·1]	48·9	52·6	52·0	54·3	42·3	45·3	25·6
25	[42·1]	45·7	37·1	44·1	51·7	49·6	53·5	50·7	54·5	[41·1]	41·9	27·5
26	46·0	45·6	37·1	[40·1]	46·7	50·5	[57·4]	52·1	51·9	37·4	42·0	28·1
27	44·0	48·1	38·4	36·6	46·4	53·8	62·0	52·4	[50·9]	37·8	38·1	[31·4]
28	41·5	46·9	36·7	36·4	45·7	[52·8]	62·0	55·2	45·4	44·7	30·4	35·8
29	42·7		[38·3]	39·9	50·8	54·4	57·3	56·0	48·9	40·6	[32·1]	37·2
30	43·4		37·7	41·6	51·9	53·8	60·1	[53·5]	50·3	38·8	28·0	34·4
31	48·0		37·3		[53·7]		58·4	54·0		47·3		39·9

TABLE XLVIII.—Mean Temperature of Evaporation at the Observation Hours for each Month, for each Astronomical Quarter, and for the Year 1846.

Makerstoun Mean Time.	17h.	19h.	21h.	23h.	1h.	3h.	5h.	7h.	9h.
	°	°	°	°	°	°	°	°	°
January	38·6	38·7	39·1	41·3	42·3	41·4	40·5	39·8	39·8
February	39·1	38·5	40·5	42·5	43·2	42·6	41·1	40·4	40·0
March	34·9	35·7	38·7	40·9	40·9	40·4	39·3	37·1	36·2
April	38·0	40·3	42·1	43·2	44·0	44·1	43·2	41·3	40·1
May	44·3	46·7	48·5	49·7	50·4	50·5	49·5	47·9	45·7
June	52·0	55·6	58·7	59·4	60·2	59·6	59·4	58·2	55·5
July	53·8	55·6	56·9	57·9	58·2	58·3	57·5	56·0	54·5
August	53·0	55·4	58·2	59·4	60·1	60·5	59·5	57·4	55·2
September	48·7	51·2	55·2	57·2	58·1	57·9	56·3	53·9	52·1
October	43·2	43·5	46·7	49·0	49·5	48·9	46·7	45·3	44·2
November	40·8	39·9	41·1	43·2	43·7	43·1	42·0	41·8	41·6
December	30·1	30·4	31·6	33·2	34·0	33·3	31·8	31·2	30·7
Nov., Dec., Jan.,	36·50	36·33	37·27	39·23	40·00	39·27	38·10	37·60	37·37
Feb., Mar., Apr.,	37·33	38·17	40·43	42·20	42·70	42·37	41·20	39·60	38·77
May, June, July,	50·03	52·63	54·70	55·67	56·27	56·13	55·47	54·03	51·90
Aug., Sept., Oct.,	48·30	50·03	53·37	55·20	55·90	55·77	54·17	52·20	50·50
The Year	43·04	44·29	46·44	48·07	48·72	48·38	47·23	45·86	44·63

TABLE XLIX.—Daily and Weekly Means of the Pressure of Aqueous Vapour, in inches of Mercury, for the Year 1846, as deduced from Tables XLIII. and XLVII.

Civil Day.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
1	0·178	[0·264]	[0·297]	0·275	0·326	0·354	0·409	0·528	0·321	0·355	[0·306]	0·202
2	·162	·226	·269	·286	·280	·453	·415	[·512]	·404	·304	·314	·128
3	·228	·283	·313	·225	[·290]	·434	·465	·538	·436	·281	·346	·161
4	[·222]	·214	·271	·195	·258	·444	·453	·492	·480	[·333]	·347	·153
5	·193	·209	·233	[·231]	·321	·414	[·398]	·510	·462	·401	·330	·211
6	·284	·231	·225	·208	·307	·380	·398	·484	[·447]	·350	·316	[·197]
7	·286	·217	·217	·224	·260	[·428]	·304	·530	·491	·308	·300	·192
8	·309	[·203]	[·235]	·249	·264	·448	·353	·575	·446	·318	[·269]	·233
9	·265	·182	·222	·216	·294	·439	·404	[·469]	·369	·374	·237	·235
10	·273	·171	·252	·234	[·282]	·446	·394	·425	·318	·395	·206	·180
11	[·249]	·211	·259	·265	·276	·375	·346	·405	·461	[·318]	·227	·142
12	·213	·219	·278	[·277]	·290	·400	[·424]	·393	·461	·331	·275	·161
13	·198	·220	·256	·329	·309	·427	·496	·454	[·421]	·225	·271	[·158]
14	·235	·221	·250	·313	·285	[·410]	·446	·342	·440	·266	·239	·136
15	·248	[·229]	[·222]	·303	·267	·413	·456	·435	·428	·315	[·269]	·162
16	·199	·256	·232	·313	·254	·410	·458	[·427]	·421	·315	·227	·166
17	·241	·233	·148	·316	[·287]	·437	·402	·450	·410	·375	·303	·150
18	[·241]	·227	·168	·267	·320	·512	·367	·455	·315	[·330]	·299	·158
19	·251	·225	·119	[·267]	·286	·491	[·405]	·424	·369	·357	·283	·269
20	·272	·223	·153	·235	·311	·348	·384	·443	[·358]	·316	·301	[·200]
21	·238	·308	·183	·231	·334	[·420]	·444	·456	·337	·302	·261	·240
22	·286	[·288]	[·187]	·240	·344	·400	·375	·461	·288	·306	[·277]	·192
23	·259	·332	·211	·252	·357	·452	·451	[·408]	·432	·208	·232	·189
24	·247	·345	·237	·281	[·322]	·320	·355	·369	·423	·271	·307	·148
25	[·275]	·297	·222	·286	·348	·332	·373	·351	·406	[·258]	·278	·155
26	·312	·293	·221	[·239]	·267	·352	[·449]	·370	·386	·233	·263	·166
27	·287	·321	·216	·192	·281	·380	·531	·370	[·374]	·239	·231	[·190]
28	·257	·317	·214	·194	·252	[·374]	·520	·416	·316	·293	·176	·219
29	·263		[·223]	·228	·318	·379	·463	·437	·354	·262	[·193]	·237
30	·265		·205	·250	·334	·392	·516	[·391]	·356	·247	·159	·215
31	·334		·209		·357		·486	·397		·319		·261

TABLE L.—Pressure of Aqueous Vapour, with reference to the Moon's Age and Declination, for 1846.

Moon's Age.	Mean Pressure of Vapour.	Moon's Age.	Mean Pressure of Vapour.	After Moon farthest North.	Mean Pressure of Vapour.	After Moon farthest North.	Mean Pressure of Vapour.
Day.	in.	Day.	in.	Day.	in.	Day.	in.
15	0·333	0	0·316	0	0·311	14	0·314
16	·327	1	·301	1	·313	15	·307
17	·320	2	·292	2	·298	16	·306
18	·319	3	·298	3	·286	17	·313
19	·315	4	·317	4	·283	18	·337
20	·305	5	·312	5	·301	19	·326
21	·313	6	·317	6	·311	20	·313
22	·297	7	·317	7	·325	21	·317
23	·298	8	·313	8	·306	22	·323
24	·301	9	·315	9	·308	23	·329
25	·317	10	·315	10	·307	24	·321
26	·305	11	·313	11	·321	25	·296
27	·323	12	·299	12	·326	26	·302
28	·318	13	·304	13	·318	27	·309
29	·329	14	·315				

TABLE LI.—Mean Pressure of Aqueous Vapour at the Observation Hours for each Month, for each Astronomical Quarter, and for the Year 1846.

Makerstoun Mean Time.	17h.	19h.	21h.	23h.	1h.	3h.	5h.	7h.	9h.
	in.	in.	in.	in.	in.	in.	in.	in.	in.
January	0·238	0·242	0·242	0·259	0·267	0·261	0·252	0·246	0·247
February	·238	·234	·248	·255	·258	·252	·247	·243	·243
March	·210	·215	·228	·234	·225	·220	·221	·217	·215
April	·238	·252	·254	·258	·265	·264	·263	·257	·254
May	·289	·296	·297	·300	·311	·306	·305	·305	·294
June	·381	·414	·421	·402	·407	·412	·418	·431	·419
July	·406	·419	·427	·435	·437	·438	·434	·427	·415
August	·408	·433	·460	·463	·469	·468	·460	·451	·431
September	·350	·378	·418	·427	·438	·436	·419	·405	·389
October	·285	·288	·315	·335	·332	·324	·311	·302	·294
November	·261	·251	·259	·274	·273	·269	·267	·266	·266
December	·176	·179	·186	·191	·196	·192	·186	·183	·181
Nov., Dec., Jan.,	·225	·224	·229	·241	·245	·241	·235	·232	·231
Feb., Mar., Apr.,	·229	·234	·243	·249	·249	·245	·244	·239	·237
May, June, July,	·359	·376	·382	·379	·385	·385	·386	·388	·376
Aug., Sept., Oct.,	·348	·366	·398	·408	·413	·409	·397	·386	·371
The Year	·290	·300	·313	·319	·323	·320	·315	·311	·304

TABLE LII.—Mean Relative Humidity of the Air for each Week-Day and Week in 1846, Saturation being = 1.

Civil Day.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	0·757	[0·851]	[0·843]	0·899	0·867	0·639	0·838	0·898	0·793	0·872	[0·898]	0·898
2	·831	·807	·784	·851	·670	·715	·742	[·892]	·840	·886	·837	·877
3	·891	·865	·899	·849	[·827]	·661	·863	·835	·850	·829	·889	·899
4	[·854]	·881	·807	·878	·881	·639	·816	·821	·870	[·852]	·883	·895
5	·906	·807	·841	[·862]	·879	·603	[·810]	·892	·872	·859	·930	·865
6	·896	·878	·896	·816	·850	·575	·896	·811	[·854]	·827	·873	[·890]
7	·846	·783	·813	·855	·739	[·711]	·689	·980	·847	·842	·901	·835
8	·883	[·852]	[·849]	·926	·680	·865	·857	·919	·861	·878	[·929]	·943
9	·872	·879	·874	·828	·742	·791	·942	[·861]	·822	·919	·944	·904
10	·850	·929	·797	·815	[·733]	·795	·790	·843	·807	·868	·954	·796
11	[·900]	·834	·872	·908	·710	·737	·744	·830	·838	[·871]	·970	·798
12	·922	·866	·850	[·871]	·699	·746	[·820]	·784	·887	·892	·926	·875
13	·952	·837	·760	·846	·831	·713	·831	·871	[·872]	·753	·903	[·846]
14	·922	·770	·772	·846	·785	[·701]	·795	·769	·911	·914	·885	·855
15	·932	[·815]	[·802]	·981	·740	·705	·816	·916	·882	·946	[·891]	·890
16	·990	·821	·800	·894	·741	·667	·858	[·872]	·905	·963	·857	·865
17	·956	·806	·701	·952	[·777]	·637	·837	·865	·861	·966	·904	·909
18	[·933]	·791	·928	·878	·889	·756	·844	·932	·838	[·931]	·874	·898
19	·916	·801	·875	[·884]	·730	·714	[·832]	·878	·898	·925	·858	·954
20	·898	·820	·879	·822	·777	·795	·798	·927	[·862]	·890	·846	[·923]
21	·905	·895	·893	·895	·859	[·770]	·895	·857	·810	·899	·859	·972
22	·986	[·856]	[·884]	·866	·835	·629	·759	·867	·811	·905	[·895]	·906
23	·970	·885	·883	·860	·867	·940	·871	[·860]	·954	·715	·903	·900
24	·957	·885	·891	·934	[·785]	·786	·743	·839	·953	·903	·933	·902
25	[·919]	·853	·881	·885	·760	·808	·767	·834	·855	[·886]	·972	·866
26	·920	·837	·874	[·818]	·654	·850	[·835]	·839	·932	·943	·871	·933
27	·820	·840	·777	·716	·734	·782	·875	·787	[·929]	·960	·888	[·932]
28	·860	·890	·849	·738	·633	[·809]	·828	·856	·981	·891	·893	·932
29	·832		[·822]	·778	·681	·742	·928	·895	·967	·946	[·883]	·979
30	·805		·743	·814	·692	·836	·957	[·836]	·886	·957	·874	·982
31	·915		·789		[·670]		·951	·845		·879		·985

TABLE LIII.—Mean Relative Humidity of the Air, Saturation being = 1, with reference to the Moon's Age and Declination, for 1846.

Moon's Age.	Mean Relative Humidity.	Moon's Age.	Mean Relative Humidity.	After Moon farthest North.	Mean Relative Humidity.	After Moon farthest North.	Mean Relative Humidity.
Day.		Day.		Day.		Day.	
15	0·873	0	0·844	0	0·827	14	0·847
16	·847	1	·830	1	·859	15	·856
17	·820	2	·825	2	·845	16	·878
18	·843	3	·814	3	·839	17	·877
19	·854	4	·848	4	·866	18	·866
20	·829	5	·833	5	·850	19	·865
21	·843	6	·863	6	·860	20	·850
22	·840	7	·851	7	·862	21	·835
23	·841	8	·867	8	·823	22	·840
24	·854	9	·870	9	·827	23	·849
25	·867	10	·854	10	·826	24	·842
26	·881	11	·833	11	·838	25	·836
27	·879	12	·847	12	·835	26	·845
28	·862	13	·823	13	·847	27	·838
29	·885	14	·864				

TABLE LIV.—Mean Relative Humidity at the Observation Hours for each Month, for each Astronomical Quarter, and for the Year 1846.

Makerstoun Mean Time.	17h.	19h.	21h.	23h.	1h.	3h.	5h.	7h.	9h.
January	0·905	0·924	0·906	0·887	0·878	0·894	0·890	0·888	0·895
February	·878	·886	·864	·799	·777	·778	·823	·841	·862
March	·917	·911	·835	·760	·710	·707	·765	·848	·885
April	·941	·900	·814	·777	·773	·763	·804	·871	·924
May	·892	·794	·702	·658	·669	·644	·690	·770	·838
June	·901	·818	·664	·565	·544	·588	·616	·730	·848
July	·902	·841	·792	·763	·751	·750	·783	·849	·898
August	·969	·921	·847	·778	·758	·729	·760	·862	·929
September	·959	·940	·865	·774	·763	·768	·798	·890	·935
October	·931	·932	·895	·859	·814	·808	·871	·907	·925
November	·926	·916	·899	·864	·832	·843	·896	·899	·914
December	·912	·923	·912	·872	·863	·873	·903	·910	·919
Nov., Dec., Jan.,	·914	·921	·906	·874	·858	·870	·896	·899	·909
Feb., Mar., Apr.,	·912	·899	·838	·779	·753	·749	·797	·853	·890
May, June July,	·898	·818	·719	·662	·655	·661	·696	·783	·861
Aug., Sept., Oct.,	·953	·931	·869	·804	·778	·768	·810	·886	·930
The Year,	·919	·892	·833	·780	·761	·762	·800	·855	·898

TABLE LV.—Daily and Weekly Means of the Height of the Barometer in 1846.

Civil Day.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
1	29·394	[29·336]	[29·259]	29·046	29·955	29·945	29·490	29·724	30·089	29·608	[29·762]	29·425
2	30·041	29·484	29·397	28·913	29·860	29·962	29·615	[29·783]	30·043	29·486	29·599	29·318
3	29·948	29·296	29·169	29·016	[29·688]	29·978	29·768	29·660	30·036	29·434	29·664	29·422
4	[29·758]	29·493	28·892	29·273	29·705	29·929	29·813	29·722	30·053	[29·275]	29·721	29·735
5	29·808	29·450	29·212	[29·100]	29·369	29·884	[29·557]	29·736	29·961	29·247	29·896	29·498
6	29·606	29·451	29·265	29·060	29·214	29·819	29·119	29·730	[29·847]	28·982	29·911	[29·789]
7	29·754	29·276	29·377	29·125	29·352	[29·711]	29·445	29·596	29·648	28·891	29·997	29·958
8	30·044	[29·730]	[29·681]	29·214	29·563	29·624	29·581	29·424	29·564	28·936	[30·119]	30·121
9	30·245	30·099	29·941	29·401	29·607	29·493	29·553	[29·626]	29·822	29·042	30·273	29·998
10	30·047	30·197	30·053	29·468	[29·621]	29·520	29·670	29·631	30·128	28·934	30·323	29·585
11	[29·769]	29·905	30·239	29·246	29·694	29·801	29·807	29·626	30·194	[29·170]	30·314	29·501
12	29·661	29·896	30·266	[29·424]	29·709	29·909	[29·635]	29·748	30·297	29·436	30·325	29·613
13	29·352	29·859	29·955	29·227	29·803	29·890	29·714	29·313	[30·108]	29·752	30·257	[29·483]
14	29·266	29·925	29·604	29·513	29·954	[29·957]	29·514	29·608	30·057	28·923	30·137	29·335
15	29·413	[29·892]	[29·511]	29·690	29·777	29·977	29·551	29·418	30·007	28·718	[29·908]	29·371
16	29·596	29·978	28·707	29·839	29·475	30·088	29·282	[29·434]	29·963	29·029	29·842	29·491
17	29·540	29·899	29·078	29·727	[29·358]	30·076	28·995	29·492	29·824	29·258	29·497	29·592
18	[29·188]	29·793	29·458	29·844	28·798	29·965	28·911	29·311	29·756	[29·031]	29·389	29·699
19	28·935	29·752	29·438	[29·848]	29·031	29·861	[29·273]	29·463	29·499	29·290	29·283	29·456
20	28·685	29·774	29·479	30·000	29·113	30·064	29·556	29·494	[29·561]	29·190	28·760	[29·187]
21	28·961	29·684	28·990	29·851	29·579	[29·636]	29·423	29·689	29·563	28·702	29·030	28·749
22	28·663	[29·456]	[29·124]	29·825	29·837	29·668	29·474	29·832	29·522	28·779	[29·152]	28·818
23	28·865	29·380	28·823	29·790	29·977	29·205	29·392	[29·867]	29·200	29·298	29·388	28·810
24	29·159	29·105	28·971	29·727	[29·810]	29·055	29·435	30·078	29·195	29·247	29·275	29·183
25	[28·913]	29·041	29·042	29·781	29·834	29·264	29·603	30·104	29·422	[29·504]	29·178	29·621
26	28·763	29·335	29·183	[29·766]	29·833	29·360	[29·641]	30·003	29·315	29 785	28·932	30·036
27	29·015	29·341	29·377	29·664	29·801	29·361	29·715	29·899	[29·304]	30·025	29·244	[29·892]
28	29·012	29·420	29·412	29·733	29·977	[29·356]	29·821	29·917	29·321	29·891	29·364	30·128
29	29·078		[29·381]	29·900	30·034	29·303	29·883	29·884	29·099	29·926	[29·342]	30·134
30	29·383		29·847	30·025	29·982	29·360	29·939	[29·960]	29·470	29·919	29·772	30·252
31	29·285		29·421		[29·980]		29·918	29·929		29·741		30·279

TABLE LVI.—Mean Height of the Barometer at the Observation Hours for each Month, for each Astronomical Quarter, and for the Year 1846.

Makerstoun Mean Time.	17^h.	19^h.	21^h.	23^h.	1^h.	3^h.	5^h.	7^h.	9^h.
	in.	in.	in.	in.	in.	in.	in.	in.	in.
January	29·364	29·375	29·390	29·397	29·392	29·398	29·406	29·412	29·413
February	·598	·602	·612	·624	·620	·613	·620	·633	·634
March	·405	·410	·411	·416	·409	·402	·399	·404	·406
April	·523	·536	·539	·534	·532	·524	·527	·545	·556
May	·643	·655	·656	·655	·652	·643	·639	·648	·652
June	·716	·721	·717	·712	·702	·695	·685	·692	·707
July	·549	·557	·560	·561	·558	·550	·548	·554	·567
August	·695	·700	·697	·693	·685	·678	·674	·687	·701
September	·735	·744	·747	·738	·727	·714	·713	·726	·734
October	·306	·311	·314	·309	·299	·298	·308	·322	·330
November	·654	·665	·678	·676	·659	·646	·642	·638	·642
December	·577	·581	·599	·604	·595	·598	·604	·614	·620
Nov., Dec., Jan.,	·5317	·5403	·5557	·5590	·5487	·5473	·5507	·5547	·5583
Feb., Mar., Apr.,	·5087	·5160	·5207	·5247	·5203	·5130	·5153	·5273	·5320
May, June, July,	·6360	·6443	·6443	·6427	·6373	·6293	·6240	·6313	·6420
Aug., Sept., Oct.,	·5787	·5850	·5860	·5800	·5703	·5633	·5650	·5783	·5883
The Year	·5637	·5714	·5767	·5766	·5692	·5632	·5637	·5729	·5802

TABLE LVII.—Diurnal Range of the Barometer for each Week-Day and Week, for 1846.

Civil Day.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
1	0·761	[0·311]	[0·211]	0·202	0·167	0·056	0·116	0·209	0·084	0·113	[0·105]	0·381
2	·433	·187	·252	·143	·089	·023	·272	[·093]	·055	·352	·056	·063
3	·564	·539	·246	·436	[·180]	·068	·101	·081	·032	·181	·147	·219
4	[·364]	·349	·377	·188	·378	·066	·058	·029	·052	[·246]	·104	·251
5	·110	·160	·211	[·192]	·285	·064	[·183]	·025	·125	·330	·183	·437
6	·092	·268	·071	·161	·078	·072	·294	·067	[·146]	·201	·034	[·251]
7	·226	·524	·300	·032	·164	[·089]	·320	·185	·164	·298	·145	·241
8	·388	[·260]	[·217]	·193	·293	·157	·051	·111	·158	·338	[·086]	·088
9	·155	·216	·235	·123	·278	·103	·042	[·107]	·346	·316	·075	·269
10	·127	·178	·099	·051	[·177]	·071	·168	·073	·165	·549	·045	·321
11	[·234]	·214	·388	·365	·091	·411	·082	·111	·058	[·493]	·034	·076
12	·354	·057	·231	[·218]	·062	·067	[·130]	·098	·222	·535	·045	·152
13	·259	·031	·243	·303	·177	·026	·211	·579	[·113]	0·192	·117	[·164]
14	·121	·143	·449	·245	·085	[·137]	·200	·237	·099	1·026	·110	·126
15	·288	[·087]	[·383]	·223	·272	·133	·079	·282	·045	0·258	[·196]	·203
16	·085	·072	·482	·093	·345	·089	·437	[·281]	·092	·279	·394	·105
17	·055	·166	·704	·096	[·241]	·097	·146	·207	·134	·200	·341	·389
18	[·285]	·054	·190	·178	·147	·137	·256	·183	·100	[·258]	·171	·384
19	·693	·070	·022	[·124]	·345	·091	[·246]	·197	·297	·134	·062	·098
20	·390	·067	·068	·162	·251	·198	·125	·079	[·175]	·132	·970	[·242]
21	·200	·099	·730	·147	·496	[·252]	·285	·327	·057	·544	·611	·168
22	·331	[·215]	[·198]	·067	·121	·453	·226	·043	·148	·327	[·418]	·144
23	·109	·233	·163	·138	·145	·500	·273	[·118]	·316	·484	·267	·268
24	·363	·392	·111	·098	[·164]	·134	·150	·073	·149	·213	·192	·346
25	[·257]	·432	·095	·034	·100	·234	·230	·056	·201	[·274]	·407	·537
26	·112	·105	·258	[·112]	·034	·085	[·159]	·129	·263	·320	·198	·335
27	·403	·126	·091	·062	·091	·111	·148	·108	[·258]	·126	·311	[·240]
28	·227	·159	·102	·214	·160	[·133]	·068	·054	·274	·174	·230	·047
29	·322		[·255]	·129	·059	·087	·083	·088	·229	·122	[·250]	·086
30	·195		·322	·081	·048	·164	·086	[·104]	·432	·090	·320	·092
31	·272		·553		[·069]		·131	·234		·111		·041

TABLE LVIII.—Diurnal Range of the Barometer, with reference to the Moon's Age and Declination, for 1846.

