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STORAGE

ASTRONOMICAL  
OBSERVATIONS

MADE AT THE  
OBSERVATORY OF CAMBRIDGE

BY

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IN THE UNIVERSITY OF CAMBRIDGE.

VOL. VIII.  
FOR THE YEAR 1835.



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1871



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## P R E F A C E.

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THE general course of observations, and the principle and arrangement of the reductions, for the year 1835, differ in no respect from those of preceding years.

On the 1st of October I commenced the general superintendance of the Royal Observatory at Greenwich. My residence at Greenwich, however, did not begin till the latter part of December. In the interval between these times, my attention was divided between the two Observatories. The reductions, therefore, which were made in the last three months of the year, have not received so much of my personal examination as those of the earlier parts. I believe, however, that the measures which were taken for verifying the computations will be found to have ensured their general correctness. The final arrangement of the results was entrusted in a great degree to Mr Glaisher: who had then taken the situation of Assistant at the Royal Observatory, but was indulged with leave of absence by the Lords Commissioners of the Admiralty for this express purpose.

The reductions for Halley's Comet were also made by Mr Glaisher: but as these appeared peculiarly liable to errors, I have myself examined every part of them.

A few observations of various kinds, made under my direction, and on the same general plan in the year 1836, are included in the present Volume.

In finally quitting the connexion with an Institution, whose efficiency has been for several years the first object of my wishes, and whose fair reputation has been my pride, I must congratulate the University, and the friends of the Observatory, on its immediate prospects under the direction of Professor Challis. And I trust that nothing will at any distant time occur to disable an Observatory, which, though necessarily limited in personal establishment, yet from the excellence of its instruments and the peculiarity of its connexion with the University, may compete, in regard of general utility, with any similar institution.

G. B. AIRY.

ROYAL OBSERVATORY, GREENWICH,  
1836. *August 22.*

# ERRATA.

## IN THE VOLUME FOR 1834.

PAGE	PAGE
v. LINE 4, for 1833, read 1834.	156. $\zeta^1$ Geminorum and $\zeta^2$ Geminorum should have the annual variation +4",681.

## IN THE PRESENT VOLUME.

<p>103. Line 1, Venus, Refraction, for 3'.49",82, read 3'.50",23.            ... N.P.D. of center, for 114°.4'.25",03, read 114°.4'.25",44.</p> <p>111. <math>\zeta^1</math> Geminorum and <math>\zeta^2</math> Geminorum are misplaced: they should follow * <math>\bar{R}</math> 6<sup>h</sup>.52<sup>m</sup>.35<sup>s</sup>. It seems probable that the N.P.D. of <math>\zeta^1</math> Geminorum is erroneous by one revolution of the Micrometer.</p> <p>119. <math>\zeta^1</math> Geminorum, the same remark applies.</p> <p>120. * <math>\bar{R}</math> 7<sup>h</sup>.11<sup>m</sup>.30<sup>s</sup>, for 63°, read 65°.</p> <p>131. Venus, Dec. 2, N.P.D., for 114°.4'.25",22, read 114°.4'.25",63.            ... Venus, Dec. 2, Error of Tables, for -0",51, read -0",92.</p> <p>140. The comparisons of Clocks, &amp;c., on Jan. 17, 1836, should stand as follows:                G. 7.5.46      U. 7.1.15,0                G. 7.5.58      U. 7.1.27,0.</p> <p>142. Corresponding Time by Hardy, for 6.50.23,88, read 6.45.40,88.            ... Greenwich Mean Solar Time, for 11.5.15,3, read 11.0.33,1.</p> <p>144. v Wire, Jan. 3, last series, Jupiter 1 L. the minutes should be 37.            ... Jan. 6, 2d series, Jupiter 1 L. the minutes should be 7.</p>	<p>165. Series 52, the seconds of Apparent N.P.D. of Mars, for 30",53, read 30",72.            ... Series 52, the Errors of Tables, for 19",05, read -19",24.</p> <p>178. Series 193, for f, read i.</p> <p>179. Series 193, Pointer, for 17.55, read 18.0.            ... Apparent <math>\bar{R}</math>, for 16.33.54,00, read 16.38.54,00.            ... Apparent <math>\bar{R}</math>, for 16.35.42,30, read 16.40.42,30.            ... <math>\bar{R}</math> (last column), for 16.33.55,20, read 16.38.55,20.            ... <math>\bar{R}</math> (last column), for 16.35.42,30, read 16.40.42,30.</p> <p>181. Series 212, 213, 214, 215, 216, 217, 218, the refractions of the Comet should be increased by 0,04, and the Right Ascensions diminished by 0,04.</p> <p>198. Series 193, for f, read i.</p> <p>199. Series 193, Hour angle, for -6.5, read -6.0.            ... Refractions, for 4.7,58, read 3.49,77.            ... Corrected N.P.D., for 76.7.55,85, read 76.7.33,04.            ... for 76.7.40,09, read 76.7.22,28.</p>
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# CAMBRIDGE OBSERVATIONS.

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## INTRODUCTION.

THE Transit Instrument was constructed by Dollond in 1824. Its focal length is nearly 10 feet, and the aperture of the object glass is 5 inches. In general, the whole aperture is employed in observing. During the whole of 1835, the instrument has been covered with a covering of oiled silk; and the Sun has never been allowed to shine upon it before the observation commenced. It is presumed therefore that the transits in the following pages are free from all effects of solar heat. The piers are very massive. The pivots of the transit are of bell metal, turning in brass Y's which have the usual adjustments; no alteration has been made in the screws for either vertical or horizontal adjustment in the year 1835. The Y's are somewhat worn and scratched, but the pivots are in a very good state. The wires are of silk from the silk-worms ball, and they subtend an angle of less than 1" (their thickness being less than  $\frac{1}{2200}$  of an inch). The present system of wires was fixed at the end of 1832: no alteration has been made in their position during the year 1835. The power usually employed is about 140.

The clock was constructed by Hardy, with Hardy's escapement: its beat is remarkably loud and distinct. The only alteration which has been made in the clock is the occasionally putting forward the minute hand.

The original observations with the transit (as well as with the other instruments) are entered in small memorandum-books, in which the writing cannot easily be effaced: these are carefully preserved for future reference.

The following is the explanation of each of the columns in the tabular part of the work, and of the methods by which the numbers in those columns have been obtained.

*Transits as observed, and calculation of apparent right ascensions:*  
page (1) to (79).

The first column on the left hand contains the day of the month in apparent solar time.

The second column contains the names of the objects observed. With regard to the nomenclature of stars, the following is the order of preference in which the names have been taken:

1. The proper name of the star (as used in the Nautical Almanac 1834, 2d Edition).
2. The Greek or Roman character, with the name of the constellation, (as given in the Royal Astronomical Society's Catalogue).
3. Flamsteed's number.
4. The number in the Royal Astronomical Society's Catalogue.
5. Piazzi's number.
6. The approximate N.P.D., which may be erroneous 3' or 4'.

In the observation of a double star it is always to be understood (if not otherwise expressed) that the brighter star was observed.  $\gamma$  Virginis is observed as a single star.

The seven succeeding columns contain the times of transit over the seven wires. It is to be remarked that it is the practice to look at the clock-face before the transit over the first wire, to take a second, and then to count (listening to the beats), and not to look again at the clock-face till the object has passed all the wires. Thus it can rarely happen that any one wire is affected by an error which is not common to all. Errors in the minutes are very common, and are not noticed in the notes: errors of 5 or 10 seconds sometimes occur: and very rarely errors of 1<sup>s</sup>: occasionally also there seems reason to alter a single wire by 1<sup>s</sup>. All alterations of the seconds are carefully mentioned in the notes. The hour and minute are always those corresponding to the wire last observed.

A micrometer wire in the eyepiece of the transit (parallel to the fixed wires, and moveable in a horizontal direction by means of a screw of which one turn = 17",06 nearly) is sometimes used for transits of Polaris and  $\delta$  Ursæ Minoris. The reading of the micrometer on coincidence with the middle wire is first found by taking the mean of the readings when it

touches the middle wire, three times on each side: then the micrometer is turned 1, 2, and 3 revolutions on each side of that position, and used as so many distinct wires. The mean of the transits represents therefore an observation on the middle wire. The readings of the micrometer are given in the notes: and the transits over the micrometer wire are printed in a smaller type than those over the fixed wires.

The tenth column contains the correction to be applied to the mean of the wires actually observed, in order to obtain the mean of the transits over the seven wires (errors of observation excepted), supposing all employed. The intervals of the wires are deduced from 12 observations of Polaris and 19 observations of  $\delta$  Ursæ Minoris, between Jan. 4 and Feb. 27, 1833. The following are the tables used in the calculation of the numbers of the 10th column. The wires are distinguished by the letters *A*, *B*, *C*, *D*, *E*, *F*, *G*: and stars above the pole pass them in this order when the illuminated end of the axis is East.

Distance (in Time) of each Wire from the Mean of all.

For Polaris; declination =  $88^{\circ}.25' + n''$ .

	m.	s.	s.
<i>A</i> .....	- 24	. 27,73	- $n \times 0,261$
<i>B</i> .....	- 16	. 17,13	- $n \times 0,173$
<i>C</i> .....	- 8	. 7,60	- $n \times 0,086$
<i>D</i> .....		+ 0,18	
<i>E</i> .....	+ 8	. 13,47	+ $n \times 0,088$
<i>F</i> .....	+ 16	. 16,47	+ $n \times 0,173$
<i>G</i> .....	+ 24	. 22,30	+ $n \times 0,260$

For  $\delta$  Ursæ Minoris; declination =  $86^{\circ}.35' + n''$ .

	m.	s.	s.
<i>A</i> .....	- 11	. 19,47	- $n \times 0,055$
<i>B</i> .....	- 7	. 32,73	- $n \times 0,037$
<i>C</i> .....	- 3	. 46,00	- $n \times 0,019$
<i>D</i> .....		+ 0,08	
<i>E</i> .....	+ 3	. 48,73	+ $n \times 0,019$
<i>F</i> .....	+ 7	. 32,43	+ $n \times 0,037$
<i>G</i> .....	+ 11	. 16,93	+ $n \times 0,056$



## For Equatoreal Stars.

<i>A</i> .....	- 40,478
<i>B</i> .....	- 26,976
<i>C</i> .....	- 13,469
<i>D</i> .....	+ 0,005
<i>E</i> .....	+ 13,632
<i>F</i> .....	+ 26,959
<i>G</i> .....	+ 40,328

For the planets, besides the secant of declination, a factor is used, depending on the daily increase or diminution of right ascension: for the Sun, the factors are used which are given in the Supplement to the Nautical Almanac for 1833: for the Moon, the factors are calculated by the formula

$$\text{factor} = \frac{3600 + I}{3600} \times \frac{\sin \text{Moon's geocentric } ZD}{\sin \text{Moon's apparent } ZD} \times \text{secant Moon's declination,}$$

where *I* is the increase of the Moon's *R* in passing over 1<sup>h</sup> of terrestrial longitude, given in the Nautical Almanac, page 410.

In the observation of Jupiter and Saturn, it is usual to observe the first limb over *A*, *C*, *E*, and *G*, and the second limb over *B*, *D*, and *F*. The mean of each of these sets coincides so nearly with the mean of the whole, that it has not been thought worth while to apply any correction.

The eleventh column contains the concluded time of transit over the imaginary line which is the mean of all the wires.

The twelfth column contains the initial of the observer's name. Those marked *A* are by myself, those marked *B* by Mr Baldrey, and those marked *G* by Mr Glaisher.

The first column on the right hand page contains the error of collimation, which is determined by the following process: A mark on Grantchester steeple (about 2½ miles to the S.) and a wire in a collimating telescope (supplying the place of an object infinitely distant on the N. side) are observed with the transit, the micrometer wire being employed to measure the distance of



each from the middle wire. The same measures are made when the transit has been reversed. Each mark gives a value for the error of collimation: and the mean of the two values is free from the effect of displacement of the axis by reversion. This mean is corrected for the difference between the middle wire and the mean of the seven wires. It is considered positive when it implies an additive correction to the time of transit of an object above the pole. The quantity  $-0''.2$  is then applied algebraically, to take account of diurnal aberration. The result of these operations is the quantity in the tables.

The following are the observations by which the error of collimation has been determined in the year 1835 (that used for Jan. 1 having been taken from the observations of 1834, Oct. 9).

Jan. 2, 0<sup>h</sup>. Observed the cross and collimator as usual. The cross rather faint, but steady: a very small motion perceptible when the wire was on it. The wire of the collimator very well seen: a very small motion apparent in it.

Illuminated end West.

Micrometer reading on coincidence with $D$ (6 measures) .....	<sup>r</sup> 24,032
..... on bisecting the south mark (6 measures)...	25,425
..... on bisecting the north mark (6 measures)...	22,754

Illuminated end East.

Micrometer reading on bisecting the north mark (6 measures)...	25,292
..... on bisecting the south mark (6 measures)...	22,661
..... on coincidence with $D$ (6 measures).....	24,039

Hence, reading for line of collimation, by the south mark.....	24,043
..... by the north mark.....	24,023
Reading for true line of collimation.....	24,033
Reading for $D$ .....	24,035

Hence the apparent error of collimation for  $D$  is insensible.

Correcting this for diurnal aberration, the error of collimation of  $D$  is  $-0''.2$ , and that for the mean of wires, illuminated end East, is  $-0''.1$ .

July 8, 23<sup>h</sup>. Reversed the transit as usual. The collimator seen very well. The cross unsteady, though the Sun was not shining.

Illuminated end East.

Micrometer reading on coincidence with $D$ (6 measures) .....	23,981
..... on bisecting the south mark (6 measures)...	22,633
..... on bisecting the north mark (6 measures)...	24,599

Illuminated end West.

Micrometer reading on bisecting the north mark (6 measures)...	23,212
..... on bisecting the south mark (6 measures)...	25,274
..... on coincidence with $D$ (6 measures).....	23,979

Hence, reading for line of collimation, by the south mark.....	23,953
..... by the north mark.....	23,906
Reading for true line of collimation .....	23,930
Reading for $D$ .....	23,980

Hence the apparent error of collimation for  $D$ , illuminated end West, is  $0^r,050 = 0'',85$ . As the micrometer readings increase when the wire is moved from the illuminated end, the negative sign is to be attached to this quantity. Correcting it for diurnal aberration, the error of collimation for  $D$  is  $-1'',00$ , and that for the mean of the wires  $-1'',07$ , the illuminated end being West.

Nov. 17, 1<sup>h</sup>. Reversed the transit as usual. The cross a little faint, but perfectly steady: the wires of the collimator faint and ill defined.

Illuminated end West.

Micrometer reading on coincidence with $D$ (6 measures) .....	24,033
..... on bisecting the south mark (6 measures)...	25,544
..... on bisecting the north mark (6 measures)...	22,525

Illuminated end East.

Micrometer reading on bisecting the north mark (6 measures)...	25,655
..... on bisecting the south mark (6 measures)...	22,547
..... on coincidence with $D$ (6 measures).....	24,039

Hence, reading for line of collimation, by the south mark.....	24,046
..... by the north mark.....	24,090
Reading for true line of collimation.....	24,068
Reading for $D$ .....	24,036

The apparent error of collimation for  $D$  is therefore  $0',032 = 0'',54$  with negative sign (illuminated end East). Corrected for diurnal aberration and for the distance of  $D$  from the mean of the wires, this gives error of collimation for the mean, illuminated end East,  $= -0'',6$ .

The numerical correction to each transit, in seconds of time, is  $\frac{1}{15} \times$  error of collimation  $\times$  cosec N.P.D.

The second column contains the value, in seconds of space, of the elevation of the western end of the axis (considered negative when the eastern end is the higher). It is always ascertained by six applications of the spirit-level, reversing the level on each application: the excess of the sum of the six western readings of the bubble over the sum of the six eastern readings is divided by 12, and  $+0'',15$  is added to the quotient if the illuminated end is East, or  $-0'',15$  if the illuminated end is West. This quantity depends on the difference of the diameters of the pivots, as found in Vol. I. and II. The operation of levelling is commonly performed once in a week.

It was found in 1834 (see the Observations for 1834, page xii.) that one part on the level-scales  $= 1'',3$ . By this factor the error of level, as expressed in divisions of the scales, has always been multiplied to obtain the result which is set down in the second column of the right-hand page.

The numerical correction to each transit, in seconds of time, is  $\frac{1}{15} \times$  level error  $\times$  cos (N.P.D.  $- 37^\circ. 47'$ )  $\times$  cosec N.P.D.

The third column contains the seconds of the transits of those stars by which the meridian error is ascertained (the transits being corrected for error of collimation and level error). These are therefore the times at which those stars would pass the vertical great circle whose azimuthal deviation is the same as that of the inclined small circle described by the axis of the transit-telescope.

The fourth column contains the value of the Meridian Error or azimuthal deviation in seconds of space, considered positive when the telescope points to the E. of the S. point, and to the W. of the N. point. It is always determined by consecutive opposite passages of Polaris or  $\delta$  Ursæ Minoris,



in this manner. If the clock had no rate, and if the star's right ascension did not alter, the meridian error, in seconds of space, would be found by subtracting the time of transit below the pole from that above the pole (removing  $12^h$  from the difference) and dividing the difference in seconds of time by 2,94 for Polaris or by 1,37 for  $\delta$  Ursæ Minoris. The only modification introduced by the clock's rate and by the alteration of right ascension is, that the clock's loss and the decrease of right ascension in  $12^h$  must be added to the second transit, whether above or below the pole. If three consecutive passages have been observed, there is no need to consider the clock rate, &c., inasmuch as these quantities will increase the difference between the first two, and will as much diminish the difference between the second two, or *vice versá*, and therefore the mean of the differences will be free from the effects of these quantities. If several consecutive passages have been observed, I have commonly taken the differences, have taken the mean of each pair of adjacent differences, and have considered this mean as the quantity proper for giving the meridian error applicable to the transit separating the two differences of that pair: the first and last transits are commonly corrected by the meridian error corresponding to the first but one and the last but one.

The correction in seconds of time to be applied to each transit is  $\frac{1}{15} \times \text{meridian error} \times \sin (\text{N.P.D.} - 37^\circ. 47') \times \text{cosec N.P.D.}$

The limits between which each of these errors is used are marked by the bars across the column.

The fifth column contains the seconds of every transit, as corrected for the three errors of collimation, level, and azimuth. The numbers corresponding to the Sun, Jupiter, and Saturn (when both limbs are observed), have a bracket before them: it is to be understood here, that the mean of the uncorrected transits of the two limbs has been corrected in the same manner as other transits. In the corrections for the Moon, no allowance is made for the Moon's motion in right ascension.

The sixth column contains the seconds of the calculated apparent right ascensions of the stars used for determining the clock error. Among these

Polaris and  $\delta$  Ursæ Minoris are always included, not in order to give a clock error which can be used with the others, but in order to give the reader the means of judging of the instrument's position when there is no determination of meridian error on the day of observation. The assumed mean right ascensions, January 1, 1835, of these stars are as follows:

Star's Name.	Assumed Mean A.R. Jan. 1, 1835.			Excess over Naut. Alm. 1835.	Star's Name.	Assumed Mean A.R. Jan. 1, 1835.			Excess over Naut. Alm. 1835.
	<i>h.</i>	<i>m.</i>	<i>s.</i>	<i>s.</i>		<i>h.</i>	<i>m.</i>	<i>s.</i>	<i>s.</i>
Polaris.....	1.	0.	49,55	- 0,03	$\epsilon$ Bootis.....	14.	37.	47,04	+ 0,15
$\alpha$ Arietis.....	1.	57.	53,34	+ 0,14	$\alpha^2$ Libræ.....	14.	41.	45,92	+ 0,04
$\alpha$ Ceti.....	2.	53.	39,86	+ 0,15	$\alpha$ Coronæ Borealis..	15.	27.	42,37	+ 0,14
Aldebaran.....	4.	26.	27,78	+ 0,16	$\alpha$ Serpentis.....	15.	36.	8,92	+ 0,18
Rigel.....	5.	6.	36,82	+ 0,13	$\delta$ Ophiuchi.....	16.	5.	42,36	- 0,02
$\beta$ Tauri.....	5.	15.	52,15	+ 0,10	Antares.....	16.	19.	18,32	+ 0,25
$\alpha$ Orionis.....	5.	46.	14,63	+ 0,14	$\alpha$ Herculis.....	17.	7.	7,73	+ 0,09
Sirius.....	6.	37.	52,61	+ 0,10	$\alpha$ Ophiuchi.....	17.	27.	16,83	+ 0,13
Castor.....	7.	24.	3,79	+ 0,01	$\delta$ Ursæ Minoris....	18.	25.	31,31	- 1,10
Procyon.....	7.	30.	39,71	- 0,10	$\alpha$ Aquilæ.....	19.	42.	44,05	+ 0,06
Pollux.....	7.	35.	12,67	+ 0,01	$\alpha^2$ Capricorni.....	20.	8.	53,79	+ 0,11
$\alpha$ Hydræ.....	9.	19.	28,88	+ 0,06	$\beta$ Aquarii.....	21.	22.	52,28	+ 0,19
Regulus.....	9.	59.	34,80	- 0,02	$\alpha$ Aquarii.....	21.	57.	18,60	+ 0,09
$\beta$ Leonis.....	11.	40.	38,46	+ 0,09	$\alpha$ Pegasi.....	22.	56.	32,96	+ 0,10
Spica.....	13.	16.	30,76	+ 0,15	$\alpha$ Andromedæ.....	23.	59.	52,51	+ 0,12
Arcturus.....	14.	8.	8,42	+ 0,11					

The right ascensions of these stars were originally taken from the Nautical Almanac of 1829: they have been corrected by the observations of the succeeding years according to the methods explained in the different volumes of the Cambridge Observations, leaving the mean of all (except Polaris and  $\delta$  Ursæ Minoris) nearly unaltered; each place corrected by a sufficient number of observations in one year being adopted as the fundamental place for the next year. The mean exceeds the mean for the same stars in Mr Pond's catalogue of 1112 stars by  $0^s,11$ , and exceeds the mean for the same stars in Bessel's catalogue (*Tabulæ Regiomontanæ*) by  $0^s,19$ . It appears from a discussion of the observations of the Sun made with the Transit and the Mural Circle in the year 1833, (*Memoirs of the Royal Astronomical Society*, Vol. viii.) that the right ascensions ought to be diminished by  $0^s,18$ : and by a similar discussion of the observations made in the year 1834, (*Memoirs of the Royal Astronomical Society*, Vol. ix.) that

they ought to be diminished by  $0^s,15$ : thus making the mean of the catalogue to coincide almost exactly with the mean of Bessel's catalogue. But for the sake of using the same place of the equinox, and the same catalogue (in all fundamental points) which has been used in the *Cambridge Observations* since their commencement in 1828, I have deemed it not yet advisable to alter the right ascensions of the fundamental stars.

The apparent right ascensions are found by adding to the apparent right ascensions of the *Nautical Almanac 1835*, the excesses given in the table above. Thus the corrections adopted are the same as those of the *Nautical Almanac*. They assume the constant of aberration =  $20'',36$ , and that of lunar nutation =  $9'',25$ . For the stars whose passage below the pole is observed, the right ascension is interpolated between those for the preceding and following passages above the pole. For Polaris and  $\delta$  Ursæ Minoris the corrections are applied which depend on the Moon's longitude, and which are given in the *Nautical Almanac*, page 408.

The seventh column contains the clock error as shewn by each star: it is the excess of the apparent right ascension over the corrected time of transit.

The observations are divided into groups, whose limits are marked by the bars across the eighth and ninth columns. The mean of the clock errors in each group (excluding those given by Polaris or  $\delta$  Ursæ Minoris) is considered to correspond to the mean of the times of transit of the stars furnishing the clock errors; by comparing this with the mean of the preceding group and the mean of the following group, a preceding and a following clock rate are obtained: from these a rate is determined which is assumed to hold uniformly through the group (for the method of determining which no general rule can be given), and this rate is set down in the eighth column. This rate is applied backwards to the mean clock error just mentioned, so as to give the clock error when the clock shewed  $0^h$ , and this quantity is set down in the ninth column. As the observations frequently extend into more than one sidereal day, the error is set down which corresponds to the  $0^h$  preceding each observation of the group.



The apparent right ascension in the tenth column is formed by adding to the corrected transit (column 5) the clock error at 0<sup>h</sup> (column 9) and the proportional part of the rate (column 8). No apparent right ascensions are given for Polaris or  $\delta$  Ursæ Minoris, unless one of those stars has been observed at consecutive passages: and none are given for other fundamental stars, unless three at least, excluding Polaris and  $\delta$  Ursæ Minoris, are contained in the group.

*Sidereal Times occupied by the passages of the diameters of the Sun, the Moon, Jupiter, and Saturn, over the Meridian, pages (80) and (81).*

These numbers for the Sun, Jupiter, and Saturn, are merely the differences of the "Concluded Transit over the mean of the Seven Wires" for the first and second limbs. For the Moon a small correction is necessary, as it is hardly possible that both her limbs can be quite full. This correction is investigated by ascertaining the Moon's distance (in  $\mathcal{R}$ ) from the point of opposition to the Sun: this distance multiplied by the cosine of the Sun's declination is the length of the arc of a great circle drawn perpendicularly from the Sun's place upon the meridian passing through the Moon's place; and the correction required is the versed sine of this arc, on the Moon's surface: always additive to the observed diameter. In two of the instances in the table the correction is 0<sup>o</sup>.04: in the third it is insensible.

*Apparent Right Ascensions of Polaris and  $\delta$  Ursæ Minoris, and Mean Right Ascensions of Stars observed in the year 1835; page (84) to (94).*

The apparent Right Ascensions of Polaris and  $\delta$  Ursæ Minoris are merely extracted from the tenth column, right-hand page, in the "*Transits as observed &c.*" It has been mentioned that none are retained except when consecutive passages of one of these stars were observed, and when consequently the meridian error was well known. With one exception also, none are retained in which the observation was made over less than three wires. The process of determining the meridian error, as explained above, takes account of the variation of right ascension between the two passages. Nothing is omitted therefore in these determinations: and I believe that they are worthy of great confidence.

The mean right ascensions of these and all the other stars are formed by subtracting the corrections from the apparent right ascensions in column 10 of the "*Transits as observed, &c.*" For the stars in the list of the Nautical Almanac, the requisite corrections are found by subtracting the mean right ascensions of that work from the apparent right ascensions of the same work (those of Polaris and  $\delta$  Ursæ Minoris being affected with the corrections depending on the Moon's longitude). For the stars in the Royal Astronomical Society's Catalogue not included in the list of the Nautical Almanac, the corrections are calculated by the formula  $Aa + Bb + Cc + Dd$ ;  $\log A$ ,  $\log B$ ,  $\log C$ , and  $\log D$ , being taken from the Nautical Almanac without alteration, and  $\log a$ ,  $\log b$ ,  $\log c$ ,  $\log d$ , being taken from the Royal Astronomical Society's Catalogue. For the stars not included in that Catalogue, the corrections are calculated by the formula  $\frac{1}{15} A \cdot \cos R \operatorname{cosec} N.P.D.$   
 $+ \frac{1}{15} B \cdot \sin R \operatorname{cosec} N.P.D. + \frac{1}{15} C \times (n^{\circ} \log = 1,3020) \times \sin R \operatorname{cotan} N.P.D.$   
 $+ \frac{1}{15} D \cdot \cos R \operatorname{cotan} N.P.D. + C \times (n^{\circ} \log = 0,4869).$

The Catalogue given in pages (93) and (94) contains the mean of all the different values of mean R.A. of each star. It must be remembered that these are subject to the same error, from error in the place of the equinox, as the mean R.A. in the Nautical Almanac for 1829. The annual variations are taken from the Astronomical Society's Catalogue, or are computed by the same formula which is used there.

*Zenith Distances observed with the Mural Circle, and Calculation of Geocentric North Polar Distances, page 1 to 105.*

The mural circle with which these observations were made was constructed by Troughton and Simms. It is 8 feet in diameter, but in all other respects is similar to the mural circles of the Greenwich Observatory. The limb is connected with the center piece by 16 spokes (hollow cones); and these spokes are connected at about the middle of their lengths by bars forming a circle whose diameter is about half that of the exterior circle. The limb was cast in several pieces, which were afterwards united by the process technically called *burning together*; a process which, when



skilfully performed, makes a connexion as perfect as if the whole had been cast at once. The axis on which the circle turns is a hollow cone  $4\frac{1}{2}$  feet long, passing through a very massive stone pier (the circle being on its eastern face): both bearings of the axis are on the same side of the circle. At both bearings the axis is armed with a steel ring, which turns within a steel cylinder. A considerable part of the weight at the bearing of the large ring (or that near the circle) is supported by lever counterpoises. The divisions of the limb are on the external edge, so that the microscopes by which they are read are in the same plane as the circle: the intervals of the divisions are 5'. The divisions were cut after the circle was mounted on the pier. The microscopes are attached to the stone pier by brass supports, the height of which above the point of attachment is intended to supply a thermometrical expansion nearly equal to the upward expansion of the central support. The eyepieces of the microscopes are fitted with micrometers, by which the intervals of the divisions are subdivided: in observation the subdivisions are always read to tenths of seconds. The telescope is carried by a steel rod passing through the center of the conical axis: it is however fixed in its position by frames which are clamped to the limb at both ends of the telescope. One of these frames is as near as possible to the object-glass-cell, and the other as near as possible to the wire-frame. In the eyepiece there is one fixed horizontal wire, of spider's web, adjustable by a screw to horizontality, and one wire parallel to it moveable by a micrometer screw: there are also five vertical wires. The instrument is fixed or moved slowly by five clamps, with tangent screws acting immediately on the limb; two of these however have been taken off (to diminish the friction), but can be restored in a few minutes.

That the radiation of the Sun may produce no injurious effect in observations of the Sun or of bodies near the Sun, a wooden screen is provided, consisting of three parts: two of which are designed to screen all those parts of the limb which are beyond the zenith distances corresponding to the solstitial points, and the third (a sliding board with a hole little larger than the object glass of the telescope) protects all those parts of the limb between the two solstitial points. It is impossible that the Sun's warmth can have produced the least effect on any of the succeeding observations.

When there is no reason for departing from the usual practice, the circle is set approximately for the object to be observed, it is fixed by the clamp nearest to the observer's hand, and then by the tangent screw it is moved till the fixed wire bisects the star or touches the planet under observation (an attempt is always made to bisect the thickness of the wire by the limb of a planet). The heads of the tangent screws have been notched in such a way that the observer, without looking to them, can tell whether he is moving the circle by the screw in opposition to the spring of the clamp (which is preferred to the contrary motion, as less liable to be followed by a slip of the circle). When two observations follow each other very closely, the circle is clamped nearly in the proper position, the microscopes are all read, and then (without moving the circle or telescope) the object is bisected or touched by the micrometer wire: this operation requiring very little time, allows the next observation to be taken very soon after the first. This method is always used for the observation of a quick-moving star (and sometimes for that of a slow-moving star) by reflexion and directly at the same passage: it is also used for the observation of both limbs of the Sun or Moon. When there is no reason to the contrary, the bisection is always effected (as nearly as possible) when the object passes the middle vertical wire; but in such cases as those mentioned above, one observation is generally made a little before and the other a little after passing the middle wire: if their alteration of zenith distance in this time has been perceptible, it is allowed for by numerical correction. The Moon's limb is frequently observed several times with the micrometer wire; a correction is then necessary for the change of polar distance at each observation.

The following tables contain the particulars of two examinations of the divisions of the circle in the year 1835. The sum of opposite readings only is used (so that the effect of this examination is to determine diametral errors only). The sum of the readings of  $A + B$ ,  $C + D$ ,  $E + F$ , being divided by 3, and  $A + B$  being diminished by this quantity, it is clear that the accidental position of the division in the field of view is eliminated from the remainder. Thus  $A + B - \frac{1}{3}$  sum may be supposed to depend only on the position of the microscopes  $A$  and  $B$ , the error of division, and the

error in reading the divisions (whether produced by a change in the figure of the circle or by any other cause). Assuming the values of the two latter quantities to be periodical, the mean of all the quantities  $A + B - \frac{1}{3}$  sum is the error in the position of the microscopes: this being applied with sign changed to each particular value in that column, leaves a quantity  $A + B - \frac{1}{3}$  sum - constant, which depends only on the error of division and the error in reading the divisions. Selecting all those values for which the same divisions are observed (remarking that the divisions which were under  $A$  and  $B$  with the pointer-reading  $10^\circ$  are also under  $A$  and  $B$  with the pointer-reading  $190^\circ$ , and are under  $C$  and  $D$  with the pointer-reading  $70^\circ$  and  $250^\circ$ , and under  $E$  and  $F$  with the pointer-reading  $130^\circ$  and  $310^\circ$ , &c.) and taking the mean, the errors of division are found. Applying these with sign changed to  $A + B - \frac{1}{3}$  sum - constant, the variations of the readings of the same divisions in different positions of the circle are found.

The general coincidence of the results, as to error of division, with each other and with those of the two preceding years, gives strong reason for thinking that reliance may be placed on this method of examination, and that the anomalous errors of division are trifling in comparison with the very small error which appears to follow a law.



*Examination of the Mural Circle, 1835, March 3. Zenith point 221°. 35'.  
Pointer reading greater than that of Microscope A by 10°. 40'. Object end  
of Telescope upon 120°. 55'.*

Pointer.	A	B	C	D	E	F	A+B	C+D	E+F	A+B - $\frac{1}{2}$ sum	C+D - $\frac{1}{2}$ sum	E+F - $\frac{1}{2}$ sum	A+B - $\frac{1}{2}$ sum -0,13	C+D - $\frac{1}{2}$ sum -2,01	E+F - $\frac{1}{2}$ sum +2,14
5°	5,6	9,1	10,2	5,4	9,8	2,8	14,7	15,6	12,6	+0,40	+1,30	-1,70	+0,27	-0,71	+0,44
65	5,3	10,9	10,8	7,9	8,1	4,1	16,2	18,7	12,2	+0,50	+3,00	-3,50	+0,37	+0,99	-1,36
125	5,8	9,8	10,3	7,2	8,2	2,3	15,6	17,5	10,5	+1,07	+2,97	-4,03	+0,94	+0,96	-1,89
185	5,2	7,1	8,8	6,2	6,0	4,6	12,3	15,0	10,6	-0,33	+2,37	-2,03	-0,46	+0,36	+0,11
245	4,2	4,1	6,4	1,9	2,9	0,9	8,3	8,3	3,8	+1,50	+1,50	-3,00	+1,37	-0,51	-0,86
305	4,0	5,3	8,9	2,5	5,1	1,9	9,3	11,4	7,0	+0,07	+2,17	-2,23	-0,06	+0,16	-0,09
15	3,3	8,1	8,9	5,6	7,2	1,9	11,4	14,5	9,1	-0,27	+2,83	-2,57	-0,40	+0,82	-0,43
75	3,8	8,1	8,9	6,0	6,9	2,3	11,9	14,9	9,2	-0,10	+2,90	-2,80	-0,23	+0,89	-0,66
135	4,0	5,7	8,1	3,5	5,3	2,0	9,7	11,6	7,3	+0,17	+2,07	-2,23	+0,04	+0,06	-0,09
195	4,1	4,9	8,7	3,3	4,4	2,0	9,0	12,0	6,4	-0,13	+2,87	-2,73	-0,26	+0,86	-0,59
255	4,0	5,7	9,0	3,2	7,0	2,3	9,7	12,2	9,3	-0,70	+1,80	-1,10	-0,85	-0,21	+1,04
315	5,2	8,1	9,8	5,2	8,1	2,9	13,3	15,0	11,0	+0,20	+1,90	-2,10	+0,07	-0,11	+0,04
25	3,9	9,0	8,8	6,2	8,1	2,3	12,9	15,0	10,4	+0,13	+2,23	-2,37	0,00	+0,22	-0,23
85	4,0	9,7	8,9	4,7	7,2	2,4	13,7	13,6	9,6	+1,40	+1,30	-2,70	+1,27	-0,71	-0,56
145	2,3	6,7	7,1	5,0	5,3	1,9	9,0	12,1	7,2	-0,43	+2,67	-2,23	-0,56	+0,66	-0,09
205	2,8	4,9	5,9	4,0	3,9	1,9	7,7	9,9	5,8	-0,10	+2,10	-2,00	-0,23	+0,09	+0,14
265	3,7	5,0	6,9	2,9	2,9	1,9	8,7	9,8	4,8	+0,93	+2,03	-2,97	+0,80	+0,02	-0,83
325	3,9	5,6	9,7	3,0	6,0	1,1	9,5	12,7	7,1	-0,27	+2,93	-2,67	-0,40	+0,92	-0,53
35	4,7	9,2	8,3	5,2	7,1	3,2	13,9	13,5	10,3	+1,33	+0,93	-2,27	+1,20	-1,08	-0,13
95	4,9	9,3	10,3	5,9	9,0	4,7	14,2	16,2	13,7	-0,50	+1,50	-1,00	-0,63	-0,51	+1,14
155	4,7	8,3	10,5	3,9	9,1	4,1	13,0	14,4	13,2	-0,53	+0,87	-0,33	-0,66	-1,14	+1,81
215	4,7	6,5	9,1	4,9	7,4	2,7	11,2	14,0	10,1	-0,57	+2,23	-1,67	-0,70	+0,22	+0,47
275	3,6	6,7	9,1	3,5	5,8	1,9	10,3	12,6	7,7	+0,10	+2,40	-2,50	-0,03	+0,39	-0,36
335	4,1	6,7	9,0	2,7	6,9	0,9	10,8	11,7	7,8	+0,70	+1,60	-2,30	+0,57	-0,41	-0,16
45	4,1	9,0	9,0	4,0	7,9	4,7	13,1	13,0	12,6	+0,20	+0,10	-0,30	+0,07	-1,91	+1,84
105	3,9	6,3	7,9	4,2	5,3	1,0	10,2	12,1	6,3	+0,67	+2,57	-3,23	+0,54	+0,56	-1,09
165	3,9	6,7	7,7	3,9	6,3	2,3	10,6	11,6	8,6	+0,33	+1,33	-1,67	+0,20	-0,68	+0,47
225	3,5	4,4	7,1	1,7	5,4	0,3	7,9	8,8	5,7	+0,43	+1,33	-1,77	+0,30	-0,68	+0,37
285	3,2	7,3	9,1	3,1	5,7	2,1	10,5	12,2	7,8	+0,33	+2,03	-2,37	+0,20	+0,02	-0,23
345	3,0	7,9	9,9	4,3	8,6	2,2	10,9	14,2	10,8	-1,07	+2,23	-1,17	-1,20	+0,22	+0,97
55	4,3	10,1	9,7	5,9	8,7	4,7	14,4	15,6	13,4	-0,07	+1,13	-1,07	-0,20	-0,88	+1,07
115	4,7	8,5	9,3	6,0	5,8	3,6	13,2	15,3	9,4	+0,57	+2,67	-3,23	+0,44	+0,66	-1,09
175	5,3	7,1	9,9	6,0	8,4	4,8	12,4	15,9	13,2	-1,43	+2,07	-0,63	-1,56	+0,06	+1,51
235	5,1	5,9	9,2	2,9	6,3	2,2	11,0	12,1	8,5	+0,47	+1,57	-2,03	+0,34	-0,44	+0,11
295	5,0	7,4	10,7	5,5	8,1	2,0	12,4	16,2	10,1	-0,50	+3,30	-2,80	-0,63	+1,29	-0,66
355	6,2	12,1	13,0	6,8	11,6	4,9	18,3	19,8	16,5	+0,10	+1,60	-1,70	-0,03	-0,41	+0,44

*Errors of Division in each Diameter.*

Divisions on the Diameter.	Sum of Errors of Divisions.
354.20 and 174.20	- 0,28
4.20 ... 184.20	- 0,01
14.20 ... 194.20	- 0,26
24.20 ... 204.20	+ 0,34
34.20 ... 214.20	+ 0,40
44.20 ... 224.20	+ 0,67
54.20 ... 234.20	+ 0,57
64.20 ... 244.20	- 0,35
74.20 ... 254.20	+ 0,59
84.20 ... 264.20	- 0,31
94.20 ... 274.20	+ 0,41
104.20 ... 284.20	+ 0,11
114.20 ... 294.20	- 0,28
124.20 ... 304.20	+ 0,36
134.20 ... 314.20	- 0,34
144.20 ... 324.20	- 0,03
154.20 ... 334.20	- 0,82
164.20 ... 344.20	- 0,78

*Variability of Readings, at different inclinations, of each Diameter.*

Divisions on the Diameter.	POSITION OF THE DIAMETER.					
	Under A,B	Under C,D	Under E,F	Under B,A	Under D,C	Under F,E
354.20 and 174.20	+ 0,55	+ 1,27	- 1,61	- 0,18	- 0,23	+ 0,19
4.20 ... 184.20	- 0,39	+ 0,90	- 0,08	- 0,25	- 0,20	+ 0,05
14.20 ... 194.20	+ 0,26	- 0,45	+ 0,17	+ 0,03	+ 0,28	- 0,27
24.20 ... 204.20	+ 0,86	- 0,85	+ 1,47	- 1,04	+ 0,05	- 0,50
34.20 ... 214.20	- 0,33	+ 0,16	+ 0,07	- 0,10	- 0,38	+ 0,57
44.20 ... 224.20	- 0,87	- 0,01	+ 0,84	- 0,33	+ 0,62	- 0,23
54.20 ... 234.20	- 0,20	+ 0,39	- 0,46	+ 0,80	- 0,41	- 0,13
64.20 ... 244.20	+ 0,12	+ 0,41	- 0,24	- 0,48	+ 0,24	- 0,08
74.20 ... 254.20	+ 0,68	+ 0,07	- 0,45	+ 0,21	+ 0,33	- 0,82
84.20 ... 264.20	- 0,32	- 0,83	+ 0,78	+ 0,28	- 0,10	+ 0,18
94.20 ... 274.20	+ 0,13	- 1,09	- 0,04	- 0,21	- 0,19	+ 1,43
104.20 ... 284.20	+ 0,33	- 0,05	0,00	- 0,74	- 0,52	+ 0,96
114.20 ... 294.20	+ 1,22	+ 0,64	- 0,58	+ 0,22	- 0,43	- 1,08
124.20 ... 304.20	- 0,32	+ 0,50	+ 0,68	- 0,29	+ 0,46	- 1,02
134.20 ... 314.20	- 0,22	+ 0,43	- 0,49	- 0,06	+ 0,56	- 0,22
144.20 ... 324.20	- 0,63	+ 0,25	- 0,33	+ 0,60	- 1,05	+ 1,17
154.20 ... 334.20	+ 1,04	+ 0,14	+ 0,59	- 0,38	- 1,09	- 0,27
164.20 ... 344.20	- 0,78	+ 0,34	+ 0,12	+ 0,75	- 0,10	- 0,31

*Examination of the Mural Circle, 1835, Dec. 31. Zenith Point 170°. 8'.  
Pointer reading greater than that of Microscope A by 10°. 40'. Object end  
of Telescope on 69°. 28'.*

Pointer.	A	B	C	D	E	F	A+B	C+D	E+F	A+B -½ sum	C+D -½ sum	E+F -½ sum	A+B -½ sum + 2,43	C+D -½ sum + 0,82	E+F -½ sum - 3,24
0	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
2.30	5,0	58,8	8,3	58,2	3,0	9,3	3,8	6,5	12,3	-3,73	-1,03	+4,77	-1,30	-0,21	+1,53
62.30	5,2	57,2	6,9	55,3	2,0	6,1	2,4	2,2	8,1	-1,83	-2,03	+3,87	+0,60	-1,21	+0,63
122.30	9,9	2,4	14,3	1,1	8,3	9,0	12,3	15,4	17,3	-2,70	+0,40	+2,30	-0,27	+1,22	-0,94
182.30	9,6	7,1	14,4	4,7	10,6	12,0	16,7	19,1	22,6	-2,77	-0,37	+3,13	-0,34	+0,45	-0,11
242.30	9,1	7,2	11,3	4,9	8,2	12,7	16,3	16,2	20,9	-1,50	-1,60	+3,10	+0,93	-0,78	-0,14
302.30	9,0	6,3	11,7	5,9	6,8	13,3	15,3	17,6	20,1	-2,37	-0,07	+2,43	+0,06	+0,75	-0,81
12.30	9,3	2,0	12,9	1,6	5,4	10,7	11,3	14,5	16,1	-2,67	+0,53	+2,13	-0,24	+1,35	-1,11
72.30	9,6	1,9	12,8	1,1	6,2	11,3	11,5	13,9	17,5	-2,80	-0,40	+3,20	-0,37	+0,42	-0,04
132.30	9,6	5,1	16,2	1,9	9,8	10,3	14,7	18,1	20,1	-2,93	+0,47	+2,47	-0,50	+1,29	-0,77
192.30	10,8	8,0	16,9	4,9	11,4	13,6	18,8	21,8	25,0	-3,07	-0,07	+3,13	-0,64	+0,75	-0,11
252.30	12,2	9,1	16,9	6,5	12,0	15,0	21,3	23,4	27,0	-2,60	-0,50	+3,10	-0,17	+0,32	-0,14
312.30	10,9	6,1	12,4	6,8	7,3	16,9	17,0	19,2	24,2	-3,13	-0,93	+4,07	-0,70	-0,11	+0,83
22.30	10,0	7,6	17,8	6,9	10,3	17,3	23,6	24,7	27,6	-1,70	-0,60	+2,30	+0,73	+0,22	-0,94
82.30	16,3	9,0	20,3	7,9	13,0	17,9	25,3	28,2	30,9	-2,83	+0,07	+2,77	-0,40	+0,89	-0,47
142.30	15,9	12,7	23,0	8,2	16,3	18,3	28,6	31,2	34,6	-2,87	-0,27	+3,13	-0,44	+0,55	-0,11
202.30	14,8	13,1	20,3	8,2	17,0	16,8	27,9	28,5	33,8	-2,17	-1,57	+3,73	+0,26	-0,75	+0,49
262.30	16,3	13,3	20,3	11,1	15,8	19,9	29,6	31,4	35,7	-2,63	-0,83	+3,47	-0,20	-0,01	+0,23
322.30	14,3	8,5	12,9	10,9	8,9	20,3	22,8	23,8	29,2	-2,47	-1,47	+3,93	-0,04	-0,65	+0,69
32.30	14,6	8,0	17,7	6,1	9,8	17,0	22,6	23,8	26,8	-1,80	-0,60	+2,40	+0,63	+0,22	-0,84
92.30	15,2	8,9	19,9	6,7	11,8	16,0	24,1	26,6	27,8	-2,07	+0,43	+1,63	+0,36	+1,25	-1,61
152.30	13,6	10,5	19,9	8,1	14,3	17,2	24,1	28,0	31,5	-3,77	+0,13	+3,63	-1,34	+0,95	+0,39
212.30	12,9	10,7	17,2	6,5	14,8	15,7	23,6	23,7	30,5	-2,33	-2,23	+4,57	+0,10	-1,41	+1,33
272.30	15,6	12,0	17,8	10,9	13,9	18,9	27,6	28,7	32,8	-2,10	-1,00	+3,10	+0,33	-0,18	-0,14
332.30	16,2	10,2	16,7	10,3	11,3	20,1	26,4	27,0	31,4	-1,87	-1,27	+3,13	+0,56	-0,45	-0,11
42.30	17,5	11,1	20,8	7,2	14,9	19,1	28,6	28,0	34,0	-1,60	-2,20	+3,80	+0,83	-1,38	+0,56
102.30	17,2	10,7	22,2	7,3	14,1	16,5	27,9	29,5	30,6	-1,43	+0,17	+1,27	+1,00	+0,99	-1,97
162.30	17,2	12,8	22,3	12,3	17,7	20,3	30,0	34,6	38,0	-4,20	+0,40	+3,80	-1,77	+1,22	+0,56
222.30	17,3	13,3	19,8	9,7	18,2	18,9	30,6	29,5	37,1	-1,80	-2,90	+4,70	+0,63	-2,08	+1,46
282.30	18,2	13,6	19,7	13,7	14,1	22,5	31,8	33,4	36,6	-2,13	-0,53	+2,67	+0,30	+0,29	-0,57
342.30	18,5	9,9	17,1	13,3	11,3	24,9	28,4	30,4	36,2	-3,27	-1,27	+4,53	-0,84	-0,45	+1,29
52.30	19,3	11,1	21,2	9,1	13,9	21,1	30,4	30,3	35,0	-1,50	-1,60	+3,10	+0,93	-0,78	-0,14
112.30	7,7	0,9	10,3	57,9	4,0	7,9	8,6	8,2	11,9	-0,97	-1,37	+2,33	+1,46	-0,55	-0,91
172.30	20,3	16,1	26,0	13,3	20,8	23,0	36,4	39,3	43,8	-3,43	-0,53	+3,97	-1,00	+0,29	+0,73
232.30	10,1	7,4	15,0	4,7	13,2	12,3	17,5	19,7	25,5	-3,40	-1,20	+4,60	-0,97	-0,38	+1,36
292.30	10,1	12,0	12,2	6,5	9,1	14,6	22,1	18,7	23,7	+0,60	-2,80	+2,20	+3,03	-1,98	-1,04
352.30	11,3	2,8	13,3	3,5	6,7	15,1	14,1	16,8	21,8	-3,47	-0,77	+4,23	-1,04	+0,05	+0,99



*Errors of Division in each Diameter.*

Divisions on the Diameter.	Sum of Errors of Divisions.
351.50 and 171.50	-0,90
1.50 ... 181.50	-0,01
11.50 ... 191.50	+0,41
21.50 ... 201.50	+0,35
31.50 ... 211.50	+0,77
41.50 ... 221.50	-0,14
51.50 ... 231.50	+0,82
61.50 ... 241.50	-0,09
71.50 ... 251.50	-0,19
81.50 ... 261.50	+0,28
91.50 ... 271.50	+0,68
101.50 ... 281.50	+1,01
111.50 ... 291.50	+0,09
121.50 ... 301.50	+0,12
131.50 ... 311.50	-0,21
141.50 ... 321.50	-0,62
151.50 ... 331.50	-1,43
161.50 ... 341.50	-0,86

*Variability of Readings, at different inclinations, of each Diameter.*

Divisions on the Diameter.	POSITION OF THE DIAMETER.					
	Under A,B	Under C,D	Under E,F	Under B,A	Under D,C	Under F,E
351.50 and 171.50	-0,40	-0,31	-0,04	+0,56	+0,12	+0,09
1.50 ... 181.50	-0,23	+0,43	-0,76	-0,63	+0,33	+0,84
11.50 ... 191.50	+0,32	+0,48	-0,52	-0,15	-0,42	+0,28
21.50 ... 201.50	+0,28	+0,90	+0,04	-0,25	-0,53	-0,46
31.50 ... 211.50	+0,06	+0,22	-0,21	-0,14	-0,48	+0,52
41.50 ... 221.50	+1,07	-0,41	+0,87	-0,83	-1,84	+1,13
51.50 ... 231.50	-0,22	+0,40	-0,93	+0,11	-0,07	+0,71
61.50 ... 241.50	-0,28	+1,38	-0,02	-0,08	-0,02	-1,02
71.50 ... 251.50	-0,21	+0,74	+0,68	-0,01	-0,46	-0,75
81.50 ... 261.50	+0,08	+0,67	+1,05	+0,05	-0,73	-1,12
91.50 ... 271.50	+0,32	+0,54	+0,78	-0,38	-1,13	-0,12
101.50 ... 281.50	+0,45	-0,72	+0,35	+2,02	-0,96	-1,15
111.50 ... 291.50	-0,36	+0,36	-0,23	-0,03	-0,30	+0,54
121.50 ... 301.50	-0,62	+0,63	-0,26	-0,82	+1,23	-0,16
131.50 ... 311.50	-0,23	-0,54	+0,44	+0,17	+0,43	-0,26
141.50 ... 321.50	-0,72	-0,79	+0,48	+1,18	+0,84	-0,99
151.50 ... 331.50	-0,34	-0,65	+0,86	+0,59	+0,05	-0,54
161.50 ... 341.50	-0,14	+0,48	-0,18	-0,18	+0,08	-0,05

I shall now proceed with the explanation of the different columns in the *Zenith Distances observed with the Mural Circle, &c.*

Column 1 contains the day, beginning always with the Sun's passage.

Column 2 contains the name of the object observed, with letters indicating the method of observation. *R* denotes that it is observed by reflexion in a trough of mercury: *M* that it is observed with the micrometer wire (the reading of which is given in column 10). The limb of a planet which is mentioned in column 2 is that which is observed with the fixed wire: the other limb is commonly observed with the micrometer wire (the reading for which is set down in column 8 of the right-hand page). The rules for the nomenclature of the stars are the same as in the *Transits observed, &c.* except that when other references fail the star's place is described by its approximate *R*, which may be erroneous 3<sup>s</sup> or 4<sup>s</sup>.

Column 3 contains the indication of the pointer. This is merely a pointed index fixed to the stone pier; and column 3 contains only the degrees and the whole number of divisions (of 5' each) which it marks.

The position of the pointer is such that its reading is greater than the division under Microscope *A* by 10°. 40'. The pointer reading, as first set down, is frequently erroneous by some multiple of 5': no mention is made, in the notes, of these alterations.

Columns 4 to 9 contain the readings of the six microscopes (the minutes being set down in column 4 only). It must be remarked that the microscopes are lettered in the following order:

<i>E</i>	<i>C</i>
<i>B</i>	<i>A</i>
<i>D</i>	<i>F</i>

so that the readings of *A* and *B* are those at opposite ends of one diameter, the readings of *C* and *D* are at opposite ends of a diameter inclined 60° to the former, and the readings of *E* and *F* are at opposite ends of a third diameter inclined 60° to each of the others. Once or twice the minute



has been set down wrong, but other observations of the same object (independent of catalogues) have given the means of correcting it: and no mention is made in the notes. The seconds are sometimes set down wrong, but every alteration of them is carefully recorded in the notes.

Column 10 contains either the reading of the micrometer for the body or limb mentioned in column 2, or the time shewn by the clock near the circle at the instant of bisection, or, in a few instances, both these quantities. To reduce an observation of the micrometer wire, the micrometer reading in column 10 must be subtracted from the reading at coincidence with the fixed wire (given at the bottom of the right-hand page), and the difference (considered negative if the reading in column 10 is the greater) must be converted into arc at the rate of  $20''.833$  for one revolution. When the reading is negative, it must be added to the reading at coincidence with the fixed wire. The value of the revolutions was obtained in 1833 by observing a pretty well-defined aperture on Grantchester steeple (under the meridian mark of the transit) with the micrometer wire successively at the revolutions 0 and 20, and reading the circle microscopes.

The times given in column 10 are generally for the observations of Polaris and  $\delta$  Ursæ Minoris (whose path within the field of view is very much more curved than that of any other star). This time being reduced to time by Hardy (the transit-clock) by the comparisons at the bottom of the right-hand page, and compared with the observed time of transit, gives the distance in time of the star from the meridian: by means of which, with special tables, the correction to the meridian is easily found. When no time is given for these stars, it is to be understood that they were observed on the meridian. When any star or planet whose declination is considerable is observed at a distance from the middle wire, a correction is generally applied for the curvature of its path. This is calculated by dividing ten times the log secant of the distance from the middle wire (considering the intervals of the wires 4' each, the distance of the micrometer-comb from the 5th wire as 4', and the distance of the edge of the field from the 5th wire as 7') by the difference of  $\log \cos$  N.P.D. as given for 10" in Callet's Logarithms: or it is calculated by the proper formula.

Column 11 contains the correction for the micrometer reading (which is always placed before any other) and the correction for curvature of path: it contains also (for the Sun, Moon, and Planets whose polar distance varies) the correction depending on the difference between the time at which the body passed the middle wire and the time at which it was observed. Of the calculations for the Sun and Planets, no explanation is necessary. But the rapid change of the Moon's N.P.D. makes it requisite to shew that due accuracy has been preserved. The calculation is thus made. As the Moon is commonly observed at the instant of passing some one of the vertical wires, or her distance from the middle wire at the time of observation is noted in terms of the interval between two wires, a knowledge of the intervals of the wires is necessary. By transits of six stars, the interval was found to be nearly  $16^s,6$  for equatoreal stars. The time occupied by the Moon in passing from one to another is therefore  $16^s,6 \times F$  nearly, where  $F$  is the lunar factor in the Bologna Ephemeris: and hence the log variation of the Moon's N.P.D. in passing from one wire to the next is  $= 8,44196 + \log F + \log \text{variation in } 10^m$  (the last term of which is taken from the Nautical Almanac). The circle reading thus corrected is therefore the reading corresponding to the body's passage over the middle vertical wire.

When both limbs of the Moon are observed, one of them in general is a little defective from want of illumination. A numerical correction is thus investigated. The Moon's place, on a common celestial globe, is brought to the horizon at the meridian: and the number of degrees by which the Sun's place is then above or below the horizon is measured. In the former case the reading for the S.L. requires the correction, + Moon's semidiameter  $\times$  versed sine of Sun's elevation: in the latter, the reading for the N.L. requires the correction, - Moon's semidiameter  $\times$  versed sine of Sun's depression. This supposes the Moon to be gibbous, as is almost always true in these observations.

Another correction is applied to every observation (not explicitly stated in any of the columns) depending on the construction of the micrometer microscopes. When two adjacent divisions are viewed with a microscope, five turns of the micrometer ought to carry the micrometer wire from the image of one division to that of the other. It is impossible to effect this

adjustment with accuracy, both because it is one of much delicacy, and because it is continually altered by the expansion or contraction of the circle. From time to time therefore (especially when there has been a considerable change of temperature) the observer carefully reads the micrometer of each microscope for the divisions which happen to be on both sides of the center of the field. The excess of the seconds read for that division which is commonly registered, over the seconds read for the next division on the negative side (with reference to the micrometer reading), is the error which would be committed in excess (if not corrected), supposing the reading of that microscope to be nearly 5'. For a smaller reading, the error would be smaller in the same proportion. The sum of the excesses for all the microscopes is therefore the error in excess of the sum of the microscope readings (if not corrected), supposing the readings nearly 5', and therefore the sum of the microscope readings, before being divided by 6, requires, for correction, that sum of excesses with its sign changed: the whole to be taken if the reading is nearly 5', but to be diminished in proportion if the reading is smaller. The sum of the excesses with changed sign is given at the bottom of the right-hand page as the "Correction for Runs."



*The following are the Observations for Runs, 1835.*

Day.	Division, &c.	A	B	C	D	E	F	Sum of Excesses.
Jan. 24	Negative side.....	0,8	5,4	5,0	2,9	2,5	2,9	
	Positive .....	1,2	5,8	5,2	3,3	3,5	1,4	
	Excess of latter...	+ 0,4	+ 0,4	+ 0,2	+ 0,4	+ 1,0	- 1,5	+ 0,9
Feb. 16	Negative side.....	47,7	50,0	50,1	52,9	49,3	48,2	
	Positive .....	47,6	49,9	51,0	53,7	49,3	47,5	
	Excess of latter...	- 0,1	- 0,1	+ 0,9	+ 0,8	0,0	- 0,7	+ 0,8
23	Negative side.....	53,2	57,7	58,7	54,4	55,7	52,0	
	Positive .....	54,0	58,2	58,7	53,8	57,5	51,1	
	Excess of latter...	+ 0,8	+ 0,5	0,0	- 0,6	+ 1,8	- 0,9	+ 1,6
Mar. 2	Negative side.....	27,0	29,0	30,1	25,5	30,8	25,0	
	Positive .....	26,0	30,3	31,1	25,4	31,3	24,3	
	Excess of latter...	- 1,0	+ 1,3	+ 1,0	- 0,1	+ 0,5	- 0,7	+ 1,0
16	Negative side.....	49,7	48,3	52,1	47,1	47,2	48,2	
	Positive .....	49,8	49,1	52,0	47,3	47,6	47,5	
	Excess of latter...	+ 0,1	+ 0,8	- 0,1	+ 0,2	+ 0,4	- 0,7	+ 0,7
April 6	Negative side.....	29,3	25,3	29,9	26,0	24,3	25,1	
	Positive .....	29,9	26,4	30,5	26,4	24,9	24,2	
	Excess of latter...	+ 0,6	+ 1,1	+ 0,6	+ 0,4	+ 0,6	- 0,9	+ 2,4
9	Negative side.....	44,5	44,2	41,4	40,0	41,1	40,0	
	Positive .....	44,0	44,5	42,3	41,0	42,0	39,1	
	Excess of latter...	- 0,5	+ 0,3	+ 0,9	+ 1,0	+ 0,9	- 0,9	+ 1,7
27	Negative side.....	27,9	22,0	29,0	21,7	23,8	22,1	
	Positive .....	27,6	22,9	29,3	22,1	24,0	21,0	
	Excess of latter...	- 0,3	+ 0,9	+ 0,3	+ 0,4	+ 0,2	- 1,1	+ 0,4
May 27	Negative side.....	48,0	43,1	46,8	44,3	41,9	43,3	
	Positive .....	49,1	45,0	47,4	45,2	43,8	42,0	
	Excess of latter ..	+ 1,1	+ 1,9	+ 0,6	+ 0,9	+ 1,9	- 1,3	+ 5,1
June 3	Negative side.....	42,1	37,6	40,3	39,5	37,6	39,3	
	Positive .....	43,3	40,4	41,2	40,2	39,8	39,3	
	Excess of latter...	+ 1,2	+ 2,8	+ 0,9	+ 0,7	+ 2,2	0,0	+ 7,8
13	Negative side.....	33,1	21,7	30,5	25,2	22,0	24,6	
	Positive .....	34,2	22,9	31,6	25,3	24,3	23,2	
	Excess of latter...	+ 1,1	+ 1,2	+ 1,1	+ 0,1	+ 2,3	- 1,4	+ 4,4
18	Negative side.....	11,1	2,2	9,8	4,0	2,5	3,0	
	Positive .....	12,9	3,9	11,0	4,8	4,6	1,9	
	Excess of latter...	+ 1,8	+ 1,7	+ 1,2	+ 0,8	+ 2,1	- 1,1	+ 6,5

Day.	Division, &c.	A	B	C	D	E	F	Sum of Excesses.
June 30	Negative side.....	55,6	49,0	53,4	50,1			
	Positive .....	56,2	49,7	54,5	50,8			
	Excess of latter...	+ 0,6	+ 0,7	+ 1,1	+ 0,7			+ 3,1
July 3	Negative side.....	49,7	41,1	48,7	43,3	51,4	43,5	
	Positive .....	51,0	44,4	48,8	44,2	52,9	44,2	
	Excess of latter...	+ 1,3	+ 3,3	+ 0,1	+ 0,9	+ 1,5	+ 0,7	+ 7,8
	Negative side.....	27,8	20,8	23,3	22,4	27,9	23,8	
	Positive .....	29,0	22,2	24,8	23,5	28,5	23,6	
	Excess of latter...	+ 1,2	+ 1,4	+ 1,5	+ 1,1	+ 0,6	- 0,2	+ 5,6
	Negative side.....	29,8	23,1	25,8	26,3	28,5	24,9	
	Positive .....	31,5	25,1	26,3	26,8	29,0	25,0	
	Excess of latter...	+ 1,7	+ 2,0	+ 0,5	+ 0,5	+ 0,5	+ 0,1	+ 5,3
	Negative side.....	26,2	21,9	23,1	22,6	28,0	22,0	
	Positive .....	27,4	23,1	24,9	23,7	29,1	21,9	
	Excess of latter...	+ 1,2	+ 1,2	+ 1,8	+ 1,1	+ 1,1	- 0,1	+ 6,3
11	Negative side.....	43,0	44,5	46,1	46,8	47,5	49,8	
	Positive .....	43,9	46,6	47,5	47,2	46,3	49,6	
	Excess of latter...	+ 0,9	+ 2,1	+ 1,4	+ 0,4	- 1,2	- 0,2	+ 3,4
22	Negative side.....	36,4	39,3	41,9	42,0	43,1	42,3	
	Positive .....	37,1	40,0	40,6	43,3	43,3	41,8	
	Excess of latter...	+ 0,7	+ 0,7	- 1,3	+ 1,3	+ 0,2	- 0,5	+ 1,1
30	Negative side.....	4,2	7,4	6,5	8,6	10,2	10,2	
	Positive .....	5,1	9,3	7,2	9,7	9,2	10,1	
	Excess of latter...	+ 0,9	+ 1,9	+ 0,7	+ 1,1	- 1,0	- 0,1	+ 3,5
Aug. 10	Negative side.....	49,6	55,0	53,4	54,8	57,4	55,6	
	Positive .....	50,2	56,1	55,2	55,8	58,1	55,4	
	Excess of latter...	+ 0,6	+ 1,1	+ 1,8	+ 1,0	+ 0,7	- 0,2	+ 5,0
20	Negative side.....	22,1	29,4	23,2	29,8	29,7	29,9	
	Positive .....	23,2	30,9	24,9	31,4	29,7	29,1	
	Excess of latter...	+ 1,1	+ 1,5	+ 1,7	+ 1,6	0,0	- 0,8	+ 5,1
Sept. 1	Negative side.....	50,7	57,5	57,0	58,5	57,3	58,2	
	Positive .....	51,4	59,2	57,3	59,2	57,8	57,3	
	Excess of latter...	+ 0,7	+ 1,7	+ 0,3	+ 0,7	+ 0,5	- 0,9	+ 3,0
16	Negative side.....	57,2	53,9	50,2	56,3	54,2	57,3	
	Positive .....	58,2	54,5	50,9	56,0	53,8	55,7	
	Excess of latter...	+ 1,0	+ 0,6	+ 0,7	- 0,3	- 0,4	- 1,6	0,0
Oct. 6	Negative side.....	41,1	45,5	46,2	45,3	48,9	47,0	
	Positive .....	41,2	46,3	47,3	45,4	47,6	46,2	
	Excess of latter...	+ 0,1	+ 0,8	+ 1,1	+ 0,1	- 1,3	- 0,8	0,0

Day.	Division, &c.	A	B	C	D	E	F	Sum of Excesses.
Oct. 20	Negative side.....	47,0	50,5	53,3	47,2	51,4	49,2	
	Positive .....	47,5	50,7	53,7	47,1	50,3	49,2	
	Excess of latter...	+ 0,5	+ 0,2	+ 0,4	- 0,1	- 1,1	0,0	
Nov. 21	Negative side.....	1,5	0,0	1,0	2,4	0,3	10,0	
	Positive .....	1,8	1,3	1,5	2,2	0,0	9,2	
	Excess of latter...	+ 0,3	+ 1,3	+ 0,3	- 0,2	- 0,3	- 0,8	
Dec. 13	Negative side.....	54,3	55,1	59,0	54,0	56,2	0,9	
	Positive .....	55,3	55,9	58,2	53,3	55,3	0,3	
	Excess of latter...	- 1,0	+ 0,8	- 0,8	- 0,7	- 0,9	- 0,6	

Column 12 contains the mean of the microscopes corrected for the three quantities just described: and it is therefore the reading of the circle supposing the microscopes to have been in accurate adjustment for runs, and supposing the body to have been observed with the fixed wire when it passed the middle vertical wire; or (for Polaris and  $\delta$  U. Minoris) at the time of true transit.

Column 13 contains the initial of the observer's name. The observations marked *A* are by myself, those marked *G* by Mr Glaisher, and those marked *J.G* by his brother, Mr John Glaisher.

Column 1 on the right-hand page contains the seconds of the zenith point as determined from each star which has been observed at the same passage by reflexion and directly. The mean between the two readings in those positions corresponds to the reading when the telescope is horizontal: and this altered in the proper direction by  $90^\circ$  gives the reading when the telescope is vertical. The zenith points thus determined from different stars ought to agree: their disagreement will be noticed presently. The zenith point which is adopted for the formation of *all* the zenith distances is given at the bottom of the page. It has generally been found by dividing the stars observed by reflexion and directly into three groups, one comprehending stars near the zenith, and the others comprehending the stars far from the zenith north and south respectively: the mean of the zenith points given by each group is considered as one result, and the mean of the three results is adopted for the zenith point.



Column 2 contains the difference between the reading of the circle for the object observed and the reading for the zenith point. It is therefore the zenith distance of the object, on the supposition that the zenith point is correctly found, and that the circle measures angular distances in the meridian without error. The negative sign denotes that the object is North of the Zenith.

The four next columns contain the materials for the calculation of refraction. Column 3 has the height of the barometer as shewn by a cistern barometer constructed by Dollond and attached to the circle pier: the lower surface of the mercury is raised by a screw pressing the bag till the light seen below a brass edge is excluded: and a brass slider is brought to the upper surface to shut out the light in the same way. Column 4 has the reading of the thermometer whose bulb is plunged in the cistern of the barometer.

In an *Addendum* to the Observations for 1834, it was stated that there was reason to think that the barometer-reading was too small by 0,1 inch nearly. This determination was founded upon a number of comparisons, of which the following is an abstract.

Dollond's barometer was compared immediately with a similar barometer by Troughton and Simms in the possession of Mr Sheepshanks, and with a syphon barometer by Robinson in the possession of Professor Miller. The former of these was compared with Mr Simms' standard barometer: and with Newman's standard barometer, Daniel's barometer, and Schumacher's barometer, at the apartments of the Royal Society. The result was, that Dollond's read less than

Troughton and Simms's .....	by <sup>in.</sup> 0,086
Robinson's .....	,127
Simms' standard .....	,128
Newman's standard .....	,112
Daniel's .....	,065
Schumacher's .....	,095

The bore of Dollond's tube is much smaller than either of the others.

In consequence of this determination, the registered height of the barometer has always been increased by  $0^{\text{in}},10$  for the calculation of refraction. The height recorded in column 3 is, however, that which is read immediately from the barometer.

Column 5 has the mean of the readings of the two free thermometers. These thermometers are carried by jointed arms attached to the top of the circle pier (one at the north and one at the south end), and therefore at the level (nearly) of the upper limb of the circle. The bottoms of the thermometer-scales are cut off, so that the bulbs are perfectly free: the middle of each thermometer-scale is screwed to a piece of tin-plate which crosses a tube of tin-plate about 4 inches in diameter: and this tube is carried by the jointed arms. The top of the tube, as well as the bottom, is protected by a flat disk 6 inches in diameter and 2 inches from the extremity of the tube. It is presumed that this construction insures the free passage of air by the thermometer bulb, and that it is well protected from radiation; and that the thermometers therefore give the true temperature of the air. The shutters (except the lowest) are always kept open, and thus there is generally a strong current of air past the thermometers: no lamp is allowed to burn near them longer than is absolutely necessary. When the Sun is near the meridian, the thermometers are turned from its rays by means of the jointed arms. For reading the thermometers, doors are provided in the sides of the tin tubes. With the view of ascertaining more certainly the relations of the exterior and interior thermometers, a thermometer, exactly similar in construction and mounting to those fixed upon the circle piers, was attached to a moveable stand about 5 feet high on the N. side of the Observatory, which was kept as far from the building as could be done without exposing it to the direct rays of the Sun. Before the commencement, and after the conclusion, of the experiments, the thermometer was compared with those fixed on the pier, and found to give precisely the same reading. The following is an abstract of the results:



*Reading of interior Thermometer—Reading of exterior Thermometer.*

Hour of the day, (Astronomical reckoning).	March.		April.		May.		June.	
	No. of Comp.		No. of Comp.		No. of Comp.		No. of Comp.	
<sup>h</sup> 21	3	- 0,8	2	- 1,6	1	- 4,1		°
0	5	- 0,5	10	- 1,5	5	- 5,6	2	- 7,1
3	3	- 0,6	2	- 0,8			2	- 5,9
6	5	+ 0,9	5	+ 0,1				
9	5	+ 2,8	2	+ 1,6	2	+ 1,8	1	+ 2,6
12	2	+ 1,5	10	+ 3,5	2	+ 3,2	4	+ 4,8
14			1	+ 3,0				

The reading used in the calculation of the refractions is always that of the interior thermometer.

Column 6 has the refraction, calculated by Bessel's tables in page 538, &c. of the *Tabulæ Regiomontanæ*. The form of these tables has been altered so as to dispense with the necessity of change of signs: and they have been expanded so as to avoid the necessity of interpolation.

Column 7 contains the parallax. For the Moon, the horizontal equatoreal parallax is interpolated with second differences from the Nautical Almanac: it is then altered by the quantity given in the following table (for the calculation of which see Cambridge Observations, Vol. IV. for 1831, p. 147).

*Correction to the Moon's Horizontal Parallax for Observations of the Limbs.*

Limb observed.	ZENITH DISTANCE.										
	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°
North.....	- 0,03	- 0,04	- 0,05	- 0,06	- 0,06	- 0,07	- 0,08	- 0,08	- 0,09	- 0,09	- 0,09
South.....	+ 0,10	+ 0,11	+ 0,12	+ 0,12	+ 0,13	+ 0,14	+ 0,15	+ 0,15	+ 0,16	+ 0,16	+ 0,16

The true parallax is then accurately computed (without assuming the sine equal to the arc), considering the angle of the vertical =  $11'.12''$ , and the log radius for Cambridge = log equatoreal radius + 9,9990916. For the Sun and planets the log horizontal parallax is found by adding 0,9325 to the ar. comp. log distance: and the true parallaxes are computed with the same angle of the vertical. These numbers suppose that the proportion of the Earth's axes is 297 : 298: and that the Sun's horizontal equatoreal parallax at mean distance is  $8'',5776$ .

Column 8 contains the micrometer reading for the limb of a planet opposite to that observed with the fixed wire: and column 9 contains the semi-diameter. The Sun's semi-diameter is taken from the Nautical Almanac: the Moon's is interpolated from the Nautical Almanac with second differences. For the planets, the micrometer reading (treated as has been described for the micrometer readings in the left-hand page) gives the apparent diameter of the planet in the vertical direction. For Mercury, Mars, Jupiter, and Saturn, the diameter is merely divided by 2 to obtain the semi-diameter in column 9. But for Venus it is necessary to take account of the apparent figure. This is done, when she is horned, by bringing her geocentric place on a common celestial globe to the zenith, and then by a quadrant of altitude finding the azimuth of the Sun's geocentric place: its distance from the East or West point measures the inclination of the horns of Venus to the vertical. When she is gibbous, her geocentric place is brought to the horizon at the meridian, and the Venero-centric place of the Sun being marked on the globe, its distance from the horizon is the same as the distance of the highest or lowest point of the illuminated disk of Venus from the highest or lowest point of her true circular disk. In both cases, the measured diameter is divided by  $1 + \text{cosine of angle so found}$ , to obtain the semidiameter: and this, or the difference between this and the measured quantity (according as the full limb or the imperfect limb has been observed with the fixed wire) is used for the semidiameter, and is inserted in column 9. It is presumed that the determination of the place of the center by these methods is very much more accurate than if any tabular semidiameter had been used.

Column 10 contains the geocentric N.P.D. of center from each observation, supposing all the above-mentioned corrections applied, and assuming the colatitude of the Observatory to be  $37^{\circ}.47'.8'',28$ . The negative sign denotes that the object is below the pole. It must be noticed therefore that this is the N.P.D. of the center of the object as viewed from the Earth's center, at the time of passing the middle wire, assuming the adopted zenith point to be correct, assuming the circle to measure angular distances correctly, assuming the correctness of the refractions, assuming the correctness of the Moon's semidiameter and of all the parallaxes, and assuming the colatitude of the Observatory. Most of these quantities require correction: and this therefore must not be considered as a final result.

*Stars observed with the Micrometer, &c. page 105.*

The three observations of Castor given here were made with the micrometer, and are calculated in the usual way.

*Vertical diameters of the Sun and Moon, page 106.*

These diameters are freed from refraction and parallax (the application of parallax separately to the two limbs having the same effect as applying with changed sign the *augmentation of semidiameter*). For the Moon, when either limb is imperfect, a correction is applied as above-described. These are, therefore, true geocentric semidiameters. It has not been thought necessary to give those of the planets, as they may be taken without subtraction from column 9, right-hand page, of the *Zenith Distances observed, &c.*

*Mean North Polar Distances of Stars, &c. page 108 to 118.*

These mean N.P.D. to the beginning of the year are reduced from the apparent N.P.D. in column 10, right-hand page, of the *Zenith Distances observed, &c.* by the following methods. For the stars included in the list of the Nautical Almanac, the corrections are found by subtracting the mean place in that work from the apparent place (noticing that the corrections thus obtained are of declination, whereas the elements used in this volume are always N.P.D.) For other stars, included in the catalogue of the Royal Astronomical Society, the corrections (with the same notice) are calculated by the formula  $Aa' + Bb' + Cc' + Dd'$ . For stars not included in that catalogue, the correction (also for apparent declination) is calculated by



the formula  $A \times (\text{N}^\circ. \log = 9,6375) \times \sin \text{N.P.D.} - A \cdot \sin \mathcal{R} \cdot \cos \text{N.P.D.} + B \cdot \cos \mathcal{R} \cdot \cos \text{N.P.D.} + C \times (\text{N}^\circ. \log = 1,3020) \times \cos \mathcal{R} - D \cdot \sin \mathcal{R}$ . Log  $A$ , log  $B$ , log  $C$ , and log  $D$ , are taken from the Nautical Almanac. The results included in brackets are those of which no use is made in taking the mean. The results of each star, as observed directly or by reflexion, above the pole or below the pole, are kept in separate groups: because one comparison indicates a discordance of a very remarkable kind; and the other indicates any error in the assumed colatitude.

The nature of the discordance above alluded to is this. The zenith point determined by a northern star is generally greater than that determined by a southern star: or if a mean zenith point be determined as has been described, the N.P.D. of a star N. of the zenith and above the pole is generally greater by direct observation than by reflexion (if below the pole, it is less), while the N.P.D. of a star S. of the zenith is generally less by direct observation than by reflexion.

For a more detailed statement, and for an account of the difficulties which I find in offering any explanation, I beg to refer to the volume for 1833. I shall only remark here, that I am as little able as ever to offer a conjecture as to its cause.

As the only circumstance that I can consider likely to affect this discordance is the position of the telescope on the circle, I thought it best (as in 1833 and 1834) to group together all the observations in each position of the telescope. Then (as the adopted zenith point is determined by a method, already described, which is likely to give results related at all times to the state of the circle in a tolerably uniform manner), the amount of the discordance for any star when observed both directly and by reflection on any night would be found, with reference to a determinate method of obtaining the zenith point, by subtracting the direct zenith distance from the reflected zenith distance, or the direct mean N.P.D. from the reflected mean N.P.D. And the mean of the numbers found for each star, in one position of the telescope, would shew more accurately the amount of the discordance for that particular zenith distance. The following tables, therefore, have been formed by subtracting algebraically (considering N.P.D. below the pole as negative) the N.P.D. given by direct observation from the N.P.D. given

by reflection at the same transit, and taking the mean of all the differences so found.

*Difference between the N.P.D. of the same STARS as determined by Direct and Reflected Observations.*

[The N.P.D. is considered negative when the Star is below the Pole, and the Difference is taken with a regard to the Algebraic Signs.]

From January 1 to July 9. Zenith point 221° 35'.				From January 1 to July 9. Zenith point 221° 35'.			
Star's Name.	No. of Obs.	Zen. Dist.	R—D	Star's Name.	No. of Obs.	Zen. Dist.	R—D
		° ' "	"			° ' "	"
$\alpha$ Cassiopeiæ S.P...	5	- 72 . 9	+ 2,196	$\beta$ Leonis.....	6	+ 26 . 43	+ 1,235
A.S.C. 715. S.P....	1	- 67 . 57	- 0,140	$\epsilon$ Geminorum.....	1	26 . 56	- 2,160
$\alpha$ Lyncis S.P. ....	1	- 66 . 13	+ 0,400	$\kappa$ Geminorum.....	1	27 . 26	+ 0,030
$\alpha$ Cephei S.P.....	5	- 65 . 54	- 1,276	Regulus.....	8	29 . 27	- 1,069
$\delta$ Draconis S.P....	4	- 60 . 25	+ 1,148	$\alpha$ Arietis.....	4	29 . 32	- 0,012
$\omega$ Draconis S.P. ....	1	- 58 . 47	- 4,000	$\delta$ Geminorum.....	1	29 . 56	- 0,470
$\beta$ Cephei S.P.....	4	- 57 . 57	- 1,472	$\gamma$ Leonis.....	1	31 . 32	+ 1,090
$\beta$ U. Minoris S.P..	3	- 52 . 57	- 1,303	Arcturus.....	13	32 . 10	+ 0,631
$\delta$ U. Minoris S.P..	16	- 41 . 11	- 0,500	Aldebaran.....	19	36 . 3	+ 0,695
Polaris S.P.....	29	- 39 . 21	- 0,550	$\alpha$ Herculis.....	1	37 . 38	+ 0,650
Polaris.....	6	- 36 . 13	- 0,602	$\alpha$ Pegasi.....	2	37 . 54	+ 2,340
$\delta$ Ursæ Minoris....	3	- 34 . 23	- 0,257	$\gamma$ Pegasi.....	1	37 . 57	+ 0,630
A.S.C. 874.....	2	- 30 . 39	- 1,075	$\alpha$ Orionis.....	4	44 . 50	+ 0,515
$\beta$ Ursæ Minoris...	7	- 22 . 37	- 0,929	$\alpha$ Serpentis.....	11	45 . 16	+ 0,667
$\alpha$ Draconis.....	5	- 12 . 58	- 0,106	Procyon.....	2	46 . 34	- 0,140
$\alpha$ Ursæ Majoris...	4	- 10 . 26	- 0,122	$\beta$ Virginis.....	1	49 . 31	+ 4,170
31 Camelopardali..	1	- 7 . 37	+ 0,090	$\gamma$ Ceti.....	1	49 . 40	+ 1,410
$\delta$ Ursæ Majoris....	5	- 5 . 44	- 0,120	$\epsilon$ Orionis.....	1	53 . 32	+ 0,270
$\beta$ Ursæ Majoris....	4	- 5 . 3	- 0,122	$\zeta$ Orionis.....	1	54 . 15	+ 1,890
$\zeta$ Ursæ Majoris....	9	- 3 . 34	- 0,346	$\delta$ Ophiuchi.....	1	55 . 29	+ 0,650
$\zeta^2$ Ursæ Majoris...	6	- 3 . 34	- 0,442	$\alpha$ Hydræ.....	2	60 . 11	- 1,020
$\alpha$ Cassiopeiæ.....	2	- 3 . 25	+ 0,755	$\kappa$ Virginis.....	1	61 . 43	+ 3,370
$\alpha$ Persei.....	3	+ 2 . 57	+ 1,073	Spica.....	9	62 . 31	+ 0,494
Capella.....	18	6 . 24	+ 0,420	$\delta$ Eridani.....	1	62 . 33	+ 0,320
$\beta$ Aurigæ.....	1	7 . 18	- 0,010	$\lambda$ Virginis.....	1	64 . 49	+ 2,790
$\epsilon$ Persei.....	1	12 . 41	+ 1,440	$\eta$ Libræ.....	2	67 . 21	- 1,005
$\alpha$ Lyræ.....	5	13 . 35	+ 0,074	$\alpha^1$ Libræ.....	1	67 . 32	- 1,020
Castor.....	3	19 . 58	+ 1,173	$\alpha^2$ Libræ.....	3	67 . 34	+ 1,410
$\beta$ Tauri.....	13	23 . 45	+ 0,199	Sirius.....	2	68 . 43	- 0,345
Pollux.....	3	23 . 48	- 0,767	$\beta$ Ceti.....	1	71 . 7	+ 0,630
$\alpha$ Andromedæ.....	1	24 . 2	- 0,050	$\beta^1$ Scorpii.....	5	71 . 34	+ 0,068
$\epsilon$ Bootis.....	3	24 . 27	+ 0,173	$\beta^2$ Scorpii.....	1	71 . 34	- 0,540
$\alpha$ Coronæ Borealis.	12	+ 24 . 57	+ 0,203	$\beta$ Corvi.....	1	+ 74 . 42	+ 5,080

From July 10 to the end of the Year. Zenith point 170°.9'.				From July 10 to the end of the Year. Zenith point 170°.9'.			
Star's Name.	No. of Obs.	Zen. Dist.	R—D	Star's Name.	No. of Obs.	Zen. Dist.	R—D
		° ' "	"			° ' "	"
$\alpha$ Lyncis S.P.....	5	-66.13	+0,374	Aldebaran.....	1	+24.2	-0,230
$\alpha$ Cephei S.P.....	2	-65.54	+0,595	$\alpha$ Andromedæ.....	5	24.3	+1,176
$\alpha$ U. Majoris S.P..	4	-65.5	-0,670	$\alpha$ Coronæ Borealis.	3	24.57	+0,223
Polaris S.P.....	11	-39.21	+0,415	$\alpha$ Arietis.....	1	29.32	-0,400
$\lambda$ Ursæ Minoris....	5	-36.35	-0,626	Arcturus.....	2	32.10	+1,560
Polaris.....	18	-36.13	-0,520	$\alpha$ Herculis.....	5	37.38	+0,858
$\delta$ Ursæ Minoris....	15	-34.23	-0,592	$\alpha$ Pegasi.....	3	37.54	+0,983
$\beta$ Ursæ Minoris...	3	-22.37	-0,237	$\alpha$ Ophiuchi.....	3	39.32	+0,650
$\beta$ Cephei.....	4	-17.37	-1,870	$\alpha$ Aquilæ.....	11	43.46	-0,065
$\alpha$ Cephei.....	12	-9.40	-0,247	$\alpha$ Piscium.....	1	43.54	-2,020
$\epsilon$ Cephei.....	7	-4.0	+0,530	$\epsilon$ Piscium.....	1	45.13	+0,600
$\alpha$ Cassiopeiæ.....	5	-3.25	-0,160	$\alpha$ Serpentis.....	1	45.16	+0,490
$\alpha$ Persei.....	3	+2.57	-0,597	$\beta$ Aquilæ.....	1	46.12	-1,630
Capella.....	2	6.24	-2,395	$\alpha$ Ceti.....	1	48.47	+0,100
$\alpha$ Cygni.....	12	7.31	+0,119	$\delta$ Aquilæ.....	1	49.25	+0,060
$\alpha$ Lyrae.....	13	13.35	+0,007	$\alpha$ Aquarii.....	10	53.20	-1,026
$\beta$ Lyrae.....	7	19.1	+0,307	$\beta$ Aquarii.....	14	58.29	+0,421
$\beta^2$ Lyrae.....	1	19.2	-0,840	$\alpha^1$ Capricorni.....	5	65.14	+1,616
$\beta$ Tauri.....	2	+23.35	+0,870	$\alpha^2$ Capricorni.....	10	65.16	+1,210

A line of abscissæ being taken on which the zenith distances were laid down, the values of  $D - R$  were used as ordinates to determine the position of points: and among these points I drew by hand a curve, endeavouring to make its proximity to any point depend (as well as in a simple curve could be done) upon the number of observations by which that point was determined. The ordinates of this curve were then measured, at the points where they would be most convenient for use; and half these ordinates were considered to be the correction for the N.P.D., to be applied with one sign to the direct determinations and with the opposite sign to the reflection-determinations. This operation was performed for both positions of the telescope: but it appeared that the same numbers would extremely well represent the corrections for both positions.

In the *Addendum* to the Volume for 1834, it was remarked, that (in consequence of the error in the refractions depending on the error of the barometer) the colatitude ought to be increased by 0",15. This correction



is combined with that inferred from the graphical process above described: the results are contained in the following Table.

*Corrections to be applied algebraically to N.P.D. 1835.*

N.P.D.	D	R
°	"	"
- 40	+ 0,10	+ 0,20
- 30	+ 0,05	+ 0,25
- 20	- 0,01	+ 0,31
- 10	- 0,05	+ 0,35
0	- 0,11	+ 0,41
+ 10	- 0,17	+ 0,47
+ 20	- 0,13	+ 0,43
+ 30	- 0,01	+ 0,31
+ 40	+ 0,25	+ 0,05
+ 50	+ 0,37	- 0,07
+ 60	+ 0,39	- 0,09
+ 70	+ 0,37	- 0,07
+ 80	+ 0,35	- 0,05
+ 90	+ 0,31	- 0,01
+ 100	+ 0,25	+ 0,05
+ 110	+ 0,20	+ 0,10
+ 120	+ 0,17	+ 0,13

*Catalogue of concluded mean N.P.D. page 119 to 121.*

The numbers in this catalogue are corrected by means of the table just given. The annual variations are taken from the Catalogue of the Royal Astronomical Society, or are computed by the use of the formula which is employed there.

I have omitted to remark, that the following Stars are among those given in the Nautical Almanac, 1835, page 480, &c.

- \*  $\mathcal{R}$ . 6<sup>h</sup>. 12<sup>m</sup>. 50<sup>s</sup>. is the star marked (B).
- \*  $\mathcal{R}$ . 6<sup>h</sup>. 13<sup>m</sup>. 10<sup>s</sup>. ..... (C).
- \*  $\mathcal{R}$ . 6<sup>h</sup>. 18<sup>m</sup>. 35<sup>s</sup>. ..... (A).
- \*  $\mathcal{R}$ . 6<sup>h</sup>. 31<sup>m</sup>. 25<sup>s</sup>. ..... (z).
- \*  $\mathcal{R}$ . 6<sup>h</sup>. 39<sup>m</sup>. 45<sup>s</sup>. ..... (y).
- $y^1$  Geminorum ..... 39 Geminorum.
- $y^2$  Geminorum ..... 40 Geminorum.

- \*  $\mathcal{R}$ .  $6^h. 51^m. 20^s$ . is the star marked (*u*).
- \*  $\mathcal{R}$ .  $6^h. 52^m. 35^s$ . ..... (*w*).
- \*  $\mathcal{R}$ .  $6^h. 59^m. 25^s$ . ..... (*p*).
- \*  $\mathcal{R}$ .  $7^h. 11^m. 30^s$ . ..... (*q*).
- A* Geminorum ..... 57 Geminorum.
- \*  $\mathcal{R}$ .  $7^h. 21^m. 40^s$ . ..... (*g*).
- \*  $\mathcal{R}$ .  $7^h. 22^m. 55^s$ . ..... (*a*).
- \*  $\mathcal{R}$ .  $7^h. 24^m. 55^s$ . ..... (*e*).
- \*  $\mathcal{R}$ .  $7^h. 35^m. 0^s$ . ..... (*i*).
- \*  $\mathcal{R}$ .  $7^h. 40^m. 45^s$ . ..... (*h*).

In like manner it is to be remarked, that in the Catalogue of Concluded Mean Right Ascensions, page (93), the following Stars correspond to those given in the Nautical Almanac, 1835, page 480, &c.

- \* N.P.D.  $62^\circ. 56'$ . is the star marked (*A*).
- \* N.P.D.  $62^\circ. 46'$ . ..... (*z*).
- \* N.P.D.  $62^\circ. 48'$ . ..... (*y*).
- y*<sup>1</sup> Geminorum ..... 39 Geminorum.
- y*<sup>2</sup> Geminorum ..... 40 Geminorum.
- \* N.P.D.  $64^\circ. 0'$ . (preceding)..... (*p*).
- \* N.P.D.  $63^\circ. 50'$ . ..... (*q*).
- A* Geminorum ..... 57 Geminorum.
- \* N.P.D.  $65^\circ. 40'$ . ..... (*g*).
- \* N.P.D.  $64^\circ. 41'$ . .. ..... (*e*).
- \* N.P.D.  $65^\circ. 26'$ . ..... (*h*).

*Right Ascensions and North Polar Distances of the centers of the Sun, Moon, and Planets, observed in the year 1835, with the Greenwich Mean Solar Time of Observation, and compared with the places interpolated from the Nautical Almanac or the Meridian Ephemeris of the Royal Astronomical Society, page 124 to 136.*

In all cases the Right Ascensions of the planet's limb (if one limb only was observed) have been taken from the column *Apparent  $\mathcal{R}$  from the observation* in the *Transits as observed, &c.*, and have been corrected for the semidiameter in the manner that will be explained for each. If both limbs were observed, the right ascension of the center is taken from the same column, and is not altered in any manner. The *Geocentric N.P.D.*

of the Center in the *Zenith Distances observed*, &c. have been corrected by means of the table just given.

The Greenwich Mean Solar Time is found from the Right Ascension by adding the next preceding Mean Time of Transit of the first point of Aries, from the Nautical Almanac, (diminished by  $23^{\circ},48$ , because Cambridge is  $23^{\circ},54$  East of Greenwich) to the equivalent, in Solar Time, of the Sidereal Time representing the Right Ascension.

The right ascension of the Sun's center, when one limb only has been observed, is formed by applying to the observed right ascension of the limb, the sidereal time occupied by the transit of the semidiameter as given in the Nautical Almanac. From this right ascension of the center, the Greenwich Mean Solar Time is deduced by the method just explained. For the days on which the N.P.D. was observed and the  $\mathcal{R}$  not observed, the Mean Solar Time is found by the same process, using the  $\mathcal{R}$  for apparent noon of the Nautical Almanac, corrected for difference of longitude. The tabular places both in  $\mathcal{R}$  and in N.P.D. are taken from the places at apparent noon in the Nautical Almanac, applying (with the sign changed)  $\frac{1}{152,9}$  of the hourly variation. It is always to be understood that both limbs are observed, (the 1st and 2nd with the transit and the N. and S. with the circle) unless one limb is specified in the column of *Limb observed*.

For the Moon's  $\mathcal{R}$ , the Greenwich Mean Solar Time is always the time of transit of the limb observed, the name of which is given in the second column. The  $\mathcal{R}$  is the  $\mathcal{R}$  of the center, which is deduced from that of the limb (in the column of *Apparent  $\mathcal{R}$  from the Observation* in the *Transits observed*, &c.) by applying  $\frac{\text{Moon's semidiameter}}{15 \times \cos \text{declination}}$ : the semidiameter being interpolated with second differences from the Nautical Almanac, and the declination at transit being taken from the section of Moon-culminating Stars in the same. The tabular  $\mathcal{R}$  of the center has been found by taking the  $\mathcal{R}$  of limb from the section of Moon-culminating Stars in the Nautical Almanac, applying with sign changed  $\frac{1}{152,9}$  of the difference for  $1^{\text{h}}$  of longitude, and then applying  $\frac{\text{Moon's semidiameter}}{15 \times \cos \text{declination}}$ . The  $\mathcal{R}$  thus compared are



therefore, in fact, the observed  $\mathcal{R}$  of the limb with the  $\mathcal{R}$  of the limb given in the Nautical Almanac (the same correction for semidiameter in  $\mathcal{R}$  being applied to both): but it has been thought that the exhibition in the form of  $\mathcal{R}$  of the center would be more convenient for further uses. On three or four occasions the tabular  $\mathcal{R}$  of the center has been computed by second differences from the hourly ephemeris in the Nautical Almanac: the greatest difference between the  $\mathcal{R}$  of the center thus directly computed and that indirectly computed from the process above described is  $0^{\circ}.03$ . When a limb was observed whose  $\mathcal{R}$  was not given in the Moon-culminating Stars of the Nautical Almanac, the tabular  $\mathcal{R}$  of the center for that time is computed with second differences from the hourly ephemeris.

The Greenwich Mean Solar Time for the observation in N.P.D. or for the transit of the center, is found by applying to the time for the limb, the solar equivalent for the duration of transit of semidiameter in the Nautical Almanac. On those days in which the transit was not observed, the  $\mathcal{R}$  of the limb in the Nautical Almanac has been altered for the duration of transit of semidiameter, and the Greenwich Mean Solar Time calculated from it in the usual way. With this the tabular N.P.D. has been computed with second differences from the hourly ephemeris of the Nautical Almanac.

The apparent N.P.D. of the Moon's center, besides the correction for the discordance of Zenith points, is affected with another correction which in every other case is insensible. The N.P.D. in the *Zenith Distances observed, &c.* is that for the time of passing the middle wire: this does not coincide with the meridian: and a correction is necessary for the Moon's change of N.P.D. By numerous transits of several principal stars observed with the circle and Molyneux, and referred by comparison of clocks to Hardy, its errors of position at various polar distances were found. It was found that these might be represented with sufficient accuracy by assuming the transit over the middle wire, from January 1 to July 9, to be too late by  $5^{\circ}.5$ ; and from July 10 to the end of the year, to be too late by  $6^{\circ}.0$ .

The variation of N.P.D., in the interval between passing the middle wire of the telescope and passing the meridian, is calculated with these

numbers and with the variations for  $10^m$  in the hourly ephemeris of the Nautical Almanac; and this correction is applied to the observed N.P.D.

The columns of Errors of Tables contain the effects on the Errors which would be produced if the Moon's tabular semidiameter were increased by  $\frac{1}{1000}$  part: those for the N.P.D. contain also the effect of increasing the tabular parallax by  $\frac{1}{1000}$  part, and the effect of supposing the Earth spherical with the same equatoreal radius (to give the reader the power of easily altering the proportion of axes, viz. 297 : 298, with which the parallaxes have been computed). For the formation of the last-mentioned column, the parallax has always been calculated on both suppositions.

For Mercury, Venus, and Mars, the Greenwich Mean Solar Time is the time of transit of the limb, but the  $\mathcal{R}$  is the  $\mathcal{R}$  of the center, found from that of the limb by applying the semidiameter in  $\mathcal{R}$  which is given in the Meridian Ephemeris circulated by the Royal Astronomical Society. As the semidiameter used for correcting the  $\mathcal{R}$  is calculated from an assumed semidiameter, while that used for the N.P.D. is inferred from each observation, it is thought proper to mention the limb observed in  $\mathcal{R}$ , but not that observed with the fixed wire in N.P.D.

For all the other planets, the Greenwich Mean Solar Time is the time of transit of the center.

The tabular  $\mathcal{R}$  and N.P.D. have been computed, as far as possible, from the  $\mathcal{R}$  and N.P.D. in the Meridian Ephemeris, applying  $\frac{1}{152.9}$  of the hourly variation with sign changed. As this work is calculated from the data of the Nautical Almanac, and under the immediate direction of its Superintendant, it is considered to be in all cases an accurate representation of the results of the Nautical Almanac. In a few instances, where observations have been made beyond the limits of the Meridian Ephemeris, the tabular places have been calculated, with second differences, from the daily ephemeris in the Nautical Almanac.

As the accurate ephemeris of the small planets in the Nautical Almanac extends only to a certain time before and after opposition, the tabular

place cannot be accurately given beyond these limits, and therefore no attempt is made to exhibit it collaterally with the observed place.

The reductions for Halley's Comet are made in the same manner, in all respects, as those for the planets. At the time of sending the observations to press (in the sections *Transits observed, &c.* and *Zenith Distances observed, &c.*) there existed no accurate means of computing the parallax of the Comet. Since that time, an ephemeris (computed on very approximate elements, unaffected with perturbation) has been circulated by the Superintendent of the Nautical Almanac, and from this the log. distance has been taken for the computation of parallax: which is applied to form the *Apparent N.P.D. from observations* given here. The *Tabular R.A.* and *Tabular N.P.D.* are interpolated from the same ephemeris. The elements of the orbit assumed in the ephemeris are the following:

Perihelion Passage. 1835, Nov, <sup>a.</sup> 15,93546, Greenwich Mean Time.

$$a = 18,0779386$$

$$e = 0,9675509$$

$$\left. \begin{array}{l} \pi = 304^{\circ} . 32' . 9,2'' \\ \Omega = 55^{\circ} . 8' . 21,2'' \\ i = 17^{\circ} . 45' . 56,7'' \end{array} \right\} \begin{array}{l} \text{from the Mean Equinox} \\ \text{of Nov. 15, 1835.} \end{array}$$

Motion retrograde.

It must be borne in mind, that all the errors of tables in  $\mathcal{R}$  are affected by any error in the assumed  $\mathcal{R}$  of the fundamental stars.

*Comparisons of Clocks and Chronometers*, pages 138 and 139.

The comparisons of the clocks with the sidereal chronometer  $U$ , are made by merely estimating the second and fraction of a second indicated by one at the beat of the other.

The comparisons here given are necessary for the reduction of the observations with the equatoreal and the detached telescopes.

*Observations of the Elongation in Right Ascension of Jupiter's Fourth Satellite, with the Equatoreal and the Clock Graham*, page 142.



A description of the Equatoreal with which these observations were made, may be found in the Observations of 1832. It will be sufficient for the present purpose to remark, that in all observations it is considered as an instrument which is essentially incapable of giving absolute places with accuracy, but which is capable of giving differences either of  $\mathcal{R}$  or of declination with considerable accuracy.

The screws for adjusting the Equatoreal had not been touched since the observations of 1833. The observations of 1833 and 1834 appeared to shew that the adjustments were not liable to change: and as a small error in adjustment produces no sensible error in the results of comparative observation, it has not been thought worth while to examine the adjustments in 1835.

In observing Jupiter and his 4th satellite, the declination circle is never clamped, but as soon as the transit of one object is finished, the circle is moved by hand, so that the transit of the other may be observed on the same parts of the wires as nearly as possible. When the observation of both objects is completed, the hour circle is released from its clamp, and the instrument is turned round the polar axis to prepare it for another observation of both objects. During the course of each double observation the hour circle is held by its clamp, and is not touched by the observer: and the eye-piece is not moved in its sliding frame. The observations included between any two horizontal black lines are those made with unaltered position of the hour circle.

At the termination of the observations, the hour angle of the Equatoreal is noted: from which the hour angle at the middle of the observations is found. The difference of the polar distance of the planet and satellite is also roughly observed. The whole of these observations are made by Mr Glaisher.

The effect of refraction on the apparent  $\mathcal{R}$  of each body at passing the same wire is computed, supposing that vertical refraction may be represented by  $57'' \times \tan \text{zen. dist.}$  The difference between the computed refractions is to be applied, with the proper sign, to the mean of the observed differences

of right ascension (being additive when the N.P.D. of the following body is the greater and the objects are East of the meridian). The effect of refraction, in the present instance, is insensible.

The difference of right ascension, so corrected, is multiplied by a factor depending on the motion of the Jovial system in  $\mathcal{R}$  (which factor is greater than 1 when the motion is retrograde and less than 1 when the motion is direct). This factor is the reciprocal of the factor used for completing imperfect transits, under similar circumstances.

The times by Graham are converted into times by Hardy, by means of the table of comparisons of Clocks and Chronometers: the clock error and clock rate are applied to Hardy, and the Greenwich Mean Solar Time found, in the same manner as for the meridional observations of Planets.

These observations were made in the commencement of the year 1836, and ought in strictness to have been retained for a future volume. But as the direction of the Observatory has since that time been changed, it was thought better to preserve them in the volume to which they are more closely related, both in similarity of plan and in proximity of time.

*Observations of a Spot on Jupiter's Disk, with the Equatoreal, p. 144.*

These observations were made with the view of obtaining data for the time of rotation of Jupiter. The spot observed was one of two on the lower edge of the lower broad belt (as seen with an inverting telescope): it is the same on which observations were made in 1834 (see Vol. VII. p. 188, &c.).

As the axis of Jupiter was sensibly inclined to the meridian, these observations do not give accurately the position of the spot with regard to its arc of rotation; but the correction required would be so nearly the same in all the observations, that for determining the periodic time this consideration may be safely neglected.

*Differences of N.P.D. of Mars and Stars near him, observed with the Equatoreal, and compared with the places of the Nautical Almanac, p. 152.*

The general rule of clamping the hour circle and leaving it unaltered during the course of each set of comparative observations, has been strictly

followed. The stars compared with Mars are principally those of the ephemeris contained in the Nautical Almanac 1835, p. 480, &c.

In some of the comparisons, the objects which were compared passed in the same field of view, and could be observed with the micrometer wire (the declination circle being clamped). The value used for the micrometer divisions is that given in the Observations for 1833, p. 156, namely,  $1'' = 33''.429$ . The wire of micrometer *a* is pretty exactly parallel to the fixed wire, and the reading of the micrometer *a* at coincidence was found in December 1834 (confirmed by observations in March 1835) to be  $0''.054$ . The wire of micrometer *b* is not quite parallel to the fixed wire: its reading at coincidence, as found in December 1834 (and confirmed in March 1835), is  $0''.190$  at the first wire (graduated face of circle East),  $0''.085$  at the center wire, and  $0''.000$  at the fifth wire. The micrometer *a* is that whose graduated head is upwards, and which has the greatest range in the upper part of the field, when the graduated face is East.

In other comparisons, the objects are too widely separated in N.P.D. to pass in the same field: and then it is necessary to move the telescope and attached declination-circle, and to read the divisions of the declination-circle with the two microscopes *A* and *B*, carried by arms attached to the frame of the polar axis.

In the volume of 1834, p. xlix. &c. I have fully stated the nature of the examination to which the divisions of the declination-circle have been subjected, with a table of the errors of 96 principal divisions (page lv), and a description of the method used for the errors of subordinate divisions employed in the series of observations there alluded to. For the subordinate divisions employed in the present series the same method was used: consisting merely of a measurement, by means of the micrometers in the microscopes *A* and *B*, of each of the 45 intervals between two of the principal divisions: from which, as the errors of the first and the last are known, those of the intermediate divisions are easily found. The opposite sets of divisions were examined at the same time, one with *A* and the other with *B*. The operation was repeated: and the mean of the results of the two operations was adopted. The greatest discordance in the two results for a



diameter, was less than 5" on one arc and less than 3" on the other. The following are the resulting corrections to be applied to the readings of the circle.

Division.	Correction to Division.	Division.	Correction to Division.	Division.	Correction to Division.	Division.	Correction to Division.
° ' 240 . 0	+ 8,5	° ' 60 . 0	+ 98,5	° ' 116 . 15	+ 53,0	° ' 296 . 15	+ 49,0
5	7,1	5	95,4	20	54,5	20	50,3
10	8,3	10	96,2	25	55,7	25	49,4
15	6,3	15	94,7	30	57,1	30	50,0
20	8,8	20	94,8	35	56,0	35	48,4
25	8,9	25	94,3	40	56,9	40	48,4
30	10,8	30	96,2	45	57,3	45	45,3
35	9,5	35	93,7	50	58,2	50	47,3
40	9,7	40	94,6	55	62,2	55	48,9
45	8,0	45	93,5	117 . 0	60,7	297 . 0	49,6
50	9,5	50	94,9	5	58,5	5	48,3
55	7,2	55	91,9	10	57,2	10	48,3
241 . 0	10,5	61 . 0	93,6	15	55,9	15	48,8
5	9,8	5	92,5	20	56,0	20	48,8
10	11,7	10	94,6	25	54,7	25	46,5
15	10,5	15	94,9	30	56,6	30	48,8
20	9,7	20	92,8	35	54,9	35	46,7
25	9,8	25	91,3	40	53,7	40	47,4
30	12,5	30	95,1	45	52,0	45	46,8
35	10,6	35	92,2	50	50,7	50	48,2
40	10,3	40	91,9	55	50,9	55	47,3
45	11,1	45	92,8	118 . 0	50,8	298 . 0	46,9
50	9,9	50	92,7	5	52,3	5	46,0
55	10,4	55	90,4	10	51,4	10	47,4
242 . 0	12,2	62 . 0	89,6	15	52,2	15	47,0
5	12,0	5	88,6	20	51,8	20	47,8
10	11,1	10	89,7	25	51,0	25	46,3
15	9,4	15	90,8	30	53,3	30	48,4
20	12,9	20	91,7	35	52,3	35	46,8
25	12,5	25	90,3	40	53,7	40	46,5
30	16,4	30	91,6	45	53,9	45	46,8
35	16,3	35	88,9	50	53,4	50	48,5
40	17,6	40	89,1	55	52,1	55	47,8
45	17,2	45	86,3	119 . 0	52,3	299 . 0	48,7
50	17,1	50	88,6	5	51,1	5	46,4
55	17,1	55	84,8	10	50,4	10	46,3
243 . 0	16,5	63 . 0	87,7	15	50,7	15	46,5
5	17,7	5	86,1	20	49,1	20	46,9
10	18,1	10	83,9	25	49,2	25	46,7
15	16,6	15	86,8	30	49,2	30	46,6
20	16,9	20	85,6	35	48,9	35	43,8
25	16,2	25	85,1	40	49,9	40	44,9
30	19,7	30	90,2	45	49,7	45	44,6
35	16,7	35	87,7	50	50,0	50	45,0
40	15,5	40	89,0	55	49,2	55	45,8
45	+ 14,3	45	+ 88,8	120 . 0	+ 50,3	300 . 0	+ 47,9

The whole correction for  $A$ 's run of  $5'$ , in the arc  $240^\circ—243^\circ.45'$ , appeared to be  $-4''.5$ , and in the arc  $116^\circ.15'—120^\circ$ , it appeared to be  $-3''.5$ . That for  $B$ 's run, in the arc  $60^\circ—63^\circ.45'$ , appeared to be  $-2''.0$ , and in the arc  $296^\circ.15'—300^\circ$ , it appeared to be  $-0''.5$ . These are the quantities used in computing the corrections in the observations of Mars, &c.

Little explanation is necessary for the rest of the calculations and results with regard to Mars. The times are converted by the same successive steps as for Jupiter's fourth satellite: the place of Mars is calculated with second differences from the daily ephemeris in the Nautical Almanac: the refraction is computed on the same supposition as for Jupiter's fourth satellite: the parallax with the assumed horizontal equatoreal parallax from the Nautical Almanac, and with the supposition that it varies as  $\sin.$  distance from geocentric zenith (the formulæ used for the two latter being easily found in parts of the spherical triangles formed by drawing an arc of great circle from the astronomical or geocentric zenith perpendicular to the meridian passing through the body observed). The form in which the results are exhibited will enable the reader to correct them for an alteration in the assumed place of the stars compared, and in the magnitude of the parallax. As this course of observations is in every respect a continuation of that of 1834, the numeration of the series is continued.

*Right Ascensions and North Polar Distances of Halley's Comet and Stars, observed with the Equatoreal and the clock Graham, 1835 and 1836, p. 170.*

In the observation of Halley's Comet, it appeared necessary to secure, if possible, both the following objects. First, to effect a series of accurate comparisons of the Comet with any stars which might be found so near to it, as to be similarly affected by the errors of adjustment, flexure, and other defects of an equatoreal. Secondly, to observe well-known stars whose distance would make the comparison less accurate, but which would give approximate places of the small stars for their future identification.

For these reasons, it has been thought desirable to deduce from every transit the apparent  $\mathcal{R}$  of the object observed, subject to the index-error of the hour circle, the error of the clock, and the errors of observation, of adjustment, those arising from flexure, &c. The latter, though sensible, are so small, and the clock rate is so small, that the combined error of the

hour circle and the clock, deduced from the well-known stars, will apply nearly for other positions of the instrument in the observations of the Comet and small stars, at least nearly enough to give very approximate places. The most accurate places of the Comet must rest upon the comparisons made in unvaried positions of the instrument: nearly the whole of which will require future meridional observations of the small stars.

The whole of the observations recorded here were made by Mr Glaisher. The whole were also made with the graduated face of the declination-circle West. By this expression it is not to be understood that the graduated face was turned towards the West when the object observed was more than six hours from the upper meridian, but that the position of the instrument was related to the place of the object in the same manner as it would have been if the body had been on the meridian above the pole, and if the graduated face had then been West.

The first column on the left-hand page, in the section of Right Ascensions, contains the day of the month. The second column contains the number of the series (where by a series, as in the observations of Mars, is meant the set of observations made without varying the position of the polar axis). To prevent the possibility of confusing the series of Comet-observations with those of the observations of Mars, the numeration is here begun from 100. Two or three series have been rejected (a wrong object having been observed), and the numeration is therefore a little irregular. The third column contains the name of the object: the small stars being distinguished by letters. The letter M denotes that the object is observed with a micrometer wire.

The fourth column contains the time of entrance (as shewn by the clock Graham) into the field. This mode of observation was employed only when the Comet was so faint as to bear no illumination in the field, or before thick wires had been mounted in the wire-frame. The observation of entrance was by no means accurate, as, in entering, the body emerged from behind the comb, and its time would therefore be different according as it emerged from a tooth or from a hollow. The error, however, was probably not greater than that to which every observation of the Comet was liable before its disk was seen pretty well defined.



The five following columns contain the times of passing the five transit-wires of the Equatoreal. At the commencement of the observations the wires mounted in the wire-frame were of cobweb and very delicate: their position with regard to the equator was very well adjusted. It soon appeared desirable to change these for thicker wires: and the latter were mounted on October 13, and were used for several days without adjustment. On examination it was found that their position was very erroneous. The transits were not affected by this error when the objects were observed on or very near to the wire parallel to the equator: and it is always to be understood that this condition holds with regard to those observations in which the micrometer was not read: such being the invariable practice of the observer. For correction of the transits observed at a distance from the equatoreal wire, it was remarked that (as nearly as could be observed) the error of the meridional wire, at the distance of 10 revolutions of the micrometer from the equatoreal wire, was  $\frac{1}{5}$ th of an interval of wires, and that the objects whose N.P.D. was greater than that of the equatoreal wire, passed the wires too early. The correction corresponding to this error has accordingly been applied from Oct. 17 to Oct. 19 (both days included). On Oct. 20 the position of the wires was accurately adjusted.

The tenth column contains the time of departure from the field. The boundary of the field of view, on the departing side, is a straight line, much better defined than that on the entering side: and the observations of departure are much more accurate than those of entrance.

The eleventh column contains the correction for imperfect transits. The mean of the five wires is assumed to coincide with the 3d wire. This is not accurately true: but it is nearly enough true for the Comet observations. The distances from the middle wire (for an equatoreal star) used in the reductions from Sept. 2 to Jan. 10, are the following:

Entrance	+ 51,54
1 Wire	+ 25,79
2 .....	+ 12,91
4 .....	- 13,22
5 .....	- 26,05
Departure	- 67,97

It has been mentioned, that in the month of October thicker wires were inserted; but they were fixed as nearly as possible in the same notches as the old ones, and it does not appear necessary to make any change in the assumed distances of the wires.

In the month of January 1836, a new system of fine wires was mounted, and the following are the intervals used for their reduction:

Entrance	+ 49,55
1 Wire	+ 20,98
2 .....	+ 10,33
4 .....	- 10,55
5 .....	- 21,11
Departure	- 69,96

It is probable that the assumed intervals, for both systems of wires, are not very accurate, but there is no doubt that they are much more accurate than any Comet-observations. In the computations for the Comet, allowance is made for the Comet's motion in  $\mathcal{R}$ .

The twelfth column contains the correction for the position of the wires. This is computed on the principle already described.

The first column on the right-hand page contains the time of transit over the middle wire, as inferred from the mean of all the observed passages affected with the corrections in the two last-mentioned columns.

The second column contains the reading of the hour-circle-pointer. This is merely a brass index touching a circle roughly divided into minutes of time. It is not very firmly fixed: and some confusion was introduced in a portion of the observations by its disturbance. This, however, is completely removed in the printed sheets.

The third and fourth columns contain the readings of the microscope-micrometers of the hour circle. These are fixed so as to read opposite divisions. The band to which their view is directed is divided into spaces of  $20''$ , and these are subdivided by the micrometer reading to  $0''.1$ . One turn of the micrometer corresponds to  $4''$  on the limb. In some of the

observations the microscopes were not read, or their readings merely guessed at. As in all these instances the observations are strictly differential, the omission is of no importance. The hour-circle-reading is the hour-angle East of the Meridian.

The fifth column contains the Apparent Right Ascension, found by adding the reading of the Hour Circle to the Clock Time of Transit. It is of course subject to Instrumental and Clock Errors, as well as to refraction and parallax.

The sixth column contains the approximate N.P.D., which is necessary for the calculation of the two following columns.

The seventh column contains the refraction in  $R$ . It is generally computed on the supposition that the vertical refraction will be represented with sufficient accuracy for differential observations by the formula  $57'' \times \tan. \text{zen. dist.}$  On the 15th and 18th of November, however, not only the refraction but also the difference of refraction being considerable, it was thought necessary to calculate with much greater attention to accuracy. The following is the method used on those days. The reading of the hour circle is increased by  $10^s$ ; which appears, from comparing several resulting right ascensions (corrected for clock error) with tabular right ascensions, to be nearly the index error. The true apparent hour angle is thus obtained. The apparent N.P.D. given by the declination-circle is corrected very approximately for the index error of the declination-circle, and thus a true apparent N.P.D. is obtained. With these values and the colatitude  $37^\circ.47'$  the apparent zenith-distance is computed. With this,  $\log a$  is taken from Bessel's tables of refraction: or when the zenith-distance is beyond the limits of his first table,  $\log a$  is found from his supplementary table by the formula  $\log a = \log \text{refraction} + \log \cotan \text{zen. dist.}$  The value of  $\log a$  thus found is used instead of  $\log \frac{57}{15}$  in the calculation of refractions by the usual formula.

The refraction is computed for the fundamental stars whose observation was intended to give information as to the index-error, &c., of the instrument. It is also computed for the Comet when it has appeared probable



that the absolute instrumental determinations may be needed. For strictly differential observations it has been computed only when the difference of the refractions was sensible.

The eighth column contains the Comet's parallax in  $\mathcal{R}$ . This is computed supposing the vertical parallax to be proportional to the sin. zen. dist., and taking the log. horizontal equatoreal parallax from the formula  $0,9334 + \text{ar. comp. log. Comet's distance}$ : the log. distance being taken from the Ephemeris dated Dec. 30, 1835, circulated by the Superintendent of the Nautical Almanac.

The ninth column contains the apparent right ascension of every object observed, subject to instrumental error and clock error, and in certain instances to the omission of refraction, but always corrected for parallax. It is formed by applying the numbers in columns 7 and 8 to those in column 5.

The arrangement of the section of *North Polar Distances of Halley's Comet, &c.* proceeds upon the same general principles as that of the section of *Right Ascensions*, with this difference only, that the refraction in N.P.D. is computed in every instance. The following explanation of the different columns will probably be sufficient.

The first, second, and third columns give the day, the number of the series, and the name of the object, in the same manner as in the  $\mathcal{R}$ . The series of observations of N.P.D. sometimes correspond with those of  $\mathcal{R}$  and sometimes do not. The letter M denotes that the object has been observed with the micrometer wire.

The fourth column contains the reading of the fixed pointer. The division indicated by this is supposed to be the same as that read by Microscope  $\mathcal{A}$ . There appears reason to think that between Oct. 24 and Oct. 26 the pointer was disturbed so as to make its reading in a given position of the circle  $5'$  greater than before. The only error which this change would introduce would be that the corrections for the wrong divisions would be used: but as there is no remarkable change between the

corrections for adjacent divisions in the arc of the circle employed here, this is of small importance.

The readings of the microscopes in columns 5 and 8 require no explanation. The corrections for runs in columns 7 and 10 are computed on the supposition that the error of run of  $A$  was  $+4''.9$ , and that of  $B - 0''.2$ , in the five-minute spaces.

Columns 6 and 9 contain the errors of division of the circle. The methods by which the errors of division of 96 fundamental points were found, and the results for these points, are fully explained in the Introduction to the Volume for 1834. These 96 determinations, it is to be observed, are assumed as foundations for every succeeding investigation of the errors. In the Introduction to the Volume for 1834, and in the preceding part of this Introduction, will be found a description of the method by which the errors of individual points were found from the 96 fundamental points, for the observations of Mars. It consisted in merely running over every space with the microscope-micrometer. To avoid the accumulation of possible errors thus produced, and to diminish the labour of the process, the following method was now used. Two microscopes were constructed under my directions by Mr Simms, of nearly the same length as the micrometer-microscopes, but so small that they could be placed side by side, to view two divisions separated by 15 spaces or  $1^{\circ}.15'$ . They are, in fact, included in the same prismatic tube. One of these has a fixed  $\times$  wire: the other has one fixed  $\times$  wire and one similar wire moved by a micrometer. This double microscope is fixed firmly to the pillars of the instrument, and in the first place it is used to trisect the spaces of  $3^{\circ}.45'$ , by spanning the three arcs of  $1^{\circ}.15'$ : one division being placed under the fixed wire of one microscope, and the moveable wire of the other being then placed upon the other division and its micrometer being read. The value of the revolutions being found, the difference between the successive spaces of  $1^{\circ}.15'$  and consequently the error of each of these divisions is easily and accurately found. Then the microscope which has one fixed and one moveable wire is used alone; the wires being placed nearly  $5'$  apart, and a division being brought to the fixed wire, the micrometer-wire is placed on the next division. In this manner the error

of each of the divisions is found with the accumulation which belongs to an arc of 15 spaces only instead of 45, as in the method previously used: and with greater ease and accuracy in every individual measure. The errors being thus found, and their signs changed, and 80" added to make them all positive (as before), the following table of corrections is formed.

Division.	Correction to Division.	Division.	Correction to Division.	Division.	Correction to Division.	Division.	Correction to Division.
° /	"	° /	"	° /	"	° /	"
202 . 35	17,3	22 . 35	85,3	211 . 40	16,3	31 . 40	88,0
40	19,2	40	86,1	45	17,2	45	88,4
45	18,9	45	85,6	50	17,3	50	87,0
50	19,3	50	86,7	211 . 55	15,6	31 . 55	87,3
202 . 55	18,1	22 . 55	88,1	212 . 0	16,8	32 . 0	88,9
203 . 0	18,3	23 . 0	88,7	5	14,8	5	87,9
5	17,2	5	87,1	10	15,4	10	88,2
10	17,6	10	90,4	15	14,7	15	86,7
15	17,3	15	88,6	20	15,4	20	86,6
20	16,8	20	90,1	25	14,4	25	86,6
25	15,0	25	88,0	212 . 30	16,6	32 . 30	88,4
30	14,2	30	88,6				
35	15,9	35	87,1	215 . 0	18,0	35 . 0	89,6
40	16,1	40	90,0	5	17,1	5	89,9
203 . 45	17,5	23 . 45	86,6	10	16,0	10	89,7
				15	15,8	15	87,1
206 . 10	12,1	26 . 10	89,7	20	15,1	20	90,3
15	13,7	15	85,8	25	13,8	25	89,7
20	12,9	20	86,2	30	13,9	30	90,8
25	13,9	25	84,6	35	15,9	35	89,9
30	15,4	30	84,5	40	15,3	40	91,9
35	14,5	35	83,5	45	15,4	45	88,0
40	15,8	40	83,8	50	13,2	50	90,4
45	15,8	45	83,0	215 . 55	13,4	35 . 55	90,0
50	14,2	50	84,7	216 . 0	14,3	36 . 0	89,7
206 . 55	14,7	26 . 55	84,8	5	12,7	5	87,7
207 . 0	15,3	27 . 0	84,4	10	13,2	10	89,2
5	16,2	5	84,8	216 . 15	15,0	36 . 15	86,8
10	14,8	10	85,1				
15	17,0	15	84,0	221 . 20	10,6	41 . 20	80,5
20	15,4	20	85,1	25	11,5	25	80,6
25	14,5	25	84,5	30	12,3	30	80,5
207 . 30	15,8	27 . 30	86,3	35	11,3	35	78,9
				40	11,2	40	80,9
211 . 20	15,9	31 . 20	86,9	45	12,1	45	80,4
25	15,2	25	88,3	50	10,9	50	81,8
30	16,3	30	87,5	221 . 55	9,2	41 . 55	82,1
35	15,1	35	88,1	222 . 0	11,2	42 . 0	82,9



Division.	Correction to Division.	Division.	Correction to Division.	Division.	Correction to Division.	Division.	Correction to Division.
0 /	"	0 /	"	0 /	"	0 /	"
222 . 5	10,5	42 . 5	82,5	230 . 50	3,6	50 . 50	81,5
10	10,1	10	84,9	230 . 55	3,7	50 . 55	83,2
15	10,0	15	82,1	231 . 0	4,5	51 . 0	77,7
20	9,1	20	81,9	5	4,6	5	77,1
25	7,8	25	85,6	10	5,3	10	79,3
222 . 30	8,5	42 . 30	79,7	15	5,4	15	75,5
				20	3,8	20	79,4
223 . 50	9,1	43 . 50	90,0	25	3,2	25	78,2
223 . 55	9,0	43 . 55	91,1	30	5,2	30	81,4
224 . 0	10,4	44 . 0	92,1	35	4,6	35	81,4
5	7,8	5	90,8	40	5,8	40	83,6
10	8,2	10	91,0	45	6,1	45	79,8
15	6,8	15	90,5	50	4,5	50	80,7
20	6,1	20	92,3	231 . 55	4,1	51 . 55	80,0
25	5,2	25	93,5	232 . 0	5,9	52 . 0	81,4
30	6,7	30	92,9	5	5,0	5	82,4
35	6,9	35	91,3	10	4,8	10	81,0
40	7,6	40	93,3	15	6,6	15	76,3
45	6,4	45	90,4	20	4,8	20	75,9
50	7,7	50	90,5	25	4,9	25	73,6
224 . 55	7,9	44 . 55	89,4	232 . 30	6,6	52 . 30	74,5
225 . 0	8,6	45 . 0	91,2				
				235 . 5	4,4	55 . 5	94,2
228 . 40	8,4	48 . 40	83,3	10	5,7	10	96,2
45	5,8	45	82,5	15	4,9	15	95,3
50	5,7	50	83,0	20	5,9	20	96,0
228 . 55	4,3	48 . 55	82,0	25	4,4	25	94,8
229 . 0	6,7	49 . 0	85,2	30	3,8	30	95,6
5	6,7	5	82,6	35	3,3	35	93,2
10	6,5	10	84,5	40	4,5	40	94,4
15	6,4	15	80,7	45	2,5	45	94,3
20	5,7	20	82,4	50	4,6	50	96,4
25	4,3	25	82,4	235 . 55	3,6	55 . 55	95,2
30	6,1	30	83,8	236 . 0	5,7	56 . 0	96,0
35	5,4	35	82,3	5	4,4	5	95,3
40	4,9	40	83,7	10	6,0	10	96,1
45	3,9	45	84,4	15	6,7	15	93,1
50	4,6	50	85,7	20	6,1	20	99,6
229 . 55	5,4	49 . 55	83,1	25	5,6	25	95,9
230 . 0	6,5	50 . 0	81,7	30	6,6	30	96,8
5	5,2	5	78,1	35	5,6	35	93,9
10	5,2	10	79,0	40	6,8	40	96,9
15	5,7	15	78,3	45	8,0	45	96,1
20	4,0	20	79,9	50	6,3	50	98,5
25	3,4	25	78,7	236 . 55	5,4	56 . 55	96,5
30	5,0	30	80,9	237 . 0	6,8	57 . 0	97,9
35	1,7	35	78,4	5	6,8	5	96,2
40	3,6	40	81,4	10	6,6	10	96,1
45	3,4	45	85,2	15	6,5	15	95,0

Division.	Correction to Division.	Division.	Correction to Division.	Division.	Correction to Division.	Division.	Correction to Division.
° /	''	° /	''	° /	''	° /	''
237.20	6,1	57.20	96,4	246.20	14,5	66.20	94,7
25	5,4	25	95,2	25	14,4	25	94,7
30	7,7	30	95,2	30	15,6	30	95,8
35	7,2	35	94,8	35	14,1	35	93,2
40	7,9	40	94,6	40	15,0	40	94,9
45	7,5	45	93,8	45	14,0	45	94,7
50	7,4	50	93,8	50	15,5	50	94,2
237.55	7,3	57.55	92,5	246.55	17,2	66.55	93,1
238.0	7,9	58.0	94,2	247.0	18,2	67.0	94,2
5	8,9	5	92,9	5	16,3	5	93,2
10	7,8	10	95,8	10	16,1	10	94,5
15	6,1	15	93,5	15	15,7	15	95,2
20	7,1	20	94,5	20	16,1	20	95,3
25	6,7	25	93,0	25	16,7	25	93,9
30	8,5	30	93,3	247.30	17,1	67.30	94,4
35	8,7	35	92,6				
40	8,7	40	94,2	250.5	21,0	70.5	88,9
45	7,3	45	95,1	10	21,9	10	90,3
50	6,8	50	95,1	15	21,3	15	90,7
238.55	6,0	58.55	95,0	20	21,6	20	91,1
239.0	7,2	59.0	96,7	25	21,6	25	90,8
5	5,6	5	95,3	30	23,3	30	92,1
10	6,1	10	97,1	35	22,4	35	91,3
15	6,5	15	96,9	40	24,0	40	90,4
20	6,8	20	97,1	45	22,3	45	90,4
25	6,8	25	97,9	50	23,5	50	95,5
30	7,3	30	99,9	250.55	23,8	70.55	94,1
35	6,5	35	97,6	251.0	25,0	71.0	94,2
40	6,6	40	98,3	5	24,0	5	97,6
45	6,7	45	97,5	10	25,5	10	93,3
50	6,9	50	100,5	251.15	24,2	71.15	89,6
239.55	7,0	59.55	98,3				
240.0	8,5	60.0	98,5	255.5	27,4	75.5	83,0
				10	26,6	10	83,6
243.50	15,2	63.50	87,6	15	25,6	15	83,2
243.55	15,4	63.55	87,9	20	25,5	20	84,4
244.0	15,6	64.0	89,9	25	25,2	25	82,4
5	14,3	5	87,7	30	26,2	30	83,9
10	15,0	10	87,9	35	25,4	35	83,9
15	13,4	15	89,0	40	26,1	40	83,4
20	15,0	20	88,3	45	26,2	45	80,7
25	15,2	25	87,7	50	26,0	50	80,8
30	15,4	30	89,8	255.55	27,0	75.55	81,3
35	14,6	35	88,8	256.0	26,8	76.0	82,3
40	15,3	40	90,3	5	25,6	5	80,4
45	14,5	45	89,2	10	26,3	10	82,3
50	14,4	50	92,0	256.15	28,1	76.15	81,1
244.55	13,9	64.55	89,5				
245.0	15,8	65.0	92,1	258.50	33,1	78.50	77,9

Division.	Correction to Division.	Division.	Correction to Division.	Division.	Correction to Division.	Division.	Correction to Division.
° /	"	° /	"	° /	"	° /	"
258.55	33,5	78.55	76,4	269.5	40,0	89.5	77,6
259.0	34,1	79.0	78,1	10	40,6	10	78,0
5	36,0	5	76,3	15	39,5	15	77,3
10	34,8	10	75,3	20	40,8	20	77,8
15	34,8	15	76,1	25	40,6	25	78,0
20	34,0	20	77,7	30	41,4	30	77,2
25	33,3	25	78,1	35	39,9	35	78,2
30	32,6	30	80,1	40	39,7	40	79,5
35	32,3	35	77,2	45	38,6	45	79,5
40	32,1	40	77,8	50	39,3	50	78,5
45	33,5	45	77,6	269.55	39,8	89.55	76,9
50	32,6	50	78,0	270.0	40,7	90.0	76,4
259.55	33,2	79.55	78,0	5	40,0	5	75,2
260.0	34,5	80.0	79,0	10	39,4	10	75,0
				15	39,9	15	73,6
				20	39,5	20	75,6
265.5	34,6	85.5	78,3	25	39,3	25	77,4
10	35,9	10	77,3	30	40,1	30	78,8
15	35,7	15	76,0	35	39,3	35	78,0
20	37,1	20	76,0	40	41,7	40	77,4
25	37,1	25	77,0	45	40,8	45	77,9
30	38,4	30	77,9	50	41,3	50	77,2
35	38,2	35	78,6	270.55	40,6	90.55	76,6
40	39,3	40	79,1	271.0	40,8	91.0	77,8
45	40,3	45	79,8	5	40,8	5	78,2
50	40,2	50	79,9	10	40,8	10	78,0
265.55	40,5	85.55	80,6	15	41,1	15	77,4
266.0	40,8	86.0	79,5	20	40,0	20	77,8
5	39,9	5	78,6	271.25	38,5	91.25	76,9
10	40,2	10	78,3				
266.15	38,8	86.15	78,7	273.50	40,1	93.50	77,9
				273.55	38,9	93.55	78,9
267.35	39,9	87.35	79,2	274.0	39,6	94.0	80,2
40	40,4	40	79,3	5	38,7	5	81,2
45	39,9	45	78,8	10	40,3	10	82,3
50	40,2	50	80,1	15	40,2	15	78,3
267.55	39,8	87.55	80,2	20	40,6	20	77,1
268.0	41,3	88.0	81,2	25	38,6	25	76,5
5	41,1	5	80,5	30	40,7	30	77,6
10	40,9	10	80,2	35	39,6	35	76,1
15	40,9	15	80,5	40	39,4	40	75,8
20	41,4	20	80,3	45	39,6	45	74,9
25	41,3	25	79,9	50	40,5	50	76,3
30	41,5	30	81,0	274.55	41,0	94.55	77,3
35	40,2	35	79,8	275.0	40,7	95.0	77,0
40	40,5	40	77,9	5	38,2	5	77,0
45	40,1	45	77,8	10	39,8	10	76,7
50	39,7	50	77,5	15	40,4	15	76,1
268.55	40,4	88.55	76,5	20	40,7	20	78,7
269.0	40,5	89.0	76,5				



Division.	Correction to Division.	Division.	Correction to Division.	Division.	Correction to Division.	Division.	Correction to Division.
° /	"	° /	"	° /	"	° /	"
275 . 25	40,5	95 . 25	77,2	280 . 40	40,0	100 . 40	79,1
30	40,3	30	77,7	45	40,4	45	76,5
35	39,2	35	77,3	50	41,3	50	81,3
40	41,1	40	79,4	280 . 55	41,5	100 . 55	80,4
45	41,0	45	77,0	281 . 0	41,7	101 . 0	83,7
50	41,2	50	78,9	5	41,3	5	82,4
275 . 55	41,4	95 . 55	77,7	10	42,4	10	82,1
276 . 0	42,8	96 . 0	77,3	281 . 15	42,8	101 . 15	79,6
5	42,8	5	75,3				
10	43,7	10	77,6	282 . 35	43,4	102 . 35	81,7
15	41,7	15	77,4	40	45,3	40	81,7
20	43,6	20	79,0	45	45,1	45	78,4
25	41,6	25	76,7	50	46,1	50	81,4
30	41,3	30	77,2	282 . 55	45,5	102 . 55	79,9
35	41,0	35	76,5	283 . 0	44,8	103 . 0	80,1
40	42,1	40	76,5	5	45,4	5	80,2
45	41,7	45	76,4	10	45,2	10	81,3
50	40,6	50	76,9	15	43,9	15	79,5
276 . 55	41,5	96 . 55	80,4	20	44,0	20	81,5
277 . 0	40,9	97 . 0	79,4	25	45,3	25	81,0
5	41,8	5	77,2	30	45,9	30	80,4
10	42,4	10	77,5	35	44,3	35	80,1
15	41,0	15	75,1	40	46,2	40	82,1
20	41,4	20	76,4	45	44,2	45	80,0
25	40,3	25	75,6	50	45,5	50	81,8
277 . 30	41,5	97 . 30	77,5	283 . 55	44,1	103 . 55	80,7
				284 . 0	44,0	104 . 0	81,1
278 . 50	39,7	98 . 50	79,2	5	44,3	5	81,7
278 . 55	40,3	98 . 55	79,8	10	44,6	10	82,5
279 . 0	40,0	99 . 0	78,6	15	44,9	15	80,7
5	40,0	5	76,8	20	44,6	20	81,7
10	40,6	10	79,3	25	43,9	25	81,5
15	39,6	15	78,6	30	44,7	30	81,0
20	40,0	20	78,9	35	44,4	35	80,3
25	40,6	25	79,3	40	45,4	40	80,7
30	40,0	30	77,7	45	45,4	45	80,5
35	41,2	35	79,2	50	44,5	50	82,7
40	41,1	40	80,4	284 . 55	44,8	104 . 55	80,5
45	40,7	45	79,5	285 . 0	44,6	105 . 0	80,6
50	40,7	50	79,6	5	44,2	5	81,0
279 . 55	39,2	99 . 55	78,2	10	45,2	10	82,5
280 . 0	40,2	100 . 0	77,5	15	46,1	15	81,6
5	38,1	5	78,8	20	46,3	20	84,8
10	39,4	10	79,1	25	46,9	25	85,0
15	37,5	15	77,9	30	45,6	30	83,8
20	39,1	20	78,9	35	45,2	35	81,8
25	39,0	25	79,7	40	44,9	40	83,1
30	39,6	30	80,4	45	43,5	45	79,9
35	39,4	35	78,1	50	44,2	50	81,1

Division.	Correction to Division.	Division.	Correction to Division.	Division.	Correction to Division.	Division.	Correction to Division.
° /	"	° /	"	° /	"	° /	"
285.55	43,3	105.55	80,7	296.45	48,1	116.45	53,2
286.0	44,4	106.0	80,5	50	49,9	50	52,4
5	43,2	5	81,6	296.55	49,7	116.55	52,5
10	43,4	10	81,8	297.0	49,1	117.0	52,1
286.15	42,7	106.15	79,4	5	48,6	5	52,0
				10	48,9	10	51,6
295.0	49,7	115.0	56,2	15	48,4	15	51,8
5	48,6	5	54,7	20	49,5	20	51,3
10	48,4	10	54,4	25	49,0	25	50,5
15	47,4	15	52,4	297.30	49,2	117.30	51,7
20	47,8	20	53,0				
25	46,6	25	50,8	298.45	48,2	118.45	51,6
30	49,1	30	52,6	50	49,0	50	52,2
35	48,8	35	51,6	298.55	48,4	118.55	51,4
40	48,9	40	53,0	299.0	48,4	119.0	51,9
45	48,3	45	53,1	5	48,2	5	51,3
50	47,8	50	53,6	10	48,1	10	51,0
295.55	47,9	115.55	53,8	15	46,7	15	50,7
296.0	49,9	116.0	54,0	20	48,7	20	50,9
5	49,6	5	53,5	25	46,4	25	50,1
10	49,8	10	52,9	30	46,4	30	50,4
15	49,0	15	53,0	35	44,8	35	48,8
20	50,1	20	52,9	40	45,7	40	49,2
25	49,4	25	53,2	45	46,4	45	49,3
30	50,2	30	53,9	50	46,7	50	48,7
35	49,5	35	52,9	299.55	47,1	119.55	49,5
40	48,9	40	53,3	300.0	47,9	120.0	50,3

It will be seen that a small part of the arc examined here had also been examined in the former method for the observations of Mars at opposition: and near the middle of the arc of  $3^{\circ}.45'$  the discordance is very sensible. This arises entirely, without doubt, from the accumulation of errors in the former method. The printing of the Volume had however proceeded too far, when the second examination was made, to enable me to avail myself of the more correct determinations.

The eleventh and twelfth columns have the same meaning as in the Observations of Mars, &c.: and the thirteenth column contains the equivalent correction in sexagesimal divisions. One revolution of the micrometer is always considered =  $33''.429$ ; and the readings at coincidence are supposed to be as follows:

## INTRODUCTION.

From Sept. 2 to Oct. 10,

*a* 0,054

*b* 0,086.

From Oct. 14 to Nov. 18,

	1st wire	2d	3d	4th	5th	One interval later.
<i>a</i>	0,036	0,035	0,035	0,022	0,002	9,987
<i>b</i>	9,983	9,998	0,006	9,986	9,992	0,005.

On Jan. 16,

*a* 0,005.

The fourteenth column contains the correction for the position of the wires, which between Oct. 10 and Oct. 21 (as already mentioned) were misplaced in such a direction that a star passed apparently above the wire before it reached the center, and below it afterwards. It appeared that the following corrections were necessary to the observed polar distance:

When the observation was made at the 1st wire,	- 14",5
..... 2d .....	- 7",2
..... 4th.....	+ 7",2
..... 5th.....	+ 14",5.

Before the observations of Oct. 21 the wires were well adjusted,

The first column on the right hand page contains the circle reading as affected with the corrections for error of divisions, error of runs, micrometer reading, and position of wires, and diminished by 180°. This quantity is always near to the polar distance of the body observed (the face of the circle having been West during the whole suite of observations). In a few instances the circle-microscopes have not been read, and no quantity can be set down for the polar distance.

The second column contains the approximate hour-angle, which is necessary for the calculation of the two next columns.



The third column contains the refraction in N.P.D. This is always computed on the supposition that the vertical refraction =  $57'' \times \tan \text{zen. dist.}$ , except on Nov. 15 and 18, when instead of  $57''$  a different multiplier has been used for every different calculation, as has been already described in speaking of the Right Ascensions.

The fourth column contains the parallax in N.P.D. The log. horizontal equatoreal parallax has been found from the log. dist. in Mr Stratford's Ephemeris, dated Dec. 30, 1835, and the log. hor. par. for Cambridge is found by diminishing this by ,0009.

With regard to the formula and tables used for the computation of extrameridional refraction and parallax from the erection of the equatoreal, the following explanation will be sufficient. Join  $P$  the pole with  $S$  the place of the celestial body, and from  $Z$  the astronomical zenith draw  $ZQ$  perpendicular to  $PS$ . Then, if vertical refraction =  $A \cdot \tan ZS$ , the refraction in  $\mathcal{R}$

$$= \frac{A}{15} \cdot \tan ZS \cdot \sin S \cdot \frac{1}{\sin PS} = \frac{A}{15} \cdot \frac{\tan ZQ}{\sin PS \cdot \cos QS} = \frac{A}{15} \cdot \frac{\tan ZQ}{\sin PS \cdot \cos (PS \pm PQ)}.$$

And the refraction in N.P.D.

$$= A \cdot \tan ZS \cdot \cos S = A \cdot \tan QS = A \cdot \tan (PS \pm PQ).$$

The quantities  $ZQ$  and  $PQ$  depend only on the colatitude of the place and the hour angle. Tables being prepared therefore which give log. tan.  $ZQ$  and  $PQ$ , with the hour angle for argument, it remains only to substitute the value of the polar distance in the formula, and the refractions are easily found.

In like manner for the parallax: taking  $Z'$  the geocentric zenith, and drawing  $Z'Q'$  perpendicular to  $PS$ , the parallax in  $\mathcal{R}$

$$= \frac{\text{h. p.}}{15} \times \sin Z'S \times \sin S \times \frac{1}{\sin PS} = \frac{\text{h. p.}}{15} \times \frac{\sin Z'Q'}{\sin PS}.$$

And the parallax in N.P.D.

$$= \text{h. p.} \times \sin Z'S \times \cos S = \text{h. p.} \times \cos Z'Q' \cdot \sin Q'S = \text{h. p.} \times \cos Z'Q' \times \sin (PS \pm PQ).$$

Tables therefore being prepared containing  $\log. \sin Z'Q'$ ,  $\log \cos Z'Q'$ , and  $PQ'$ , with the hour angle for argument, the computation of the parallaxes is easy.

The fifth column contains the N.P.D. from the circle affected with the corrections for refraction and parallax: it is therefore the true N.P.D. from the observation, subject only to the index error of the circle and the error in the position of the polar axis. The refraction has been applied in every instance.

The two following columns contain the times of observation of the Comet as noted by Graham, and as reduced by the Comparisons to the time by Hardy. They will facilitate the reduction of the times by Graham to times by Hardy for the Right Ascensions also. In many instances the observation in N.P.D. was not made at the middle wire, and the time for the N.P.D. observation is therefore not the same as that for observation in  $\mathcal{R}$ .

The table of the approximate places of the stars of comparison is founded upon the observations. The stars for the most part are anonymous and very small; it will be necessary that they should be observed with meridional instruments before the Comet-observations can be made available.

The time by Hardy is converted into Cambridge Sidereal Time, and this into Greenwich Mean Solar Time, in the usual way. With this, the Comet's place is interpolated from the Ephemeris so often referred to, using third differences whenever their effects are sensible. This Ephemeris is not affected with planetary perturbations nor (it appears) with aberration. But it will readily be understood that when the stars shall have been observed and the observations of the previous pages shall be completely reduced, the comparison of them with places accurately interpolated from this very approximate Ephemeris will give a series of Normal Places possessing great accuracy: and that when (as is expected) an Ephemeris shall be published, comprising the effects of perturbation and aberration, it will be the work of a few minutes to apply the difference of the two Ephemerides, either to the interpolated places given here, or to single

places of the old Ephemeris comparable with the Normal Places; and that, with the factors of errors of elements in the equations of condition, a series of such equations may immediately be formed, the solution of which will give, with great accuracy, the whole of the elements of the Comet's orbit.

A place has been interpolated from the Ephemeris corresponding to every observation of the Comet. It is not meant by this that every observation will be available.

The *Transits with the Mural Circle* require no explanation. The *Physical Observations* comprise every remark made by me, or by Mr Glaisher, during the visibility of the Comet.

The *Eclipses, &c., of Jupiter's Satellites*, and the *Occultations of Stars by the Moon*, are arranged in the same manner as in previous years, and require no particular explanation. The Calculation of the Occultations is performed in the same manner as in several past years: the method of calculation is described in the Volumes for 1830 and 1831.

The *Meteorological Observations*, on June 22 and Sept. 21, were made in conformity with a plan suggested by Sir J. Herschel, and which, it is probable, may be extensively followed, and may offer those prospects for advance of this science which simultaneous observations alone can give. The observations of Dec. 21 were omitted from mere inadvertence.

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TRANSITS AS OBSERVED,  
AND  
CALCULATION  
OF THE  
APPARENT RIGHT ASCENSIONS.

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1835.

TRANSITS OBSERVED IN THE YEAR 1835.

Month and Day.	NAME OF STAR or PLANET.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Concluded Transit over the Mean of the seven Wires.			Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	m. s.		h. m. s.	m. s.	h. m. s.	
Jan. 1	(a) Polaris.....	35.44,4	43.52,0	52. 3,4	.....	8.36,8	16.51,0	1.....	+ 4. 56,64	1. 0. 22,16	G.		
	α Arietis.....	40,0	55,0	9,1	24,0	38,9	53,0	1. 58. 7,9		1. 57. 23,98	G.		
	Jupiter 1 L.....	53,0	.....	21,9	.....	50,2	.....	4. 3. 19,2		4. 2. 36,07	G.		
	Jupiter 2 L.....	.....	10,2	.....	38,3	.....	7,3	4. 3. ....		4. 2. 38,60	G.		
	Aldebaran.....	17,0	30,7	44,6	59,0	12,8	26,9	4. 26. 40,8		4. 25. 58,83	G.		
Jan. 2	δ Ursæ Minoris...	.....	17.11,2	20.58,4	.....	28.34,8	32.18,2	18. 36. 3,6	- 2. 16,03	18. 24. 45,21	B.		
Jan. 3	⊙ 1 L.....	44,8	59,3	14,1	28,7	43,8	58,2	18. 53. 12,8		18. 52. 28,82	B.		
	⊙ 2 L.....	6,9	21,4	36,1	50,8	5,7	20,1	18. 55. 34,8		18. 54. 50,83	B.		
	α Aquilæ.....	27,7	41,2	54,7	8,3	22,1	35,4	19. 42. 49,1		19. 42. 8,36	B.		
	β Aquarii.....	35,8	49,2	2,9	16,4	30,1	43,7	21. 22. 57,1		21. 22. 16,46	B.		
	γ 1 L.....	9,3	23,9	37,9	52,3	6,9	20,7	22. 39. 34,9		22. 38. 52,27	B.		
	α Pegasi.....	15,7	29,5	43,6	57,5	11,7	25,2	22. 56. 39,1		22. 55. 57,47	B.		
	χ Aquarii.....	1,4	14,9	28,4	42,2	56,0	9,4	23. 8. 23,1		23. 7. 42,20	B.		
	(b) α Ceti.....	24,8	38,1	51,9	5,3	18,9	33,0	2. 53. 45,9		2. 53. 5,41	B.		
	Vesta.....	40,2	54,0	7,9	21,3	35,6	49,3	3. 16. 3,1		3. 15. 21,63	B.		
	Jupiter 1 L.....	8,1	.....	37,0	.....	5,9	.....	4. 2. 33,9		4. 1. 51,22	B.		
	Jupiter 2 L.....	.....	25,9	.....	54,6	.....	23,3	4. 2. ....		4. 1. 54,60	B.		
	Aldebaran.....	11,5	25,3	39,4	53,8	8,1	21,6	4. 26. 35,7		4. 25. 53,63	B.		
	i Tauri.....	26,9	41,2	55,3	9,8	24,1	38,1	4. 41. 52,0		4. 41. 9,63	B.		
	Rigel.....	21,6	35,4	49,1	2,9	16,5	30,1	5. 6. 43,5		5. 6. 2,73	B.		
	α Orionis.....	59,6	13,3	27,1	40,3	54,1	7,8	5. 46. 21,2		5. 45. 40,48	B.		
	Q <sup>2</sup> Tauri.....	26,1	40,9	55,4	9,9	24,7	39,1	5. 51. 54,0		5. 51. 10,02	B.		
	δ Ursæ Min. S.P.....	13.16,2	17. 0,8	20.47,4	24.32,2	28.16,6	32. 7,0	6. 35. 55,4		6. 24. 33,66	B.		
Mars 1 L.....	10,3	.....	40,9	.....	11,0	.....	6. 49. 41,1		6. 48. 55,82	B.			
Mars 2 L.....	.....	26,7	.....	57,1	.....	27,4	6. 49. ....		6. 48. 57,07	B.			
Jan. 4	Venus 2 L.....	55,1	9,3	23,6	37,8	52,1	6,1	17. 28. 19,9		17. 27. 37,70	B.		
	δ Ursæ Minoris...	13.19,6	17. 8,6	20.56,2	24.42,8	28.80,4	32.14,6	18. 35. 58,2		18. 24. 41,49	B.		
Jan. 5	⊙ 1 L.....	28,9	43,8	58,2	12,9	27,7	42,1	19. 1. 56,8		19. 1. 12,91	B.		
	⊙ 2 L.....	50,8	5,4	20,1	34,8	49,6	4,1	19. 4. 18,8		19. 3. 34,80	B.		
	α Aquilæ.....	23,2	36,9	50,4	4,1	17,8	31,2	19. 42. 44,9		19. 42. 4,07	B.		
	β Aquarii.....	31,7	45,3	58,8	12,3	26,0	39,6	21. 22. 53,0		21. 22. 12,38	B.		
	α Pegasi.....	11,7	25,4	39,2	53,4	7,2	21,0	22. 56. 35,0		22. 55. 53,27	B.		
	r Piscium.....	9,8	23,4	37,1	50,6	4,2	17,9	23. 53. 30,9		23. 52. 50,55	B.		
	s Piscium.....	33,4	47,1	0,7	14,2	27,9	41,1	23. 56. 54,7		23. 56. 14,16	B.		
	γ 1 L.....	12,9	26,7	40,8	54,3	8,2	21,9	0. 13. 35,7		0. 12. 54,36	B.		
	m Ceti.....	14,9	28,4	42,1	55,5	9,3	22,7	0. 44. 36,1		0. 43. 55,57	B.		
	Vesta.....	19,2	33,3	47,1	1,1	15,0	28,7	3. 15. 42,2		3. 15. 0,94	B.		
	Jupiter 1 L.....	27,3	.....	56,0	.....	25,0	.....	4. 1. 53,2		4. 1. 10,37	B.		
	Jupiter 2 L.....	.....	45,2	.....	13,9	.....	42,4	4. 1. ....		4. 1. 13,83	B.		
	Aldebaran.....	7,3	21,1	35,0	49,3	3,8	17,2	4. 26. 31,1		4. 25. 49,26	B.		
	i Tauri.....	22,5	37,0	51,1	5,5	19,8	33,9	4. 41. 48,1		4. 41. 5,41	B.		
	Rigel.....	17,4	31,1	44,9	58,4	12,2	25,8	5. 6. 39,2		5. 5. 58,43	B.		
	α Orionis.....	55,5	9,1	22,8	36,9	50,2	3,4	5. 46. 16,9		5. 45. 36,40	B.		
	Q <sup>2</sup> Tauri.....	21,8	36,7	51,1	5,7	20,4	35,1	5. 51. 50,0		5. 51. 5,83	B.		
δ Ursæ Min. S.P.....	12.57,8	.....	20.38,6	24.29,8	28.18,4	32. 4,6	6. 35. 49,4	- 1. 15,48	6. 24. 27,62	B.			
Mars 1 L.....	37,0	.....	7,3	.....	37,8	.....	6. 46. 7,9		6. 45. 22,50	B.			
Mars 2 L.....	.....	53,8	.....	24,1	.....	54,1	6. 45. ....		6. 45. 24,00	B.			
Venus 2 L.....	1,8	15,9	30,2	44,2	58,6	12,8	17. 27. 27,0		17. 26. 44,36	B.			
δ Ursæ Minoris...	13.17,6	17. 5,8	20.52,6	24.36,2	28.27,4	32.13,8	18. 35. 56,6		18. 24. 38,57	B.			