Moon's Age.	Mean Diurnal Range.	Moon's Age.	Mean Diurnal Range.	After Moon farthest North.	Mean Diurnal Range.	After Moon farthest North.	Mean Diurnal Range.
Day.	in.	Day.	in.	Day.	in.	Day.	in.
15	0·204	0	0·221	0	0·222	14	0·232
16	·167	1	·147	1	·233	15	·222
17	·208	2	·248	2	·251	16	·250
18	·200	3	·248	3	·184	17	·166
19	·192	4	·207	4	·216	18	·208
20	·209	5	·182	5	·171	19	·173
21	·228	6	·191	6	·164	20	·186
22	·255	7	·257	7	·148	21	·182
23	·146	8	·202	8	·132	22	·219
24	·298	9	·190	9	·156	23	·176
25	·179	10	·189	10	·245	24	·249
26	·187	11	·152	11	·244	25	·228
27	·219	12	·181	12	·201	26	·228
28	·212	13	·155	13	·175	27	·215
29	·253	14	·155				

TABLE LIX.—Extreme Readings of the Barometer for each Month; Extreme Mean Daily Heights for each Month; and Extreme Diurnal Ranges for each Month, together with the Ranges and Means of the Extremes, for 1846.

Month.	Extreme Readings.								Extreme Daily Means.						Extreme Diurnal Ranges.			
	Highest.			Lowest.			Range.	Mean.	Highest.		Lowest.		Range.	Mean.	Greatest.		Least.	
	d.	h.	in.	d.	h.	in.	in.	in.	d.	in.	d.	in.	in.	in.	d.	in.	d.	in.
Jan.	9	0	30·304	21	18	28·498	1·806	29·401	9	30·245	22	28·663	1·582	29·454	1	0·761	17	0·055
Feb.	9	23	30·268	24	22	28·863	1·405	29·565	10	30·197	25	29·041	1·156	29·619	3	0·539	13	0·031
March	11	10	30·380	16	8	28·492	1·888	29·436	12	30·266	16	28·707	1·559	29·486	21	0·730	19	0·022
April	29	21	30·058	2	18	28·823	1·235	29·440	30	30·025	2	28·913	1·112	29·469	3	0·436	7	0·032
May	28	18	30·066	18	4	28·772	1·294	29·419	29	30·034	18	28·798	1·236	29·416	21	0·496	26	0·034
June	16	10	30·115	23	18	28·988	1·127	29·551	16	30·088	24	29·055	1·033	29·571	23	0·500	2	0·023
July	30	10	29·986	18	6	28·778	1·208	29·382	30	29·939	18	28·911	1·028	29·425	16	0·437	9	0·042
Aug.	24	20	30·132	13	2	29·118	1·014	29·625	25	30·104	18	29·311	0·793	29·707	13	0·579	5	0·025
Sept.	12	10	30·351	29	4	29·027	1·324	29·689	12	30·297	29	29·099	1·198	29·698	30	0·432	3	0·032
Oct.	27	0	30·061	21	4	28·582	1·479	29·321	27	30·025	21	28·702	1·323	29·363	14	1·026	30	0·090
Nov.	10	0	30·352	20	8	28·267	2·085	29·310	12	30·325	20	28·760	1·565	29·542	20	0·970	6 11	0·034
Dec.	30	22	30·304	22	18	28·681	1·623	29·492	31	30·279	21	28·749	1·530	29·514	25	0·537	28	0·047

TABLE LX.—Daily and Weekly Means of the Pressure of the Wind, in Pounds on the Square Foot of Surface, deduced from the greatest pressures occurring between the Observation Hours, in 1846.

Civil Day.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.
1	1·97	[1·92]	[1·97]	0·37	0·69	0·15	1·17	0·62	0·30	0·37	[0·80]	1·04
2	0·14	0·49	2·22	0·28	1·52	0·21	0·82	[0·32]	0·50	0·18	1·45	0·12
3	0·36	2·30	2·55	1·98	[0·72]	0·13	1·34	0·16	0·62	0·42	0·87	0·40
4	[0·89]	1·36	4·86	0·22	1·29	0·18	1·03	0·22	0·20	[0·80]	1·26	0·31
5	0·17	1·02	0·35	[0·94]	0·45	0·20	[0·99]	0·11	0·12	0·77	0·36	0·52
6	0·86	1·12	0·21	1·33	0·27	0·47	1·64	0·11	[0·36]	1·33	0·92	[0·43]
7	1·83	4·75	0·70	1·39	1·42	[0·44]	0·78	0·37	0·19	1·74	0·23	1·00
8	2·04	[1·43]	[0·44]	0·42	1·21	0·09	0·32	0·19	0·61	1·10	[0·31]	0·08
9	1·26	1·26	0·11	0·29	0·82	0·27	0·37	[0·62]	0·42	0·95	0·24	0·27
10	1·30	0·12	0·90	0·29	[1·28]	1·42	0·27	1·02	0·47	1·55	0·07	1·88
11	[0·82]	0·30	0·37	0·89	2·10	1·57	0·77	1·63	0·24	[1·55]	0·07	2·36
12	0·12	0·11	1·26	[0·69]	1·31	1·07	[0·44]	0·43	0·21	3·22	0·09	1·74
13	0·03	0·26	2·12	1·36	0·81	0·58	0·43	1·26	[0·21]	1·82	0·02	[1·37]
14	0·17	0·21	2·27	0·36	0·66	[0·66]	0·21	0·41	0·17	0·69	0·07	0·50
15	0·30	[0·18]	[2·21]	0·96	0·55	0·42	0·62	0·36	0·12	0·07	[0·72]	1·00
16	0·02	0·32	5·05	0·39	0·72	0·22	0·72	[0·46]	0·06	0·09	1·85	0·72
17	0·15	0·13	2·13	0·16	[0·89]	0·13	0·51	0·27	0·09	0·31	1·31	0·40
18	[0·54]	0·08	0·41	0·13	0·68	0·26	0·72	0·25	0·15	[0·36]	0·99	1·05
19	0·83	0·09	0·01	[0·31]	1·32	0·58	[0·88]	0·19	0·14	0·74	1·75	0·62
20	1·35	0·05	0·28	0·30	1·43	0·75	1·15	0·22	[0·31]	0·36	3·57	[0·86]
21	0·60	1·30	2·47	0·17	0·30	[0·71]	0·72	0·24	0·27	0·62	1·84	0·18
22	0·13	[1·01]	[0·50]	0·69	0·90	0·56	1·47	0·22	0·52	0·78	[1·31]	0·12
23	0·05	1·02	0·15	1·62	0·24	0·64	1·95	[0·18]	0·70	0·97	0·24	2·77
24	0·06	1·46	0·07	0·94	[1·12]	1·50	1·80	0·18	0·10	0·50	0·27	0·53
25	[0·40]	2·12	0·02	0·31	2·31	0·22	1·30	0·12	0·28	[0·44]	0·17	0·54
26	0·17	1·13	0·01	[0·84]	1·73	0·58	[1·51]	0·10	0·52	0·10	0·59	0·20
27	0·75	0·63	0·31	0·92	1·27	0·36	1·87	0·17	[0·32]	0·05	2·36	[0·30]
28	1·27	0·42	0·59	0·27	0·37	[1·45]	1·84	0·20	0·18	0·22	1·22	0·15
29	1·70		[0·25]	0·96	0·55	3·57	0·29	0·14	0·61	0·06	[0·96]	0·22
30	2·58		0·12	0·12	0·77	2·78	0·43	[0·30]	0·22	0·17	0·46	0·17
31	3·12		0·10		[0·36]		0·37	0·50		1·01		0·11

TABLE LXI.—Daily and Weekly Means of the Pressure of the Wind in Pounds on the Square Foot of Surface, deduced from the greatest pressures observed within 10^m *at* the Hours of Observation in 1846.

Civil Day.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.
1	1·14	[0·96]	[1·07]	0·18	0·34	0·05	0·67	0·17	0·16	0·21	[0·41]	0·47
2	0·07	0·27	1·35	0·08	0·71	0·09	0·37	[0·15]	0·31	0·11	0·87	0·04
3	0·19	1·17	1·58	1·27	[0·30]	0·03	0·79	0·10	0·43	0·17	0·39	0·27
4	[0·57]	0·74	2·60	0·16	0·48	0·07	0·61	0·13	0·15	[0·40]	0·53	0·13
5	0·07	0·38	0·10	[0·59]	0·16	0·11	[0·53]	0·04	0·07	0·45	0·17	0·24
6	0·60	0·79	0·12	0·76	0·08	0·29	1·01	0·07	[0·22]	0·76	0·38	[0·18]
7	1·34	2·79	0·33	1·00	0·69	[0·30]	0·27	0·27	0·14	0·72	0·09	0·30
8	1·31	[0·79]	[0·20]	0·28	0·58	0·05	0·16	0·07	0·33	0·52	[0·13]	0·04
9	0·72	0·66	0·04	0·07	0·59	0·14	0·23	[0·35]	0·22	0·59	0·12	0·12
10	0·80	0·04	0·58	0·17	[0·72]	1·13	0·11	0·49	0·26	0·85	0·03	1·20
11	[0·50]	0·11	0·03	0·37	1·32	0·77	0·39	0·99	0·13	[0·92]	0·02	1·32
12	0·07	0·07	0·78	[0·34]	0·62	0·48	[0·23]	0·19	0·12	2·41	0·04	0·83
13	0·00	0·12	1·05	0·72	0·50	0·33	0·29	0·57	[0·12]	0·77	0·02	[0·77]
14	0·07	0·11	1·65	0·06	0·47	[0·32]	0·07	0·17	0·12	0·37	0·00	0·30
15	0·13	[0·10]	[1·21]	0·65	0·29	0·22	0·27	0·23	0·05	0·05	[0·31]	0·64
16	0·00	0·18	3·02	0·11	0·51	0·08	0·33	[0·24]	0·02	0·05	0·82	0·34
17	0·04	0·07	0·67	0·00	[0·56]	0·07	0·30	0·18	0·04	0·14	0·47	0·09
18	[0·30]	0·02	0·12	0·07	0·46	0·02	0·55	0·20	0·09	[0·19]	0·50	0·52
19	0·53	0·05	0·00	[0·12]	0·92	0·20	[0·46]	0·11	0·07	0·39	1·38	0·20
20	0·96	0·00	0·12	0·12	0·70	0·37	0·44	0·12	[0·20]	0·21	2·03	[0·42]
21	0·16	0·76	1·18	0·07	0·12	[0·34]	0·31	0·15	0·22	0·32	1·02	0·16
22	0·10	[0·50]	[0·23]	0·37	0·55	0·20	0·82	0·12	0·30	0·67	[0·79]	0·07
23	0·01	0·37	0·06	1·01	0·13	0·37	1·12	[0·10]	0·46	0·57	0·19	1·48
24	0·02	0·71	0·02	0·44	[0·65]	0·90	0·84	0·09	0·07	0·32	0·10	0·17
25	[0·18]	1·09	0·02	0·19	1·43	0·02	0·61	0·04	0·14	[0·29]	0·05	0·35
26	0·08	0·56	0·01	[0·41]	1·06	0·30	[0·79]	0·05	0·21	0·03	0·42	0·06
27	0·56	0·14	0·12	0·22	0·64	0·15	1·26	0·06	[0·17]	0·02	1·32	[0·14]
28	0·31	0·17	0·21	0·13	0·14	[0·68]	0·82	0·11	0·12	0·11	0·35	0·11
29	1·08		[0·10]	0·49	0·17	1·74	0·09	0·06	0·38	0·02	[0·48]	0·07
30	1·22		0·06	0·01	0·35	1·19	0·25	[0·16]	0·08	0·07	0·27	0·07
31	1·29		0·02		[0·14]		0·23	0·24		0·57		0·07

TABLE LXII.—Mean Pressure of Wind with reference to the Moon's Age and Declination, for 1846.

Moon's Age.	Pressure of Wind.	Moon's Age.	Pressure of Wind.	After Moon farthest North.	Pressure of Wind.	After Moon farthest North.	Pressure of Wind.
Day.	lb.	Day.	lb.	Day.	lb.	Day.	lb.
15	0·33	0	0·58	0	0·45	14	0·40
16	0·45	1	0·47	1	0·50	15	0·40
17	0·51	2	0·55	2	0·63	16	0·34
18	0·36	3	0·41	3	0·33	17	0·26
19	0·59	4	0·52	4	0·25	18	0·28
20	0·26	5	0·63	5	0·25	19	0·25
21	0·27	6	0·35	6	0·26	20	0·43
22	0·46	7	0·62	7	0·45	21	0·44
23	0·38	8	0·23	8	0·45	22	0·42
24	0·38	9	0·38	9	0·42	23	0·45
25	0·30	10	0·31	10	0·44	24	0·38
26	0·23	11	0·52	11	0·62	25	0·52
27	0·36	12	0·37	12	0·46	26	0·54
28	0·31	13	0·38	13	0·32	27	0·41
29	0·37	14	0·17				

TABLE LXIII.—Maximum Pressure of the Wind in each Civil Day in 1846.

Civil Day.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.
1	3·1	6·1	2·8	0·9	1·7	0·3	1·8	3·0	0·8	0·9	1·8	2·8
2	0·9	1·2	3·2	0·9	2·9	0·6	1·4	0·5	0·9	0·4	2·4	0·4
3	1·5	7·0	3·8	3·8	1·3	0·3	3·0	0·4	1·4	1·0	1·8	0·9
4	3·9	2·8	10·7	1·0	2·2	0·4	2·1	0·5	0·3	2·0	2·7	0·6
5	1·2	1·6	1·0	1·2	0·9	0·4	5·8	0·3	0·2	1·7	0·8	1·4
6	2·3	2·5	0·7	3·3	0·4	1·3	2·3	0·3	1·0	3·8	1·7	1·9
7	4·5	8·2	1·4	2·4	2·7	0·9	1·7	0·9	0·4	2·8	0·4	2·3
8	6·2	3·1	0·6	0·9	2·3	0·3	0·5	0·6	2·1	1·7	0·4	0·2
9	2·4	2·6	0·4	1·4	2·1	0·6	0·7	1·3	1·1	1·8	0·5	0·5
10	2·7	0·5	2·5	0·6	3·9	2·8	0·7	2·8	1·3	3·5	0·1	2·8
11	0·5	1·5	1·6	3·7	4·0	3·0	1·5	2·6	0·5	1·0	0·1	3·5
12	0·2	0·2	3·0	2·9	2·4	2·0	3·1	0·8	0·5	5·2	0·3	4·7
13	0·1	0·8	3·7	2·5	1·8	1·2	0·9	2·2	0·2	5·1	0·1	1·3
14	0·7	0·4	4·1	1·3	0·9	1·9	0·5	0·9	0·3	2·4	0·1	0·7
15	0·6	1·5	4·1	1·4	1·3	0·6	1·1	1·1	0·3	0·1	0·4	2·2
16	0·1	0·8	7·8	0·7	1·5	0·6	2·0	1·6	0·1	0·2	4·6	2·3
17	0·4	0·5	4·2	1·0	1·1	0·3	1·1	0·8	0·2	0·6	2·0	1·5
18	0·5	0·1	0·7	0·3	2·0	1·9	1·8	0·5	0·4	0·3	1·7	3·4
19	2·6	0·2	0·1	0·8	3·1	1·8	2·8	0·5	0·3	1·3	3·3	1·1
20	2·8	0·1	0·9	1·1	3·0	1·1	2·5	0·5	1·1	1·8	5·2	2·3
21	2·5	3·1	6·2	0·6	1·0	1·1	1·8	0·7	1·0	1·8	5·8	0·9
22	0·2	11·0	1·7	1·9	2·4	1·4	2·5	0·7	1·5	1·9	1·7	0·2
23	0·2	1·8	0·5	2·7	0·5	1·8	3·8	1·0	1·7	3·2	0·5	4·4
24	0·3	3·7	0·2	1·8	1·7	2·7	2·7	0·5	0·3	2·8	0·5	1·3
25	3·3	3·8	0·1	0·7	4·2	0·9	2·5	0·3	0·6	3·7	0·5	1·0
26	0·3	2·1	0·1	4·5	3·4	1·6	2·0	0·4	1·5	0·3	1·0	0·4
27	1·5	2·6	1·4	1·8	2·3	1·0	3·0	0·4	1·2	0·1	4·0	0·1
28	2·4	1·1	1·9	1·1	0·7	2·3	3·5	0·4	0·5	0·3	3·3	0·4
29	4·0		1·7	2·6	1·6	7·5	0·3	0·3	2·4	0·2	2·9	0·5
30	4·7		0·6	0·2	2·1	6·0	0·8	1·0	0·4	0·6	1·0	0·3
31	5·4		0·7		0·9		0·9	0·8		2·2		0·3

TABLE LXIV.—Means of the Maximum Pressure of Wind between the Hours of Observation for each Month, for each of the Astronomical Quarters, and for the Year 1846.

Makerstoun Mean Time.	9^{h}—17^{h}.	17^{h}—19^{h}.	19^{h}—21^{h}.	21^{h}—23^{h}.	23^{h}—1^{h}.	1^{h}—3^{h}.	3^{h}—5^{h}.	5^{h}—7^{h}.	7^{h}—9^{h}.
	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.
January	1·37	0·73	0·67	0·94	1·04	0·96	0·80	0·84	1·05
February	1·90	0·73	0·92	1·19	1·13	1·40	1·22	0·82	0·57
March	1·40	0·96	1·28	1·38	1·55	1·49	1·38	0·98	0·73
April	0·76	0·42	0·68	0·85	1·09	1·08	1·05	0·68	0·34
May	0·88	0·56	1·09	1·37	1·45	1·56	1·54	1·04	0·64
June	0·72	0·44	0·70	0·83	1·06	1·26	0·95	0·79	0·57
July	0·95	0·67	0·96	1·21	1·24	1·32	1·13	0·94	0·69
August	0·39	0·33	0·37	0·48	0·57	0·58	0·47	0·35	0·24
September	0·32	0·22	0·24	0·41	0·51	0·51	0·46	0·32	0·20
October	1·05	0·57	0·70	0·95	1·08	0·89	0·81	0·71	0·60
November	1·28	0·62	0·90	1·10	1·09	1·10	0·92	0·96	0·85
December	1·02	0·67	0·53	0·60	0·64	0·71	0·66	0·68	0·69
Nov., Dec., Jan.,	1·22	0·67	0·70	0·88	0·92	0·92	0·79	0·83	0·86
Feb., Mar., Apr.,	1·35	0·70	0·96	1·14	1·26	1·32	1·22	0·83	0·55
May, June, July,	0·85	0·56	0·92	1·14	1·25	1·38	1·21	0·92	0·63
Aug., Sept., Oct.,	0·59	0·37	0·44	0·61	0·72	0·66	0·58	0·46	0·35
The Year	1·00	0·58	0·75	0·94	1·04	1·07	0·95	0·76	0·60

TABLE LXV.—Means of the Maximum Pressure of Wind within 10^{m} at the Hours of Observation for each Month, for each of the Astronomical Quarters, and for the Year 1846.

Makerstoun Mean Time.	17^{h}.	19^{h}.	21^{h}.	23^{h}.	1^{h}.	3^{h}.	5^{h}.	7^{h}.	9^{h}.
	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.
January	0·48	0·37	0·36	0·51	0·49	0·42	0·47	0·58	0·44
February	0·42	0·37	0·53	0·75	0·57	0·85	0·49	0·22	0·32
March	0·57	0·44	0·93	0·72	0·71	0·95	0·58	0·49	0·40
April	0·19	0·31	0·50	0·55	0·59	0·61	0·41	0·26	0·18
May	0·20	0·44	0·80	0·96	0·97	0·99	0·76	0·42	0·27
June	0·18	0·30	0·46	0·51	0·61	0·52	0·53	0·31	0·28
July	0·29	0·40	0·76	0·68	0·72	0·78	0·53	0·46	0·34
August	0·11	0·16	0·32	0·35	0·25	0·30	0·26	0·16	0·10
September	0·10	0·13	0·20	0·36	0·29	0·29	0·21	0·18	0·10
October	0·34	0·33	0·43	0·59	0·50	0·55	0·43	0·43	0·41
November	0·37	0·40	0·43	0·59	0·59	0·59	0·49	0·56	0·42
December	0·31	0·31	0·46	0·41	0·35	0·47	0·38	0·39	0·31
Nov., Dec., Jan.,	0·39	0·36	0·42	0·50	0·48	0·49	0·45	0·51	0·39
Feb., Mar., Apr.,	0·39	0·37	0·65	0·67	0·62	0·80	0·49	0·32	0·30
May, June, July,	0·22	0·38	0·67	0·72	0·77	0·76	0·61	0·40	0·30
Aug., Sept., Oct.,	0·18	0·21	0·32	0·43	0·35	0·38	0·30	0·26	0·20
The Year	0·30	0·33	0·51	0·58	0·55	0·61	0·46	0·37	0·30

TABLE LXVI.—Number of Times which the Wind blew from each Point of the Compass at the together with the sums of the Pres-

Wind blowing from	January.		February.		March.		April.		May.		June.	
	Times.	Press.	Times.	Press.	Times.	Press.	Times.	Press.	Times.	Press.	Times.	Press.
		lb.		lb.		lb.		lb.		lb.		lb.
N.	...	...	1	0·7	7	1·8	13	13·7	4	0·9	1	0·1
N by E.	...	...	1	1·6	...	...	8	12·7	...	...	...	...
NNE.	2	0·4	...	...	3	0·9	25	15·7	7	1·7	8	2·9
NE by N.	2	0·4	...	...	2	0·8	9	4·4	3	0·8	2	0·4
NE.	2	0·2	...	...	1	0·3	24	10·9	9	3·0	9	2·5
NE by E.	...	...	...	...	1	0·3	14	5·1	1	0·8	1	0·4
ENE.	2	0·3	...	...	...	...	11	5·2	10	5·5	3	0·3
E by N.	...	...	...	...	1	0·1	2	0·2	1	0·7	2	0·5
E.	3	2·6	...	...	...	...	4	0·6	6	3·6	1	0·1
E by S.	...	...	...	...	...	...	...	...	1	0·1	...	...
ESE.	2	1·6	...	...	...	...	1	0·1	5	2·7	2	1·0
SE by E.	1	0·8	...	...	...	...	2	0·2	2	1·9	1	0·2
SE.	3	0·7	...	...	1	0·1	1	0·2	7	5·2	3	0·9
SE by S.	...	...	...	...	1	0·1	2	0·2	1	0·1	2	0·8
SSE.	2	0·3	1	1·0	3	0·5	6	3·3	5	3·1	7	2·6
S by E.	...	...	2	1·0	2	0·4	1	0·2	6	5·4	1	0·2
S.	13	1·9	9	3·2	16	30·0	6	3·3	13	11·2	5	1·4
S by W.	16	7·2	7	5·8	8	9·1	6	3·6	3	2·9	3	4·3
SSW.	23	14·3	20	13·0	19	16·9	10	3·1	24	19·7	21	18·1
SW by S.	15	14·3	16	15·6	18	25·0	2	0·7	10	9·8	16	16·4
SW.	43	33·6	28	24·0	22	22·9	4	0·6	17	14·6	24	20·6
SW by W.	13	15·8	12	6·2	10	10·6	2	0·2	6	6·0	17	7·0
WSW.	8	7·1	10	3·9	12	7·9	4	0·4	15	9·9	17	8·7
W by S.	1	0·7	4	1·3	4	8·8	4	2·0	4	1·9	2	0·4
W.	1	1·0	13	13·6	5	3·8	5	1·6	14	15·6	7	2·4
W by N.	3	3·0	6	4·5	6	3·2	1	1·2	4	3·1	4	1·5
WNW.	1	0·9	9	5·1	4	4·9	...	...	13	13·9	2	1·2
NW by W.	2	1·8	1	0·2	...	...	1	0·3	3	0·5	...	...
NW.	1	2·6	9	3·2	4	1·2	3	0·7	3	2·7	3	0·8
NW by N.	...	...	1	0·1	...	...	2	1·6	3	2·1	...	...
NNW.	1	0·2	3	1·5	3	0·7	4	1·4	4	1·2	2	0·2
N by W.	...	...	4	3·3	...	...	...	...	2	0·3	2	0·4

Observation Hours, with a Pressure of one-tenth of a pound or upwards on a square foot of surface, sures, for each Month in 1846.

July.		August.		September.		October.		November.		December.		Wind blowing from
Times.	Press.	Times.	Press.	Times.	Press.	Times.	Press.	Times.	Press.	Times.	Press.	
	lb.		lb.		lb.		lb.		lb.		lb.	
4	1·9	3	0·4	6	0·9	6	8·8	10	10·2	12	14·2	N.
...	...	4	1·2	2	0·5	2	0·4	...	...	1	2·7	N by E.
5	1·6	9	2·1	5	0·5	14	18·5	4	0·7	7	6·6	NNE.
3	0·7	8	1·3	6	0·8	5	3·6	...	...	...	...	NE by N.
19	4·1	22	3·9	16	3·5	5	0·5	3	0·3	...	...	NE.
4	0·8	5	1·2	1	1·0	...	...	...	...	1	0·1	NE by E.
8	2·3	11	2·1	13	4·4	3	0·4	2	0·2	1	0·1	ENE.
2	0·6	2	0·5	...	...	2	0·3	...	...	...	...	E by N.
2	0·3	11	2·1	9	1·2	3	0·3	2	0·2	...	...	E.
...	...	...	...	...	...	...	...	...	...	...	...	E by S.
1	0·2	2	0·4	4	2·0	4	1·6	2	0·2	...	...	ESE.
...	...	2	0·2	...	...	1	0·3	1	0·1	...	...	SE by E.
1	0·2	8	1·2	7	2·4	4	1·4	3	0·9	...	...	SE.
...	...	...	...	...	...	3	1·2	1	2·0	...	...	SE by S.
2	0·2	2	0·2	4	0·9	8	7·4	13	14·2	1	0·2	SSE.
3	2·9	2	0·4	1	0·1	...	...	4	7·0	3	0·3	S by E.
9	6·7	7	4·5	6	1·1	12	3·1	36	25·5	4	0·4	S.
6	8·8	7	1·5	6	1·6	4	1·5	4	1·3	1	0·2	S by W.
30	21·1	21	5·0	16	4·0	44	25·9	30	20·7	13	2·4	SSW.
12	9·7	6	3·0	5	1·0	5	2·4	5	3·6	3	1·7	SW by S.
42	28·6	23	10·6	32	11·0	23	11·7	16	9·3	24	9·7	SW.
17	11·4	6	3·0	7	1·8	2	0·3	3	2·4	5	1·2	SW by W.
19	15·2	12	3·5	11	2·7	15	4·3	5	1·2	17	2·7	WSW.
6	4·4	1	0·3	2	0·8	2	0·3	1	0·1	3	0·8	W by S.
8	4·0	2	0·3	6	1·0	8	1·3	1	0·1	11	2·4	W.
1	0·9	1	0·1	1	0·1	1	0·6	1	0·1	2	0·4	W by N.
6	2·1	1	0·4	2	0·6	4	1·0	3	0·7	5	0·7	WNW.
2	0·5	...	...	1	1·1	3	1·0	...	...	10	5·5	NW by W.
5	1·4	3	0·5	8	1·4	3	2·4	7	2·8	36	15·0	NW.
...	...	1	0·2	...	...	3	2·9	3	1·4	12	9·2	NW by N.
1	1·0	5	2·2	4	1·8	2	1·1	7	3·5	13	11·2	NNW.
2	2·3	1	0·1	3	0·4	6	3·5	3	2·1	6	3·4	N by W.

TABLE LXVII.—Number of Times which the Wind blew from each Point of the Compass
the square foot of surface, together

Wind blowing from	17^h.		19^h.		21^h.		23^h.		1^h.		3^h.	
	Times.	Press.	Times.	Press.	Times.	Press.	Times.	Press.	Times.	Press.	Times.	Press.
		lb.		lb.		lb.		lb.		lb.		lb.
N.	5	3·8	9	8·3	4	5·5	9	4·0	10	7·8	8	9·3
N by E.	1	1·0	...	...	3	5·0	4	5·8	...	...	4	4·7
NNE.	5	2·4	6	3·3	5	4·1	12	9·1	8	5·2	13	8·3
NE by N.	4	2·0	10	3·0	2	1·5	2	0·3	5	2·5	3	1·1
NE.	6	1·2	5	1·9	15	4·5	11	4·7	16	3·6	18	6·7
NE by E.	1	0·1	...	...	3	1·5	2	0·7	8	2·4	4	2·1
ENE.	3	1·2	4	1·8	6	0·6	9	3·6	11	3·9	8	3·7
E by N.	...	...	...	...	4	1·4	2	0·3	...	...	3	0·7
E.	...	...	1	0·1	2	0·2	9	1·9	10	2·1	5	2·5
E by S.	...	...	1	0·1	...	...	...	...	...	...	...	...
ESE.	...	...	...	...	2	1·7	4	2·3	5	2·8	6	2·2
SE by E.	1	0·3	1	0·8	2	0·3	...	...	1	0·1	1	0·1
SE.	5	1·4	3	1·1	1	0·1	4	2·1	5	2·0	8	3·3
SE by S.	1	0·4	1	0·3	2	0·2	3	1·3	...	...	2	2·1
SSE.	6	1·3	3	1·3	9	5·3	6	7·1	6	7·8	7	3·5
S by E.	1	0·6	2	0·2	6	5·2	2	3·0	...	...	1	0·4
S.	12	7·3	16	11·1	16	23·3	18	12·4	22	11·6	13	7·8
S by W.	9	4·8	12	6·0	7	9·0	8	6·1	12	7·2	5	3·0
SSW.	26	11·0	30	12·2	27	17·1	35	33·5	27	20·1	33	20·4
SW by S.	10	9·9	8	6·3	10	5·5	14	13·7	19	18·9	16	19·9
SW.	30	19·5	32	16·3	32	18·6	30	23·7	33	23·3	38	38·9
SW by W.	7	4·1	10	4·2	14	8·9	12	7·9	15	14·4	10	2·5
WSW.	13	3·2	11	3·7	21	12·1	22	11·6	16	9·6	16	9·3
W by S.	3	1·0	5	1·4	4	3·6	...	...	6	3·0	7	9·5
W.	6	3·9	7	8·5	8	3·9	11	5·0	12	8·8	16	10·5
W by N.	1	1·2	2	0·7	4	4·4	2	1·5	6	3·4	6	3·1
WNW.	6	1·2	4	1·4	5	3·1	8	7·5	4	3·5	6	4·8
NW by W.	2	0·3	2	1·4	4	4·4	6	1·6	3	0·9	3	0·8
NW.	7	3·0	5	1·4	10	3·9	12	4·2	12	2·8	11	3·0
NW by N.	3	1·8	3	1·6	3	1·4	3	1·7	2	1·4	3	3·6
NNW.	4	2·5	6	2·3	3	2·1	4	0·7	10	2·7	6	2·0
N by W.	4	2·4	4	3·0	5	2·2	5	4·2	3	1·4	3	0·4

at each Observation Hour in 1846, with a Pressure of one-tenth of a pound or upwards on with the sums of the Pressures.

5h.		7h.		9h.		9 Observations.		12 Observations.		Mean Pressure, Wind Blowing.	Wind blowing from
Times.	Press.	Times.	Press.	Times.	Press.	Times.	Press.	Times.	Press.		
	lb.		lb.		lb.		lb.		lb.	lb.	
10	4·9	6	1·9	6	8·0	67	53·5	83	71·2	0·86	N.
2	0·9	2	0·9	2	0·8	18	19·1	22	21·8	0·99	N by E.
12	7·2	11	7·6	17	4·4	89	51·6	122	61·8	0·51	NNE.
6	1·4	4	0·7	4	0·7	40	13·2	52	17·2	0·33	NE by N.
13	2·5	13	2·5	13	1·6	110	29·2	138	33·4	0·24	NE.
3	1·3	5	1·0	2	0·3	28	9·4	32	10·0	0·31	NE by E.
10	3·3	10	1·9	3	0·8	64	20·8	73	23·8	0·33	ENE.
1	0·1	2	0·4	...	...	12	2·9	12	2·9	0·24	E by N.
5	2·3	3	1·1	6	0·6	41	10·8	51	11·7	0·23	E.
...	...	...	...	...	...	1	0·1	1	0·1	0·10	E by S.
4	0·6	1	0·1	1	0·1	23	9·8	24	9·9	0·41	ESE.
2	1·1	2	1·0	...	...	10	3·7	11	4·1	0·37	SE by E.
6	1·3	2	0·5	3	1·3	37	13·1	49	17·1	0·35	SE.
...	...	...	...	1	0·1	10	4·4	13	5·1	0·39	SE by S.
6	3·3	6	2·6	5	1·7	54	33·9	70	38·4	0·55	SSE.
7	5·8	4	1·5	2	1·2	25	17·9	29	20·6	0·71	S by E.
18	9·6	15	7·6	6	1·6	136	92·3	163	105·6	0·65	S.
6	3·2	7	3·8	5	4·7	71	47·8	92	62·0	0·67	S by W.
33	16·2	28	17·9	32	16·1	271	164·5	358	205·1	0·57	SSW.
9	12·5	15	8·9	12	7·6	113	103·2	146	129·4	0·89	SW by S.
35	23·7	41	19·4	27	13·8	298	197·2	383	247·1	0·65	SW.
15	11·7	9	6·2	9	6·1	101	66·0	125	81·3	0·65	SW by W.
13	4·8	20	8·3	13	4·9	145	67·5	184	79·6	0·43	WSW.
1	0·1	5	1·0	3	2·2	34	21·8	43	26·6	0·62	W by S.
9	4·0	4	0·8	8	1·7	81	47·1	102	55·5	0·54	W.
5	3·3	3	0·4	2	0·7	31	18·7	35	21·5	0·61	W by N.
8	4·9	4	1·2	5	3·9	50	31·5	66	39·1	0·59	WNW.
1	1·1	2	0·4	...	...	23	10·9	26	11·3	0·43	NW by W.
14	6·9	8	6·5	6	3·0	85	34·7	104	43·7	0·42	NW.
2	1·5	5	4·3	1	0·2	25	17·5	31	20·5	0·66	NW by N.
5	3·9	6	4·8	5	4·9	49	25·9	62	37·0	0·60	NNW.
2	0·7	2	1·3	1	0·2	29	15·8	36	19·7	0·55	N by W.

TABLE LXVIII.—Sums of the Pressures of the Wind in Table LXVI., resolved into the Four Cardinal Points of the Compass, together with the Value and Direction of the Resultant for each Month, for each of the Astronomical Quarters, and for the Year 1846.

Period 1846.	Sums of Pressures resolved in				Resultant.			
	N.	E.	S.	W.	Sums.	Means with reference to Whole No. of Obs.	Means with reference to No. of Obs., Wind blowing.	Directions.
	lb.	lb.	lb.	lb.	lb.	lb.	lb.	°
January	4·8	6·2	71·3	67·2	90·2	0·37	0·56	S. 43 W.
February	12·3	0·9	58·0	68·4	81·5	0·38	0·52	W. 34 S.
March	7·6	1·7	103·2	75·6	120·8	0·52	0·79	S. 38 W.
April	60·4	30·2	15·0	10·1	49·6	0·21	0·28	N. 24 E.
May	19·1	23·6	72·2	75·3	74·1	0·32	0·36	S. 44 W.
June	7·3	7·4	62·2	51·4	70·4	0·30	0·42	S. 39 W.
July	13·8	8·6	79·3	72·2	91·3	0·38	0·41	S. 44 W.
August	11·9	11·6	25·4	19·5	15·6	0·07	0·08	S. 30 W.
September	11·3	13·1	20·6	19·4	11·2	0·05	0·06	S. 34 W.
October	39·6	16·9	50·3	32·3	18·7	0·08	0·10	W. 35 S.
November	19·9	9·1	79·8	25·3	62·0	0·28	0·36	S. 15 W.
December	58·3	3·4	13·4	41·6	58·9	0·24	0·31	N. 40 W.
Astron. Qrs.								
Winter	83·0	18·7	164·5	134·1	141·3	0·20	0·27	W. 35 S.
Spring	80·3	32·8	176·2	154·1	154·6	0·23	0·32	W. 38 S.
Summer	40·2	39·6	213·7	198·9	235·5	0·33	0·40	S. 43 W.
Autumn	62·8	41·6	96·3	71·2	44·7	0·06	0·08	S. 41 W.
The Year.	266·3	132·7	650·7	558·3	573·5	0·20	0·26	W. 42 S.

TABLE LXIX.—Sums of the Pressures of the Wind in Table LXVII., resolved into the Four Cardinal Points of the Compass, together with the Value and Direction of the Resultant, for each of the Observation Hours, and for the Year 1846.

Makerstoun Mean Time.	Sums of Pressures resolved in				Resultant.			
	N.	E.	S.	W.	Sums.	Means with reference to Whole No. of Obs.	Means with reference to No. of Obs., Wind blowing.	Directions.
h.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	°
17	19·3	6·2	51·2	42·8	48·6	0·16	0·27	W. 41 S.
19	24·5	8·4	51·8	44·3	45·1	0·14	0·22	W. 37 S.
21	32·5	15·0	87·1	66·3	74·9	0·24	0·31	W. 47 S.
23	36·7	21·8	99·4	75·4	82·5	0·26	0·31	W. 49 S.
1	29·6	20·7	91·6	80·0	85·9	0·27	0·30	W. 46 S.
3	40·0	24·7	88·9	90·6	82·1	0·26	0·29	W. 37 S.
5	31·0	16·9	73·6	64·7	64·0	0·20	0·24	W. 42 S.
7	28·3	12·0	60·6	51·7	51·2	0·16	0·21	W. 39 S.
9	23·7	6·9	46·7	43·0	42·8	0·14	0·21	W. 32 S.
Sum of 9 Obs.	265·6	132·6	650·9	558·8	574·5	0·20	0·26	W. 42 S.
Sum of 12 Obs.	330·1	152·2	797·8	687·5	710·8	0·19	0·26	W. 41 S.

TABLE LXX.—Differences of the Directions of Motions of the Lower and Upper Currents of Air, as deduced from the Comparisons of the Direction of the Wind and the Motions of the Clouds in 1846.

Currents.	Quadrant N. to E.			Quadrant E. to S.			Quadrant S. to W.			Quadrant W. to N.		
	No. of Results.	Mean Diffs. of Motion.	Mean Result.	No. of Results.	Mean Diffs. of Motion.	Mean Result.	No. of Results.	Mean Diffs. of Motion.	Mean Result.	No. of Results.	Mean Diffs. of Motion.	Mean Result.
		°	°		°	°		°	°		°	°
Scud *minus* Wind	40	+23		17	+20		129	+22		21	+25	
	7	− 7	+18	4	− 9	+12	11	− 9	+19	8	−11	+15
	1	0		4	0		6	0		1	0	
Cir.-str. *minus* Wind	5	+34		7	+17		53	+33		12	+30	
	1	−67	+17	2	−13	+11	6	−14	+29	4	−38	+13
	0	0		0	0		0	0		0	0	
Cir.-str. *minus* Scud	5	+34		9	+28		17	+23		12	+36	
	3	−48	+ 2	0	...	+18	10	−18	+ 6	8	−27	+ 8
	4	0		5	0		8	0		6	0	
Cirrus *minus* Wind	2	+45		2	+58		36	+40		8	+35	
	0	...	+45	0	...	+58	3	−21	+32	1	−22	+26
	0	0		0	0		4	0		1	0	
Cirrus *minus* Scud	3	+26		6	+52		18	+39		12	+30	
	0	...	+20	0	...	+44	6	−12	+23	7	−25	+ 9
	1	0		1	0		3	0		1	0	

TABLE LXXI.—Daily and Weekly Means of the Estimated Extent of Clouded Sky, the whole Sky covered being 10, for 1846.

Civil Day.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	1·2	[7·9]	[8·1]	9·1	10·0	0·4	9·2	7·0	4·9	6·2	[6·5]	4·9
2	4·1	6·1	7·9	8·4	9·1	2·2	8·9	[7·9]	7·1	5·2	9·5	1·2
3	9·8	8·1	10·0	7·2	[9·6]	1·4	9·9	6·2	7·9	1·3	6·6	5·0
4	[6·6]	6·3	7·4	9·9	10·0	1·5	5·9	7·7	9·3	[5·4]	5·4	2·4
5	5·1	6·8	2·7	[9·0]	9·2	5·7	[8·8]	7·9	7·0	8·7	7·9	8·2
6	9·9	7·2	8·9	8·8	9·7	5·3	9·8	2·9	[6·9]	5·8	9·5	[6·3]
7	9·5	5·6	4·6	9·5	6·3	[6·9]	8·1	10·0	4·2	5·3	8·6	6·5
8	8·5	[6·7]	[6·2]	10·0	4·3	9·9	10·0	8·8	6·9	6·0	[7·5]	9·7
9	9·1	5·7	6·2	2·9	5·4	8·8	10·0	[7·3]	6·3	6·9	8·4	5·8
10	9·3	7·9	9·2	6·1	[6·3]	10·0	7·1	4·7	2·2	8·4	3·8	4·2
11	[9·0]	7·1	5·7	10·0	4·2	8·2	8·8	8·6	6·6	[8·1]	6·9	7·0
12	9·2	5·4	8·4	[7·6]	8·7	5·8	[8·5]	8·6	9·2	10·0	10·0	6·4
13	8·4	2·5	8·5	9·3	8·9	7·2	7·0	9·1	[6·0]	7·4	10·0	[5·0]
14	9·8	9·7	8·3	7·5	4·5	[4·7]	9·3	5·6	3·8	9·9	10·0	1·5
15	5·7	[7·6]	[7·9]	10·0	6·1	4·7	8·7	7·4	5·6	8·4	[8·1]	5·5
16	9·7	9·4	8·5	7·8	4·7	1·3	10·0	[7·8]	8·7	8·7	4·1	5·6
17	9·4	9·2	5·3	10·0	[6·6]	1·1	9·4	9·4	10·0	9·5	9·2	2·7
18	[8·3]	9·7	8·6	10·0	9·5	4·7	9·3	8·9	5·3	[8·9]	5·1	6·7
19	10·0	10·0	3·1	[7·9]	8·5	8·1	[9·0]	6·6	10·0	7·8	4·2	7·3
20	10·0	10·0	3·6	4·8	6·3	8·1	7·8	9·9	[7·7]	8·9	9·7	[7·2]
21	5·3	9·5	7·7	7·6	4·2	[7·7]	9·9	8·9	6·7	9·9	4·5	9·6
22	10·0	[9·5]	[6·0]	7·2	9·5	6·7	7·5	6·4	6·0	9·1	[6·6]	9·0
23	7·3	9·7	7·5	9·2	9·2	10·0	9·9	[6·4]	8·1	6·5	6·1	8·2
24	6·6	9·6	8·4	10·0	[7·4]	8·4	5·9	5·8	9·6	9·9	5·7	4·5
25	[7·8]	8·4	5·6	9·4	6·1	5·8	5·2	3·5	8·1	[7·1]	9·7	2·8
26	9·7	9·2	7·1	[8·2]	6·2	9·6	[8·3]	3·8	9·0	2·5	10·0	1·0
27	5·8	7·3	7·8	8·4	9·0	5·8	9·1	6·2	[8·9]	5·9	7·7	[4·8]
28	7·5	6·8	6·1	6·2	3·5	[7·5]	9·7	4·2	7·5	8·8	3·6	8·0
29	7·3		[7·7]	5·9	5·7	6·1	10·0	7·8	10·0	4·7	[5·8]	6·9
30	9·5		8·1	9·9	3·2	8·7	9·3	[6·3]	9·0	3·7	7·4	5·5
31	10·0		8·1		[2·7]		9·6	7·5		9·3		9·5

TABLE LXXII.—Means of the Estimated Extent of Clouded Sky at the Observation Hours for each Month, for each of the Astronomical Quarters, and for the Year 1846.

Makerstoun Mean Time.	17^{h}.	19^{h}.	21^{h}.	23^{h}.	1^{h}.	3^{h}.	5^{h}.	7^{h}.	9^{h}.
January	7·7	8·6	8·1	8·5	8·4	8·1	8·5	8·1	7·7
February	6·9	7·3	8·7	8·1	8·1	8·8	8·2	8·2	7·8
March	7·8	7·4	7·8	7·5	7·1	7·3	5·9	5·9	6·1
April	8·5	8·2	8·3	9·4	9·2	8·4	7·8	7·8	7·4
May	6·6	7·7	6·8	7·1	7·3	7·5	6·6	7·7	6·6
June	5·1	5·3	5·5	6·3	6·9	6·8	7·0	6·1	6·2
July	8·8	9·2	9·1	8·6	8·9	8·6	8·3	8·3	8·3
August	7·9	7·9	7·2	7·8	8·0	6·7	6·0	5·7	6·0
September	7·4	7·3	7·8	8·0	7·7	7·7	7·2	7·1	6·1
October	7·1	7·6	8·2	8·3	7·9	6·8	7·6	6·1	6·4
November	7·2	7·0	6·3	7·8	7·7	8·1	7·6	6·9	7·6
December	5·5	7·1	6·4	6·0	6·2	6·5	5·4	4·6	5·0
Nov., Dec., Jan.,	6·8	7·6	6·9	7·4	7·4	7·6	7·2	6·5	6·8
Feb., Mar., Apr.,	7·7	7·6	8·3	8·3	8·1	8·2	7·3	7·3	7·1
May, June, July,	6·8	7·4	7·1	7·3	7·7	7·6	7·3	7·4	7·0
Aug., Sept., Oct.,	7·5	7·6	7·7	8·0	7·9	7·1	6·9	6·3	6·2
The Year,	7·21	7·55	7·52	7·78	7·78	7·61	7·17	6·87	6·77

TABLE LXXIII.—Quantity of Rain by the Observatory, Garden, and Greenhouse Gauges, for the Years 1846–1849.

Month.	Observatory Gauge.				Garden Gauge.			Greenhouse Gauge.			
	1846.	1847.	1848.	1849.	1846.	1847.	1848.	1846.	1847.	1848.	1849.
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
Jan.	1·901	0·624	1·166	2·775	1·95	0·70	0·95	1·59	0·67	0·85	2·00
Feb.	1·827	0·484	3·780	1·305	1·57	0·52	3·68	1·14	0·44	3·18	0·70
March	2·293	0·330	3·350	0·929	2·17	0·44	3·29	1·61	0·29	2·79	0·78
April	2·272	1·201	1·028	2·480	1·92	1·16	1·05	1·68	0·81	0·80	1·74
May	2·975	4·335	0·350	2·831	2·82	4·16	0·53	2·45	3·46	0·46	2·46
June	2·761	1·970	3·826	2·379	2·55	1·86	3·67	2·26	1·67	3·35	2·07
July	7·124	2·099	1·294	2·383	5·31	3·27	1·40	5·43	3·09	0·95	1·98
Aug.	4·738	1·035	3·223	2·547	4·69	1·08	2·60	4·34	0·87	2·32	2·12
Sept.	4·586	1·375	1·182	1·973	4·37	1·24	1·42	4·14	1·01	1·14	1·57
Oct.	3·506	2·778	4·152	2·417	3·27	2·31	3·72	2·92	2·10	3·30	2·15
Nov.	2·054	1·839	2·252	1·309	1·88	1·71	Gauge	1·24	1·38	1·80	0·95
Dec.	1·817	4·006	1·627	2·000	1·95	3·21	broken.	1·15	2·95	1·20	1·46
Sums	37·854	22·076	27·230	25·328	34·45	21·66		29·95	18·74	22·14	19·98

NOTE.—The Tables in the preceding pages have been formed in the manner already described in the volume for 1844.

REPORT

TO

GENERAL SIR THOMAS MAKDOUGALL BRISBANE, BART.,

G.C.B., G.C.H., D.C.L., LL.D., F.R.S., F.R.A.S., H.M.R.I.A., PRESIDENT OF THE ROYAL SOCIETY OF EDINBURGH, AND CORRESPONDING MEMBER OF THE INSTITUTE OF FRANCE,

ON THE COMPLETION OF THE

PUBLICATION, IN THE TRANSACTIONS OF THE ROYAL SOCIETY OF EDINBURGH.

OF THE

OBSERVATIONS MADE IN HIS OBSERVATORY AT MAKERSTOUN.

By JOHN ALLAN BROUN,

LATELY DIRECTOR OF THE OBSERVATORY.

EDINBURGH:
PRINTED BY NEILL AND COMPANY.

MDCCCL.

REPORT, &c.

To General Sir T. MAKDOUGALL BRISBANE, Bart.,
PRES. ROY. SOC. EDIN.