On Jan. 1, ILLUMINATED END OF AXIS WEST. Order of Wires, for Stars above the Pole, GFEDCBA.  
 From Jan. 2, ILLUMINATED END OF AXIS EAST. Order of Wires, for Stars above the Pole, ABCDEFG.

(a) Cloudy. The II wire was set down 44.2, and the III wire 53.3,4; altered from conjecture. (b) It appears probable that F may be 1<sup>s</sup> in error.

CALCULATION OF APPARENT RIGHT ASCENSIONS.

(3)

Error of Collimation.	Level Error.	Seconds of Transit corr. for the two Errors.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock slow at 0 <sup>h</sup> .	Apparent R.A. from the Observation.			NAME OF STAR or PLANET.		
									h.	m.	s.			
- 0,5	+ 1,91		+ 9,8	10,75	45,01	34,26	2,56	28,08	.....			Polaris.		
				24,41	52,71	28,30			.....			$\alpha$ Arietis.		
				37,77					4. 3. 6,28			Jupiter's center.		
				59,31	27,84	28,53			.....			Aldebaran.		
- 0,1	+ 2,77	47,66	+ 10,90	40,77	14,44	33,67	2,30	30,95	18. 25. 13,48			$\delta$ Ursæ Minoris.		
				40,62					18. 54. 13,38			$\odot$ 's center.		
				9,00	41,80	32,80			19. 42. 41,84			$\alpha$ Aquilæ.		
				17,18	50,24	33,06			21. 22. 50,18			$\beta$ Aquarii.		
				53,03					22. 39. 26,15			) 1 L.		
				58,08	31,35	33,27			22. 56. 31,23			$\alpha$ Pegasi.		
				42,92					23. 8. 16,09			$\chi$ Aquarii.		
				6,07	39,57	33,50			33,25	2. 53. 39,60			$\alpha$ Ceti.	
				22,24						3. 15. 55,80			Vesta.	
				53,48						4. 2. 27,12			Jupiter's center.	
		54,23	27,83	33,60		4. 26. 27,90			Aldebaran.					
		10,20				4. 41. 43,90			$i$ Tauri.					
		3,45	37,16	33,71		5. 6. 37,19			Rigel.					
		41,12	14,93	33,81		5. 46. 14,92			$\alpha$ Orionis.					
		10,58				5. 51. 44,39			Q <sup>2</sup> Tauri.					
		39,47	14,44	34,97		18. 25. 13,34			$\delta$ Ursæ Min. S.P.					
		56,97				6. 49. 30,87			Mars' center.					
		31,44				38,56			2,06	35,37	17. 28. 15,43			Venus 2 L.
						36,27	14,45	38,18			18. 25. 13,22			$\delta$ Ursæ Minoris.
						24,74					19. 3. 1,74			$\odot$ 's center.
						4,77	41,82	37,05			19. 42. 41,83			$\alpha$ Aquilæ.
13,17	50,24					37,07	21. 22. 50,38				$\beta$ Aquarii.			
53,93	31,33					37,40	22. 56. 31,27				$\alpha$ Pegasi.			
51,33							23. 53. 28,75				$r$ Piscium.			
14,94							23. 56. 52,37				$s$ Piscium.			
55,14							37,43	0. 13. 32,59			) 1 L.			
56,34								0. 44. 33,83			$m$ Ceti.			
1,60			3. 15. 39,31			Vesta.								
25,40				12,72					4. 1. 50,50			Jupiter's center.		
				49,91	27,83	37,92	4. 26. 27,72			Aldebaran.				
				6,03			4. 41. 43,86			$i$ Tauri.				
				59,22	37,15	37,93	5. 6. 37,09			Rigel.				
				37,10	14,94	37,84	5. 46. 15,02			$\alpha$ Orionis.				
				6,44			5. 51. 44,37			Q <sup>2</sup> Tauri.				
				34,35	14,47	40,12		18. 25. 12,33			$\delta$ Ursæ Min. S.P.			
				23,82				6. 46. 1,83			Mars' center.			
				45,22			1,80	37,69	17. 27. 24,22			Venus 2 L.		
				33,35	14,47	41,12			18. 25. 12,42			$\delta$ Ursæ Minoris.		

The instrumental errors on Jan. 1 are taken from the Observations of 1834.  
 On Jan. 2 the Transit was reversed, and the error of collimation determined.  
 Jan 2 and 3. Meridian error by  $\delta$  U. Minoris and  $\delta$  U. Minoris S.P., allowing 1<sup>s</sup>,30 for clock rate.  
 Jan. 4, 5, and 6. The meridian error by the first set of three passages of  $\delta$  U. Minoris is 12<sup>''</sup>,49: that by the second 11<sup>''</sup>,78: the mean is adopted.  
 The Transit levelled, Jan. 6. 2<sup>h</sup>.



Month and Day.	NAME OF STAR or PLANET.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Concluded Transit over the Mean of the seven Wires.			Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	m. s.		h. m. s.	m. s.	h. m. s.	
Jan. 6	⊙ 1 L. ....	50,2	5,0	19,8	34,1	49,0	3,7	19. 6. 18,1		19. 5. 34,27	B.		
	⊙ 2 L. ....	12,0	26,5	41,1	56,0	10,9	25,2	19. 8. 39,8		19. 7. 55,93	B.		
	α Aquilæ.....	21,1	34,7	48,2	2,1	15,7	29,2	19. 42. 42,9		19. 42. 1,98	B.		
	α Pegasi.....	9,3	23,2	37,3	50,9	5,4	19,0	22. 56. 33,1		22. 55. 51,17	B.		
	m Ceti.....	13,0	26,3	40,0	53,6	7,2	20,5	0. 44. 33,9		0. 43. 53,50	B.		
	γ 1 L.....	41,9	55,1	9,6	23,0	36,9	50,4	0. 58. 4,4		0. 57. 23,04	B.		
	μ Piscium.....	11,2	24,9	38,4	51,9	5,7	18,9	1. 21. 32,3		1. 20. 51,90	B.		
	ν Piscium.....	29,6	43,1	57,0	10,4	23,9	37,3	1. 32. 50,7		1. 32. 10,28	B.		
	α Arietis.....	28,4	43,1	58,0	12,4	27,1	41,3	1. 57. 56,1		1. 57. 12,34	B.		
	α Ceti.....	18,7	32,1	45,8	59,3	13,1	26,2	2. 53. 39,9		2. 52. 59,30	B.		
	Jupiter 1 L.....	8,1		36,9		6,1		4. 1. 33,9		4. 0. 51,25	B.		
	Jupiter 2 L.....		25,7		54,8		23,3	4. 1. ....		4. 0. 54,60	B.		
	Aldebaran.....	5,1	19,3	33,1	47,1	1,3	15,2	4. 26. 29,3		4. 25. 47,20	B.		
	i Tauri.....	20,7	35,1	48,9	3,4	18,0	31,6	4. 41. 46,1		4. 41. 3,40	B.		
	Rigel.....	15,6	29,2	43,1	56,4	10,3	24,1	5. 6. 37,4		5. 5. 56,59	B.		
	α Orionis.....	53,6	7,2	20,7	34,2	48,1	1,3	5. 46. 14,9		5. 45. 34,29	B.		
	δ Ursæ Min. S.P..	13. 8,8	16.50,4	20.34,8	24.27,4	28.15,6	32. 2,6	6. 35. 47,2		6. 24. 26,69	B.		
Mars 1 L.....				37,9	52,7	7,3	6. 44. 22,0	- 22,67	6. 43. 37,30	B.			
Jan. 9	α Ophiuchi.....	47,8	1,8	15,7	29,3	43,2	56,9	17. 27. 10,7		17. 26. 29,35	B.		
	δ Ursæ Minoris...	13.13,6	17. 0,2	20.47,8	24.34,4		32. 6,2	18. 35. 51,4	+ 38,16	18. 24. 33,76	B.		
Jan. 10	⊙ 1 L. ....	13,7	28,0	42,6	57,3	12,0	26,5	19. 23. 40,9		19. 22. 57,29	B.		
	⊙ 2 L. ....	34,3	49,1	4,0	18,3	33,2	47,5	19. 26. 2,1		19. 25. 18,36	B.		
	α Aquilæ.....	15,2	28,7	42,9	56,2	9,9	23,2	19. 42. 36,9		19. 41. 56,14	B.		
Jan. 12	Jupiter 1 L.....	33,2		2,1		31,1		3. 59. 59,1		3. 59. 16,37	B.		
	Jupiter 2 L.....		51,1		19,7		48,2	3. 59. ....		3. 59. 19,67	B.		
	Aldebaran.....	56,4	10,1	23,9	37,8	52,4	6,2	4. 26. 20,1		4. 25. 38,13	B.		
	i Tauri.....	11,6	25,9	40,2	54,2	8,8	22,9	4. 41. 36,8		4. 40. 54,34	B.		
Jan. 13	⊙ 1 L. ....	9,2	23,9	38,4	52,9	7,8	21,9	19. 36. 36,4		19. 35. 52,93	B.		
	⊙ 2 L. ....	30,1	44,8	58,9	13,3	28,1	42,5	19. 38. 57,0		19. 38. 13,53	B.		
	β Aquarii.....	18,7	32,0	45,5	59,1	13,0	26,4	21. 22. 40,0		21. 21. 59,25	B.		
	α Pegasi.....	58,5	12,4	26,3	40,1	54,3	8,0	22. 56. 21,8		22. 55. 40,20	B.		
Jan. 14	Venus 2 L. ....	39,8	53,9	8,1	22,4	36,6	50,5	17. 27. 5,2		17. 26. 22,35	B.		
	δ Ursæ Minoris...			20.38,4	24.24,8	28.14,4	32. 0,0	18. 35. 44,2	- 3. 46,61	18. 24. 25,75	B.		
	α Aquilæ.....	7,0	20,4	34,0	47,8	1,7	14,9	19. 42. 28,5		19. 41. 47,76	B.		
Jan. 15	⊙ 1 L. ....	43,2	57,8	12,2	26,8	41,3	55,8	19. 45. 10,1		19. 44. 26,75	B.		
	⊙ 2 L. ....	3,7	18,1	32,9	47,1	1,9	16,1	19. 47. 30,4		19. 46. 47,17	B.		
	α Pegasi.....	54,9	9,0	22,7	36,6	50,8	4,5	22. 56. 18,4		22. 55. 36,70	B.		
Jan. 16	α Ceti.....	1,8	15,3	28,9	42,4	56,1	9,4	2. 53. 23,0		2. 52. 42,41	B.		
	(a) Vesta.....	33,1	46,7	0,5	13,9	28,2	42,0	3. 15. 55,8		3. 15. 14,31	B.		
	Jupiter 1 L.....	44,9		14,0		42,8		3. 59. 10,9		3. 58. 28,15	B.		
	Jupiter 2 L.....		2,7		31,3		0,1	3. 59. ....		3. 58. 31,37	B.		
	Aldebaran.....	48,5	2,6	16,8	30,5	45,1	58,4	4. 26. 12,3		4. 25. 30,60	B.		
	i Tauri.....	4,1	18,3	32,4	46,9	1,2	15,2	4. 41. 29,4		4. 40. 46,79	B.		
	Rigel.....	59,1	12,6	26,5	40,1	53,8	7,2	5. 6. 20,6		5. 5. 39,98	B.		
	α Orionis.....	37,2	50,8	4,3	18,1	31,4	45,1	5. 45. 58,4		5. 45. 17,90	B.		
	Q <sup>2</sup> Tauri.....	3,7	18,1	32,6	47,2	2,0	16,2	5. 51. 31,0		5. 50. 47,26	B.		
	δ Ursæ Min. S.P..	12.55,6	16.41,6	20.23,8	24.12,2		31.45,8	6. 35. 33,2	+ 37,69	6. 24. 13,06	B.		

ILLUMINATED END OF AXIS EAST. Order of Wires, for Stars above the Pole, ABCDEFG.

(a) G was set down 54,8: altered conjecturally.

CALCULATION OF APPARENT RIGHT ASCENSIONS.

(5)

Error of Collimation.	Level Error.	Seconds of Transit corr. for the two Errors.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock slow at 0 <sup>h</sup> .	Apparent R.A. from the Observation.			NAME OF STAR or PLANET.	
									h.	m.	s.		
- 0,1	+ 2,77	24,47	+ 12,14	45,99				1,80	37,69	19 . 7 . 25,11	☉'s center.		
				2,68	41,83	39,15				19 . 42 . 41,85	α Aquilæ.		
				51,83	31,32	39,49				22 . 56 . 31,24	α Pegasi.		
				54,27						0 . 44 . 33,81	m Ceti.		
				23,78						0 . 58 . 3,34	γ 1 L.		
				52,61						1 . 21 . 32,20	μ Piscium.		
				10,99						1 . 32 . 50,59	ν Piscium.		
				12,94				52,65	39,71		1 . 57 . 52,58	α Arietis.	
				0,02				39,54	39,52		2 . 53 . 39,73	α Ceti.	
								53,54			4 . 1 . 33,33	Jupiter's center.	
								47,84	27,82	39,98		4 . 26 . 27,66	Aldebaran.
								4,02				4 . 41 . 43,86	i Tauri.
								57,39	37,15	39,76		5 . 6 . 37,26	Rigel.
								34,99	14,94	39,95		5 . 46 . 14,91	α Orionis.
								33,42	14,51	41,09		18 . 25 . 13,39	δ Ursæ Min. S.P.
								37,87				6 . 44 . 17,86	Mars 1 L.
								30,02	14,80	44,78			α Ophiuchi.
								28,54	14,60	46,06	1,55	43,69	δ Ursæ Minoris.
					8,72					19 . 24 . 53,66	☉'s center.		
					56,84	41,85	45,01			α Aquilæ.			
		+ 3,42			18,68					4 . 0 . 7,64	Jupiter's center.		
					38,81	27,80	48,99	1,71	48,68	4 . 26 . 27,80	Aldebaran.		
					55,00					4 . 41 . 44,01	i Tauri.		
					4,14					19 . 37 . 54,22	☉'s center.		
				0,06	50,23	50,17			21 . 22 . 50,26	β Aquarii.			
				40,90	31,27	50,37			22 . 56 . 31,22	α Pegasi.			
			+ 12,81	23,28					17 . 27 . 16,57	Venus 2 L.			
				20,70	14,70	54,00	1,90	51,91	δ Ursæ Minoris.				
				48,52	41,90	53,38			α Aquilæ.				
				37,90					19 . 46 . 31,37	☉'s center.			
				37,42	31,25	53,83			α Pegasi.				
				43,19	39,44	56,25	1,94	55,95	α Ceti.				
				15,04					3 . 16 . 11,25	Vesta.			
				30,45					3 . 59 . 26,72	Jupiter's center.			
				31,30	27,77	56,47			4 . 26 . 27,61	Aldebaran.			
				47,48					4 . 41 . 43,81	i Tauri.			
				40,84	37,11	56,27			5 . 6 . 37,20	Rigel.			
				18,66	14,95	56,29			5 . 46 . 15,07	α Orionis.			
				47,93					5 . 51 . 44,35	Q <sup>2</sup> Tauri.			
				19,75	14,77	55,02			δ Ursæ Min. S.P.				

The Transit levelled, Jan. 16. 1<sup>h</sup>.



Month and Day.	NAME OF STAR or PLANET.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Concluded Transit over the Mean of the seven Wires.			Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	m. s.		h. m. s.	m. s.	h. m. s.	
Jan. 16	Mars 1 L.....	59,9		30,3		0,8		6.28.30,8		6.27.45,45			B.
	Mars 2 L.....		16,5		46,9		17,4	6.28.....		6.27.46,93			B.
Jan. 17	β Aquarii.....	11,1	24,7	38,1	51,7	5,3	18,8	21.22.32,2		21.21.51,70			B.
	α Pegasi.....	50,9	4,8	18,9	32,4	46,8	0,3	22.56.14,2		22.55.32,61			B.
	α Ceti.....	0,1	13,8	27,1	40,6	54,1	7,6	2.53.21,1		2.52.40,63			B.
	Vesta.....	44,3	57,8	11,7	25,4	39,3	53,0	3.16.6,9		3.15.25,49			B.
	Jupiter 1 L.....	35,3		4,1		32,9		3.59.1,1		3.58.18,35			B.
	Jupiter 2 L.....		52,8		21,4		50,2	3.58.....		3.58.21,47			B.
	Aldebaran.....	47,1	1,1	15,0	29,2	43,0	57,1	4.26.10,9		4.25.29,06			B.
	i Tauri.....	2,4	16,8	30,9	45,1	59,4	13,7	4.41.27,8		4.40.45,16			B.
	Rigel.....	57,2	11,2	24,5	38,1	52,0	5,7	5.6.19,2		5.5.38,27			B.
	α Orionis.....	35,1	49,1	2,6	16,2	29,8	43,2	5.45.56,8		5.45.16,11			B.
	Q <sup>2</sup> Tauri.....	2,1	16,4	31,0	45,6	0,3	14,8	5.51.29,2		5.50.45,63			B.
	Mars 1 L.....	37,9		8,3		38,9		6.27.9,1		6.26.23,55			B.
	Mars 2 L.....		54,5		25,0		55,2	6.26.....		6.26.24,90			B.
	Jan. 19	Venus 2 L.....	55,8	10,7	24,3	38,6	53,1	6,8	17.33.21,1		17.32.38,63		
δ Ursæ Minoris...		13.56,2	17.44,4	21.32,2	25.17,6	29.7,8	32.48,4	18.36.35,2		18.25.17,40			B.
α Aquilæ.....		58,5	12,7	26,1	39,7	53,3	7,1	19.43.20,4		19.42.39,69			B.
Jan. 20	⊙ 1 L.....	56,7	11,0	25,5	39,6	54,5	8,8	20.7.22,8		20.6.39,85			B.
	⊙ 2 L.....	15,8	30,2	44,9	59,1	13,7	28,0	20.9.42,3		20.8.59,15			B.
	α Pegasi.....	46,8	0,3	14,9	28,8	42,7	56,3	22.57.10,3		22.56.28,59			B.
	α Ceti.....	56,1	9,9	23,2	36,5	50,1	4,0	2.54.17,2		2.53.36,72			B.
	Vesta.....	27,8	41,9	55,4	9,7	23,3	37,1	3.17.50,9		3.17.9,45			B.
	Jupiter 1 L.....	11,9		40,1		9,9		3.59.38,0		3.58.54,97			B.
	Jupiter 2 L.....		29,9		58,1		26,9	3.59.....		3.58.58,30			B.
	Aldebaran.....	42,7	57,1	11,1	25,0	39,1	52,8	4.27.6,9		4.26.24,96			B.
	i Tauri.....	58,2	12,4	27,0	41,1	55,4	9,3	4.42.23,5		4.41.40,98			B.
	Rigel.....	52,9	7,2	20,5	34,1	48,1	1,6	5.7.15,2		5.6.34,23			B.
	Q <sup>2</sup> Tauri.....	57,7	12,3	26,9	41,3	56,2	10,9	5.52.25,1		5.51.41,48			B.
	Mars 1 L.....	50,4	6,0	20,9	36,2	51,8	6,3	6.24.21,8		6.23.36,20			B.
	δ Ursæ Min. S.P.	13.47,8	17.33,2			28.49,4	32.37,6	6.36.22,8	-45,79	6.25.4,37			B.
	δ Ursæ Minoris...	13.58,6	17.44,2	21.31,6	25.17,4	29.7,8	32.50,2	18.36.34,4		18.25.17,74			B.
α Aquilæ.....	57,4	11,2	25,0	38,4	52,1	5,7	19.43.19,1		19.42.38,42			B.	
Jan. 21	⊙ 1 L.....	9,2	23,7	38,2	52,7	7,2	21,3	20.11.35,6		20.10.52,55			B.
	⊙ 2 L.....	28,3	43,1	57,2	11,7	26,3	40,6	20.13.54,9		20.13.11,73			B.
	α Ophiuchi.....					24,3	38,1	17.27.51,9	-27,64	17.27.10,46			B.
	Venus 2 L.....	1,1	15,4	29,8	44,0	58,1	12,0	17.36.25,8		17.35.43,74			B.
	δ Ursæ Minoris...	13.56,4	17.42,6	21.30,4	25.15,8	29.5,2	32.48,2	18.36.33,6		18.25.16,03			B.
Jan. 22	⊙ 1 L.....	21,4	36,5	50,9	5,2	19,8	33,7	20.15.48,1		20.15.5,09			B.
	⊙ 2 L.....	40,9	55,2	9,7	24,0	38,3	52,8	20.18.7,3		20.17.24,03			B.
	α Ceti.....	53,5	7,1	21,0	34,1	47,7	1,0	2.54.14,2		2.53.34,09			B.
	Vesta.....	5,2	19,1	33,0	47,0	0,9	14,5	3.18.28,0		3.17.46,82			B.
	Jupiter 1 L.....	0,9		29,8		58,0		3.59.27,0		3.58.43,92			B.
	Jupiter 2 L.....		18,3		47,1		15,7	3.59.....		3.58.47,03			B.
	Aldebaran.....	40,3	54,5	8,3	22,7	37,0	50,8	4.27.4,7		4.26.22,61			B.
Rigel.....	51,1	4,4	18,0	32,0	45,3	59,0	5.7.12,5		5.6.31,75			B.	
Jan. 23	Jupiter 1 L.....	56,9		25,4		54,1		3.59.22,9		3.58.39,82			B.
	Jupiter 2 L.....		14,0		43,0		11,3	3.59.....		3.58.42,77			B.
	Aldebaran.....	39,0	53,1	7,1	21,0	35,5	49,0	4.27.3,0		4.26.21,10			B.

ILLUMINATED END OF AXIS EAST. Order of Wires, for Stars above the Pole, ABCDEFG.



CALCULATION OF APPARENT RIGHT ASCENSIONS.

(7)

Error of Collimation.	Level Error.	Seconds of Transit corr. for the two Errors.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock slow at 0 <sup>h</sup> .	Apparent R.A. from the Observation.			NAME OF STAR or PLANET.
									h.	m.	s.	
- 0,1	+ 3,42		+ 12,81	46,82			1,94	55,95	6 . 28 . 43,29	Mars' center.		
					52,55	50,24	57,69	1,60	56,19	21 . 22 . 50,16	$\beta$ Aquarii.	
				33,33	31,24	57,91			22 . 56 . 31,05	$\alpha$ Pegasi.		
				41,41	39,43	58,02		57,79	2 . 53 . 39,39	$\alpha$ Ceti.		
				26,22					3 . 16 . 24,23	Vesta.		
				20,60						3 . 59 . 18,65	Jupiter's center.	
					29,76	27,77	58,01			4 . 26 . 27,85	Aldebaran.	
				45,85						4 . 41 . 43,95	$i$ Tauri.	
				39,13	37,11	57,98				5 . 6 . 37,26	Rigel.	
				16,87	14,95	58,08				5 . 46 . 15,04	$\alpha$ Orionis.	
	46,30						5 . 51 . 44,48	Q <sup>2</sup> Tauri.				
	24,85						6 . 27 . 23,07	Mars' center.				
	+ 2,56	19,66			39,53			1,30	0,54	17 . 32 . 41,02	Venus 2 L.	
					11,56	15,14	3,58			18 . 25 . 13,10	$\delta$ Ursæ Minoris.	
					40,41	41,96	1,55			19 . 42 . 42,02	$\alpha$ Aquilæ.	
					50,42						20 . 7 . 52,05	$\odot$ 's center.
						29,27	31,22	1,95			22 . 56 . 31,05	$\alpha$ Pegasi.
					37,46	39,40	1,94		1,84	2 . 53 . 39,46	$\alpha$ Ceti.	
					10,14					3 . 17 . 12,16	Vesta.	
57,26										3 . 58 . 59,32	Jupiter's center.	
					25,61	27,75	2,14			4 . 26 . 27,69	Aldebaran.	
41,62										4 . 41 . 43,71	$i$ Tauri.	
35,06	37,09	2,03				5 . 6 . 37,18	Rigel.					
42,10						5 . 51 . 44,26	Q <sup>2</sup> Tauri.					
56,77						6 . 23 . 38,96	Mars 1 L.					
11,76	15,23	3,47				18 . 25 . 13,95	$\delta$ Ursæ Min. S.P.					
11,90	15,29	3,39			1,20	1,85	18 . 25 . 14,67	$\delta$ Ursæ Minoris.				
39,14	41,98	2,84				.....	$\alpha$ Aquilæ.					
				3,06					20 . 12 . 5,92	$\odot$ 's center.		
					11,15	15,07	3,92	1,28	3,00	17 . 27 . 15,08	$\alpha$ Ophiuchi.	
				44,64						17 . 35 . 48,58	Venus 2 L.	
				10,19	15,43	5,24				.....	$\delta$ Ursæ Minoris.	
				15,48						20 . 16 . 19,56	$\odot$ 's center.	
					34,83	39,38	4,55		4,28	2 . 53 . 39,26	$\alpha$ Ceti.	
				47,51						3 . 17 . 51,97	Vesta.	
				46,10						3 . 58 . 50,59	Jupiter's center.	
					23,26	27,73	4,47			4 . 26 . 27,78	Aldebaran.	
				32,57	37,08	4,51				5 . 6 . 37,12	Rigel.	
41,92						3 . 58 . 47,73	Jupiter's center.					
	21,75	27,72	5,97			.....	Aldebaran.					

Jan. 19 and 20. Meridian error by  $\delta$  U. Minoris,  $\delta$  U. Minoris S.P., and  $\delta$  U. Minoris.  
 Before the observations of Jan. 19 the clock was put forward one minute.  
 The Transit levelled, Jan. 22. 20<sup>h</sup>.

Month and Day.	NAME OF STAR or PLANET.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Concluded Transit over the Mean of the seven Wires.	Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	h. m. s.			
Jan. 23	(a) Rigel.....	49,6	3,1	17,0	30,5	44,2	58,0	5. 7. 11,1	- 45,79	5. 6. 30,50	B.
	Mars 1 L.....	32,8		2,9		33,6		6. 21. 3,8		6. 20. 18,27	B.
	Mars 2 L.....		49,3		19,3			6. 20.....		6. 20. 19,47	B.
	δ Ursæ Min. S.P..	13.48,0	17.33,6			28.50,2	32.36,6	6. 36. 25,2		6. 25. 4,93	B.
Jan. 24	Vesta.....					44,2	57,7	3. 19. 11,6	- 27,76	3. 18. 30,07	B.
	Jupiter 1 L.....	52,9		21,9		50,8		3. 59. 18,8		3. 58. 36,10	B.
	Jupiter 2 L.....		10,6		39,2		7,9	3. 59.....		3. 58. 39,23	B.
	Aldebaran.....	37,4	51,6	5,9	20,1	34,1	47,9	4. 27. 2,0		4. 26. 19,85	B.
	Rigel.....	47,8	1,9	15,6	29,2	43,0	56,3	5. 7. 10,1		5. 6. 29,13	B.
	α Orionis.....	26,2	40,1	53,3	7,1	20,5	34,2	5. 46. 47,5		5. 46. 6,99	B.
	Mars 1 L.....	33,1		3,6		34,0		6. 20. 3,9		6. 19. 18,65	B.
	Mars 2 L.....		49,4		19,7		50,3	6. 19.....		6. 19. 19,80	B.
Jan. 25	α Ophiuchi.....	23,2	36,9	50,7	4,4	18,3	32,0	17. 27. 46,1	+ 7. 32,94	17. 27. 4,51	B.
	Venus 2 L.....	37,7	51,6	5,9	20,2	34,7	48,4	17. 44. 2,9		17. 43. 20,20	B.
	δ Ursæ Minoris...	13.49,4	17.36,8	21.22,2				18.....		18. 25. 9,07	B.
	α Aquilæ.....	50,7	4,4	17,8	31,4	45,1	58,9	19. 43. 12,2		19. 42. 31,50	B.
Jan. 26	☉ 1 L.....	2,1	16,3	30,8	45,1	59,0	13,3	20. 32. 27,7	- 1. 15,44	20. 31. 44,90	B.
	☉ 2 L.....	20,1	34,3	48,8	3,1	17,3	31,4	20. 34. 45,8		20. 34. 2,97	B.
	α Pegasi.....	38,9	52,6	6,6	20,5	34,3	48,0	22. 57. 1,8		22. 56. 20,38	B.
	α Ceti.....	47,5	0,9	14,4	28,1	41,5	55,1	2. 54. 8,4		2. 53. 27,99	B.
	Vesta.....	36,6	50,7	4,6	18,3	32,3	45,9	3. 20. 0,1		3. 19. 18,36	B.
	Jupiter 1 L.....	47,3		16,1		44,7		3. 59. 13,4		3. 58. 30,37	B.
	Jupiter 2 L.....		5,3		33,6		2,4	3. 59.....		3. 58. 33,77	B.
	Aldebaran.....	34,1	48,1	2,2	16,3	30,7	44,1	4. 26. 58,2		4. 26. 16,24	B.
	Rigel.....	44,4	58,1	12,2	25,3	39,1	52,5	5. 7. 6,1		5. 6. 25,39	B.
	Mars 1 L.....	43,4		14,0		44,2		6. 18. 14,8		6. 17. 29,10	B.
	Mars 2 L.....		0,3		30,5		1,1	6. 18.....		6. 17. 30,63	B.
	δ Ursæ Min. S.P..	13.43,2		21.10,8	25. 0,4	28.46,6	32.35,4	6. 36. 17,2		6. 25. 0,16	B.
Jan. 27	α Ceti.....	45,3	58,8	12,9	26,1	39,7	53,1	2. 54. 6,4		2. 53. 26,04	B.
	Vesta.....	2,9	16,8	30,6	44,5	58,6	12,3	3. 20. 26,1		3. 19. 44,54	B.
	Jupiter 1 L.....	46,0		14,5		43,3		3. 59. 11,7		3. 58. 28,87	B.
	Jupiter 2 L.....		3,4		32,2		0,9	3. 59.....		3. 58. 32,17	B.
	Aldebaran.....	32,0	46,1	0,1	14,2	28,3	42,1	4. 26. 56,2		4. 26. 14,14	B.
Jan. 28	Rigel.....	42,7	56,1	9,9	23,6	37,2	50,9	5. 7. 4,3		5. 6. 23,53	B.
	Venus 2 L.....	27,7	42,3	56,4	10,7	24,9	38,8	17. 50. 53,2		17. 50. 10,57	B.
	α Aquilæ.....	44,9	58,7	12,2	25,9	39,7	53,1	19. 43. 6,7		19. 42. 25,89	B.
Jan. 30	α Ceti.....	40,3	54,0	7,7	21,1	34,8	48,2	2. 54. 1,7		2. 53. 21,11	B.
	Vesta.....	30,7	44,8	58,9	12,7	26,6	40,2	3. 21. 54,1		3. 21. 12,57	B.
	Jupiter 1 L.....	47,2		16,2		44,0		3. 59. 13,2		3. 58. 30,15	B.
	Jupiter 2 L.....		5,3		33,2		2,1	3. 59.....		3. 58. 33,53	B.
Feb. 2	α Ceti.....	35,1	48,6	2,1	15,4	29,2	42,5	2. 53. 55,9		2. 53. 15,54	B.
	Jupiter 1 L.....	55,6		24,2		53,1		3. 59. 21,4		3. 58. 38,57	B.
	Jupiter 2 L.....		13,3		42,0		10,4	3. 59.....		3. 58. 41,90	B.
	Aldebaran.....	21,7	35,3	49,6	3,9	18,0	31,7	4. 26. 46,1		4. 26. 3,76	B.
	Rigel.....	32,2	45,9	59,2	13,2	27,1	40,3	5. 6. 53,8		5. 6. 13,10	B.
	Mars 1 L.....	15,0		45,1		15,8		6. 13. 45,5		6. 13. 0,35	B.
	Mars 2 L.....		31,2		1,5		31,6	6. 13.....		6. 13. 1,43	B.
	δ Ursæ Min. S.P..		17.17,2	20.59,2	24.48,8	28.34,6	32.18,2	6. 36. 8,4		6. 24. 48,22	B.

ILLUMINATED END OF AXIS EAST. Order of Wires, for Stars above the Pole, ABCDEFG.

(a) The first wire was set down 47,6: it is altered conjecturally.



Error of Collimation.	Level Error.	Seconds of Transit corr. for the two Errors.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock slow at 0 <sup>h</sup> .	Apparent R.A. from the Observation.			NAME OF STAR or PLANET.	
									h.	m.	s.		
-0,1	+2,56	11,33	+12,81	31,32	37,07	5,75	1,40	5,58	.....			Rigel.	
				19,44						6.20.25,39		Mars' center.	
				12,32	15,60	3,28			.....			δ Ursæ Min. S.P.	
				+8,97	30,59		1,62	7,02			3.18.37,83		Vesta.
				38,14							3.58.45,43		Jupiter's center.
				20,35	27,71	7,36					4.26.27,67		Aldebaran.
			29,73	37,06	7,33					5.6.37,10		Rigel.	
			7,53	14,92	7,39					5.46.14,94		α Orionis.	
			19,67							6.19.27,12		Mars' center.	
			5,03	15,17	10,14	1,89	8,63			17.27.15,03		α Ophiuchi.	
			20,84							17.43.30,86		Venus 2 L.	
			5,66	15,86	10,20					18.25.15,74		δ Ursæ Minoris.	
	32,04	42,04	10,00					19.42.42,22		α Aquilæ.			
	54,58							20.33.4,82		☉'s center.			
	20,90	31,18	10,28					22.56.31,33		α Pegasi.			
	28,54	39,32	10,78				10,52	2.53.39,29		α Ceti.			
	18,88							3.19.29,66		Vesta.			
	32,55							3.58.43,38		Jupiter's center.			
	16,74	27,68	10,94					4.26.27,61		Aldebaran.			
	25,99	37,04	11,05					5.6.36,91		Rigel.			
	30,31							6.17.41,32		Mars' center.			
	4,72	15,89	11,17					18.25.15,75		δ Ursæ Min. S.P.			
	26,59	39,31	12,72				1,85	12,57	2.53.39,38		α Ceti.		
	45,06								3.19.57,89		Vesta.		
31,00								3.58.43,88		Jupiter's center.			
14,64	27,67	13,03						4.26.27,55		Aldebaran.			
24,13	37,04	12,91						5.6.37,09		Rigel.			
+3,26								17.50.26,73		Venus 2 L.			
26,46	42,08	15,62				1,59	14,32	.....		α Aquilæ.			
21,69	39,27	17,58				1,69	17,38	.....		α Ceti.			
13,13								3.21.30,75		Vesta.			
32,37								3.58.50,03		Jupiter's center.			
+3,29								2.53.39,23		α Ceti.			
16,12	39,23	23,11				2,15	22,85	3.59.3,97		Jupiter's center.			
40,76								4.26.27,55		Aldebaran.			
4,30	27,61	23,31						5.6.37,04		Rigel.			
13,73	36,97	23,24						6.13.24,80		Mars' center.			
1,39								.....		δ Ursæ Min. S.P.			
52,17	17,11	24,94											

Jan. 25 and 26. Meridian error by δ U. Minoris and δ U. Minoris S.P., allowing 0<sup>s</sup>,89 for clock rate and change of R.A., is 9<sup>s</sup>,00. Feb. 3 and 4, allowing 1<sup>s</sup>,22, it is 8<sup>s</sup>,97. Feb. 5, allowing 1<sup>s</sup>,02, it is 8<sup>s</sup>,10. Feb. 9 and 10, allowing 0<sup>s</sup>,64, it is 9<sup>s</sup>,81. The mean is adopted.

The Transit levelled, Jan. 30. 1<sup>h</sup>; and Feb. 3. 2<sup>h</sup>.



Month and Day.	NAME OF STAR or PLANET.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Concluded Transit over the Mean of the seven Wires.			Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	m. s.		h. m. s.	m. s.	h. m. s.	
Feb. 3	Mars 1 L.....	50,3	.....	20,8	.....	51,0	.....	6.13.21,0		6.12.35,77	B.		
	Mars 2 L.....	.....	6,6	.....	36,3	.....	7,2	6.13.....		6.12.36,70	B.		
	α Ophiuchi.....	6,4	20,1	34,2	48,0	2,0	15,6	17.27.29,1		17.26.47,92	B.		
	Venus 2 L.....	38,7	53,3	7,6	21,6	35,8	49,7	18.7.4,2		18.6.21,55	B.		
	δ Ursæ Minoris...	13.34,2	17.20,6	21.8,4	24.53,4	28.43,2	32.24,8	18.36.10,4		18.24.53,57	B.		
α Aquilæ.....	33,4	47,0	0,8	14,4	28,2	41,7	19.42.55,1		19.42.14,37	B.			
Feb. 4	☉ 1 L.....	40,9	55,1	9,4	23,3	37,6	51,4	21.9.5,7		21.8.23,34	B.		
	☉ 2 L.....	57,1	11,3	25,5	39,3	53,7	7,7	21.11.21,8		21.10.39,49	B.		
	Mercury 1 L.....	4,7	18,9	32,9	46,8	1,1	14,9	21.40.29,1		21.39.46,92	B.		
	α Pegasi.....	21,6	35,5	49,6	3,1	17,1	30,9	22.56.44,3		22.56.3,16	B.		
	γ 1 L.....	1,8	15,8	29,4	43,2	57,7	11,6	2.8.25,4		2.7.43,56	B.		
	38 Arietis.....	48,3	1,8	16,1	30,2	43,9	57,1	2.35.....	+ 6,86	2.35.29,76	B.		
	α Ceti.....	30,1	43,9	57,1	10,9	24,3	37,7	2.53.51,0		2.53.10,71	B.		
	Vesta.....	23,1	37,1	51,0	4,9	19,3	32,7	3.24.47,0		3.24.5,01	B.		
	Jupiter 1 L.....	4,9	.....	33,1	.....	2,0	.....	3.59.30,2		3.58.47,55	B.		
	Jupiter 2 L.....	.....	21,9	.....	50,5	.....	19,0	3.59.....		3.58.50,47	B.		
	Aldebaran.....	16,7	31,0	45,1	59,0	13,1	27,0	4.26.40,7		4.25.58,95	B.		
	Rigel.....	27,2	40,7	54,5	7,8	22,1	.....	5.6.....	+ 13,60	5.6.8,06	B.		
	Mars 1 L.....	29,2	.....	59,4	.....	30,0	.....	6.13.0,1		6.12.14,67	B.		
	Mars 2 L.....	.....	45,6	.....	15,7	.....	46,1	6.12.....		6.12.15,80	B.		
δ Ursæ Min. S.P..	.....	17.12,8	20.56,8	24.45,4	28.32,2	32.18,6	6.36.5,2	- 1.52,85	6.24.45,65	B.			
α Ophiuchi.....	4,0	17,7	31,5	45,2	59,1	13,0	17.27.26,6		17.26.45,30	B.			
Feb. 5	☉ 1 L.....	40,9	54,8	9,1	22,9	37,2	51,1	21.13.5,1		21.12.23,01	B.		
	(a) ☉ 2 L.....	56,3	10,7	24,8	38,7	52,7	7,0	21.15.20,8		21.14.38,72	B.		
	Mars 1 L.....	11,8	27,0	41,9	57,1	12,2	27,1	6.12.42,2		6.11.57,05	G.		
	δ Ursæ Min. S.P..	.....	17.11,5	20.55,2	24.42,8	28.30,6	32.16,0	6.....	+ 0,50	6.24.43,72	G.		
	Castor.....	45,1	1,0	17,2	33,0	49,1	5,0	7.24.21,0		7.23.33,06	G.		
	Procyon.....	28,0	41,4	55,1	8,5	22,2	36,0	7.30.49,1		7.30.8,62	G.		
	Pollux.....	5,6	11,1	26,3	41,8	57,1	12,1	7.35.27,9		7.34.41,70	G.		
	Venus 2 L.....	40,2	54,3	9,0	23,1	37,2	51,5	18.13.5,8		18.12.23,01	B.		
	δ Ursæ Minoris...	.....	.....	.....	24.48,2	28.36,2	32.21,0	18.36.5,8	- 5.39,61	18.24.48,19	B.		
α Aquilæ.....	28,7	42,2	56,0	9,5	23,3	37,0	19.42.50,4		19.42.9,59	B.			
Feb. 6	☉ 1 L.....	39,5	53,5	7,9	21,8	36,0	49,8	21.17.3,6		21.16.21,72	B.		
	☉ 2 L.....	55,0	9,1	23,3	37,3	51,7	5,3	21.19.19,1		21.18.37,26	B.		
	Mercury 1 L.....	51,9	6,2	20,1	34,0	48,2	2,0	21.54.15,9		21.53.34,04	B.		
	α Pegasi.....	16,4	30,2	44,1	58,1	12,2	26,0	22.56.39,9		22.55.58,13	B.		
	α Ceti.....	25,2	38,8	52,1	5,7	19,4	32,8	2.53.46,1		2.53.5,73	B.		
	ζ Arietis.....	8,9	23,0	37,4	52,1	6,6	20,7	3.5.35,0		3.4.51,95	B.		
	f Tauri.....	31,1	45,0	59,1	12,6	26,3	40,1	3.21.54,0		3.21.12,60	B.		
	Vesta.....	40,7	54,9	9,0	22,8	36,7	50,2	3.26.4,1		3.25.22,63	B.		
	γ 1 L.....	2,1	16,8	31,1	45,5	0,2	14,5	3.42.29,1		3.41.45,62	B.		
	(b) Jupiter 1 L.....	16,2	30,3	45,1	59,2	13,7	28,0	3.59.42,1		3.59.0,85	B.		
	Rigel.....	22,3	36,1	49,9	3,3	17,1	30,4	5.6.44,1		5.6.3,31	B.		
β Tauri.....	32,8	48,1	3,6	19,0	34,3	49,7	5.16.4,8		5.15.18,90	B.			
Mars 1 L.....	57,8	13,1	28,3	43,9	58,7	13,8	6.12.28,7		6.11.43,47	B.			
Feb. 7	Jupiter 1 L.....	23,3	.....	52,3	.....	21,2	.....	3.59.49,3		3.59.6,52	B.		
	Jupiter 2 L.....	.....	41,1	.....	10,1	.....	38,3	3.59.....		3.59.9,83	B.		
	(c) Mars 1 L.....	48,1	3,0	18,1	33,4	48,7	2,8	6.12.17,7		6.11.33,11	B.		
	Castor.....	40,6	56,5	12,7	28,6	44,9	.....	7.23.....	+ 15,92	7.23.28,58	B.		

ILLUMINATED END OF AXIS EAST. Order of Wires, for Stars above the Pole, ABCDEFG.

(a) The 5th wire was set down 53,7: it is altered by conjecture.  
 (b) 1<sup>h</sup>.6<sup>m</sup> is added to the mean of wires, to obtain the concluded transit of the center.

(c) The last wire was set down 16,7: it is altered by conjecture.

CALCULATION OF APPARENT RIGHT ASCENSIONS.

(11)

Error of Collimation.	Level Error.	Seconds of Transit corr. for the two Errors.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock slow at 0 <sup>h</sup> .	Apparent R.A. from the Observation.	NAME OF STAR or PLANET.		
"	"	"	"	"	"	"	"	"	h. m. s.			
- 0,1	+ 3,29	56,50	+ 8,97	36,73			2,51	25,12	6. 13. 2,50	Mars' center.		
				48,47	15,40	26,93		17. 27. 15,42	$\alpha$ Ophiuchi.			
				22,21				18. 6. 49,23	Venus 2 L.			
				50,83	17,42	26,59		18. 25. 17,88	$\delta$ Ursæ Minoris.			
				14,94	42,17	27,23		19. 42. 42,12	$\alpha$ Aquilæ.			
								21. 9. 59,41	$\odot$ 's center.			
								21. 40. 14,97	Mercury 1 L.			
								22. 56. 31,24	$\alpha$ Pegasi.			
								2. 8. 11,97	$\gamma$ 1 L.			
								2. 35. 58,21	38 Arietis.			
								2. 53. 39,22	$\alpha$ Ceti.			
								3. 24. 33,55	Vesta.			
								3. 59. 17,59	Jupiter's center.			
								4. 26. 27,58	Aldebaran.			
						5. 6. 36,86	Rigel.					
						6. 12. 44,01	Mars' center.					
				42,99		49,60	17,53	27,93		18. 25. 17,90	$\delta$ Ursæ Min. S.P.	
						45,85	15,43	29,58	2,39	27,88	17. 27. 15,47	$\alpha$ Ophiuchi.
				41,06		31,52				21. 14. 1,52	$\odot$ 's center.	
							57,55			30,27	6. 12. 28,44	Mars 1 L.
							47,67	17,74	30,07		18. 25. 18,58	$\delta$ Ursæ Min. S.P.
							33,53	4,44	30,91		7. 24. 4,54	Castor.
							9,20	40,26	31,06		7. 30. 40,22	Procyon.
							42,19	13,31	31,12		7. 35. 13,22	Pollux.
				51,12		23,67			2,20	30,29	18. 12. 55,63	Venus 2 L.
							45,45	17,85	32,40		18. 25. 17,43	$\delta$ Ursæ Minoris.
						10,16	42,21	32,05		19. 42. 42,25	$\alpha$ Aquilæ.	
						30,15					21. 18. 2,40	$\odot$ 's center.
					34,69				21. 54. 6,98	Mercury 1 L.		
					58,69	31,15	32,46		22. 56. 31,08	$\alpha$ Pegasi.		
					6,31	39,18	32,87		2. 53. 39,06	$\alpha$ Ceti.		
					52,48				3. 5. 25,25	$\zeta$ Arietis.		
					13,15				3. 21. 45,95	$f$ Tauri.		
					23,18				3. 25. 55,98	Vesta.		
					46,16				3. 42. 18,99	$\gamma$ 1 L.		
					1,38				3. 59. 34,24	Jupiter's center.		
					3,94	36,92	32,98		5. 6. 36,90	Rigel.		
					19,40	52,18	32,78		5. 15. 52,37	$\beta$ Tauri.		
					43,97				6. 12. 17,03	Mars 1 L.		
	+ 2,54			8,65			2,22	34,76	3. 59. 43,78	Jupiter's center.		
					33,56				6. 12. 8,89	Mars 1 L.		
					29,00	4,44	35,44		.....	Castor.		



Month and Day.	NAME OF STAR or PLANET.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Concluded Transit over the Mean of the seven Wires.	Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	m. s.			
Feb. 8	Jupiter 1 L.....	31,5	...	0,5	...	29,2	...	3. 59. 57,5	- 37,67	3. 59. 14,67	B.
	Jupiter 2 L.....	...	49,3	...	18,1	...	46,9	3. 59. ....		3. 59. 18,10	B.
	Aldebaran.....	7,7	21,4	35,4	49,6	4,1	17,5	4. 26. 31,1		4. 25. 49,55	B.
	γ Tauri.....	53,3	7,9	22,0	36,3	51,1	5,8	4. 53. 19,9		4. 52. 36,62	B.
	β Tauri.....	28,2	43,6	59,1	14,3	29,8	45,1	5. 16. 0,3		5. 15. 14,34	B.
	δ 1 L.....	11,1	26,3	41,2	56,5	11,9	26,6	5. 27. 42,0		5. 26. 56,52	B.
	α Ophiuchi.....	54,9	9,1	22,6	30,3	50,3	4,0	17. 27. 17,8		17. 26. 36,43	B.
	Venus 2 L.....	15,4	29,8	44,2	58,3	12,9	26,8	18. 22. 41,1		18. 21. 58,36	B.
	δ Ursæ Minoris...	13.22,6	17.10,8	...	24.42,4	28.33,4	32.15,2	18. 36. 0,6		18. 24. 43,16	B.
	α Aquilæ.....	22,0	35,6	49,2	3,1	16,8	30,1	19. 42. 43,8		19. 42. 2,94	B.
Feb. 9	⊙ 1 L.....	31,9	45,9	59,7	13,8	27,8	41,8	21. 28. 55,4	+ 14,29	21. 28. 13,76	B.
	⊙ 2 L.....	46,3	0,9	14,7	28,3	43,0	56,3	21. 31. 10,4		21. 30. 28,56	B.
	Mercury 1 L.....	9,1	22,9	36,7	50,9	4,7	18,2	22. 14. 31,9		22. 13. 50,62	B.
	α Ceti.....	18,7	32,2	46,0	59,2	12,9	26,2	2. 53. 39,8		2. 52. 59,29	B.
	Vesta.....	46,3	0,9	15,1	28,8	43,0	56,7	3. 28. 11,0		3. 27. 28,83	B.
	Jupiter 1 L.....	41,0	...	10,2	...	38,2	...	3. 59. ....		3. 59. 24,09	B.
	Jupiter 2 L.....	...	58,4	...	27,1	...	55,8	3. 59. ....		3. 59. 27,10	B.
	Rigel.....	...	29,8	43,1	57,0	10,5	24,1	5. 6. 37,8		5. 5. 56,89	B.
	β Tauri.....	26,2	41,7	57,0	12,1	28,0	43,0	5. 15. 58,1		5. 15. 12,30	B.
	δ Ursæ Minoris...	13.22,4	17. 8,6	20.55,2	...	28.30,8	32.14,4	18. 35. 59,2		18. 24. 41,78	B.
Venus 2 L.....	35,5	49,9	4,4	18,3	32,6	46,7	18. 26. 1,1	18. 25. 18,36	B.		
α Aquilæ.....	20,3	34,1	48,0	1,5	15,1	28,8	19. 42. 42,1	19. 42. 1,41	B.		
Feb. 10	⊙ 1 L.....	27,9	42,1	56,0	9,8	24,0	37,8	21. 32. 51,4	- 1. 52,84	21. 32. 9,86	B.
	⊙ 2 L.....	42,4	56,6	10,8	24,3	38,5	52,3	21. 35. 6,3		21. 34. 24,46	B.
	Mercury 1 L.....	45,4	59,3	13,2	27,2	41,0	54,7	22. 21. 8,5		22. 20. 27,04	B.
	Jupiter 1 L.....	51,3	...	20,2	...	49,1	...	4. 0. 17,6		3. 59. 34,55	B.
	Jupiter 2 L.....	...	8,7	...	37,4	...	6,5	4. 0. ....		3. 59. 37,53	B.
	Aldebaran.....	4,0	18,1	32,0	46,1	0,4	14,2	4. 26. 28,0		4. 25. 46,12	B.
	Rigel.....	14,4	28,1	41,7	55,3	9,1	22,6	5. 6. 36,1		5. 5. 55,33	B.
	β Tauri.....	24,9	40,2	55,5	11,0	26,2	41,5	5. 15. 56,3		5. 15. 10,80	B.
	Mars 1 L.....	38,3	53,7	8,9	23,8	39,1	54,1	6. 12. 9,0		6. 11. 23,84	B.
	δ Ursæ Min. S.P. ....	...	16.59,2	20.43,8	24.32,4	28.17,6	32. 5,4	6. 35. 50,4		6. 24. 31,96	B.
ζ Geminorum.....	54,9	9,0	23,5	37,9	52,8	6,9	6. 54. 21,1	6. 53. 38,02	B.		
δ Geminorum.....	...	5,8	20,4	34,9	49,5	4,0	7. 10. 18,0	7. 9. 34,81	B.		
η 1 L.....	4,0	19,2	34,2	49,9	5,2	20,4	7. 24. 35,3	7. 23. 49,75	B.		
Pollux.....	...	...	...	32,3	47,6	3,1	7. 35. 18,0	7. 34. 32,25	B.		
φ Geminorum....	57,3	12,3	27,4	42,3	58,1	13,0	7. 43. 27,9	7. 42. 42,61	B.		
Feb. 12	α Ceti.....	14,1	27,4	41,1	54,4	8,3	21,8	2. 53. 35,2	- 1. 52,83	2. 52. 54,61	B.
	Vesta.....	6,0	19,9	34,0	47,4	2,0	15,8	3. 30. 30,2		3. 29. 47,90	B.
	Jupiter 1 L.....	14,7	...	43,9	...	12,9	...	4. 0. 42,0		3. 59. 58,37	B.
	Jupiter 2 L.....	...	32,2	...	1,4	...	29,3	4. 0. ....		4. 0. 0,97	B.
	Aldebaran.....	1,1	14,5	29,1	42,8	57,2	11,0	4. 26. 25,1		4. 25. 42,97	B.
	Rigel.....	11,8	24,9	39,0	52,2	6,1	19,4	5. 6. 33,1		5. 5. 52,35	B.
	β Tauri.....	21,7	37,1	53,1	8,0	23,1	38,1	5. 15. 53,2		5. 15. 7,76	B.
	Mars 1 L.....	49,3	4,8	20,0	34,9	50,1	5,0	6. 12. 20,0		6. 11. 34,87	B.
	δ Ursæ Min. S.P. ....	...	16.58,8	20.42,2	24.28,4	28.17,6	32. 3,8	6. 35. 49,4		6. 24. 30,53	B.
	Pollux.....	42,7	58,1	13,3	28,9	44,1	59,2	7. 35. 14,8		7. 34. 28,73	B.
φ Geminorum....	54,0	9,1	24,2	39,2	54,8	9,8	7. 43. 25,0	7. 42. 39,45	B.		
ξ Cancri.....	23,8	38,6	53,1	7,7	22,3	37,0	8. 59. 51,4	8. 59. 7,70	B.		
α Hydræ.....	3,9	17,4	51,1	44,8	58,4	12,0	9. 19. 25,3	9. 18. 44,70	B.		
λ Leonis.....	49,5	4,2	19,1	33,8	48,7	3,2	9. 22. 18,1	9. 21. 33,80	B.		

ILLUMINATED END OF AXIS EAST. Order of Wires, for Stars above the Pole, ABCDEFG.



Error of Collimation.	Level Error.	Seconds of Transit corr. for the two Errors.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock slow at 0 <sup>h</sup> .	Apparent R.A. from the Observation.	NAME OF STAR or PLANET.			
"	"	s.	"	s.	s.	s.	s.	s.	h. m. s.				
- 0,1	+ 2,54	44,02	+ 8,97	16,86			2,10	37,00	3 . 59 . 54,21	Jupiter's center.			
				50,05	27,53	37,48			.....	Aldebaran.			
				37,09					4 . 53 . 14,51	$\alpha$ Tauri.			
				14,79	52,15	37,36			.....	$\beta$ Tauri.			
				56,99					5 . 27 . 34,47	$\gamma$ 1 L.			
				36,94	15,54	38,60	1,68	37,38	17 . 27 . 15,54	$\alpha$ Ophiuchi.			
				59,01					18 . 22 . 37,67	Venus 2 L.			
				39,73	18,44	38,71			.....	$\delta$ Ursæ Minoris.			
				3,47	42,26	38,79			19 . 42 . 42,23	$\alpha$ Aquilæ.			
												21 . 30 . 0,67	$\odot$ 's center.
												22 . 14 . 30,18	Mercury 1 L.
												2 . 53 . 39,10	$\alpha$ Ceti.
												3 . 28 . 8,64	Vesta.
												4 . 0 . 5,42	Jupiter's center.
												5 . 6 . 36,91	Rigel.
									5 . 15 . 52,18	$\beta$ Tauri.			
									18 . 25 . 18,50	$\delta$ Ursæ Minoris.			
									18 . 25 . 59,16	Venus 2 L.			
									19 . 42 . 42,17	$\alpha$ Aquilæ.			
										21 . 33 . 58,14	$\odot$ 's center.		
									22 . 21 . 8,06	Mercury 1 L.			
									4 . 0 . 17,27	Jupiter's center.			
									4 . 26 . 27,40	Aldebaran.			
									5 . 6 . 36,75	Rigel.			
									5 . 15 . 52,08	$\beta$ Tauri.			
									6 . 12 . 5,18	Mars 1 L.			
			29,93						18 . 25 . 17,44	$\delta$ Ursæ Min. S.P.			
									6 . 54 . 19,42	$\zeta$ Geminorum.			
									7 . 10 . 16,24	$\delta$ Geminorum.			
									7 . 24 . 31,18	$\gamma$ 1 L.			
								7 . 35 . 13,67	Pollux.				
								7 . 43 . 24,04	$\phi$ Geminorum.				
	+ 3,00			55,18	39,09	43,91	1,71	43,59	2 . 53 . 38,97	$\alpha$ Ceti.			
											3 . 30 . 32,28	Vesta.	
											4 . 0 . 44,06	Jupiter's center.	
											4 . 26 . 27,41	Aldebaran.	
											5 . 6 . 36,92	Rigel.	
											5 . 15 . 52,20	$\beta$ Tauri.	
											6 . 12 . 19,38	Mars 1 L.	
											.....	$\delta$ Ursæ Min. S.P.	
											7 . 35 . 13,33	Pollux.	
											7 . 43 . 24,07	$\phi$ Geminorum.	
											8 . 59 . 52,43	$\xi$ Cancri.	
											9 . 19 . 29,57	$\alpha$ Hydræ.	
											9 . 22 . 18,56	$\lambda$ Leonis.	

The Transit levelled, Feb. 9. 2<sup>h</sup>.

Month and Day.	NAME OF STAR or PLANET.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Concluded Transit over the Mean of the seven Wires.	Observer.	
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	m. s.				h. m. s.
Feb. 12	γ 1 L.....	22,3	37,0	51,3	5,7	20,3	34,6	9.24.49,4	- 21,41	9.24.5,80	B.	
	Venus 2 L.....				40,6	55,1	9,0	18.36.23,2				18.35.40,56
Feb. 13	⊙ 1 L.....	12,4	26,2	40,2	54,1	8,2	21,8	21.44.35,6		21.43.54,07	B.	
	⊙ 2 L.....	26,3	40,2	54,1	8,2	22,2	35,7	21.46.49,7				21.46.8,06
	Rigel.....	9,3	23,0	36,9	50,4	4,1	17,7	5.6.31,1				5.5.50,35
	β Tauri.....	19,8	35,1	50,4	5,9	21,2	36,5	5.15.51,9				5.15.5,83
Feb. 19	δ 2 L.....	7,0	21,9	36,8	51,3	7,0	21,1	15.59.35,4		15.58.51,50	B.	
	δ Ophiuchi.....	2,8	16,2	29,7	43,1	57,0	10,1	16.5.23,8				16.4.43,24
	Antares.....	33,6	49,0	3,7	19,1	34,2	49,1	16.19.3,9				16.18.18,95
	ω Ophiuchi.....	38,9	53,8	8,1	22,6	37,1	51,4	16.22.5,9				16.21.22,54
	δ Ursæ Minoris...	13.6,8	16.54,2	20.39,6	24.26,8	28.15,4	31.57,6	18.35.43,2				18.24.26,23
	Venus 2 L.....	57,6	11,7	26,1	40,4	54,8	8,8	19.2.23,2				19.1.40,37
Feb. 20	α Aquilæ.....	2,8	16,3	30,1	43,6	57,1	10,8	19.42.24,3		19.41.43,57	B.	
	⊙ 1 L.....	8,1	21,8	35,3	49,3	3,3	16,7	22.11.30,5				22.10.49,29
	⊙ 2 L.....	20,4	34,2	47,9	2,1	15,9	29,2	22.13.43,0				22.13.1,81
	Mercury 1 L.....	31,9	45,3	59,0	12,7	26,3	39,6	23.17.53,2				23.17.12,57
	δ 2 L.....	21,3	37,0	51,9	7,1	22,2	37,3	16.59.52,3				16.59.7,02
	α Herculis.....	24,6	38,6	52,7	6,4	20,7	34,6	17.6.48,1				17.6.6,53
	α Ophiuchi.....	34,0	47,7	1,7	15,7	29,4	43,1	17.26.56,7				17.26.15,47
	δ Ursæ Minoris...	13.6,2	16.52,6	20.40,2	24.24,8	28.14,6	31.56,8	18.35.42,2				18.24.25,34
	Venus 2 L.....	51,3	5,6	19,8	33,9	48,4	2,6	19.6.16,8				19.5.34,06
	α Aquilæ.....	0,8	14,3	28,3	41,9	55,7	9,1	19.42.22,5				19.41.41,80
Feb. 21	⊙ 1 L.....	55,9	10,0	23,7	37,3	51,3	5,0	22.15.18,4	- 27,08	22.14.37,37	B.	
	⊙ 2 L.....	8,5	22,3	36,0	50,0	3,8	17,2	22.17.30,8				22.16.49,80
	α Pegasi.....	48,3	2,1	16,3	30,4	44,3	58,1	22.56.12,0				22.55.30,21
	(a) Mercury 1 L.....					34,0	47,7	23.22.1,0				23.21.20,49
	Jupiter 1 L.....	35,3		4,1		33,0		4.3.1,8				4.2.18,55
	Jupiter 2 L.....		52,8		21,5		50,2	4.2.....				4.2.21,50
	Aldebaran.....	44,0	58,1	12,2	26,1	40,2	53,9	4.26.8,2				4.25.26,10
	Rigel.....	54,3	8,3	21,7	35,2	49,2	3,0	5.6.16,3				5.5.35,43
	β Tauri.....	5,0	20,1	35,8	51,0	6,3	21,4	5.15.36,7				5.14.50,90
	Mars 1 L.....	7,8	22,6	37,9	52,9	8,3	23,1	6.15.38,1				6.14.52,95
	δ Ursæ Min. S.P..			20.28,2	24.16,6	28.2,4	31.48,8	6.35.37,4				6.24.16,83
	(b) δ Ursæ Minoris...	13.4,4	16.51,2	20.37,6	24.23,2	28.11,8	31.55,4	18.35.40,6				18.24.23,46
Feb. 22	(c) Venus 2 L.....	45,3		14,1		42,8		19.15.11,0		19.14.28,30	B.	
Feb. 23	Mercury 1 L.....	38,9		6,6	19,9	33,3	46,8	23.30.0,2	- 4,51	23.29.19,77	B.	
	Jupiter 1 L.....	15,3		44,0		12,8		4.4.41,4				4.3.58,37
	Jupiter 2 L.....		32,4		1,2		30,0	4.4.....				4.4.1,20
	Aldebaran.....	40,1	54,2	8,5	22,5	37,0	50,9	4.27.5,0				4.26.22,60
	Rigel.....	51,0	4,6	18,1	32,0	45,7	59,0	5.7.12,8				5.6.31,88
	α Orionis.....	29,0	42,5	56,1	9,8	23,5	37,0	5.46.50,3				5.46.9,75
	Mars 1 L.....	23,1	38,2	53,5	8,4	23,9	38,7	6.17.53,6				6.17.8,49
	δ Ursæ Min. S.P..	13.57,2		21.24,4	25.13,8	29.0,8	32.47,2	6.....				6.25.14,07
	Venus 2 L.....	45,1	59,5	13,6	28,1	42,5	56,9	19.19.11,1				19.18.28,12
α Aquilæ.....	55,8	9,3	23,0	36,5	50,4	3,9	19.43.17,4	19.42.36,62				
Feb. 24	⊙ 1 L.....		31,0	44,4	58,1	12,1	25,5	22.27.39,2	- 6,86	22.26.58,19	B.	
	⊙ 2 L.....	29,0	42,9	56,2	9,8			22.29.51,0				22.29.10,03
	α Pegasi.....	43,1	57,0	11,0	25,0	38,8	52,9	22.57.7,0				22.56.24,97

ILLUMINATED END OF AXIS EAST. Order of Wires, for Stars above the Pole, ABCDEFG.

(a) Very cloudy.  
(b) Extremely faint.

(c) Very cloudy, and wind very loud.

Error of Collimation.	Level Error.	Seconds of Transit corr. for the two Errors.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock slow at 0 <sup>h</sup> .	Apparent R.A. from the Observation.			NAME OF STAR or PLANET.
									h.	m.	s.	
- 0,1	+ 3,00		+ 8,97	6,32			1,71	43,59	9 . 24 . 50,58	) 1 L.		
				41,22			1,88	43,52	18 . 36 . 26,19	Venus 2 L.		
				1,70					21 . 45 . 46,92	☉'s center.		
				50,97	36,82	45,85			.....	Rigel.		
				6,31	52,08	45,77			.....	β Tauri.		
	+ 2,70		+ 8,88	52,15			1,83	56,76	15 . 59 . 50,13	) 2 L.		
				43,76	41,76	58,00			16 . 5 . 41,75	δ Ophiuchi.		
				19,63	17,51	57,88			16 . 19 . 17,63	Antares.		
				23,20					16 . 22 . 21,21	ω Ophiuchi.		
				23,00	21,27	58,27			.....	δ Ursæ Minoris.		
				41,01					19 . 2 . 39,22	Venus 2 L.		
				44,11	42,48	58,37			19 . 42 . 42,37	α Aquilæ.		
				56,16					22 . 12 . 54,62	☉'s center.		
				13,16					23 . 18 . 11,70	Mercury 1 L.		
				7,69			1,77	58,60	17 . 0 . 7,54	) 2 L.		
				7,04	6,90	59,86			17 . 7 . 6,90	α Herculis.		
				15,99	15,89	59,90			17 . 27 . 15,87	α Ophiuchi.		
		27,72		22,11	21,54	59,43			18 . 25 . 22,07	δ Ursæ Minoris.		
				34,70					19 . 6 . 34,71	Venus 2 L.		
				42,34	42,50	60,16			19 . 42 . 42,39	α Aquilæ.		
				44,19					22 . 16 . 44,43	☉'s center.		
				30,73	31,14	60,41			22 . 56 . 31,02	α Pegasi.		
				21,07					23 . 22 . 21,39	Mercury 1 L.		
				20,51				60,37	4 . 3 . 21,18	Jupiter's center.		
				26,60	27,33	60,73			4 . 26 . 27,30	Aldebaran.		
				36,03	36,70	60,67			5 . 6 . 36,78	Rigel.		
				51,36	51,95	60,59			5 . 15 . 52,12	β Tauri.		
				53,40					6 . 15 . 54,23	Mars 1 L.		
		14,67		21,21	21,65	60,44			18 . 25 . 22,05	δ Ursæ Min. S.P.		
		25,84		20,23	21,80	61,57			18 . 25 . 21,96	δ Ursæ Minoris.		
				28,94			1,79	2,07	19 . 14 . 32,45	Venus 2 L.		
				20,36					23 . 29 . 24,18	Mercury 1 L.		
				0,27				3,86	4 . 4 . 4,43	Jupiter's center.		
				23,10	27,30	4,20			4 . 26 . 27,29	Aldebaran.		
				32,48	36,67	4,19			5 . 6 . 36,72	Rigel.		
				10,30	14,62	4,32			5 . 46 . 14,59	α Orionis.		
				8,94					6 . 17 . 13,27	Mars 1 L.		
				18,45	22,15	3,70			.....	δ Ursæ Min. S.P.		
				28,76			1,80	3,88	19 . 18 . 34,08	Venus 2 L.		
				37,16	42,57	5,41			19 . 42 . 42,52	α Aquilæ.		
				4,72					22 . 28 . 10,28	☉'s center.		
				25,49	31,16	5,67			22 . 56 . 31,09	α Pegasi.		

The Transit levelled, Feb. 16. 2<sup>h</sup>; and Feb. 23. 1<sup>h</sup>.

Feb. 20 and 21. Meridian error by δ U. Minoris, δ U. Minoris S.P., and δ U. Minoris.

Before the observation of Feb. 22 the clock was put forward one minute.



Month and Day.	NAME OF STAR or PLANET.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Concluded Transit over the Mean of the seven Wires.	Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	h. m. s.			
Feb. 24	Mercury 1 L.....	26,7	40,1	53,9	7,2	21,0	34,0	23.32.47,6		23.32.7,22	B.
	α Ceti.....	51,8	5,3	18,9	32,3	46,0	59,3	2.54.13,0		2.53.32,37	B.
	Aldebaran.....	38,6	53,0	6,7	20,6	35,0	49,0	4.27.3,1		4.26.20,85	B.
	Rigel.....	49,1	2,8	16,7	30,2	44,1	57,3	5.7.11,0		5.6.30,17	B.
	β Tauri.....	59,2	14,3	30,1	45,2	1,1	16,2	5.16.31,2		5.15.45,33	B.
	(a) α Orionis.....	27,2	40,7	54,4	8,1	21,8	35,2	5.46.47,7		5.46.7,87	B.
	Mars 1 L.....	4,9	19,8	34,7	49,9	5,1	19,9	6.18.34,9		6.17.49,89	B.
	δ Ursæ Min. S.P..	13.54,2	...	21.22,8	25.12,4	28.56,6	32.44,4	6.36.26,2	- 1.15,40	6.25.10,30	B.
Mar. 3	⊙ 1 L.....	25,3	39,1	52,8	6,2	20,0	33,3	22.53.47,0		22.53.6,24	B.
	⊙ 2 L.....	36,1	49,8	3,4	17,0	30,7	44,2	22.55.57,9		22.55.17,02	B.
	α Ceti.....	...	...	...	...	33,9	47,1	2.54.0,8	- 27,02	2.53.20,25	B.
	Rigel.....	36,9	50,8	...	17,8	31,3	45,0	5.6.58,6	- 2,27	5.6.17,80	B.
	β Tauri.....	47,1	...	18,0	33,1	...	4,2	5.16. ....	+ 7,66	5.15.33,26	B.
	α Orionis.....	14,8	28,8	42,2	55,5	9,3	22,9	5.46.36,3		5.45.55,69	B.
	A.S.C. 784.....	56,2	11,5	27,0	41,9	57,1	12,1	6.8.27,0		6.7.41,83	B.
	Mars 1 L.....	4,9	19,9	35,0	50,2	5,6	20,2	6.24.35,1		6.23.50,12	B.
	δ Ursæ Min. S.P..	13.44,8	17.29,2	21.13,2	...	28.47,4	32.33,6	6.36.20,2		6.25.1,40	B.
	Mar. 4	β Tauri.....	45,3	1,0	16,2	31,4	47,0	2,1	5.16.17,3		5.15.31,47
A.S.C. 784.....		54,5	9,9	25,1	40,1	55,2	10,7	6.8.25,3		6.7.40,11	B.
Mars 1 L.....		5,8	20,8	36,0	50,9	6,2	20,9	6.25.36,1		6.24.50,95	B.
δ Ursæ Min. S.P..		13.43,8	17.28,4	21.11,6	...	28.45,8	32.33,8	6.36.19,4		6.25.0,47	B.
37 Geminorum ...		5,0	19,6	34,6	49,4	4,8	19,5	6.45.34,1		6.44.49,57	B.
γ <sup>2</sup> Geminorum ...		11,3	26,2	41,3	56,1	11,5	26,1	6.49.41,1		6.48.56,23	B.
* N.P.D. 64°. 0'		22,1	37,1	52,3	7,4	22,2	37,0	6.59.52,1		6.59.7,17	B.
(preceding) ...		...	...	...	...	...	...	...		...	...
* N.P.D. 63°. 50'		26,0	40,9	56,0	11,1	26,3	41,1	7.11.56,1		7.11.11,07	B.
* N.P.D. 68°. 13'		1,1	15,8	30,6	45,3	59,9	14,0	7.17.28,3		7.16.45,00	B.
Castor.....		56,0	12,0	27,9	43,9	0,1	15,4	7.24.31,6		7.23.43,84	B.
Procyon.....		39,0	52,4	6,2	19,8	33,1	47,0	7.31.0,3		7.30.19,69	B.
Pollux.....		6,8	22,1	37,4	52,9	8,3	23,1	7.35.38,7		7.34.52,75	B.
δ Ursæ Minoris...		13.49,4	17.36,2	21.23,4	25.8,6	28.57,8	32.41,6	18.36.25,2		18.25.8,89	B.
α Aquilæ.....		40,7	54,1	7,9	21,4	35,1	48,7	19.43.2,3		19.42.21,45	B.
Venus 2 L.....		2,4	16,7	31,0	45,3	59,6	13,7	19.56.27,9		19.55.45,23	B.
Mar. 5	⊙ 1 L.....	49,3	2,9	16,4	30,1	44,0	57,2	23.1.10,9		23.0.30,11	B.
	⊙ 2 L.....	59,7	13,3	26,9	40,4	54,1	7,5	23.3.21,2		23.2.40,44	B.
	γ 1 L.....	9,1	23,3	38,1	52,3	7,1	21,0	3.22.35,2		3.21.52,30	B.
	α Aquilæ.....	38,9	52,8	6,2	19,9	34,0	47,2	19.43.0,8		19.42.19,98	B.
	Venus 2 L.....	17,9	32,2	46,7	0,9	15,2	29,1	20.0.43,4		20.0.0,77	B.
Mar. 6	⊙ 1 L.....	30,3	43,9	57,8	11,1	25,0	38,2	23.4.51,5		23.4.11,11	B.
	⊙ 2 L.....	40,6	54,1	8,0	21,5	35,0	48,8	23.7.2,1		23.6.21,44	B.
	(b) λ Tauri.....	27,2	41,1	54,9	8,7	22,6	36,6	3.51.50,0		3.51.8,73	B.
	λ <sup>1</sup> Tauri.....	...	...	...	33,0	47,4	2,0	3.55.16,2	- 21,75	3.54.32,90	B.
	Jupiter 1 L.....	43,8	...	12,8	...	41,9	...	4.9.10,2		4.8.27,17	B.
	Jupiter 2 L.....	...	1,1	...	29,9	...	58,7	4.8. ....		4.8.29,90	B.
	γ 1 L.....	27,1	41,8	56,3	11,3	26,0	40,5	4.11.55,2		4.11.11,17	B.
	Aldebaran.....	21,5	35,5	49,4	3,8	17,9	31,7	4.26.45,4		4.26.3,60	B.
	τ Tauri.....	13,3	27,9	42,3	57,0	11,8	26,2	4.32.40,7		4.31.57,03	B.
	ι Tauri.....	7,1	21,4	36,0	50,4	5,2	19,3	4.53.34,0		4.52.50,48	B.
	Rigel.....	32,0	45,5	59,2	13,1	26,9	40,2	5.6.53,8		5.6.12,96	B.
	β Tauri.....	42,7	57,4	13,1	28,2	44,0	59,1	5.16.14,1		5.15.28,37	B.
	α Orionis.....	10,1	23,7	37,2	51,0	4,6	18,1	5.46.31,7		5.45.50,91	B.

ILLUMINATED END OF AXIS EAST. Order of Wires, for Stars above the Pole, ABCDEFG.

(a) Perhaps the last wire should be increased 1".

(b) The 5th wire was set down 23,6: it is altered conjecturally.





Month and Day.	NAME OF STAR or PLANET.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Concluded Transit over the Mean of the seven Wires.	Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	m. s.			
Mar. 6	δ Ursæ Min. S.P.	13.41,8	17.26,4	21. 9,2	24.58,6	...	32.30,8	6. 36. 17,2	+ 37,65	6. 24. 58,32	B.
	Mars 1 L.....	14,2	29,1	44,0	58,9	14,3	29,1	6. 27. 43,8		6. 26. 59,06	B.
	37 Geminorum....	1,8	16,9	31,8	46,9	1,6	17,0	6. 45. 31,7		6. 44. 46,82	B.
	* N.P.D. 64°. 0' (preceding)...	19,1	34,2	49,0	4,1	19,3	34,2	6. 59. 49,0		6. 59. 4,13	B.
	* N.P.D. 63°. 50'.	22,9	38,1	53,0	8,1	23,3	38,1	7. 11. 53,0		7. 11. 8,07	B.
	* N.P.D. 68°. 13'.	58,0	12,8	27,1	42,0	56,2	10,9	7. 17. 25,5		7. 16. 41,78	B.
	Castor.....	53,0	9,0	24,9	40,9	56,8	12,7	7. 24. 28,5		7. 23. 40,82	B.
	Procyon.....	35,8	49,3	2,9	16,4	30,2	43,7	7. 30. 57,1		7. 30. 16,49	B.
	Pollux.....	3,8	19,0	34,3	49,7	5,2	20,2	7. 35. 35,3		7. 34. 49,65	B.
	δ Ursæ Minoris...	13.46,5	17.32,4	21.19,2	25. 4,5	28.53,6	32.36,8	18. 36. 22,2		18. 25. 5,03	B.
α Aquilæ.....	37,3	51,0	4,9	18,2	32,0	45,7	19. 42. 59,1	19. 42. 18,32	B.		
Venus 2 L.....	34,3	48,8	2,8	17,1	31,4	45,3	20. 4. 59,6	20. 4. 17,04	B.		
Mar. 8	Rigel.....	28,8	42,3	56,0	10,0	23,7	37,2	5. 6. 50,6	5. 6. 9,80	B.	
	β Tauri.....	39,1	54,3	9,9	25,1	40,8	55,7	5. 16. 11,1	5. 15. 25,14	B.	
	ζ Tauri.....	37,1	51,5	6,0	20,3	35,0	49,1	5. 28. 3,9	5. 27. 20,41	B.	
	B Tauri.....	42,4	57,1	12,0	26,6	41,8	56,3	5. 39. 11,0	5. 38. 26,75	B.	
	γ 1 L.....	39,9	55,0	10,4	25,7	41,0	55,9	5. 59. 11,1	5. 58. 25,57	B.	
	(a) ν Geminorum.....	1,8	16,2	30,3	44,5	58,8	13,1	6. 19. 27,2	6. 18. 44,56	B.	
	ε Geminorum.....	35,2	50,7	5,5	20,1	35,2	50,0	6. 34. 5,1	6. 33. 20,25	B.	
	δ Ursæ Minoris...	13.43,8	17.30,4	21.16,6	25. 3,2	28.51,4	32.35,2	18. 36. 20,8	18. 25. 3,06	B.	
α Aquilæ.....	34,3	48,1	2,0	15,7	29,1	42,7	19. 42. 56,1	19. 42. 15,43	B.		
Mar. 9	α Aquilæ.....	33,1	46,8	0,4	14,0	27,8	41,1	19. 42. 54,6	19. 42. 13,97	B.	
	Venus 2 L.....	29,5	43,8	57,8	12,3	26,4	40,4	20. 17. 54,4	20. 17. 12,08	B.	
Mar. 10	⊙ 1 L.....	10,9	24,4	38,1	51,4	5,7	18,9	23. 19. 32,2	23. 18. 51,65	B.	
	⊙ 2 L.....	20,7	34,3	48,0	1,7	15,1	28,8	23. 21. 42,1	23. 21. 1,53	B.	
	λ Tauri.....	21,1	35,0	48,8	...	...	30,2	3. 51. 44,0	3. 51. 2,60	B.	
	Aldebaran.....	15,6	29,6	43,8	57,7	12,0	25,6	4. 26. 39,5	4. 25. 57,69	B.	
	τ Tauri.....	7,3	21,8	36,6	51,0	6,0	20,2	4. 32. 34,7	4. 31. 51,08	B.	
	Rigel.....	26,1	39,7	53,2	7,0	20,9	34,1	5. 6. 47,7	5. 6. 6,96	B.	
	β Tauri.....	36,1	51,7	7,0	22,2	37,9	52,9	5. 16. 8,3	5. 15. 22,30	B.	
	ζ Tauri.....	34,1	48,6	3,2	17,4	32,1	46,2	5. 28. 1,1	5. 27. 17,53	B.	
	B Tauri.....	39,3	54,4	9,1	24,0	39,0	53,3	5. 39. 8,2	5. 38. 23,90	B.	
	δ Ursæ Min. S.P.	13.36,4	17.21,2	21. 4,2	24.52,8	28.39,4	...	6. 36. 11,8	6. 24. 53,05	B.	
	Mars 1 L.....	54,7	9,9	24,9	39,3	54,8	9,4	6. 32. 24,7	6. 31. 39,67	B.	
	γ <sup>1</sup> Geminorum....	22,7	37,9	52,9	8,1	23,0	37,7	6. 48. 52,8	6. 48. 7,87	B.	
	* N.P.D. 64°. 0' (following)...	20,3	35,8	50,7	5,9	20,9	35,5	6. 59. 50,2	6. 59. 5,62	B.	
	A Geminorum....	11,0	25,9	40,6	55,4	10,5	25,3	7. 13. 40,1	7. 12. 55,55	B.	
Procyon.....	30,1	43,9	57,1	10,7	24,1	37,5	7. 30. 51,0	7. 30. 10,63	B.		
Pollux.....	57,6	13,0	28,2	43,8	59,1	14,3	7. 35. 29,3	7. 34. 43,61	B.		
γ 1 L.....	28,7	43,9	59,2	14,2	29,8	44,9	7. 55. 59,8	7. 55. 14,35	B.		
γ Cancri.....	31,7	46,1	0,4	15,1	29,6	44,1	8. 33. 58,3	8. 33. 15,04	B.		
Mar. 11	Rigel.....	24,3	38,1	51,6	5,3	19,1	32,7	5. 6. 46,2	5. 6. 5,33	B.	
	β Tauri.....	34,7	50,2	5,4	20,6	36,1	51,2	5. 16. 6,5	5. 15. 20,67	B.	
	δ Ursæ Min. S.P.	13.36,8	17.22,2	21. 5,2	24.53,4	28.39,8	...	6. 36. 12,4	6. 24. 53,72	B.	
	Mars 1 L.....	9,0	24,1	39,1	54,0	9,2	24,2	6. 33. 39,0	6. 32. 54,08	B.	
	γ <sup>2</sup> Geminorum....	0,6	15,3	30,6	45,9	0,8	15,7	6. 49. 30,4	6. 48. 45,62	B.	
	* N.P.D. 64°. 0' (following)....	19,0	33,9	49,1	4,0	19,1	34,0	6. 59. 49,0	6. 59. 4,01	B.	
A Geminorum....	9,0	23,9	39,0	54,0	8,9	24,0	7. 13. 38,6	7. 12. 53,91	B.		

ILLUMINATED END OF AXIS EAST. Order of Wires, for Stars above the Pole, ABCDEFG.

(a) This appears to be 1<sup>s</sup> or 2<sup>s</sup> too great.



Error of Collimation.	Level Error.	Seconds of Transit corr. for the two Errors.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock slow at 0 <sup>h</sup> .	Apparent R.A. from the Observation.	NAME OF STAR or PLANET.						
"	"	"	"	"	"	"	"	"	h. m. s.							
- 0,1	+ 1,95	56,79	+ 7,7	2,46	25,72	23,26	1,58	22,66	18. 25. 25,54	δ Ursæ Min. S.P.						
				59,43					6. 27. 22,51	Mars 1 L.						
				47,19					6. 45. 10,29	37 Geminorum.						
				4,50					6. 59. 27,62	{ * N.P.D. 64°. 0' (preceding).						
				8,44					7. 11. 31,58	* N.P.D. 63°. 50'.						
				42,18					7. 17. 5,32	* N.P.D. 68°. 13'.						
				41,16	4,19	23,03			7. 24. 4,31	Castor.						
				16,95	40,05	23,10			7. 30. 40,11	Procyon.						
				50,01	13,10	23,09			7. 35. 13,17	Pollux.						
				1,85	25,88	24,03			18. 25. 25,72	δ Ursæ Minoris.						
				18,77	42,82	24,05			19. 42. 42,73	α Aquilæ.						
				17,59					20. 4. 41,59	Venus 2 L.						
					+ 2,20	6,72				10,31	36,45	26,14	1,49	25,81	5. 6. 36,44	Rigel.
									25,52	51,68	26,16	5. 15. 51,65			β Tauri.	
									20,82			5. 27. 46,97			ζ Tauri.	
		27,15					5. 38. 53,31	β Tauri.								
		25,97					5. 58. 52,15	γ 1 L.								
		44,97					6. 19. 11,17	ν Geminorum.								
		20,65					6. 33. 46,87	ε Geminorum.								
		0,11	26,49	26,38			.....	δ Ursæ Minoris.								
		15,89	42,87	26,98			19. 42. 42,92	α Aquilæ.								
							14,43	42,90	28,47	1,47	27,15	19. 42. 42,79			α Aquilæ.	
							12,63					20. 17. 41,02			Venus 2 L.	
							57,09					23. 20. 25,67			☉'s center.	
							3,04					3. 51. 31,89			λ Tauri.	
							58,12	27,04	28,92			4. 26. 27,01			Aldebaran.	
							51,49					4. 32. 20,39			τ Tauri.	
					7,47	36,41	28,94	5. 6. 36,40	Rigel.							
					22,68	51,64	28,96	5. 15. 51,63	β Tauri.							
					17,94			5. 27. 46,90	ζ Tauri.							
					24,30			5. 38. 53,26	β Tauri.							
					56,98	26,95	29,97	.....	δ Ursæ Min. S.P.							
					40,06			6. 32. 9,08	Mars 1 L.							
					8,26			6. 48. 37,30	γ <sup>1</sup> Geminorum.							
					6,01			6. 59. 35,06	{ * N.P.D. 64°. 0' (following).							
					55,95			7. 13. 25,01	A Geminorum.							
					11,10	40,00	28,90	7. 30. 40,18	Procyon.							
					43,98	13,05	29,07	7. 35. 13,07	Pollux.							
					14,75			7. 55. 43,86	γ 1 L.							
					15,46			8. 33. 44,61	γ Cancri.							
					5,84	36,40	30,56	1,60	30,10	5. 6. 36,28	Rigel.					
					21,05	51,62	30,57			5. 15. 51,50	β Tauri.					
					57,65	27,26	29,61			.....	δ Ursæ Min. S.P.					
					54,47					6. 33. 25,00	Mars 1 L.					
					46,01					6. 49. 16,56	γ <sup>2</sup> Geminorum.					
				4,40			6. 59. 34,97			{ * N.P.D. 64°. 0' (following).						
				54,31			7. 13. 24,89			A Geminorum.						

The Transit levelled, March 9. 1<sup>h</sup>.

March 6, Meridian error by δ U. Minoris S.P. and δ U. Minoris, allowing 0,66 for clock rate and change of R.A.

Month and Day.	NAME OF STAR or PLANET.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Concluded Transit over the Mean of the seven Wires.			Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	m. s.		h. m. s.	h. m. s.	h. m. s.	
Mar. 11	* N.P.D. 64° . 41'	30,6	45,8	0,2	15,7	30,7	45,3	7.25. 0,2		7.24. 15,50	B.		
	Procyon.....	28,3	41,9	55,3	9,1	22,7	36,1	7.30. 49,4		7.30. 8,97	B.		
	Pollux.....	56,1	11,4	26,8	42,2	57,8	13,0	7.35. 28,0		7.34. 42,18	B.		
	* N.P.D. 65° . 26'	28,3	43,1	58,0	13,0	27,9	42,3	7.40. 57,0		7.40. 12,80	B.		
	γ Cancri.....	29,4	44,0	58,9	13,2	28,0	42,2	8.33. 56,7		8.33. 13,20	B.		
	δ 1 L.....	3,3	18,0	33,0	47,9	3,0	17,7	8.55. 32,3		8.54. 47,89	B.		
	α Hydræ.....	17,4	31,0	44,9	58,3	12,1	25,8	9.19. 39,1		9.18. 58,37	B.		
	λ Leonis.....	3,1	18,0	32,9	47,2	2,2	16,9	9.22. 31,4		9.21. 47,39	B.		
Mar. 12	α Hydræ.....	16,3	29,9	43,1	56,7	10,2	23,8	9.19. 37,6		9.18. 56,80	B.		
	λ Leonis.....	1,7	16,2	31,0	45,7	0,8	15,1	9.22. 29,7		9.21. 45,74	B.		
	δ 1 L.....	56,6	11,2	25,9	40,2	54,9	9,2	9.54. 23,8		9.53. 40,25	B.		
	α Aquilæ.....	28,8	42,1	55,7	9,3	23,0	36,6	19.42. 50,0		19.42. 9,36	B.		
	Venus 2 L.....	31,1	45,5	59,8	13,7	27,8	41,6	20.30. 55,8		20.30. 13,61	B.		
Mar. 13	⊙ 1 L.....	7,9	21,0	34,9	48,0	1,8	15,1	23.30. 28,4		23.29. 48,16	B.		
	⊙ 2 L.....	17,0	30,4	44,0	57,7	11,5	24,4	23.32. 38,1		23.31. 57,59	B.		
	Aldebaran.....	10,7	24,3	38,8	52,9	7,0	20,6	4.26. 34,8		4.25. 52,73	B.		
	Rigel.....	21,1	34,7	48,3	2,0	15,9	29,1	5. 6. 42,7		5. 6. 1,97	B.		
	β Tauri.....	31,3	46,6	2,1	17,3	33,1	48,0	5.16. 3,3		5.15. 17,39	B.		
	δ Ursæ Min. S.P.	13.32,2	17.19,2	21. 1,8	24.50,4	28.37,2	32.23,6	6.....	+ 1. 53,20	6.24. 50,60	B.		
	Mars 1 L.....	43,5	58,5	13,8	28,7	43,8	58,6	6.36. 13,4		6.35. 28,62	B.		
	γ <sup>1</sup> Geminorum....	17,4	32,7	47,6	3,0	18,0	33,0	6.48. 47,6		6.48. 2,75	B.		
	* N.P.D. 64° . 0'	15,9	30,8	45,7	0,8	16,0	30,5	6.59. 45,3		6.59. 0,73	B.		
	(following)....												
	ρ Geminorum.....	38,7	53,1	8,0	22,3	37,0	51,2	7.18. 6,0		7.17. 22,33	B.		
	Procyon.....	24,9	38,4	52,1	5,5	19,2	32,6	7.30. 46,1		7.30. 5,54	B.		
	* N.P.D. 65° . 26'	25,0	40,0	54,9	9,8	24,5	39,1	7.40. 54,0		7.40. 9,62	B.		
	α Hydræ.....	14,1	27,7	41,2	55,0	8,9	22,1	9.19. 35,4		9.18. 54,91	B.		
	Regulus.....	19,5	33,4	47,2	1,1	15,1	28,7	9.59. 42,4		9.59. 1,05	B.		
	γ Leonis.....	35,1	49,8	4,0	18,3	33,0	46,9	10.11. 1,7		10.10. 18,40	B.		
ρ Leonis.....	52,8	6,1	20,0	33,6	47,1	0,7	10.24. 14,5		10.23. 33,54	B.			
δ 1 L.....	35,2	49,3	3,8	17,8	32,1	46,0	10.52. 0,2		10.51. 17,77	B.			
ξ <sup>1</sup> Virginis.....	31,9	45,9	59,3	13,1	26,6	40,1	11.36. 53,9		11.36. 12,97	B.			
β Leonis.....	23,0	36,8	51,0	5,0	18,9	32,8	11.40. 46,9		11.40. 4,91	B.			
Mar. 15	β Leonis.....	19,1	33,0	47,2	1,1	15,3	29,0	11.40. 43,1		11.40. 1,11	B.		
	η Virginis.....	10,2	23,7	37,2	50,4	4,1	18,0	12.11. 31,1		12.10. 50,67	B.		
	δ 2 L.....	11,1	25,0	39,1	52,9	7,0	20,8	12.46. 34,2		12.45. 52,87	B.		
	Polaris S.P.....	.....	.....	50.51,6	59. 7,6	7.19,8	15.34,4	13.....	- 4. 4,94	12.59. 8,41	B.		
	Saturn 1 L.....	52,8	.....	20,9	.....	48,1	.....	13.24. 14,9		13.23. 34,17	B.		
	Saturn 2 L.....	.....	9,7	.....	37,7	.....	4,2	13.24.....		13.23. 37,20	B.		
Venus 2 L.....	37,2	51,3	5,6	19,5	33,8	47,8	20.44. 1,9		20.43. 19,59	G.			
Mar. 16	⊙ 1 L.....	0,7	14,2	27,8	41,2	54,7	8,2	23.41. 21,6		23.40. 41,20	B.		
	⊙ 2 L.....	10,0	23,3	37,0	50,7	4,2	17,3	23.43. 31,0		23.42. 50,50	B.		
Mar. 19	Polaris.....	34.41,6	42.54,6	51. 4,8	59.19,4	7.37,2	15.45,6	1.23. 56,4		0.59. 19,94	B.		
	Jupiter 1 L.....	40,8	.....	9,9	.....	38,3	.....	4.16. 7,2		4.15. 24,05	B.		
	Jupiter 2 L.....	.....	57,9	.....	27,0	.....	55,7	4.15.....		4.15. 26,87	B.		
	Aldebaran.....	59,7	13,7	27,9	41,9	56,2	10,0	4.26. 24,0		4.25. 41,91	B.		
	Rigel.....	10,3	24,0	37,9	51,1	5,0	18,3	5. 6. 32,0		5. 5. 51,23	B.		
	β Tauri.....	20,4	36,1	51,3	6,7	22,1	37,2	5.15. 52,4		5.15. 6,60	B.		
	* N.P.D. 62° . 56'	6,1	21,2	36,1	51,3	6,9	21,7	6.18. 36,6		6.17. 51,41	B.		
	* N.P.D. 62° . 46'	53,8	9,0	24,1	39,2	54,9	9,6	6.31. 24,7		6.30. 39,33	B.		

ILLUMINATED END OF AXIS EAST. Order of Wires, for Stars above the Pole, ABCDEFG.



Error of Collimation.	Level Error.	Seconds of Transit corr. for the two Errors.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock slow at 0 <sup>h</sup> .	Apparent R.A. from the Observation.			NAME OF STAR or PLANET.
									<i>h.</i>	<i>m.</i>	<i>s.</i>	
- 0,1	+ 2,20		+ 7,7	15,90				1,60	30,10	7 . 24 . 46,49	* N.P.D. 64°. 41'	
				9,44	39,98	30,54			7 . 30 . 40,04	Procyon.		
				42,55	13,03	30,48			7 . 35 . 13,16	Pollux.		
				13,20					7 . 40 . 43,81	* N.P.D. 65°. 26'		
				13,62					8 . 33 . 44,29	γ Cancri.		
				48,30					8 . 55 . 18,99	δ 1 L.		
				58,88	29,57	30,69			9 . 19 . 29,60	α Hydræ.		
				47,79					9 . 22 . 18,52	λ Leonis.		
	+ 2,03			57,31	29,56	32,25	1,70	31,72	9 . 19 . 29,69	α Hydræ.		
				46,13					9 . 22 . 18,51	λ Leonis.		
				40,68					9 . 54 . 13,10	δ 1 L.		
				9,81	42,97	33,16			19 . 42 . 42,93	α Aquilæ.		
				14,16					20 . 30 . 47,33	Venus 2 L.		
				53,36					23 . 31 . 26,74	☉'s center.		
				53,14	26,99	33,85		33,42	4 . 26 . 26,87	Aldebaran.		
				2,48	36,33	33,85			5 . 6 . 36,26	Rigel.		
				17,76	51,58	33,82			5 . 15 . 51,56	β Tauri.		
				54,67	27,95	33,28			.....	δ Ursæ Min. S.P.		
				29,00					6 . 36 . 2,89	Mars 1 L.		
				3,13					6 . 48 . 37,03	γ <sup>1</sup> Geminorum.		
				1,11					6 . 59 . 35,03	* N.P.D. 64°. 0'		
				22,74					7 . 17 . 56,68	(following).		
				6,00	39,95	33,95			7 . 30 . 39,95	p Geminorum.		
				10,00					7 . 40 . 43,96	Procyon.		
				55,42	29,55	34,13			9 . 19 . 29,49	* N.P.D. 65°. 26'		
				1,49	35,63	34,14			9 . 59 . 35,62	α Hydræ.		
				18,80					10 . 10 . 52,94	Regulus.		
				33,98					10 . 24 . 8,14	γ Leonis.		
				18,21					10 . 51 . 52,39	ρ Leonis.		
				13,42					11 . 36 . 47,66	δ 1 L.		
				5,33	39,43	34,10			11 . 40 . 39,58	ξ <sup>1</sup> Virginis.		
				1,53	39,44	37,91	1,80	37,03	.....	β Leonis.		
				51,15					12 . 11 . 29,10	η Virginis.		
				53,36					14 . 46 . 31,35	δ 2 L.		
				16,57	56,98	40,41			.....	Polaris S.P.		
				36,19					13 . 24 . 14,22	Saturn's center.		
				20,14					20 . 43 . 58,73	Venus 2 L.		
				46,34					23 . 42 . 25,14	☉'s center.		
		23,64	+ 7,33	13,23	56,33	43,10	1,75	44,16	0 . 59 . 57,46	Polaris.		
				25,84					4 . 16 . 10,31	Jupiter's center.		
				42,31	26,89	44,58			4 . 26 . 26,79	Aldebaran.		
				51,72	36,25	44,53			5 . 6 . 36,25	Rigel.		
				6,96	51,47	44,51			5 . 15 . 51,51	β Tauri.		
				51,78					6 . 18 . 36,40	* N.P.D. 62°. 56'		
				39,70					6 . 31 . 24,33	* N.P.D. 62°. 46'		

The Transit levelled, March 16. 1<sup>h</sup>.

March 19, Meridian error by Polaris and Polaris S.P., allowing 0<sup>s</sup>.99 for clock rate and change of R.A.



Month and Day.	NAME OF STAR or PLANET.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Concluded Transit over the Mean of the seven Wires.	Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	h. m. s.			
Mar. 19	* N.P.D. 62° . 48'.	14,4	29,7	44,8	0,1	15,4	29,9	6 . 39 . 45,2		6 . 38 . 59,93	B.
	Mars 1 L.....	5,3	20,2	35,2	50,0	5,3	20,1	6 . 44 . 34,9		6 . 43 . 50,14	B.
	$\gamma^1$ Geminorum....	7,0	21,9	37,0	52,0	7,2	22,0	6 . 48 . 37,1		6 . 47 . 52,03	B.
	(a) * N.P.D. 63° . 4'.	34,2	49,9	4,8	19,3	34,4	50,0	6 . 53 . 5,0		6 . 52 . 19,66	B.
	* N.P.D. 64° . 0' (preceding)...	57,2	12,4	27,7	42,5	57,2	12,1	6 . 59 . 27,1		6 . 58 . 42,31	B.
	* N.P.D. 64° . 0' (following)...	5,0	20,0	35,1	50,0	14,9	19,3	6 . 59 . 34,6		6 . 58 . 49,84	B.
	* N.P.D. 65° . 40'.	11,3	26,1	41,0	55,8	10,9	24,9	7 . 21 . 39,2		7 . 20 . 55,60	B.
	Procyon.....	14,1	27,6	41,3	54,9	8,3	22,1	7 . 30 . 35,4		7 . 29 . 54,81	B.
	$\kappa$ Geminorum....	59,0	14,1	29,0	44,1	59,1	13,4	7 . 34 . 28,3		7 . 33 . 43,85	B.
	* N.P.D. 65° . 26'.	14,0	29,1	44,0	58,9	13,9	28,3	7 . 40 . 43,1		7 . 39 . 58,76	B.
	$\beta$ Leonis.....	12,1	25,9	40,1	54,0	8,2	22,0	11 . 40 . 35,9		11 . 39 . 54,03	B.
	Polaris S.P.....	34.37,6	42.47,4	50.44,8	58.58,2	7.11,8	15.27,6	13.....	+ 4 . 6,77	12 . 59 . 4,67	B.
	Saturn 1 L.....	48,9	.....	15,9	.....	43,1	.....	13 . 23 . 9,7		13 . 22 . 29,40	B.
	Saturn 2 L.....	.....	5,5	.....	32,5	.....	59,5	13 . 22 . .....		13 . 22 . 32,50	B.
Apr. 1	☉ 1 L.....	45,4	59,0	13,2	26,7	40,0	53,4	0 . 40 . 7,1		0 . 39 . 26,40	B.
	☉ 2 L.....	55,0	8,5	22,1	35,4	49,1	2,6	0 . 42 . 16,1		0 . 41 . 35,54	B.
	Polaris.....	.....	.....	.....	59.57,4	8.11,8	16.16,2	1.....	- 8 . 14,00	0 . 59 . 54,47	B.
	Rigel.....	48,4	2,0	15,5	29,1	43,0	56,2	5 . 7 . 10,0		5 . 6 . 29,18	B.
	$\alpha$ Orionis.....	26,2	40,0	53,4	7,1	21,0	34,3	5 . 46 . 47,8		5 . 46 . 7,12	B.
	Regulus.....	46,6	0,3	14,2	28,0	42,0	55,9	10 . 0 . 9,3		9 . 59 . 28,05	B.
	Venus 2 L.....	24,7	38,2	52,3	5,8	20,3	33,6	21 . 59 . 47,6		21 . 59 . 6,07	B.
Apr. 2	☉ 1 L.....	21,4	35,0	48,9	2,5	16,0	29,4	0 . 43 . 42,7		0 . 43 . 2,27	B.
	☉ 2 L.....	30,3	44,0	57,8	11,2	24,9	38,4	0 . 45 . 51,9		0 . 45 . 11,21	B.
	Polaris.....	.....	.....	51.39,4	59.47,8	8 . 7,6	16.12,2	1 . 24 . 27,8	- 8 . 12,90	0 . 59 . 50,06	B.
	Mars 1 L.....	46,0	0,9	16,0	30,8	45,8	0,3	7 . 8 . 15,0		7 . 7 . 30,68	B.
	Procyon.....	49,3	3,0	16,5	30,0	43,8	57,0	7 . 31 . 10,5		7 . 30 . 30,01	B.
	Pollux.....	17,0	32,3	47,9	3,1	18,9	33,9	7 . 35 . 49,0		7 . 35 . 3,15	B.
Apr. 5	(b) Venus 2 L.....	52,8	6,5	20,2	34,3	48,5	1,7	22 . 17 . 15,5		22 . 16 . 34,21	G.
Apr. 6	(c) ☉ 1 L.....	46,2	0,0	13,4	27,0	40,9	54,0	0 . 58 . 7,5		0 . 57 . 27,00	G.
	☉ 2 L.....	55,0	8,8	22,0	35,9	49,1	3,0	1 . 0 . 16,6		0 . 59 . 35,77	G.
	$\delta$ Geminorum....	12,8	27,0	41,9	56,3	11,0	25,0	7 . 10 . 39,9		7 . 9 . 56,27	G.
	Mars 1 L.....	51,0	6,1	21,1	35,9	50,9	5,8	7 . 15 . 20,8		7 . 14 . 35,75	G.
	$\eta$ 1 L.....	8,9	24,4	39,7	55,0	10,6	25,5	7 . 30 . 40,8		7 . 29 . 54,99	G.
	$\zeta$ Cancri.....	17,1	32,5	48,0	3,0	18,7	33,6	7 . 53 . 49,0		7 . 53 . 3,13	G.
	Regulus.....	34,0	48,0	1,9	15,8	29,3	43,1	9 . 59 . 57,0		9 . 59 . 15,59	G.
	$\beta$ Leonis.....	37,4	51,4	5,5	19,7	33,7	47,5	11 . 41 . 1,1		11 . 40 . 19,48	G.
	$\beta$ Corvi.....	40,9	56,0	10,3	25,0	39,8	53,9	12 . 26 . 8,5		12 . 25 . 24,91	G.
	Polaris S.P.....	34.51,6	43 . 4,5	51 . 8,8	59.28,8	7.38,7	.....	13.....	+ 8 . 12,78	12 . 59 . 27,26	G.
	(d) Polaris S.P. with Micrometer...}	57.21,2	58 . 2,2	58.46,4	59.28,8	0 . 7,3	0.48,4	13 . 1 . 30,2	+ 0,18	12 . 59 . 26,54	G.
	$\nu$ Spica.....	30,2	44,0	58,0	11,4	25,3	.....	13 . 16 . .....	+ 13,68	13 . 16 . 11,46	G.
	Saturn 1 L.....	22,0	35,6	49,3	3,0	16,4	30,0	13 . 18 . 43,9		13 . 18 . 2,88	G.
	Saturn 2 L.....	25,1	38,7	52,3	5,8	19,3	32,7	13 . 18 . 46,7		13 . 18 . 5,80	G.
Venus 2 L.....	14,4	28,2	42,0	55,8	9,7	23,2	22 . 21 . 36,9		22 . 20 . 55,74	G.	
(e) Polaris.....	35 . 2,5	43.17,6	51.30,0	.....	7.55,2	16 . 2,2	1 . 24 . 13,5		0 . 59 . 40,17	G.	
Apr. 7	☉ 1 L.....	22,3	36,0	49,9	3,0	17,0	30,3	1 . 1 . 43,9		1 . 1 . 3,20	G.
	☉ 2 L.....	31,1	45,0	58,8	12,2	26,2	39,6	1 . 3 . 53,0		1 . 3 . 12,27	G.
	Aldebaran.....	23,0	36,9	51,0	5,0	19,4	33,3	4 . 26 . 47,0		4 . 26 . 5,09	G.

ILLUMINATED END OF AXIS EAST. Order of Wires, for Stars above the Pole, ABCDEFG.

(a) If this be the star marked (*v*) in the Ephemeris of Stars to be observed with Mars, Nautical Almanac 1835, the time here is 30° too great.  
 (b) Very bad.

(c) Some wires without coloured glass: difficult transit.  
 (d) Coincidence with *D* at 23,956: Micrometer at 20,956; 21,956; &c.  
 (e) Very faint.

Error of Collimation.	Level Error.	Seconds of Transit corr. for the two Errors.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock slow at 0 <sup>h</sup> .	Apparent R.A. from the Observation.			NAME OF STAR or PLANET.
									h.	m.	s.	
- 0,1	+ 2,03	1,13	+ 7,33	0,30			1,75	44,16	6 . 39 . 44,94	* N.P.D. 62°. 48'.		
				50,51					6 . 44 . 35,16	Mars 1 L.		
				52,40					6 . 48 . 37,06	<i>y</i> <sup>1</sup> Geminorum.		
				20,02					6 . 53 . 4,68	* N.P.D. 63°. 4'.		
				42,68					6 . 59 . 27,35	* N.P.D. 64°. 0' (preceding).		
				50,21					6 . 59 . 34,88	* N.P.D. 64°. 0' (following).		
				55,98					7 . 21 . 40,67	* N.P.D. 65°. 40'.		
				55,25	39,86	44,61			7 . 30 . 39,96	Procyon.		
				44,22					7 . 34 . 28,93	* Geminorum.		
				59,13					7 . 40 . 43,85	* N.P.D. 65°. 26'.		
	54,44	39,46	45,02			11 . 40 . 39,45	$\beta$ Leonis.					
	12,27	56,28	44,01			0 . 59 . 57,38	Polaris S.P.					
	31,44					13 . 23 . 16,58	Saturn's center.					
		+ 2,24		+ 6,64	31,39			2,44	5,93	0 . 40 . 37,39	$\odot$ 's center.	
	49,15				54,36	5,21			.....	Polaris.		
	29,64				36,03	6,39			5 . 6 . 36,09	Rigel.		
	7,54				14,01	6,47			5 . 46 . 14,06	$\alpha$ Orionis.		
	28,45				35,52	7,07			9 . 59 . 35,42	Regulus.		
	6,54								21 . 59 . 14,73	Venus 2 L.		
	7,16								8,39	0 . 44 . 15,62	$\odot$ 's center.	
44,74	54,43				9,69			.....	Polaris.			
31,05								7 . 7 . 40,17	Mars 1 L.			
30,43	39,63				9,20			.....	Procyon.			
3,50	12,65	9,15			.....	Pollux.						
	+ 1,45	24,44		34,65			2,24	16,35	22 . 16 . 53,07	Venus 2 L.		
31,77								18,59	0 . 58 . 50,46	$\odot$ 's center.		
56,60								7 . 10 . 15,85	$\delta$ Geminorum.			
36,07								7 . 14 . 55,33	Mars 1 L.			
55,31								7 . 30 . 14,60	$\gamma$ 1 L.			
3,43								7 . 53 . 22,76	$\delta$ 6 Cancri.			
15,95				35,47	19,52			9 . 59 . 35,48	Regulus.			
19,83				39,48	19,65			11 . 40 . 39,51	$\beta$ Leonis.			
25,40								12 . 25 . 45,15	$\beta$ Corvi.			
34,53				54,62	20,09			0 . 59 . 54,34	Polaris S.P.			
	42,74			11,90	31,75	19,85			13 . 16 . 31,73	Spica.		
4,76								13 . 18 . 24,59	Saturn's center.			
56,18								22 . 21 . 16,78	Venus 2 L.			
33,31				54,58	21,27	2,33	18,43	20,76	0 . 59 . 54,17	Polaris.		
8,12									1 . 2 . 28,98	$\odot$ 's center.		
5,43				26,63	21,20				4 . 26 . 26,62	Aldebaran.		

Before the observations of April 1 the clock was put forward one minute.

The Transit levelled, April 2. 1<sup>h</sup>; and April 6. 1<sup>h</sup>.

April 6, Meridian error by Polaris S.P. and Polaris, allowing 1<sup>s</sup>.25 for clock rate and change of R.A.



Month and Day.	NAME OF STAR or PLANET.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Concluded Transit over the Mean of the seven Wires.			Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	m. s.		h. m. s.	m. s.	h. m. s.	
Apr. 7	Rigel.....	33,1	47,0	0,7	14,1	28,0	41,5	5. 6. 55,0		5. 6. 14,20	G.		
	β Tauri.....	43,4	59,0	14,1	29,5	45,0	0,0	5. 16. 15,5		5. 16. 29,50	G.		
	α Orionis.....	11,1	25,0	38,8	52,1	6,0	19,9	5. 46. 32,9		5. 45. 52,25	G.		
	Sirius.....	48,1	2,1	16,3	30,4	44,8	58,8	6. 38. 12,6		6. 37. 30,44	G.		
	(a) Mars 1 L.....	40,0	54,9	9,8	.....	.....	.....	7. 16. ....	+ 29,72	7. 16. 24,62	G.		
	Venus 2 L.....	35,5	49,2	3,1	17,0	30,8	44,3	22. 25. 58,0		22. 25. 16,84	G.		
	(b) Polaris.....	34.57,6	.....	51.25,2	59.39,8	.....	.....	0. ....	+ 10. 56,70	0. 59. 37,57	G.		
(c) Polaris with Mi- crometer.....	.....	58.21,6	59. 1,2	59.39,8	0.25,2	1. 9,1	1. ....	- 0,18	0. 59. 43,20	G.			
	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....			
Apr. 8	☉ 1 L.....	.....	12,8	26,0	39,7	53,5	7,0	1. 5. 20,5	- 6,82	1. 4. 39,76	G.		
	☉ 2 L.....	8,0	22,0	35,5	49,0	3,0	16,3	1. 7. 30,0		1. 6. 49,12	G.		
	Aldebaran.....	20,7	34,3	48,8	2,9	16,9	30,8	4. 26. 44,5		4. 26. 2,70	G.		
	(d) Jupiter 1 L.....	8,3	.....	37,3	.....	6,8	.....	4. 30. ....	+ 14,44	4. 29. 51,91	G.		
	Jupiter 2 L.....	.....	25,2	.....	54,3	.....	23,4	4. 30. ....		4. 29. 54,30	G.		
	Rigel.....	30,9	44,5	58,0	11,9	25,5	39,0	5. 6. 52,3		5. 6. 11,73	G.		
	β Tauri.....	41,1	56,6	11,9	27,2	42,8	58,0	5. 16. 12,9		5. 15. 27,22	G.		
	(e) α Orionis.....	9,0	22,5	36,0	49,7	3,2	16,9	5. 46. 30,2		5. 45. 49,65	G.		
	Sirius.....	45,9	0,0	14,0	28,0	42,3	56,2	6. 38. 10,0		6. 37. 28,06	G.		
	δ Geminorum.....	7,0	22,1	36,9	51,3	6,0	20,2	7. 10. 35,0		7. 9. 51,21	G.		
	Mars 1 L.....	29,0	43,9	59,0	13,9	29,0	43,6	7. 18. 58,2		7. 18. 13,80	G.		
	(f) Castor.....	51,7	7,1	23,5	39,2	55,5	11,0	7. 24. 27,0		7. 23. 39,29	G.		
	(g) Procyon.....	34,6	48,0	1,8	15,1	28,9	42,1	7. 30. 55,8		7. 30. 15,19	G.		
	♄ Cancri.....	12,1	27,1	43,0	58,0	13,8	29,0	7. 53. 44,0		7. 52. 58,15	G.		
	α Hydræ.....	23,6	37,0	51,0	4,4	18,0	31,9	9. 19. 45,2		9. 19. 4,44	G.		
	γ 1 L.....	52,8	7,2	22,0	36,7	51,9	5,9	9. 26. 20,7		9. 25. 36,75	G.		
	η Leonis.....	.....	.....	.....	56,0	9,9	24,0	9. 58. 38,0	- 21,22	9. 57. 55,76	G.		
	γ Leonis.....	44,9	59,0	13,8	28,0	42,7	56,9	10. 11. 11,0		10. 10. 28,05	G.		
	β Leonis.....	.....	46,8	0,7	15,0	28,9	42,4	11. 40. 56,1	- 7,00	11. 40. 14,65	G.		
	Polaris S.P.....	34.48,2	42.59,2	51. 2,5	59.19,0	7.32,0	15.43,8	13. 24. 1,1		12. 59. 20,83	G.		
(h) Polaris S.P. with Micrometer....	57.15,8	57.56,2	58.37,5	59.19,0	0. 1,5	0.43,4	13. 1. 23,0	+ 0,18	12. 59. 19,67	G.			
(i) Saturn 1 L.....	43,0	56,2	10,0	23,6	37,0	50,4	13. 18. 4,2		13. 17. 23,49	G.			
Saturn 2 L.....	46,1	59,3	13,3	26,8	40,0	53,3	13. 18. 7,3		13. 17. 26,59	G.			
Apr. 9	☉ 2 L.....	45,2	59,0	12,8	26,1	40,0	53,5	1. 11. 7,0		1. 10. 26,23	G.		
	Polaris S.P.....	.....	42.56,5	51. 1,3	59.19,8	7.30,1	15.43,8	13. 23. 58,8	- 4. 5,57	12. 59. 19,48	G.		
	(j) Polaris S.P. with Micrometer....	57.13,4	57.54,8	58.40,0	59.19,8	0. 1,5	0.42,0	13. 1. 22,0	+ 0,18	12. 59. 19,25	G.		
	(k) Saturn 1 L.....	.....	.....	.....	.....	18,0	31,0	13. 17. 44,2	- 27,08	13. 17. 3,99	G.		
	Saturn 2 L.....	.....	.....	.....	.....	21,1	34,2	13. 17. 47,5	- 27,08	13. 17. 7,19	G.		
(l) Arcturus.....	59,0	13,5	27,8	42,0	56,5	10,4	14. 8. ....	+ 7,15	14. 7. 42,02	G.			
Apr. 10	Rigel.....	25,9	39,0	53,0	6,8	20,4	34,0	5. 6. 47,5		5. 6. 6,66	G.		
	α Orionis.....	4,0	17,5	31,0	44,7	58,0	11,8	5. 46. 25,1		5. 45. 44,59	G.		
	Sirius.....	40,7	54,8	8,8	22,8	37,0	50,9	6. 38. 5,0		6. 37. 22,86	G.		
	δ Geminorum.....	2,3	17,0	31,5	46,0	1,0	15,3	7. 10. 29,9		7. 9. 46,14	G.		
	Mars 1 L.....	10,3	25,1	40,0	55,0	9,9	24,4	7. 22. 39,3		7. 21. 54,86	G.		
	Procyon.....	29,3	42,9	56,3	10,0	23,8	37,0	7. 30. 50,5		7. 30. 9,97	G.		
	Pollux.....	56,9	12,3	27,9	43,0	58,8	13,9	7. 35. 28,9		7. 34. 43,10	G.		
	α Hydræ.....	18,4	31,9	45,9	59,5	13,1	26,3	9. 19. 40,0		9. 18. 59,30	G.		
	χ Leonis.....	20,1	34,0	47,2	1,0	14,9	28,2	10. 56. 42,0		10. 56. 1,05	G.		
	(m) η Leonis.....	2,9	17,0	31,0	45,0	58,8	12,6	11. 7. 26,2		11. 6. 44,79	G.		
	γ 1 L.....	53,9	7,9	22,0	36,0	50,1	4,0	11. 19. 17,9		11. 18. 35,97	G.		

ILLUMINATED END OF AXIS EAST. Order of Wires, for Stars above the Pole, ABCDEFG.

- (a) Faint: invisible after three first wires.
- (b) F was set down 16.24,0: it is rejected.
- (c) Micrometer at 25,956: 24,956: &c.
- (d) Very faint: clouded at last wire.
- (e) Hurried: not well observed.
- (f) Not good: the observer confused with the small star.

- (g) In consequence of a disturbance after the 1st wire, the others were set down 10<sup>s</sup> too great.
- (h) Micrometer at 20,956: 21,956: &c.
- (i) The eye-piece not well adjusted to the focus.
- (k) Very faint and bad.
- (l) Cloudy.
- (m) The three last wires set down 10<sup>s</sup> too great.



Error of Collimation.	Level Error.	Seconds of Transit corr. for the two Errors.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock slow at 0 <sup>h</sup> .	Apparent R.A. from the Observation.			NAME OF STAR or PLANET.
									h.	m.	s.	
- 0,1	+ 1,45	42,95	+ 6,64	14,63	35,95	21,32	2,33	20,76	5 . 6 . 35,89	Rigel.		
				29,80	51,14	21,34			5 . 16 . 51,07	$\beta$ Tauri.		
				52,63	13,92	21,29			5 . 46 . 13,93	$\alpha$ Orionis.		
				30,90	52,19	21,29			6 . 37 . 52,30	Sirius.		
				24,94					7 . 16 . 46,41	Mars 1 L.		
				17,37					22 . 25 . 40,36	Venus 2 L.		
				+ 8,16	31,36	54,54			23,18	23,15	0 . 59 . 54,61	Polaris.
					44,89						1 . 6 . 8,15	$\odot$ 's center.
					3,10	26,62			23,52		4 . 26 . 26,70	Aldebaran.
					53,49						4 . 30 . 17,10	Jupiter's center.
					12,25	35,93			23,68		5 . 6 . 35,91	Rigel.
					27,56	51,13			23,57		5 . 15 . 51,25	$\beta$ Tauri.
					50,10	13,90			23,80		5 . 46 . 13,84	$\alpha$ Orionis.
					28,62	52,17			23,55		6 . 37 . 52,44	Sirius.
					51,59						7 . 10 . 15,47	$\delta$ Geminorum.
			14,17					7 . 18 . 38,06	Mars 1 L.			
			39,61		3,60	23,99		7 . 24 . 3,51	Castor.			
			15,65		39,54	23,89		7 . 30 . 39,56	Procyon.			
			58,49					7 . 53 . 22,44	$\delta$ Cancri.			
			4,96		29,28	24,32		9 . 19 . 29,05	$\alpha$ Hydræ.			
			37,14					9 . 26 . 1,24	$\gamma$ 1 L.			
			56,16				9 . 58 . 20,32	$\eta$ Leonis.				
			28,43				10 . 10 . 52,62	$\gamma$ Leonis.				
			15,06	39,48	24,42		11 . 40 . 39,40	$\beta$ Leonis.				
			17,79	30,19	54,53	24,34		0 . 59 . 54,66	Polaris S.P.			
				25,55				13 . 17 . 50,05	Saturn's center.			
				26,68			2,60	25,65	1 . 10 . 52,46	$\odot$ 2 L.		
				29,30	54,50	25,20			.....	Polaris S.P.		
				6,10					13 . 17 . 33,19	Saturn's center.		
				42,41	9,59	27,18			.....	Arcturus.		
+ 1,29	+ 7,18			7,11	35,90	28,79	2,45	28,33	5 . 6 . 35,96	Rigel.		
				44,98	13,88	28,90			5 . 46 . 13,90	$\alpha$ Orionis.		
				23,35	52,13	28,78			6 . 37 . 52,35	Sirius.		
				46,48					7 . 10 . 15,54	$\delta$ Geminorum.		
				55,18					7 . 22 . 24,26	Mars 1 L.		
				10,37	39,51	29,14			7 . 30 . 39,47	Procyon.		
				43,40	12,51	29,11			7 . 35 . 12,51	Pollux.		
				59,75	29,25	29,50			9 . 19 . 29,03	$\alpha$ Hydræ.		
				1,44					10 . 56 . 30,88	$\chi$ Leonis.		
			45,16			11 . 7 . 14,62			$\eta$ Leonis.			
			36,36			11 . 19 . 5,85			$\gamma$ 1 L.			

April 7 and 8, Meridian error by Polaris and Polaris S.P., allowing 1<sup>s</sup>.20 for clock rate and change of R.A.

Month and Day.	NAME OF STAR or PLANET.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Concluded Transit over the Mean of the seven Wires.			Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	m. s.		h. m. s.	m. s.	h. m. s.	
Apr. 10	$\beta$ Virginis.....	56,3	10,1	23,9	37,1	50,9	4,1	11.42.17,4		11.41.37,12	G.		
	$\pi$ Virginis.....	15,1	29,0	42,4	55,9	10,0	23,1	11.52.36,8		11.51.56,04	G.		
Apr. 11	(a) $\odot$ 2 L.....		13,3	27,2		54,9	8,0	1.18.22,0	- 8,20	1.17.40,88	G.		
	Aldebaran.....	13,0	27,0	41,1	55,3	9,4	23,0	4.26.....	+ 7,00	4.25.55,13	G.		
	(a) Jupiter 1 L.....	23,0		52,0		20,9		4.32.49,9		4.32.6,45	G.		
	Jupiter 2 L.....		39,9		9,0		37,8	4.32.....		4.32.8,90	G.		
	Rigel.....	23,4	37,0	50,4	4,3	18,0	31,3	5.6.45,1		5.6.4,21	G.		
	$\beta$ Tauri.....	33,5	49,1	4,2	19,5	35,0	50,2	5.16.5,4		5.15.19,56	G.		
	$\alpha$ Orionis.....	1,3	15,0	28,5	42,1	56,0	9,4	5.46.22,8		5.45.42,15	G.		
	Sirius.....	38,0	52,3	6,1	20,6	34,8	48,5	6.38.2,5		6.37.20,40	G.		
	Mars 1 L.....	2,3	17,1	32,0	47,0	1,9	16,3	7.24.31,0		7.23.46,80	G.		
	Procyon.....	27,0	40,4	54,0	7,3	21,1	34,7	7.30.48,0		7.30.7,50	G.		
	Pollux.....	54,9	9,9	25,3	40,9	56,0	11,5	7.35.26,8		7.34.40,75	G.		
	$\alpha$ Hydræ.....	16,1	30,0	43,2	57,0	10,9	24,2	9.19.38,0		9.18.57,06	G.		
	$\gamma$ Leonis.....	37,3	52,0	6,3	21,0	35,2	49,5	10.11.4,0		10.10.20,75	G.		
	* N.P.D. 62°. 52'	17,3	32,9	47,9	3,2	18,9	33,8	10.24.48,9		10.24.3,27	G.		
	$\chi$ Leonis.....	18,0	31,3	44,9	59,0	12,5	25,9	10.56.39,9		10.55.58,79	G.		
	$n$ Leonis.....	0,7	14,7	28,8	42,6	56,7	10,3	11.7.24,0		11.6.42,54	G.		
	$\beta$ Virginis.....	54,2	7,9	21,3	35,0	48,5	2,0	11.42.15,2		11.41.34,87	G.		
	$\pi$ Virginis.....	13,0	26,4	40,0	53,9	7,7	21,0	11.52.34,5		11.51.53,79	G.		
$\eta$ 1 L.....	38,1	52,0	5,9	20,0	33,9	47,5	12.15.1,2		12.14.19,80	G.			
$\gamma$ Virginis.....				47,0	0,1	13,9	12.33.27,2	- 20,23	12.32.46,82	G.			
$\delta$ Virginis.....	6,0	19,2	33,0	46,5	59,9	13,2	12.47.27,0		12.46.46,40	G.			
Saturn 1 L.....	54,3		11,4		38,5		13.17.5,2		13.16.24,85	G.			
Saturn 2 L.....		0,4		28,0		55,0	13.16.....		13.16.27,80	G.			
Apr. 12	$\delta$ Virginis.....	3,5	17,0	30,8	44,3	57,9	11,1	12.47.24,5		12.46.44,16	G.		
	$\eta$ 1 L.....				32,3	46,1	0,0	13.11.....	- 13,96	13.10.32,17	G.		
	$\delta$ Ophiuchi.....	28,0	41,3	55,0	8,2	21,9	35,2	16.5.48,5		16.5.8,30	G.		
Apr. 13	(b) $\odot$ 1 L.....	6,7	20,2	34,0	47,8	1,9	15,0	1.23.28,4		1.22.47,72	G.		
	(c) $\odot$ 2 L.....	16,0	29,8					1.25.38,0	+ 9,18	1.24.57,11	G.		
	Venus 2 L.....	37,9	51,1	5,2	18,9	32,5	45,9	22.51.59,8		22.51.18,76	G.		
	(d) Polaris.....		42.57,5	51.14,4	59.23,8	7.43,5	15.47,7	1.....	- 1,09	0.59.24,29	G.		
	(e) Polaris with Micrometer.....	57.18,1	58.1,5	58.42,4	59.23,8	0.4,5	0.45,7	1.1.28,8	- 0,18	0.59.23,36	G.		
Apr. 14	$\odot$ 1 L.....	44,7	58,2	12,0	25,7	39,5	53,0	1.27.6,8		1.26.25,70	G.		
	$\odot$ 2 L.....	54,0	8,0	21,5	35,3	49,0	2,9	1.29.16,3		1.28.35,29	G.		
	Aldebaran.....		19,9	34,0	48,1	2,0	16,1	4.26.30,0	- 7,03	4.25.47,99	G.		
	Jupiter 1 L.....	41,2		10,3		39,4		4.35.8,3		4.34.24,80	G.		
	Jupiter 2 L.....		58,0		27,1		56,1	4.34.....		4.34.27,07	G.		
	Rigel.....	16,1	29,7	43,4	57,0	10,9	24,3	5.6.38,0		5.5.57,06	G.		
	$\beta$ Tauri.....	26,1	41,9	57,0	12,4	28,0	42,9	5.15.58,1		5.15.12,34	G.		
	$\alpha$ Orionis.....	53,9	7,8	21,3	34,9	48,8	1,9	5.46.15,5		5.45.34,87	G.		
	Castor.....	36,8	52,9	8,6	24,3	40,8	56,1	7.24.12,1		7.23.24,51	G.		
	Mars 1 L.....	42,2	57,0	12,1	26,8	41,9	56,1	7.30.11,0		7.29.26,73	G.		
	Pollux.....	47,7	3,0	18,1	33,6	49,1	4,0	7.35.19,1		7.34.33,51	G.		
	$\alpha$ Hydræ.....	8,9	22,9	36,2	50,0	3,9	17,2	9.19.30,8		9.18.49,98	G.		
	Polaris S.P.....			50.47,7	59.8,5	7.17,5		13.23.41,0	- 6.8,09	12.59.5,59	G.		
	(f) Polaris S.P. with Micrometer.....	56.58,5	57.44,0	58.28,2	59.8,5	59.51,5	0.25,8	13.1.7,7	+ 0,18	12.59.6,49	G.		
	Saturn 1 L.....	45,8		12,8		40,0		13.16.6,9		13.15.26,38	G.		
Saturn 2 L.....		2,3		29,3		56,3	13.15.....		13.15.29,30	G.			

ILLUMINATED END OF AXIS EAST. Order of Wires, for Stars above the Pole, ABCDEFG.

(a) Very faint.

(b) Observed without taking a second from the clock, and the counting was found at the end too great by 1": the times set down were 7,7: 21,2: &c.

(c) Observed without dark glass.

(d) Pretty good.

(e) Coincidence with D at 23,949: Micrometer at 26,949: 25,949: &c.

(f) Micrometer at 20,949: 21,949: &c.



CALCULATION OF APPARENT RIGHT ASCENSIONS.

(27)

Error of Collimation.	Level Error.	Seconds of Transit corr. for the two Errors.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock slow at 0 <sup>h</sup> .	Apparent R.A. from the Observation.			NAME OF STAR or PLANET.		
									h.	m.	s.			
- 0,1	+ 1,29		+ 7,18	37,54	.		2,45	28,33	11 . 42 . 7,06	β Virginis.		β Virginis.		
				56,43					11 . 52 . 25,97	π Virginis.			π Virginis.	
				41,27			2,33	30,73	1 . 18 . 12,13	☉ 2 L.		☉ 2 L.		
				55,48	26,59	31,11			4 . 26 . 26,64	Aldebaran.			Aldebaran.	
				8,02					4 . 32 . 39,19	Jupiter's center.		Jupiter's center.		
				4,66	35,89	31,23			5 . 6 . 35,89	Rigel.			Rigel.	
				19,86	51,08	31,22			5 . 15 . 51,09	β Tauri.		β Tauri.		
				42,54	13,86	31,32			5 . 46 . 13,83	α Orionis.			α Orionis.	
				20,89	52,11	31,22			6 . 37 . 52,26	Sirius.		Sirius.		
				47,12					7 . 24 . 18,57	Mars 1 L.			Mars 1 L.	
				7,90	39,49	31,59			7 . 30 . 39,36	Procyon.		Procyon.		
				41,05	12,49	31,44			7 . 35 . 12,52	Pollux.			Pollux.	
				57,51	29,24	31,73			9 . 19 . 29,13	α Hydræ.		α Hydræ.		
				21,07					10 . 10 . 52,79	γ Leonis.			γ Leonis.	
				3,58					10 . 24 . 35,31	* N.P.D. 62°. 52'.		* N.P.D. 62°. 52'.		
				59,18					10 . 56 . 30,97	χ Leonis.			χ Leonis.	
				42,91					11 . 7 . 14,71	η Leonis.		η Leonis.		
				35,29					11 . 42 . 7,16	β Virginis.			β Virginis.	
				54,18					11 . 52 . 26,07	π Virginis.		π Virginis.		
				20,22					12 . 14 . 52,13	δ 1 L.			δ 1 L.	
				47,25					12 . 33 . 19,18	γ Virginis.		γ Virginis.		
				46,81					12 . 47 . 18,78	δ Virginis.			δ Virginis.	
				26,78					13 . 16 . 58,80	Saturn's center.		Saturn's center.		
				44,57					2,35	32,91	12 . 47 . 18,73		δ Virginis.	
				32,61							13 . 11 . 6,82	δ 1 L.		δ 1 L.
				8,68			43,16	34,48			.....	δ Ophiuchi.		
				52,81							35,26	1 . 24 . 28,17		☉'s center.
				19,21							2,47	35,39	22 . 51 . 56,95	
				26,08				15,88	55,01	39,13		37,86	0 . 59 . 53,84	Polaris.
				30,89									1 . 28 . 8,86	☉'s center.
48,34				26,57	38,23				4 . 26 . 26,65	Aldebaran.				
26,28									4 . 35 . 4,61	Jupiter's center.				
57,51				35,86	38,35				5 . 6 . 35,90	Rigel.				
12,64				51,04	38,40				5 . 12 . 51,04	β Tauri.				
35,26				13,82	38,56				5 . 46 . 13,72	α Orionis.				
24,79				3,49	38,70				7 . 24 . 3,41	Castor.				
27,05									7 . 30 . 5,68	Mars 1 L.				
33,81				12,44	38,63				7 . 35 . 12,45	Pollux.				
50,43				29,20	38,77				9 . 19 . 29,24	α Hydræ.				
3,88				14,79	55,14	40,35			0 . 59 . 53,99	Polaris S.P.				
				28,29					13 . 16 . 7,52	Saturn's center.				

The Transit levelled, April 13. 2<sup>h</sup>.

April 13 and 14, Meridian error by Polaris and Polaris S.P., allowing 1<sup>s</sup>.13 for clock rate and change of R.A.



Month and Day.	NAME OF STAR or PLANET.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Concluded Transit over the Mean of the seven Wires.	Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	m. s.			
Apr. 14	(a) Arcturus.....	47,0	1,2	15,3	...	44,5	58,9	14. 8. 13,1		14. 7. 30,00	G.
	) 2 L.....	44,2	59,1	13,9	28,1	43,0	57,2	15. 11. 11,8		15. 10. 28,19	G.
	Venus 2 L.....	57,1	11,0	24,6	38,3	52,0	5,7	22. 56. 19,1		22. 55. 38,26	G.
Apr. 20	Saturn 1 L.....	50,3	.....	17,5	.....	44,8	.....	13. 14. 11,9		13. 13. 31,12	B.
	Saturn 2 L.....	.....	6,9	.....	34,1	.....	1,0	13. 14. ....		13. 13. 34,00	B.
	Spica.....	.....	11,0	24,8	38,4	52,0	5,9	13. 16. 19,3	- 6,83	13. 15. 38,40	B.
Apr. 21	α Hydræ.....	52,5	6,2	19,9	33,6	47,2	0,8	9. 19. 14,3		9. 18. 33,50	B.
	Regulus.....	58,2	12,1	26,0	39,8	53,6	7,3	9. 59. 21,1		9. 58. 39,73	B.
	β Leonis.....	1,9	16,0	29,7	43,7	58,1	12,0	11. 40. 25,8		11. 39. 43,88	B.
	Polaris S.P.....	34.13,6	42.23,8	50.31,4	58.46,2	6.59,4	.....	13. ....	+ 8. 12,38	12. 58. 47,26	B.
Apr. 22	Polaris.....	.....	42.42,8	50.54,6	59. 9,4	7.25,2	15.29,6	1. 23. 41,8	- 4. 6,32	0. 59. 7,58	B.
Apr. 22	☉ 1 L.....	4,6	18,7	32,2	46,2	0,3	14,1	1. 56. 27,4		1. 55. 46,22	B.
	☉ 2 L.....	15,8	29,3	43,1	57,0	11,1	24,7	1. 58. 38,4		1. 57. 57,06	B.
	Jupiter 1 L.....	5,2	.....	34,3	.....	3,2	.....	4. 41. 32,3		4. 40. 48,75	B.
	Jupiter 2 L.....	.....	21,7	.....	50,8	.....	19,7	4. 41. ....		4. 40. 50,73	B.
	Rigel.....	57,3	11,0	24,7	38,3	51,9	5,6	5. 6. 19,1		5. 5. 38,27	B.
	Castor.....	18,1	33,9	49,9	5,7	21,9	37,8	7. 23. 53,5		7. 23. 5,83	B.
	Procyon.....	1,1	14,6	28,0	41,4	55,2	8,7	7. 30. 22,1		7. 29. 41,58	B.
Apr. 24	Aldebaran.....	.....	.....	.....	.....	38,4	52,3	4. 27. 6,3	- 28,08	4. 26. 24,25	B.
	Venus 2 L.....	.....	.....	.....	43,8	57,3	10,9	23. 40. 24,2	- 20,29	23. 39. 43,76	B.
	Polaris.....	35.24,2	.....	.....	.....	.....	.....	1. 24. 33,6	+ 2,73	1. 0. 1,63	B.
Apr. 25	☉ 2 L.....	23,1	37,0	51,0	4,8	18,9	32,8	2. 10. ....	+ 6,92	2. 10. 4,85	B.
	Regulus.....	48,3	2,6	16,1	30,0	44,1	57,9	10. 0. 11,4		9. 59. 30,05	B.
	β Leonis.....	52,1	6,1	19,9	34,0	48,1	2,0	11. 41. 15,7		11. 40. 33,98	B.
	Polaris S.P.....	.....	.....	51.21,2	59.39,6	7.49,6	.....	13. 24. 16,4	- 6. 7,89	12. 59. 38,81	B.
	(b) Saturn 1 L.....	16,1	.....	.....	.....	8,9	23,3	13. 13. 37,1	- 10,15	13. 12. 57,71	B.
Apr. 26	Spica.....	45,1	58,8	12,4	26,1	40,2	53,6	13. 17. 7,2		13. 16. 26,20	B.
Apr. 26	Venus 2 L.....	39,1	52,6	6,3	19,7	33,2	47,0	23. 49. 0,3		23. 48. 19,75	B.
	Polaris.....	35.20,2	43.35,6	51.53,2	59.59,6	8.17,4	16.22,2	1. 24. 31,8		1. 0. 0,00	B.
Apr. 27	☉ 1 L.....	39,8	53,8	7,5	21,3	35,6	49,1	2. 16. 3,0		2. 15. 21,44	B.
	☉ 2 L.....	51,2	4,9	19,1	32,9	47,1	0,9	2. 18. 14,8		2. 17. 32,98	B.
	α Hydræ.....	38,4	52,1	5,7	19,3	33,0	46,4	9. 20. 0,1		9. 19. 19,29	B.
	Regulus.....	44,2	57,9	12,1	26,1	39,7	53,2	10. 0. 7,1		9. 59. 25,76	B.
	β Leonis.....	.....	.....	16,0	30,0	43,9	57,8	11. 41. 11,6	- 13,99	11. 40. 29,87	B.
	Polaris S.P.....	35. 6,4	43.17,8	51.23,4	59.35,6	7.47,2	.....	13. 24. 13,6	+ 2. 43,94	12. 59. 37,94	B.
	Saturn 1 L.....	39,6	.....	6,9	.....	34,1	.....	13. 13. 0,5		13. 12. 20,27	B.
	Saturn 2 L.....	.....	56,2	.....	23,7	.....	50,4	13. 12. ....		13. 12. 23,43	B.
Apr. 28	Spica.....	40,8	54,4	8,2	21,9	36,0	49,3	13. 17. 2,9		13. 16. 21,93	B.
Apr. 28	Castor.....	4,1	19,9	35,8	51,7	8,0	23,7	7. 24. 39,5		7. 23. 51,81	B.
	Procyon.....	46,9	0,6	14,1	27,5	41,2	54,7	7. 31. 8,2		7. 30. 27,60	B.
	Pollux.....	14,7	30,1	45,4	0,9	16,3	31,2	7. 35. 46,6		7. 35. 0,74	B.
	Mars 1 L.....	21,7	36,1	50,8	5,4	20,3	34,8	7. 58. 49,1		7. 58. 5,46	B.
	α Hydræ.....	36,3	50,1	3,9	17,2	31,0	44,4	9. 19. 57,9		9. 19. 17,26	B.
	Regulus.....	42,0	55,6	9,7	23,4	37,3	51,1	10. 0. 5,0		9. 59. 23,44	B.
	β Leonis.....	45,5	59,8	14,0	27,4	41,9	55,6	11. 41. 9,4		11. 40. 27,66	B.
	Polaris S.P.....	35. 2,6	43.14,2	51.19,8	59.33,4	7.45,6	.....	13. 24. 12,2	+ 2. 43,93	12. 59. 35,23	B.

ILLUMINATED END OF AXIS EAST. Order of Wires, for Stars above the Pole, ABCDEFG.

(a) Cloudy.

(b) The intervals are rather irregular: 1<sup>s</sup>.51 is added for the time of transit of the center.

Error of Collimation.	Level Error.	Seconds of Transit corr. for the two Errors.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock slow at 0 <sup>h</sup> .	Apparent R.A. from the Observation.			NAME OF STAR or PLANET.
									h.	m.	s.	
-0,1	+1,29	45,88 9,03	+7,18	30,34 28,68 38,71	9,65	39,31	2,47	37,86	14. 8. 9,65 15. 11. 8,11 22. 56. 18,93		Arcturus. J 2 L. Venus 2 L.	
	+0,87		+8,27	33,05 38,92	31,84	52,92	2,48	51,55	13. 14. 25,97 .....	Saturn's center. Spica.		
				34,02 40,13 44,27 58,45 57,29	29,10 35,30 39,43 56,65 56,69	55,08 55,17 55,16 58,20 59,40	2,43	54,10	9. 19. 29,06 9. 59. 35,24 11. 40. 39,55 0. 59. 53,87 0. 59. 53,89	$\alpha$ Hydræ. Regulus. $\beta$ Leonis. Polaris S.P. Polaris.		
				52,04 50,09					1. 57. 48,73 4. 41. 47,06	$\odot$ 's center. Jupiter's center.		
				38,78 6,10 42,02	35,73 3,34 39,32	56,95 57,24 57,30			5. 6. 35,79 7. 24. 3,34 7. 30. 39,27	Rigel. Castor. Procyon.		
				+8,40	24,63 44,25 51,15	26,50 57,38	1,87 6,23	2,28	1,60 3,88	..... 23. 39. 48,10 0. 59. 55,12	Aldebaran. Venus 2 L. Polaris.	
			3,08		5,26 30,46 34,37 50,20 58,21 26,72				2. 10. 9,35 9. 59. 35,29 11. 40. 39,36 0. 59. 55,31 13. 13. 3,34 13. 16. 31,86	$\odot$ 2 L. Regulus. $\beta$ Leonis. Polaris S.P. Saturn's center. Spica.		
			37,43		20,15 49,77	58,08	8,31	2,18	6,10 8,28	23. 48. 28,42 0. 59. 58,14	Venus 2 L. Polaris.	
	+0,23		0,21	+7,35	27,53 19,73 26,08 30,18 48,92 22,27 22,37				2. 16. 36,02 9. 19. 28,86 9. 59. 35,27 11. 40. 39,52 0. 59. 58,38 13. 12. 31,75 13. 16. 31,86	$\odot$ 's center. $\alpha$ Hydræ. Regulus. $\beta$ Leonis. Polaris S.P. Saturn's center. Spica.		
			37,75		52,02 27,96 0,97 5,73 17,69 23,76 27,97 46,21	3,25 39,23 12,21	11,23 11,27 11,24	2,20	10,48	7. 24. 3,18 7. 30. 39,13 7. 35. 12,15 7. 58. 16,94 9. 19. 29,02 9. 59. 35,16 11. 40. 39,52 .....	Castor. Procyon. Pollux. Mars 1 L. $\alpha$ Hydræ. Regulus. $\beta$ Leonis. Polaris S.P.	

The Transit levelled, April 22. 2<sup>h</sup>.

April 21, Meridian error by Polaris S.P. and Polaris, allowing 1<sup>s</sup>.09 for clock rate and change of R.A.

April 24 and 25, Meridian error by Polaris and Polaris S.P., allowing 1<sup>s</sup>.07 for clock rate and change of R.A.

April 26 and 27, Meridian error by Polaris and Polaris S.P., allowing 0<sup>s</sup>.90 for clock rate and change of R.A.

After Aldebaran, April 24, the clock was put forward one minute.



Month and Day.	NAME OF STAR or PLANET.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Concluded Transit over the Mean of the seven Wires.	Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	m. s.			
Apr. 28	Saturn 1 L. ....	21,4	.....	48,9	.....	16,1	.....	13. 12. 43,1		13. 12. 2,37	B.
	Saturn 2 L. ....	.....	38,2	.....	5,5	.....	32,8	13. 12. ....		13. 12. 5,50	B.
	Spica.....	38,4	52,5	6,2	19,9	33,7	47,3	13. 17. 1,1		13. 16. 19,88	B.
May 2	Regulus.....	33,1	46,9	0,8	14,6	28,5	42,1	9. 59. 56,0		9. 59. 14,57	B.
May 4	Procyon.....	33,8	47,2	1,0	14,3	28,0	41,6	7. 30. 55,0		7. 30. 14,41	B.
	Pollux.....	1,5	17,1	32,2	47,4	2,8	18,2	7. 35. 33,3		7. 34. 47,50	B.
	γ 1 L.....	37,7	52,7	7,9	23,1	38,4	53,3	8. 7. 8,5		8. 6. 23,08	B.
	Polaris S.P.....	.....	43. 2,8	51. 5,6	59.22,2	7.31,4	.....	13.....	+ 4. 7,20	12. 59. 22,70	B.
May 5	⊙ 1 L.....	50,6	4,9	18,9	32,8	47,1	1,1	2. 46. 14,9		2. 45. 32,90	B.
	⊙ 2 L.....	3,4	17,4	31,6	45,6	59,5	13,8	2. 48. 27,6		2. 47. 45,56	B.
May 6	⊙ 1 L.....	39,1	53,3	7,7	21,5	35,9	40,8	2. 50. 3,9		2. 49. 21,60	B.
	Castor.....	.....	2,3	18,0	33,8	50,1	6,0	7. 24. 21,5	- 7,98	7. 23. 33,97	B.
	Procyon.....	29,0	42,6	56,3	10,0	23,4	37,0	7. 30. 50,3		7. 30. 9,80	B.
	γ 1 L.....	37,1	51,9	6,3	20,9	35,4	49,9	9. 59. 4,2		9. 58. 20,81	B.
May 7	Mars 1 L.....	57,1	11,9	26,1	40,7	55,4	.....	8. 17. 24,2	+ 4,83	8. 16. 40,73	B.
	γ Leonis.....	37,3	52,0	.....	20,8	.....	49,9	10. 11. 4,0	+ 0,03	10. 10. 20,83	B.
	γ 1 L.....	12,1	26,4	40,2	54,7	9,0	22,9	10. 53. 37,0		10. 52. 54,61	B.
	δ Leonis.....	6,8	20,2	34,3	48,1	2,0	15,6	11. 15. 29,3		11. 14. 48,05	B.
	β Leonis.....	25,2	39,1	53,4	7,3	21,7	35,2	11. 40. 49,3		11. 40. 7,32	B.
	Polaris S.P.....	34.45,6	42.51,2	51. 1,8	59.18,2	.....	15.41,8	13.....	+ 6. 33,51	12. 59. 17,23	B.
May 8	⊙ 1 L.....	18,0	32,2	46,2	0,5	14,8	28,9	2. 57. 42,8		2. 57. 0,48	B.
	⊙ 2 L.....	30,9	45,3	59,4	13,8	28,0	41,9	2. 59. 56,0		2. 59. 13,61	B.
	Polaris.....	34.57,8	.....	.....	59.33,6	.....	15.57,4	1. 24. 2,2	- 4. 4,31	0. 59. 33,44	B.
May 9	⊙ 1 L.....	8,1	22,2	36,4	50,6	5,1	19,1	3. 1. 33,2		3. 0. 50,67	B.
	⊙ 2 L.....	21,3	35,5	.....	.....	.....	32,0	3. 3. ....	+ 14,18	3. 3. 3,78	B.
	Regulus.....	16,7	30,7	44,5	58,3	12,4	25,9	9. 59. 39,9		9. 58. 58,35	B.
	β Leonis.....	20,9	34,3	48,4	.....	.....	30,2	11. 40. 44,2	+ 2,83	11. 40. 2,43	B.
	η Virginis.....	.....	.....	39,0	52,4	6,0	19,4	12. 11. 32,3	- 13,49	12. 10. 52,33	B.
	Polaris S.P.....	34.49,6	42.58,2	.....	59.15,8	.....	.....	13. 23. 49,4	+ 4. 4,30	12. 59. 17,55	B.
	Saturn 1 L.....	14,4	.....	42,0	.....	8,2	.....	13. 9. 35,3		13. 8. 54,97	B.
	Saturn 2 L.....	.....	31,1	.....	58,2	.....	25,2	13. 9. ....		13. 8. 58,17	B.
	Spica.....	14,0	27,3	41,0	55,0	8,8	22,2	13. 16. 36,0		13. 15. 54,90	B.
	Arcturus.....	49,7	4,1	18,7	33,2	47,3	1,6	14. 8. 15,7		14. 7. 32,90	B.
	May 10	θ Virginis.....	.....	19,1	33,0	46,8	0,4	13,9	13. 1. 27,2	- 6,77	13. 0. 46,63
Spica.....		11,4	25,0	38,9	52,3	6,4	20,1	13. 16. 33,5		13. 15. 52,51	B.
γ 1 L.....		34,8	49,1	2,8	16,7	31,0	44,9	13. 37. 58,4		13. 37. 16,82	B.
κ Virginis.....		47,1	1,0	14,7	28,1	42,0	55,6	14. 4. 9,1		14. 3. 28,23	B.
Arcturus.....		47,2	1,8	16,2	30,7	45,1	59,6	14. 8. 13,3		14. 7. 30,55	B.
λ Virginis.....		.....	.....	.....	33,7	47,4	1,1	14. 10. 14,9	- 20,72	14. 9. 33,55	B.
May 11	⊙ 1 L.....	.....	.....	19,0	33,2	46,9	1,8	3. 9. 16,0	- 14,21	3. 8. 33,17	B.
	⊙ 2 L.....	.....	.....	.....	.....	1,1	15,0	3. 11. 29,1	- 28,41	3. 10. 46,66	B.
May 12	⊙ 1 L.....	42,8	56,9	11,2	25,2	39,5	53,4	3. 13. 7,9		3. 12. 25,27	B.
	⊙ 2 L.....	56,6	11,0	24,9	39,0	53,4	7,8	3. 15. 21,9		3. 14. 39,23	B.
	Mars 1 L.....	27,3	41,7	56,1	10,8	25,3	39,9	8. 27. ....	+ 7,20	8. 27. 10,72	B.
	Arcturus.....	43,0	57,3	11,8	26,1	40,7	55,0	14. 8. 9,0		14. 7. 26,13	B.

ILLUMINATED END OF AXIS EAST. Order of Wires, for Stars above the Pole, ABCDEFG.



Error of Collimation.	Level Error.	Seconds of Transit corr. for the two Errors.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock slow at 0 <sup>h</sup> .	Apparent R.A. from the Observation.			NAME OF STAR or PLANET.							
									h.	m.	s.								
- 0,1	+ 0,23		+ 7,35	4,35				2,20	10,48	13 . 12 . 16,04			Saturn's center.						
				20,32						31,87	11,55	13 . 16 . 32,02			Spica.				
	14,91			35,17						20,26	.....			Regulus.					
	14,79			39,16						24,37	2,24	23,66	.....			Procyon.			
	47,75			12,12						24,37			.....			Pollux.			
	23,37			1,17						28,21	8 . 6 . 47,79			) 1 L.			Polaris S.P.		
	32,96										.....								
				39,55										25,90	2 . 47 . 5,71			☉'s center.	
				21,92										2,30	28,22	2 . 49 . 50,41			☉ 1 L.
				34,20						3,13	28,93	.....				Castor.			
		10,18	39,12	28,94	.....			Procyon.											
		21,14			9 . 58 . 50,32			) 1 L.											
		41,03					2,40	30,49	8 . 17 . 12,35			Mars 1 L.							
		21,13			10 . 10 . 52,64				γ Leonis.										
		54,95			10 . 53 . 26,53			) 1 L.											
		48,40			11 . 15 . 20,01			ι Leonis.											
		7,65	39,31	31,66	.....			β Leonis.											
		27,49	2,20	34,71	.....			Polaris S.P.											
				7,37				32,89	2 . 58 . 40,56			☉'s center.							
	- 0,35	32,52	+ 4,34	26,36	2,82	36,46	2,36	35,49	1 . 0 . 1,95			Polaris.							
				57,37					3 . 2 . 33,16			☉'s center.							
				58,51	35,08	36,37			9 . 59 . 34,98			Regulus.							
				2,58	39,30	36,72			11 . 40 . 39,22			β Leonis.							
				52,54					12 . 11 . 29,23			η Virginis.							
		18,44		25,04	3,05	38,01			1 . 0 . 1,81			Polaris S.P.							
				56,79					13 . 9 . 33,57			Saturn's center.							
				55,14	31,87	36,73			13 . 16 . 31,93			Spica.							
				33,03	9,79	36,76			14 . 8 . 9,91			Arcturus.							
				46,86			2,26	37,83	13 . 1 . 25,91			θ Virginis.							
				52,75	31,87	39,12			.....			Spica.							
				17,05					13 . 37 . 56,16			) 1 L.							
				28,47					14 . 4 . 7,62			κ Virginis.							
				30,68	9,80	39,12			.....			Arcturus.							
				33,80					14 . 10 . 12,96			λ Virginis.							
				40,05				40,09	3 . 10 . 20,44			☉'s center.							
				32,39			2,12	42,30	3 . 14 . 14,97			☉'s center.							
				10,85					8 . 27 . 53,90			Mars 1 L.							
				26,26	9,80	43,54			.....			Arcturus.							

The Transit levelled, April 29. 2<sup>h</sup>; and May 4. 1<sup>h</sup>.

May 8 and 9, Meridian error by Polaris and Polaris S.P., allowing 1<sup>s</sup>.34 for clock rate and change of R.A.