Sir,—I have several times brought under your notice the state of the Makerstoun Observatory, and of the Observations made in it, but generally with reference to some special object connected with the prosecution of the work itself; it seems desirable now, when the Observations have been reduced and printed, that I should report to you in a more complete way, in order to embody in the report some notice of the imperfections of the instruments and processes usually employed, and some suggestions for their improvement, the results of my experience in the management of your Observatory.

History.—The proposal made by Humboldt for obtaining an extensive series of corresponding observations in terrestrial magnetism, and generally in the physics of the globe, was readily prosecuted in different countries, but especially in the Russian and in the British Empires. In the latter, many observatories were founded,—by the British Government in the Colonies, and by the East India Company in the large territory under its sway. At home, our Government also founded an Observatory at Greenwich, under the powerful direction of the Astronomer Royal; in Dublin, another observatory was established at the expense of Trinity College, which was placed under the skilful hands of Dr Lloyd,—an observatory which was the Normal School for the Directors of the Colonial Observatories. Scotland alone, of the three kingdoms, seemed destined to remain without any share in this great scientific undertaking; a matter of double regret to the lovers of science in it, since an observatory in this country was even of more importance to the enterprise than in the more southern localities. What the British Government performed at Greenwich, and the rich institution of Trinity College did at Dublin, was undertaken by yourself in Roxburghshire.

The building of the observatory at your seat at Makerstoun was commenced early in 1841, but no observations were made till July of that year. The system adopted was limited, in the first instance, to a few daily observations, together with a participation in the complete series on *Term-days.* The observer, Mr Russell, had also the charge of a transit instrument and of several clocks. In

April 1842, Mr Russell having resigned, the observatory was placed under my direction, the same system of observation being continued. In the end of that year I suggested the propriety of increasing the number of daily observations, an increase which would require the services of another observer; this suggestion, which was seconded by the opinion of Professor J. D. Forbes, was at once approved by you, and Mr John Welsh, a talented student in arts of the Edinburgh University, was, at my recommendation, appointed by you as my assistant. The series of observations obtained in 1843 was necessarily still incomplete, no observations were made after 9^h P.M. nor before 5^h A.M., excepting on term-days and during magnetic disturbances: it was evident, therefore, that determinations of the diurnal laws would still be desiderata; while it was equally evident that a complete diurnal series would at once satisfy these wants, and render the previous incomplete series of greater value. I then suggested the addition of another observer to the establishment, pointing out, however, the most economical way in which this addition could be made, and especially the fact that it would render unnecessary the extra assistants required on term-days. These suggestions were made throughout with the full knowledge that they were in accordance with your object and wishes. I have merely to state the readiness with which you adopted this suggestion and every other tending to the advancement of the work of the observatory. Mr Alexander Hogg, an ingenious mechanic, who had been engaged in the construction of the observatory (which was performed chiefly under his superintendence), and who had been engaged under Mr Russell, at the first, and under myself afterwards, as an observer on the term-days, was recommended by me, as not only fitted for an observing assistant, but also as likely to be of much use in matters of handicraft connected with the observatory and its instruments; he was accordingly appointed in the end of 1843. In 1844 and 1845 a series of observations of all the magnetical and meteorological instruments was made hourly, excepting on Sundays.* It was originally proposed that this hourly series should extend through only two years; in 1846, therefore, the same system was adopted as in 1843. With the year 1846 terminated the period contemplated for the extended work of your observatory, and the period contemplated by the Royal Society of Edinburgh in adopting the large volumes of observations as portion of their Transactions. A more limited series was made in the following years, 1847, 1848, and 1849.

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* I may remark here that the omission of observations on Sundays, even of the great and unusual magnetic perturbations, which has excited the astonishment of our German co-labourers, and especially of the Baron Von Humboldt, like the omission of many other works on the same day, has never been felt as any loss. The amount of simultaneous disturbance observations in existence, made on the six week-days, is greater than we are likely to make any use of. It had not occurred, perhaps, to our continental friends that there was any difficulty in determining the kind of scientific work which would not be a "sin upon an English Sunday," as their own limit, if they have any, is not of a very stringent character.

The first part of the Makerstoun Observations was published in June 1845, and the last part appeared in June of the present year: the last part contains the detailed tables of *results* for the years 1845 and 1846, together with the general results of all the observations, including the monthly means of observations made in 1847, 1848, and 1849. The Makerstoun Observations have appeared as a portion of the Transactions of the Royal Society of Edinburgh, that body having liberally granted £600 towards the expense of printing; a grant for one object which, I am satisfied, will bear comparison with the grants of much richer societies.

I shall now notice some of the more salient matters in connection with the Observatory itself and its instruments.

The Observatory.—The geographical co-ordinates are—

Latitude, 55° 34′ 45″ N.
Longitude, 0^h 10^m $3^s{\cdot}5$ W. of Greenwich.
Height of the barometer cistern above mean water at Berwick, 213 feet.

The observatory is constructed of wood, like that at Greenwich; its architectural character is not of the highest order; it is placed on a small rising ground which is probably formed of felspathic trap, covered with rolled boulders, pebbles, and gravel. The internal division of the building, and the number, size, and positions of the windows are ill adapted for the purposes of the observatory. The plan and elevation were due to an assistant in the Dublin Observatory. Care was taken to exclude iron completely from the structure, copper nails having been used throughout: the telescopes and instruments were placed upon excellent white sandstone pillars, well-founded, and unconnected with the floor. The care taken in this matter is the most deserving of praise in connection with the construction of the observatory, and that care was chiefly or altogether your own. It should not be forgotten that the knowledge of the best arrangement for such a building was very small at the time it was planned, if it is considerable now.

The range of temperature within the observatory was much too great, owing to the thinness of the walls, and the number and largeness of the windows. The building was at first heated by copper stoves which soon became oxidated, and produced suffocating fumes of most hurtful character. It was altogether impossible to approximate to anything like uniformity of temperature in a house so easily affected by external variations. The stove was discontinued in 1843, and a small brick building erected at a distance for a computing room in winter. I proposed, in 1843, to heat the observatory with hot water pipes, but the difficulties connected with this process were too considerable to render the experiment desirable. It was found possible in 1845, to erect a fire-place with a tubular brick chimney in one of the ante-rooms, which, though wholly useless for heating the observatory, served to render the small room in which it was placed sufficiently comfortable for a computing-room.

The Instruments.—The declination and bifilar magnetometers were made by Mr Grubb of Dublin. The magnets during 1841 and 1842 were enclosed by loosely fitting cylinders, resting upon the pillar tops, covered by glazed lids; but the junctions were neither pressed together by any contrivance, nor was there any moderate precaution taken to prevent currents of air from circulating in the boxes. In 1843 and 1844, these and various other defects were removed: the joints were lined with velvet and pressed firmly together; rectangular boxes were placed within the drums; both cylindrical and rectangular boxes were gilt outside and inside; and the whole apparatuses were covered by thick cotton hoods. The gilding prevented the effects of radiation in producing currents within the boxes; the other precautions prevented the entrance of external currents, and secured to a considerable extent a uniform temperature and dryness.

The suspension threads for the declination magnet broke at short intervals in 1841 and 1842; they were succeeded in June 1843 by a thread carefully prepared, which is still in use, and apparently as good as ever. In case, however, the suspension thread should have received any torsion, the magnet was removed occasionally, a brass bar was suspended, and the torsion was rendered zero for the magnetic meridian before replacing the magnet; when little torsion was found existing the trials were made seldomer, as the mere manipulation was apt to introduce torsion of itself.

Errors due to twist in the suspension wires of the bifilar magnet, were eliminated by the process employed to determine the unit-coefficient. The interval of the wires was adjusted according to the instructions by the Committee of the Royal Society; but this rendered the instrument too sensitive, and, during moderate disturbances, the scale went out of the field of the telescope. This was attempted to be remedied at the time by turning the torsion circle till the scale reappeared, generally a difficult and unsatisfactory operation; in 1846, however, I employed a small magnet for the purpose, this being placed at known distances where its effect upon the bifilar magnet was determined.

Even for the ordinary diurnal movements, however, the instrument was too sensitive; the reading of the magnet scale was estimated to one-tenth of a division, and of the thermometer to one-tenth of a degree, but a variation of one-tenth of a degree in the temperature of the magnet is equivalent to two-tenths of a scale division in its motion. The thermometer was placed with its bulb resting on a brass bar, so that it might show as nearly as possible the temperature of the magnet.

The balance magnetometer was made by the late Mr Robinson of London; the box was gilt inside and outside, and covered with cloth as in the case of the other instruments. The magnet was never lifted from its support, excepting during the adjustments; it was vibrated through small arcs only. Many of the apparent anomalies which I have observed in this instrument, and described in the Edinburgh Transactions, were probably due to the facts, that the needle rests upon knife edges, and that every care being taken in the management of the instrument, the consequences of such a mode of support were exhibited under the most favourable circumstances.

I have referred to the imperfections of the inclinometer, in the introductions to the various volumes; one error I believe to be due to the presence of iron in the copper circle or basement of the instrument.

The barometer, a standard by Mr NEWMAN, was fixed to the south wall of the west ante-room, not the best possible position in the observatory, as it was subjected to greater variations of temperature than it would have been if placed to the north. The thermometers were placed on a revolving frame in front of one of the north windows; but the case was removed to the west in the morning, and to the east in the evening, when the sun shone near to, or north of the prime vertical. The anemometer is sufficiently well-fitted for the determination of the laws of variation, but there is considerable uncertainty as to its value for giving absolute results, as there is with most of the anemometers yet in use. From various causes, the working of the anemometer became less trustworthy in 1848 and 1849.

Times of Observation.—The ordinary observations were made at certain previously arranged hours and minutes of Göttingen mean time. When the observer, from any cause, was too late for his observations, he was requested to note the exact minutes when the observations were made; this was done in all cases, and the true minutes will be found in connection with the printed observations. No check-clock was used, and none was necessary. Indeed, it is my opinion, where little confidence is placed in some portions of the labours of assistants, they will generally, in consequence, be found to deserve little trust in others; and this is especially true in the work of an observatory, requiring such a *various* fidelity and care. Besides the regular observations, large masses of observations were made during magnetic disturbances and other occasional phenomena.

Reductions.—Before the reductions of the magnetical observations could be completed, certain factors were requisite, representing the effect of one degree Fahrenheit on the positions of the bifilar and balance magnets, and the values of a given change of angular position in terms of some known or easily found unit. It is not necessary that I should do more than refer to the fact, that I have proved the insufficiency of the processes originally prescribed for the accurate determinations of those co-efficients and have substituted new ones, of the accuracy of which there can be no doubt, as they have been verified in every possible way.* I mention this, chiefly to remark upon the time and labour bestowed on the investigations for these important objects. Could I have been satisfied with issuing the volumes of observations from the press uncorrected, as has been done in many cases, or have reduced them by the official methods, the volumes might have been published immediately after the observations were made, as all the ordinary portion of the reductions were performed, and were verified week by week. The whole value of such observations, for any present use, depends upon these reductions: erroneously corrected observations are as useless as if they were uncorrected; and to publish them in an uncorrected state would be simply to place the volumes on the shelf, with large masses of other like valuable works, till their proper reduction and discussion at the period vulgarly denominated the Greek Calends. It is conceived, therefore, that the great amount of labour was well spent, which was necessary, *first*, in attempting to obtain satisfactory results from the old processes; *second*, in gradually developing and perfecting the new ones; and, *third*, in rendering the factors deduced as accurate as possible, by getting rid of those errors which are unavoidable in the employment of new methods. It is conceived also, though this well-bestowed labour were forgotten, and by far the greater part of it has never shown itself in print, that the speed with which the volumes have appeared, will do no discredit to your observatory, nor to its director with one complete and one partial computing assistant.

Printing.—Considerable time was bestowed in arranging the observations into the best forms for printing; many condensations and improvements were gradually adopted till, it is believed, that the volumes for 1844, 1845, and 1846 have been printed in the most distinct and condensed way to be unabbreviated; it would have been a great saving of *time* to have had them printed in twice the bulk. The proofs were carefully revised by my assistants and myself; almost every sheet passed through my own hands before sending to press.

Division of Labour.—The general management of the observatory, with the correspondence and all other matters relating thereto, devolved upon myself. I took a regular share of the work of observing night and day, especially in the years 1843, 1844, and 1845, and, with Mr Welsh, performed the principal portion of the work of computing, and of the more difficult class of absolute observations. I also made, with Mr Welsh, the astronomical observations of transits, &c., and performed other occasional work required by yourself.

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* The imperfect system of determining the temperature coefficients by removing the magnet from its place in the instrument to water baths, has been retained in opposition to anything like scientific caution, after its insufficiency has been demonstrated in the case of instruments by the best makers, treated with *at least* an average care.

Mr Welsh shared in all the work of observing and computing. A large mass of observations of the new planets were made with your large equatorial, chiefly by Mr Welsh, at extra-official hours; these observations have been published by the Royal Astronomical Society.

Mr Hogg shared in the regular and disturbance observations, assisted in the computations, and performed all the mechanical work connected with the observatory and its instruments.

I have already noticed, in different Introductions to the Makerstoun Observations, the diligence and care of my assistants. I shall here repeat my obligations to Mr Welsh, who was trained from the commencement under my own eye. His acquaintance with the mathematical details of his work, his skill as an observer, his fidelity in all he performed, and his appreciation of the practical difficulties occurring, have been of the greatest importance to me. He was made conversant with all my own views upon the theoretical and practical questions which so often developed themselves, and, in return, I frequently derived considerable benefit from his opinions.

To Mr Hogg, also, I can award my testimony as to the honesty and diligence with which he has fulfilled the duties for which he was at first engaged. To his invention and handicraft most of the mechanical contrivances, in wood and brass, about the observatory are indebted.

Suggestions.—I shall now offer a few suggestions, the results of my experience, on the subject of magnetical and meteorological observatories, especially in such climates as our own.

Situation.—I need scarcely say that it is of importance, especially for absolute magnetical determinations, that the position chosen for the observatory should not be over highly ferruginous rocks, even though observations can be made in the neighbourhood to determine any local error. But there is a point connected with the placing of magnetical and meteorological observatories which it seems to me is of very great importance, a point which has been apparently overlooked to a very great extent; I mean the influences due to the proximity of large cities. These influences, I fear, are much greater than may be suspected, and that not only on the absolute values, but likewise on the variations, whether magnetical or meteorological. Suppose an observatory placed on one side of a large city, which contains immense masses of iron, huge piles of stones, and thousands of human beings; this combined mass has a temperature several degrees higher than that of the air at a distance; it is a generator of electrical, thermal, and aërial currents: have these no effects upon the magnetical and meteorological states of the neighbouring district? The probabilities appear all in favour of an answer in the affirmative, and, at least, till the negative can be proved, it is evidently contrary to all sound investigation to incur the risk of ills we know not of. I feel inclined to attribute some curious discrepancies betwixt the results obtained in town and country observatories to some such causes.

The building to contain the variation instruments and computing room, should be made of stone if possible, even though it should contain some *small* quantity of iron. It is of the greatest importance that the temperature within the instrument room should be nearly uniform; for this end, stones or *logs* of wood are essential; I do not believe that any small quantity of iron which analysis might detect would affect the *variation* results. In the construction of the observatory, however, an important matter has always been lost sight of: it is nearly impossible that the temperature in our climate can be very uniform without a complete exclusion of the external atmosphere. Such an exclusion has been attempted by sealing up the observatory, and by burying it under ground; methods which might have served for the instruments, but which would in a short period have served for the observers too. It appears essential, then, that the instruments should be placed in a different room from the observer: this room should be wholly *within* the observatory, with passages or rooms around it, separating it on all sides from the outer wall: the telescopes could be placed in the wall of this room, the eyepieces being outside; a single glazed aperture with a lamp and proper arrangement of mirrors would serve to illuminate all the scales. There should be no windows, and only one (*double*) door into the room which could be well closed, and would require to be opened only at considerable intervals. The roof of the observatory should slope only to the north, so that the sun could not beat on it, or some arrangement should be made by a double roof, to prevent the heating there from affecting the internal temperature.

By such arrangements, the diurnal variation of temperature would be scarcely appreciable within the magnetometer boxes. It would be necessary, in order to determine the temperature co-efficients, either that this room could be opened for some time to the variations of the external temperature, or that it should be possible to heat it artificially: this might be done by a stove, or by pipes with hot water laid in the external room, which could be used as a computing room. The annual variation of temperature might be very much diminished, and the dryness of the instruments be insured by this arrangement. It is to the effects of varying temperature and humidity, that the principal errors are due for the three variation magnetometers.

Having suggested what I conceive to be the best position for the variation magnetometers, I would remark, shortly, with reference to the dry and wet bulb thermometers, that they ought not to be placed in a *recess* to the north; a position which, although sufficiently shaded from the sun, is, however, in general wholly abnormal; it is generally damp, and if the house be of stone, of a considerably lower temperature than in the shade elsewhere.* The thermometer case should, I think, be placed to the north of the building, not in a recess, but sheltered from the sun's rays in the morning and evening by large double boards placd at a moderate distance, and permitting a free circulation of the air: the case itself should be similar to that employed at Makerstoun, or of a lighter construction, which can be turned round from within the observatory, so as to allow the observations to be made from one of the windows, the glass of which prevents the effects of radiation from the body of the observer, or from the lamp during night.

The Declinometer.—This instrument, which is of the simplest possible construction, requires no correction for the effects of temperature; it has generally, therefore, been *the* instrument in observatories, the only one from which laws of variation might be expected with little trouble, yet the observations have in general been overrun with errors. The errors of the instrument are due chiefly or altogether to the suspension of the magnet.

The French Academy of Sciences thought the mode of suspension of the declination-magnet of so much importance, that they offered it as the subject of a prize in the year 1777; previously the needle was balanced upon a pivot as in our common mariner's compass. The prize was carried by COULOMB, who proposed suspension by means of a thread formed of the silk fibres from the cocoon. This suspension was adopted immediately after by M. DOMINIC CASSINI; the old cap and pivot suspension was used, however, for some time afterwards, as by GILPIN, early in the present century. CASSINI seems to have soon become aware of the effects of humidity, and of separation of the fibres, in introducing torsion into the thread; for he prepared his threads by first gumming the fibres together, and then greasing the thread. It is obvious, however, that, after all,

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* As I will not again allude to the meteorological instruments, I may mention here my doubts as to the accuracy of the theory of the wet bulb, even as a measurer of the humidity of the locality in which it is placed; and my perfect belief that the determinations of the vapour pressure in the atmosphere, obtained by means of the dry and wet bulbs, are wholly in error. I have indicated this opinion in different volumes of the Makerstoun Observations, where I have also shewn that the apparent success of an attempt made by M. DOVE, and lately by Colonel SABINE, to resolve the diurnal variation of the total pressure of the atmosphere into two simple variations, is in all probability due to the large but erroneous diurnal variation of aqueous vapour pressure obtained in the mean for the year; which, when subducted from the smaller double variation of the total pressure, leaves traces only of its own abstraction. I have shewn that this is the more certainly true, since, when we consider winter only, the variation of the aqueous vapour pressure, as computed, being then very small, the pressure of the *dry air* then exhibits a well marked *double* diurnal variation as before. I do not enter in this Report into the Results of the Makerstoun Observations. I do not mention the previous fact to shew that the pressure of aqueous vapour is not involved in the diurnal variation obtained from the barometer, but as some evidence that the pressures deduced from the dry and wet bulbs are not to be trusted. I have proposed and attempted some experiments for the purpose of obtaining the *actual* value of the vapour pressure in the atmosphere, by destroying the moisture in a closed apparatus, but have not yet succeeded, owing to imperfections in the instrument.

I am glad to learn, since the above was written, that Colonel SYKES has also, in a paper read before the Royal Society of London last session, objected to the results from the psychrometer.

the threads thus constructed must have performed very indifferently; for his observations, which were made at the same time in the Paris Observatory, and in the caves below, shew differences and variations in the monthly means which are not explicable by anything within our later, and, as we may suppose, more accurate experience. Since CASSINI's time, the improvement of the suspension-thread seems to have made very little progress. M. KUPFFER, apparently despairing of satisfactory results from a silk suspension, substituted silver wires in the Russian declinometers; a similar suspension has also been employed by M. QUETELET at Brussels. This seems to me a step towards the cap and pivot suspension. Indeed, M. NERVANDER of Helsingfors has found that such suspension cannot be trusted, since the wires are so affected by temperature that, when an unmagnetic bar is suspended, it has a considerable diurnal motion: a fact which I had suspected, and had pointed out as a probable source of error in determining the temperature coefficient for the bifilar magnet.

The suspension-thread acts in the following manner:—As the thread is composed of a series of fibres more or less twisted, the plane of detorsion, that is, the vertical plane in which an unmagnetic bar will rest when suspended, is determined by the composition of series of opposing forces: if the torsion of the individual fibres be at all considerable, very small motions of the magnet will cause them to occupy slightly different positions *inter se*, or moderate changes of humidity acting to a greater extent upon the external than the internal fibres, and upon some of the external fibres than upon others, will change the plane of equilibrium, and in this way force the magnet from its true position. Changes of the plane of detorsion caused in this way, and by the occasional breaking of fibres, will explain the great discrepancies occurring in large series of observations, and the consequent lessening of their value. The importance also of obtaining properly-constructed suspension-threads will be at once evident, when it is remembered, that unless such are obtained, the labour of years may be rendered of little or no value. The conditions sought to be obtained in the construction of the thread for the Makerstoun declinometer, were the following:—*First,* The absence of all torsion from the fibre. The so-called *untwisted* compound fibre from the cocoon, usually employed in observatories, receives a considerable twist in the operations of drawing from the cocoon and reeling, as may easily be perceived by passing it between the thumb-nail and index, the method which I employed to remove the twist. *Second,* That each fibre when combined into the thread, shall bear an equal portion of the weight. For this end the fibre was not cut into pieces, but a sufficient length being obtained, free of flaws, it was wound round two smooth pins, placed at the required distance, so that no twist should be introduced in the act of winding; when a sufficient thickness was obtained, and the ends were tied, a hook attached to a weight was inserted in place of the lower pin; the thread being formed of one continuous fibre was thus free to move round the upper pin and the weight-hook till each length of fibre bore nearly an equal strain. *Third*, That the thread should be as small as is consistent with durability. The number of fibres for a particular weight should be determined by experiment; sixteen fibres of the silk supplied to the Makerstoun Observatory, and bearing nearly a pound weight, were found insufficient several times, though that number was recommended in the Report of the Royal Society; this was probably due to some difference in the thread: a thread of 22 fibres has now performed well for seven years.

I should notice that M. Nervander has proposed to form the suspension thread, by moistening with hot water the fibre cut into lengths, and submitting each length in this state to a considerable tension, before combining them to form the thread.

The Bifilar Magnetometer.—The chief source of error for this instrument is also to be found in its suspension; wires of silver or of gold have generally been adopted; although threads like those for the declinometer have also been employed, as at Greenwich. I object to the use of skeins, not merely because the errors due to a silk suspension are probably greater than those due to wires, but chiefly because no correction can be applied for the errors due to the former, while those due to the latter can be wholly eliminated. One error common to every kind of suspension is due to the stretching of the thread or wires, which gives a false value of the secular change; it is curious that no attempt has been made to eliminate this error, which could easily be done by means of a small apparatus for measuring the distance between the suspended magnet and the base plate of instrument. Any twist in the wires will give a false value of the unit coefficient, if determined in the usual way by the torsion circle; I am afraid that there is an equal chance of a similar error with silk threads, besides the probable variation due to breaking of fibres, &c. The error arising from twist, however, does not appear, when the process, which I have proposed and used, of determining the unit coefficient by deflections is adopted. The error which is peculiar to the wire suspension is that already noticed of a variation due to temperature; this error, however, also disappears when the temperature coefficient is determined by my process, since then, the total effect of temperature upon the position of the magnet is at once obtained. There remains against the silk suspension the heavy and indeterminable errors due to humidity, and to the gradual breaking of fibres.

By the use of metallic wires and an apparatus to determine the amount which they stretch, nothing is required to render this instrument as perfect as possible but a magnet with permanent magnetism, the proper processes being employed for the determinations of the unit and temperature coefficients.

The Balance Magnetometer.—I conceive that with proper care this apparatus may give considerably better results than have ever yet been obtained from it, The points of principal consequence are, well made hardened knife edges, and a magnet that will not lose magnetism. The temperature coefficients of well hardened thin bars, especially of those supplied by ROBINSON, have been very small; and it would not be difficult for the maker, by a few experiments, to diminish or destroy the effect of temperature altogether in the manner suggested afterwards. The only subject then remaining for the maker's skill would be the formation of a powerful and *permanent* magnet with a hard well-made knife-edge. I have already shown in other places, than no dependence can be placed on the coefficients involving the time of vibration of this needle.

Mechanical Temperature Compensation.—The difficulties cónnected with the diminution of the temperature coefficients of magnets, for the purposes of the bifilar and balance magnetometers, may be, to a great extent, avoided by mechanical compensations. Such compensations, by a little experimentation and previous calculation, may be sufficiently complete for most self-registering apparatuses, to render considerations of the varying temperature negligible: even for the more delicate apparatuses, however, any incompleteness of the temperature compensation may be determined by the process which I have employed. The following method of compensation may be adopted for the bifilar magnet:—Let the upper extremities of the suspension wires be attached to the ends of two brass rods, which approach each other within an interval equal to the diameter of the lower wheel, and let the other ends of the brass rods be *fixed* to a beam of wood, so that an increase of temperature will cause the free ends of the rods to approach each other, by an amount equal to the difference of their expansion and that of the wooden beam to which they are fixed. Such an approximation will diminish the directive force of the wires, and by a proper regulation will compensate for the diminution of the magnet's moment. If the suspended wires are silver, and the lower wheel is of brass, the coefficient (e) of *contraction* of the space betwixt the suspension wires at the top will be found from the equation of equilibrium to be

$$e=q$$

where q is the temperature coefficient. Thus, in the case of the Makerstoun bifilar $q=0{\cdot}000266$, the interval of the wires is nearly 0·5 inch, and, therefore, the brass rods would require each to be about $7\frac{1}{2}$ inches long, in order that the interval be diminished 0·000266 of itself, or 0·000133 inch; the difference of the coefficients of expansion of brass and wood being assumed $=0{\cdot}0000085$. Magnets with a temperature co-efficient of 0·0001 would require brass suspension rods of3 inches in length, or less in proportion as the interval of the wires is less than 0·5 inch.

For the balance magnet; let a brass rod be fixed to the magnet near its south end, but free to expand towards the north, and having as much to the north of the axle as to the south; it is obvious that when the temperature increases the expansion of the brass rod towards the north, if properly regulated, may be made to depress the north end of the needle as much as the diminution of the magnetic moment would tend to elevate it. The expression for the proper weight and length of such a brass rod is more complicated than in the case of the bifilar, depending on the weight of the needle, and the distance of its centre of gravity from the centre of motion. In the case of the Makerstoun balance, for which $q=0{\cdot}00008$, I have computed that a brass rod 10 inches long, $\frac{1}{30}$ the weight of the needle, fixed so that its centre of gravity should be near the centre of motion of the needle, would by its expansion compensate nearly for the diminution of the magnetic moment.

In both cases such computations could only be considered as rough guides to the instrument-maker who, by a few experiments at different temperatures, might be able to attain a more accurate compensation.

Magnets.—My experience of small magnets is not very great, but I feel inclined to prefer thin parallelopipedal magnets of a length of about six inches for variation instruments in a fixed observatory, to either the large or smaller sizes. If building them of thin bars would diminish the temperature coefficient, would the compound magnet be equally permanent? For variation instruments, mirrors and scales would be preferable to collimators for such small magnets.

The whole subject of the best forms and kinds of magnets, the best for permanency, intensity, and smallness of temperature co-efficient, requires a careful investigation. I am not aware whether any considerable use has been made of the labours of the Rev. Dr Scoresby, Mr Petrie, and others, for the purposes of an observatory.

Instruments for Absolute Determinations.—These instruments require to be placed at a distance from the others, and in a place wholly free from iron.

The Inclinometer.—This should have the needle placed apart from the reading circle, and as little metal should be employed as possible for the base: if the makers would take greater pains in obtaining metal without iron, such precautions would be less necessary. Such instruments as those made by M. Repsold of Hamburgh, with reading microscopes and short needles, seem best fitted for good observations.

In order to determine the error of old instruments due to the iron in the circle or general structure, the following process might be employed with advantage: Connect the needle with a beam carrying a lens and scale, or a mirror, with the scale at a distance,—suspend this by a silk thread so that the axle of the needle may occupy its usual position in the circle, the latter with the whole apparatus being placed horizontal and the agate planes being removed, adjust a telescope so as to read the scale, and turn the circle, &c., round, so that a given division shall occupy different azimuths; then from the variations of scale reading (the changes of declination being subducted), the effect of the circle, &c., upon the needle in different positions is determined; and from these the effect upon the needle, when the whole apparatus is vertical, may be easily obtained. This process will be found much more satisfactory then than that by vibrations. I would only farther suggest, that the process should be repeated, with the poles changed, and that the position of the needle should be obtained for the apparatus away; since in some needles I have found that the intensity of saturation differs with the end which is made north, and that one end is sometimes much weaker than the other.

The Horizontal Force-Measurer.—For a fixed observatory, I feel inclined to prefer thin parallelopipedal magnets, perhaps about 8 inches long, with deflections of from 3° to 8° according to M. GAUSS's method, rather than the small magnets and large deflections by Dr LAMONT's. If, however, the 4-inch magnets are used I prefer a modification of Dr LAMONT's method which Dr LLOYD has employed, in which the deflecting bar is kept always at right angles, not to the suspended magnet, but to the magnetic meridian. This subject requires considerable examination; the discordant results obtained from different instruments, and from the same instrument with different magnets, are too considerable not to require explanation. The deflecting magnet should never be touched with the hand during observations, but it should be lifted by a carriage or chair. The expansion of the distance beam should not be omitted in the computation of the absolute intensity; where it is of brass the effect of this omission may be quite marked in comparing observations during summer and during winter. I may touch upon the whole subject again in another way.

Having noticed those points which have occurred to me as of principal importance, or as more or less new, I cannot conclude this report without adverting to the assistance which I have received from different gentlemen during my labours at Makerstoun.

To yourself I have been especially indebted. The foundation and support of the observatory is a thing, of itself, which might be noticed as a matter for gratulation. It is rare for persons with much more extensive means to have done so much for science,—while they were themselves living and capable of otherwise employing their wealth—it is rare for them to have done so much even by their bequests. This reason for thanks I possess only in common with other lovers of science. It is for your personal kindness, the friendship with which you have honoured me, the suggestions and aids which I have derived from you in every matter likely to advance the cause that you have had so much at heart, and which were likely to enable me to perform those duties devolving upon me with satisfaction and comfort to myself,—it is for these, and many similar kindnesses, that I have to offer you my most grateful and most hearty thanks.

You have acknowledged, in the first part of the Makerstoun Observations, the assistance which you derived from the advice of Professor J. D. FORBES as to the formation and continuance of the Makerstoun Observatory, and I have to acknowledge my obligations to him in a more extensive way. As his pupil I am indebted to him for his valuable instructions, and especially for that love of strict science which he has sought with so much success to diffuse among his students in the University of our Scottish metropolis, whether by his prelections or by his example, through those original and laborious scientific investigations which he has prosecuted so successfully. In some of the latter of these I had the pleasure and good fortune to assist him, benefiting as I hope I did, by that cautious and careful spirit which distinguishes his researches. Besides many other kindnesses, I owe to his recommendation your selection of me for the care of your observatory: since then, I have been in constant communication with him, either as my friend and adviser, or in his capacity as secretary of the Royal Society of Edinburgh, in whose Transactions the work of your observatory has appeared.

To the Rev. Dr H. LLOYD, the excellent President of the Royal Irish Academy, I also owe my best acknowledgments. It was to him that the observatory owed its first scheme of observation, and much attention and examination of the earliest observations. I have also been indebted to him in frequent communications, and, above all, to his published papers on the instruments and processes of observatory work, without the use of which my own progress, and that of most of the Directors of our Colonial Observatories, would have been difficult and painful labour.

Mr AIRY, the Astronomer Royal, I have before thanked for the instruction which I received in the Greenwich Observatory before undertaking the charge of yours; but I have also to thank him for the readiness and willingness with which he has invariably thrown open to me any matter connected with the observations at Greenwich, which I may have desired for comparison with our own.

I have already noticed the valuable grant of the Royal Society of Edinburgh towards the printing of the volumes of Observations. I may also notice that copies of the volumes of Makerstoun Observations have been forwarded by the Royal Society to the institutions and individuals, given in the Addendum to this Report, in addition to those entitled to receive them as portions of the Edinburgh Transactions.

Permit me to conclude by expressing my hope that these labours, to which

I have devoted my best energies, may ultimately be found to have added something of importance to our knowledge of the wondrous works of that Infinite Being, the Creator of all things and the Redeemer of men.

And I have the honour to be,

Sir,

Your very obedient,

And very humble servant,

JOHN ALLAN BROUN.

Edinburgh, *July* 1850.

ADDENDUM.

Besides those Institutions and Individuals entitled to receive the Edinburgh Transactions, the following have had the Makerstoun Observations forwarded to them:—

ENGLAND.

The Royal Observatory, *Greenwich.*
The Cambridge Observatory.
The Oxford Observatory.
The Durham Observatory.
The Royal Artillery Library, *Woolwich.*
The Trigonometrical Survey Office, *London.*
Colonel Sabine, *Woolwich.*
Captain Riddell.
Very Rev. Dr Peacock, *Ely.*
Rev. Dr Whewell, *Cambridge.*
S. H. Christie, Esq., *Woolwich.*
W. S. Harris, Esq., *Plymouth.*

SCOTLAND.

The Royal Observatory, *Edinburgh.*
The Glasgow Observatory.

IRELAND.

The Dublin Observatory.
The Armagh Observatory.
Rev. Dr Lloyd, *Dublin.*
The Earl of Rosse, *Parsonstown.*
E. J. Cooper, Esq., *Markree.*

COLONIES, ETC.

St Helena, Magnetic Observatory.
Cape of Good Hope, Observatory.
Cape of Good Hope, Magnetic Observatory.
Madras, Observatory.
Bombay, Magnetic Observatory.
Trevandrum, Magnetic Observatory.
Paramatta, N. S. W., Observatory.
Toronto, Canada, Magnetic Observatory.

CONTINENT OF EUROPE.

Berlin, M. Dove.
Berlin, M. Erman.
Bonn, Observatory.
Breslau, Observatory.
Cadiz, Observatory.
Dorpat, M. Kämtz.
Geneva, Observatory.
Helsingfors, Magnetic Observatory.
Kasan, Observatory.
Lausanne, M. Wartmann.
Milan, Observatory.
Naples, Observatory.
Paris, Observatory.
Prague, Observatory.
Pulkowa, Observatory.
Rome, Observatory Collegio Romano.
Senftenberg (Bohemia), Observatory.
St Petersburg, Corps des Mines.
Vienna, Observatory.

UNITED STATES.

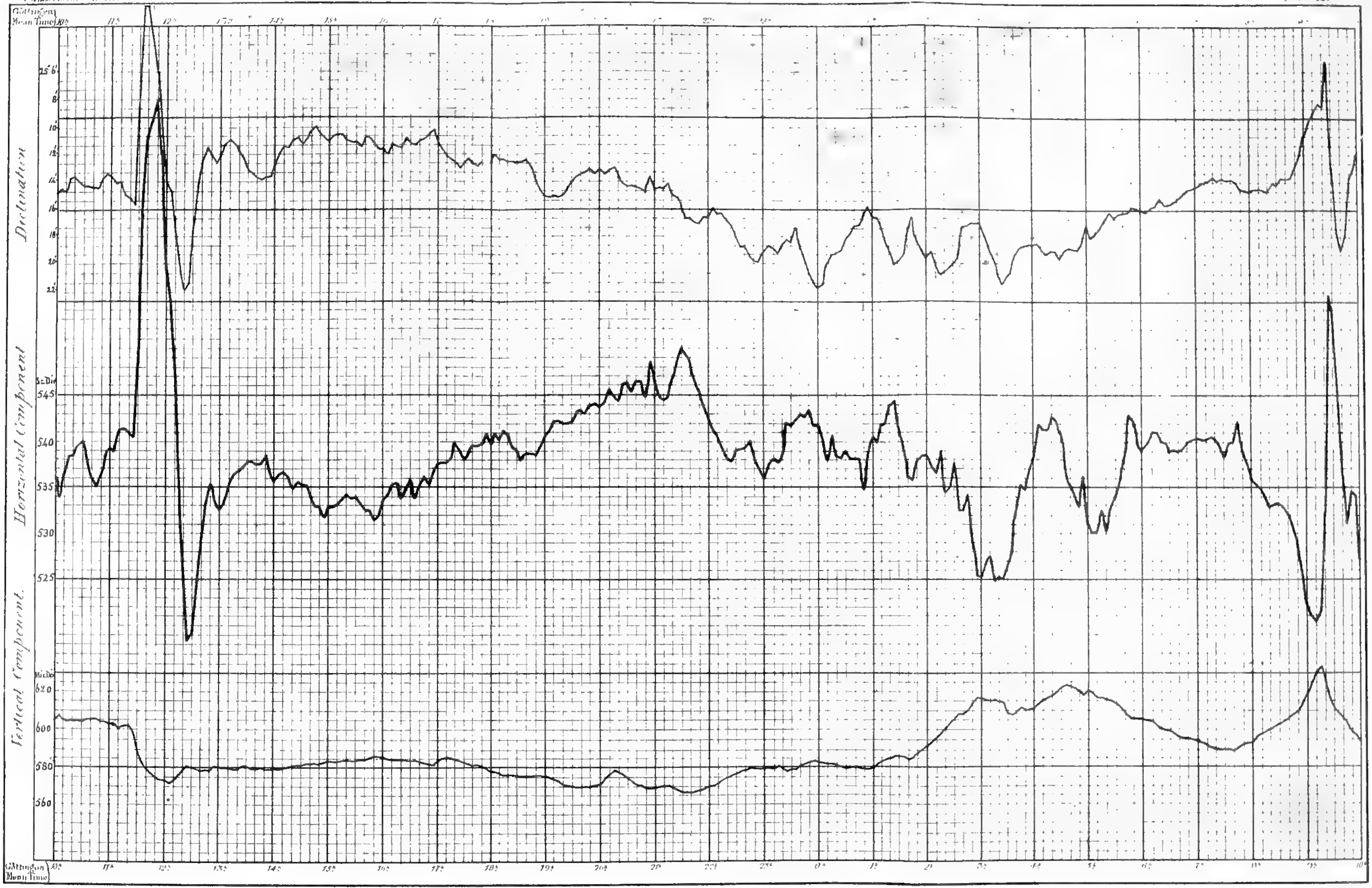
Boston, Harford Magnetic Observatory.
Philadelphia, Girard College Magnetic Observatory.
Washington, Observatory.

BRITISH MUSEUM NATURAL HISTORY

Term-Day Magnetical Observations. January 22, 23. 1845.

Makerstoun Observations.

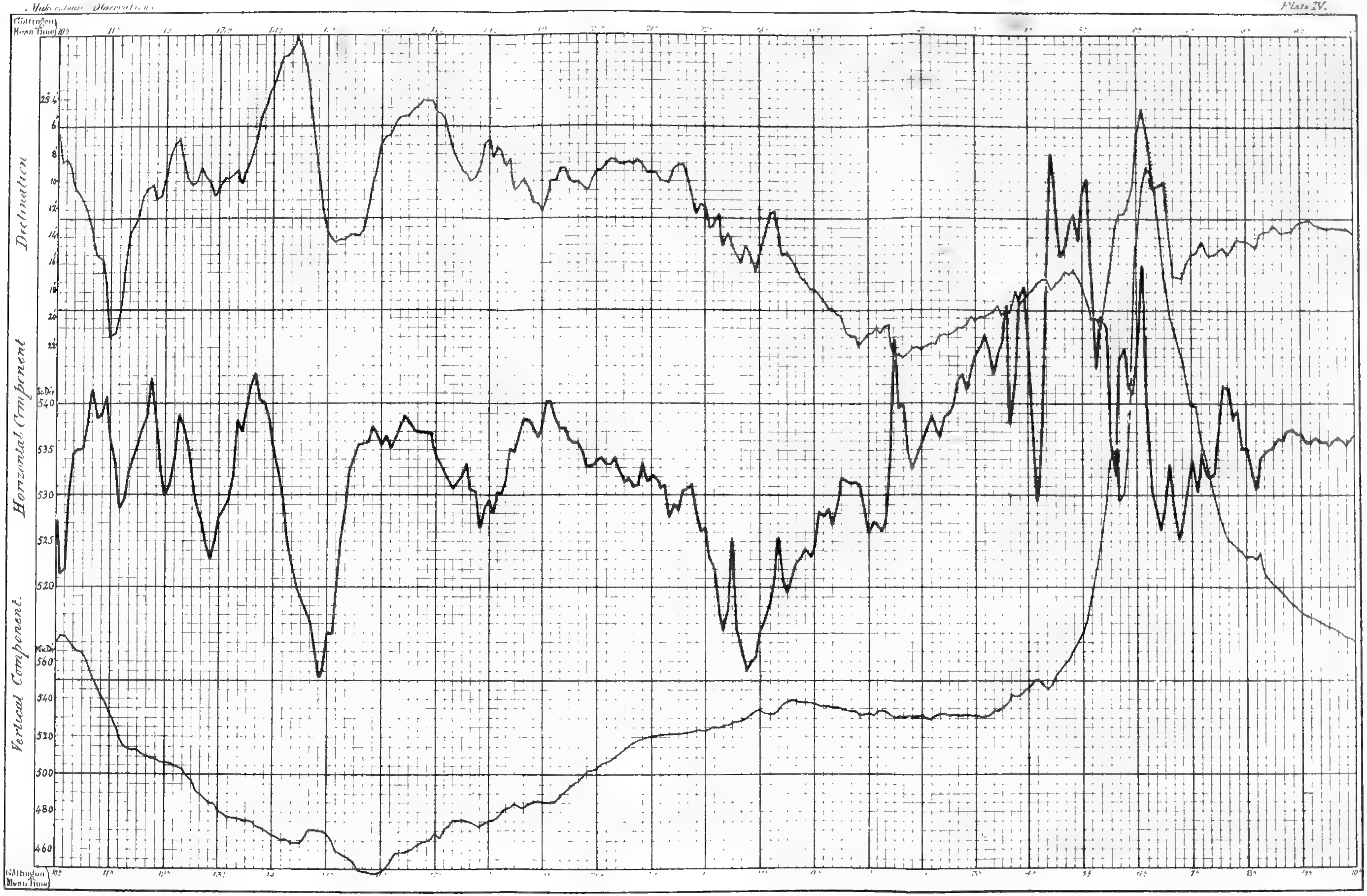
Plate II.



Ascending Curves indicate decreasing westerly declination and increasing force

BRITISH MUSEUM
NATURAL HISTORY.

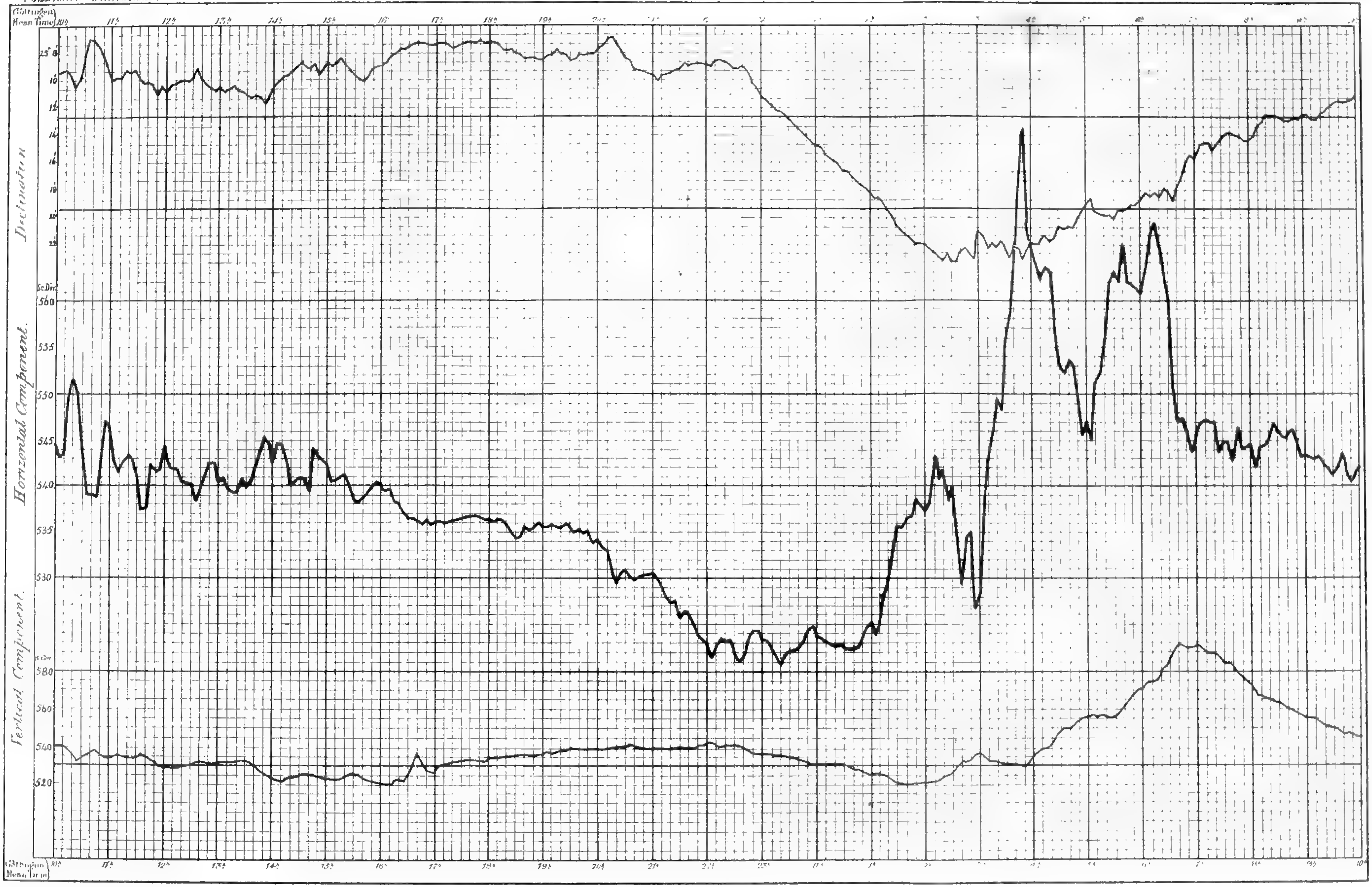
Term-Day Magnetical Observations. March 19, 20: 1845.



Ascending Curves indicate decreasing westerly declination and increasing force

BRITISH MUSEUM
NATURAL HISTORY

Term-Day Magnetical Observations. April 23, 24: 1845.