Month and Day.	NAME OF STAR or PLANET.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Concluded Transit over the Mean of the seven Wires.	Observer.	
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	m. s.				h. m. s.
May 13	☉ 1 L. ....	35,3	49,5	3,7	18,0	32,1	46,4	3. 17. 0,8		3. 16. 17,97	B.	
	☉ 2 L. ....	49,2	3,7	17,9	32,1	46,1	0,3	3. 19. 14,7		3. 18. 32,00	B.	
May 15	Castor.....	25,7	42,0	57,8	13,7	29,8	45,3	7. 24. 1,3		7. 23. 13,66	B.	
	Procyon.....	8,9	22,3	36,0	49,8	3,3	16,4	7. 30. 30,0		7. 29. 49,53	B.	
	β Leonis.....	7,5	21,5	35,2	49,2	3,6	17,2	11. 40. 31,1		11. 39. 49,33	B.	
	Polaris S.P.....	34.37,2	42.44,2	50.49,4	59. 5,2	.....	15.27,8	13. 23. 41,6	+ 1. 21,74	12. 59. 5,97	B.	
	Polaris.....	34.53,8	43. 3,8	.....	.....	7.44,4	.....	1. 23. 56,4	+ 2. 2,99	0. 59. 27,59	B.	
May 16	☉ 1 L. ....	.....	.....	45,8	0,1	14,9	28,3	3. 28. 42,5	- 14,30	3. 28. 0,02	B.	
	☉ 2 L. ....	31,3	46,0	0,2	14,6	29,0	43,1	3. 30. 57,1		3. 30. 14,47	B.	
	Castor.....	.....	.....	.....	.....	28,3	43,9	7. 23. 59,2	- 31,90	7. 23. 11,90	B.	
	Procyon.....	6,7	20,2	33,8	47,3	1,1	14,4	7. 30. 27,9		7. 29. 47,35	B.	
	Pollux.....	34,2	49,7	5,1	20,3	35,8	50,9	7. 35. 6,2		7. 34. 20,31	B.	
	Regulus.....	1,4	15,6	29,1	42,9	57,0	10,7	9. 59. 24,3		9. 58. 43,00	B.	
	β Leonis.....	5,1	19,0	33,1	47,3	1,3	15,0	11. 40. 28,9		11. 39. 47,10	B.	
	Polaris S.P.....	34.29,8	42.39,4	50.44,6	59. 2,2	.....	.....	13. 23. 39,4	+ 4. 54,67	12. 59. 1,75	B.	
	Saturn 1 L.....	30,1	.....	57,1	.....	24,0	.....	13. 7. 51,3		13. 7. 10,62	B.	
	Saturn 2 L.....	.....	47,1	.....	13,7	.....	40,9	13. 7. ....		13. 7. 13,90	B.	
	Spica.....	58,1	12,2	25,7	39,6	53,4	7,0	13. 16. 20,5		13. 15. 39,50	B.	
	Arcturus.....	34,4	49,1	3,2	17,6	32,0	46,1	14. 8. 0,7		14. 7. 17,59	B.	
	Antares.....	42,1	56,9	12,2	27,0	42,1	57,0	16. 19. 11,9		16. 18. 27,03	B.	
	α Herculis.....	34,4	48,8	2,7	16,9	30,7	44,7	17. 6. 58,2		17. 6. 16,63	B.	
	Pallas.....	22,9	37,4	51,9	6,8	22,0	36,6	17. 22. 51,3		17. 22. 6,99	B.	
	α Ophiuchi.....	44,1	57,9	11,7	25,6	39,4	53,1	17. 27. 7,0		17. 26. 25,54	B.	
	Ceres.....	47,7	3,1	18,0	32,2	47,0	1,1	17. 35. 15,3		17. 34. 32,05	B.	
	Polaris.....	.....	.....	51.12,8	59.25,4	7.42,6	15.46,2	1. 23. 53,4	- 8. 11,86	0. 59. 24,22	B.	
	May 17	Polaris.....	34.46,8	43. 1,6	51.14,4	59.24,6	7.41,4	15.45,2	1. 23. 52,8		0. 59. 23,83	B.
		Venus 2 L.....	23,2	36,7	50,6	4,3	17,9	31,4	1. 19. 44,8		1. 19. 4,13	B.
May 18	☉ 1 L. ....	7,4	22,1	36,3	50,6	5,1	19,3	3. 36. 33,6		3. 35. 50,62	B.	
	☉ 2 L. ....	22,7	36,9	51,2	5,4	20,0	34,1	3. 38. 48,5		3. 38. 5,54	B.	
	Regulus.....	56,9	10,9	24,8	38,3	52,2	6,0	9. 59. 19,8		9. 58. 38,42	B.	
	β Leonis.....	0,4	14,7	28,4	42,7	56,6	10,8	11. 40. 24,3		11. 39. 42,56	B.	
	κ <sup>4</sup> Virginis.....	48,3	1,7	15,4	29,0	42,7	56,0	12. 55. 9,3		12. 54. 28,92	B.	
	Polaris S.P.....	34.29,2	42.40,6	50.43,8	58.59,4	.....	.....	13. 23. 38,2	+ 4. 54,65	12. 59. 0,89	B.	
	Saturn 1 L.....	2,3	.....	29,9	.....	56,8	.....	13. 7. 22,9		13. 6. 42,97	B.	
	Saturn 2 L.....	.....	18,9	.....	46,2	.....	13,2	13. 7. ....		13. 6. 46,10	B.	
	Spica.....	53,8	7,7	21,1	35,0	48,7	2,1	13. 16. 15,9		13. 15. 34,90	B.	
	η Bootis.....	11,4	25,6	40,1	54,2	8,7	22,9	13. 46. 37,0		13. 45. 54,27	B.	
	Arcturus.....	29,7	44,1	58,6	12,9	27,3	41,6	14. 7. 55,9		14. 7. 12,87	B.	
	* N.P.D. 64°. 45'.	44,9	59,9	14,7	29,9	44,6	59,2	14. 34. 13,9		14. 33. 29,59	B.	
	* N.P.D. 64°. 43'.	43,8	58,9	13,3	28,7	43,9	58,2	14. 39. 13,2		14. 38. 28,57	B.	
	* N.P.D. 91°. 15'.	54,6	8,4	21,2	34,6	47,6	1,4	15. 5. 15,2		15. 4. 34,71	B.	
	α Coronæ Borealis.	1,5	17,0	31,9	47,1	2,3	17,5	15. 27. 32,7		15. 26. 47,15	B.	
	δ 2 L.....	2,6	17,0	31,4	46,2	1,1	15,5	21. 58. 29,9		21. 57. 46,24	B.	
Polaris.....	34.43,8	42.56,6	51. 9,2	59.23,4	7.36,8	15.39,2	1. ....	+ 4. 5,14	0. 59. 19,97	B.		
Venus 2 L.....	46,2	59,6	13,5	26,9	40,6	54,2	1. 24. 7,8		1. 23. 26,97	B.		
May 19	☉ 1 L. ....	3,6	18,1	32,3	46,6	1,3	15,8	3. 40. 29,3		3. 39. 46,72	B.	
	☉ 2 L. ....	19,0	33,3	47,6	1,9	16,7	30,6	3. 42. 44,9		3. 42. 2,00	B.	
	Pollux.....	27,3	42,5	58,0	13,4	29,0	43,9	7. 34. 59,0		7. 34. 13,30	B.	
	Mars 1 L.....	20,1	34,7	49,0	3,1	18,0	31,9	8. 42. 46,0		8. 42. 3,26	B.	

ILLUMINATED END OF AXIS EAST. Order of Wires, for Stars above the Pole, ABCDEFG. -

Error of Collimation.	Level Error.	Seconds of Transit corr. for the two Errors.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock slow at 0 <sup>h</sup> .	Apparent R.A. from the Observation.			NAME OF STAR or PLANET.
									h.	m.	s.	
-0,1	-0,35		+4,34	25,12			2,12	44,42	3. 18. 9,83		☉'s center.	
	+0,39		+8,50	13,91	3,03	49,12	2,14	48,46	7. 24. 3,03		Castor.	
				49,96	39,04	49,08			7. 30. 39,09		Procyon.	
				49,70	39,24	49,54			11. 40. 39,20		β Leonis.	
		5,49		18,41	6,54	48,13			1. 0. 8,03		Polaris S.P.	
		28,10		16,03	6,80	50,77	2,25	50,55	1. 0. 6,67		Polaris.	
				7,58					3. 29. 58,46		☉'s center.	
				12,15	3,02	50,87			7. 24. 3,39		Castor.	
				47,78	39,03	51,25			7. 30. 39,03		Procyon.	
				20,59	11,98	51,39			7. 35. 11,85		Pollux.	
				43,38	35,00	51,62			9. 59. 34,86		Regulus.	
				47,47	39,23	51,76			11. 40. 39,10		β Leonis.	
		1,27		14,19	7,06	52,87			1. 0. 5,96		Polaris S.P.	
				12,74					13. 8. 4,52		Saturn's center.	
				40,01	31,86	51,85			13. 16. 31,80		Spica.	
				17,92	9,81	51,89			14. 8. 9,80		Arcturus.	
				27,65	19,84	52,19			16. 19. 19,73		Antares.	
				17,00	9,11	52,11			17. 7. 9,15		α Herculis.	
				7,31					17. 22. 59,49		Pallas.	
				25,92	18,15	52,23			17. 27. 18,11		α Ophiuchi.	
				32,65					17. 35. 24,85		Ceres.	
		24,73		12,66	7,31	54,65		52,80	1. 0. 5,55		Polaris.	
		24,34	+7,50	13,69	7,81	54,12	2,44	55,15	1. 0. 8,94		Polaris.	
				4,50					1. 19. 59,78		Venus 2 L.	
				58,38					3. 37. 53,90		☉'s center.	
				38,76	34,98	56,22			9. 59. 34,92		Regulus.	
				42,89	39,22	56,33			11. 40. 39,22		β Leonis.	
				29,33					12. 55. 25,79		k <sup>4</sup> Virginis.	
		0,41		11,81	8,02	56,21			1. 0. 8,27		Polaris S.P.	
				44,95					13. 7. 41,43		Saturn's center.	
				35,35	31,86	56,51			13. 16. 31,84		Spica.	
				54,57					13. 46. 51,11		η Bootis.	
				13,17	9,81	56,64			14. 8. 9,75		Arcturus.	
				29,87					14. 34. 26,50		* N.P.D. 64°. 45'.	
				28,85					14. 39. 25,48		* N.P.D. 64°. 43'.	
				35,13					15. 5. 31,81		* N.P.D. 91°. 15'.	
				47,41	44,00	56,59			15. 27. 44,13		α Coronæ Borealis.	
		20,48		46,74			2,33	55,41	21. 58. 44,28		) 2 L.	
				9,83	8,26	58,43		57,74	1. 0. 7,67		Polaris.	
				27,34					1. 24. 25,21		Venus 2 L.	
				54,66					3. 41. 52,76		☉'s center.	
				13,55	11,95	58,40			7. 35. 12,03		Pollux.	
				3,56					8. 43. 2,15		Mars 1 L.	

The Transit levelled, May 13. 2<sup>h</sup>; and May 18. 1<sup>h</sup>.

May 15 and 16, The meridian error by the first set of three passages of Polaris is 8",41. That by the second set is 8",58. The mean is adopted.

May 17 and 18, the meridian error by Polaris, Polaris S.P., and Polaris is 7",49. May 21, the meridian error by Polaris S.P. and Polaris, allowing 1",13 for clock rate and change of R.A., is 7",53. 7",50 is adopted for both.



Month and Day.	NAME OF STAR or PLANET.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Concluded Transit over the Mean of the seven Wires.	Observer.			
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	m. s.				h. m. s.	m. s.	h. m. s.
May 19	Regulus.....	.....	8,1	22,0	36,0	49,9	3,5	9.59.17,1	- 6,92	9.58.35,85	B.			
	$\beta$ Leonis.....	58,0	12,1	25,9	40,0	53,9	8,0	11.40.22,0				11.39.39,98	B.	
May 21	$\odot$ 1 L.....	57,7	12,5	26,9	41,1	55,3	10,0	3.48.24,0	- 13,99	3.47.41,07	B.			
	(a) $\odot$ 2 L.....	13,1	27,1	42,0	56,2	11,1	24,9	3.50.40,0				3.49.56,35	B.	
	Regulus.....	50,1	4,0	17,8	31,4	45,8	59,1	9.59.13,0				9.58.31,60	B.	
	$\beta$ Leonis.....	.....	.....	22,0	35,7	49,9	3,9	11.40.17,6				11.39.35,83	B.	
	$k^4$ Virginis.....	41,5	55,0	8,8	22,1	36,0	49,2	12.55.2,7				12.54.22,18	B.	
	(b) Polaris S.P.....	34.26,8	42.39,4	50.40,6	58.47,4	.....	.....	13.23.26,2				+ 4.54,62	12.58.54,70	B.
	Saturn 1 L.....	23,2	.....	50,3	.....	17,5	.....	13.6.44,1				13.6.3,77	B.	
	Saturn 2 L.....	.....	40,1	.....	7,0	.....	33,9	13.6. ....				13.6.7,00	B.	
	Spica.....	46,8	1,1	14,7	28,1	41,9	55,4	13.16.9,2				13.15.28,17	B.	
	$\eta$ Bootis.....	4,8	19,1	33,4	47,7	2,1	16,2	13.46.30,3				13.45.47,66	B.	
	Arcturus.....	23,2	37,4	52,0	6,3	20,7	34,8	14.7.49,1				14.7.6,22	B.	
	* N.P.D. 64°. 45'.	38,2	53,1	7,9	23,1	38,0	52,4	14.34.7,7				14.33.22,91	B.	
	* N.P.D. 91°. 15'.	46,9	1,2	14,9	28,3	42,0	55,2	15.5.8,6				15.4.28,16	B.	
	$\alpha$ Coronæ Borealis	54,8	10,1	25,1	40,3	55,7	10,9	15.27.26,0				15.26.40,41	B.	
	Antares.....	31,2	46,0	1,1	16,0	31,2	45,8	16.19.0,8				16.18.16,02	B.	
$\alpha$ Herculis.....	23,4	38,0	51,3	5,1	19,3	32,9	17.6.47,2	17.6.5,31	B.					
Pallas.....	32,1	47,0	2,0	16,8	31,4	45,8	17.19.1,3	17.18.16,63	B.					
Polaris.....	.....	42.50,6	51.7,4	.....	7.32,2	15.37,4	1.....	- 1,32	0.59.15,58	B.				
May 22	(c) $\odot$ 1 L.....	55,8	10,1	24,4	39,0	53,4	7,7	3.52.22,2	- 21,42	3.51.38,95	B.			
	$\odot$ 2 L.....	11,3	25,9	40,3	54,4	9,2	23,3	3.54.37,6				3.53.54,57	B.	
	Venus 2 L.....	24,6	38,6	52,4	5,9	19,7	33,5	1.41.47,1				1.41.5,97	B.	
May 23	Castor.....	7,7	23,8	39,7	55,5	12,0	27,4	7.23.43,3	- 27,42	7.22.55,63	B.			
	Procyon.....	50,3	4,2	17,9	31,5	45,1	58,4	7.30.12,0				7.29.31,34	B.	
May 24	Venus 2 L.....	.....	.....	.....	.....	13,2	26,5	1.50.40,3	- 27,42	1.49.59,25	B.			
May 25	$\odot$ 1 L.....	52,4	6,8	21,3	35,9	50,8	4,9	4.4.19,1	+ 4.54,59	4.3.35,89	B.			
	$\odot$ 2 L.....	8,3	22,9	37,1	51,8	6,5	20,7	4.6.34,9				4.5.51,74	B.	
	Mars 1 L.....	.....	.....	.....	55,1	9,8	23,8	8.55.37,7				8.54.55,18	B.	
	$\beta$ Leonis.....	44,5	58,7	12,9	26,9	40,8	54,3	11.40.8,4				11.39.26,64	B.	
	Polaris S.P.....	34.17,4	42.28,8	50.32,2	58.48,6	.....	.....	13.23.23,4				12.58.48,67	B.	
	(d) Saturn 1 L.....	33,9	.....	0,8	.....	28,1	.....	13.5.55,1				13.5.14,47	B.	
	Saturn 2 L.....	.....	50,6	.....	17,9	.....	45,0	13.5. ....				13.5.17,83	B.	
	Spica.....	37,9	51,4	5,7	19,2	33,0	46,5	13.16.0,1				13.15.19,12	B.	
	Arcturus.....	14,1	28,6	42,9	57,1	11,7	25,9	14.7.40,2				14.6.57,22	B.	
	* N.P.D. 64°. 43'.	.....	.....	58,0	12,4	27,7	42,8	14.38.57,3				14.38.12,72	B.	
	Antares.....	21,6	37,1	52,0	7,0	22,1	36,9	16.18.51,8				16.18.6,93	B.	
	$\alpha$ Herculis.....	14,6	28,4	42,6	56,2	10,4	24,1	17.6.37,9				17.5.56,32	B.	
Ceres.....	34,9	50,0	3,9	17,9	33,2	48,1	17.28.2,4	17.27.18,63	B.					
Venus 2 L.....	45,4	.....	.....	.....	41,3	54,6	1.55.8,9	- 10,29	1.54.27,26	B.				
May 26	Polaris S.P.....	34.15,2	42.25,4	50.29,6	58.46,2	.....	.....	13.23.23,2	+ 4.54,58	12.58.46,50	B.			
	Saturn 1 L.....	24,0	.....	51,1	.....	18,4	.....	13.5.45,1				13.5.4,65	B.	
	Saturn 2 L.....	.....	40,7	.....	8,0	.....	34,7	13.5. ....				13.5.7,80	B.	
	Spica.....	36,0	49,8	3,4	17,1	30,9	44,3	13.15.58,0				13.15.17,07	B.	
	Arcturus.....	12,1	26,3	41,1	55,1	10,0	24,0	14.7.37,9				14.6.55,22	B.	
	Antares.....	20,0	35,5	50,3	5,2	20,2	35,0	16.18.49,9				16.18.5,16	B.	
Venus 2 L.....	14,5	28,4	42,4	55,9	9,7	23,4	2.0.36,8	1.59.55,87	B.					

ILLUMINATED END OF AXIS EAST. Order of Wires, for Stars above the Pole, ABCDEFG.

- (a) The intervals of the wires are irregular.
- (b) It seems possible that there may be some error in the IV and VII wires.
- (c) The II wire was set down 9,1.

(d) The right ascension from this transit is evidently 1<sup>s</sup> too small: it is increased by 1<sup>s</sup> in the tables of Saturn's right ascension, &c., at the end of the observations.

Error of Collimation.	Level Error.	Seconds of Transit corr. for the two Errors.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock slow at 0 <sup>h</sup> .	Apparent R.A. from the Observation.			NAME OF STAR or PLANET.
									h.	m.	s.	
- 0,1	+ 0,39	54,64	+ 7,50	36,19	34,96	58,77	2,33	57,74	9 . 59 . 34,90	Regulus.		
	40,31			39,21	58,90	11 . 40 . 39,18			β Leonis.			
	+ 0,16			49,00			2,18	62,00	3 . 49 . 51,35	☉'s center.		
				31,93	34,94	63,01			9 . 59 . 34,84	Regulus.		
				36,15	39,19	63,04			11 . 40 . 39,23	β Leonis.		
				22,59					12 . 55 . 25,76	k <sup>4</sup> Virginis.		
				6,04	9,54	63,50			1 . 0 . 9,22	Polaris S.P.		
		15,65		5,80					13 . 7 . 8,99	Saturn's center.		
				28,62	31,85	63,23			13 . 16 . 31,82	Spica.		
				47,95					13 . 46 . 51,20	η Bootis.		
				6,51	9,81	63,30			14 . 8 . 9,79	Arcturus.		
				23,17					14 . 34 . 26,49	* N.P.D. 64°. 45'.		
				28,57					15 . 5 . 31,94	* N.P.D. 91°. 15'.		
				40,65	44,02	63,37			15 . 27 . 44,05	α Coronæ Borealis.		
				16,56	19,92	63,36			16 . 19 . 20,04	Antares.		
				5,63	9,20	63,57			17 . 7 . 9,18	α Herculis.		
				16,89					17 . 19 . 20,46	Pallas.		
				5,00	9,82	64,82		64,18	1 . 0 . 9,27	Polaris.		
				47,05					3 . 53 . 51,58	☉'s center.		
				6,32			2,27	66,50	1 . 42 . 12,98	Venus 2 L.		
				55,83	2,97	67,14			.....	Castor.		
				31,71	38,98	67,27			.....	Procyon.		
				59,60			2,02	71,15	1 . 51 . 10,90	Venus 2 L.		
				44,09					4 . 5 . 55,58	☉'s center.		
				55,47					8 . 56 . 7,37	Mars 1 L.		
				26,96	39,15	72,19			11 . 40 . 39,09	β Leonis.		
				0,01	12,14	72,13			.....	Polaris S.P.		
				16,57					13 . 6 . 28,82	Saturn's center.		
				19,57	31,83	72,26			13 . 16 . 31,84	Spica.		
				57,51	9,80	72,29			14 . 8 . 9,85	Arcturus.		
				12,98					14 . 39 . 25,36	* N.P.D. 64°. 43'.		
				7,47	19,97	72,50			16 . 19 . 19,99	Antares.		
				56,64	9,26	72,62			17 . 7 . 9,23	α Herculis.		
				19,15					17 . 28 . 31,77	Ceres.		
				27,61			1,96	73,10	1 . 55 . 40,87	Venus 2 L.		
				57,84	13,18	75,34			.....	Polaris S.P.		
				6,64					13 . 6 . 20,81	Saturn's center.		
				17,52	31,83	74,31			13 . 16 . 31,70	Spica.		
				55,51	9,79	74,28			14 . 8 . 9,76	Arcturus.		
				5,70	19,99	74,29			16 . 19 . 20,13	Antares.		
				56,22			2,14	15,17	2 . 0 . 11,57	Venus 2 L.		

The Transit levelled, May 25. 1<sup>h</sup>.

After Antares, May 26, the clock was put forward one minute.



Month and Day.	NAME OF STAR or PLANET.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Concluded Transit over the Mean of the seven Wires.	Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	m. s.			
May 27	☉ 1 L. ....	53,8		22,2			5,9	4. 13. 20,3	- 3,59	4. 12. 36,06	B.
	☉ 2 L. ....			38,2	52,8	7,5	21,9	4. 15. 36,4	- 14,51	4. 14. 52,85	B.
	Polaris S.P. ....		43.26,4	51.29,8	59.46,2			13. 24. 23,8	+ 0,61	12. 59. 47,16	B.
	(a) Saturn 1 L. ....	12,8		40,2				13. 6. 32,4	+ 4,55	13. 5. 53,02	B.
	Saturn 2 L. ....		29,3				22,3	13. 6. ....	+ 0,01	13. 5. 55,81	B.
	Spica ....	34,0	47,3	1,1	15,0	29,0	42,7	13. 16. 56,1		13. 16. 15,03	B.
May 28	Polaris S.P. ....	35.16,2	43.21,6	51.28,4	59.43,6			13. 24. 20,8	+ 4. 54,57	12. 59. 44,69	B.
	Saturn 1 L. ....	3,0		29,9		57,0		13. 6. 23,9		13. 5. 43,45	B.
	Saturn 2 L. ....		20,1		46,7		13,5	13. 6. ....		13. 5. 46,77	B.
	Spica ....	31,8	45,7	59,1	13,1	26,5	40,1	13. 16. 53,8		13. 16. 12,87	B.
	Arcturus ....	8,1	21,9	36,5	51,1	5,4	19,7	14. 8. 33,9		14. 7. 50,94	B.
	Antares ....	16,1	31,0	45,6	1,1	16,0	30,9	16. 19. 45,6		16. 19. 0,90	B.
	α Herculis ....	8,2	22,3	36,1	50,2	4,3	17,8	17. 7. 32,1		17. 6. 50,14	B.
	Pallas ....	41,0	55,8	11,0	26,1	40,3	55,2	17. 14. 10,5		17. 13. 25,70	B.
	Ceres ....				36,1	50,7	5,2	17. 26. 19,6	- 21,81	17. 25. 36,09	B.
	Venus 2 L. ....	14,6	28,3	42,2	55,8	9,7	23,5	2. 9. 37,3		2. 8. 55,91	B.
May 29	☉ 1 L. ....	56,1	10,7	25,2	39,8	54,6	8,9	4. 21. 23,3		4. 20. 39,80	B.
	☉ 2 L. ....	12,9	27,3	41,9	56,7	11,2	25,7	4. 23. 40,1		4. 22. 56,55	B.
	Procyon ....	37,7	51,5	5,2	18,8	32,2	45,7	7. 30. 59,1		7. 30. 18,60	B.
	Pollux ....	5,7	21,0	36,4	51,8	7,1	22,2	7. 35. 37,1		7. 34. 51,61	B.
	Mars 1 L. ....	51,1	5,2	19,5	33,5	47,8	1,7	9. 5. 16,2		9. 4. 33,57	B.
	α Hydræ ....	26,9	40,8	54,4	8,1	21,7	35,1	9. 19. 48,7		9. 19. 7,96	B.
	Regulus ....	32,7	46,5	0,4	14,2	28,0	41,7	9. 59. 55,7		9. 59. 14,17	B.
	β Leonis ....	36,3	50,4	4,3	18,4	32,5	46,2	11. 41. 0,1		11. 40. 18,32	B.
	Polaris S.P. ....	35.13,4	43.20,8	51.29,2	59.43,2			13. 24. 18,6	+ 4. 54,56	12. 59. 43,60	B.
	Saturn 1 L. ....	52,9		19,9		46,9		13. 6. 14,1		13. 5. 33,45	B.
	Saturn 2 L. ....		9,4		36,6		4,0	13. 6. ....		13. 5. 36,67	B.
	(b) Spica ....	29,7	43,3	57,1	10,9	25,0	38,5	13. 16. 52,2		13. 16. 10,95	B.
	Arcturus ....	6,1	20,2	34,4	48,9	3,6	17,4	14. 8. 32,2		14. 7. 48,98	B.
	Antares ....	13,7	28,6	43,7	58,6	14,1	28,6	16. 19. 43,3		16. 18. 58,66	B.
α Herculis ....	6,5	20,2	34,3	48,2	2,2	15,9	17. 7. 30,0		17. 6. 48,19	B.	
Pallas ....	49,2	4,0	18,2	33,3	48,2	3,1	17. 13. 18,4		17. 12. 33,48	B.	
Ceres ....		11,2	25,9	40,3	54,9	9,3	17. 25. 24,2	- 7,27	17. 24. 40,36	B.	
May 30	☉ 1 L. ....	57,9	12,8	27,3	41,9	56,4	10,9	4. 25. 25,3		4. 24. 41,78	B.
	☉ 2 L. ....	15,0	29,1	44,0	58,7	13,2	27,5	4. 27. 42,0		4. 26. 58,50	B.
	Mars 1 L. ....	0,9	15,1	29,3	43,4	57,8	11,9	9. 7. 25,8		9. 6. 43,46	B.
	Saturn 1 L. ....	43,0		10,1		37,4		13. 6. 4,2		13. 5. 23,67	B.
	Saturn 2 L. ....		59,7		26,8		53,9	13. 5. ....		13. 5. 26,80	B.
	Spica ....	27,7	41,4	55,1	8,9	22,5	35,9	13. 16. 50,0		13. 16. 8,79	B.
	Arcturus ....	4,1	18,2	32,8	47,1	1,4	15,7	14. 8. 30,1		14. 7. 47,06	B.
	Antares ....	11,8	26,5	42,0	56,8	12,1	26,7	16. 19. 41,7		16. 18. 56,80	B.
	α Herculis ....	4,6	18,3	32,1	46,0	0,2	14,0	17. 7. 27,8		17. 6. 46,14	B.
	Pallas ....			27,1	42,0	57,1	11,8	17. 12. 26,7	- 14,92	17. 11. 42,02	B.
	Ceres ....	59,9	14,8	29,6	44,2	58,8	13,2	17. 24. 27,9		17. 23. 44,05	B.
June 1	☽ 1 L. ....	2,3	17,2	32,0	47,2	2,3	17,0	8. 45. 32,0		8. 44. 47,15	B.
	Polaris S.P. ....	35. 7,2	43.18,2	51.22,8	59.38,4	7.49,6		13. 24. 14,6	+ 2. 43,74	12. 59. 38,87	B.
	Saturn 1 L. ....	24,9		51,8		19,1		13. 5. 45,3		13. 5. 5,27	B.
	Saturn 2 L. ....		41,3		8,2		35,2	13. 5. ....		13. 5. 8,23	B.
	Spica ....	23,8	37,3	50,9	5,2	18,7	32,1	13. 16. 45,7		13. 16. 4,81	B.
	Arcturus ....	59,6	14,1	28,3	42,9	57,2	11,5	14. 8. 25,9		14. 7. 42,78	B.
Antares ....	7,7	22,9	37,6	52,5	8,1	22,4	16. 19. 37,8		16. 18. 52,71	B.	

ILLUMINATED END OF AXIS EAST. Order of Wires, for Stars above the Pole, ABCDEFG.

(a) The right ascension is too small by 1<sup>s</sup>: it is increased by 1<sup>s</sup> in the subsequent tables of Saturn's right ascension, &c.

(b) The second wire was set down 42,3: it is altered by conjecture.



Error of Collimation.	Level Error.	Seconds of Transit corr. for the two Errors.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock slow at 0 <sup>h</sup> .	Apparent R.A. from the Observation.			NAME OF STAR or PLANET.
									h.	m.	s.	
- 0,1	+ 0,16		+ 7,50	45,18			2,14	15,17	4 . 14 . 0,73		☉'s center.	
				58,50	13,59	15,09			.....	Polaris S.P.		
				54,83					13 . 6 . 11,17		Saturn's center.	
				15,48	31,83	16,35			.....	Spica.		
				56,03	14,31	18,28	2,07	17,31	.....	Polaris S.P.		
				45,53					13 . 6 . 3,97		Saturn's center.	
				13,32	31,82	18,50			13 . 16 . 31,77		Spica.	
				51,23	9,79	18,56			14 . 8 . 9,75		Arcturus.	
				1,44	20,01	18,57			16 . 19 . 20,15		Antares.	
				50,46	9,30	18,84			17 . 7 . 9,24		α Herculis.	
				25,96					17 . 13 . 44,75		Pallas.	
				36,61					17 . 25 . 55,42		Ceres.	
				56,25					2 . 9 . 15,83		Venus 2 L.	
				48,45					4 . 22 . 8,22		☉'s center.	
				18,97	38,94	19,97			7 . 30 . 39,00		Procyon.	
				51,84	11,88	20,04			7 . 35 . 11,88		Pollux.	
				33,87					9 . 4 . 54,03		Mars 1 L.	
				8,40	28,62	20,22			9 . 19 . 28,58		α Hydræ.	
				14,50	34,85	20,35			9 . 59 . 34,74		Regulus.	
				18,64	39,11	20,47			11 . 40 . 39,02		β Leonis.	
				54,94	15,01	20,07			.....		Polaris S.P.	
				35,48					13 . 5 . 55,98		Saturn's center.	
				11,40	31,82	20,42			13 . 16 . 31,91		Spica.	
				49,27	9,79	20,52			14 . 8 . 9,85		Arcturus.	
				59,20	20,02	20,82			16 . 19 . 19,96		Antares.	
				48,51	9,31	20,80			17 . 7 . 9,34		α Herculis.	
				33,74					17 . 12 . 54,58		Pallas.	
				40,88					17 . 25 . 1,74		Ceres.	
				50,42					2,00	21,37	4 . 26 . 12,16	☉'s center.
				43,76							9 . 7 . 5,89	Mars 1 L.
				25,65							13 . 5 . 48,11	Saturn's center.
				9,24	31,81	22,57					13 . 16 . 31,71	Spica.
				47,35	9,78	22,43					14 . 8 . 9,90	Arcturus.
				57,34	20,04	22,70					16 . 19 . 20,07	Antares.
				46,46	9,33	22,87					17 . 7 . 9,26	α Herculis.
				42,28							17 . 12 . 5,08	Pallas.
				44,57							17 . 24 . 7,39	Ceres.
				47,34							8 . 45 . 13,61	☽ 1 L.
				47,95	16,91	28,96			2,13	25,49	.....	Polaris S.P.
				7,06							13 . 5 . 33,71	Saturn's center.
				5,14	31,80	26,66					13 . 16 . 31,81	Spica.
				42,98	9,77	26,79					14 . 8 . 9,72	Arcturus.
				53,11	20,06	26,95					16 . 19 . 20,05	Antares.

Month and Day.	NAME OF STAR or PLANET.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Concluded Transit over the Mean of the seven Wires.			Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	h. m. s.		m. s.	h. m. s.		
June 1	$\alpha$ Herculis.....	0,7	14,1	28,3	42,1	55,9	10,2	17. 7. 23,9		17. 6. 42,17	B.		
	(a) Pallas.....	11,1	26,0	41,1	56,2	11,5	26,2	17. 10. 40,8		17. 9. 56,13	B.		
	(b) Ceres.....	7,1	21,1	35,0	49,6	3,7	18,2	17. 22. 32,2		17. 21. 49,56	B.		
	Venus 2 L.....	24,6	38,7	52,4	6,5	20,6	33,9	2. 27. 48,0		2. 27. 6,39	B.		
June 2	$\delta$ 1 L.....	2,4	17,1	31,7	46,2	1,2	15,4	9. 40. 30,0		9. 39. 46,29	B.		
	Regulus.....	24,2	38,3	52,1	6,0	19,8	33,3	9. 59. 47,2		9. 59. 5,84	B.		
	$\gamma$ Leonis.....	40,0	54,6	8,9	23,2	37,7	52,1	10. 11. 6,5		10. 10. 23,28	B.		
	Polaris S.P.....	35. 7,6	43.17,4	51.21,8	59.37,6	.....	16. 0,2	13. 24. 15,4	+ 1. 21,71	12. 59. 38,38	B.		
	Arcturus.....	57,6	12,2	26,2	40,6	55,2	9,3	14. 8. 23,5		14. 7. 40,65	B.		
	Antares.....	5,8	20,5	35,8	50,8	6,1	20,6	16. 19. 35,3		16. 18. 50,70	B.		
	$\alpha$ Herculis.....	.....	.....	26,2	40,1	54,1	8,0	17. 7. 21,6	- 13,93	17. 6. 40,07	B.		
	Ceres.....	6,7	21,0	35,9	50,6	5,2	19,4	17. 21. 34,3		17. 20. 50,44	B.		
June 3	$\delta$ 1 L.....	38,4	53,1	7,7	21,1	35,7	49,6	10. 34. 4,0		10. 33. 21,37	B.		
	Arcturus.....	55,6	9,8	24,1	38,5	53,0	7,2	14. 8. 21,6		14. 7. 38,55	B.		
June 4	Polaris S.P.....	35. 3,8	43.11,4	51.22,6	59.39,4	7.44,2	.....	13. ....	+ 8. 11,62	12. 59. 35,90	B.		
	Saturn 1 L.....	59,2	.....	26,2	.....	53,3	.....	13. 5. 20,3		13. 4. 39,75	B.		
	Saturn 2 L.....	.....	15,5	.....	42,6	.....	9,7	13. 5. ....		13. 4. 42,60	B.		
	Spica.....	17,1	30,8	44,4	58,2	12,1	25,5	13. 16. 39,2		13. 15. 58,19	B.		
June 5	Arcturus.....	53,1	7,6	22,0	36,3	50,7	5,1	14. 8. 19,0		14. 7. 36,26	B.		
	Venus 2 L.....	49,3	3,4	17,5	31,2	45,4	59,4	2. 46. 13,2		2. 45. 31,34	B.		
June 6	$\odot$ 1 L.....	23,8	38,3	53,0	7,8	22,6	36,9	4. 53. 51,3		4. 53. 7,67	B.		
	$\odot$ 2 L.....	40,9	55,8	10,7	25,1	40,0	54,2	4. 56. 9,0		4. 55. 25,10	B.		
	Mercury 1 L.....	48,5	3,9	18,8	33,5	48,8	3,8	6. 24. 18,5		6. 23. 33,68	B.		
	Castor.....	38,0	53,8	9,9	25,7	41,8	57,5	7. 24. 13,8		7. 23. 25,79	B.		
	Procyon.....	20,9	34,5	48,1	1,8	15,7	28,5	7. 30. 42,1		7. 30. 1,65	B.		
	Pollux.....	48,6	4,1	19,4	34,7	50,1	5,3	7. 35. 20,5		7. 34. 34,67	B.		
	Regulus.....	15,8	29,7	43,4	57,2	11,1	25,0	9. 59. 38,6		9. 58. 57,26	B.		
	$\gamma$ Virginis.....	0,9	14,7	27,9	41,2	55,0	8,4	12. 33. 21,7		12. 32. 41,40	B.		
	$\delta$ Virginis.....	0,4	13,9	27,3	40,9	54,6	8,1	12. 47. 21,4		12. 46. 40,94	B.		
	Saturn 1 L.....	44,0	.....	11,1	.....	38,2	.....	13. 5. 5,1		13. 4. 24,60	B.		
	Saturn 2 L.....	.....	0,2	.....	27,4	.....	54,4	13. 4. ....		13. 4. 27,33	B.		
	$\delta$ 1 L.....	44,0	57,8	11,8	25,9	39,6	53,2	13. 12. 7,0		13. 11. 25,61	B.		
	Spica.....	12,4	26,2	40,1	54,0	7,8	21,3	13. 16. 25,0		13. 15. 53,83	B.		
	$m$ Virginis.....	40,0	53,6	7,3	21,0	35,0	48,2	13. 33. 1,7		13. 32. 20,97	B.		
	Arcturus.....	49,1	3,4	17,5	32,0	46,4	0,7	14. 8. 15,1		14. 7. 32,03	B.		
	Antares.....	56,9	12,1	26,8	41,8	56,9	12,1	16. 19. 26,9		16. 18. 41,93	B.		
(c) Pallas.....	44,0	58,9	13,5	29,4	44,3	58,2	17. 6. 13,1		17. 5. 28,77	B.			
June 7	$\delta$ 1 L.....	3,3	17,8	31,9	45,9	0,1	14,0	14. 7. 27,9		14. 6. 45,84	B.		
	$\epsilon$ Bootis.....	22,9	38,1	53,2	8,5	24,0	39,0	14. 37. 54,1		14. 37. 8,55	B.		
	$\alpha^2$ Libræ.....	24,9	39,1	52,9	7,0	21,1	34,8	14. 41. 48,7		14. 41. 6,93	B.		
	$\xi^2$ Libræ.....	29,6	43,2	57,1	10,8	24,7	38,1	14. 47. 52,0		14. 47. 10,78	B.		
	Venus 2 L.....	7,5	21,5	35,9	49,7	3,3	17,6	2. 55. 31,7		2. 54. 49,60	B.		
June 8	$\odot$ 1 L.....	33,8	48,6	3,3	17,9	32,6	47,1	5. 2. 1,7		5. 1. 17,86	B.		
	$\odot$ 2 L.....	51,3	6,1	20,9	35,4	50,2	5,0	5. 4. 19,2		5. 3. 35,44	B.		
	Mercury 1 L.....	39,1	53,7	8,9	23,5	38,3	53,2	6. 38. 8,1		6. 37. 23,54	B.		
	Castor.....	33,3	49,2	5,6	21,4	37,7	53,1	7. 24. 9,1		7. 23. 21,34	B.		
	Procyon.....	16,7	30,1	43,9	57,2	10,9	24,1	7. 30. 37,8		7. 29. 57,25	B.		
	Pollux.....	44,3	59,7	15,0	30,2	45,8	1,2	7. 35. 16,0		7. 34. 30,31	B.		

ILLUMINATED END OF AXIS EAST. Order of Wires, for Stars above the Pole, ABCDEFG.

(a) The 4th wire was set down 57,2: it is altered conjecturally. With regard to this and other conjectural corrections of Pallas and Ceres, it must be remarked that they are extremely doubtful: the excessive faintness of the planets making it probable that errors of

1<sup>st</sup> or 2<sup>d</sup> may have been committed in the actual observation.

(b) The 2d wire was set down 20,1.

(c) The 4th wire was set down 27,4. Excessively faint.



Error of Collimation.	Level Error.	Seconds of Transit corr. for the two Errors.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock slow at 0 <sup>h</sup> .	Apparent R.A. from the Observation.	NAME OF STAR or PLANET.
"	"	s.	"	s.	s.	s.	s.	s.	h. m. s.	
- 0,1	- 0,13		+ 5,66	42,39	9,35	26,96	2,13	25,49	17. 7. 9,40	α Herculis.
				56,30					17. 10. 23,31	Pallas.
				49,95		17. 22. 16,98	Ceres.			
				6,62		2. 27. 34,47	Venus 2 L.			
				46,49			9. 40. 14,99	γ 1 L.		
				6,07	34,81	28,74	9. 59. 34,60	Regulus.		
				23,47			10. 10. 52,01	γ Leonis.		
				47,46	17,50	30,04	.....	Polaris S.P.		
				40,85	9,77	28,92	14. 8. 9,75	Arcturus.		
				51,10	20,07	28,97	16. 19. 20,19	Antares.		
				40,29	9,36	29,07	17. 7. 9,45	α Herculis.		
				50,83			17. 21. 20,01	Ceres.		
				21,59			10. 33. 52,28	γ 1 L.		
				38,75	9,76	31,01	.....	Arcturus.		
	44,98			18,70	33,72	.....	Polaris S.P.			
	41,48					13. 5. 14,70	Saturn's center.			
	58,52			31,79	33,27	.....	Spica.			
	36,46			9,76	33,30	.....	Arcturus.			
	31,57					2. 46. 8,12	Venus 2 L.			
	16,56					4. 54. 53,31	☉'s center.			
	33,85					6. 24. 10,74	Mercury 1 L.			
	25,92			2,91	36,99	7. 24. 2,90	Castor.			
	1,92			38,92	37,00	7. 30. 38,91	Procyon.			
	34,82			11,85	37,03	7. 35. 11,82	Pollux.			
	57,50			34,77	37,27	9. 59. 34,72	Regulus.			
	41,70					12. 33. 19,16	γ Virginis.			
	41,21					12. 47. 18,69	δ Virginis.			
	26,27					13. 5. 3,78	Saturn's center.			
25,92			13. 12. 3,44	γ 1 L.						
54,16	31,77	37,61	13. 16. 31,69	Spica.						
21,29			13. 32. 58,84	m Virginis.						
32,23	9,75	37,52	14. 8. 9,83	Arcturus.						
42,33	20,11	37,78	16. 19. 20,14	Antares.						
28,94			17. 6. 6,82	Pallas.						
46,18			14. 7. 26,09	γ 1 L.						
8,71	48,59	39,88	.....	ε Bootis.						
7,28	47,34	40,06	.....	α <sup>2</sup> Libræ.						
11,12			14. 47. 51,10	ξ <sup>2</sup> Libræ.						
49,83			2. 55. 30,95	Venus 2 L.						
26,83			5. 3. 8,14	☉'s center.						
23,71			6. 38. 5,17	Mercury 1 L.						
21,47	2,91	41,44	7. 24. 3,00	Castor.						
57,52	38,91	41,39	7. 30. 39,06	Procyon.						
30,46	11,85	41,39	7. 35. 12,01	Pollux.						

The Transit levelled, June 2. 2<sup>h</sup>; and June 8. 1<sup>h</sup>.



Month and Day.	NAME OF STAR or PLANET.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Concluded Transit over the Mean of the seven Wires.	Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	m. s.			
June 8	α Hydræ.....	5,8	19,4	33,0	46,4	0,2	13,8	9.19.27,1	+ 2. 43,72	9.18.46,53	B.
	Regulus.....	11,4	24,9	39,0	52,8	6,6	20,2	9.59.34,0		9.58.52,70	B.
	Polaris S.P.....	35. 0,4	43. 9,8	51.14,6	59.30,2	7.40,8	.....	13.24.24,6		12.59.33,79	B.
	Saturn 1 L.....	30,0	.....	56,4	.....	24,2	.....	13. 4.51,0		13. 4.10,40	B.
	Saturn 2 L.....	.....	46,3	.....	13,9	.....	40,4	13. 4. ....		13. 4.13,53	B.
	Spica.....	7,7	21,5	35,4	49,3	3,1	16,6	13.16.30,3		13.15.49,13	B.
	m Virginis.....	35,9	49,2	3,0	16,8	30,2	43,7	13.32.57,3		13.32.16,59	B.
	Arcturus.....	44,3	58,9	13,2	27,5	41,9	56,2	14. 8.10,3		14. 7.27,47	B.
	ε Bootis.....	20,1	35,3	51,1	6,3	21,8	36,5	14.37.52,0		14.37. 6,16	B.
	α <sup>2</sup> Libræ.....	22,7	36,7	50,9	4,6	18,9	32,6	14.41.46,5		14.41. 4,70	B.
	ξ <sup>2</sup> Libræ.....	27,2	40,9	54,8	8,5	22,3	36,1	14.47.49,5		14.47. 8,47	B.
	γ 1 L.....	40,1	54,3	9,1	23,9	38,2	52,7	15. 6. 7,1		15. 5.23,63	B.
	η Libræ.....	24,9	39,0	53,2	7,4	21,2	34,9	15.34.49,0		15.34. 7,09	B.
	θ Libræ.....	3,4	17,5	31,3	45,6	0,1	13,9	15.44.27,5		15.43.45,62	B.
	Antares.....	52,1	7,4	22,2	37,6	52,8	7,4	16.19.22,3		16.18.37,40	B.
	Pallas.....	56,3	11,2	26,4	41,8	56,2	11,0	17. 4.26,2		17. 3.41,30	B.
	Ceres.....	7,8	22,0	36,9	51,7	6,4	20,7	17.15.34,9		17.14.51,48	B.
	Polaris.....	.....	43.31,2	51.41,6	59.50,8	8. 5,4	16. 9,2	1.24.20,4		0.59.50,50	B.
	Venus 2 L.....	48,4	2,7	16,7	30,5	44,7	58,6	3. 0.12,7		2.59.30,61	B.
	June 9	⊙ 1 L.....	39,2	53,9	8,6	23,2	38,1	52,8		5. 6. 7,4	- 18,69
⊙ 2 L.....		56,9	11,7	26,4	41,1	55,8	10,1	5. 8.25,0	5. 7.41,00	B.	
Mercury 1 L.....		13,7	29,0	43,3	58,2	13,8	28,2	6.44.43,2	6.43.58,49	B.	
Procyon.....		14,7	28,2	41,9	55,1	8,8	22,1	7.30.35,4	7.29.55,17	B.	
Pollux.....		42,1	57,5	12,8	28,1	43,3	58,3	7.35.13,8	7.34.27,99	B.	
η Libræ.....		22,9	37,1	50,9	5,1	19,2	33,1	15.34.46,7	15.34. 5,00	B.	
θ Libræ.....		1,4	15,4	29,6	43,5	58,0	11,4	15.44.25,3	15.43.43,51	B.	
γ 1 L.....		15,1	29,9	45,1	0,1	15,2	30,0	16. 8.44,8	16. 8. 0,02	B.	
Antares.....		50,2	4,9	19,6	34,8	50,2	5,1	16.19.20,1	16.18.34,99	B.	
ω Ophiuchi.....		55,3	10,1	24,3	39,0	53,6	8,1	16.22.22,0	16.21.38,92	B.	
Pallas.....		.....	.....	32,7	.....	1,9	16,6	17. 3.32,0	17. 2.47,11	B.	
α Ophiuchi.....		51,9	6,1	19,7	33,9	47,6	1,2	17.27.14,9	17.26.33,61	B.	
Venus 2 L.....		.....	.....	58,3	12,4	26,8	40,3	3. 4.54,4	3. 4.12,39	B.	
June 10	⊙ 1 L.....	45,2	59,9	14,7	29,2	44,3	58,5	5.10.13,3	- 1. 37,56	5. 9.29,30	B.
	⊙ 2 L.....	3,1	18,0	32,3	47,1	2,0	16,8	5.12.31,0		5.11.47,19	B.
	Procyon.....	12,1	25,7	39,3	52,9	6,6	20,0	7.30.33,4		7.29.52,86	B.
	Regulus.....	.....	20,9	34,5	48,2	2,1	16,0	9.59.29,8		9.58.48,33	B.
	β Leonis.....	10,5	24,3	38,2	52,3	7,0	20,3	11.40.34,1		11.39.52,38	B.
	Polaris S.P.....	.....	43. 7,2	51. 9,5	59.25,5	7.37,0	.....	13.24. 3,2		12.59.26,92	B.
	Saturn 1 L.....	17,8	.....	45,9	.....	14,0	.....	13. 4.40,8		13. 3.59,62	B.
	Saturn 2 L.....	.....	35,1	.....	3,0	.....	30,1	13. 4. ....		13. 4. 2,73	B.
	Arcturus.....	40,0	54,2	8,8	22,9	37,3	51,5	14. 8. 6,0		14. 7.22,96	B.
	α <sup>2</sup> Libræ.....	18,1	32,3	46,2	0,3	14,5	28,3	14.41.42,0		14.41. 0,24	B.
	Antares.....	48,1	3,1	18,0	32,9	48,3	3,1	16.19.17,9		16.18.33,05	B.
	ω Ophiuchi.....	53,2	7,9	22,4	36,8	51,2	5,6	16.22.19,9		16.21.36,72	B.
	Pallas.....	.....	.....	39,8	55,2	10,1	24,8	17. 2.39,9		17. 1.55,00	B.
	α Herculis.....	40,8	54,8	8,6	22,4	36,7	50,4	17. 7. 4,1		17. 6.22,54	B.
	γ 1 L.....	29,0	44,4	0,1	15,2	30,7	46,0	17.15. 1,3		17.14.15,24	B.
γ 2 L.....	1,4	16,9	32,4	47,9	3,5	18,3	17.17.34,0	17.16.47,77	B.		
Venus 2 L.....	13,8	27,3	41,2	55,4	9,6	23,6	3. 9.37,7	3. 8.55,51	B.		
June 11	⊙ 1 L.....	51,1	6,1	20,7	35,4	50,3	4,7	5.14.19,4	- 14,96	5.13.35,39	B.
	⊙ 2 L.....	9,1	23,9	38,6	53,1	8,0	22,4	5.16.37,0		5.15.53,15	B.
	Antares.....	46,1	1,1	16,0	30,8	46,1	0,7	16.19.15,7		16.18.30,93	B.

ILLUMINATED END OF AXIS EAST. Order of Wires, for Stars above the Pole, ABCDEFG.

Error of Collimation.	Level Error.	Seconds of Transit corr. for the two Errors.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock slow at 0 <sup>h</sup> .	Apparent R.A. from the Observation.			NAME OF STAR or PLANET.	
									h.	m.	s.		
- 0,1	- 0,09	34,20	+ 5,66	46,85	28,53	41,68	2,20	40,85	9. 19. 28,55			α Hydræ.	
				52,94	34,75	41,81			9. 59. 34,71			Regulus.	
				42,80	21,67	38,87			1. 0. 24,84			Polaris S.P.	
				12,27					13. 4. 54,32			Saturn's center.	
				49,46	31,76	42,30			13. 16. 31,53			Spica.	
				16,91					13. 32. 59,00			m Virginis.	
				27,67	9,74	42,07			14. 8. 9,81			Arcturus.	
				6,32	48,59	42,27			14. 37. 43,51			ε Bootis.	
				5,05	47,34	42,29			14. 41. 47,25			α <sup>2</sup> Libræ.	
				8,81					14. 47. 51,02			ξ <sup>2</sup> Libræ.	
				23,99					15. 6. 6,22			γ 1 L.	
				7,44					15. 34. 49,72			η Libræ.	
				45,98					15. 44. 28,27			θ Libræ.	
				37,80	20,13	42,33			16. 19. 20,14			Antares.	
				41,47					17. 4. 23,88			Pallas.	
				51,87					17. 15. 34,30			Ceres.	
				42,05	22,09	40,04			1. 0. 25,17		2,19	43,03	Polaris.
				30,84					3. 0. 14,14				Venus 2 L.
				32,33					5. 7. 15,83				☉'s center.
				58,66					6. 44. 42,30				Mercury 1 L.
		55,44		38,91	43,47	7. 30. 39,16				Procyon.			
		28,14		11,84	43,70	7. 35. 11,86				Pollux.			
		5,35				15. 34. 49,80				η Libræ.			
		43,87				15. 44. 28,34				θ Libræ.			
		0,41				16. 8. 44,91				γ 1 L.			
		35,39		20,14	44,75	16. 19. 19,91				Antares.			
		39,30				16. 22. 23,82				ω Ophiuchi.			
		47,28				17. 3. 31,86				Pallas.			
		33,85		18,53	44,68	17. 27. 18,47				α Ophiuchi.			
		12,60				3. 4. 58,13		2,17	45,25	Venus 2 L.			
		38,42				5. 11. 24,14				☉'s center.			
		53,13		38,91	45,78	7. 30. 39,06				Procyon.			
		48,57		34,73	46,16	9. 59. 34,72				Regulus.			
		52,60		38,98	46,38	11. 40. 38,90				β Leonis.			
		35,93		23,33	47,40	.....				Polaris S.P.			
		1,48				13. 4. 47,91				Saturn's center.			
		23,16		9,73	46,57	14. 8. 9,69				Arcturus.			
		0,59		47,34	46,75	14. 41. 47,17				α <sup>2</sup> Libræ.			
		33,45		20,15	46,70	16. 19. 20,17				Antares.			
		37,10				16. 22. 23,83				ω Ophiuchi.			
55,17			17. 2. 41,96				Pallas.						
22,77	9,45	46,68	17. 7. 9,57				α Herculis.						
15,64			17. 15. 2,45				γ 1 L.						
48,17			17. 17. 34,98				γ 2 L.						
55,72			3. 9. 43,39		2,10	47,40	Venus 2 L.						
44,45			5. 15. 32,31				☉'s center.						
31,33	20,16	48,83	.....				Antares.						

June 8, Meridian error by Polaris S.P. and Polaris, allowing 0<sup>h</sup>,74 for clock rate and change of R.A.



Month and Day.	NAME OF STAR or PLANET.	I.		II.		III.		IV.		V.		VI.		VII. Wire.			Correction to Mean of Wires Observed.	Concluded Transit over the Mean of the seven Wires.			Observer.
		m.	s.	m.	s.	m.	s.	m.	s.	m.	s.	m.	s.	h.	m.	s.		m.	s.	h.	
June 11	$\omega$ Ophiuchi.....	51,1	5,8	20,1	34,6	49,2	3,7	16. 22. 37,2									16. 21. 34,53	B.			
	$\alpha$ Ophiuchi.....	47,5	1,9	15,9	29,3	43,5	56,8	17. 27. 10,7									17. 26. 29,38	B.			
	$b$ Sagittarii.....	11,5	26,3	41,7	56,1	10,9	25,7	17. 49. 39,9									17. 48. 56,02	B.			
	$\mu^1$ Sagittarii.....	23,0	37,5	52,0	6,4	21,0	35,2	18. 3. 49,7									18. 3. 6,40	B.			
	$\gamma$ 2 L.....	10,3	26,1	41,8	57,2	13,1	29,0	18. 25. 44,1									18. 24. 57,37	B.			
	Venus 2 L.....	57,1	11,3	25,4	39,5	53,7	7,6	3. 14. 21,5									3. 13. 39,45	B.			
June 12	$\odot$ 1 L.....	57,5	12,2	26,8	41,6	56,5	11,1	5. 18. 25,8									5. 17. 41,64	B.			
	$\odot$ 2 L.....	15,8	30,2	44,8	59,5	14,6	29,0	5. 20. 43,5									5. 19. 59,63	B.			
June 13	Arcturus.....	34,1	48,0	2,6	17,0	31,5	45,8	14. 8. 0,1									14. 7. 17,02	B.			
	$\epsilon$ Bootis.....	10,1	25,0	40,8	55,9	11,1	25,9	14. 37. 41,1									14. 36. 55,70	B.			
	$\alpha$ Serpentis.....	36,4	50,0	3,9	17,2	31,1	44,2	15. 35. 58,0									15. 35. 17,26	B.			
	$\delta$ Ophiuchi.....	10,2	24,0	37,4	50,7	4,8	18,0	16. 5. 31,0									16. 4. 50,87	B.			
	Antares.....	41,2	56,4	11,5	26,7	42,0	56,8	16. 19. 11,7									16. 18. 26,62	B.			
June 14	Polaris.....					7.58,6	16. 2,2	1. 24. 11,8								- 16. 22,60	0. 59. 41,60	B.			
June 15	$\odot$ 1 L.....	18,3	33,1	47,3	2,2	17,1	31,7	5. 30. 46,4									5. 30. 2,30	B.			
	$\odot$ 2 L.....	36,1	51,0	5,7	20,9	35,4	49,6	5. 33. 4,5									5. 32. 20,45	B.			
	Venus 2 L.....	5,2	19,8	33,6	47,8	1,9	16,3	3. 33. 30,2									3. 32. 47,83	B.			
June 18	Arcturus.....	23,0	37,5	52,1	6,2	20,9	34,9	14. 7. 49,0									14. 7. 6,23	B.			
	$\epsilon$ Bootis.....	59,4	14,7	30,0	45,2	0,8	15,5	14. 37. 30,9									14. 36. 45,22	B.			
	Pallas.....			46,2	2,0	16,9	31,4	16. 55. 45,9								- 14,94	16. 55. 1,54	B.			
	Ceres.....	7,2	21,8	36,2	50,8	5,6	20,2	17. 5. 34,3									17. 4. 50,87	B.			
	$\gamma$ 2 L.....	9,1	23,0	37,1	50,7	4,6	18,1	0. 50. 31,9									0. 49. 50,64	B.			
	Polaris.....	35. 1,2	43.14,6					1. 24. 8,8								+ 5. 29,24	0. 59. 37,44	B.			
June 19	$\odot$ 1 L.....	47,1	2,0	16,6	31,3	46,1	0,9	5. 47. 15,6									5. 46. 31,37	B.			
	$\odot$ 2 L.....	5,0	19,9	34,8	49,4	4,1	18,9	5. 49. 33,5									5. 48. 49,37	B.			
June 20	$\alpha$ Coronæ Borealis	51,1	6,2	21,2	36,4	51,7	7,0	15. 28. 22,1									15. 27. 36,53	B.			
	$\alpha$ Serpentis.....	21,9	35,3	49,1	2,6	16,2	29,3	15. 36. 43,2									15. 36. 2,51	B.			
	$\delta$ Ophiuchi.....	55,5	9,2	22,6	36,0	49,9	3,3	16. 6. 16,8									16. 5. 36,19	B.			
	Antares.....	27,1	42,2	56,9	12,3	27,1	42,0	16. 19. 57,1									16. 19. 12,10	B.			
	Pallas.....	38,1	52,9	8,0	22,8	37,9	53,0	16. 55. 7,7									16. 54. 22,91	B.			
	Ceres.....	11,0	25,6	40,1	54,9	9,1	24,0	17. 4. 38,7									17. 3. 54,77	B.			
June 21	Polaris.....			52.23,6	0.34,4	8.49,8	16.53,2	1. 24. 54,6								- 8. 11,55	1. 0. 31,57	B.			
	Venus 2 L.....	20,7	35,2	49,6	4,1	18,5		4. 3. ....								+ 14,31	4. 3. 3,93	B.			
June 22	$\odot$ 1 L.....			39,4	54,1	9,0	23,4	6. 0. 38,2								- 14,74	5. 59. 54,08	B.			
	Mercury 1 L.....	50,0	4,4	18,7	33,1	47,6	1,9	7. 49. 16,3									7. 48. 33,14	B.			
	Polaris S.P.....		43.49,6	51.52,2	0. 8,6	8.20,4		13. 24. 44,8								- 1. 37,55	13. 0. 9,57	B.			
	Saturn 1 L.....	33,7		1,8		28,7		13. 4. 55,6									13. 4. 14,95	B.			
	Saturn 2 L.....		50,4		17,9		44,5	13. 4. ....									13. 4. 17,60	B.			
	Spica.....	38,6	52,1	6,0	19,7	33,5	47,1	13. 17. 0,8									13. 16. 19,69	B.			
	Arcturus.....	14,7	29,2	43,7	58,1	12,4	26,3	14. 8. 40,4									14. 7. 57,83	B.			
	Polaris.....			52.22,2	0.33,2	8.48,8	16.52,4	1. 25. 3,2								- 8. 11,54	1. 0. 32,42	B.			
	$\gamma$ 2 L.....	59,0	13,5	27,8	42,2	56,4	11,2	3. 55. 25,7									3. 54. 42,25	B.			
	Venus 2 L.....	17,5	31,8	46,4	0,7	15,6	29,7	4. 8. 43,4									4. 8. 0,72	B.			
June 23	Mercury 1 L.....			23,0	37,5	52,0	6,1	7. 52. 20,4								- 14,47	7. 51. 37,33	B.			
	$\beta$ Leonis.....	43,2	57,2	11,3	25,1	39,2	53,0	11. 41. 7,0									11. 40. 25,14	B.			

ILLUMINATED END OF AXIS EAST. Order of Wires, for Stars above the Pole, ABCDEFG.



Error of Collimation.	Level Error.	Seconds of Transit corr. for the two Errors.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock slow at 0 <sup>h</sup> .	Apparent R.A. from the Observation.	NAME OF STAR. or PLANET.		
"	"	"	"	"	"	"	"	"	h. m. s.			
-0,1	-0,09		+5,66	34,91	18,55	48,93	2,10	47,40	16.22.23,74	$\omega$ Ophiuchi.		
				29,62					18,55	48,93	17.49.45,37	$\alpha$ Ophiuchi.
				56,41					6,78	17,46	18.03.55,76	$b$ Sagittarii.
				57,78					57,78	51,05	18.25.46,79	$\mu^1$ Sagittarii.
				39,66					39,66	27,00	3.14.29,44	$\delta$ 2 L. Venus 2 L.
					50,82					5.19.40,79	$\odot$ 's center.	
			-1,20			17,16	9,71	52,55	2,08	51,57	14.08.9,95	Arcturus.
						55,79	48,56	52,77			14.37.48,63	$\epsilon$ Bootis.
						17,46	10,50	53,04			15.36.10,38	$\alpha$ Serpentis.
						51,05	44,00	52,95			16.05.44,01	$\delta$ Ophiuchi.
						27,00	20,17	53,17			16.19.19,98	Antares.
						31,00	26,51	55,51				Polaris.
						11,48						$\odot$ 's center.
						47,98						Venus 2 L.
			-0,95		+6,53	6,41	9,67	63,26	2,10	61,96		Arcturus.
						45,34	48,52	63,18			$\epsilon$ Bootis.	
						1,69				16.56.5,13	Pallas.	
						51,30				17.05.54,75	Ceres.	
						50,94	29,30	63,21		64,06	0.50.55,07	$\delta$ 2 L. Polaris.
				26,09								
				40,54					5.48.45,11	$\odot$ 's center.		
				36,67	44,04	7,37	2,12	6,18	15.27.44,22	$\alpha$ Coronæ Borealis.		
				2,77	10,50	7,73			15.36.10,33	$\alpha$ Serpentis.		
				36,42	44,03	7,61			16.05.44,02	$\delta$ Ophiuchi.		
				12,56	20,21	7,65			16.19.20,18	Antares.		
				23,06					16.54.30,73	Pallas.		
				55,20					17.04.2,89	Ceres.		
		29,49		20,22	31,77	11,55	2,03	10,46	1.00.30,76	Polaris.		
				4,11					4.03.14,91	Venus 2 L.		
				54,25					6.00.5,22	$\odot$ 1 L.		
				33,31					7.48.44,43	Mercury 1 L.		
		11,57		21,50	32,20	10,70			1.00.33,06	Polaris S.P.		
				16,59					13.04.28,16	Saturn's center.		
				20,04	31,66	11,62				Spica.		
				58,01	9,64	11,63				Arcturus.		
				21,07	32,63	11,56	1,82	12,55	1.00.33,70	Polaris.		
		30,34		42,43					3.54.55,28	$\delta$ 2 L.		
				0,90					4.08.13,76	Venus 2 L.		
				37,50					7.51.50,65	Mercury 1 L.		
				25,35	38,85	13,50			11.40.38,79	$\beta$ Leonis.		

The Transit levelled, June 16. 1<sup>h</sup>; and June 22. 2<sup>h</sup>.

June 21, 22, and 23. The first set of three consecutive passages of Polaris gives for meridian error 6",24: the second gives 6",82: the mean is adopted.

After the observation of June 19 the clock was put forward one minute.

Month and Day.	NAME OF STAR or PLANET.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Concluded Transit over the Mean of the seven Wires.			Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	m. s.		h. m. s.	m. s.	h. m. s.	
June 23	Polaris S.P. ....	35.37,4	43.46,6	51.49,2	0. 6,8	8.17,4	...	13. 24. 42,2	+ 2. 43,71	13. 0. 6,98	B.		
	Saturn 1 L. ....	33,1	...	0,4	...	27,4	...	13. 4. 54,6		13. 4. 13,87	B.		
	Saturn 2 L. ....	...	49,3	...	16,3	...	43,5	13. 4. ....		13. 4. 16,37	B.		
	Spica ....	36,6	50,2	4,1	17,7	31,4	45,1	13. 16. 58,7		13. 16. 17,69	B.		
	Arcturus ....	13,2	27,3	41,5	55,9	10,4	24,3	14. 8. 38,8		14. 7. 55,92	B.		
	Antares ....	21,0	36,1	51,1	6,2	20,9	36,1	16. 19. 50,6		16. 19. 6,00	B.		
(a) Pallas ....	15,2	30,0	44,7	0,4	15,1	30,0	16. 52. 44,2	16. 51. 59,94	B.				
June 25	Pallas ....	43,4	58,2	14,3	29,1	43,4	59,0	16. 51. 14,2	- 13,88	16. 50. 28,80	B.		
	Ceres ....	31,8	46,6	1,9	17,2	31,8	46,7	17. 0. 1,3		16. 59. 16,76	B.		
	α Herculis ....	...	24,6	...	...	...	20,1	17. 7. 33,9		17. 6. 52,32	B.		
	α Ophiuchi ....	19,9	33,8	47,1	1,3	14,9	28,7	17. 27. 42,5		17. 27. 1,17	B.		
June 26	Venus 2 L. ....	16,3	30,7	45,3	59,6	14,4	28,5	4. 28. 42,8		4. 27. 59,66	B.		
June 27	⊙ 1 L. ....	48,1	2,8	17,7	32,5	47,2	1,8	6. 21. 16,4		6. 20. 32,35	B.		
	⊙ 2 L. ....	6,0	20,9	35,6	50,3	5,2	19,7	6. 23. 34,3		6. 22. 50,28	B.		
	α Ophiuchi ....	16,4	30,4	43,5	58,1	11,7	25,2	17. 27. 39,4		17. 26. 57,82	B.		
June 29	⊙ 1 L. ....	2,3	17,2	32,1	46,8	0,9	16,1	6. 29. 30,7	+ 4,60 + 2. 43,71	6. 28. 46,59	B.		
	⊙ 2 L. ....	20,4	35,3	50,1	4,8	19,3	34,0	6. 31. 48,5		6. 31. 4,63	B.		
	Regulus ....	28,7	42,5	56,3	10,2	24,2	37,9	9. 59. 52,0		9. 59. 10,25	B.		
	Mars 1 L. ....	29,9	43,9	57,5	11,3	25,4	...	10. 13. 53,1		10. 13. 11,45	B.		
	Polaris S.P. ....	35.32,2	43.39,6	51.45,4	0. 0,6	8.11,2	...	13. 24. 34,8		13. 0. 1,01	B.		
	Spica ....	25,6	39,3	52,9	6,8	20,6	34,1	13. 16. 47,7		13. 16. 6,72	B.		
	Arcturus ....	2,1	16,2	30,5	45,1	59,3	14,0	14. 8. 28,1		14. 7. 45,04	B.		
	δ Ophiuchi ....	38,7	52,2	5,9	19,3	32,8	46,2	16. 5. 59,9		16. 5. 19,29	B.		
	Antares ....	10,1	25,1	40,0	54,9	10,3	25,2	16. 19. 40,2		16. 18. 55,12	B.		
	Pallas ....	52,6	7,4	22,2	37,2	51,9	7,2	16. 48. 21,9		16. 47. 37,20	B.		
	Ceres ....	7,8	22,4	36,9	51,2	5,9	20,3	16. 56. 34,9		16. 55. 51,34	B.		
June 30	⊙ 1 L. ....	9,7	24,3	38,7	53,8	8,4	23,2	6. 33. 37,4		6. 32. 53,64	B.		
	⊙ 2 L. ....	27,1	42,1	57,0	11,7	26,3	40,8	6. 35. 55,4		6. 35. 11,48	B.		
	Regulus ....	27,3	41,2	55,0	8,8	22,4	36,2	9. 59. 50,1		9. 59. 8,72	B.		
	β Leonis ....	30,4	44,3	58,4	12,3	26,6	40,2	11. 40. 54,1		11. 40. 12,33	B.		
	Polaris S.P. ....	35.31,4	43.40,4	51.45,2	59.59,6	8.11,8	16.23,4	13. 24. 37,2		13. 0. 1,29	B.		
	Arcturus ....	59,7	14,2	28,7	42,9	57,4	11,8	14. 8. 26,1		14. 7. 42,97	B.		
	δ Ophiuchi ....	36,8	50,2	3,9	17,4	31,1	44,3	16. 5. 57,9		16. 5. 17,37	B.		
	Antares ....	8,3	23,2	38,1	53,1	8,3	23,1	16. 19. 38,1		16. 18. 53,17	B.		
	Pallas ....	11,5	26,2	40,3	56,0	11,2	26,5	16. 47. 40,3		16. 46. 56,00	B.		
	Ceres ....	18,2	32,8	47,8	2,3	17,0	31,8	16. 55. 46,2		16. 55. 2,30	B.		
	α Herculis ....	1,1	14,9	28,7	42,7	56,8	10,9	17. 7. 24,4		17. 6. 42,78	B.		
	Polaris ....	35.47,8	44. 0,6	52.13,2	0.23,6	8.40,2	16.44,4	1. 24. 53,8		1. 0. 23,37	B.		
	Aldebaran ....	17,7	31,4	45,2	59,4	13,8	27,3	4. 26. 41,3		4. 25. 59,45	B.		
	Venus 2 L. ....	30,4	44,7	59,6	14,3	28,7	43,2	4. 48. 57,5		4. 48. 14,06	B.		
Rigel ....	27,1	40,7	54,3	8,1	21,8	35,2	5. 6. 48,6	5. 6. 7,97	B.				
July 1	⊙ 1 L. ....	16,2	30,8	45,4	0,1	14,7	29,6	6. 37. 43,8	+ 0,05	6. 37. 0,08	B.		
	⊙ 2 L. ....	33,9	48,7	...	...	...	47,1	6. 40. 2,0		6. 39. 17,97	B.		
	Mars 1 L. ....	53,9	7,4	21,1	34,9	48,7	2,5	10. 18. 16,2		10. 17. 34,96	B.		
	γ 1 L. ....	51,8	5,9	19,9	33,8	48,0	1,9	11. 10. 15,8		11. 9. 33,87	B.		
	β Leonis ....	28,6	42,4	56,2	10,3	24,6	38,3	11. 40. 52,2		11. 40. 10,37	B.		
	Polaris S.P. ....	35.29,8	43.38,8	51.44,0	59.59,6	8.10,2	16.22,8	13. 24. 36,2		13. 0. 0,20	B.		
	Arcturus ....	57,8	12,2	26,7	41,1	55,4	9,9	14. 8. 24,1		14. 7. 41,02	B.		
δ Ophiuchi ....	34,9	48,3	2,0	15,3	29,1	42,3	16. 5. 55,8	16. 5. 15,39	B.				

ILLUMINATED END OF AXIS EAST. Order of Wires, for Stars above the Pole, ABCDEFG.

(a) The 5th wire was set down 16,1.



Error of Collimation.	Level Error.	Seconds of Transit corr. for the two Errors.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock slow at 0 <sup>h</sup> .	Apparent R.A. from the Observation.			NAME OF STAR or PLANET.				
									h.	m.	s.					
-0,1	-0,95	8,98	+6,53	18,91	33,07	14,16	1,82	12,55	1	0	32,45	Polaris S.P.				
				15,44								13	4	28,98	Saturn's center.	
	18,04			31,65	13,61						13	16	31,59	Spica.		
	56,10			9,63	13,53						14	8	9,72	Arcturus.		
	6,46			20,22	13,76						16	19	20,25	Antares.		
	0,09										16	52	13,92	Pallas.		
						28,95					1,66	15,95	16	50	46,06	Pallas.
						17,19							16	59	34,31	Ceres.
						52,53			9,55	17,02			.....	.....	.....	$\alpha$ Herculis.
						1,40			18,67	17,27			.....	.....	.....	$\alpha$ Ophiuchi.
	-1,35			59,81			1,95	19,23	4	28	19,40	Venus 2 L.				
				41,45					6	22	1,20	$\odot$ 's center.				
				58,03	18,68	20,65			.....	.....	.....	$\alpha$ Ophiuchi.				
			+5,80	55,72			1,90	23,38	6	30	19,61	$\odot$ 's center.				
				10,43	34,61	24,18			9	59	34,60	Regulus.				
				11,63					10	13	35,82	Mars 1 L.				
				12,57	37,67	25,10			.....	.....	.....	Polaris S.P.				
				7,02	31,60	24,58			13	16	31,45	Spica.				
				45,17	9,58	24,41			14	8	9,67	Arcturus.				
				19,47	44,03	24,56			16	5	44,13	$\delta$ Ophiuchi.				
				55,51	20,23	24,72			16	19	20,18	Antares.				
				37,30					16	48	2,01	Pallas.				
				51,72					16	56	16,44	Ceres.				
				2,68			1,95	25,21	6	34	28,42	$\odot$ 's center.				
				8,90	34,60	25,70			9	59	34,92	Regulus.				
				12,48	38,79	26,31			11	40	38,64	$\beta$ Leonis.				
		4,03		12,85	38,36	26,51			1	0	39,12	Polaris S.P.				
				43,10	9,57	26,47			14	8	9,46	Arcturus.				
				17,55	44,03	26,48			16	5	44,07	$\delta$ Ophiuchi.				
				53,56	20,23	26,67			16	19	20,09	Antares.				
				56,10					16	47	22,67	Pallas.				
				2,68					16	55	29,26	Ceres.				
				42,94	9,56	26,62			17	7	9,54	$\alpha$ Herculis.				
		20,51		12,27	38,69	26,42	2,03	27,18	1	0	39,53	Polaris.				
				59,60	27,20	27,60			4	26	27,15	Aldebaran.				
				14,18					4	48	41,77	Venus 2 L.				
				8,26	36,10	27,84			5	6	35,87	Rigel.				
				9,14					6	38	36,88	$\odot$ 's center.				
				35,13					10	18	3,18	Mars 1 L.				
				34,06					11	10	2,18	$\gamma$ 1 L.				
				10,52	38,78	28,26			11	40	38,69	$\beta$ Leonis.				
		2,94		11,76	39,05	27,29			1	0	40,04	Polaris S.P.				
				41,15	9,56	28,41			14	8	9,52	Arcturus.				
				15,57	44,03	28,46			16	5	44,11	$\delta$ Ophiuchi.				

The Transit levelled, June 29. 1<sup>h</sup>.

June 30 and July 1, Meridian error by Polaris S.P., Polaris, and Polaris S.P.



Month and Day.	NAME OF STAR or PLANET.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Concluded Transit over the Mean of the seven Wires.			Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	m. s.		h. m. s.	h. m. s.		
July 1	Antares.....	6,5	21,3	36,3	51,2	6,7	21,3	16. 19. 36,2	- 2,95	16. 18. 51,35	B.		
	Pallas.....	31,4	46,7	.....	.....	31,3	46,2	16. 47. 1,3		16. 46. 16,43	B.		
	Ceres.....	28,3	43,2	58,3	13,7	29,1	43,6	16. 54. 57,8		16. 54. 13,43	B.		
	α Herculis.....	58,9	12,9	27,8	41,1	55,0	8,9	17. 7. 22,4		17. 6. 41,00	B.		
	α Ophiuchi.....	8,6	22,2	36,1	49,9	4,1	17,4	17. 27. 31,1		17. 26. 49,92	B.		
	ι Sagittarii.....	32,2	47,0	2,1	16,5	31,2	45,9	17. 50. 0,6		17. 49. 16,50	B.		
July 2	β Leonis.....	26,3	40,3	54,3	8,2	22,4	36,1	11. 40. 50,0		11. 40. 8,23	B.		
	γ 1 L.....	16,7	30,7	44,4	58,2	12,1	26,0	12. 1. 39,9		12. 0. 58,29	B.		
	Arcturus.....	56,1	10,3	24,9	39,1	53,3	7,6	14. 8. 21,9		14. 7. 39,03	B.		
	δ Ophiuchi.....	32,9	46,1	0,0	13,3	27,0	40,1	16. 5. 53,7		16. 5. 13,30	B.		
	Pallas.....	54,5	8,1	22,0	37,2	52,3	6,9	16. 46. 21,6		16. 45. 37,52	B.		
	α Herculis.....	56,9	11,0	24,9	38,6	52,9	6,4	17. 7. 20,3		17. 6. 38,72	B.		
	Venus 2 L.....	42,5	57,9	12,6	26,8	41,4	55,7	4. 59. 10,5		4. 58. 26,77	B.		
July 3	☉ 1 L.....	28,3	42,9	57,5	12,4	27,3	41,7	6. 45. 56,3	+ 1. 37,24	6. 45. 12,34	B.		
	☽ 1 L.....	45,1	58,9	12,9	26,6	40,9	54,4	12. 53. 8,2		12. 52. 26,72	B.		
	Polaris S.P.....	35.29,2	43.38,6	.....	59.59,0	8. 9,6	.....	13. 24. 33,8		12. 59. 59,28	B.		
	Spica.....	17,7	31,3	45,0	58,7	12,6	26,1	13. 16. 39,8		13. 15. 58,75	B.		
	Arcturus.....	53,9	8,2	22,4	36,9	51,3	5,5	14. 8. 19,8		14. 7. 36,86	B.		
	δ Ophiuchi.....	31,1	44,0	57,7	11,2	24,9	38,1	16. 5. 51,8		16. 5. 11,25	B.		
	Antares.....	2,2	17,3	32,2	47,1	2,2	17,3	16. 19. 31,8		16. 18. 47,16	B.		
	Pallas.....	15,5	30,3	44,9	59,8	14,6	29,3	16. 45. 44,2		16. 44. 59,80	B.		
	Ceres.....	57,2	11,7	26,8	41,4	56,1	10,7	16. 53. 25,5		16. 52. 41,34	B.		
	α Herculis.....	54,7	8,9	23,0	36,5	50,9	4,4	17. 7. 18,3		17. 6. 36,67	B.		
	α Ophiuchi.....	4,2	18,1	31,8	45,6	59,8	13,3	17. 27. 26,9		17. 26. 45,67	B.		
	Aldebaran.....	.....	.....	39,2	53,0	7,7	21,2	4. 26. 35,0		- 14,04	4. 25. 53,18	B.	
	Venus 2 L.....	.....	.....	.....	.....	48,9	3,3	5. 4. 18,0		- 29,18	5. 3. 34,22	B.	
	July 4	☉ 2 L.....	52,1	6,6	21,0	35,8	51,0	5,1		6. 52. 19,4	- 21,00	6. 51. 35,86	B.
Mars 1 L.....		29,0	42,9	56,6	10,3	24,0	37,7	10. 24. 51,5	10. 24. 10,28	B.			
β Leonis.....		.....	.....	.....	4,3	18,3	32,0	11. 40. 46,1	11. 40. 4,17	B.			
Arcturus.....		51,4	6,1	20,3	34,8	49,1	3,6	14. 8. 17,6	14. 7. 34,70	B.			
Pallas.....		38,5	53,2	8,1	23,1	38,0	52,4	16. 45. 7,1	16. 44. 22,91	B.			
α Herculis.....		53,0	6,9	20,8	34,3	48,5	1,9	17. 7. 16,1	17. 6. 34,50	B.			
α Ophiuchi.....		2,3	15,9	29,9	43,9	57,6	11,2	17. 27. 25,1	17. 26. 43,70	B.			
July 5	Arcturus.....	49,8	4,0	18,4	32,8	47,3	1,5	14. 8. 15,7		14. 7. 32,78	B.		
	ε Bootis.....	26,0	40,9	56,4	11,8	27,0	42,0	14. 37. 57,3		14. 37. 11,63	B.		
	γ 1 L.....	50,3	4,9	19,1	33,4	47,9	2,0	14. 41. 15,9		14. 40. 33,36	B.		
	γ Libræ.....	1,0	15,2	29,0	43,0	57,1	10,9	15. 26. 24,5		15. 25. 42,96	B.		
	Antares.....	58,0	12,9	28,1	42,9	58,4	12,9	16. 19. 28,0		16. 18. 43,03	B.		
July 6	Arcturus.....	.....	2,1	16,3	30,8	45,1	59,1	14. 8. 13,5	- 7,18	14. 7. 30,64	B.		
	γ Libræ.....	59,1	13,1	26,9	41,1	54,8	8,9	15. 26. 22,4		15. 25. 40,90	B.		
	α Herculis.....	48,9	2,8	16,7	30,4	44,3	58,2	17. 7. 12,0		17. 6. 30,47	B.		
	α Ophiuchi.....	57,9	11,8	25,7	39,5	53,4	7,2	17. 27. 21,0		17. 26. 39,50	B.		
	Venus 2 L.....	.....	.....	46,9	.....	16,5	30,6	5. 19. 45,4		- 18,28	5. 19. 1,57	B.	
July 7	☉ 1 L.....	48,9	3,7	18,4	32,6	47,7	2,3	7. 2. 16,9		7. 1. 32,93	B.		
	☉ 2 L.....	6,1	21,0	35,4	50,0	5,0	19,3	7. 4. 34,0		7. 3. 50,11	B.		
	Arcturus.....	45,8	0,0	14,2	28,7	43,1	57,3	14. 8. 11,8		14. 7. 28,70	B.		
	ε Bootis.....	21,9	37,0	52,2	7,3	22,9	38,0	14. 37. 53,1		14. 37. 7,49	B.		
	γ 1 L.....	46,5	1,9	17,0	32,1	47,9	3,0	16. 43. 17,9		16. 42. 32,33	B.		
	Aldebaran.....	.....	.....	31,3	45,1	59,5	13,4	4. 26. 27,2		- 14,04	4. 25. 45,26	B.	

ILLUMINATED END OF AXIS EAST. Order of Wires, for Stars above the Pole, ABCDEFG.

Error of Collimation.	Level Error.	Seconds of Transit corr. for the two Errors.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock slow at 0 <sup>h</sup> .	Apparent R.A. from the Observation.			NAME OF STAR or PLANET.			
									h.	m.	s.				
-0,1	-1,35		+5,80	51,74	20,23	28,49	2,03	27,18	16. 19. 20,30			Antares.			
				16,53						16. 46. 45,13			Pallas.		
				13,81						16. 54. 42,42			Ceres.		
				41,16	9,56	28,40				17. 7. 9,78			$\alpha$ Herculis.		
				50,10	18,70	28,60				17. 27. 18,75			$\alpha$ Ophiuchi.		
				16,88						17. 49. 45,56			$\beta$ Sagittarii.		
				8,38	38,77	30,39			2,07	29,22	11. 40. 38,61			$\beta$ Leonis.	
				58,51							12. 1. 28,77			) 1 L.	
				39,16	9,55	30,39					14. 8. 9,60			Arcturus.	
				13,48	44,03	30,55					16. 5. 44,09			$\delta$ Ophiuchi.	
				37,62							16. 46. 8,28			Pallas.	
				38,88	9,56	30,68					17. 7. 9,58			$\alpha$ Herculis.	
				26,89					2,11	31,26	4. 58. 58,59			Venus 2 L.	
				12,46							6. 45. 44,31			☉ 1 L.	
				26,98							12. 52. 59,37			) 1 L.	
				10,84	40,53	29,69					.....			Polaris S.P.	
				59,05	31,56	32,51					13. 16. 31,48			Spica.	
				36,99	9,54	32,55					14. 8. 9,49			Arcturus.	
				11,43	44,02	32,59					16. 5. 44,11			$\delta$ Ophiuchi.	
				47,55	20,22	32,67					16. 19. 20,25			Antares.	
				59,90							16. 45. 32,63			Pallas.	
				41,72							16. 53. 14,47			Ceres.	
				36,83	9,56	32,73					17. 7. 9,59			$\alpha$ Herculis.	
				45,85	18,71	32,86					17. 27. 18,65			$\alpha$ Ophiuchi.	
				53,33	27,28	33,95				2,07	33,44	4. 26. 27,15			Aldebaran.
				34,34								5. 4. 8,22			Venus 2 L.
				35,97								6. 52. 10,00			☉ 2 L.
				10,46								10. 24. 44,80			Mars 1 L.
				4,32	38,75	34,43						11. 40. 38,77			$\beta$ Leonis.
				34,83	9,53	34,70						14. 8. 9,49			Arcturus.
				23,01								16. 44. 57,89			Pallas.
				34,66	9,56	34,90						17. 7. 9,57			$\alpha$ Herculis.
				43,88	18,71	34,83						17. 27. 18,82			$\alpha$ Ophiuchi.
				32,91	9,51	36,60				2,02	35,41	14. 8. 9,51			Arcturus.
				11,71	48,36	36,65						14. 37. 48,36			$\epsilon$ Bootis.
				33,68								14. 41. 10,33			) 1 L.
				43,28								15. 26. 19,99			$\gamma$ Libræ.
				43,42	20,22	36,80						16. 19. 20,20			Antares.
				30,77	9,50	38,73				2,04	37,52	14. 8. 9,49			Arcturus.
				41,22								15. 26. 20,05			$\gamma$ Libræ.
30,63	9,56	38,93						17. 7. 9,60			$\alpha$ Herculis.				
39,68	18,71	39,03						17. 27. 18,68			$\alpha$ Ophiuchi.				
1,69						2,02	39,50	5. 19. 41,64			Venus 2 L.				
41,63								7. 3. 21,72			☉'s center.				
28,83	9,49	40,66						.....			Arcturus.				
7,57	48,34	40,77						.....			$\epsilon$ Bootis.				
32,71								16. 43. 13,62			) 1 L.				
45,41	27,38	41,97				1,98	41,61	4. 26. 27,38			Aldebaran.				



Month and Day.	NAME OF STAR or PLANET.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Concluded Transit over the Mean of the seven Wires.	Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	m. s.			
July 8	$\alpha$ Coronæ Borealis.	15,5	30,8	46,0	1,0	16,3	31,1	15. 27. 46,0		15. 27. 0,95	B.
	$\alpha$ Herculis .....	44,8	58,8	12,2	26,3	40,5	53,9	17. 7. 8,0		17. 6. 26,36	B.
July 9	Aldebaran .....			27,6	41,4	55,5	9,8	4. 26. 23,9	- 14,01	4. 25. 41,63	B.
	Venus 2 L.....			21,3	35,8		5,4	5. 35. 19,6	- 14,63	5. 34. 35,89	B.
July 10	☉ 1 L. ....	1,4	16,0	30,2	44,9	59,4	14,2	7. 14. 29,0		7. 13. 45,01	B.
	☉ 2 L. ....	17,8	32,5	47,1	1,8	16,3	30,9	7. 16. 45,6		7. 16. 1,71	B.
	Arcturus.....	39,8	54,1	8,4	22,9	37,1	51,3	14. 8. 6,0		14. 7. 22,80	B.
	$\delta$ Ophiuchi.....	16,8	30,1	43,8	57,2	10,7	23,9	16. 5. 37,7		16. 4. 57,17	B.
	Antares.....	47,2	3,3	18,1	32,9	48,1	2,9	16. 19. 18,1		16. 18. 32,94	B.
	(a) Ceres.....		29,1	44,1	59,0	13,7	29,2	16. 48. 43,1	- 7,33	16. 47. 59,04	B.
	(b) $\alpha$ Herculis.....	40,8	54,7	8,9	22,5	36,2	50,4	17. 7. 4,6		17. 6. 22,58	B.
	$\alpha$ Ophiuchi.....	50,4	4,1	17,9	32,0	45,4	59,2	17. 27. 13,2		17. 26. 31,74	B.
	$\alpha$ Aquilæ.....	18,3	31,7	44,9	59,1	12,7	26,1	19. 42. 39,9		19. 41. 58,96	B.
	Rigel.....		21,1	34,7	48,2	2,0	15,7	5. 6. ....	+ 0,03	5. 5. 48,37	B.
July 11	☉ 1 L. ....	4,3	19,0	33,1	48,0	2,7	17,2	7. 18. 31,9		7. 17. 48,03	B.
	☉ 2 L. ....	21,1	35,3	49,9	5,0	19,1	34,0	7. 20. 48,9		7. 20. 4,76	B.
	Arcturus.....	38,0	52,1	6,7	21,0	35,2	49,7	14. 8. 4,1		14. 7. 20,97	B.
	(c) Antares.....	46,0	1,5	16,3	31,1	46,0	0,8	16. 19. 15,7		16. 18. 31,05	B.
	Ceres.....	39,2	54,2	9,3	24,4	39,2	53,9	16. 48. 9,2		16. 47. 24,20	B.
	$\alpha$ Herculis.....	39,1	52,6	6,9	20,5	34,4	48,4	17. 7. 2,6		17. 6. 20,64	B.
	$\alpha$ Ophiuchi.....	48,6	2,3	16,1	29,7	44,1	57,5	17. 27. 11,8		17. 26. 30,02	B.
	$\alpha$ Aquilæ.....	16,2	29,8	43,2	57,1	10,6	24,2	19. 42. 38,1		19. 41. 57,03	B.
	$\alpha^2$ Capricorni.....	25,1	39,1	52,7	6,9	20,5	34,3	20. 8. 47,8		20. 8. 6,63	B.
	$\nu$ Capricorni.....	9,4	23,3	37,8	52,0	6,3	20,5	20. 30. 35,1		20. 29. 52,05	B.
July 12	Aldebaran.....		8,0	22,1	36,0	49,9	4,0	4. 26. ....	+ 0,03	4. 25. 36,03	B.
July 16	) 2 L.....	7,4	21,2	35,0	48,7	2,6	16,5	1. 17. 30,0		1. 16. 48,78	B.
	$\alpha$ Arietis.....	10,9	25,1	39,6	54,3	9,0	23,6	1. 57. 38,2		1. 56. 54,38	B.
	Aldebaran.....	46,1	59,8	13,5	27,9	41,9	56,0	4. 26. 10,1		4. 25. 27,90	B.
	$\alpha$ Orionis.....	33,7	47,0	0,4	14,7	27,8		5. 45. ....	+ 13,59	5. 45. 14,31	B.
July 17	Venus 2 L.....	29,5	44,2	58,3	13,5	28,3	43,2	6. 11. 57,7		6. 11. 13,53	B.
July 17	☉ 1 L. ....					11,5	26,0	7. 42. 40,5	- 29,01	7. 41. 56,99	B.
	☉ 2 L. ....	30,0	44,1	58,9	13,7	28,0	42,4	7. 44. 57,0		7. 44. 13,44	B.
	$\beta$ Leonis.....				38,2	52,3	6,2	11. 40. 20,3	- 21,00	11. 39. 38,25	B.
	Polaris S.P.....			51.25,8	59.36,4	7.53,2	15.56,6	13. 24. 5,4	- 8. 11,70	12. 59. 35,78	B.
	Arcturus.....	26,1	40,2	54,2	8,6	23,1	37,7	14. 7. 52,1		14. 7. 8,86	B.
	$\alpha^2$ Libræ.....			31,9	46,3	0,1	14,4	14. 41. 28,3	- 13,95	14. 40. 46,25	B.
	$\delta$ Ophiuchi.....	2,7	16,3	29,9	43,1	56,9	10,8	16. 5. 23,7		16. 4. 43,34	B.
	Antares.....			4,1	19,1	34,2	49,1	16. 19. 4,4	- 14,98	16. 18. 19,20	B.
	Pallas.....			54,2	9,1	23,8	38,4	16. 38. 51,3	- 14,58	16. 38. 9,14	B.
	Ceres.....	42,2	57,0	11,3	26,2	41,2	56,0	16. 45. 11,1		16. 44. 26,43	B.
July 18	Polaris.....				0. 4,2	8.14,6	16.26,2	1. 24. 40,4	- 12. 17,15	1. 0. 4,20	B.
July 18	☉ 1 L. ....	14,1	28,3	42,1	56,3	11,9	26,3	7. 46. 40,4		7. 45. 57,06	B.
	☉ 2 L. ....	30,7	44,0	58,3	12,9	27,3	42,2	7. 48. 56,9		7. 48. 13,18	B.
	Spica.....	47,6	1,6	14,5	28,4	42,4	56,0	13. 16. 9,7		13. 15. 28,60	B.
	Arcturus.....	23,8	38,1	52,1	6,7	21,1	35,4	14. 7. 50,0		14. 7. 6,75	B.
	) 2 L.....	48,2	2,1	16,1	30,7	45,0	58,9	2. 48. 12,8		2. 47. 30,54	B.
	Aldebaran.....	41,8	55,8	9,6	23,7	37,9	51,8	4. 26. 6,0		4. 25. 23,80	B.
	Rigel.....	51,7	5,2	18,8	32,4	46,1	59,7	5. 6. 13,3		5. 5. 32,45	B.

To July 8, ILLUMINATED END OF AXIS EAST. Order of Wires, for Stars above the Pole, ABCDEFG.  
 From July 9, ILLUMINATED END OF AXIS WEST. Order of Wires, for Stars above the Pole, GFEDCBA.

- (a) The II wire was set down 27,1: probably a mistake in writing. observer found his counting at the end 1<sup>st</sup> fast on the clock: all are therefore diminished by 1<sup>st</sup>.  
 (b) The wires were all set down greater by 1<sup>st</sup>, but the (c) The wires were all set down greater by 1<sup>st</sup>.



Error of Collimation.	Level Error.	Seconds of Transit corr. for the two Errors.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock slow at 0 <sup>h</sup> .	Apparent R.A. from the Observation.	NAME OF STAR or PLANET.
"	"	"	"	"	"	"	"	"	<i>h. m. s.</i>	
-0,1	-1,35		+5,80	1,04 26,52	43,91 9,56	42,87 43,04	1,98	41,61	15.27.43,93 17.7.9,54	$\alpha$ Coronæ Borealis. $\alpha$ Herculis.
-1,1	-1,53			41,70 35,92	27,43	45,73	1,90	45,49	4.26.27,54 5.35.21,85	Aldebaran, Venus $\gamma$ L.
				} 53,39					7.15.39,45	$\odot$ 's center.
				22,85	9,46	46,61			14.8.9,46	Arcturus.
				57,27	44,01	46,74			16.5.44,03	$\delta$ Ophiuchi.
				33,26	20,21	46,95			16.19.20,04	Antares.
				59,34					16.48.46,16	Ceres.
				22,66	9,56	46,90			17.7.9,50	$\alpha$ Herculis.
				31,84	18,72	46,88			17.27.18,71	$\alpha$ Ophiuchi.
				59,08	46,05	46,97			19.42.46,13	$\alpha$ Aquilæ.
				48,58	36,30	47,72	1,87	47,39	5.6.36,37	Rigel.
				} 56,42					7.19.44,38	$\odot$ 's center.
				21,02	9,45	48,43			14.8.9,51	Arcturus.
				31,37	20,20	48,83			16.19.20,03	Antares.
				24,50					16.48.13,20	Ceres.
				20,72	9,56	48,84			17.7.9,42	$\alpha$ Herculis.
				30,12	18,72	48,60			17.27.18,87	$\alpha$ Ophiuchi.
				57,16	46,06	48,90			19.42.46,08	$\alpha$ Aquilæ.
				6,87	55,92	49,05			20.8.55,83	$\alpha^2$ Capricorni.
				52,32					20.30.41,31	$\nu$ Capricorni.
				36,10	27,52	51,42			.....	Aldebaran.
	-1,56		+6,11	48,95			2,09	59,25	1.17.48,31	$\gamma$ 2 L.
				54,42	53,90	59,48			1.57.53,84	$\alpha$ Arietis.
				27,98	27,63	59,65			4.26.27,61	Aldebaran.
				14,46	14,22	59,76			5.46.14,21	$\alpha$ Orionis.
				13,57					6.12.13,36	Venus $\gamma$ L.
				} 5,26					7.44.5,18	$\odot$ 's center.
		41,32		38,34	38,64	60,30			11.40.38,60	$\beta$ Leonis.
				50,61	51,37	60,76			1.0.50,99	Polaris S.P.
				8,92	9,38	60,46			14.8.9,40	Arcturus.
				46,52	47,11	60,59			14.41.47,05	$\alpha^2$ Libræ.
				43,45	43,97	60,52			16.5.44,10	$\delta$ Ophiuchi.
				19,55	20,17	60,62			16.19.20,22	Antares.
				9,18					16.39.9,87	Pallas.
		58,54		26,76				61,34	16.45.27,46	Ceres.
				49,86	51,80	61,94			1.0.51,29	Polaris.
				} 5,17			2,07	61,37	7.48.7,21	$\odot$ 's center.
				28,85	31,41	62,56			.....	Spica.
				6,81	9,36	62,55			.....	Arcturus.
				30,65			1,97	63,40	2.48.34,28	$\gamma$ 2 L.
				23,88	27,68	63,80			.....	Aldebaran.
				32,69	36,48	63,79			.....	Rigel.

The Transit levelled, July 8. 1<sup>h</sup>; and July 14. 1<sup>h</sup>.  
 On July 8 the Transit was reversed and the error of collimation determined.  
 July 17, Meridian error by Polaris S.P. and Polaris, allowing 0<sup>s</sup>,69 for clock rate and change of R.A.

Month and Day.	NAME OF STAR or PLANET.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Concluded Transit over the Mean of the seven Wires.			Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	m. s.		h. m. s.	m. s.	h. m. s.	
July 19	Rigel .....	49,5	3,2	16,8	30,4	44,1	57,7	5. 7. 11,3			5. 6. 30,42	B.	
	α Orionis .....	27,5	41,1	54,3	8,1	21,9	35,2	5. 46. 49,0			5. 46. 8,16	B.	
July 20	☉ 1 L. ....	12,0	26,3	40,6	55,1	10,0	24,2	7. 55. 38,7			7. 54. 55,27	B.	
	☉ 2 L. ....	27,2	42,0	56,1	10,7	25,1	39,6	7. 57. 54,1			7. 57. 10,68	B.	
	Arcturus .....	19,9	34,1	48,0	2,7	17,0	31,4	14. 8. 45,9			14. 8. 2,71	B.	
	δ Ophiuchi .....	57,1	10,8	23,6	37,1	50,8	4,1	16. 6. 17,7			16. 5. 37,32	B.	
	Antares .....				13,4	27,9	43,2	16. 19. 58,1	- 22,51		16. 19. 13,14	B.	
July 21	☉ 1 L. ....	10,2	24,2	38,7	53,3	8,0	22,3	7. 59. 37,1			7. 58. 53,40	B.	
	☉ 2 L. ....	25,3	40,0	54,3	8,9	23,3	37,7	8. 1. 52,1			8. 1. 8,80	B.	
	β Leonis .....					44,0	57,9	11. 41. 12,2	- 28,00		11. 40. 30,03	B.	
	Arcturus .....	17,7	31,9	46,1	0,4	14,9	29,1	14. 8. 43,5			14. 8. 0,51	B.	
	δ Ophiuchi .....	54,4	8,1	21,3	35,0	48,3	2,0	16. 6. 15,5			16. 5. 34,94	B.	
	Antares .....	26,0	40,7	55,4	11,1	26,0	40,7	16. 19. 56,0			16. 19. 10,84	B.	
	Rigel .....	45,4	59,1	12,6	26,1	40,0	53,6	5. 7. 7,6			5. 6. 26,34	B.	
	☽ 2 L. ....	26,8	41,4	56,5	12,0	26,7	42,1	5. 19. 57,2			5. 19. 11,81	B.	
	α Orionis .....	23,7	37,1	50,3	4,1	17,7	31,1	5. 46. 45,0			5. 46. 4,14	B.	
	Venus 2 L. ....	47,4	1,7	16,7	31,4	45,9	0,7	6. 39. 15,5			6. 38. 31,33	B.	
July 28	☉ 1 L. ....	42,6	56,8	11,0	25,6	39,6	54,0	8. 27. 8,1			8. 26. 25,39	G.	
	☉ 2 L. ....	56,7	11,0	25,0	39,4	54,0	7,9	8. 29. 22,3			8. 28. 39,48	G.	
	(a) Spica .....			53,9	8,0	21,3	34,9	13. 16. 49,0	- 13,67		13. 16. 7,75	G.	
	Arcturus .....	2,9	17,3	31,5	46,0	0,3	14,8	14. 8. 29,1			14. 7. 45,99	G.	
	Antares .....	11,1	26,2	41,0	56,2	11,3	26,0	16. 19. 41,5			16. 18. 56,19	G.	
	Rigel .....		45,0	58,0	11,9	25,5	39,2	5. 6. 53,0	- 6,80		5. 6. 11,97	G.	
	Venus 2 L. ....	33,4	47,8	2,0	16,9	31,8	46,2	7. 16. 1,0			7. 15. 17,02	G.	
July 29	☉ 1 L. ....	35,9	50,0	4,2	18,9	33,0	47,8	8. 31. 2,0			8. 30. 18,83	G.	
	☉ 2 L. ....	50,0	4,5	18,3	33,0	47,0	1,1	8. 33. 15,9			8. 32. 32,83	G.	
	(b) ☽ 1 L. ....	39,9	53,8	7,3	21,2	35,3	49,0	11. 46. 3,0			11. 45. 21,35	G.	
	Spica .....	25,0	38,5	52,0	6,0	19,5	32,9	13. 16. 47,0			13. 16. 5,84	G.	
	Arcturus .....	1,0	15,3	29,1	43,9	58,2	12,7	14. 8. 27,0			14. 7. 43,88	G.	
	Antares .....	9,2	24,1	39,0	54,1	9,1	24,0	16. 19. 39,1			16. 18. 54,08	G.	
	δ Ursæ Minoris...	14. 8,2	17.55,0	21.37,4	25.26,2	29.11,3	33. 1,0	18.36. 47,2			18.25. 26,61	G.	
	α Aquarii .....	14,5	28,0	40,9	54,7	7,9	21,7	21.57. 35,0			21.56. 54,67	G.	
	Uranus .....	20,4	33,8	47,4	1,3	15,0	29,0	22. 7. 42,9			22. 7. 1,40	G.	
	Rigel .....	29,0	42,9	56,0	10,0	23,6	36,9	5. 6. 51,0			5. 6. 9,91	G.	
	β Tauri .....	39,8	55,0	10,1	25,8	40,9	56,0	5. 16. 11,4			5. 15. 25,57	G.	
	Venus 2 L. ....	47,1	1,5	16,0	30,8	45,3	0,1	7. 21. 14,9			7. 20. 30,81	G.	
July 30	☉ 1 L. ....	29,3	43,4	57,5	11,9	26,0	40,1	8. 34. 54,9			8. 34. 11,87	G.	
	☉ 2 L. ....	42,8	57,0	11,1	25,7	39,7	54,0	8. 37. 8,3			8. 36. 25,51	G.	
	☽ 1 L. ....	6,3	20,1	33,9	48,0	1,9	15,7	12. 37. 29,4			12. 36. 47,90	G.	
	Spica .....		36,3	50,0	4,0	17,3	31,3	13. 16. 45,0	- 6,83		13. 16. 3,82	G.	
	α Herculis .....	0,1	14,0	27,8	42,0	55,9	10,0	17. 7. 23,3			17. 6. 41,94	G.	
	α Ophiuchi .....	9,9	23,1	37,0	50,9	5,0	18,9	17. 27. 32,5			17. 26. 51,04	G.	
	δ Ursæ Minoris...	14. 5,0	17.52,5	21.35,2	25.24,1	29. 9,6	32.58,2	18.36. 44,8			18.25. 24,20	G.	
	(c) δ Ursæ Minoris } with Micrometer }	24. 26,0	24. 45,0	25. 4,0	25. 24,1	25. 42,5	26. 2,0	18. 26. 21,2	+ 0,08		18. 25. 23,77	G.	
	α Aquarii .....	12,0	25,8	39,0	52,6	5,9	20,0	21.57. 33,1			21.56. 52,63	G.	
	Uranus .....	10,0	23,1	37,1	51,0	4,8	18,7	22. 7. 32,8			22. 6. 51,07	G.	
	Rigel .....	27,0	40,8	53,9	8,0	21,4	35,2	5. 6. 48,9			5. 6. 7,89	G.	
Venus 2 L. ....	0,7	15,2	29,4	44,2	58,9	13,6	7. 26. 28,2			7. 25. 44,31	G.		

ILLUMINATED END OF AXIS WEST. Order of Wires, for Stars above the Pole, GFEDCBA.

(a) Very faint: unsteady.  
(b) Very faint.

(c) Micrometer at 21,029; 22,029; &c.: coincidence with D at 24,029.



CALCULATION OF APPARENT RIGHT ASCENSIONS.

(51)

Error of Collimation.	Level Error.	Seconds of Transit corr. for the two Errors.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock slow at 0 <sup>h</sup> .	Apparent R.A. from the Observation.			NAME OF STAR or PLANET.					
									h.	m.	s.						
- 1,1	- 1,56		+ 6,11	30,66	36,51	5,85	2,11	5,31	5 . 6 . 36,42	Rigel.							
				8,31	14,28	5,97			5 . 46 . 14,13	α Orionis.							
				}					3,02				7 . 56 . 9,03	☉'s center.			
				}					2,77	9,34	6,57		14 . 8 . 9,32	Arcturus.			
				}					37,43	43,95	6,52		16 . 5 . 44,16	δ Ophiuchi.			
				}					13,49	20,16	6,07		16 . 19 . 20,24	Antares.			
				}					1,15			2,07	7,52	8 . 0 . 9,36	☉'s center.		
				}					30,12	38,60	8,48			11 . 40 . 38,65	β Leonis.		
				}					0,57	9,33	8,76			14 . 8 . 9,31	Arcturus.		
				}					35,05	43,94	8,89			16 . 5 . 43,96	δ Ophiuchi.		
	}			11,19	20,15	8,96			16 . 19 . 20,12	Antares.							
	}			26,58	36,56	9,98	1,99	9,55	.....	Rigel.							
	}			11,84					5 . 19 . 21,83	) 2 L.							
	}			4,29	14,32	10,03			.....	α Orionis.							
	}			31,37					6 . 38 . 41,47	Venus 2 L.							
	}			32,52				2,00	22,11	8 . 27 . 55,34	☉'s center.						
	}			8,02	31,30	23,28			13 . 16 . 31,24	Spica.							
	}			46,08	9,24	23,16			14 . 8 . 9,37	Arcturus.							
	}			56,55	20,09	23,54			16 . 19 . 20,02	Antares.							
	}			12,23	36,74	24,51	1,96	24,12	5 . 6 . 36,77	Rigel.							
}			17,10					7 . 15 . 41,81	Venus 2 L.								
}			25,92					8 . 31 . 50,73	☉'s center.								
}			21,53					11 . 45 . 46,61	) 1 L.								
}			6,11	31,29	25,18			13 . 16 . 31,31	Spica.								
}			43,97	9,22	25,25			14 . 8 . 9,24	Arcturus.								
}			54,44	20,08	25,64			16 . 19 . 19,89	Antares.								
}			20,35	45,01	24,66			.....	δ Ursæ Minoris.								
}			54,89	20,68	25,79			21 . 57 . 20,80	α Aquarii.								
}			1,69					22 . 7 . 27,62	Uranus.								
}			10,17	36,76	26,59	1,98	26,07	5 . 6 . 36,66	Rigel.								
}			25,60	52,16	26,56			5 . 15 . 52,10	β Tauri.								
}			30,89					7 . 20 . 57,56	Venus 2 L.								
}			18,78					8 . 35 . 45,56	☉'s center.								
}			48,11					12 . 37 . 15,22	) 1 L.								
}			4,09	31,28	27,19			13 . 16 . 31,25	Spica.								
}			42,06	9,45	27,39			17 . 7 . 9,54	α Herculis.								
}			51,18	18,64	27,46			17 . 27 . 18,69	α Ophiuchi.								
}			17,73	44,79	27,06			.....	δ Ursæ Minoris.								
}			52,85	20,70	27,85			21 . 57 . 20,72	α Aquarii.								
}			51,36					22 . 7 . 19,26	Uranus.								
}			8,15	36,79	28,64	2,06	28,13	5 . 6 . 36,72	Rigel.								
}			44,39					7 . 26 . 13,16	Venus 2 L.								

The Transit levelled, July 20. 2<sup>h</sup>; and July 29. 1<sup>h</sup>.  
 Before the observations of July 19 the clock was put forward one minute.



Month and Day.	NAME OF STAR or PLANET.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Concluded Transit over the Mean of the seven Wires.	Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	h. m. s.	m. s.	
July 31	☉ 1 L. ....	21,3	35,8	50,0	4,1	18,4	32,9	8.38.47,0		8.38.42,1	G.
	☉ 2 L. ....	34,9	49,1	3,3	18,0	31,9	46,3	8.41.0,5		8.40.17,72	G.
	Spica .....	20,8	34,3	47,9	1,5	14,9	29,0	13.16.42,6		13.16.1,57	G.
	γ 1 L. ....	1,2	15,7	29,0	43,4	57,0	10,9	13.29.25,0		13.28.43,17	G.
	α Ophiuchi .....	7,7	21,2	35,0	49,0	2,9	16,8	17.27.30,6		17.26.49,03	G.
	δ Ursæ Minoris ..	14.2,8	17.49,2	21.32,5	25.21,9	29.9,0	32.55,2	18.36.42,8		18.25.21,91	G.
	α Aquilæ .....	35,9	49,0	2,4	16,1	30,0	43,4	19.42.57,0		19.42.16,26	G.
	α Aquarii .....	10,0	23,6	37,0	50,5	4,0	17,4	21.57.31,0		21.56.50,50	G.
	Uranus .....	59,3	13,1	27,0	40,9	54,4	8,2	22.7.22,0		22.6.40,70	G.
	α Orionis .....	3,0	16,5	30,0	43,8	57,2	10,8	5.46.24,4		5.45.43,67	G.
	Venus 2 L. ....	13,9	28,2	42,7	57,2	12,1	26,4	7.31.41,1		7.30.57,37	G.
	Aug. 1	☉ 1 L. ....	13,4	27,8	41,3	55,9	10,1	24,5	8.42.39,0		8.41.56,00
☉ 2 L. ....		26,9	40,8	55,0	9,1	23,6	37,8	8.44.52,2		8.44.9,35	G.
Polaris S.P. ....		35.36,5		51.55,8	0.13,6	8.30,0	16.35,8	13.24.44,0	-2.43,84	13.0.12,11	G.
(a) Polaris S.P. with Micrometer ...		58.13,8	58.54,2	59.34,0	0.13,6	0.58,5	1.37,5	13.2.21,3	-0,18	13.0.15,95	G.
Arcturus .....		54,9	9,1	23,3		52,0	6,1	14.8.20,9		14.7.37,72	G.
γ 1 L. ....		37,8	51,9	5,8	20,0	33,9	48,2	14.23.2,8		14.22.20,05	G.
α Coronæ Borealis		26,9	41,9	56,8	12,0	27,1	42,3	15.27.57,3		15.27.12,04	G.
α Serpentis .....		58,0	11,3	24,8	38,7	52,0	5,9	15.36.19,1		15.35.38,55	G.
α Aquarii .....		8,2	21,8	35,0	48,4	2,0	15,5	21.57.29,0		21.56.48,56	G.
Uranus .....		49,1	3,0	16,6	30,3	44,0	58,3	22.7.12,0		22.6.30,47	G.
Polaris .....		36.11,5		52.26,6	0.42,0	8.51,8		1.....	+6.9,32	1.0.42,29	G.
(b) Polaris with Micrometer .....		58.34,5	59.16,8	59.58,2	0.42,0	1.20,8	1.59,4	1.2.45,6	+0,18	1.0.39,79	G.
Aug. 2	Polaris S.P. ....			52.1,2	0.11,6	8.29,5		13.....	-2,03	13.0.12,07	G.
	(c) Polaris S.P. with Micrometer ...			59.31,0	0.11,6	0.55,8		13.....	-0,18	13.0.12,62	G.
	Arcturus .....		7,0	21,1	35,9	50,0	4,6	14.8.19,0	-7,15	14.7.35,78	G.
	Venus 2 L. ....	38,2	52,7	7,1	21,4	36,2	50,8	7.42.5,2		7.41.21,65	G.
Aug. 3	☉ 1 L. ....	55,4	9,8				6,3	8.50.20,9	-0,04	8.49.38,06	G.
	☉ 2 L. ....	8,2	22,4	36,3	51,0	5,0	18,9	8.52.33,1		8.51.50,70	G.
	α Coronæ Borealis	22,8	37,9	53,0	8,0	23,3	38,5	15.27.53,9		15.27.8,20	G.
	γ 1 L. ....	57,0	12,0	27,1	42,1	57,0	11,9	16.19.27,0		16.18.42,01	G.
	β Aquarii .....	38,0	51,3	4,9	18,1	32,0	45,8	21.22.59,0		21.22.18,45	G.
	α Aquarii .....	4,3	17,9	31,0	44,8	58,0	11,8	21.57.25,0		21.56.44,69	G.
	Uranus .....	28,3	41,9	55,9	9,4	23,1	37,0	22.6.50,9		22.6.9,50	G.
	Venus 2 L. ....	49,5	4,0	18,2	33,1	47,5	2,0	7.47.16,7		7.46.33,00	G.
Aug. 4	(e) ☉ 1 L. ....	45,1	0,0	13,9	28,0	42,0	56,1	8.54.10,4		8.53.27,93	G.
	☉ 2 L. ....	58,3	12,5	26,2	40,7	54,9	9,0	8.56.23,1		8.55.40,67	G.
	(f) Arcturus .....	49,0	2,9	17,1		46,1	0,5	14.8.15,0		14.7.31,77	G.
	α Coronæ Borealis		35,8	51,0	6,2	21,1	36,5	15.27.52,0	-7,56	15.27.6,21	G.
	Antares .....	57,2	12,0	27,0	42,1	57,0	12,2	16.19.27,1		16.18.42,08	G.
	γ 1 L. ....	19,9	35,4	50,7	6,2	21,9	36,9	17.22.52,8		17.22.6,26	G.
	(g) A.S.C. 2085 .....	17,0	32,0	47,3	2,7	18,0	34,0	17.57.48,9		17.57.2,84	G.
	μ <sup>1</sup> Sagittarii .....	35,0	49,3	3,9	18,3	33,0	47,1	18.4.2,0		18.3.18,37	G.
	α Aquarii .....	2,6	16,0	29,1	42,8	56,3	9,9	21.57.23,0		21.56.42,81	G.
	(h) Uranus .....	18,1	32,0	44,5			27,0	22.6.40,4	+2,75	22.5.59,15	G.
	α Orionis .....			22,1	36,0	49,9	3,2	5.46.17,0	-13,56	5.45.36,08	G.
	Venus 2 L. ....	0,3	14,9	29,0	43,8	58,3	12,8	7.52.27,4		7.51.43,78	G.

ILLUMINATED END OF AXIS WEST. Order of Wires, for Stars above the Pole, GFEDCBA.

(a) Micrometer at 27,029: 26,029: &c.: coincidence with D at 24,029.  
 (b) Micrometer at 21,029: 22,029: &c.  
 (c) Very cloudy: micrometer at 25,029, &c.  
 (d) The two last wires without dark glass.

(e) Very bad limbs.  
 (f) Not satisfactory.  
 (g) Some of the last wires mere guesses.  
 (h) Very cloudy and bad.

Error of Collimation.	Level Error.	Seconds of Transit corr. for the two Errors.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock slow at 0 <sup>h</sup> .	Apparent R.A. from the Observation.			NAME OF STAR or PLANET.
									h.	m.	s.	
-1,1	-1,16		+6,26	11,06			2,06	28,13	8. 39. 39,93		☉'s center.	
				1,84	31,27	29,43			13. 16. 31,11	Spica.		
				43,42					13. 29. 12,72	) 1 L.		
				49,17	18,63	29,46			17. 27. 18,80	α Ophiuchi.		
				15,65	44,56	28,91			.....	δ Ursæ Minoris.		
				16,42	46,21	29,79			19. 42. 46,24	α Aquilæ.		
				50,72	20,72	30,00			21. 57. 20,73	α Aquarii.		
				40,99					22. 7. 11,02	Uranus.		
				43,84	14,57	30,73	2,00	30,19	5. 46. 14,51	α Orionis.		
				57,45					7. 31. 28,27	Venus 2 L.		
				2,77					8. 43. 33,69	☉'s center.		
		18,82		28,34	2,39	34,05			1. 0. 59,61	Polaris S.P.		
				37,81	9,18	31,37			14. 8. 9,18	Arcturus.		
				20,33					14. 22. 51,72	) 1 L.		
				12,08	43,60	31,52			15. 27. 43,56	α Coronæ Borealis.		
				38,73	10,21	31,48			15. 36. 10,22	α Serpentis.		
				48,78	20,73	31,95			21. 57. 20,79	α Aquarii.		
				30,76					22. 7. 2,80	Uranus.		
		36,15		27,26	2,78	35,52		32,19	1. 0. 59,53	Polaris.		
		17,14		26,66	3,17	36,51	1,95	32,15	1. 0. 59,87	Polaris S.P.		
				35,87	9,17	33,30			.....	Arcturus.		
	-1,74			21,69			1,98	34,08	7. 41. 56,40	Venus 2 L.		
					44,45					8. 51. 19,26	☉'s center.	
				8,20	43,57	35,37			15. 27. 43,56	α Coronæ Borealis.		
				42,34					16. 19. 17,76	) 1 L.		
				18,68	54,55	35,87			21. 22. 54,52	β Aquarii.		
				44,89	20,76	35,87			21. 57. 20,78	α Aquarii.		
				9,77					22. 6. 45,67	Uranus.		
				33,04			1,99	36,07	7. 47. 9,76	Venus 2 L.		
				34,38					8. 55. 11,19	☉'s center.		
				31,83	9,14	37,31			14. 8. 9,07	Arcturus.		
				6,21	43,55	37,34			15. 27. 43,56	α Coronæ Borealis.		
				42,43	20,01	37,58			16. 19. 19,85	Antares.		
				6,60					17. 22. 44,11	) 1 L.		
				3,21					17. 57. 40,77	A.S.C. 2085.		
				18,68					18. 3. 56,25	μ <sup>1</sup> Sagittarii.		
				43,01	20,78	37,77			21. 57. 20,90	α Aquarii.		
				59,42					22. 6. 37,33	Uranus.		
				36,23	14,67	38,44		38,06	5. 46. 14,77	α Orionis.		
				43,82					7. 52. 22,53	Venus 2 L.		

The Transit levelled, August 3. 1<sup>h</sup>.

August 1 and 2, Meridian error by Polaris S.P., Polaris, and Polaris S.P.



Month and Day.	NAME OF STAR or PLANET.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Concluded Transit over the Mean of the seven Wires.	Observer.	
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	h. m. s.				m. s.
Aug. 5	☉ 1 L. ....	34,9	49,0	3,2	17,5	31,6	45,8	8. 58. 0,0		8. 57. 17,43	G.	
Aug. 7	α <sup>2</sup> Capricorni.....	31,0	44,9	58,2	12,3	26,2	39,9	20. 8. 54,0	+ 7,30	20. 8. 12,35	G.	
	π Capricorni.....	28,3	42,2	56,5	11,0	25,0	39,5	20. 17. 54,0		20. 17. 10,92	G.	
	(a) ) 1 L.....	41,0	56,2	11,0	26,5	42,1	57,0	20. 37. 12,2		20. 36. 26,57	G.	
	ζ Capricorni.....	.....	3,5	18,0	32,9	47,1	1,9	21. 17. 17,0		21. 16. 32,77	G.	
	(b) β Aquarii.....	30,0	43,5	56,9	10,8	24,0	37,9	21. 22. 51,6		21. 22. 10,67	G.	
	(c) α Aquarii.....	56,5	9,9	23,0	36,9	50,0	3,8	21. 57. 17,1		21. 56. 36,74	G.	
	(d) Uranus.....	46,0	59,9	13,2	27,4	40,9	55,0	22. 6. 8,5		22. 5. 27,27	G.	
	(d) Jupiter 1 L.....	12,1	.....	40,9	.....	10,1	.....	6. 24. 39,8		6. 23. 55,72	G.	
	Jupiter 2 L.....	.....	28,3	.....	58,0	.....	27,1	6. 24. ....		6. 23. 57,80	G.	
	(d) Mercury 2 L.....	2,1	16,3	30,8	.....	0,2	14,3	7. 52. 28,4		7. 51. 45,35	G.	
	(e) Venus 2 L.....	27,9	42,4	56,6	11,2	25,7	40,3	8. 7. 54,8	8. 7. 11,27	G.		
Aug. 8	☉ 1 L. ....	59,9	13,8	27,4	41,8	56,0	9,9	9. 9. 24,0	- 20,35	9. 8. 41,82	G.	
	☉ 2 L. ....	11,8	25,4	39,9	53,9	8,0	21,9	9. 11. 36,0		9. 10. 53,84	G.	
	Spica.....	5,0	18,5	32,0	46,0	59,4	13,5	13. 16. 27,1		13. 15. 45,93	G.	
	Arcturus.....	40,9	55,2	9,3	24,0	38,1	52,8	14. 8. 7,0		14. 7. 23,90	G.	
	α Aquilæ.....	19,9	33,2	47,0	0,6	14,2	28,0	19. 42. 41,5		19. 42. 0,62	G.	
	α <sup>2</sup> Capricorni.....	28,9	42,8	56,1	.....	24,2	37,9	20. 8. 52,0		20. 8. 10,32	G.	
	χ <sup>1</sup> Capricorni.....	39,2	53,3	7,9	22,2	37,0	51,4	20. 59. 6,0		20. 58. 22,43	G.	
	ζ Capricorni.....	46,9	1,5	15,9	30,8	45,3	0,0	21. 17. 15,0		21. 16. 30,77	G.	
	(f) β Aquarii.....	.....	.....	.....	8,9	22,1	35,9	21. 22. 49,2		21. 22. 8,67	G.	
	) 2 L.....	13,8	28,3	43,0	58,0	12,9	27,7	21. 38. 42,3		21. 37. 58,00	G.	
	35 Aquarii.....	29,2	43,4	57,5	12,0	26,1	40,5	21. 59. 55,0	21. 59. 11,95	G.		
	Uranus.....	34,9	48,8	2,3	16,7	30,3	44,1	22. 5. 58,0	22. 5. 16,44	G.		
Aug. 9	α Aquilæ.....	17,9	31,3	45,0	58,7	12,0	25,9	19. 42. 39,3	- 6,89	19. 41. 58,59	G.	
	α <sup>2</sup> Capricorni.....	.....	40,9	54,4	8,3	22,0	36,0	20. 8. 49,9		20. 8. 8,36	G.	
	β Aquarii.....	26,1	39,8	53,0	6,5	20,2	33,9	21. 22. 47,2		21. 22. 6,67	G.	
	35 Aquarii.....	27,2	41,6	55,7	10,0	24,2	38,3	21. 59. 52,9		21. 59. 9,98	G.	
	Uranus.....	24,1	38,0	52,0	5,9	19,9	34,2	22. 5. 47,9		22. 5. 6,00	G.	
	σ Aquarii.....	28,0	41,4	55,1	9,0	23,0	36,9	22. 21. 50,3		22. 21. 9,10	G.	
	) 2 L.....	58,8	12,9	27,2	42,0	55,9	10,5	22. 33. 24,9		22. 32. 41,74	G.	
	α Orionis.....	45,6	58,8	12,3	26,0	40,0	53,4	5. 46. 6,9		5. 45. 26,14	G.	
	Jupiter 1 L.....	51,8	.....	20,9	.....	50,0	.....	6. 26. 19,7		6. 25. 35,60	G.	
	Jupiter 2 L.....	.....	8,4	.....	37,4	.....	7,0	6. 26. ....		6. 25. 37,60	G.	
	Mercury 2 L.....	.....	.....	28,0	42,3	56,5	11,3	7. 3. 25,7	8. 2. 42,39	G.		
	Venus 2 L.....	42,4	56,9	11,2	25,8	40,0	54,8	8. 18. 9,0	8. 17. 25,73	G.		
Aug. 10	☉ 1 L. ....	.....	.....	0,7	14,9	29,4	43,8	9. 16. 58,0	- 14,01	9. 16. 15,35	G.	
	☉ 2 L. ....	45,0	58,7	12,6	26,8	40,8	55,0	9. 19. 9,0		9. 18. 26,84	G.	
	α Coronæ Borealis	9,0	24,1	39,1	54,5	9,7	24,8	15. 27. 40,0		15. 26. 54,46	G.	
	Antares.....	45,5	0,3	15,2	30,3	45,4	0,4	16. 19. 15,5		16. 18. 30,37	G.	
	δ Ursæ Minoris...	13.38,2	17.26,0	.....	24.57,7	28.46,2	32.32,3	18. 36. 19,5		- 38,21	18. 24. 58,44	G.
	α Aquilæ.....	15,9	29,4	43,0	56,8	10,3	24,0	19. 42. 37,7		19. 41. 56,73	G.	
	α <sup>2</sup> Capricorni.....	25,1	39,0	52,5	6,3	20,4	34,0	20. 8. 47,9		20. 8. 6,46	G.	
Aug. 11	(g) ☉ 1 L. ....	18,8	33,0	46,8	1,0	14,9	29,1	9. 20. 43,0	+ 10,51	9. 20. 0,94	G.	
	☉ 2 L. ....	30,1	44,3	58,0	.....	.....	.....	9. 22. 54,3		9. 22. 12,18	G.	
	α Aquilæ.....	14,0	27,4	41,0	54,9	8,0	22,0	19. 42. 35,4		19. 41. 54,67	G.	
	α <sup>2</sup> Capricorni.....	22,9	36,8	50,5	4,3	18,2	32,0	20. 8. 45,8		20. 8. 4,36	G.	
	α Aquarii.....	48,8	2,0	15,3	29,0	42,4	55,9	21. 57. 9,5		21. 56. 28,99	G.	
	Uranus.....	2,8	16,3	30,0	43,9	58,0	12,0	22. 5. 25,4		22. 4. 44,06	G.	

ILLUMINATED END OF AXIS WEST. Order of Wires, for Stars above the Pole, GFEDCBA.

(a) Unsteady. (b) A spectrum. (c) Blurred. (d) Very faint. (e) Steadier than usual. (f) Hurried. (g) Very faint: 2 L clouded.



Error of Collimation.	Level Error.	Seconds of Transit corr. for the two Errors.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock slow at 0 <sup>h</sup> .	Apparent R.A. from the Observation.			NAME OF STAR or PLANET.	
									h.	m.	s.		
- 1,1	- 1,74		+ 6,26	17,51				1,99	38,06	8 . 57 . 56,32			☉ 1 L.
	- 1,32			12,62						56,19	43,57	1,95	41,99
				11,23						20 . 17 . 54,87	π Capricorni.		
				26,91						20 . 37 . 10,58	☽ 1 L.		
				33,11						21 . 17 . 16,83	ζ Capricorni.		
				10,91	54,60	43,69				21 . 22 . 54,63	β Aquarii.		
				36,96	20,82	43,86				21 . 57 . 20,73	α Aquarii.		
				27,55						22 . 6 . 11,34	Uranus.		
				} 56,83			1,97	43,92	6 . 24 . 41,27		Jupiter's center.		
				45,43					7 . 52 . 29,99		Mercury 2 L.		
				11,34					8 . 7 . 55,93		Venus 2 L.		
				} 47,94					9 . 10 . 32,61		☉'s center.		
				46,20	31,18	44,98			13 . 16 . 31,20		Spica.		
				23,98	9,08	45,10			14 . 8 . 9,06		Arcturus.		
				0,78	46,23	45,45			19 . 42 . 46,32		α Aquilæ.		
				10,59	56,20	45,61			20 . 8 . 56,16		α <sup>2</sup> Capricorni.		
				22,76					20 . 59 . 8,40		χ <sup>1</sup> Capricorni.		
				31,11					21 . 17 . 16,78		ζ Capricorni.		
				8,91	54,61	45,70			21 . 22 . 54,58		β Aquarii.		
				58,32					21 . 38 . 44,01		☽ 2 L.		
				12,26					21 . 59 . 57,98		35 Aquarii.		
				16,71					22 . 6 . 2,44		Uranus.		
				58,75	46,23	47,48	1,95	45,93	19 . 42 . 46,28		α Aquilæ.		
				8,63	56,20	47,57			20 . 8 . 56,20		α <sup>2</sup> Capricorni.		
				6,91	54,62	47,71			21 . 22 . 54,58		β Aquarii.		
				10,29					21 . 59 . 58,00		35 Aquarii.		
				6,27					22 . 5 . 54,00		Uranus.		
				9,38					22 . 21 . 57,12		σ Aquarii.		
				42,02					22 . 33 . 29,78		☽ 2 L.		
				26,31	14,80	48,49	1,96	47,82	5 . 46 . 14,60		α Orionis.		
				} 36,67					6 . 26 . 25,01		Jupiter's center.		
				42,47					8 . 3 . 30,94		Mercury 2 L.		
				25,81					8 . 18 . 14,31		Venus 2 L.		
				} 21,20					9 . 18 . 9,78		☉'s center.		
				54,49	43,45	48,96			15 . 27 . 43,57		α Coronæ Borealis.		
				30,73	19,94	49,21			16 . 19 . 19,88		Antares.		
				52,03	41,59	49,56			.....		δ Ursæ Minoris.		
				56,89	46,23	49,34			19 . 42 . 46,32		α Aquilæ.		
				6,73	56,20	49,47			20 . 8 . 56,19		α <sup>2</sup> Capricorni.		
				} 6,67			1,98	49,84	9 . 21 . 57,28		☉'s center.		
				54,83	46,22	51,39			19 . 42 . 46,30		α Aquilæ.		
				4,63	56,20	51,57			20 . 8 . 56,13		α <sup>2</sup> Capricorni.		
				29,21	20,87	51,66			21 . 57 . 20,86		α Aquarii.		
				44,33					22 . 5 . 35,99		Uranus.		

The Transit levelled, August 10. 1<sup>h</sup>.

Month and Day.	NAME OF STAR or PLANET.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Concluded Transit over the Mean of the seven Wires.			Observer.	
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	h. m. s.		m. s.	h. m. s.			
Aug. 11	Jupiter 1 L.....			59,0		28,3		6.27.57,9	- 14,61	6.27.13,79			G.	
	Jupiter 2 L.....		46,3		16,0		45,2	6.27.....		6.27.15,83			G.	
	Mercury 2 L.....						35,0	8.15.48,3		- 36,01	8.15.5,64			G.
	Venus 2 L.....	53,8	8,0	22,0	36,4	50,9	5,2	8.28.19,4			8.27.36,53			G.
Aug. 12	☉ 1 L.....	4,0	18,0	31,9	46,4	0,0	14,1	9.24.28,0		9.23.46,06			G.	
	☉ 2 L.....	15,4	29,4	43,0	57,2	11,1	25,2	9.26.39,4		9.25.57,24			G.	
Aug. 13	(a) ☉ 1 L.....	48,3	2,8	16,2	30,8	44,4	58,5	9.28.12,2	+ 13,98	9.27.30,45			G.	
	☉ 2 L.....	0,0	13,5	27,4	41,5	55,8		9.29.....		9.29.41,62			G.	
	Spica.....	55,0	8,5	21,9	35,8	49,5	3,4	13.16.17,0		13.15.35,87			G.	
	α Ophiuchi.....	42,0	55,8	9,0	23,0	36,9	51,0	17.27.4,8		17.26.23,21			G.	
	δ Ursæ Minoris...	13.31,5	17.18,2	21.0,0	24.52,2		32.24,0	18.36.12,5		+ 37,75	18.24.50,82			G.
	α Aquilæ.....	10,0	23,8	36,9	50,9	4,2	17,9	19.42.31,8			19.41.50,78			G.
	α² Capricorni.....	19,1	32,8	46,5	0,2	14,3	23,2	20.8.42,3		20.8.0,48			G.	
	Uranus.....	41,0	54,8	8,2	22,3	36,0	49,8	22.5.3,8		22.4.22,27			G.	
	(b) Jupiter 1 L.....	7,2		36,0		5,7		6.29.35,0			6.28.50,97			G.
	Jupiter 2 L.....		23,8		53,1		22,2	6.29.....			6.28.53,03			G.
Aug. 14	α Aquilæ.....	8,1	21,7	35,1	49,1	2,4	16,1	19.42.29,8		19.41.48,90			B.	
	α² Capricorni.....	17,1	30,8	44,3	58,2	12,2	26,2	20.8.39,9		20.7.58,39			B.	
	β Aquarii.....	16,6	30,1	43,0	57,1	10,5	24,1	21.22.37,6		21.21.57,00			B.	
	α Aquarii.....	43,2	56,4	9,5	23,1	36,8	50,3	21.57.3,6		21.56.23,27			B.	
	Uranus.....	29,7	43,9	57,2	11,1	25,1	39,1	22.4.53,1		22.4.11,31			B.	
	Venus 2 L.....	3,6	17,9	32,2	46,6			8.43.29,5	+ 8,58	8.42.46,54			B.	
Aug. 15	☉ 1 L.....	16,8	30,8	44,1	58,4	12,1	26,2	9.35.40,2		9.34.58,38			B.	
	☉ 2 L.....	28,0	41,7	55,4	9,9	23,6	37,4	9.37.51,4		9.37.9,63			B.	
Aug. 17	(c) α Aquilæ.....	1,9	15,6	29,3	42,8	56,3	9,9	19.42.23,5	+ 3.46,40	19.41.42,75			B.	
	α² Capricorni.....	11,1	24,7	38,4	52,2	6,2	20,0	20.8.33,9		20.7.52,36			B.	
	β Aquarii.....	10,3	23,7	37,1	51,0	4,4	18,1	21.22.31,3		21.21.50,84			B.	
	α Aquarii.....	36,9	50,2	3,6	17,0	30,5	44,1	21.56.57,8		21.56.17,16			B.	
	Uranus.....	56,4	10,2	23,7	37,3	51,4	5,2	22.4.19,2		22.3.37,63			B.	
	γ 2 L.....	29,3	44,2	59,3	14,6	29,4	44,9	4.56.59,8		4.56.14,50			B.	
	β Tauri.....	2,8	17,9	33,1	48,3	3,9	19,2	5.15.34,3		5.14.48,50			B.	
	δ U. Minoris S.P.	13.5,8	16.54,5	20.40,4	24.26,2	28.13,6		6.....			6.24.26,50			B.
	Jupiter 1 L.....	17,2		46,3		15,7		6.32.44,9			6.32.1,02			B.
	Jupiter 2 L.....		34,7		4,1		33,1	6.32.....			6.32.3,97			B.
	Castor.....	11,7	27,5	43,4	59,5	15,4	31,2	7.23.47,1			7.22.59,40			B.
Procyon.....	54,4	8,1	21,3	35,1	48,6	2,2	7.30.15,8		7.29.35,07			B.		
Mercury 2 L.....	43,2	57,3	11,3	25,6	40,4	54,3	8.59.8,7		8.58.25,83			B.		
Aug. 18	☉ 1 L.....	24,3	39,7	51,3	5,7	19,9	33,3	9.46.47,2		9.46.5,66			B.	
	☉ 2 L.....	35,1	48,8	2,7	16,5	30,1	44,3	9.48.58,1		9.48.16,52			B.	
	δ Ursæ Minoris...	13.22,2	17.8,4	20.51,6	24.40,8	28.27,2	32.14,6	18.36.1,6		18.24.40,91			B.	
	α Aquilæ.....	59,9	13,5	26,8	40,7	54,1	8,0	19.42.21,4		19.41.40,62			B.	
	α² Capricorni.....	9,1	22,6	36,5	50,3	4,1	18,1	20.8.32,0		20.7.50,38			B.	
	β Aquarii.....	8,2	21,4	35,1	48,6	2,2	16,1	21.22.29,4		21.21.48,72			B.	
	α Aquarii.....	34,4	48,1	1,4	14,9	28,2	41,9	21.56.55,2		21.56.14,87			B.	
	Uranus.....	45,1	58,9	12,4	26,3	40,0	54,0	22.4.7,7		22.3.26,34			B.	
	Castor.....		25,8		57,3	13,5	29,3	7.24.45,3	- 12,76	7.23.57,48			B.	
	Procyon.....	52,4	6,0	19,3	32,8	46,2	0,2	7.31.13,7		7.30.32,94			B.	
	Venus 2 L.....	3,8	17,6	31,9	46,4	0,8	14,8	9.4.28,7		9.3.46,29			B.	
	Mercury 2 L.....	29,6	43,9	58,3	12,6	26,8	40,8	9.7.55,3		9.7.12,47			B.	

ILLUMINATED END OF AXIS WEST. Order of Wires, for Stars above the Pole, GFEDCBA.

(a) Some wires without the dark glass: 2 L. clouded.  
(b) Very badly defined.

(c) The 3d wire was set down 28,3.



Error of Collimation.	Level Error.	Seconds of Transit corr. for the two Errors.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock slow at 0 <sup>h</sup> .	Apparent R.A. from the Observation.			NAME OF STAR or PLANET.
									h.	m.	s.	
-1,1	-1,32	29,02	+6,26	14,88				1,98	51,82	6.28.7,23	Jupiter's center.	
	5,72			8.15.58,22						Mercury 2 L.		
36,61	8.28.29,13			Venus 2 L.								
51,76	9.25.44,35			☉'s center.								
36,20	9.29.30,69			☉'s center.								
36,22	31,13		54,91	1,92				53,73	9.29.30,69	☉'s center.		
23,40	18,50		55,10						13.16.31,01	Spica.		
43,54	40,74		57,20						17.27.18,53	α Ophiuchi.		
51,01	46,22		55,21						.....	δ Ursæ Minoris.		
0,84	56,20		55,36						19.42.46,32	α Aquilæ.		
22,63					20.8.56,18	α <sup>2</sup> Capricorni.						
					22.5.18,13	Uranus.						
				52,12			55,65		6.29.48,29	Jupiter's center.		
	-1,53	29,02		49,12	46,21	57,09	1,96	55,61	19.42.46,34	α Aquilæ.		
58,75				56,21	57,46	20.8.56,01			α <sup>2</sup> Capricorni.			
57,32				54,66	57,34	21.22.54,67			β Aquarii.			
23,55				20,90	57,35	21.57.20,95			α Aquarii.			
11,67						22.5.9,08			Uranus.			
46,67					57,57		8.43.44,95	Venus 2 L.				
						4,17				9.37.2,52	☉'s center.	
						42,97	46,21	63,24	2,11	61,60	19.42.46,30	α Aquilæ.
						52,72	56,21	63,49			20.8.56,09	α <sup>2</sup> Capricorni.
						51,16	54,68	63,52			21.22.54,64	β Aquarii.
				17,44	20,93	63,49			21.57.20,97	α Aquarii.		
				37,99					22.4.41,53	Uranus.		
				14,60					4.57.18,79	γ 2 L.		
				48,55	52,76	64,21	2,07	63,77	5.15.52,77	β Tauri.		
				34,66	39,25	64,59			18.25.38,98	δ Ursæ Min. S.P.		
				2,59					6.33.6,92	Jupiter's center.		
				59,41	3,89	64,48			7.24.3,82	Castor.		
				35,31	39,67	64,36			7.30.39,73	Procyon.		
				25,97					8.59.30,51	Mercury 2 L.		
				11,27					9.48.15,88	☉'s center.		
		38,27		33,44	39,07	65,63			18.25.38,79	δ Ursæ Minoris.		
				40,84	46,20	65,36			19.42.46,31	α Aquilæ.		
				50,74	56,21	65,47			20.8.56,24	α <sup>2</sup> Capricorni.		
				49,04	54,68	65,64			21.22.54,65	β Aquarii.		
				15,15	20,94	65,79			21.57.20,81	α Aquarii.		
				26,70					22.4.32,37	Uranus.		
				57,50	3,92	6,42	2,04	5,78	7.24.3,91	Castor.		
				33,18	39,69	6,51			7.30.39,60	Procyon.		
				46,43					9.3.52,98	Venus 2 L.		
				12,61					9.7.19,16	Mercury 2 L.		

The Transit levelled, August 18. 1<sup>h</sup>.

August 17 and 18. Meridian error by δ U. Minoris S.P. and δ U. Minoris, allowing 1<sup>s</sup>.27 for clock rate and change of R.A.

After Uranus, August 18, the clock was put forward one minute.



Month and Day.	NAME OF STAR or PLANET.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Concluded Transit over the Mean of the seven Wires.	Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	h. m. s.			
Aug. 19	☉ 1 L. ....	6,1	19,6	33,2	47,1	1,0	14,3	9.51.28,1		9.50.47,06	B.
	☉ 2 L. ....	16,3	30,1	43,9	57,9	12,0	25,7	9.53.39,9		9.52.57,97	B.
	♁ Ursæ Minoris...	14.19,6	18.4,8	21.47,6	25.36,2	29.24,8	33.11,4	18.36.59,4		18.25.37,69	B.
	α Aquilæ.....	57,9	11,4	25,1	38,8	52,2	6,1	19.43.19,4		19.42.38,70	B.
	α <sup>2</sup> Capricorni....	7,1	20,6	34,3	48,4	2,1	15,9	20.9.30,1		20.8.48,36	B.
	β Aquarii.....	6,1	19,6	33,1	46,7	0,3	14,1	21.23.27,4		21.22.46,76	B.
	α Aquarii.....	32,4	46,1	59,3	13,1	26,5	40,1	21.57.53,1		21.57.12,94	B.
	Uranus.....	34,0	47,7	1,6	15,3	29,1	43,1	22.4.57,0		22.4.15,40	B.
	♃ 2 L.....	17,2	32,6	47,9	3,6	18,9	34,0	6.48.49,5		6.48.3,38	B.
	Procyon.....	50,4	4,0	17,8	31,1	44,4	58,0	7.31.11,6		7.30.31,04	B.
	Pollux.....	18,1	33,4	48,4	4,1	19,3	35,0	7.35.50,1		7.35.4,06	B.
	Venus 2 L.....	0,7	15,6	29,9	43,6	57,7	11,8	9.9.26,1		9.8.43,63	B.
	Mercury 2 L.....	20,5	34,8	48,8	3,4	17,5	31,4	9.15.45,7		9.15.3,16	B.
Aug. 20	☉ 1 L. ....	46,7	0,7	14,4	28,3	42,1	55,8	9.55.9,9		9.54.28,27	B.
	☉ 2 L. ....	57,3	11,2	24,7	39,1	53,0	6,7	9.57.20,4		9.56.38,92	B.
	α Aquilæ.....	55,7	9,3	22,6	36,5	50,2	4,1	19.43.17,5		19.42.36,56	B.
	α <sup>2</sup> Capricorni....	4,7	18,8	32,3	46,1	59,9	14,1	20.9.28,0		20.8.46,27	B.
	β Aquarii.....	4,1	17,5	30,8	44,9	57,7	12,1	21.23.25,4		21.22.44,64	B.
	α Aquarii.....	30,9	44,1	.....	11,1	23,9	37,8	21.57.51,5	- 2,27	21.57.10,95	B.
	Jupiter 1 L.....	36,0	.....	5,0	.....	34,3	.....	6.36.3,7		6.35.19,75	B.
	Jupiter 2 L.....	.....	53,2	.....	22,7	.....	52,1	6.35.....		6.35.22,67	B.
	Procyon.....	48,3	1,9	15,2	28,7	42,4	55,9	7.31.9,7		7.30.28,87	B.
	Pollux.....	16,2	31,4	46,5	2,0	17,3	32,5	7.35.48,1		7.35.2,00	B.
	♃ 2 L.....	0,2	15,7	30,3	46,1	1,3	16,8	7.46.32,1		7.45.46,07	B.
	Venus 2 L.....	57,4	11,9	25,7	39,9	53,6	8,1	9.14.22,4		9.13.39,86	B.
	Mercury 2 L.....	14,3	28,3	42,6	56,9	10,6	24,5	9.23.38,8		9.22.56,57	B.
Aug. 21	☉ 1 L. ....	27,7	41,2	54,9	8,9	22,7	36,5	9.58.50,7		9.58.8,95	B.
	☉ 2 L. ....	38,0	51,7	5,4	19,2	33,1	47,0	10.1.1,1		10.0.19,36	B.
	♁ Ursæ Minoris...	14.14,2	18.0,8	21.43,4	25.33,2	29.21,0	33.7,4	18.36.54,6		18.25.33,51	B.
	α Aquilæ.....	53,4	7,3	20,7	34,5	48,1	1,9	19.43.15,4		19.42.34,47	B.
	β Aquarii.....	2,2	15,8	29,1	42,9	56,3	.....	21.23.23,8	+ 4,52	21.22.42,87	B.
	α Aquarii.....	28,9	42,1	55,5	9,1	22,3	36,1	21.57.49,3		21.57.9,05	B.
	Uranus.....	12,1	25,9	38,7	.....	7,0	21,1	22.4.....	+ 8,30	22.3.53,26	B.
Aug. 22	α Aquilæ.....	51,9	5,3	18,6	32,3	46,1	59,6	19.43.13,4		19.42.32,45	B.
	α <sup>2</sup> Capricorni....	1,1	14,8	28,3	42,2	56,1	10,0	20.9.23,9		20.8.42,34	B.
	β Aquarii.....	0,2	13,7	27,1	40,9	54,2	8,1	21.23.21,3		21.22.40,78	B.
	α Aquarii.....	26,6	40,1	53,4	7,1	20,4	34,1	21.57.47,3		21.57.7,00	B.
	Uranus.....	0,5	14,2	27,9	42,1	55,6	9,3	22.4.23,3		22.3.41,84	B.
Aug. 25	☉ 1 L. ....	5,8	18,8	32,1	46,9	0,8	14,5	10.13.28,4		10.12.46,76	B.
	☉ 2 L. ....	16,1	29,0	42,9	57,1	10,4	24,2	10.15.38,0		10.14.56,82	B.
Aug. 27	(a) Procyon.....	35,4	49,1	2,4	16,2	29,8	43,2	7.30.56,8		7.30.16,13	B.
	(a) Pollux.....	3,4	18,7	33,9	49,1	4,8	20,1	7.35.35,3		7.34.49,33	B.
	(a) Venus 2 L.....	6,4	20,3	33,8	48,4	2,3	16,4	9.48.30,4		9.47.48,29	B.
Aug. 28	☉ 2 L. ....	10,2	24,0	37,3	51,3	5,0	18,9	10.26.32,3		10.25.51,28	B.
	Polaris S.P.....	36.1,2	44.14,8	52.27,4	0.39,2	8.54,8	.....	13.....	+ 8.11,33	13.0.38,81	B.
	α Aquilæ.....	40,7	54,3	7,9	21,5	35,2	48,8	19.43.2,6		19.42.21,57	B.
	α <sup>2</sup> Capricorni....	49,7	3,8	17,2	31,3	45,1	58,9	20.9.12,9		20.8.31,27	B.
	β Aquarii.....	48,8	2,6	16,0	29,7	43,1	57,0	21.23.10,3		21.22.29,65	B.
α Aquarii.....	15,6	29,1	42,2	56,1	9,5	23,0	21.57.36,6		21.56.56,01	B.	

ILLUMINATED END OF AXIS WEST. Order of Wires, for Stars above the Pole, GFEDCBA.

(a) Cloudy.

CALCULATION OF APPARENT RIGHT ASCENSIONS.

(59)

Error of Collimation.	Level Error.	Seconds of Transit corr. for the two Errors.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock slow at 0 <sup>h</sup> .	Apparent R.A. from the Observation.			NAME OF STAR or PLANET.
									h.	m.	s.	
- 1,1	- 1,53		+ 7,65	52,69			2,04	5,78	9 . 51 . 59,31		☉'s center.	
				30,22	38,69	8,47			.....		δ Ursæ Minoris.	
				38,92	46,20	7,28			19 . 42 . 46,37		α Aquilæ.	
				48,72	56,21	7,49			20 . 8 . 56,21		α <sup>2</sup> Capricorni.	
				47,08	54,69	7,61			21 . 22 . 54,68		β Aquarii.	
				13,22	20,95	7,73			21 . 57 . 20,86		α Aquarii.	
				15,76					22 . 4 . 23,42		Uranus.	
				3,45			2,04	7,86	6 . 48 . 11,89		) 2 L	
				31,28	39,71	8,43			7 . 30 . 39,78		Procyon.	
				4,10	12,76	8,66			7 . 35 . 12,61		Pollux.	
				43,77					9 . 8 . 52,41		Venus 2 L.	
				3,30					9 . 15 . 11,95		Mercury 2 L.	
				33,77					9 . 55 . 42,47		☉'s center.	
				36,78	46,19	9,41			19 . 42 . 46,32		α Aquilæ.	
				46,63	56,21	9,58			20 . 8 . 56,20		α <sup>2</sup> Capricorni.	
				44,96	54,69	9,73			21 . 22 . 54,64		β Aquarii.	
				11,23	20,96	9,73			21 . 57 . 20,96		α Aquarii.	
				21,31			1,98	9,91	6 . 35 . 31,76		Jupiter's center.	
				29,11	39,73	10,62			7 . 30 . 39,64		Procyon.	
				2,04	12,79	10,75			7 . 35 . 12,58		Pollux.	
				46,15					7 . 45 . 56,70		) 2 L.	
				40,00					9 . 13 . 50,67		Venus 2 L.	
				56,71					9 . 23 . 7,39		Mercury 2 L.	
				14,34					9 . 59 . 25,08		☉'s center.	
				26,04	38,93	12,89			.....		δ Ursæ Minoris.	
				34,69	46,19	11,50			19 . 42 . 46,22		α Aquilæ.	
				43,19	54,70	11,51			21 . 22 . 54,86		β Aquarii.	
				9,33	20,96	11,63			21 . 57 . 21,05		α Aquarii.	
				53,62					22 . 4 . 5,35		Uranus.	
				32,67	46,18	13,51	1,95	11,88	19 . 42 . 46,15		α Aquilæ.	
				42,70	56,20	13,50			20 . 8 . 56,22		α <sup>2</sup> Capricorni.	
				41,10	54,70	13,60			21 . 22 . 54,71		β Aquarii.	
				7,28	20,97	13,69			21 . 57 . 29,94		α Aquarii.	
				42,19					22 . 3 . 55,86		Uranus.	
	- 1,98		+ 6,65	51,92					.....		☉'s center.	
				16,30	39,89	23,59	1,82	23,08	7 . 30 . 39,95		Procyon.	
				49,31	12,96	23,65			7 . 35 . 12,97		Pollux.	
				48,38					9 . 48 . 12,20		Venus 2 L.	
		45,13		51,42					10 . 26 . 15,29		☉ 2 L.	
				55,24	18,78	23,54			1 . 1 . 19,31		Polaris S.P.	
				21,71	46,14	24,43			19 . 42 . 46,28		α Aquilæ.	
				31,55	56,18	24,63			20 . 8 . 56,16		α <sup>2</sup> Capricorni.	
				29,90	54,72	24,82			21 . 22 . 54,60		β Aquarii.	
				56,22	21,00	24,78			21 . 57 . 20,96		α Aquarii.	

The Transit levelled, August 25. 1<sup>h</sup>.