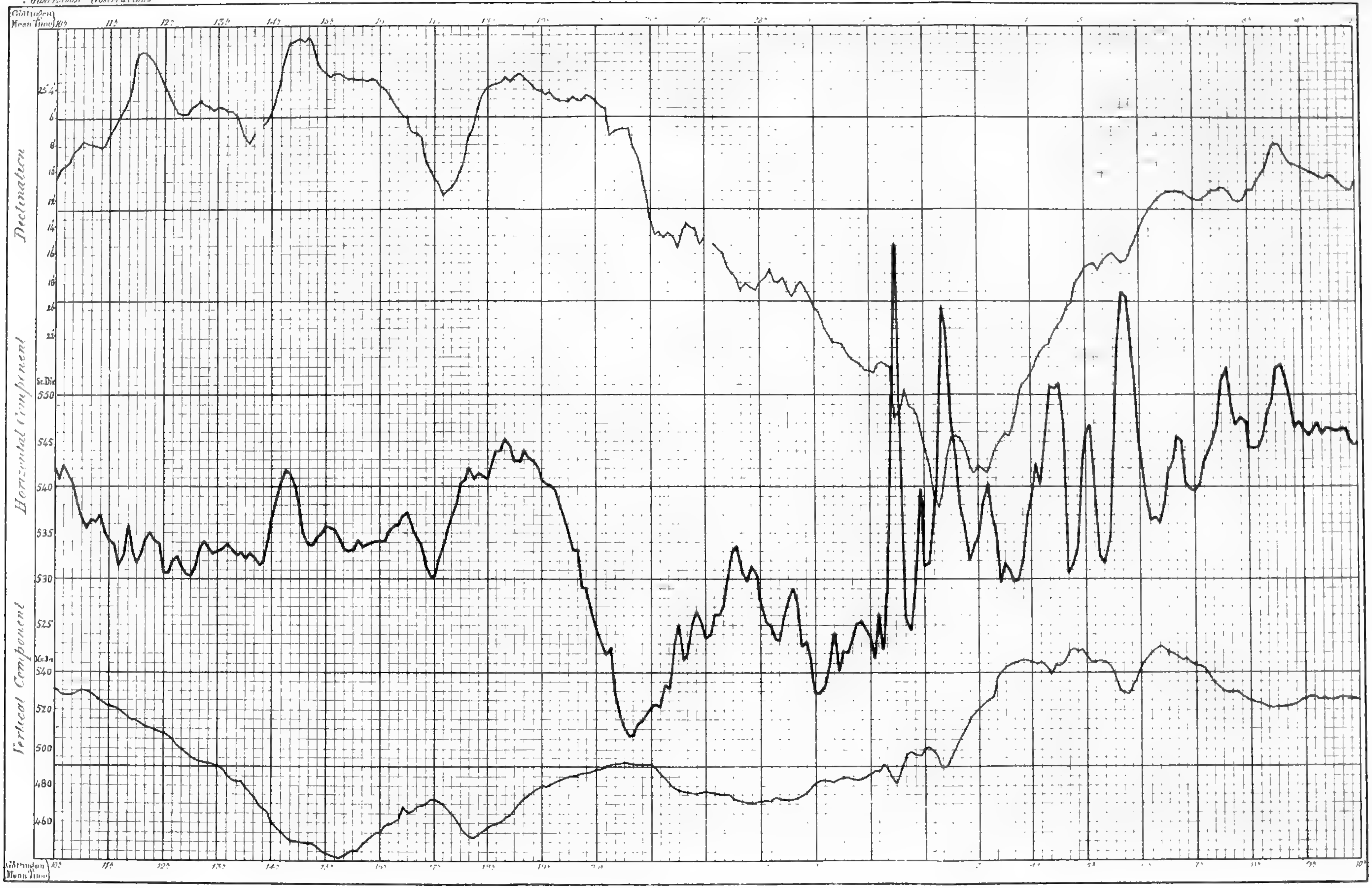
Ascending Curves indicate decreasing westerly declination and increasing force

BRITISH MUSEUM NATURAL HISTORY

Term-Day Magnetical Observations. May 30, 31. 1845.

Makerstoun Observations

Plate VI.

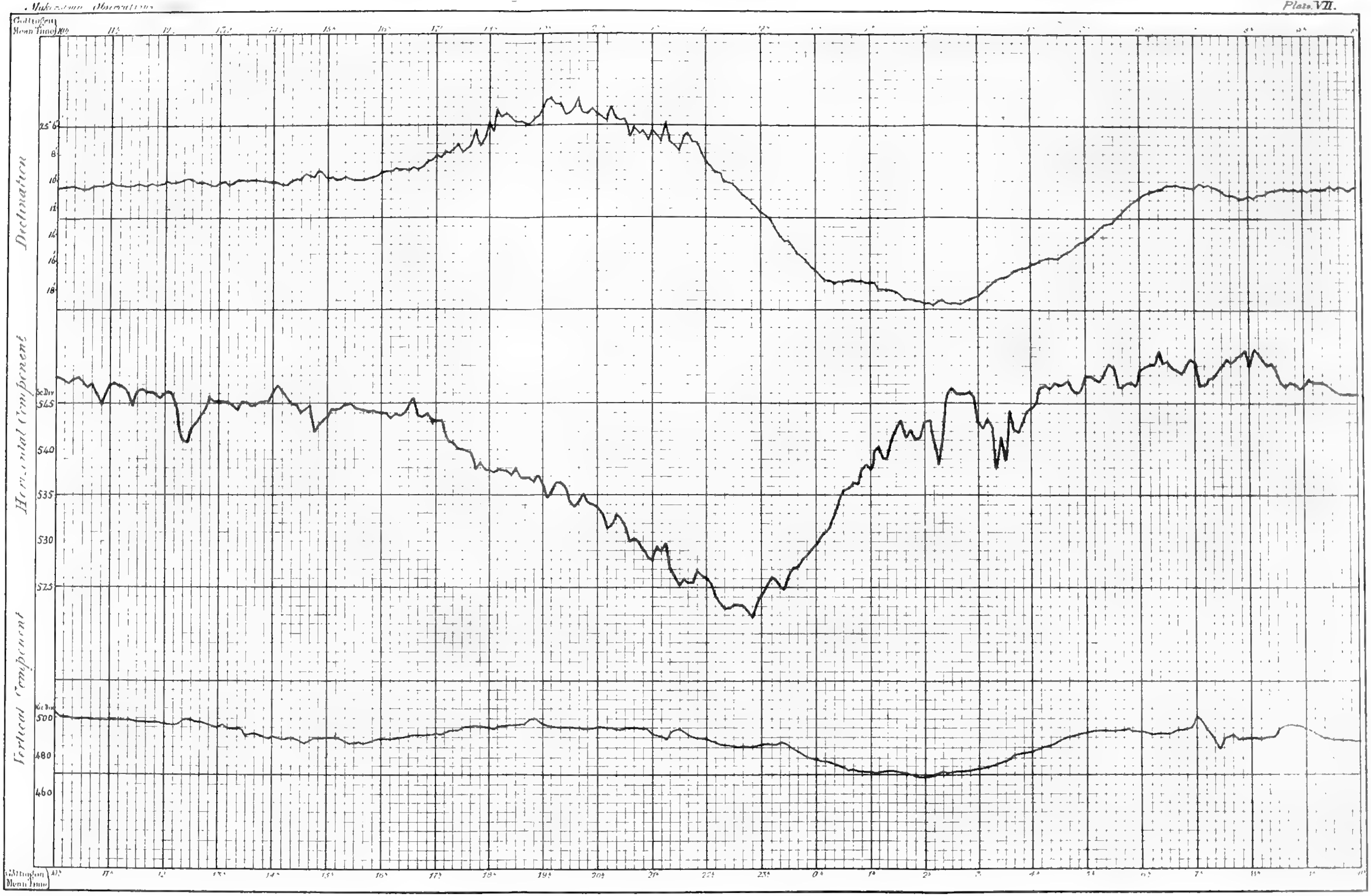


Ascending Curves indicate decreasing westerly declination and increasing force

BRITISH MUSEUM
NATURAL HISTORY

Term-Day Magnetical Observations. June 18, 19: 1845.

Plate VII.



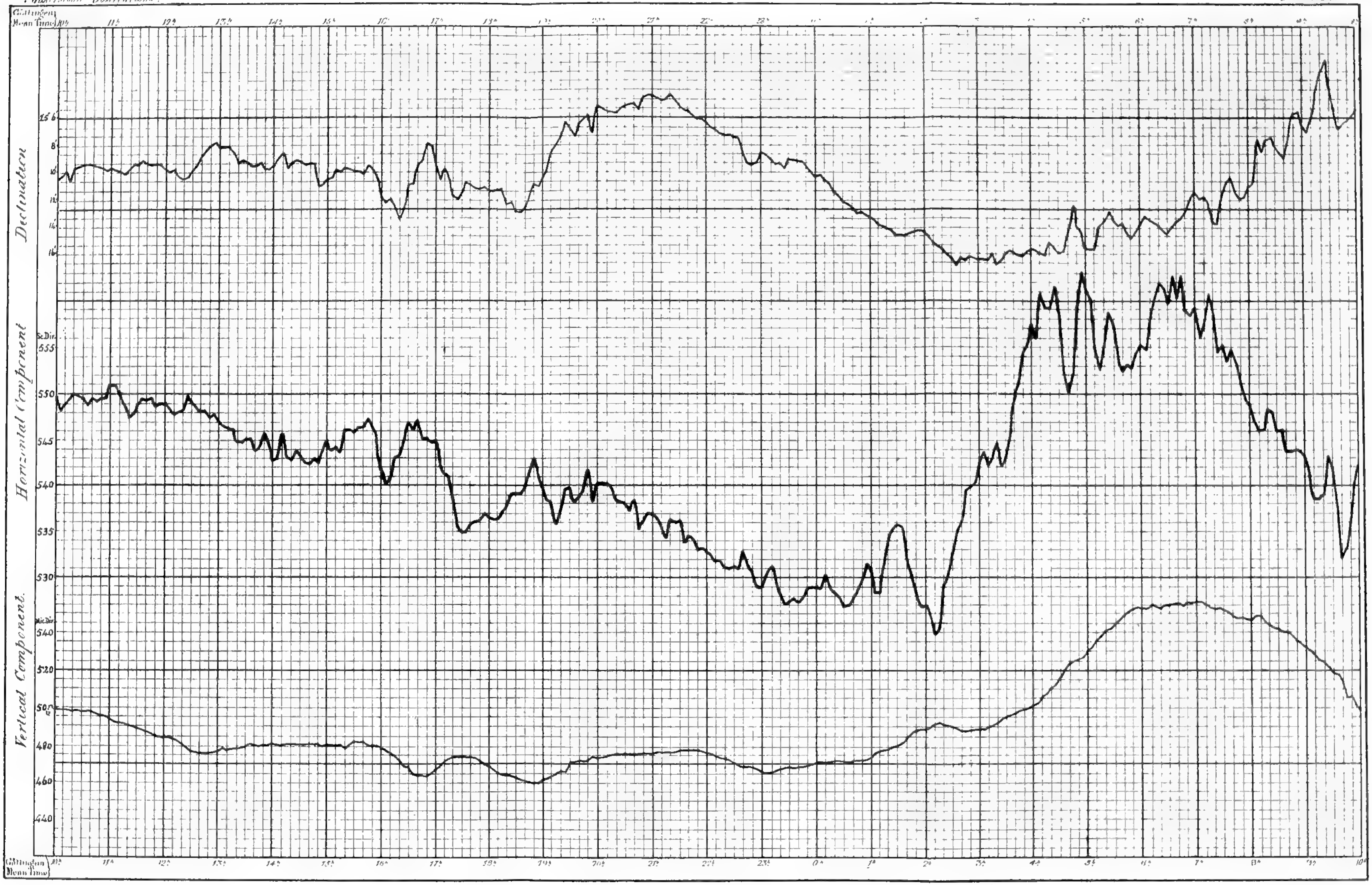
Ascending Curves indicate decreasing westerly declination and increasing force

[illegible]

Term-Day Magnetical Observations. July 23, 24. 1845.

Makerstoun Observations.

Plate VIII.



Ascending Curves indicate decreasing westerly declination and increasing force.

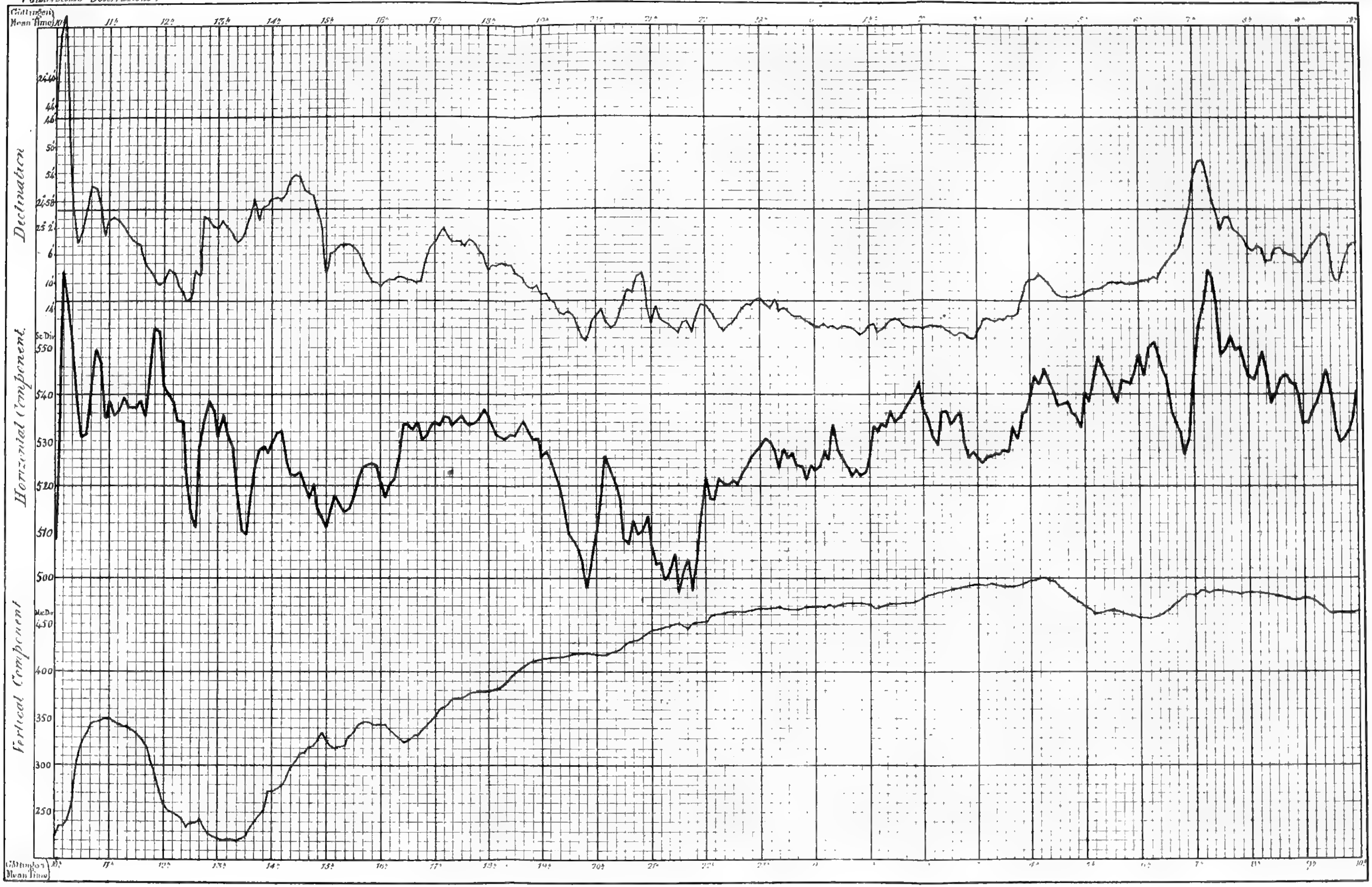
BRITISH MUSEUM NATURAL HISTORY

Term-Day Magnetical Observations. August 29, 30. 1845.

. Makerstoun Observations.

Plate IX.

Half the usual scale.



Ascending Curves indicate decreasing westerly declination and increasing force.

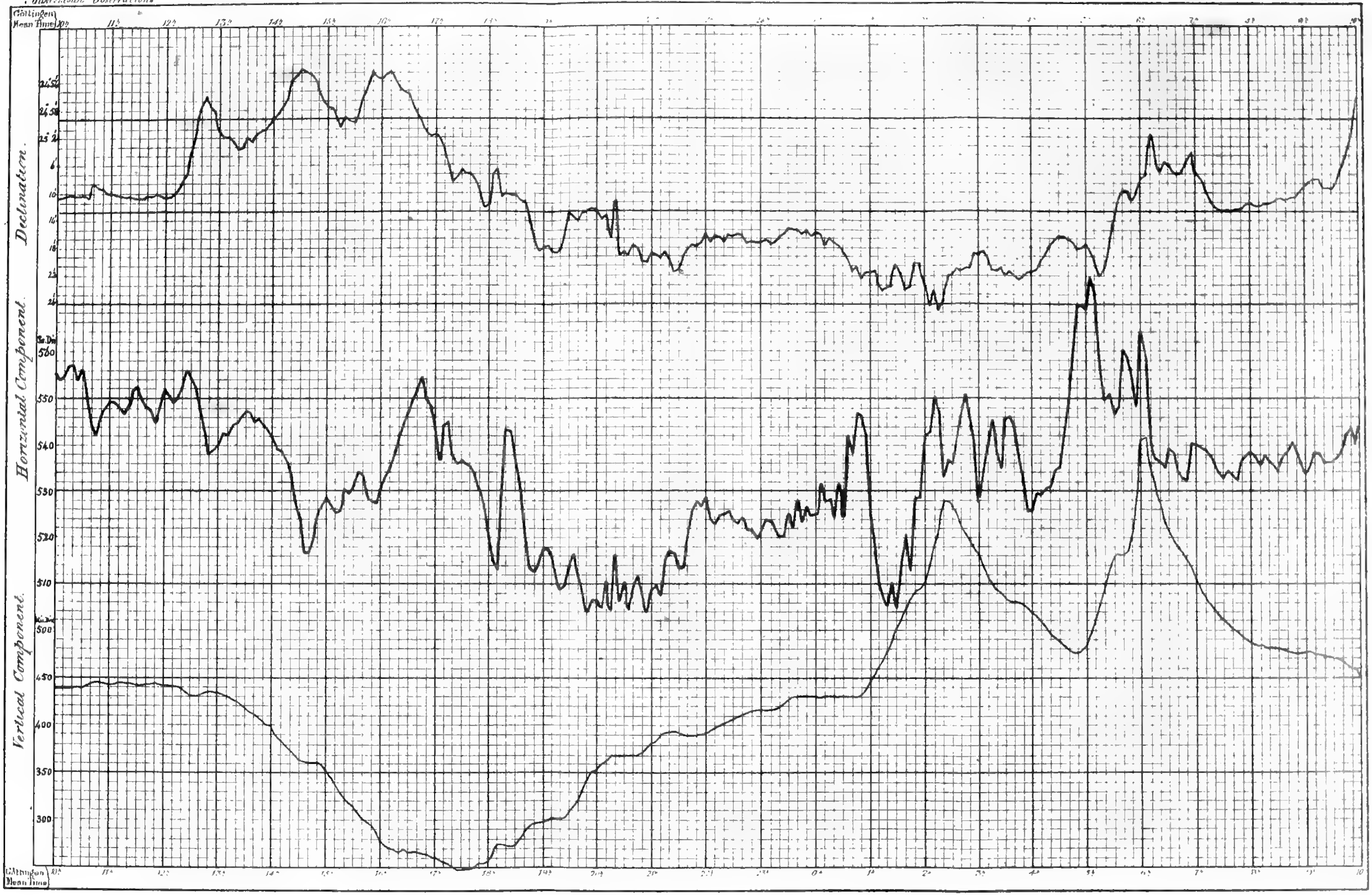
NATURAL HISTORY

Term-Day Magnetical Observations. September 24, 25: 1845.

Makerstoun Observations

Plate X.

Half the usual scale.



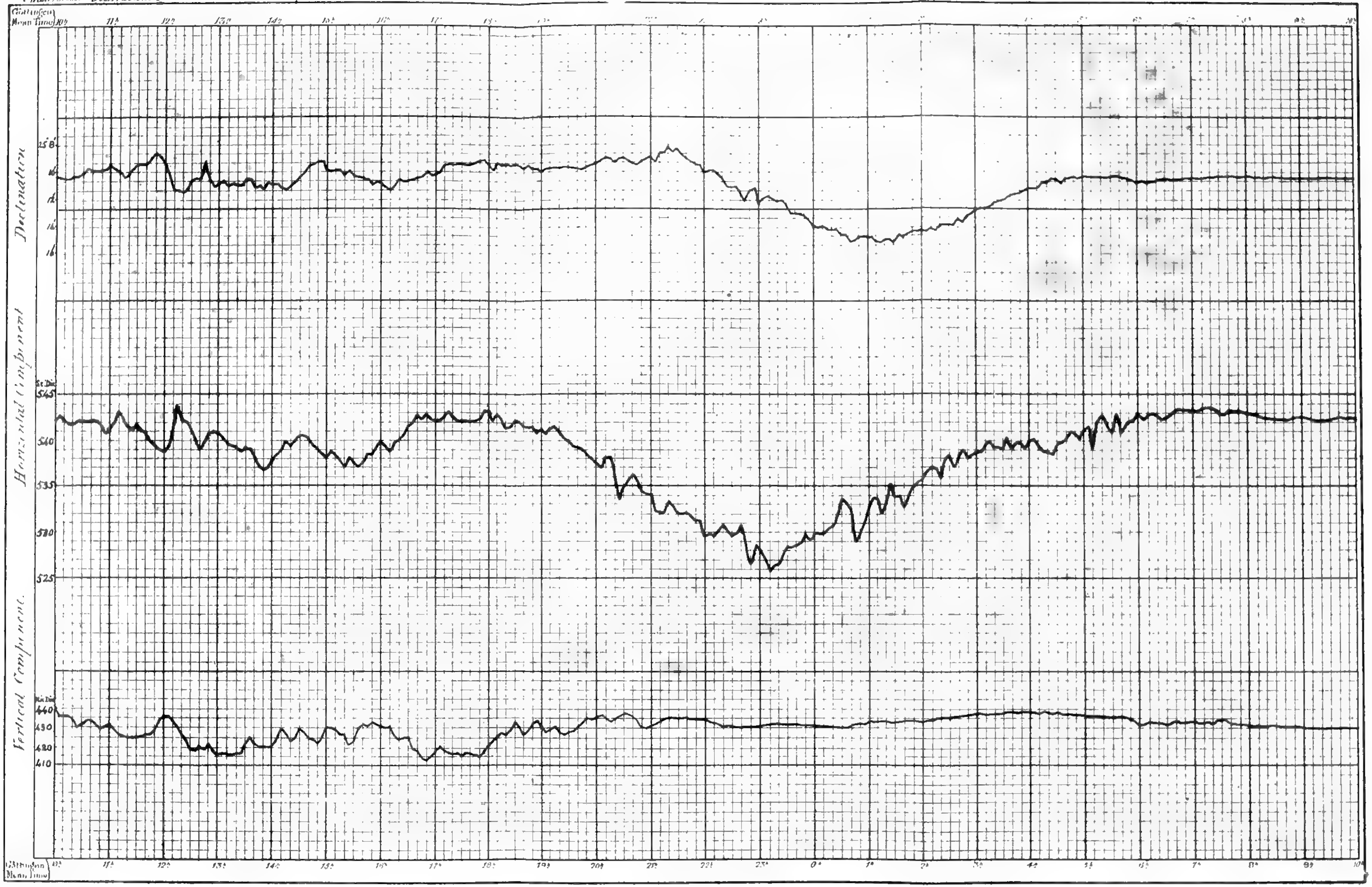
Ascending Curves indicate decreasing westerly declination and increasing force

BRITISH MUSEUM NATURAL HISTORY

Makerstoun Observations.

Term-Day Magnetical Observations. October 22, 23: 1845.

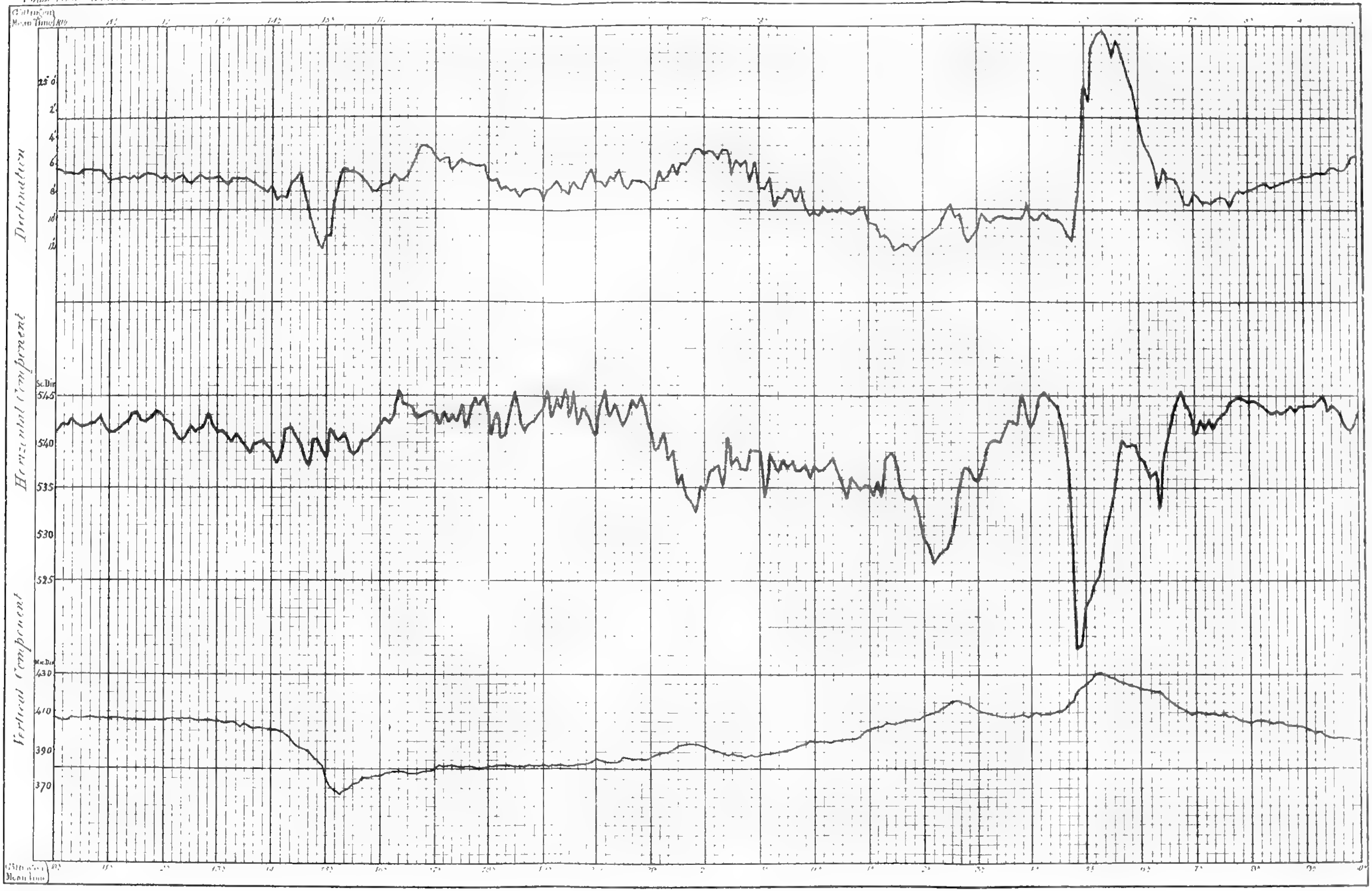
Plate XI.



Ascending Curves indicate decreasing westerly declination and increasing force.

BRITISH MUSEUM
NATURAL HISTORY

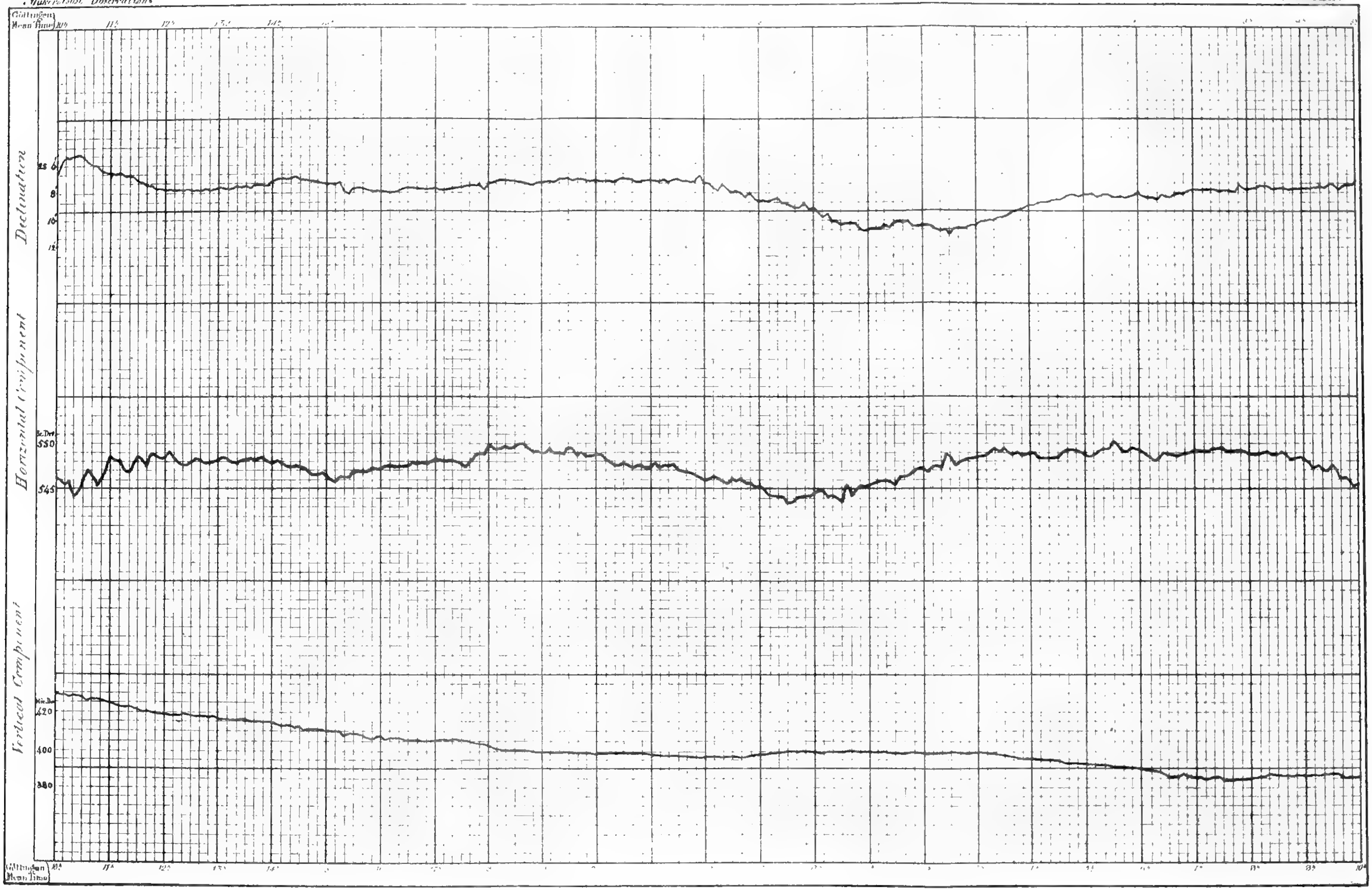
Term-Day Magnetical Observations. November 28, 29: 1845.



Ascending Curves indicate decreasing westerly declination and increasing force

BRITISH MUSEUM
NATURAL HISTORY

Term-Day Magnetical Observations December 24, 25: 1845.

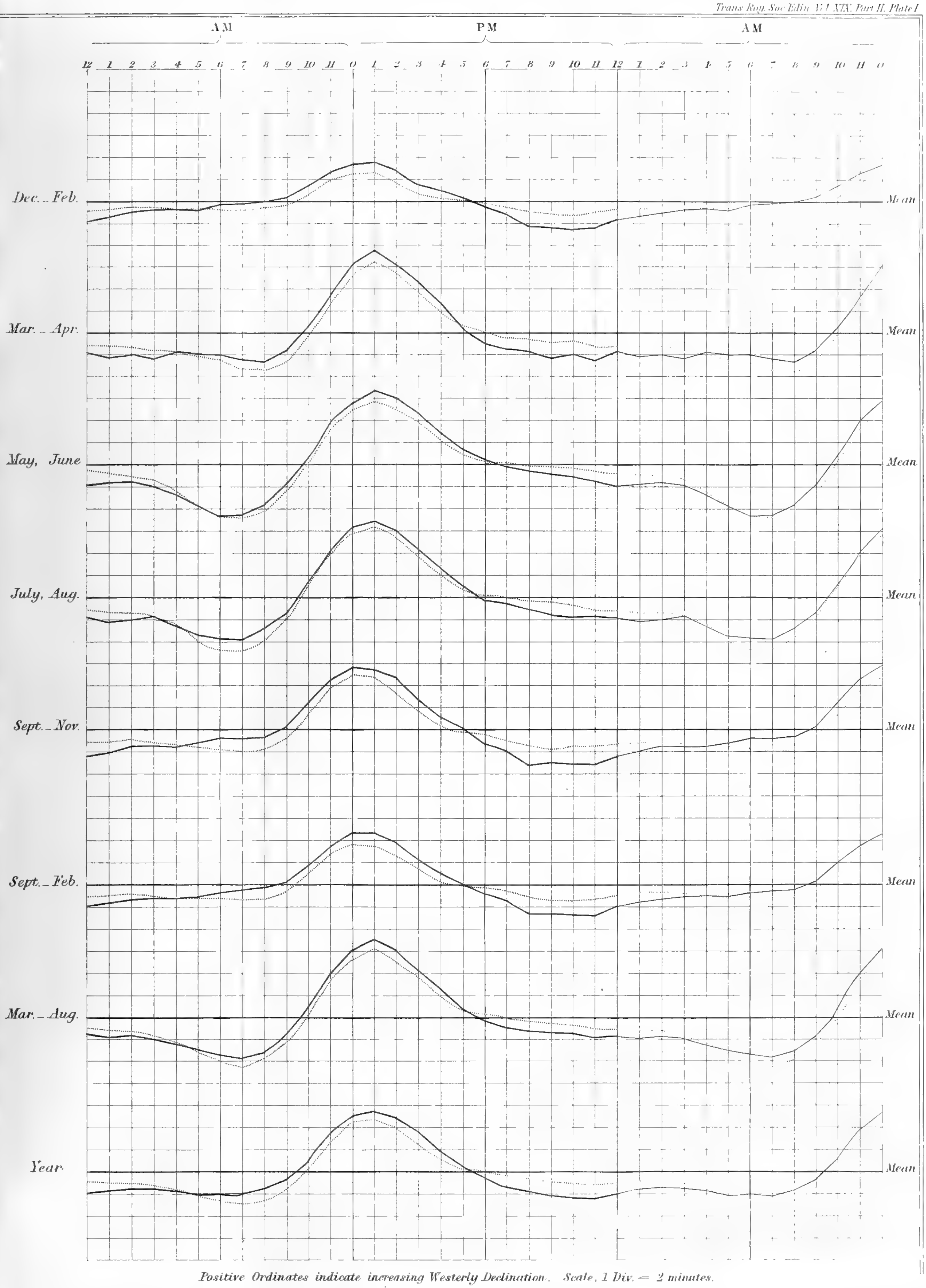


Ascending Curves indicate decreasing westerly declination and increasing force

BRITISH MUSEUM
NATURAL HISTORY

DIURNAL VARIATION OF MAGNETIC DECLINATION AT MAKERSTOUN 1843 1846.

Trans. Roy. Soc. Edin. Vol. XIX. Part II. Plate I



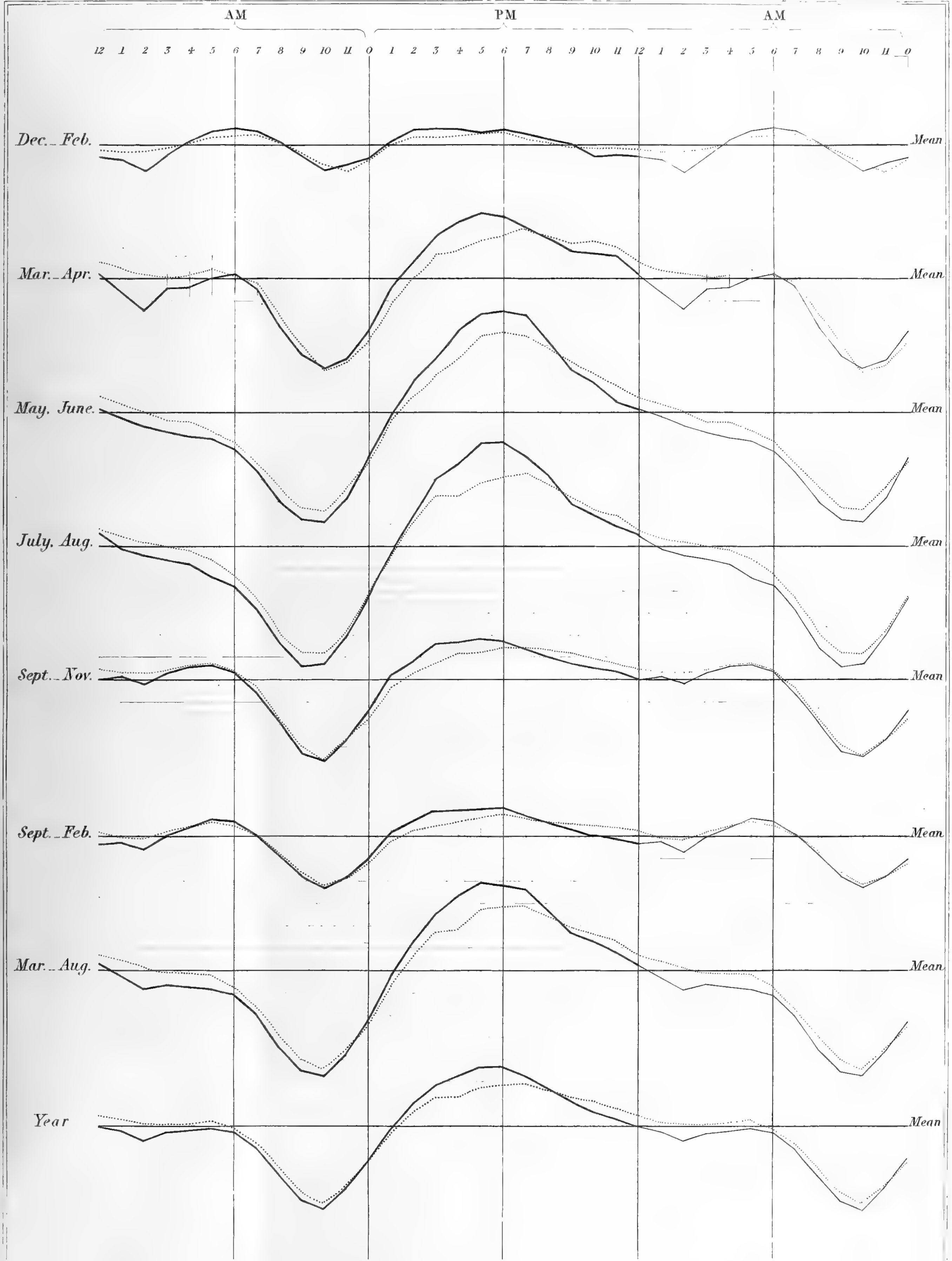
Positive Ordinates indicate increasing Westerly Declination. Scale, 1 Div. = 2 minutes.

Mean of all. Mean of undisturbed days.

NATURAL HISTORY

DIURNAL VARIATIONS OF THE HORIZONTAL COMPONENT OF MAGNETIC FORCE AT MAKERSTOUN 1843 - 1846.

Trans. Roy. Soc. Edin. Vol. XIX. Part II. Plate II.



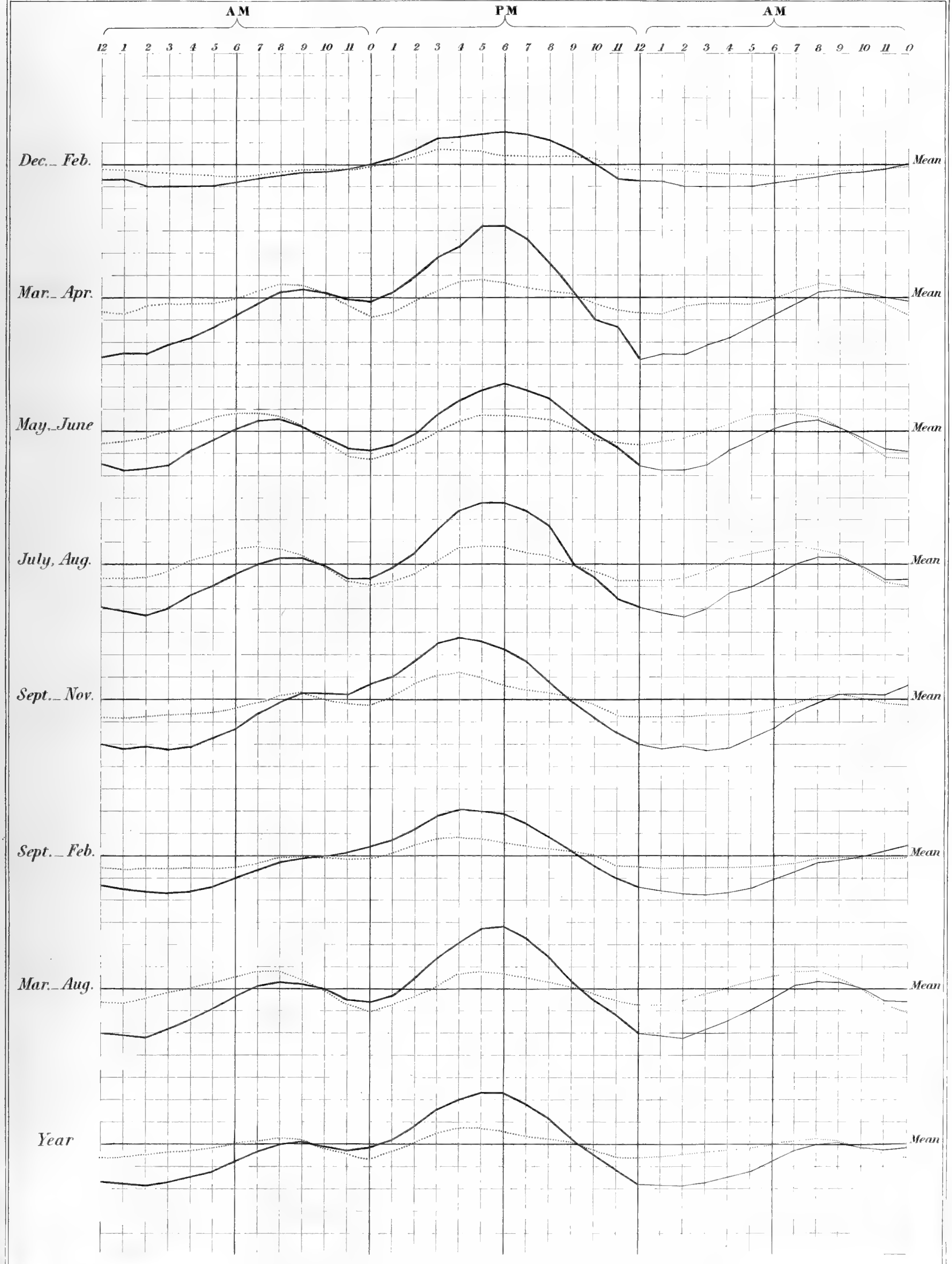
Positive Ordinates indicate increasing Horizontal Force. Scale, 1 Div. = 0·0004, Hor. Force = 1.

Mean of all. *Mean of undisturbed days.*

NAT. HIST.

DIURNAL VARIATIONS OF THE VERTICAL COMPONENT OF MAGNETIC FORCE AT MAKERSTOUN 1843 -1846.

Trans. Roy. Soc. Edin. Vol. XIX. Part II. Plate III.



Positive Ordinates indicate increasing Vertical Force. Scale, 1 Div. = 0·0001; Vert. Force 1.

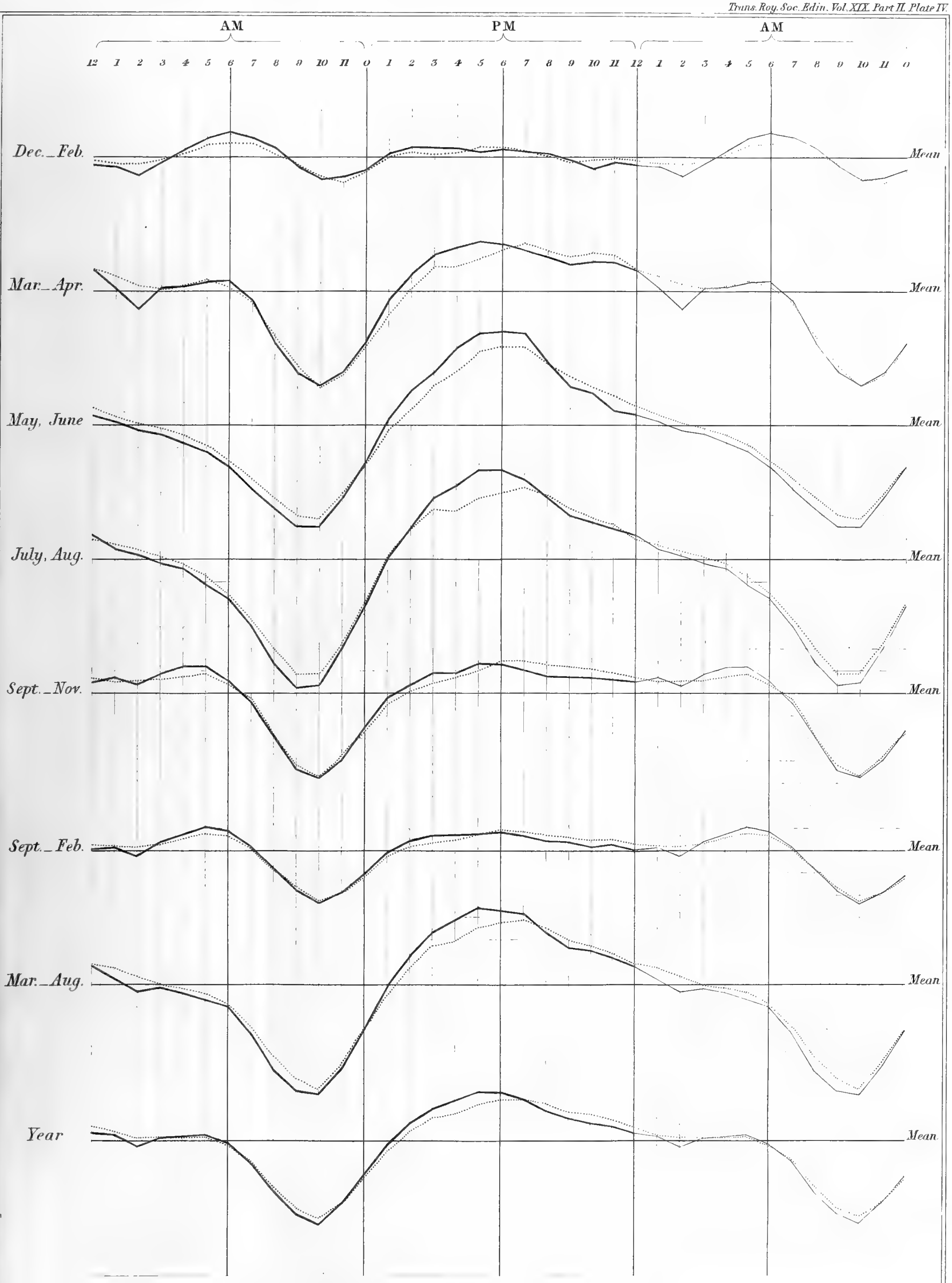
Mean of all. *Mean of undisturbed days.*

Eng.d by Geo. Aikman

BRITISH MUSEUM
NATURAL HISTORY

DIURNAL VARIATIONS OF MAGNETIC DIP AT MAKERSTOUN 1843–1846.

Trans. Roy. Soc. Edin. Vol. XIX. Part II. Plate IV.



Negative Ordinates indicate increasing Dip. Scale, 1 Div. = 0·4 minutes.