Month and Day.	NAME OF STAR or PLANET.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Concluded Transit over the Mean of the seven Wires.			Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	m. s.		h. m. s.	m. s.	h. m. s.	
Aug. 28	Uranus.....	54,4	8,1	21,8	35,8	49,4	3,4	22. 3. 17,2	+ 8. 12,55	22. 2. 35,73	B.		
	Polaris.....	36.35,4	44.50,8	52.51,2	1. 7,6	9.22,6	.....	1. ....		1. 1. 10,07	B.		
	Jupiter 1 L.....	30,6	.....	59,7	.....	28,9	.....	6. 41. 58,3		6. 41. 14,37	B.		
	Jupiter 2 L.....	.....	47,9	.....	17,0	.....	46,6	6. 41. ....		6. 41. 17,17	B.		
	Procyon.....	33,7	47,1	0,7	14,3	27,8	41,5	7. 30. 55,1		7. 30. 14,31	B.		
	Pollux.....	1,9	16,9	31,8	47,5	2,9	18,3	7. 35. 33,4		7. 34. 47,53	B.		
	Venus 2 L.....	54,7	8,7	22,8	36,9	50,7	4,9	9. 53. 18,6		9. 52. 36,76	B.		
Aug. 29	☉ 1 L.....	38,1	51,9	5,3	19,3	32,7	46,5	10. 28. 0,4	- 4. 6,43	10. 27. 19,18	B.		
	☉ 2 L.....	47,9	1,2	14,7	28,4	42,2	56,0	10. 30. 9,9		10. 29. 28,62	B.		
	Polaris S.P.....	.....	44.13,2	52.25,8	0.38,2	8.53,4	16.58,6	13. 25. 9,2		13. 0. 36,64	B.		
	Arcturus.....	59,8	14,1	28,2	42,7	57,1	11,6	14. 8. 26,2		14. 7. 42,81	B.		
	☽ 1 L.....	42,3	56,9	11,1	25,9	40,3	54,9	15. 2. 9,4		15. 1. 25,83	B.		
	α <sup>2</sup> Capricorni.....	48,1	2,1	15,4	29,3	43,1	57,1	20. 9. 11,1		20. 8. 29,46	B.		
	β Aquarii.....	47,3	0,8	14,2	27,8	41,4	55,1	21. 23. 8,5		21. 22. 27,87	B.		
	α Aquarii.....	14,1	27,3	40,9	54,0	7,8	21,2	21. 57. 34,9		21. 56. 54,31	B.		
	Uranus.....	43,7	57,0	11,1	24,9	38,8	52,6	22. 3. 6,4		22. 2. 24,93	B.		
Aug. 30	Arcturus.....	58,1	12,3	26,4	40,9	55,0	9,4	14. 8. 24,1	- 3,66 + 4,88 - 9,09	14. 7. 40,88	B.		
	☽ 1 L.....	27,1	41,9	56,6	11,9	26,6	41,9	16. 0. 56,8		16. 0. 11,83	B.		
	α Aquilæ.....	37,2	50,8	4,2	18,1	31,2	45,1	19. 42. 58,8		19. 42. 17,92	B.		
	α <sup>2</sup> Capricorni.....	46,2	59,9	13,7	27,9	41,5	55,8	20. 9. 9,9		20. 8. 27,84	B.		
	Jupiter 1 L.....	54,9	.....	24,2	.....	.....	8,2	6. 43. 23,1		6. 42. 38,94	B.		
	Jupiter 2 L.....	.....	12,5	.....	41,8	56,4	.....	6. 42. ....		6. 42. 41,78	B.		
	Procyon.....	30,4	.....	.....	.....	.....	38,1	7. 30. 51,4		7. 30. 10,88	B.		
Venus 2 L.....	29,7	43,7	57,5	11,7	25,2	39,2	10. 2. 53,4	10. 2. 11,48	B.				
Aug. 31	☉ 1 L.....	.....	.....	19,4	33,1	47,0	0,4	10. 35. 14,1	- 13,64	10. 34. 33,16	B.		
	☉ 2 L.....	1,3	15,0	28,2	42,2	55,8	9,6	10. 37. 23,4		10. 36. 42,21	B.		
	Arcturus.....	56,2	10,7	24,6	39,0	53,3	8,0	14. 8. 22,2		14. 7. 39,15	B.		
	☽ 1 L.....	13,2	28,4	43,4	59,0	14,3	29,8	17. 2. 45,2		17. 1. 59,05	B.		
	α Ophiuchi.....	7,1	20,9	34,5	48,4	2,2	16,1	17. 27. 30,1		17. 26. 48,48	B.		
	4 Sagittarii.....	31,1	46,0	0,3	15,2	29,8	44,4	17. 49. 59,3		17. 49. 15,16	B.		
	α Aquilæ.....	35,4	49,1	2,3	16,1	30,0	43,4	19. 42. 57,1		19. 42. 16,20	B.		
	α <sup>2</sup> Capricorni.....	44,9	58,7	12,2	26,1	39,9	53,9	20. 9. 8,1		20. 8. 26,26	B.		
	β Aquarii.....	43,8	57,1	11,1	24,4	38,1	51,8	21. 23. 5,2		21. 22. 24,50	B.		
	α Aquarii.....	10,3	24,0	36,9	50,9	4,2	17,9	21. 57. 31,2		21. 56. 50,77	B.		
	Uranus.....	21,9	35,7	49,3	3,6	17,2	31,2	22. 2. 45,0		22. 2. 3,41	B.		
	Jupiter 1 L.....	37,0	.....	6,1	.....	35,3	.....	6. 44. 5,0		6. 43. 20,85	B.		
	Jupiter 2 L.....	.....	54,4	.....	23,4	.....	52,9	6. 43. ....		6. 43. 23,57	B.		
	Procyon.....	28,7	42,1	55,6	9,4	22,9	36,1	7. 30. 50,0		7. 30. 9,26	B.		
	Pollux.....	56,4	11,9	27,2	42,3	57,7	13,1	7. 35. 28,4		7. 34. 42,43	B.		
Sept. 1	☉ 1 L.....	.....	.....	55,7	9,3	23,2	37,0	10. 38. 50,4	- 13,63 - 21,54	10. 38. 9,49	B.		
	☉ 2 L.....	37,6	51,1	4,8	18,4	32,1	45,8	10. 40. 59,4		10. 40. 18,46	B.		
	Arcturus.....	.....	.....	.....	37,9	52,1	6,8	14. 8. 20,6		14. 7. 37,81	B.		
	α Ophiuchi.....	5,4	19,1	32,6	46,4	0,4	14,3	17. 27. 28,1		17. 26. 46,62	B.		
	D Ophiuchi.....	19,7	34,1	48,3	2,9	17,3	31,8	17. 33. 46,4		17. 33. 2,93	B.		
	4 Sagittarii.....	29,3	44,1	58,6	13,6	28,2	43,1	17. 49. 57,8		17. 49. 13,53	B.		
	☽ 1 L.....	10,6	26,4	41,9	57,4	13,1	28,9	18. 6. 44,3		18. 5. 57,52	B.		
	φ Sagittarii.....	5,9	21,1	36,0	51,2	6,2	21,6	18. 35. 37,0		18. 34. 51,28	B.		
	σ Sagittarii.....	47,4	2,6	17,6	32,7	47,4	2,9	18. 45. 18,1		18. 44. 32,67	B.		
	α Aquilæ.....	33,7	47,2	0,8	14,5	28,1	41,8	19. 42. 55,4		19. 42. 14,50	B.		
	α <sup>2</sup> Capricorni.....	42,9	56,5	9,8	24,2	38,1	51,8	20. 9. 5,9		20. 8. 24,17	B.		
	(a) β Aquarii.....	42,6	55,6	9,3	23,0	36,4	50,2	21. 23. 3,7		21. 22. 22,97	B.		

ILLUMINATED END OF AXIS WEST. Order of Wires, for Stars above the Pole, GFEDCBA.

(a) The III wire was set down 8,3.



CALCULATION OF APPARENT RIGHT ASCENSIONS.

Error of Collimation.	Level Error.	Seconds of Transit corr. for the two Errors.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock slow at 0 <sup>h</sup> .	Apparent R.A. from the Observation.			NAME OF STAR or PLANET.					
									h.	m.	s.						
- 1,1	- 1,98	3,59	+ 6,65	36,00	19,08	24,93	1,82	23,08	22. 3. 0,75	Uranus. Polaris. Jupiter's center. Procyon. Pollux. Venus 2 L.  ☉'s center. Polaris S.P. Arcturus. ) 1 L. α <sup>2</sup> Capricorni. β Aquarii. α Aquarii. Uranus.							
	54,15			24,90				1. 1. 19,13									
15,81	1,79			24,90				6. 41. 41,21									
14,48								7. 30. 39,94									
47,51								7. 35. 12,98									
36,86								9. 53. 2,50									
24,04								10. 28. 49,72									
53,07								1. 1. 18,94									
42,86								14. 8. 8,81									
26,14								15. 1. 52,16									
29,74	42,96	24,96		56,18	26,44	20. 8. 56,14	21. 22. 54,61	21. 57. 21,06	22. 2. 51,75	α <sup>2</sup> Capricorni. β Aquarii. α Aquarii. Uranus.							
28,12				54,72	26,60	21. 22. 54,61											
54,52				21,01	26,49	21. 57. 21,06											
25,20						22. 2. 51,75											
40,91				8,79	27,88	1,71	26,72	14. 8. 8,63	16. 0. 40,03				19. 42. 46,17	20. 8. 56,27	Arcturus. ) 1 L. α Aquilæ. α <sup>2</sup> Capricorni. Jupiter's center. Procyon. Venus 2 L.  ☉'s center. Arcturus. ) 1 L. α Ophiuchi. 4 Sagittarii. α Aquilæ. α <sup>2</sup> Capricorni. β Aquarii. α Aquarii. Uranus.		
12,17						1,68	28,44	16. 0. 40,03									
18,05				46,12	28,07			19. 42. 46,17									
28,11				56,17	28,06			20. 8. 56,27									
40,38								6. 43. 9,29									
11,04				39,96	28,92			7. 30. 40,01									
11,57					10. 2. 40,71												
37,81					10. 36. 6,99												
39,18	8,78	29,60			14. 8. 8,61												
59,41					17. 2. 29,04												
48,57	18,24	29,67			17. 27. 18,23												
15,51					17. 49. 45,20												
16,33	46,11	29,78			19. 42. 46,15												
26,53	56,16	29,63			20. 8. 56,38												
24,74	54,72	29,98			21. 22. 54,67												
50,97	21,01	30,04			21. 57. 20,95												
3,67					22. 2. 33,65												
22,23					1,68	30,11	6. 43. 52,81	7. 30. 40,05	7. 35. 13,03	Jupiter's center. Procyon. Pollux.  ☉'s center. Arcturus. α Ophiuchi. D Ophiuchi. 4 Sagittarii. ) 1 L. φ Sagittarii. σ Sagittarii. α Aquilæ. α <sup>2</sup> Capricorni. β Aquarii.							
9,41	39,98	30,57															
42,39	13,07	30,68															
14,11																	
37,84	8,76	30,92															
46,71	18,22	31,51															
3,27																	
13,88																	
57,90																	
51,66																	
33,05																	
14,63	46,10	31,47															
24,44	56,16	31,72															
23,21	54,72	31,51															

August 28 and 29, Meridian error by Polaris S.P., Polaris, and Polaris S.P.  
The Transit levelled, Sept. 1. 1<sup>h</sup>.

Month and Day.	NAME OF STAR or PLANET.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Concluded Transit over the Mean of the seven Wires.			Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	m. s.		h. m. s.	m. s.	h. m. s.	
Sept. 1	$\alpha$ Aquarii.....	8,6	22,1	35,6	40,2	2,9	16,1	21.57.29,7		21.56.49,17	B.		
	Uranus.....	11,4	25,1	38,9	52,6	6,4	20,2	22.2.34,2		22.1.52,68	B.		
	Procyon.....	26,9	40,5	53,9	7,6	21,1	34,5	7.30.48,1		7.30.7,52	B.		
	Pollux.....	55,0	10,1	25,1	40,7	55,9	11,4	7.35.26,6		7.34.40,68	B.		
	Venus 2 L.....	0,8	15,1	28,5	42,8	56,5	10,4	10.12.24,3		10.11.42,63	B.		
Sept. 2	$\odot$ 1 L.....	4,7	18,2	31,9	45,4	59,2	13,0	10.42.26,7		10.41.45,59	B.		
	$\odot$ 2 L.....	14,0	27,2	40,8	55,1	8,3	21,9	10.44.35,6		10.43.54,70	B.		
	Arcturus.....				36,2	50,3	4,7	14.8.18,2	- 21,54	14.7.35,81	B.		
	$\sigma$ Sagittarii.....	46,0	0,8	15,7	31,1	45,9	1,1	18.45.16,2		18.44.30,97	B.		
	$\eta$ 1 L.....	36,8	52,1	7,8	23,3	39,0	54,4	19.11.10,2		19.10.23,37	B.		
	$\alpha$ Aquilæ.....	32,1	45,8	59,2	13,0	26,7	40,2	19.42.53,9		19.42.12,98	B.		
	59 Sagittarii.....	31,6	47,3	2,3	18,2	33,7	48,2	19.47.3,9		19.46.17,89	B.		
	$c$ Sagittarii.....	13,9	28,6	44,1	59,2	14,7	30,0	19.52.45,1		19.51.59,38	B.		
	$\alpha^2$ Capricorni.....	41,1	55,0	8,7	22,7	36,4	50,3	20.9.4,1		21.8.22,61	B.		
	$\beta$ Aquarii.....	40,4	54,1	7,9	21,2	34,9	48,2	21.23.2,1		21.22.21,25	B.		
	Uranus.....	1,0	14,7	28,0	42,3	55,9	9,9	22.2.23,7		22.1.42,21	B.		
	Jupiter 1 L.....	59,0		27,9		57,2		6.45.26,8		6.44.42,72	B.		
	Jupiter 2 L.....		16,3		45,4		15,0	6.45.....		6.44.45,57	B.		
	Procyon.....	25,2	38,7	52,1	5,8	19,4	32,9	7.30.46,4		7.30.5,79	B.		
	Pollux.....	53,1	8,5	23,6	39,1	54,3	9,9	7.35.25,2		7.34.39,10	B.		
Venus 2 L.....	45,3	58,8	12,8	26,9	40,6	54,4	10.17.8,5		10.16.26,76	B.			
Sept. 3	$\odot$ 1 L.....	41,1	54,1	7,9	21,3	35,1	48,7	10.46.2,5		10.45.21,53	B.		
	$\odot$ 2 L.....	49,9	3,1	16,9	30,3	44,1	57,7	10.48.11,4		10.47.30,48	B.		
	Arcturus.....	51,3	5,7	19,5	34,1	48,3	2,9	14.8.17,1		14.7.34,13	B.		
	$\alpha$ Aquilæ.....	30,5	44,1	57,3	11,1	24,8	38,3	19.42.52,1		19.42.11,17	B.		
	$\alpha^2$ Capricorni.....	39,7	53,1	7,0	21,1	34,9	47,9	20.9.2,6		20.8.20,90	B.		
Sept. 4	$\odot$ 2 L.....	24,2	38,1	51,7	5,5	19,2	32,9	10.51.46,3		10.51.5,41	B.		
Sept. 5	$\odot$ 1 L.....	51,1	4,7	18,1	31,9	45,2	58,8	10.53.12,5		10.52.31,75	B.		
	Arcturus.....	47,8	1,8	16,1	30,4	44,7	59,3	14.8.13,4		14.7.30,50	B.		
	$\alpha$ Aquilæ.....	27,0	40,3	53,9	7,5	21,1	34,7	19.42.48,2		19.42.7,53	B.		
	$\alpha^2$ Capricorni.....	35,9	49,8	3,3	17,2	31,0	45,0	20.8.59,1		20.8.17,33	B.		
	(a) $\beta$ Aquarii.....	35,1	48,0		15,8	29,8	42,9	21.22.56,0	- 2,28	21.22.15,65	B.		
$\alpha$ Aquarii.....	1,9	15,1	28,6	42,1	55,6	9,1	21.57.23,0		21.56.42,20	B.			
Sept. 6	$\beta$ Aquarii.....	33,3	47,0	0,4	14,1	27,8	41,1	21.22.54,8		21.22.14,07	G.		
	$\alpha$ Aquarii.....	0,0	13,5	26,9	40,6	53,9	7,3	21.57.20,9		21.56.40,44	B.		
	$\delta$ Aquarii.....	33,1	47,1	0,9	15,2	29,1	43,0	22.45.57,4		22.45.15,11	B.		
	$\eta$ 1 L.....	32,8	46,6	0,9	14,9	29,2	43,0	23.0.57,2		23.0.14,94	B.		
	$\eta$ 2 L.....	43,2	57,2	11,4	25,8	39,9	53,7	23.3.8,0		23.2.25,60	B.		
Sept. 7	$\odot$ 1 L.....	0,8	14,3	27,4	41,5	54,9	8,9	11.0.22,2		10.59.41,43	B.		
	$\odot$ 2 L.....	9,2	23,1	36,1	50,1	3,3	17,0	11.2.30,7		11.1.49,92	B.		
	Arcturus.....	44,1	58,3	12,4	26,9	41,1	55,5	14.8.9,4		14.7.26,82	B.		
	$\alpha$ Aquilæ.....	23,3	36,6	50,1	4,2	17,9	31,2	19.42.45,1		19.42.4,06	B.		
	$\alpha^2$ Capricorni.....	31,7	46,1	59,4	13,5	27,3	41,4	20.8.55,4		20.8.13,54	B.		
	$\alpha$ Aquarii.....	58,1	11,7	24,9	38,4	52,2	5,7	21.57.19,2		21.56.38,60	B.		
	Uranus.....	7,9	21,4	34,9	49,2	2,9	16,8	22.1.30,8		22.0.49,13	B.		
	$n$ Piscium.....	7,2	20,9	33,5	47,6	1,2	14,6	23.39.28,2		23.38.47,60	B.		
	$\eta$ 2 L.....	32,1	46,0	59,6	13,7	27,7	41,2	23.51.55,3		23.51.13,66	B.		

ILLUMINATED END OF AXIS WEST. Order of Wires, for Stars above the Pole, GFEDCBA.

(a) The intervals of wires are irregular.



Error of Collimation.	Level Error.	Seconds of Transit corr. for the two Errors.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock slow at 0 <sup>h</sup> .	Apparent R.A. from the Observation.			NAME OF STAR or PLANET.
									<i>h.</i>	<i>m.</i>	<i>s.</i>	
- 1,1	- 2,26		+ 6,65	49,37	21,02	31,65	1,68	30,11	21 . 57 . 21,02	α Aquarii. Uranus. Procyon. Pollux. Venus 2 L. ☉'s center. Arcturus. σ Sagittarii. ) 1 L. α Aquilæ. 59 Sagittarii. c Sagittarii. α <sup>2</sup> Capricorni. β Aquarii. Uranus. Jupiter's center. Procyon. Pollux. Venus 2 L. ☉'s center. Arcturus. α Aquilæ. α <sup>2</sup> Capricorni. ☉ 2 L. ☉ 1 L. Arcturus. α Aquilæ. α <sup>2</sup> Capricorni. β Aquarii. α Aquarii. β Aquarii. α Aquarii. δ Aquarii. ) 1 L. ) 2 L. ☉'s center. Arcturus. α Aquilæ. α <sup>2</sup> Capricorni. α Aquarii. Uranus. n Piscium. ) 2 L.		
				52,94	40,01	32,33	1,70	31,79	22 . 2 . 24,59			
				7,68	13,09	32,45			7 . 30 . 40,00			
				40,64					7 . 35 . 12,97			
				42,73					10 . 12 . 15,24			
									10 . 43 . 22,82			
									14 . 8 . 8,63			
									18 . 45 . 4,47			
									19 . 10 . 56,90			
									19 . 42 . 46,30			
									19 . 46 . 51,47			
									19 . 52 . 32,97			
								20 . 8 . 56,10				
								21 . 22 . 54,79				
								22 . 2 . 15,82				
								6 . 45 . 18,13				
								7 . 30 . 39,98				
								7 . 35 . 13,09				
								10 . 17 . 1,09				
								10 . 47 . 0,39				
								14 . 8 . 8,67				
								19 . 42 . 46,22				
								20 . 8 . 56,12				
								10 . 51 . 41,57				
					10 . 53 . 9,77							
					14 . 8 . 8,64							
					19 . 42 . 46,18							
					20 . 8 . 56,16							
					21 . 22 . 54,53							
					21 . 57 . 21,09							
					β Aquarii.							
					α Aquarii.							
					δ Aquarii.							
					) 1 L.							
					) 2 L.							
					11 . 1 . 27,29							
					14 . 8 . 8,55							
					19 . 42 . 46,29							
					20 . 8 . 55,94							
					21 . 57 . 21,06							
					22 . 1 . 31,66							
					23 . 39 . 30,19							
					23 . 51 . 56,30							
					) 2 L.							
					☉'s center.							
					Arcturus.							
					α Aquilæ.							
					α <sup>2</sup> Capricorni.							
					α Aquarii.							
					Uranus.							
					n Piscium.							
					) 2 L.							

The Transit levelled, Sept. 7. 1<sup>h</sup>.



Month and Day.	NAME OF STAR or PLANET.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Concluded Transit over the Mean of the seven Wires.			Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	m. s.		h. m. s.	m. s.	h. m. s.	
Sept. 8	Jupiter 1 L.....	52,9	...	22,1	...	51,2	...	6.49.21,0		6.48.36,80	B.		
	Jupiter 2 L.....	...	10,5	...	40,0	...	9,1	6.49. ....		6.48.39,87	B.		
	Procyon.....	15,0	28,3	42,1	55,8	9,1	22,7	7.30.36,2		7.29.55,60	B.		
	Pollux.....	42,7	58,1	13,2	28,5	44,0	59,3	7.35.14,7		7.34.28,65	B.		
Sept. 9	☉ 1 L.....	9,7	23,3	36,8	...	4,0	17,7	11.7.31,1		11.6.50,43	B.		
	Arcturus.....	40,7	54,8	9,1	23,4	37,8	52,3	14.8.6,8		14.7.23,56	B.		
	φ Sagittarii.....	51,7	7,1	22,1	37,3	52,4	8,1	18.35.23,0		18.34.37,39	B.		
	α Aquilæ.....	20,1	33,6	47,2	0,7	14,4	28,1	19.42.41,9		19.42.0,85	B.		
	59 Sagittarii.....	20,4	35,2	50,3	6,1	21,2	36,2	19.46.51,4		19.46.5,83	B.		
	c Sagittarii.....	1,6	16,7	31,6	47,2	2,3	17,7	19.52.33,1		19.51.47,17	B.		
	α² Capricorni.....	29,1	42,8	56,9	10,5	24,3	37,9	20.8.52,1		20.8.10,51	B.		
	β Aquarii.....	28,4	42,2	55,4	9,1	22,5	36,2	21.22.49,6		21.22.9,06	B.		
	α Aquarii.....	55,1	8,4	21,9	35,2	49,0	2,4	21.57.15,9		21.56.35,41	B.		
Uranus.....	47,2	1,1	14,5	28,7	42,5	56,3	22.1.10,3		22.0.28,66	B.			
Sept. 10	α Aquilæ.....	19,0	32,2	45,5	59,6	13,3	26,7	19.42.40,5		19.41.59,55	B.		
	α² Capricorni.....	28,1	41,5	54,7	8,8	23,2	36,8	20.8.50,4		20.8.9,08	B.		
Sept. 11	α Aquilæ.....	17,6	31,1	44,8	58,3	12,2	25,5	19.42.39,2		19.41.58,39	B.		
	α² Capricorni.....	26,8	40,3	54,1	8,3	22,0	36,1	20.8.49,6		20.8.8,17	B.		
	β Aquarii.....	26,2	40,0	53,1	7,0	20,3	34,0	21.22.47,3		21.22.6,85	B.		
	α Aquarii.....	53,0	6,3	19,8	33,1	46,5	0,1	21.57.14,1		21.56.33,27	B.		
Uranus.....	27,7	42,1	55,3	9,2	23,1	36,9	22.0.51,1		22.0.9,35	B.			
Sept. 13	Venus 2 L.....	3,1	15,9	29,4	43,8	56,5	...	11.8.24,4	+ 4,54	11.7.43,39	B.		
Sept. 14	☉ 1 L.....	2,5	16,1	29,3	43,1	56,7	10,2	11.25.23,7		11.24.43,08	B.		
	☉ 2 L.....	10,9	24,2	37,8	51,3	5,0	18,5	11.27.32,2		11.26.51,41	B.		
	α Aquilæ.....	14,1	27,4	41,1	54,7	8,3	22,1	19.42.35,5		19.41.54,74	B.		
	α² Capricorni.....	22,9	37,0	50,4	4,7	18,5	32,1	20.8.46,0		20.8.4,51	B.		
	β Aquarii.....	22,6	36,1	49,4	2,9	16,8	30,2	21.22.44,0		21.22.3,14	B.		
	α Aquarii.....	49,1	2,8	16,0	29,6	42,9	56,4	21.57.10,0		21.56.29,55	B.		
	Uranus.....	59,5	13,3	27,0	41,1	54,9	8,8	22.0.22,7		21.59.41,04	B.		
Sept. 15	(a) ☉ 2 L.....	5,0	20,6	35,3	51,1	6,7	22,0	6.23.37,1		6.22.51,11	B.		
	Venus 2 L.....	13,8	27,5	40,8	54,4	8,1	21,8	11.17.35,3		11.16.54,53	B.		
Sept. 16	☉ 1 L.....	10,4	23,9	37,4	51,0	4,4	18,1	11.32.31,8		11.31.51,00	B.		
	☉ 2 L.....	18,6	32,0	45,3	59,0	12,8	26,1	11.34.39,7		11.33.59,07	B.		
	Arcturus.....	31,6	46,1	0,2	14,6	29,0	43,3	14.7.57,7		14.7.14,64	B.		
	α² Capricorni.....	20,1	33,7	47,5	1,8	15,2	29,2	20.8.43,1		20.8.1,51	B.		
	β Aquarii.....	19,7	33,0	46,2	59,9	13,7	27,1	21.22.40,8		21.22.0,06	B.		
	α Aquarii.....	...	59,5	13,0	26,6	40,1	53,7	21.57.7,1	- 6,72	21.56.26,61	B.		
	Uranus.....	40,7	54,2	8,1	22,0	35,7	49,4	22.0.3,7		21.59.21,97	B.		
	Jupiter 1 L.....	40,6	...	9,2	24,0	...	...	6.53. ....	+ 19,50	6.53.24,10	B.		
	(b) Jupiter 2 L.....	...	57,4	...	...	41,9	56,1	6.54.11,0	- 14,62	6.53.26,98	B.		
☉ 2 L.....	45,3	0,8	15,9	31,2	46,3	2,0	7.20.17,4		7.19.31,27	B.			
Venus 2 L.....	49,1	2,9	15,4	29,7	43,4	57,1	11.22.10,9		11.21.29,79	B.			
Sept. 17	☉ 1 L.....	44,1	58,0	11,6	25,1	38,7	52,1	11.36.5,8		11.35.25,06	B.		
	☉ 2 L.....	53,0	6,2	19,8	33,1	46,8	0,1	11.38.14,0		11.37.33,28	B.		
	δ Ophiuchi.....	...	...	34,0	47,7	1,3	14,8	16.5.28,1	- 13,49	16.4.47,69	B.		
	α Aquilæ.....	9,6	23,2	36,7	50,3	3,8	17,5	19.42.31,3		19.41.50,34	B.		
	α² Capricorni.....	18,9	33,0	46,2	0,1	14,0	27,8	20.8.41,7		20.8.0,24	B.		

ILLUMINATED END OF AXIS WEST. Order of Wires, for Stars above the Pole, GFEDCBA.

(a) The limb uneven.

(b) The seconds 11,0 were set down as an observation of the first limb, but it evidently belongs to the second.

Error of Collimation.	Level Error.	Seconds of Transit corr. for the two Errors.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock slow at 0 <sup>h</sup> .	Apparent R.A. from the Observation.			NAME OF STAR or PLANET.	
									h.	m.	s.		
-1,1	-2,12		+6,65	38,36				1,43	44,08	6.49.22,85			Jupiter's center.
										7.30.40,29			Procyon.
										7.35.13,15			Pollux.
				50,59			8,67	45,07	11.7.35,33			☉ 1 L.	
				23,60					14.8.8,52			Arcturus.	
				37,77					18.35.22,96			φ Sagittarii.	
				0,99			46,02	45,03	19.42.46,24			α Aquilæ.	
				6,22					19.46.51,48			59 Sagittarii.	
				47,56			56,09	45,30	19.52.32,82			c Sagittarii.	
				10,79					20.8.56,07			α <sup>2</sup> Capricorni.	
				9,31			21,03	45,41	21.22.54,66			β Aquarii.	
				35,62					21.57.21,01			α Aquarii.	
				28,93			46,00	46,31	22.1.14,32			Uranus.	
				59,69					.....			α Aquilæ.	
				9,36			45,99	47,46	.....			α <sup>2</sup> Capricorni.	
	58,53			1,11	46,59	19.42.46,03			α Aquilæ.				
	8,45					20.8.55,97			α <sup>2</sup> Capricorni.				
	7,10			21,02	47,54	21.22.54,68			β Aquarii.				
	33,48					21.57.21,09			α Aquarii.				
	9,62			43,56	51,25	22.0.57,23			Uranus.				
	43,56					1,40	49,98	11.8.34,19			Venus 2 L.		
	47,42			45,95	51,05			11.26.38,06			☉'s center.		
	54,90					56,04	51,24	19.42.46,03			α Aquilæ.		
	4,80			20.8.55,96				α <sup>2</sup> Capricorni.					
	3,40			21,02	51,28	21.22.54,62			β Aquarii.				
	29,77					21.57.21,03			α Aquarii.				
	41,32			51,14	51,25	22.0.32,58			Uranus.				
	51,14					1,37	53,05	6.23.44,55			☾ 2 L.		
	54,70			11.17.48,39				Venus 2 L.					
	55,23			8,60	53,89	11.33.48,94			☉'s center.				
14,71			14.8.8,57			Arcturus.							
1,80			54,67	54,35	20.8.56,00			α <sup>2</sup> Capricorni.					
0,32					21.22.54,59			β Aquarii.					
26,83			21,01	54,18	21.57.21,13			α Aquarii.					
22,25					22.0.16,55			Uranus.					
25,59			29,37	55,36	1,33	54,37	6.54.20,34			Jupiter's center.			
31,31							7.20.26,09			☾ 2 L.			
29,96			11.22.24,96			Venus 2 L.							
29,37			43,17	55,36	11.37.24,38			☉'s center.					
47,81					16.5.43,07			δ Ophiuchi.					
50,50			56,01	55,48	19.42.45,96			α Aquilæ.					
0,53					20.8.56,02			α <sup>2</sup> Capricorni.					

The Transit levelled, Sept. 14. 1<sup>h</sup>.



Month and Day.	NAME OF STAR or PLANET.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Concluded Transit over the Mean of the seven Wires.			Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	m. s.		h. m. s.	h. m. s.		
Sept. 17	$\beta$ Aquarii.....	18,2	31,9	44,9	59,0	12,4	26,1	21.22.39,6		21.21.58,87	B.		
	$\alpha$ Aquarii.....	44,8	58,2	11,8	25,3	38,7	52,1	21.57.5,8		21.56.25,24	B.		
	Uranus.....	31,5	45,1	58,5	12,9	26,4	40,2	21.59.54,1		21.59.12,67	B.		
	Jupiter 1 L.....	13,7	.....	42,3	.....	12,1	.....	6.54.41,3		6.53.57,35	B.		
	Jupiter 2 L.....	.....	30,7	.....	0,2	.....	29,6	6.54.....		6.54.0,17	B.		
	Procyon.....	3,7	17,1	30,4	44,0	57,7	11,1	7.30.24,9		7.29.44,13	B.		
	Pollux.....	31,4	46,8	1,9	17,3	32,7	47,9	7.35.3,5		7.34.17,36	B.		
) 2 L.....	59,0	14,1	29,0	44,4	59,8	15,0	8.17.29,9		8.16.44,45	B.			
Sept. 18	$\odot$ 1 L.....	18,7	32,0	45,7	59,2	12,9	26,2	11.39.39,9		11.38.59,23	B.		
	$\odot$ 2 L.....	27,0	40,4	53,9	7,3	20,9	34,3	11.41.48,0		11.41.7,40	B.		
Sept. 19	Arcturus.....	27,6	41,8	56,1	10,4	24,9	39,1	14.7.53,3		14.7.10,45	B.		
	$\alpha$ Ophiuchi.....	38,2	51,8	5,3	19,4	33,2	47,1	17.27.0,9		17.26.19,42	B.		
	$\alpha$ Aquilæ.....	6,5	20,1	33,6	47,2	1,1	14,7	19.42.28,3		19.41.47,36	B.		
	$\alpha^2$ Capricorni.....	16,1	29,8	43,0	57,1	10,9	24,9	20.8.38,8		20.7.57,23	B.		
Sept. 25	Polaris S.P.....	36.24,6	44.39,2	52.54,6	.....	9.22,8	17.30,4	13.25.40,8	+ 0,03	13.1.5,43	B.		
	Polaris.....	36.57,4	45.7,6	.....	1.33,6	9.44,4	17.57,2	1.26.15,4	- 1.22,99	1.1.32,94	B.		
Sept. 28	$\odot$ 1 L.....	1,3	14,8	28,1	41,7	55,3	9,0	12.16.22,5		12.15.41,81	B.		
	$\odot$ 2 L.....	10,0	23,3	36,9	50,3	4,0	17,9	12.18.31,1		12.17.50,50	B.		
	Polaris S.P.....	.....	44.36,4	52.50,6	1.3,6	9.17,8	17.27,2	13.25.37,4	- 4.6,89	13.1.1,94	B.		
	Arcturus.....	13,4	27,7	41,9	56,4	11,0	25,1	14.8.39,3		14.7.56,40	B.		
	Antares.....	.....	.....	.....	6,7	21,5	36,9	16.19.52,3	- 22,51	16.19.6,84	B.		
	$\alpha$ Ophiuchi.....	24,0	37,6	51,2	5,4	19,2	33,1	17.27.46,8		17.27.5,33	B.		
	) 1 L.....	8,3	24,0	39,4	55,0	10,6	26,2	17.47.41,9		17.46.55,06	B.		
	$\lambda$ Sagittarii.....	51,4	6,2	21,2	36,3	51,1	6,6	18.18.21,3		18.17.36,30	B.		
	$\phi$ Sagittarii.....	25,0	39,9	54,4	10,1	25,2	40,1	18.35.55,2		18.35.9,98	B.		
	$\alpha$ Aquilæ.....	52,3	6,2	19,8	33,4	47,1	0,7	19.43.14,3		19.42.33,40	B.		
	$\alpha^2$ Capricorni.....	2,1	15,6	29,1	42,9	57,1	11,1	20.9.24,8		20.8.43,24	B.		
	Uranus.....	53,7	8,1	21,1	35,2	48,9	3,2	21.59.16,7		21.58.35,27	B.		
	Polaris.....	36.55,6	45.8,2	53.13,4	1.32,2	.....	18.1,2	1.26.12,6	+ 1.22,02	1.1.32,55	B.		
Regulus.....	40,4	54,7	8,1	22,1	35,7	49,6	10.0.3,8		9.59.22,05	B.			
Oct. 2	(a) $\alpha^2$ Capricorni.....	56,1	9,8	23,5	37,8	51,3	5,0	20.9.19,0		20.8.37,50	B.		
	(a) $\zeta$ Capricorni.....	.....	29,0	43,1	58,2	.....	27,4	21.17.42,1	- 5,83	21.16.58,13	B.		
	(a) $\beta$ Aquarii.....	55,7	8,9	22,0	36,0	49,5	3,3	21.23.16,9		21.22.36,04	B.		
Oct. 4	$\alpha$ Aquarii.....	19,0	32,1	45,5	59,0	12,7	26,0	21.57.39,6		21.56.59,13	B.		
	$\alpha$ Pegasi.....	31,9	46,0	59,8	13,7	27,5	41,4	22.56.53,3		22.56.13,66	B.		
	$\psi^1$ Aquarii.....	.....	.....	.....	55,3	9,0	22,9	23.7.36,5	- 20,54	23.6.55,38	B.		
	$\psi^3$ Aquarii.....	22,3	36,0	49,3	3,3	17,0	30,8	23.10.44,5		23.10.3,31	B.		
	) 1 L.....	59,9	13,9	27,7	41,8	55,7	9,8	23.32.23,5		23.31.41,75	B.		
	$\alpha$ Andromedæ....	47,8	3,0	17,9	33,3	48,9	4,0	0.0.19,1		23.59.33,43	B.		
Oct. 5	(a) $\odot$ 2 L.....	21,7	35,0	48,2	2,2	.....	28,1	12.43.43,0	+ 2,26	12.43.1,96	B.		
	Uranus.....	59,3	13,5	27,1	41,1	54,9	8,9	21.58.22,7		21.57.41,07	B.		
	(a) $\alpha$ Pegasi.....	30,1	44,0	57,9	12,1	25,8	39,6	22.56.53,4		22.56.11,84	B.		
	$\psi^1$ Aquarii.....	12,8	26,3	40,1	53,9	7,7	21,1	23.7.35,0		23.6.53,84	B.		
	(a) $\psi^3$ Aquarii.....	20,3	34,0	47,7	1,8	15,3	29,1	23.10.43,0		23.10.1,60	B.		
	$r$ Piscium.....	28,2	41,8	55,1	8,9	22,3	36,0	23.53.49,7		23.53.8,86	B.		
	(a) $s$ Piscium.....	51,9	5,3	18,9	32,3	46,0	0,0	23.57.13,2		23.56.32,51	B.		
	(b) $\alpha$ Andromedæ....	46,0	1,1	16,2	31,8	47,1	2,1	0.0.17,3		23.59.31,65	B.		
) 1 L.....	52,3	6,0	19,4	33,4	47,2	1,1	0.19.15,0		0.18.33,48	B.			

ILLUMINATED END OF AXIS WEST. Order of Wires, for Stars above the Pole, GFEDCBA.

(a) Very cloudy.

(b) Blazing.



CALCULATION OF APPARENT RIGHT ASCENSIONS.

(67)

Error of Collimation.	Level Error.	Seconds of Transit corr. for the two Errors.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock slow at 0 <sup>h</sup> .	Apparent R.A. from the Observation.			NAME OF STAR or PLANET.	
									h.	m.	s.		
- 1,1	- 1,69		+ 6,65	59,13	54,66	55,53	1,33	54,37	21 . 22 . 54,68		β Aquarii. α Aquarii. Uranus. Jupiter's center. Procyon. Pollux. ) 2 L.		
				25,46	21,01	55,55			21 . 57 . 21,05				
				12,95					22 . 0 . 8,54				
				} 58,81				1,46	55,69			6 . 54 . 54,92	
					44,31	40,41	56,10					.....	
					17,36	13,56	56,20					.....	
					44,49							8 . 17 . 40,68	
				} 3,51								11 . 40 . 59,91	
					10,52	8,57	58,05	1,51	57,18			14 . 8 . 8,59	
					19,54	17,91	58,37					17 . 27 . 17,82	
	47,52	45,88	58,36				19 . 42 . 45,94						
	57,52	55,99	58,47				20 . 8 . 55,96						
							Arcturus. α Ophiuchi. α Aquilæ. α <sup>2</sup> Capricorni.						
	- 1,78	11,38 26,85		+ 5,50	19,74	29,09	9,35	1,54	6,44	1 . 1 . 27,02		Polaris S.P. Polaris.	
					19,04	29,25	10,21			1 . 1 . 27,08			
		} 6,56	7,89			46,37			1,48	11,06	12 . 16 . 58,19		☉'s center. Polaris S.P. Arcturus. Antares. α Ophiuchi. ) 1 L. λ Sagittarii. φ Sagittarii. α Aquilæ. α <sup>2</sup> Capricorni. Uranus. Polaris. Regulus.
						17,86	30,01	12,15			1 . 1 . 29,72		
						56,47	8,50	12,03			14 . 8 . 8,40		
						7,21	19,14	11,93			16 . 19 . 19,28		
						5,45	17,75	12,30			17 . 27 . 17,59		
56,45										17 . 47 . 8,61			
36,67										18 . 17 . 48,86			
10,37										18 . 35 . 22,58			
33,55	45,75	12,20			19 . 42 . 45,83								
43,52	55,86	12,34			20 . 8 . 55,83								
35,55					21 . 58 . 47,97								
17,14	30,09	12,95			1 . 1 . 29,74								
22,17	35,24	13,07			9 . 59 . 35,33								
- 1,34				37,79	55,80	18,01	1,55	16,78	.....		α <sup>2</sup> Capricorni. ζ Capricorni. β Aquarii.		
				58,49					21 . 17 . 16,65				
				36,30	54,54	18,24			.....				
				59,36	20,91	21,55	1,72	19,93	21 . 57 . 20,86				
				13,79	35,36	21,57			22 . 56 . 35,37				
				55,66					23 . 7 . 17,24				
				3,60					23 . 10 . 25,19				
				42,03					23 . 32 . 3,64				
				33,46	55,09	21,63			23 . 59 . 55,11				
				2,21			1,72	21,71	12 . 43 . 24,83				
41,36					21 . 58 . 4,64								
11,97	35,35	23,38			.....								
54,12					23 . 7 . 17,49								
1,89					23 . 10 . 25,26								
9,12					23 . 53 . 32,54								
32,77					23 . 56 . 56,19								
31,68	55,09	23,41			.....								
33,72					0 . 18 . 57,17								

The Transit levelled, Sept. 21. 1<sup>h</sup>, Sept. 29. 2<sup>h</sup>, and Oct. 5. 1<sup>h</sup>.

On Sept. 24 the clock was put forward one minute.

Sept. 25, Meridian error by Polaris S.P. and Polaris, allowing 0<sup>s</sup>,68 for clock rate and change of  $\mathcal{R}$ .

Sept. 28, Meridian error by Polaris S.P. and Polaris, allowing 0<sup>s</sup>,70 for clock rate and change of  $\mathcal{R}$ .

Month and Day.	NAME OF STAR or PLANET.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Concluded Transit over the Mean of the seven Wires.			Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	m. s.		h. m. s.	m. s.	h. m. s.	
Oct. 6	(a) $\alpha$ Aquilæ.....	39,8	.....	7,0	20,8	34,2	48,1	19.43.16	- 4,53	19.42.20,72	B.		
Oct. 7	$\beta$ Aquarii.....	47,2	0,4	14,0	27,5	.....	.....	21.22.....	+ 20,23	21.22.27,50	B.		
	$\alpha$ Pegasi.....	.....	40,7	54,3	8,2	22,3	.....	22.56.50,1	- 2,75	22.56.8,37	B.		
	$\nu$ Piscium.....	46,1	59,3	12,9	26,6	40,2	53,4	1.33.7,1		1.32.26,52	B.		
	$\sigma$ Piscium.....	.....	.....	3,1	16,9	30,6	44,1	1.36.58,0	- 13,60	1.36.16,94	B.		
	$\delta$ 2 L.....	8,1	21,9	35,6	50,0	4,0	17,7	1.52.31,5		1.51.49,82	B.		
Oct. 8	$\odot$ 1 L.....	4,3	17,8	31,2	44,8	58,4	11,9	12.52.25,4		12.51.44,83	B.		
	$\odot$ 2 L.....	13,7	27,1	41,0	54,4	8,0	21,5	12.54.35,0		12.53.54,39	B.		
	Polaris S.P.....	.....	44.17,8	.....	0.46,4	9.46	17.11,2	13.25.22,6	- 6.34,96	13.0.45,56	B.		
	Arcturus.....	57,4	11,8	26,1	40,3	54,9	9,1	14.8.23,3		14.7.40,41	B.		
	$\alpha$ Ophiuchi.....	8,0	21,8	35,2	49,1	2,9	17,0	17.27.30,8		17.26.49,26	B.		
	(b) Halley's Comet S.P.....	.....	.....	35.55,0	.....	36.45,0	.....	20.....	- 0,15	20.36.19,85	J.G.		
	Uranus.....	38,0	51,9	5,1	19,2	32,9	47,0	21.58.1,0		21.57.19,30	J.G.		
	$\alpha$ Pegasi.....	25,0	38,9	52,8	6,7	20,4	34,4	22.56.48,5		22.56.6,67	J.G.		
$\alpha$ Andromedæ....	40,9	56,0	11,0	26,3	41,5	57,0	0.0.12,1		23.59.26,40	J.G.			
Oct. 9	$\odot$ 1 L.....	42,8	56,1	9,4	23,1	36,8	50,3	12.56.4,1		12.55.23,23	B.		
	(c) Halley's Comet S.P.	30.59,0	31.26,0	31.54,0	.....	32.59,0	33.28,0	21.33.58,0		21.32.27,33	B.		
Oct. 10	(a) $\odot$ 1 L.....	21,1	34,8	48,0	.....	15,9	.....	12.59.....	+ 17,00	12.59.1,95	B.		
	Arcturus.....	54,3	8,8	22,9	37,4	51,7	6,1	14.8.20,2		14.7.37,35	B.		
	$\alpha$ Ophiuchi.....	4,8	18,7	32,1	46,1	59,9	13,9	17.27.27,6		17.26.46,16	B.		
	$\alpha$ Aquilæ.....	33,2	46,9	0,3	14,0	27,3	41,2	19.42.55,0		19.42.13,99	B.		
	$\alpha^2$ Capricorni....	42,7	56,7	9,9	24,1	37,6	51,9	20.9.5,7		20.8.24,08	B.		
	$\beta$ Aquarii.....	42,2	55,7	9,2	23,1	36,2	50,1	21.23.3,5		21.22.22,86	B.		
	Uranus.....	24,9	38,5	52,2	6,2	20,1	33,7	21.57.47,5		21.57.6,16	B.		
	(d) Halley's Comet S.P.	55.53,0	56.26,0	56.56,0	57.32,0	58.0,0	58.33,0	22.59.10,0		22.57.30,00	B.		
	(e) * N.P.D. 26°.55'. S.P.....	7.10,4	7.40,6	8.10,2	8.39,6	9.10,4	9.39,9	23.10.9,1		23.8.40,03	B.		
	$\alpha$ Andromedæ....	38,1	53,4	8,7	23,9	39,3	54,2	0.0.9,6		23.59.23,88	B.		
(f) $\delta$ Ursæ Major. S.P.	5.23,7	5.49,1	6.14,8	6.40,1	7.6,2	7.31,1	0.7.56,2		0.6.40,17	B.			
Oct. 11	Halley's Comet S.P.	38.34,8	39.8,9	39.39,2	40.11,1	40.40,7	41.9,9	0.41.41,2		0.40.9,40	B.		
	$\zeta$ Ursæ Major. S.P.	15.29,7	15.53,5	16.17,9	16.41,4	17.6,3	17.29,2	1.17.53,3		1.16.41,61	B.		
Oct. 12	(g) $\odot$ 1 L.....	40,8	54,1	7,9	21,3	35,1	48,8	13.7.2,4		13.6.21,48	B.		
	$\odot$ 2 L.....	50,4	4,2	18,0	31,4	45,0	58,7	13.9.13,1		13.8.31,54	B.		
Oct. 14	(g) $\odot$ 1 L.....	1,9	15,2	.....	42,2	56,1	9,8	13.14.23,5	- 2,30	13.13.42,48	B.		
	$\odot$ 2 L.....	12,1	25,8	39,1	.....	.....	.....	13.15.....	+ 27,31	13.15.52,98	B.		
	$\alpha$ Ophiuchi.....	59,2	13,1	26,7	40,5	54,1	8,2	17.27.22,0		17.26.40,54	B.		
	$\alpha$ Aquilæ.....	27,6	41,2	54,4	8,3	22,1	35,5	19.42.49,2		19.42.8,33	B.		
Oct. 15	(g) $\odot$ 1 L.....	42,3	56,0	9,6	23,7	37,1	51,0	13.18.4,9		13.17.23,51	B.		
	$\odot$ 2 L.....	53,2	7,0	20,1	34,0	47,5	1,3	13.20.15,0		13.19.34,01	B.		
Oct. 16	(g) Polaris S.P.....	35.47,2	43.59,8	52.19,4	0.32,2	8.49,6	16.55,2	13.....	+ 4.6,28	13.0.30,18	B.		
Oct. 17	(g) $\odot$ 1 L.....	6,3	19,9	33,3	47,1	1,1	14,9	13.25.28,3		13.24.47,27	B.		
	$\odot$ 2 L.....	17,1	30,6	44,2	58,1	12,0	25,4	13.27.39,0		13.26.58,06	B.		
	$\alpha$ Aquilæ.....	22,2	36,1	49,3	3,1	16,4	30,1	19.42.43,6		19.42.2,97	B.		
Oct. 18	Polaris S.P.....	35.45,6	43.57,4	52.13,8	0.28,6	8.43,2	16.49,4	13.....	+ 4.6,32	13.0.25,99	B.		

ILLUMINATED END OF AXIS WEST. Order of Wires, for Stars above the Pole, GFEDCBA.

(a) Very cloudy.

(b) The III wire doubtful: the V wire very good: the Comet left the field at 20.40.21.

(c) The illumination of the field unsteady. The first wire set down 30.19: altered by conjecture. The Comet entered the field at 21.27.43, and left it at 21.37.3.

(d) The Comet entered the field at 22.52.40, and left it at 23.2.25.

(e) The star left the field at 23.13.13,8.

(f) The star left the field at 0.10.33,6.

(g) Very cloudy and unsteady.



Error of Collimation.	Level Error.	Seconds of Transit corr. for the two Errors.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock slow at 0 <sup>h</sup> .	Apparent R.A. from the Observation.			NAME OF STAR or PLANET.	
									h.	m.	s.		
- 1,1	- 1,34	31,44	+ 6,56	20,89	45,62	24,73			.....		$\alpha$ Aquilæ.		
				27,76	54,48	26,72	1,79	25,11	.....	$\beta$ Aquarii.			
				8,51	35,34	26,83		26,90	.....	$\alpha$ Pegasi.			
				26,71					1. 32. 53,72	$\nu$ Piscium.			
				17,12					1. 36. 44,14	$\sigma$ Piscium.			
				50,00					1. 52. 17,04	) 2 L.			
				49,87			1,59	27,04	12. 53. 17,76	$\odot$ 's center.			
				0,66	30,93	30,27			.....	Polaris S.P.			
				40,50	8,46	27,96			14. 8. 8,48	Arcturus.			
				49,40	17,58	28,18			17. 27. 17,60	$\alpha$ Ophiuchi.			
	20,82							8. 36. 49,22	Halley's Comet S.P.				
	19,59							21. 57. 48,08	Uranus.				
	6,80			35,34	28,54			22. 56. 35,36	$\alpha$ Pegasi.				
	26,43			55,10	28,67			23. 59. 55,06	$\alpha$ Andromedæ.				
	23,49							28,63	12. 55. 52,98	$\odot$ 1 L.			
	28,42								9. 32. 58,48	Halley's Comet S.P.			
	- 1,14						2,22			1,43	30,08	12. 59. 33,07	$\odot$ 1 L.
							37,45	8,46	31,01			14. 8. 8,37	Arcturus.
							46,31	17,55	31,24			17. 27. 17,43	$\alpha$ Ophiuchi.
							14,17	45,56	31,39			19. 42. 45,43	$\alpha$ Aquilæ.
24,38		55,68	31,30						20. 8. 55,66	$\alpha^2$ Capricorni.			
23,13		54,44	31,31						21. 22. 54,48	$\beta$ Aquarii.			
6,46									21. 57. 37,85	Uranus.			
31,15									10. 58. 2,60	Halley's Comet S.P.			
41,13									11. 9. 12,59	{ * N.P.D. 26°. 55'. S.P.			
23,92		55,10	31,18						23. 59. 55,43	$\alpha$ Andromedæ.			
41,14					31,51	12. 7. 12,66	$\delta$ Ursæ Major.S.P.						
				10,34			1,44	32,89	12. 40. 43,27	Halley's Comet S.P.			
				42,52						13. 17. 15,47	$\zeta$ Ursæ Major.S.P.		
				26,78						13. 8. 0,46	$\odot$ 's center.		
				48,01					35,77	13. 15. 24,57	$\odot$ 's center.		
				40,69	17,49	36,80			.....	$\alpha$ Ophiuchi.			
				8,51	45,49	36,98			.....	$\alpha$ Aquilæ.			
				29,04					37,21	13. 19. 7,05	$\odot$ 's center.		
				48,55	31,18	42,63	1,50	40,98	.....	Polaris S.P.			
				53,04						13. 26. 34,86	$\odot$ 's center.		
				3,23	45,44	42,21			.....	$\alpha$ Aquilæ.			
		44,36	1,32	43,92	1. 1. 28,99	Polaris S.P.							

The Transit levelled, Oct. 13. 2<sup>h</sup>.

Oct. 18 and 19, Meridian error by Polaris S.P. and Polaris, allowing 0<sup>s</sup>.93 for clock rate and change of  $\mathcal{R}$ .



Month and Day.	NAME OF STAR or PLANET.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Concluded Transit over the Mean of the seven Wires.	Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	h. m. s.			
Oct. 19	☉ 1 L. ....	32,9	46,4	0,3	14,0	27,6	41,3	13.32.55,1	- 6,90	13.32.13,94	B.
	☉ 2 L. ....	44,1	57,9	11,3	25,2	39,0	52,8	13.35.6,5		13.34.25,26	B.
	α <sup>2</sup> Capricorni....	42,4	56,3	10,0	23,8	38,0	52,0	20.8.51,8		20.8.10,15	B.
	β Aquarii.....	28,3	41,9	55,0	8,9	22,3	36,0	21.22.49,7		21.22.8,87	B.
	Uranus.....	33,3	46,9	1,0	15,0	28,8	42,8	21.56.56,5		21.56.14,90	B.
	α Pegasi.....	8,1	22,1	35,8	50,0	3,5	17,8	22.56.31,5		22.55.49,82	B.
	(a) Polaris.....	36.18,5	44.37,0	52.43,6	1.3,5	9.12,5	17.26,5	1.25.45,0		1.1.0,94	B.
Oct. 20	Polaris S.P. ....	43.59,5	52.16,4	0.28,5	8.48,4	16.54,0	13.....	- 1,10	13.0.28,26	G.	
Oct. 21	☉ 1 L. ....	2,9	16,8	30,2	44,0	57,9	11,8	13.40.25,5	+ 8.14,28	13.39.44,16	A.
	☉ 2 L. ....	14,3	28,0	41,6	55,4	9,1	23,0	13.42.36,8		13.41.55,46	A.
	Arcturus.....	38,5	52,8	6,9	35,7	50,0	14.8.4,6	14.7.21,42		A.	
	α Aquilæ.....	16,9	30,4	44,0	57,6	11,1	25,0	19.42.38,5		19.41.57,65	A.
	α <sup>2</sup> Capricorni....	26,0	39,9	53,6	7,8	21,4	35,6	20.8.49,1		20.8.7,63	A.
	Uranus.....	24,5	38,2	52,0	6,0	19,9	33,8	21.56.47,8		21.56.6,03	A.
	(b) Polaris.....	36.10,0	44.19,5	52.36,0	0.54,5	9.12,8	.....	1.....		1.0.52,84	G.
Oct. 22	(c) ☉ 2 L. ....	0,9	14,2	27,9	42,0	55,4	9,1	13.46.23,1	- 14,63	13.45.41,80	B.
	(b) α Aquilæ.....	15,8	29,3	43,1	56,4	20,2	23,9	19.42.37,4		19.41.56,59	B.
	α <sup>2</sup> Capricorni....	24,9	39,2	52,9	6,7	20,2	34,1	20.8.47,9		20.8.6,56	B.
	ζ Capricorni....	.....	.....	12,8	27,2	41,9	56,8	21.17.11,3		21.16.27,37	B.
	β Aquarii.....	24,9	38,2	51,1	5,3	18,8	32,3	21.22.46,1		21.22.5,24	B.
	Polaris S.P. ....	35.40,8	43.56,2	52.9,4	0.24,8	8.40,6	16.48,2	13.25.1,6		13.0.23,09	B.
Oct. 23	☉ 1 L. ....	35,3	49,0	2,6	16,4	30,3	44,1	13.47.57,7	+ 13,54	13.47.16,49	B.
	☉ 2 L. ....	47,1	0,9	14,4	28,3	42,1	56,0	13.50.9,9		13.49.28,39	B.
	(c) Venus 1 L. ....	11,2	24,9	38,4	52,3	6,1	20,2	14.8.34,1		14.7.52,46	B.
	α Ophiuchi.....	46,1	59,9	13,3	27,3	41,0	55,0	17.27.8,8		17.26.27,34	B.
	(b) α Aquilæ.....	14,7	28,1	42,3	55,9	9,1	22,3	19.42.36,2		19.41.55,52	B.
	α <sup>2</sup> Capricorni....	23,7	37,3	51,2	5,2	19,1	32,9	20.8.46,8		20.8.5,17	B.
	(c) β Aquarii.....	23,3	36,8	50,3	3,9	16,3	.....	21.22.....		21.22.3,66	B.
	Polaris S.P. ....	35.39,2	43.54,8	52.11,2	0.24,6	8.40,4	16.48,4	13.25.0,8		13.0.22,77	B.
Oct. 24	☉ 1 L. ....	22,3	36,1	49,8	3,9	17,5	31,2	13.51.45,1	- 13,82	13.51.3,70	B.
	☉ 2 L. ....	34,9	48,3	2,0	16,0	29,6	43,4	13.53.57,1		13.53.15,90	B.
	Arcturus.....	34,4	48,7	3,1	17,4	31,8	46,1	14.8.0,5		14.7.17,43	B.
	Venus 1 L. ....	57,1	10,9	24,4	38,6	52,3	6,3	14.13.20,1		14.12.38,53	B.
	(c) α <sup>2</sup> Capricorni....	22,5	36,2	50,1	3,9	17,8	31,8	20.8.45,4		20.8.3,96	B.
	(c) ζ Capricorni....	40,7	55,3	9,7	25,0	39,4	54,0	21.17.8,9		21.16.24,71	B.
	(c) β Aquarii.....	22,1	35,7	49,1	2,9	16,2	29,9	21.22.43,3		21.22.2,74	B.
	Uranus.....	12,9	26,4	40,1	54,0	8,1	21,8	21.56.35,3		21.55.54,09	B.
	(c) Polaris S.P. ....	35.35,6	43.52,8	52.8,2	0.21,6	8.39,4	16.45,2	13.24.59,6		13.0.20,34	B.
Oct. 26	(d) ☉ 1 L. ....	.....	.....	26,3	40,1	54,0	8,0	13.59.21,9	- 4,60	13.58.40,24	B.
	☉ 2 L. ....	11,3	.....	39,0	53,1	6,9	20,3	14.1.34,1		14.0.52,85	B.
	α Ophiuchi.....	42,1	55,9	9,4	23,2	37,1	51,1	17.27.4,9		17.26.23,38	B.
	α Aquilæ.....	10,6	24,1	37,6	51,2	5,1	18,7	19.42.32,1		19.41.51,34	B.
	α <sup>2</sup> Capricorni....	20,1	33,4	47,1	1,3	15,1	29,0	20.8.42,5		20.8.1,21	B.
	(e) Polaris S.P. ....	35.34,2	43.50,8	52.6,6	0.19,2	8.37,8	16.44,4	13.24.57,6		13.0.18,66	B.
	(f) Venus 1 L. ....	21,3	35,1	49,0	2,9	16,9	31,1	14.27.44,9		14.27.3,03	B.
α Ophiuchi.....	40,7	54,7	8,2	22,1	36,0	49,8	17.27.3,9	17.26.22,20	B.		
γ 1 L. ....	25,9	41,3	56,8	12,3	27,9	43,9	19.34.59,2	19.34.12,47	B.		

ILLUMINATED END OF AXIS WEST. Order of Wires, for Stars above the Pole, GFEDCBA.

(a) Blazing and unsteady.  
 (b) Blazing.  
 (c) Cloudy and faint.

(d) Cloudy: and wind very loud.  
 (e) The last wires clouded.  
 (f) Faint.

Error of Collimation.	Level Error.	Seconds of Transit corr. for the two Errors.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock slow at 0 <sup>h</sup> .	Apparent R.A. from the Observation.	NAME OF STAR or PLANET.			
"	"	"	"	"	"	"	"	"	h. m. s.				
- 1,1	- 1,51	55,37	+ 8,5	19,99			1,32	43,92	13. 34. 4,65	☉'s center.			
				10,56	55,54	44,98			20. 8. 55,59	α <sup>2</sup> Capricorni.			
				9,24	54,33	45,09			21. 22. 54,34	β Aquarii.			
				15,30					21. 57. 0,43	Uranus.			
				50,03	35,26	45,23			22. 56. 35,21	α Pegasi.			
			43,30	30,83	47,53		45,24	1. 1. 28,60	Polaris.				
			+ 4,83	33,71	41,05	30,69	49,64	1,22	46,54	1. 1. 28,25	Polaris S.P.		
				49,98						13. 41. 37,21	☉'s center.		
				21,43	8,48	47,05				14. 8. 8,69	Arcturus.		
				57,74	45,37	47,63				19. 42. 45,28	α Aquilæ.		
	7,81	55,51		47,70				20. 8. 55,37	α <sup>2</sup> Capricorni.				
	47,27				6,21					21. 56. 53,87	Uranus.		
					40,41	30,67	50,26		47,76	1. 1. 28,22	Polaris.		
					41,97			1,21	47,74	13. 46. 30,40	☉ 2 L.		
					56,68	45,36	48,68			19. 42. 45,41	α Aquilæ.		
					6,74	55,50	48,76			20. 8. 55,50	α <sup>2</sup> Capricorni.		
						27,60					21. 17. 16,41	ζ Capricorni.	
						5,40	54,28	48,88			21. 22. 54,21	β Aquarii.	
						35,88	30,65	54,77	1,28	49,02	.....	Polaris S.P.	
						22,61					13. 49. 12,36	☉'s center.	
52,64										14. 8. 42,41	Venus 1 L.		
	- 0,99	23,14	+ 8,38	27,39	17,36	49,97			17. 27. 17,34	α Ophiuchi.			
				55,61	45,34	49,73			19. 42. 45,68	α Aquilæ.			
				5,35	55,48	50,13			20. 8. 55,44	α <sup>2</sup> Capricorni.			
				3,82	54,27	50,45			21. 22. 53,98	β Aquarii.			
				35,56	30,64	55,08	1,27	50,26	.....	Polaris S.P.			
							9,98					13. 53. 0,97	☉'s center.
							17,44	8,49	51,05			14. 8. 8,45	Arcturus.
							38,71					14. 13. 29,72	Venus 1 L.
							4,14	55,46	51,32			20. 8. 55,46	α <sup>2</sup> Capricorni.
							24,94					21. 17. 16,33	ζ Capricorni.
				2,90	54,26	51,36			21. 22. 54,29	β Aquarii.			
				54,27					21. 56. 45,69	Uranus.			
				37,56	3,51	52,95	1,20	52,78	.....	Polaris S.P.			
				46,96					14. 0. 40,44	☉'s center.			
				23,62	17,33	53,71			17. 27. 17,27	α Ophiuchi.			
				51,61	45,29	53,68			19. 42. 45,32	α Aquilæ.			
				1,62	55,43	53,81			20. 8. 55,40	α <sup>2</sup> Capricorni.			
				35,88	30,35	54,47	1,23	53,92	1. 1. 30,47	Polaris S.P.			
				3,45					14. 27. 58,11	Venus 1 L.			
				22,44	17,31	54,87			17. 27. 17,25	α Ophiuchi.			
				13,00				19. 35. 7,92	γ 1 L.				

Oct. 20 and 21, Meridian error by Polaris S.P. and Polaris, allowing 0<sup>s</sup>,61 for clock rate and change of right ascension. The sudden change of meridian error appears to be quite certain.

The Transit levelled, Oct. 19. 1<sup>h</sup> and Oct. 26. 1<sup>h</sup>.

Oct. 26 and 27, Meridian error by Polaris S.P., Polaris, and Polaris S.P.



Month and Day.	NAME OF STAR or PLANET.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Concluded Transit over the Mean of the seven Wires.			Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	h. m. s.		m. s.	h. m. s.		
Oct. 27	$\alpha$ Aquilæ.....	9,3	22,9	36,2	50,1	4,0	17,4	19. 42. 31,1		19. 41. 50,14	B.		
	$c$ Sagittarii.....	50,7	6,1	21,1	36,3	51,9	7,2	19. 52. 22,3		19. 51. 36,52	B.		
	$\alpha^2$ Capricorni.....	18,8	32,3	46,1	0,1	13,8	27,6	20. 8. 41,6		20. 8. 0,04	B.		
	(a) Uranus.....	2,1	16,1	29,3	44,0	57,3	11,3	21. 56. 25,4		21. 55. 43,64	B.		
	$\alpha$ Pegasi.....	58,1	12,1	25,9	39,8	54,1	7,7	22. 56. 21,4		22. 55. 39,88	B.		
	Polaris.....	36.10,2	44.26,6	52.31,2	0.51,4	9. 4,8	17.19,2	1. 25. 35,6		1. 0. 51,29	B.		
(b) Polaris S.P. ....	35.32,4	43.49,2	52. 4,2	0.17,6	8.35,4	16.41,8	13. 24. 55,4		13. 0. 16,57	B.			
Oct. 28	☉ 1 L. ....	37,9	51,4	5,8	19,4	33,2	47,2	14. 7. 1,3		14. 6. 19,46	B.		
	☉ 2 L. ....	51,1	4,9	18,3	32,4	46,2	0,3	14. 9. 14,1		14. 8. 32,47	B.		
	(c) Venus 1 L. ....	11,7	25,6	39,2	53,3	7,2	21,3	14. 32. 35,1		14. 31. 53,34	B.		
	(d) $\alpha$ Aquilæ.....	8,1	21,4	34,9	48,4	2,2	16,1	19. 42. 29,8		19. 41. 48,70	B.		
Oct. 29	$\chi^1$ Capricorni.....	26,2	40,8	55,1	9,9	24,2	38,6	20. 58. 53,1		20. 58. 9,70	B.		
	$\zeta$ Capricorni.....	34,3	48,8	3,3	17,9	32,5	47,1	21. 17. 2,0		21. 16. 17,99	B.		
	$\beta$ Aquarii.....	15,6	29,2	42,2	55,9	9,4	23,1	21. 22. 37,0		21. 21. 56,06	B.		
	) 1 L. ....	49,8	4,3	19,1	34,0	48,8	3,8	21. 34. 18,4		21. 33. 34,03	B.		
	Uranus.....	55,9	9,8	23,3	37,2	51,1	5,1	21. 56. 18,8		21. 55. 37,32	B.		
	$\alpha$ Pegasi.....	55,3	9,3	23,1	37,1	51,0	4,9	22. 56. 18,8		22. 55. 37,07	B.		
	$\alpha$ Andromedæ.....	21,5	36,8	42,1	57,3	12,4	27,7	23. 59. 43,1		23. 58. 57,27	B.		
	Polaris.....	36. 9,6	44.22,2	52.29,4	0.47,8	9. 2,2	17.17,4	1. 25. 32,2		1. 0. 48,69	B.		
Nov. 1	$\beta$ Aquarii.....	10,9	24,3	37,8	51,5	4,9	18,8	21. 22. 32,1		21. 21. 51,47	B.		
	$\alpha$ Aquarii.....	37,7	51,0	4,3	17,8	31,3	44,9	21. 56. 58,0		21. 56. 17,86	B.		
	$\alpha$ Pegasi.....	50,8	4,9	18,3	32,4	46,3	0,2	22. 56. 14,3		22. 55. 32,46	B.		
	$n$ Piscium.....	46,8	0,3	13,8	27,3	40,9	54,4	23. 39. 7,7		23. 38. 27,32	B.		
	$p$ Piscium.....	32,8	46,2	59,8	13,4	27,2	40,2	23. 49. 54,0		23. 49. 13,37	B.		
	) 1 L. ....	12,8	26,3	40,0	54,1	8,1	21,6	0. 3. 35,4		0. 2. 54,04	B.		
Nov. 2	☉ 1 L. ....	57,9	11,8	25,4	39,7	53,6	8,0	14. 26. 21,5		14. 25. 39,70	B.		
	☉ 2 L. ....	12,0	26,0	39,6	53,4	7,8	21,7	14. 28. 35,7		14. 27. 53,74	B.		
	Venus 1 L. ....	38,3	52,7	6,3	20,9	34,8	48,9	14. 57. 3,2		14. 56. 20,72	B.		
Nov. 3	$\alpha$ Andromedæ....	4,0	19,0	33,9	49,7	5,0	20,2	0. 0. 35,6		23. 59. 49,63	B.		
	Polaris.....	37. 0,5	45.11,8	53.21,3	1.40,5	...	18. 9,5	1. 26. 25,6	+ 1. 22,22	1. 1. 40,42	B.		
	$\mu$ Piscium.....	49,3	3,0	16,1	30,0	43,6	57,0	1. 22. 10,1		1. 21. 29,87	B.		
	) 1 L. ....	38,3	51,9	5,9	19,8	33,7	47,6	1. 35. 1,5		1. 34. 19,82	B.		
	$\alpha$ Arietis.....	7,0	21,5	36,0	50,3	5,2	20,0	1. 58. 34,5		1. 57. 50,64	B.		
	$\xi^1$ Ceti.....	32,2	46,0	0,3	13,0	26,4	40,1	2. 4. 54,0		2. 4. 13,14	B.		
Nov. 5	$\alpha$ Andromedæ....	1,1	16,2	31,1	46,6	2,0	17,1	0. 0. 32,3		23. 59. 46,63	B.		
	Polaris.....	...	45. 8,6	53.15,2	1.34,6	9.49,8	18. 7,2	1. 26. 22,4	- 4. 6,60	1. 1. 36,37	B.		
	$\pi$ Arietis.....	18,2	32,0	46,1	0,2	14,3	28,5	2. 40. 42,9		2. 40. 0,31	B.		
	$\epsilon$ Arietis.....	57,8	13,2	27,3	41,9	56,2	11,0	2. 50. 25,3		2. 49. 41,81	B.		
	$\alpha$ Ceti.....	53,4	7,1	20,3	34,0	47,3	1,1	2. 54. 14,4		2. 53. 33,94	B.		
	) 2 L. ....	10,9	24,8	39,0	53,2	7,3	21,8	3. 9. 36,1		3. 8. 53,30	B.		
Nov. 6	$\alpha$ Andromedæ....	59,2	15,1	29,9	45,2	0,5	15,8	0. 0. 31,2		23. 59. 45,27	B.		
	Polaris.....	36.55,8	45. 8,4	53.14,6	1.34,2	9.48,8	18. 5,6	1. 26. 21,8		1. 1. 35,60	B.		
	$\alpha$ Arietis.....	3,1	17,2	31,3	46,3	1,1	15,8	1. 58. 30,2		1. 57. 46,43	B.		
	$\pi$ Arietis.....	16,6	30,8	44,7	58,8	13,0	26,9	2. 40. 41,2		2. 39. 58,86	B.		
	$\epsilon$ Arietis.....	57,4	12,0	25,9	40,7	55,1	9,4	2. 50. 23,7		2. 49. 40,60	B.		
	$\alpha$ Ceti.....	52,2	5,6	19,1	32,5	46,1	59,6	2. 54. 13,1		2. 53. 32,60	B.		
	$\eta$ Tauri.....	50,4	5,1	19,8	35,1	49,1	4,3	3. 38. 18,8		3. 37. 34,66	B.		
	) 2 L. ....	1,7	16,1	30,1	45,4	0,1	15,0	3. 58. 29,4		3. 57. 45,40	B.		

ILLUMINATED END OF AXIS WEST. Order of Wires, for Stars above the Pole, GFEDCBA.

(a) Disturbed by a noise.  
(b) Sometimes clouded.

(c) Faint.  
(d) Cloudy, very bad.



CALCULATION OF APPARENT RIGHT ASCENSIONS.

Error of Collimation.	Level Error.	Seconds of Transit corr. for the two Errors.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock slow at 0 <sup>h</sup> .	Apparent R.A. from the Observation.			NAME OF STAR or PLANET.		
									h.	m.	s.			
- 1,1	- 0,99	46,73 21,05	+ 8,38	50,41	45,28	54,87	1,23	53,92	19 . 42 . 45,34	α Aquilæ. c Sagittarii. α <sup>2</sup> Capricorni. Uranus. α Pegasi. Polaris. Polaris S.P.  ☉'s center. Venus 1 L. α Aquilæ.  χ <sup>1</sup> Capricorni. ζ Capricorni. β Aquarii. ) 1 L. Uranus. α Pegasi. α Andromedæ. Polaris.  β Aquarii. α Aquarii. α Pegasi. n Piscium. p Piscium. ) 1 L.  ☉'s center. Venus 1 L.				
				37,06	55,42	54,97					19 . 52 . 32,00			
				0,45							20 . 8 . 55,49			
				44,05							21 . 56 . 39,10			
				40,11							22 . 56 . 35,21			
				34,83					55,15		1 . 1 . 30,03			
				33,79					1,33		55,20	1 . 1 . 29,71		
								26,37				14 . 8 . 22,35		
								53,76				14 . 32 . 49,76		
								48,97	45,26		56,29	.....		
								10,19				1,45	56,37	20 . 59 . 7,83
								18,48						21 . 17 . 16,14
								56,45	54,19		57,74			21 . 22 . 54,11
								34,51						21 . 34 . 32,19
								37,73						21 . 56 . 35,43
					37,30	35,17	57,87			22 . 56 . 35,06				
					57,38	55,03	57,65			23 . 59 . 55,20				
					32,23	29,69	57,46			.....				
					51,86	54,15	62,29	1,60	60,91	21 . 22 . 54,19				
					18,20	20,59	62,39			21 . 57 . 20,57				
					32,69	35,14	62,45			22 . 56 . 35,13				
					27,68					23 . 39 . 30,17				
					13,73					23 . 50 . 16,23				
					54,41				62,51	0 . 3 . 56,92				
					47,15					14 . 27 . 50,62				
					21,15					14 . 57 . 24,66				
		- 1,08			49,74	55,00	5,26	1,45	3,89	.....	α Andromedæ. Polaris. μ Piscium. ) 1 L. α Arietis. ξ <sup>1</sup> Ceti.  α Andromedæ. Polaris. π Arietis. ε Arietis. α Ceti. ) 2 L.  α Andromedæ. Polaris. α Arietis. π Arietis. ε Arietis. α Ceti. η Tauri. ) 2 L.			
	23,78				28,39	4,61				5,34		.....		
	30,16												1 . 21 . 35,58	
	20,10												1 . 34 . 25,54	
50,79	56,33				5,54							.....		
13,41												2 . 4 . 18,87		
46,74	54,98				8,24				1,40	6,91		.....		
19,73	28,00				8,27					8,31		.....		
0,51												2 . 40 . 8,98		
41,97												2 . 49 . 50,44		
34,24	42,78				8,54							.....		
53,50												3 . 9 . 1,99		
45,38	54,98				9,60				1,35	8,31		23 . 59 . 55,04		
18,96	27,81				8,85					9,66		.....		
46,58	56,34				9,76							1 . 57 . 56,35		
59,06								2 . 40 . 8,87						
40,76								2 . 49 . 50,58						
32,90	42,79	9,89						2 . 53 . 42,72						
34,80								3 . 37 . 44,66						
45,58								3 . 57 . 55,46						

The Transit levelled, Nov. 3. 1<sup>h</sup>.

On Nov. 3 the clock was put forward one minute.

Month and Day.	NAME OF STAR or PLANET.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Concluded Transit over the Mean of the seven Wires.			Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	h. m. s.		m. s.	h. m. s.		
Nov. 11	☉ 1 L. ....	37,8	51,9	5,9	20,0	34,1	48,5	15. 3. 2,5		15. 2. 20,10	B.		
	☉ 2 L. ....	53,9	8,0	21,7	36,1	50,1	4,4	15. 5. 18,5		15. 4. 36,10	B.		
	Venus 1 L. ....	56,4	10,8	24,9	39,3	53,9	8,2	15. 43. 22,6		15. 42. 39,45	B.		
	α Ophiuchi. ....	19,4	33,1	47,0	0,9	14,5	28,2	17. 27. 41,9		17. 27. 0,71	B.		
Nov. 12	(a) ☉ 1 L. ....	39,9	53,9	8,0	22,2	36,3	50,7	15. 7. 5,1		15. 6. 22,30	B.		
	α Aquilæ.....	46,3	0,1	13,4	27,3	40,9	54,3	19. 43. 8,2		19. 42. 27,22	B.		
	α² Capricorni.....	55,6	8,9	23,1	37,0	50,8	5,1	20. 9. 19,0		20. 8. 37,07	B.		
Nov. 16	(b) ☉ 1 L. ....	55,8	9,9	24,1	38,4	52,8	7,1	15. 23. 21,6		15. 22. 38,53	B.		
	☉ 2 L. ....	13,1	27,2	41,1	.....	.....	23,9	15. 25. 39,0	+ 2,84	15. 24. 55,70	B.		
Nov. 17	Arcturus.....	58,4	13,1	27,2	41,7	56,1	10,2	14. 8. 24,4		14. 7. 41,58	B.		
	Mercury 2 L.....	0,1	13,7	.....	41,4	55,3	.....	14. 24. 22,4	+ 2,76	14. 23. 41,34	B.		
Nov. 18	☉ 2 L. ....	.....	.....	55,1	9,3	.....	38,0	15. 33. 52,0	- 14,29	15. 33. 9,31	B.		
	Uranus.....	33,9	48,0	2,0	15,8	29,9	43,3	21. 56. 57,0		21. 56. 15,70	B.		
	α Pegasi.....	24,8	39,0	53,0	7,0	21,1	35,0	22. 56. 48,8		22. 56. 6,96	B.		
	α Andromedæ....	41,2	56,2	11,9	26,9	42,7	57,5	0. 0. 13,1		23. 59. 27,07	B.		
	Polaris.....	36.22,4	44.38,6	52.54,2	1. 8,6	9.28,8	.....	1. ....	+ 8. 13,92	1. 1. 8,44	B.		
	α Arietis.....	.....	59,1	14,0	28,3	42,9	57,5	1. 58. 12,0	- 7,31	1. 57. 28,32	B.		
	Polaris S.P. ....	36. 0,0	44.11,6	52.20,8	0.42,4	8.54,4	17.12,2	13. 25. 28,8		13. 0. 41,46	B.		
	Arcturus.....	56,6	11,1	25,6	39,9	54,3	8,6	14. 8. 22,7		14. 7. 39,83	B.		
Nov. 19	☉ 1 L. ....	16,3	30,8	44,9	59,3	13,7	28,1	15. 35. 42,1		15. 34. 59,32	B.		
	α Aquilæ.....	34,4	48,1	2,0	15,7	29,3	42,9	19. 42. 56,2		19. 42. 15,51	B.		
	α² Capricorni....	43,9	57,8	11,6	25,5	39,5	53,1	20. 9. 6,9		20. 8. 25,47	B.		
	β Aquarii.....	43,4	57,1	10,8	24,4	38,1	50,8	21. 23. 4,9		21. 22. 24,21	B.		
	Uranus.....	35,1	48,8	2,5	16,1	30,4	44,1	21. 56. 57,7		21. 56. 16,39	B.		
	α Pegasi.....	23,4	37,8	51,2	5,5	19,3	33,2	22. 56. 47,1		22. 56. 5,36	B.		
	α Andromedæ....	39,4	54,9	10,1	25,4	40,9	56,1	0. 0. 11,3		23. 59. 25,44	B.		
	Polaris.....	36.23,2	44.35,6	52.54,4	1. 7,2	.....	.....	1. ....	+ 12. 22,37	1. 1. 7,47	B.		
Nov. 21	α Aquilæ.....	31,0	44,5	58,6	12,0	25,7	39,1	19. 42. 52,7		19. 42. 11,94	B.		
	β Aquarii.....	39,7	53,4	7,2	20,6	34,1	47,5	21. 23. 1,2		21. 22. 20,52	B.		
	(c) Uranus.....	36,4	50,5	4,2	18,3	32,1	46,0	21. 56. 59,5		21. 56. 18,14	B.		
	α Pegasi.....	19,7	34,1	48,0	1,8	15,7	29,5	22. 56. 43,2		22. 56. 1,71	B.		
Nov. 23	α Pegasi.....	16,1	29,6	44,1	57,7	11,6	25,3	22. 56. 39,3		22. 55. 57,67	B.		
	α Andromedæ....	31,7	47,1	2,3	17,8	33,0	48,2	0. 0. 3,4		23. 59. 17,65	B.		
	Polaris.....	36. 8,2	44.27,4	52.45,4	0.59,8	9.16,2	17.26,4	1. 25. 36,8		1. 0. 57,17	B.		
	α Arietis.....	35,3	50,1	4,5	19,3	33,8	48,2	1. 58. 3,0		1. 57. 19,18	B.		
Nov. 24	Polaris S.P. ....	.....	44. 1,4	52. 9,2	0.27,6	8.41,2	16.58,8	13. 25. 14,4	- 4. 6,88	13. 0. 28,55	B.		
	Arcturus.....	45,5	59,9	14,4	28,6	43,1	57,2	14. 8. 11,7		14. 7. 28,63	B.		
Nov. 25	(d) ☉ 1 L. ....	18,8	33,1	47,8	2,3	16,9	30,8	16. 0. 45,3		16. 0. 2,14	B.		
	☉ 2 L. ....	38,0	52,3	6,9	21,4	36,0	50,2	16. 3. 4,7		16. 2. 21,35	B.		
	η Capricorni....	.....	.....	6,6	21,1	35,8	49,9	20. 55. 4,3	- 14,39	20. 54. 21,15	B.		
	δ 1 L. ....	58,7	13,7	28,6	43,7	59,1	13,3	21. 14. 28,3		21. 13. 43,63	B.		
	β Aquarii.....	32,1	46,0	59,3	13,2	27,0	40,1	21. 22. 53,4		21. 22. 13,01	B.		
	(e) Uranus.....	41,1	55,0	9,0	23,1	37,0	50,7	21. 57. 4,4		21. 56. 22,90	B.		
	α Pegasi.....	12,1	26,1	40,1	54,0	8,2	21,4	22. 56. 35,5		22. 55. 53,91	B.		
	α Andromedæ....	28,1	43,2	58,7	14,1	29,3	44,4	23. 59. 59,7		23. 59. 13,93	B.		
(f) Polaris.....	36. 4,2	44.22,6	52.38,4	0.53,8	9.12,4	17.21,2	1. 25. 35,4		1. 0. 52,57	B.			

To Nov. 16, ILLUMINATED END OF AXIS WEST. Order of Wires, for Stars above the Pole, *GFEDCBA*.  
 From Nov. 17, ILLUMINATED END OF AXIS EAST. Order of Wires, for Stars above the Pole, *ABCDEFGF*.

(a) Very cloudy: the last wire a mere guess.  
 (b) Very cloudy and faint: some wires uncertain.  
 (c) The 11 wire was set down 51,3, which is undoubtedly wrong. Much confusion from the loudness of the wind, in this and the following transit.  
 (d) Cloudy: most of the wires observed without dark-glass.  
 (e) 2d and 3d wires cloudy: doubtful observation. It appears that the right ascension is 1' too little: 1' is added in subsequent calculations.  
 (f) Blazing.



CALCULATION OF APPARENT RIGHT ASCENSIONS.

(75)

Error of Collimation.	Level Error.	Seconds of Transit corr. for the two Errors.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock slow at 0 <sup>h</sup> .	Apparent R.A. from the Observation.			NAME OF STAR or PLANET.								
									h.	m.	s.									
-1,1	-1,08	6,90	+8,38	28,54	17,20	16,26	1,30	15,32	15.	3.	44,67	☉'s center.								
				39,92					45,05	17,55	1,40	16,46	15.	42.	56,09	Venus 1 L.				
				0,94									α Ophiuchi.							
				22,75									☉ 1 L.							
				27,50					55,19	17,70			α Aquilæ.							
	37,49		α <sup>2</sup> Capricorni.																	
				47,57				☉'s center.												
	-0,6		-0,05	42,99	+8,00	41,84	8,76	26,92	1,68	25,99	14.	8.	8,82	Arcturus.						
						41,80					14.	24.	8,80	Mercury 2 L.						
						9,81					34,95	27,69	1,75	27,65	15.	33.	36,89	☉ 2 L.		
16,16		21.				56.									43,69	Uranus.				
7,26		22.				56.									34,86	α Pegasi.				
27,27		23.				59.									54,94	α Andromedæ.				
55,54		23.				59.									54,94	Polaris.				
28,57		1.				1.									23,28	α Arietis.				
55,15		1.				1.									23,75	Polaris S.P.				
40,09		8,78				28,69									14.	8.	8,77	Arcturus.		
59,82		34,94	29,28	1,92	35,02	15.	35.	28,61	☉ 1 L.											
15,85						44,97	29,12	19.	42.	44,93					α Aquilæ.					
25,92						55,11	29,19	20.	8.	55,04	α <sup>2</sup> Capricorni.									
24,63						53,91	29,28	21.	22.	53,83	β Aquarii.									
16,85						54,86	29,22	1,90	38,82	21.	56.	46,10	Uranus.							
5,66										22.	56.	34,98	α Pegasi.							
25,64										23.	59.	55,04	α Andromedæ.							
54,57										22,88	28,31	1.	1.	24,04	Polaris.					
12,28										34,91	32,90	1,88	31,17	19.	42.	44,99	α Aquilæ.			
20,94														53,88	32,94	21.	22.	53,78	β Aquarii.	
18,60	34,91	32,90	1,92	35,02	21.									56.	51,49	Uranus.				
2,01					22.									56.	34,98	α Pegasi.				
57,95					34,89									36,94	1,92	35,02	22.	56.	34,81	α Pegasi.
17,83					54,81									36,98	36,94	23.	59.	54,77	α Andromedæ.	
44,92					21,27	36,35	Polaris.													
19,41					56,37	36,96	1.	57.	56,51					α Arietis.						
41,54					20,42	38,88	1,90	38,82	1.					1.	21,39	Polaris S.P.				
28,88									8,90					40,02	14.	8.	8,82	Arcturus.		
12,21									20,16	39,84	40,72	40,72	16.	1.	52,30	☉'s center.				
21,63													20.	55.	2,11	η Capricorni.				
44,12	21.	14.	24,62	☉ 1 L.																
13,41	53,83	40,42	21.	22.									53,92	β Aquarii.						
23,33	34,86	40,67	40,68	40,68									21.	57.	3,89	Uranus.				
54,19													22.	56.	34,83	α Pegasi.				
14,11													54,79	40,68	23.	59.	54,83	α Andromedæ.		
40,32													20,16	39,84	1.	1.	21,12	Polaris.		

The Transit levelled, Nov. 11. 2<sup>h</sup>, Nov. 18. 1<sup>h</sup>, and Nov. 24. 1<sup>h</sup>.

On Nov. 17, the Transit was reversed, and the Error of Collimation ascertained.

Nov. 18 and 19, Meridian error by Polaris, Polaris S.P., and Polaris.

Nov. 24 and 25, Meridian error by Polaris S.P. and Polaris, allowing 1<sup>s</sup>.20 for clock rate and change of right ascension.



Month and Day.	NAME OF STAR or PLANET.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Concluded Transit over the Mean of the seven Wires.			Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	m. s.		h. m. s.	m. s.	h. m. s.	
Nov. 26	$\alpha$ Aquilæ.....	21,3	34,9	48,7	2,4	16,1	29,4	19.42.43,1		19.42.2,27	B.		
	(a) Polaris S.P.....	43.55,6	52.2,4	0.22,2	8.37,6	13.....	+4.8,85	13.0.23,30	B.				
Nov. 27	(a) $\eta$ Capricorni.....			2,6	17,2	31,8	45,9	20.55.0,2	-14,39	20.54.17,15	B.		
	$\beta$ Aquarii.....	28,3	41,8	55,9	9,2	22,7	36,1	21.22.49,7		21.22.9,10	B.		
	$\delta$ Capricorni.....	30,7	44,4	58,4	13,0	27,1	40,8	21.37.54,9		21.37.12,76	B.		
	Uranus.....	46,1	0,2	14,1	28,0	42,0	55,7	21.57.9,2		21.56.27,90	B.		
	$\tau^2$ Aquarii.....	26,3	40,4	54,3	8,3	22,3	36,1	22.40.50,0		22.40.8,25	B.		
	(b) $\delta$ Aquarii.....	28,7	42,2	56,3	14,0	25,7	40,1	22.45.53,8		22.45.11,11	B.		
	(c) $\alpha$ Pegasi.....	8,3	22,1	36,1	50,1	4,2	18,0	22.56.31,9		22.55.50,10	B.		
	) 1 L.....	8,0	22,0	36,3	50,3	4,6	18,7	23.1.32,8		23.0.50,38	B.		
	$n$ Piscium.....	4,7	18,1	31,9	45,0	58,9	12,0	23.39.25,6		23.38.45,17	B.		
	$\alpha$ Andromedæ....	24,1	39,6	55,0	10,1	25,5	40,8	23.59.56,1		23.59.10,17	B.		
	(d) Polaris.....	36.0,8	52.35,6	0.47,2	9.14,4	1.25.31,6	-0,13	1.0.49,79	B.				
	(a) Polaris S.P.....	35.37,2	43.51,8	52.1,6	0.21,2	8.30,8	13.....	+8.15,39	13.0.19,91	B.			
Nov. 28	⊙ 1 L.....	0,3	14,7	29,0	43,6	58,3	12,7	16.13.27,1		16.12.43,67	B.		
	⊙ 2 L.....	20,1	34,6	49,1	3,9	18,4	32,6	16.15.47,0		16.15.3,67	B.		
	Uranus.....	48,8	2,9	16,4	30,1	44,0	58,0	21.57.11,6		21.56.30,25	B.		
	$\tau^2$ Aquarii.....	24,3	38,5	52,4	6,5	20,7	34,4	22.40.48,1		22.40.6,42	B.		
	$\delta$ Aquarii.....	26,4	40,7	54,7	8,7	22,9	36,6	22.45.50,8		22.45.8,69	B.		
	$\alpha$ Pegasi.....	6,4	20,7	34,2	48,3	2,3	16,1	22.56.30,0		22.55.48,29	B.		
	$n$ Piscium.....			30,1	43,3	57,0	10,2	23.39.23,5	-13,52	23.38.43,30	B.		
	) 1 L.....	59,8	13,6	27,4	41,4	55,3	9,1	23.49.23,0		23.48.41,37	B.		
	$s$ Piscium.....	28,3	42,1	55,7	9,1	22,7	36,2	23.56.50,0		23.56.9,16	B.		
	$\alpha$ Andromedæ....	22,2	37,7	53,0	8,9	24,0	38,7	23.59.54,1		23.59.8,37	B.		
	Polaris.....	35.59,4	44.16,4	52.34,2	0.45,8	9.7,2	17.15,8	1.25.29,2		1.0.46,86	B.		
Nov. 30	$\beta$ Aquarii.....	23,0	36,4	50,1	3,8	17,3	30,8	21.22.44,2		21.22.3,66	B.		
	$\alpha$ Pegasi.....	3,0	16,6	30,8	44,9	58,7	12,3	22.56.26,2		22.55.44,64	B.		
	Polaris.....	35.53,6	44.10,8	52.25,6	0.42,4	9.2,2	17.9,4	1.25.21,8		1.0.40,83	B.		
	) 1 L.....	31,4	45,3	59,2	13,0	26,9	40,3	1.19.54,1		1.19.12,88	B.		
Polaris S.P.....	35.30,4	43.46,2	51.55,4	0.15,6	8.27,8	16.40,6	13.25.1,2		13.0.13,89	B.			
Dec. 1	⊙ 1 L.....	48,2	2,9	17,4	31,8	46,3	0,8	16.26.15,4		16.25.31,83	B.		
	⊙ 2 L.....	8,9	23,1	38,0	52,2	7,1	21,3	16.28.36,0		16.27.52,37	B.		
	$\alpha$ Aquilæ.....	12,1	25,6	39,4	52,9	7,1	20,4	19.42.33,8		19.41.53,04	B.		
	$\alpha^2$ Capricorni.....	21,4	35,2	49,2	3,1	17,0	30,7	20.8.44,2		20.8.2,97	B.		
	Uranus.....	57,1	10,9	25,0	38,8	52,7	6,1	21.57.20,0		21.56.38,66	B.		
	Polaris.....	35.51,8	44.9,4	52.38,8	9.0,6	17.7,8	1.25.21,4	-1.22,34	1.0.39,29	B.			
	$\sigma$ Piscium.....	11,4	24,9	38,5	52,1	6,0	19,3	1.36.33,0		1.35.52,17	B.		
	$\xi$ Piscium.....	31,4	44,9	58,4	12,1	25,7	39,0	1.44.52,3		1.44.11,97	B.		
	$\alpha$ Arietis.....	20,5	35,2	49,8	4,3	19,0	33,6	1.57.48,1		1.57.4,36	B.		
	) 1 L.....	30,0	44,0	57,9	11,9	25,8	39,8	2.4.53,6		2.4.11,85	B.		
	$\alpha$ Ceti.....	10,1	23,7	37,2	50,8	4,3	17,7	2.53.31,1		2.52.50,70	B.		
	Polaris S.P.....	43.41,6	51.51,8	0.13,4	8.25,2	16.41,6	13.24.57,8	-4.6,96	13.0.11,61	B.			
	Arcturus.....	32,8	47,2	1,6	15,9	30,4	44,4	14.7.58,9		14.7.15,89	B.		
Mercury 2 L.....	27,3	41,1	55,3	9,7	23,8	37,5	15.17.51,6		15.17.9,48	B.			
Dec. 2	⊙ 2 L.....	26,0	40,7	55,1	10,0	24,9	39,1	16.32.53,3		16.32.9,87	B.		
	$\alpha$ Herculis.....	33,1	47,0	0,8	14,6	28,8	42,7	17.6.56,2		17.6.14,74	B.		
	$\alpha$ Ophiuchi.....			10,0	23,7	37,8	51,4	17.27.5,1	-13,83	17.26.23,77	B.		
	Venus 1 L.....	26,4	41,5	56,3	11,2	26,0	40,7	17.34.55,6		17.34.11,10	B.		
	(e) $\alpha$ Aquilæ.....	10,4	24,0	37,6	51,1	5,0	18,5	19.42.32,1		19.41.51,24	B.		
	(f) $\alpha^1$ Capricorni.....	55,9	9,8	24,0	37,2	51,1	5,1	20.7.18,7		20.6.37,40	B.		

ILLUMINATED END OF AXIS EAST. Order of Wires, for Stars above the Pole, ABCDEFG.

- (a) Cloudy.
- (b) The observer believed that this was 1<sup>a</sup> too great. The intervals of wires are too large; it seems likely that 1<sup>a</sup> has been lost in the middle of the transit, perhaps after the 3d or 4th wire.
- (c) The 2d wire was set down 21,1, which is undoubtedly wrong.
- (d) Rain.
- (e) The last wire was set down 33,1, which is undoubtedly wrong.
- (f)  $\alpha^2$  Capricorni was not visible.

Error of Collimation.	Level Error.	Seconds of Transit corr. for the two Errors.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock slow at 0 <sup>h</sup> .	Apparent R.A. from the Observation.			NAME OF STAR or PLANET.
									h.	m.	s.	
-0,6	-0,08	24,89	+8,5	2,63	44,90	42,27	1,84	42,60	.....			<i>a</i> Aquilæ.
				37,81	19,22	41,41			1. 1. 21,41	Polaris S.P.		
				17,70					20. 55. 1,90	$\eta$ Capricorni.		
				9,55	53,81	44,26			21. 22. 53,79	$\beta$ Aquarii.		
				13,28					21. 37. 57,54	$\delta$ Capricorni.		
				23,39					21. 57. 12,67	Uranus.		
		8,75			22. 40. 53,09	$\tau^2$ Aquarii.						
		11,63			22. 45. 55,98	$\delta$ Aquarii.						
		50,43	34,84	44,41	22. 56. 34,79	<i>a</i> Pegasi.						
		50,87			23. 1. 35,23	) 1 L.						
		45,61			23. 39. 30,02	<i>n</i> Piscium.						
		10,38	54,77	44,39	23. 59. 54,82	<i>a</i> Andromedæ.						
	36,12	18,92	42,80	44,44	1. 1. 20,64	Polaris.						
	34,57	18,60	44,03	1,82	44,41	1. 1. 19,97	Polaris S.P.					
									16. 14. 39,86	☉'s center.		
									21. 57. 16,81	Uranus.		
									22. 40. 53,05	$\tau^2$ Aquarii.		
									22. 45. 55,36	$\delta$ Aquarii.		
					34,83	46,21			.....	<i>a</i> Pegasi.		
					43,74				23. 39. 29,94	<i>n</i> Piscium.		
					41,83				23. 49. 28,05	) 1 L.		
					9,62				23. 56. 55,85	<i>s</i> Piscium.		
					8,59	54,76	46,17		.....	<i>a</i> Andromedæ.		
			45,26		33,05	18,28	45,23		46,23	1. 1. 19,36	Polaris.	
	-0,29	38,83	+7,6	4,05	53,78	49,73	1,84	48,11	.....			$\beta$ Aquarii.
44,91				34,80	49,89	.....			<i>a</i> Pegasi.			
28,04				17,19	49,15	1. 1. 18,07			Polaris.			
13,21						1. 20. 3,26			) 1 L.			
27,42				16,92	49,50	1,81			49,96	1. 1. 18,36	Polaris S.P.	
					42,58				19. 42. 44,79	<i>a</i> Aquilæ.		
					53,35	44,87	51,52		20. 8. 54,86	$a^2$ Capricorni.		
					3,38	55,01	51,63		21. 57. 30,70	Uranus.		
			37,29		39,08				1. 1. 18,35	Polaris.		
					26,50	16,69	50,19		51,77	1. 36. 44,37	<i>o</i> Piscium.	
					52,48				1. 45. 4,21	$\xi$ Piscium.		
				12,31				1. 57. 56,49	<i>a</i> Arietis.			
				4,57	56,36	51,79		2. 5. 4,08	) 1 L.			
				12,15				2. 53. 43,02	<i>a</i> Ceti.			
		13,59		51,03	42,94	51,91	1,85	51,73	1. 1. 17,87	Polaris S.P.		
				25,14	16,44	51,30			14. 8. 8,94	Arcturus.		
				16,12	9,06	52,94			15. 18. 2,84	Mercury 2 L.		
				9,93								
				10,35						16. 33. 3,36	☉ 2 L.	
				15,00	8,04	53,04				17. 7. 8,05	<i>a</i> Herculis.	
				24,05	17,19	53,14		17. 27. 17,12	<i>a</i> Ophiuchi.			
				11,60				17. 35. 4,68	Venus 1 L.			
				51,55	44,86	53,31		19. 42. 44,80	<i>a</i> Aquilæ.			
				37,81				20. 7. 31,09	$a^1$ Capricorni.			

Nov. 26, 27, and 28, Meridian errors by the two sets of three consecutive passages of Polaris.

Nov. 30 and Dec. 1 and 2. The meridian error is the mean of the three determined from the three different sets, each of three consecutive passages of Polaris.



Month and Day.	NAME OF STAR or PLANET.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Concluded Transit over the Mean of the seven Wires.			Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	h. m. s.		m. s.	h. m. s.		
Dec. 2	$\beta$ Aquarii.....	19,1	32,9	46,2	0,1	13,8	27,1	21. 22. 40,4		21. 21. 59,94	B.		
	Uranus.....	0,1	13,8	27,7	41,9	55,6	9,4	21. 57. 23,1		21. 56. 41,65	B.		
	$s$ Piscium.....	21,1	34,8	47,7	2,1	16,0	29,0	23. 56. 42,4		23. 56. 1,87	B.		
	$\alpha$ Andromedæ....	15,2	30,4	45,8	1,1	16,4	31,4	23. 59. 46,7		23. 59. 1,00	B.		
	Polaris.....	35.49,2	44. 5,8	52.21,4	0.36,6	8.57,8	17. 7,0	1. 25. 18,4		1. 0. 36,60	B.		
	$o$ Piscium.....	9,4	23,1	36,5	50,3	4,1	17,5	1. 36. 31,0		1. 35. 50,27	B.		
	$\xi$ Piscium.....	29,6	43,0	56,4	10,1	23,5	37,1	1. 44. 50,6		1. 44. 10,04	B.		
	$\alpha$ Arietis.....	18,6	33,3	47,9	2,5	17,1	31,6	1. 57. 46,1		1. 57. 2,44	B.		
	$\mu$ Ceti.....	30,1	43,9	57,9	11,3	25,1	38,3	2. 35. 52,1		2. 35. 11,24	B.		
	$\pi$ Arietis.....	32,9	46,7	1,1	15,1	29,2	42,9	2. 39. 57,0		2. 39. 14,99	B.		
	$\gamma$ 1 L.....	35,3	49,9	4,2	18,3	32,5	46,8	2. 51. 0,8		2. 50. 18,26	B.		
	$f$ Tauri.....	14,4	27,9	42,1	55,7	9,6	23,2	3. 21. 37,1		3. 20. 55,71	B.		
	Aldebaran.....	55,8	9,3	23,4	37,2	51,3	5,3	4. 26. 19,0		4. 25. 37,33	B.		
	139 Tauri.....	10,1	25,1	40,2	55,1	10,3	25,0	5. 47. 39,9		5. 46. 55,10	B.		
2 Geminorum....	10,4	25,1	40,0	54,6	9,5	24,0	5. 56. 37,8		5. 55. 54,49	B.			
Arcturus.....	31,1	45,3	59,8	14,1	28,8	42,9	14. 7. 57,1		14. 7. 14,16	B.			
Dec. 3	$\odot$ 1 L.....	23,8	37,9	52,7	7,2	21,9	36,2	16. 34. 50,9		16. 34. 7,23	B.		
	$\odot$ 2 L.....	44,1	59,0	13,5	28,0	42,3	57,1	16. 37. 11,8		16. 36. 27,97	B.		
	$\beta$ Aquarii.....	17,0	30,8	44,4	58,0	11,8	25,0	21. 22. 38,5		21. 21. 57,93	B.		
	Uranus.....	3,3	17,3	31,0	44,8	58,8	12,5	21. 57. 26,2		21. 56. 44,84	B.		
	$\alpha$ Pegasi.....	57,2	11,2	25,1	39,0	53,1	6,8	22. 56. 20,6		22. 55. 39,00	B.		
	$\alpha$ Ceti.....	6,5	20,1	33,6	47,2	0,6	14,1	2. 53. 27,4		2. 52. 47,07	B.		
	$f$ Tauri.....	12,3	26,3	40,1	54,0	8,1	21,9	3. 21. 35,2		3. 20. 53,99	B.		
	$\gamma$ 1 L.....	32,9	47,4	1,9	16,5	31,3	45,9	3. 39. 0,2		3. 38. 16,59	B.		
Dec. 4	$\odot$ 1 L.....	41,5	56,1	11,0	25,5	40,3	54,8	16. 39. 9,2		16. 38. 25,49	B.		
	$\odot$ 2 L.....	3,0	17,2	32,0	46,8	1,2	15,9	16. 41. 30,2		16. 40. 46,62	B.		
	$\alpha$ Herculis.....	29,1	43,0	57,0	10,7	25,0	38,9	17. 6. 52,9		17. 6. 10,94	B.		
	$\beta$ Aquarii.....	15,4	28,9	42,4	56,0	9,9	23,1	21. 22. 36,9		21. 21. 56,09	B.		
	Uranus.....	6,8	20,9	34,4	48,3	2,0	15,8	21. 57. 29,9		21. 56. 48,30	B.		
	$\alpha$ Pegasi.....	55,3	9,3	23,1	37,0	50,8	4,9	22. 56. 18,8		22. 55. 37,03	B.		
	(a) $\alpha$ Andromedæ....	11,2	26,7	42,0	57,0	12,7	28,0	23. 59. 3,3		23. 58. 57,27	B.		
	Polaris.....	35.44,0	44. 0,6	52.17,8	0.28,0	8.52,6	17. 2,2	1. ....	+ 4. 7,00	1. 0. 31,20	B.		
	$\omega^2$ Tauri.....	59,0	12,9	27,6	42,0	56,2	10,3	4. 7. 24,8		4. 6. 41,83	B.		
	$\delta^1$ Tauri.....	48,9	2,9	17,3	31,2	45,8	59,5	4. 13. 13,4		4. 12. 31,28	B.		
	$\gamma$ 1 L.....	49,0	4,0	18,9	34,0	49,0	3,8	4. 29. 18,7		4. 28. 33,91	B.		
	$\gamma$ 2 L.....	1,1	16,0	31,2	46,3	1,0	16,3	4. 31. 31,0		4. 30. 46,13	B.		
	$\epsilon$ Tauri.....	37,2	51,3	5,8	20,1	34,8	49,0	4. 53. 3,4		4. 52. 20,22	B.		
$\alpha$ Orionis.....	39,2	52,4	6,2	20,0	33,8	47,1	5. 46. 0,4		5. 45. 19,87	B.			
Dec. 5	Aldebaran.....	49,8	3,9	17,8	31,5	45,7	59,8	4. 26. 13,6		4. 25. 31,72	B.		
	Rigel.....	0,3	13,0	26,3	40,2	54,0	7,3	5. 6. 20,9		5. 5. 40,28	B.		
	$\gamma$ 2 L.....	40,3	56,0	11,0	26,3	41,9	57,0	5. 24. 12,0		5. 23. 26,36	B.		
Dec. 10	Spica.....	43,4	57,0	10,8	24,3	38,2	51,5	13. 17. 5,2		13. 16. 24,34	G.		
Dec. 11	Aldebaran.....	41,0	55,0	9,1	23,0	37,2	50,9	4. 27. 4,9		4. 26. 23,01	G.		
	Rigel.....	51,0	4,3	18,0	31,4	45,4	59,0	5. 7. 12,4		5. 6. 31,64	G.		
	$\beta$ Tauri.....	1,9	17,3	33,0	48,0	3,4	18,8	5. 16. 34,0		5. 15. 48,06	G.		
	(b) 139 Tauri.....	56,3	11,2	26,3	41,2	56,3	11,2	5. 48. 26,1		5. 47. 41,23	G.		
	(c) 2 Geminorum....	56,7	11,3	26,0	41,0	55,9	10,4	5. 57. 25,0		5. 56. 40,90	G.		
	(d) * N.P.D. 59°. 58'	39,2	55,0	10,9	...	42,0	57,0	6. 12. 12,8		6. 11. 26,15	G.		
	z Aurigæ.....	...	22,5	38,0	54,0	9,3	24,9	6. 18. 40,5	- 7,83	6. 17. 53,70	G.		
* N.P.D. 57°. 7'	...	...	...	7,9	24,1	39,9	6. 20. 56,0	- 24,07	6. 20. 7,90	G.			

ILLUMINATED END OF AXIS EAST. Order of Wires, for Stars above the Pole, ABCDEFG.

(a) The last wire was set down 4,3, which appears certainly wrong.  
(b) Misty.

(c) The 6th wire was set down 11,4.  
(d) Misty: this star very faint.



CALCULATION OF APPARENT RIGHT ASCENSIONS.

Error of Collimation.	Level Error.	Seconds of Transit corr. for the two Errors.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock slow at 0 <sup>h</sup> .	Apparent R.A. from the Observation.			NAME OF STAR or PLANET.		
									h.	m.	s.			
-0,6	-0,29	34,60	+7,6	0,33	53,76	53,43	1,85	51,73	21 . 22 . 53,71			$\beta$ Aquarii.		
						42,07					21 . 57 . 35,49			Uranus.
						2,26					23 . 56 . 55,84			$\delta$ Piscium.
						1,17	54,71	53,54			23 . 59 . 54,75			$\alpha$ Andromedæ.
						23,81	16,18	53,37		53,58	1 . 1 . 17,47			Polaris.
						50,58					1 . 36 . 44,28			$\sigma$ Piscium.
						10,38					1 . 45 . 4,09			$\xi$ Piscium.
						2,65	56,36	53,71			1 . 57 . 56,38			$\alpha$ Arietis.
						11,55					2 . 36 . 5,33			$\mu$ Ceti.
						15,24					2 . 40 . 9,02			$\pi$ Arietis.
						18,52					2 . 51 . 12,32			) 1 L.
						55,98					3 . 21 . 49,82			$f$ Tauri.
						37,58	31,24	53,66			4 . 26 . 31,50			Aldebaran.
						55,28					5 . 47 . 49,30			139 Tauri.
						54,70					5 . 56 . 48,74			2 Geminorum.
						14,39	9,08	54,69	1,90	53,60	14 . 8 . 9,11			Arcturus.
						18,08					16 . 36 . 12,99			$\odot$ 's center.
						58,32	53,75	55,43			21 . 22 . 53,61			$\beta$ Aquarii.
						45,26					21 . 57 . 40,60			Uranus.
						39,27	34,77	55,50			22 . 56 . 34,69			$\alpha$ Pegasi.
						47,40	42,94	55,54		55,50	2 . 53 . 43,13			$\alpha$ Ceti.
						54,26					3 . 21 . 50,02			$f$ Tauri.
						16,83					3 . 39 . 12,62			) 1 L.
						36,53			1,78	55,61	16 . 40 . 33,37			$\odot$ 's center.
						11,20	8,05	56,85			17 . 7 . 8,08			$\alpha$ Herculis.
						56,48	53,74	57,26			21 . 22 . 53,67			$\beta$ Aquarii.
						48,72					21 . 57 . 45,96			Uranus.
						37,30	34,76	57,46			22 . 56 . 34,61			$\alpha$ Pegasi.
						57,44	54,69	57,25			23 . 59 . 54,83			$\alpha$ Andromedæ.
						18,41	15,18	56,77		57,39	.....			Polaris.
						42,06					4 . 7 . 39,75			$\omega^2$ Tauri.
						31,53					4 . 13 . 29,23			$\delta^1$ Tauri.
						34,13					4 . 29 . 31,85			) 1 L.
						46,35					4 . 31 . 44,07			) 2 L.
				20,44					4 . 53 . 18,19			$\epsilon$ Tauri.		
				20,19	17,96	57,77			5 . 46 . 18,01			$\alpha$ Orionis.		
				31,97	31,27	59,30	1,60	58,98	.....			Aldebaran.		
				40,68	39,98	59,30			.....			Rigel.		
				26,56					5 . 24 . 25,90			) 2 L.		
				24,75	32,06	7,31	1,45	6,30	13 . 16 . 31,85			Spica.		
				23,26	31,32	8,06		7,75	4 . 26 . 31,28			Aldebaran.		
				32,04	40,05	8,01			5 . 6 . 40,10			Rigel.		
				48,23	56,10	7,87			5 . 15 . 56,30			$\beta$ Tauri.		
				41,41					5 . 47 . 49,51			139 Tauri.		
				41,11					5 . 56 . 49,22			2 Geminorum.		
				26,30					6 . 11 . 34,42			* N.P.D. 59°. 58'.		
				53,84					6 . 18 . 1,97			$z$ Aurigæ.		
				8,03					6 . 20 . 16,16			* N.P.D. 57°. 7'.		

The Transit levelled, Dec. 2. 1<sup>h</sup>.  
 On Dec. 10 the clock was put forward one minute.

## TRANSITS OBSERVED IN THE YEAR 1835.

THE following Results are deduced immediately from the Observed Transits:

I. SIDEREAL TIME occupied by the Passage of the SUN'S DIAMETER  
across the Meridian.

1835.	m.	s.	1835.	m.	s.	1835.	m.	s.	1835.	m.	s.
Jan. 3	2	22,01	April 8	2	9,36	June 30	2	17,84	Sept. 1	2	8,97
5	2	21,89	13	2	9,39				2	2	9,11
6	2	21,66	14	2	9,59	July 1	2	17,89	3	2	8,95
10	2	21,07	22	2	10,84	7	2	17,18	7	2	8,49
13	2	20,60	27	2	11,54	10	2	16,70	14	2	8,33
15	2	20,42				11	2	16,73	16	2	8,07
20	2	19,30	May 5	2	12,66	17	2	16,45	17	2	8,22
21	2	19,18	8	2	13,13	18	2	16,12	18	2	8,17
22	2	18,94	9	2	13,11	20	2	15,41	28	2	8,69
26	2	18,07	11	2	13,49	21	2	15,40			
			12	2	13,96	28	2	14,09	Oct. 8	2	9,56
Febr. 4	2	16,15	13	2	14,03	29	2	14,00	12	2	10,06
5	2	15,71	16	2	14,45	30	2	13,64	14	2	10,50
6	2	15,54	18	2	14,92	31	2	13,51	15	2	10,50
9	2	14,80	19	2	15,28				17	2	10,79
10	2	14,60	21	2	15,28	Aug. 1	2	13,35	19	2	11,32
13	2	13,99	22	2	15,62	3	2	12,64	21	2	11,30
20	2	12,52	25	2	15,85	4	2	12,74	23	2	11,90
21	2	12,43	27	2	15,89	8	2	12,02	24	2	12,20
24	2	11,84	29	2	16,75	10	2	11,49	26	2	12,61
			30	2	16,72	11	2	11,24	28	2	13,01
March 3	2	10,78				12	2	11,18			
5	2	10,33	June 6	2	17,43	13	2	11,17	Nov. 2	2	14,04
6	2	10,33	8	2	17,58	15	2	11,25	11	2	16,00
10	2	9,88	9	2	17,69	18	2	10,86	16	2	17,17
13	2	9,43	10	2	17,89	19	2	10,91	25	2	19,21
16	2	9,30	11	2	17,76	20	2	10,65	28	2	20,00
			12	2	17,99	21	2	10,41			
April 1	2	9,14	15	2	18,15	25	2	10,06	Dec. 1	2	20,54
2	2	8,94	19	2	18,00	29	2	9,44	3	2	20,74
6	2	8,77	27	2	17,93	31	2	9,05	4	2	21,13
7	2	9,07	29	2	18,04						

II. SIDEREAL TIME occupied by the Passage of the MOON'S DIAMETER  
across the Meridian.

1835.	m.	s.
June 10	2	32,53
September 6	2	10,66
December 4	2	12,29

The time for December 4 is corrected for the defect in illumination, agreeably to the method described in the Introduction.

III. SIDEREAL TIME occupied by the Passage of JUPITER'S DIAMETER across the Meridian.

1835.	s.	1835.	s.	1835.	s.
Jan. 1	2,53	Febr. 4	2,92	Aug. 7	2,08
3	3,38	7	3,31	9	2,00
5	3,46	8	3,43	11	2,04
6	3,35	9	3,01	13	2,06
12	3,30	10	2,98	17	2,95
16	3,22	12	2,60	20	2,92
17	3,12	21	2,95	28	2,80
20	3,33	23	2,83	30	2,84
22	3,11			31	2,72
23	2,95	March 6	2,73		
24	3,13	19	2,82		
26	3,40			Sept. 2	2,85
27	3,30	April 8	2,39	8	3,07
30	3,38	11	2,45	16	2,88
Febr. 2	3,33	14	2,27	17	2,82
		22	1,98		

IV. SIDEREAL TIME occupied by the Passage of SATURN'S RING across the Meridian.

1835.	s.	1835.	s.	1835.	s.
March 15	3,03	April 28	3,13	May 29	3,22
19	3,10			30	3,13
April 6	2,92	May 9	3,20	June 1	2,96
8	3,10	16	3,28	4	2,85
9	3,20	18	3,13	6	2,73
11	2,95	21	3,23	8	3,13
14	2,92	25	3,36	10	3,11
20	2,88	26	3,15	22	2,65
27	3,16	27	2,79	23	2,50
		28	3,32		





APPARENT RIGHT ASCENSIONS  
OF  
POLARIS AND  $\delta$  URSÆ MINORIS,  
AND  
MEAN RIGHT ASCENSIONS OF THE STARS  
OBSERVED IN THE YEAR 1835,  
AS DEDUCED FROM EACH DAY'S OBSERVATION;  
WITH  
A CATALOGUE  
OF THE  
CONCLUDED MEAN RIGHT ASCENSIONS,  
JANUARY 1, 1835.

## POLARIS.

Day of Observation.	Apparent R.A.	Mean R.A. Jan. 1, 1835.	Day of Observation.	Apparent R.A.	Mean R.A. Jan. 1, 1835.
1835.	<i>h. m. s.</i>	<i>h. m. s.</i>	1835.	<i>h. m. s.</i>	<i>h. m. s.</i>
March 19	0 . 59 . 57,46	1 . 0 . 50,68	July 17	1 . 0 . 50,99	1 . 0 . 49,17
19	57,38	50,65	17	51,29	49,04
April 6	54,34	49,27	Aug. 1	59,61	46,77
6	54,17	49,14	1	59,53	46,30
7	54,61	49,62	2	59,87	46,25
8	54,66	49,68	28	1 . 1 . 19,31	50,08
13	53,84	48,38	28	19,13	49,60
14	53,99	48,40	29	18,94	49,14
21	53,87	46,77	Sept. 25	27,02	47,48
21	53,89	46,75	25	27,08	47,38
24	55,12	47,29	28	29,72	49,29
25	55,31	47,33	28	29,74	49,20
26	58,14	49,61	Oct. 18	28,99	47,66
27	58,38	49,66	19	28,60	47,32
May 8	1 . 0 . 1,95	48,68	20	28,25	47,11
9	1,81	48,31	21	28,22	47,10
15	8,03	51,04	26	30,47	49,68
15	6,67	49,42	27	30,03	49,34
16	5,96	48,45	27	29,71	49,16
16	5,55	47,79	Nov. 18	23,28	49,59
17	8,94	50,68	18	23,75	50,25
18	8,27	49,80	19	24,01	50,71
18	7,67	48,96	24	21,39	50,52
21	9,22	49,23	25	21,12	50,54
21	9,27	49,00	26	21,41	51,77
June 8	24,84	52,72	27	20,64	51,30
8	25,17	52,63	27	19,97	50,95
21	30,76	48,54	28	19,36	50,63
22	33,06	50,41	30	18,07	50,43
22	33,70	50,62	30	18,36	50,99
23	32,45	48,93	Dec. 1	18,35	51,21
30	39,12	50,31	1	17,87	50,98
30	39,53	50,39	2	17,47	50,84
July 1	40,04	50,54			



## δ URSÆ MINORIS.

Day of Observation.	Apparent R.A.	Mean R.A. Jan. 1, 1834.	Day of Observation.	Apparent R.A.	Mean R.A. Jan. 1, 1834.
1835.	<i>h.</i> <i>m.</i> <i>s.</i>	<i>h.</i> <i>m.</i> <i>s.</i>	1835.	<i>h.</i> <i>m.</i> <i>s.</i>	<i>h.</i> <i>m.</i> <i>s.</i>
Jan. 2	18 . 25 . 13,48	18 . 25 . 30,35	Feb. 5	18 . 25 . 17,43	18 . 25 . 30,89
3	13,34	30,21	9	18,50	31,17
4	13,22	30,08	10	17,44	30,03
5	12,33	29,17	20	22,07	31,84
5	12,42	29,26	21	22,05	31,71
6	13,39	30,19	21	21,96	31,47
19	13,10	29,27			
20	13,95	30,03	March 4	25,47	31,70
20	14,67	30,69	4	25,60	31,67
25	15,74	31,19	6	25,54	31,13
26	15,75	31,17	6	25,72	31,15
Feb. 3	17,88	31,77	Aug. 17	38,98	31,04
4	17,90	31,68	18	38,79	31,03
5	18,58	32,15			

<i>m</i> Ceti.		$\pi$ Arietis.		$\omega^2$ Tauri.		$\iota$ Tauri.	
Jan. 5	<i>h. m. s.</i> 0.44.34,84	Nov. 5	<i>h. m. s.</i> 2.40.59,95	Dec. 4	<i>h. m. s.</i> 4.7.36,23	Feb. 8	<i>h. m. s.</i> 4.53.14,63
6	34,83	6	5,83	$\delta^1$ Tanri.		March 6	14,41
$\mu$ Piscium.		Dec. 2	5,85	Dec. 4	4.13.25,75	Dec. 4	14,56
Jan. 6	1.21.33,02	$\epsilon$ Arietis.		ALDEBARAN.		RIGEL.	
Nov. 3	32,79	Nov. 5	2.49.47,35	Jan. 3	4.26.27,85	Jan. 3	5.6.36,85
$\nu$ Piscium.		6	47,48	5	27,67	5	36,76
Jan. 6	1.32.51,35	$\alpha$ CETI.		6	27,62	6	36,93
Oct. 7	51,08	Jan. 3	2.53.39,89	12	27,78	16	36,91
$\omicron$ Piscium.		6	40,05	16	27,62	17	36,97
Oct. 7	1.36.41,50	16	39,79	17	27,86	20	36,91
Dec. 1	41,56	17	39,82	20	27,72	22	36,86
2	41,47	20	39,92	22	27,83	24	36,86
$\xi$ Piscium.		22	39,74	24	27,74	26	36,69
Dec. 1	1.45.1,38	26	39,83	26	27,71	27	36,87
2	1,26	27	39,93	27	27,66	Feb. 2	36,89
$\alpha$ ARIETIS.		Feb. 2	39,86	Feb. 2	27,72	4	36,73
Jan. 6	1.57.53,27	4	39,88	4	27,78	6	36,80
July 16	53,28	6	39,74	10	27,68	9	36,85
Nov. 6	53,35	9	39,83	12	27,72	10	36,70
18	53,34	12	39,74	21	27,75	12	36,90
23	53,48	24	39,77	23	27,77	21	36,90
Dec. 1	53,47	March 3	39,84	24	27,86	23	36,87
2	53,36	Nov. 6	39,79	March 6	27,64	24	37,00
$\xi^1$ Ceti.		Dec. 1	39,94	10	27,75	March 3	36,84
Nov. 3	2.4.15,99	3	40,05	13	27,66	6	36,80
38 Arietis.		$\zeta$ Arietis.		19	27,68	8	36,80
Feb. 4	2.35.59,02	Feb. 6	3.5.25,96	April 7	27,77	10	36,81
$\mu$ Ceti.		$f$ Tauri.		8	27,86	11	36,70
Dec. 2	2.36.2,27	Feb. 6	3.21.46,52	11	27,83	13	36,72
$\lambda$ Tauri.		Dec. 2	46,31	14	27,86	19	36,82
March 6	3.51.32,93	3	46,50	June 30	27,73	April 1	36,88
10	32,81	$\eta$ Tauri.		July 3	27,65	7	36,76
$A^1$ Tauri.		Nov. 6	3.37.41,47	7	27,78	8	36,80
March 6	3.54.57,11	$\tau$ Tauri.		9	27,89	10	36,88
$i$ Tauri.		March 6	4.32.21,05	16	27,76	11	36,82
Jan. 3	4.41.43,80	10	21,14	Dec. 2	28,04	14	36,86
5	43,75	$\beta$ TAURI.		11	27,74	22	36,84
6	43,75	Feb. 6	5.15.52,34	$\tau$ Tauri.		June 30	36,59
12	43,92	9	52,19	March 6	4.32.21,05	July 10	36,89
16	43,76	10	52,10	10	21,14	19	36,73
17	43,90	12	52,25	$i$ Tauri.		28	36,85
20	43,68	21	52,32	Jan. 3	4.41.43,80	29	36,72
$\beta$ TAURI.		24	52,11	5	43,75	30	36,75
Feb. 6	5.15.52,34	$\lambda$ Tauri.		6	43,75	Dec. 11	36,87
9	52,19	March 6	3.51.32,93	12	43,92		
10	52,10	10	32,81	16	43,76		
12	52,25	$A^1$ Tauri.		17	43,90		
21	52,32	March 6	3.54.57,11	20	43,68		
24	52,11						

<i>β</i> TAURI <i>continued.</i>			139 Tauri.			SIRIUS.			* N.P.D. 63°. 50'.														
	<i>h.</i>	<i>m.</i>	<i>s.</i>		<i>h.</i>	<i>m.</i>	<i>s.</i>		<i>h.</i>	<i>m.</i>	<i>s.</i>												
March 3	5	15	52,22	Dec. 2	5	47	45,58	April 7	6	37	52,72	March 4	7	11	31,11								
4			52,10	11			45,63	8			52,88	6			31,29								
6			52,18	Q <sup>2</sup> Tauri.			10				52,83	A Geminorum.											
8		52,12	11						52,76														
10		52,14	* N.P.D. 62°. 48'.				March 19			6. 39. 45,06													
11		52,03	Jan. 3							5	51	44,11	37 Geminorum.										
13		52,13	5						44,07	March 4			7. 13. 24,77										
19		52,19	16						44,02	6			24,67										
April 7		52,08	17			44,16	March 4			* N.P.D. 68°. 13'.													
8		52,27	20			43,94							6			7. 17. 5,06							
11		52,16	2 Geminorum.			March 4			6			5,01											
14		52,15	Dec. 2			5. 56. 45,10			y <sup>1</sup> Geminorum.			March 13			7. 17. 56,47								
July 29		52,09																11			45,40		
Aug. 17		52,16	A.S.C. 784.			March 10			6. 48. 37,21			* N.P.D. 65°. 40'.											
Dec. 11		52,35	March 3			4			13						36,99								
ζ Tauri.			March 4			6. 8. 0,52			19			37,13											
			10			47,30			y <sup>2</sup> Geminorum.			March 19			7. 21. 40,53								
B Tauri.			* N.P.D. 59°. 58'.			March 4			6. 49. 16,40			CASTOR.											
			Dec. 11			6. 11. 30,41			11						16,48								
March 8			5. 38. 53,61			z Aurigæ.			* N.P.D. 63°. 4'.			Feb. 5			7. 24. 3,89								
10			53,62			Dec. 11			6. 17. 57,94			March 4			3,75								
α ORIONIS.			Jan. 3			5. 46. 14,62			* N.P.D. 62°. 56'.			6			3,91								
			5			14,71			March 19			6. 18. 36,36			April 8			3,70					
6			14,60			* N.P.D. 64°. 0'. (preceding.)			March 4			6. 59. 27,27			14			3,71					
16			14,75			March 6			6. 59. 27,39			19			27,34			22			3,79		
17			14,72			* N.P.D. 64°. 0'. (following.)			March 10			6. 59. 34,90			28			3,72					
24			14,65			March 11			34,84			13			34,92			May 15			3,79		
Feb. 23			14,60			* N.P.D. 57°. 7'.			March 10			6. 59. 34,87			16			4,16					
24			14,55			Dec. 11			6. 20. 12,05			19			34,87			June 6			3,78		
March 3			14,54			* N.P.D. 62°. 46'.			March 19			6. 31. 24,50			8			3,88					
6			14,58			March 19			6. 31. 24,50			Feb. 10			7. 10. 15,72			Aug. 17			3,72		
April 1			14,68			ε Geminorum.			March 8			6. 33. 46,82			18			3,78					
7			14,64			* N.P.D. 62°. 46'.			March 8			6. 33. 46,82			19			3,81					
8			14,57			March 19			6. 31. 24,50			Feb. 10			7. 10. 15,72			March 4			39,82		
10			14,65			* N.P.D. 62°. 46'.			March 19			6. 31. 24,50			April 6			15,92					
11			14,60			March 19			6. 31. 24,50			Feb. 10			7. 10. 15,72			8			15,57		
14			14,53			* N.P.D. 62°. 46'.			March 19			6. 31. 24,50			April 8			15,57					
July 16			14,62			* N.P.D. 62°. 46'.			March 19			6. 31. 24,50			10			15,67					
19			14,48			* N.P.D. 62°. 46'.			March 19			6. 31. 24,50			Feb. 10			7. 10. 15,72					
31			14,57			* N.P.D. 62°. 46'.			March 19			6. 31. 24,50			April 6			15,92					
Aug. 4			14,73			* N.P.D. 62°. 46'.			March 19			6. 31. 24,50			8			15,57					
9			14,43			* N.P.D. 62°. 46'.			March 19			6. 31. 24,50			10			15,67					
Dec. 4			14,68			* N.P.D. 62°. 46'.			March 19			6. 31. 24,50			19			39,81					





$\beta$ Corvi.		$\zeta$ Ursæ Majoris.		ARCTURUS <i>continued.</i>		* N.P.D. 91°. 15'.	
April 6	<i>h. m. s.</i> 12. 25. 44,20	Oct. 11	<i>h. m. s.</i> 13. 17. 16,13	Sept. 1	<i>h. m. s.</i> 14. 8. 8,60	May 18	<i>h. m. s.</i> 15. 5. 30,41
				2	8,30	21	30,52
$\gamma$ Virginis.		$m$ Virginis.		3	8,35	$\gamma$ Libræ.	
April 11	12. 33. 18,15	June 6	13. 32. 57,74	5	8,34		
June 6	18,36	8	57,91	7	8,28	July 5	15. 26. 18,44
$\delta$ Virginis.		$\eta$ Bootis.		9	8,27	6	18,52
April 11	12. 47. 17,71	May 18	13. 46. 49,76	16	8,39	$\alpha$ CORONÆ BOREALIS.	
12	17,66	21	49,85	19	8,44	May 18	15. 27. 42,50
June 6	17,79	$\kappa$ Virginis.		28	8,32	21	42,40
$\kappa^A$ Virginis.		May 10	14. 4. 6,38	Oct. 8	8,44	June 20	42,55
May 18	12. 55. 24,76	ARCTURUS.		10	8,33	July 8	42,39
21	24,75	April 14	14. 8. 8,42	21	8,63	Aug. 1	42,33
$\theta$ Virginis.		May 9	8,54	24	8,38	3	42,36
May 10	13. 1. 24,85	16	8,41	$\lambda$ Virginis.		4	42,38
SPICA.		18	8,36	May 10	14. 10. 11,69	10	42,49
April 6	13. 16. 30,74	21	8,40	* N.P.D. 64°. 45'.		$\eta$ Libræ.	
25	30,76	25	8,47	May 18	14. 34. 24,96	June 8	15. 34. 48,12
27	30,76	26	8,39	21	24,94	9	48,20
28	30,91	28	8,38	$\epsilon$ BOOTIS.		$\alpha$ SERPENTIS.	
May 9	30,82	29	8,48	June 8	14. 37. 46,96	June 13	15. 36. 8,80
16	30,70	30	8,54	13	47,11	20	8,75
18	30,74	June 1	8,37	* N.P.D. 64°. 43'.		Aug. 1	8,93
21	30,73	2	8,40	May 18	14. 39. 23,93	$\theta$ Libræ.	
25	30,77	6	8,50	25	23,80	June 8	15. 44. 26,62
26	30,63	8	8,49	$\alpha^2$ LIBRÆ.		9	26,69
28	30,71	10	8,38	June 8	14. 41. 45,83	$\delta$ OPHIUCHI.	
29	30,85	13	8,66	10	45,75	Feb. 19	16. 5. 42,35
30	30,66	23	8,51	July 5	47,04	June 13	42,37
June 1	30,77	29	8,51	* N.P.D. 64°. 43'.		20	42,35
6	30,68	30	8,31	May 18	14. 39. 23,93	29	42,46
8	30,53	July 1	8,38	25	23,80	30	42,40
23	30,70	2	8,47	$\alpha^2$ LIBRÆ.		July 1	42,44
29	30,61	3	8,37	June 8	14. 41. 45,83	2	42,42
July 3	30,68	4	8,38	10	45,75	3	42,45
28	30,70	5	8,42	July 17	45,86	10	42,38
29	30,78	6	8,41	$\xi^2$ LIBRÆ.		17	42,49
30	30,73	10	8,42	June 7	14. 47. 49,67	20	42,57
31	30,60	11	8,48	8	49,59	21	42,38
Aug. 8	30,78	17	8,44	$\zeta^2$ LIBRÆ.		Sept. 17	42,26
13	30,64	20	8,40				
Dec. 10	30,55	21	8,40				
		28	8,55				
		29	8,44				
		Aug. 1	8,42				
		4	8,35				
		8	8,40				
		8	8,43				
		30	8,26				
		31	8,25				



ANTARES.			$\alpha$ HERCULIS <i>continued.</i>			A.S.C. 2085.			$\alpha$ AQUILÆ <i>continued.</i>		
	<i>h. m. s.</i>			<i>h. m. s.</i>			<i>h. m. s.</i>			<i>h. m. s.</i>	
Feb. 19	16. 19.	18,44	July 3	17. 7.	7,76	Aug. 4	17. 57.	38,47	Aug. 19	19. 42.	44,22
May 16		18,21	4		7,74	$\mu^1$ Sagittarii.			20		44,18
21		18,44	6		7,77				21		44,08
25		18,34	8		7,71				22		44,02
26		18,46	10		7,67				28		44,19
28		18,46	11		7,59	June 11	18. 3.	53,90	30		44,10
29		18,26	30		7,82	Aug. 4		54,06	31		44,09
30		18,35	Dec. 2		7,74	$\lambda$ Sagittarii.			Sept. 1		44,07
June 1		18,31	4		7,76				2		44,26
2		18,44	$\alpha$ OPHIUCHI.						3		44,19
6		18,35	Jan. 21	17. 27.	16,84				5		44,17
8		18,33	25		16,69				7		44,30
9		18,09	Feb. 3		16,85	Sept. 28	18. 17.	47,26	9		44,27
10		18,34	4		16,87	$\phi$ Sagittarii.			11		44,09
13		18,13	8		16,83				14		44,13
20		18,29	20		16,81				17		44,10
23		18,35	May 16		16,79				19		44,11
29		18,27	June 9		16,77	Sept. 1	18. 35.	20,88	28		44,13
30		18,18	July 1		16,88	9		20,89	Oct. 10		43,92
July 1		18,39	3		16,77	28		20,85	21		43,96
3		18,35	4		16,80	$\sigma$ Sagittarii.			22		44,10
5		18,30	6		16,82				23		44,39
10		18,15	10		16,82	Sept. 1	18. 45.	2,24	26		44,08
11		18,15	11		16,98	2		2,26	27		44,11
17		18,37	30		16,88	$\alpha$ AQUILÆ.			Nov. 19		44,01
20		18,40	31		17,00	Jan. 3	19. 42.	44,09	21		44,09
21		18,29	Aug. 13		16,86	5		44,06	22		44,10
28		18,25	31		16,82	6		44,07	23		44,39
29		18,13	Sept. 1		16,65	19		44,11	26		44,08
Aug. 4		18,16	19		16,74	25		44,23	27		44,11
10		18,26	28		16,67	Feb. 3		44,00	Dec. 1		43,97
Sept. 28		18,46	Oct. 8		16,85	5		44,09	2		43,99
$\omega$ Ophiuchi.			10		16,71	8		44,02	$59$ Sagittarii.		
Feb. 19	16. 22.	22,01	23		16,81	9		43,95	Sept. 2	19. 46.	48,93
June 9		22,05	26		16,77	19		43,94	9		49,01
10		22,05	27		16,77	20		43,94	$c$ Sagittarii.		
11		21,95	Dec. 2		16,76	23		44,00	Sept. 2	19. 52.	30,39
$\alpha$ HERCULIS.			D Ophiuchi.			March 4		44,03	9		30,30
Feb. 20	17. 7.	7,73	Sept. 1	17. 33.	32,89	5		44,06	Oct. 27		30,27
May 16		7,77	$b$ Sagittarii.			6		43,96	$\alpha^1$ Capricorni.		
21		7,71	June 11	17. 49.	43,47	8		44,10	Dec. 2	20. 8.	29,88
25		7,70	July 1		43,41	9		43,94	$\alpha^2$ CAPRICORNI.		
28		7,67	Aug. 31		43,33	12		44,01	July 11	20. 8.	53,70
29		7,76	Sept. 1		43,38	July 10		44,13	Aug. 7		53,85
30		7,66				11		44,07	8		53,75
June 1		7,78				31		44,08	9		53,79
2		7,82				Aug. 8		44,14	10		53,78
10		7,85				9		44,10	11		53,72
30		7,71				10		44,14	13		53,77
July 1		7,95				11		44,13	14		53,59
2		7,75				13		44,15			
						14		44,18			
						17		44,14			
						18		44,16			





<i>p</i> Piscium.		<i>s</i> Piscium.		<i>α</i> ANDROMEDÆ.		<i>α</i> ANDROMEDÆ <i>continued.</i>	
Nov. 1	$\begin{matrix} h. & m. & s. \\ 23. & 50. & 13,70 \end{matrix}$	Jan. 5	$\begin{matrix} h. & m. & s. \\ 23. & 56. & 53,64 \end{matrix}$	Oct. 4	$\begin{matrix} h. & m. & s. \\ 23. & 59. & 52,53 \end{matrix}$	Nov. 19	$\begin{matrix} h. & m. & s. \\ 23. & 59. & 52,69 \end{matrix}$
<i>r</i> Piscium.		Oct. 5	53,53	8	52,47	23	52,47
		Nov. 28	53,49	10	52,84	25	52,55
Jan. 5	$\begin{matrix} h. & m. & s. \\ 23. & 53. & 30,04 \end{matrix}$	Dec. 2	53,52	29	52,68	27	52,56
Oct. 5	29,89			Nov. 6	52,57	Dec. 2	52,55
				18	52,58	4	52,65

CATALOGUE OF THE CONCLUDED MEAN RIGHT ASCENSIONS, JAN. 1, 1835.  
WITH THE ANNUAL VARIATIONS.

Name of Star.	Number of Observations.	Mean R.A. Jan. 1, 1835.			Annual Variation.	Name of Star.	Number of Observations.	Mean R.A. Jan. 1, 1835.			Annual Variation.
		<i>h.</i>	<i>m.</i>	<i>s.</i>				<i>s.</i>	<i>h.</i>	<i>m.</i>	
<i>m</i> Ceti.....	2	0.44.	34,84		+ 3,059	<i>p</i> Geminorum.....	1	7.17.	56,47		+ 3,572
POLARIS.....	67	1.0.	49,37		+ 15,974	* N.P.D. 65°. 40'.	1	7.21.	40,53		+ 3,634
<i>μ</i> Piscium.....	2	1.21.	32,90		+ 3,111	CASTOR.....	13	7.24.	3,81		+ 3,856
<i>ν</i> Piscium.....	2	1.32.	51,22		+ 3,111	* N.P.D. 64°. 41'.	1	7.24.	46,21		+ 3,657
<i>ο</i> Piscium.....	3	1.36.	41,51		+ 3,148	PROCYON.....	30	7.30.	39,74		+ 3,143
<i>ξ</i> Piscium.....	2	1.45.	1,32		+ 3,092	<i>κ</i> Geminorum.....	1	7.34.	28,72		+ 3,634
<i>α</i> ARIETIS.....	7	1.57.	53,36		+ 3,342	POLLUX.....	25	7.35.	12,67		+ 3,682
<i>ξ</i> <sup>1</sup> Ceti.....	1	2.4.	15,99		+ 3,165	* N.P.D. 65°. 26'.	3	7.40.	43,58		+ 3,621
38 Arietis.....	1	2.35.	59,02		+ 3,242	<i>φ</i> Geminorum.....	2	7.43.	23,40		+ 3,686
<i>μ</i> Ceti.....	1	2.36.	2,27		+ 3,207	6 Cancri.....	2	7.53.	22,58		+ 3,701
<i>π</i> Arietis.....	3	2.40.	5,88		+ 3,326	<i>γ</i> Cancri.....	2	8.33.	43,82		+ 3,493
<i>ε</i> Arietis.....	2	2.49.	47,42		+ 3,408	<i>ξ</i> Cancri.....	1	8.59.	51,64		+ 3,465
<i>α</i> CETI.....	18	2.53.	39,86		+ 3,123	<i>α</i> HYDRÆ.....	13	9.19.	28,83		+ 2,948
<i>ζ</i> Arietis.....	1	3.5.	25,96		+ 3,427	<i>λ</i> Leonis.....	3	9.22.	17,71		+ 3,441
<i>f</i> Tauri.....	3	3.21.	46,44		+ 3,293	<i>η</i> Leonis.....	1	9.58.	19,65		+ 3,283
<i>η</i> Tauri.....	1	3.37.	41,47		+ 3,542	REGULUS.....	20	9.59.	34,72		+ 3,221
<i>λ</i> Tauri.....	2	3.51.	32,87		+ 3,309	<i>γ</i> Leonis.....	5	10.10.	52,01		+ 3,300
<i>A</i> <sup>1</sup> Tauri.....	1	3.54.	57,11		+ 3,520	<i>ρ</i> Leonis.....	1	10.24.	7,28		+ 3,166
<i>ω</i> <sup>2</sup> Tauri.....	1	4.7.	36,23		+ 3,500	* N.P.D. 62°. 52'.	1	10.24.	34,46		+ 3,345
<i>δ</i> <sup>1</sup> Tauri.....	1	4.13.	25,75		+ 3,436	<i>χ</i> Leonis.....	2	10.56.	30,10		+ 3,086
ALDEBARAN.....	33	4.26.	27,76		+ 3,423	<i>η</i> Leonis.....	2	11.7.	13,76		+ 3,146
<i>τ</i> Tauri.....	2	4.32.	21,08		+ 3,584	* N.P.D. 26°. 55'.	1	11.9.	12,65		+ 3,646
<i>i</i> Tauri.....	7	4.41.	43,79		+ 3,490	<i>ι</i> Leonis.....	1	11.15.	19,30		+ 3,121
<i>i</i> Tauri.....	3	4.53.	14,53		+ 3,568	<i>ξ</i> <sup>1</sup> Virginis.....	1	11.36.	46,73		+ 3,090
RIOEL.....	40	5.6.	36,80		+ 2,876	<i>β</i> LEONIS.....	24	11.40.	38,44		+ 3,064
<i>β</i> TAURI.....	21	5.15.	52,18		+ 3,779	<i>β</i> Virginis.....	2	11.42.	6,19		+ 3,124
<i>ζ</i> Tauri.....	2	5.27.	47,32		+ 3,577	<i>π</i> Virginis.....	2	11.52.	25,04		+ 3,074
<i>B</i> Tauri.....	2	5.38.	53,62		+ 3,674	<i>δ</i> Ursæ Majoris.....	1	12.7.	13,01		+ 3,003
<i>α</i> ORIONIS.....	22	5.46.	14,61		+ 3,241	<i>η</i> Virginis.....	2	12.11.	28,29		+ 3,068
139 Tauri.....	2	5.47.	45,61		+ 3,717	<i>β</i> Corvi.....	1	12.25.	44,20		+ 3,129
<i>Q</i> <sup>2</sup> Tauri.....	5	5.51.	44,06		+ 3,618	<i>γ</i> Virginis.....	2	12.33.	18,26		+ 3,022
2 Geminorum.....	2	5.56.	45,25		+ 3,653	<i>δ</i> Virginis.....	3	12.47.	17,72		+ 3,004
A.S.C. 784.....	2	6.8.	0,49		+ 3,756	<i>κ</i> <sup>4</sup> Virginis.....	2	12.55.	24,76		+ 3,083
* N.P.D. 59°. 58'.	1	6.11.	30,41		+ 3,839	<i>θ</i> Virginis.....	1	13.1.	24,85		+ 3,097
<i>z</i> Aurigæ.....	1	6.17.	57,94		+ 3,856	SPICA.....	26	13.16.	30,71		+ 3,147
* N.P.D. 62°. 56'.	1	6.18.	36,36		+ 3,749	<i>ζ</i> Ursæ Majoris.....	1	13.17.	16,13		+ 2,419
<i>ν</i> Geminorum.....	1	6.19.	11,22		+ 3,561	<i>m</i> Virginis.....	2	13.32.	57,83		+ 3,140
* N.P.D. 57°. 7'.	1	6.20.	12,05		+ 3,928	<i>η</i> Bootis.....	2	13.46.	49,81		+ 2,859
* N.P.D. 62°. 46'.	1	6.31.	24,50		+ 3,749	<i>κ</i> Virginis.....	1	14.4.	6,38		+ 3,183
<i>ε</i> Geminorum.....	1	6.33.	46,82		+ 3,693	ARCTURUS.....	56	14.8.	8,42		+ 2,731
SIRIUS.....	4	6.37.	52,80		+ 2,643	<i>λ</i> Virginis.....	1	14.10.	11,69		+ 3,228
* N.P.D. 62°. 48'.	1	6.39.	45,06		+ 3,744	* N.P.D. 64°. 45'.	2	14.34.	24,95		+ 2,775
37 Geminorum.....	2	6.45.	9,95		+ 3,695	<i>ε</i> <sup>2</sup> BOOTIS.....	3	14.37.	47,04		+ 2,621
<i>y</i> <sup>1</sup> Geminorum.....	3	6.48.	37,11		+ 3,714	* N.P.D. 64°. 43'.	2	14.39.	23,87		+ 2,664
<i>y</i> <sup>2</sup> Geminorum.....	2	6.49.	16,44		+ 3,709	<i>α</i> <sup>2</sup> LIBRÆ.....	3	14.41.	45,81		+ 3,305
* N.P.D. 63°. 4'.	1	6.53.	4,72		+ 3,729	<i>ξ</i> <sup>2</sup> LIBRÆ.....	2	14.47.	49,63		+ 3,237
<i>ζ</i> Geminorum.....	1	6.54.	18,97		+ 3,562	* N.P.D. 91°. 15'.	2	15.5.	30,47		+ 3,089
* N.P.D. 64°. 0'.	3	6.59.	27,33	+ 3,698		<i>γ</i> Libræ.....	2	15.26.	18,48		+ 3,333
(preceding).....						<i>α</i> CORONÆ BOREALIS	8	15.27.	42,43		+ 2,526
* N.P.D. 64°. 0'.	4	6.59.	34,88	+ 3,698		<i>η</i> Libræ.....	2	15.34.	48,16		+ 3,359
(following).....						<i>α</i> SERPENTIS.....	3	15.36.	8,83		+ 2,936
<i>δ</i> Geminorum.....	4	7.10.	15,72		+ 3,590	<i>θ</i> Libræ.....	2	15.44.	26,66		+ 3,390
* N.P.D. 63°. 50'.	2	7.11.	31,20		+ 3,693	<i>δ</i> OPHIUCHI.....	13	16.5.	42,41		+ 3,135
<i>A</i> Geminorum.....	2	7.13.	24,72		+ 3,670	ANTARES.....	32	16.19.	18,30		+ 3,659
* N.P.D. 68°. 13'.	2	7.17.	5,04		+ 3,572	<i>ω</i> Ophiuchi.....	4	16.22.	22,02		+ 3,537



CATALOGUE OF THE CONCLUDED MEAN RIGHT ASCENSIONS, &c. *continued.*

Name of Star.	Number of Observations.	Mean R.A. Jan. 1, 1835.			Annual Variation.	Name of Star.	Number of Observations.	Mean R.A. Jan. 1, 1835.			Annual Variation.
		<i>h.</i>	<i>m.</i>	<i>s.</i>				<i>s.</i>	<i>h.</i>	<i>m.</i>	
$\alpha$ HERCULIS.....	22	17.	7.	7,75	+ 2,729	$\chi^1$ Capricorni.....	2	20.	59.	5,83	+ 3,449
$\alpha$ OPHIUCHI.....	27	17.	27.	16,81	+ 2,770	$\zeta$ Capricorni.....	6	21.	17.	14,16	+ 3,441
D Ophiuchi.....	1	17.	33.	32,89	+ 3,593	$\beta$ AQUARI.....	40	21.	22.	52,25	+ 3,162
$b$ Sagittarii.....	4	17.	49.	43,40	+ 3,656	$\delta$ Capricorni.....	1	21.	37.	55,80	+ 3,304
A.S.C. 2085.....	1	17.	57.	38,47	+ 3,792	$\alpha$ AQUARI.....	28	21.	57.	18,61	+ 3,082
$\mu^1$ Sagittarii.....	2	18.	3.	53,98	+ 3,583	35 Aquarii.....	2	21.	59.	55,53	+ 3,303
$\lambda$ Sagittarii.....	1	18.	17.	47,26	+ 3,704	$\sigma$ Aquarii.....	1	22.	21.	54,81	+ 3,182
$\delta$ URSÆ MINORIS...	26	18.	25.	30,85	- 19,204	$\tau^2$ Aquarii.....	2	22.	40.	51,03	+ 3,185
$\phi$ Sagittarii.....	3	18.	35.	20,87	+ 3,745	$\delta$ Aquarii.....	2	22.	45.	53,26	+ 3,196
$\sigma$ Sagittarii.....	2	18.	45.	2,25	+ 3,722	$\alpha$ PEGASI.....	25	22.	56.	32,91	+ 2,975
$\alpha$ AQUILÆ.....	57	19.	42.	44,09	+ 2,924	$\psi^1$ Aquarii.....	2	23.	7.	14,76	+ 3,122
59 Sagittarii.....	2	19.	46.	48,97	+ 3,693	$\chi$ Aquarii.....	1	23.	8.	17,63	+ 3,114
$c$ Sagittarii.....	3	19.	52.	30,32	+ 3,700	$\psi^3$ Aquarii.....	2	23.	10.	22,61	+ 3,122
$\alpha^1$ Capricorni.....	1	20.	8.	29,88	+ 3,330	$n$ Piscium.....	4	23.	39.	27,72	+ 3,076
$\alpha^2$ CAPRICORNI.....	39	20.	8.	53,76	+ 3,331	$p$ Piscium.....	1	23.	50.	13,70	+ 3,073
$\pi$ Capricorni.....	1	20.	17.	52,37	+ 3,443	$r$ Piscium.....	2	23.	53.	29,97	+ 3,073
$\nu$ Capricorni.....	1	20.	30.	39,15	+ 3,427	$s$ Piscium.....	4	23.	56.	53,54	+ 3,070
$\eta$ Capricorni.....	2	20.	55.	0,43	+ 3,430	$\alpha$ ANDROMEDÆ.....	12	23.	59.	52,60	+ 3,067

The Mean Right Ascensions of the Fundamental Stars are greater than those in Mr Pond's Catalogue of 1112 stars by 0',09, and greater than those in Bessel's catalogue (*Tabulæ Regiomontanæ*) by 0',18.

From a discussion of the observations of the Sun, made with both instruments in the year 1834, it appears that the assumed R.A. were too great by 0',14.

ZENITH DISTANCES  
OBSERVED WITH THE MURAL CIRCLE,  
AND  
CALCULATION  
OF  
GEOCENTRIC NORTH POLAR DISTANCES.

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1835.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.		
			A	B	C	D	E	F						
			° ' "	" "	" "	" "	" "	" "						
Jan. 1	Polaris R. M.....	77.50	0.15,9	20,9	21,0	17,9	20,4	16,9	{ 19,841 1. 2. 25 1. 3. 45	- 3. 23,56 - 0,16 + 0,49	77.46.55,11	G.		
	Polaris.....	185.20	2. 1,5	6,2	5,0	6,7	5,8	4,3					185.22. 5,34	G.
	Jupiter N.L.....	253.45	3. 14,9	20,9	19,1	18,8	19,1	15,5						
Jan. 3	☉ N.L. M.....	296.20	1. 49,3	52,1	52,2	49,9	49,1	47,0	15,162	- 1. 46,08	296.20. 3,80	G.		
	☉ S.L. M.....	296.50	4. 14,8	17,9	20,8	15,9	16,0	13,3	15,162	- 1. 46,08	296.52.30,24	G.		
	(a) ) S.L.....	288.45	2. 31,0	35,3	35,3	33,9	32,9	30,2	10,265	- 4,05 + 3,30	288.47.33,02	G.		
	) S.L. M.....	288.45	2. 31,0	35,3	35,3	33,9	32,9	30,2					10,410	- 7,08 + 6,60
	α Pegasi R. M.....	3.40	1. 12,0	17,1	18,2	15,9	16,3	12,5	9,327	+ 15,47	3.41.30,77	G.		
	α Pegasi.....	259.25	2. 26,5	30,1	30,2	27,3	29,0	25,9	9,992	+ 1,63	259.27.28,10	G.		
	(b) χ Aquarii M.....	282.20	3. 18,9	20,7	21,1	18,9	18,9	17,3					282.23.20,83	284.16.14,43
	ψ <sup>3</sup> Aquarii.....	284.15	1. 13,3	16,3	17,9	15,3	12,0	12,0	13,935	- 1. 20,52	17.32.54,03	J.G.		
	α Andromedæ R.M.	17.30	4. 12,0	17,9	16,7	15,3	13,3	12,9					16,016	- 2. 3,87
	α Andromedæ.....	245.35	1. 2,9	8,9	9,3	5,1	5,5	2,0	12,956	- 1. 0,13	44.59.37,71	J.G.		
	α Cassiopeiæ R. M.	45. 0	1. 39,0	45,7	44,0	40,7	41,3	39,1					10,374	- 6,33
	α Cassiopeiæ.....	218. 5	4. 19,8	25,0	23,0	21,9	22,3	20,3	185.22. 7,13	77.46.54,67	G.			
	Polaris R. M.....	77.45	2. 52,7	57,2	57,8	54,4	55,9	51,3				261.37.39,17	253.49.35,97	G.
	Polaris.....	185.20	2. 4,2	9,3	10,6	6,5	7,9	4,7	257.36.20,35	248.12.21,58	J.G.			
	Vesta.....	261.35	2. 37,7	42,0	41,8	38,7	39,7	35,6				246.56. 4,48	246.57.32,02	G.
	Jupiter N.L.....	253.45	4. 35,7	37,9	38,1	35,7	35,8	33,4	1,841	+ 2. 51,44	246.58.55,92			
	Aldebaran R. M...	5.30	2. 41,5	48,7	48,9	42,1	48,2	40,0				5,865	+ 1. 27,60	246.57.32,08
	Aldebaran.....	257.35	1. 18,9	22,7	23,4	19,3	19,8	18,2	246.39.36,20	291.55.27,20	G.			
	37 Geminorum.....	248.10	2. 19,9	24,1	24,7	21,1	21,4	18,7				18,899	- 3. 3,94	296. 7.48,68
	Mars N.L.....	246.55	1. 2,0	7,0	9,1	4,0	4,1	0,9	12,600	- 52,71	296.40.15,53			
* R.6 <sup>h</sup> .51 <sup>m</sup> .22 <sup>s</sup> .M.	246.55	1. 2,0	7,0	9,1	4,0	4,1	0,9	12,079				- 41,86	259.27.28,75	G.
* R.6 <sup>h</sup> .52 <sup>m</sup> .10 <sup>s</sup> .M.	246.55	1. 2,0	7,0	9,1	4,0	4,1	0,9		11,081	- 21,06	280.41.41,52			
47 Geminorum.....	246.35	4. 36,0	38,9	39,0	35,3	35,3	33,5	278.42.46,91				- 7,14	280.23.40,52	J.G.
Jan. 4	Venus S.L.....	291.55	0. 25,9	29,3	29,3	26,5	27,3		25,0	10,266	- 4,09 - 3,57			
	Jan. 5	☉ N.L. M.....	296.10	0. 51,2	55,3	57,2	51,4	52,5	48,3			10,434	- 7,58	278.42.46,47
		☉ S.L.....	296.40	0. 13,4	17,8	18,9	15,1	14,3	13,7	10,652	- 12,12 + 3,57			
		α Pegasi R. M.....	3.40	2. 19,5	24,1	24,5	23,9	23,7	19,9			10,839	- 16,01 + 7,14	278.42.45,18
		α Pegasi.....	259.25	2. 27,3	30,7	29,8	28,6	30,3	26,2	13,905	- 1. 19,89			
		r Piscium M.....	280.40	2. 21,9	25,2	25,6	22,4	23,3	22,3			218. 9.21,75	275.48.33,40	G.
		s Piscium.....	280.20	3. 38,0	42,0	43,6	39,9	41,9	38,3	14,259	- 1. 27,27			
		γ Pegasi R. M.....	3.35	3. 38,0	44,4	45,0	40,3	44,8	38,4			185.22. 5,85	185.22. 5,85	G.
		γ Pegasi.....	259.30	0. 36,1	41,2	39,1	38,0	39,9	36,0	185.22. 5,85	185.22. 5,85			
		(c) ) S.L.....	278.40	2. 52,6	56,3	57,3	53,0	54,3	51,3			185.22. 5,85	185.22. 5,85	G.
		) S.L. M.....	278.40	2. 52,6	56,3	57,3	53,0	54,3	51,3	185.22. 5,85	185.22. 5,85			
		) S.L. M.....	278.40	2. 52,6	56,3	57,3	53,0	54,3	51,3			185.22. 5,85	185.22. 5,85	G.
) S.L. M.....	278.40	2. 52,6	56,3	57,3	53,0	54,3	51,3	185.22. 5,85	185.22. 5,85	G.				
α Cassiopeiæ R. M.	45. 0	0. 52,9	60,1	57,9	55,3	57,9	54,0				185.22. 5,85	185.22. 5,85	G.	
α Cassiopeiæ.....	218. 5	4. 19,1	24,7	22,7	22,2	22,9	19,7	185.22. 5,85	185.22. 5,85	G.				
m Ceti.....	275.45	3. 32,3	35,4	34,5	34,1	33,6	31,1				185.22. 5,85	185.22. 5,85	G.	
Polaris R. M.....	77.45	3. 17,9	24,9	23,7	21,1	22,3	17,9	185.22. 5,85	185.22. 5,85	G.				
Polaris.....	185.20	2. 2,0	8,0	8,0	7,2	6,0	4,3				185.22. 5,85	185.22. 5,85	G.	

(a) Observed at the 3<sup>d</sup>, 4<sup>th</sup>, and 5<sup>th</sup> wires.

(b) The result of this observation is too great by 10" nearly.

(c) Observed at the five wires.



CALCULATION OF GEOCENTRIC NORTH POLAR DISTANCES.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi- diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
"	" ' "	Inch.	"	"	" "	" "	"	" "	" ' "	
30,22	- 36 . 12 . 25,28	30,512	43,2	41,5					1 . 33 . 58,71	Polaris R.
	- 36 . 12 . 24,49				44,29			1 . 33 . 59,50	Polaris.	
	32 . 13 . 48,12		42,1	40,0	38,27	1,07	8,055	20,99	70 . 1 . 54,59	Jupiter.
	74 . 45 . 33,97	30,682	41,0	39,5	3 . 40,95	8,40		16 . 17,20	112 . 52 . 32,00	☉.
	75 . 18 . 0,41				3 . 49,22	8,42			112 . 52 . 32,29	☉.
	67 . 13 . 3,19	30,650	39,9	37,7					103 . 56 . 9,34	☽.
	67 . 13 . 2,44				2 . 24,98	51 . 15,33		15 . 11,80	103 . 56 . 8,58	☽.
	67 . 13 . 2,71								103 . 56 . 8,86	☽.
29,44	37 . 52 . 59,06			37,6					75 . 40 . 55,00	α Pegasi R.
	37 . 52 . 58,27				47,66				75 . 40 . 54,21	α Pegasi.
	60 . 48 . 51,00				1 . 49,35				98 . 37 . 48,63	χ Aquarii.
	62 . 41 . 44,60		39,0	37,5	1 . 58,26				100 . 30 . 51,14	ψ <sup>3</sup> Aquarii.
29,81	24 . 1 . 35,80		38,2	35,6	27,43				61 . 49 . 11,51	α Andromedæ R.
	24 . 1 . 35,75								61 . 49 . 11,46	α Andromedæ.
29,82	- 3 . 25 . 7,88	30,644		35,5	3,67				34 . 21 . 56,73	α Cassiopeiæ R.
	- 3 . 25 . 7,91								34 . 21 . 56,70	α Cassiopeiæ.
30,90	- 36 . 12 . 24,84	30,637			45,02				1 . 33 . 58,42	Polaris R.
	- 36 . 12 . 22,70								1 . 34 . 0,56	Polaris.
	40 . 3 . 9,34	30,628	36,1	32,8	51,97	2,96			77 . 51 . 6,63	Vesta.
	32 . 15 . 6,14	30,610	35,3	32,4	39,03	1,06	7,889	22,72	70 . 3 . 15,11	Jupiter.
29,42	36 . 1 . 51,34	30,608	35,2	32,6	44,97				73 . 49 . 44,59	Aldebaran R.
	36 . 1 . 50,52								73 . 49 . 43,77	Aldebaran.
	26 . 37 . 51,75	30,600		32,0	31,04				64 . 25 . 31,07	37 Geminorum.
	25 . 21 . 34,65				29,34	5,85	9,232	8,73	63 . 9 . 15,15	Mars.
	25 . 24 . 26,09				29,40				63 . 12 . 3,77	*R. 6 <sup>h</sup> . 51 <sup>m</sup> . 22 <sup>s</sup> .
	25 . 23 . 2,25				29,37				63 . 10 . 39,90	*R. 6 <sup>h</sup> . 52 <sup>m</sup> . 10 <sup>s</sup> .
	25 . 5 . 6,37				28,98				62 . 52 . 43,63	47 Geminorum.
	70 . 20 . 57,37	30,524	37,2	36,4	2 . 49,89	27,12	12,750	27,91	108 . 10 . 0,51	Venus.
	74 . 33 . 18,85	30,512	37,3	38,0	3 . 37,50	8,39			112 . 40 . 13,44	☉.
	75 . 5 . 45,70				3 . 45,53	8,41		16 . 17,20	112 . 40 . 13,90	☉.
29,29	37 . 53 . 0,01	30,514	39,8	38,5	47,36				75 . 40 . 55,65	α Pegasi R.
	37 . 52 . 58,92								75 . 40 . 54,56	α Pegasi.
	59 . 7 . 11,69	30,524	38,4		1 . 41,58				96 . 56 . 1,55	τ Piscium.
	58 . 49 . 10,69				1 . 40,39				96 . 37 . 59,36	σ Piscium.
29,52	37 . 56 . 9,17				47,47				75 . 44 . 4,92	γ Pegasi R.
	37 . 56 . 8,54		38,2	36,3					75 . 44 . 4,29	γ Pegasi.
	57 . 8 . 17,08								93 . 56 . 23,59	☽.
	57 . 8 . 16,56								93 . 56 . 23,07	☽.
	57 . 8 . 16,64				1 . 34,50	45 . 42,95		14 . 53,32	93 . 56 . 23,15	☽.
	57 . 8 . 15,67								93 . 56 . 22,18	☽.
	57 . 8 . 15,35								93 . 56 . 21,86	☽.
29,09	- 3 . 25 . 6,60				3,66				34 . 21 . 58,02	α Cassiopeiæ R.
	- 3 . 25 . 8,08								34 . 21 . 56,54	α Cassiopeiæ.
	54 . 14 . 3,57		37,9	36,2	1 . 24,82				92 . 2 . 36,67	m Ceti.
29,89	- 36 . 12 . 24,10	30,529	37,3		44,81				1 . 33 . 59,37	Polaris R.
	- 36 . 12 . 23,98								1 . 33 . 59,49	Polaris.

Coincidence of Micrometer Wire with fixed Wire = 10',070. One revolution = 20'',833.

Correction for Runs = -0'',9.

Adopted Zenith Point = 221°. 34'. 29'',83.

Assumed Co-latitude = 37°. 47'. 8'',28.

Jan. 6. 6<sup>h</sup>, Molyneux fast on Hardy 61<sup>s</sup>,2.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.		
			A	B	C	D	E	F						
			° ' "	° ' "	° ' "	° ' "	° ' "	° ' "						
Jan. 5	(a) Jupiter N.L.....	253.50	0.48,9	53,6	53,3	50,3	52,8	47,3	10,380	- 6,46	253.50.51,02	G.		
	Aldebaran R. M....	5.30	2.40,6	47,3	47,5	43,1	47,8	41,1			5.32.38,02	G.		
	Aldebaran .....	257.35	1.16,6	22,8	21,9	19,8	20,2	18,3			257.36.19,90	G.		
	Mars N.L.....	246.50	0.18,7	23,9	22,2	19,0	20,7	20,1			246.50.20,77	G.		
	(b) Venus S.L.....	291.45	3.10,9	14,6	16,0	10,3	12,5	10,2			291.48.12,32	G.		
Jan. 6	☉ S.L. M.....	296.35	0.21,8	25,0	27,2	21,8	23,2	20,9	15,612	- 1.55,46	296.33.27,86	G.		
	☉ N.L.....	296.0	0.56,5	60,5	62,2	56,8	57,9	53,1			296.0.57,80	G.		
	β Ceti R. M.....	330.25	4.20,3	23,7	24,9	21,8	23,2	20,1	6,063	+ 1.23,48	330.30.45,68	J.G.		
	β Ceti.....	292.35	3.11,7	16,1	16,0	13,3	12,5	11,1			292.38.13,35	J.G.		
	m Ceti.....	275.45	3.31,6	36,9	35,3	33,1	34,2	30,2	19,859	- 3.23,94 - 7,10	275.48.33,45	J.G.		
	(c) ) S.L. M.....	273.30	1.34,2	40,2	38,4	36,0	36,0	33,6			273.28.5,31	G.		
	) S.L. M.....	273.30	1.34,2	40,2	38,4	36,0	36,0	33,6	20,042	- 3.27,75 - 3,55	273.28.5,05	G.		
	) S.L.....	273.25	3.2,1	6,9	9,7	2,7	5,5	1,3			273.28.4,62	G.		
	) S.L. M.....	273.25	3.2,1	6,9	9,7	2,7	5,5	1,3	10,302	- 4,83 + 3,55	273.28.3,34	G.		
	) S.L. M.....	273.25	3.2,1	6,9	9,7	2,7	5,5	1,3			273.28.2,22	G.		
	Polaris R. M.....	77.45	3.42,9	50,2	47,3	46,7	47,9	42,2	15,432 { 1.4.20	- 1.51,71 - 0,57	77.46.53,80	G.		
	Polaris.....	185.20	2.1,1	5,9	7,9	6,0	5,7	3,7			185.22.5,85	G.		
	μ Piscium.....	268.25	3.50,3	55,1	57,2	51,3	54,3	50,7	1.5.2	+ 0,87	268.28.53,03	G.		
	ν Piscium.....	269.5	2.16,6	20,2	21,1	16,3	18,2	15,9			269.7.17,98	G.		
	(d) Jupiter S.L.....	253.50	2.9,9	13,2	15,5	9,3	13,3	8,3	9,123	+ 19,73	253.52.11,52	G.		
(e) Aldebaran R. M....	5.30	2.15,5	22,7	24,1	17,2	21,9	16,0	5.32.39,23			J.G.			
Aldebaran.....	257.35	1.16,2	21,9	22,3	19,3	18,3	18,4	257.36.19,37			J.G.			
ε Geminorum.....	248.25	4.33,0	36,9	38,7	33,0	37,6	32,3	248.29.35,12			G.			
(f) Mars S.L.....	246.45	2.58,6	65,1	65,0	58,3	62,0	57,9	246.48.1,07			G.			
Jan. 9	δ Ursæ Minoris....	187.10	2.46,0	51,7	49,9	46,1	49,9	46,8			187.12.48,32	G.		
Jan. 10	☉ S.L. M.....	296.0	2.48,0	52,6	51,9	47,0	49,4	47,2	12,700	- 54,79	296.1.54,48	G.		
	☉ N.L.....	295.25	4.24,6	28,3	29,7	24,7	27,0	22,7			295.29.26,03	G.		
Jan. 12	(g) Jupiter S.L.....	253.50	4.40,8	46,9	46,0	43,3	48,4	41,1	8,939	+ 23,55	253.54.44,28	G.		
	Aldebaran R. M....	5.30	2.9,1	15,1	14,2	9,5	14,1	10,1			5.32.35,50	G.		
	Aldebaran.....	257.35	1.19,9	23,7	23,3	23,1	23,6	21,1			257.36.22,42	G.		
Jan. 13	☉ N.L. M.....	295.0	2.54,2	57,1	58,5	52,9	55,3	52,7	14,901	- 1.40,64	295.1.14,39	G.		
	☉ S.L.....	295.30	3.40,2	44,0	44,1	40,3	39,2	37,9			295.33.40,83	G.		
Jan. 14	Venus S.L.....	291.15	0.40,3	43,6	43,5	40,3	41,3	38,0			291.15.41,15	G.		
Jan. 15	☉ N.L. M.....	294.40	1.11,7	15,0	15,9	13,9	13,1	10,3	12,683	- 54,44	294.40.18,84	G.		
	☉ S.L. M.....	295.10	3.38,2	41,9	41,1	39,0	42,7	35,1			295.12.45,11	G.		
Jan. 16	Jupiter S.L.....	253.55	0.42,3	46,1	45,0	43,3	44,3	40,2	8,586	+ 30,91	253.55.43,52	J.G.		
	(h) Aldebaran R. M....	5.30	2.1,2	7,7	8,2	4,2	6,2	1,3			5.32.35,64	G.		
	Aldebaran.....	257.35	1.20,3	25,7	25,0	24,0	22,0	22,6			257.36.23,23	G.		
	Capella R. M.....	35.10	1.57,0	63,3	63,1	59,9	61,1	57,2			12,501	- 50,64	35.11.9,58	J.G.
	Capella.....	227.55	2.49,6	55,7	53,9	52,7	52,3	48,8					227.57.52,08	J.G.
	Mars S.L.....	246.30	2.26,7	29,5	29,7	26,3	27,2	26,1			246.32.27,52	G.		

(a) Very good.  
 (b) Faint, from fog.  
 (c) Observed at the five wires: all pretty good.  
 (d) The air foggy, and the planet badly defined.

(e) A blur.  
 (f) Very ill defined.  
 (g) Very unsatisfactory.  
 (h) Too much wind.



CALCULATION OF GEOCENTRIC NORTH POLAR DISTANCES.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi- diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
"	° ' "	Inch.	°	°	' "	"	r	' "	° ' "	
28,96	32. 16. 21,19	30,522	35,6	33,8	38,84	1,06	7,952	22,06	70. 4. 20,31	Jupiter.
	36. 1. 51,81		35,9	33,5	44,76				73. 49. 44,85	Aldebaran R.
	36. 1. 50,07								73. 49. 43,11	Aldebaran.
	25. 15. 50,94	30,542	34,2	32,0	29,16	5,80	9,288	8,14	63. 3. 30,72	Mars.
	70. 13. 42,49	30,497	34,3	32,2	2. 50,12	26,77	12,716	27,56	108. 2. 46,56	Venus.
29,52	74. 58. 58,03	30,464	35,7	35,4	3. 44,66	8,40		16. 17,20	112. 33. 25,37	☉.
	74. 26. 27,97				3. 36,70	8,38			112. 33. 21,77	☉.
	71. 3. 44,15	30,404	35,2	33,6	2. 57,02			108. 53. 49,45	β Ceti R.	
	71. 3. 43,52							108. 53. 48,82	β Ceti.	
	54. 14. 3,62				1. 24,95			92. 2. 36,85	m Ceti.	
	51. 53. 35,48							88. 44. 40,07	♃.	
	51. 53. 35,22							88. 44. 39,81	♃.	
	51. 53. 34,79				1. 18,04	42. 33,54		14. 48,19	88. 44. 39,38	♃.
	51. 53. 33,51							88. 44. 38,10	♃.	
	51. 53. 32,39							88. 44. 36,98	♃.	
29,82	- 36. 12. 23,97	30,410	35,0	32,7					1. 33. 59,35	Polaris R.
	- 36. 12. 23,98				44,96				1. 33. 59,34	Polaris.
29,30	46. 54. 23,20	30,394	34,3	31,3	1. 5,75				84. 42. 37,23	μ Piscium.
	47. 32. 48,15			31,1	1. 7,27				85. 21. 3,70	ν Piscium.
	32. 17. 41,69	30,360	30,2	26,5	39,27	1,06	12,291	23,14	70. 5. 5,04	Jupiter.
	36. 1. 50,60	30,350	30,0	26,1	45,20				73. 49. 44,08	Aldebaran R.
	36. 1. 49,54								73. 49. 43,02	Aldebaran.
	26. 55. 5,29	30,324	28,0	24,0	31,68				64. 42. 45,25	ε Geminorum.
	25. 13. 31,24				29,40	5,80	10,909	8,74	63. 0. 54,38	Mars.
28,96	- 34. 21. 41,51	29,720	41,0	41,0	40,34				3. 24. 46,43	δ Ursæ Minoris.
	74. 27. 24,65	29,725	41,8	42,8	3. 28,40	8,38		16. 17,10	112. 1. 35,85	☉.
	73. 54. 56,20				3. 21,23	8,36			112. 1. 34,45	☉.
	32. 20. 14,45	29,782	44,0	44,0	37,20	1,04	12,093	21,07	70. 7. 37,82	Jupiter.
	36. 1. 54,33			43,4	42,73				73. 49. 45,34	Aldebaran R.
	36. 1. 52,59								73. 49. 43,60	Aldebaran.
	73. 26. 44,56	29,572	42,8	43,7	3. 13,98	8,34		16. 16,90	111. 33. 15,38	☉.
	73. 59. 11,00				3. 20,73	8,36			111. 33. 14,75	☉.
	69. 41. 11,32	29,560	44,2	44,6	2. 36,11	23,18	12,452	24,81	107. 30. 7,72	Venus.
	73. 5. 49,01	29,580	46,1	46,6	3. 8,76	8,32		16. 16,80	111. 12. 14,53	☉.
	73. 38. 15,28				3. 15,18	8,35			111. 12. 13,59	☉.
29,44	32. 21. 13,69	29,258	39,8	38,3	37,00	1,03	12,171	21,88	70. 8. 36,06	Jupiter.
30,83	36. 1. 54,19	29,272	39,2	37,9	42,48				73. 49. 44,95	Aldebaran R.
	36. 1. 53,40								73. 49. 44,16	Aldebaran.
	6. 23. 20,25				6,55				44. 10. 35,08	Capella R.
	6. 23. 22,25								44. 10. 37,08	Capella.
	24. 57. 57,69				27,24	5,45	10,892	8,56	62. 45. 19,20	Mars.

Coincidence of Micrometer Wire with fixed Wire = 10',070. One revolution = 20,"833.

Correction for Runs = - 0",9.

Adopted Zenith Point = 221°. 34'. 29",83.

Assumed Co-latitude = 37°. 47'. 8",28.



Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
			° ' "	" "	" "	" "	" "	" "				
Jan. 16	*R.6 <sup>h</sup> .31 <sup>m</sup> .25 <sup>s</sup> .M.	246.30	2.26,7	29,5	29,7	26,3	27,2	26,1	7,906	+ 45,08	246.33.12,60	G.
	*R.6 <sup>h</sup> .37 <sup>m</sup> .0 <sup>s</sup> .M.	246.30	2.26,7	29,5	29,7	26,3	27,2	26,1	9,570	+ 10,42	246.32.37,94	G.
	(a) *R.6 <sup>h</sup> .39 <sup>m</sup> .45 <sup>s</sup> .M.	246.30	2.26,7	29,5	29,7	26,3	27,2	26,1	0,150	+ 3.26,67 + 0,29	246.35.54,48	G.
Jan. 17	(b) ☉ N.L. M.....	294.15	4.10,9	13,8	15,3	10,5	10,6	6,0	14,110	- 1.24,16 + 0,35	294.17.47,24	G.
	☉ S.L.....	294.50	0.11,5	13,9	17,0	11,9	11,7	9,5		+ 0,35	294.50.12,93	G.
	α Pegasi R. M.....	3.40	1.18,2	21,9	22,3	20,0	21,3	16,6	9,652	+ 8,71	3.41.28,73	G.
	α Pegasi.....	259.25	2.32,9	35,3	36,5	33,3	34,3	31,9			259.27.33,95	G.
	α Persei R. M.....	38.35	3.18,3	22,7	22,7	19,3	22,2	17,5	11,319	- 26,02	38.37.54,33	G.
	α Persei.....	224.30	1.6,0	11,3	10,3	8,7	8,3	5,7			224.31.8,35	G.
	Vesta.....	260.40	0.49,7	54,3	53,4	52,7	50,7	48,3			260.40.51,48	G.
	Jupiter N.L.....	253.55	0.7,2	10,7	11,3	9,5	8,9	7,0			253.55.9,10	G.
	(c) Aldebaran R. M...	5.30	2.5,5	11,7	13,3	8,3	11,3	6,0	8,552	+ 31,63	5.32.40,91	G.
	Aldebaran.....	257.35	1.21,1	25,3	24,8	25,3	20,8	21,5			257.36.23,10	G.
	(d) Capella R. M.....	35.10	2.35,3	41,1	40,3	37,8	38,3	35,6	14,160	- 1.25,20	35.11.12,78	G.
	Capella.....	227.55	2.51,9	58,0	58,0	55,0	54,9	51,9			227.57.54,87	G.
	β Tauri R. M.....	17.50	0.48,0	54,9	54,3	51,5	51,9	47,5	13,003	- 1.1,10	17.49.50,23	G.
	β Tauri.....	245.15	4.15,0	19,0	18,2	17,1	15,8	14,0			245.19.16,38	G.
	Mars N.L.....	246.30	1.35,7	39,7	38,5	36,0	37,3	33,5			246.31.36,73	G.
*R.6 <sup>h</sup> .31 <sup>m</sup> .25 <sup>s</sup> .M.	246.30	1.35,7	39,7	38,5	36,0	37,3	33,5	5,378	+ 1.37,74	246.33.14,47	G.	
*R.6 <sup>h</sup> .39 <sup>m</sup> .45 <sup>s</sup> .M.	246.30	1.35,7	39,7	38,5	36,0	27,3	33,5	87,629	+ 4.19,18	246.35.55,91	G.	
Jan. 19	Venus S.L.....	291.15	3.14,7	18,3	20,1	16,1	16,2	13,9			291.18.16,45	G.
Jan. 20	(e) ☉ S.L. M.....	294.15	3.33,9	34,7	39,1	32,0	34,5	29,7	24,792	- 5.6,71	294.13.27,16	G.
	(f) ☉ N.L. ....	293.40	0.57,2	61,3	65,0	57,9	60,7	55,1			293.40.59,50	G.
	Vesta.....	260.25	1.33,2	38,7	40,3	35,0	37,3	33,3			260.26.36,25	G.
	Jupiter S.L.....	253.55	1.1,3	6,0	7,9	4,4	5,7	4,4			253.56.4,92	G.
	Aldebaran R. M...	5.30	2.12,2	19,0	19,2	15,3	16,1	12,8	8,802	+ 26,42	5.32.42,12	G.
	Aldebaran.....	257.35	1.20,3	27,2	27,3	23,7	25,7	22,1			257.36.24,33	G.
	Capella R. M.....	35.10	1.19,1	24,4	25,3	20,9	23,1	20,1	10,501	- 8,97	35.11.13,15	G.
	Capella.....	227.55	2.51,0	58,5	57,7	52,9	54,1	51,0			227.57.54,12	G.
	β Tauri R. M.....	17.45	4.38,3	44,2	44,4	39,8	43,2	37,0	9,682	+ 8,09	17.49.49,11	G.
	(u) β Tauri.....	245.15	4.13,2	19,2	19,5	15,4	15,9	13,1		+ 0,31	245.19.16,23	G.
	A. S. C. 784.....	246.30	0.53,0	58,3	58,3	55,1	55,2	52,0			246.30.55,28	G.
	*R.6 <sup>h</sup> .12 <sup>m</sup> .50 <sup>s</sup> .M.	246.30	0.53,0	58,3	58,3	55,1	55,2	52,0	9,342	+ 15,17	246.31.10,45	G.
	(a) *R.6 <sup>h</sup> .13 <sup>m</sup> .12 <sup>s</sup> .M.	246.30	0.53,0	58,3	58,3	55,1	55,2	52,0	87,274	+ 4.26,57 + 0,29	246.35.22,14	G.
	Mars S.L. M.....	246.30	0.53,0	58,3	58,3	55,1	55,2	52,0	10,129	- 1,23	246.30.54,05	G.
	(g) δ U. Min. SP. R. M.	82.45	1.45,6	53,1	54,2	48,3	51,1	45,3	13,482	- 1.11,08	82.45.38,67	G.
δ Ursæ Minoris SP.	180.20	3.24,5	30,3	32,2	28,8	28,2	27,0	6.27.0	+ 0,20	180.23.27,93	G.	
δ Ursæ Minoris.....	187.10	2.55,3	60,8	62,7	59,1	57,4	55,0	18.28.10	+ 0,73	187.12.59,03	G.	
Jan. 21	☉ N.L. M.....	293.25	3.19,0	24,1	28,1	20,2	23,9	17,0	11,476	- 29,28	293.27.52,67	G.
	☉ S.L.....	294.0	0.20,0	24,0	26,0	20,1	21,5	17,2			294.0.21,47	G.
	Venus S.L.....	291.20	2.13,3	17,6	19,3	14,3	15,4	10,2			291.22.14,95	G.
Jan. 22	☉ S.L. M.....	293.45	2.50,9	54,7	59,0	49,9	54,7	48,7	12,481	- 50,23	293.47.2,67	G.
	☉ N.L.....	293.10	4.33,9	37,9	38,9	33,6	36,6	31,3			293.14.35,23	G.
	Vesta.....	260.15	1.41,3	47,3	45,0	43,6	46,0	42,0			260.16.44,15	G.
	Jupiter S.L.....	253.55	0.57,3	62,7	62,7	60,3	61,2	57,2			253.56.0,20	G.

(a) Observed at the 5<sup>th</sup> wire.

(b) The N.L. observed at the 5<sup>th</sup> wire, and the S.L. at the comb: both are corrected for change of N.P.D. in 42°. Observed without a dark glass.

(c) The center of an unsteady blur.

(d) Not satisfactory.

(e) Very bad.

(f) Better.

(g) Too much wind.

CALCULATION OF GEOCENTRIC NORTH POLAR DISTANCES.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi- diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
"	" ' "	Inch.	"	"	" "	" "	r	" "	" ' "	
	24.58.42,77	29,272	39,2	37,9	27,25				62.46.18,30	*R.6 <sup>h</sup> .31 <sup>m</sup> .25 <sup>s</sup> .
	24.58.8,11				27,24				62.45.43,63	*R.6 <sup>h</sup> .37 <sup>m</sup> .0 <sup>s</sup> .
	25.1.24,65				27,31				62.49.0,24	*R.6 <sup>h</sup> .39 <sup>m</sup> .45 <sup>s</sup> .
	72.43.14,50	29,500	38,9	38,3	3.2,94	8,30			110.49.34,02	☉.
	73.15.40,19				3.13,48	8,32		16.16,60	110.49.37,03	☉.
31,34	37.53.4,01	29,582	39,1	38,2	45,95				75.40.53,24	α Pegasi R.
	37.53.1,21	29,697	36,2	34,7					75.40.55,44	α Pegasi.
31,34	2.56.38,41				3,07				40.43.49,76	α Persei R.
	2.56.35,61								40.43.46,96	α Persei.
	39.6.18,74				48,54	2,67			76.54.12,89	Vesta.
	32.20.36,36				37,82	1,03	8,004	21,52	70.8.42,95	Jupiter.
32,01	36.1.51,83				43,44				73.49.43,55	Aldebaran R.
	36.1.50,36								73.49.42,08	Aldebaran.
33,83	6.23.19,96	29,732	35,0	33,2	6,72				44.10.34,96	Capella R.
	6.23.22,13								44.10.37,13	Capella.
33,31	23.44.42,51				26,40				61.32.17,19	β Tauri R.
	23.44.43,64								61.32.18,32	β Tauri.
	24.57.3,99	29,756	35,7	33,4	27,92	5,42	9,272	8,31	62.44.43,08	Mars.
	24.58.41,73				27,96				62.46.17,97	*R.6 <sup>h</sup> .31 <sup>m</sup> .25 <sup>s</sup> .
	25.1.23,17				28,02				62.48.59,47	*R.6 <sup>h</sup> .39 <sup>m</sup> .45 <sup>s</sup> .
	69.43.43,71	29,827	33,7	31,6	2.42,22	21,35	12,213	22,32	107.32.50,54	Venus.
	72.38.54,42	29,889	32,3	31,5	3.11,62	8,30			110.12.49,72	☉.
	72.6.26,76				3.5,59	8,27		16.16,30	110.12.48,66	☉.
	38.52.3,51	30,088	33,0	31,4	49,10	2,60			76.39.53,29	Vesta.
	32.21.32,18	30,108	32,2	31,1	38,67	1,02	12,157	21,74	70.8.56,37	Jupiter.
33,23	36.1.50,62	30,110	32,2	31,0	44,38				73.49.43,28	Aldebaran R.
	36.1.51,59								73.49.44,25	Aldebaran.
33,64	6.23.19,59	30,112	30,8	28,9	6,87				44.10.34,74	Capella R.
	6.23.21,38								44.10.36,53	Capella.
32,67	23.44.43,63				26,98				61.32.18,89	β Tauri R.
	23.44.43,49								61.32.18,75	β Tauri.
	24.56.22,54	30,136	29,0	27,5	28,63				62.43.59,45	A. S. C. 784.
	24.56.37,71				28,63				62.44.14,62	*R.6 <sup>h</sup> .12 <sup>m</sup> .50 <sup>s</sup> .
	25.0.49,40				28,72				62.48.26,40	*R.6 <sup>h</sup> .13 <sup>m</sup> .12 <sup>s</sup> .
	24.56.21,31				28,63	5,31	10,931	8,35	62.43.44,56	Mars.
	-41.11.5,93				53,83				-3.24.51,48	δ U. Min. SP. R.
33,30	-41.11.4,81								-3.24.50,36	δ Urs. Min. SP.
	-34.21.33,71	30,229	29,1	27,9	42,17				3.24.52,40	δ Ursæ Minoris.
	71.53.19,93	30,200	31,6	31,5	3.5,16	8,26			109.59.41,31	☉.
	72.25.48,73				3.11,12	8,29		16.16,20	109.59.43,64	☉.
	69.47.42,21	30,068	34,4	33,5	2.43,46	20,65	12,119	21,34	107.36.51,96	Venus.
	72.12.29,93	30,085	39,6	39,8	3.4,63	8,27			109.46.18,47	☉.
	71.40.2,49				2.58,92	8,25		16.16,10	109.46.17,54	☉.
	38.42.11,41	30,172	35,6	34,2	48,66	2,56			76.30.5,79	Vesta.
	32.21.27,46				38,49	1,02	12,133	21,49	70.8.51,72	Jupiter.

Coincidence of Micrometer Wire with fixed Wire = 10',070, or 100',070. One revolution = 20'',833.  
 Correction for Runs = - 0',9.  
 Adopted Zenith Point = 221°.34'.29'',83. From Jan. 17. = 221°.34'.32'',74.  
 Assumed Co-latitude = 37°.47'.8'',28.



Month and Day.	NAME OF STAR or PLANET.	Pointer. ° ' "	Microscopes.						Micrometer or Time by Molyneux. r. h. m. s.	Correction for Microm. or Time. " "	Concluded reading of Circle. ° ' "	Observer.
			A	B	C	D	E	F				
			"	"	"	"	"	"				
Jan. 22	(a) Aldebaran R. ....	5.30	2.36,7	43,3	43,3	39,3	43,1	37,3	12,830	- 57,50	5.32.40,42	i.g.
	Aldebaran .....	257.35	1.21,9	27,0	27,2	25,3	23,3	22,7			5.32.40,14	i.g.
	Capella R. M. ....	35.10	2.7,0	12,3	12,8	9,3	10,7	8,1			35.11.12,47	G.
	Capella .....	227.55	2.50,7	56,5	55,3	52,5	53,4	49,8			227.57.52,95	G.
Jan. 23	Jupiter N.L. ....	253.55	0.7,8	13,6	13,2	10,8	10,3	9,7	9,931	+ 2,89	253.55.10,90	G.
	Aldebaran R. M. ...	5.30	2.33,3	40,1	39,1	35,8	40,0	35,7			5.32.40,14	i.g.
	Aldebaran .....	257.35	1.22,4	27,3	25,9	24,6	23,3	23,3	13,472	- 1.10,87	257.36.24,43	i.g.
	Capella R. M. ....	35.10	2.19,7	24,2	23,8	21,5	25,0	20,3			35.11.11,48	G.
	Capella .....	227.55	2.50,6	57,3	55,9	53,2	54,3	50,5	8,490	+ 32,92	227.57.53,55	G.
	α Orionis R. M. ....	356.40	4.13,6	18,9	20,2	15,9	20,2	13,9			356.44.49,90	G.
	α Orionis .....	266.20	4.12,7	17,3	18,3	13,3	15,1	12,3	9,290	+ 16,25	266.24.14,70	G.
	A. S. C. 784. ....	246.30	0.52,2	57,7	55,9	52,9	55,2	52,0			246.30.54,28	G.
	*R. 6 <sup>h</sup> .12 <sup>m</sup> .50 <sup>s</sup> .M.	246.30	0.52,2	57,7	55,9	52,9	55,2	52,0	87,204	+ 4.28,04	246.31.10,53	G.
	*R. 6 <sup>h</sup> .13 <sup>m</sup> .12 <sup>s</sup> .M.	246.30	0.52,2	57,7	55,9	52,9	55,2	52,0			246.35.22,32	G.
	Mars N.L. M. ....	245.30	0.52,2	57,7	55,9	52,9	55,2	52,0	10,163	- 1,93	246.30.52,35	G.
	δ U. Min. SP. R. M.	82.45	1.59,3	67,3	66,4	64,7	63,7	61,7			14,012	- 1.22,12
	δ Ursæ Minoris SP.	180.20	3.20,0	25,3	25,5	25,3	22,9	21,7	180.23.23,35	G.		
	Jan. 24	(b) α Arietis R. M. ....	12.0	3.31,1	36,8	34,1	33,1	34,3	35,4	11,590	- 31,67	12.3.2,35
γ Arietis .....		251.5	1.8,9	13,8	13,1	9,6	11,3	10,2	12.3.6,11,12			G.
α Ceti R. M. ....		351.50	4.28,5	31,3	31,6	31,1	32,3	28,3	8,697	+ 28,60	351.54.58,98	i.g.
γ Ceti .....		271.10	4.12,0	15,3	16,9	12,1	14,6	12,3			271.14.13,73	i.g.
(c) Vesta .....		260.5	1.38,2	43,3	39,9	39,2	42,1	38,3	9,090	+ 20,42	260.6.40,12	G.
Jupiter S.L. ....		253.55	0.48,0	52,2	50,9	48,1	51,1	47,0			253.55.49,53	G.
Aldebaran R. M. ...		5.30	2.20,8	25,3	25,6	20,9	24,9	22,1	9,348	+ 15,04	5.32.43,62	i.g.
Aldebaran .....		257.35	1.27,1	31,7	29,8	29,2	28,6	28,5			257.36.29,10	i.g.
A. S. C. 784. ....		246.30	0.56,5	63,0	60,0	58,1	59,1	56,1	87,210	+ 4.27,92	246.30.58,77	i.g.
*R. 6 <sup>h</sup> .12 <sup>m</sup> .50 <sup>s</sup> .M.		246.30	0.56,5	63,0	60,0	58,1	59,1	56,1			246.31.13,81	i.g.
*R. 6 <sup>h</sup> .13 <sup>m</sup> .12 <sup>s</sup> .M.		246.30	0.56,5	63,0	60,0	58,1	59,1	56,1	9,326	+ 15,49	246.35.26,69	i.g.
Mars N.L. M. ....		246.30	0.56,5	63,0	60,0	58,1	59,1	56,1			246.31.14,26	i.g.
δ U. Min. SP. R. M.		82.45	2.11,9	16,9	16,5	13,9	15,7	13,0	14,232	- 1.26,70	82.45.47,88	G.
δ Ursæ Minoris SP.		180.20	3.25,1	28,9	28,2	27,2	28,7	26,7			180.23.27,37	G.
Jan. 25	Venus S.L. ....	291.30	3.48,9	52,2	50,6	46,1	50,2	43,3			291.33.48,43	G.
Jan. 26	☉ S.L. M. ....	292.50	1.34,5	41,1	38,2	38,9	39,3	36,0	14,682	- 1.36,08	292.50.1,87	G.
	☉ N.L. ....	292.15	2.32,1	36,1	34,6	29,7	35,6	31,1			292.17.33,12	G.
	α Arietis R. M. ....	12.0	2.41,6	47,3	45,0	44,0	47,3	41,2	9,400	+ 13,96	12.2.58,28	G.
	α Arietis .....	251.5	1.7,0	11,0	11,0	14,6	10,3	7,2			251.6.10,15	G.
	β U. Min SP. R. M.	94.30	2.16,6	21,9	20,1	18,1	19,2	18,9	14,000	- 1.21,87	94.30.57,20	G.
	β Ursæ Minoris SP.	168.35	3.12,0	14,0	13,9	10,9	15,6	14,9			168.38.13,45	G.
	Vesta .....	259.55	1.16,6	19,4	18,1	15,3	19,6	16,2	13,532	- 1.12,12	259.56.17,50	G.
	Jupiter S.L. ....	253.55	0.22,0	30,2	23,9	28,0	25,9	25,9			253.55.25,98	G.
	Capella R. M. ....	35.10	2.24,7	27,8	27,3	26,1	30,3	26,0	9,279	+ 16,47	35.11.14,85	i.g.
	Capella .....	227.55	2.53,3	59,0	56,9	54,1	56,3	52,3			227.57.55,23	i.g.
	A. S. C. 784. ....	246.30	0.56,0	61,3	59,0	55,3	57,8	54,3	87,220	+ 4.27,71	246.30.57,25	i.g.
	*R. 6 <sup>h</sup> .12 <sup>m</sup> .50 <sup>s</sup> .M.	246.30	0.56,0	61,3	59,0	55,3	57,8	54,3			246.31.13,72	i.g.
	*R. 6 <sup>h</sup> .13 <sup>m</sup> .12 <sup>s</sup> .M.	246.30	0.56,0	61,3	59,0	55,3	57,8	54,3	5,873	+ 1.27,43	246.35.24,96	i.g.
	Mars S.L. M. ....	246.30	0.56,0	61,3	59,0	55,3	57,8	54,3			246.32.24,68	i.g.
δ U. Min. SP. R. M.	82.45	1.10,3	15,2	14,9	12,9	14,4	11,6	11,434	- 28,41	82.45.44,77	i.g.	
δ Ursæ Minoris SP.	180.20	3.25,9	29,3	27,7	27,9	28,9	26,0			180.23.27,52	i.g.	
Jan. 27	(a) α Arietis R. ....	12.0	2.59,5	64,7	64,0	61,6	64,0	60,0			12.3.2,22	i.g.
	α Arietis .....	251.5	1.7,8	12,1	11,9	8,9	11,8	7,3			251.6.9,93	i.g.

(a) The star came on the fixed wire, pretty well bisected.

(b) Very good:  
(c) Cloudy and bad.



Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi- diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.							
			Attach.	Free.													
"	° ' "	Inch.	°	°	' "	' "	r	' "	° ' "								
32,48	36 . 1 . 52,32	30,192	35,0	33,6	44,27				73 . 49 . 44,87	Aldebaran R.							
	36 . 1 . 51,79										Aldebaran.						
32,71	6 . 23 . 20,27			33,4	6,82				44 . 10 . 35,37	Capella R.							
	6 . 23 . 20,21									Capella.							
32,29	32 . 20 . 38,16	30,122	37,2	36,7	38,21	1,01	8,017	21,38	70 . 8 . 45,02	Jupiter.							
	36 . 1 . 52,60									Aldebaran R.							
	36 . 1 . 51,69									Aldebaran.							
32,52	6 . 23 . 21,26	30,100		36,5	6,76				44 . 10 . 36,30	Capella R.							
	6 . 23 . 20,81									Capella.							
32,30	44 . 49 . 42,84	30,078		36,2	59,92				82 . 37 . 51,04	$\alpha$ Orionis R.							
	44 . 49 . 41,96									$\alpha$ Orionis.							
32,51	24 . 56 . 21,54	30,058	37,7	37,1	27,98				62 . 43 . 57,80	A. S. C. 784.							
	24 . 56 . 37,79									* R. 6 <sup>h</sup> . 12 <sup>m</sup> . 50 <sup>s</sup> .							
	25 . 0 . 49,58									* R. 6 <sup>h</sup> . 13 <sup>m</sup> . 12 <sup>s</sup> .							
	24 . 56 . 19,61									Mars.							
	- 41 . 11 . 8,92									$\delta$ U. Min. SP. R.							
	- 41 . 11 . 9,39									$\delta$ Urs. Min. SP.							
36,74	29 . 31 . 34,71	30,080	43,0	42,7	33,71				67 . 19 . 16,70	$\alpha$ Arietis R.							
	29 . 31 . 34,06									$\alpha$ Arietis.							
36,36	49 . 39 . 38,08	30,092	42,3	42,6	1 . 10,04				87 . 27 . 56,40	$\gamma$ Ceti R.							
	49 . 39 . 36,67									$\gamma$ Ceti.							
36,36	38 . 32 . 3,06	30,104	42,6	43,0	47,39	2,52			76 . 19 . 56,21	Vesta.							
	32 . 21 . 12,47								30,109	43,2	42,6	37,74	1,01	12,082	20,96	70 . 8 . 36,52	Jupiter.
	36 . 1 . 53,44								30,114	42,2	41,5	43,43				73 . 49 . 45,15	Aldebaran R.
	36 . 1 . 52,04															73 . 49 . 43,75	Aldebaran.
	24 . 56 . 21,71								30,129	41,6	40,6	27,84				62 . 43 . 57,83	A. S. C. 784.
	24 . 56 . 36,75											27,85				62 . 44 . 12,88	* R. 6 <sup>h</sup> . 12 <sup>m</sup> . 50 <sup>s</sup> .
37,63	25 . 0 . 49,63	30,132	41,5	40,5	27,94	5,15	8,566	7,92	62 . 48 . 25,85	* R. 6 <sup>h</sup> . 13 <sup>m</sup> . 12 <sup>s</sup> .							
	24 . 56 . 37,20									27,85					62 . 44 . 16,10	Mars.	
	- 41 . 11 . 10,82											52,37				- 3 . 24 . 54,91	$\delta$ U. Min. SP. R.
	- 41 . 11 . 9,69															- 3 . 24 . 53,78	$\delta$ Urs. Min. SP.
	69 . 59 . 14,12								30,200	45,5	46,0	2 . 41,57	19,36	12,169	21,86	107 . 48 . 22,75	Venus.
	71 . 15 . 27,56								30,214	48,5	50,6	2 . 51,67	8,22		16 . 15,60	108 . 49 . 3,69	$\odot$ .
34,22	70 . 42 . 58,81	30,256	46,2	45,2	33,73				108 . 49 . 1,08	$\odot$ .							
	29 . 31 . 36,03									67 . 19 . 18,04	$\alpha$ Arietis R.						
	29 . 31 . 35,84									67 . 19 . 17,85	$\alpha$ Arietis.						
35,33	- 52 . 56 . 22,89	30,252	45,2	44,5	1 . 18,83				- 15 . 10 . 33,44	$\beta$ U. Min. SP. R.							
	- 52 . 56 . 20,86									- 15 . 10 . 31,41	$\beta$ Urs. Min. SP.						
35,04	38 . 21 . 43,19	30,278	42,3	40,6	6,74				76 . 9 . 36,22	Vesta.							
	32 . 20 . 51,67									44,0	42,5	37,92	1,00	12,008	20,18	70 . 8 . 16,69	Jupiter.
	6 . 23 . 19,46															44 . 10 . 34,48	Capella R.
	6 . 23 . 20,92															44 . 10 . 35,94	Capella.
	24 . 56 . 22,94								30,284	41,3	40,0	28,02				62 . 43 . 59,24	A. S. C. 784.
	24 . 56 . 39,41											28,03				62 . 44 . 15,72	* R. 6 <sup>h</sup> . 12 <sup>m</sup> . 50 <sup>s</sup> .
36,15	25 . 0 . 50,65	30,290	43,3	42,1	33,98				62 . 48 . 27,05	* R. 6 <sup>h</sup> . 13 <sup>m</sup> . 12 <sup>s</sup> .							
	24 . 57 . 50,37									28,12					62 . 48 . 27,05	Mars.	
	- 41 . 11 . 10,46											28,05	5,07	6,609	7,66	62 . 45 . 13,97	$\delta$ U. Min. SP. R.
	- 41 . 11 . 6,79											52,69				- 3 . 24 . 54,87	$\delta$ Urs. Min. SP.
																- 3 . 24 . 51,20	$\delta$ Urs. Min. SP.
36,08	29 . 31 . 32,09	30,290	43,3	42,1	33,98				67 . 19 . 14,35	$\alpha$ Arietis R.							
	29 . 31 . 35,62														67 . 19 . 17,88	$\alpha$ Arietis.	

Coincidence of Micrometer Wire with fixed Wire = 10',070, or 100',070. One revolution = 20'',833.

Correction for Runs = - 0'',9.

Adopted Zenith Point = 221° . 34' . 32'',74. From Jan. 24. = 221° . 34' . 37'',06. From Jan. 25. = 221° . 34' . 34'',31.

Assumed Co-latitude = 37° . 47' . 8'',28.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.		
			A	B	C	D	E	F						
			° ' "	° ' "	° ' "	° ' "	° ' "	° ' "						
Jan. 27	(a) β U. Min. SP. R. M.	94.30	2.10,2	15,3	14,7	12,3	14,2	11,0	13,730	- 1.16,25	94.30.56,63	G.		
	β Ursæ Minoris SP.	168.35	3.13,7	15,3	16,8	15,3	17,0	15,0			168.38.15,42	G.		
	Vesta	259.50	0.57,0	62,3	61,3	58,9	60,9	57,2			259.50.59,57	G.		
	Jupiter N.L.	253.50	4.20,9	24,7	24,0	22,1	25,1	18,7			253.54.22,45	G.		
	Capella R. M.	35.10	2.35,0	40,7	38,2	37,3	37,7	35,3			14,123	- 1.24,43	35.11.12,85	G.
	Capella	227.55	2.51,9	55,1	55,7	50,2	53,1	51,1					227.57.52,77	G.
	Jan. 28	Venus S.L.	291.40	4.13,5	16,1	17,8	12,8	13,9			9,9			291.44.13,87
Jan. 30	(a) α Arietis R. M.	12.0	4.4,5	11,3	10,1	8,2	8,9	4,5	13,419	- 1.9,77	12.2.58,03	G.		
	α Arietis	251.5	1.6,8	10,1	10,7	6,0	8,8	5,5			251.6.7,95	G.		
	(b) β U. Min. SP. R. M.	94.30	2.8,9	14,3	13,3	12,5	12,3	10,5	13,731	- 1.16,27 + 0,35	94.30.55,98	G.		
	(c) β Ursæ Minoris SP.	168.35	3.9,9	13,3	13,9	11,3	13,8	12,3			- 1,23	168.38.11,09	G.	
	Vesta	259.30	4.47,9	50,7	52,3	49,2	50,1	45,9			259.34.49,20	G.		
	(d) Jupiter S.L.	253.50	3.59,6	62,5	62,9	60,2	62,6	58,0			253.54.0,85	G.		
Feb. 2	Jupiter S.L.	253.50	2.38,7	42,1	39,2	38,0	42,1	36,7	9,261	+ 16,86	253.52.39,38	J.G.		
	Aldebaran R. M.	5.30	2.21,1	27,2	25,0	23,1	26,8	20,4			5.32.40,73	J.G.		
	Aldebaran	257.35	1.24,4	28,8	26,6	26,4	27,1	24,8			257.36.26,30	J.G.		
	β Tauri R. M.	17.50	0.45,6	53,1	48,8	48,3	49,6	46,8	12,910	- 59,17 + 0,31	17.49.49,51	J.G.		
	(e) β Tauri	245.15	4.14,8	18,4	17,1	13,9	18,1	13,4			245.19.16,13	J.G.		
	Mars S.L.	246.35	3.14,8	17,5	17,7	15,4	17,9	13,3	18,432	- 2.54,20 + 0,29	246.38.16,00	J.G.		
	(e) * R. 6 <sup>h</sup> .13 <sup>m</sup> .12 <sup>s</sup> . M.	246.35	3.14,8	17,5	17,7	15,4	17,9	13,3			246.35.22,09	J.G.		
	(f) δ U. Min. SP. R. M.	82.45	1.43,0	48,7	46,9	45,4	47,8	42,7	6.27.20 6.27.45	- 57,44 + 0,27	82.45.48,53	J.G.		
	δ Ursæ Minoris SP.	180.20	3.18,0	23,2	21,9	21,4	20,9	19,5			- 0,47	180.23.20,25	J.G.	
	Feb. 3	Mars N.L.	246.35	4.3,9	8,2	7,5	4,0	7,1	1,5	20,827	- 3.44,10	246.39.5,25	G.	
(g) * R. 6 <sup>h</sup> .13 <sup>m</sup> .12 <sup>s</sup> . M.		246.35	4.3,9	8,2	7,5	4,0	7,1	1,5	246.35.21,15			G.		
Venus S.L.		292.5	1.32,5	36,8	34,9	33,0	34,3	32,9	292.6.34,02			G.		
δ Ursæ Minoris		187.10	2.58,1	63,2	61,2	60,7	60,2	57,0	187.12.59,98			J.G.		
Feb. 4	⊙ S.L. M.	290.20	2.49,5	52,0	50,3	47,3	48,9	45,1	12,846	- 57,83	290.21.50,94	G.		
	⊙ N.L.	289.45	4.22,7	26,0	25,2	22,3	22,9	19,9			289.49.23,03	G.		
	(h) ) S.L. M.	265.10	4.39,3	43,2	43,3	38,7	42,7	36,5	14,667	- 1.35,77 + 3,36	265.13.4,71	G.		
	) S.L.	265.10	2.60,0	63,2	64,3	60,3	63,4	57,2			265.13.4,68	G.		
	) S.L. M.	265.10	2.60,0	63,2	64,3	60,3	63,4	57,2	10,452	- 7,96 + 6,72	265.13.0,08	G.		
	Vesta	259.5	1.53,6	58,2	56,3	54,5	56,2	51,8			259.6.55,05	J.G.		
	Jupiter S.L.	253.50	1.31,5	35,0	31,7	33,3	35,3	28,9	13,513	- 1.11,72	253.51.32,57	J.G.		
	Capella R. M.	35.10	2.20,2	25,3	22,3	23,0	23,2	20,9			35.11.10,70	G.		
	Capella	227.55	2.47,0	51,1	50,2	47,3	51,1	45,7			227.57.48,65	G.		
	β Tauri R. M.	17.50	0.37,9	43,3	38,9	39,9	42,6	37,9	12,680	- 54,38	17.49.45,69	G.		
	β Tauri	245.15	4.11,9	15,8	14,6	12,9	15,6	10,0			245.19.13,33	G.		
	Mars S.L.	246.40	0.27,2	27,9	28,9	26,1	28,0	25,9	24,827	- 5.7,43	246.40.27,33	G.		
	* R. 6 <sup>h</sup> .13 <sup>m</sup> .12 <sup>s</sup> . M.	246.40	0.27,2	27,9	28,9	26,1	28,0	25,9			246.35.19,90	G.		
	* R. 6 <sup>h</sup> .18 <sup>m</sup> .37 <sup>s</sup> . M.	246.40	0.27,2	27,9	28,9	26,1	28,0	25,9	3,162	+ 2.23,92	246.42.51,25	G.		
	* R. 6 <sup>h</sup> .18 <sup>m</sup> .50 <sup>s</sup> . M.	246.40	0.27,2	27,9	28,9	26,1	28,0	25,9	13,161	- 1.4,39	246.39.22,94	G.		
	δ U. Min. SP. R. M.	82.45	1.34,7	39,3	37,9	38,0	38,3	34,8	12,691	- 54,61	82.45.42,51	J.G.		
	δ Ursæ Minoris SP.	180.20	3.15,8	19,9	18,9	18,9	18,9	15,1			180.23.17,82	J.G.		

(a) Very good.

(b) About three-fourths of an interval too late.

(c) About an interval and half too late.

(d) Cloudy: very unsatisfactory.

(e) Observed at the 5<sup>th</sup> wire.

(f) Cloudy: difficult to see: neither observation good.

(g) Cloudy.

(h) Observed at the 3<sup>d</sup>, 4<sup>th</sup>, and 5<sup>th</sup> wires: clouded and faint, especially at the last observation.



Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi- diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
"	" " "	Inch.	"	"	" "	" "	"	" "	" " "	
36,03	- 52 . 56 . 22,32	30,294	42,5	41,0	1 . 19,50				- 15 . 10 . 33,54	$\beta$ U. Min. SP. R.
	- 52 . 56 . 18,89							- 15 . 10 . 30,11	$\beta$ Urs. Min. SP.	
	38 . 16 . 25,26					47,51	2,46		76 . 4 . 18,59	Vesta.
32,81	32 . 19 . 48,14	30,299	41,3	39,7	38,17	1,00	8,016	21,39	70 . 7 . 54,98	Jupiter.
	6 . 23 . 21,46		39,8	38,6	6,77				44 . 10 . 36,51	Capella R.
	6 . 23 . 18,46								44 . 10 . 33,51	Capella.
	70 . 9 . 39,56	30,079	41,6	41,0	2 . 44,14	18,47	11,933	19,41	107 . 58 . 54,10	Venus.
32,99	29 . 31 . 36,28	29,958	44,2	44,0	33,48				67 . 19 . 18,04	$\alpha$ Arietis R.
	29 . 31 . 33,64								67 . 19 . 15,40	Arietis.
33,54	- 52 . 56 . 21,67	29,954	44,0	42,5	1 . 18,37				- 15 . 10 . 31,76	$\beta$ U. Min. SP. R.
	- 52 . 56 . 23,22							- 15 . 10 . 33,31	$\beta$ Urs. Min. SP.	
	38 . 0 . 14,89		43,2	41,7		46,38	2,40		75 . 48 . 7,15	Vesta.
	32 . 19 . 26,54	29,952	42,2	41,0	37,62	0,98	11,929	19,36	70 . 6 . 52,10	Jupiter.
33,52	32 . 18 . 5,07	30,171	47,1	46,7	37,42	0,98	12,008	20,18	70 . 5 . 29,61	Jupiter.
	36 . 1 . 53,58	30,192	46,9	46,2	43,12				73 . 49 . 44,98	Aldebaran R.
32,82	36 . 1 . 51,99								73 . 49 . 43,39	Aldebaran.
	23 . 44 . 44,80		46,0	45,7	26,12				61 . 32 . 19,20	$\beta$ Tauri R.
	23 . 44 . 41,82								61 . 32 . 16,22	$\beta$ Tauri.
	25 . 3 . 41,69	30,200	45,0	44,2	27,86	4,80	10,792	7,52	62 . 51 . 5,51	Mars.
	25 . 0 . 47,78				27,80				62 . 48 . 23,86	*R. 6 <sup>h</sup> . 13 <sup>m</sup> . 12 <sup>s</sup> .
34,39	- 41 . 11 . 14,22	30,196	44,7	44,1	52,10				- 3 . 24 . 58,04	$\delta$ U. Min. SP. R.
	- 41 . 11 . 14,06								- 3 . 24 . 57,88	$\delta$ Urs. Min. SP.
	25 . 4 . 35,46	30,296	47,2	47,2	27,79	4,75	9,337	7,63	62 . 52 . 14,41	Mars.
	25 . 0 . 51,36				27,72				62 . 48 . 27,36	*R. 6 <sup>h</sup> . 13 <sup>m</sup> . 12 <sup>s</sup> .
	70 . 32 . 4,23	50,342	45,2	44,9	2 . 47,56	16,86	11,842	18,46	108 . 21 . 24,75	Venus.
	- 34 . 21 . 29,81		45,7	45,5	40,80				3 . 24 . 57,67	$\delta$ Ursæ Minoris.
	68 . 47 . 21,15	30,340	49,2	50,7	2 . 31,03	8,08		16 . 14,40	106 . 20 . 37,98	$\odot$ .
	68 . 14 . 53,24				2 . 26,96	8,05			106 . 20 . 34,83	$\odot$ .
	43 . 38 . 34,92	30,342	48,6	47,8					80 . 34 . 41,38	$\delta$ .
	43 . 38 . 34,89				56,61	37 . 12,37		14 . 46,06	80 . 34 . 41,35	$\delta$ .
	43 . 38 . 30,29								80 . 34 . 36,75	$\delta$ .
	37 . 32 . 25,26		47,0	45,3	45,86	2,31			75 . 20 . 17,09	Vesta.
	32 . 17 . 2,78		46,2		37,72	0,97	12,079	20,93	70 . 4 . 26,88	Jupiter.
29,68	6 . 23 . 19,09	30,382	45,2	43,0	6,73				44 . 10 . 34,10	Capella R.
	6 . 23 . 18,86								44 . 10 . 33,87	Capella.
29,51	23 . 44 . 44,10		45,0	42,6	26,45				61 . 32 . 18,83	$\beta$ Tauri R.
	23 . 44 . 43,54								61 . 32 . 18,27	$\beta$ Tauri.
	25 . 5 . 57,54	30,320	44,0	42,5	28,11	4,71	10,789	7,49	62 . 53 . 21,73	Mars.
	25 . 0 . 50,11				28,00				62 . 48 . 26,39	*R. 6 <sup>h</sup> . 13 <sup>m</sup> . 12 <sup>s</sup> .
	25 . 8 . 21,46				28,16				62 . 55 . 57,90	*R. 6 <sup>h</sup> . 18 <sup>m</sup> . 37 <sup>s</sup> .
	25 . 4 . 53,15				28,09				62 . 52 . 29,52	*R. 6 <sup>h</sup> . 18 <sup>m</sup> . 50 <sup>s</sup> .
30,17	- 41 . 11 . 12,72				52,48				- 3 . 24 . 56,92	$\delta$ U. Min. SP. R.
	- 41 . 11 . 11,97								- 3 . 24 . 56,17	$\delta$ Urs. Min. SP.

Coincidence of Micrometer Wire with fixed Wire = 10',070. One revolution = 20'',833.

Correction for Runs = - 0'',9.

Adopted Zenith Point = 221° . 34' . 34'',31. From Feb. 3. = 221° . 34' . 29'',79.

Assumed Co-latitude = 37° . 47' . 8'',28.

Feb. 2. 21<sup>h</sup>, Molyneux fast on Hardy 50°.



12 ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1835.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.		
			A	B	C	D	E	F						
			° ' "	" "	" "	" "	" "	" "						
Feb. 5	☉ N.L. M. ....	289.30	2.31,9	33,2	33,3	31,9	34,0	28,0	13,178	- 1. 4,75	289.31.27,22	G.		
	☉ S.L. ....	290. 0	3.50,7	54,9	53,3	46,5	51,9	45,7			290. 3.50,38	G.		
	Mars N.L. ....	246.40	1.22,1	26,3	23,0	21,5	23,1	21,1			246.41.22,82	J.G.		
	♄ U. Min. SP. R. M.	82.45	1.58,0	63,3	63,2	59,8	61,1	56,5			82.45.43,90	J.G.		
	♃ Ursæ Minoris SP.	180.20	3.15,3	20,3	19,9	19,3	19,9	16,7			180.23.18,47	J.G.		
	(a) Venus S.L. ....	292.10	3.30,3	33,4	34,8	30,2	30,3	27,5			292.13.30,98	G.		
Feb. 6	☉ S.L. M. ....	289.45	1.48,3	51,7	52,3	48,3	48,4	44,0	13,660	- 1. 14,79	289.45.33,99	G.		
	☉ N.L. ....	289.10	3.10,3	12,1	14,9	10,0	11,1	5,9			289.13.10,62	G.		
	(b) Mercury center....	288.15	0. 9,5	14,3	14,3	10,2	9,9	5,9			+ 0,95	288.15.11,63	G.	
	ζ Arietis.....	253.20	0.64,6	68,0	68,0	64,2	63,3	59,7			253.21. 4,60	G.		
	* ♀. 3 <sup>h</sup> 21 <sup>m</sup> 20 <sup>s</sup> .	261.25	1.40,1	43,3	43,8	42,7	40,9	37,1			261.26.41,27	G.		
	f Tauri M. ....	261.25	1.40,1	43,3	43,8	42,7	40,9	37,1			16,001	- 2. 3,56	261.24.37,71	G.
	Vesta .....	258.55	0.25,9	29,3	28,5	26,0	25,1	24,0			258.55.26,47	G.		
	(c) ♃ S.L. M. ....	256.25	0.29,3	29,8	32,5	28,3	27,3	27,1			17,761	- 2. 40,22	256.22.43,41	G.
												- 5,40		
	♃ S.L. M. ....	256.25	0.29,3	29,8	32,5	28,3	27,3	27,1			17,941	- 2. 43,98	256.22.42,35	G.
												- 2,70		
	♃ S.L. ....	256.20	2.41,1	45,9	43,6	42,1	42,0	37,5					256.22.41,95	G.
	♃ S.L. M. ....	256.20	2.41,1	45,9	43,6	42,1	42,0	37,5			10,331	- 5,44	256.22.39,21	G.
												+ 2,70		
♃ S.L. M. ....	256.20	2.41,1	45,9	43,6	42,1	42,0	37,5	10,543	- 9,85	256.22.37,50	G.			
									+ 5,40					
(d) Jupiter S.L. ....	253.50	0. 8,2	11,3	11,9	8,3	7,4	4,5			253.50. 8,60	G.			
Mars S.L. ....	246.40	2.53,1	57,0	57,7	53,3	53,9	50,2			246.42.54,12	G.			
♄ U. Min. SP. R. M.	82.45	1.50,4	56,0	55,0	53,3	52,2	48,2	13,254	- 1. 6,33	82.45.46,14	G.			
♃ Ursæ Minoris SP.	180.20	3.17,0	21,3	21,8	20,3	18,9	15,4			180.23.19,02	G.			
Feb. 7	Jupiter S.L. ....	253.45	4.29,7	31,4	33,1	29,3	32,1	26,3	17,759	- 2. 40,19	253.49.30,18	G.		
	(e) ♃ S.L. M. ....	253. 0	1.16,2	21,0	17,9	17,5	19,0	13,3			- 4,26	252.58.33,00	G.	
	♃ S.L. M. ....	253. 0	1.16,2	21,0	17,9	17,5	19,0	13,3			17,855	- 2. 42,18	252.58.33,14	G.
												- 2,13		
	♃ S.L. ....	252.55	3.32,0	35,0	35,7	33,0	35,1	31,0					252.58.33,53	G.
	♃ S.L. M. ....	252.55	3.32,0	35,0	35,7	33,0	35,1	31,0			10,250	- 3,75	252.58.31,91	G.
												+ 2,13		
♃ S.L. M. ....	252.55	3.32,0	35,0	35,7	33,0	35,1	31,0	10,359	- 6,02	252.58.31,77	G.			
									+ 4,26					
Mars S.L. ....	246.40	4.10,3	15,1	13,8	11,8	11,6	8,9			246.44.11,78	G.			
Feb. 8	β Tauri R. M. ....	17.45	4.37,0	42,7	40,0	38,0	41,9	35,0	9,593	+ 9,94	17.49.48,91	G.		
	β Tauri .....	245.15	4.16,9	20,0	20,4	17,5	19,3	14,7					245.19.18,00	G.
	(f) ♃ S.L. ....	250.30	3.15,3	19,3	20,6	16,7	18,1	12,5			10,109	- 2,72	250.33.14,26	G.
	♃ S.L. M. ....	250.30	3.15,3	19,3	20,6	16,7	18,1	12,5					- 0,81	250.33.14,81
	♃ S.L. M. ....	250.30	3.15,3	19,3	20,6	16,7	18,1	12,5			10,248	- 1,36	250.33.13,27	
	♃ S.L. M. ....	250.30	3.15,3	19,3	20,6	16,7	18,1	12,5			10,349	- 3,71		250.33.12,52
												- 5,82		
	♃ S.L. M. ....	250.30	3.15,3	19,3	20,6	16,7	18,1	12,5			10,436	+ 1,36	250.33.12,08	G.
									- 7,62					
Venus S.L. ....	292.20	2.60,9	62,5	66,3	58,9	60,3	56,7			292.23. 0,85	G.			
Feb. 9	☉ N.L. M. ....	288.15	1.60,2	63,1	66,0	59,8	60,2	54,8	10,217	- 2,85	288.16.57,77	G.		
	☉ S.L. ....	288.45	4.22,5	22,5	25,8	20,1	22,2	18,1			288.49.21,73	G.		
	Mercury center....	286. 0	3.54,8	60,0	61,7	55,3	56,5	51,3			286. 3.56,48	G.		

(a) The barometer was set down 30,500: it is altered conjecturally.  
 (b) Observed between the 5<sup>th</sup> wire, and the comb: the correction for change of N.P.D. is +1",17, and that for curvature of path -0",22.

(c) Observed at the five wires: doubtful from clouds.  
 (d) Cloudy and bad.  
 (e) Observed at the five wires: cloudy at the 5<sup>th</sup>.  
 (f) Observed at the five wires.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi- diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
"	" ' "	Inch.	"	"	" "	" "	" "	" "	" " "	"
31,19	67. 56. 55,71	29,942	48,9	49,4	2. 23,28	8,04	9,379	7,20	106. 2. 33,43	☉.
	68. 29. 18,87				2. 27,19	8,07			106. 2. 32,07	☉.
	25. 6. 51,31	29,882	41,2	39,6	27,89	4,67		62. 54. 30,01	Mars.	
	- 41. 11. 12,39			39,5				- 3. 24. 56,16	δ U. Min. SP. R.	
	- 41. 11. 13,04				52,05			- 3. 24. 56,81	δ Urs. Min. SP.	
	70. 38. 59,47	30,050	39,5	38,3	2. 49,32	16,37	11,850	18,54	108. 28. 22,16	Venus.
	68. 11. 2,48	30,108	42,0	42,3	2. 27,92	8,05	16. 14,10		105. 44. 16,53	☉.
	67. 38. 39,11				2. 24,04	8,02		105. 44. 17,51	☉.	
	66. 40. 40,12	30,096	42,3	42,5	2. 17,37	6,05		104. 29. 59,72	Mercury.	
	31. 46. 33,09	30,148	41,6	40,6	37,10			69. 34. 18,47	ζ Arietis.	
39. 52. 9,76	30,162	41,9		50,03		77. 40. 8,07		* R. 3 <sup>h</sup> . 21 <sup>m</sup> . 20 <sup>s</sup> .		
39. 50. 6,20				49,97		77. 38. 4,45		f Tauri.		
37. 20. 54,96				45,72	2,27	75. 8. 46,69		Vesta.		
34. 48. 11,90	30,154	41,6	40,9					71. 50. 15,57	☽.	
34. 48. 10,84								71. 50. 14,51	☽.	
34. 48. 10,44				41,61	30. 54,85			14. 51,37	71. 50. 14,11	☽.
34. 48. 7,70								71. 50. 11,37	☽.	
34. 48. 5,99								71. 50. 9,66	☽.	
32,58	32. 15. 37,09	30,170	41,3	39,8	37,79	0,96	12,015	20,26	70. 3. 1,94	Jupiter.
	25. 8. 22,61				28,18	4,63	10,803	7,63	62. 55. 46,81	Mars.
	- 41. 11. 14,63			39,6	52,54				- 3. 24. 58,89	δ U. Min. SP. R.
	- 41. 11. 12,49								- 3. 24. 56,75	δ Urs. Min. SP.
	32. 14. 58,67	29,624	46,3	47,2	36,64	0,96	11,971	19,80	70. 2. 22,83	Jupiter.
	31. 24. 1,49		47,3	47,5					68. 28. 21,06	☽.
	31. 24. 1,63								68. 28. 21,20	☽.
	31. 24. 2,02				35,42	28. 25,63		14. 58,50	68. 28. 21,59	☽.
	31. 24. 0,40								68. 28. 19,97	☽.
	31. 24. 0,26								68. 28. 19,83	☽.
33,46	25. 9. 40,27	29,620	48,1	47,0	27,29	4,59	10,741	6,99	62. 57. 4,26	Mars.
	23. 44. 42,60	29,526	41,1	39,2	25,89				61. 32. 16,77	β Tanri R.
	23. 44. 46,49								61. 32. 20,66	β Tauri.
	28. 58. 42,75	29,522	40,4	38,7					66. 4. 33,41	☽.
	28. 58. 43,30								66. 4. 33,96	☽.
	28. 58. 41,76				32,62	26. 42,16		15. 8,08	66. 4. 32,42	☽.
	28. 58. 41,01								66. 4. 31,67	☽.
	28. 58. 40,57								66. 4. 31,23	☽.
	70. 48. 29,34	29,730	38,3	36,7	2. 49,55	15,68	11,691	16,89	108. 37. 54,60	Venus.
	66. 42. 26,26	29,788	40,0	40,0	2. 16,86	7,96		16. 13,50	104. 47. 56,94	☉.
67. 14. 50,22				2. 20,45	7,99		104. 47. 57,46		☉.	
64. 29. 24,97	29,800	40,9	40,5	2. 3,53	6,13		102. 18. 30,65		Mercury.	

Coincidence of Micrometer Wire with fixed Wire = 10',070. One revolution = 20'',833.  
 Correction for Runs = -0'',9.  
 Adopted Zenith Point = 221°. 34'. 31'',51.  
 Assumed Co-latitude = 37°. 47'. 8'',28.



Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
			° ' "	° ' "	° ' "	° ' "	° ' "	° ' "				
Feb. 9	α Persei R. M.....	38.35	3.27,2	32,3	28,9	29,3	29,3	26,5	11,693	-33,81	38.37.55,01	G.
	α Persei.....	224.30	1.6,8	10,2	11,0	7,0	8,9	4,9			224.31.8,10	G.
	(a) Vesta.....	258.35	2.62,0	65,0	66,5	63,1	62,2	59,0	14,085	-1.23,64	258.38.2,87	G.
	Jupiter N.L.....	253.45	2.17,0	19,7	20,3	17,7	17,3	13,7			253.47.17,55	G.
	Capella R. M.....	35.10	2.33,4	38,3	36,7	34,0	36,3	32,0	11,220	-23,95	35.11.11,89	G.
	Capella.....	227.55	2.49,4	53,2	53,9	50,0	49,8	45,5			227.57.50,22	G.
	(b) N.L. M.....	248.50	0.61,0	64,8	65,8	59,7	61,2	59,7	11,292	-0,72	248.50.37,33	G.
	N.L. M.....	248.50	0.61,0	64,8	65,8	59,7	61,2	59,7			-25,46	248.50.36,18
	N.L.....	248.50	0.34,3	37,0	36,0	34,3	34,8	32,1	11,292	-0,36	248.50.35,45	G.
	Venus S.L.....	292.25	0.43,3	42,9	47,1	40,6	42,5	39,9			+0,72	292.25.42,70
Feb. 10	⊙ S.L. M.....	288.30	1.18,8	22,9	25,9	21,0	20,4	18,1	13,801	-1.17,72	288.30.3,43	G.
	⊙ N.L.....	287.55	2.39,1	42,0	44,1	39,3	40,9	36,5			287.57.40,23	G.
	Mercury center....	285.15	2.56,1	61,5	64,9	58,3	58,9	54,3	10,602	-11,08	285.17.58,92	G.
	(a) Jupiter S.L.....	253.45	2.6,9	10,3	12,0	8,9	9,0	4,9			253.47.8,60	G.
	(a) Aldebaran R. M....	5.30	2.48,0	54,0	57,8	50,0	52,3	45,8	15,319	-1.40,36	5.32.40,15	G.
	(a) Aldebaran.....	257.35	1.22,8	26,3	28,8	24,3	23,6	22,0			257.36.24,60	G.
	Mars S.L.....	246.45	3.10,0	12,7	13,9	9,0	9,8	6,8	14,813	-1.38,80	246.48.10,27	G.
	δ U. Min. SP. R. M.	82.45	2.32,7	36,9	36,4	33,7	33,9	30,9			82.45.44,64	G.
	δ Ursæ Minoris SP.	180.20	3.17,0	21,1	21,2	18,9	17,6	15,9	14,813	-1.38,80	180.23.18,52	G.
	Sirius R. M.....	332.55	1.1,7	6,4	9,0	4,3	5,0	0,1			332.54.25,58	G.
	Sirius.....	290.10	4.37,3	40,0	42,0	35,5	39,0	32,1	14,430	-1.30,83	290.14.37,50	G.
	ζ <sup>2</sup> Geminorum.....	252.55	3.23,9	25,3	23,7	23,0	24,3	21,9			252.58.24,42	J.G.
	ζ <sup>1</sup> Geminorum M.	252.55	3.23,9	25,3	28,7	23,0	24,3	21,9	14,430	-1.30,83	252.56.53,59	J.G.
	δ Geminorum.....	251.25	4.59,0	64,2	65,1	59,1	61,6	56,2			251.30.0,72	J.G.
	(c) S.L. M.....	249.35	2.17,3	20,7	22,8	18,9	18,9	16,1	11,150	-22,50	249.36.58,09	J.G.
	S.L. M.....	249.35	2.17,3	20,7	22,8	18,9	18,9	16,1			+1,54	249.36.58,37
	N.L.....	249.5	0.23,3	25,9	27,1	22,8	24,0	21,0	10,030	-21,45	249.5.24,02	G.
	N.L. M.....	249.5	0.23,3	25,9	27,1	22,8	24,0	21,0			+0,83	249.5.24,08
	N.L. M.....	249.5	0.23,3	25,9	27,1	22,8	24,0	21,0	10,012	-0,77	249.5.23,69	G.
	Pollux.....	245.20	1.49,3	51,3	53,1	47,9	48,9	46,0			+1,21	245.21.49,37
φ Geminorum.....	246.35	0.41,9	44,1	45,9	39,8	42,2	39,0	10,012	-1,54	246.35.42,13	G.	
Feb. 12	α Persei R. M.....	38.35	3.6,8	12,1	11,3	6,9	11,3	6,6	10,769	-14,56	38.37.54,51	G.
	α Persei.....	224.30	1.7,0	10,1	9,5	6,1	10,0	5,5			224.31.8,00	G.
	(d) Vesta.....	258.20	0.21,5	23,8	24,3	23,1	25,9	21,9	7,118	+0,29	258.20.23,71	G.
	δ Eridani R. M.....	339.0	2.44,1	49,1	51,3	44,6	49,8	42,4			+1.1,50	339.3.48,30
	δ Eridani.....	284.5	0.13,3	16,3	18,8	12,2	13,6	12,2	9,401	+13,94	284.5.14,40	G.
	ε Persei R. M.....	28.50	3.16,5	22,1	20,9	19,7	20,0	16,9			28.53.33,19	J.G.
	ε Persei.....	234.15	0.25,6	29,5	28,3	25,7	27,1	25,6	12,924	-59,46	234.15.26,95	J.G.
	Jupiter S.L.....	253.45	0.24,3	27,9	27,0	23,3	25,0	21,3			253.45.24,78	G.
	Mars S.L.....	246.50	1.1,2	4,9	4,3	0,9	2,1	0,0	11,943	-39,02	246.51.2,20	G.
	δ U. Min. SP. R. M.	82.45	1.42,8	48,5	47,5	45,6	48,1	43,0			82.45.46,41	J.G.
	δ Ursæ Minoris SP.	180.20	3.13,0	17,5	17,3	16,3	18,0	12,7	11,943	-39,02	180.23.15,70	J.G.
	δ Draco. SP. R. M.	101.55	3.28,7	35,6	33,0	31,2	32,5	29,8			101.57.52,68	J.G.
	δ Draconis SP.....	161.10	1.6,2	10,7	10,5	8,9	9,3	7,0	11,943	-39,02	161.11.8,73	J.G.
ξ Cancri.....	251.0	4.20,0	23,2	23,7	19,4	22,0	17,9	251.4.20,90			G.	

(a) Cloudy.  
 (b) Observed at the 1<sup>st</sup>, 2<sup>d</sup>, and 5<sup>th</sup> wires: invisible at the others.  
 (c) The illuminated edge was distant from the S.L. by about 4°. 35' on the Moon's surface; 2",99 is added as a correction to the concluded reading

of the S.L. The observations made at the five wires.  
 (d) Near the 5<sup>th</sup> wire. The correction for change of N.P.D. is +0",13, and that for curvature of path +0",16.



Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi- diameter.	Geoc. N.P.D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
"	° ' "	Inch.	°	°	' "	' "	r	' "	° ' "	
31,56	2.56.36,50	29,772	40,0	38,6	3,06				40.43.47,84	α Persei R.
	2.56.36,59								40.43.47,93	α Persei.
	37.3.31,36			38,2	44,88	2,22			74.51.22,30	Vesta.
	32.12.46,04	29,752	39,1	38,1	37,44	0,95	8,159	19,90	70.0.50,71	Jupiter.
30,81	6.23.20,12	29,748	39,2	37,9	6,66				44.10.35,06	Capella R.
	6.23.18,71								44.10.33,65	Capella.
	27.16.5,82	29,712	39,3	38,4					64.53.30,69	∫.
	27.16.4,67				30,57	25.23,66		15.19,68	64.53.29,54	∫.
	27.16.3,94								64.53.28,81	∫.
	70.51.11,19	30,004	33,3	32,0	2.53,27	15,46	11,712	17,10	108.40.40,18	Venus.
	66.55.31,92	30,100	37,0	37,3	2.20,54	7,97		16.13,40	104.28.39,37	☉.
	66.23.8,72				2.16,98	7,94			104.28.39,44	☉.
	63.43.27,41	30,126	37,3	37,6	2.1,48	6,17			101.32.31,00	Mercury.
	32.12.37,09	30,250	36,3	35,0	38,31	0,95	12,000	20,10	70.0.2,63	Jupiter.
32,38	36.1.51,36	30,262	36,2	34,5	44,29				73.49.43,93	Aldebaran R.
	36.1.53,09								73.49.45,66	Aldebaran.
	25.13.38,76	30,296	34,2	33,0	28,82	4,48	10,713	6,70	63.1.4,68	Mars.
	-41.11.13,13				53,49				-3.24.58,34	δ U. Min. SP. R.
31,58	-41.11.12,99								-3.24.58,20	δ Ursæ Min. SP.
31,54	68.40.5,93				2.35,53				106.29.49,74	Sirius R.
	68.40.5,99								106.29.49,80	Sirius.
	31.23.52,91	30,314	35,0	32,4	37,39				69.11.38,58	ζ <sup>2</sup> Geminorum.
	31.22.22,08				37,36				69.10.7,72	ζ <sup>1</sup> Geminorum.
	29.55.29,21				35,27				67.43.12,76	δ Geminorum.
	28.2.29,57								65.8.1,64	∫.
	28.2.29,85				32,64	26.36,54			65.8.1,92	∫.
	27.30.52,51							15.32,31	65.7.57,25	∫.
	27.30.52,57				31,92	26.7,77			65.7.57,31	∫.
	27.30.52,18								65.7.56,92	∫.
	23.47.17,86				27,01				61.34.53,15	Pollux.
	25.1.10,62				28,60				62.48.47,50	φ Geminorum.
31,26	2.56.37,00	30,149	42,0	41,5	3,08				40.43.48,36	α Persei R.
	2.56.36,49								40.43.47,85	α Persei.
	36.45.52,20				44,66	2,19			74.33.42,95	Vesta.
31,35	62.30.43,21	30,141		41,0	1.54,50				100.19.45,99	δ Eridani R.
	62.30.42,89								100.19.45,67	δ Eridani.
30,07	12.40.58,32			40,6	13,48				50.28.20,08	ε Persei R.
	12.40.55,44								50.28.17,20	ε Persei.
	32.10.53,27	30,140		40,5	37,69	0,94	12,000	20,10	69.58.18,20	Jupiter.
	25.16.30,69	30,182	40,4	39,5	28,39	4,40	10,762	7,20	63.3.55,76	Mars.
31,06	-41.11.14,90				52,57				-3.24.59,19	δ U. Min. SP. R.
	-41.11.15,81								-3.25.0,10	δ Ursæ Min. SP.
30,71	-60.23.21,17			39,2	1.45,49				-22.37.58,38	δ Draco. SP. R.
	-60.23.22,78								-22.37.59,99	δ Draconis SP.
	29.29.49,39		40,2	38,9	34,05				67.17.31,72	ξ Cancri.

Coincidence of Micrometer-Wire with fixed Wire = 10',070. One revolution = 20",833.  
 Correction for Runs = -0",9.  
 Adopted Zenith Point = 221°.34'.31",51.  
 Assumed Co-latitude = 37°.47'.8",28.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
			° ' "	° ' "	° ' "	° ' "	° ' "	° ' "				
Feb. 12	(a) » N.L. M.....	254.10	2.34,3	35,5	36,2	33,7	39,1	33,0	9,921	+ 3,10	254.12.44,14	G.
	» N.L. M.....	254.10	2.34,3	35,5	36,2	33,7	39,1	33,0	9,840	+ 5,82		
	» N.L.....	254.10	2.43,0	47,9	48,1	44,4	48,2	41,5	9,968	+ 4,79	254.12.42,52	G.
	» N.L. M.....	254.10	2.43,0	47,9	48,1	44,4	48,2	41,5		+ 2,91		
	(b) Venus S.L.....	292.30	2.38,2	41,0	41,9	39,1	39,9	38,9		- 2,91	292.32.39,75	G.
Feb. 13	☉ N.L. M.....	286.55	4.49,5	57,9	56,1	53,1	54,2	48,1	14,019	- 1.22,27	286.58.30,73	G.
	☉ S.L.....	287.30	0.50,9	56,0	55,0	52,2	53,4	48,0			287.30.52,55	G.
Feb. 19	(c) » S.L. M.....	294.15	4.19,2	20,0	24,0	18,3	19,4	16,1	6,119	+ 1.22,37	294.20.47,71	G.
	» S.L. M.....	294.15	4.19,2	20,0	24,0	18,3	19,4	16,1	6,019	+ 5,95		
	» S.L.....	294.20	0.47,5	49,8	50,9	46,2	48,2	42,2	9,962	+ 24,45	294.20.47,45	G.
	» S.L. M.....	294.20	0.47,5	49,8	50,9	46,2	48,2	42,2		+ 2,91		
	» S.L. M.....	294.20	0.47,5	49,8	50,9	46,2	48,2	42,2	9,827	- 2,98	294.20.46,61	G.
	Antares.....	299.45	1.24,0	25,3	28,0	21,8	24,9	21,1		+ 5,12		
	ω Ophiuchi.....	294.50	0.36,1	37,8	39,1	33,9	37,1	32,0		- 5,96	294.50.35,98	G.
	δ Ursæ Minoris.....	187.10	3.3,9	8,1	7,7	6,7	5,7	2,9			187.13.5,75	G.
Venus N.L.....	292.35	2.53,3	55,9	57,9	53,7	54,0	48,3			292.37.53,77	G.	
Feb. 20	(d) ☉ S.L. M.....	285.5	0.32,0	37,4	36,9	31,9	34,3	29,2	10,136	- 1,31	285.5.32,29	G.
	☉ N.L.....	284.30	3.8,2	12,7	13,3	8,9	9,9	5,1			284.33.9,60	G.
	(e) » S.L. M.....	297.45	2.53,3	55,7	57,9	52,9	54,9	50,3	7,862	+ 46,07	297.48.42,17	G.
	» S.L.....	297.45	3.44,2	45,3	48,0	42,7	44,4	41,3		+ 2,02		
	» S.L. M.....	297.45	3.44,2	45,3	48,0	42,7	44,4	41,3	10,000	+ 1,52	297.48.43,72	G.
	» S.L. M.....	297.45	3.44,2	45,3	48,0	42,7	44,4	41,3	9,991	- 2,02		
	δ Ursæ Minoris.....	187.10	3.3,9	8,0	7,5	4,1	5,1	0,3		+ 1,71	187.13.4,73	G.
Venus N.L.....	292.35	2.15,3	17,1	19,9	15,1	15,3	11,3		- 4,04	292.37.15,62	G.	
Feb. 21	☉ N.L.....	284.10	1.35,9	44,6	38,1	39,4	37,8	35,0			284.11.38,42	G.
	Jupiter N.L.....	253.35	0.22,8	24,9	25,8	22,4	23,1	21,3			253.35.23,38	G.
	(f) Aldebaran R. M...	5.30	1.39,3	44,9	45,9	41,1	45,3	38,3	7,300	+ 57,77	5.32.40,19	G.
	Aldebaran.....	257.35	1.27,6	30,1	31,7	29,2	28,9	27,0			257.36.29,05	G.
	Mars N.L.....	247.0	4.55,9	59,0	59,7	55,7	57,9	53,7			247.4.56,85	G.
	δ U. Min. SP. R. M.	82.45	1.1,9	6,0	7,9	4,5	5,1	1,1	10,479	- 8,45	82.45.55,93	G.
	δ Ursæ Minoris SP.	180.20	3.14,8	17,8	18,7	16,8	15,2	13,3			180.23.16,02	G.
	α Lyræ R. M.....	28.0	0.5,6	9,6	9,9	5,1	6,0	4,1	11,237	- 24,24	27.59.42,48	G.
α Lyræ.....	235.5	4.27,1	27,9	29,1	25,1	26,5	23,1			235.9.26,35	G.	
Feb. 22	(g) Venus N.L.....	292.30	4.52,9	55,4	56,3	51,3	55,3	46,9			292.34.52,75	G.
Feb. 23	Mercury center....	275.25	1.39,3	41,2	42,2	38,0	41,7	35,9			275.26.39,63	G.
	Jupiter N.L.....	253.30	2.55,3	60,3	58,1	56,4	56,4	52,8			253.32.56,40	G.
	Aldebaran R. M...	5.30	2.23,3	27,9	27,3	25,1	27,3	22,7	9,437	+ 13,12	5.32.38,59	1.6
	Aldebaran.....	257.35	1.25,9	30,0	28,4	27,6	27,1	25,1			257.36.27,28	1.6

(a) Observed at 1<sup>st</sup>, 2<sup>d</sup>, 4<sup>th</sup>, and 5<sup>th</sup> wires.

(b) Very faint.

(c) Observed at the five wires.

(d) Too near the fixed wire to be satisfactory.

(e) Observed at the 2<sup>d</sup>, 3<sup>d</sup>, 4<sup>th</sup>, and 5<sup>th</sup> wires.

(f) F was set down 48,3: it is altered conjecturally. The observations very good.

(g) At the 4<sup>th</sup> wire: the correction is insensible. Very cloudy.



Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi- diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
"	° ' "	Inch.	°	°	' "	' "	r	' "	° ' "	
	32. 38. 12,63	30,182	40,2	38,9					70. 10. 36,04	∩.
	32. 38. 11,41				38,54	31. 19,98		15. 56,57	70. 10. 34,82	∩.
	32. 38. 11,01								70. 10. 34,42	∩.
	32. 38. 10,22								70. 10. 33,63	∩.
	70. 58. 8,24	30,200	40,3	40,0	2. 52,58	14,84	11,729	17,28	108. 47. 36,98	Venus.
	65. 23. 59,22	30,172	44,1	45,9	2. 8,88	7,87		16. 12,80	103. 29. 21,31	☉.
	65. 56. 21,04				2. 12,11	7,90			103. 29. 20,73	☉.
	72. 46. 12,70	29,042	39,8	38,5					109. 24. 13,50	∩.
	72. 46. 11,80								109. 24. 12,60	∩.
	72. 46. 12,44				3. 4,76	56. 8,54		16. 3,70	109. 24. 13,24	∩.
	72. 46. 11,77								109. 24. 12,57	∩.
	72. 46. 11,60								109. 24. 12,40	∩.
	78. 11. 49,14			37,7	4. 31,03				116. 3. 28,45	Antares.
	73. 16. 0,97				3. 10,76				111. 6. 20,01	♁ Ophiuchi.
	- 34. 21. 29,26	29,102	38,1	37,8	39,76				3. 24. 59,26	♁ Ursæ Minoris.
	71. 3. 18,76	29,126	39,0	38,5	2. 47,78	13,52	8,696	14,35	108. 53. 15,65	Venus.
	63. 30. 57,28	29,166	43,8	44,4	1. 54,92	7,73		16. 11,30	101. 3. 41,45	☉.
	62. 58. 34,59				1. 52,28	7,70			101. 3. 38,75	☉.
	76. 14. 7,16	29,112	38,0	36,5					112. 52. 30,18	∩.
	76. 14. 9,21								112. 52. 32,23	∩.
	76. 14. 8,71				3. 53,88	56. 42,20		15. 56,94	112. 52. 31,73	∩.
	76. 14. 6,88								112. 52. 29,90	∩.
	- 34. 21. 30,28	29,148	37,5	37,0	39,89				3. 24. 58,11	♁ Ursæ Minoris.
	71. 2. 40,61	29,126	38,2	37,4	2. 48,27	13,35	8,652	14,80	108. 52. 38,61	Venus.
	62. 37. 3,41	29,190	43,3	44,7	1. 50,61	7,67		16. 11,10	100. 42. 5,73	☉.
34,62	32. 0. 48,37	29,290	41,3	40,3	36,41	0,91	8,155	19,98	69. 48. 52,13	Jupiter.
	36. 1. 54,82	29,300	41,0	40,0	42,39				73. 49. 45,49	Aldebaran R.
	36. 1. 54,04								73. 49. 44,71	Aldebaran.
	25. 30. 21,84	29,326	39,4	38,6	27,92	4,07	9,461	6,38	63. 18. 0,35	Mars.
35,98	- 41. 11. 20,92				51,18				- 3. 25. 3,82	♁ U. Min. SP. R.
	- 41. 11. 18,99								- 3. 25. 1,89	♁ Urs. Min. SP.
34,42	13. 34. 52,53	29,608	38,2	37,2	14,32				51. 22. 15,13	α Lyræ R.
	13. 34. 51,34								51. 22. 13,94	α Lyræ.
	71. 0. 19,15	29,072	44,0	44,6	2. 44,90	13,01	8,865	12,52	108. 50. 11,84	Venus.
	53. 52. 6,03	29,226	48,1	48,2	1. 18,17	7,49			91. 40. 24,99	Mercury.
	31. 58. 22,80	29,406	45,2	44,3	36,19	0,90	8,148	19,99	69. 46. 26,36	Jupiter.
32,94	36. 1. 55,01	29,424	44,7	43,7	42,25				73. 49. 45,54	Aldebaran R.
	36. 1. 53,68								73. 49. 44,21	Aldebaran.

Coincidence of Micrometer Wire with fixed Wire = 10',070. From Feb. 19. = 10',073. From Feb. 22. = 10',067.

One revolution = 20'',833.

Correction for Runs = - 0'',9. From Feb. 19. = - 0'',8. From Feb. 22. = - 1'',6.

Adopted Zenith Point = 221°. 34'. 31'',51. From Feb. 19. = 221°. 34'. 35'',01. From Feb. 22. = 221°. 34'. 33'',60.

Assumed Co-latitude = 37°. 47'. 8'',28.



Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
			° ' "	° ' "	° ' "	° ' "	° ' "	° ' "				
Feb. 23	Capella R. M.....	35.10	1.53,9	59,0	58,3	55,4	56,3	52,8	12,013	-40,53	35.11.15,32	G.
	Capella .....	227.55	2.50,0	54,1	53,2	49,9	51,3	48,0			227.57.50,93	G.
	β Tauri R. M.....	17.45	4.40,2	46,5	43,9	42,4	44,7	40,1	9,750	+6,61	17.49.49,33	J.G.
	β Tauri .....	245.15	4.15,0	18,2	17,5	16,1	17,3	14,4			245.19.16,18	J.G.
	Mars N.L.....	247.5	3.18,3	23,2	21,9	19,9	20,2	17,8	11,187	-23,33	247.8.20,05	G.
	δ U. Min. SP. R. M.	82.45	1.13,7	18,0	18,7	16,9	16,1	13,9			82.45.52,82	G.
	δ Ursæ Minoris SP.	180.20	3.13,1	17,2	17,0	15,3	14,1	12,2			180.23.14,63	G.
Venus N.L.....	292.30	2.54,6	56,7	58,2	53,0	55,2	49,2	292.32.54,33	G.			
Feb. 24	⊙ S.L. M.....	283.35	2.19,3	21,7	23,9	18,3	20,7	17,0	7,035	+1.3,16	283.38.23,19	G.
	⊙ N.L.....	283.5	1.5,0	7,2	9,3	3,3	5,9	2,1			283.6.5,40	G.
	Mercury center....	274.50	2.14,1	18,3	19,1	14,6	17,5	11,6	8,419	+34,33	274.52.15,75	G.
	(a) Jupiter N.L.....	253.30	1.38,9	42,8	41,9	38,9	41,9	36,5			253.31.40,07	G.
	Aldebaran R. M...	5.30	2.3,8	9,4	11,3	6,1	8,0	1,8	7,429	+54,96	5.32.40,95	G.
	Aldebaran .....	257.35	1.25,9	29,7	28,7	26,5	25,9	24,7			257.36.26,83	G.
	β Tauri R. M.....	17.45	3.51,8	58,6	57,6	54,7	55,7	51,9	10,979	-19,00	17.49.49,86	J.G.
	β Tauri .....	245.15	4.15,2	17,8	19,7	15,7	16,2	12,7			245.19.15,98	J.G.
	ε Orionis R. M.....	348.0	4.24,9	29,0	32,0	25,3	29,4	24,8	13,973	-1.21,37	348.4.8,33	G.
	ε Orionis .....	275.0	4.58,5	60,0	64,3	56,9	59,5	54,0			275.4.58,60	G.
	(b) ω Draco. SP. R. M.	100.30	1.48,1	51,3	52,3	49,9	50,9	46,3	9,813	+5,29	100.30.28,33	G.
	ω Draconis SP.....	162.35	3.41,0	44,2	44,9	44,0	43,1	41,2			162.38.42,87	G.
	Mars S.L.....	247.10	0.15,6	18,2	20,9	15,3	17,3	15,1	180.23.16,58		247.10.17,05	G.
	(b) δ U. Min. SP. R. M.	82.45	0.44,0	48,3	49,9	46,3	46,3	43,0			82.45.51,56	J.G.
(b) δ Ursæ Minoris SP.	180.20	3.15,0	18,7	19,6	17,2	16,0	14,0	180.23.16,58	J.G.			
Mar. 3	⊙ N.L. M.....	280.30	2.9,0	12,5	14,6	10,1	12,2	7,0	21,232	-3.52,68	280.28.18,15	G.
	⊙ S.L.....	281.0	0.30,9	34,4	34,9	32,0	34,2	30,2			281.0.32,75	G.
	Capella R. M.....	35.5	2.52,0	57,7	56,0	52,9	56,1	50,8	0,562	+3.17,94	35.11.12,09	G.
	Capella .....	227.55	2.47,9	52,7	50,9	47,9	49,7	45,3			227.57.48,98	G.
	Mars N.L.....	247.20	3.3,9	6,9	7,2	2,2	6,0	1,9	247.23.4,58	G.		
Mar. 4	β Tauri R. M.....	17.50	0.14,0	19,0	19,2	14,7	16,2	13,1	11,398	-27,80	17.49.48,23	G.
	β Tauri .....	245.15	4.14,1	18,1	19,1	14,8	17,0	12,1			245.19.15,73	G.
	* R. 6 <sup>h</sup> . 18 <sup>m</sup> . 37 <sup>s</sup> .	246.40	2.52,9	55,1	55,2	52,2	51,8	49,0	11,817	-36,53	246.42.52,60	J.G.
	Mars S.L.....	247.25	0.20,7	21,0	23,0	18,7	20,1	19,0			247.25.20,40	G.
	ε Geminorum R. M.	14.40	0.1,0	6,2	7,3	3,2	4,7	0,0	11,781	-35,78	14.39.27,20	J.G.
	ε Geminorum.....	248.25	4.36,3	39,0	38,3	36,7	39,9	35,4			248.29.37,62	J.G.
	* R. 6 <sup>h</sup> . 39 <sup>m</sup> . 45 <sup>s</sup> .	246.35	0.54,0	56,9	57,1	52,2	54,2	50,7	17,692	-2.38,94	246.35.54,15	J.G.
	37 Geminorum.....	248.10	2.21,3	24,0	25,7	21,2	22,9	19,9			248.12.22,42	J.G.
	(d) γ <sup>1</sup> Geminorum M...	247.25	4.62,2	62,2	66,7	59,2	60,9	59,7	247.29.26,04		247.29.26,04	G.
	γ <sup>2</sup> Geminorum.....	247.35	3.60,0	61,5	65,9	58,5	60,6	57,5			247.39.0,53	G.
	* R. 6 <sup>h</sup> . 51 <sup>m</sup> . 22 <sup>s</sup> .	246.55	3.59,0	60,0	62,7	57,2	58,7	55,4	246.58.58,70		246.58.58,70	G.
	Castor R. M.....	21.35	4.16,2	21,8	21,9	17,0	20,2	14,3			21.36.39,49	G.
	Castor .....	241.30	2.23,5	25,0	25,2	22,1	23,7	21,8	12,572	-52,28	241.32.23,47	G.
	δ Ursæ Minoris.....	187.10	3.6,0	9,2	10,9	6,9	6,9	4,7			187.13.7,33	G.
α Lyrae R. M.....	28.0	0.30,3	35,1	33,2	31,0	30,9	27,9	291.56.19,77		27.59.39,10	G.	
α Lyrae.....	235.5	4.27,7	27,7	30,0	23,9	25,5	23,0			235.9.26,15	G.	
Venus N.L.....	291.55	1.20,3	20,0	24,1	18,3	19,8	16,4	291.56.19,77	G.			
Mar. 5	⊙ N.L. M.....	279.40	1.17,3	21,2	22,9	18,3	18,7	16,7	7,370	+56,09	279.42.15,22	G.
	⊙ S.L.....	280.10	4.29,0	30,1	33,4	28,1	31,3	24,6			280.14.29,27	G.
	Venus N.L.....	291.45	4.60,1	62,5	64,9	57,0	60,6	55,1	291.49.59,87	G.		
Mar. 6	⊙ S.L. M.....	279.50	0.52,0	55,3	58,2	52,8	55,9	48,3	8,681	+28,79	279.51.22,51	G.
	⊙ N.L.....	279.15	4.6,9	9,7	12,3	4,0	8,0	3,3			279.19.7,23	G.

(a) Cloudy.

(b) Not good.

In consequence of the unsteadiness of the Zenith Point during January and February, the screws connecting the telescope with the circle, the mounting of the object glass, and the screws

fixing the microscope to the pier, were examined on Feb. 27 and 28: all appeared quite firm.

(c) The wrong divisions were read with the microscopes: the correction for runs is therefore positive, corresponding to 22".

(d) No correction for runs.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi- diameter.	Geoc. N.P.D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
"	" ' "	Inch.	"	"	" "	" "	"	" "	" ' "	
33,13	6.23.18,28	29,424	44,7	43,1	6,51				44.10.33,07	Capella R.
	6.23.17,33								44.10.32,12	Capella.
32,76	23.44.44,27				25,59				61.32.18,14	$\beta$ Tauri R.
	23.44.42,58								61.32.16,45	$\beta$ Tauri.
	25.33.46,45	29,456	43,0	42,0	27,92	4,00	9,520	5,70	63.21.24,35	Mars.
33,73	-41.11.19,22								-3.25.1,98	$\delta$ U. Min. SP. R.
	-41.11.18,97				51,04				-3.25.1,73	$\delta$ Ursæ Min. SP.
	70.58.20,73	29,635	40,2	39,1	2.49,70	12,84	8,769	13,52	108.48.19,39	Venus.
	62.3.49,59	29,700	43,6	44,7	1.49,94	7,63		16.10,40	99.36.29,78	$\odot$ .
	61.31.31,80				1.47,51	7,59			99.36.30,40	$\odot$ .
	53.17.42,15	29,697	43,8	44,8	1.18,35	7,66			91.6.1,12	Mercury.
	31.57.6,47	29,732	43,2	42,1	36,73	0,90	8,159	19,88	69.45.10,46	Jupiter.
33,89	36.1.52,65	29,744	43,3	41,2	42,92				73.49.43,85	Aldebaran R.
	36.1.53,23								73.49.44,43	Aldebaran.
32,92	23.44.43,74								61.32.18,12	$\beta$ Tauri R.
	23.44.42,38			39,3	26,10				61.32.16,76	$\beta$ Tauri.
33,47	53.30.25,27								91.18.53,50	$\epsilon$ Orionis R.
	53.30.25,00				1.19,95				91.18.53,23	$\epsilon$ Orionis.
35,60	-58.55.54,73	29,747	40,2	38,6	1.38,23				-21.10.24,68	$\omega$ Draco. SP. R.
	-58.55.50,73								-21.10.20,68	$\omega$ Draconis SP.
	25.35.43,45	29,762	40,0	38,4	28,46	3,97	10,731	6,92	63.23.9,30	Mars.
34,07	-41.11.17,96								-3.25.1,63	$\delta$ U. Min. SP. R.
	-41.11.17,02				51,95				-3.25.0,69	$\delta$ Ursæ Min. SP.
	58.53.46,82	29,582	43,3	44,8	1.36,33	7,38		16.8,70	96.58.32,75	$\odot$ .
	59.26.1,42				1.38,39	7,42			96.58.31,97	$\odot$ .
30,54	6.23.19,24	29,700	44,0	43,0	6,58				44.10.34,10	Capella R.
	6.23.17,65								44.10.32,51	Capella.
	25.48.33,25	29,722	43,0	42,0	28,48	3,74	9,485	6,02	63.36.12,29	Mars.
31,98	23.44.43,10	29,480	42,0	41,0	25,75				61.32.17,13	$\beta$ Tauri R.
	23.44.44,40								61.32.18,43	$\beta$ Tauri.
	25.8.21,27	29,472	40,0	38,0	27,63				62.55.57,18	* R. 6 <sup>h</sup> . 18 <sup>m</sup> . 37 <sup>s</sup> .
	25.50.49,07				28,53	3,71	10,681	6,44	63.38.15,73	Mars.
32,41	26.55.4,13	29,480	39,8		29,90				64.42.42,31	$\epsilon$ Geminorum R.
	26.55.6,29								64.42.44,47	$\epsilon$ Geminorum.
	25.1.22,82				27,49				62.48.58,59	* R. 6 <sup>h</sup> . 39 <sup>m</sup> . 45 <sup>s</sup> .
	26.37.51,09				29,53				64.25.28,90	$\beta$ Geminorum.
	25.54.54,71				28,62				63.42.31,61	$\gamma^1$ Geminorum.
	26.4.29,20				28,82				63.52.6,30	$\gamma^2$ Geminorum.
	25.24.27,37				27,98				63.12.3,63	* R. 6 <sup>h</sup> . 51 <sup>m</sup> . 22 <sup>s</sup> .
31,48	19.57.51,84		39,1	37,5					57.45.21,54	Castor R.
	19.57.52,14				21,42				57.45.21,84	Castor.
	-34.21.24,00	29,810	37,7	35,6	40,91				3.25.3,37	$\delta$ Ursæ Minoris.
32,62	13.34.52,23				14,46				51.22.14,97	$\alpha$ Lyrae R.
	13.34.54,82								51.22.17,56	$\alpha$ Lyrae.
	70.21.48,44	29,850	38,0	37,5	2.45,88	11,53	8,927	11,85	108.11.42,92	Venus.
	58.7.43,89	29,882	42,0	43,0	1.34,80	7,31		16.8,20	96.12.27,86	$\odot$ .
	58.39.57,94				1.36,80	7,36			96.12.27,46	$\odot$ .
	70.15.28,54	29,188	43,1	43,2	2.39,38	11,39	8,880	12,36	108.5.17,17	Venus.
	58.16.51,18	29,272	46,6	46,9	1.32,65	7,33		16.7,90	95.49.16,88	$\odot$ .
	57.44.35,90				1.30,75	7,28			95.49.15,55	$\odot$ .

Coincidence of Micrometer Wire with fixed Wire = 10',067. From Mar. 3. = 10',063. One revolution = 20',833.  
 Correction for Runs = -1'',6. From Mar. 3. = -1'',0.  
 Adopted Zenith Point = 221°. 34'. 33'',60. From Mar. 3. = 221°. 34'. 31'',33.  
 Assumed Co-latitude = 37°. 47'. 8'',28.



Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
			° ' "	° ' "	° ' "	° ' "	° ' "	° ' "				
Mar. 6	Jupiter S.L. M.....	253.15	3.22,9	22,8	25,9	21,1	23,3	18,8	10,397	-6,95	253.18.15,40	G.
	(a) S.L. M.....	254.0	3.17,3	19,0	20,3	15,7	18,0	14,9	17,872	-2.42,69 -4,74	254.0.29,99	G.
	) S.L. M.....	254.0	3.17,3	19,0	20,3	15,7	18,0	14,9	18,072	-2.46,85 -2,37	254.0.28,20	G.
	) S.L.....	254.0	0.26,8	29,3	29,2	27,2	28,9	25,3		+0,47	254.0.28,24	G.
	) S.L. M.....	254.0	0.26,8	29,3	29,2	27,2	28,9	25,3	10,268	-4,27 +2,37	254.0.25,87	G.
	) S.L. M.....	254.0	0.26,8	29,3	29,2	27,2	28,9	25,3	10,382	-6,64 +4,74	254.0.25,87	G.
	(b) Aldebaran R. M...	5.30	1.27,2	30,7	32,2	28,4	30,3	24,3	6,819	+1.7,58	5.32.36,38	G.
	Aldebaran .....	257.35	1.25,5	27,4	27,5	26,2	25,0	23,9			257.36.25,87	G.
	(c) Capella R. M.....	35.10	1.40,2	45,6	44,1	41,1	42,5	40,0	11,505	-30,03	35.11.12,17	J.G.
	Capella.....	227.55	2.47,5	51,9	50,9	48,9	50,0	46,9			227.57.49,25	J.G.
	(d) β Tauri R. M.....	17.45	4.7,3	13,0	11,3	10,7	9,9	7,8	8,271	+37,32	17.49.47,19	J.G.
	β Tauri.....	245.15	4.14,1	16,0	16,8	13,7	14,2	13,7			245.19.14,60	J.G.
	31 Camel. R. M.....	49.10	1.43,8	47,3	42,9	44,0	43,8	40,9	8,832	+25,63	49.12.9,36	G.
	31 Camelopardali...	213.55	1.52,3	55,0	54,9	53,1	53,0	50,9			213.56.53,13	G.
	Mars S.L.....	247.25	4.26,1	28,5	28,0	25,4	26,1	25,4			247.29.26,43	G.
	(e) * R. 6 <sup>h</sup> . 31 <sup>m</sup> . 25 <sup>s</sup> .	246.30	3.8,8	12,9	11,2	9,8	8,1	8,0			246.33.9,70	J.G.
	ε Geminorum.....	248.25	4.36,1	38,0	37,8	35,8	37,1	35,1			248.29.36,50	J.G.
	(f) * R. 6 <sup>h</sup> . 39 <sup>m</sup> . 45 <sup>s</sup> .	246.35	0.53,3	56,0	54,2	53,0	52,8	52,0			246.35.53,52	J.G.
	37 Geminorum M.	248.10	2.7,1	8,3	8,8	5,5	6,3	5,1	9,390	+14,02	248.12.20,80	G.
	γ <sup>1</sup> Geminorum M...	247.30	0.35,2	35,3	36,3	33,3	35,4	33,9	13,409	-1.9,70	247.29.25,18	G.
	* R. 6 <sup>h</sup> . 49 <sup>m</sup> . 2 <sup>s</sup> . M.	247.35	3.58,9	60,9	62,0	58,7	58,8	56,0	9,420	+13,39	247.39.12,47	G.
	γ <sup>2</sup> Geminorum.....	247.35	3.58,9	60,9	62,0	58,7	58,8	56,0			247.38.59,08	G.
	(g) A. S. C. 874. R. M.	72.0	3.58,0	62,8	61,9	59,3	60,1	56,1	11,089	-21,37	72.3.38,20	J.G.
	A. S. C. 874.....	191.5	0.24,7	27,0	25,8	26,5	24,3	26,5			191.5.25,78	J.G.
	* R. 6 <sup>h</sup> . 59 <sup>m</sup> . 27 <sup>s</sup> .	247.45	2.18,3	20,3	19,7	17,9	18,8	16,9			247.47.18,57	J.G.
	47 Geminorum.....	246.35	4.37,3	39,2	37,9	36,1	38,3	35,4			246.39.37,22	G.
	δ Draco. SP. R. M.	101.55	2.21,5	23,9	22,0	23,0	20,3	21,0	8,213	+38,54	101.58.0,41	G.
	δ Draconis SP.....	161.10	0.60,1	60,7	63,9	61,0	60,3	59,7			161.11.0,92	G.
	δ Ursæ Minoris.....	187.10	3.4,2	7,1	6,9	5,2	2,9	3,1			187.13.4,80	G.
	Venus N.L.....	291.40	3.11,3	14,0	13,9	10,4	10,8	8,8			291.43.11,43	G.
Mar. 8	Capella R. M.....	35.10	1.8,0	12,8	11,7	9,7	9,3	7,9	9,883	+3,75	35.11.13,62	G.
	Capella .....	227.55	2.49,0	53,5	52,1	49,8	49,6	47,1			227.57.50,08	G.
	β Tauri R. M.....	17.45	4.35,4	41,0	39,3	37,3	38,0	34,0	9,580	+10,06	17.49.47,41	J.G.
	β Tauri.....	245.15	4.14,2	16,9	16,9	14,3	14,3	13,0			245.19.14,78	J.G.
	ζ Tauri.....	252.40	4.39,1	41,2	42,2	39,3	40,8	37,3			252.44.39,83	J.G.
	ζ Orionis R. M.....	347.15	4.55,3	59,3	61,9	55,9	59,4	53,1	7,821	+46,70	347.20.44,02	G.
	ζ Orionis.....	275.45	3.17,2	18,9	20,5	15,2	16,1	13,3			275.48.16,75	G.
	β Tauri.....	249.15	1.32,4	34,0	33,0	32,5	33,7	30,9			249.16.32,70	J.G.
	α Orionis R. M.....	356.45	0.17,0	19,5	22,1	18,2	20,4	16,8	11,589	-31,79	356.44.47,19	G.
	α Orionis.....	266.20	4.15,5	17,5	20,0	13,9	14,0	13,1			266.24.15,52	G.
	(h) S.L. M.....	249.25	4.43,7	45,1	46,9	41,1	44,4	42,1	13,511	-1.11,84 -1,58	249.28.30,31	G.
	) S.L. M.....	249.25	4.43,7	45,1	46,9	41,1	44,4	42,1	13,592	-1.13,53 -0,79	249.28.29,41	G.
	) N.L.....	248.55	2.44,9	46,0	47,3	45,1	46,3	41,9			248.57.45,17	G.
	) N.L. M.....	248.55	2.44,9	46,0	47,3	45,1	46,3	41,9	10,143	-1,67 +0,79	248.57.44,29	G.
	) N.L. M.....	248.55	2.44,9	46,0	47,3	45,1	46,3	41,9	10,213	-3,12 +1,58	248.57.43,63	G.

- (a) The observations were at the five wires, except the third, which was 3<sup>s</sup> too late.
- (b) A blur.
- (c) Very unsteady.
- (d) Not good.

- (e) Very faint.
- (f) Not satisfactory.
- (g) Pretty good.
- (h) Observed at the five wires. The limbs pretty equally illuminated.



Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi- diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
"	" ' "	Inch.	"	"	" "	" "	"	" "	" ' "	
	31.43.44,07	29,512	45,2	44,3	35,98	0,86	12,210	18,88	69.31.8,59	Jupiter.
	32.25.58,66								69.29.54,49	)
	32.25.56,87								69.29.52,70	)
	32.25.56,91				36,98	28.59,46		14.49,97	69.29.52,74	)
	32.25.54,54								69.29.50,37	)
	32.25.54,54								69.29.50,37	)
31,13	36.1.54,95			44,0	42,35				73.49.45,58	Aldebaran R.
	36.1.54,54								73.49.45,17	Aldebaran.
30,71	6.23.19,16	29,536	44,2	43,1	6,54				44.10.33,98	Capella R.
	6.23.17,92								44.10.32,74	Capella.
30,90	23.44.44,14				25,69				61.32.18,11	$\beta$ Tauri R.
	23.44.43,27								61.32.17,24	$\beta$ Tauri.
31,25	-7.37.38,03		43,7	42,7	7,83				30.9.22,42	31 Camel. R.
	-7.37.38,20								30.9.22,25	31 Camelopard.
	25.54.55,10	29,550	43,2	41,5	28,48	3,67	10,664	6,26	63.42.21,93	Mars.
	24.58.38,37				27,50				62.46.13,95	*R.6 <sup>h</sup> .31 <sup>m</sup> .25 <sup>s</sup> .
	26.55.5,17				29,76				64.42.43,21	$\epsilon$ Geminorum.
	25.1.22,19				27,36				62.48.57,83	*R.6 <sup>h</sup> .39 <sup>m</sup> .45 <sup>s</sup> .
	26.37.49,47				29,39				64.25.27,14	37 Geminorum.
	25.54.53,85			41,2	28,50				63.42.30,63	$\gamma^1$ Geminorum.
	26.4.41,14				28,70				63.52.18,12	*R.6 <sup>h</sup> .49 <sup>m</sup> .2 <sup>s</sup> .
	26.4.27,75				28,70				63.52.4,73	$\gamma^2$ Geminorum.
31,99	-30.29.6,87	29,536	43,0	41,0	34,52				7.17.26,89	A. S. C. 874. R.
	-30.29.5,55								7.17.28,21	A. S. C. 874.
	26.12.47,24				28,87				64.0.24,39	*R.6 <sup>h</sup> .59 <sup>m</sup> .27 <sup>s</sup> .
	25.5.5,89				27,45				62.52.41,62	47 Geminorum.
30,67	-60.23.29,08	29,537	42,9	41,2	1.42,81				-22.38.3,61	$\delta$ Draco. SP. R.
	-60.23.30,41								-22.38.4,94	$\delta$ Draconis SP.
	-34.21.26,53	28,969	42,6	41,8	39,24				3.25.2,51	$\delta$ Ursae Minoris.
	70.8.40,10	28,920	44,0	43,8	2.36,75	11,26	8,982	11,33	107.58.25,20	Venus.
31,85	6.23.17,71	29,681	41,2	39,8	6,62				44.10.32,61	Capella R.
	6.23.18,75								44.10.33,65	Capella.
31,10	23.44.43,92			39,3	26,02				61.32.18,22	$\beta$ Tauri R.
	23.44.43,45								61.32.17,75	$\beta$ Tauri.
	31.10.8,50				35,77				68.57.52,55	$\zeta$ Tauri.
30,38	54.13.47,31		40,5	38,0	1.22,15				92.2.17,74	$\zeta$ Orionis R.
	54.13.45,42								92.2.15,85	$\zeta$ Orionis.
	27.42.1,37				31,13				65.29.40,78	$\beta$ Tauri.
31,36	44.49.44,14				58,89				82.37.51,31	$\alpha$ Orionis R.
	44.49.44,19								82.37.51,36	$\alpha$ Orionis.
	27.53.58,98	29,678	40,0	38,2					65.0.45,49	)
	27.53.58,08				31,38	25.45,74			65.0.44,59	)
	27.23.13,84							15.7,41	65.0.40,94	)
	27.23.12,96								65.0.40,06	)
	27.23.12,30				30,70	25.19,29			65.0.39,40	)

Coincidence of Micrometer Wire with fixed Wire = 10',063. One revolution = 20'',833.

Correction for Runs = -1'',0.

Adopted Zenith Point = 221°. 34'. 31'',33.

Assumed Co-latitude = 37°. 47'. 8'',28:

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
			° ' "	" "	" "	" "	" "	" "				
Mar. 8	ν Geminorum .....	253.25	3. 9,7	11,7	13,9	8,2	9,9	7,9			253.28.10,12	G.
	Mars S.L.....	247.30	3.45,5	47,0	48,2	43,9	46,1	44,3			247.33.45,72	G.
	ε Geminorum.....	248.25	4.36,6	36,4	37,4	34,7	37,5	33,1			248.29.35,80	G.
Mar. 9	Venus N.L.....	291.15	4.36,5	37,7	40,2	34,9	35,2	32,7			291.19.36,05	G.
Mar. 10	⊙ S.L. M.....	278.15	3.40,9	44,4	42,0	39,0	40,9	37,0	11,890	-38,07	278.18.2,51	G.
	⊙ N.L.....	277.45	0.47,7	50,1	49,6	46,1	46,2	43,1			277.45.47,10	G.
	Aldebaran R. M....	5.30	2.16,3	19,3	21,0	17,0	18,8	14,9	9,172	+18,56	5.32.36,36	G.
	Aldebaran.....	257.35	1.24,7	28,2	26,9	26,6	23,1	25,1			257.36.25,72	G.
	β Aurigæ R. M....	34.15	2.19,0	23,1	21,4	19,0	17,9	19,9	10,261	-4,12	34.17.15,85	J.G.
	β Aurigæ.....	228.50	1.45,7	50,0	48,0	47,0	46,5	44,0			228.51.46,82	J.G.
	* R. 6 <sup>h</sup> .18 <sup>m</sup> .37 <sup>s</sup> ..	246.40	2.51,3	54,5	53,6	52,0	51,3	50,7			246.42.52,13	G.
	δ U. Min. SP. R. M.	82.45	1.5,7	9,9	10,2	8,0	6,8	5,5	10,840	-16,19	82.45.51,46	G.
	δ Ursæ Minoris SP.	180.20	3.9,7	11,9	13,2	12,0	10,8	9,5			180.23.11,08	G.
	Mars S.L.....	247.35	3.15,7	17,5	19,6	15,1	15,9	15,0			247.38.16,35	G.
	* R. 7 <sup>h</sup> .21 <sup>m</sup> .40 <sup>s</sup> ..	246.35	0.54,7	55,9	55,1	53,9	53,4	52,6			246.35.54,23	G.
	37 Geminorum M..	248.10	2.37,1	36,1	38,9	34,1	35,9	34,6	10,777	-14,87	248.12.21,16	J.G.
	γ <sup>1</sup> Geminorum M...	247.30	0.29,9	30,3	31,7	28,3	29,8	28,8	13,129	-1.3,87	247.29.25,91	J.G.
	γ <sup>2</sup> Geminorum.....	247.35	3.59,2	60,4	62,0	58,7	59,4	55,8			247.38.59,12	J.G.
	* R. 6 <sup>h</sup> .51 <sup>m</sup> .22 <sup>s</sup> ..	246.55	3.56,1	58,0	59,9	55,3	55,1	54,9			246.58.56,42	J.G.
	(a) * R. 6 <sup>h</sup> .52 <sup>m</sup> .34 <sup>s</sup> ..	246.50	0.59,1	62,2	62,8	60,0	59,5	57,8		+0,46	246.51.0,66	J.O.
	47 Geminorum.....	246.35	4.37,3	38,3	38,2	36,1	36,9	36,3			246.39.37,03	J.G.
	δ Draco. SP. R. M.	101.55	2.43,3	48,0	45,0	46,3	46,3	43,7	9,329	+15,28	101.58.0,63	J.G.
	δ Draconis SP.....	161.10	1.0,7	3,3	4,3	2,0	2,1	0,0			161.11.2,03	J.G.
	* R. 7 <sup>h</sup> .21 <sup>m</sup> .40 <sup>s</sup> ..	249.25	1.59,8	63,0	63,2	59,1	60,8	58,6	11,686	-33,81	249.26.26,87	J.G.
	* R. 7 <sup>h</sup> .22 <sup>m</sup> .9 <sup>s</sup> ..	249.25	1.59,8	63,0	63,2	59,1	60,8	58,6	5,302	+1.39,18	249.28.39,86	J.G.
	ν Geminorum.....	246.30	1.31,7	31,3	33,3	29,7	30,1	29,7			246.31.30,92	J.G.
	Pollux R. M. ....	17.45	2.46,1	52,1	49,9	48,8	49,2	45,0	11,612	-32,27	17.47.16,15	G.
	Pollux.....	245.20	1.46,6	49,8	49,1	47,3	46,5	43,7			245.21.47,12	G.
	* R. 7 <sup>h</sup> .40 <sup>m</sup> .43 <sup>s</sup> ..	249.10	2.35,6	37,0	38,2	35,5	36,4	34,9			249.12.36,18	G.
	(b) ) N.L. M.....	249.35	2.53,9	54,9	55,0	51,9	52,9	50,2	8,052	+41,90	249.38.37,65	G.
	) N.L. M.....	249.35	2.53,9	54,9	55,0	51,9	52,9	50,2	7,990	+2,72		
) N.L.....	249.35	3.40,1	41,3	41,2	37,9	40,2	37,9		+43,19	249.38.37,58	G.	
) N.L. M.....	249.35	3.40,1	41,3	41,2	37,9	40,2	37,9	9,992	+1,36	249.38.39,65	G.	
) N.L. M.....	249.35	3.40,1	41,3	41,2	37,9	40,2	37,9	9,975	+1,48	249.38.38,77	G.	
) N.L. M.....	249.35	3.40,1	41,3	41,2	37,9	40,2	37,9	9,975	-1,36			
γ Cancri M.....	251.40	2.31,1	31,1	32,2	28,9	29,7	29,3	7,500	+1,84	251.43.23,70	G.	
(c) δ Cancri.....	255.0	1.21,3	25,0	26,0	21,9	22,7	22,9		-2,72	255.1.23,25	G.	
Mar. 11	(d) α Orionis R. M.....	356.45	0.27,8	30,0	29,9	27,7	30,3	27,1	12,175	-43,99	356.44.44,79	G.
	α Orionis.....	266.20	4.18,1	18,9	20,3	25,9	16,6	15,9			266.24.17,47	G.
	(e) α Lyncis R. M.....	50.50	4.18,2	21,8	20,0	19,3	20,1	18,0	7,608	+51,14	50.55.10,56	J.G.
	α Lyncis.....	212.10	3.52,1	54,3	54,1	52,1	52,8	50,4			212.13.52,50	J.G.
	(f) * R. 6 <sup>h</sup> .18 <sup>m</sup> .37 <sup>s</sup> ..	246.40	2.52,1	53,1	52,3	48,7	50,3	50,3			246.42.51,03	G.
	(e) δ U. Min. SP. R. M.	82.45	1.4,9	4,2	7,0	3,2	1,1	4,0	10,683	-12,92	82.45.51,11	G.
	δ Ursæ Minoris SP.	180.20	3.10,7	8,9	13,0	8,1	7,9	10,5			180.23.9,75	G.
	* R. 6 <sup>h</sup> .31 <sup>m</sup> .25 <sup>s</sup> ..	246.30	3.12,0	9,7	13,3	7,4	7,3	8,9			246.33.9,67	J.G.
	Mars N.L.....	247.40	0.26,0	33,3	26,1	22,0	22,0	24,0			247.40.25,55	G.
	37 Geminorum.....	248.10	2.21,7	20,3	22,6	18,3	20,9	20,2			248.12.20,58	G.
	γ <sup>1</sup> Geminorum M...	247.25	4.16,7	16,0	18,7	14,3	16,2	16,1	9,709	+7,37	247.29.23,57	G.
	γ <sup>2</sup> Geminorum.....	247.35	3.60,3	58,8	62,7	56,7	58,8	57,0			247.38.58,92	G.

(a) Extremely faint: observed near the comb.

(b) Observed at the five wires.

(c) Not well bisected.

(d) Too much wind.

(e) Very good.

(f) Pointer reading taken from observations of Mar. 10.



Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi- diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
"	" / "	Inch.	"	"	" "	" "	"	" "	" / "	
	31.53.38,79	29,687	40,0	38,2	36,88				69.41.23,95	ν Geminorum.
	25.59.14,39	29,662	39,3	38,0	28,89	3,60	10,590	5,49	63.46.42,47	Mars.
	26.55.4,47				30,09				64.42.42,84	ε Geminorum.
	69.45.4,72	29,340	38,2	38,3	2.37,53	10,87	8,951	11,64	107.34.51,30	Venus.
	56.43.31,18	29,460	45,3	46,6	1.27,91	7,18			94.15.53,29	⊙.
	56.11.15,77				1.26,15	7,14		16.6,90	94.15.49,96	⊙.
31,04	36.1.54,97	29,572	43,7	42,8					73.49.45,79	Aldebaran R.
	36.1.54,39				42,54				73.49.45,21	Aldebaran.
31,34	7.17.15,48	29,606	42,1	40,8		7,52			45.4.31,28	β Aurigæ R.
	7.17.15,49								45.4.31,29	β Aurigæ.
	25.8.20,80			39,5	27,67				62.55.56,75	*R.6 <sup>h</sup> .18 <sup>m</sup> .37 <sup>s</sup> .
31,27	-41.11.20,13		41,2	39,7	51,55				-3.25.3,40	δ Urs. Min. SP. R.
	-41.11.20,25								-3.25.3,52	δ Urs. Min. SP.
	26.3.45,02	29,607	41,0	39,3	28,85	3,54	10,668	6,30	63.51.12,31	Mars.
	25.1.22,90				27,54				62.48.58,72	*R.6 <sup>h</sup> .39 <sup>m</sup> .45 <sup>s</sup> .
	26.37.49,83				29,58				64.25.27,69	37 Geminorum.
	25.54.54,58				28,67				63.42.31,53	γ <sup>1</sup> Geminorum.
	26.4.27,79				28,87				63.52.4,94	γ <sup>2</sup> Geminorum.
	25.24.25,09				28,02				63.12.1,39	*R.6 <sup>h</sup> .51 <sup>m</sup> .22 <sup>s</sup> .
	25.16.29,33				27,86				63.4.5,47	*R.6 <sup>h</sup> .52 <sup>m</sup> .34 <sup>s</sup> .
	25.5.5,70				27,62				62.52.41,60	47 Geminorum.
31,33	-60.23.29,30		40,2	38,6	1.43,62				-22.38.4,64	δ Draco. SP. R.
	-60.23.29,30								-22.38.4,64	δ Draconis SP.
	27.51.55,54				31,24				65.39.35,06	*R.7 <sup>h</sup> .21 <sup>m</sup> .40 <sup>s</sup> .
	27.54.8,53				31,28				65.41.48,09	*R.7 <sup>h</sup> .22 <sup>m</sup> .3 <sup>s</sup> .
	24.56.59,59			37,6	27,54				62.44.35,41	ν Geminorum.
31,64	23.47.15,18		40,0	37,4	26,11				61.34.49,57	Pollux R.
	23.47.15,79				26,11				61.34.50,18	Pollux.
	27.38.4,85				31,01				65.25.44,14	*R.7 <sup>h</sup> .40 <sup>m</sup> .43 <sup>s</sup> .
	28.4.6,32								65.40.39,90	).
	28.4.6,25								65.40.39,83	).
	28.4.8,32				31,58	26.40,82		15.34,54	65.40.41,90	).
	28.4.8,44								65.40.42,02	).
	28.4.7,44								65.40.41,02	).
	30.8.52,37				34,39				67.56.35,04	γ Cancri.
	33.26.51,92	29,600	39,0	37,5	39,10				71.14.39,30	δ Cancri.
31,13	44.49.46,54	29,590	46,6	45,4	57,82				82.37.52,64	α Orionis R.
	44.49.46,14								82.37.52,24	α Orionis.
31,53	-9.20.39,23				9,58				28.26.19,47	α Lyncis R.
	-9.20.38,83								28.26.19,87	α Lyncis.
	25.8.19,70			45,1	27,34				62.55.55,32	*R.6 <sup>h</sup> .18 <sup>m</sup> .37 <sup>s</sup> .
30,43	-41.11.19,78	29,602	46,1		50,97				-3.25.2,47	δ Urs. Min. SP. R.
	-41.11.21,58								-3.25.4,27	δ Urs. Min. SP.
	24.58.38,34				27,15				62.46.13,77	*R.6 <sup>h</sup> .31 <sup>m</sup> .25 <sup>s</sup> .
	26.5.54,22				28,55	3,51	9,521	5,65	63.53.33,19	Mars.
	26.37.49,25				29,21				64.25.26,74	37 Geminorum.
	25.54.52,24				28,32				63.42.28,84	γ <sup>1</sup> Geminorum.
	26.4.27,59				28,52				63.52.4,39	γ <sup>2</sup> Geminorum.

Coincidence of Micrometer Wire with fixed Wire = 10',063. One revolution = 20'',833.

Correction for Runs = -1'',0.

Adopted Zenith Point = 221°.34'.31'',33.

Assumed Co-latitude = 37°.47'.8'',28.



Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.		
			A	B	C	D	E	F						
			° ' "	° ' "	° ' "	° ' "	° ' "	° ' "						
Mar. 11	* R. 6 <sup>h</sup> . 51 <sup>m</sup> . 22 <sup>s</sup> .	246.55	3.57,3	56,7	60,4	53,1	54,0	54,7	14,031	- 1.22,67	246.58.55,90	G.		
	* R. 6 <sup>h</sup> . 59 <sup>m</sup> . 35 <sup>s</sup> . M.	247.45	3.43,7	40,9	43,1	39,1	40,3	40,6			247.47.18,50	J.G.		
	47 Geminorum.....	246.35	4.39,8	36,3	39,7	34,3	38,0	56,9			246.39.37,35	J.G.		
	δ Draco. SP. R. M.	101.55	1.34,0	32,8	33,7	32,2	30,9	32,9			5,771	+ 1.29,41	101.58.2,11	J.G.
	(a) δ Draconis SP.....	161.10	0.60,0	58,6	62,3	58,9	56,9	59,0			- 0,35	161.10.58,90	G.	
	(b) γ Cancri.....	251.40	3.26,5	25,1	27,0	21,1	23,3	24,0			251.43.24,38	G.		
	δ Cancri.....	255.0	1.24,8	23,5	26,1	21,1	21,7	24,0			255.1.23,48	G.		
	(c) ) N.L. M.....	252.15	0.8,5	7,2	9,7	4,7	4,9	7,1			9,830	+ 4,86	252.15.16,80	G.
	) N.L. M.....	252.15	0.8,5	7,2	9,7	4,7	4,9	7,1			9,727	+ 4,92		
	) N.L.....	252.15	0.18,7	15,9	18,5	13,3	14,7	17,4			9,923	+ 6,99		
	) N.L. M.....	252.15	0.18,7	15,9	18,5	13,3	14,7	17,4			9,850	+ 2,91	252.15.16,85	G.
	) N.L. M.....	252.15	0.18,7	15,9	18,5	13,3	14,7	17,4			9,850	- 2,46		
	) N.L. M.....	252.15	0.18,7	15,9	18,5	13,3	14,7	17,4			9,850	+ 4,44		
	(d) α Hydræ R. M.....	341.25	2.17,9	15,9	20,3	13,9	18,3	15,7			12,168	- 43,85	341.26.33,07	J.G.
	α Hydræ.....	281.40	2.37,8	36,1	39,7	32,3	35,8	33,0			281.42.35,70	J.G.		
λ Leonis.....	250.5	0.23,6	21,2	23,9	19,6	21,1	23,1	250.5.22,07	G.					
Mar. 12	(c) ) N.L. M.....	256.15	2.51,3	50,3	54,1	49,1	51,9	48,7	7,750	+ 48,19	256.18.45,71	G.		
	) N.L. M.....	256.15	2.51,3	50,3	54,1	49,1	51,9	48,7	7,650	+ 6,72				
	) N.L.....	256.15	3.45,9	44,0	48,0	43,5	45,7	42,9	9,897	+ 50,27	256.18.44,43	G.		
	) N.L. M.....	256.15	3.45,9	44,0	48,0	43,5	45,7	42,9	9,897	+ 3,45				
	) N.L. M.....	256.15	3.45,9	44,0	48,0	43,5	45,7	42,9	9,822	- 3,36	256.18.44,97	G.		
	Venus N.L.....	290.50	1.45,7	42,2	45,9	40,0	42,9	40,0	9,822	+ 5,02				
Mar. 13	⊙ N.L. M.....	276.35	0.20,9	19,3	24,1	15,9	20,4	18,5	10,382	- 6,65	276.35.13,18	G.		
	⊙ S.L.....	277.5	2.24,7	23,2	27,7	20,1	23,1	21,2	277.7.23,25	G.				
	(e) Aldebaran R. M...	5.30	2.19,2	18,8	21,3	17,3	18,3	17,8	9,191	+ 18,16	5.32.36,86	J.G.		
	Aldebaran.....	257.35	1.26,0	26,1	26,7	24,7	22,8	24,2	257.36.25,03	J.G.				
	Capella R. M.....	35.10	1.20,0	19,7	21,0	18,3	16,8	19,3	10,353	- 6,04	35.11.13,09	G.		
	Capella.....	227.55	2.51,0	50,3	51,0	48,2	48,9	46,0	227.57.49,13	G.				
	(e) β Tauri R. M.....	17.45	3.51,8	52,3	52,8	48,7	50,8	50,0	7,380	+ 55,90	17.49.46,83	G.		
	β Tauri.....	245.15	4.16,1	15,1	18,0	13,6	14,3	12,6	245.19.14,82	G.				
	B Tauri.....	249.15	1.34,9	32,5	33,9	30,2	33,1	31,5	249.16.32,63	J.G.				
	α Orionis R. M.....	356.40	3.60,2	60,2	65,3	58,8	61,3	57,7	7,881	+ 45,46	356.44.45,91	G.		
	α Orionis.....	266.20	4.18,1	16,4	20,3	12,9	14,3	14,4	266.24.15,92	G.				
	Mars N.L.....	247.45	0.15,3	12,7	17,3	11,2	12,4	14,3	247.45.13,87	G.				
	* R. 6 <sup>h</sup> . 39 <sup>m</sup> . 45 <sup>s</sup> .	246.35	0.55,3	52,1	56,4	51,7	51,0	51,2	246.35.52,92	G.				
	* R. 6 <sup>h</sup> . 49 <sup>m</sup> . 2 <sup>s</sup> .	247.35	4.13,0	10,7	15,1	8,9	10,9	10,3	247.39.11,35	G.				
	γ <sup>2</sup> Geminorum M.....	247.35	4.13,0	10,7	15,1	8,9	10,9	10,3	10,689	- 13,04	247.38.58,31	G.		
	A. S. C. 874. R. M.	72.0	4.13,3	13,1	15,8	10,9	11,9	11,1	11,757	- 35,28	72.3.37,27	J.G.		
	A. S. C. 874.....	191.5	0.27,9	25,2	27,9	24,8	25,3	26,3	191.5.26,22	J.G.				
	* R. 6 <sup>h</sup> . 59 <sup>m</sup> . 35 <sup>s</sup> .	247.45	2.19,7	18,0	21,0	15,8	17,3	17,3	247.47.18,10	J.G.				
	* R. 6 <sup>h</sup> . 59 <sup>m</sup> . 27 <sup>s</sup> . M.	247.45	2.19,7	18,0	21,0	15,8	17,3	17,3	10,133	- 1,46	247.47.16,64	G.		
	* R. 7 <sup>h</sup> . 11 <sup>m</sup> . 31 <sup>s</sup> .	247.35	1.60,2	58,2	62,0	56,3	57,8	56,5	247.36.58,43	G.				
A Geminorum.....	248.25	0.10,9	9,0	14,8	9,1	10,8	11,0	248.25.10,93	G.					
* R. 7 <sup>h</sup> . 21 <sup>m</sup> . 40 <sup>s</sup> . M.	249.25	1.43,0	39,9	41,9	36,4	40,0	38,9	10,738	- 14,06	249.26.25,91	J.G.			
* R. 7 <sup>h</sup> . 22 <sup>m</sup> . 3 <sup>s</sup> . M.	249.25	1.43,0	39,9	41,9	36,4	40,0	38,9	4,258	+ 2.0,94	249.28.40,91	J.G.			
* R. 7 <sup>h</sup> . 22 <sup>m</sup> . 56 <sup>s</sup> .	250.30	2.50,9	50,6	54,2	49,1	50,3	49,1	250.32.50,60	J.G.					

(a) At 4<sup>th</sup> wire.

(b) The microscopes read previously: the star came on the fixed wire, not well bisected.

(c) Observed at the five wires.

(d) Very bad.

(e) Very good.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi- diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
"	" "	Inch.	"	"	" "	" "	r	" "	" "	"
30,50	25.24.24,57	29,620	45,3	44,4	27,74				63.12.0,59	*R.6 <sup>h</sup> .51 <sup>m</sup> .22 <sup>s</sup> .
	26.12.47,17				28,75				64.0.24,20	*R.6 <sup>h</sup> .59 <sup>m</sup> .35 <sup>s</sup> .
	25.5.6,02				27,34				62.52.41,64	47 Geminorum.
	-60.23.30,78	29,629	45,0	44,2	1.42,50				-22.38.5,00	δ Draco. SP. R.
	-60.23.32,43								-22.38.6,65	δ Draconis SP.
	30.8.53,05	29,653	44,0	42,3	34,10				67.56.35,43	γ Cancri.
	33.26.52,15				38,78				71.14.39,21	δ Cancri.
	30.40.45,47			43,2					68.14.53,04	).
	30.40.45,14								68.14.52,71	).
	30.40.45,07					34,83	29.25,25		68.14.52,64	).
30.40.45,52							15.49,71	68.14.53,09	).	
30.40.44,59								68.14.52,16	).	
34,39	60.7.58,26		43,1	42,2	1.41,95				97.56.48,49	α Hydræ R.
	60.8.4,37				31,91				97.56.54,60	α Hydræ.
	28.30.50,74								66.18.30,93	λ Leonis.
34.44.14,38	29,788	42,3	41,0					72.14.44,79	).	
34.44.13,10								72.14.43,51	).	
34.44.13,55					41,00	33.23,20		72.14.43,96	).	
34.44.13,64							16.4,33	72.14.44,05	).	
34.44.11,85								72.14.42,26	).	
69.17.11,40	30,032	41,2			2.36,49	10,51	8,970	11,45	107.6.57,11	Venus.
55.0.41,85	30,090	46,0	48,6		1.23,88	7,04		16.6,20	93.5.13,17	☉.
55.32.51,92					1.25,57	7,08			93.5.12,49	☉.
36.1.54,47	30,112	48,6	48,1		42,84				73.49.45,59	Aldebaran R.
36.1.53,70									73.49.44,82	Aldebaran.
6.23.18,24		47,7	47,0		6,61				44.10.33,13	Capella R.
6.23.17,80									44.10.32,69	Capella.
23.44.44,50			46,4		26,01				61.32.18,79	β Tauri R.
23.44.43,49					31,04				61.32.17,78	β Tauri.
27.42.1,30					58,75				65.29.40,62	B Tauri.
44.49.45,42		46,6	46,2		29,24	3,46	9,584	4,99	82.37.52,45	α Orionis R.
44.49.44,59					27,77				82.37.51,62	α Orionis.
26.10.42,54	30,100	45,1	43,3		29,11				63.58.21,59	Mars.
25.1.21,59					29,11				62.48.57,64	*R.6 <sup>h</sup> .39 <sup>m</sup> .45 <sup>s</sup> .
26.4.40,02					29,11				63.52.17,41	*R.6 <sup>h</sup> .49 <sup>m</sup> .2 <sup>s</sup> .
26.4.26,98					29,11				63.52.4,37	γ <sup>2</sup> Geminorum.
-30.29.5,94					35,01				7.17.27,33	A.S.C. 874. R.
-30.29.5,11					29,28				7.17.28,16	A.S.C. 874.
26.12.46,77					29,28				64.0.24,33	*R.6 <sup>h</sup> .59 <sup>m</sup> .35 <sup>s</sup> .
26.12.45,31					29,06				64.0.22,87	*R.6 <sup>h</sup> .59 <sup>m</sup> .27 <sup>s</sup> .
26.2.27,10					30,10				63.50.4,44	*R.7 <sup>h</sup> .11 <sup>m</sup> .31 <sup>s</sup> .
26.50.39,60					31,44				64.38.17,98	A Geminorum.
27.51.54,58					31,50				65.39.34,30	*R.7 <sup>h</sup> .21 <sup>m</sup> .40 <sup>s</sup> .
27.54.9,58					32,93				65.41.49,36	*R.7 <sup>h</sup> .22 <sup>m</sup> .3 <sup>s</sup> .
28.58.19,27									66.46.0,48	*R.7 <sup>h</sup> .22 <sup>m</sup> .56 <sup>s</sup> .

Coincidence of Micrometer Wire with fixed Wire 10',063. One revolution = 20'',833.

Correction for Runs = -1'',0.

Adopted Zenith Point = 221°.34'.31'',33.

Assumed Co-latitude = 37°.47'.8'',28.



Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.		
			A	B	C	D	E	F						
			° ' "	° ' "	° ' "	° ' "	° ' "	° ' "						
Mar. 13	* R. 7 <sup>n</sup> . 24 <sup>m</sup> . 46 <sup>s</sup> .	248.25	2.31,2	27,6	31,9	27,8	31,0	28,2	9,780	+ 5,90	248.27.29,53	G.		
	* Geminorum M....	248.55	4.32,3	27,9	32,9	26,2	28,7	28,7			248.59.35,20	G.		
	* R. 7 <sup>n</sup> . 34 <sup>m</sup> . 58 <sup>s</sup> .	249.0	4.18,2	15,0	20,6	14,0	16,3	15,0			249.4.16,37	G.		
	* R. 7 <sup>n</sup> . 40 <sup>m</sup> . 43 <sup>s</sup> .	249.10	2.36,8	33,0	38,0	31,9	34,1	34,0			249.12.34,55	G.		
	(a) α Cephei SP. R. M.	107.25	2.53,7	53,3	56,2	50,6	53,9	51,0			14,180	- 1.25,77	107.26.27,25	G.
	α Cephei SP.....	155.40	2.39,0	37,2	41,3	35,3	38,1	37,1			155.42.37,92	G.		
	γ Leonis.....	253.5	1.21,0	21,7	27,3	21,9	25,9	24,0			253.6.23,58	J.G.		
	ρ Leonis.....	263.35	2.23,7	19,0	23,0	17,5	18,2	21,0			263.37.20,32	J.G.		
	(b) δ N.L. M.....	261.30	3.37,1	33,1	37,2	33,3	32,9	33,1			4,617	+ 1.53,47 + 8,02	261.35.35,82	G.
	δ N.L. M.....	261.30	3.37,1	33,1	37,2	33,3	32,9	33,1			4,440	+ 1.57,15 + 4,01	261.35.35,49	G.
	δ N.L.....	261.35	0.40,7	37,0	40,6	37,1	37,1	36,9			9,940	+ 2,57 - 4,01	261.35.38,22	G.
	δ N.L. M.....	261.35	0.40,7	37,0	40,6	37,1	37,1	36,9			9,811	+ 5,25 - 8,02	261.35.36,78	G.
	δ N.L. M.....	261.35	0.40,7	37,0	40,6	37,1	37,1	36,9			9,811	+ 5,25 - 8,02	261.35.35,45	G.
	δ Leonis.....	262.20	0.23,7	21,3	24,2	20,7	19,0	22,3			85,020	+ 5.13,43 + 9,16	262.20.21,85	J.G.
Mar. 15	Regulus R. M.....	2.5	2.56,3	57,9	61,1	54,0	57,0	52,7	7,911	+ 44,87	2.8.41,29	G.		
	Regulus.....	261.0	0.23,1	22,2	24,2	21,3	21,9	22,1	15,369	- 1.50,50	261.0.22,45	G.		
	α Urs. Maj. R. M....	52.0	1.47,1	47,2	48,2	44,2	46,9	45,1	84,842	+ 5.17,15 + 4,58	51.59.55,90	J.G.		
	α Ursæ Majoris.....	211.5	4.9,6	8,9	11,1	7,0	8,1	5,3	9,932	+ 2,76 - 4,58	211.9.8,20	J.G.		
	η Virginis.....	273.30	1.13,3	11,7	16,1	8,0	17,8	10,0	9,776	+ 6,02 - 9,16	273.31.12,78	G.		
	(c) δ S.L. M.....	274.50	1.62,3	61,3	66,3	60,5	58,1	61,0	9,932	+ 2,76 - 4,58	274.57.24,11	G.		
	δ S.L. M.....	274.50	1.62,3	61,3	66,3	60,5	58,1	61,0	9,776	+ 6,02 - 9,16	274.57.23,25	G.		
	δ N.L.....	274.20	3.63,5	59,4	65,8	57,3	60,3	57,4	9,932	+ 2,76 - 4,58	274.24.0,50	G.		
	δ N.L. M.....	274.20	3.63,5	59,4	65,8	57,3	60,3	57,4	9,776	+ 6,02 - 9,16	274.23.58,68	G.		
	δ N.L. M.....	274.20	3.63,5	59,4	65,8	57,3	60,3	57,4	9,776	+ 6,02 - 9,16	274.23.57,36	G.		
	(d) Saturn N.L.....	279.40	0.11,3	8,7	12,7	7,0	8,3	6,0	6,402	+ 1.16,32	279.40.9,00	G.		
	(e) Venus S.L.....	290.15	4.55,9	56,0	58,2	52,1	52,9	51,9	6,402	+ 1.16,32	290.19.54,50	J.G.		
	Mar. 16	⊙ S.L. M.....	275.55	0.17,7	17,2	21,2	14,1	15,9	13,8	6,402	+ 1.16,32	275.56.32,95	G.	
		⊙ N.L.....	275.20	4.23,3	19,4	24,2	18,4	20,6	19,0	6,402	+ 1.16,32	275.24.20,68	G.	
Mar. 19	⊙ N.L. M.....	274.10	3.46,5	43,5	49,7	40,9	41,9	41,4	10,930	- 18,02	274.13.25,85	G.		
	⊙ S.L.....	274.45	0.35,2	32,3	36,7	29,9	31,5	30,5	10,930	- 18,02	274.45.32,67	G.		
	Polaris.....	185.20	2.21,6	20,4	23,8	19,8	19,4	19,3	6,659	+ 1.10,95	185.22.20,65	G.		
	Jupiter N.L.....	252.55	1.28,8	27,5	28,9	25,4	25,8	25,8	6,659	+ 1.10,95	252.56.26,98	G.		
	(f) Aldebaran R. M....	5.30	1.29,2	29,8	33,2	26,1	28,4	26,8	6,659	+ 1.10,95	5.32.39,82	G.		
	(g) Aldebaran.....	257.35	1.30,8	30,2	31,9	28,5	26,9	27,1	10,790	+ 0,16	257.36.29,34	G.		
	(h) Capella R. M.....	35.10	1.33,3	31,9	32,1	29,5	28,0	30,2	10,790	- 15,10	35.11.15,68	G.		
	Capella.....	227.55	2.55,5	54,3	56,2	51,5	52,2	51,7	8,112	+ 40,68 - 0,08	227.57.53,48	G.		
	(i) β Tauri R. M.....	17.45	4.11,9	12,0	14,6	9,8	10,7	8,8	8,112	+ 40,68 - 0,08	17.49.51,77	J.G.		
	(g) β Tauri.....	245.15	4.21,1	18,3	22,1	14,0	17,3	16,3	8,112	+ 0,31	249.19.18,36	J.G.		
	β Canis Majoris.....	291.35	2.41,3	39,1	42,9	36,0	38,8	35,9	10,505	- 9,17	291.37.38,92	G.		
	δ U. Min. SP. R. M.	82.45	1.4,2	4,6	6,3	2,9	0,3	1,3	10,505	- 9,17	82.45.54,06	G.		
	δ Ursæ Minoris SP.	180.20	3.16,4	15,6	18,0	15,1	14,3	13,4	8,259	+ 37,62	180.23.15,37	G.		
	Sirius R. M.....	332.50	3.45,0	43,9	49,0	42,0	46,9	41,3	8,259	+ 37,62	332.54.22,19	J.G.		
(k) Sirius.....	290.10	4.51,2	48,0	52,6	45,0	49,6	44,0	8,259	- 0,09	290.14.48,16	J.G.			

(a) The micrometer was set down 13,180.

(b) Observed at the five wires.

(c) The S.L. too far from the center of the field to be very well observed. Both limbs uneven: the correction appears insensible. Observations made at the five wires: flying clouds.

(d) Cloudy.

(e) No correction for runs.

(f) Seen but for an instant. The micrometer was set down 4,659.

(g) At 5<sup>th</sup> wire.

(h) Very good.

(i) At 4<sup>th</sup> wire: not good.

(k) Between 4<sup>th</sup> and 5<sup>th</sup> wires: not good.



Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi- diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
"	" "	Inch.	"	"	" "	" "	"	" "	" "	"
32,59	26.52.58,20	30,100	45,1	43,3	30,15				64.40.36,63	*R. 7 <sup>h</sup> .24 <sup>m</sup> .46 <sup>s</sup> .
	27.25.3,87	30,089	44,0	42,0	30,93				65.12.43,08	κ Geminorum.
	27.29.45,04				31,03				65.17.24,35	*R. 7 <sup>h</sup> .34 <sup>m</sup> .58 <sup>s</sup> .
	27.38.3,22			41,0	31,27				65.25.42,77	*R. 7 <sup>h</sup> .40 <sup>m</sup> .43 <sup>s</sup> .
	-65.51.55,92				2.12,58				-28.7.0,22	α Cephei SP. R.
	-65.51.53,41								-28.6.57,71	α Cephei SP.
	31.31.52,25	30,070	41,8	40,3	36,68				69.19.37,21	γ Leonis.
	42.2.48,99	30,060			53,87				79.50.51,14	ρ Leonis.
	40.1.4,49	30,050	41,3	40,0					77.27.8,01	δ.
	40.1.4,16								77.27.7,68	δ.
40.1.6,89				50,17	38.11,61		16.16,68	77.27.10,41	δ.	
40.1.5,45								77.27.8,97	δ.	
40.1.4,12								77.27.7,64	δ.	
40.45.50,52	30,044	41,0	39,5	51,56				78.33.50,36	ι Leonis.	
31,87	39.25.50,04	29,926	42,0	40,6	48,87				77.13.47,19	Regulus R.
	39.25.51,12								77.13.48,27	Regulus.
32,05	-10.25.24,57		41,5	40,4	10,95				27.21.32,76	α Urs. Maj. R.
	-10.25.23,13								27.21.34,20	α Ursæ Majoris.
	51.56.41,45	29,914	41,2	40,2	1.15,88				89.45.5,61	η Virginis.
	53.22.52,78	29,912		40,3					90.6.25,11	δ.
	53.22.51,92				1.19,89	48.25,31			90.6.24,25	δ.
	52.49.29,17						16.30,53		90.6.22,39	δ.
	52.49.27,35				1.18,29	48.3,88			90.6.20,57	δ.
	52.49.26,03								90.6.19,25	δ.
	58.5.37,67				1.35,23	0,83	9,182	9,20	95.54.29,55	Saturn.
	68.45.23,17	29,938	44,2	44,8	2.30,61	10,16	11,192	11,66	106.34.40,24	Venus.
	54.22.1,62	29,949	48,0	49,1	1.21,44	6,98			91.54.19,06	⊙.
	53.49.49,35				1.19,85	6,93		16.5,30	91.54.15,85	⊙.
	52.38.50,99	30,166	42,3	42,2	1.18,15	6,82			90.43.15,10	⊙.
	53.10.57,81				1.19,68	6,86		16.4,50	90.43.14,41	⊙.
	-36.12.14,21	30,162	44,2	44,8	43,49				1.34.10,58	Polaris.
34,58	31.21.52,12	30,163	46,3	46,5	36,09	0,82	8,391	17,43	69.9.53,10	Jupiter.
	36.1.55,04				43,06				73.49.46,38	Aldebaran R.
34,58	36.1.54,48								73.49.45,82	Aldebaran.
	6.23.19,18			46,2	6,64				44.10.34,10	Capella R.
	6.23.18,62								44.10.33,54	Capella.
35,07	23.44.43,09				26,07				61.32.17,44	β Tauri R.
	23.44.43,50								61.32.17,85	β Tauri.
34,72	70.3.4,06	30,174	45,3	44,4	2.42,51				107.52.54,85	β Canis Majoris.
	-41.11.19,20				52,03				-3.25.2,95	δ Urs. Min. SP. R.
35,18	-41.11.19,49								-3.25.3,24	δ Urs. Min. SP.
	68.40.12,67				2.31,24				106.29.52,19	Sirius R.
	68.40.13,30								106.29.52,82	Sirius.

Coincidence of Micrometer Wire with fixed Wire = 10',063. From Mar. 15. = 10',065, or 100',065.

One revolution = 20'',833.

Correction for Runs = -1'',0. From Mar. 15. = -0'',9.

Adopted Zenith Point = 221°.34'.31'',33. From Mar. 19. = 221°.34'.34'',86.

Assumed Co-latitude = 37°.47'.8'',28.

Mar. 19. 7<sup>h</sup>, Molyneux slow on Hardy 8<sup>s</sup>.

Month and Day.	NAME OF STAR or PLANET.	Pointer. ° ' "	Microscopes.						Micrometer or Time by Molyneux. r. h. m. s.	Correction for Microm. or Time. ' "	Concluded reading of Circle. ° ' "	Observer.
			A	B	C	D	E	F				
			"	"	"	"	"	"				
Mar. 19	Mars N.L. ....	248. 0	1. 13,7	11,6	13,9	9,2	9,1	9,0			248. 1. 11,05	G.
	(a) * R. 6 <sup>h</sup> . 51 <sup>m</sup> . 22 <sup>s</sup> .	246. 55	3. 61,9	59,1	63,4	55,9	63,4	56,0		+ 0,29	246. 59. 0,12	J.G.
	* R. 6 <sup>h</sup> . 59 <sup>m</sup> . 35 <sup>s</sup> .	247. 45	2. 23,9	20,1	23,9	18,8	19,8	19,0			247. 47. 20,85	J.G.
	* R. 7 <sup>h</sup> . 21 <sup>m</sup> . 40 <sup>s</sup> .	249. 25	1. 33,1	29,0	32,9	27,0	28,6	28,9			249. 26. 29,87	G.
	* R. 7 <sup>h</sup> . 22 <sup>m</sup> . 3 <sup>s</sup> . M.	249. 25	1. 33,1	29,0	32,9	27,0	28,6	28,9	3,655	+ 2. 13,54	249. 28. 43,41	G.
	* R. 7 <sup>h</sup> . 24 <sup>m</sup> . 46 <sup>s</sup> .	248. 25	2. 35,9	33,8	37,3	31,8	34,2	33,1			248. 27. 34,27	G.
	* R. 7 <sup>h</sup> . 26 <sup>m</sup> . 0 <sup>s</sup> . M.	248. 25	2. 35,9	33,8	37,3	31,8	34,2	33,1	89,759	+ 3. 34,69	248. 31. 8,96	G.
	* Geminorum. ....	248. 55	4. 41,3	37,3	42,1	35,9	36,9	38,3			248. 59. 38,50	G.
	* R. 7 <sup>h</sup> . 40 <sup>m</sup> . 43 <sup>s</sup> .	249. 10	2. 40,3	36,8	40,2	36,0	37,2	37,6			249. 12. 37,93	G.
	(b) α Cephei SP. R. M.	107. 25	2. 38,6	37,1	39,5	36,1	34,8	35,6	13,280	- 1. 6,97	107. 26. 29,90	G.
	α Cephei SP. ....	155. 40	2. 43,9	43,3	45,9	40,4	40,8	41,2			155. 42. 42,50	G.
	(c) β Cephei SP. R. M.	99. 30	0. 47,0	46,1	49,0	46,1	43,7	44,0	11,705	- 34,16 + 0,10	99. 30. 11,91	G.
	β Cephei SP. ....	163. 35	3. 63,7	60,1	65,3	59,5	59,2	61,0		- 0,90	163. 39. 0,45	G.
	(d) Polaris SP. R. M. ...	80. 55	0. 54,9	56,2	58,8	54,6	52,3	53,3	12,346	- 47,51	80. 55. 7,47	G.
Polaris SP. ....	182. 10	4. 8,0	7,1	10,9	4,9	2,8	4,6			182. 14. 6,27	G.	
Saturn N.L. ....	279. 30	3. 49,5	47,7	53,1	44,2	45,7	45,2			279. 33. 47,45	G.	
April 1	⊙ N.L. M. ....	269. 5	2. 51,1	49,0	51,1	50,3	48,9	48,9	9,872	+ 3,94	269. 7. 53,59	G.
	(e) ⊙ S.L. ....	269. 35	4. 55,2	53,0	54,9	53,8	52,8	53,9			269. 39. 53,93	G.
	Polaris. ....	185. 20	2. 22,0	22,1	22,7	20,3	21,0	20,4			185. 22. 21,23	G.
	Capella R. M. ....	35. 10	0. 52,2	50,3	51,0	49,1	47,9	49,2	8,913	+ 23,91	35. 11. 13,79	G.
	Capella. ....	227. 55	2. 53,3	54,6	52,7	51,3	51,7	50,4			227. 57. 52,10	G.
	(f) Regulus R. M. ....	2. 5	3. 53,9	53,9	56,5	51,0	52,9	51,0	10,470	- 8,51 - 0,09	2. 8. 44,28	J.G.
	(g) Regulus. ....	261. 0	0. 28,2	25,5	25,9	24,0	24,4	26,9		+ 0,16	261. 0. 25,94	J.G.
	(h) Venus N.L. ....	285. 55	4. 13,9	12,3	14,3	9,1	10,3	8,5			285. 59. 11,07	G.
April 2	⊙ S.L. M. ....	269. 15	1. 47,5	48,8	46,7	45,1	47,0	43,8	9,920	+ 2,93	269. 16. 49,26	G.
	⊙ N.L. ....	268. 40	4. 47,8	50,1	49,2	45,0	48,1	43,0			268. 44. 46,82	G.
	Mars S.L. ....	248. 45	3. 48,9	49,0	49,3	45,1	49,6	45,6			248. 48. 47,62	G.
	Castor R. M. ....	21. 35	3. 47,9	47,8	42,8	46,0	45,0	46,8	15,883	- 2. 1,30	21. 36. 44,45	G.
	Castor. ....	241. 30	2. 26,9	24,9	24,9	21,9	24,8	23,0			241. 32. 24,22	G.
	Procyon R. M. ....	355. 0	2. 21,7	21,1	22,8	17,9	22,3	19,0	13,370	- 1. 8,93	355. 1. 11,69	J.G.
	Procyon. ....	268. 5	2. 59,5	59,7	59,9	56,6	57,9	54,3			268. 7. 57,75	J.G.
April 5	Venus N.L. ....	284. 40	0. 42,8	39,9	43,3	37,5	36,9	36,0			284. 40. 39,35	J.G.
April 6	(i) ⊙ S.L. M. ....	267. 45	0. 58,3	56,1	60,7	53,1	53,9	52,7	12,122	- 42,94	267. 45. 12,79	J.G.
	⊙ N.L. ....	267. 10	3. 17,0	13,1	18,3	9,9	12,8	10,9			267. 13. 13,42	J.G.
	δ Geminorum. ....	251. 30	0. 7,3	4,3	9,7	3,8	2,2	5,1			251. 30. 5,40	J.G.
	Mars S.L. ....	249. 5	0. 31,9	27,3	31,1	27,7	25,3	28,7	12,860	- 58,31 + 1,78	249. 5. 28,63	J.G.
	(k) ) N.L. M. ....	248. 45	0. 52,3	49,1	52,0	48,0	47,7	48,6	12,840	- 57,90 + 0,89	248. 44. 53,02	J.G.
	) N.L. M. ....	248. 45	0. 52,3	49,1	52,0	48,0	47,7	48,6			248. 44. 52,54	J.G.
	) N.L. ....	248. 40	4. 56,0	52,0	55,8	52,9	51,6	52,9			248. 44. 53,13	J.G.
	) N.L. M. ....	248. 40	4. 56,0	52,0	55,8	52,9	51,6	52,9	10,010	+ 1,06 - 0,89	248. 44. 53,30	J.G.
	) N.L. M. ....	248. 40	4. 56,0	52,0	55,8	52,9	51,6	52,9	10,000	+ 1,27 - 1,78	248. 44. 52,62	J.G.
	6 Cancri. ....	245. 30	1. 57,5	54,3	56,3	51,8	52,2	52,7			245. 31. 53,98	J.G.
	Regulus R. M. ....	2. 10	0. 31,6	29,2	33,0	26,9	30,3	28,1	14,801	- 1. 38,75	2. 8. 51,07	J.G.
	Regulus. ....	261. 0	0. 30,5	25,9	28,7	26,9	25,9	26,2			261. 0. 27,32	J.G.

(a) At 5<sup>th</sup> wire: not good.  
 (b) Pretty good.  
 (c) The observations too late by half an interval and an interval and half respectively.  
 (d) Not well defined.  
 (e) No correction for runs.  
 (f) Between 1<sup>st</sup> and 2<sup>d</sup> wires: too much wind.

(g) At 5<sup>th</sup> wire.  
 (h) Faint and unsatisfactory.  
 (i) Faint: not good. The N.L. better. The free thermometers were not read: the refraction is calculated with 54°.  
 (k) Observations at the five wires.



Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi- diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
"	" ' "	Inch.	"	"	" "	" "	"	" "	" ' "	"
36,20	26.26.36,19	30,176	44,5	42,6	29,70	3,32	9,590	4,94	64.14.15,79	Mars.
	25.24.25,26				28,36				63.12.1,90	*R.6 <sup>h</sup> .51 <sup>m</sup> .22 <sup>s</sup> .
	26.12.45,99				29,40				64.0.23,67	*R.6 <sup>h</sup> .59 <sup>m</sup> .35 <sup>s</sup> .
	27.51.55,01			41,3	31,65				65.39.34,94	*R.7 <sup>h</sup> .21 <sup>m</sup> .40 <sup>s</sup> .
	27.54.8,55				31,70				65.41.48,53	*R.7 <sup>h</sup> .22 <sup>m</sup> .3 <sup>s</sup> .
	26.52.59,41			41,0	30,37				64.40.38,06	*R.7 <sup>h</sup> .24 <sup>m</sup> .46 <sup>s</sup> .
	26.56.34,10				30,45				64.44.12,83	*R.7 <sup>h</sup> .26 <sup>m</sup> .0 <sup>s</sup> .
	27.25.3,64				31,07				65.12.42,99	κ Geminorum.
	27.38.3,07	30,180	43,2	40,4	31,40				65.25.42,75	*R.7 <sup>h</sup> .40 <sup>m</sup> .43 <sup>s</sup> .
	-65.51.55,04	30,192	41,0	38,0	2.13,88				-28.7.0,64	α Cephei SP. R.
-65.51.52,36								-28.6.57,96	α Cephei SP.	
36,18	-57.55.37,05				1.35,99			-20.10.4,76	β Cephei SP. R.	
36,87	-57.55.34,41							-20.10.2,12	β Cephei SP.	
	-39.20.32,61	30,194	38,3	36,5	49,58			-1.34.13,91	Polaris SP. R.	
	-39.20.28,59							-1.34.9,89	Polaris SP.	
	57.59.12,59				1.36,53	0,83	9,172	9,30	95.48.5,87	Saturn.
32,95	47.33.18,73	29,894	58,1	59,6	1.2,43	6,30		16.0,90	85.37.24,04	⊙.
	48.5.19,07				1.3,60	6,35			85.37.23,70	⊙.
	-36.12.13,63			60,4	41,76				1.34.12,89	Polaris.
	6.23.21,07	29,842	61,3	62,4	6,36				44.10.35,71	Capella R.
	6.23.17,24							44.10.31,88	Capella.	
35,11	39.25.50,58	29,838	55,2	55,0	47,32			77.13.46,18	Regulus R.	
	39.25.51,08							77.13.46,68	Regulus.	
	64.24.36,21	29,792	53,3	55,3	1.59,38	8,43	9,126	9,89	102.13.45,33	Venus.
34,34	47.42.14,40	29,770	58,5	63,6	1.2,01	6,32		16.0,60	85.14.17,77	⊙.
	47.10.11,96				1.0,86	6,26			85.14.15,44	⊙.
	27.14.12,76	29,702	58,6	59,7	29,22	3,05	10,479	4,35	65.1.42,86	Mars.
	19.57.50,41	29,700	58,3	60,0	20,61				57.45.19,30	Castor R.
34,72	19.57.49,36							57.45.18,25	Castor.	
	46.33.23,17				59,85			84.21.31,30	Procyon R.	
	46.33.22,89							84.21.31,02	Procyon.	
	63.6.0,95	30,293	49,0	49,1	1.56,10	8,07	9,312	7,92	100.55.5,18	Venus.
39,20	46.10.34,39	30,290	53,3		1.0,96	6,15		15.59,60	83.42.37,88	⊙.
	45.38.35,02				59,84	6,09			83.42.36,65	⊙.
	29.55.27,00	30,280		53,0	33,76				67.43.9,04	δ Geminorum.
	27.30.50,23				30,55	2,99	10,456	4,11	65.18.21,96	Mars.
	27.10.14,62		53,1	52,3					64.47.45,70	∩.
	27.10.14,14								64.47.45,22	∩.
	27.10.14,73				30,15	25.24,73		15.17,38	64.47.45,81	∩.
	27.10.14,90								64.47.45,98	∩.
	27.10.14,22								64.47.45,30	∩.
	23.57.15,58		52,1	51,1	26,16				61.44.50,02	6 Cancri.
39.25.47,33	30,294	49,0	47,1	48,81				77.13.44,42	Regulus R.	
	39.25.48,93							77.13.46,01	Regulus.	

Coincidence of Micrometer Wire with fixed Wire = 10',065, or 100',065. From Apr. 1. = 10',061.

One revolution = 20",833.

Correction for Runs = - 0',9. From Apr. 1. = - 2",4.

Adopted Zenith Point = 221°.34'.34",86. From Apr. 5. = 221°.34'.38",40.

Assumed Co-latitude = 37°.47'.8",28.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
			° ' "	° ' "	° ' "	° ' "	° ' "	° ' "				
Apr. 6	$\beta$ Urs. Maj. R. M.	46.35	2.37,2	34,3	35,9	33,1	32,2	33,5	9,589	+9,83	46.37.44,00	G.
	$\beta$ Ursæ Majoris.....	216.30	1.37,3	32,3	36,1	33,1	31,3	32,6			216.31.33,65	G.
	$\beta$ Leonis R. M.....	4.50	3.47,0	44,8	47,2	40,7	44,2	39,7	14,741	-1.37,50	4.52.6,13	J.G.
	$\beta$ Leonis.....	258.15	2.12,0	9,3	12,3	8,8	4,9	7,9			258.17.9,03	J.G.
	$\alpha$ Cassiop. SP. R. M.	113.40	1.42,3	38,4	41,7	38,1	36,9	39,1	12,051	-41,45	113.40.57,83	G.
	(a) $\alpha$ Cassiopeiæ SP....	149.25	3.22,0	18,8	21,9	16,2	14,9	17,3		-0,83	149.28.17,42	G.
	Polaris SP. R. M....	80.55	2.31,9	29,0	31,7	28,8	27,3	29,3	16,509	-2.14,34	80.55.15,13	J.G.
	Polaris SP.....	182.10	4.7,8	4,0	8,8	5,0	0,3	4,0			182.14.4,65	J.G.
	Saturn S.L.....	279.0	3.21,8	16,6	21,9	15,7	14,1	16,1			279.3.17,43	J.G.
	Venus N.L.....	284.20	0.15,3	11,4	17,7	9,9	9,7	9,2			284.20.12,18	J.G.
Apr. 7	$\odot$ N.L. M.....	266.50	0.39,9	37,7	41,3	34,5	35,9	35,9	9,949	+2,33	266.50.39,81	J.G.
	$\odot$ S.L.....	267.20	2.40,1	37,3	39,0	35,1	34,7	33,1			267.22.36,33	J.G.
	Venus N.L.....	283.55	4.24,9	22,2	24,1	21,9	20,9	20,0			283.59.21,98	J.G.
Apr. 8	$\odot$ S.L. M.....	266.55	4.22,9	20,9	24,1	21,7	20,0	19,2	7,871	+45,62	267.0.6,74	J.G.
	$\odot$ N.L.....	266.25	3.9,9	8,9	10,9	7,0	6,7	5,5			266.28.7,90	J.G.
	$\delta$ Geminorum.....	251.30	0.10,0	7,1	9,9	7,3	5,3	6,7			251.30.7,70	J.G.
	Mars S.L.....	249.10	4.30,2	26,9	28,6	26,0	26,2	24,9			249.14.26,77	J.G.
	$\kappa$ Geminorum R.M.	14.10	0.17,0	16,8	16,3	16,1	14,1	15,0	12,063	-41,70	14.9.34,17	G.
	$\kappa$ Geminorum.....	248.55	4.44,7	42,7	44,0	41,3	44,3	40,9			248.59.42,60	G.
	6 Cancri.....	245.30	1.59,6	56,7	58,3	54,6	56,3	56,0			245.31.56,75	J.G.
	(b) $\circ$ N.L. M.....	253.55	3.62,8	61,1	63,0	60,7	61,0	58,8	8,540	+31,69 +5,82	253.59.38,43	J.G.
	$\circ$ N.L. M.....	253.55	3.62,8	61,1	63,0	60,7	61,0	58,8	8,413	+34,33 +2,91	253.59.38,16	J.G.
	$\circ$ N.L.....	253.55	4.40,4	38,2	38,3	37,9	39,3	36,0			253.59.37,97	J.G.
	$\circ$ N.L. M.....	253.55	4.40,4	38,2	38,3	37,9	39,3	36,0	9,958	+2,14 -2,91	253.59.37,20	J.G.
	$\circ$ N.L. M.....	253.55	4.40,4	38,2	38,3	37,9	39,3	36,0	9,835	+4,71 -5,82	253.59.36,86	J.G.
	$\eta$ Leonis.....	256.10	2.60,9	59,0	60,9	57,2	56,8	55,3			256.12.58,12	J.G.
	(c) $\gamma$ Leonis R. M.....	10.0	1.36,2	35,0	35,3	34,3	34,9	33,1	6,628	+1.11,51	10.2.46,18	J.G.
	$\gamma$ Leonis.....	253.5	1.31,8	28,3	29,9	29,3	30,3	28,3			253.6.29,53	J.G.
	(d) $\beta$ Urs. Maj. R. M....	46.35	3.10,1	10,0	10,0	8,4	8,5	7,0	11,180	-23,32	46.37.45,43	J.G.
	$\beta$ Ursæ Majoris.....	216.30	1.32,7	30,9	31,0	31,0	29,8	29,0			216.31.30,62	J.G.
(e) $\beta$ Leonis R. M.....	4.50	3.42,1	42,2	42,6	38,7	40,7	37,5	14,656	-1.35,73 +0,37	4.52.4,60	J.G.	
(f) $\beta$ Leonis.....	258.15	2.9,2	6,9	9,9	6,3	4,1	6,6			258.17.7,37	J.G.	
(g) $\alpha$ Cassiop. SP. R. M.	113.40	1.42,7	40,0	41,4	40,1	38,1	39,8	12,029	-41,00	113.40.59,22	G.	
(h) $\alpha$ Cassiopeiæ SP....	149.25	3.15,9	12,8	15,3	11,3	10,3	11,8		-0,21	149.28.12,44	G.	
Polaris SP. R. M....	80.55	2.49,7	48,5	46,2	48,2	45,9	46,1	17,432	-2.33,57	80.55.13,65	J.G.	
Polaris SP.....	182.10	3.63,8	60,7	63,2	60,0	57,6	59,9			182.14.0,55	J.G.	
Saturn S.L.....	278.55	4.51,2	48,0	51,2	45,9	45,1	44,5			278.59.47,27	J.G.	
Apr. 9	$\odot$ N.L.....	266.5	0.48,5	46,0	46,4	44,0	44,0	43,1			266.5.45,27	J.G.
	(i) Polaris SP. R. M....	80.55	2.37,9	37,3	36,3	36,1	36,3	35,4	16,898	-2.22,44	80.55.13,91	J.G.
	(k) Polaris SP.....	182.10	3.59,7	58,7	60,6	58,8	59,0	57,0			182.13.58,65	J.G.
	(l) Saturn N.L.....	278.55	2.49,4	46,3	49,1	44,8	43,8	43,9			278.57.46,00	J.G.
Apr. 10	$\delta$ Geminorum R. M.	11.35	3.35,0	32,9	34,1	31,3	30,3	30,0	8,378	+35,06	11.39.7,04	J.G.
	$\delta$ Geminorum.....	251.30	0.8,3	5,2	9,9	4,1	4,2	5,2			251.30.6,15	J.G.
	Mars S.L.....	249.20	3.48,9	43,9	47,3	42,5	41,4	42,0			249.23.44,03	J.G.
	(m) $\kappa$ Geminorum.....	248.55	4.44,7	39,1	43,0	39,0	39,3	36,9		+0,25	248.59.40,22	J.G.
	(n) $\alpha$ Hydræ R. M.....	341.25	2.24,8	20,0	25,8	16,7	20,5	16,7	12,410	-48,94	341.26.31,61	J.G.
	$\alpha$ Hydræ.....	281.40	2.47,0	40,9	46,9	39,1	41,0	39,2			281.42.42,13	J.G.

(a) At 5<sup>th</sup> wire.  
 (b) At the five wires: all pretty good.  
 (c) Defined in the mercury as double.  
 (d) The mercury disturbed by a carriage passing near the Observatory.  
 (e) Center of a bad blur.  
 (f) At the comb.

(g) Bad.  
 (h) At 4<sup>th</sup> wire.  
 (i) Not good: star appearing and disappearing.  
 (k) One of the shutters could not be opened, and the image was distorted.  
 (l) Very faint: at 5<sup>th</sup> wire.  
 (m) At 5<sup>th</sup> wire.  
 (n) Beautiful.



Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi- diameter.	Geoc. N.P.D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
"	° ' "	Inch.	°	°	' "	' "	r	' "	° ' "	
38,83	- 5 . 3 . 5,60	30,294	48,0	46,0	5,26				32 . 43 . 57,42	$\beta$ Urs. Maj. R.
	- 5 . 3 . 4,75								32 . 43 . 58,27	$\beta$ Ursæ Majoris.
37,58	36 . 42 . 32,27	30,312	46,2	45,2	44,47				74 . 30 . 25,02	$\beta$ Leonis R.
	36 . 42 . 30,63								74 . 30 . 23,38	$\beta$ Leonis.
37,63	- 72 . 6 . 19,43	30,300		44,9	3 . 2,83				- 34 . 22 . 13,98	$\alpha$ Cassiop. SP. R.
	- 72 . 6 . 20,98								- 34 . 22 . 15,53	$\alpha$ Cassiopeiæ SP.
39,89	- 39 . 20 . 36,73	30,308		44,4	48,96				- 1 . 34 . 17,41	Polaris SP. R.
	- 39 . 20 . 33,75								- 1 . 34 . 14,43	Polaris SP.
	57 . 28 . 39,03		45,9	43,8	1 . 33,58	0,83	10,900	8,74	95 . 17 . 11,32	Saturn.
	62 . 45 . 33,78	30,322	49,8	50,7	1 . 54,16	7,98	9,244	8,65	100 . 34 . 36,89	Venus.
	45 . 16 . 1,41	30,306	55,1	56,8	58,76	6,05		15 . 59,30	83 . 20 . 1,70	$\odot$ .
	45 . 47 . 57,93				59,86	6,11			83 . 20 . 0,66	$\odot$ .
	62 . 24 . 43,58	30,211	55,7	56,2	1 . 50,84	7,89	9,223	8,88	100 . 13 . 43,69	Venus.
	45 . 25 . 28,34	30,212	61,0	63,3	58,14	6,07		15 . 59,00	82 . 57 . 29,69	$\odot$ .
	44 . 53 . 29,50				57,08	6,01			82 . 57 . 27,85	$\odot$ .
	29 . 55 . 29,30	30,147	60,3	59,5	33,17				67 . 43 . 10,75	$\delta$ Geminorum.
	27 . 39 . 48,37				30,21	2,96	10,419	3,72	65 . 27 . 20,18	Mars.
38,39	27 . 25 . 4,23	30,144	59,7	58,7	29,94				65 . 12 . 42,45	$\kappa$ Geminorum R.
	27 . 25 . 4,20				25,56				65 . 12 . 42,42	$\kappa$ Geminorum.
	23 . 57 . 18,35								61 . 44 . 52,19	$\delta$ Cancri.
	32 . 25 . 0,03	30,148	55,0	54,2					69 . 57 . 41,10	$\delta$ .
	32 . 24 . 59,76								69 . 57 . 40,83	$\delta$ .
	32 . 24 . 59,57				36,87	30 . 52,19		15 . 48,11	69 . 57 . 40,64	$\delta$ .
	32 . 24 . 58,80								69 . 57 . 39,87	$\delta$ .
	32 . 24 . 58,46								69 . 57 . 39,53	$\delta$ .
	34 . 38 . 19,72				40,24				72 . 26 . 8,24	$\eta$ Leonis.
37,86	31 . 31 . 52,22		54,3	53,0	35,83				69 . 19 . 36,33	$\gamma$ Leonis R.
	31 . 31 . 51,13								69 . 19 . 35,24	$\gamma$ Leonis.
38,03	- 5 . 3 . 7,03	30,146	53,0	52,0	5,17				32 . 43 . 56,08	$\beta$ Urs. Maj. R.
	- 5 . 3 . 7,78								32 . 43 . 55,33	$\beta$ Ursæ Majoris.
35,99	36 . 42 . 33,80	30,142	52,0	49,0	43,87				74 . 30 . 25,95	$\beta$ Leonis R.
	36 . 42 . 28,97								74 . 30 . 21,12	$\beta$ Leonis.
35,83	- 72 . 6 . 20,82	30,136	50,5	49,9	2 . 59,97				- 34 . 22 . 12,51	$\alpha$ Cassiop.SP. R.
	- 72 . 6 . 25,96								- 34 . 22 . 17,65	$\alpha$ Cassiopeiæ SP.
37,10	- 39 . 20 . 35,25	30,128	50,6	49,3	48,18				- 1 . 34 . 15,15	Polaris SP. R.
	- 39 . 20 . 37,85								- 1 . 34 . 17,75	Polaris SP.
	57 . 25 . 8,87			49,1	1 . 31,81	0,83	10,953	9,29	95 . 13 . 38,84	Saturn.
36,28	44 . 31 . 8,91	30,061	56,9	57,3	56,73	5,97		15 . 58,70	82 . 35 . 6,65	$\odot$ .
	- 39 . 20 . 37,55	29,992	55,2	54,6	47,45				- 1 . 34 . 16,72	Polaris SP. R.
	- 39 . 20 . 37,71								- 1 . 34 . 16,88	Polaris SP.
	57 . 23 . 9,64				1 . 30,27	0,83	9,250	8,45	95 . 11 . 55,81	Saturn.
36,60	29 . 55 . 29,32	30,118	53,2	52,3	33,63				67 . 43 . 11,23	$\delta$ Geminorum R.
	29 . 55 . 29,79								67 . 43 . 11,70	$\delta$ Geminorum.
	27 . 49 . 7,67				30,82	2,93	10,438	3,93	65 . 36 . 39,91	Mars.
	27 . 25 . 3,86		52,7	51,9	30,33				65 . 12 . 42,47	$\kappa$ Geminorum.
36,87	60 . 8 . 4,75	30,117	49,5	48,5	1 . 42,20				97 . 56 . 55,23	$\alpha$ Hydræ R.
	60 . 8 . 5,77								97 . 56 . 56,25	$\alpha$ Hydræ.

Coincidence of Micrometer Wire with fixed Wire = 10',061. One revolution = 20'',833.

Correction for Runs = -2'',4.

Adopted Zenith Point = 221° . 34' . 38'',40. From April 9. = 221° . 34' . 36'',36.

Assumed Co-latitude = 37° . 47' . 8'',28.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
			° ' "	" "	" "	" "	" "	" "				
Apr. 10	(a) $\chi$ Leonis .....	265.30	2.65,3	59,8	67,0	59,3	68,0	59,2			265.33. 2,87	J.G.
	$\eta$ Leonis .....	259.30	4.25,9	20,7	25,9	20,3	19,7	20,5			259.34.21,82	J.G.
	(b) $\delta$ N.L. M. ....	264.15	4.33,2	26,3	33,8	25,3	25,3	27,0	2,730	+ 2.32,72 + 8,46	264.22. 9,30	J.G.
	$\delta$ N.L. M. ....	264.15	4.33,2	26,3	33,8	25,3	25,3	27,0	2,530	+ 2.36,89 + 4,23	264.22. 9,24	J.G.
	$\delta$ N.L. ....	264.20	2.18,1	8,9	17,3	10,1	8,0	10,3			264.22.11,95	J.G.
	$\delta$ N.L. M. ....	264.20	2.18,1	8,9	17,3	10,1	8,0	10,3	9,900	+ 3,35 - 4,23	264.22.11,07	J.G.
	$\delta$ N.L. M. ....	264.20	2.18,1	8,9	17,3	10,1	8,0	10,3	9,740	+ 6,69 - 8,46	264.22.10,18	J.G.
	(c) $\beta$ Virginis R. M. ....	352. 0	4.11,2	6,2	14,7	3,8	9,0	1,9	8,929	+ 23,57	352. 4.31,04	J.O.
	$\beta$ Virginis .....	271. 0	4.50,8	43,9	51,2	42,6	45,0	42,8			271. 4.45,65	J.G.
	$\pi$ Virginis .....	266.10	4.36,8	30,0	36,6	29,0	29,1	28,0			266.14.31,22	J.O.
	Saturn S.L. ....	278.55	1.22,3	15,4	21,8	14,4	13,1	13,3			278.56.16,62	J.G.
	Apr. 11	(d) $\odot$ N.L. M. ....	265.20	1.44,0	38,7	46,9	37,9	38,7	37,1	11,019	- 20,02	265.21.20,43
$\odot$ S.L. ....		265.50	3.16,3	13,8	20,7	11,3	11,0	10,7			265.53.13,78	J.G.
Jupiter N.L. ....		252.10	4.61,3	57,3	62,7	56,1	52,8	54,7			252.14.57,20	J.G.
Capella R. M. ....		35.10	1.22,3	19,6	23,9	18,6	16,5	16,9	10,200	- 2,95	35.11.16,62	G.
Capella .....		227.55	2.60,3	56,9	61,9	55,4	52,8	53,3			227.57.56,60	G.
$\beta$ Tauri R. M. ....		17.45	3. 8,0	6,6	12,9	4,3	5,3	3,5	5,017	+ 1.45,02	17.49.51,60	J.G.
$\beta$ Tauri .....		245.15	4.25,7	20,1	25,3	19,5	18,9	17,3			245.19.20,88	J.G.
Mars N.L. ....		249.25	3.29,1	24,0	27,0	22,1	21,0	23,3			249.28.24,22	J.G.
Pollux R. M. ....		17.45	2.52,2	51,7	55,6	47,2	49,3	45,1	11,380	- 27,54	17.47.22,48	J.G.
Pollux .....		245.20	1.56,1	51,1	55,9	49,2	49,8	47,9			245.21.51,57	J.G.
$\alpha$ Cephei SP. R. M. ....		107.25	2.40,9	37,3	42,0	35,9	34,7	34,3	13,009	- 1. 1,48	107.26.35,89	G.
$\alpha$ Cephei SP. ....		155.40	2.42,1	37,8	42,8	36,7	36,7	36,4			155.42.38,60	G.
$\beta$ Cephei SP. R. M. ....		99.30	0.10,0	3,9	10,2	6,3	0,9	4,3	9,540	+ 10,79	99.30.16,72	G.
$\beta$ Cephei SP. ....		163.35	3.65,0	58,1	66,3	59,0	56,3	58,3			163.39. 0,27	G.
$\eta$ Leonis .....		256.10	2.58,5	55,1	61,3	53,4	53,3	49,9			256.12.55,08	G.
A. S. C. 1215 .....		280.15	1.23,1	16,9	25,0	16,1	14,7	16,1			280.16.18,57	G.
$\gamma$ Leonis .....		253. 5	1.30,2	24,7	31,3	24,5	24,9	22,2			253. 6.26,22	J.G.
* R. 10 <sup>h</sup> .23 <sup>m</sup> .30 <sup>s</sup> ..		246.35	3.57,5	53,0	59,0	51,9	50,5	50,9			246.38.53,57	J.G.
$l$ Leonis .....		262.20	1.43,0	39,9	44,0	37,9	37,8	36,1			262.21.39,68	J.G.
$\chi$ Leonis .....		265.30	2.61,4	56,0	65,3	55,4	55,1	54,9			265.32.57,85	J.G.
$\eta$ Leonis .....		259.30	4.23,0	18,5	24,7	17,2	17,0	15,3			259.34.19,03	J.G.
$\beta$ Virginis .....		271. 0	4.47,5	42,2	50,3	41,0	41,1	40,0			271. 4.43,42	J.G.
$\pi$ Virginis .....		266.10	4.31,3	24,8	33,2	23,0	23,0	22,8			266.14.26,10	J.O.
(b) $\delta$ N.L. M. ....		270.45	4.15,0	7,9	18,2	7,0	5,8	5,7	5,670	+ 1.31,42 + 9,12	270.50.50,24	J.G.
$\delta$ N.L. M. ....		270.45	4.15,0	7,9	18,2	7,0	5,8	5,7	5,495	+ 1.35,06 + 4,56	270.50.49,32	J.G.
$\delta$ N.L. ....		270.50	0.55,2	47,5	55,3	47,7	45,7	46,3			270.50.49,57	J.G.
$\delta$ N.L. M. ....		270.50	0.55,2	47,5	55,3	47,7	45,7	46,3	9,870	+ 3,92 - 4,56	270.50.48,93	J.G.
$\delta$ N.L. M. ....		270.50	0.55,2	47,5	55,3	47,7	45,7	46,3	9,680	+ 7,87 - 9,12	270.50.48,32	J.O.
$\gamma$ Virginis .....	274.15	3.55,2	50,0	59,0	47,6	49,1	45,8			274.18.50,90	J.G.	
$\delta$ Virginis .....	269.25	3.47,0	42,0	49,2	40,0	41,5	39,0			269.28.42,90	J.G.	
Saturn N.L. ....	278.50	4.19,2	13,1	20,0	10,9	11,1	9,9			278.54.13,80	J.G.	
Apr. 12	$\delta$ Virginis .....	269.25	3.48,0	43,9	50,0	41,5	44,2	41,9	17,035	- 2.25,35	269.28.44,70	J.G.
	Polaris SP. R. M. ....	80.55	2.42,2	38,3	42,8	38,3	38,7	37,8			80.55.14,18	J.G.
	Polaris SP. ....	182.10	3.61,0	57,9	62,0	56,9	54,3	55,5			182.13.57,70	J.G.

(a) At 5<sup>th</sup> wire.  
 (b) At the five wires.  
 (c) A blur.

(d) Very faint: observed without coloured glass: at 2<sup>d</sup> and 5<sup>th</sup> wires.



Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi- diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.			
			Attach.	Free.									
"	" / "	Inch.	"	"	" "	" "	"	" "	" / "				
38,35	43.58.26,51	30,118	48,5	47,0	56,93	40.28,67	10,941	16.19,46	81.46.31,72	χ Leonis.			
	37.59.45,46		48,2	46,6	46,15				75.47.39,89	η Leonis.			
	42.47.32,94								80.11.26,69	δ.			
	42.47.32,88								80.11.26,63	δ.			
	42.47.35,59								54,68	80.11.29,34	δ.		
	42.47.34,71									80.11.28,46	δ.		
	42.47.33,82									80.11.27,57	δ.		
	49.30.5,32		30,128	47,3	46,1				1.9,21			87.18.22,81	β Virginis R.
	49.30.9,29											87.18.26,78	β Virginis.
	44.39.54,86									58,45			82.28.1,59
57.21.40,26	46,4	45,2		1.32,34	0,83	9,17	95.10.10,88	Saturn.					
36,61	43.46.44,07	30,279	47,6	47,4	56,81	5,89	8,719	15.58,20	81.50.41,47	☉.			
	44.18.37,42				57,87	5,95			81.50.39,42	☉.			
	30.40.20,84	30,278	48,3	47,6	35,17	0,76			68.28.17,48	Jupiter.			
	6.23.19,74		48,2	48,1	6,64				44.10.34,66	Capella R.			
	6.23.20,24								44.10.35,16	Capella.			
	23.44.44,76								61.32.19,11	β Tauri R.			
	23.44.44,52				26,07				61.32.18,87	β Tauri.			
	27.53.47,86		47,2	46,0	31,50	2,92			9,732	3,39	65.41.28,11	Mars.	
	23.47.13,88										61.34.48,39	Pollux R.	
	23.47.15,21				26,23						61.34.49,72	Pollux.	
37,25	-65.51.59,53	30,280	45,3	43,0	2.12,89				-28.7.4,14	α Cephei SP. R.			
	-65.51.57,76										-28.7.2,37	α Cephei SP.	
38,50	-57.55.40,36				1.35,28				-20.10.7,36	β Cephei SP. R.			
	-57.55.36,09								-20.10.3,09	β Cephei SP.			
	34.38.18,72			42,8	41,36				72.26.8,36	η Leonis.			
	58.41.42,21				1.38,20				96.30.28,69	A. S. C. 1215.			
	31.31.49,86				36,74				69.19.34,88	γ Leonis.			
	25.4.17,21				28,02				62.51.53,51	* R <sup>10</sup> .23 <sup>m</sup> .30 <sup>s</sup> .			
	40.47.3,32				51,64				78.35.3,24	ι Leonis.			
	43.58.21,49	30,272	44,0	41,9	57,83				81.46.27,60	χ Leonis.			
	37.59.42,67				46,84				75.47.37,79	η Leonis.			
	49.30.7,06				1.10,15				87.18.25,49	β Virginis.			
44.39.49,74			40,1	59,45				82.27.57,47	π Virginis.				
35,94	49.16.13,88	30,269	43,1	39,5					86.35.19,19	δ.			
	49.16.12,96								86.35.18,27	δ.			
	49.16.13,21				1.9,91	45.44,37		16.31,49	86.35.18,52	δ.			
	49.16.12,57								86.35.17,88	δ.			
	49.16.11,96								86.35.17,27	δ.			
	52.44.14,54				1.19,09				90.32.41,91	γ Virginis.			
	47.54.6,54		42,5	39,1	1.6,69				85.42.21,51	δ Virginis.			
	57.19.37,44	30,252	42,3	40,2	1.33,57	0,83	9,169	9,26	95.8.27,72	Saturn.			
	47.54.8,34	30,068	47,2	46,5	1.5,26				85.42.21,88	δ Virginis.			
	-39.20.37,82				48,37				-1.34.17,91	Polaris SP. R.			
-39.20.38,66								-1.34.18,75	Polaris SP.				

Coincidence of Micrometer Wire with fixed Wire = 10',061. From April 11. = 10',058. One revolution = 20",833.  
 Correction for Runs = -2",4. From April 11. = -1",7.  
 Adopted Zenith Point = 221°.34'.36",36.  
 Assumed Co-latitude = 37°.47'.8",28.

Month and Day.	NAME OF STAR or PLANET.	Pointer. ° ' "	Microscopes.						Micrometer or Time by Molyneux. r. h. m. s.	Correction for Microm. or Time. ' "	Concluded reading of Circle. ° ' "	Observer.
			A	B	C	D	E	F				
			"	"	"	"	"	"				
Apr. 13	(a) ☉ N.L. M.....	264.35	2.48,8	43,2	49,1	41,9	44,9	41,8	10,802	- 15,49	264.37.29,29	J.G.
	☉ S.L.....	265.5	4.23,3	18,9	20,1	17,3	20,0	16,4			265.9.19,08	J.G.
	(b) Venus N.L.....	281.45	2.43,4	40,1	42,9	38,7	39,2	37,9			281.47.40,22	J.G.
	(c) Polaris.....	185.20	2.30,5	28,1	29,9	28,0	27,5	26,9			185.22.28,33	J.G.
Apr. 14	(d) ☉ S.L. M.....	264.45	3.31,3	28,5	31,9	27,0	27,9	26,8	12,457	- 49,98	264.47.38,72	J.G.
	☉ N.L.....	264.15	0.47,3	46,9	47,3	43,1	43,0	43,6			264.15.45,17	J.G.
	Capella R. M.....	35.10	1.11,1	8,0	9,0	7,8	4,9	7,0	9,752	+ 6,37	35.11.14,27	J.G.
	Capella.....	227.55	2.58,9	56,8	59,0	53,7	55,2	52,2			227.57.55,80	J.G.
	Castor R. M.....	21.35	3.50,6	48,5	47,7	48,0	44,9	46,5	15,895	- 2.1,61	21.36.45,87	J.G.
	Castor.....	241.30	2.27,0	23,4	26,1	22,2	23,8	22,8			241.52.24,08	J.G.
	Mars S.L.....	249.40	3.40,5	37,8	38,2	35,5	36,9	35,1	12,340	- 47,55	249.43.37,12	J.G.
	α Cephei SP. R. M.	107.25	2.30,0	27,6	29,8	26,0	25,2	25,1			107.26.39,58	J.G.
	α Cephei SP.....	155.40	2.35,1	32,5	34,0	30,0	31,5	29,8	5,420	+ 1.36,62	155.42.32,00	J.G.
	β Cephei SP. R. M.	99.25	3.45,5	43,9	45,3	42,9	42,0	40,1			99.30.19,69	J.G.
	β Cephei SP.....	163.35	3.55,8	52,3	56,8	51,5	51,0	51,0	9,662	+ 8,24	163.38.52,85	J.G.
	β Urs. Maj. R. M...	46.35	2.38,3	34,4	36,1	35,3	33,3	33,8			46.37.43,29	G.
	β Ursæ Majoris.....	216.30	1.32,1	29,0	30,0	29,9	28,0	28,3	17,242	- 2.29,66	216.31.29,47	G.
	Polaris SP. R. M...	80.55	2.47,6	46,1	48,0	45,9	44,5	42,7			80.55.15,99	J.G.
	Polaris SP.....	182.10	3.60,2	57,9	62,0	57,9	55,6	55,7	86,543	+ 4.41,56 + 7,78	182.13.57,98	J.G.
	Saturn S.L.....	278.45	4.29,0	23,3	29,4	23,2	22,5	22,9			278.49.24,80	J.G.
	) S.L. M.....	290.50	0.16,0	10,0	17,2	10,0	10,3	10,1	86,343	+ 4.45,72 + 3,89	290.55.1,59	J.G.
	(e) ) S.L. M.....	290.50	0.16,0	10,0	17,2	10,0	10,3	10,1			290.55.1,86	J.G.
	(f) ) S.L.....	290.50	4.64,9	60,7	67,3	59,4	59,8	59,2	9,879	+ 3,73 - 3,89	290.55.1,88	J.G.
	) S.L. M.....	290.50	4.64,9	60,7	67,3	59,4	59,8	59,2			290.55.1,72	J.G.
) S.L. M.....	290.50	4.64,9	60,7	67,3	59,4	59,8	59,2	9,667	+ 8,14 - 7,78	290.55.2,24	J.G.	
Venus N.L.....	281.20	4.46,4	42,0	46,9	40,1	43,0	37,6			281.24.42,40	J.G.	
Apr. 20	Saturn S.L.....	278.35	4.23,9	21,3	24,2	18,7	20,0	17,8			278.39.20,92	G.
Apr. 21	(g) α Cephei SP. R. M.	107.25	3.27,1	23,4	26,8	22,1	23,9	22,2	15,082	- 1.44,67	107.26.39,53	G.
	α Cephei SP.....	155.40	2.36,2	30,9	36,2	31,9	33,3	32,5			155.42.33,47	G.
	α Hydræ R. M.....	341.25	2.36,0	31,9	36,6	31,2	34,5	31,0	13,039	- 1.2,11	341.26.31,39	G.
	α Hydræ.....	281.40	2.44,4	42,9	44,4	38,9	42,3	39,7			281.42.42,07	G.
	β Cephei SP. R. M.	99.30	0.14,2	8,7	14,2	10,9	9,1	10,3	9,790	+ 5,59	99.30.16,82	J.G.
	β Cephei SP.....	163.35	3.56,2	52,5	57,0	51,2	53,8	52,3			163.38.53,78	J.G.
	γ Leonis.....	262.20	1.42,1	39,3	42,3	38,3	38,9	38,0	10,972	- 19,04	262.21.39,80	G.
	(g) β Urs. Maj. R. M...	46.35	3.4,3	2,1	5,5	1,3	2,2	0,4			46.37.43,56	J.G.
	β Ursæ Majoris.....	216.30	1.31,6	28,8	31,7	28,3	28,1	27,0	17,401	- 2.32,97	216.31.29,23	J.G.
	Polaris SP. R. M...	80.55	2.53,1	51,3	53,9	50,5	50,9	48,7			80.55.18,40	G.
	Polaris SP.....	182.10	3.56,9	54,7	57,7	54,4	56,1	52,1	278.37.8,82		182.13.55,27	G.
Venus N.L.....	278.35	2.11,7	8,7	13,2	7,1	7,7	4,7	278.37.8,82			G.	
Polaris.....	185.20	2.35,6	30,9	34,2	31,3	31,2	31,0	185.22.32,33			G.	
Apr. 22	(h) ☉ S.L. M.....	262.0	0.12,1	9,3	13,8	7,2	8,1	6,3	10,909	- 17,73	261.59.51,74	G.
	☉ N.L.....	261.25	2.62,9	60,7	65,2	58,0	61,3	57,2			261.28.0,83	G.
	Procyon R. M.....	355.0	1.58,6	59,7	64,9	57,2	61,9	55,2	12,180	- 44,21	355.1.15,42	G.
	Procyon.....	268.5	2.58,9	58,2	61,5	55,0	56,9	55,2			268.7.57,58	G.
Apr. 24	(i) Venus N.L.....	277.20	2.20,5	16,1	21,6	15,3	16,3	12,9		+ 0,28	277.22.17,36	G.

(a) Observed without dark glass: neither limb good.  
 (b) Faint.  
 (c) Dancing, faint, and unsatisfactory.  
 (d) Very great vertical motion.  
 (e) Limb very uneven. Observations at the five wires.

(f) No correction for runs.  
 (g) Very good.  
 (h) Great motion: unsatisfactory observation.  
 (i) At 4<sup>th</sup> wire.



Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi- diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
"	° ' "	Inch.	°	°	' "	' "	r	' "	° ' "	
	43. 2. 52,93	30,082	51,3	54,7	54,23	5,81		15. 57,70	81. 6. 47,33	☉.
	43. 34. 42,72				55,24	5,86			81. 6. 42,68	☉.
	60. 13. 3,86	30,073	53,0	54,2	1. 41,22	7,38	9,354	7,45	98. 1. 53,43	Venus.
	-36. 12. 8,03	30,054	57,6	58,7	42,12				1. 34. 18,13	Polaris.
	43. 13. 2,36	30,052	57,9	59,2	53,99	5,82		15. 57,40	80. 45. 1. 41	☉.
	42. 41. 8,81				53,00	5,76			80. 45. 1. 73	☉.
35,04	6. 23. 22,09	29,988	59,6	60,4	6,41				44. 10. 36,78	Capella R.
	6. 23. 19,44								44. 10. 34,13	Capella.
34,98	19. 57. 50,49	29,969	58,0	57,4	20,91				57. 45. 19,68	Castor R.
	19. 57. 47,72				30,79	2,88	10,437	3,95	57. 45. 16,91	Castor.
	28. 9. 0,76								65. 56. 33,00	Mars.
35,79	-65. 52. 3,22	29,956	54,0	53,1	2. 8,77				-28. 7. 3,71	α Cephei SP. R.
	-65. 52. 4,36				1. 32,34				-28. 7. 4,85	α Cephei SP.
36,27	-57. 55. 43,33								-20. 10. 7,39	β Cephei SP. R.
	-57. 55. 43,51								-20. 10. 7,57	β Cephei SP.
36,38	-5. 3. 6,93	29,939	52,2	51,1	5,15				32. 43. 56,20	β Urs. Maj. R.
	-5. 3. 6,89				47,99				32. 43. 56,24	β Ursæ Majoris.
36,99	-39. 20. 39,63			48,0	1. 30,78	0,83	10,931	9,10	-1. 34. 19,34	Polaris SP. R.
	-39. 20. 38,38								-1. 34. 18,09	Polaris SP.
	57. 14. 48,44	29,920	50,0						95. 3. 17,57	Saturn.
	69. 20. 25,23	29,896	48,6	45,5					105. 56. 34,38	♃.
	69. 20. 25,50								105. 56. 34,65	♃.
	69. 20. 25,52				2. 34,70	56. 56,02		16. 37,81	105. 56. 34,67	♃.
	69. 20. 25,36								105. 56. 34,51	♃.
	69. 20. 25,88								105. 56. 35,03	♃.
	59. 50. 6,04	29,829	52,2	52,8	1. 39,15	7,30	9,326	7,76	97. 38. 53,93	Venus.
	57. 4. 44,70	30,340	49,2	49,3	1. 31,23	0,82	10,947	9,26	94. 53. 14,13	Saturn.
36,50	-65. 52. 3,31	30,242	50,9	50,4	2. 10,73				-28. 7. 5,76	α Cephei SP. R.
	-65. 52. 2,75				1. 42,23				-28. 7. 5,20	α Cephei SP.
36,73	60. 8. 4,83								97. 56. 55,34	α Hydræ R.
	60. 8. 5,85								97. 56. 56,36	α Hydræ.
35,30	-57. 55. 40,60				1. 33,73				-20. 10. 6,05	β Cephei SP. R.
	-57. 55. 42,44								-20. 10. 7,89	β Cephei SP.
	40. 47. 3,58		50,0	49,3	50,89				78. 35. 2,75	ι Leonis.
36,40	-5. 3. 7,34				5,22				32. 43. 55,72	β Urs. Maj. R.
	-5. 3. 6,99				48,63				32. 43. 56,07	β Ursæ Majoris.
36,84	-39. 20. 42,18	30,294	48,6	47,5					-1. 34. 22,53	Polaris SP. R.
	-39. 20. 40,95								-1. 34. 21,30	Polaris SP.
	57. 2. 32,60	30,340	51,0	51,8	1. 30,65	6,74	9,237	8,61	94. 51. 13,40	Venus.
	-36. 12. 3,89		54,0	53,5	42,96				1. 34. 21,43	Polaris.
	40. 25. 15,52	30,340	54,6	54,6	49,87	5,50		15. 55,30	77. 57. 12,87	☉.
	39. 53. 24,61				48,94	5,44			77. 57. 11,69	☉.
36,50	46. 33. 20,80	30,332	54,0	53,6	1. 1,90				84. 21. 30,98	Procyon R.
	46. 33. 21,36								84. 21. 31,54	Procyon.
	55. 47. 41,14	29,990	49,9	49,0	1. 25,97	6,51	9,512	7,89	93. 36. 16,77	Venus.

Coincidence of Micrometer Wire with fixed Wire = 10',058, or 100',058. One revolution = 20'',833.  
 Correction for Runs = -1'',7. From April 20. = -0'',4.  
 Adopted Zenith Point = 221°. 34'. 36'',36. From April 20. = 221°. 34'. 36'',22.  
 Assumed Co-latitude = 37°. 47'. 8'',28.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
			° ' "	° ' "	° ' "	° ' "	° ' "	° ' "				
Apr. 25	(a) ☉ N.L. M.....	260.25	2.31,7	25,7	32,3	26,1	29,2	25,2	7,392	+ 55,54	260.28.23,87	G.
	☉ S.L.....	260.55	4.62,0	60,3	64,2	60,1	58,6	56,9			261. 0. 0,28	G.
	Regulus R. M.....	2.10	0.28,1	25,7	32,1	24,9	27,8	22,8	14,731	- 1.37,35	2. 8.49,55	G.
	Regulus.....	261. 0	0.29,2	24,3	30,2	24,0	25,6	24,9			261. 0.26,37	G.
	(b) β Urs. Maj. R. M....	46.35	2.53,6	50,1	54,8	48,1	50,6	47,7	10,513	- 9,47	46.37.41,31	J.G.
(c) β Ursæ Majoris.....	216.30	1.27,9	25,1	27,9	24,9	23,3	22,7	+ 0,22			216.31.25,50	J.G.
(d) Saturn S.L.....	278.30	1.22,8	16,2	22,9	15,5	14,9	16,2			278.31.18,07	G.	
Apr. 26	Venus N.L.....	276.30	1.34,8	29,2	36,9	28,2	29,9	28,2			276.31.31,18	G.
	Polaris.....	185.20	2.35,1	32,7	36,9	33,3	31,2	30,9			185.22.33,32	G.
Apr. 27	☉ N.L. M.....	259.45	4.16,9	11,3	19,7	10,5	12,3	10,2	9,758	+ 6,25	259.49.19,68	G.
	☉ S.L.....	260.20	1.10,2	6,0	13,8	5,7	5,9	5,9			260.21. 7,90	G.
	(e) Polaris SP. R. M....	80.55	0.25,9	21,2	28,2	22,0	20,9	21,9	10,421	- 7,56	80.55.15,79	G.
	Polaris SP.....	182.10	3.54,9	51,2	58,9	50,0	51,5	48,0			182.13.52,37	G.
	Saturn N.L.....	278.25	2.56,2	51,2	58,9	50,1	49,1	48,0			278.27.52,22	G.
	ζ <sup>1</sup> Urs. Maj. R. M....	45.10	0.52,7	51,0	55,9	48,5	48,2	47,9	15,529	- 1.53,98	45. 8.56,70	G.
	ζ <sup>1</sup> Ursæ Majoris.....	218. 0	0. 8,7	5,9	12,7	5,1	4,3	4,3			218. 0. 6,83	G.
	(f) ζ <sup>2</sup> Urs. Maj. R. M..	45.10	0.52,7	51,0	55,9	48,5	48,2	47,9	16,010	- 2. 4,00 - 0,21	45. 8.46,47	G.
	(g) ζ <sup>2</sup> Ursæ Majoris M.	218. 0	0. 8,7	5,9	12,7	5,1	4,3	4,3			+ 9,26 + 0,48	218. 0.16,57
	Apr. 28	Pollux R. M.....	17.45	3.28,9	27,3	30,7	26,0	28,2	24,2	13,423	- 1.10,10	17.47.17,40
Pollux.....		245.20	1.49,1	46,3	50,0	43,0	45,9	42,3	245.21.46,08			G.
Mars S.L.....		251. 5	1.44,8	42,5	44,5	40,9	41,1	38,0			251. 6.41,95	G.
(h) Regulus R. M.....		2.10	0. 9,0	8,5	15,3	7,3	10,7	6,9	14,152	- 1.25,28	2. 8.44,34	J.G.
Regulus.....		261. 0	0.23,3	18,3	25,3	17,3	20,4	20,3			261. 0.20,82	J.G.
α Urs. Maj. R. M....		52. 0	1.39,4	38,5	41,2	35,6	37,8	35,1	14,447	- 1.31,44	52. 0. 6,48	J.G.
α Ursæ Majoris.....		211. 5	3.60,2	59,0	62,2	57,8	57,9	55,0			211. 8.58,63	J.G.
β Leonis R. M.....		4.50	3.61,1	59,3	65,7	56,2	60,0	54,5	15,603	- 1.55,52	4.52. 3,90	G.
β Leonis.....		258.15	1.64,3	60,0	66,3	60,0	59,0	60,0			258.17. 1,57	G.
r Virginis.....		270.55	1.53,5	48,3	55,9	47,0	49,1	45,9			270.56.50,10	J.G.
(i) β Corvi R. M.....		326.55	0.17,9	12,1	20,1	10,0	13,9	11,9	7,909	+ 44,77 - 0,23	326.55.59,09	J.G.
(k) β Corvi.....		296.10	2.62,9	58,7	65,0	55,7	58,8	54,2			296.12.58,95	J.G.
(i) Polaris SP. R. M....		80.55	0.60,1	59,1	63,0	56,9	59,5	55,1	12,076 12.58.30	- 42,05 + 0,12	80.55.17,00	J.G.
Polaris SP.....		182.10	3.52,5	50,8	55,2	48,9	49,7	48,0			182.13.50,80	J.G.
Saturn S.L.....		278.25	1.44,0	39,3	43,8	37,7	38,0	37,0			278.26.39,95	J.G.
May 4	(l) ) NL. M.....	249.30	4. 9,7	5,1	10,7	3,1	6,1	2,7	4,052	+ 2. 5,11 + 3,02	249.36.14,31	G.
	) N.L. M.....	249.30	4. 9,7	5,1	10,7	3,1	6,1	2,7			3,822	+ 2. 9,92 + 1,51
	) N.L.....	249.35	1.15,2	10,1	14,5	7,3	9,3	7,7	9,852	+ 4,29 - 1,51		
	) N.L. M.....	249.35	1.15,2	10,1	14,5	7,3	9,3	7,7			9,796	+ 5,46 - 3,02
	) N.L. M.....	249.35	1.15,2	10,1	14,5	7,3	9,3	7,7				
	(h) Mars N.L.....	251.45	3.64,4	63,0	67,3	59,7	62,9	58,8	16,807	- 2.20,60	251.49. 2,63	G.
	Regulus R. M.....	2.10	0.63,2	63,0	66,2	60,5	62,5	59,6			2. 8.41,88	J.G.
(k) Regulus.....	261. 0	0.26,0	20,1	25,0	18,6	21,8	20,6		+ 0,13	261. 0.22,15	J.G.	

(a) The result of this observation is about 10'' too great: it is not used in subsequent computations.  
 (b) Too much wind.  
 (c) Near 4<sup>th</sup> wire.  
 (d) Cloudy and unsatisfactory.  
 (e) Not very good.

(f) At 2<sup>d</sup> wire.  
 (g) Between 4<sup>th</sup> and 5<sup>th</sup> wires.  
 (h) Very good.  
 (i) Not good.  
 (k) At 5<sup>th</sup> wire.  
 (l) Very faint: no outline: a most doubtful observation: at the five wires.



Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi- diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.	
			Attach.	Free.							
"	° ' "	Inch.	°	°	' "	' "	r	' "	° ' "		
37,96	38.53.47,65	29,938	51,2	51,2	46,95	5,32	15.54,50	76.57.32,06	☉.		
	39.25.24,06				47,83	5,38		76.57.20,29	☉.		
	39.25.46,67	29,776	47,9	45,3	48,15			77.13.43,10	Regulus R.		
	39.25.50,15							77.13.46,58	Regulus.		
33,41	-5.3.5,09	29,734	46,2	44,5	5,18			32.43.58,01	β Urs. Maj. R.		
	-5.3.10,72							32.43.52,38	β Ursæ Majoris.		
	56.56.41,85	29,684	43,9	42,4	1.30,08	0,82	10,902	8,79	94.45.10,60	Saturn.	
	54.56.59,62	29,526	42,2	42,1	1.23,22	6,36	9,299	8,04	92.45.32,80	Venus.	
	-36.11.58,24	29,594	45,9	43,8	42,74				1.34.27,30	Polaris.	
34,08	38.14.48,12	29,596	45,2	45,7	45,86	5,24	15.54,00	76.18.31,02	☉.		
	38.46.36,34				46,75	5,30		76.18.32,07	☉.		
	-39.20.44,23	29,654	39,8	36,3	48,71			-1.34.24,66	Polaris SP. R.		
	-39.20.39,19							-1.34.19,62	Polaris SP.		
31,77	56.53.20,66		39,6	36,5	1.30,90	0,82	9,126	9,71	94.42.8,73	Saturn.	
	-3.34.25,14								34.12.39,43	ζ <sup>1</sup> Urs. Maj. R.	
	-3.34.24,73								34.12.39,84	ζ <sup>1</sup> Ursæ Majoris.	
31,52	-3.34.14,91								34.12.49,66	ζ <sup>2</sup> Urs. Maj. R.	
	-3.34.14,99								34.12.49,58	ζ <sup>2</sup> Ursæ Majoris.	
31,74	23.47.14,16	29,744	48,0	48,0	25,66				61.34.48,10	Pollux R.	
	23.47.14,52								61.34.48,46	Pollux.	
32,58	29.32.10,39				47,6	33,01	2,75	10,381	3,37	67.19.45,56	Mars.
	39.25.47,22	29,784	45,2	43,1	48,39					77.13.43,89	Regulus R.
32,55	39.25.49,26									77.13.45,93	Regulus.
	-10.25.34,92	29,788	43,0	40,1	10,91					27.21.22,45	α Urs. Maj. R.
32,74	-10.25.32,93									27.21.24,44	α Ursæ Majoris.
	36.42.27,66	29,780	41,7	39,6	44,20					74.30.20,14	β Leonis R.
29,02	36.42.30,01									74.30.22,49	β Leonis.
	49.22.18,54				39,0	1.9,11				87.10.35,93	r Virginis.
	74.38.32,47	29,775	40,5	39,2	3.32,89					112.29.13,64	β Corvi R.
	74.38.27,39									112.29.8,56	β Corvi.
33,90	-39.20.45,44	29,600	40,0	38,4						-1.34.25,58	Polaris SP. R.
	-39.20.40,76					48,42				-1.34.20,90	Polaris SP.
	56.52.8,39					1.30,31	0,82	10,960	9,40	94.40.36,76	Saturn.
	28.1.42,75	29,846	50,0	49,8						65.38.31,59	♃.
	28.1.46,05									65.38.34,89	♃.
	28.1.39,11					30,98	26.5,58	15.15,16		65.38.27,95	♃.
	28.1.41,89									65.38.30,73	♃.
	28.1.41,55									65.38.30,39	♃.
32,02	30.14.31,07				33,93	2,72	9,757	3,14		68.2.13,70	Mars.
	39.25.49,68	29,860	49,5	49,0	47,93					77.13.45,89	Regulus R.
	39.25.50,59									77.13.46,80	Regulus.

Coincidence of Micrometer Wire with fixed Wire = 10',058. One revolution = 20'',833.

Correction for Runs = - 0'',4.

Adopted Zenith Point = 221°. 34'. 36'',22. From April 26. = 221°. 34'. 31'',56.

Assumed Co-latitude = 37°. 47'. 8'',28.

April 28. 21<sup>h</sup>, Molyneux fast on Hardy 15<sup>a</sup>.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.		
			A	B	C	D	E	F						
			° ' "	° ' "	° ' "	° ' "	° ' "	° ' "						
May 5	☉ N.L. M. ....	257.20	2.18,5	18,3	21,2	16,0	18,3	15,5	7,210	+ 59,34	257.23.17,27	G.		
	☉ S.L. ....	257.55	0.4,3	2,3	6,1	1,3	2,3	1,5			257.55.2,97	G.		
May 6	☉ S.L. M. ....	257.35	2.30,7	27,5	31,4	26,4	27,2	25,9	8,631	+ 29,73	257.37.57,88	G.		
	(a) ☉ N.L. ....	257.5	1.13,7	13,7	16,3	11,0	11,8	10,0			257.6.12,73	G.		
	(b) ☉ N.L. ....	256.20	0.55,2	54,1	58,1	53,1	53,9	49,9			+ 6,56	256.21.0,59	G.	
	☉ N.L. M. ....	256.20	0.55,2	54,1	58,1	53,1	53,9	49,9			+ 4,23	256.21.1,54	G.	
	☉ N.L. M. ....	256.20	0.55,2	54,1	58,1	53,1	53,9	49,9			+ 3,28			
	☉ N.L. M. ....	256.20	0.55,2	54,1	58,1	53,1	53,9	49,9			+ 5,92	256.20.59,95	G.	
	☉ N.L. M. ....	256.20	0.55,2	54,1	58,1	53,1	53,9	49,9			+ 7,83	256.20.58,58	G.	
☉ N.L. M. ....	256.20	0.55,2	54,1	58,1	53,1	53,9	49,9	- 3,28						
May 7	Mars N.L. ....	252.10	1.49,2	47,5	48,7	45,2	47,0	43,1	9,855	+ 1.27,62	252.11.46,77	G.		
	(c) ☉ N.L. M. ....	261.25	2.15,2	13,2	16,7	13,1	12,5	10,3			+ 7,82	261.28.48,91	G.	
	☉ N.L. M. ....	261.25	2.15,2	13,2	16,7	13,1	12,5	10,3			+ 1.29,89	261.28.47,27	G.	
	☉ N.L. ....	261.25	3.50,7	47,8	50,8	46,0	48,9	43,5			+ 3,91			
	☉ N.L. M. ....	261.25	3.50,7	47,8	50,8	46,0	48,9	43,5			+ 6,06	261.28.47,90	G.	
	☉ N.L. M. ....	261.25	3.50,7	47,8	50,8	46,0	48,9	43,5			- 7,82			
	(d) ☉ Leonis R. M. ....	0.45	3.6,5	4,9	9,6	4,2	6,5	0,4			8,223	+ 38,22	0.48.43,52	G.
	☉ Leonis ....	262.20	0.22,9	20,8	22,6	19,3	19,4	18,0			14,294	- 1.28,24	262.20.20,50	G.
	(e) ☉ Urs. Maj. R. M. ....	47.20	0.15,3	10,5	13,0	9,3	10,8	8,8					47.18.43,04	J.G.
	☉ Ursæ Majoris. ....	215.50	0.24,3	20,2	22,8	19,0	20,2	18,2			182.10	3.49,3	215.50.20,78	J.G.
(f) ☉ Polaris SP. R. ....	80.55	0.20,9	17,1	19,1	15,0	16,6	15,1	80.55.17,30	J.G.					
☉ Polaris SP. ....	182.10	3.49,3	46,0	49,2	44,9	45,8	44,0	182.13.46,48	J.G.					
May 8	☉ S.L. M. ....	257.0	3.48,0	46,7	49,1	45,0	47,5	43,3	7,740	+ 48,30	257.4.34,85	G.		
	(g) ☉ N.L. ....	256.30	2.53,5	54,2	54,9	49,7	51,3	47,7			256.32.51,85	G.		
May 9	(h) ☉ N.L. M. ....	256.15	2.50,5	48,9	49,8	47,2	46,7	44,3	13,510	- 1.11,91	256.16.35,52	G.		
	☉ S.L. ....	256.45	3.20,9	18,8	20,0	17,9	17,3	16,5			256.48.18,02	G.		
	☉ Urs. Maj. R. M. ....	47.15	3.60,0	55,8	58,5	55,8	56,9	53,3			10,632	- 11,96	47.18.44,09	G.
	☉ Ursæ Majoris. ....	215.50	0.23,5	17,7	21,1	16,7	18,4	17,7			10,889	- 17,31	215.50.19,13	G.
	☉ Virginis. ....	273.30	1.16,2	11,0	15,9	10,3	11,1	9,8						
	☉ Polaris SP. R. M. ....	80.55	0.38,9	33,2	35,9	35,1	34,0	34,1			12.58.45	- 0,12	80.55.18,08	G.
	☉ Polaris SP. ....	182.10	3.49,6	43,9	46,9	43,1	43,3	42,3			14,744	- 1.37,62	182.13.44,10	G.
	☉ Saturn N.L. ....	278.10	1.25,1	18,0	22,9	19,8	16,8	17,3					278.11.19,77	G.
	☉ ζ <sup>1</sup> Urs. Maj. R. M. ....	45.10	0.43,0	37,8	40,3	37,9	37,7	37,9			15,225	- 1.47,65	45.9.1,36	G.
	(i) ☉ ζ <sup>1</sup> Ursæ Majoris. ....	217.55	4.65,3	60,0	65,3	60,0	60,7	59,1					218.0.1,73	G.
	☉ ζ <sup>2</sup> Urs. Maj. R. M. ....	45.10	0.43,0	37,8	40,3	37,9	37,7	37,9			9,559	- 1.47,65	45.8.50,49	G.
	☉ ζ <sup>2</sup> Ursæ Majoris M. ....	217.55	4.65,3	60,0	65,3	60,0	60,7	59,1						
	(k) ☉ Arcturus R. M. ....	9.25	2.14,3	10,7	13,6	10,3	11,2	7,8			16,722	- 2.18,83	9.24.52,12	J.G.
☉ Arcturus ....	253.40	4.14,3	9,3	13,7	8,9	12,0	7,8	253.44.10,30	J.G.					
May 10	☉ Saturn S.L. ....	278.10	0.28,5	21,8	27,0	22,8	21,0	20,7			278.10.23,57	G.		

(a) Observed without dark glass.  
 (b) Observed at the five wires: the second not good.  
 (c) Observed at the 1<sup>st</sup>, 2<sup>d</sup>, 3<sup>d</sup>, and 5<sup>th</sup> wires: the 1<sup>st</sup> and 5<sup>th</sup> pretty good, but the 3<sup>d</sup> cloudy and very bad.  
 (d) Pretty good.  
 (e) Very good.

(f) The star came on the fixed wire, pretty well bisected.  
 (g) Observed without coloured glass: unsatisfactory.  
 (h) Very bad motion.  
 (i) No correction for runs. ζ<sup>2</sup> observed at 1<sup>st</sup> and 5<sup>th</sup> wires. The observations of ζ<sup>2</sup> are more satisfactory than those of ζ<sup>1</sup>.  
 (k) Blazing very much.



Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi- diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
"	° ' "	Inch.	°	°	' "	' "	"	' "	° ' "	
	35.48.45,71 36.20.31,41	30,012	50,1	52,2	42,02 42,84	4,94 5,01		15.52,20	73.52.23,27 73.52.25,32	⊙ ⊙
	36.3.26,32 35.31.41,17 34.46.29,03	29,732 29,712	54,2	56,0	41,68 40,87	4,97 4,90		15.51,90	73.35.19,41 73.35.17,32 72.17.18,73	⊙ ⊙ D.
	34.46.29,98 34.46.28,39 34.46.27,02 34.46.26,60		56,0		39,72	32.41,81		15.43,51	72.17.19,68 72.17.18,09 72.17.16,72 72.17.16,30	D. D. D. D.
	30.37.15,21 39.54.17,35	29,908 29,939	54,9	55,2	34,14	2,70	9,723	3,48	68.24.53,41 77.20.47,84	Mars. D.
	39.54.15,71 39.54.16,34 39.54.14,58				48,36	37.25,52		15.59,37	77.20.46,20 77.20.46,83 77.20.45,07	D. D. D.
32,01	40.45.48,04 40.45.48,94	29,950	54,2	53,8	49,91				78.33.46,23 78.33.47,13	Leonis R. Leonis.
31,91	-5.44.11,48 -5.44.10,78	29,960	53,4	52,7	5,84				32.2.50,96 32.2.51,66	δ Urs. Maj. R. δ Ursæ Majoris.
31,89	-39.20.45,74 -39.20.45,08		52,5	52,0	47,66				-1.34.25,12 -1.34.24,46	Polaris SP. R. Polaris SP.
	35.30.3,29 34.58.20,29	29,972	57,5	59,2	40,90 40,11	4,90 4,84		15.51,50	73.1.56,07 73.1.55,34	⊙ ⊙
	34.42.3,96 35.13.46,46 -5.44.12,53 -5.44.12,43 51.56.40,62	29,827 29,723	63,2	64,2	39,12 39,89	4,80 4,87		15.51,30	72.45.37,86 72.45.38,46 32.2.50,00 32.2.50,10 89.45.1,88	⊙ ⊙ δ Urs. Maj. R. δ Ursæ Majoris. η Virginis.
	-39.20.46,52 -39.20.47,46 56.36.48,21	29,714	56,5		46,90				-1.34.25,14 -1.34.26,08 94.25.31,91	Polaris SP. R. Polaris SP. Saturn.
	-3.34.29,80 -3.34.29,83 -3.34.18,93		56,6	55,3	1.26,72	0,81	9,145	9,51	34.12.34,90 34.12.34,87 34.12.45,77	ζ <sup>1</sup> Urs. Maj. R. ζ <sup>1</sup> Ursæ Majoris. ζ <sup>2</sup> Urs. Maj. R.
	-3.34.18,60 32.9.39,44 32.9.38,74	29,706	55,9	54,3	36,08				34.12.46,10 69.57.23,80 69.57.23,10	ζ <sup>2</sup> Ursæ Majoris. Arcturus R. Arcturus.
	56.35.52,01	29,714	53,5	51,5	1.27,33	0,81	10,932	9,11	94.24.17,70	Saturn.

Coincidence of Micrometer Wire with fixed Wire 10',058. One revolution = 20',833.

Correction for Runs = -0',4. From May 9. = -5',1.

Adopted Zenith Point = 221°. 34'. 31'',56.

Assumed Co-latitude = 37°. 47'. 8'',28.

May 9. 10<sup>h</sup>, Molyneux fast on Hardy 51°.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
			° ' "	° ' "	° ' "	° ' "	° ' "	° ' "				
May 10	(a) ) N.L. M.....	280.45	0.28,9	22,8	29,9	24,0	23,0	22,0	1,642	+ 2.55,32 + 9,10	280.48.29,45	G.
	) N.L. M.....	280.45	0.28,9	22,8	29,9	24,0	23,0	22,0	1,428	+ 2.59,78 + 4,55	280.48.29,36	G.
	) N.L.....	280.45	3.35,0	29,0	34,6	28,7	30,3	28,0			280.48.30,35	G.
	) N.L. M.....	280.45	3.35,0	29,0	34,6	28,7	30,3	28,0	9,850	+ 4,34 - 4,55	280.48.30,14	G.
	) N.L. M.....	280.45	3.35,0	29,0	34,6	28,7	30,3	28,0	9,727	+ 6,89 - 9,10	280.48.28,14	G.
	α Draconis R. M....	54.30	2.65,6	61,7	64,9	60,2	61,8	57,6	14,511	- 1.32,76	54.31.28,71	G.
	α Draconis.....	208.35	2.41,0	34,8	37,3	34,2	33,3	32,7			208.37.35,12	G.
	κ Virginis R. M....	339.50	2.42,2	36,7	41,9	37,3	40,3	35,2	8,492	+ 32,62	339.53.11,10	G.
	κ Virginis.....	283.15	0.53,1	47,4	53,9	46,9	46,3	45,1			283.15.48,65	G.
	(b) λ Virginis R. M....	336.45	1.30,3	24,5	31,7	24,2	27,0	23,7	8,139	+ 39,98	336.47.6,65	G.
	λ Virginis.....	286.20	1.57,9	52,6	58,2	52,7	52,3	50,3			286.21.53,68	G.
	May 11	☉ N.L. M.....	255.45	0.35,3	31,7	35,3	31,1	32,4	30,1	11,759	- 35,43	255.44.57,12
☉ S.L.....		256.15	1.42,6	36,8	42,5	35,4	37,5	34,2			256.16.37,88	G.
May 12	☉ S.L. M.....	256.0	1.16,3	13,9	17,9	13,2	13,0	10,9	9,932	+ 2,62	256.1.16,60	G.
	☉ N.L.....	255.25	4.35,2	33,3	37,0	31,4	33,2	30,1			255.29.32,60	G.
	Mars center.....	252.50	2.7,1	6,1	8,0	5,2	3,3	0,9			252.52.4,75	G.
May 13	(c) ☉ N.L. M.....	255.10	3.54,9	49,4	55,1	48,3	48,1	47,2	8,100	+ 40,79	255.14.30,64	G.
	(c) ☉ S.L.....	255.45	1.13,3	8,7	13,1	6,7	8,3	5,0			255.46.8,98	G.
May 15	(d) Polaris SP. R. M...	80.55	1.13,3	8,1	14,3	9,6	9,7	8,2	12,507	- 51,02	80.55.19,31	G.
	Polaris SP.....	182.10	3.48,3	44,2	47,1	43,3	43,8	41,9			182.13.44,13	G.
	ζ <sup>1</sup> Urs. Maj. R. M...	45.10	0.24,0	20,0	24,4	20,4	19,0	20,2	13,822	- 1.18,41	45.9.2,86	G.
	(e) ζ <sup>1</sup> Ursæ Majoris...	217.55	4.62,2	57,9	63,9	58,7	57,9	57,0			217.59.59,60	G.
	ζ <sup>2</sup> Urs. Maj. R. M...	45.10	0.24,0	20,0	24,4	20,4	19,0	20,2	14,312	- 1.28,62 - 0,84	45.8.51,81	G.
(e) ζ <sup>2</sup> Ursæ Majoris M.	217.55	4.62,2	57,9	63,9	58,7	57,9	57,0	9,530	+ 11,01 + 0,84	218.0.11,45	G.	
May 16	☉ S.L. M.....	255.0	3.7,1	2,1	9,2	4,7	4,0	3,3	10,919	- 17,94	255.2.46,61	G.
	☉ N.L.....	254.30	1.6,9	3,7	8,4	3,7	4,7	0,7			254.31.4,50	G.
	Regulus R. M.....	2.10	0.63,9	62,9	66,8	61,0	62,6	57,2	16,810	- 2.20,66	2.8.41,56	G.
	Regulus.....	261.0	0.24,5	20,0	24,6	17,1	18,0	19,8			261.0.20,60	G.
	α Urs. Maj. R. M...	52.0	0.36,9	33,3	34,9	30,3	32,8	32,0	11,272	- 25,29	52.0.7,98	G.
	α Ursæ Majoris.....	211.5	3.57,8	55,8	56,7	53,2	53,9	50,7			211.8.54,03	G.
	β Leonis R. M.....	4.50	3.20,3	17,8	21,7	16,3	18,4	14,1	13,733	- 1.16,56	4.52.0,99	G.
	β Leonis.....	258.15	1.64,1	59,4	63,9	60,3	60,3	58,0			258.17.0,67	G.
	δ Urs. Maj. R. M...	47.20	0.19,7	13,9	17,4	14,7	14,1	15,0	14,447	- 1.31,44	47.18.44,31	G.
	δ Ursæ Majoris.....	215.50	0.21,8	16,2	20,8	15,7	16,4	16,3			215.50.17,82	G.
	(f) α Cassiop. SP. R. M.	113.45	0.22,8	18,0	21,8	17,7	23,0	16,4	22,371	- 4.16,52	113.41.3,38	G.
	(g) α Cassiopeia SP....	149.25	2.64,1	59,4	62,9	58,9	58,3	57,0		- 0,48	149.27.59,10	G.
	Polaris SP. R. M...	80.55	1.34,1	29,7	32,9	30,7	31,1	30,2	13,546	- 1.12,67	80.55.18,51	G.
	Polaris SP.....	182.10	3.48,2	44,0	46,9	44,8	44,0	42,8			182.13.44,48	G.
	Saturn S.L.....	278.0	3.47,7	42,2	46,5	41,4	41,8	40,2			278.3.42,67	G.
	(h) Spica R. M.....	339.5	1.12,7	7,7	14,7	8,0	7,9	7,0	11,850	- 37,32	339.5.32,15	G.
	Spica.....	284.0	3.35,2	28,7	35,2	28,7	28,9	27,1			284.3.30,03	G.
	(f) Pallas.....	249.40	3.13,7	7,7	14,2	7,1	8,2	7,8			249.43.9,25	G.
Ceres.....	295.15	0.49,3	43,7	49,3	43,2	43,7	40,5			295.15.44,82	G.	

(a) Unsteady.  
 (b) Faint.  
 (c) Observed without dark glass.  
 (d) Very good.  
 (e) No correction for runs. ζ<sup>2</sup> observed at 1<sup>st</sup> and 5<sup>th</sup> wires.  
 (f) Very bad.  
 (g) An interval and half of wires too late.  
 (h) Not very good.



Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi- diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
"	" / "	Inch.	"	"	" "	" "	"	" "	" / "	
	59.13.57,89	29,714	53,5	51,5					96.27.5,38	).
	59.13.57,80								96.27.5,29	).
	59.13.58,79				1.36,67	52.15,70		16.38,24	96.27.6,28	).
	59.13.58,58								96.27.6,07	).
	59.13.56,58								96.27.4,07	).
31,92	-12.56.57,15	29,718	53,0	50,7					24.49.57,83	α Draconis R.
	-12.56.56,44				13,30				24.49.58,54	α Draconis.
29,88	61.41.20,46								99.30.15,68	κ Virginis R.
	61.41.17,09				1.46,94				99.30.12,31	κ Virginis.
30,17	64.47.24,91								102.36.35,40	λ Virginis R.
	64.47.22,12				2.2,21				102.36.32,61	λ Virginis.
	34.10.25,56	29,846	55,2	56,1	39,00	4,74		15.50,90	72.13.59,00	⊙.
	34.42.6,32				39,78	4,80			72.13.58,68	⊙.
	34.26.45,04	29,690	56,4	58,7	39,00	4,77		15.50,70	71.58.36,85	⊙.
	33.55.1,04				38,23	4,70			71.58.33,55	⊙.
	31.17.33,19	29,601	57,2	56,3	34,62	2,68			69.5.13,41	Mars.
	33.39.59,08	29,490	54,3	53,7	37,99	4,67		15.50,50	71.43.31,18	⊙.
	34.11.37,42				38,75	4,74			71.43.29,21	⊙.
31,72	-39.20.47,75	29,650	50,6	49,6					-1.34.26,86	Polaris SP. R.
	-39.20.47,43				47,39				-1.34.26,54	Polaris SP.
31,23	-3.34.31,30								34.12.33,37	ζ <sup>1</sup> Urs. Maj. R.
	-3.34.31,96				3,61				34.12.32,71	ζ <sup>1</sup> Ursæ Majoris.
31,63	-3.34.20,25								34.12.44,42	ζ <sup>2</sup> Urs. Maj. R.
	-3.34.20,11				3,61				34.12.44,56	ζ <sup>2</sup> Ursæ Majoris.
	33.28.15,05	29,690	53,8	55,0	37,87	4,65		15.49,90	71.0.6,65	⊙.
	32.56.32,94				37,12	4,58			71.0.3,66	⊙.
31,08	39.25.50,00	29,751	56,2	56,3	47,06				77.13.45,34	Regulus R.
	39.25.49,04								77.13.44,38	Regulus.
31,01	-10.25.36,42	29,771	55,0	54,5					27.21.21,28	α Urs. Maj. R.
	-10.25.37,48				10,58				27.21.20,22	α Ursæ Majoris.
30,83	36.42.30,57	29,790	54,2	53,7	42,95				74.30.21,80	β Leonis R.
	36.42.29,11								74.30.20,34	β Leonis.
31,07	-5.44.12,75	29,799		52,5		5,81			32.2.49,72	δ Urs. Maj. R.
	-5.44.13,74								32.2.48,73	δ Ursæ Majoris.
31,24	-72.6.31,42	29,804	53,2	52,1	2.57,21				-34.22.20,35	α Cassiop. SP. R.
	-72.6.32,46								-34.22.21,39	α Cassiopeiæ SP.
31,50	-39.20.46,95		52,6	50,3		47,57			-1.34.26,24	Polaris SP. R.
	-39.20.47,08								-1.34.26,37	Polaris SP.
	56.29.11,11				1.27,44	0,80	10,942	9,21	94.17.36,82	Saturn.
31,09	62.28.59,41	29,810	52,1	49,5	1.51,18				100.17.58,87	Spica R.
	62.28.58,47								100.17.57,93	Spica.
	28.8.37,69	29,831	48,2	46,2	31,34	1,71			65.56.15,60	Pallas.
	73.41.13,26				3.17,59	4,37			111.31.34,76	Ceres.

Coincidence of Micrometer Wire with fixed Wire = 10',058. One revolution = 20'',833.  
 Correction for Runs = - 5'',1.  
 Adopted Zenith Point = 221°. 34'. 31'',56.  
 Assumed Co-latitude = 37°. 47'. 8'',28.

Month and Day.	NAME OF STAR or PLANET.	Pointer. ° ' "	Microscopes.						Micrometer or Time by Molyneux. r. h. m. s.	Correction for Microm. or Time. " "	Concluded reading of Circle. ° ' "	Observer.
			A	B	C	D	E	F				
			"	"	"	"	"	"				
May 17	Polaris R. M.....	77.45	3.20,7	17,2	19,2	16,1	16,1	15,2	14,979	-1.42,52	77.46.34,35	G.
	Polaris.....	185.20	2.35,2	30,9	33,8	30,9	31,9	29,8			185.22.31,65	G.
	Venus N.L.....	267.20	1.35,3	31,0	34,1	29,5	31,6	28,4			267.21.31,38	G.
May 18	⊙ S.L. M.....	254.35	0.42,7	42,0	43,0	39,9	42,4	37,7	10,790	-15,24	254.35.25,93	G.
	⊙ N.L.....	254.0	3.45,9	43,7	44,8	40,9	45,7	38,2			254.3.42,58	G.
	(a) α Ursæ Majoris R..	52.0	0.10,4	8,2	10,8	7,1	7,3	7,1			52.0.8,47	J.G.
	α Ursæ Majoris.....	211.5	3.56,2	54,1	55,1	52,5	53,8	48,8			211.8.52,77	J.G.
	(b) β Leonis R. M.....	4.50	3.34,0	31,1	31,3	28,2	30,3	26,3	14,311	-1.28,60	4.52.1,00	G.
	β Leonis.....	258.15	1.62,8	59,7	63,2	59,3	59,3	58,5			258.17.0,13	G.
	α Cassiop. SP. R. M.	113.40	2.24,2	20,2	21,7	18,3	18,2	20,0	13,682	-1.15,50	113.41.4,53	G.
	α Cassiopeïæ SP....	149.25	2.60,5	56,1	57,7	54,0	55,9	54,3			149.27.55,92	G.
	(c) Polaris SP. R. M....	80.55	1.18,2	15,0	16,6	15,2	14,7	14,7	12,840	-57,96	80.55.17,56	G.
	Polaris SP.....	182.10	3.46,0	41,3	44,0	41,9	43,3	40,1			182.13.42,15	G.
	Saturn S.L.....	278.0	1.50,7	46,3	48,2	45,3	46,2	44,3			278.1.46,53	G.
	Spica R. M.....	339.5	0.59,7	56,4	61,0	56,3	57,0	53,5	11,331	-26,52	339.5.30,63	J.G.
	Spica.....	284.0	3.37,5	32,0	35,3	30,3	33,0	28,7			284.3.32,20	J.G.
	(d) α Draconis R. M....	54.30	2.61,1	57,8	58,3	55,6	58,2	53,9	14,273	-1.27,81	54.31.29,17	J.G.
	α Draconis.....	208.35	2.36,4	31,7	33,7	30,8	33,2	29,3			208.37.32,08	J.G.
	(e) Arcturus R. M.....	9.25	1.6,0	4,3	6,4	2,3	4,2	1,2	13,416	-1.9,96	9.24.53,92	G.
	(f) Arcturus.....	253.40	4.13,2	8,3	12,3	7,7	8,8	6,5			253.44.8,77	G.
	Polaris.....	185.20	2.35,0	31,5	33,8	30,6	32,0	30,3			185.22.31,77	G.
	(g) Venus N.L.....	266.55	0.31,1	28,0	28,9	27,6	26,1	27,0			266.55.28,03	J.G.
May 19	⊙ N.L. M.....	253.50	0.44,1	44,8	44,8	40,1	44,6	41,5	10,530	-9,83	253.50.33,37	G.
	⊙ S.L.....	254.20	2.15,3	14,0	15,1	14,1	15,1	12,1			254.22.13,92	G.
	Mars center.....	253.50	3.14,9	11,2	13,2	9,3	10,6	8,0			253.53.10,67	G.
	Regulus R. M.....	2.10	0.32,4	29,7	31,9	27,9	31,1	26,7	15,232	-1.47,79	2.8.42,08	J.G.
	Regulus.....	261.0	0.25,4	19,9	21,5	20,4	19,9	19,0			261.0.20,95	J.G.
May 21	⊙ N.L. M.....	253.25	0.60,0	54,7	59,9	53,2	54,7	51,3	12,052	-41,53	253.25.13,94	G.
	⊙ S.L.....	253.55	1.53,0	51,2	52,0	50,7	50,4	46,0			253.56.50,23	G.
	β Leonis R. M.....	4.50	4.36,7	32,0	36,2	31,9	34,3	29,0	17,193	-2.28,63	4.52.3,95	G.
	β Leonis.....	258.15	1.63,1	58,9	62,9	59,9	56,2	57,0			258.16.59,33	G.
	δ Urs. Maj. R. M....	47.20	0.46,8	40,6	44,5	41,8	39,7	40,3	15,691	-1.57,35	47.18.44,82	J.G.
	δ Ursæ Majoris.....	215.50	0.22,0	17,3	21,5	17,6	17,2	16,1			215.50.18,57	J.G.
	(h) α Cassiop. SP. R. M.	113.40	1.66,3	62,0	66,0	63,0	59,1	59,7	13,000	-1.1,31	113.41.1,02	G.
	α Cassiopeïæ SP....	149.25	2.67,1	60,7	66,1	60,0	60,0	58,3			149.28.1,52	G.
	Polaris SP. R. M....	80.55	0.54,6	50,0	54,3	51,1	48,1	48,0	11,512	-30,28	80.55.20,59	G.
	Polaris SP.....	182.10	3.49,9	44,3	48,5	43,9	43,3	43,7			182.13.44,97	G.
	Saturn N.L.....	277.55	3.48,8	42,1	47,8	42,3	40,2	39,2			277.58.42,77	G.
	Spica R. M.....	339.5	0.58,0	50,4	61,1	51,7	51,6	49,1	10,965	-18,90	339.5.34,60	J.G.
	Spica.....	284.0	3.35,8	26,7	34,8	27,2	27,0	26,7			284.3.29,10	J.G.
	Pallas.....	249.5	3.28,3	20,3	28,0	21,6	20,3	19,0			249.8.22,33	G.
	Ceres.....	295.25	3.61,9	54,2	64,0	54,2	54,1	51,2			295.28.55,93	G.
May 22	(i) ⊙ S.L. M.....	253.45	0.15,6	12,2	16,5	10,2	11,1	10,2	11,577	-31,65	253.44.40,95	G.
	⊙ N.L.....	253.10	3.6,2	4,7	7,7	2,1	4,4	0,0			253.13.3,67	G.
	Polaris.....	185.20	2.37,5	33,2	35,5	32,2	33,4	31,5			185.22.33,45	G.
	Venus N.L.....	265.10	2.31,3	26,8	29,1	25,9	24,8	24,9			265.12.26,72	G.
May 24	Venus N.L.....	264.20	1.49,2	46,7	48,0	43,0	43,9	41,8			264.21.45,13	J.G.
May 25	⊙ N.L. M.....	252.35	2.41,5	37,3	40,7	35,9	38,1	35,3	7,172	+1.0,13	252.38.37,81	G.
	⊙ S.L.....	253.10	0.14,2	12,2	14,5	10,9	9,7	9,9			253.10.11,87	G.

(a) The star came on the fixed wire pretty well bisected.

(b) Beautiful.

(c) Observed by reflexion from the surface of water: the image very faint, indistinct, and bad.

(d) Very good.

(e) Observed by reflexion from water: would scarcely bear illumination.

(f) Blazing dreadfully.

(g) Dancing very much.

(h) Not satisfactory.

(i) Very bad.



Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi- diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
"	" "	Inch.	"	"	" "	" "	"	" "	" "	"
33,00	-36.12.2,79	29,821	54,7	58,5	41,82				1.34.23,67	Polaris R.
	-36.11.59,91								1.34.26,55	Polaris.
	45.46.59,82	29,826	55,2	59,8					58,54	4,92
30,62	33.0.54,37	29,819	59,8	64,1	36,72	4,59	15.49,50	70.32.45,28	☉.	
	32.29.11,02				35,98	4,52		70.32.40,26	☉.	
	-10.25.36,91	29,800	60,7	61,4	10,45			27.21.20,92	α Urs. Maj. R.	
30,57	-10.25.38,79		60,1	60,1	42,42			74.30.21,26	β Leonis R.	
	36.42.30,56							74.30.19,27	β Leonis.	
30,23	-72.6.32,97	29,808	59,1	58,4	2.54,97				-34.22.19,66	α Cassiop. SP. R.
	-72.6.35,64									
29,86	-39.20.46,00		58,8	57,3	46,90				-1.34.24,62	Polaris SP. R.
	-39.20.49,41								-1.34.28,03	Polaris SP.
31,42	56.27.14,97				1.26,12	0,80	10,974	9,54	94.15.39,03	Saturn.
	62.29.0,93			57,2	1.49,44				100.17.58,65	Spica R.
	62.29.0,64								100.17.58,36	Spica.
30,63	-12.56.57,61		58,1	57,1	13,17				24.49.57,50	α Draconis R.
	-12.56.59,48								24.49.55,63	α Draconis.
31,35	32.9.37,64				36,00				69.57.21,92	Arcturus R.
	32.9.37,21								69.57.21,49	Arcturus.
31,52	-36.11.59,79	29,798		60,9	41,58				1.34.26,91	Polaris.
	45.20.56,47		58,8	62,2	57,33	4,86	9,409	6,86	83.9.4,08	Venus.
	32.16.1,81	29,780	62,3	61,5	35,80	4,49		15.49,30	70.19.30,70	☉.
31,64	32.47.42,36				36,54	4,56			70.19.33,32	☉.
	32.18.39,11	29,759	61,7	61,8	35,82	2,66			70.6.20,55	Mars.
	39.25.49,48	29,761	60,7	60,4	46,68				77.13.44,44	Regulus R.
	39.25.49,39								77.13.44,35	Regulus.
	31.50.42,38	30,114	54,3	54,7	36,11	4,44		15.48,90	69.54.11,23	☉.
31,70	32.22.18,67				36,85	4,50			69.54.10,40	☉.
	36.42.27,61	30,100		52,7	43,48				74.30.19,37	β Leonis R.
	36.42.27,77								74.30.19,53	β Leonis.
31,27	-5.44.13,26			51,8	5,87				32.2.49,15	δ Urs. Maj. R.
	-5.44.12,99								32.2.49,42	δ Ursæ Majoris.
32,78	-72.6.29,46		53,2	50,4	2.59,57				-34.22.20,75	α Cassiop. SP. R.
	-72.6.30,04									
31,85	-39.20.49,03	30,104	52,3	50,0	48,07				-1.34.28,82	Polaris SP. R.
	-39.20.46,59								-1.34.26,38	Polaris SP.
	56.24.11,21			49,0	1.28,27	0,80	9,161	9,35	94.12.56,31	Saturn.
31,85	62.28.56,96			48,8	1.52,42				100.17.57,66	Spica R.
	62.28.57,54								100.17.58,24	Spica.
	27.33.50,77	30,068	48,8	46,1	30,83	1,68			65.21.28,20	Pallas.
	73.54.24,37				3.21,93	4,44			111.44.50,14	Ceres.
31,85	32.10.9,39	30,045	55,6	57,6	36,27	4,49		15.48,70	69.42.0,75	☉.
	31.38.32,11				35,54	4,42			69.42.0,21	☉.
	-36.11.58,11	30,012	56,2	56,4	42,25				1.34.27,92	Polaris.
	43.37.55,16	30,014	57,2	57,6	54,88	4,62	9,391	7,04	81.26.0,74	Venus.
	42.47.12,06	29,720	58,2	58,7	52,65	4,50	9,401	6,94	80.35.15,43	Venus.
31,85	31.4.4,74	29,683	59,3	59,7	34,18	4,34		15.48,20	69.7.31,06	☉.
	31.35.38,80				34,89	4,40			69.7.29,37	☉.

Coincidence of Micrometer Wire with fixed Wire = 10",058. One revolution = 20",833.  
 Correction for Runs = -5",1.  
 Adopted Zenith Point = 221°.34'.31",56. From May 24. = 221°.34'.33",07.  
 Assumed Co-latitude = 37°.47'.8",28.

44 ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1835.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.		
			A	B	C	D	E	F						
			° ' "	° ' "	° ' "	° ' "	° ' "	° ' "						
May 25	(a) Mars center.....	254.45	4.64,0	60,0	63,2	58,5	59,7	56,9	14,049	- 1.23,14	254.50. 0,38	J.G.		
	(b) δ Urs. Maj. R. M...	47.20	0.15,7	9,7	13,3	9,4	9,2	8,3			47.18.47,76	J.G.		
	δ Ursæ Majoris.....	215.50	0.23,1	17,3	21,7	17,4	18,0	16,2			215.50.18,90	J.G.		
	(c) Polaris SP. R. M...	80.55	0.50,8	47,3	50,2	47,3	45,8	45,6			80.55.24,35	J.G.		
	Polaris SP.....	182.10	3.48,9	42,3	46,3	43,5	41,8	41,2			182.13.43,37	G.		
	Saturn S.L.....	277.55	0.63,3	58,2	64,3	57,9	56,3	56,0			277.55.59,17	G.		
	ζ <sup>1</sup> Urs. Maj. R. M...	45.10	0.41,1	35,9	38,3	35,7	34,2	34,6			45.9.6,54	G.		
	(d) ζ <sup>1</sup> Ursæ Majoris...	217.55	4.61,7	55,3	60,7	56,9	54,3	53,3			218.0.0,37	G.		
	ζ <sup>2</sup> Urs. Maj. R. M...	45.10	0.41,1	35,9	38,3	35,7	34,2	34,6			14,931	- 1.41,52 - 0,84	45.8.54,16	G.
	(d) ζ <sup>2</sup> Ursæ Majoris M.	217.55	4.61,7	55,3	60,7	56,9	54,3	53,3			9,510	+ 11,42 + 0,84	218.0.12,63	G.
	Arcturus R. M....	9.25	0.45,2	40,7	44,7	40,8	42,3	37,0			12,281	- 46,32	9.24.55,35	J.G.
	Arcturus.....	253.40	4.12,3	6,2	11,4	5,6	7,8	4,2					253.44.7,20	J.G.
	Ceres.....	295.35	4.44,0	38,0	43,1	35,2	35,2	34,1					295.39.37,47	G.
	(e) Venus N.L.....	263.55	1.45,3	38,3	44,0	38,1	37,6	38,9				+ 0,66	263.56.40,74	G.
	May 26	Polaris SP. R. M...	80.55	1.22,9	18,8	22,2	19,4	18,9			19,1	12,791	- 56,95	80.55.23,07
Polaris SP.....		182.10	3.46,8	39,7	46,2	41,1	39,1	40,3			182.13.41,57	G.		
Saturn S.L.....		277.55	0.17,8	10,1	16,3	11,3	9,2	12,3			277.55.12,80	G.		
ζ <sup>1</sup> Urs. Maj. R. M...		45.10	0.16,0	10,0	16,7	10,7	8,7	10,3	13,203	- 1.5,51	45.9.6,52	G.		
(a) ζ <sup>1</sup> Ursæ Majoris...		217.55	4.60,0	53,8	60,3	54,0	52,8	55,2			217.59.56,02	G.		
α Cor. Bor. R. M...		16.40	0.14,0	10,0	13,0	9,1	7,4	7,5	14,821	- 1.39,22	16.38.30,91	G.		
α Coronæ Borealis..		246.30	0.36,0	30,9	34,2	29,9	28,8	29,0			246.30.31,38	G.		
α Serpentis R. M...		356.20	0.60,6	57,2	62,9	56,0	56,7	53,1	14,132	- 1.24,87	356.19.32,71	J.G.		
(f) α Serpentis.....		266.45	4.36,2	29,1	36,9	30,6	30,1	28,0		+ 0,16	266.49.31,23	J.G.		
Venus N.L.....		263.30	1.48,3	43,8	46,5	43,9	40,3	40,7			263.31.43,63	G.		
May 27	Polaris SP. R. M...	80.55	1.6,3	1,0	7,0	1,9	0,0	0,3	12,062	- 41,75	80.55.20,83	J.G.		
	(g) Polaris SP.....	182.10	3.45,9	41,2	45,3	41,2	40,3	39,7			182.13.41,65	J.G.		
May 28	(b) Polaris SP. R. M...	80.55	0.61,0	55,9	61,7	57,7	54,2	54,3	11,770	- 35,66	80.55.21,64	G.		
	Polaris SP.....	182.10	3.46,8	41,3	46,3	42,1	42,0	40,3			182.13.42,50	G.		
	Saturn S.L.....	277.50	3.57,0	53,2	59,0	52,0	51,7	49,1			277.53.53,00	G.		
	Spica R. M.....	339.5	0.34,4	28,8	35,0	29,8	31,1	28,1	9,950	+ 2,25	339.5.33,37	J.G.		
	Spica.....	284.0	3.34,1	28,2	33,8	28,2	27,8	26,5			284.3.29,17	J.G.		
	α Draconis R. M...	54.30	2.47,3	40,5	43,8	41,3	42,0	39,4	13,359	- 1.8,77	54.31.33,16	G.		
	α Draconis.....	208.35	2.35,9	28,4	34,7	30,0	28,8	27,8			208.37.30,52	G.		
	Arcturus R. M....	9.25	1.18,1	12,7	18,5	14,3	12,4	12,2	13,742	- 1.16,75	9.24.57,73	G.		
	Arcturus.....	253.40	4.13,1	5,7	11,8	5,9	6,0	4,4			253.44.7,10	G.		
	Antares.....	299.45	1.28,2	17,7	25,6	19,0	15,4	17,3			299.46.20,32	G.		
	(h) Pallas.....	248.30	1.53,2	45,9	51,2	45,4	45,4	46,3			248.31.47,60	G.		
	Venus N.L.....	262.40	2.32,2	27,3	32,1	28,3	26,9	25,1			262.42.28,22	G.		
May 29	⊙ N.L. M.....	251.55	3.26,3	23,1	27,7	21,1	22,3	19,7	11,916	- 38,71	251.57.44,07	G.		
	⊙ S.L.....	252.25	4.22,7	17,9	22,2	16,1	16,4	15,4			252.29.17,72	G.		
	Mercury center.....	248.40	4.26,9	23,3	27,7	21,9	24,4	22,3			248.44.23,67	G.		
	(i) Mars center.....	255.30	0.8,5	3,2	8,2	3,2	3,0	1,1		+ 0,09	255.30.4,61	G.		
	Polaris SP. R. M...	80.55	0.10,0	5,3	10,3	6,9	3,9	4,5	9,397	+ 13,77	80.55.20,57	G.		
	Polaris SP.....	182.10	3.47,9	42,0	47,2	44,2	42,1	41,8			182.13.43,55	G.		
	Saturn N.L.....	277.50	2.64,7	60,0	64,9	57,2	57,0	55,2			277.52.59,32	G.		
	Spica R. M.....	339.5	0.65,0	60,0	68,0	60,2	62,2	58,1	11,187	- 23,52	339.5.38,56	G.		
	Spica.....	284.0	3.33,0	26,3	34,9	26,3	26,2	25,0			284.3.28,02	G.		
	α Draconis R. M...	54.30	2.56,2	53,1	55,3	50,4	51,3	48,1	13,875	- 1.19,53	54.31.32,37	J.G.		
α Draconis.....	208.35	2.36,2	30,5	34,0	31,7	30,7	28,2			208.37.31,45	J.G.			

(a) No correction for runs.

(b) Pretty good.

(c) Too much wind.

(d) No correction for runs. ζ<sup>2</sup> was observed at the 1<sup>st</sup> and 5<sup>th</sup> wires.

(e) At the 5<sup>th</sup> wire: not satisfactory. The correction for change of N.P.D. is + 0<sup>''</sup>,56, and that for curvature of path is + 0<sup>''</sup>,10.

(f) At the comb.

(g) The wires of microscope E dragged on the surface of the eye-glass: the reading is supplied by comparing E + F with the mean of A + B and C + D in other observations.

(h) Very cloudy and bad.

(i) At the comb: the correction for change of N.P.D. is - 0<sup>''</sup>,36, and that for curvature of path + 0<sup>''</sup>,45.



Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi- diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.	
			Attach.	Free.							
"	° ' "	Inch.	°	°	' "	' "	"	' "	° ' "		
33,33	33. 15. 27,31	29,580	58,5	58,5	37,16	2,65			71. 3. 10,10	Mars.	
	- 5. 44. 14,69	29,550	56,1	54,7	57,3				32. 2. 47,86	♁ Urs. Maj. R.	
33,86	- 5. 44. 14,17	29,499	54,6	53,7	46,76	1. 25,55	0,79	11,001	9,82	32. 2. 48,38	♁ Ursæ Majoris.
	- 39. 20. 51,28									- 1. 34. 29,76	Polaris SP. R.
33,46	- 39. 20. 49,70	29,386	55,0	54,7	51,71	4,44	9,530	5,57	- 1. 34. 28,18	Polaris SP.	
	56. 21. 26,10								94. 9. 49,32	Saturn.	
33,40	- 3. 34. 33,47	29,602	55,0	54,6	51,35	4,39	9,435	6,56	34. 12. 31,24	ζ <sup>1</sup> Urs. Maj. R.	
	- 3. 34. 32,70								34. 12. 32,01	ζ <sup>1</sup> Ursæ Majoris.	
31,28	- 3. 34. 21,09	29,537	53,6	51,6	36,07	3,18,62	4,48		34. 12. 43,62	ζ <sup>2</sup> Urs. Maj. R.	
	- 3. 34. 20,44								34. 12. 44,27	ζ <sup>2</sup> Ursæ Majoris.	
31,15	32. 9. 37,72	29,468	51,0	50,0	3. 18,62	4,48			69. 57. 22,07	Arcturus R.	
	32. 9. 34,13								69. 57. 18,48	Arcturus.	
32,32	74. 5. 4,40	29,334	55,2	52,7	46,59	0,79	10,885	8,62	111. 55. 26,82	Ceres.	
	42. 22. 8,85								29,386	53,0	51,9
31,27	- 39. 20. 51,18	29,926	52,2	49,9	13,42	1,64	9,460	6,30	- 1. 34. 29,49	Polaris SP. R.	
	- 39. 20. 50,32								- 1. 34. 28,63	Polaris SP.	
31,97	56. 20. 40,91	29,980	52,3	52,7	50,73	4,27			94. 9. 4,97	Saturn.	
	- 3. 34. 34,63								34. 12. 30,10	ζ <sup>1</sup> Urs. Maj. R.	
31,24	- 3. 34. 35,87	30,006	55,0	55,8	33,89	4,25		15. 47,60	34. 12. 28,86	ζ <sup>1</sup> Ursæ Majoris.	
	24. 56. 0,98								62. 43. 35,78	α Cor. Bor. R.	
31,15	24. 55. 59,49	29,994	55,2	56,0	29,64	3,21			62. 43. 34,29	α Coronæ Bor.	
	45. 14. 59,18								83. 3. 4,96	α Serpentis R.	
31,97	45. 14. 59,34	30,012	56,2	55,6	38,89	2,65			83. 3. 5,12	α Serpentis.	
	41. 57. 11,74								29,602	55,0	54,6
31,24	- 39. 20. 48,94	29,759	54,0	52,3	47,31				- 1. 34. 27,97	Polaris SP. R.	
	- 39. 20. 50,24								- 1. 34. 29,27	Polaris SP.	
32,07	- 39. 20. 49,75	29,898	54,0	50,8	47,66	0,79	10,897	8,74	- 1. 34. 29,13	Polaris SP. R.	
	- 39. 20. 49,39								- 1. 34. 28,77	Polaris SP.	
31,27	56. 19. 21,11	29,926	52,2	49,9	13,42	1,64	9,460	6,30	94. 7. 46,94	Saturn.	
	62. 28. 58,52								100. 17. 58,04	Spica R.	
31,84	62. 28. 57,28	30,030	52,0	48,7	48,08	1. 27,79	0,79	9,147	100. 17. 56,80	Spica.	
	- 12. 57. 1,27								24. 49. 53,59	α Draconis R.	
32,42	- 12. 57. 1,37	30,012	56,2	55,6	38,89	2,65			24. 49. 53,49	α Draconis.	
	32. 9. 34,16								69. 57. 19,11	Arcturus R.	
32,06	32. 9. 35,21	30,030	52,0	48,7	48,08	1. 27,79	0,79	9,147	69. 57. 20,16	Arcturus.	
	78. 11. 48,43								116. 3. 31,55	Antares.	
33,29	26. 57. 15,71	29,980	52,3	52,7	50,73	4,27	9,460	6,30	64. 44. 52,40	Pallas.	
	41. 7. 56,33								78. 55. 57,37	Venus.	
31,91	30. 23. 12,18	30,006	55,0	55,8	33,89	4,25		15. 47,60	68. 26. 37,70	☉.	
	30. 54. 45,83								68. 26. 36,80	☉.	
32,06	27. 9. 51,78	29,994	55,2	56,0	29,64	3,21			64. 57. 26,49	Mercury.	
	33. 55. 32,72								71. 43. 17,24	Mars.	
33,29	- 39. 20. 48,68	30,012	56,2	55,6	38,89	2,65			- 1. 34. 28,48	Polaris SP. R.	
	- 39. 20. 48,34								- 1. 34. 28,14	Polaris SP.	
31,91	56. 18. 27,43	30,030	52,0	48,7	48,08	1. 27,79	0,79	9,147	94. 7. 12,20	Saturn.	
	62. 28. 53,33								100. 17. 53,93	Spica R.	
31,91	62. 28. 56,13	29,980	52,3	52,7	50,73	4,27	9,460	6,30	100. 17. 56,73	Spica.	
	- 12. 57. 0,48								24. 49. 54,26	α Draconis R.	
31,91	- 12. 57. 0,44	29,980	52,3	52,7	50,73	4,27	9,460	6,30	24. 49. 54,30	α Draconis.	

Coincidence of Micrometer Wire with fixed Wire 10',058. One revolution = 20'',833.  
 Correction for Runs = - 5'',1.  
 Adopted Zenith Point = 221°. 34'. 33'',07. From Venus May 25. = 221°. 34'. 31'',89.  
 Assumed Co-latitude = 37°. 47'. 8'',28.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.	
			A	B	C	D	E	F					
			° ' "	° ' "	° ' "	° ' "	° ' "	° ' "					
May 29	(a) Arcturus R. M.....	9. 25	0. 58,3	55,3	61,2	55,7	56,2	52,8	12,892	- 59,04	9. 24. 57,39	J.G.	
	Arcturus .....	253. 40	4. 12,3	5,7	11,7	5,4	5,2	4,0			253. 44. 6,67	J.G.	
	β <sup>1</sup> Scorpii R. M.....	330. 0	4. 30,7	24,0	31,5	24,7	24,3	23,8	12,355	- 47,86	330. 3. 37,89	G.	
	β <sup>1</sup> Scorpii.....	293. 5	0. 29,8	21,9	28,2	21,0	19,8	21,1			293. 5. 23,55	G.	
	(b) β <sup>2</sup> Scorpii M.....	293. 5	0. 29,8	21,9	28,2	21,0	19,8	21,1	10,759	- 14,60 - 0,31	293. 5. 8,64	G.	
	Antares .....	299. 45	1. 28,2	17,9	26,0	19,1	16,2	17,3			299. 46. 20,55	G.	
	Pallas M.....	248. 25	1. 12,3	4,0	11,3	4,9	2,0	5,0	5,171	+ 1. 41,82	248. 27. 48,22	G.	
	(c) Ceres.....	295. 50	0. 9,1	1,9	11,3	1,3	0,0	0,9			295. 50. 4,07	G.	
	May 30	(d) ☉ S.L. M.....	252. 15	4. 44,4	40,6	46,1	38,3	41,4	37,7	9,151	+ 18,90 + 0,29	252. 19. 59,82	G.
		☉ N.L.....	251. 45	3. 28,7	24,3	28,8	25,0	24,1	22,0		+ 0,29	251. 48. 25,21	G.
Mars N.L.....		255. 40	0. 21,9	17,4	22,9	17,5	16,8	16,4			255. 40. 18,77	G.	
Saturn S.L.....		277. 50	2. 51,9	45,2	51,3	45,2	45,0	43,0			277. 52. 46,47	G.	
Spica R. M.....		339. 5	0. 62,0	56,8	67,2	57,5	58,3	55,0	11,187	- 23,52	339. 5. 33,78	G.	
Spica.....		284. 0	3. 35,3	28,8	36,4	28,7	28,1	27,2			284. 3. 30,17	G.	
(e) α Draconis R. M....		54. 30	3. 41,0	36,3	40,3	35,0	37,4	34,0	15,930	- 2. 2,34	54. 31. 34,38	G.	
α Draconis .....		208. 35	2. 35,3	30,7	34,0	31,2	30,1	28,2			208. 37. 31,15	G.	
ε Bootis R. M.....		17. 10	0. 51,1	45,8	52,0	45,1	44,2	44,0	16,457	- 2. 13,31	17. 8. 33,59	G.	
ε Bootis .....		246. 0	0. 37,0	30,3	36,7	30,2	27,8	29,7			246. 0. 31,85	G.	
β <sup>1</sup> Scorpii R. M.....		330. 5	0. 36,8	29,7	37,2	30,6	31,0	30,3	15,462	- 1. 52,58	330. 3. 39,92	J.G.	
β <sup>1</sup> Scorpii.....		293. 5	0. 30,9	24,0	30,0	24,0	21,4	22,9			293. 5. 25,45	J.G.	
(f) β <sup>2</sup> Scorpii R. M....		330. 5	0. 36,8	29,7	37,2	30,6	31,0	30,3	14,825	- 1. 39,31 + 0,20	330. 3. 53,39	J.G.	
β <sup>2</sup> Scorpii M.....		293. 5	0. 30,9	24,0	30,0	24,0	21,4	22,9	10,745	- 14,32 - 0,20	293. 5. 10,93	J.G.	
Pallas.....		248. 20	4. 8,8	2,3	10,5	2,0	3,1	1,0			248. 24. 3,93	G.	
Ceres .....		295. 50	2. 46,7	42,8	47,9	41,3	41,7	37,7			295. 52. 42,57	G.	
June 1	ζ <sup>1</sup> Urs. Maj. R. M....	45. 10	0. 59,3	54,8	60,0	53,4	52,3	53,1	15,263	- 1. 48,44	45. 9. 6,88	G.	
	(g) ζ <sup>1</sup> Ursæ Majoris....	217. 55	4. 58,9	55,7	59,7	56,1	55,7	55,1	15,782	- 1. 59,25 - 0,84	217. 59. 56,87	G.	
	ζ <sup>2</sup> Urs. Maj. R. M....	45. 10	0. 59,3	54,8	60,0	53,4	52,3	53,1			45. 8. 55,23	G.	
	(g) ζ <sup>2</sup> Ursæ Majoris M.	217. 55	4. 58,9	55,7	59,7	56,1	55,7	55,1	9,543	+ 10,73 + 0,84	218. 0. 8,44	G.	
	Arcturus R. M.....	9. 25	1. 8,6	5,7	10,7	6,9	6,1	5,7	13,511	- 1. 11,93	9. 24. 55,17	G.	
	Arcturus.....	253. 40	4. 10,2	6,0	11,4	5,7	8,3	3,2			253. 44. 6,78	G.	
	(h) α Cor. Bor. R. M....	16. 40	1. 7,0	3,3	8,2	4,3	1,3	2,5	17,279	- 2. 30,44 - 0,07	16. 38. 33,74	G.	
	α Coronæ Borealis..	246. 30	0. 33,3	27,3	32,9	27,9	26,8	26,7		+ 0,29	246. 30. 29,36	G.	
	(i) α Serpentis R. M....	356. 20	0. 32,7	30,0	34,7	28,3	29,2	28,0	12,810	- 57,33	356. 19. 33,07	J.G.	
	α Serpentis .....	266. 45	4. 32,9	25,9	33,1	27,3	26,2	26,6			266. 49. 27,92	J.G.	
	Antares .....	299. 45	1. 31,2	23,1	29,2	25,2	22,3	24,1			299. 46. 25,60	G.	
	(k) Pallas.....	248. 15	2. 48,2	42,9	47,9	41,1	44,6	41,1			248. 17. 43,83	G.	
	Ceres.....	295. 55	2. 61,2	56,3	62,3	55,1	55,7	52,0			295. 57. 56,60	G.	
	Venus N.L.....	261. 5	1. 39,3	35,9	36,7	34,9	34,4	33,1			261. 6. 35,45	G.	
June 2	Polaris SP. R. M....	80. 50	4. 49,3	44,7	47,2	43,3	44,3	42,7	8,220	+ 38,29	80. 55. 22,74	G.	
	Polaris SP. ....	182. 10	3. 43,4	37,0	42,8	38,9	39,7	37,8			182. 13. 39,32	G.	
	(l) Saturn S.L.....	277. 50	1. 28,1	21,4	25,4	22,2	21,9	21,0			277. 51. 23,10	G.	
	ζ <sup>1</sup> Urs. Maj. R. M....	45. 10	0. 51,0	46,3	48,3	48,2	43,8	46,0	14,912	- 1. 41,12	45. 9. 6,00	G.	
	(m) ζ <sup>1</sup> Ursæ Majoris....	217. 55	4. 60,0	55,6	58,0	55,0	54,9	53,0			217. 59. 56,08	G.	
	β Urs. Min. R. M....	64. 10	0. 61,0	56,7	58,9	56,7	55,7	54,9	9,461	+ 12,44	64. 11. 9,59	J.G.	
	(n) β Ursæ Minoris....	198. 55	2. 54,2	50,1	52,1	49,6	50,3	48,2		+ 2,21	198. 57. 52,48	J.G.	

(a) Blazing very much.  
 (b) Between the 5<sup>th</sup> wire and the comb.  
 (c) Bad.  
 (d) At the 4<sup>th</sup> and 5<sup>th</sup> wires: both limbs are corrected for the change of N.P.D. in 24'.  
 (e) Unsatisfactory.  
 (f) At the 1<sup>st</sup> and 5<sup>th</sup> wires.

(g) No correction for runs. ζ<sup>2</sup> observed at 1<sup>st</sup> and 5<sup>th</sup> wires.  
 (h) A blur: the observations at the 4<sup>th</sup> and 5<sup>th</sup> wires.  
 (i) Pretty good. (k) Better than usual.  
 (l) Faint and unsatisfactory: at the comb; correction insensible. (m) No correction for runs.  
 (n) At the 5<sup>th</sup> wire.



Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi- diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
"	" ' "	Inch.	"	"	" "	" "	"	" "	" ' "	
32,03	32. 9. 34,50	30,040	50,0	47,2	37,01				69. 57. 19,79	Arcturus R.
	32. 9. 34,78								69. 57. 20,07	Arcturus.
30,72	71. 30. 54,00		48,2	45,2	2. 55,05				109. 20. 57,33	$\beta^3$ Scorpii R.
	71. 30. 51,66								109. 20. 54,99	$\beta^1$ Scorpii.
	71. 30. 36,75				2. 55,05				109. 20. 40,08	$\beta^2$ Scorpii.
	78. 11. 48,66		47,3	43,7	4. 36,73				116. 3. 33,67	Antares.
	26. 53. 16,33	30,026	46,0	41,7	30,18	1,64			64. 40. 53,15	Pallas.
	74. 15. 32,18				3. 28,19	4,51			112. 6. 4,14	Ceres.
	30. 45. 27,93	29,992	51,9	52,2	34,63	4,30		15. 47,50	68. 17. 19,04	$\odot$ .
	30. 13. 53,32				33,91	4,23			68. 17. 18,78	$\odot$ .
	34. 5. 46,88	29,986	53,0		39,37	2,65	9,731	3,41	71. 53. 35,29	Mars.
	56. 18. 14,58	29,975	49,8	47,2	1. 27,90	0,79	10,917	8,95	94. 6. 41,02	Saturn.
32,98	62. 28. 56,11				1. 52,31				100. 17. 56,70	Spica R.
	62. 28. 58,28								100. 17. 58,87	Spica.
32,77	-12. 57. 2,49	29,968	48,2	46,0	13,55				24. 49. 52,24	$\alpha$ Draconis R.
	-12. 57. 0,74								24. 49. 53,99	$\alpha$ Draconis.
32,72	24. 25. 58,30	29,970	47,8	45,5	26,79				62. 13. 33,37	$\epsilon$ Bootis R.
	24. 25. 59,96								62. 13. 35,03	$\epsilon$ Bootis.
32,69	71. 30. 51,97		48,0	46,0	2. 54,38				109. 20. 54,63	$\beta^1$ Scorpii R.
	71. 30. 53,56								109. 20. 56,22	$\beta^1$ Scorpii.
32,16	71. 30. 38,50				2. 54,34				109. 20. 41,12	$\beta^2$ Scorpii R.
	71. 30. 39,04								109. 20. 41,66	$\beta^2$ Scorpii.
	26. 49. 32,04	29,960	47,0	45,0	29,83	1,63			64. 37. 8,52	Pallas.
	74. 18. 10,68				3. 26,94	4,52			112. 8. 41,38	Ceres.
31,88	-3. 34. 34,99	29,900	53,2	51,6	3,63				34. 12. 29,66	$\zeta^1$ Urs. Maj. R.
	-3. 34. 35,02								34. 12. 29,63	$\zeta^1$ Ursæ Majoris.
	-3. 34. 23,34								34. 12. 41,31	$\zeta^2$ Urs. Maj. R.
31,84	-3. 34. 23,45				3,63				34. 12. 41,20	$\zeta^2$ Ursæ Majoris.
30,98	32. 9. 36,72	29,916	52,2	50,6	36,61				69. 57. 21,61	Arcturus R.
	32. 9. 34,89								69. 57. 19,78	Arcturus.
31,55	24. 55. 58,15	29,931	51,0	48,9	27,18				62. 43. 33,61	$\alpha$ Cor. Bor. R.
	24. 55. 57,47								62. 43. 32,93	$\alpha$ Coronæ Bor.
30,50	45. 14. 58,82				58,92				83. 3. 6,02	$\alpha$ Serpentinis R.
	45. 14. 56,03								83. 3. 3,23	$\alpha$ Serpentinis.
	78. 11. 53,71	29,944	50,3	48,4	4. 33,21				116. 3. 35,20	Antares.
	26. 43. 11,94		50,1	47,6	29,52	1,63			64. 30. 48,11	Pallas.
	74. 23. 24,71				3. 26,87	4,54			112. 13. 55,32	Ceres.
	39. 32. 4,68	29,947	53,9	57,2	47,47	4,06	9,388	7,05	77. 20. 3,42	Venus.
31,03	-39. 20. 51,97	29,924	56,5	57,0	47,12				-1. 34. 30,81	Polaris SP. R.
	-39. 20. 51,45								-1. 34. 30,29	Polaris SP.
	56. 16. 52,23				1. 25,96	0,78	10,862	8,37	94. 5. 17,32	Saturn.
31,04	-3. 34. 35,23				3,60				34. 12. 29,45	$\zeta^1$ Urs. Maj. R.
	-3. 34. 34,69								34. 12. 29,99	$\zeta^1$ Ursæ Majoris.
31,04	-22. 36. 38,82	29,922	55,5	54,9	24,05				15. 10. 5,41	$\beta$ Urs. Min. R.
	-22. 36. 38,29								15. 10. 5,94	$\beta$ Ursæ Minoris.

Coincidence of Micrometer Wire with fixed Wire = 10",058. One revolution = 20",833.  
 Correction for Runs = - 5",1.  
 Adopted Zenith Point = 221°. 34'. 31",89. From Venus June 1. = 221°. 34'. 30",77.  
 Assumed Co-latitude = 37°. 47'. 8",28.

48 ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1835.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.			
			A	B	C	D	E	F							
			° ' "	" "	" "	" "	" "	" "							
June 2	α Cor. Bor. R. M...	16.35	4.27,6	26,9	27,0	25,3	24,9	22,1	12,625	- 53,49	16.38.31,41	G.			
	α Coronæ Borealis..	246.30	0.33,1	26,7	31,7	27,3	26,7	26,9			246.30.28,65	G.			
	Ceres.....	296.0	0.37,8	30,6	35,6	31,5	30,2	31,3			296.0.32,73	G.			
June 4	Saturn S.L.....	277.50	0.40,3	33,0	37,2	33,0	32,3	33,9	14,915	- 1.41,20	277.50.34,77	G.			
	ζ <sup>1</sup> Urs. Maj. R. M..	45.10	0.51,9	48,6	50,3	47,3	48,2	46,5			45.9.7,37	J.G.			
	(a) ζ <sup>1</sup> Ursæ Majoris...	217.55	4.59,3	56,0	57,8	54,9	54,9	53,7			217.59.56,10	J.G.			
June 5	(a) Venus N.L.....	259.30	4.58,7	55,6	58,4	55,0	56,5	49,6			259.34.55,63	G.			
June 6	⊙ S.L. M.....	251.25	0.22,3	21,3	21,5	17,7	20,3	17,0	9,231	+ 17,24	251.25.37,17	G.			
	⊙ N.L.....	250.50	3.66,2	66,9	66,1	62,1	65,0	59,0			250.54.3,18	G.			
	Mercury center...	248.20	0.5,8	5,3	6,5	1,7	5,1	1,1			248.20.4,23	G.			
	γ Virginis.....	274.15	3.49,0	49,4	50,2	49,3	48,3	45,2			274.18.47,58	G.			
	Polaris SP. R. M...	80.55	1.25,0	17,2	19,1	17,4	16,3	19,3			80.55.21,99	J.G.			
	Polaris SP.....	182.10	3.43,2	37,0	42,2	34,6	40,9	36,9			182.13.38,17	J.G.			
	(a) Saturn S.L.....	277.45	4.63,5	60,7	63,0	59,0	61,9	57,5			277.50.0,93	G.			
	(b) ) N.L. M.....	277.40	0.17,1	13,6	15,5	12,7	14,5	9,2			7,682	+ 49,50 + 8,88	277.41.12,06	G.	
	) N.L. M.....	277.40	0.17,1	13,6	15,5	12,7	14,5	9,2			7,441	+ 54,53 + 4,44	277.41.12,65	G.	
	) N.L.....	277.40	1.15,6	12,3	13,9	10,9	12,0	8,9			9,856	+ 4,21 - 4,44	277.41.11,95	G.	
	) N.L. M.....	277.40	1.15,6	12,3	13,9	10,9	12,0	8,9			9,672	+ 8,04 - 8,88	277.41.11,11	G.	
	α <sup>2</sup> Libræ R. M.....	334.5	0.29,7	26,0	28,7	25,3	30,0	26,0			17,912	- 2.43,62	334.2.43,90	G.	
	α <sup>2</sup> Libræ.....	289.5	1.21,0	16,3	19,8	15,0	16,1	14,8			9,127	+ 19,39	289.6.16,83	G.	
	β Urs. Min. R. M...	64.10	0.55,3	49,7	51,8	47,0	50,2	48,3			9,243	- 1.48,02	64.11.9,54	G.	
	β Ursæ Minoris....	198.55	2.56,3	52,2	53,9	51,6	53,3	50,2			15,243		198.57.52,17	G.	
	α Cor. Bor. R. M...	16.40	0.24,5	20,7	22,2	20,5	20,1	20,1			15,243		16.38.33,25	J.G.	
	α Coronæ Borealis..	246.30	0.32,7	27,3	29,8	26,5	27,2	27,5			9,307	+ 15,64	246.30.28,37	J.G.	
	(c) Pallas M.....	248.5	1.64,8	59,8	62,8	59,7	59,8	58,9			6,031	+ 1.23,90 + 8,66	248.7.16,09	G.	
	June 7	(d) ) N.L. M.....	284.5	2.48,2	44,2	45,6	43,2	46,7			40,0	5,890	+ 1.26,83 + 4,33	284.9.16,48	G.
		) N.L. M.....	284.5	2.48,2	44,2	45,6	43,2	46,7			40,0	9,821	+ 4,94 - 4,33	284.9.15,08	G.
) N.L.....		284.5	4.21,2	16,4	20,2	14,2	19,0	11,0	9,821		284.9.15,88	G.			
) N.L. M.....		284.5	4.21,2	16,4	20,2	14,2	19,0	11,0	9,659	+ 8,31 - 8,66	284.9.16,49	G.			
) N.L. M.....		284.5	4.21,2	16,4	20,2	14,2	19,0	11,0	9,659		284.9.15,53	G.			
(a) ξ <sup>2</sup> Libræ.....		284.25	4.62,9	60,3	63,2	60,3	61,2	56,0	14,487	- 1.32,27	284.30.0,65	G.			
(e) α Cor. Bor. R. M...		16.40	0.8,8	4,1	5,9	6,8	4,8	5,3	14,487		16.38.33,66	G.			
α Coronæ Borealis..	246.30	0.33,2	27,8	31,9	25,1	30,6	25,9	12,903	- 59,27	246.30.28,95	G.				
(e) α Serpentes R. M...	356.20	0.33,8	30,2	33,3	29,2	33,2	28,7	12,903		356.19.32,00	G.				
α Serpentes.....	266.45	4.34,9	28,9	33,3	28,3	31,0	28,0			266.49.29,57	G.				
(f) Venus N.L.....	258.50	0.55,0	55,1	54,8	52,9	52,6	49,5			258.50.53,08	J.G.				
June 8	(g) ⊙ S.L.....	251.10	3.41,3	40,0	39,0	37,3	39,7	36,2	11,692	- 34,03	251.13.37,98	G.			
	⊙ N.L.....	250.40	2.6,3	5,9	6,2	3,8	6,1	1,2			250.42.4,37	G.			
	Polaris SP. R. M...	80.55	0.64,0	55,2	59,9	55,6	56,3	58,0			80.55.23,87	G.			
	Polaris SP.....	182.10	3.41,4	36,8	38,3	38,0	40,0	36,3			182.13.37,53	G.			
	Saturn S.L.....	277.45	4.38,8	31,8	33,2	34,2	33,7	30,3			277.49.32,47	G.			

(a) No correction for runs.

(b) The observations made at the five wires.

(c) A star of nearly the same magnitude bisected by the fixed wire.

(d) The observations made at the five wires: all pretty good.

(e) Beautiful.

(f) Dreadfully unsteady.

(g) Came on the fixed wire: not a good observation, but it could not be improved with the micrometer.



Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi- diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
"	" / "	Inch.	°	°	' "	' "	"	' "	° / "	
30,03	24. 55. 59,36	29,916	55,2	54,5	26,86				62. 43. 34,50	α Cor. Bor. R.
	24. 55. 57,88								62. 43. 33,02	α Coronæ Bor.
	74. 26. 1,96	29,892	54,0	52,2	3. 25,14	4,54			112. 16. 30,84	Ceres.
31,74	56. 16. 4,00	29,967	56,0	53,7	1. 26,60	0,78	10,827	8,01	94. 4. 30,09	Saturn.
	- 3. 34. 36,60				3,62				34. 12. 28,06	ζ <sup>1</sup> Urs. Maj. R.
	- 3. 34. 34,67								34. 12. 29,99	ζ <sup>1</sup> Ursæ Majoris.
	38. 0. 24,86	30,021	60,0	62,8	44,56	3,86	9,482	6,06	75. 48. 19,90	Venus.
30,08	29. 51. 6,40	30,009	63,5	67,8	32,40	4,18		15. 46,60	67. 22. 56,30	☉.
	29. 19. 32,41				31,72	4,10			67. 22. 54,91	☉.
	26. 45. 33,46	30,008	67,2	69,1	28,39	3,59			64. 33. 6,54	Mercury.
	52. 44. 16,81	30,026	61,4	65,7	1. 14,43				90. 32. 39,52	γ Virginis.
	- 39. 20. 51,22				46,49				- 1. 34. 29,43	Polaris SP. R.
	- 39. 20. 52,60								- 1. 34. 30,81	Polaris SP.
	56. 15. 30,16				1. 24,73	0,78	10,913	8,90	94. 3. 53,49	Saturn,
	56. 6. 41,29			65,4					93. 22. 1,12	∫.
	56. 6. 41,88								93. 22. 1,71	∫.
	56. 6. 41,18				1. 24,30	49. 32,43		16. 19,68	93. 22. 1,01	∫.
	56. 6. 40,95								93. 22. 0,78	∫.
	56. 6. 40,34								93. 22. 0,17	∫.
30,37	67. 31. 46,87	30,034	61,8	60,7	2. 17,56				105. 21. 12,71	α <sup>2</sup> Libræ R.
	67. 31. 46,06								105. 21. 11,90	α <sup>2</sup> Libræ.
30,86	- 22. 36. 38,77				23,86				15. 10. 5,65	β Urs. Min. R.
	- 22. 36. 38,60								15. 10. 5,82	β Ursæ Minoris.
30,81	24. 55. 57,52				26,63				62. 43. 32,43	α Cor. Bor. R.
	24. 55. 57,60								62. 43. 32,51	α Coronæ Bor.
	26. 32. 45,32	30,028	58,2	57,5	28,80	1,61			64. 20. 20,79	Pallas.
	62. 34. 45,71	30,059	62,0	64,5					99. 46. 40,17	∫.
	62. 34. 44,31								99. 46. 38,77	∫.
	62. 34. 45,11				1. 49,23	53. 32,81		16. 29,76	99. 46. 39,57	∫.
	62. 34. 45,72								99. 46. 40,18	∫.
	62. 34. 44,76								99. 46. 39,22	∫.
31,31	62. 55. 29,88		62,2	63,7	1. 51,01				100. 44. 29,17	ξ <sup>2</sup> Libræ.
	24. 55. 57,11	30,061	62,0	62,5	26,56				62. 43. 31,95	α Cor. Bor. R.
	24. 55. 58,18								62. 43. 33,02	α Coronæ Bor.
30,78	45. 14. 58,77				57,58				83. 3. 4,63	α Serpentis R.
	45. 14. 58,80								83. 3. 4,66	α Serpentis.
	37. 16. 22,31	30,022	65,0	67,6	42,98	3,76	9,400	6,90	75. 4. 16,71	Venus.
	29. 39. 7,21	30,023	68,2	72,8	31,84	4,15		15. 46,40	67. 10. 56,78	☉.
	29. 7. 33,60				31,17	4,08			67. 10. 55,37	☉.
30,70	- 39. 20. 53,10	30,052	68,8	69,6	46,15				- 1. 34. 30,97	Polaris SP. R.
	- 39. 20. 53,24								- 1. 34. 31,11	Polaris SP.
	56. 15. 1,70				1. 24,08	0,78	10,808	7,81	94. 3. 25,47	Saturn.

Coincidence of Micrometer Wire with fixed Wire = 10',058. One revolution = 20'',833.  
 Correction for Runs = - 5'',1. From June 4. = - 7'',8.  
 Adopted Zenith Point = 221°. 34'. 30'',77.  
 Assumed Co-latitude = 37°. 47'. 8'',28.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
			° ' "	° ' "	° ' "	° ' "	° ' "	° ' "				
June 8	ζ <sup>1</sup> Urs. Maj. R. M.	45. 5	4. 22,1	14,0	17,2	15,6	14,2	16,3	10,380	-6,71	45. 9. 8,74	G.
	(a) ζ <sup>1</sup> Ursæ Majoris....	217. 55	4. 60,5	55,3	55,6	52,0	57,7	52,0				
	ζ <sup>2</sup> Urs. Maj. R. M.	45. 5	4. 22,1	14,0	17,2	15,6	14,2	16,3	9,535	+10,90 +0,84	218. 0. 5,96	G.
	(a) ζ <sup>2</sup> Ursæ Majoris M.	217. 55	4. 60,5	55,3	55,6	52,0	57,7	52,0				
	α <sup>1</sup> Libræ R. M.....	334. 0	2. 15,9	9,7	13,3	11,3	14,3	9,3	8,569	-0,37	289. 3. 36,66	G.
	α <sup>1</sup> Libræ.....	289. 0	3. 42,7	37,0	39,2	36,9	36,3	35,9				
	α <sup>2</sup> Libræ R. M.....	334. 0	2. 15,9	9,7	13,3	11,3	14,3	9,3	9,870	+2. 40,95 -0,37	289. 6. 17,61	G.
	α <sup>2</sup> Libræ M.....	289. 0	3. 42,7	37,0	39,2	36,9	36,3	35,9				
	(c) ξ <sup>2</sup> Libræ.....	284. 25	4. 62,9	59,3	61,6	58,5	58,9	56,9	9,707	+3,92	290. 8. 14,89	G.
	(d) ) N.L.....	290. 5	3. 12,8	6,7	10,0	5,4	7,2	5,1				
	) N.L. M.....	290. 5	3. 12,8	6,7	10,0	5,4	7,2	5,1	9,707	+7,31	290. 8. 14,36	G.
	) N.L. M.....	290. 5	3. 12,8	6,7	10,0	5,4	7,2	5,1				
	) N.L. M.....	290. 5	3. 12,8	6,7	10,0	5,4	7,2	5,1	9,370	+14,34 -7,84	290. 8. 13,55	G.
	(e) ηLibræ R.....	334. 15	0. 25,0	18,2	22,3	19,1	21,7	20,3				
	ηLibræ.....	288. 50	3. 46,8	39,7	43,1	40,3	41,3	38,2	0. 57. 30	-0,37	288. 53. 40,60	G.
	θLibræ.....	289. 55	4. 32,3	24,4	29,3	24,2	26,3	23,7				
	Antares.....	299. 45	1. 40,0	32,0	35,8	32,8	34,0	31,1	11,200	-23,79	299. 46. 33,87	G.
	Pallas.....	248. 5	0. 26,6	19,8	22,8	18,3	22,2	18,4				
	Ceres.....	296. 15	0. 53,4	47,2	51,2	47,7	48,9	46,7	1. 1. 30	+0,10	296. 15. 48,97	G.
	Polaris R. M.....	77. 45	1. 54,8	52,1	52,2	50,0	50,5	47,3				
	Polaris.....	185. 20	2. 37,1	32,0	32,8	32,3	30,2	35,2	0. 57. 30	-0,37	185. 22. 32,72	G.
	(f) Venus N.L.....	258. 25	4. 22,7	20,0	21,1	18,5	19,9	15,3				
	(g) ⊙ N.L. M.....	250. 35	1. 42,2	38,7	39,7	35,6	38,7	33,9	9,973	+1,77	250. 36. 39,47	G.
	⊙ S.L.....	251. 5	3. 15,9	13,7	14,8	10,2	15,0	9,1				
	(h) αCor. Bor. R. M...	16. 35	4. 62,6	57,2	58,2	58,7	56,6	57,2	11,309	+0,29	16. 38. 28,96	G.
αCoronæ Borealis..	246. 30	0. 28,0	22,1	23,2	21,6	22,2	21,0	11,309				
(i) ηLibræ R. M.....	334. 15	0. 49,0	42,4	44,9	43,3	44,6	43,1		13,086	-1. 3,09	334. 15. 18,29	G.
ηLibræ.....	288. 50	3. 42,8	35,7	38,8	37,4	38,7	34,3	86,222				
θLibræ.....	289. 55	4. 27,0	22,1	23,9	22,6	21,9	18,9		86,015	+4. 52,55 +3,11	289. 59. 21,60	G.
(k) β <sup>1</sup> Scorpii R. M.....	330. 0	4. 37,0	30,7	33,5	31,1	31,9	29,7	9,861				
β <sup>1</sup> Scorpii.....	293. 5	0. 32,0	23,8	27,0	24,0	24,9	24,2		9,861	+4,10 -6,22	293. 5. 25,87	G.
(l) ) N.L. M.....	295. 0	2. 18,0	11,2	14,8	12,1	12,2	10,0	9,861				
) N.L. M.....	295. 0	2. 18,0	11,2	14,8	12,1	12,2	10,0		9,861	+4,10 -6,22	295. 7. 8,13	G.
) N.L.....	295. 5	2. 16,3	9,2	13,7	8,9	9,2	7,5	9,861				
) N.L. M.....	295. 5	2. 16,3	9,2	13,7	8,9	9,2	7,5		9,861	+4,10 -6,22	295. 7. 8,10	G.
(m) ωOphiuchi.....	294. 50	0. 43,4	37,7	40,4	38,0	38,7	35,7	7,970				
(m) Pallas.....	248. 0	4. 50,6	43,7	46,2	43,3	44,8	41,7		7,970	+43,51	248. 4. 43,82	G.
Venus N.L.....	258. 5	3. 11,3	6,7	10,0	5,3	6,7	3,2	7,970				
(m) Venus N.L.....	258. 5	3. 11,3	6,7	10,0	5,3	6,7	3,2		7,970	+43,51	258. 8. 6,37	G.
⊙ S.L. M.....	251. 0	2. 31,1	27,4	28,5	26,2	27,6	21,9	7,970				
⊙ N.L.....	250. 30	1. 39,8	37,8	38,7	35,2	36,9	31,1		7,970	+43,51	250. 31. 36,15	G.

(a) The whole correction for runs to be applied. ζ<sup>2</sup> observed at the 1<sup>st</sup> and 5<sup>th</sup> wires. All the observations are pretty good.  
 (b) Neither star seen well. Both the direct observations very near the comb.  
 (c) No correction for runs.  
 (d) Observed at the five wires.  
 (e) The star came on the fixed wire.

(f) Exceedingly unsteady.  
 (g) Too near the fixed wire to be good.  
 (h) No correction for runs. The observations at the 4<sup>th</sup> and 5<sup>th</sup> wires: not good.  
 (i) The star would scarcely bear illumination.  
 (k) Very faint: the small star invisible.  
 (l) At the 1<sup>st</sup>, 2<sup>d</sup>, 4<sup>th</sup>, and 5<sup>th</sup> wires: not good.  
 (m) Very bad.



Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi- diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.							
			Attach.	Free.													
"	" " "	Inch.	"	"	" "	" "	"	" "	" " "								
31,48	- 3. 34. 37,97	30,052	68,8	69,6	3,52				34. 12. 26,79	ζ <sup>1</sup> Urs. Maj. R.							
	- 3. 34. 36,55								34. 12. 28,21	ζ <sup>1</sup> Ursæ Majoris.							
	- 3. 34. 26,53								34. 12. 38,23	ζ <sup>2</sup> Urs. Maj. R.							
31,63	- 3. 34. 24,81				3,52				34. 12. 39,95	ζ <sup>2</sup> Ursæ Majoris.							
31,28	67. 29. 4,87	30,058	67,0	65,7	2. 15,98				105. 18. 29,13	α <sup>1</sup> Libræ R.							
	67. 29. 5,89								105. 18. 30,15	α <sup>1</sup> Libræ.							
30,18	67. 31. 48,02	30,068	66,2	65,3	1. 50,54				105. 21. 12,58	α <sup>2</sup> Libræ R.							
	67. 31. 46,84								105. 21. 11,40	α <sup>2</sup> Libræ.							
	62. 55. 28,91								100. 44. 27,73	ξ <sup>2</sup> Libræ.							
	68. 33. 44,12								105. 43. 20,10	∫.							
	68. 33. 44,12								105. 43. 20,10	∫.							
	68. 33. 43,59								2. 23,62	56. 32,01	16. 36,09	105. 43. 19,57	∫.				
	68. 33. 43,52											105. 43. 19,50	∫.				
	68. 33. 42,78											105. 43. 18,76	∫.				
	67. 19. 9,75								30,066	65,9	64,4	2. 15,28				105. 8. 33,31	η Libræ R.
	67. 19. 9,83															105. 8. 33,39	η Libræ.
30,81	68. 24. 54,75	30,074	65,2	63,3	4. 26,05				106. 14. 25,82	θ Libræ.							
	78. 12. 3,10								30,078	64,2	62,5	28,51	1,61		116. 3. 37,43	Antares.	
29,62	26. 30. 50,50	30,114	65,0	66,3	3. 25,52				64. 18. 25,68	Pallas.							
	74. 41. 18,20										4,56			112. 31. 47,44	Ceres.		
	- 36. 11. 55,74														1. 34. 30,98	Polaris R.	
	- 36. 11. 58,05														1. 34. 28,67	Polaris.	
	36. 54. 47,71								30,130	66,9	70,5	42,34	3,71	9,425	6,63	74. 42. 41,25	Venus.
	29. 2. 8,70								30,129	70,0	74,4	31,06	4,07			67. 5. 30,27	☉.
	29. 33. 41,51											31,73	4,14		15. 46,30	67. 5. 31,08	☉.
	24. 55. 57,72								30,168	68,0	65,7					62. 43. 32,48	α Cor. Bor. R.
	24. 55. 56,54											26,48				62. 43. 31,30	α Coronæ Bor.
	67. 19. 8,39											2. 15,38				105. 8. 32,05	η Libræ R.
27,65	67. 19. 10,32				2. 22,89				105. 8. 33,98	η Libræ.							
	68. 24. 54,92								106. 14. 26,09	θ Libræ.							
26,96	71. 30. 58,64	30,173	66,3	64,3	2. 49,10				109. 20. 56,02	β <sup>1</sup> Scorpii R.							
	71. 30. 59,19													109. 20. 56,57	β <sup>1</sup> Scorpii.		
26,96	73. 32. 40,25		66,0	63,5					110. 41. 15,93	∫.							
	73. 32. 41,45														110. 41. 17,13	∫.	
	73. 32. 40,43											3. 11,10	58. 21,35		16. 37,65	110. 41. 16,11	∫.
	73. 32. 41,42															110. 41. 17,10	∫.
	73. 16. 12,14											3. 7,88				111. 6. 28,30	ω Ophiuchi.
	26. 30. 17,14									64,2	62,0	28,62	1,60			64. 17. 52,44	Pallas.
	36. 33. 39,69								30,212	66,2	68,4	42,08	3,66	9,477	6,08	74. 21. 32,47	Venus.
	29. 28. 43,31								30,222	71,2	74,4	31,72	4,13			67. 0. 32,98	☉.
	28. 57. 9,47											31,04	4,06		15. 46,20	67. 0. 30,93	☉.

Coincidence of Micrometer Wire with fixed Wire = 10',058, or 100',058. One revolution = 20'',833.

Correction for Runs = - 7'',8.

Adopted Zenith Point = 221°. 34'. 30'',77. From α Coronæ Borealis June 9. = 221°. 34'. 26'',68.

Assumed Co-latitude = 37°. 47'. 8'',28.

June 8. 20<sup>h</sup>, Molyneux fast on Hardy 26°.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
			° ' "	° ' "	° ' "	° ' "	° ' "	° ' "				
June 10	Polaris SP. R. M...	80.55	0.50,7	42,6	42,9	43,3	41,4	43,1	11,212	- 24,03	80.55.19,77	J.G.
	Polaris SP.....	182.10	3.39,2	32,3	34,9	33,2	35,2	31,2			182.13.33,42	J.G.
	(a) Saturn S.L.....	277.45	4.16,0	11,0	11,8	10,9	9,8	8,1	12,830	- 57,75	277.49.10,17	J.G.
	Spica R. M.....	339.5	1.26,5	21,6	22,9	21,0	21,0	18,9			339.5.23,88	J.G.
	Spica .....	284.0	3.34,1	28,9	30,4	29,0	29,5	26,1	13,069	- 1.27,3	284.3.28,75	J.G.
	(b) ε Bootis R. M.....	17.5	4.33,5	29,2	28,2	32,9	29,3	28,9			17.8.26,44	G.
	ε Bootis .....	246.0	0.26,9	22,2	24,9	23,1	25,3	23,3	15,055	- 1.44,10	246.0.24,18	G.
	α Cor. Bor. R. M...	16.40	0.17,3	13,2	12,4	12,9	12,1	10,9			16.38.28,97	G.
	α Coronæ Borealis..	246.30	0.29,2	21,9	24,6	22,7	23,0	22,1	299.45	1.38,0	246.30.23,80	G.
	Antares .....	299.45	1.38,0	30,7	32,3	32,3	29,1	29,3			299.46.31,55	G.
	ω Ophiuchi.....	294.50	0.45,3	38,7	41,6	40,3	41,3	37,8	248.0	4.37,7	294.50.40,67	G.
	Pallas .....	248.0	4.37,7	29,8	31,2	29,5	32,5	28,2			248.4.30,30	G.
	(c) ) N.L. M.....	298.30	3.8,7	3,2	5,3	3,2	1,4	1,7	3,112	+ 2.24,70	298.35.31,02	G.
										+ 3,20		
	) N.L. M.....	298.30	3.8,7	3,2	5,3	3,2	1,4	1,7	3,062	+ 2.25,74	298.35.30,16	G.
										+ 1,30		
	) S.L.....	299.5	3.45,0	38,0	40,0	40,0	37,0	36,3	9,940	+ 2,46	299.8.38,43	G.
	) S.L. M.....	299.5	3.45,0	38,0	40,0	40,0	37,0	36,3				
	) S.L. M.....	299.5	3.45,0	38,0	40,0	40,0	37,0	36,3	9,800	+ 5,38	299.8.40,01	G.
	Venus N.L.....	257.45	2.19,2	15,5	17,1	13,9	13,5	11,3		- 3,80		
June 11	⊙ N.L.....	250.25	1.61,8	65,2	59,6	64,3	64,3	57,0	13,587	- 1.13,53	250.27.1,52	G.
	(b) Arcturus R. M.....	9.25	1.12,2	7,3	7,3	7,9	7,2	6,3			9.24.54,20	G.
	Arcturus.....	253.40	4.8,3	3,3	5,2	3,3	4,9	0,3	8,690	+ 28,50	253.44.3,15	G.
	α Serpentis R. M...	356.15	3.68,0	63,3	67,1	62,7	65,3	58,3			356.19.31,55	G.
	α Serpentis.....	266.45	4.34,7	25,5	30,0	26,5	28,0	24,9	88,343	+ 4.4,05	266.49.27,10	G.
	μ <sup>1</sup> Sagittarii.....	294.45	4.59,5	50,3	56,3	51,0	52,7	47,3			294.49.51,57	G.
	(d) ) S.L. M.....	300.35	4.59,3	51,7	56,3	51,7	52,8	49,3	300.43.55,85	- 0,43	300.11.8,42	G.
	) N.L.....	300.10	1.17,0	9,1	13,7	9,2	9,7	6,9				
	Venus N.L.....	257.25	1.56,2	50,2	54,0	50,9	50,2	46,7			257.26.50,88	G.
	June 12	⊙ S.L. M.....	250.55	0.33,2	28,0	30,2	28,0	28,9	26,0	13,072	- 1.2,69	250.54.26,29
⊙ N.L.....		250.20	2.57,5	52,8	54,6	50,9	51,8	48,3	250.22.52,23			G.
June 13	α Cor. Bor. R. M...	16.40	0.39,5	31,3	36,1	32,5	30,3	31,3	15,762	- 1.58,73	16.38.34,69	G.
	α Coronæ Borealis..	246.30	0.31,8	23,7	27,9	25,3	21,3	23,3			246.30.25,48	G.
	α Serpentis R. M...	356.20	0.32,9	25,9	33,5	25,9	26,4	24,3	12,672	- 54,36	356.19.33,72	J.G.
	α Serpentis.....	266.45	4.34,2	22,9	31,6	25,3	24,3	23,2			266.49.26,27	J.G.
	β <sup>1</sup> Scorpii R. M.....	330.5	0.37,3	28,5	36,1	31,7	28,9	31,0	15,670	- 1.56,82	330.3.35,35	G.
	β <sup>1</sup> Scorpii.....	293.5	0.31,1	22,3	27,3	23,3	19,7	21,5			293.5.24,13	G.
	(e) β <sup>2</sup> Scorpii M.....	293.5	0.31,1	22,3	27,3	23,3	19,7	21,5	10,701	- 13,29	293.5.10,37	G.
	(f) Pallas.....	248.5	0.64,0	56,9	62,0	57,6	57,0	55,9				
June 15	(g) ⊙ N.L. M.....	250.10	1.11,0	5,8	9,9	7,3	4,9	7,1	5,445	+ 1.36,21	250.12.43,71	G.
	⊙ S.L. M.....	250.40	2.43,8	39,0	40,7	39,7	38,7	37,1	5,445	+ 1.56,21	250.44.15,66	G.
	Venus N.L.....	256.5	3.53,3	47,2	52,5	47,9	48,3	45,2			256.8.48,50	G.
June 16	(h) ⊙ S.L. M.....	250.40	1.44,8	40,3	40,7	39,9	38,3	37,9	9,973	+ 1,87	250.41.41,94	G.
June 18	Arcturus R. M.....	9.25	0.28,9	23,1	27,3	27,2	23,8	23,1	11,293	- 25,62	9.24.59,86	G.
	(i) Arcturus.....	253.40	4.11,0	2,3	8,3	4,5	2,7	1,1			+ 0,12	253.44.4,22

(a) Very bad; no defined disk.