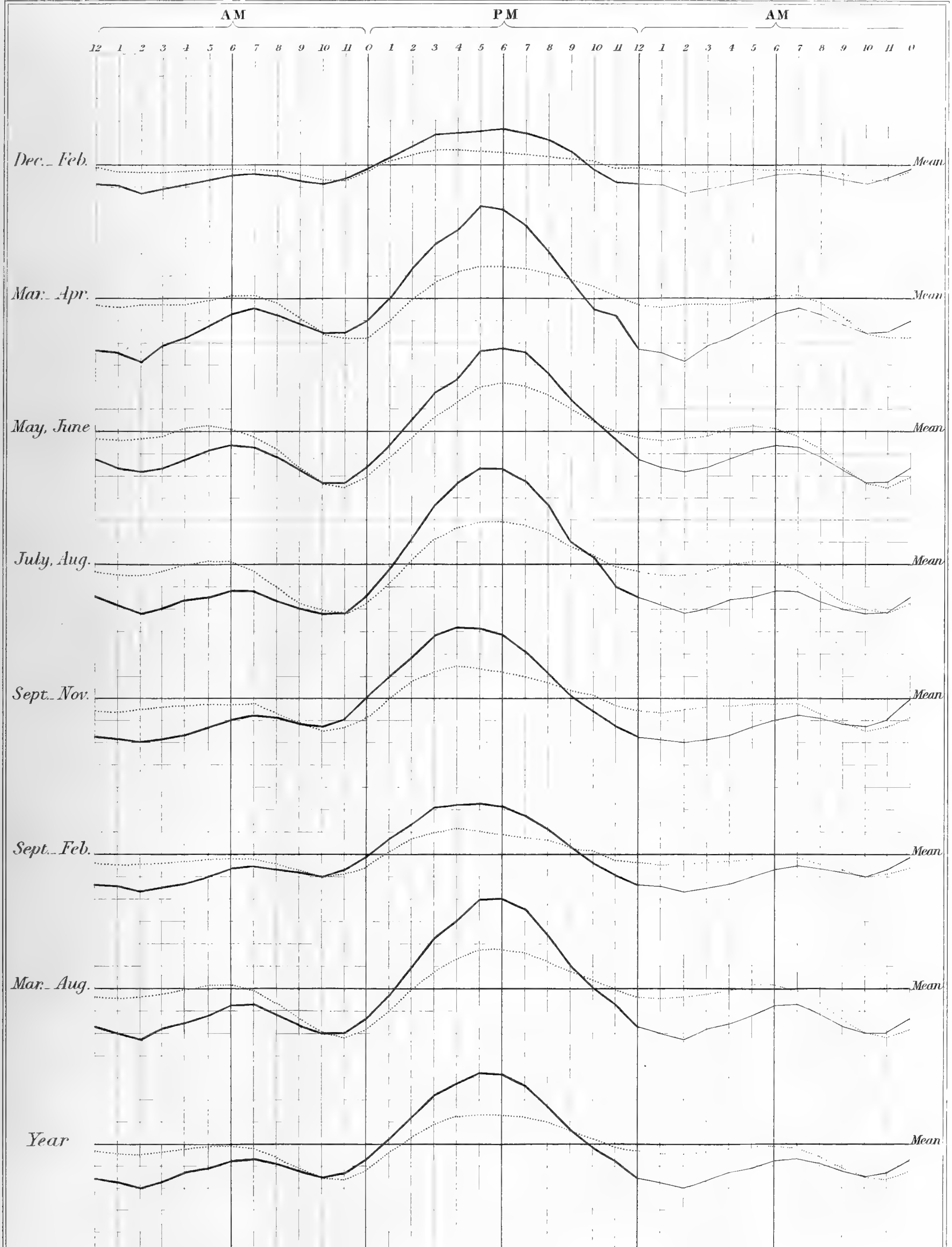
Mean of all. *Mean of undisturbed days.*

Eng.d by Geo. Aikman.

BRITISH MUSEUM

DIURNAL VARIATIONS OF THE TOTAL MAGNETIC FORCE AT MAKERSTOUN 1843 - 1846

Trans. Roy. Soc. Edin. Vol. XIX. Part II. Plate V.



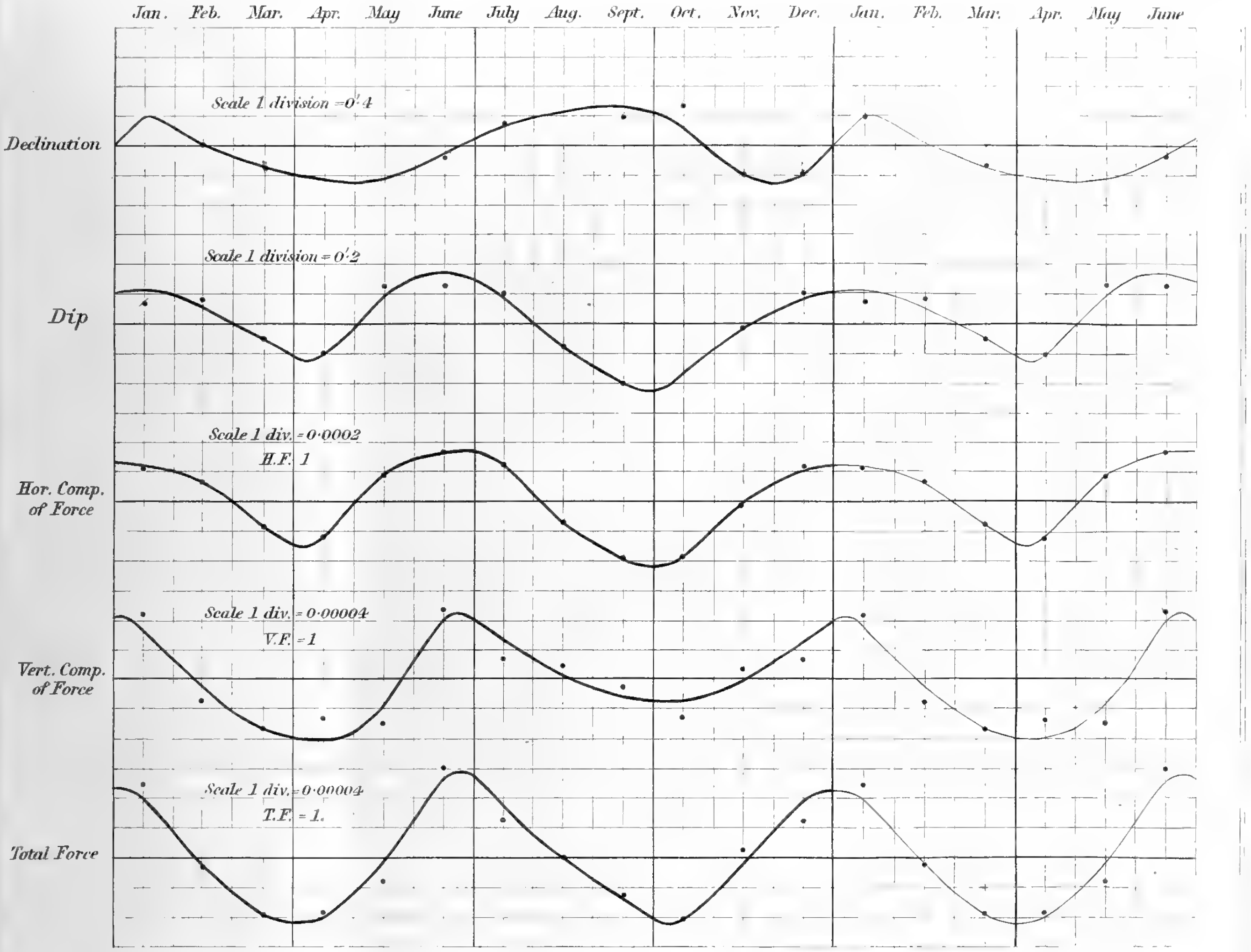
Positive Ordinates indicate increasing Total Force. Scale, 1 Div = 0·0001; Total Force = 1.

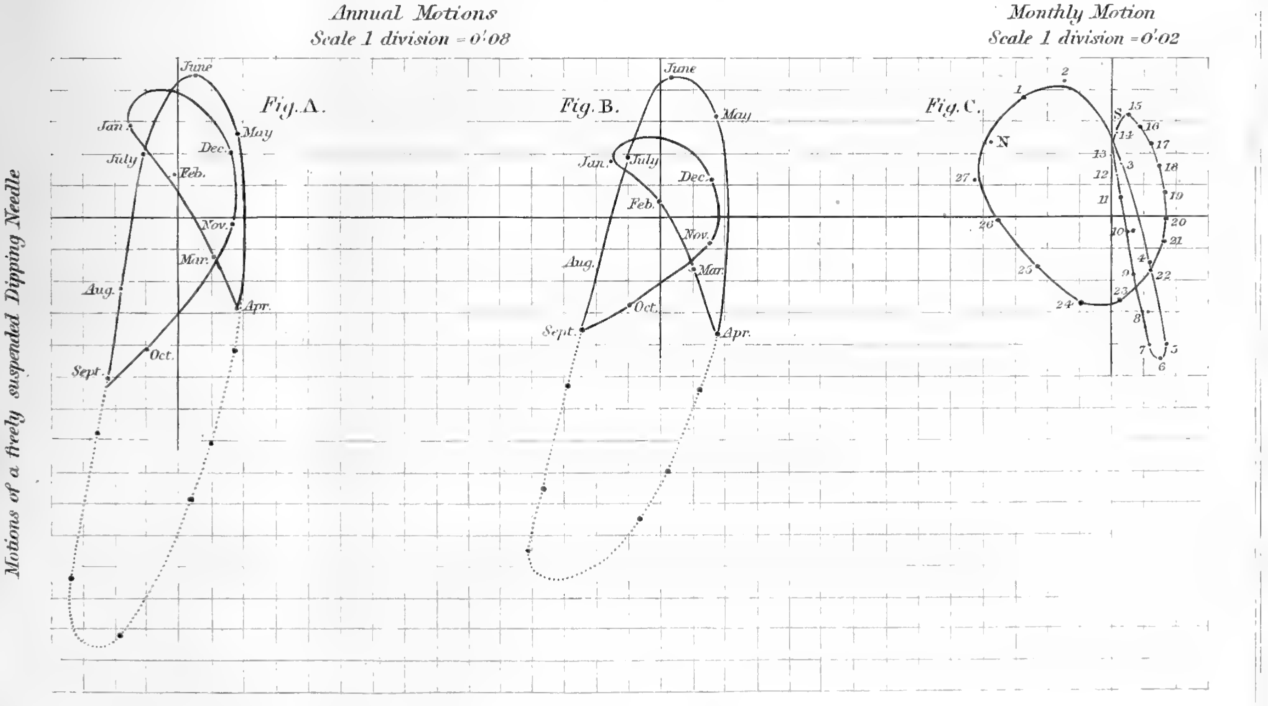
Mean of all. *Mean of undisturbed days.*

Eng^d by Geo. Aikman

BRITISH MUSEUM
NATURAL HISTORY

ANNUAL VARIATIONS OF THE MAGNETIC ELEMENTS AT MAKERSTOUN 1843 - 1846.

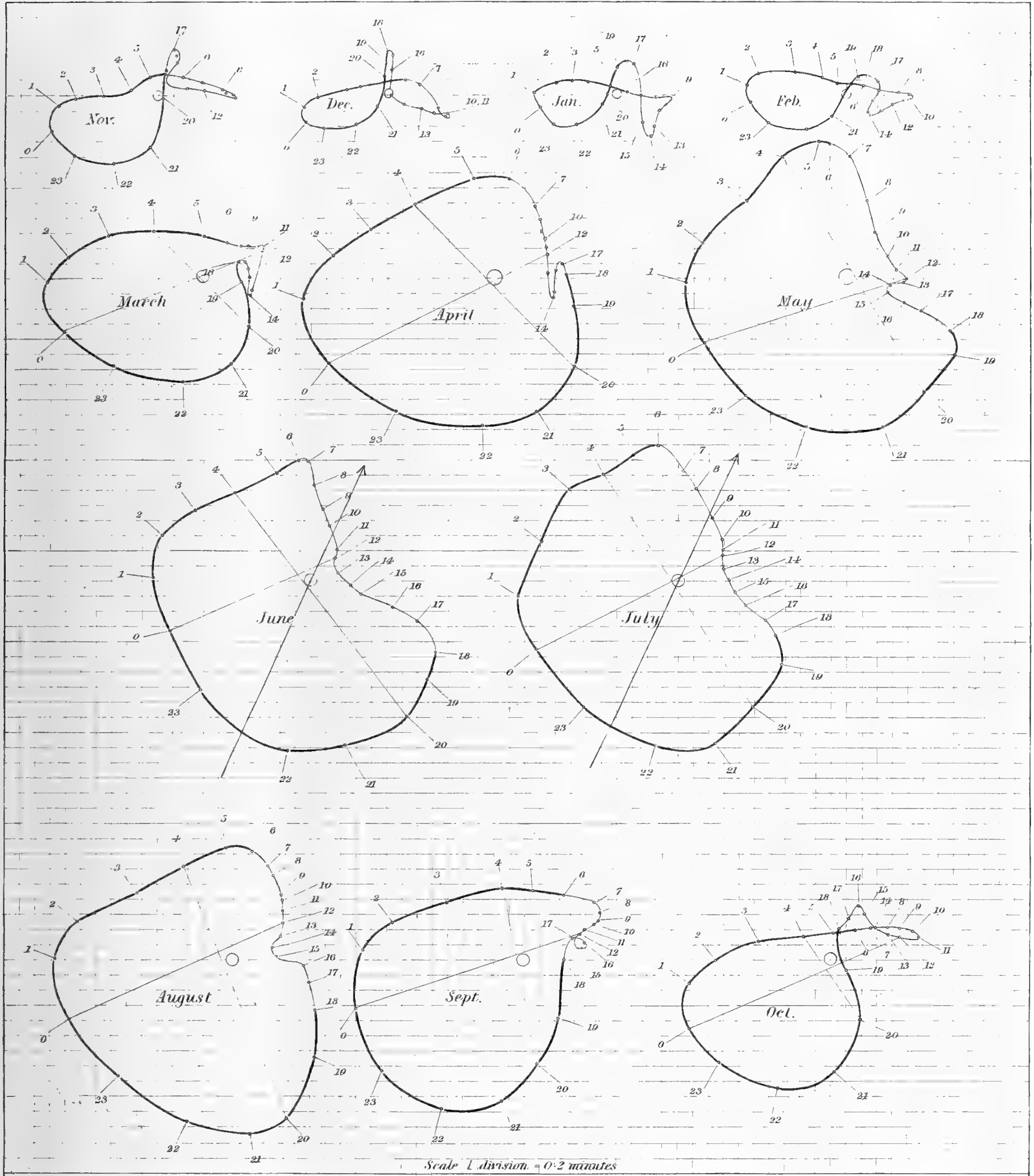




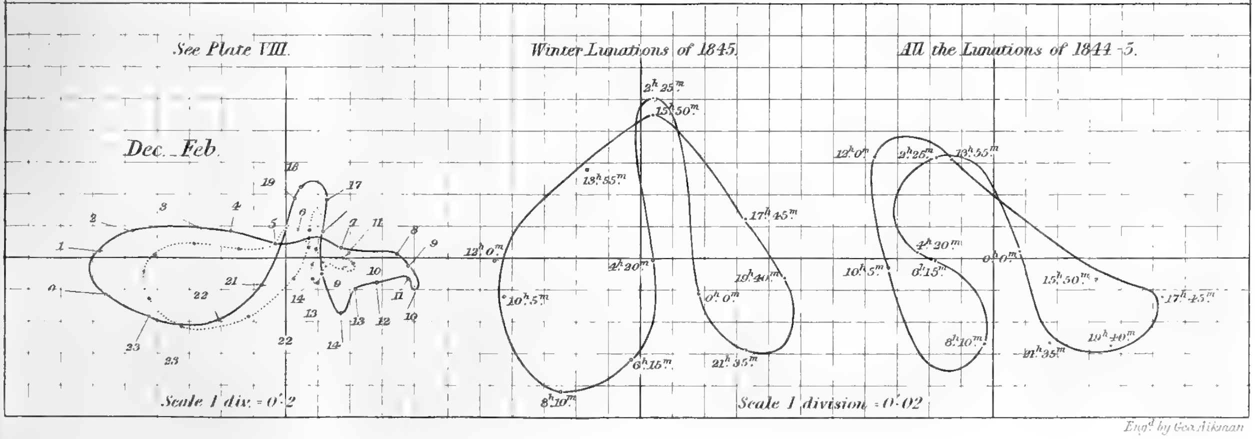
BRITISH MUSEUM NATURAL HISTORY

DIURNAL MOTIONS OF THE NORTH END OF A FREELY SUSPENDED DIPPING NEEDLE
MAKERSTOUN 1843-6.

Trans. Roy. Soc. Edin. Vol. XIX. Part II. Plate VII.



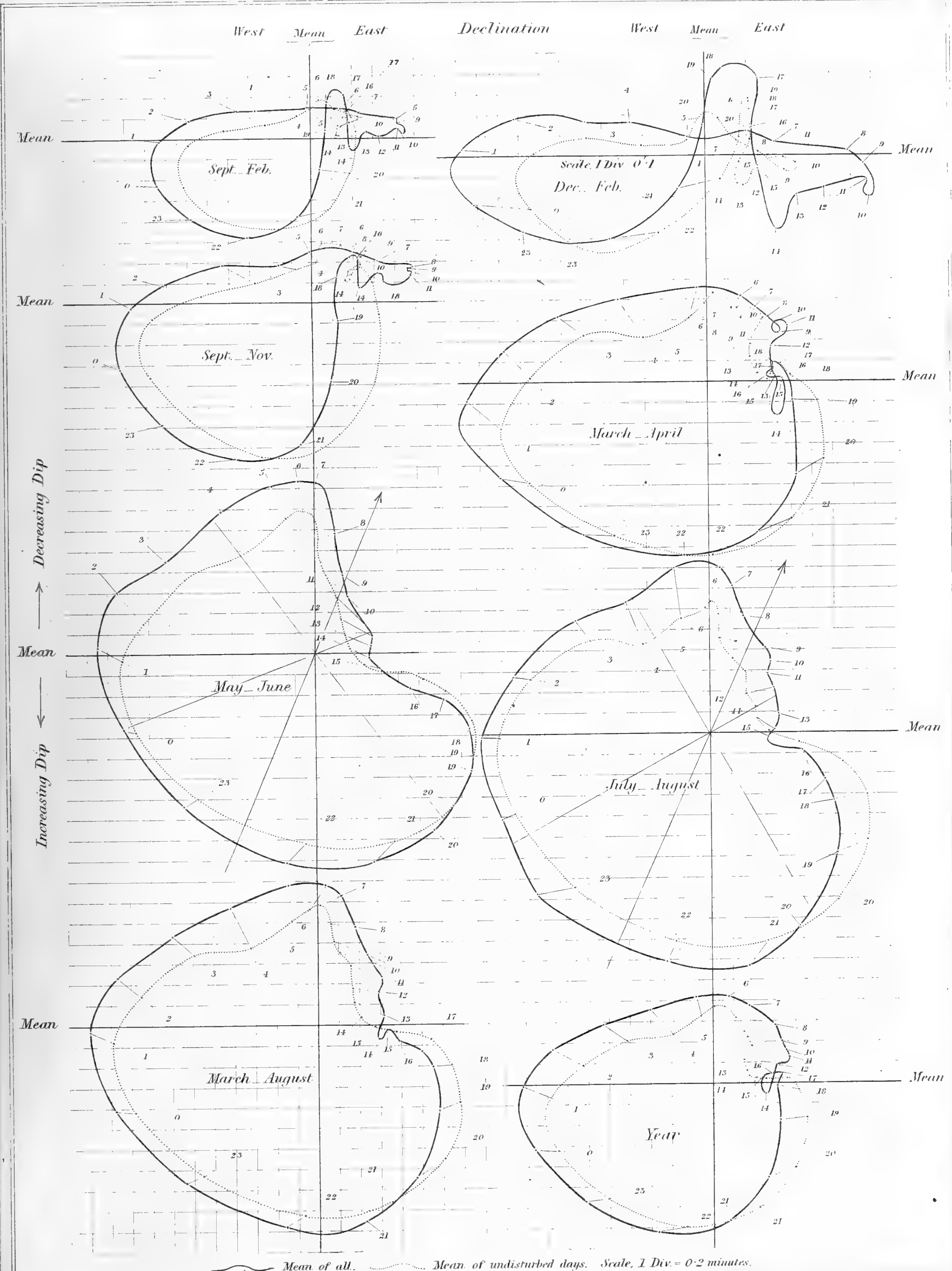
Motions with reference to the Moon's hour angles



Engd by Geo. Aikman

BRITISH MUSEUM NATURAL HISTORY

DIURNAL MOTIONS OF THE NORTH END OF A FREELY

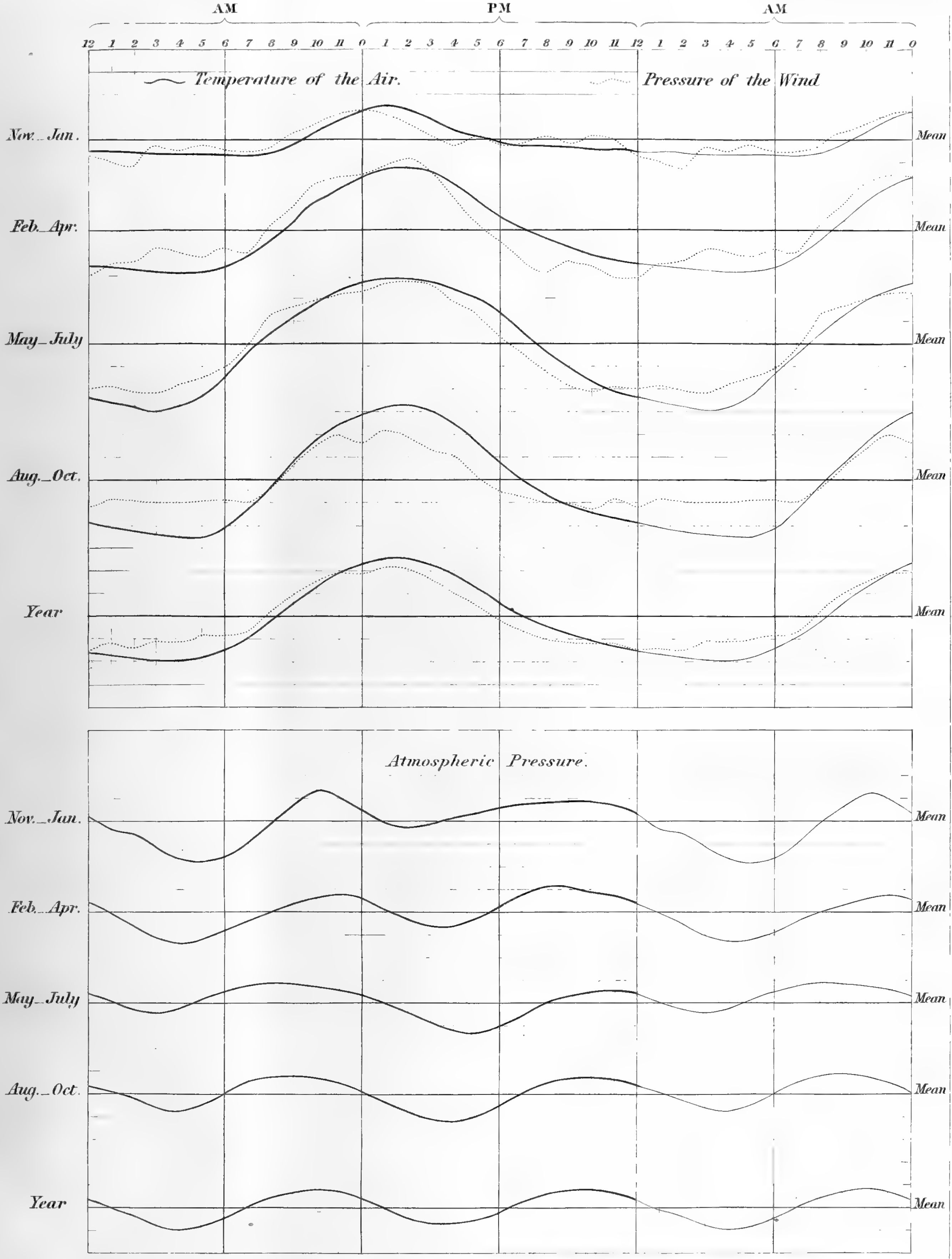


Mean of all. Mean of undisturbed days. Scale, 1 Div. = 0·2 minutes.

BRITISH MUSEUM
NATURAL HISTORY

METEOROLOGICAL DIURNAL VARIATIONS AT MAKERSTOUN 1843–1846.

Trans. Roy. Soc. Edin. Vol. XIX. Part II. Plate IX.



Scales. Temperature of the Air, 1 Div.= 2°. Pressure of the Wind, 1 Div. =0·1 lb.
Atmospheric Pressure, 1 Div. =0·01 inch.

Eng^d by Geo. Aikman

BRITISH MUSEUM NATURAL HISTORY