(b) Very good.

(c) The observations at the five wires: the N.P.D. of the N.L. is corrected by -0'',60, as it appears that about 2° of the Moon's surface was not illuminated.

(d) Observed at the 4<sup>th</sup> and 5<sup>th</sup> wires: the N.L. is corrected by -1'',35, for 3° defect of illumination.

(e) At the comb.

(f) Very bad.

(g) Very satisfactory observation.

(h) Observed without a dark glass, between the 4<sup>th</sup> and 5<sup>th</sup> wires: the correction is insensible.

(i) Between the 4<sup>th</sup> and 5<sup>th</sup> wires.



Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi- diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
"	" ' "	Inch.	"	"	" "	" "	"	" "	" ' "	
26,60	- 39.20 . 53,09	30,230	70,9	73,0	46,12	0,77	10,848	8,23	- 1.34 . 30,93	Polaris SP. R.
	- 39.20 . 53,26								- 1.34 . 31,10	Polaris SP.
26,32	56.14 . 43,49	30,238	69,9	70,7	1.24,00	1,60	9,500	5,85	94.3 . 6,77	Saturn.
	62.29 . 2,80				100.17 . 58,65				Spica R.	
25,31	62.29 . 2,07	30,248	69,6	70,5	1.47,57	1,60	9,465	6,21	100.17 . 57,92	Spica.
	24.26 . 0,24				62.13 . 34,22				ε Bootis R.	
26,39	24.25 . 57,50	30,282	68,3	72,1	25,70	4,05	15,46,10	15,46,00	62.13 . 31,48	ε Bootis.
	24.55 . 57,71				62.43 . 32,30				α Cor. Bor. R.	
28,68	24.55 . 57,12	30,307	68,2	67,2	26,31	5,58	9,470	6,20	62.43 . 31,71	α Coronæ Bor.
	78.12 . 4,87				116.3 . 36,92				Antares.	
29,33	73.16 . 13,99	30,306	70,0	70,0	4.23,77	4,11	15,46,00	15,46,00	111.6 . 28,85	α Ophiuchi.
	26.30 . 3,62				64.17 . 38,69				Pallas.	
30,08	77.1 . 4,34	30,185	58,0	55,0	68,0	4,08	15,45,70	15,45,80	114.9 . 43,40	)).
	77.1 . 3,48				114.9 . 42,54				)).	
30,00	77.34 . 11,75	30,163	66,1	67,0	4.1,90	3,41	9,470	6,20	114.9 . 45,60	)).
	77.34 . 12,31				114.9 . 46,16				)).	
29,74	77.34 . 13,33	30,164	56,0	53,3	4.12,50	4,08	15,45,70	15,45,70	114.9 . 47,18	)).
	36.12 . 44,78				74.0 . 36,64				Venus.	
32,04	28.52 . 31,80	30,126	67,8	69,1	41,35	4,02	9,470	6,20	66.55 . 53,07	☉.
	32.9 . 35,52				69.57 . 19,65				Arcturus R.	
32,04	32.9 . 33,43	30,163	66,1	67,0	35,85	4,08	9,470	6,20	69.57 . 17,56	Arcturus.
	45.14 . 58,17				83.3 . 3,93				α Serpentis R.	
32,04	45.14 . 57,38	30,154	68,4	68,5	57,48	3,41	9,470	6,20	83.3 . 3,14	α Serpentis.
	73.15 . 21,85				111.5 . 38,52				μ <sup>1</sup> Sagittarii.	
32,04	73.15 . 21,85	30,154	68,4	68,5	3.8,39	4,08	9,470	6,20	115.45 . 56,72	)).
	79.9 . 26,13				115.45 . 53,24				)).	
32,04	78.36 . 38,70	30,154	68,4	68,5	4.50,14	4,08	9,470	6,20	73.40 . 13,24	Venus.
	35.52 . 21,16				73.40 . 13,24				Venus.	
32,04	29.19 . 56,57	30,154	68,4	68,5	4.50,14	4,08	9,470	6,20	66.51 . 46,63	☉.
	28.48 . 22,51				66.51 . 43,95				☉.	
32,04	24.55 . 55,03	30,154	68,4	68,5	27,08	4,08	9,470	6,20	62.43 . 30,39	α Cor. Bor. R.
	24.55 . 55,76				62.43 . 31,12				α Coronæ Bor.	
32,04	45.14 . 56,00	30,154	68,4	68,5	58,68	4,08	9,470	6,20	83.3 . 2,96	α Serpentis R.
	45.14 . 56,55				83.3 . 3,51				α Serpentis.	
32,04	71.30 . 54,37	30,154	68,4	68,5	2.52,38	4,08	9,470	6,20	109.20 . 55,03	β <sup>1</sup> Scorpii R.
	71.30 . 54,61				109.20 . 55,27				β <sup>1</sup> Scorpii.	
32,04	71.30 . 40,65	30,154	68,4	68,5	2.52,38	4,08	9,470	6,20	109.20 . 41,51	β <sup>2</sup> Scorpii.
	26.31 . 29,03				64.19 . 4,85				Pallas.	
32,04	28.38 . 13,99	30,154	68,4	68,5	29,14	4,08	9,470	6,20	66.41 . 34,91	☉.
	29.9 . 45,94				66.41 . 35,88				☉.	
32,04	34.34 . 18,78	30,154	68,4	68,5	39,15	4,08	9,470	6,20	72.22 . 9,00	Venus.
	29.7 . 12,22				66.39 . 2,26				☉.	
32,04	32.9 . 32,08	30,024	62,1	60,0	36,05	4,08	9,470	6,20	69.57 . 16,41	Arcturus R.
	32.9 . 32,28				69.57 . 16,61				Arcturus.	

Coincidence of Micrometer Wire with fixed Wire 10',058, or 100',058. From June 12. = 10',063.

One revolution = 20'',833.

Correction for Runs = -7'',8. From June 12. = -4'',4. From June 18. = -6'',5.

Adopted Zenith Point = 221°. 34'. 26'',68. From Venus June 10. = 221°. 34'. 29'',72.

From June 18. = 221°. 34'. 31'',94.

Assumed Co-latitude = 37°. 47'. 8'',28.

June 11. 9<sup>h</sup>, Molyneux fast on Hardy 33°.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
			° ' "	° ' "	° ' "	° ' "	° ' "	° ' "				
June 18	α <sup>2</sup> Libræ R. M.....	334. 0	1. 53,2	46,3	52,6	48,7	48,0	44,8	7,328	+ 56,97	334. 2. 45,54	G.
	α <sup>2</sup> Libræ.....	289. 5	1. 22,3	13,9	20,0	16,3	12,7	13,1			289. 6. 16,10	G.
	βUrs. Min. R. M...	64. 10	0. 9,7	5,1	8,1	3,7	0,9	1,7	6,666	+ 1. 10,77	64. 11. 15,62	G.
	βUrsæ Minoris.....	198. 55	2. 57,0	49,9	55,5	52,4	51,0	50,1			198. 57. 52,02	G.
	Pallas.....	248. 10	4. 41,9	34,8	38,8	34,9	33,3	31,5	10,723	- 13,75	248. 14. 34,87	G.
	Ceres.....	296. 35	4. 42,3	35,2	40,9	35,2	31,9	32,2			296. 39. 35,28	G.
	(a) ) N.L. M.....	273. 35	4. 42,8	36,2	41,8	35,9	33,9	33,9	10,923	+ 3,69	273. 39. 26,36	G.
	) N.L. M.....	273. 35	4. 42,8	36,2	41,8	35,9	33,9	33,9			- 17,92	273. 39. 25,88
June 19	☉ N.L. M.....	250. 0	4. 34,2	36,9	33,6	31,2	29,1	36,0	8,456	+ 33,48	250. 5. 6,00	G.
	☉ S.L. ....	250. 35	1. 36,9	30,7	34,2	32,8	28,5	29,3			250. 36. 31,73	G.
June 20	α Cor. Bor. R. M...	16. 40	0. 45,3	41,3	43,7	40,9	39,0	38,7	16,011	- 2. 3,92	16. 38. 37,41	G.
	α Coronæ Borealis..	246. 30	0. 32,8	25,3	27,5	26,7	22,2	23,8			246. 30. 26,28	G.
	(b) α Serpentes R. M...	356. 20	0. 32,1	25,8	32,3	27,8	27,7	24,2	12,682	- 54,57	356. 19. 33,65	G.
	α Serpentes.....	266. 45	4. 35,2	24,9	32,8	27,3	26,1	25,1			266. 49. 27,58	G.
	(c) β <sup>1</sup> Scorpii R. M.....	330. 0	4. 37,6	27,8	34,7	29,7	28,3	25,7	12,739	- 55,75	330. 3. 33,90	G.
	β <sup>1</sup> Scorpii.....	293. 5	0. 35,5	28,0	33,1	29,3	24,9	27,5			293. 5. 29,60	G.
	Pallas.....	248. 20	0. 9,1	0,7	6,3	3,9	0,9	0,3	296. 44. 3,38	G.		
	Ceres.....	296. 40	3. 68,3	61,1	67,3	62,1	67,8	58,9				
June 21	Venus N.L.....	254. 20	4. 42,8	39,0	39,2	37,3	37,3	35,8			254. 24. 37,57	G.
June 22	☉ S.L. M.....	250. 35	0. 29,3	23,7	26,0	25,2	21,2	23,7	11,202	- 23,72	250. 35. 1,03	J.G.
	☉ N.L.....	250. 0	3. 35,2	33,0	33,8	32,8	31,0	38,1			250. 3. 33,20	J.G.
	Mercury center....	252. 25	2. 45,2	41,3	40,6	41,1	37,3	39,1	11,407	- 27,99	252. 27. 40,18	G.
	Polaris SP. R. M...	80. 55	0. 59,8	53,5	54,8	56,7	55,9	51,3			+ 0,15	80. 55. 26,96
	Polaris SP.....	182. 10	3. 42,2	37,3	41,1	39,2	35,3	35,9	12. 59. 20	- 0,05	182. 13. 37,65	G.
	Saturn S.L.....	277. 50	0. 48,4	43,0	44,9	45,2	39,3	40,2			277. 50. 43,33	J.G.
	Venus N.L.....	254. 5	3. 60,0	56,0	58,0	54,1	52,8	50,8			254. 8. 54,45	J.G.
June 23	(d) Polaris SP. R. M...	80. 55	0. 56,0	48,3	52,2	50,8	49,1	46,1	11,261	- 24,95	80. 55. 25,28	G.
	Polaris SP.....	182. 10	3. 43,3	37,3	40,9	41,1	39,1	36,0			182. 13. 38,82	G.
	(e) Saturn N.L.....	277. 50	0. 57,5	51,9	55,9	51,3	51,0	47,9	11,183	- 23,33	277. 50. 52,40	G.
	Spica R. M.....	339. 5	0. 57,5	52,1	59,1	53,3	54,7	48,7			339. 5. 30,72	J.G.
	Spica.....	284. 0	3. 37,8	30,2	35,5	31,8	33,0	30,0	12,769	- 56,37	284. 3. 32,28	J.G.
	Arcturus R. M.....	9. 25	0. 58,0	52,8	58,8	55,3	53,1	50,5			9. 24. 58,18	G.
	Arcturus.....	253. 40	4. 8,2	3,0	5,9	4,3	2,3	0,0	8,403	+ 34,58	253. 44. 3,07	G.
	α Serpentes R. M...	356. 15	4. 9,0	4,9	11,5	4,9	6,9	0,1			356. 19. 39,91	G.
α Serpentes.....	266. 45	4. 33,2	23,9	33,2	25,1	24,9	24,1	248. 30. 32,80	J.G.			
Pallas.....	248. 30	0. 37,8	31,0	35,8	32,1	30,8	30,0					
June 25	Pallas.....	248. 35	3. 60,3	53,8	60,3	53,8	54,3	52,0	11,913	- 38,75	248. 38. 54,90	G.
	(f) Ceres.....	296. 50	4. 65,9	57,8	65,1	59,1	55,8	54,7			296. 54. 59,73	G.
	(g) α Herculis R. M...	3. 55	3. 9,7	2,8	13,0	4,5	4,4	1,1	- 0,04	+ 0,15	3. 57. 26,46	G.
α Herculis.....	259. 10	1. 43,1	35,2	39,9	35,2	33,2	35,2	259. 11. 36,77			G.	
June 26	Venus N.L.....	253. 10	1. 13,8	9,2	12,6	9,1	4,9	4,3			253. 11. 8,73	G.

(a) At the 4<sup>th</sup> and 5<sup>th</sup> wires: very faint and difficult to observe.  
 (b) A blur.  
 (c) Pretty good.

(d) Beautiful.  
 (e) Very bad, almost useless.  
 (f) No correction for runs: very bad.  
 (g) At the 4<sup>th</sup> and 5<sup>th</sup> wires.



Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi- diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
"	" ' "	Inch.	"	"	" "	" "	"	" "	" ' "	
30,82	67.31.46,40	30,021	60,7	58,2	2.18,17				105.21.12,85	$\alpha^2$ Librae R.
	67.31.44,16								105.21.10,61	$\alpha^2$ Librae.
33,82	-22.36.43,68				23,97				15.10.0,63	$\beta$ Urs. Min. R.
	-22.36.39,92								15.10.4,39	$\beta$ Ursae Minoris.
	26.40.2,93	30,015	58,2	56,5	28,99	1,59			64.27.38,61	Pallas.
	75.5.3,34				3.33,21	4,52			112.55.40,31	Ceres.
	52.4.54,42	30,043	58,0	56,0					89.25.16,41	).
	52.4.53,94				1.14,12	42.53,09		14.52,68	89.25.15,93	).
	28.30.34,06	30,066	60,5	60,9	31,14	4,00		15.45,50	66.33.54,98	☉.
	29.1.59,79				31,82	4,07			66.33.50,32	☉.
31,85	24.55.54,53	29,943	58,0	56,1	26,80				62.43.29,61	$\alpha$ Cor. Bor. R.
	24.55.54,34								62.43.29,42	$\alpha$ Coronae Bor.
30,62	45.14.58,29				58,09				83.3.4,66	$\alpha$ Serpentis R.
	45.14.55,64								83.3.2,01	$\alpha$ Serpentis.
31,75	71.30.58,04	29,928	57,0	56,0	2.50,62				109.20.56,94	$\beta^1$ Scorpii R.
	71.30.57,66								109.20.56,56	$\beta^1$ Scorpii.
	26.45.31,59				29,06	1,59			64.33.7,34	Pallas.
	75.9.31,44				3.33,92	4,52			113.0.9,12	Ceres.
	32.50.5,63	29,683	63,2	62,8	36,38	3,18	9,501	5,89	70.37.53,00	Venus.
	29.0.29,09	29,648	64,2	64,8	31,10	4,06		15.45,30	66.32.19,11	☉.
	28.29.1,26				30,44	3,99			66.32.21,29	☉.
	30.53.8,24	29,622	68,3	68,5	33,27	5,59			68.40.44,20	Mercury.
32,31	-39.20.55,02	29,562	64,3	63,8					-1.34.32,67	Polaris SP. R.
	-39.20.54,29				45,93				-1.34.31,94	Polaris SP.
	56.16.11,39				1.23,73	0,76	10,822	7,91	94.4.34,73	Saturn.
	32.34.22,51	29,540	58,7	59,2	36,10	3,15	9,482	6,07	70.22.9,81	Venus.
32,05	-39.20.53,34	29,597	60,0	58,6	46,46				-1.34.31,52	Polaris SP. R.
	-39.20.53,12								-1.34.31,30	Polaris SP.
	56.16.20,46				1.24,71	0,76	9,224	8,74	94.5.1,43	Saturn.
31,50	62.29.1,22	29,599	59,3	57,8	1.48,55				100.17.58,05	Spica R.
	62.29.0,34								100.17.57,17	Spica.
30,63	32.9.33,76	29,608	58,2	55,7	35,86				69.57.17,90	Arcturus R.
	32.9.31,13								69.57.15,27	Arcturus.
33,17	45.14.52,03	29,611	54,8	51,6	57,97				83.2.58,28	$\alpha$ Serpentis R.
	45.14.54,49								83.3.0,74	$\alpha$ Serpentis.
	26.56.0,86	29,613	51,4	47,6	29,46	1,59			64.43.37,01	Pallas.
	27.4.22,96	29,650	50,6	49,0	29,60	1,59			64.51.59,25	Pallas.
	75.20.27,79				3.37,73	4,47			113.11.9,33	Ceres.
31,62	37.37.5,48				44,61				75.24.58,37	$\alpha$ Herculis R.
	37.37.4,83								75.24.57,72	$\alpha$ Herculis.
	31.36.36,79	29,890	52,1	52,5	35,67	3,03	9,503	5,75	69.24.23,46	Venus.

Coincidence of Micrometer Wire with fixed Wire = 10',063. From June 25. = 10',053. One revolution = 20',833.  
 Correction for Runs = - 6'',5.  
 Adopted Zenith Point = 221°. 34'. 31'',94.  
 Assumed Co-latitude = 37°. 47'. 8'',28.  
 June 23. 23<sup>b</sup>, Molyneux fast on Hardy 7<sup>a</sup>.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.	
			A	B	C	D	E	F					
			° ' "	" "	" "	" "	" "	" "					
June 27	☉ N.L. M. ....	250. 5	4. 26,2	23,7	25,2	21,2	21,0	21,7	10,410	- 7,44	250. 9. 14,78	G.	
	☉ S.L. ....	250. 40	0. 47,8	46,6	45,8	45,5	42,5	41,7			250. 50. 44,82	G.	
June 29	(a) ☉ N.L. M. ....	250. 10	3. 26,7	26,3	24,8	24,7	....	....	7,033	+ 1. 2,92	250. 14. 28,02	G.	
	☉ S.L. ....	250. 45	0. 58,0	57,0	56,2	56,4	....	....			250. 45. 56,75	G.	
	(b) Polaris SP. R. M. ...	80. 55	0. 59,3	54,4	57,9	56,1	....	....	11,621	- 32,67	80. 55. 24,11	G.	
	Polaris SP. ....	182. 10	3. 44,8	39,1	43,0	41,1	....	....			182. 13. 41,43	G.	
	Arcturus R. M. ....	9. 25	1. 60,2	58,2	61,2	58,2	....	....	15,780	- 1. 59,32	9. 24. 59,83	G.	
	Arcturus. ....	253. 40	4. 9,0	3,1	6,9	2,7	....	....			253. 44. 4,80	G.	
	(c) β Urs. Min. R. M. ...	64. 10	2. 4,8	0,7	4,1	1,2	....	....	12,309	- 47,00	64. 11. 15,40	J.G.	
	β Ursæ Minoris. ....	198. 55	2. 53,7	48,7	51,9	50,2	....	....			198. 57. 50,68	J.G.	
	α Serpentis R. M. ...	356. 20	1. 9,7	4,8	11,7	5,9	....	....	14,308	- 1. 28,64	356. 19. 39,21	G.	
	α Serpentis. ....	266. 45	4. 31,8	23,3	30,8	25,8	....	....			266. 49. 27,23	G.	
	Pallas. ....	248. 55	3. 58,8	55,5	57,6	54,9	....	....	14,308	- 1. 28,64	248. 58. 56,10	J.G.	
	(d) Ceres. ....	297. 0	3. 29,6	24,8	28,0	25,0	....	....			297. 3. 26,30	J.G.	
	June 30	☉ S.L. M. ....	250. 45	3. 16,7	14,3	16,0	13,1	....	....	7,262	+ 58,14	250. 49. 12,67	G.
		☉ N.L. ....	250. 15	2. 42,0	42,1	41,2	39,1	....	....			250. 17. 40,67	G.
Polaris SP. ....		182. 10	3. 43,8	39,3	42,3	41,1	....	....	13,169	- 1. 4,91	182. 13. 41,05	G.	
Arcturus R. M. ....		9. 25	1. 6,8	4,1	7,2	6,3	....	....			9. 25. 1,02	J.G.	
Arcturus. ....		253. 40	4. 8,2	3,2	6,3	4,9	....	....	7,807	+ 46,79	253. 44. 5,03	J.G.	
α Serpentis R. M. ...		356. 15	3. 52,8	50,6	54,6	49,9	....	....			356. 19. 38,17	G.	
α Serpentis. ....		266. 45	4. 33,3	25,0	31,3	24,9	....	....	14,532	- 1. 33,31	266. 49. 27,93	G.	
Pallas. ....		249. 0	4. 42,1	35,7	39,8	36,7	....	....			249. 4. 37,85	G.	
Ceres. ....		297. 5	0. 31,2	24,6	28,7	27,7	....	....	14,532	- 1. 33,31	297. 5. 27,98	G.	
A.S.C.715.SP.R.M.		109. 30	0. 31,2	24,9	28,2	25,9	....	....			109. 28. 54,17	G.	
A. S. C. 715. SP. ...		153. 40	0. 15,7	8,0	13,3	11,3	....	....	14,632	- 1. 35,40	153. 40. 12,05	G.	
δ Urs. Min. R. M. ...		75. 55	2. 58,3	52,3	56,1	55,0	....	....			75. 56. 19,58	G.	
δ Ursæ Minoris. ....		187. 10	2. 51,3	45,7	50,3	49,0	....	....	12,663	- 54,38	187. 12. 48,65	G.	
α Lyræ R. M. ....		28. 0	0. 54,5	50,0	51,9	53,0	....	....			27. 59. 57,82	G.	
α Lyræ. ....		235. 5	4. 11,8	5,3	9,7	6,3	....	....	14,632	- 1. 35,40	235. 9. 7,65	G.	
(e) Venus N.L. ....		252. 20	1. 64,6	58,3	62,8	58,3	....	....			252. 22. 0,70	G.	
July 1		(f) ☉ N.L. M. ....	250. 20	0. 43,4	42,8	39,3	43,8	46,2	39,0	8,338	+ 35,72	250. 21. 18,00	G.
	☉ S.L. ....	250. 50	2. 51,3	51,3	47,2	48,9	52,3	45,9	250. 52. 48,90			G.	
	(g) ) N.L. M. ....	263. 15	2. 30,1	26,4	28,3	27,5	28,3	25,3	11,925	- 39,00	263. 16. 55,89	G.	
	) N.L. M. ....	263. 15	2. 30,1	26,4	28,3	27,5	28,3	25,3					+ 7,76
	) N.L. M. ....	263. 15	2. 30,1	26,4	28,3	27,5	28,3	25,3	11,762	- 35,60	263. 16. 55,41	G.	
	) N.L. ....	263. 15	1. 62,3	60,0	60,7	59,2	60,2	57,2					+ 3,88
	) N.L. M. ....	263. 15	1. 62,3	60,0	60,7	59,2	60,2	57,2	9,859	- 3,88	263. 16. 55,64	G.	
	) N.L. M. ....	263. 15	1. 62,3	60,0	60,7	59,2	60,2	57,2					+ 4,03
	Polaris SP. R. M. ...	80. 55	1. 47,7	40,8	42,9	41,7	45,0	41,3	13,763	- 1. 17,29	80. 55. 25,59	G.	
	Polaris SP. ....	182. 10	3. 44,0	37,1	43,8	37,9	45,1	36,6					- 7,76
	(h) Spica R. M. ....	339. 5	1. 6,9	3,0	8,2	4,2	8,7	2,8	11,755	- 35,45	339. 5. 30,05	G.	
	Spica. ....	284. 0	3. 35,3	32,8	33,5	32,3	34,8	30,3					+ 0,10
	Arcturus R. M. ....	9. 25	1. 9,2	6,9	8,4	10,3	11,2	5,9	13,320	- 1. 8,07	284. 3. 32,18	G.	
	Arcturus. ....	253. 40	4. 8,7	4,7	7,2	3,5	7,7	1,0					- 0,24
	Pallas. ....	249. 10	0. 34,3	27,7	30,3	28,1	33,3	28,1	14,352	- 1. 29,56	253. 44. 4,60	J.G.	
	Ceres. ....	297. 5	2. 39,0	33,1	36,2	33,9	37,2	32,0					249. 10. 30,20
	A.S.C.715.SP.R.M.	109. 30	0. 30,1	24,8	25,9	27,2	26,3	24,0	14,352	- 1. 29,56	297. 7. 34,70	G.	
A. S. C. 715. SP. ...	153. 40	0. 13,7	5,3	13,9	9,9	12,4	7,3	109. 28. 56,72					G.
											153. 40. 10,38	G.	

(a) The wires of the cross in microscope E dragged, and the microscope in consequence was useless.  
 (b) Extremely faint.  
 (c) Very good.  
 (d) Very doubtful observation.

(e) After this observation I cleaned the micrometer of microscope E.  
 (f) Observed without dark glass: but too bright.  
 (g) Faint: observed at the 1<sup>st</sup>, 2<sup>d</sup>, 4<sup>th</sup>, and 5<sup>th</sup> wires.  
 (h) Observed at the 5<sup>th</sup> wire and the comb.



Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi- diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
"	" "	Inch.	"	"	" "	" "	"	" "	" "	"
	28.34.42,84 29.6.12,88	29,921	54,2	55,1	31,44 32,13	4,00 4,07		15.45,10	66.38.3,65 66.38.4,12	☉. ☉.
	28.39.54,98 29.11.23,71 -39.20.51,07 -39.20.51,61	30,125 50,088	55,8 56,6	56,2 56,5	31,70 32,39 47,43	4,02 4,08		15.45,10	66.43.16,04 66.43.15,20 -1.34.30,22 -1.34.30,76	☉. ☉. Polaris SP. R. Polaris SP.
32,77	32.9.33,21 32.9.31,76	30,075	56,1	55,1	36,47				69.57.17,96 69.57.16,51	Arcturus R. Arcturus.
32,32	-22.36.42,36 -22.36.42,36		55,1	54,0	24,22				15.10.1,70 15.10.1,70	βUrs. Min. R. βUrsæ Minoris.
33,04	45.14.53,83 45.14.54,19 27.24.23,06 75.28.53,26	30,088	54,5	53,2	58,71 30,30 3.41,85	1,59 4,43			83.3.0,82 83.3.1,18 65.12.0,05 113.19.38,96	αSerpentis R. αSerpentis. Pallas. Ceres.
	29.14.39,63 28.43.7,63 -39.20.51,99 32.9.32,02 32.9.31,99	30,037 30,021 30,030	58,2 59,0 58,1	61,1 58,9 57,2	32,06 31,37 47,09 36,26	4,09 4,02		15.45,10	66.46.30,78 66.46.28,36 -1.34.30,80 69.57.16,56 69.57.16,53	☉. ☉. Polaris SP. Arcturus R. Arcturus.
33,03	45.14.54,87 45.14.54,89		56,0	54,9	58,40				83.3.1,55 83.3.1,57	αSerpentis R. αSerpentis.
33,05	27.30.4,81 75.30.54,94	30,032	55,2	53,0	30,28 3.41,34	1,59 4,41			65.17.41,78 113.21.40,15	Pallas. Ceres.
33,11	-67.54.21,13 -67.54.20,99	30,036	54,3	52,1	2.22,59				-30.9.35,44 -30.9.35,30	A.S.C.715.SP.R. A.S.C.715.SP.
34,12	-34.21.46,54 -34.21.44,39	30,034	54,2	51,6	39,88				3.24.41,86 3.24.44,01	δUrs. Min. R. δUrsæ Minoris.
32,73	13.34.35,22 13.34.34,61 30.47.27,66				14,09 34,03		9,472	6,07	51.21.57,59 51.21.56,98 68.35.13,13	αLyræ R. αLyræ. Venus.
	28.46.45,52 29.18.16,42	30,022	61,3	63,8	31,27 31,95	4,03 4,10		15.45,10	66.50.6,14 66.50.7,45	☉. ☉.
	41.42.23,41	30,007	62,0	64,1					79.7.56,44	♃.
	41.42.22,93 41.42.23,16 41.42.23,31				50,64	38.8,38		15.42,49	79.7.55,96 79.7.56,19 79.7.56,34	♃. ♃. ♃.
32,79	-39.20.53,11 -39.20.52,50	30,005	61,2	62,6	46,73				-1.34.31,56 -1.34.30,95	Polaris SP. R. Polaris SP.
31,12	62.29.2,43 62.28.59,70		61,0	62,1	1.49,11				100.17.59,82 100.17.57,09	Spica R. Spica.
32,48	32.9.32,13 32.9.32,12	30,008	60,7	61,1	35,96				69.57.16,37 69.57.16,36	Arcturus R. Arcturus.
	27.35.57,72 75.33.2,20	30,011	58,0	56,1	30,20 3.40,32	1,59 4,40			65.23.34,61 113.23.46,42	Pallas. Ceres.
33,55	-67.54.24,24 -67.54.22,10	30,016	57,3	55,0	2.21,64				-30.9.37,60 -30.9.35,46	A.S.C.715.SP.R. A.S.C.715.SP.

Coincidence of Micrometer Wire with fixed Wire = 10",053. One revolution = 20",833.  
 Correction for Runs = -6",5. From June 29. = -3",1. From July 1. = -6",3.  
 Adopted Zenith Point = 221°.34'.31",94. From June 29. = 221°.34'.33",04. From July 1. = 221°.34'.32",48.  
 Assumed Co-latitude = 37°.47'.8",28.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
			° ' "	" "	" "	" "	" "	" "				
July 2	Mars center.....	262.15	0.42,2	41,5	38,3	39,8	43,2	36,0			262.15.40,03	J.G.
	(a) ) N.L. M.....	269.10	0.43,0	41,0	38,8	39,8	44,1	37,0	9,402	+ 13,56 + 8,32	269.11.2,36	G.
	) N.L. M.....	269.10	0.43,0	41,0	38,8	39,8	44,1	37,0	9,221	+ 17,33 + 4,16	269.11.1,97	G.
	) N.L.....	269.10	1.5,6	4,3	3,5	0,2	6,1	0,7			269.11.3,17	G.
	) N.L. M.....	269.10	1.5,6	4,3	3,5	0,2	6,1	0,7	9,829	+ 4,67 - 4,16	269.11.3,68	G.
	) N.L. M.....	269.10	1.5,6	4,3	3,5	0,2	6,1	0,7	9,584	+ 9,77 - 8,32	269.11.4,62	G.
	α Cor. Bor. R. M...	16.40	0.49,1	48,0	46,4	47,2	45,9	45,2	16,269	- 2.9,29	16.38.37,51	G.
	α Coronæ Borealis..	246.30	0.26,0	22,3	22,6	19,3	24,7	20,0			246.30.22,40	G.
	δ Ophiuchi R. M...	346.5	3.7,6	5,0	7,9	6,1	8,9	0,9	12,798	- 56,97	346.7.8,45	J.G.
	δ Ophiuchi.....	277.0	1.54,7	50,7	53,8	50,8	55,8	47,3			277.1.51,80	J.G.
	(b) Pallas.....	249.15	1.39,2	34,3	35,2	35,4	41,0	33,2			249.16.36,05	G.
	Venus N.L.....	252.0	0.50,9	49,2	48,9	46,1	51,4	43,2			252.0.48,13	G.
July 3	☉ N.L. M.....	250.25	3.27,9	26,8	25,1	26,9	30,8	24,2	6,522	+ 1.13,56	250.29.39,78	G.
	☉ S.L.....	251.0	1.16,3	13,3	13,8	12,6	13,1	11,1			251.1.13,12	G.
	(a) ) N.L. M.....	275.25	0.39,7	35,0	34,9	34,8	39,6	33,3	5,907	+ 1.26,36 + 8,62	275.27.11,06	G.
	) N.L. M.....	275.25	0.39,7	35,0	34,9	34,8	39,6	33,3	5,682	+ 1.31,06 + 4,31	275.27.11,45	G.
	) N.L.....	275.25	2.17,8	13,7	14,6	13,1	15,8	10,3			275.27.13,75	G.
	) N.L. M.....	275.25	2.17,8	13,7	14,6	13,1	15,8	10,3	9,881	+ 3,58 - 4,31	275.27.13,02	G.
	) N.L. M.....	275.25	2.17,8	13,7	14,6	13,1	15,8	10,3	9,743	+ 6,46 - 8,62	275.27.11,59	G.
	(c) Polaris SP. R. M...	80.55	0.57,3	53,3	55,3	51,4	56,4	52,2	11,527	- 30,70	80.55.23,43	G.
	Polaris SP.....	182.10	3.42,1	36,8	37,7	36,2	40,3	34,7			182.13.37,20	G.
	(d) Spica R.....	339.5	0.32,1	27,2	29,7	28,3	32,1	25,8			339.5.29,10	J.G.
	Spica.....	284.0	3.37,0	32,1	32,3	29,9	34,0	27,7			284.3.31,40	J.G.
	β Urs. Min. R. M...	64.10	0.31,1	27,4	26,7	27,3	31,8	25,7	7,762	+ 47,73	64.11.15,96	G.
	β Ursæ Minoris M..	198.55	1.62,5	57,5	59,8	58,8	61,3	54,3	7,762	+ 47,73	198.57.46,35	G.
	Pallas.....	249.20	2.63,9	58,9	60,3	56,9	63,0	57,0			249.22.59,37	G.
	Ceres.....	297.10	1.47,3	42,2	43,4	43,2	46,2	39,7			297.11.43,32	G.
	A.S.C.715.SP.R.M.	109.30	0.34,5	27,8	29,7	31,5	32,7	28,3	14,638	- 1.35,52	109.28.55,13	G.
	A. S. C. 715. SP....	153.40	0.10,3	2,3	7,8	5,3	9,3	2,9			153.40.6,30	G.
	(e) δ Urs. Min. R. M...	75.55	1.65,3	58,9	60,9	61,9	63,5	59,2	12,205	- 44,83	75.56.16,37	J.G.
	δ Ursæ Minoris.....	187.10	2.46,9	43,2	44,2	42,2	47,2	40,3			187.12.43,43	J.G.
	α Lyræ R. M.....	28.0	0.32,0	29,3	26,7	30,3	30,8	29,3	11,671	- 33,70	27.59.55,93	G.
	α Lyræ.....	235.5	4.10,0	2,4	6,2	3,3	8,3	1,9			235.9.4,48	G.
(f) Venus N.L.....	251.50	1.10,7	7,2	9,7	3,6	9,1	4,4		+ 0,65	251.51.7,87	G.	
July 4	(g) ☉ S.L.....	251.5	0.63,5	60,0	61,9	60,0	64,8	57,3			251.6.1,03	G.
	☉ N.L.....	250.30	4.35,9	32,3	32,1	32,1	34,1	28,7			250.34.31,58	G.
	Mars center.....	262.40	2.46,0	44,7	42,1	44,3	45,3	40,9			262.42.43,32	G.
	α Cor. Bor. R. M...	16.40	0.25,9	21,3	21,5	23,0	24,7	20,3	15,061	- 1.44,34	16.38.38,36	G.
	α Coronæ Borealis..	246.30	0.28,3	21,1	22,1	22,4	23,9	20,5			246.30.22,97	G.
	(h) α Serpentis R. M...	356.20	0.27,5	22,3	26,1	21,9	28,2	20,0	12,438	- 49,69	356.19.34,56	J.G.
	α Serpentis.....	266.45	4.32,0	22,0	27,1	24,5	27,5	23,1			266.49.25,08	J.G.
	(i) Pallas.....	249.25	4.40,3	34,3	38,0	35,3	39,7	34,1			249.29.35,98	G.

(a) At the five wires.

(b) Extremely bad.

(c) Very good.

(d) The star came on the fixed wire, pretty well bisected.

(e) Blur.

(f) Between the 5<sup>th</sup> wire and the comb; the correction for change of N.P.D. is + 0',26, and that for curvature of path + 0'',39.

(g) The limb came on the fixed wire.

(h) Seen for a moment only; not good.

(i) Very bad.



Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi- diameter.	Geoc. N.P.D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
"	° ' "	Inch.	°	°	' "	' "	"	' "	° ' "	
	40.41.9,58	29,972	65,8	68,5	48,38	2,72			78.29.3,52	Mars.
	47.36.31,91	29,969	66,2	69,1					84.57.45,41	∩.
	47.36.31,52								84.57.45,02	∩.
	47.36.32,72				1.15,2	42.48,65		15.52,35	84.57.46,22	∩.
	47.36.33,23								84.57.46,73	∩.
	47.36.34,17								84.57.47,67	∩.
29,96	24.55.52,94	29,986	63,3	64,0	26,42				62.43.27,64	α Cor. Bor. R.
	24.55.51,95								62.43.26,65	α Coronæ Bor.
30,13	55.27.22,00	29,995	63,7	63,1	1.22,52				93.15.52,80	δ Ophiuchi R.
	55.27.21,35								93.15.52,15	δ Ophiuchi.
	27.42.5,60				29,90	1,59			65.29.42,19	Pallas.
	30.26.17,68	29,986	63,9	66,7	33,22	2,86	9,479	5,98	68.14.2,30	Venus.
	28.55.9,33	29,984	67,8	70,3	31,01	4,05		15.45,10	66.58.29,67	⊙.
	29.26.42,67				31,68	4,12			66.58.33,41	⊙.
	53.52.40,61	29,963		68,5					91.9.48,16	∩.
	53.52.41,00								91.9.48,55	∩.
	53.52.43,30				1.16,96	47.19,78		16.2,09	91.9.50,85	∩.
	53.52.42,57								91.9.50,12	∩.
	53.52.41,14								91.9.48,69	∩.
30,32	-39.20.52,98				46,12				-1.34.30,82	Polaris SP. R.
	-39.20.53,25								-1.34.31,09	Polaris SP.
30,25	62.29.1,35				1.47,57				100.17.57,20	Spica R.
	62.29.0,95								100.17.56,80	Spica.
31,16	-22.36.45,51	29,969	66,2	65,6	23,58				15.9.59,19	β Urs. Min. R.
	-22.36.44,10								15.10.0,60	β Ursæ Minoris.
	27.48.28,92	29,970	62,2	59,7	30,21	1,59			65.36.5,82	Pallas.
	75.37.12,87				3.39,47	4,37			113.27.56,25	Ceres.
30,72	-67.54.24,68	29,974	61,6	59,1	2.20,28				-30.9.36,68	A.S.C.715.SP.R.
	-67.54.24,15								-30.9.36,15	A.S.C.715.SP.
29,90	-34.21.45,92		60,2	58,1	39,28				3.24.43,08	δ Urs. Min. R.
	-34.21.47,02								3.24.41,98	δ Ursæ Minoris.
30,21	13.34.34,52				13,88				51.21.56,68	α Lyræ R.
	13.34.34,03								51.21.56,19	α Lyræ.
	30.16.37,42	29,987	65,1	66,0	33,04	2,84	9,532	5,44	68.4.21,34	Venus.
	29.31.30,58	29,985	67,0	69,1	31,86	4,13		15.45,10	67.3.21,49	⊙.
	29.0.1,13				31,18	4,06			67.3.21,63	⊙.
	41.8.12,87	29,942	69,2	70,0	48,95	2,72			78.56.7,38	Mars.
30,67	24.55.52,09	29,918	64,3	62,1	26,45				62.43.26,82	α Cor. Bor. R.
	24.55.52,52								62.43.27,25	α Coronæ Bor.
29,82	45.14.55,89				57,34				83.3.1,51	α Serpentes R.
	45.14.54,63								83.3.0,25	α Serpentes.
	27.55.5,53	29,909	62,0	58,2	30,37	1,59			65.42.42,59	Pallas.

Coincidence of Micrometer Wire with fixed Wire = 10',053. One revolution = 20",833.  
 Correction for Runs = -6",3.  
 Adopted Zenith Point = 221°.34'.30",45.  
 Assumed Co-latitude = 37°.47'.8",28.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
			° ' "	° ' "	° ' "	° ' "	° ' "	° ' "				
July 5	(a) ) N.L. M.....	287.45	0.57,9	50,5	57,0	53,1	56,4	49,9	4,621	+ 1.53,16 + 7,98	287.47.55,07	J.G.
	) N.L. M.....	287.45	0.57,9	50,5	57,0	53,1	56,4	49,9	4,422	+ 1.57,31 + 3,99	287.47.55,23	J.G.
	) N.L.....	287.45	2.60,6	53,7	57,9	54,2	59,2	52,3	9,918	+ 2,80 - 3,99	287.47.55,68	J.G.
	) N.L. M.....	287.45	2.60,6	53,7	57,9	54,2	54,2	52,3	9,759	+ 6,12 - 7,98	287.47.54,49	J.G.
	) N.L. M.....	287.45	2.60,6	53,7	57,9	54,2	59,2	52,3	8,889	+ 24,24	287.47.53,82	J.G.
	(b) β Urs. Min. R. M...	64.10	0.54,7	49,2	51,8	48,9	54,8	46,9	8,889	+ 24,24	64.11.15,11	J.G.
	γ Ursæ Minoris.....	198.55	2.52,9	45,3	48,0	46,9	49,7	44,0			198.57.47,22	J.G.
	ε Libræ.....	287.55	4.26,3	17,0	22,7	18,2	20,3	16,6			287.59.19,28	J.G.
	α Serpentis R. M...	356.15	3.62,7	59,0	65,2	58,3	64,2	54,7	8,369	+ 35,08	356.19.34,93	G.
	α Serpentis.....	266.45	4.31,6	20,1	28,0	23,7	25,2	23,0			266.49.24,32	G.
July 6	(c) ☉ S.L. M.....	251.15	1.13,8	7,3	11,7	9,1	11,7	6,9	8,069	+ 41,33	251.16.51,16	G.
	☉ N.L.....	250.45	0.29,3	23,3	25,7	22,8	27,0	21,2			250.45.24,78	G.
	ε Bootis R. M.....	17.10	0.28,3	25,7	24,1	25,4	27,2	23,6	15,325	- 1.49,84	17.8.35,79	G.
	ε Bootis.....	246.0	0.29,7	22,8	26,4	24,3	28,0	23,3			246.0.25,67	G.
	(d) β Urs. Min. R. M..	64.10	0.28,5	21,8	24,1	21,3	25,8	21,4	7,542	+ 52,32 - 0,55	64.11.15,50	G.
	(e) β Ursæ Minoris.....	198.55	2.49,8	42,7	44,3	43,7	47,3	41,5		+ 0,98	198.57.45,30	G.
	γ Libræ.....	287.55	4.23,3	15,8	20,7	15,7	18,0	16,0			287.59.17,35	G.
	Ceres.....	297.15	2.52,2	45,3	48,9	45,6	47,8	43,5			297.17.46,63	G.
	A.S.C.715.SP.R.M.	109.30	0.46,3	38,9	41,3	40,6	40,8	38,3	15,120	- 1.45,57	109.28.55,31	G.
	A.S.C.715.SP....	153.40	0.10,3	2,2	8,8	4,0	6,9	4,0			153.40.6,02	G.
	δ Urs. Min. R. M...	75.55	1.51,3	44,1	47,7	45,0	47,3	43,6	11,437	- 28,83	75.56.17,29	G.
	δ Ursæ Minoris.....	187.10	2.48,1	40,3	45,2	42,9	45,2	41,7			187.12.43,33	G.
	α Lyræ R. M.....	28.0	2.49,3	44,3	44,7	43,9	46,7	42,6	18,090	- 2.47,43	27.59.57,25	J.G.
	α Lyræ.....	235.5	4.10,3	2,1	6,3	0,5	3,8	0,1			235.9.2,98	J.G.
	(f) Venus N.L.....	251.25	0.46,3	41,7	43,3	40,7	43,3	40,8		+ 0,40	251.25.42,93	G.
	July 7	☉ N.L. M.....	250.50	0.51,3	48,7	50,0	48,0	50,2	47,0	8,313	+ 36,24	250.51.25,27
☉ S.L.....		251.20	2.56,9	53,3	53,3	53,0	55,5	49,0			251.22.52,88	G.
Arcturus R. M....		9.25	0.46,7	44,8	45,2	46,7	47,7	42,2	12,267	- 46,13	9.24.59,27	J.G.
Arcturus.....		253.40	4.8,5	2,2	4,9	2,0	5,9	0,2			253.44.3,08	J.G.
α Serpentis R. M...		356.20	0.61,9	60,3	64,3	58,3	64,3	55,0	14,000	- 1.22,23	356.19.38,24	G.
α Serpentis.....		266.45	4.31,8	23,8	29,1	24,0	27,3	24,3			266.49.25,77	G.
(g) ) N.L. M.....		297.5	4.31,3	23,7	28,7	24,1	27,8	21,9	5,232	+ 1.40,44 + 4,88	297.11.10,62	J.G.
) N.L. M.....		297.5	4.31,3	23,7	28,7	24,1	27,8	21,9	5,158	+ 1.41,97 + 2,44	297.11.9,71	J.G.
) N.L.....		297.10	1.15,1	9,3	12,9	8,1	13,0	6,9	9,905	+ 3,08 - 2,44	297.11.10,63	J.G.
) N.L. M.....		297.10	1.15,1	9,3	12,9	8,1	13,0	6,9	9,800	+ 5,27 - 4,88	297.11.11,02	J.G.
July 8	α Cor. Bor. R. M...	16.40	0.60,9	59,1	60,2	60,3	59,3	56,3	16,783	- 2.20,20	16.38.38,98	J.G.
	α Coronæ Borealis..	246.30	0.27,3	23,2	24,0	22,0	24,9	21,2			246.30.23,70	J.G.
July 9	(h) Venus N.L.....	251.5	0.55,9	53,3	55,1	52,2	55,8	47,5			251.5.53,13	G.

- (a) At the five wires: unsteady.
- (b) Not good.
- (c) Without coloured glass.
- (d) At the 4<sup>th</sup> wire.
- (e) One-third of an interval after the 4<sup>th</sup> wire.
- (f) At the 5<sup>th</sup> wire.
- (g) Observations at the five wires.
- (h) After this observation the circle was taken down

and cleaned, and the telescope shifted. It was found that the micrometer wire was not perfectly parallel to the fixed wire: and from July 10 to August 22 the coincidence at the different wires is found from that at the middle wire by applying the following quantities: 1<sup>st</sup> wire, -.025: 2<sup>d</sup> wire, -.013: 4<sup>th</sup> wire, +.003: 5<sup>th</sup> wire, +.012: comb, +.018.



Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi- diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.	
			Attach.	Free.							
" "	" / "	Inch.	°	°	' "	' "	r	' "	° / "		
	66. 13. 24,62	29,742	62,1	59,7					103. 24. 23,88	δ.	
	66. 13. 24,78								103. 24. 24,04	δ.	
	66. 13. 25,23				2. 8,23	54. 36,00		16. 18,75	103. 24. 24,49	δ.	
	66. 13. 24,04								103. 24. 23,30	δ.	
	66. 13. 23,37								103. 24. 22,63	δ.	
31,17	-22. 36. 44,66								15. 9. 59,94	β Urs. Min. R.	
	-22. 36. 43,23					23,68			15. 10. 1,37	β Ursæ Minoris.	
	66. 24. 48,83	29,749	60,3	58,2	2. 9,81				104. 14. 6,92	γ Libræ.	
29,63	45. 14. 55,52								83. 3. 1,27	α Serpentis R.	
	45. 14. 53,87					57,47			83. 2. 59,62	α Serpentis.	
	29. 42. 20,71	29,964	64,2	64,9		32,34	4,15		67. 14. 12,08	⊙.	
	29. 10. 54,33					31,65	4,08	15. 45,10	67. 14. 15,28	⊙.	
30,73	24. 25. 54,66	30,042	64,1	63,2		25,90			62. 13. 28,84	ε Bootis R.	
	24. 25. 55,22								62. 13. 29,40	ε Bootis.	
30,40	-22. 36. 45,05	30,047	63,3	62,0		23,80			15. 9. 59,43	β Urs. Min. R.	
	-22. 36. 45,15								15. 9. 59,33	β Ursæ Minoris.	
	66. 24. 46,90				2. 10,07				104. 14. 5,25	γ Libræ.	
	75. 43. 16,18	30,058	61,6	59,9		3. 41,60	4,32		113. 34. 1,74	Ceres.	
30,67	-67. 54. 24,86	30,056	61,0	58,4		2. 20,85			-30. 9. 37,43	A.S.C. 715. SP. R.	
	-67. 54. 24,43								-30. 9. 37,00	A. S. C. 715. SP.	
30,31	-34. 21. 46,84	30,059	59,9	57,8		39,41			3. 24. 42,03	δ Urs. Min. R.	
	-34. 21. 47,12								3. 24. 41,75	δ Ursæ Minoris.	
30,12	13. 34. 33,20					13,93			51. 21. 55,41	α Lyræ R.	
	13. 34. 32,53								51. 21. 54,74	α Lyræ.	
	29. 51. 11,27	30,041	62,1	62,5		32,77	2,79	9,573	5,00	67. 38. 54,53	Venus.
	29. 16. 53,61	30,031	64,3	64,9		31,85	4,10		15. 45,10	67. 20. 14,74	⊙.
	29. 48. 21,22					32,54	4,16		67. 20. 12,78	⊙.	
31,18	32. 9. 32,39	29,947	63,5	62,7		35,77			69. 57. 16,44	Arcturus R.	
	32. 9. 31,42								69. 57. 15,47	Arcturus.	
32,01	45. 14. 53,42	29,946	61,3	59,7		57,68			83. 2. 59,38	α Serpentis R.	
	45. 14. 54,11								83. 3. 0,07	α Serpentis.	
	75. 36. 38,96	29,930	60,1	58,2					112. 45. 38,45	δ.	
	75. 36. 38,05								112. 45. 37,54	δ.	
	75. 36. 38,97				3. 39,73	58. 14,15		16. 25,63	112. 45. 38,46	δ.	
	75. 36. 39,61								112. 45. 39,10	δ.	
	75. 36. 39,36								112. 45. 38,85	δ.	
31,34	24. 55. 52,68	29,924	62,1	60,4		26,55			62. 43. 27,51	α Cor. Bor. R.	
	24. 55. 52,04								62. 43. 26,87	α Coronæ Bor.	
	29. 31. 21,47	29,699	61,3	62,0		32,00	2,73	9,448	6,30	67. 19. 5,32	Venus.

Coincidence of Micrometer Wire with fixed Wire = 10',053. One revolution = 20',833.  
 Correction for Runs = -6'',3.  
 Adopted Zenith Point = 221°. 34'. 30'',45. From Venus July 6. = 221°. 34'. 31'',66.  
 Assumed Co-latitude = 37°. 47'. 8'',28.

Month and Day.	NAME OF STAR or PLANET.	Pointer. ° ' "	Microscopes.						Micrometer or Time by Molyneux. r. h. m. s.	Correction for Microm. or Time. ' "	Concluded reading of Circle. ° ' "	Observer.		
			A	B	C	D	E	F						
			"	"	"	"	"	"						
July 10	Ceres.....	245.55	4.47,0	51,6	53,0	50,2	50,8	50,5	6,952	+ 1. 4,41	245.59.49,98	G.		
	α Hercules R. M....	312.30	0.18,2	22,0	22,3	21,0	21,7	23,9			312.31.25,88	G.		
	α Hercules.....	207.45	0.29,9	34,7	33,9	33,9	34,0	35,0			207.45.33,52	G.		
	(a) α Lyncis SP. R. M.	56.15	3.21,0	26,9	24,8	28,2	24,0	28,1			56.20.2,54	G.		
	α Lyncis SP.....	103.55	1.55,7	59,7	58,7	61,1	55,8	61,8			103.56.58,57	G.		
	(b) δ Urs. Min. R. M...	24.25	3. 9,3	18,2	16,2	16,8	15,5	16,5			24.30.19,66	G.		
	δ Ursæ Minoris.....	135.45	1.41,6	43,7	45,3	45,1	43,0	45,9			135.46.43,90	G.		
	(c) α Lyræ R. M.....	336.30	1.51,8	57,7	56,9	55,3	56,9	55,5			336.33.59,04	G.		
α Lyræ.....	183.40	3. 0,3	4,4	6,0	3,8	4,0	4,9	183.43. 3,57	G.					
July 11	☉ N.L. M.....	199.50	2. 7,3	11,6	12,5	12,0	8,9	14,2	6,639	+ 1.10,93	199.53.21,78	G.		
	☉ S.L.....	200.20	4.51,5	55,0	54,3	55,1	54,1	54,8			200.24.53,58	G.		
	α Cor. Bor. R. M....	325.10	2.24,5	27,0	29,2	26,3	28,9	28,1			325.12.39,61	G.		
	α Coronæ Borealis..	195. 0	4.21,6	23,0	26,7	23,0	23,8	25,6			195. 4.23,47	G.		
	α Serpentis R. M....	304.50	2.57,1	61,9	63,3	61,1	63,1	62,4			304.53.37,10	G.		
	α Serpentis.....	215.20	3.21,5	26,2	26,0	25,9	24,1	27,2			215.23.24,77	G.		
	(a) Ceres.....	246. 0	1.44,3	46,3	47,1	47,8	44,6	50,0			246. 1.46,48	G.		
	α Lyræ R. M.....	336.30	2.13,3	17,8	17,9	15,7	17,2	17,3			336.34. 2,14	G.		
	(d) α Lyræ.....	183.40	2.59,7	65,1	63,5	64,5	63,1	65,2			183.43. 4,24	G.		
	July 16	(e) ) N.L. M.....	218.45	0.53,8	58,5	56,1	59,8	59,3			60,2	4,489	+ 1.55,38 - 6,61	218.47.46,69
) N.L. M.....		218.45	0.53,8	58,5	56,1	59,8	59,3	60,2	4,641	+ 1.52,48 - 2,94	218.47.47,46			A.
) N.L. M.....		218.45	0.53,8	58,5	56,1	59,8	59,3	60,2	4,895	+ 1.47,41 + 0,73	218.47.46,06			A.
) N.L. M.....		218.45	0.53,8	58,5	56,1	59,8	59,3	60,2	5,072	+ 1.43,81 + 4,40	218.47.46,13			A.
) N.L. M.....		218.45	0.53,8	58,5	56,1	59,8	59,3	60,2	5,242	+ 1.40,44 + 8,07	218.47.46,43			A.
(f) Venus center.....		199.15	1.12,0	16,0	13,5	19,0	15,3	19,6			199.16.15,85			A.
July 17		(g) ☉ N.L. M.....	200.45	1.22,2	27,8	24,0	29,2	26,8	30,2	9,178	+ 18,04			200.46.44,69
	☉ S.L.....	201.15	3. 9,8	17,0	12,5	17,2	13,4	16,4	201.18.14,27			A.		
	(h) β Urs. Min. R. M...	12.40	2.46,6	54,8	49,8	55,3	54,9	52,7	2,994			+ 2.26,87	12.45.19,12	A.
	β Ursæ Minoris.....	147.30	1.44,2	49,0	46,5	49,4	49,4	50,2					147.31.48,05	A.
	(i) Ceres M.....	246.10	3.18,3	21,5	21,2	22,2	20,6	23,5	8,418			+ 33,99	246.13.55,09	A.
	(k) α Hercules R. M....	312.25	4.24,0	27,5	28,4	25,1	29,6	26,7	4,068			+ 2. 4,50	312.31.31,22	A.
	(l) α Hercules.....	207.45	0.32,9	33,9	31,8	35,0	35,3	37,8				+ 0,16	207.45.34,59	A.
(m) Venus S.L.....	199.15	0.32,7	38,3	32,2	40,3	36,0	40,5			199.15.36,65	A.			
July 18	☉ S.L. M.....	201.25	2. 2,9	9,4	4,5	10,9	6,4	8,3	6,184	+ 1.20,42	201.28.27,42	A.		
	(n) ☉ N.L.....	200.55	1.51,3	57,9	53,8	59,4	55,5	57,6			10,795	- 15,64	200.56.55,85	A.
	Arcturus R. M.....	317.55	4.12,4	15,5	15,9	15,3	18,0	14,9					317.58.59,54	A.
	Arcturus.....	202.15	3. 1,3	5,6	2,4	7,2	4,9	6,7					202.18. 4,57	A.
	(o) ) N.L. M.....	208.35	3.54,7	58,7	57,0	59,0	59,2	56,6			8,097	+ 40,68	208.39.38,06	A.
	(p) ) N.L. M.....	208.35	3.54,7	58,7	57,0	59,0	59,2	56,6			8,357	+ 35,58 + 7,99	208.39.40,95	A.
July 19	(q) β Urs. Min. R. M...	12.40	4.12,8	21,6	16,4	20,3	20,8	17,6	7,136	+ 1. 0,59	12.45.18,69	A.		
	β Ursæ Minoris.....	147.30	1.43,9	49,5	48,0	49,3	50,2	47,9					147.31.48,07	A.
	α Cor. Bor. R. M....	325.10	2.21,3	26,4	25,2	24,1	28,2	23,2			9,183	+ 17,94	325.12.42,59	A.
	α Coronæ Borealis..	195. 0	4.21,6	24,7	23,7	26,0	25,3	24,4					195. 4.24,13	A.

(a) Very bad. (b) Blur: very bad. (k) The star beautifully divided: I omitted to read microscope D, but have supplied it by comparing C + D with the mean of A + B and E + F in other observations of the same star.

(c) Not good. (d) At the comb: cloudy and bad. (l) At 5<sup>th</sup> wire. (m) Unsteady.

(e) Rather faint and ill defined: the observations were made about 3<sup>d</sup> after passing each wire. (n) Hasty, among dark clouds. (o) At 3<sup>d</sup> wire.

(f) Very unsteady and ill defined: impossible to observe a limb. (g) Bad limbs. (h) Very good. (p) Between 5<sup>th</sup> wire and comb: heavily clouded: observations hurried: limb very faint. (q) Good.

(i) Would bear no illumination: I think that I placed the wire nearly on the planet, but am not sure.



Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi- diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
"	" / "	Inch.	"	"	" "	" "	"	" "	" / "	
29,70	75.51.18,80	29,822	57,2	55,1	3.44,16	4,26			113.42.6,98	Ceres.
	37.37.5,30								75.24.57,89	$\alpha$ Herculis R.
	37.37.2,34								75.24.54,93	$\alpha$ Herculis.
30,56	-66.11.31,36	29,826	55,3	54,2	2.9,86				-28.26.32,94	$\alpha$ Lyncis SP. R.
	-66.11.32,61								-28.26.34,19	$\alpha$ Lyncis SP.
31,78	-34.21.48,48	29,826	55,2	54,1	39,41				3.24.40,39	$\delta$ Urs. Min. R.
	-34.21.47,28								3.24.41,59	$\delta$ Ursæ Minoris.
31,31	13.34.32,14				13,92				51.21.54,34	$\alpha$ Lyræ R.
	13.34.32,39								51.21.54,59	$\alpha$ Lyræ.
31,54	29.44.50,60	29,980	62,7	63,9	32,47	4,16	15.45,30		67.48.12,49	$\odot$ .
	30.16.22,40				33,17	4,22			67.48.14,33	$\odot$ .
	24.55.51,57	29,962	61,0	59,7	26,62				62.43.26,47	$\alpha$ Cor. Bor. R.
	24.55.52,29								62.43.27,19	$\alpha$ Coronæ Bor.
30,94	45.14.54,08				57,71				83.3.0,07	$\alpha$ Serpentis R.
	45.14.53,59								83.2.59,58	$\alpha$ Serpentis.
33,19	75.53.15,30	29,969	59,3	56,5	3.45,12	4,24			113.44.4,46	Ceres.
	13.34.29,04	29,950	56,8	54,6	13,97				51.21.51,29	$\alpha$ Lyræ R.
	13.34.33,06								51.21.55,31	$\alpha$ Lyræ.
	48.39.13,63	29,910	60,5	57,4					86.1.29,07	$\delta$ .
	48.39.14,40								86.1.29,84	$\delta$ .
	48.39.13,00				1.5,16	40.52,33		14.54,33	86.1.28,44	$\delta$ .
	48.39.13,07								86.1.28,51	$\delta$ .
	48.39.13,37								86.1.28,81	$\delta$ .
	29.7.42,79	29,933	66,5	66,6	31,44	2,64			66.55.19,87	Venus.
33,59	30.38.11,63	29,925	68,9	69,8	33,20	4,27	15.45,50		68.41.34,34	$\odot$ .
	31.9.41,21				33,90	4,34			68.41.33,55	$\odot$ .
	-22.36.46,06	29,912	67,5	67,6	23,44				15.9.58,78	$\beta$ Urs. Min. R.
32,91	-22.36.45,01	29,913	63,5	60,6	3.46,60	4,13			15.9.59,83	$\beta$ Ursæ Minoris.
	76.5.22,03				60,4				113.56.12,78	Ceres.
	37.37.1,84				43,97				75.24.54,09	$\alpha$ Herculis R.
	37.37.1,53							75.24.53,78	$\alpha$ Herculis.	
	29.7.3,59	29,885	68,0	69,5	31,20	2,64	10,557	5,29	66.54.35,14	Venus.
32,05	31.19.54,36	29,876	71,3	72,0	33,92	4,36	15.45,60		68.51.46,60	$\odot$ .
	30.48.22,79				33,23	4,29			68.51.45,61	$\odot$ .
	32.9.33,52	29,868	70,5	69,1	35,22				69.57.17,02	Arcturus R.
	32.9.31,51								69.57.15,01	Arcturus.
	38.31.5,00	30,030	64,1	61,9					76.0.12,32	$\delta$ .
	38.31.7,89				45,45	33.32,05		14.45,64	76.0.15,21	$\delta$ .
33,38	-22.36.45,63	30,040	69,0	68,7	23,49				15.9.59,16	$\beta$ Urs. Min. R.
	-22.36.44,99								15.9.59,80	$\beta$ Ursæ Minoris.
33,36	24.55.50,47			67,6	26,27				62.43.25,02	$\alpha$ Cor. Bor. R.
	24.55.51,07								62.43.25,62	$\alpha$ Coronæ Bor.

Coincidence of Micrometer Wire with fixed Wire = 10',053. From July 10. = 10',050. One revolution = 20'',833.  
 Correction for Runs = -6'',3. From July 10. = -3'',4. From July 16. = -1'',1.  
 Adopted Zenith Point = 170°. 8'. 31'',18. From July 16. = 170°. 8'. 33'',06.  
 Assumed Co-latitude = 37°. 47'. 8'',28.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
			° ' "	" "	" "	" "	" "	" "				
July 20	(a) ☉ S.L. M.....	201.45	3.40,0	48,1	43,1	45,9	47,0	43,6	6,760	+1. 8,85 -0,31	201.49.53,02	A.
July 21	(b) ☉ N.L. M.....	201.25	3.12,0	22,3	15,4	20,4	18,7	17,5	6,447	+1.15,19 -0,24	201.29.32,55	A.
	☉ S.L. ....	202. 0	1. 2,4	11,7	6,4	12,2	9,6	8,8		-0,24	202. 1. 8,24	A.
	Arcturus R. M....	317.55	2.45,0	48,4	46,0	47,9	49,0	47,7	6,533	+1.13,15	317.59. 0,38	A.
	Arcturus.....	202.15	3. 1,1	7,0	3,6	7,2	5,3	4,3			202.18. 4,63	A.
	β Urs. Min. R. M..	12.40	4. 3,2	11,6	6,7	12,1	9,0	8,0	6,715	+1. 9,36	12.45.17,64	A.
	β Ursæ Minoris....	147.30	1.44,0	48,6	46,0	49,4	49,2	48,2			147.31.47,50	A.
July 28	(c) ☉ S.L. M.....	203.25	2.37,3	52,6	37,3	51,1	48,2	46,3	5,622	+1.32,20	203.29.17,37	J.G.
	☉ N.L.....	202.55	2.39,1	52,3	40,4	50,4	48,0	45,8			202.57.45,67	J.G.
	(d) α Ophiuchi R. M..	310.35	0.55,0	57,8	60,0	56,8	59,8	59,7	5,011	+1.44,94	310.37.43,01	J.G.
	α Ophiuchi.....	209.35	4.22,1	26,9	25,7	27,0	25,2	29,2			209.39.25,52	J.G.
	(e) Venus N.L.....	199.50	1.29,7	36,0	31,5	34,8	33,8	33,8			199.51.33,10	J.G.
July 29	(e) ☉ N.L. M.....	203.10	0. 7,3	14,9	10,9	13,3	14,1	12,9	5,833	+1.27,81	203.11.40,01	J.G.
	☉ S.L.....	203.40	3. 9,3	15,9	12,2	16,3	15,3	13,5			203.43.13,38	J.G.
	α Hercules R. M....	312.30	0.27,4	32,9	30,2	32,7	34,1	34,8	7,112	+1. 1,16	312.31.33,11	J.G.
	α Hercules.....	207.45	0.32,3	33,7	35,6	36,7	38,3	37,9			207.45.36,52	J.G.
	δ Urs. Min. R. M....	24.25	3.41,4	50,4	44,3	48,2	47,5	46,7	5,072	+1.43,79	24.30.29,76	J.G.
	δ Ursæ Minoris....	135.45	1.36,4	41,9	37,8	40,8	40,6	40,6			135.46.39,50	J.G.
	β Lyræ R. M.....	331. 5	1.12,7	18,9	14,9	17,5	19,6	12,9	8,933	+23,22	331. 6.39,15	J.G.
	β Lyræ.....	189.10	0.23,0	28,3	24,7	29,2	27,2	31,7			189.10.27,30	J.G.
	Uranus.....	234.40	3.32,8	37,5	36,8	34,4	36,0	35,2			234.43.35,05	J.G.
	Venus N.L.....	199.55	3.46,3	52,7	49,8	50,9	50,8	49,3			199.58.49,52	J.G.
July 30	☉ S.L. M.....	203.55	0.27,8	37,1	31,6	34,5	36,3	31,8	4,667	+1.52,11	203.57.25,23	J.G.
	☉ N.L.....	203.25	0.48,9	57,3	52,3	54,9	57,5	52,1			203.25.53,73	J.G.
	(f) ☽ N.L. M.....	222.15	2.16,2	24,1	17,7	23,0	23,7	22,1	8,580	+30,77 -4,27	222.17.47,37	G.
	☽ N.L. M.....	222.15	2.16,2	24,1	17,7	23,0	23,7	22,1	8,430	+34,07 -8,54	222.17.46,40	G.
	α Hercules R. M....	312.30	0.54,0	59,3	58,2	59,3	60,3	61,1	8,455	+33,18	312.31.31,78	J.G.
	α Hercules.....	207.45	0.31,8	38,1	33,1	36,2	39,2	36,0			207.45.35,67	J.G.
	(g) α Lyncis SP. R. M.	56.15	2.33,7	40,9	35,2	39,8	39,7	40,9	2,682	+2.33,64 +0,28	56.20.11,99	J.G.
	α Lyncis SP.....	103.55	1.52,2	55,7	54,1	58,2	56,1	56,3		-0,28	103.56.54,94	J.G.
	δ Urs. Min. R. M....	24.25	3.32,2	41,0	32,4	38,8	37,9	36,2	4,565	+1.54,36	24.30.30,38	J.G.
	δ Ursæ Minoris....	135.45	1.38,1	42,3	37,3	41,9	40,4	42,1			135.46.40,15	J.G.
	β Lyræ R. M.....	331. 5	1.22,4	26,9	23,7	25,2	27,8	25,2	9,309	+15,39	331. 6.40,42	J.G.
	β Lyræ.....	189.10	0.25,2	28,7	24,7	30,1	27,9	31,7			189.10.28,00	J.G.
	Uranus.....	234.40	4.20,4	23,2	23,1	20,9	24,3	23,0			234.44.21,98	J.G.
	(h) Venus S.L.....	200. 5	1.55,0	60,2	60,1	60,2	58,3	58,1			200. 6.58,42	J.G.
July 31	☉ N.L. M.....	203.35	3.54,2	59,9	59,7	60,3	59,2	57,3	5,978	+1.24,79	203.40.22,76	J.G.
	☉ S.L.....	204.10	1.53,9	60,2	58,7	59,8	58,7	56,2			204.11.57,68	J.G.
	(i) ☽ N.L. M.....	228.30	4.15,9	21,7	19,7	19,4	19,9	17,8	4,055	+2. 4,46 +8,50	228.36.31,53	J.G.
	☽ N.L. M.....	228.30	4.15,9	21,7	19,7	19,4	19,9	17,8	3,900	+2. 7,93 +4,25	228.36.30,75	J.G.
	☽ N.L.....	228.35	1.24,3	29,3	27,9	27,1	29,4	26,9			228.36.27,32	J.G.
	☽ N.L. M.....	228.35	1.24,3	29,3	27,9	27,1	29,4	26,9	9,623	+9,22 -8,50	228.36.28,04	J.G.

(a) Hurried: between 5<sup>th</sup> wire and comb.  
 (b) The N.L. about one-third of an interval after the 4<sup>th</sup> wire: the S.L. between 5<sup>th</sup> wire and comb: both are corrected for change of N.P.D. in 30': I remarked that the diameter was probably taken a little too large.  
 (c) Bad motion.

(d) Cloudy: A was not read: it is supplied by comparing A+B with the mean of C+D and E+F for α Hercules R. (e) Dreadfully unsteady.  
 (f) At 4<sup>th</sup> and 5<sup>th</sup> wires: very faint.  
 (g) At 2<sup>d</sup> and 4<sup>th</sup> wires. (h) Very doubtful.  
 (i) At 1<sup>st</sup>, 2<sup>d</sup>, 3<sup>d</sup>, and 5<sup>th</sup> wires: limb not good and very faint.



Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi- diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
"	° ' "	Inch.	°	°	"	"	"	"	° ' "	
	31. 41. 19,96	30,070	70,5	73,1	34,55	4,40		15. 45,70	69. 13. 12,69	☉.
	31. 20. 59,49	30,136	69,5	74,3	34,10	4,36		15. 45,80	69. 24. 23,31	☉.
32,51	31. 52. 35,18				34,81	4,43			69. 24. 28,04	☉.
	32. 9. 32,68	30,125	71,2	72,2	35,31				69. 57. 16,27	Arcturus R.
32,57	32. 9. 31,57								69. 57. 15,16	Arcturus.
	-22. 36. 44,58	30,140	71,0	71,0	23,46				15. 10. 0,24	β Urs. Min. R.
	-22. 36. 45,56								15. 9. 59,26	β Ursæ Minoris.
34,27	33. 20. 43,12	29,974	71,3	77,6	36,40	4,61		15. 46,50	70. 52. 36,69	☉.
	32. 49. 11,42				35,68	4,55			70. 52. 37,33	☉.
	39. 30. 51,24	30,053	65,0	62,2	47,10				77. 18. 46,62	α Ophiuchi R.
	39. 30. 51,27								77. 18. 46,65	α Ophiuchi.
	29. 42. 58,85	30,120	72,8	69,2	32,23	2,62	9,578	4,46	67. 30. 41,20	Venus.
34,82	33. 3. 5,76	30,108	70,2	72,2	36,53	4,58		15. 46,60	71. 6. 32,59	☉.
	33. 34. 39,13				37,26	4,64			71. 6. 33,43	☉.
	37. 37. 1,14	30,092		69,0	43,48				75. 24. 52,90	α Herculis R.
34,63	37. 37. 2,27								75. 24. 54,03	α Herculis.
	-34. 21. 55,51	30,089	68,0	66,5	38,78				3. 24. 33,99	δ Urs. Min. R.
33,23	-34. 21. 54,75								3. 24. 34,75	δ Ursæ Minoris.
	19. 1. 55,10			66,0	19,59				56. 49. 22,97	β Lyræ R.
	19. 1. 53,05								56. 49. 20,92	β Lyræ.
	64. 35. 0,80	30,074	64,0	61,6	1. 59,86	0,40			102. 24. 8,54	Uranus.
	29. 50. 15,27	30,080	77,2	73,0	32,10	2,62	9,549	5,26	67. 37. 58,29	Venus.
33,73	33. 48. 50,98	30,040	72,1	74,9	37,32	4,67		15. 46,70	71. 20. 45,21	☉.
	33. 17. 19,48				36,58	4,61			71. 20. 46,43	☉.
	52. 9. 13,12	30,004	74,6	79,4	1. 10,90	46. 3,16		15. 57,72	89. 27. 26,86	♃.
	52. 9. 12,15								89. 27. 25,89	♃.
33,47	37. 37. 2,47	30,000	72,1	72,2	43,09				75. 24. 53,84	α Herculis R.
	37. 37. 1,42								75. 24. 52,79	α Herculis.
35,27	-66. 11. 37,74		70,3	68,0	2. 7,03				-28. 26. 36,49	α Lyncis SP. R.
	-66. 11. 39,31								-28. 26. 38,06	α Lyncis SP.
34,21	-34. 21. 56,13		69,0	67,1	38,62				3. 24. 33,53	δ Urs. Min. R.
	-34. 21. 54,10								3. 24. 35,56	δ Ursæ Minoris.
	19. 1. 53,83				19,49				56. 49. 21,60	β Lyræ R.
	19. 1. 53,75								56. 49. 21,52	β Lyræ.
	64. 35. 47,73		64,2	61,3	1. 59,70	0,40			102. 24. 55,31	Uranus.
	29. 58. 24,17	30,040	70,6	64,5	32,78	2,63	10,568	5,56	67. 45. 57,24	Venus.
34,21	33. 31. 48,51	30,028	67,1	66,8	37,49	4,64		15. 46,80	71. 35. 16,44	☉.
	34. 3. 23,43				38,24	4,70			71. 35. 18,45	☉.
	58. 27. 57,28	30,010	69,2	69,5					95. 42. 39,11	♃.
	58. 27. 56,50								95. 42. 38,33	♃.
	58. 27. 53,07				1. 31,39	50. 0,94		16. 3,10	95. 42. 34,90	♃.
	58. 27. 53,79								95. 42. 35,62	♃.

Coincidence of Micrometer Wire with fixed Wire = 10',050. From July 28. = 10',054. One revolution = 20'',833.  
 Correction for Runs = - 1'',1. From July 28. = - 3'',5.  
 Adopted Zenith Point = 170°. 8'. 33'',06. From July 28. = 170°. 8'. 34'',25.  
 Assumed Co-latitude = 37°. 47'. 8'',28.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
			° ' "	° ' "	° ' "	° ' "	° ' "	° ' "				
July 31	<i>a</i> Lyncis SP. R. M.	56.15	3.37,2	44,2	39,9	43,3	42,9	44,0	5,742	+ 1.29,83	56.20.11,33	J.G.
	(a) <i>a</i> Lyncis SP. ....	103.55	1.55,3	59,8	59,2	60,3	59,2	60,0		- 0,28	103.56.58,45	J.G.
	(b) $\delta$ Urs. Min. R. M...	24.25	3.2,5	11,5	7,2	10,1	8,9	7,7	3,149	+ 2.23,85	24.30.31,47	J.G.
	$\delta$ Ursæ Minoris .....	135.45	1.39,2	43,8	40,7	43,4	42,1	42,2			135.46.41,70	J.G.
	$\beta$ Lyræ R. M. ....	331.5	1.1,2	6,0	6,0	5,9	7,3	4,7	8,209	+ 38,31	331.6.43,36	J.G.
	$\beta$ Lyræ.....	189.10	0.25,6	27,3	27,0	30,9	28,2	32,0			189.10.28,45	J.G.
	Uranus.....	234.45	0.6,1	9,2	10,3	9,0	10,0	10,2			234.45.9,13	J.G.
	Venus S.L.....	200.15	0.30,8	35,9	33,5	36,3	35,1	34,2			200.15.34,23	J.G.
Aug. 1	$\odot$ N.L. M.....	203.50	3.57,1	63,3	60,5	64,1	61,9	59,9	6,643	+ 1.10,93	203.55.11,60	J.G.
	$\odot$ S.L.....	204.25	1.44,2	51,7	46,5	50,7	49,2	46,5			204.26.47,92	J.G.
	(c) $\rangle$ N.L. M.....	234.35	3.23,9	30,0	26,0	29,2	29,7	26,9	5,103	+ 1.42,62 + 8,04	234.40.17,88	J.G.
	$\rangle$ N.L. M.....	234.35	3.23,9	30,0	26,0	29,2	29,7	26,9	4,995	+ 1.45,12 + 4,02	234.40.16,36	J.G.
	$\rangle$ N.L.....	234.40	0.11,2	18,2	15,0	17,2	18,6	16,1			234.40.16,03	J.G.
	$\rangle$ N.L. M.....	234.40	0.11,2	18,2	15,0	17,2	18,6	16,1	9,871	+ 3,87 - 4,02	234.40.15,88	J.G.
	$\rangle$ N.L. M.....	234.40	0.11,2	18,2	15,0	17,2	18,6	16,1	9,800	+ 5,54 - 8,04	234.40.13,53	J.G.
	$\alpha$ Aquarii R. M.....	296.45	2.2,7	10,6	7,0	10,0	5,4	5,0	1,564	+ 2.56,74	296.50.3,29	J.G.
	$\alpha$ Aquarii.....	223.25	2.5,2	9,2	7,7	10,5	7,9	9,0			223.27.8,02	J.G.
	Uranus.....	234.45	0.55,8	59,9	57,0	60,1	58,1	59,4			234.45.58,28	J.G.
Aug. 2	Venus S.L.....	200.30	4.38,5	44,0	42,1	43,6	41,3	41,4			200.34.41,27	J.G.
Aug. 3	$\odot$ N.L. M.....	204.20	4.41,1	47,8	44,2	47,9	43,7	45,8	7,230	+ 58,72	204.25.43,25	J.G.
	$\odot$ S.L.....	200.55	2.13,9	20,8	16,9	21,3	17,2	18,7			204.57.17,87	J.G.
	(d) $\rangle$ N.L. M.....	244.25	3.57,8	63,9	61,4	63,5	62,8	62,3	89,865	+ 3.31,74 + 5,50	244.32.38,72	J.G.
	$\rangle$ N.L. M.....	244.25	3.57,8	63,9	61,4	63,5	62,8	62,3	89,754	+ 3.34,32 + 2,75	244.32.38,55	J.G.
	$\rangle$ N.L.....	244.30	2.37,5	44,1	39,8	43,3	41,7	43,3			244.32.41,32	J.G.
	$\rangle$ N.L. M.....	244.30	2.37,5	44,1	39,8	43,3	41,7	43,3	9,915	+ 2,95 - 2,75	244.32.41,52	J.G.
	$\rangle$ N.L. M.....	244.30	2.37,5	44,1	39,8	43,3	41,7	43,3	9,842	+ 4,67 - 5,50	244.32.40,49	J.G.
	$\alpha$ Cygni R. M.....	342.35	0.5,9	10,1	13,9	9,5	12,9	10,3	3,138	+ 2.23,96	342.37.34,39	J.G.
	$\alpha$ Cygni.....	177.35	4.31,2	39,6	36,2	37,1	36,9	38,3			177.39.36,02	J.G.
	(e) $\beta$ Cephei R. M.....	7.40	3.30,5	38,9	34,9	36,8	35,0	32,9	4,002	+ 2.5,95	7.45.40,37	J.G.
$\beta$ Cephei.....	152.30	1.28,1	34,1	31,1	33,1	31,3	32,8			152.31.31,58	J.G.	
$\alpha$ Aquarii R. M.....	296.45	2.9,7	15,3	14,3	13,1	11,3	12,7	1,740	+ 2.53,08	296.50.5,56	J.G.	
$\alpha$ Aquarii.....	223.25	2.3,5	7,6	7,9	7,2	5,9	5,7			223.27.6,05	J.G.	
Uranus.....	234.45	2.27,0	30,0	31,4	28,1	28,9	28,4			234.47.28,68	J.G.	
Venus S.L.....	200.45	0.7,5	13,8	14,0	12,9	12,9	12,3			200.45.12,22	J.G.	
Aug. 4	$\odot$ S.L. M.....	205.10	1.23,2	29,1	27,1	27,9	28,8	26,7	5,640	+ 1.31,83	205.12.58,80	J.G.
	$\odot$ N.L.....	204.40	1.20,1	26,4	24,1	25,0	25,6	24,8			204.41.24,17	J.G.

(a) Near the 4<sup>th</sup> wire.  
(b) Not good.

(c) At the five wires: very faint: unsatisfactory.  
(d) At the five wires.  
(e) A blur.



Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi- diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.	
			Attach.	Free.							
"	" ' "	Inch.	°	°	" "	" "	r	" "	" ' "		
34,89	- 66 . 11 . 37,08	30,014	64,2	61,1	2 . 8,85					- 28 . 26 . 37,65	$\alpha$ Lyncis SP. R.
	- 66 . 11 . 35,80									- 28 . 26 . 36,37	$\alpha$ Lyncis SP.
36,59	- 34 . 21 . 57,22	30,012		62,5	38,99					3 . 24 . 32,07	$\delta$ Urs. Min. R.
	- 34 . 21 . 52,55									3 . 24 . 36,74	$\delta$ Ursæ Minoris.
35,91	19 . 1 . 50,89			61,4	19,72					56 . 49 . 18,89	$\beta$ Lyræ R.
	19 . 1 . 54,20									56 . 49 . 22,20	$\beta$ Lyræ.
	64 . 36 . 34,88	30,009	60,0	57,2	2 . 0,80	0,40	10,594	5,62	102 . 25 . 43,56	Uranus.	
	30 . 6 . 59,98	30,050	73,0	68,4	32,73	2,63			67 . 54 . 32,74	Venus.	
	33 . 46 . 37,35	30,004	68,2	69,1	37,64	4,67		15 . 47,00	71 . 50 . 5,60	$\odot$ .	
	34 . 18 . 13,67				38,39	4,73			71 . 50 . 8,61	$\odot$ .	
	64 . 31 . 43,63	29,960	69,2 <sup>n</sup>	70,7					101 . 43 . 41,86	$\text{D}$ .	
	64 . 31 . 42,11								101 . 43 . 40,34	$\text{D}$ .	
	64 . 31 . 41,78				1 . 57,02	53 . 14,69		16 . 7,62	101 . 43 . 40,01	$\text{D}$ .	
	64 . 31 . 41,63								101 . 43 . 39,86	$\text{D}$ .	
	64 . 31 . 39,28								101 . 43 . 37,51	$\text{D}$ .	
	53 . 18 . 30,96	29,921	63,7	61,3	1 . 16,34				91 . 6 . 55,58	$\alpha$ Aquarii R.	
35,66	53 . 18 . 33,77				1 . 59,54	0,40			91 . 6 . 58,39	$\alpha$ Aquarii.	
	64 . 37 . 24,03								102 . 26 . 31,45	Uranus.	
	50 . 26 . 7,02	29,980	68,2	65,7	33,26	2,65	10,555	5,22	68 . 13 . 40,69	Venus.	
	34 . 17 . 9,00	29,972	66,7	66,8	38,50	4,73			15 . 47,30	72 . 20 . 38,35	$\odot$ .
	34 . 48 . 43,62									72 . 20 . 39,06	$\odot$ .
	74 . 24 . 4,47	29,934	65,0	62,8						111 . 33 . 38,52	$\text{D}$ .
	74 . 24 . 4,30										
	74 . 24 . 7,07				3 . 20,58	57 . 7,04		16 . 12,23	111 . 33 . 41,12	$\text{D}$ .	
	74 . 24 . 7,27								111 . 33 . 41,32	$\text{D}$ .	
	74 . 24 . 6,24								111 . 33 . 40,29	$\text{D}$ .	
35,21	7 . 30 . 59,86	29,937	56,6	53,1	7,65					45 . 18 . 15,79	$\alpha$ Cygni R.
	7 . 31 . 1,77									45 . 18 . 17,70	$\alpha$ Cygni.
35,98	- 17 . 37 . 6,12		56,2	52,0	18,45					20 . 9 . 43,71	$\beta$ Cephei R.
	- 17 . 37 . 2,67									20 . 9 . 47,16	$\beta$ Cephei.
35,81	53 . 18 . 28,69	29,930	56,0		1 . 17,80					91 . 6 . 54,77	$\alpha$ Aquarii R.
	53 . 18 . 31,80									91 . 6 . 57,88	$\alpha$ Aquarii.
	64 . 38 . 54,43	29,933	67,8	65,8	2 . 1,97	0,41			102 . 28 . 4,27	Uranus.	
	30 . 36 . 37,97									33,43	2,66
	35 . 4 . 24,55	29,912	66,1	68,3	39,46	4,83		15 . 47,40	72 . 36 . 20,06	$\odot$ .	
	34 . 32 . 49,92				38,69	4,77			72 . 36 . 19,52	$\odot$ .	

Coincidence of Micrometer Wire with fixed Wire = 10',054 or 100',054. One revolution = 20'',833.  
 Correction for Runs = - 3'',5.  
 Adopted Zenith Point = 170° . 8' . 34'',25.  
 Assumed Co-latitude = 37° . 47' . 8'',28.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
			° ' "	° ' "	° ' "	° ' "	° ' "	° ' "				
Aug. 4	(a) ) N.L. M.....	247.30	1.28,2	32,2	32,1	31,1	33,4	30,6	4,720	+ 1.50,61 + 3,24	247.33.24,93	J.G.
	) N.L. M.....	247.30	1.28,2	32,2	32,1	31,1	33,4	30,6	4,680	+ 1.51,69 + 1,62	247.33.24,39	J.G.
	) N.L.....	247.30	3.21,8	25,3	25,2	24,2	27,2	24,1			247.33.24,23	J.G.
	) N.L. M.....	247.30	3.21,8	25,3	25,2	24,2	27,2	24,1	9,940	+ 2,44 - 1,62	247.33.25,05	J.G.
	) N.L. M. ....	247.30	3.21,8	25,3	25,2	24,2	27,2	24,1	9,885	+ 3,77 - 3,24	247.33.24,76	J.G.
	A. S. C. 2085.....	250.40	3.58,1	63,5	63,6	61,5	64,1	59,7			250.44.1,28	J.G.
	μ <sup>1</sup> Sagittarii.....	243.20	3.54,9	60,1	61,1	59,1	60,0	56,9			243.23.58,22	J.G.
	δ Urs. Min. R. M...	24.25	2.37,4	46,0	39,1	45,3	42,8	42,4	1,976	+ 2.48,29	24.30.30,16	J.G.
	δ Ursæ Minoris.....	135.45	1.32,5	39,0	34,5	39,2	36,2	37,4			135.46.36,28	J.G.
	β Lyræ R. M.....	331.5	0.5,6	12,5	10,3	11,1	13,0	11,1	5,691	+ 1.30,77	331.6.41,35	J.G.
	β Lyræ.....	189.10	0.20,0	25,3	23,5	25,9	26,8	26,9			189.10.24,70	J.G.
	(b) β <sup>2</sup> Lyræ R. M.....	331.5	0.5,6	12,5	10,3	11,1	13,0	11,1	7,460	+ 53,65 - 0,22	331.6.4,01	J.G.
	(c) β <sup>2</sup> Lyræ M.....	189.10	0.20,0	25,3	23,5	25,9	26,8	26,9	8,122	+ 40,41 + 0,22	189.11.5,33	J.G.
	(d) Uranus.....	234.45	3.13,2	16,3	18,3	13,7	16,5	15,9			234.48.15,27	J.G.
	Venus S.L.....	200.55	1.15,1	23,2	18,0	23,8	20,4	21,2			200.56.20,13	J.G.
Aug. 5	⊙ N.L. M.....	204.55	1.9,8	17,4	13,4	17,8	16,0	16,0	7,010	+ 1.3,29	204.57.18,22	J.G.
	⊙ S.L.....	205.25	3.50,5	60,1	55,4	59,3	56,9	56,2			205.28.55,95	J.G.
Aug. 6	γ Draconis.....	170.50	0.29,3	33,3	31,3	35,1	35,3	36,3			170.50.33,35	J.G.
	(e) * R. 18 <sup>h</sup> . 18 <sup>m</sup> . 20 <sup>s</sup> .	170.50	3.30,1	35,3	33,0	34,0	35,6	34,1		+ 0,19	170.53.33,29	J.G.
	α Lyræ R. M.....	336.30	2.41,0	47,2	43,2	46,3	48,8	44,2	6,056	+ 1.23,20	336.34.7,87	J.G.
α Lyræ.....	183.40	2.54,8	62,3	59,8	60,8	61,8	58,9			183.42.59,25	J.G.	
Aug. 7	γ Draconis.....	170.50	0.29,3	37,1	34,2	36,9	37,1	36,5			170.50.35,10	G.
	* R. 18 <sup>h</sup> . 18 <sup>m</sup> . 20 <sup>s</sup> .	170.50	3.31,8	36,0	35,6	36,3	34,8	35,9			170.53.34,48	J.G.
	δ Urs. Min. R. M...	24.25	3.30,0	38,5	33,7	36,9	34,3	34,3	4,490	+ 1.55,96	24.30.29,99	J.G.
	δ Ursæ Minoris.....	135.45	1.35,1	40,7	39,2	39,3	38,7	39,3			135.46.38,45	J.G.
	α Lyræ R. M.....	336.30	1.34,8	39,8	40,2	38,7	40,3	36,8	2,808	+ 2.30,87	336.34.9,04	J.G.
	α Lyræ.....	183.40	2.54,5	62,8	60,8	61,3	60,8	60,8			183.42.59,68	J.G.
	π Capricorni.....	241.0	3.18,7	23,2	22,2	23,6	21,6	23,8			241.3.21,63	J.G.
	(f) ) S.L. M.....	246.25	3.2,5	9,1	7,2	9,3	4,3	8,0	0,880	+ 3.10,64 - 4,58	246.31.12,28	J.G.
	) S.L. M.....	246.25	3.2,5	9,1	7,2	9,3	4,3	8,0	0,979	+ 3.8,83 - 2,29	246.31.12,76	J.G.
	ζ Capricorni.....	245.20	4.55,7	59,0	59,3	59,2	56,2	57,6			245.24.57,00	J.G.
	α Aquarii R. M.....	296.45	1.25,1	28,2	27,3	28,2	25,3	28,1	89,550	+ 3.38,75	296.50.5,55	J.G.
	α Aquarii.....	223.25	2.0,6	4,8	4,0	5,4	2,3	4,1			223.27.3,20	J.G.
Uranus.....	234.50	0.38,9	42,8	41,4	42,3	40,6	43,4			234.50.41,47	J.G.	
(g) Jupiter N.L.....	199.10	2.28,4	34,4	32,8	34,9	32,5	32,3			199.12.32,13	J.G.	
Mercury center....	202.15	3.11,2	17,3	15,2	17,9	15,5	14,2			202.18.14,68	J.G.	
Venus S.L.....	201.30	3.27,0	33,5	31,3	32,7	30,4	29,2			201.33.30,10	J.G.	
Aug. 8	⊙ S.L. M.....	206.15	2.26,0	33,9	30,2	33,9	31,2	30,4	7,188	+ 59,63	206.18.30,16	J.G.
	⊙ N.L.....	205.45	1.48,6	56,1	53,2	55,1	53,9	52,8			205.46.52,98	J.G.
	(h) α Aquilæ R. M.....	306.20	0.49,3	55,1	55,1	56,3	55,7	54,0	3,799	+ 2.10,23	306.23.4,35	J.G.
	α Aquilæ.....	213.50	4.1,7	7,0	5,3	6,9	5,0	4,9			213.54.4,47	J.G.
	χ <sup>1</sup> Capricorni.....	244.5	3.58,2	62,1	63,3	61,8	60,8	60,9			244.9.0,52	J.G.
	ζ Capricorni.....	245.20	4.52,0	56,1	57,4	54,6	54,8	53,0			245.24.53,83	J.G.

(a) At the five wires: great motion.  
 (b) Between 1<sup>st</sup> and 2<sup>d</sup> wires.  
 (c) Between 4<sup>th</sup> and 5<sup>th</sup> wires.  
 (d) Very cloudy and bad.

(e) At the 4<sup>th</sup> wire: clouded.  
 (f) At 1<sup>st</sup> and 2<sup>d</sup> wires: very good.  
 (g) Very faint: the limb scarcely visible.  
 (h) A blur.



Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi- diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
"	" ' "	Inch.	"	"	" "	" "	"	" "	" ' "	
	77.24.50,68	29,920	65,0	63,1					114.34.27,62	♃.
	77.24.50,14								114.34.27,08	♃.
	77.24.49,98				4. 8,54	57.51,75		16. 11,87	114.34.26,92	♃.
	77.24.50,80								114.34.27,74	♃.
	77.24.50,51								114.34.27,45	♃.
	80.35.27,03	29,922	64,6	63,4	5.28,92				118.28. 4,23	A. S. C. 2085.
	73.15.23,97				3. 6,25				111. 5.38,50	μ <sup>1</sup> Sagittarii.
33,22	-34.21.55,91		64,5	63,5	38,80				3.24.33,57	δ Urs. Min. R.
	-34.21.57,97								3.24.31,51	δ Ursæ Minoris.
33,03	19. 1.52,90			62,2	19,63				56.49.20,81	β Lyrae R.
	19. 1.50,45								56.49.18,36	β Lyrae.
	19. 2.30,24								56.49.58,16	β <sup>2</sup> Lyrae R.
34,67	19. 2.31,08				19,64				56.49.59,00	β <sup>2</sup> Lyrae.
	64.39.41,02	29,883	59,3	55,2	2. 1,06	0,41			102.28.49,95	Uranus.
	30.47.45,88	29,909	72,0	71,2	33,30	2,67	10,599	5,68	68.35.19,11	Venus.
	34.48.43,97	29,892	72,0	73,3	38,67	4,80			72.52.13,62	☉.
	35.20.21,70				39,43	4,86		15.47,50	72.52.17,05	☉.
	0.41.59,10	29,893	68,7	68,0	0,69				38.29. 8,07	γ Draconis.
	0.44.59,04				0,74				38.32. 8,06	* R18 <sup>h</sup> .18 <sup>m</sup> .20 <sup>s</sup> .
33,56	13.34.26,38		67,8	67,4	13,59				51.21.48,25	α Lyrae R.
	13.34.25,00								51.21.46,87	α Lyrae.
	0.42. 0,85	29,952	61,0	58,7	0,70				38.29. 9,83	γ Draconis.
	0.45. 0,23				0,75				38.32. 9,26	* R18 <sup>h</sup> .18 <sup>m</sup> .20 <sup>s</sup> .
34,22	-34.21.55,74	29,966	60,3	58,0	39,28				3.24.33,26	δ Urs. Min. R.
	-34.21.55,80								3.24.33,20	δ Ursæ Minoris.
34,36	13.34.25,21				13,88				51.21.47,37	α Lyrae R.
	13.34.25,43								51.21.47,59	α Lyrae.
	70.54.47,38	29,989	58,6	56,8	2.44,97				108.44.40,63	π Capricorni.
	76.22.38,03	29,996	58,0	55,3					113. 1. 6,08	♃.
	76.22.38,51				3.54,01	56.38,79		15.55,45	113. 1. 6,56	♃.
	75.16.22,75		56,6	55,1	3.36,48				113. 7. 7,51	ζ Capricorni.
34,38	53.18.28,70	30,010	57,0	54,7	1.17,59				91. 6.54,57	α Aquarii R.
	53.18.28,95								91. 6.54,82	α Aquarii.
	64.42. 7,22				2. 1,93	0,41			102.31.17,02	Uranus.
	29. 3.57,88	30,121	60,2	60,1	31,97	0,70	8,635	14,80	66.51.52,23	Jupiter.
	32. 9.40,43	30,144	64,4	62,4	36,02	4,76			69.57.19,97	Mercury.
	31.24.55,85			63,0	34,95	2,70	10,579	5,45	69.12.30,93	Venus.
	36. 9.55,91	30,136	64,3	65,0	41,65	4,96			73.41.52,88	☉.
	35.38.18,73				40,85	4,90		15.48,00	73.41.50,96	☉.
34,41	43.45.29,90	30,177	58,2	56,0	55,59				81.33.33,77	α Aquilæ R.
	43.45.30,22								81.33.34,09	α Aquilæ.
	74. 0.26,27		55,2	54,5	3.20,52				111.50.55,07	χ <sup>1</sup> Capricorni.
	75.16.19,58				3.38,07				113. 7. 5,93	ζ Capricorni.

Coincidence of Micrometer Wire with fixed Wire = 10',054. From Aug 6. = 10',056 or 100',056.

One revolution = 20",833.

Correction for Runs = -3",5. From Aug. 6. = -5",0.

Adopted Zenith Point = 170°. 8'. 34",25.

Assumed Co-latitude = 37°. 47'. 8",28.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
			° ' "	" "	" "	" "	" "	" "				
Aug. 8	$\beta$ Cephei R. M.....	7.40	2.54,5	63,0	61,3	61,0	60,8	58,1	2,292	+ 2.41,62	7.45.40,92	J.G.
	$\beta$ Cephei.....	152.30	1.23,8	29,9	28,8	28,8	27,3	29,2			152.31.27,73	J.G.
	(a.) $\delta$ S.L. M.....	242.45	1.24,6	29,4	27,3	29,3	27,7	29,3	4,740	+ 1.50,23 - 6,22	242.48.11,71	J.G.
	$\delta$ S.L. M.....	242.45	1.24,6	29,4	27,3	29,3	27,7	29,3	4,930	+ 1.46,52 - 3,11	242.48.11,11	J.G.
	$\delta$ N.L.....	242.15	1.30,2	35,8	31,6	35,0	32,3	34,9			242.16.33,05	J.G.
	$\delta$ N.L. M.....	242.15	1.30,2	35,8	31,6	35,0	32,3	34,9	10,260	- 4,19 + 3,11	242.16.31,97	J.G.
	$\delta$ N.L. M.....	242.15	1.30,2	35,8	31,6	35,0	32,3	34,9	10,425	- 7,44 + 6,22	242.16.31,83	J.G.
	35 Aquarii.....	241.35	2.42,9	47,5	45,2	47,9	45,9	47,0			241.37.45,62	J.G.
Uranus.....	234.50	1.24,9	29,1	25,8	28,9	25,3	29,0			234.51.26,93	J.G.	
Aug. 9	$\alpha$ Cephei R. M.....	359.45	1.26,7	34,1	33,7	32,8	34,4	31,1	3,202	+ 2.22,67	359.48.54,55	J.G.
	$\alpha$ Cephei.....	160.25	3.10,6	16,1	14,8	16,1	14,9	14,6			160.28.13,98	J.G.
	$\beta$ Aquarii R. M.....	291.35	3.8,9	15,4	13,9	14,7	11,1	12,2	5,332	+ 1.38,29	291.39.50,46	J.G.
	$\beta$ Aquarii.....	228.35	2.13,1	18,0	15,7	17,5	15,6	17,5			228.37.15,87	J.G.
	35 Aquarii.....	241.35	2.45,2	49,3	50,0	47,9	50,1	47,0			241.37.47,78	J.G.
	Uranus.....	234.50	2.17,1	20,7	19,8	19,6	19,1	21,0			234.52.19,17	J.G.
	$\sigma$ Aquarii.....	233.50	0.24,1	29,2	25,1	29,0	26,4	29,2			233.50.27,10	J.G.
	(b.) $\delta$ S.L. M.....	238.5	0.24,8	29,1	27,9	28,3	28,9	29,4	12,775	- 57,16 - 6,66	238.4.24,18	J.G.
	$\delta$ S.L. M.....	238.5	0.24,8	29,1	27,9	28,3	28,9	29,4	12,977	- 1.1,12 - 3,05	238.4.23,83	J.G.
	$\delta$ N.L.....	237.30	3.0,5	5,7	3,9	5,0	4,1	6,0			237.33.3,70	J.G.
	$\delta$ N.L. M.....	237.30	3.0,5	5,7	3,9	5,0	4,1	6,0	10,329	- 5,63 + 3,61	237.33.1,68	J.G.
	$\delta$ N.L. M.....	237.30	3.0,5	5,7	3,9	5,0	4,1	6,0	10,560	- 10,24 + 7,22	237.33.0,68	J.G.
	(c) Jupiter N.L.....	199.10	3.19,7	29,1	24,2	27,5	26,3	24,5			199.13.24,67	J.G.
	(d) Mercury center.....	202.15	3.52,0	62,9	55,9	60,2	60,1	54,9		+ 0,27	202.18.57,29	J.G.
Venus N.L.....	202.0	1.1,0	12,0	5,4	10,9	9,9	6,3			202.1.7,40	J.G.	
Aug. 10	(e) $\odot$ S.L. M.....	206.50	2.26,9	36,1	28,1	35,0	34,0	31,1	9,095	+ 19,89	206.52.51,34	J.G.
	$\odot$ N.L.....	206.20	1.8,8	19,0	11,1	18,9	16,9	14,2			206.21.14,62	J.G.
	$\gamma$ Draconis.....	170.50	0.28,8	35,0	32,2	33,1	37,3	32,9			170.50.33,12	J.G.
	* $\mathcal{R}$ . 18 <sup>h</sup> . 18 <sup>m</sup> . 20 <sup>s</sup> .....	170.50	3.28,3	35,2	33,0	32,9	36,3	33,8			170.53.32,67	J.G.
	$\delta$ Urs. Min. R. M.....	24.25	3.27,5	36,9	28,2	34,7	34,0	34,1	4,279	+ 2.0,36	24.30.32,34	J.G.
	$\delta$ Ursæ Minoris.....	135.45	1.33,0	36,1	33,3	35,2	37,8	38,8			135.46.35,43	J.G.
	$\alpha$ Lyræ R. M.....	336.30	0.49,2	57,8	53,5	56,6	59,6	55,0	0,819	+ 3.12,31	336.34.7,44	J.G.
	$\alpha$ Lyræ.....	183.40	2.54,0	60,9	59,1	58,9	61,1	59,1			183.42.58,35	J.G.
	$\alpha^2$ Capricorni R. M.....	284.50	1.28,3	35,5	31,2	33,9	35,1	33,1	0,570	+ 3.17,50	284.54.50,10	J.G.
	$\alpha^2$ Capricorni.....	235.20	2.13,8	19,6	15,2	18,1	20,1	19,7			235.22.17,37	J.G.
	Aug. 11	(f) $\odot$ N.L. M.....	206.35	3.1,6	11,1	5,0	10,3	9,9	7,0	8,072	+ 41,21	206.38.48,19
$\odot$ S.L.....		207.10	0.15,2	25,2	16,1	23,7	22,7	21,2			207.10.20,63	J.G.
$\alpha$ Aquilæ R. M.....		306.20	1.42,3	47,9	47,2	46,3	50,3	46,3	6,563	+ 1.12,65	306.22.59,08	J.G.
$\alpha$ Aquilæ.....		213.50	4.4,2	10,6	6,2	9,4	9,3	7,0			213.54.7,10	J.G.
$\alpha$ Cygni R. M.....		342.35	1.43,0	51,3	48,2	50,3	53,7	48,0	7,846	+ 45,92	342.37.34,70	J.G.
$\alpha$ Cygni.....		177.35	4.27,2	33,7	32,4	31,9	34,4	31,9			177.39.31,17	J.G.
Uranus M.....		234.50	3.26,8	32,2	26,4	31,4	30,7	32,2	8,650	+ 29,28	234.53.58,65	J.G.
(g) Mercury center.....		202.25	4.0,0	10,3	4,3	8,9	9,8	3,8			202.29.5,50	J.G.
Venus N.L.....	202.30	1.12,7	24,9	15,9	22,6	21,7	17,1			202.31.18,93	J.G.	

- (a) At the five wires: both limbs so nearly full that the correction is insensible.
- (b) Observed at the five wires. About 2° of the S.L. was not illuminated, and the correction +0",56 is therefore applied.
- (c) Faint.
- (d) Doubtful observation at 5<sup>th</sup> wire: the correction

- for change of N.P.D. is +0",05, and that for curvature of path +0",22.
- (e) Great undulatory motion.
- (f) Not good.
- (g) Very faint: at 5<sup>th</sup> wire: the correction for change of N.P.D. and curvature of path nearly destroy each other.



Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi- diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.					
			Attach.	Free.											
"	" ' "	Inch.	"	"	" "	" "	"	" "	" ' "						
34,33	-17.37.6,67	30,170	55,2	54,2	18,52				20.9.43,09	β Cephei R.					
	-17.37.6,52								20.9.43,24	β Cephei.					
	72.39.37,46								109.19.1,87	∩.					
	72.39.36,86								3.4,52	55.2,89	109.19.1,27	∩.			
	72.7.58,80										15.45,50	109.18.58,53	∩.		
	72.7.57,72											2.58,86	54.52,91	109.18.57,45	∩.
	72.7.57,58													109.18.57,31	∩.
71.29.11,37			55,0	2.52,05			109.19.11,70	35 Aquarii.							
64.42.52,68				2.2,60	0,41		102.32.3,15	Uranus.							
34,27	-9.40.20,30	30,196	59,5	57,0	9,89				28.6.38,09	α Cephei R.					
	-9.40.20,27								28.6.38,12	α Cephei.					
33,17	58.28.43,79	30,193	59,2	56,8	1.34,31				96.17.26,38	β Aquarii R.					
	58.28.41,62								96.17.24,21	β Aquarii.					
	71.29.13,53								109.19.13,35	35 Aquarii.					
	64.43.44,92								102.32.55,10	Uranus.					
	63.41.52,85								101.30.57,95	σ Aquarii.					
	67.55.49,93								104.36.58,12	∩.					
	67.55.49,58								2.22,08	52.47,78	104.36.57,77	∩.			
67.24.29,45			15.34,39	104.36.55,00	∩.										
67.24.27,43				2.18,48	52.35,60	104.36.52,98	∩.								
67.24.26,43						104.36.51,98	∩.								
29.4.50,42	30,198	65,3	68,4	31,56	0,71	8,683	14,30	66.52.43,85	Jupiter.						
32.10.23,04	30,218	75,5	73,9	35,31	4,51			69.58.2,12	Mercury.						
31.52.33,15				34,91	2,73	9,537	5,41	69.40.19,02	Venus.						
36.44.17,09	30,190	73,4	76,3	41,68	5,03			74.16.13,72	☉.						
36.12.40,37				40,88	4,97			74.16.12,86	☉.						
0.41.58,87	30,107	71,1	68,1	0,69				38.29.7,84	γ Draconis.						
0.44.58,42				0,74				38.32.7,44	*R.18 <sup>b</sup> .18 <sup>m</sup> .20 <sup>o</sup> .						
-34.21.58,09			69,0	66,9	38,77			3.24.31,42	δ Urs. Min. R.						
-34.21.58,82								3.24.30,69	δ Ursæ Minoris.						
13.34.26,81					13,70			51.21.48,79	α Lyræ R.						
13.34.24,10								51.21.46,08	α Lyræ.						
65.13.44,15		67,8	66,2	2.2,40				103.2.54,83	α <sup>2</sup> Capricorni R.						
65.13.43,12								103.2.53,80	α <sup>2</sup> Capricorni.						
36.30.13,94	29,948	70,3	74,9	41,11	5,01			74.33.46,82	☉.						
37.1.46,38				41,90	5,07			74.33.42,99	☉.						
43.45.35,17	29,789	69,3	68,3	53,55				81.33.37,00	α Aquilæ R.						
43.45.32,85								81.33.34,68	α Aquilæ.						
7.30.59,55	29,780	68,2	65,7	7,42				45.18.15,25	α Cygni R.						
7.30.56,92								45.18.12,62	α Cygni.						
64.45.24,40	29,747	66,2	64,8	1.58,72	0,41			102.34.30,99	Uranus.						
32.20.31,25	29,805	75,5	74,6	35,02	4,33			70.8.10,22	Mercury.						
32.22.44,68			75,1	35,03	2,76	9,552	5,25	70.10.30,48	Venus.						

Coincidence of Micrometer Wire with fixed Wire = 10',056. One revolution = 20",833.  
 Correction for Runs = -5",0.  
 Adopted Zenith Point = 170°.8.34",25.  
 Assumed Co-latitude = 37°.47'.8",28.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer or Time of Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
			° ' "	° ' "	° ' "	° ' "	° ' "	° ' "				
Aug. 12	☉ S.L. M.....	207.25	3. 2,2	13,8	6,4	10,5	11,3	6,1	9,762	+ 6,01	207.28.13,88	J.G.
	☉ N.L.....	206.55	1. 30,9	42,7	33,1	39,0	40,5	34,9			206.56.36,58	J.G.
Aug. 13	(a) ☉ N.L. M.....	207.10	4. 10,6	20,1	15,1	17,9	15,8	15,4	8,939	+ 23,14	207.14.38,26	J.G.
	☉ S.L.....	207.45	1. 11,9	21,0	15,8	19,8	18,9	17,2			207.46.17,22	J.G.
	γ Draconis.....	170.50	0. 29,2	37,8	33,6	37,1	36,3	35,8	6,880	+ 1. 6,16	170.50.34,87	J.G.
	* R 18 <sup>h</sup> . 18 <sup>m</sup> . 20 <sup>s</sup> . M.	170.50	2. 23,0	30,1	28,0	29,8	28,0	27,7			170.53.33,37	J.O.
	δ Urs. Min. R. M...	24.30	0. 20,7	29,8	24,5	28,9	27,1	26,9	9,731	+ 6,77	24.30.33,04	J.O.
	δ Ursæ Minoris.....	135.45	1. 34,3	39,1	38,3	39,0	37,7	38,4			135.46.37,53	J.O.
	(b) α Lyræ R. M.....	336.30	2. 21,1	26,8	27,5	25,9	27,7	24,0	4,995	+ 1. 45,31	336.34.10,41	J.G.
	α Lyræ.....	183.40	2. 53,2	61,9	60,0	60,8	59,0	58,2			183.42.58,37	J.G.
	α Aquilæ R. M.....	306.20	1. 52,8	58,3	59,6	57,9	58,1	57,3	6,832	+ 1. 7,05	306.23.4,07	J.G.
	α Aquilæ.....	213.50	4. 2,1	7,8	7,0	7,5	5,1	1,9			213.54.4,55	J.G.
	(c) α <sup>2</sup> Capricorni R. M.	284.50	2. 19,7	26,9	24,6	26,8	23,7	25,0	2,865	+ 2. 29,68	284.54.53,73	J.G.
	α <sup>2</sup> Capricorni.....	235.20	2. 13,9	19,0	18,0	17,0	17,9	17,9			235.22.16,92	J.G.
	Uranus M.....	234.55	0. 3,7	10,3	9,9	9,0	8,8	9,0	8,709	+ 28,06	234.55.36,49	J.G.
	(d) Jupiter N.L.....	199.15	0. 21,2	27,9	24,8	29,4	24,9	26,4			199.15.25,70	J.G.
Aug. 14	β Cephei R. M.....	7.40	3. 18,9	25,9	23,0	26,0	22,9	24,1	3,344	+ 2. 19,70	7.45.42,60	J.G.
	β Cephei.....	152.30	1. 22,1	29,7	28,8	27,9	28,1	26,1			152.31.26,88	J.O.
	α Aquarii R. M....	296.45	1. 53,2	60,0	57,9	59,1	56,4	56,6	0,965	+ 3. 9,27	296.50.6,15	J.G.
	α Aquarii.....	223.25	1. 59,2	67,0	64,6	65,8	65,3	64,1			223.27.4,00	J.G.
	Uranus M.....	234.55	1. 2,7	9,4	6,5	8,2	7,6	8,9	9,109	+ 19,73	234.56.26,76	J.G.
(e) Venus S.L.....	203.20	0. 55,0	66,0	59,8	66,3	63,1	60,2	203.21.1,57			J.G.	
Aug. 15	☉ N.L. M.....	207.50	0. 19,3	30,0	22,1	29,2	27,1	25,0	7,109	+ 1. 1,27	207.51.26,65	G.
	☉ S.L.....	208.20	2. 57,2	68,4	61,8	68,0	66,1	62,7			208.23.3,55	G.
Aug. 17	α Herculis R. M....	312.30	0. 45,3	52,8	49,9	52,2	52,1	47,8	7,933	+ 44,11	312.31.33,99	G.
	α Herculis.....	207.45	0. 27,8	37,2	30,1	37,2	35,8	33,0			207.45.33,43	G.
	β Cephei R. M.....	7.40	3. 47,2	55,9	52,8	55,3	55,9	51,1	4,673	+ 1. 52,03	7.45.44,43	G.
	β Cephei.....	152.30	1. 20,9	27,3	26,1	28,2	27,9	26,7			152.31.25,97	G.
	Uranus.....	234.55	3. 52,1	59,2	56,3	58,3	56,3	57,8	9,872	+ 1,79 + 4,10 + 3,58	234.58.56,02	G.
	(f) ) N.L.....	198.55	2. 20,7	26,8	24,2	27,2	25,7	25,3			198.57.26,39	G.
	) N.L. M.....	198.55	2. 20,7	26,8	24,2	27,2	25,7	25,3	6,082	+ 1. 23,07 - 0,32	198.57.32,28	G.
	(g) β Tauri R. M.....	326.20	2. 20,7	26,2	25,9	26,9	27,0	25,7			326.23.47,77	J.O.
	β Tauri.....	193.50	3. 17,7	22,2	19,9	21,9	22,7	21,9	5,742	+ 0,73 + 0,25	193.53.21,23	J.G.
	(h) Jupiter N.L.....	199.15	2. 28,0	36,0	29,6	36,8	32,8	32,0			199.17.32,37	G.
	(i) Venus S.L. M.....	204.10	3. 51,3	61,5	54,7	60,9	56,9	55,6	5,742	+ 1. 29,85 - 0,35	204.15.26,02	G.
(k) Mercury center...	204. 0	3. 17,0	24,8	19,8	27,0	22,1	23,1	204. 3.21,40			G.	
Aug. 18	☉ S.L. M.....	209.15	2. 52,2	61,8	57,9	63,3	59,9	59,0	4,237	+ 2. 1,11	209.19.59,64	G.
	☉ N.L.....	208.45	3. 14,1	24,8	19,7	23,9	20,8	19,3			208.48.19,88	G.
	α Ophiuchi R. M....	310.35	1. 10,3	16,7	14,9	17,5	17,2	15,8	5,769	+ 1. 29,18	310.37.44,38	J.G.
	α Ophiuchi.....	209.35	4. 18,0	28,5	22,0	27,4	27,1	23,7			209.39.23,72	J.G.
	(l) γ Draconis.....	170.50	0. 25,8	34,2	30,7	34,2	35,1	33,3	3,589	+ 2. 14,52 + 0,28	170.50.32,13	G.
	(m) α Lyncis SP. R. M.	56.15	2. 54,3	62,0	56,7	63,1	60,3	62,2			56.20.14,08	G.
	α Lyncis SP. ....	103.55	1. 51,7	56,1	57,7	55,1	56,2	53,7	4,231	+ 2. 1,34	103.56.53,65	G.
	* R. 18 <sup>h</sup> . 18 <sup>m</sup> . 20 <sup>s</sup> .	170.50	3. 27,2	34,0	31,9	33,9	35,7	33,1			170.53.32,05	G.
	δ Urs. Min. R. M...	24.25	3. 27,7	38,0	31,0	36,2	33,8	33,3	4,231	+ 2. 1,34	24.30.34,09	G.
	δ Ursæ Minoris.....	135.45	1. 32,2	35,9	35,7	34,0	38,3	35,7			135.46.35,05	G.

(a) Very great motion. (b) Blazing. (g) Observed at the 5<sup>th</sup> wire and comb.  
(c) Not good. (h) At 5<sup>th</sup> wire: the change of N.P.D. insensible: faint and unsatisfactory.  
(d) Faint and doubtful. (e) Cloudy. (i) Very unsteady.  
(f) At 4<sup>th</sup> and 5<sup>th</sup> wires: scarcely visible: observations far from good. (The limb appears to have been so faint that the observer was mistaken as to the direction in which the change of N.P.D. took place.) (k) Between 5<sup>th</sup> wire and comb: the correction for change of N.P.D. is -0",66, and that for curvature of path is +0",31. (l) Very good.  
(m) At 4<sup>th</sup> and 5<sup>th</sup> wires: not good.



Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi- diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
"	" " "	Inch.	"	"	" "	" "	r	" "	" " "	
	37.19.39,63 36.48.2,33	29,808	74,1	77,5	41,94 41,15	5,10 5,04		15.48,60	74.51.36,15 74.51.35,32	☉. ☉.
	37.6.4,01 37.37.42,97 0.42.0,62 0.44.59,28	29,982 30,055	67,0 62,0	66,5 60,0	42,74 43,56 0,70 0,75	5,08 5,14		15.48,80	75.9.38,75 75.9.40,87 38.29.9,60 38.32.8,31	☉. ☉. γ Draconis. * R18 <sup>h</sup> .18 <sup>m</sup> .20 <sup>s</sup> .
35,29	-34.21.58,79 -34.21.56,72				39,24				3.24.30,25 3.24.32,32	δ Urs. Min. R. δ Ursæ Minoris.
34,39	13.34.23,84 13.34.24,12		61,3	58,4	13,90				51.21.46,02 51.21.46,30	α Lyræ R. α Lyræ.
34,31	43.45.30,18 43.45.30,30	30,063	59,8	57,0	55,26				81.33.33,72 81.33.33,84	α Aquilæ R. α Aquilæ.
35,33	65.13.40,52 65.13.42,67 64.47.2,24 29.6.51,45			57,5	2.4,36				103.2.53,16 103.2.55,31 102.36.12,20	α <sup>2</sup> Capricorni R. α <sup>2</sup> Capricorni. Uranus.
		30,075	61,8	62,4	31,84	0,41 0,71	8,672	14,42	66.54.45,28	Jupiter.
34,74	-17.37.8,35 -17.37.7,37	30,028	58,9	56,0	18,36				20.9.41,57 20.9.42,55	β Cephei R. β Cephei.
35,08	53.18.28,10 53.18.29,75 64.47.52,51 33.12.27,32		58,5		1.17,43 2.2,20	0,41	10,542	5,06	91.6.53,81 91.6.55,46 102.37.2,58	α Aquarii R. α Aquarii. Uranus.
		30,008	66,8	69,7	36,81	2,81			71.0.4,54	Venus.
	37.42.52,40 38.14.29,30	29,940	66,8	69,6	43,38 44,21	5,15 5,21		15.49,20	75.46.28,11 75.46.27,38	☉. ☉.
33,71	37.37.0,26 37.36.59,18	30,212	68,2	66,8	43,85				75.24.52,39 75.24.51,31	α Herculis R. α Herculis.
35,20	-17.37.10,18 -17.37.8,28 64.50.21,77 28.48.52,14 28.48.58,03		64,0	62,0	18,26				20.9.39,84 20.9.41,74 102.39.31,65 66.25.19,89	β Cephei R. β Cephei. Uranus. ).
		30,198	63,8 62,1	60,7 58,3	31,83	0,41 26.2,94		14.50,58	66.25.25,78	).
34,50	23.44.46,48 23.44.46,98 29.8.58,12 34.6.51,77 33.54.47,15		61,1	58,8	25,43				61.32.20,19 61.32.20,69 66.56.52,50 71.54.28,85 71.42.29,59	β Tauri R. β Tauri. Jupiter. Venus. Mercury.
		30,202 30,200	63,9 69,9	64,3 68,5	31,90 38,41 38,12	0,72 2,86 3,96	8,622 6,390	14,92 6,75		
	39.11.25,39 38.39.45,63 39.30.49,87 39.30.49,47 0.41.57,88	30,188 30,137	68,0 67,7	70,3 68,1	46,05 45,19 46,70 0,69	5,33 5,27		15.49,70	76.43.24,69 76.43.23,53 77.18.44,85 77.18.44,45 38.29.6,85	☉. ☉. α Ophiuchi R. α Ophiuchi. γ Draconis.
34,05										
33,87	-66.11.39,83 -66.11.40,60 0.44.57,80	30,152	67,2	66,7	2.8,04				-28.26.39,59 -28.26.40,36 38.32.6,82	α Lyncis SP. R. α Lyncis SP. * R18 <sup>h</sup> .18 <sup>m</sup> .20 <sup>s</sup> .
34,57	-34.21.59,84 -34.21.59,20	30,163	67,0	66,5	38,88				3.24.29,56 3.24.30,20	δ Urs. Min. R. δ Ursæ Minoris.

Coincidence of Micrometer Wire with fixed Wire = 10',056. From Aug. 17. = 10',055. One revolution = 20'',833.  
 Correction for Runs = - 5'',0. From Aug. 17. = - 5'',1.  
 Adopted Zenith Point = 170°. 8'. 34'',25.  
 Assumed Co-latitude = 37°. 47'. 8'',28.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
			° ' "	° ' "	° ' "	° ' "	° ' "	° ' "				
Aug. 18	$\beta$ Lyrae R. M.....	331. 5	0. 26,3	32,2	29,4	32,2	33,9	31,8	6,608	+ 1. 11,70	331. 6. 42,58	G.
	$\beta$ Lyrae.....	189. 10	0. 18,7	25,3	21,9	26,7	24,9	26,1			189. 10. 23,87	G.
	$\alpha^2$ Capricorni R. M.....	284. 50	3. 14,0	20,8	18,6	19,7	21,6	19,6	5,699	+ 1. 30,64	284. 54. 49,14	G.
	$\alpha^2$ Capricorni.....	235. 20	2. 11,5	17,7	14,9	18,8	17,3	18,9			235. 22. 16,13	G.
	Uranus M.....	234. 55	4. 29,8	35,4	31,5	35,9	33,1	34,3	9,472	+ 12,15	234. 59. 44,73	G.
	(a) Venus S.L. M.....	204. 30	3. 58,3	68,2	61,7	68,0	63,7	65,5	8,328	+ 35,98	204. 34. 39,55	G.
	(b) Mercury center.....	204. 25	3. 26,7	35,3	27,0	34,3	30,9	32,2			204. 28. 30,48	G.
Aug. 19	(c) $\odot$ N.L. M.....	209. 5	2. 16,9	24,7	17,8	26,5	22,1	22,3	8,959	+ 22,72	209. 7. 44,05	G.
	$\odot$ S.L. ....	209. 35	4. 17,2	26,2	21,8	27,7	23,7	23,4			209. 39. 22,62	G.
	(d) $\gamma$ Draconis.....	170. 50	0. 24,7	35,2	28,7	36,4	34,6	33,5			170. 50. 32,10	G.
	(e) $\alpha$ Lyncis SP. R. M.....	56. 20	0. 24,2	29,9	23,9	31,7	26,7	33,3	10,572	- 10,73	56. 20. 17,47	G.
	$\alpha$ Lyncis SP.....	103. 55	1. 48,8	52,7	53,3	51,2	53,9	50,7			103. 56. 51,47	G.
	(d) * $\beta$ R. 18 <sup>h</sup> . 18 <sup>m</sup> . 20 <sup>s</sup> .....	170. 50	3. 27,8	35,3	29,8	34,3	32,8	33,8			170. 53. 31,72	J.G.
	(d) $\delta$ Urs. Min. R. M....	24. 25	5. 23,8	31,7	25,9	31,7	29,2	29,9	4,017	+ 2. 5,79	24. 30. 33,92	J.G.
	$\delta$ Ursae Minoris.....	135. 45	1. 31,9	36,0	33,8	34,8	36,2	35,4			135. 46. 34,43	J.G.
	$\alpha$ Lyrae R. M.....	336. 30	2. 17	7,8	6,3	7,2	9,7	5,9	4,072	+ 2. 4,55	336. 34. 10,63	J.G.
	$\alpha$ Lyrae.....	183. 40	2. 52,2	60,1	57,7	58,9	59,0	57,4			183. 42. 57,05	J.G.
	(f) $\alpha^1$ Capricorni R. M.....	284. 55	0. 59,3	65,8	66,0	65,8	66,1	65,9	7,037	+ 1. 2,33 + 0,14	284. 57. 7,12	G.
	$\alpha^1$ Capricorni M.....	235. 20	2. 13,3	17,8	14,7	20,3	16,9	20,4	16,687	- 2. 17,79 - 0,31	235. 19. 58,77	G.
	$\alpha^2$ Capricorni R. M.....	284. 55	0. 59,3	65,8	66,0	65,8	66,1	65,9	13,780	- 1. 17,78	284. 54. 46,87	G.
	$\alpha^2$ Capricorni.....	235. 20	2. 13,3	17,8	14,7	20,3	16,9	20,4			235. 22. 16,87	G.
	Uranus.....	235. 0	0. 32,8	39,3	33,3	37,3	36,4	39,4			235. 0. 36,33	G.
	(g) Venus S.L.....	204. 50	4. 13,0	22,0	15,3	21,0	19,8	18,0			204. 54. 17,47	G.
	(h) Mercury center.....	204. 55	1. 3,3	14,9	9,3	15,1	15,2	12,2			204. 56. 11,47	G.
Aug. 20	(i) $\odot$ S.L. M.....	209. 55	3. 38,0	51,9	42,3	49,3	49,3	44,3	9,402	+ 13,50	209. 58. 58,72	G.
	$\odot$ N.L.....	209. 25	2. 10,2	21,9	14,2	22,7	19,3	17,0			209. 27. 17,17	G.
	$\gamma$ Aquilae R. M.....	308. 5	3. 43,2	49,9	45,0	48,7	47,9	47,3	7,466	+ 53,84	308. 9. 40,21	G.
	$\gamma$ Aquilae.....	212. 5	2. 23,3	31,3	24,8	30,7	29,3	30,0			212. 7. 27,82	G.
	$\alpha$ Aquilae R. M.....	306. 20	2. 23,2	28,7	26,1	28,8	28,9	28,3	8,388	+ 34,62	306. 23. 1,54	J.G.
	$\alpha$ Aquilae.....	213. 50	4. 27	10,2	4,6	9,9	8,3	6,8			213. 54. 6,40	J.G.
	(k) $\alpha^1$ Capricorni R. M.....	284. 55	0. 48,3	56,0	53,3	56,3	55,4	54,0	6,606	+ 1. 11,31 + 0,14	284. 57. 5,18	G.
	$\alpha^1$ Capricorni M.....	235. 20	2. 15,2	22,3	16,1	21,3	20,9	22,3	16,639	- 2. 16,88 - 0,14	235. 20. 2,28	G.
	(l) $\alpha^2$ Capricorni R. M.....	284. 55	0. 48,3	56,0	53,3	56,3	55,4	54,0	13,158	- 1. 5,16 + 0,14	284. 54. 48,71	G.
	$\alpha^2$ Capricorni.....	235. 20	2. 15,2	22,3	16,1	21,3	20,9	22,3			235. 22. 19,30	G.
	$\lambda$ Urs. Min. R. M....	26. 40	3. 37,0	47,1	39,8	44,7	43,0	43,1	9,460	+ 12,39	26. 43. 54,22	G.
	$\lambda$ Ursae Minoris.....	133. 30	3. 11,3	17,3	16,8	16,9	17,8	15,7			133. 33. 15,43	G.
	$\alpha$ Cygni R. M.....	342. 35	1. 7,9	13,8	14,1	14,9	17,1	13,3	5,954	+ 1. 25,32	342. 37. 38,64	J.G.
	$\alpha$ Cygni.....	177. 35	4. 26,1	32,9	29,9	31,3	32,9	30,5			177. 39. 29,85	J.G.
	Venus S.L.....	205. 10	4. 22,8	33,0	26,0	32,1	30,3	28,2			205. 14. 27,98	G.
Mercury center.....	205. 25	1. 8,3	19,4	12,4	19,0	17,1	15,2			205. 26. 15,02	G.	
Aug. 21	(m) $\odot$ N.L. M.....	209. 45	0. 50,0	63,8	56,3	62,3	60,1	57,0	6,732	+ 1. 9,13	209. 47. 7,21	G.
	$\odot$ S.L. ....	210. 15	3. 41,2	53,3	44,1	50,6	50,4	47,0			210. 18. 47,13	G.
	$\alpha$ Cor. Bor. R. M....	325. 10	2. 54,7	62,2	59,8	60,8	61,6	60,1	10,863	- 16,94	325. 12. 42,43	G.
	$\alpha$ Coronae Borealis..	195. 0	4. 19,8	26,5	24,3	26,9	27,2	24,2			195. 4. 24,08	G.
	$\alpha$ Aquarii R. M.....	296. 45	2. 16,5	21,7	18,8	20,7	20,2	20,8	2,163	+ 2. 44,32	296. 50. 3,72	G.
	$\alpha$ Aquarii.....	223. 25	2. 1,3	8,1	3,9	8,3	6,2	8,7			223. 27. 5,73	G.
	(n) Uranus M.....	235. 0	2. 0,9	7,2	3,3	6,7	5,9	7,2	9,361	+ 14,45	235. 2. 19,30	G.

- (a) Faint, unsteady, and shapeless.
- (b) Faint.
- (c) Bad limbs: motion unusually great.
- (d) Very good.
- (e) Small and steady: good observations.
- (f) At 1<sup>st</sup> wire and comb.
- (g) Unsteady.

- (h) Pretty good.
- (i) The barometer-reading appears doubtful.
- (k) At 1<sup>st</sup> and 5<sup>th</sup> wires.
- (l) At 1<sup>st</sup> wire.
- (m) Faint: but a better observation than has been obtained for some time.
- (n) Very cloudy.



Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi- diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
"	"	Inch.	"	"	"	"	"	"	"	"
33,23	19. 1. 51,67	30,163	67,0	66,5	19,62				56. 49. 19,57	$\beta$ Lyræ R.
	19. 1. 49,62								56. 49. 17,52	$\beta$ Lyræ.
32,64	65. 13. 45,11	30,168	65,2	62,7	2. 3,50				103. 2. 56,89	$\alpha^2$ Capricorni R.
	65. 13. 41,88								103. 2. 53,66	$\alpha^2$ Capricorni.
	64. 51. 10,48	30,161	62,4	60,2	2. 2,01	0,41			102. 40. 20,36	Uranus.
	34. 26. 5,30	30,108	68,2	68,8	38,74	2,88	8,941	6,39	72. 13. 43,05	Venus.
	34. 19. 56,23				38,59	3,94			72. 7. 39,16	Mercury.
	38. 59. 9,80	30,093	68,3	72,0	45,42	5,30			77. 2. 48,10	$\odot$ .
	39. 30. 48,37				46,28	5,36		15. 49,90	77. 2. 47,67	$\odot$ .
	0. 41. 57,85	30,049	69,1	68,8	0,69				38. 29. 6,82	$\gamma$ Draconis.
34,47	-66. 11. 43,22								-28. 26. 42,01	$\alpha$ Lyncis SP. R.
	-66. 11. 42,78				2. 7,07				-28. 26. 41,57	$\alpha$ Lyncis SP.
	0. 44. 57,47	30,030	68,8	67,6	0,74				38. 32. 6,49	*R. 18 <sup>h</sup> . 18 <sup>m</sup> . 20 <sup>s</sup> .
34,18	-34. 21. 59,67								3. 24. 29,99	$\delta$ Urs. Min. R.
	-34. 21. 59,82				38,62				3. 24. 29,84	$\delta$ Ursæ Minoris.
33,84	13. 34. 23,62								51. 21. 45,54	$\alpha$ Lyræ R.
	13. 34. 22,80				13,64				51. 21. 44,72	$\alpha$ Lyræ.
32,95	65. 11. 27,13	30,024	66,3	64,8	2. 2,19				103. 0. 37,60	$\alpha^1$ Capricorni R.
	65. 11. 24,52								103. 0. 34,99	$\alpha^1$ Capricorni.
31,87	65. 13. 47,38				2. 2,41				103. 2. 58,07	$\alpha^2$ Capricorni R.
	65. 13. 42,62								103. 2. 53,31	$\alpha^2$ Capricorni.
	64. 52. 2,08	29,973	62,8	60,0	2. 1,37	0,41			102. 41. 11,32	Uranus.
	34. 45. 43,22	29,729	72,8	73,7	38,35	2,90	10,608	5,76	72. 33. 21,19	Venus.
	34. 47. 37,22				38,40	3,92			72. 35. 19,98	Mercury.
	39. 50. 24,47	29,799	71,2	74,0	46,18	5,40			77. 22. 23,43	$\odot$ .
	39. 18. 42,92				45,32	5,34		15. 50,10	77. 22. 21,28	$\odot$ .
34,02	41. 58. 54,04	29,668	69,2	68,3	50,12				79. 46. 52,44	$\gamma$ Aquilæ R.
	41. 58. 53,57								79. 46. 51,97	$\gamma$ Aquilæ.
33,97	43. 45. 32,71				53,33				81. 33. 34,32	$\alpha$ Aquilæ R.
	43. 45. 32,15								81. 33. 33,76	$\alpha$ Aquilæ.
33,73	65. 11. 29,07	29,650	68,8	66,4	2. 0,28				103. 0. 37,63	$\alpha^1$ Capricorni R.
	65. 11. 28,03								103. 0. 36,59	$\alpha^1$ Capricorni.
34,01	65. 13. 45,54				2. 0,49				103. 2. 54,31	$\alpha^2$ Capricorni R.
	65. 13. 45,05								103. 2. 53,82	$\alpha^2$ Capricorni.
34,83	-36. 35. 19,97		68,2	65,6	41,55				1. 11. 6,76	$\lambda$ Urs. Min. R.
	-36. 35. 18,82								1. 11. 7,91	$\lambda$ Ursæ Minoris.
34,25	7. 30. 55,61				7,39				45. 18. 11,28	$\alpha$ Cygni R.
	7. 30. 55,60								45. 18. 11,27	$\alpha$ Cygni.
	35. 5. 53,73	29,536	73,1	75,0	38,49	2,92	10,588	5,55	72. 53. 32,03	Venus.
	35. 17. 40,77				38,77	3,91			73. 5. 23,91	Mercury.
	39. 38. 32,96	29,530	72,3	76,0	45,27	5,38			77. 42. 11,43	$\odot$ .
	40. 10. 12,88				46,13	5,44		15. 50,30	77. 42. 11,55	$\odot$ .
33,26	24. 55. 51,82	29,448	74,0	76,3	25,33				62. 43. 25,43	$\alpha$ Cor. Bor. R.
	24. 55. 49,83								62. 43. 23,44	$\alpha$ Coronæ Bor.
34,73	53. 18. 30,53	29,450	68,7	66,6	1. 14,36				91. 6. 53,17	$\alpha$ Aquarii R.
	53. 18. 31,48								91. 6. 54,12	$\alpha$ Aquarii.
	64. 53. 45,05				1. 57,85	0,41			102. 42. 50,77	Uranus.

Coincidence of Micrometer Wire with fixed Wire = 10',055. One revolution = 20'',833.  
 Correction for Runs = - 5'',1.  
 Adopted Zenith Point = 170°. 8'. 34'',25.  
 Assumed Co-latitude = 37°. 47'. 8'',28.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
			° ' "	° ' "	° ' "	° ' "	° ' "	° ' "				
Aug. 21	(a) ε Cephei R. M.....	354. 5	2. 0,2	8,8	6,9	6,2	9,2	6,5	4,192	+ 2. 2,05	354. 9. 8,00	G.
	ε Cephei .....	166. 5	2. 55,3	62,9	61,1	61,3	62,2	61,3			166. 8. 0,18	
Aug. 22	⊙ S.L. M.....	210. 35	2. 51,3	60,0	54,2	59,4	58,0	56,3	7,508	+ 52,96	210. 38. 48,99	G.
	⊙ N.L.....	210. 5	2. 3,0	11,7	6,0	10,7	10,2	7,9			210. 7. 7,90	
	(b) α Lyræ R. M.....	336. 30	2. 54,2	62,2	60,3	59,6	60,3	59,9	6,519	+ 1. 13,56	336. 34. 12,48	G.
	α Lyræ.....	183. 40	2. 50,7	59,1	56,2	58,5	58,3	56,2			183. 42. 56,00	
	α Aquarii R. M.....	296. 50	0. 39,1	47,2	42,0	45,1	43,2	42,3	11,849	- 37,47	296. 50. 5,56	G.
	α Aquarii.....	223. 25	2. 0,7	6,1	4,2	6,9	6,1	4,7			223. 27. 4,43	
	(c) Uranus.....	235. 0	3. 3,5	10,1	6,9	9,1	7,3	8,1			235. 3. 6,98	G.
Aug. 27	Venus S.L.....	207. 45	3. 37,2	46,2	38,9	44,9	43,1	41,2			207. 48. 41,55	G.
Aug. 28	⊙ S.L. M.....	212. 40	1. 38,9	47,1	40,4	46,5	46,6	44,7	7,498	+ 52,88	212. 42. 36,75	G.
	⊙ N.L.....	212. 10	0. 49,0	58,8	51,7	58,2	56,6	55,7			212. 10. 54,92	
	δ Urs. Min. R. M...	24. 25	2. 59,8	70,9	64,3	69,1	67,2	65,8	2,846	+ 2. 29,78	24. 30. 35,66	G.
	δ Ursæ Minoris.....	135. 45	1. 29,1	35,3	32,1	33,9	34,0	34,0			135. 46. 32,92	
	β Lyræ R. M.....	331. 5	0. 33,3	41,3	35,9	39,4	40,8	39,3	6,763	+ 1. 8,19	331. 6. 46,46	G.
	β Lyræ.....	189. 10	0. 14,0	22,7	18,3	23,2	21,3	23,4			189. 10. 20,45	
	β Aquarii R. M.....	291. 40	0. 8,9	13,2	13,9	13,3	12,8	13,9	11,043	- 20,98	291. 39. 51,67	G.
	β Aquarii.....	228. 35	2. 12,0	15,2	14,9	16,1	14,0	17,8			228. 37. 14,77	
	Uranus.....	235. 5	2. 57,7	64,3	62,8	62,2	62,2	63,5			235. 8. 1,82	G.
	Jupiter S.L.....	199. 20	4. 44,2	50,9	48,2	50,6	49,7	47,3			199. 24. 48,00	G.
Aug. 29	⊙ N.L. M.....	212. 30	0. 45,9	55,2	50,8	54,6	54,0	52,5	6,430	+ 1. 15,12	212. 32. 7,20	G.
	⊙ S.L.....	213. 0	3. 43,6	52,7	46,9	49,9	51,9	48,3			213. 3. 48,50	
	(d) α Ophiuchi R. M...	310. 35	1. 26,0	33,7	29,8	33,6	32,9	32,8	6,542	+ 1. 12,78	310. 37. 44,10	G.
	α Ophiuchi.....	209. 35	4. 15,8	24,3	21,1	24,2	23,4	20,9			209. 39. 21,18	
	α Cygni R. M.....	342. 30	4. 38,0	45,3	46,0	42,8	44,3	41,3	1,582	+ 2. 56,11	342. 37. 38,59	G.
	α Cygni.....	177. 35	4. 22,3	31,6	27,8	30,4	28,3	27,5			177. 39. 27,55	
	β Aquarii R. M.....	291. 35	4. 23,3	31,0	28,7	29,7	28,7	27,5	8,862	+ 24,45	291. 39. 52,17	i.g.
	β Aquarii.....	228. 35	2. 9,0	15,3	13,0	17,0	13,2	17,4			228. 37. 13,93	
	Uranus M.....	235. 5	3. 55,4	61,5	58,9	60,4	57,6	60,4	10,440	- 8,41	235. 8. 50,24	i.g.
	Aug. 30	(e) ) N.L.....	243. 30	4. 53,0	61,2	55,2	59,7	60,0	56,8			243. 34. 57,15
Jupiter S.L.....		199. 25	1. 4,9	10,4	6,5	11,1	8,2	11,4			199. 26. 8,63	G.
Venus S.L.....		209. 0	0. 56,9	68,7	60,8	68,2	63,4	66,7			209. 1. 4,02	G.
Aug. 31	(f) ⊙ N.L. M.....	213. 15	0. 49,0	58,1	52,2	57,2	55,1	56,8	12,770	- 56,95 - 0,24	213. 14. 57,46	G.
	⊙ S.L.....	213. 45	1. 36,9	44,3	39,2	44,3	41,9	42,0			- 0,24	
	(g) ) N.L. M.....	247. 0	0. 25,5	32,0	27,4	32,1	30,7	33,5	9,782	+ 5,29 + 3,92	247. 0. 39,36	G.
	) N.L. M.....	247. 0	0. 25,5	32,0	27,4	32,1	30,7	33,5			+ 5,12	
	) N.L.....	247. 0	0. 31,1	37,1	32,7	35,7	35,2	37,7	9,790	+ 1,96	247. 0. 34,87	G.
	) N.L. M.....	247. 0	0. 31,1	37,1	32,7	35,7	35,2	37,7			9,811	
	) N.L. M.....	247. 0	0. 31,1	37,1	32,7	35,7	35,2	37,7	9,772	+ 5,50 - 3,92	247. 0. 36,45	G.
	4 Sagittarii.....	246. 5	0. 13,1	19,3	15,9	19,0	17,4	20,8			246. 5. 17,55	
	(h) δ Urs. Min. R. M...	24. 25	3. 27,3	38,5	31,3	35,3	35,4	33,1	4,169	+ 2. 2,24	24. 30. 35,37	G.
	δ Ursæ Minoris.....	135. 45	1. 28,2	34,7	31,3	33,0	34,0	32,7			135. 45. 32,17	
	α Aquilæ R. M.....	306. 20	1. 45,2	53,3	50,8	51,3	53,7	48,9	6,490	+ 1. 13,87	306. 23. 4,22	i.g.
	α Aquilæ.....	213. 50	3. 57,9	65,5	62,3	65,5	63,4	62,9			213. 54. 2,52	

(a) Pretty good.  
 (b) A blur.  
 (c) After this observation, the parallelism of the micrometer wire with the fixed wire was adjusted, and the reading at coincidence may now be considered to be the same at every part.  
 (d) Very good.

(e) Extremely faint.  
 (f) Very bad: the observations made at the 3<sup>d</sup> and 5<sup>th</sup> wires: both are corrected for the change of declination in 16<sup>s</sup>.  
 (g) Observed at the five wires: very faint: all the observations doubtful.  
 (h) Too much wind: not good.



Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi- diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.					
			Attach.	Free.											
"	° ' "	Inch.	°	°	' "	' "	"	' "	° ' "						
34,09	-4. 0. 33,75	29,450	68,7	66,6	3,89				33. 46. 30,64	ε Cephei R. ε Cephei.					
	-4. 0. 34,07														
34,24	40. 30. 14,74	29,492	70,9	72,1	46,96	5,48	15. 50,50		78. 2. 14,00	⊙.					
	39. 58. 33,65	29,541	67,2	65,2	46,09	5,42			78. 2. 13,10	⊙.					
	13. 34. 21,77				13,48					51. 21. 43,53	α Lyræ R.				
35,00	13. 34. 21,75	29,572	63,5	61,5	1. 15,43				51. 21. 43,51	α Lyræ.					
	53. 18. 28,69								1. 59,63	0,41	91. 6. 52,40	α Aquarii R.			
	53. 18. 30,18										91. 6. 53,89	α Aquarii.			
34,29	64. 54. 32,73	29,950	65,6	66,5	43,59	3,08	10,606	5,94	102. 43. 40,23	Uranus.					
	37. 40. 8,12										75. 27. 50,97	Venus.			
	42. 34. 3,32								29,948	65,4	66,0	51,89	5,72	15. 51,70	80. 6. 6,07
33,46	42. 2. 21,49	30,000	61,3	59,3	50,94	5,66			80. 6. 6,75	⊙.					
	-34. 22. 2,23								3. 24. 26,82	δ Urs. Min. R.					
	-34. 22. 0,51								3. 24. 28,54	δ Ursæ Minoris.					
33,22	19. 1. 46,97	29,992	57,2	55,3	1. 34,03				56. 49. 15,04	β Lyræ R.					
	19. 1. 47,02										56. 49. 15,09	β Lyræ.			
	58. 28. 41,76								29,983	60,3	60,6	32,06	0,74	11,470	14,94
32,64	58. 28. 41,34	29,961	65,2	66,9	51,51	5,70			96. 17. 23,65	β Aquarii.					
	64. 59. 28,39										102. 48. 39,39	Uranus.			
	29. 16. 14,57										67. 3. 39,23	Jupiter.			
33,07	42. 23. 33,77	29,958	64,2	63,2	52,45	5,76	15. 52,00		80. 27. 19,86	⊙.					
	42. 55. 15,07								80. 27. 18,06	⊙.					
	39. 30. 49,33								77. 18. 44,48	α Ophiuchi R.					
33,05	39. 30. 47,75	29,947	58,9	56,0	7,61				77. 18. 42,90	α Ophiuchi.					
	7. 30. 54,84										45. 18. 10,73	α Cygni R.			
	7. 30. 54,12										45. 18. 10,01	α Cygni.			
33,37	58. 28. 41,26	29,944	62,3	63,6	3. 7,72	56. 39,71			96. 17. 23,43	β Aquarii R.					
	58. 28. 40,50										1. 33,89		96. 17. 22,67	β Aquarii.	
	65. 0. 16,81								29,982	63,2	61,8	2. 3,27	0,41	10,532	5,17
33,37	73. 26. 23,72	30,002	58,2	57,0	32,34	0,74	11,462	14,85	110. 36. 9,27	♃.					
	29. 17. 35,20								32,34	0,74	11,462	14,85	67. 5. 0,23	Jupiter.	
	38. 52. 30,59				30,006	62,2			62,6	45,95	3,16	10,532	5,17	76. 40. 16,49	Venus.
33,37	43. 6. 24,03	30,006	62,3	63,6	53,23	5,77			81. 10. 12,17	⊙.					
	43. 38. 7,60										54,22	5,84	15. 52,40	81. 10. 11,86	⊙.
	76. 52. 5,93								29,982	63,2	61,8				114. 1. 56,60
33,37	76. 52. 3,80	29,991	62,2	60,2	3. 44,53				114. 1. 54,47	♃.					
	76. 52. 1,44										3. 59,45	57. 23,04	16. 5,98	114. 1. 52,11	♃.
	76. 52. 4,17													114. 1. 54,84	♃.
33,37	76. 52. 3,02	30,003	59,0	57,1	55,14				114. 1. 53,69	♃.					
	75. 56. 44,12										61,2	59,0	39,24	113. 47. 36,93	4 Sagittarii.
	-34. 22. 1,94													3. 24. 27,10	δ Urs. Min. R.
33,37	-34. 22. 1,26	30,003	59,0	57,1	55,14				3. 24. 27,78	δ Ursæ Minoris.					
	43. 45. 29,21													81. 33. 32,63	α Aquilæ R.
	43. 45. 29,09								81. 33. 32,51	α Aquilæ.					

Coincidence of Micrometer Wire with fixed Wire = 10',055. From Aug 27. = 10',026. One revolution = 20',833.  
 Correction for Runs = -5'',1. From Aug. 27. = -3'',0.  
 Adopted Zenith Point = 170°. 8'. 34'',25. From Aug. 27. = 170°. 8'. 33'',43.  
 Assumed Co-latitude = 37°. 47'. 8'',28.

Month and Day.	NAME OF STAR or PLANET.	Pointer. ° ' "	Microscopes.						Micrometer or Time by Molyneux. r. h. m. s.	Correction for Microm. or Time. ' "	Concluded reading of Circle. ° ' "	Observer.
			A	B	C	D	E	F				
			"	"	"	"	"	"				
Aug. 31	α <sup>2</sup> Capricorni R. M.	284.55	0.13,8	20,3	17,0	20,2	18,0	20,3	11,335	-27,06	284.54.51,17	J.G.
	α <sup>2</sup> Capricorni.....	235.20	2.10,4	16,9	13,0	16,7	15,0	17,8			235.22.14,75	J.G.
	Uranus M.....	235.10	0.8,0	15,8	11,5	15,6	13,5	17,0	9,312	+15,08	235.10.28,63	J.G.
	Jupiter N.L.....	199.25	1.14,9	23,9	18,5	24,0	20,9	21,6			199.26.20,50	J.G.
Sept. 1	☉ N.L. M.....	213.35	1.15,0	23,9	18,3	23,4	21,9	22,6	9,213	+17,15	213.36.37,87	G.
	☉ S.L.....	214.5	3.17,0	26,7	19,9	24,2	22,2	22,1			214.8.21,68	G.
	♄ Sagittarii M.....	246.5	0.34,0	41,9	37,0	41,9	39,9	40,4	11,042	-20,95	246.5.18,17	J.G.
	(a) ♃ S.L. M.....	249.20	0.31,5	39,2	33,9	38,9	37,3	38,2	9,575	+9,60 +1,34	249.20.47,37	G.
	♃ S.L. M.....	249.20	0.31,5	39,2	33,9	38,9	37,3	38,2	9,535	+10,44 +0,67	249.20.47,54	G.
	♃ S.L.....	249.20	0.40,6	48,9	44,1	46,1	46,2	47,2			249.20.45,45	G.
	♃ S.L. M.....	249.20	0.40,6	48,9	44,1	46,1	46,2	47,2	9,952	+1,75 -0,67	249.20.46,53	G.
	♃ S.L. M.....	249.20	0.40,6	48,9	44,1	46,1	46,2	47,2	9,935	+2,10 -1,34	249.20.46,21	G.
	♄ Sagittarii.....	249.25	0.36,1	44,3	37,2	44,7	41,9	43,7			249.25.41,25	G.
	♄ Sagittarii.....	248.45	1.20,0	26,0	23,2	26,2	24,2	27,7			248.46.24,42	G.
	α Aquilæ R. M.....	306.20	1.19,1	25,2	24,1	25,2	26,0	25,0	5,067	+1.45,52	306.23.7,49	J.G.
	α Aquilæ.....	213.50	3.56,1	64,0	60,3	61,6	63,3	61,2			213.54.0,68	J.G.
	(b) α <sup>1</sup> Capricorni R. M.	284.55	0.32,1	39,3	33,9	39,8	37,4	39,7	5,600	+1.32,40 +0,14	284.57.9,51	G.
	α <sup>1</sup> Capricorni M.....	235.20	2.9,0	15,4	12,6	14,1	13,9	16,6	16,623	-2.17,24 -0,14	235.19.56,00	G.
	(c) α <sup>2</sup> Capricorni R. M.	284.55	0.32,1	39,3	33,9	39,8	37,4	39,7	12,162	-44,29 +0,14	284.54.52,82	G.
	α <sup>2</sup> Capricorni.....	235.20	2.9,0	15,4	12,6	14,1	13,9	16,6			235.22.13,38	G.
	λ Urs. Min. R. M.....	26.40	3.16,1	25,9	19,1	25,1	21,3	23,8	8,363	+34,85	26.43.56,40	G.
	λ Ursæ Minoris.....	133.30	3.9,0	13,3	13,7	12,8	13,3	14,0			133.33.12,37	G.
	α Cephei R. M.....	359.45	2.16,8	25,3	23,0	25,2	23,3	23,5	5,352	+1.37,58	359.49.0,20	J.G.
	α Cephei.....	160.25	3.2,7	8,0	8,2	5,9	8,6	9,0			160.28.6,75	J.G.
	Uranus.....	235.10	1.9,8	16,2	13,2	15,9	15,4	18,3			235.11.14,68	G.
	(d) Venus S.L.....	209.50	1.3,9	15,8	10,2	13,9	14,1	9,2			209.51.11,07	J.G.
Sept. 2	☉ S.L. M.....	214.30	0.36,0	45,9	39,3	44,2	44,9	41,6	11,542	-31,37	214.30.10,55	G.
	☉ N.L.....	213.55	3.17,1	26,8	20,8	25,4	23,7	22,6			213.58.22,40	G.
	(a) ♃ S.L.....	249.20	2.13,3	19,1	16,5	19,0	18,9	20,7		-1,36	249.22.16,32	G.
	♃ S.L. M.....	249.20	2.13,3	19,1	16,5	19,0	18,9	20,7	10,142	-2,20 -0,68	249.22.14,80	G.
	♃ S.L. M.....	249.20	2.13,3	19,1	16,5	19,0	18,9	20,7	10,121	-1,77	249.22.15,91	G.
	♃ S.L. M.....	249.20	2.13,3	19,1	16,5	19,0	18,9	20,7	10,172	-2,82 +0,68	249.22.15,54	G.
	♃ S.L. M.....	249.20	2.13,3	19,1	16,5	19,0	18,9	20,7	10,176	-2,91 +1,36	249.22.16,13	G.
	(e) ♄ Sagittarii.....	250.25	0.37,0	44,9	40,5	44,2	44,3	42,9		-0,32	250.25.41,91	G.
	(f) λ Urs. Min. R. M.....	26.40	3.9,7	19,0	13,9	18,3	16,2	19,2	8,142	+39,45	26.43.55,17	G.
	λ Ursæ Minoris.....	133.30	3.8,0	12,4	13,1	12,2	13,9	12,3			133.33.11,67	G.
	(g) α Cygni R. M.....	342.35	0.28,4	34,3	33,3	35,4	36,2	35,0	3,969	+2.6,40	342.37.40,10	J.G.
	α Cygni.....	177.35	4.20,0	27,3	25,1	27,3	26,8	28,2			177.39.25,35	J.G.
	(h) β Aquarii R. M.....	291.35	2.2,8	10,9	7,7	8,9	8,9	9,5	2,137	+2.44,56	291.39.52,46	J.G.
	β Aquarii.....	228.35	2.9,3	17,0	12,2	15,3	15,0	17,7			228.37.14,20	J.G.
	Uranus.....	235.10	1.58,2	65,9	62,9	64,1	65,2	65,2			235.12.3,38	G.
(i) Jupiter S.L.....	199.25	3.2,8	9,3	7,1	8,6	6,5	10,0			199.28.7,07	G.	

(a) At the five wires.  
 (b) At 1<sup>st</sup> and 5<sup>th</sup> wires.  
 (c) At 1<sup>st</sup> and 3<sup>d</sup> wires.  
 (d) Mere guess-work.  
 (e) At 5<sup>th</sup> wire: extremely faint.

(f) Very faint.  
 (g) Not good.  
 (h) Very good.  
 (i) Faint and indistinct.



Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi- diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
"	" ' "	Inch.	"	"	" "	" "	"	" "	" ' "	
32,96	65. 13. 42,26	30,010	58,3	56,7	2. 4,35				103. 2. 54,89	$\alpha^2$ Capricorni R.
	65. 13. 41,32							103. 2. 53,95	$\alpha^2$ Capricorni.	
	65. 1. 55,20		57,2	55,5	2. 3,56	0,41		102. 51. 6,63	Uranus.	
	29. 17. 47,07	30,054	57,5	56,7	32,42	0,74	8,640	14,54	67. 5. 41,57	Jupiter.
	43. 28. 4,44	30,076	62,8	65,2	53,86	3,82		15. 52,70	81. 31. 53,46	$\odot$ .
	43. 59. 48,25				54,87	5,88			81. 31. 52,82	$\odot$ .
	76. 56. 44,74	30,112		62,5	3. 44,40				113. 47. 37,42	$\gamma$ Sagittarii.
	79. 12. 13,94	30,114	62,2	61,5					115. 50. 34,96	$\delta$ .
	79. 12. 14,11								115. 50. 35,13	$\delta$ .
	79. 12. 12,02				4. 51,52	57. 37,33		16. 1,45	115. 50. 33,04	$\delta$ .
79. 12. 13,10								115. 50. 34,12	$\delta$ .	
79. 12. 12,78								115. 50. 33,80	$\delta$ .	
79. 17. 7,82				60,0	4. 54,54			117. 9. 10,64	$\phi$ Sagittarii.	
78. 37. 50,99					4. 38,11			116. 29. 37,38	$\sigma$ Sagittarii.	
34,09	43. 45. 25,94	30,128	60,8	59,0	55,16			81. 33. 29,38	$\alpha$ Aquilæ R.	
	43. 45. 27,25							81. 33. 30,69	$\alpha$ Aquilæ.	
32,76	65. 11. 23,92		60,2	57,5				103. 0. 36,61	$\alpha^1$ Capricorni R.	
	65. 11. 22,57				2. 4,41			103. 0. 35,26	$\alpha^1$ Capricorni.	
33,10	65. 13. 40,61							103. 2. 53,51	$\alpha^2$ Capricorni R.	
	65. 13. 39,95				2. 4,62			103. 2. 52,85	$\alpha^2$ Capricorni.	
34,38	-36. 35. 22,97				42,91			1. 11. 2,40	$\lambda$ Urs. Min. R.	
	-36. 35. 21,06							1. 11. 4,31	$\lambda$ Ursæ Minoris.	
33,48	-9. 40. 26,77		58,8	55,2	9,91			28. 6. 31,60	$\alpha$ Cephei R.	
	-9. 40. 26,68							28. 6. 31,69	$\alpha$ Cephei.	
32,73	65. 2. 41,25	30,131	56,1	51,9	2. 5,01	0,41		102. 51. 54,13	Uranus.	
	39. 42. 37,64	30,150	68,0	65,8	47,24	3,21	10,590	5,77	77. 30. 24,18	Venus.
33,42	44. 21. 37,12	30,149	65,3	67,7	55,43	5,92		15. 52,90	81. 53. 42,01	$\odot$ .
	43. 49. 48,97				54,41	5,86			81. 53. 38,70	$\odot$ .
32,73	79. 13. 42,89	30,118	61,4	60,0				15. 55,79	115. 52. 31,08	$\delta$ .
	79. 13. 41,37								115. 52. 29,56	$\delta$ .
33,33	79. 13. 42,48				4. 53,11	57. 17,41			115. 52. 30,67	$\delta$ .
	79. 13. 42,11								115. 52. 30,30	$\delta$ .
33,42	79. 13. 42,70								115. 52. 30,89	$\delta$ .
	80. 17. 8,48	30,112	60,8	59,3	5. 23,90			118. 9. 40,66	$\epsilon$ Sagittarii.	
32,73	-36. 35. 21,74		60,3	58,5	42,81			1. 11. 3,73	$\lambda$ Urs. Min. R.	
	-36. 35. 21,76							1. 11. 3,71	$\lambda$ Ursæ Minoris.	
32,73	7. 30. 53,33				7,61			45. 18. 9,22	$\alpha$ Cygni R.	
	7. 30. 51,92							45. 18. 7,81	$\alpha$ Cygni.	
33,33	58. 28. 40,97		59,6	56,7	1. 34,10			96. 17. 23,35	$\beta$ Aquarii R.	
	58. 28. 40,77							96. 17. 23,15	$\beta$ Aquarii.	
32,73	65. 3. 29,95	30,106	58,9	56,2	2. 3,91	0,41		102. 52. 41,73	Uranus.	
	29. 19. 33,64	30,036	60,0	59,7	32,25	0,75	11,509	15,54	67. 6. 58,08	Jupiter.

Coincidence of Micrometer Wire with fixed Wire = 10',036. One revolution = 20'',833.

Correction for Runs = -3'',0.

Adopted Zenith Point = 170°. 8'. 33'',43.

Assumed Co-latitude = 37°. 47'. 8'',28.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
			° ' "	" "	" "	" "	" "	" "				
Sept. 3	☉ N.L. M.....	214. 20	0. 32,8	43,1	33,8	40,3	40,1	38,0	10,974	- 19,54	214. 20. 18,41	G.
	☉ S.L.....	214. 50	1. 59,1	69,8	63,2	68,1	67,9	65,0			214. 52. 5,32	G.
	δ Urs. Min. R. M...	24. 30	1. 0,6	9,6	5,3	9,3	8,0	8,0	11,483	- 30,14	24. 30. 36,54	G.
	δ Ursæ Minoris.....	135. 45	1. 26,1	33,3	31,1	30,2	34,5	31,2			135. 46. 30,92	G.
	α Lyræ R. M.....	336. 30	4. 16,3	24,6	20,0	23,1	24,2	21,7	10,453	- 8,69	336. 34. 12,53	J.G.
	α Lyræ.....	183. 40	2. 48,2	57,9	53,3	55,8	56,0	54,5			183. 42. 54,00	J.G.
	α Aquilæ R. M.....	306. 20	1. 54,0	62,2	58,9	61,3	60,4	60,3	6,970	+ 1. 3,87	306. 23. 3,19	G.
α Aquilæ M.....	213. 50	2. 54,3	62,8	58,8	60,5	60,9	61,1	6,970	+ 1. 3,87	213. 54. 3,30	G.	
Sept. 4	☉ S.L. M.....	215. 10	3. 54,1	65,3	55,9	64,9	62,4	59,3	9,712	+ 6,75	215. 14. 6,67	G.
	☉ N.L.....	214. 40	2. 15,1	25,8	17,2	24,1	22,1	22,5			214. 42. 20,90	G.
Sept. 5	☉ N.L. M.....	215. 0	4. 25,3	31,2	28,2	31,7	30,9	29,6	9,937	+ 2,06	215. 4. 31,09	G.
	(a) α Aquilæ R. M.....	306. 20	2. 12,0	16,9	15,8	16,3	18,7	16,7	7,875	+ 45,02	306. 23. 0,85	G.
	α Aquilæ.....	213. 50	4. 0,7	5,9	2,0	6,2	2,7	6,9			213. 54. 3,67	G.
	λ Urs. Min. R. M...	26. 40	3. 42,2	51,7	43,5	49,7	46,7	48,2	9,453	+ 12,15	26. 43. 58,77	G.
	λ Ursæ Minoris.....	133. 30	3. 8,2	14,1	11,2	14,3	13,2	15,3			133. 33. 12,40	G.
	δ Capricorni.....	239. 10	1. 1,9	8,2	7,0	7,3	8,3	7,3			239. 11. 6,55	J.G.
Sept. 6	α Cephei R. M.....	359. 45	1. 15,6	22,1	19,8	22,3	21,3	22,0	2,062	+ 2. 46,12	359. 49. 6,50	G.
	α Cephei.....	160. 25	3. 0,3	7,6	5,5	6,3	5,7	6,1			160. 28. 4,93	G.
	(b) β Aquarii R. M.....	291. 40	0. 33,5	41,8	35,5	41,6	38,8	39,2	12,240	- 45,92	291. 39. 52,41	J.G.
	β Aquarii.....	228. 35	2. 12,0	18,1	14,2	18,1	16,1	18,0			228. 37. 15,85	J.G.
	δ Aquarii.....	239. 0	0. 27,1	32,8	30,3	31,3	33,3	32,7			239. 0. 31,20	G.
	(c) ) S.L.....	234. 55	4. 31,3	36,7	32,9	35,5	33,9	35,2		- 7,52	234. 59. 26,28	G.
	) S.L. M.....	234. 55	4. 31,3	36,7	32,9	35,5	33,9	35,2	10,207	- 3,56	234. 59. 26,48	G.
	) S.L. M.....	234. 55	4. 31,3	36,7	32,9	35,5	33,9	35,2	10,405	- 7,69	234. 59. 26,11	G.
	) S.L. M.....	234. 55	4. 31,3	36,7	32,9	35,5	33,9	35,2	10,681	- 13,43	234. 59. 24,13	G.
	) S.L. M.....	234. 55	4. 31,3	36,7	32,9	35,5	33,9	35,2	10,782	+ 3,76		
	) S.L. M.....	234. 55	4. 31,3	36,7	32,9	35,5	33,9	35,2		- 15,53	234. 59. 25,79	G.
									+ 7,52			
Sept. 7	☉ N.L. M.....	215. 45	4. 20,7	28,7	22,8	27,2	24,7	25,1	10,729	- 14,43	215. 49. 10,00	G.
	☉ S.L.....	216. 20	0. 50,1	58,3	53,2	58,8	56,7	56,9			216. 20. 55,58	G.
	δ Urs. Min. R. M...	24. 25	3. 11,1	20,2	14,1	19,0	15,3	19,3	3,329	+ 2. 19,73	24. 30. 35,90	G.
	δ Ursæ Minoris.....	135. 45	1. 28,0	34,2	31,3	33,3	33,3	32,6			135. 46. 31,97	G.
	α Lyræ R. M.....	336. 35	0. 17,9	24,9	22,0	25,2	26,0	24,8	13,373	- 1. 9,52	336. 34. 13,91	G.
	α Lyræ.....	183. 40	2. 48,9	58,0	54,2	58,3	57,1	55,7			183. 42. 55,08	G.
	(d) α <sup>1</sup> Capricorni R. M.	284. 55	0. 35,2	42,9	38,7	43,5	41,8	41,0	5,920	+ 1. 25,74	284. 57. 6,33	G.
	(e) α <sup>1</sup> Capricorni.....	235. 15	4. 56,0	63,8	61,8	62,2	63,9	63,7		+ 0,14	235. 20. 1,90	G.
	(d) α <sup>2</sup> Capricorni R. M.	284. 55	0. 35,2	42,9	38,7	43,5	41,8	41,0	12,381	- 48,85	284. 54. 51,74	G.
	(e) α <sup>2</sup> Capricorni M.....	235. 15	4. 56,0	63,8	61,8	62,2	63,9	63,7		+ 0,14	235. 22. 17,76	G.
	Uranus.....	235. 15	0. 56,4	64,1	61,8	63,1	64,1	63,9	3,515	+ 2. 15,86	235. 16. 2,13	G.
	(f) η Piscium.....	226. 0	0. 25,8	30,2	24,7	31,8	32,1	32,2			226. 0. 29,42	G.
	(g) ) S.L. M.....	229. 25	0. 24,7	31,3	28,0	30,8	29,7	31,3	11,900	- 38,83	229. 24. 42,64	G.
	) S.L. M.....	229. 25	0. 24,7	31,3	28,0	30,8	29,7	31,3	12,142	- 7,78		
) S.L. M.....	229. 25	0. 24,7	31,3	28,0	30,8	29,7	31,3		- 43,87	229. 24. 41,49	G.	
) N.L.....	228. 50	3. 42,1	52,0	46,9	50,0	48,7	49,7		- 3,89			
) N.L. M.....	228. 50	3. 42,1	52,0	46,9	50,0	48,7	49,7	10,307	+ 3,89	228. 53. 51,74	G.	
									- 5,65	228. 53. 49,98	G.	
									+ 7,78			

(a) A bad blur.  
 (b) Beautiful.  
 (c) At the five wires.  
 (d) At 1<sup>st</sup> wire.

(e) No correction for runs.  
 (f) At the comb: cloudy and bad.  
 (g) At 1<sup>st</sup>, 2<sup>d</sup>, 4<sup>th</sup>, and 5<sup>th</sup> wires: the two limbs pretty equally illuminated.



Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi- diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
"	° ' "	Inch.	°	°	' "	' "	"	' "	° ' "	
33,73	44. 11. 44,98	29,992	65,6	68,5	54,74	5,90	15. 53,10	82. 15. 35,20	⊙.	
	44. 43. 31,89	29,906	64,2	63,5	55,76	5,96		82. 15. 36,87	⊙.	
	- 34. 22. 3,11				38,78	3. 24. 26,39		δ Urs. Min. R.		
33,27	- 34. 22. 2,51	29,893	62,9	61,9	13,70		3. 24. 26,99	δ Ursæ Minoris.		
	13. 34. 20,90				54,43	51. 21. 42,88	α Lyrae R.			
33,25	13. 34. 20,57	29,741	67,8	69,5	55,88	6,00	51. 21. 42,55	α Lyrae.		
	43. 45. 30,24				54,87	5,94	81. 33. 32,95	α Aquilæ R.		
32,26	43. 45. 29,87	29,812	68,5	69,3	55,72	5,98	81. 33. 32,58	α Aquilæ.		
	45. 5. 33,24				54,60	81. 33. 31,16	α Aquilæ R.			
	44. 33. 47,47				63,0	60,6	42,43	1. 11. 2,47	λ Urs. Min. R.	
35,59	- 36. 35. 23,38	29,974	61,2	59,2	2. 28,52		1. 11. 2,86	λ Ursæ Minoris.		
	- 36. 35. 22,99				106. 52. 7,96	δ Capricorni.				
35,72	69. 2. 31,16	30,024	62,2	60,5	9,77		28. 6. 27,40	α Cephei R.		
	- 9. 40. 31,11					28. 6. 28,05	α Cephei.			
34,13	- 9. 40. 30,46	30,016	61,3	59,2	1. 33,12		96. 17. 24,38	β Aquarii R.		
	58. 28. 42,98				2. 27,42	106. 41. 31,51	δ Aquarii.			
	58. 28. 40,46				58,8	101. 33. 39,62	η.			
34,12	68. 51. 55,81	29,980	66,0	67,3	2. 27,42		101. 33. 39,82	η.		
	64. 50. 50,89				50. 57,69	15. 23,60	101. 33. 39,45	η.		
	64. 50. 51,09						101. 33. 37,47	η.		
	64. 50. 50,72						101. 33. 39,13	η.		
	64. 50. 48,74									
33,94	64. 50. 50,40	29,896	65,1	63,2	57,74	6,06	83. 44. 28,67	⊙.		
	45. 40. 34,61				58,81	6,12	83. 44. 27,06	⊙.		
34,50	46. 12. 20,19	29,890	62,2	60,3	38,79		3. 24. 28,98	δ Urs. Min. R.		
	- 34. 22. 0,51				13,70	51. 21. 43,46	α Lyrae R.			
34,12	- 34. 22. 3,42	29,806	59,7	57,0	1. 36,02	47. 53,57	51. 21. 41,67	α Lyrae.		
	13. 34. 24,48									
34,75	13. 34. 19,69	29,850	60,8	58,5	2. 2,76		103. 0. 40,10	α <sup>1</sup> Capricorni R.		
	65. 11. 29,06				2. 2,97	103. 0. 37,55	α <sup>1</sup> Capricorni.			
34,12	65. 11. 26,51	29,814	60,0	57,9	2. 2,66	0,41	103. 2. 54,90	α <sup>2</sup> Capricorni R.		
	65. 13. 43,65				1. 24,15	103. 2. 53,62	α <sup>2</sup> Capricorni.			
	65. 13. 42,37				47. 53,57	102. 56. 37,27	Uranus.			
	65. 7. 26,74				1. 34,10	93. 40. 26,46	η Piscium.			
	55. 51. 54,03				47. 53,57	96. 1. 43,66	η.			
34,12	59. 16. 7,25	29,806	59,7	57,0	1. 36,02	47. 53,57	96. 1. 42,51	η.		
	59. 16. 6,10					15. 14,32	96. 1. 35,25	η.		
	58. 45. 16,35						96. 1. 33,49	η.		
	58. 45. 14,59									

Coincidence of Micrometer Wire with fixed Wire = 10',036. One revolution = 20'',833.  
 Correction for Runs = - 3'',0.  
 Adopted Zenith Point = 170°. 8'. 33'',43. From Sept. 5. = 170°. 8'. 35'',39.  
 Assumed Co-latitude = 37°. 47'. 8'',28.

Month and Day.	NAME OF STAR or PLANET.	Pointer. ° ' "	Microscopes.						Micrometer or Time by Molyneux. h. m. s.	Correction for Microm. or Time. ' "	Concluded reading of Circle. ° ' "	Observer.
			A	B	C	D	E	F				
			° ' "	° ' "	° ' "	° ' "	° ' "	° ' "				
Sept. 8	(a) Jupiter S.L.....	199.30	2.16,7	22,7	17,9	23,8	19,1	23,1			199.32.20,55	J.G.
Sept. 9	☉ N.L. M.....	216.30	4.19,3	24,5	21,9	24,4	20,2	22,1	10,562	-10,96	216.34.11,11	G.
	δ Urs. Min. R. M...	24.25	3.29,8	37,0	33,0	36,8	32,2	34,4	4,085	+2.3,98	24.30.37,85	G.
	δ Ursæ Minoris.....	135.45	1.29,7	35,7	32,9	34,3	33,1	34,4			135.46.33,35	G.
	α Lyrae R. M.....	336.35	0.20,3	27,7	24,8	26,9	27,1	26,3	13,404	-1.10,17	336.34.15,35	G.
	α Lyrae.....	183.40	2.48,9	58,3	56,3	58,1	56,9	55,3			183.42.55,63	G.
	α Aquarii R. M.....	296.50	0.25,2	31,2	28,9	31,4	28,0	29,0	10,970	-19,45	296.50.9,50	J.G.
	α Aquarii.....	223.25	1.58,7	65,4	63,8	65,1	63,1	63,2			223.27.3,22	J.G.
	Uranus.....	235.15	2.30,7	37,0	34,8	34,5	35,0	34,2			235.17.34,37	J.G.
	(b) α U. Maj. SP. R. M.	55.10	2.30,3	36,3	31,1	34,9	33,6	35,5	2,079	+2.45,77	55.15.19,39	G.
α Ursæ Majoris SP.	105.0	1.51,1	54,0	57,2	53,9	53,4	53,7			105.1.53,88	G.	
Sept. 10	α Lyrae R. M.....	336.30	1.52,4	58,1	57,9	58,9	57,2	57,3	3,407	+2.18,11	336.34.15,08	G.
	α Lyrae.....	183.40	2.50,4	57,5	56,5	56,2	55,9	55,3			183.42.55,30	G.
	β Lyrae R. M.....	331.5	2.49,3	57,9	54,1	56,3	54,1	55,8	13,195	-1.5,81	331.6.48,77	J.G.
	β Lyrae.....	189.10	0.17,7	25,0	20,9	26,2	23,7	25,3			189.10.23,13	J.G.
Sept. 11	α Cygni R. M.....	342.35	3.5,7	12,9	12,6	12,0	13,1	11,2	11,265	-25,61	342.37.45,64	G.
	α Cygni.....	177.35	4.22,0	29,5	27,0	28,7	25,1	27,3			177.39.26,60	G.
	(c) α Cephei R. M.....	359.45	3.7,0	14,1	13,1	15,3	11,0	14,1	7,417	+54,57	359.49.7,00	G.
	α Cephei.....	160.25	2.59,5	68,7	65,9	66,8	65,7	65,0			160.28.5,27	G.
	Uranus.....	235.15	4.0,3	6,7	5,7	3,8	4,3	3,9			235.19.4,12	G.
Sept. 12	α Cephei R. M.....	359.45	0.59,4	67,2	66,6	68,1	65,4	67,1	1,267	+3.2,68	359.49.8,31	G.
	α Cephei.....	160.25	3.0,3	8,7	6,2	5,9	5,7	5,9			160.28.5,45	G.
	β Aquarii R. M.....	291.40	0.10,0	17,8	14,9	18,2	15,2	17,3	11,128	-22,74	291.39.52,83	J.G.
	β Aquarii.....	228.35	2.13,6	20,7	19,1	18,2	19,6	19,0			228.37.18,37	J.G.
Sept. 13	(d) Venus S.L.....	215.15	2.33,7	42,9	34,9	42,8	39,4	40,0			215.17.38,95	J.G.
Sept. 14	☉ S.L. M.....	219.0	0.6,9	15,6	9,8	14,9	13,5	16,8	9,982	+1,12	219.0.14,04	G.
	☉ N.L.....	218.25	3.18,9	25,7	18,3	24,1	20,8	20,1			218.28.21,32	G.
	(e) α Cygni R. M.....	342.35	0.43,0	50,4	48,1	51,7	52,7	51,8	4,563	+1.54,02	342.37.43,64	G.
	α Cygni.....	177.35	4.18,0	26,3	23,1	25,0	24,6	24,0			177.39.23,50	G.
	(f) α Cephei R. M.....	359.45	1.38,9	45,3	40,5	47,3	45,3	46,6	2,994	+2.26,70	359.49.10,53	G.
	α Cephei.....	160.25	2.55,5	65,0	61,6	62,3	64,0	63,1			160.28.1,92	G.
	Uranus.....	235.20	1.11,3	16,9	12,9	17,8	17,8	18,9			235.21.15,93	G.
	Sept. 15	(g) ) S.L. M.....	192.50	2.55,1	62,3	59,2	61,7	59,2	60,3	12,812	-57,83 -0,62	196.52.1,18
) S.L. M.....		196.50	2.55,1	62,3	59,2	61,7	59,2	60,3	12,833	-58,27 -0,31	196.52.1,05	G.
) N.L.....		196.20	1.42,0	48,8	42,6	49,1	47,4	46,8		-0,55	196.21.45,57	G.
) N.L. M.....		196.20	1.42,0	48,8	42,6	49,1	47,4	46,8	10,088	-1,08 -0,24	196.21.44,80	G.
) N.L. M.....		196.20	1.42,0	48,8	42,6	49,1	47,4	46,8	9,993	+0,89 +0,07	196.21.47,08	G.
Venus S.L.....		216.15	0.21,3	27,9	24,0	26,9	28,0	28,3			216.15.26,07	G.
Sept. 16		☉ S.L. M.....	219.45	1.9,2	17,1	13,2	16,7	16,2	16,3	9,582	+9,45	219.46.24,23
	☉ N.L.....	219.10	4.27,8	35,3	29,7	33,1	33,0	32,3			219.14.31,87	G.
	(h) γ Aquilæ R. M.....	308.5	2.58,9	64,0	63,9	63,1	64,1	62,5	5,188	+1.41,00	308.9.43,75	G.
	γ Aquilæ.....	212.5	2.19,0	24,1	22,0	25,0	25,6	24,5			212.7.23,37	G.

(a) Limbs indistinct.

(b) Not very good.

(c) Very good.

(d) Cloudy.

(e) Not satisfactory.

(f) Bad: not at all defined.

(g) At the five wires: faint: the observations not good. It appears that about 2° on the N.L. was not illuminated, and -0",55 is applied as a correction to the N.L.

(h) Pretty good.



Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi- diameter.	Geoc. N.P.D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
"	° ' "	Inch.	°	°	' "	' "	r	' "	° ' "	
	29.23.45,16	29,543	58,0	53,0	32,23	0,76	11,542	15,69	67.11.9,22	Jupiter.
35,60	46.25.35,72	29,553	59,1	61,0	59,17	6,14		15.54,60	84.29.31,63	☉.
	-34.22.2,46	29,590	57,2	55,2	39,01				3.24.26,81	δ Urs. Min. R.
	-34.22.2,04								3.24.27,23	δ Ursæ Minoris.
35,49	13.34.20,04				13,78				51.21.42,10	α Lyrae R.
	13.34.20,24								51.21.42,30	α Lyrae.
36,36	53.18.25,89	29,582	52,3	50,3	1.17,18				91.6.51,35	α Aquarii R.
	53.18.27,83								91.6.53,29	α Aquarii.
36,64	65.8.58,98				2.3,76	0,41			102.58.10,61	Uranus.
	-65.6.44,00	29,571	52,0		2.3,50				-27.21.39,22	α U. Maj. SP. R.
	-65.6.41,51								-27.21.36,73	α Urs. Maj. SP.
35,19	13.34.20,31	29,198	57,2	56,2	13,57				51.21.42,16	α Lyrae R.
	13.34.19,91								51.21.41,76	α Lyrae.
35,95	19.1.46,62				19,39				56.49.14,29	β Lyrae R.
	19.1.47,74								56.49.15,41	β Lyrae.
36,12	7.30.49,75	29,454	54,8	53,0	7,53				45.18.5,56	α Cygni R.
	7.30.51,21								45.18.7,02	α Cygni.
36,14	-9.40.31,61		53,0	51,2	9,77				28.6.26,90	α Cephei R.
	-9.40.30,12								28.6.28,39	α Cephei.
	65.10.28,73		52,0	50,0	2.3,44	0,41			102.59.40,04	Uranus.
36,88	-9.40.32,92	29,309	54,7	53,0	9,68				28.6.25,68	α Cephei R.
	-9.40.29,94								28.6.28,66	α Cephei.
35,60	58.28.42,56				1.32,30				96.17.23,14	β Aquarii R.
	58.28.42,98								96.17.23,56	β Aquarii.
	45.9.4,73	29,754	60,3	62,8	56,78	3,53	10,495	4,78	82.57.1,48	Venus.
33,57	48.51.39,82	29,759	61,0	62,6	1.4,66	6,40		15.55,90	86.23.50,46	☉.
	48.19.47,10				1.3,47	6,35			86.23.48,40	☉.
	7.30.50,58	29,790	61,1	60,4	7,50				45.18.6,36	α Cygni R.
36,23	7.30.49,28								45.18.5,06	α Cygni.
	-9.40.36,31		60,3	59,8	9,71				28.6.22,26	α Cephei R.
	-9.40.32,30								28.6.26,27	α Cephei.
	65.12.41,71	29,793	60,0	59,3	2.2,74	0,41			103.1.52,32	Uranus.
	26.43.26,96	29,689	55,7	50,8					63.51.38,60	).
	26.43.26,83				29,08	24.28,45			63.51.38,47	).
	26.13.11,35							14.57,27	63.51.42,90	).
	26.13.10,58				28,44	24.2,44			63.51.42,13	).
	26.13.12,86								63.51.44,41	).
	46.6.51,85	29,690	59,8	61,3	58,75	3,59	10,532	5,18	83.54.50,11	Venus.
33,56	49.37.50,01	29,690	60,0	61,5	1.6,43	6,47		15.56,40	87.10.1,85	☉.
	49.5.57,65				1.5,20	6,42			87.10.1,11	☉.
	41.58.50,47	29,666	58,2	56,3	51,33				79.46.50,08	γ Aquilæ R.
	41.58.49,15								79.46.48,76	γ Aquilæ.

Coincidence of Micrometer Wire with fixed Wire = 10',036. One revolution = 20'',833.  
 Correction for Runs = -3'',0. From Sept. 8. = 0'',0.  
 Adopted Zenith Point = 170°.8'.35'',39. From Sept. 13. = 170°.8'.34'',22.  
 Assumed Co-latitude = 37°.47'.8'',28.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer or Time of Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.	
			A	B	C	D	E	F					
			° ' "	° ' "	° ' "	° ' "	° ' "	° ' "					
Sept. 16	α <sup>1</sup> Capricorni R. M.	284.55	1. 12,3	17,3	17,3	17,2	18,2	18,3	7,589	+ 51,00	284.57. 7,77	G.	
	α <sup>1</sup> Capricorni.....	235.15	4. 56,2	62,9	59,7	60,2	61,9	60,6			235.20. 0,25	G.	
	α <sup>2</sup> Capricorni R. M.	284.55	1. 12,3	17,3	17,3	17,2	18,2	18,3	14,180	- 1.26,32	284.54.50,45	G.	
	α <sup>2</sup> Capricorni M.....	235.15	4. 56,2	62,9	59,7	60,2	61,9	60,6	3,499	+ 2.16,19	235.22.16,44	G.	
	(a) λ Urs. Min. R. M....	26.40	2. 48,7	56,8	53,3	56,4	54,1	55,9	6,877	+ 1. 5,81	26.44. 0,01	J.G.	
	λ Ursæ Minoris.....	133.30	3. 4,4	8,3	9,9	8,2	10,0	8,0			133.33. 8,13	J.G.	
	α Cygni R. M.....	342.35	0. 30,6	37,9	35,9	38,9	39,9	37,9	3,873	+ 2. 8,39	342.37.45,24	J.G.	
	α Cygni.....	177.35	4. 19,0	26,8	25,0	25,9	26,2	24,3			177.39.24,53	J.G.	
	Uranus.....	235.20	2. 33,0	38,7	54,8	38,9	38,2	39,0			235.22.37,10	G.	
	Jupiter S.L.....	199.35	2. 39,3	46,3	43,3	45,8	44,4	44,7			199.37.43,97	G.	
	(b) ) S.L.....	197. 5	2. 25,3	32,0	30,0	32,1	31,6	30,4		- 0,74	197. 7.29,49	G.	
	Venus S.L.....	216.40	4. 32,0	40,1	35,2	39,6	38,7	34,2			216.44.36,63	G.	
Sept. 17	(c) ☉ N.L. M.....	219.35	2. 17,3	26,9	20,7	26,0	24,3	22,2	9,101	+ 19,47	219.37.42,37	G.	
	☉ S.L. M.....	220. 5	4. 11,9	19,9	14,3	18,3	17,4	13,4	9,101	+ 19,47	220. 9.35,34	G.	
	α Aquarii R. M.....	296.45	2. 43,1	50,0	46,9	48,5	46,3	47,2	3,266	+ 2.21,04	296.50. 8,04	G.	
	α Aquarii.....	223.25	1. 57,7	64,2	60,8	62,7	62,2	62,0			223.27.1,60	G.	
	Uranus.....	235.20	3. 16,1	21,9	18,9	18,9	20,6	20,0			235.23.19,40	G.	
	ε Cephei R. M.....	354. 5	4. 1,9	8,3	7,0	7,1	6,5	7,1	9,562	+ 9,87	354. 9.16,19	G.	
	(d) ε Cephei.....	166. 5	2. 45,3	54,9	54,2	52,1	52,8	51,0		+ 0,23	166. 7.51,95	G.	
	α U. Maj. SP. R. M.	55.10	4. 2,3	5,9	3,9	4,1	4,0	6,9	6,422	+ 1.15,29	55.15.19,81	G.	
	α Ursæ Majoris SP.	105. 0	1. 48,0	49,7	51,5	49,2	49,9	50,2			105. 1.49,75	G.	
	Jupiter N.L.....	199.35	2. 49,3	57,8	55,9	55,1	55,6	54,0			199.37.54,62	G.	
	Sept. 18	☉ S.L. M.....	220.30	2. 10,7	19,0	14,8	19,7	17,6	15,8	8,447	+ 33,11	220.32.49,38	G.
		☉ N.L.....	220. 0	0. 52,2	60,2	55,6	59,0	58,2	55,9			220. 0.56,85	G.
Sept. 19	☉ N.L. M.....	220.20	4. 31,1	37,9	33,8	35,1	37,6	33,4	11,216	- 24,58	220.24.10,24	G.	
	☉ S.L.....	220.55	0. 60,0	68,0	65,4	67,1	68,1	65,8			220.56. 5,73	G.	
	α Aquilæ R. M.....	306.20	2. 32,7	39,8	36,1	38,3	40,2	37,9	8,753	+ 26,72	306.23. 4,22	G.	
	α Aquilæ.....	213.50	3. 59,2	67,5	63,2	66,3	65,9	66,0			213.54. 4,68	G.	
	α Cephei R. M.....	359.45	1. 6,0	10,3	9,8	13,2	12,1	13,1	1,544	+ 2.56,91	359.49. 7,66	G.	
	α Cephei.....	160.25	2. 59,6	62,5	60,8	58,3	61,6	60,8			160.28. 0,60	G.	
Sept. 28	☉ S.L. M.....	224.25	0. 57,7	67,1	62,2	65,3	63,2	65,1	8,513	+ 31,91	224.26.35,34	G.	
	☉ N.L.....	223.50	4. 32,0	39,8	35,6	38,0	35,5	37,3			223.54.36,37	G.	
	(e) ) N.L. M.....	248.40	0. 52,0	57,0	57,0	58,9	57,8	57,7	7,035	+ 1. 2,71	248.42. 1,60	G.	
										+ 2,16			
	) N.L. M.....	248.40	0. 52,0	57,0	57,0	58,9	57,8	57,7	6,890	+ 1. 5,72	248.42. 3,53	G.	
										+ 1,08			
	) N.L.....	248.40	1. 57,0	62,9	61,9	63,0	62,8	62,2			248.42. 1,63	G.	
	) N.L. M.....	248.40	1. 57,0	62,9	61,9	63,0	62,8	62,2	9,785	+ 5,42	248.42. 4,89	G.	
										- 2,16			
	α Lyræ R. M.....	336.30	3. 7,3	12,9	10,9	13,3	9,6	12,8	6,882	+ 1. 5,89	336.34.17,02	G.	
	α Lyræ.....	183.40	2. 49,0	56,1	55,2	55,7	54,3	54,3			183.42.54,10	G.	
	(f) α Cygni R. M.....	342.35	2. 36,0	38,5	38,0	41,9	38,0	42,9	9,570	+ 9,89	342.37.49,11	G.	
α Cygni.....	177.35	4. 16,9	23,3	23,2	21,9	21,7	22,1			177.39.21,52	G.		
Uranus.....	235.30	0. 13,9	18,2	16,2	19,8	18,8	21,1			235.30.18,00	G.		
Oct. 2	α <sup>2</sup> Capricorni R. M.	284.55	0. 19,0	21,1	22,1	22,9	20,8	26,1	11,640	- 33,22	284.54.48,78	J.G.	
	α <sup>2</sup> Capricorni.....	235.20	2. 16,2	20,9	19,0	18,9	20,5	22,4			235.22.19,65	J.G.	
	α Cygni R. M.....	342.35	2. 18,2	20,0	21,9	21,3	19,2	23,8	8,800	+ 25,93	342.37.46,66	G.	
	α Cygni.....	177.35	4. 17,2	23,1	21,7	22,3	20,3	22,1			177.39.21,12	J.G.	
	ζ Capricorni.....	245.25	0. 1,2	5,1	4,8	3,2	5,8	5,3			245.25. 4,23	J.G.	

(a) Faint and unsatisfactory.

(b) Faint and unsatisfactory: at the 4<sup>th</sup> wire.

(c) The micrometer was set down 11,101.

(d) At 4<sup>th</sup> wire.

(e) Observations at the 1<sup>st</sup>, 2<sup>d</sup>, 3<sup>d</sup>, and 5<sup>th</sup> wires: all unsatisfactory: the Moon extremely faint.

(f) Pretty good.



Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi- diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
"	" ' "	Inch.	"	"	" "	" "	"	" "	" ' "	
34,01	65. 11. 26,45	29,659	57,8	55,5	2. 2,99				103. 0. 37,72	$\alpha^1$ Capricorni R.
	65. 11. 26,03								103. 0. 37,30	$\alpha^1$ Capricorni.
33,45	65. 13. 43,77				2. 3,21				103. 2. 55,26	$\alpha^2$ Capricorni R.
	65. 13. 42,22								103. 2. 53,71	$\alpha^2$ Capricorni.
34,07	-36. 35. 25,79								1. 11. 0,07	$\lambda$ Urs. Min. R.
	-36. 35. 26,09				42,42				1. 10. 59,77	$\lambda$ Ursæ Minoris.
34,89	7. 30. 48,98			54,3					45. 18. 4,82	$\alpha$ Cygni R.
	7. 30. 50,31				7,56				45. 18. 6,15	$\alpha$ Cygni.
	65. 14. 2,88	29,644	55,0	52,2	2. 4,00	0,41			103. 3. 14,75	Uranus.
	29. 29. 9,75	29,620		51,6	32,53	0,78	11,504	15,28	67. 16. 34,50	Jupiter.
	26. 58. 55,27		54,0	52,0	29,27	24. 57,67		15. 6,93	64. 6. 28,22	)
	46. 36. 2,41	29,640	59,5	62,0	59,58	3,62	10,562	5,49	84. 24. 1,16	Venus.
	49. 29. 8,15	29,640	60,0	60,7	1. 6,08	6,46			87. 33. 12,65	$\odot$ .
	50. 1. 1,12				1. 7,33	6,51			87. 33. 13,62	$\odot$ .
34,82	53. 18. 26,18	29,685	54,3	51,0	1. 17,32				91. 6. 51,78	$\alpha$ Aquarii R.
	53. 18. 27,38								91. 6. 52,98	$\alpha$ Aquarii.
	65. 14. 45,18				2. 4,53	0,41			103. 3. 57,58	Uranus.
34,07	-4. 0. 41,97					4,05			33. 46. 22,26	$\epsilon$ Cephei R.
	-4. 0. 42,27								33. 46. 21,96	$\epsilon$ Cephei.
34,78	-65. 6. 45,59		53,2	50,6	2. 3,89				-27. 21. 41,20	$\alpha$ U. Maj. SP. R.
	-65. 6. 44,47								-27. 21. 40,08	$\alpha$ Urs. Maj. SP.
	29. 29. 20,40	29,683	54,0		32,67	0,78	8,520	15,79	67. 17. 16,36	Jupiter.
	50. 24. 15,16	29,673	60,0	61,1	1. 8,28	6,55			87. 56. 28,27	$\odot$ .
	49. 52. 22,63				1. 7,01	6,50			87. 56. 28,32	$\odot$ .
	50. 15. 36,02	29,462	63,0	63,0	1. 7,19	6,54			88. 19. 42,15	$\odot$ .
	50. 47. 31,51				1. 8,47	6,59			88. 19. 44,47	$\odot$ .
34,45	43. 45. 30,00	29,500	59,6	58,0		54,13			81. 33. 32,41	$\alpha$ Aquilæ R.
	43. 45. 30,46								81. 33. 32,87	$\alpha$ Aquilæ.
34,13	-9. 40. 33,44	29,494	58,2	57,1		9,66			28. 6. 25,18	$\alpha$ Cephei R.
	-9. 40. 33,62								28. 6. 25,00	$\alpha$ Cephei.
	54. 18. 0,97	29,400	52,2	54,0	1. 18,96	6,93			91. 50. 21,68	$\odot$ .
	53. 46. 2,00				1. 17,44	6,88			91. 50. 20,44	$\odot$ .
	78. 33. 27,23	29,492	53,0	51,2					115. 43. 29,06	)
	78. 33. 29,16								115. 43. 30,99	)
	78. 33. 27,26				4. 35,69	57. 49,07		16. 6,93	115. 43. 29,09	)
	78. 33. 30,52								115. 43. 32,35	)
35,56	13. 34. 17,35	29,499	52,0	50,0		13,88			51. 21. 39,51	$\alpha$ Lyræ R.
	13. 34. 19,73								51. 21. 41,89	$\alpha$ Lyræ.
35,32	7. 30. 45,26	29,508	49,2	48,1		7,62			45. 18. 1,16	$\alpha$ Cygni R.
	7. 30. 47,15								45. 18. 3,05	$\alpha$ Cygni.
	65. 21. 43,63	29,500	48,2	47,0	2. 5,48	0,40			103. 10. 56,99	Uranus.
34,22	65. 13. 45,59	29,212	56,2	54,9	2. 1,52				103. 2. 55,39	$\alpha^2$ Capricorni R.
	65. 13. 45,28								103. 2. 55,08	$\alpha^2$ Capricorni.
33,89	7. 30. 47,71					7,44			45. 18. 3,43	$\alpha$ Cygni R.
	7. 30. 46,75								45. 18. 2,47	$\alpha$ Cygni.
	75. 16. 29,86				3. 30,97				113. 7. 9,11	$\zeta$ Capricorni.

Coincidence of Micrometer Wire with fixed Wire = 10',036. From Sept. 28. = 10',045. One revolution = 20'',833.  
Correction for Runs = 0'',0.

Adopted Zenith Point = 170°. 8'. 34'',22. From Sept. 28. = 170°. 8'. 34'',37.

Assumed Co-latitude = 37°. 47'. 8'',28.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
			° ' "	° ' "	° ' "	° ' "	° ' "	° ' "				
Oct. 4	(a) α Pegasi R. M. . . . .	312.15	0.48,0	49,1	51,9	49,2	50,0	52,0	9,884	+ 3,35 + 0,15	312.15.53,38	J.G.
	α Pegasi . . . . .	208. 0	1.10,9	13,9	14,9	14,2	14,2	16,5			208. 1.14,25	J.G.
	ψ <sup>1</sup> Aquarii . . . . .	232.15	3.26,5	30,2	30,0	29,0	29,1	29,7			232.18.29,08	J.G.
	ψ <sup>3</sup> Aquarii . . . . .	232.45	4.58,2	64,4	63,3	60,7	62,9	62,2			232.50.1,95	J.G.
	(b) δ S.L. M. . . . .	231.30	1.32,1	33,1	33,6	34,3	35,1	37,7	8,664	+ 28,77 - 7,70	231.31.55,39	J.G.
	δ S.L. M. . . . .	231.30	1.32,1	33,1	33,6	34,3	35,1	37,7			8,860	+ 24,68 - 3,85
	δ S.L. M. . . . .	231.30	1.32,1	33,1	33,6	34,3	35,1	37,7	9,127	+ 19,13	231.31.53,45	J.G.
	δ S.L. M. . . . .	231.30	1.32,1	33,1	33,6	34,3	35,1	37,7	9,253	+ 16,49 + 3,85	231.31.54,66	J.G.
	δ S.L. M. . . . .	231.30	1.32,1	33,1	33,6	34,3	35,1	37,7	9,420	+ 13,04 + 7,70	231.31.55,06	J.G.
	Polaris R. M. . . . .	26.20	0.31,6	34,3	34,2	34,3	32,5	37,3	9,020	+ 21,35	26.20.55,38	J.G.
Polaris . . . . .	133.55	1.13,9	13,2	18,2	11,2	15,3	15,1	133.56.14,48			J.G.	
Oct. 5	(c) ⊙ N.L. M. . . . .	226.35	2. 8,4	12,0	13,7	11,8	14,8	13,3	8,942	+ 22,97	226.37.35,30	G.
	⊙ S.L. . . . .	227. 5	4.35,2	38,2	39,2	36,1	39,3	37,0			227. 9.37,50	G.
	α Aquarii R. M. . . . .	296.45	1.59,3	63,9	64,8	63,9	61,9	64,2	1,257	+ 3. 3,09	296.50. 6,09	G.
	α Aquarii . . . . .	223.25	1.57,3	61,9	62,0	61,6	61,9	60,4			223.27. 0,85	G.
	ε Cephei R. M. . . . .	354.10	0. 9,3	13,7	14,8	16,0	16,2	19,0	12,626	- 53,78 + 0,23	354. 9.21,05	G.
	ε Cephei . . . . .	166. 5	2.42,1	47,1	49,5	44,9	48,7	47,7			166. 7.46,90	G.
	ψ <sup>1</sup> Aquarii . . . . .	232.15	3.24,7	28,2	29,1	29,3	30,1	29,3	232.18.28,45	232.50. 0,33	G.	
	ψ <sup>3</sup> Aquarii . . . . .	232.45	4.55,9	61,1	63,2	59,7	62,2	59,9			G.	
	(e) δ S.L. M. . . . .	225.50	0.52,8	57,1	58,2	56,9	59,2	58,0	10,662	- 12,86 - 7,78	225.50.36,39	G.
	δ S.L. M. . . . .	225.50	0.52,8	57,1	58,2	56,9	59,2	58,0	10,830	- 16,35 - 3,89	225.50.36,79	G.
	δ S.L. M. . . . .	225.50	0.52,8	57,1	58,2	56,9	59,2	58,0	11,009	- 20,08	225.50.36,95	G.
	δ S.L. M. . . . .	225.50	0.52,8	57,1	58,2	56,9	59,2	58,0	11,210	- 24,26 + 3,89	225.50.36,66	G.
δ S.L. M. . . . .	225.50	0.52,8	57,1	58,2	56,9	59,2	58,0	11,432	- 28,90 + 7,78	225.50.35,91	G.	
Oct. 6	(c) α Cygni R. M. . . . .	342.35	1.42,0	42,4	45,9	44,1	45,4	46,3	7,009	+ 1. 3,24	342.37.47,59	G.
	α Cygni . . . . .	177.35	4.16,2	19,7	22,7	18,7	21,9	19,3			177.39.19,75	G.
Oct. 7	(f) α Cephei R. M. . . . .	359.45	0.38,9	40,5	43,9	39,9	43,7	42,7	89,918	+ 3.30,97 - 1,12	359.49.11,45	G.
	α Cephei . . . . .	160.25	2.48,5	55,4	53,9	53,4	55,0	53,6			+ 2,53	160.27.55,83
	(c) α Cassiopeiae R. M. . . . .	353.30	1.49,0	53,0	54,5	52,1	53,3	54,3	4,501	+ 1.55,49	353.33.48,19	G.
	α Cassiopeiae . . . . .	166.40	3.18,1	20,9	24,0	19,0	23,0	20,2			166.43.20,87	G.
	Polaris R. M. . . . .	26.15	2.42,0	42,9	45,7	40,2	43,0	43,3	0,803	+ 3.12,53	26.20.55,38	G.
	Polaris . . . . .	133.55	1. 8,9	12,2	14,7	10,9	12,9	13,8			133.56.12,23	G.
	(g) ο Piscium R. M. . . . .	306.10	2.49,0	52,0	52,7	52,2	52,1	53,9	89,770	+ 3.34,06	306.16.26,04	G.
	ο Piscium . . . . .	214. 0	0.41,3	45,3	46,9	43,1	47,0	44,7			214. 0.44,72	G.
	(h) δ S.L. M. . . . .	214.35	3.59,3	62,2	66,1	60,7	62,9	61,9	15,750	- 1.58,85 + 7,83	214.37.11,16	G.
	δ N.L. M. . . . .	214. 5	3.48,0	49,2	51,9	47,2	50,7	48,0	15,750	- 1.58,85 + 10,95	214. 7. 1,27	G.
Oct. 8	⊙ S.L. M. . . . .	228.15	2.48,2	55,7	50,9	54,2	50,5	52,8	7,239	+ 58,45	228.18.50,50	G.
	⊙ N.L. . . . .	227.45	1.43,0	51,0	46,9	50,6	47,3	50,1			227.46.48,15	G.
	(i) Halley's Comet SP. . . . .	100.15	2.45,3	48,9	46,9	50,0	45,5	51,2	- 6,53	100.17.41,44	G.	

(a) A bad blur: the direct observation at the 5<sup>th</sup> wire.  
 (b) Observations at the five wires: great motion.  
 (c) Very good. (d) At 4<sup>th</sup> wire.  
 (e) Observations at the five wires.  
 (f) At 5<sup>th</sup> wire and comb: difficult. (g) Not very good.  
 (h) Observations at the 5<sup>th</sup> wire and comb: the S.L. has the correction +0'',53, as it appears that about 2<sub>3</sub> was not illuminated.

(i) Observed at or near the 4<sup>th</sup> wire, with power of 50: cloudy: the nucleus so small as to make the observation extremely accurate: the correction -6'',30 is applied for change of N.P.D. in 35°, and -0'',23 for curvature of path. The correction for parallax is not applied: the factor for hor. eq. parallax is 0,9382.



Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi- diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.			
			Attach.	Free.									
"	° ' "	Inch.	°	°	' "	' "	"	' "	° ' "				
33,81	37.52.40,99	29,419	50,9	49,2	44,66				75.40.33,93	α Pegasi R.			
	37.52.39,88								75.40.32,82	α Pegasi.			
	62.9.54,71								99.58.51,33	ψ <sup>1</sup> Aquarii.			
	62.41.27,58								100.30.26,63	ψ <sup>3</sup> Aquarii.			
	61.23.21,02		50,2	48,0					98.8.13,45	β			
	61.23.20,78								98.8.13,21	β			
	61.23.19,08								1.45,16	48.48,69	15.12,32	98.8.11,51	β
	61.23.20,29											98.8.12,72	β
61.23.20,69								98.8.13,12	β				
34,93	-36.12.21,01	29,434	49,2	48,0	42,16				1.34.5,11	Polaris R.			
	-36.12.19,89								1.34.6,23	Polaris.			
33,47	56.29.0,93	29,604	54,2	55,3	1.25,99	7,13	16.1,60	94.33.29,67	⊙.				
	57.1.3,13	29,730	53,7	52,2	1.27,74	7,17		94.33.30,38	⊙.				
	53.18.28,28				1.17,27	91.6.53,83		α Aquarii R.					
33,98	53.18.26,48	29,743	52,8	51,0	4,05				91.6.52,03	α Aquarii.			
	-4.0.46,68								33.46.17,55	ε Cephei R.			
	-4.0.47,47								33.46.16,76	ε Cephei.			
	62.9.54,08								99.58.51,48	ψ <sup>1</sup> Aquarii.			
	62.41.25,96	29,734	52,0	50,8					100.30.25,81	ψ <sup>3</sup> Aquarii.			
	55.42.2,02								92.29.58,86	β			
	55.42.2,42								92.29.59,26	β			
	55.42.2,58								1.24,62	45.31,48	15.4,58	92.29.59,42	β
55.42.2,29				92.29.59,13	β								
55.42.1,54								92.29.58,38	β				
33,67	7.30.46,78	29,862	54,3	53,6	7,62				45.18.2,68	α Cygni R.			
	7.30.45,38								45.18.1,28	α Cygni.			
33,64	-9.40.37,08	30,050	52,0	51,7	9,96				28.6.21,24	α Cephei R.			
	-9.40.38,54								28.6.19,78	α Cephei.			
34,53	-3.25.13,82	30,020	51,3	49,3	3,50				34.21.50,96	α Cassiopeiae R.			
	-3.25.13,50								34.21.51,28	α Cassiopeiae.			
33,81	-36.12.21,01	30,002	50,4	48,6	42,91				1.34.4,36	Polaris R.			
	-36.12.22,14								1.34.3,23	Polaris.			
35,38	43.52.8,33	29,991	50,3		56,30				81.40.12,91	ο Piscium R.			
	43.52.10,35								81.40.14,93	ο Piscium.			
	44.28.36,79	29,999	50,5	49,0	57,48	38.1,41			81.23.49,31	β			
	43.58.26,90								56,48	37.40,67	14.51,83	81.23.42,82	β
58.10.11,34	29,850	54,0	54,6	1.32,60	7,27				95.42.42,55	⊙.			
57.38.8,99									1.30,71	7,23	16.2,40	95.42.43,15	⊙.
-69.50.57,72									29,688	52,0	50,6	2.36,16	.....

Coincidence of Micrometer Wire with fixed Wire = 10',045, or 100',045. One revolution = 20,"833.  
 Correction for Runs = 0'',0.  
 Adopted Zenith Point = 170°.8'.34'',37. From Oct. 8. = 170°.8'.39'',16.  
 Assumed Co-latitude = 37°.47'.8'',28.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
			° ' "	° ' "	° ' "	° ' "	° ' "	° ' "				
Oct. 8	Uranus .....	235.35	0.19,8	21,1	20,5	20,2	22,0	23,8			235.35.21,23	J.G.
	(a) α Pegasi R. M.....	312.15	0.9,7	11,1	14,2	10,9	12,0	14,7	7,813	+46,49	312.15.58,59	J.G.
	α Pegasi M.....	208.0	0.23,2	32,1	31,7	31,9	34,9	34,8	7,813	+46,49	208.1.18,76	J.G.
	α Andromedæ R.M.....	326.5	0.21,1	22,7	23,2	22,9	23,1	27,9	4,630	+1.52,80	326.7.16,28	J.G.
	(b) α Andromedæ .....	194.5	4.55,9	60,0	62,0	57,8	60,9	59,3			194.9.59,32	J.G.
Oct. 9	☉ N.L. M.....	228.10	0.17,7	22,2	21,6	18,9	21,9	24,5	11,917	-39,00	228.9.42,13	J.G.
	α Cephei R. M.....	359.45	3.20,0	22,0	26,0	19,3	25,3	24,1	7,422	+54,64	359.49.17,42	J.G.
	α Cephei.....	160.25	2.57,9	62,3	64,8	61,7	61,5	62,8			160.28.1,83	J.G.
	Halley's Comet SP.	103.55	4.41,0	43,9	45,1	44,1	45,4	43,4			103.59.43,82	G.
	(c) Halley's Comet } SP. M.....	103.55	4.41,0	43,9	45,1	44,1	45,4	43,4	8,860	+24,69 -25,84	103.59.42,67	G.
Oct. 10	(d) ☉ S.L. M.....	229.5	0.37,3	40,0	42,2	36,7	41,7	42,2	13,054	-1.2,69 -0,32	229.4.37,01	J.G.
	☉ N.L.....	228.30	2.31,1	34,0	34,8	31,0	34,6	34,9		-0,32	228.32.33,08	J.G.
	Uranus.....	235.35	1.13,1	15,5	17,8	11,9	18,0	17,2			235.36.15,58	J.G.
	ε Cephei R. M.....	354.10	0.54,5	57,8	63,0	56,9	61,2	60,0	14,441	-1.31,57	354.9.27,33	G.
	ε Cephei.....	166.5	2.46,9	51,1	55,9	49,9	54,5	49,7			166.7.51,33	G.
	(e) Halley's Comet SP.	106.0	3.59,8	63,7	65,8	61,3	62,3	66,0		-1,21	106.4.1,94	G.
	Halley's Comet } SP. M.....	106.0	3.59,8	63,7	65,8	61,3	62,3	66,0	10,320	-5,73 -0,30	106.3.57,12	G.
	Halley's Comet } SP. M.....	106.0	3.59,8	63,7	65,8	61,3	62,3	66,0	9,909	+2,82 -6,10	106.3.59,87	G.
	* R. 11 <sup>h</sup> . 9 <sup>m</sup> . 15 <sup>s</sup> . } SP.....	105.25	3.11,1	10,9	14,2	11,3	10,8	13,8			105.28.12,02	G.
	α Andromedæ R.M.....	326.5	0.21,9	25,1	26,4	23,2	26,2	28,0	4,623	+1.52,96	326.7.18,09	G.
α Andromedæ .....	194.5	4.58,0	61,1	65,9	60,7	63,2	62,1			194.10.1,83	G.	
δ Ursæ Majoris SP.	100.20	0.53,3	56,2	58,3	56,6	55,5	58,2			100.20.56,35	G.	
Oct. 11	δ Ursæ Majoris SP.	100.20	0.54,5	59,0	59,8	58,7	58,6	61,5			100.20.58,68	G.
	(f) Halley's Comet SP.	104.5	4.19,7	19,6	21,3	21,7	16,3	21,3			104.9.19,98	G.
	* R. 12 <sup>h</sup> . 41 <sup>m</sup> . 20 <sup>s</sup> . } SP. M.....	104.5	4.19,7	19,6	21,3	21,7	16,3	21,3	17,176	-2.28,55	104.6.51,43	G.
Oct. 12	(g) ☉ S.L. M.....	229.45	3.41,0	43,3	41,6	39,8	42,1	42,4	6,546	+1.12,89	229.49.54,59	G.
	☉ N.L.....	229.15	2.49,1	53,2	54,4	51,3	52,1	53,9			229.17.52,33	G.
Oct. 14	☉ S.L. M.....	230.35	0.24,7	28,2	24,7	23,9	29,0	28,9	11,413	-28,50	230.34.58,07	G.
	☉ N.L.....	230.0	2.48,3	52,0	49,8	49,0	52,2	52,0			230.2.50,57	G.
Oct. 15	(h) ☉ N.L. M.....	230.25	0.31,7	37,5	33,6	34,9	36,3	38,1	11,042	-20,77	230.25.14,58	G.
	☉ S.L.....	230.55	2.15,0	21,0	17,1	17,0	18,2	20,5			230.57.18,13	G.
Oct. 16	Polaris SP. R. M...	29.30	0.58,9	61,7	64,6	60,0	63,1	61,1	15,872	-2.1,39	29.29.0,18	G.
	Polaris SP.....	130.45	3.17,3	17,3	20,5	16,9	17,8	21,1			130.48.18,50	G.
Oct. 17	☉ N.L. M.....	231.5	4.0,2	6,7	4,9	3,7	4,9	5,0	8,842	+25,06	231.9.29,31	G.
	☉ S.L. M.....	231.40	1.11,2	14,5	13,7	13,3	15,6	16,7	8,842	+25,06	231.41.39,23	G.
Oct. 19	☉ N.L. M.....	231.50	2.49,0	53,3	54,1	48,8	52,9	51,5	8,850	+24,88	231.53.16,50	G.
	☉ S.L.....	232.25	0.23,0	26,6	26,2	22,7	26,2	24,9			232.25.24,93	G.
	α Cygni R. M.....	342.35	1.14,2	13,4	20,0	11,9	17,2	15,2	5,180	+1.41,35	342.37.56,67	G.
	α Cygni.....	177.35	4.24,0	26,4	30,3	22,9	28,0	25,2			177.39.26,15	G.

(a) Very good.

(b) The micrometer wires placed on the next divisions.

(c) Observed with power 50: the second observation at leaving the field: the correction -18",87 is applied for change of N.P.D. in 2<sup>m</sup>.56<sup>s</sup>, and -6",97 for curvature of path: the factor for parallax is 0,9143.

(d) The S.L. near 4<sup>th</sup> wire, and the N.L. between 4<sup>th</sup> and 5<sup>th</sup>: both are corrected for change of N.P.D. in 20<sup>s</sup>.

(e) The observations were taken at the 1<sup>st</sup> and 4<sup>th</sup> wires and at leaving the field: the change of N.P.D. insensible: the power used was 50, and the observations not very good: the factor for parallax is 0,3993. (f) The factor for parallax is 0,9131.

(g) In this and the next few observations the differences of the microscopes do not agree with the differences before this time: but they seem to return afterwards to their several magnitudes.

(h) Without dark glass: neither limb good.



Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi- diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
"	" ' "	Inch.	°	°	' "	' "	"	' "	° ' "	
38,68	65.26.42,07	29,688	52,0	50,6	2.58,1	0,40			103.15.55,76	Uranus.
	37.52.40,57	29,622	49,3	47,3	45,14			75.40.33,99	α Pegasi R.	
	37.52.39,60							75.40.33,02	α Pegasi.	
37,80	24.1.22,88	29,590	49,0	46,5	25,89			61.48.57,05	α Andromedæ R.	
	24.1.20,16							61.48.54,33	α Andromedæ.	
39,62	58.1.2,97	29,260	52,2	52,8	1.30,58	7,26		16.2,70	96.5.37,27	☉.
	-9.40.38,26	29,029	49,2	46,5	9,72				28.6.20,30	α Cephei R.
	-9.40.37,33								28.6.21,23	α Cephei.
	-66.8.55,34	29,018		48,0		.....			-28.23.54,78	Halley's Comet SP.
	-66.8.56,49				2.7,72	.....			-28.23.55,93	{ Halley's Comet SP.
39,33	58.55.57,85	28,872	48,8	49,3	1.33,28	7,34		16.2,90	96.28.29,17	☉.
	58.23.53,92				1.31,36	7,29			96.28.29,17	☉.
	65.27.36,42	29,062	48,0	45,8	2.4,47	0,40			103.16.48,77	Uranus.
	-4.0.48,17				4,01				33.46.16,10	ε Cephei R.
	-4.0.47,83								33.46.16,44	ε Cephei.
	-64.4.37,22	29,072	46,7	44,1		.....			-26.19.26,38	Halley's Comet SP.
	-64.4.42,04				1.57,44	.....			-26.19.31,20	{ Halley's Comet SP.
39,96	-64.4.39,29					.....			-26.19.28,45	{ Halley's Comet SP.
	-64.40.27,14				2.0,59				-26.55.19,45	{ *R11 <sup>h</sup> .9 <sup>m</sup> .15 <sup>s</sup> . SP.
	24.1.21,07				25,56				61.48.54,91	α Andromedæ R.
	24.1.22,67								61.48.56,51	α Andromedæ.
	-69.47.42,81	29,080	45,0	43,0	2.34,96				-32.3.9,49	δ Urs. Maj. SP.
	-69.47.40,48	29,571	45,7	44,1	2.37,19				-32.3.9,39	δ Urs. Maj. SP.
39,34	-65.59.19,18		45,0	43,2	2.10,47	.....			-28.14.21,37	Halley's Comet SP.
	-66.1.47,73				2.10,72				-28.16.50,17	{ *R12 <sup>h</sup> .41 <sup>m</sup> .20 <sup>s</sup> . SP.
	59.41.15,43	29,774	47,0	48,0	1.39,37	7,40		16.3,50	97.13.52,18	☉.
	59.9.13,17				1.37,29	7,36			97.13.54,88	☉.
	60.26.18,91	30,174	56,0	55,3	1.42,22	7,46		16.4,00	97.58.57,95	☉.
	59.54.11,41				1.40,05	7,42			97.58.56,32	☉.
	60.16.35,42	30,300	54,0	53,6	1.42,33	7,45		16.4,30	98.21.22,88	☉.
	60.48.38,97				1.44,57	7,49			98.21.20,03	☉.
	-39.20.21,02	30,190	53,6	55,0	47,73				-1.34.0,47	Polaris SP. R.
	-39.20.20,66								-1.34.0,11	Polaris SP.
41,41	61.0.50,15	30,195	54,0	55,0	1.44,79	7,51		16.4,80	99.5.40,51	☉.
	61.33.0,07				1.47,12	7,55			99.5.43,12	☉.
	61.44.35,30	30,184	50,6	52,0	1.48,61	7,56		16.5,40	99.49.30,03	☉.
	62.16.43,73				1.51,07	7,60			99.49.30,08	☉.
	7.30.44,53	30,048	48,0	46,4	7,78				45.18.0,59	α Cygni R.
	7.30.44,95								45.18.1,01	α Cygni.

Coincidence of Micrometer Wire with fixed Wire = 10',045. One revolution = 20',833.  
 Correction for Runs = 0'',0. From Oct. 14. +0'',1.  
 Adopted Zenith Point = 170°.8'.39'',16. From Oct. 19. = 170°.8'.41'',20,  
 Assumed Co-latitude = 37°.47'.8'',28.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
			° ' "	" "	" "	" "	" "	" "				
Oct. 19	α Cephei R. M.....	359.45	4.22,6	24,1	27,0	23,0	23,0	25,2	10,223	-3,70	359.49.20,47	J.G.
	α Cephei.....	160.25	2.57,9	61,2	62,2	59,0	59,8	61,8			160.28.0,33	J.G.
	Uranus.....	235.35	4.11,3	14,5	14,9	13,2	12,4	16,1			235.39.13,75	J.G.
	Polaris R. M.....	26.20	2.21,0	23,8	24,8	20,5	20,5	25,2	13,682	-1.15,77	26.21.6,86	J.G.
	Polaris.....	133.55	1.18,1	18,9	20,8	17,9	18,6	19,5			133.56.18,97	J.G.
	(a) ζ U. Maj. SP. R. M.	62.5	1.18,8	20,7	22,5	18,3	21,3	22,6	12,150	-43,84	62.5.36,86	G.
	(b) ζ Urs. Maj. SP.....	98.10	1.48,4	50,2	50,3	50,3	46,1	52,5			98.11.49,63	G.
Oct. 20	Polaris SP. R. M...	29.25	3.5,0	5,3	9,3	3,9	6,2	8,2	7,469	+53,67	29.29.0,00	J.G.
	Polaris SP.....	130.45	3.20,3	22,2	24,5	20,3	20,5	22,7			130.48.21,77	J.G.
Oct. 21	⊙ N.L. M.....	232.35	1.42,0	47,3	44,4	46,1	45,9	46,1	10,582	-11,19	232.36.34,11	G.
	⊙ S.L. M.....	233.5	3.53,5	58,1	58,7	55,9	57,3	57,8	10,582	-11,19	233.8.45,71	G.
	δ Aquilæ R. M.....	300.40	4.44,8	47,1	47,2	47,5	43,9	50,9	10,626	-12,11	300.44.34,81	G.
	δ Aquilæ.....	219.30	2.44,1	49,7	49,3	44,7	50,5	46,9			219.32.47,53	G.
	Uranus.....	235.35	4.36,9	40,3	38,8	37,2	40,7	41,1			235.39.39,18	G.
	ε Cephei R. M.....	354.5	3.18,9	19,5	23,2	19,2	21,9	23,9	6,853	+1.6,49	354.9.27,61	G.
	ε Cephei.....	166.5	2.42,3	46,9	51,8	44,1	48,5	45,1			166.7.46,47	G.
	* R. 10 <sup>h</sup> . 44 <sup>m</sup> . 25 <sup>s</sup> . SP.....	106.10	2.45,1	46,5	47,5	45,3	44,0	47,9			106.12.46,07	G.
	Polaris R. M.....	26.20	2.44,2	46,0	47,3	44,3	44,2	48,2	14,897	-1.41,08	26.21.4,64	J.G.
	Polaris.....	133.55	1.10,7	12,7	14,6	11,7	13,9	13,2			133.56.12,80	J.G.
Oct. 22	⊙ S.L. M.....	233.25	2.35,0	37,8	38,9	35,3	38,1	38,9	3,012	+2.26,51	233.30.3,86	G.
	⊙ N.L.....	232.55	2.51,9	55,0	55,5	54,6	55,6	58,1			232.57.55,13	G.
	(c) Polaris SP. R. M...	29.25	3.28,0	30,2	31,5	27,5	29,7	32,0	8,800	+25,93	29.28.55,76	G.
	Polaris SP.....	130.45	3.15,8	18,2	17,0	17,7	16,0	22,0			130.48.17,80	G.
Oct. 23	⊙ N.L. M.....	233.15	3.40,7	46,1	44,5	43,8	45,1	46,7	8,972	+22,35	233.19.6,85	G.
	⊙ S.L.....	233.50	1.16,3	19,1	18,9	15,6	18,9	21,1			233.51.18,32	G.
	Polaris SP. R. M...	29.25	3.27,1	28,0	29,7	26,3	26,7	30,9	8,747	+27,04	29.28.55,17	G.
	Polaris SP.....	130.45	3.17,0	19,0	15,9	20,2	15,7	21,9			130.48.18,30	G.
Oct. 24	⊙ S.L. M.....	234.10	2.27,7	33,5	31,3	28,9	33,7	32,8	10,532	-10,15	234.12.21,17	G.
	⊙ N.L.....	233.40	0.7,9	11,3	11,4	9,2	13,0	13,2			233.40.11,00	G.
	Venus center.....	234.55	0.31,8	36,2	34,8	33,7	39,0	37,0			234.55.35,42	G.
	β Aquarii R. M.....	291.35	4.14,4	18,8	17,2	15,9	22,0	19,0	8,279	+36,78	291.39.54,68	J.G.
	β Aquarii.....	228.35	2.15,4	19,0	16,3	17,9	16,9	21,7			228.37.17,87	J.G.
	Uranus.....	235.40	0.17,2	18,9	20,4	17,3	21,2	22,1			235.40.19,52	J.G.
	ε Cephei R. M.....	354.5	3.5,6	7,8	11,0	6,1	9,1	10,7	6,205	+1.20,00	354.9.28,40	J.G.
	ε Cephei.....	166.5	2.40,1	46,9	46,1	45,4	47,0	45,9			166.7.45,25	J.G.
Oct. 26	⊙ S.L. M.....	234.55	2.33,1	38,5	36,2	35,1	38,0	38,1	20,503	-3.37,87	234.53.58,65	G.
	⊙ N.L.....	234.20	1.42,7	48,3	46,3	45,1	47,2	46,8			234.21.46,07	G.
	α Aquilæ R. M.....	306.20	3.48,8	49,9	50,3	50,7	50,5	53,2	12,092	-42,65	306.23.7,93	G.
	α Aquilæ.....	213.50	4.4,1	5,9	9,4	2,9	8,5	6,3			213.54.6,20	G.
	* R. 10 <sup>h</sup> . 5 <sup>m</sup> . 40 <sup>s</sup> . SP.....	97.0	3.0,7	2,2	4,7	4,3	1,3	7,0			97.3.3,38	G.
	(d) * R. 10 <sup>h</sup> . 38 <sup>m</sup> . 35 <sup>s</sup> . SP.....	100.30	1.39,3	40,3	42,7	42,3	42,3	43,9		-0,24	100.31.41,56	G.
	Uranus.....	235.40	0.38,8	40,9	40,8	38,1	44,2	42,8			235.40.40,93	G.
	Polaris SP. R. M...	29.25	2.59,3	62,5	63,0	60,0	60,0	62,7	7,482	+53,40	29.28.54,67	G.
Polaris SP.....	130.45	3.17,7	20,9	22,0	19,2	19,0	19,9			130.48.19,80	G.	

(a) Not good.  
(b) Flashing violently.

(c) Pretty good.  
(d) Observed at the 4<sup>th</sup> wire.



Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi- diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
"	° ' "	Inch.	°	°	' "	' "	"	' "	' "	
40,40	- 9 . 40 . 39,27	30,048	47,2	45,8	10,08				28 . 6 . 18,93	α Cephei R.
	- 9 . 40 . 40,87								28 . 6 . 17,33	α Cephei.
42,92	65 . 30 . 32,55	30,039	46,3	44,7	2 . 9,23	0,40			103 . 19 . 49,66	Uranus.
	- 36 . 12 . 25,66	29,972	42,5	39,3	43,70				1 . 33 . 58,92	Polaris R.
43,25	- 36 . 12 . 22,23								1 . 34 . 2,35	Polaris.
	- 71 . 56 . 55,66				3 . 1,30				- 34 . 12 . 48,68	ζ U. Maj. SP. R.
40,89	- 71 . 56 . 51,57								- 34 . 12 . 44,59	ζ Urs. Maj. SP.
	- 39 . 20 . 18,80	29,683	47,5	48,4	47,56				- 1 . 33 . 58,08	Polaris SP. R.
41,17	- 39 . 20 . 19,43								- 1 . 33 . 58,71	Polaris SP.
	62 . 27 . 52,91	29,682	48,7	49,5	1 . 50,64	7,62		16 . 5,90	100 . 32 . 50,11	⊙.
37,04	63 . 0 . 4,51	29,676	47,0	46,0	1 . 53,19	7,66			100 . 32 . 52,42	⊙.
	49 . 24 . 6,39	29,672	44,0	41,0	2 . 8,67	0,40			87 . 12 . 22,62	δ Aquilæ R.
38,72	49 . 24 . 6,33								87 . 12 . 22,56	δ Aquilæ.
	65 . 31 . 1,67	29,662	43,7	41,5	1 . 59,70				103 . 20 . 18,22	Uranus.
36,78	- 4 . 0 . 50,10	29,652	43,2	41,0	43,08				33 . 46 . 14,05	ε Cephei R.
	- 4 . 0 . 51,04								33 . 46 . 13,11	ε Cephei.
36,74	- 63 . 55 . 51,44								- 26 . 10 . 42,86	{ * R10 <sup>h</sup> 44 <sup>m</sup> 25 <sup>s</sup> . SP.
	- 36 . 12 . 27,13	29,476	47,8	48,9	1 . 54,29	7,68		16 . 6,20	100 . 54 . 15,04	⊙.
36,28	- 36 . 12 . 25,71	29,600	48,2	48,2	1 . 51,69	7,65			100 . 54 . 16,14	⊙.
	63 . 21 . 26,35								- 1 . 33 . 57,41	Polaris SP. R.
36,83	62 . 49 . 17,62				47,44				- 1 . 33 . 58,87	Polaris SP.
	- 39 . 20 . 18,25	29,608	49,2	49,8	1 . 53,67	7,67		16 . 6,50	101 . 15 . 30,12	⊙.
37,07	- 39 . 20 . 19,71	29,580	50,3	50,7	1 . 56,35	7,71			101 . 15 . 31,23	⊙.
	63 . 10 . 29,34								- 1 . 33 . 57,30	Polaris SP. R.
36,28	63 . 42 . 40,81	29,586	51,1	51,5	1 . 57,66	7,73		16 . 6,70	- 1 . 33 . 57,35	Polaris SP.
	- 39 . 20 . 18,41								101 . 36 . 35,92	⊙.
37,24	- 39 . 20 . 18,46	29,600	50,6	48,5	1 . 34,08	4,53			101 . 36 . 36,46	⊙.
	64 . 3 . 44,41								102 . 36 . 3,83	Venus.
37,07	63 . 31 . 34,24								96 . 17 . 24,44	β Aquarii R.
	64 . 46 . 58,66	29,586	51,3	51,7	2 . 1,42	4,53			96 . 17 . 23,47	β Aquarii.
36,83	58 . 28 . 42,08	29,600	50,6	48,5	1 . 34,08	0,40			103 . 20 . 57,10	Uranus.
	58 . 28 . 41,11								33 . 46 . 12,58	ε Cephei R.
37,07	65 . 31 . 42,76				2 . 6,46	0,40			33 . 46 . 12,71	ε Cephei.
	- 4 . 0 . 51,64				4,06					
37,07	- 4 . 0 . 51,51									
	64 . 45 . 21,89	29,141	51,3	51,5	1 . 59,51	7,78		16 . 7,20	102 . 18 . 14,70	⊙.
37,24	64 . 13 . 9,31								102 . 18 . 13,73	⊙.
	43 . 45 . 28,83	29,244	48,8	47,0	1 . 56,69	7,75			81 . 33 . 31,98	α Aquilæ R.
37,24	43 . 45 . 29,44								81 . 33 . 32,59	α Aquilæ.
	- 73 . 5 . 33,38	29,256	47,3	46,7	3 . 6,59				- 35 . 21 . 31,69	{ * R10 <sup>h</sup> 5 <sup>m</sup> 40 <sup>s</sup> . SP.
37,24	- 69 . 36 . 55,20	29,274		45,9	2 . 33,58				- 31 . 52 . 20,50	{ * R10 <sup>h</sup> 38 <sup>m</sup> 35 <sup>s</sup> . SP.
	65 . 32 . 4,17	29,304	46,3	45,4	2 . 6,05	0,40			103 . 21 . 18,10	Uranus.
37,24	- 39 . 20 . 17,91	29,600	46,0	46,2	47,63				- 1 . 33 . 57,26	Polaris SP. R.
	- 39 . 20 . 16,96								- 1 . 33 . 56,31	Polaris SP.

Coincidence of Micrometer Wire with fixed Wire = 10',045. One revolution = 20'',833.

Correction for Runs = + 0',1.

Adopted Zenith Point = 170°. 8'. 41'',20. From Uranus Oct. 21. = 170°. 8'. 37'',51. From Oct. 23. = 170°. 8'. 36'',76.

Assumed Co-latitude = 37°. 47'. 8'',28.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.		
			A	B	C	D	E	F						
			° ' "	° ' "	° ' "	° ' "	° ' "	° ' "						
Oct. 27	⊙ N.L. M. ....	234.40	1.37,0	42,2	41,9	37,9	42,0	41,2	8,412	+ 34,01	234.42.14,38	G.		
	⊙ S.L. ....	235.10	4.23,3	29,1	26,6	24,1	26,5	27,0			235.14.26,12	G.		
	(a) Venus S.L. ....	236.10	4.36,9	42,1	40,3	40,0	40,9	42,8			236.14.40,52	G.		
	(b) ) S.L. M. ....	249.15	2.47,2	50,0	51,8	47,3	51,1	49,6			6,330	+ 1.17,39 - 2,38	249.19.45,53	G.
	) S.L. M. ....	249.15	2.47,2	50,0	51,8	47,3	51,1	49,6			6,352	+ 1.16,93 - 1,19	249.19.52,26	G.
	) S.L. ....	249.15	3.61,1	62,9	66,3	58,2	64,6	63,1			10,000	+ 0,93 + 1,19	249.19.27,72	G.
	) S.L. M. ....	249.15	3.61,1	62,9	66,3	58,2	64,6	63,1					249.19.48,84	G.
	) S.L. M. ....	249.15	3.61,1	62,9	66,3	58,2	64,6	63,1			10,097	- 1,08 + 2,38	249.19.40,02	G.
	α Aquilæ R. M. ....	306.20	4.09	2,0	5,7	1,7	3,7	4,0			12,647	- 54,21	306.23.8,81	G.
	α Aquilæ M. ....	213.50	4.56,0	60,7	61,3	56,8	59,7	59,0			12,647	- 54,21	213.54.47,72	G.
	α Cephei R. M. ....	359.45	2.29,7	32,8	35,3	29,0	34,7	33,5			4,972	+ 1.45,69	359.49.18,19	G.
	α Cephei. ....	160.25	2.53,8	57,3	58,9	54,9	57,3	55,9			4,509	+ 1.55,33	160.27.56,37	G.
	β Aquarii R. M. ...	291.35	2.56,9	61,8	63,2	58,3	61,0	61,3					291.39.55,76	G.
	β Aquarii. ....	228.35	2.16,0	17,7	17,9	15,3	16,0	22,0			15,490	- 1.53,43	228.37.17,48	G.
	Uranus. ....	235.40	0.45,6	46,1	49,2	43,1	48,3	47,8					235.40.46,68	G.
	Polaris R. M. ....	26.20	2.55,0	57,9	61,9	54,9	59,0	59,1			8,453	+ 33,16	26.21.45,55	G.
	Polaris. ....	133.55	1.59	9,1	9,0	6,5	8,3	10,0					133.56.8,13	G.
	Polaris SP. R. M. ...	29.25	3.18,7	19,5	24,2	17,9	19,8	21,2			130.45		29.28.53,39	G.
	Polaris SP. ....	130.45	3.18,8	19,7	20,1	21,3	17,3	25,0					130.48.20,38	G.
	Oct. 28	⊙ S.L. M. ....	235.35	1.39,6	41,2	38,8	40,8	38,2			44,8	15,650	- 1.56,77	235.34.43,80
⊙ N.L. ....		235.0	2.29,1	30,3	29,1	31,3	26,9	34,9	235.2.30,27	G.				
Venus S.L. ....		236.40	0.21,1	24,1	21,0	23,1	22,0	26,9	236.40.23,03	G.				
Oct. 29	χ <sup>1</sup> Capricorni. ....	244.5	4.6,9	9,3	8,2	7,8	7,0	11,5	5,317	+ 1.38,50	244.9.8,47	G.		
	α Cephei R. M. ....	359.45	2.37,2	38,0	38,3	38,1	37,3	43,0			359.49.17,17	G.		
	α Cephei. ....	160.25	2.52,0	57,0	56,3	55,0	57,1	57,0			160.27.55,75	G.		
	β Aquarii R. M. ...	291.35	2.52,8	56,9	56,1	55,3	55,0	57,6			4,311	+ 1.59,45	291.39.55,08	G.
	β Aquarii. ....	228.35	2.16,1	19,7	17,9	14,3	18,1	19,7			10,400	- 7,39 - 6,14	228.37.17,63	G.
	(c) ) S.L. M. ....	243.15	1.48,8	53,1	52,9	49,3	53,8	51,0					243.16.37,95	G.
	) S.L. M. ....	243.15	1.48,8	53,1	52,9	49,3	53,8	51,0			10,601	- 11,58 - 3,07	243.16.36,83	G.
	) S.L. M. ....	243.15	1.48,8	53,1	52,9	49,3	53,8	51,0			10,813	- 16,00	243.16.35,48	G.
	) S.L. M. ....	243.15	1.48,8	53,1	52,9	49,3	53,8	51,0			10,912	- 18,07 + 3,07	243.16.36,48	G.
	) S.L. M. ....	243.15	1.48,8	53,1	52,9	49,3	53,8	51,0			11,085	- 21,66 + 6,14	243.16.35,96	G.
	Uranus. ....	235.40	0.58,3	61,8	60,5	60,3	61,0	64,0			7,760	+ 47,60	235.41.0,98	G.
	α Cassiopeiæ R. M. ...	353.30	3.7,5	10,5	13,5	6,4	10,9	10,9					353.33.57,57	i.g.
(d) α Cassiopeiæ. ....	166.40	3.12,0	17,4	17,1	13,8	16,2	15,0	16,927	- 2.23,38	166.43.15,49	i.g.			
Polaris R. M. ....	26.20	3.28,2	30,1	33,0	27,4	32,1	30,3			26.21.6,82	i.g.			
Polaris. ....	133.55	1.6,0	10,0	8,6	7,5	8,9	8,9			133.56.8,32	i.g.			
Nov. 1	β Aquarii R. M. ....	291.35	3.4,0	7,2	7,9	7,1	5,9	10,3	4,795	+ 1.49,38	291.39.56,46	i.g.		
	β Aquarii. ....	228.35	2.14,2	18,3	15,3	16,3	14,8	20,2			228.37.16,52	i.g.		
	α Aquarii R. M. ....	296.45	2.53,8	54,9	57,1	54,8	52,1	58,2			3,515	+ 2.16,04	296.50.11,21	G.
	α Aquarii. ....	223.25	1.58,8	61,0	63,0	59,1	61,4	62,5					223.27.0,97	G.
	(e) η Piscium. ....	226.0	0.23,0	25,9	25,9	23,2	29,3	28,5			226.0.25,97		226.0.25,97	G.
	ρ Piscium. ....	226.45	2.56,3	60,3	61,9	58,3	61,1	59,7					226.47.59,62	G.

(a) Very bad.

(b) At the five wires: cloudy at the 4<sup>th</sup> and 5<sup>th</sup>.

(c) Observed at the five wires.

(d) At the 4<sup>th</sup> wire.

(e) Observed at the comb. The microscopes E and F appear discordant.



Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi- diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
"	° ' "	Inch.	°	°	' "	' "	r	' "	° ' "	
	64. 33. 37,62	29,616	47,2	47,0	2. 1,50	7,77		16. 7,50	102. 38. 47,13	☉.
	65. 5. 49,36				2. 4,47	7,81			102. 38. 46,80	☉.
	66. 6. 3,76			46,0	2. 10,60	4,58	10,469	4,42	103. 55. 13,64	Venus.
	79. 10. 27,77	29,693		45,2					115. 48. 56,18	)
	79. 10. 28,50								115. 48. 56,91	)
	79. 10. 25,96				4. 56,64	57. 35,53		16. 0,98	115. 48. 54,57	)
	79. 10. 28,08								115. 48. 56,49	)
	79. 10. 27,26								115. 48. 55,67	)
36,77	43. 45. 27,95				55,91				81. 33. 32,14	α Aquilæ R.
	43. 45. 27,96								81. 33. 32,15	α Aquilæ.
37,28	-9. 40. 41,43	29,711	45,2	42,1	10,04				28. 6. 16,81	α Cephei R.
	-9. 40. 40,39								28. 6. 17,85	α Cephei.
36,62	58. 28. 41,00				1. 35,68				96. 17. 24,96	β Aquarii R.
	58. 28. 40,72								96. 17. 24,68	β Aquarii.
	65. 32. 9,92	29,732	44,6	41,8	2. 8,84	0,40			103. 21. 26,64	Uranus.
36,34	-36. 12. 27,79	29,752	42,3	40,6	43,27				1. 33. 57,22	Polaris R.
	-36. 12. 28,63								1. 33. 56,38	Polaris.
36,89	-39. 20. 16,63	29,874	44,9	45,0	48,19				-1. 33. 56,54	Polaris SP. R.
	-39. 20. 16,38								-1. 33. 56,29	Polaris SP.
	65. 26. 7,04	29,877	46,3	46,8	2. 7,57	7,83		16. 7,80	102. 59. 7,26	☉.
	64. 53. 53,51				2. 4,50	7,79			102. 59. 6,30	☉.
	66. 31. 46,27		46,6	48,9	2. 13,65	4,60	10,520	4,95	104. 20. 58,65	Venus.
	74. 0. 31,71	29,922	49,7	48,9	3. 21,16				111. 51. 1,15	χ <sup>1</sup> Capricorni.
36,46	-9. 40. 40,41				9,97				28. 6. 17,90	α Cephei R.
	-9. 40. 41,01								28. 6. 17,30	α Cephei.
36,36	58. 28. 41,68			48,6	1. 35,09				96. 17. 25,05	β Aquarii R.
	58. 28. 40,87								96. 17. 24,24	β Aquarii.
	73. 8. 1,19								109. 48. 11,97	)
	73. 8. 0,07								109. 48. 10,85	)
	73. 7. 58,72				3. 10,54	54. 33,35		15. 34,69	109. 48. 9,50	)
	73. 7. 59,72								109. 48. 10,50	)
	73. 7. 59,20								109. 48. 9,98	)
36,53	65. 32. 24,22	29,955	48,3	47,4	2. 8,31	0,40			103. 21. 40,41	Uranus.
	-3. 25. 20,81	30,040	46,8	45,3	3,54				34. 21. 43,93	α Cassiopeiæ R.
	-3. 25. 21,27								34. 21. 43,47	α Cassiopeiæ.
37,57	-36. 12. 30,06		46,2	44,7	43,31				1. 33. 54,91	Polaris R.
	-36. 12. 28,44								1. 33. 56,53	Polaris.
36,49	58. 28. 40,30	30,150	46,3	45,3	1. 36,46				96. 17. 25,04	β Aquarii R.
	58. 28. 39,76								96. 17. 24,50	β Aquarii.
36,09	53. 18. 25,55		46,0	44,0	1. 19,68				91. 6. 53,51	α Aquarii R.
	53. 18. 24,21								91. 6. 52,17	α Aquarii.
	55. 51. 49,21	30,154	45,0	42,8	1. 27,77				93. 40. 25,26	n Piscium.
	56. 39. 22,86				1. 30,43				94. 28. 1,57	p Piscium.

Coincidence of Micrometer Wire with fixed Wire = 10',045. One revolution = 20'',833.  
 Correction for Runs = +0'',1.  
 Adopted Zenith Point = 170°. 8'. 36'',76.  
 Assumed Co-latitude = 37°. 47'. 8'',28.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
			° ' "	" "	" "	" "	" "	" "				
Nov. 1	(a) S.L. M.....	227.45	2.57,2	59,7	62,3	56,7	60,3	58,7	13,125	-1.4,17 -7,74	227.46.47,26	G.
	» S.L. M.....	227.45	2.57,2	59,7	62,3	56,7	60,3	58,7	13,307	-1.7,96 -3,87	227.46.47,34	G.
	» S.L. M.....	227.45	2.57,2	59,7	62,3	56,7	60,3	58,7	13,472	-1.11,40	227.46.47,77	G.
	» S.L. M.....	227.45	2.57,2	59,7	62,3	56,7	60,3	58,7	13,682	-1.15,77 +3,87	227.46.47,27	G.
	» S.L. M.....	227.45	2.57,2	59,7	62,3	56,7	60,3	58,7	13,912	-1.20,57 +7,74	227.46.46,34	G.
Nov. 2	☉ S.L. M.....	237.10	2.4,2	9,9	9,3	6,7	10,3	9,5	7,620	+50,52	237.12.58,84	G.
	☉ N.L.....	236.40	0.42,3	48,0	46,1	45,9	47,0	48,0			236.40.46,22	G.
	Venus center.....	238.40	2.55,9	60,5	61,3	57,2	61,9	61,9			238.42.59,80	G.
Nov. 3	α Cassiopeiæ R. M.....	353.30	3.3,5	4,0	10,8	2,2	6,3	8,0	7,563	+51,71	353.33.57,53	G.
	α Cassiopeiæ.....	166.40	3.11,7	15,3	19,1	11,7	16,9	14,6			166.43.14,90	G.
	Polaris R. M.....	26.20	3.14,8	16,4	20,1	12,1	17,8	17,7	16,199	-2.8,20	26.21.8,30	J.G.
	Polaris.....	133.55	1.2,1	7,0	7,7	3,6	6,0	7,0			133.56.5,57	J.G.
	μ Piscium.....	217.0	2.36,7	41,2	39,6	38,3	39,3	39,3			217.2.39,08	J.G.
	(b) S.L. M.....	216.30	3.35,1	39,3	39,1	39,1	38,5	39,7	19,090	-3.8,43 -7,44	216.30.22,61	J.G.
	» S.L. M.....	216.30	3.35,1	39,3	39,1	39,1	38,5	39,7	19,289	-3.12,58 -3,72	216.30.22,18	J.G.
	» S.L.....	216.30	0.18,1	22,5	20,1	20,0	22,0	24,0			216.30.21,12	J.O.
	» S.L. M.....	216.30	0.18,1	22,5	20,1	20,0	22,0	24,0	10,252	-4,32 +3,72	216.30.20,52	J.G.
	» S.L. M.....	216.30	0.18,1	22,5	20,1	20,0	22,0	24,0	10,420	-7,81 +7,44	216.30.20,75	J.G.
	α Arietis R. M.....	320.35	1.37,7	37,7	39,7	36,9	38,9	41,6	8,023	+42,13	320.37.20,88	J.O.
	(c) α Arietis.....	199.35	4.47,2	52,3	55,5	50,9	53,9	51,0		+0,14	199.39.51,96	J.G.
ξ <sup>1</sup> Ceti.....	214.15	1.1,3	4,5	4,9	2,2	6,2	4,6			214.16.3,95	J.G.	
Nov. 5	(d) α Andromedæ R.M.....	326.5	2.8,3	8,2	11,9	8,4	9,7	13,8	9,666	+7,90	326.7.17,95	G.
	α Andromedæ.....	194.5	4.48,7	54,1	54,8	50,1	54,3	52,0		+0,50	194.9.52,85	G.
	(e) α Ceti R. M.....	301.20	3.1,2	2,0	6,0	1,3	0,7	4,9	8,963	+22,54	301.23.25,24	G.
	α Ceti.....	218.50	3.44,3	48,1	50,3	43,0	49,3	47,5			218.53.47,10	G.
	(f) N.L. M.....	206.0	0.47,1	53,8	53,6	48,9	52,8	51,3	17,080	-2.26,55 -6,24	205.58.18,46	G.
	» N.L. M.....	206.0	0.47,1	53,8	53,6	48,9	52,8	51,3	17,282	-2.30,77 -3,12	205.58.17,36	G.
	» S.L.....	206.25	3.9,0	13,8	15,3	9,0	15,9	13,0			206.28.12,68	G.
	» S.L. M.....	206.25	3.9,0	13,8	15,3	9,0	15,9	13,0	10,252	-3,90 +3,12	206.28.11,90	G.
Nov. 6	» S.L. M.....	206.25	3.9,0	13,8	15,3	9,0	15,9	13,0	10,360	-6,56 +6,24	206.28.12,36	G.
	Polaris R. M.....	26.20	2.9,3	10,0	14,8	4,9	12,0	10,0	13,072	-1.3,07	26.21.7,10	J.O.
	Polaris.....	133.55	1.3,0	6,0	8,5	2,7	6,7	4,4			133.56.5,22	J.O.
	ζ U. Maj. SP. R. M.....	62.0	3.37,2	39,0	42,9	36,0	40,4	38,5	4,426	+1.57,07	62.5.36,09	J.O.
	(c) ζ Ursæ Majoris SP.....	98.10	1.34,4	35,2	37,0	33,0	34,2	36,0		-0,50	98.11.34,47	J.G.
	Piazzi II. 64. R. M.....	347.5	4.17,3	14,8	21,2	14,0	17,0	20,8	4,155	+2.2,71	347.11.20,24	G.
	Piazzi II. 64.....	173.5	0.55,2	59,2	62,2	55,4	58,3	59,3			173.5.58,27	G.
η Tauri.....	198.45	0.20,0	24,0	25,7	22,6	24,7	25,0			198.45.23,67	G.	

- (a) At the five wires: all good.
- (b) The observations made at the five wires: all pretty good.
- (c) Midway between 4<sup>th</sup> and 5<sup>th</sup> wires.

- (d) At 4<sup>th</sup> wire and midway between 5<sup>th</sup> and comb: cloudy and bad.
- (e) Very good.
- (f) Observations at the five wires: the N.L. rather better than the S.L.



Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi- diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
"	° ' "	Inch.	°	°	' "	' "	"	' "	° ' "	
	57.38.10,50	30,164	44,6	43,2					94.25.17,08	⋈.
	57.38.10,58								94.25.17,16	⋈.
	57.38.11,01				1.33,82	46.31,48		15.4,04	94.25.17,59	⋈.
	57.38.10,51								94.25.17,09	⋈.
	57.38.9,58								94.25.16,16	⋈.
	67.4.22,08	30,149	44,0	44,2	2.19,26	7,94		16.9,10	104.37.32,58	☉.
	66.32.9,46				2.15,74	7,91			104.37.34,67	☉.
	68.34.23,04	30,139	44,3	44,6	2.29,77	4,69			106.23.56,40	Venus.
36,22	-3.25.21,31	30,000	45,0	43,8		3,54			34.21.43,43	α Cassiopeiae R.
	-3.25.21,32								34.21.43,42	α Cassiopeiae.
36,94	-36.12.32,08			43,3		43,38			1.33.52,82	Polaris R.
	-36.12.30,65								1.33.54,25	Polaris.
	46.54.2,86				1.3,28				84.42.14,42	μ Piscium.
	46.21.46,39	30,004	44,3	43,0					83.15.51,21	⋈.
	46.21.45,96								83.15.50,78	⋈.
	46.21.44,90				1.2,16	39.14,67		14.50,95	83.15.49,72	⋈.
	46.21.44,30								83.15.49,12	⋈.
	46.21.44,53								83.15.49,35	⋈.
36,42	29.31.15,34					33,59			67.18.57,21	α Arietis R.
	29.31.15,74					57,49			67.18.57,61	α Arietis.
	44.7.27,73								81.55.33,50	ξ <sup>1</sup> Ceti.
35,40	24.1.18,27	29,840	42,5	40,3		26,44			61.48.52,99	α Andromedæ R.
	24.1.16,63								61.48.51,35	α Andromedæ.
36,17	48.45.10,98		41,3	39,0		1.7,76			86.33.27,02	α Ceti R.
	48.45.10,88								86.33.26,92	α Ceti.
	35.49.42,24	29,836	40,8	38,8		42,95	31.25,66		73.20.51,19	⋈.
	35.49.41,14								73.20.50,09	⋈.
	36.19.36,46							14.43,38	73.20.56,55	⋈.
	36.19.35,68					43,74	31.48,55		73.20.55,77	⋈.
	36.19.36,14								73.20.56,23	⋈.
36,16	-36.12.30,64	29,958	41,3	40,2		43,61			1.33.54,03	Polaris R.
	-36.12.31,24								1.33.53,43	Polaris.
35,28	-71.56.59,63	29,965	41,0	39,7		3.1,16			-34.12.52,51	ζ U. Maj. SP. R.
	-71.57.1,99								-34.12.54,87	ζ Urs. Maj. SP.
39,26	2.57.16,22		40,3	38,3		3,09			40.44.27,59	Piazzi II. 64. R.
	2.57.21,81								40.44.33,18	Piazzi II. 64.
	28.36.47,21	29,973	38,2	36,0		32,80			66.24.28,29	η Tauri.

Coincidence of Micrometer Wire with fixed Wire = 10',045. One revolution = 20'',833.

Correction for Runs = + 0'',1.

Adopted Zenith Point = 170°. 8'. 36'',76. From Nov. 3. = 170°. 8'. 36'',22. From Nov. 6. = 170°. 8'. 36'',46.

Assumed Co-latitude = 37°. 47'. 8'',28.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.	
			A	B	C	D	E	F					
			° ' "	° ' "	° ' "	° ' "	° ' "	° ' "					
Nov. 6	(a) ) N.L. M.....	201.55	0.18,3	20,1	24,8	14,8	23,1	20,1	10,168	- 2,56 - 5,20	201.55.12,44	G.	
	) N.L. M.....	201.55	0.18,3	20,1	24,8	14,8	23,1	20,1	10,238		- 4,01 - 2,60	201.55.13,59	G.
	) N.L.....	201.55	0.11,8	15,1	17,2	11,0	17,0	14,0			201.55.14,35	G.	
	) N.L. M.....	201.55	0.11,8	15,1	17,2	11,0	17,0	14,0	10,190	- 3,01 + 2,60	201.55.13,94	G.	
	) N.L. M.....	201.55	0.11,8	15,1	17,2	11,0	17,0	14,0	10,413	- 7,67 + 5,20	201.55.11,88	G.	
Nov. 11	☉ N.L. M.....	239.20	1.47,2	51,2	54,8	47,4	54,5	52,2	9,520	+ 10,94	239.22.2,12	G.	
	☉ S.L.....	239.50	4.17,8	19,6	22,5	16,3	21,6	21,7			239.54.19,83	G.	
	Venus S.L.....	241.55	0.56,1	58,3	63,4	54,7	61,9	60,0			241.55.59,05	G.	
Nov. 12	☉ S.L. M.....	240.10	1.30,1	31,3	35,9	30,2	35,6	35,9	11,891	- 38,45	240.10.54,68	G.	
	☉ N.L.....	239.35	3.34,3	38,0	40,8	35,3	40,0	40,3			239.38.38,05	G.	
Nov. 15	(b) α Aquilæ R. M.....	306.20	0.57,0	56,2	60,6	56,3	57,7	62,2	3,813	+ 2.9,83	306.23.8,15	G.	
	α Aquilæ.....	213.50	4.4,3	6,3	11,2	1,1	8,0	5,7			213.54.6,03	G.	
	(b) β Aquilæ R. M.....	303.55	1.39,7	41,3	42,2	40,0	41,1	44,6	9,372	+ 14,02	303.56.55,47	G.	
	β Aquilæ.....	216.20	0.16,5	17,8	21,0	15,1	22,2	21,9			216.20.19,08	G.	
Nov. 16	(c) ☉ S.L. M.....	241.10	3.31,2	32,5	35,8	29,2	35,9	35,1	8,860	+ 24,68	241.13.57,90	G.	
	☉ N.L.....	240.40	1.38,9	42,9	42,2	39,7	41,0	42,8			240.41.41,22	G.	
Nov. 18	Uranus.....	235.35	4.31,2	33,0	33,3	30,0	33,2	36,1			235.39.32,72	G.	
	ε Cephei R. M.....	354.5	4.30,7	31,8	36,3	28,3	34,9	34,0	10,180	- 2,80	354.9.29,78	G.	
	(d) ε Cephei.....	166.5	2.36,8	43,2	42,9	37,4	43,9	42,5		+ 0,23	166.7.41,30	G.	
	(e) α Pegasi R. M.....	312.10	3.58,5	61,0	60,7	59,5	58,4	64,2	4,429	+ 1.57,00	312.15.57,32	G.	
	(f) α Pegasi.....	208.0	1.10,2	16,5	16,3	12,0	18,1	14,5		+ 0,15	208.1.14,73	G.	
	α Andromedæ R. M.....	326.5	0.48,5	49,0	50,0	48,3	49,8	53,7	5,722	+ 1.30,06	326.7.19,93	G.	
	α Andromedæ.....	194.5	4.47,8	55,1	55,2	49,2	55,0	50,9			194.9.52,12	G.	
	Polaris R. M.....	26.20	2.41,5	44,2	43,3	38,9	44,5	44,8	14,350	- 1.29,68	26.21.13,14	G.	
	Polaris.....	133.55	0.58,0	60,5	62,5	56,1	62,5	60,0			133.55.59,92	G.	
	Polaris SP. R. M.....	29.30	0.22,7	22,2	27,2	21,3	24,3	26,7	14,792	- 1.38,89	29.28.45,18	G.	
	Polaris SP.....	130.45	3.25,3	29,0	32,2	24,2	31,4	27,2			130.48.28,15	G.	
	Nov. 19	☉ N.L. M.....	241.25	1.10,9	14,3	15,9	11,1	17,3	15,9	12,096	- 42,73	241.25.31,49	G.
(g) α Cephei R. M.....		359.45	1.20,7	21,0	25,3	18,3	24,0	24,3	1,586	+ 2.56,24 - 0,28	359.49.18,21	G.	
α Cephei.....		160.25	2.50,0	54,7	56,2	50,3	57,0	54,1		+ 0,64	160.27.54,31	G.	
β Aquarii R. M.....		291.35	2.50,7	54,7	54,9	51,6	51,8	56,1	4,175	+ 2.2,30	291.39.55,55	G.	
β Aquarii.....		228.35	2.14,7	19,6	19,8	15,0	21,1	19,0			228.37.18,15	G.	
Uranus.....		235.35	4.13,0	15,4	17,1	11,9	15,2	16,2			235.39.14,72	G.	
(b) Polaris R. M.....		26.20	2.26,0	27,0	29,3	22,1	27,8	29,6	13,605	- 1.14,17	26.21.12,75	G.	
Polaris.....		133.55	0.59,6	61,3	64,8	57,3	63,1	62,1			133.56.1,35	G.	
Nov. 21		(h) Uranus.....	235.35	3.42,2	46,4	43,9	41,8	48,9	47,0			235.38.44,97	G.
		(i) ε Cephei R. M.....	354.5	3.43,7	44,7	47,5	41,8	46,4	48,2	8,030	+ 41,98 - 0,91	354.9.26,39	G.
	ε Cephei.....	166.5	2.34,3	40,3	42,7	34,1	41,3	39,7		+ 2,04	166.7.40,72	G.	
	Polaris R. M.....	26.20	1.20,0	21,0	21,8	18,0	21,0	25,0	10,336	- 6,06	26.21.15,06	G.	
	Polaris.....	133.55	0.55,5	59,0	60,5	54,0	60,8	57,2			133.55.57,82	G.	
Nov. 23	(b) α Persei R. M.....	347.10	0.54,9	54,3	58,0	52,7	55,1	58,9	6,652	+ 1.10,68	347.12.6,31	G.	
	α Persei.....	173.5	0.1,8	6,0	7,9	4,9	8,1	6,1			173.5.5,80	G.	

(a) The observations at the five wires: unsteady.  
 (b) Pretty good.  
 (c) Without dark glass.  
 (d) At 4<sup>th</sup> wire.

(e) Blur.  
 (f) At 5<sup>th</sup> wire.  
 (g) At 4<sup>th</sup> wire, and between 4<sup>th</sup> and 5<sup>th</sup> wires.  
 (h) The relation of the microscopes appears unsteady.  
 (i) At 5<sup>th</sup> wire and comb: bad blur.



Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi- diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
"	° ' "	Inch.	°	°	' "	' "	r	' "	° ' "	
	31.46.35,98	29,973	38,2	36,0					69.20.51,24	♃.
	31.46.37,13								69.20.52,39	♃.
	31.46.37,89				37,24	28.12,03		14.41,77	69.20.53,15	♃.
	31.46.37,48								69.20.52,74	♃.
	31.46.35,42								69.20.50,68	♃.
	69.13.25,66	30,298	41,4	41,5	2.37,20		8,08	16.11,20	107.19.14,26	☉.
	69.45.43,37				2.41,68		8,11		107.19.14,02	☉.
	71.47.22,59		42,0	42,5	3.04,43		4,83	10,499	109.37.21,72	Venus.
	70.2.18,22	30,143	41,8	42,2	2.43,00		8,13	16.11,40	107.35.49,97	☉.
	69.30.1,59				2.38,43		8,10		107.35.51,60	☉.
37,09	43.45.28,31	30,008	42,2	41,7					81.33.33,52	α Aquilæ R.
	43.45.29,57				56,93				81.33.34,78	α Aquilæ.
37,28	46.11.40,99					1.1,97			83.59.51,24	β Aquilæ R.
	46.11.42,62								83.59.52,87	β Aquilæ.
	71.5.21,44	29,899	41,3	41,5	2.51,49		8,19	16.12,20	108.39.0,82	☉.
	70.33.4,76				2.46,47		8,16		108.39.3,55	☉.
	65.30.56,26	29,624	47,0	47,2	2.6,85		0,39		103.20.11,00	Uranus.
35,54	-4.0.53,32								33.46.10,88	ε Cephei R.
	-4.0.55,16				4,08				33.46.9,04	ε Cephei.
36,02	37.52.39,14	29,650	48,0	47,0		45,21			75.40.32,63	α Pegasi R.
	37.52.38,27								75.40.31,76	α Pegasi.
36,03	24.1.16,53	29,684	47,0	46,3		25,98			61.48.50,79	α Andromedæ R.
	24.1.15,66								61.48.49,92	α Andromedæ.
36,53	-36.12.36,68					42,67			1.33.48,93	Polaris R.
	-36.12.36,54								1.33.49,07	Polaris.
36,67	-39.20.8,72	29,900	43,5	42,2		48,51			-1.33.48,95	Polaris SP. R.
	-39.20.8,31								-1.33.48,54	Polaris SP.
	71.16.55,03	29,933	46,3	47,6	2.51,38		8,20	16.12,80	109.22.59,29	☉.
36,26	-9.40.41,75	29,926	45,2	43,5		10,08			28.6.16,45	α Cephei R.
	-9.40.42,15								28.6.16,05	α Cephei.
36,81	58.28.40,91					1.36,10			96.17.25,29	β Aquarii R.
	58.28.41,69								96.17.26,07	β Aquarii.
	65.30.38,26	29,929	45,0	42,6	2.9,33		0,39		103.19.55,48	Uranus.
37,05	-36.12.36,29					43,35			1.33.48,64	Polaris R.
	-36.12.35,11								1.33.49,82	Polaris.
	65.30.8,51	29,736	51,2	50,9	2.6,28		0,39		103.19.22,68	Uranus.
33,56	-4.0.49,93					4,06			33.46.14,29	ε Cephei R.
	-4.0.55,74								33.46.8,48	ε Cephei.
36,44	-36.12.33,60	29,732	50,2	49,8		42,43			1.33.47,25	Polaris R.
	-36.12.33,64								1.33.47,21	Polaris.
36,06	2.56.30,29	29,764	49,0	47,0		3,00			40.43.41,57	α Persei R.
	2.56.29,20								40.43.40,48	α Persei.

Coincidence of Micrometer Wire with fixed Wire = 10',045. One revolution = 20'',833.  
 Correction for Runs = +0'',1. From Nov. 11. - 0'',6.  
 Adopted Zenith Point = 170°.8'.36'',46. From Nov. 23. = 170°.8'.36'',60.  
 Assumed Co-latitude = 37°.47'.8'',28.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
			° ' "	" "	" "	" "	" "	" "				
Nov. 24	(a) Polaris SP. R. M...	29.25	3.40,3	41,6	46,9	39,2	42,9	42,0	9,950	+ 1,97	29.28.44,05	G.
	Polaris SP.....	130.45	3.27,4	28,6	31,5	25,7	29,8	27,9			130.48.28,42	G.
Nov. 25	(b) ☉ N.L. M.....	242.40	3.24,7	28,6	26,6	25,7	27,6	28,9	9,479	+ 11,79	242.43.38,64	G.
	☉ S.L.....	243.15	0.57,7	61,2	62,8	58,9	62,7	61,9		- 0,10	243.16.0,75	G.
	(c) ☽ S.L. M.....	244.45	0.33,9	35,5	36,0	33,9	37,3	36,3	1,729	+ 2.53,24	244.48.22,87	G.
	☽ S.L. M.....	244.45	0.33,9	35,5	36,0	33,9	37,3	36,3		- 5,84	244.48.21,77	G.
	☽ S.L. M.....	244.45	0.33,9	35,5	36,0	33,9	37,3	36,3	2,102	+ 2.49,22	244.48.20,94	G.
	☽ S.L. M.....	244.45	0.33,9	35,5	36,0	33,9	37,3	36,3		- 2,92	244.48.21,37	G.
	☽ S.L. M.....	244.45	0.33,9	35,5	36,0	33,9	37,3	36,3	2,222	+ 2.45,47	244.48.19,02	G.
	☽ S.L. M.....	244.45	0.33,9	35,5	36,0	33,9	37,3	36,3		+ 2.42,98	244.48.19,02	G.
	(d) β Aquarii R. M.....	291.35	2.41,9	43,4	41,9	42,5	41,8	47,0	3,789	+ 2,92	291.39.53,36	G.
	β Aquarii.....	228.35	2.19,0	23,4	21,6	18,9	21,0	23,0		+ 5,84	228.37.21,12	G.
	δ Capricorni.....	239.10	1.9,6	14,5	14,6	12,1	13,7	14,9	6,339	+ 1.17,20	239.11.13,22	G.
	Uranus.....	235.35	2.23,2	27,2	26,5	23,0	28,5	26,0		+ 2.10,33	235.37.25,68	G.
(f) α Cassiopeiae R. M.	353.30	2.45,8	45,8	47,9	44,6	45,8	50,1	15,467	- 1.52,96	353.34.3,82	G.	
α Cassiopeiae.....	166.40	3.8,3	12,2	13,3	9,2	13,2	10,2		+ 2.42,98	166.43.11,00	G.	
(g) Polaris R. M.....	26.20	3.8,0	9,7	13,3	6,6	11,1	10,3	8,500	+ 32,19	26.21.16,81	G.	
Polaris.....	133.55	0.56,0	56,0	61,8	51,3	59,3	54,0		+ 0,60	133.55.56,38	G.	
Nov. 26	(a) Polaris SP. R. M..	29.25	3.12,0	11,1	14,8	9,0	11,3	13,1	8,500	+ 32,19	29.28.44,02	i.g.
	Polaris SP.....	130.45	3.25,8	30,3	30,8	24,2	30,8	27,0		+ 0,60	130.48.28,08	i.g.
Nov. 27	Uranus.....	235.35	1.38,7	42,1	40,2	35,3	42,2	41,8	13,402	- 1.9,94	235.36.40,02	G.
	τ² Aquarii.....	236.45	1.47,0	52,3	50,3	47,8	50,8	51,0		+ 2.49,73	236.46.49,83	G.
	δ Aquarii M.....	239.0	1.47,4	52,6	50,8	48,9	51,6	51,3	1,898	+ 2.49,73	239.0.40,46	G.
	α U. Maj. SP. R. M.	55.10	2.53,0	54,0	55,9	50,9	54,8	55,3		- 35,49	55.15.43,66	G.
	α Ursæ Majoris SP.	105.0	1.28,5	26,3	28,3	27,3	25,4	32,9	11,749	- 7,52	105.1.28,08	G.
	(c) ☽ S.L. M.....	235.10	0.19,8	23,2	21,2	19,0	23,0	25,0		- 38,83	235.9.38,86	G.
	☽ S.L. M.....	235.10	0.19,8	23,2	21,2	19,0	23,0	25,0	11,909	- 3,76	235.9.39,28	G.
	☽ S.L. M.....	235.10	0.19,8	23,2	21,2	19,0	23,0	25,0		- 42,79	235.9.39,08	G.
	☽ S.L. M.....	235.10	0.19,8	23,2	21,2	19,0	23,0	25,0	12,099	- 47,57	235.9.38,06	G.
	☽ S.L. M.....	235.10	0.19,8	23,2	21,2	19,0	23,0	25,0		+ 3,76	235.9.38,39	G.
	☽ S.L. M.....	235.10	0.19,8	23,2	21,2	19,0	23,0	25,0	12,493	- 51,00	235.9.38,39	G.
	☽ S.L. M.....	235.10	0.19,8	23,2	21,2	19,0	23,0	25,0		+ 7,52	235.9.38,39	G.
	n Piscium.....	226.0	0.29,7	33,6	30,3	28,3	34,3	33,9	4,815	+ 1.48,95	226.0.31,67	G.
	(h) α Andromedæ R. M.	326.5	0.28,9	30,2	27,3	28,9	27,8	34,2		- 0,32	326.7.18,16	G.
α Andromedæ.....	194.5	4.47,0	54,7	54,9	49,9	54,8	51,7	18,380	+ 0,72	194.9.52,79	G.	
Polaris R. M.....	26.20	4.10,3	12,7	14,6	8,3	12,2	13,7		- 2.53,64	26.21.18,12	G.	
Polaris.....	133.55	0.53,3	56,0	58,1	51,2	58,0	54,0	1.5.20	+ 0,60	133.55.55,68	G.	
Nov. 28	☉ S.L. M.....	243.50	1.18,8	23,3	22,1	19,6	22,1		23,1	13,958	- 1.21,52	243.49.59,96
	☉ N.L.....	243.15	2.30,4	35,6	34,3	32,3	34,8	35,8	+ 6,72		243.17.33,82	G.
	τ² Aquarii.....	236.45	1.44,5	49,8	45,9	45,9	47,3	49,6	9,722	+ 6,72	236.46.47,13	G.
	δ Aquarii.....	239.0	0.35,0	33,7	38,7	34,6	39,3	39,0		- 0,12	239.0.37,70	G.
	(i) α U. Maj. SP. R. M.	55.15	0.35,0	36,6	38,3	32,1	37,2	38,0	1.5.20	+ 0,60	55.15.42,90	G.
	α Ursæ Majoris SP.	105.0	1.31,3	29,8	33,0	28,3	30,0	32,8		+ 0,60	105.1.30,83	G.

(a) Pretty good.

(b) The observations were 8<sup>s</sup> before the 3<sup>d</sup> wire and at the 5<sup>th</sup> wire: a correction for change of N.P.D. in 12<sup>s</sup> is applied.

(c) At the five wires.

(d) Bad: too much wind.

(e) Faint: doubtful observation.

(f) Not satisfactory.

(g) Not very good.

(h) At 5<sup>th</sup> wire and comb.

(i) Very good.



Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi- diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
"	° ' "	Inch.	°	°	' "	' "	"	' "	° ' "	
36,24	-39.20. 7,45	29,748	49,0	49,0	47,59				-1.33.46,76	Polaris SP. R.
	-39.20. 8,18								-1.33.47,49	Polaris SP.
	72.35. 2,04	29,746	51,6	51,8	3. 2,03	8,27	16.13,90	110.41.17,98	☉.	
	73. 7.24,15				3. 8,07	8,30		110.41.18,30	☉.	
	74.39.46,27	29,669	51,3	50,3				111.18.28,15	♃.	
	74.39.45,17							111.18.27,05	♃.	
	74.39.44,34				3.27,56	56. 1,56	15.52,40	111.18.26,22	♃.	
	74.39.44,77							111.18.26,65	♃.	
74.39.42,42							111.18.24,30	♃.		
37,24	58.28.43,24				1.33,96			96.17.25,48	βAquarii R.	
	58.28.44,52							96.17.26,76	βAquarii.	
	69. 2.36,62		51,0	50,0	2.29,83			106.52.14,73	δCapricorni.	
37,41	65.28.49,08	29,649	50,0	49,5	2. 6,17	0,39			103.18. 3,14	Uranus.
	-3.25.27,22								34.21.37,60	αCassiopeiæ R.
36,60	-3.25.25,60				3,46			34.21.39,22	αCassiopeiæ.	
	-36.12.40,21	29,646	50,2					1.33.45,73	Polaris R.	
36,05	-36.12.40,22				32,34			1.33.45,72	Polaris.	
	-39.20. 7,42	29,300	53,0	51,8	46,61			-1.33.45,75	Polaris SP. R.	
35,87	-39.20. 8,52							-1.33.46,85	Polaris SP.	
	65.28. 3,42	29,258	50,3	49,0	2. 4,54	0,39		103.17.15,85	Uranus.	
	66.38.13,23	29,238			2.11,40			104.27.32,91	τ <sup>2</sup> Aquarii.	
	68.52. 3,86				2.26,63			106.41.38,77	δAquarii.	
35,48	-65. 7. 7,06				2. 2,49			-27.22. 1,27	αU. Maj. SP. R.	
	-65. 7. 8,52							-27.22. 2,73	αUrs. Maj. SP.	
	65. 1. 2,26							101.43.50,05	♃.	
	65. 1. 2,68							101.43.51,47	♃.	
	65. 1. 2,48				2. 1,93	50.58,81	15.22,61	101.43.51,27	♃.	
	65. 1. 1,46							101.43.50,25	♃.	
	65. 1. 1,79							101.43.50,58	♃.	
36,90	55.51.55,07	29,244	49,5	48,2	1.24,19			93.40.27,54	ηPiscium.	
	24. 1.18,44			48,3				61.48.52,21	αAndromedæ R.	
	24. 1.16,19				25,49			61.48.49,96	αAndromedæ.	
36,87	-36.12.41,52	29,200		48,0				1.33.44,93	Polaris R.	
	-36.12.40,92				41,83			1.33.45,53	Polaris.	
36,87	73.41.23,36	29,298	50,0	49,6	3.12,70	8,33	16.14,50	111.15.21,51	☉.	
	73. 8.57,22				3. 6,33	8,30		111.15.18,03	☉.	
	66.38.10,53	29,444	48,0	46,2	2.13,08			104.27.31,89	τ <sup>2</sup> Aquarii.	
	68.52. 1,10				2.28,50			106.41.37,88	δAquarii.	
	-65. 7. 6,30				2. 4,05			-27.22. 2,07	αU. Maj. SP. R.	
	-65. 7. 5,77							-27.22. 1,54	αUrs. Maj. SP.	

Coincidence of Micrometer Wire with fixed Wire = 10',045. One revolution = 20'',833.  
 Correction for Runs = -0'',6.  
 Adopted Zenith Point = 170°. 8'. 36'',60.  
 Assumed Co-latitude = 37°. 47'. 8'',28.  
 Nov. 27. 9<sup>h</sup>, Molyneux fast on Hardy 1<sup>m</sup>. 24<sup>s</sup>.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
			° ' "	" "	" "	" "	" "	" "				
Nov. 28	η Piscium.....	226. 0	0. 29,7	33,3	30,2	28,9	34,0	34,1			226. 0. 31,68	G.
	(a) ) S.L. M.....	229. 35	0. 30,0	32,3	33,9	28,3	33,3	32,3	8,448	+ 33,27 - 7,74	229. 35. 57,20	G.
	) S.L. M.....	229. 35	0. 30,0	32,3	33,9	28,3	33,3	32,3	8,622	+ 29,64 - 3,87	229. 35. 57,44	G.
	) S.L. M.....	229. 35	0. 30,0	32,3	33,9	28,3	33,3	32,3	8,822	+ 25,48	229. 35. 57,15	G.
	) S.L. M.....	229. 35	0. 30,0	32,3	33,9	28,3	33,3	32,3	9,018	+ 21,40 + 3,87	229. 35. 56,94	G.
	) S.L. M.....	229. 35	0. 30,0	32,3	33,9	28,3	33,3	32,3	9,200	+ 17,60 + 7,74	229. 35. 57,01	G.
	ς Piscium.....	228. 55	2. 26,2	29,0	29,0	24,1	29,6	28,9			228. 57. 27,75	G.
	(b) α Cassiopeiæ R. M.	353. 30	2. 32,6	32,2	36,3	29,2	32,7	35,1	5,680	+ 1. 30,93	353. 34. 3,90	J.G.
	α Cassiopeiæ.....	166. 40	3. 6,7	11,3	13,6	7,3	11,3	8,5			166. 43. 9,73	J.G.
	(b) Polaris R. M.....	26. 20	2. 40,8	42,3	44,7	37,3	41,9	41,9	14,120	- 1. 24,89	26. 21. 16,54	G.
Polaris.....	133. 55	0. 56,2	56,6	62,3	52,3	59,0	56,9			133. 55. 57,20	G.	
Nov. 30	ε Piscium R. M....	304. 55	1. 46,4	47,1	47,7	48,9	46,8	52,3	9,552	+ 10,26	304. 56. 58,43	G.
	ε Piscium.....	215. 20	0. 11,9	15,2	16,3	11,8	16,2	14,1			215. 20. 14,25	G.
	Polaris R. M.....	26. 20	2. 14,2	16,2	16,9	12,6	17,3	18,0	12,790	- 57,19	26. 21. 18,63	G.
	Polaris.....	133. 55	0. 53,0	53,3	57,8	49,4	56,8	52,2			133. 55. 53,73	G.
	(c) ) S.L. M.....	218. 15	3. 42,6	46,5	45,0	43,9	46,8	45,9	13,948	- 1. 21,31 - 7,50	218. 17. 16,24	G.
	) S.L. M.....	218. 15	3. 42,6	46,5	45,0	43,9	46,8	45,9	14,155	- 1. 25,62 - 3,75	218. 17. 15,68	G.
	) S.L. M.....	218. 15	3. 42,6	46,5	45,0	43,9	46,8	45,9	14,356	- 1. 29,81	218. 17. 15,24	G.
	) S.L. M.....	218. 15	3. 42,6	46,5	45,0	43,9	46,8	45,9	14,554	- 1. 33,94 + 3,75	218. 17. 14,86	G.
	) S.L. M.....	218. 15	3. 42,6	46,5	45,0	43,9	46,8	45,9	14,752	- 1. 38,06 + 7,50	218. 17. 14,49	G.
	Polaris SP. R. M...	29. 25	3. 8,4	8,3	13,5	7,0	10,1	11,9	8,501	+ 32,16	29. 28. 41,98	G.
Polaris SP.....	130. 45	3. 27,7	28,5	32,2	26,8	31,1	29,0			130. 48. 29,15	G.	
Dec. 1	⊙ N.L. M.....	243. 45	3. 20,9	25,7	22,2	21,9	23,3	23,1	11,468	- 29,64	243. 47. 53,14	G.
	⊙ S.L. ....	244. 20	0. 13,8	18,2	16,2	14,7	17,8	18,7			244. 20. 16,57	G.
	α Cephei R. M.....	359. 45	2. 23,0	22,0	26,6	21,0	24,6	26,0	4,577	+ 1. 53,92	359. 49. 17,74	G.
	α Cephei.....	160. 25	2. 53,2	38,0	57,5	53,6	57,9	57,0			160. 27. 56,15	G.
	(d) Uranus.....	235. 30	4. 51,2	55,5	55,9	51,0	55,5	53,3			235. 34. 53,63	J.G.
	Polaris R. M.....	26. 20	2. 23,2	22,2	25,1	20,3	22,1	26,3	13,159	- 1. 4,47	26. 21. 18,68	G.
	Polaris.....	133. 55	0. 53,2	55,4	58,9	50,5	57,0	53,1			133. 55. 54,67	G.
	ο Piscium.....	214. 0	0. 46,8	49,8	49,5	46,3	49,8	48,9			214. 0. 48,50	G.
	(e) ) S.L. M.....	212. 55	2. 9,2	11,9	12,3	7,9	12,2	10,9	15,122	- 1. 45,78 - 7,10	212. 55. 17,82	G.
	) S.L. M.....	212. 55	2. 9,2	11,9	12,3	7,9	12,2	10,9	15,260	- 1. 48,65 - 3,55	212. 55. 18,50	G.
) S.L.....	212. 55	0. 16,0	18,0	17,9	15,1	20,0	18,9			212. 55. 17,65	G.	
) S.L. M.....	212. 55	0. 16,0	18,0	17,9	15,1	20,0	18,9	10,266	- 4,61 + 3,55	212. 55. 16,59	G.	
) S.L. M.....	212. 55	0. 16,0	18,0	17,9	15,1	20,0	18,9	10,455	- 8,54 + 7,10	212. 55. 16,21	G.	
(f) Polaris SP. R. M...	29. 25	3. 6,3	6,9	10,8	6,0	7,1	10,0	8,393	+ 34,41	29. 28. 42,19	G.	
Polaris SP.....	130. 45	3. 27,5	32,4	34,1	28,2	31,7	30,6			130. 48. 30,68	G.	
Dec. 2	⊙ S.L. M.....	244. 25	4. 29,2	31,1	31,8	29,9	31,1	31,6	10,119	- 1,54	244. 29. 29,16	G.
	⊙ N.L.....	243. 55	2. 4,0	7,3	7,3	3,2	6,9	8,2			243. 57. 6,12	G.

(a) At the five wires: all good.

(b) Pretty good.

(c) At the five wires: cloudy and clear: not very satisfactory.

(d) Faint and difficult: near the wire, but it is doubtful whether it was exactly on the wire.

(e) At five wires: limb uneven and observations not very satisfactory.

(f) Very good.



Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi- diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
"	° ' "	Inch.	°	°	' "	' "	"	' "	° ' "	
	55.51.55,08	29,444	48,0	46,2	1.25,11				93.40.28,47	η Piscium.
	59.27.20,60								96.13.9,60	⋈.
	59.27.20,84								96.13.9,84	⋈.
	59.27.20,55				1.37,71	47.46,64		15.10,35	96.13.9,55	⋈.
	59.27.20,34								96.13.9,34	⋈.
	59.27.20,41								96.13.9,41	⋈.
	58.48.51,15		46,2	44,0	1.35,70				96.37.35,13	ς Piscium.
36,82	-3.25.27,30	29,472	46,0	43,5	3,48				34.21.37,50	α Cassiopeia R.
	-3.25.26,87								34.21.37,93	α Cassiopeia.
36,87	-36.12.39,94	29,482	45,3	43,2	42,65				1.33.45,69	Polaris R.
	-36.12.39,40								1.33.46,23	Polaris.
36,34	45.11.38,21	29,150	51,0	50,5	57,10				82.59.43,59	ε Piscium R.
	45.11.37,61								82.59.42,99	ε Piscium.
36,18	-36.12.41,99				41,55				1.33.44,74	Polaris R.
	-36.12.42,91								1.33.43,82	Polaris.
	48.8.39,60	29,144		50,2					85.1.29,74	⋈.
	48.8.39,04								85.1.29,18	⋈.
	48.8.38,60				1.3,32	40.28,71		14.52,75	85.1.28,74	⋈.
	48.8.38,22								85.1.28,36	⋈.
	48.8.37,85								85.1.27,99	⋈.
35,57	-39.20.5,34	29,295	49,0	47,3	47,03				-1.33.44,09	Polaris SP. R.
	-39.20.7,49								-1.33.46,24	Polaris SP.
	73.39.16,50	29,298	50,0	50,1	3.12,09	8,33		16.14,90	111.45.43,44	⊙.
	74.11.39,93				3.18,87	8,35			111.45.43,83	⊙.
36,95	-9.40.41,10		51,0	49,6	9,75				28.6.17,43	α Cephei R.
	-9.40.40,49								28.6.18,04	α Cephei.
	65.26.16,99		49,8	49,2	2.4,49	0,38			103.15.29,38	Uranus.
36,68	-36.12.42,04	29,254	49,2	48,2	41,89				1.33.44,35	Polaris R.
	-36.12.41,97								1.33.44,42	Polaris.
	43.52.11,86	29,250	49,3	48,5	54,94				81.40.15,08	ο Piscium.
	42.46.41,18	29,230	49,2						79.43.15,73	⋈.
	42.46.41,86								79.43.16,41	⋈.
	42.46.41,01				52,85	36.39,39		14.47,17	79.43.15,56	⋈.
	42.46.39,95								79.43.14,50	⋈.
	42.46.39,57								79.43.14,12	⋈.
36,44	-39.20.5,55	29,346	49,0	47,2	47,12				-1.33.44,39	Polaris SP. R.
	-39.20.5,96								-1.33.44,80	Polaris SP.
	74.20.52,52	29,430	49,0	49,0	3.22,23	8,36		16.15,10	111.54.59,57	⊙.
	73.48.29,48				3.15,32	8,34			111.54.59,84	⊙.

Coincidence of Micrometer Wire with fixed Wire = 10',045. One revolution = 20'',833.  
 Correction for Runs = -0'',6.  
 Adopted Zenith Point = 170°.8'.36'',60. From Nov. 30. = 170°.8'.36'',64.  
 Assumed Co-latitude = 37°.47'.8'',28.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
			° ' "	° ' "	° ' "	° ' "	° ' "	° ' "				
Dec. 2	(a) Venus center	246.20	2. 6,1	10,5	12,0	6,4	8,3	8,8	4,288 4,268 8,375 8,530 8,661 8,857 9,039 6,935 6,059 17,830	+ 1. 59,93 + 2. 0,36 + 34,79 - 6,50 + 31,56 - 3,25 + 28,83 + 24,75 + 3,25 + 20,95 + 6,50 + 1. 4,79 + 1. 23,03 - 2. 42,19	246.22. 8,65 359.49.17,88 160.27.55,98 291.39.53,84 228.37.19,67 235.34.23,20 207.59.26,06 207.59.26,08 207.59.26,60 207.59.25,77 207.59.25,22 347.12. 9,89 173. 5. 4,82 209.58.27,68 196.25.23,65 198.42. 7,00 192.19. 7,28 191.45.48,80 189.29.17,17 189.26.34,98 189.12.53,15 187.44.34,32	G. G. G. J.G. J.G. G. G. G. G. G. G. G. G. G. G. G. G. G. G. G.
	α Cephei R. M.	359.45	2. 18,0	15,3	20,8	16,3	16,1	21,5				
	α Cephei	160.25	2. 53,1	57,0	58,8	53,2	57,7	56,4				
	β Aquarii R. M.	291.35	2. 52,1	54,0	55,8	52,1	52,2	55,0				
	β Aquarii	228.35	2. 17,8	21,0	20,9	16,8	19,9	21,9				
	Uranus	235.30	4. 22,3	23,5	26,2	18,9	24,8	24,0				
	(b) S.L. M.	207.55	3. 54,7	59,8	58,9	56,7	57,1	59,8				
	» S.L. M.	207.55	3. 54,7	59,8	58,9	56,7	57,1	59,8				
	» S.L. M.	207.55	3. 54,7	59,8	58,9	56,7	57,1	59,8				
	» S.L. M.	207.55	3. 54,7	59,8	58,9	56,7	57,1	59,8				
	» S.L. M.	207.55	3. 54,7	59,8	58,9	56,7	57,1	59,8				
	α Persei R. M.	347.10	1. 4,2	2,2	8,2	4,3	2,1	9,7				
	α Persei	173. 5	0. 1,9	6,2	7,1	2,7	4,9	6,1				
	f Tauri	209.55	3. 25,6	29,0	30,2	26,6	27,9	27,2				
	139 Tauri	196.25	0. 21,2	25,5	24,8	22,1	24,0	24,4				
	2 Geminorum	198.40	2. 4,4	7,7	9,2	6,3	6,8	7,8				
	* R. 6 <sup>h</sup> . 11 <sup>m</sup> . 30 <sup>s</sup> ...	192.15	4. 3,1	9,1	9,3	7,2	6,7	8,8				
	(c) z Aurigæ M.	191.40	4. 22,3	27,0	27,5	26,8	25,2	26,3				
	* R. 6 <sup>h</sup> . 20 <sup>m</sup> . 0 <sup>s</sup> ...	189.25	4. 15,0	17,7	19,0	16,2	16,3	19,3				
	* R. 6 <sup>h</sup> . 20 <sup>m</sup> . 20 <sup>s</sup> . M.	189.25	4. 15,0	17,7	19,0	16,2	16,3	19,3				
* R. 6 <sup>h</sup> . 23 <sup>m</sup> . 10 <sup>s</sup> ...	189.10	2. 49,8	55,0	55,2	53,2	53,2	52,8					
* R. 6 <sup>h</sup> . 26 <sup>m</sup> . 30 <sup>s</sup> ...	187.40	4. 30,6	35,1	37,0	34,0	34,0	35,7					
Dec. 3	☉ N.L. M.	244. 5	2. 57,4	62,0	61,2	60,0	60,1	61,2	15,979 4,333 16,849 4,742 4,891 10,189 10,322	- 2. 3,62 + 1. 59,00 - 2. 21,74 + 1. 50,48 + 1. 47,36 - 2,79 - 2,99 + 2,79 - 5,78 + 5,58	244. 5.56,65 244.38.20,02 235.33.56,77 312.15.52,53 208. 1.16,52 26.21.18,71 133.55.55,32 347.12. 8,98 173. 5. 3,75 209.58.29,22 203.11.31,15 203.11.30,82 203.41.21,95 203.41.21,75 203.41.21,75	G. G. G. J.G. J.G. J.G. J.G. G. G. G. G. G. G. G. G.
	☉ S.L.	244.35	3. 18,5	21,1	22,1	17,8	20,7	20,3				
	Uranus	235.30	3. 54,2	58,0	59,0	54,9	58,0	56,9				
	(d) α Pegasi R. M.	312.10	3. 53,3	53,3	55,2	52,6	50,7	56,5				
	α Pegasi	208. 0	1. 13,0	18,1	16,2	16,5	18,2	17,2				
	(e) Polaris R. M.	26.20	3. 39,0	41,2	42,3	38,2	41,1	41,3				
	Polaris	133.55	0. 53,0	56,0	60,0	51,9	53,3	52,8				
	(f) α Persei R.	347.10	2. 8,9	7,0	11,7	7,8	6,9	11,8				
	» Persei	173. 5	0. 0,7	3,3	5,8	2,0	5,8	4,9				
	f Tauri	209.55	3. 25,6	31,5	30,3	28,9	30,0	29,0				
	(g) N.L. M.	203. 5	4. 43,1	49,0	46,3	45,9	46,9	46,8				
	» N.L. M.	203. 5	4. 43,1	49,0	46,3	45,9	46,9	46,8				
	» S.L.	203.40	1. 17,8	24,8	21,1	23,2	22,1	22,8				
	» S.L. M.	203.40	1. 17,8	24,8	21,1	23,2	22,1	22,8				
	» S.L. M.	203.40	1. 17,8	24,8	21,1	23,2	22,1	22,8				
	Dec. 4	(h) ☉ S.L. M.	244.45	1. 21,1	24,6	25,1	23,2	23,8				
☉ N.L.		244.10	4. 17,1	20,3	18,7	16,8	19,0	19,8				
β Aquarii R. M.		291.35	2. 49,8	50,5	53,2	48,0	49,8	52,2				
β Aquarii		228.35	2. 18,0	20,9	21,1	16,8	19,0	22,6				
Uranus		235.30	3. 22,3	23,0	25,8	18,2	24,8	23,9				
α Cassiopeiae R. M.		353.30	3. 22,2	22,3	27,3	18,9	21,5	23,8				
α Cassiopeiae		166.40	3. 6,5	10,8	13,3	6,4	10,3	8,3				

(a) Impossible to take a limb.

(b) At the five wires.

(c) This and the four following observations taken with a power of 120.

(d) Center of bad blur.

(e) Pretty good.

(f) Came on fixed wire: pretty well bisected.

(g) At the five wires. Neither limb good.

(h) Not very good.



Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi- diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
"	" ' "	Inch.	°	°	' "	' "	r	' "	" ' "	
36,93	76. 13. 32,01	29,449	49,5	49,1	3. 49,82	5,08			114. 4. 25,03	Venus.
	- 9. 40. 41,24	29,500	47,2	45,0	9,91				28. 6. 17,13	α Cephei R.
36,76	- 9. 40. 40,66								28. 6. 17,71	α Cephei.
	58. 28. 42,80				1. 34,44				96. 17. 25,52	β Aquarii R.
	58. 28. 43,03								96. 17. 25,75	β Aquarii.
	65. 25. 46,56	29,508	46,3	44,5	2. 6,55	0,38			103. 15. 1,01	Uranus.
	37. 50. 49,42								74. 51. 1,94	).
	37. 50. 49,44								74. 51. 1,96	).
	37. 50. 49,96				45,18	32. 57,44		14. 43,50	74. 51. 2,48	).
	37. 50. 49,13								74. 51. 1,65	).
	37. 50. 48,58								74. 51. 1,10	).
37,36	2. 56. 26,75			41,8	3,00				40. 43. 38,03	α Persei R.
	2. 56. 28,18								40. 43. 39,46	α Persei.
	39. 49. 51,04				48,75				77. 37. 48,07	f Tauri.
	26. 16. 47,01	29,562	42,8	41,6	28,96				64. 4. 24,25	139 Tauri.
	28. 33. 30,36				31,91				66. 21. 10,55	2 Geminorum.
	22. 10. 30,64				23,90				59. 58. 2,82	* R. 6 <sup>h</sup> . 11 <sup>m</sup> . 30 <sup>s</sup> .
	21. 37. 12,16				23,24				59. 24. 43,68	z Aurigæ.
	19. 20. 40,53				20,58				57. 8. 9,39	* R. 6 <sup>h</sup> . 20 <sup>m</sup> . 0 <sup>s</sup> .
	19. 17. 58,34				20,53				57. 5. 27,15	* R. 6 <sup>h</sup> . 20 <sup>m</sup> . 20 <sup>s</sup> .
	19. 4. 16,51				20,27				56. 51. 45,06	* R. 6 <sup>h</sup> . 23 <sup>m</sup> . 10 <sup>s</sup> .
	17. 35. 57,68	29,572	43,2	42,0	18,59				55. 23. 24,55	* R. 6 <sup>h</sup> . 26 <sup>m</sup> . 30 <sup>s</sup> .
	73. 57. 20,01	29,608	49,0	49,3	3. 18,23	8,34		16. 15,20	112. 3. 53,38	⊙.
	74. 29. 43,38				3. 25,26	8,37			112. 3. 53,35	⊙.
	65. 25. 20,13		48,0	47,5	2. 6,16	0,38			103. 14. 34,19	Uranus.
34,53	37. 52. 44,11				45,10				75. 40. 37,49	α Pegasi R.
	37. 52. 39,88								75. 40. 33,26	α Pegasi.
37,02	- 36. 12. 42,07	29,580	47,0	46,3	42,52				1. 33. 43,69	Polaris R.
	- 36. 12. 41,32								1. 33. 44,44	Polaris.
36,37	2. 56. 27,66	29,542	48,3	47,6	2,97				40. 43. 38,91	α Persei R.
	2. 56. 27,11								40. 43. 38,36	α Persei.
	39. 49. 52,58				48,24				77. 37. 49,10	f Tauri.
	33. 2. 54,51		48,2	47,7					70. 36. 9,75	).
	33. 2. 54,18				37,63	29. 12,37			70. 36. 9,42	).
	33. 32. 45,31							14. 41,70	70. 36. 14,30	).
	33. 32. 45,11				38,35	29. 35,94			70. 36. 14,10	).
	33. 32. 45,11								70. 36. 14,10	).
36,67	74. 38. 6,48	29,682	46,0	46,1	3. 29,07	8,37		16. 15,40	112. 12. 20,06	⊙.
	74. 5. 41,89				3. 21,84	8,35			112. 12. 19,06	⊙.
	58. 28. 42,98	29,722	45,2	43,3	1. 35,49				96. 17. 26,75	β Aquarii R.
	58. 28. 43,04								96. 17. 26,81	β Aquarii.
	65. 24. 46,29		45,0	43,0	2. 7,75	0,38			103. 14. 1,94	Uranus.
36,09	- 3. 25. 26,31	29,794	43,0	41,3	3,54				34. 21. 38,43	α Cassiopeie R.
	- 3. 25. 27,42								34. 21. 37,32	α Cassiopeie.

Coincidence of Micrometer Wire with fixed Wire = 10',045. One revolution = 20'',833.  
 Correction for Runs = - 0''6.  
 Adopted Zenith Point = 170°. 8'. 36'',64.  
 Assumed Co-latitude = 37°. 47'. 8'',28.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.	
			A	B	C	D	E	F					
			° ' "	" "	" "	" "	" "	" "					
Dec. 4	Polaris R. M.....	26.20	3.12,3	13,1	16,4	11,3	13,0	14,9	15,612	- 1.55,99	26.21.17,46	J.G.	
	Polaris .....	133.55	0.55,3	56,0	60,7	53,0	57,3	56,3			133.55.56,42	J.G.	
	ω <sup>2</sup> Tauri .....	202.10	0.38,3	44,3	42,8	41,8	41,8	43,0			202.10.41,98	J.G.	
	δ <sup>1</sup> Tauri .....	205.10	1.35,0	40,1	40,0	38,3	38,3	38,2			205.11.38,28	J.O.	
	(a) ) N.L. M.....	199.40	3.15,6	22,1	21,7	20,1	17,4	21,0	9,530	+ 10,73 - 4,34	199.43.25,97	J.G.	
	) N.L. M.....	199.40	3.15,6	22,1	21,7	20,1	17,4	21,0	9,648	+ 8,27 - 2,17	199.43.25,68	J.G.	
	) N.L.....	200.10	3.15,1	19,2	19,9	17,2	15,9	19,0	10,167	- 2,54 + 2,17	200.13.17,65	J.G.	
	) S.L. M.....	200.10	3.15,1	19,2	19,9	17,2	15,9	19,0			200.13.17,28	J.G.	
	) S.L. M.....	200.10	3.15,1	19,2	19,9	17,2	15,9	19,0	10,298	- 5,27 + 4,34	200.13.16,72	J.G.	
	ι Tauri .....	200.55	4.49,1	55,4	57,1	51,9	53,2	51,2	5,138	+ 1.42,23 + 0,10	200.59.52,88	J.G.	
	139 Tauri.....	196.25	0.19,3	25,3	22,8	20,0	21,1	25,3			196.25.22,30	G.	
	2 Geminorum.....	198.40	2.5,3	7,0	7,3	5,2	6,8	7,6			198.42.6,50	G.	
	* R. 6 <sup>h</sup> . 11 <sup>m</sup> . 30 <sup>s</sup> ..	192.15	4.3,4	5,9	7,2	5,2	4,1	8,5			192.19.5,63	G.	
	z Aurigæ M.....	191.40	4.5,6	6,3	9,0	5,1	4,9	8,0	17,778	- 2.41,09 + 0,10	191.45.48,63	G.	
	* R. 6 <sup>h</sup> . 20 <sup>m</sup> . 0 <sup>s</sup> ..	189.25	4.13,2	15,5	18,0	13,8	15,3	16,3			189.29.15,37	G.	
	(b) * R. 6 <sup>h</sup> . 20 <sup>m</sup> . 20 <sup>s</sup> . M.	189.25	4.13,2	15,5	18,0	13,8	15,3	16,3			189.26.34,28	G.	
	Dec. 5	Capella R. M.....	343.45	1.21,1	16,7	22,0	17,8	22,2	24,2	13,129	- 1.4,24	343.45.16,41	G.
		Capella.....	176.30	1.54,1	60,8	62,3	58,8	59,4	58,3			176.31.58,92	G.
		(c) β Tauri R. M.....	326.25	0.17,1	14,2	20,3	16,8	19,3	22,7	14,061	- 1.23,66 - 0,33	326.23.54,41	J.G.
		β Tauri.....	193.50	3.10,7	18,1	17,1	15,3	18,2	16,3			+ 0,73	193.53.16,63
(d) ) N.L. M.....		197.15	2.1,5	5,3	7,5	4,1	6,8	4,9	7,740	+ 48,02 - 2,70	197.17.50,29	G.	
) N.L. M.....		197.15	2.1,5	5,3	7,5	4,1	6,8	4,9	7,816	+ 46,45 - 1,35	197.17.50,07	G.	
) N.L. M.....		197.15	2.1,5	5,3	7,5	4,1	6,8	4,9	7,885	+ 45,00	197.17.49,97	G.	
) N.L. M.....		197.15	2.1,5	5,3	7,5	4,1	6,8	4,9	7,970	+ 43,23 + 1,35	197.17.49,55	G.	
) N.L. M.....		197.15	2.1,5	5,3	7,5	4,1	6,8	4,9	8,066	+ 41,23 + 2,70	197.17.48,90	G.	
Dec. 11		(c) Aldebaran R. M...	314.5	2.6,7	2,9	9,9	2,0	0,8	11,1	10,413	- 7,67	314.6.57,98	J.G.
	Aldebaran.....	206.10	0.15,2	15,3	17,9	14,7	14,1	16,0	206.10.15,53			J.G.	
	Capella R. M.....	343.45	0.58,9	47,8	60,3	49,3	51,2	59,3	11,762	- 35,77	343.45.18,73	J.G.	
	Capella .....	176.30	1.53,5	57,8	62,8	55,2	56,9	56,7			176.31.57,23	J.G.	
	139 Tauri.....	196.25	0.19,9	23,3	24,0	18,9	20,1	22,8	11,762	- 35,77	196.25.21,00	J.G.	
	2 Geminorum.....	198.40	2.4,3	6,9	11,0	4,4	5,2	6,5			198.42.6,47	J.O.	
	* R. 6 <sup>h</sup> . 11 <sup>m</sup> . 30 <sup>s</sup> ..	192.15	4.2,3	3,1	9,1	1,6	3,0	5,3			192.19.4,23	J.O.	
	z Aurigæ.....	191.45	0.49,2	50,1	55,3	48,5	49,7	50,9			191.45.50,65	J.G.	
	(f) * R. 6 <sup>h</sup> . 23 <sup>m</sup> . 10 <sup>s</sup> ..	189.10	2.51,0	51,1	57,0	50,9	50,7	53,9		+ 0,87	189.12.53,42	J.G.	

(a) Observation at the five wires: N.L. better than the S.L.  
 (b) At 4<sup>th</sup> wire.  
 (c) At 5<sup>th</sup> wire and comb.

(d) At the five wires.  
 (e) Not good.  
 (f) At comb.



Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi- diameter.	Geoc. N.P.D. of Center.	NAME OF STAR or PLANET.								
			Attach.	Free.														
"	° ' "	Inch.	°	°	' "	' "	r	' "	° ' "									
36,94	-36. 12. 40,82	29,808	43,0	41,0	43,32				1. 33. 44,14	Polaris R.								
	-36. 12. 40,22														1. 33. 44,74	Polaris.		
	32. 2. 5,34	29,872	41,0	39,3	37,24				69. 49. 50,86	ω <sup>2</sup> Tauri.								
	35. 3. 1,64														72. 50. 51,66	δ <sup>1</sup> Tauri.		
	29. 34. 49,33	29,880	40,8	39,2	33,80	26. 24,48			67. 10. 48,22	D.								
	29. 34. 49,04															67. 10. 47,93	D.	
	30. 4. 41,01							14. 41,29	67. 10. 53,56	D.								
	30. 4. 40,64													34,48	26. 48,92	67. 10. 53,19	D.	
	30. 4. 40,08								67. 10. 52,63	D.								
	30. 51. 16,24													35,59		68. 39. 0,11	ι Tauri.	
	26. 16. 45,66	29,900	40,3	39,3	29,42				63. 59. 23,36	139 Tauri.								
	28. 33. 29,86													32,43		66. 21. 10,57	2 Geminorum.	
	22. 10. 28,99								59. 58. 1,56	* R. 6 <sup>h</sup> . 11 <sup>m</sup> . 30 <sup>s</sup> .								
	21. 37. 11,99													24,29		59. 24. 43,89	z Aurigæ.	
19. 20. 38,73								57. 8. 7,93	* R. 6 <sup>h</sup> . 20 <sup>m</sup> . 0 <sup>s</sup> .									
19. 17. 57,64													20,92		57. 5. 26,79	* R. 6 <sup>h</sup> . 20 <sup>m</sup> . 20 <sup>s</sup> .		
37,67	6. 23. 20,23	30,074	44,0	43,1	6,66				44. 10. 35,17	Capella R.								
	6. 23. 22,28														44. 10. 37,22	Capella.		
35,52	23. 44. 42,23				26,16				61. 32. 16,67	β Tauri R.								
	23. 44. 39,99														61. 32. 14,43	β Tauri.		
	27. 9. 13,65														64. 47. 8,97	D.		
	27. 9. 13,43														64. 47. 8,75	D.		
	27. 9. 13,33													30,49	24. 26,13	14. 42,68	64. 47. 8,65	D.
	27. 9. 12,91															64. 47. 8,23	D.	
27. 9. 12,26							64. 47. 7,58	D.										
36,76	36. 1. 38,66	30,170	30,0	27,2	44,83				73. 49. 31,77	Aldebaran R.								
36. 1. 38,89															73. 49. 32,00	Aldebaran.		
37,98	6. 23. 17,91	30,140	29,5	28,1	30,36				44. 10. 33,10	Capella R.								
	6. 23. 20,59													6,91		44. 10. 35,78	Capella.	
	26. 16. 44,36													30,36		64. 4. 23,00	139 Tauri.	
	28. 33. 29,83													33,46		66. 21. 11,57	2 Geminorum.	
	22. 10. 27,59													25,06		59. 58. 0,93	* R. 6 <sup>h</sup> . 11 <sup>m</sup> . 30 <sup>s</sup> .	
	21. 37. 14,01													24,37		59. 24. 46,66	z Aurigæ.	
19. 4. 16,78				21,26		56. 51. 46,32	* R. 6 <sup>h</sup> . 23 <sup>m</sup> . 10 <sup>s</sup> .											

Coincidence of Micrometer Wire with fixed Wire = 10',045. One revolution = 20",833.  
 Correction for Runs = -0",6. From Dec. 11. = +1",2.  
 Adopted Zenith Point = 170°. 8'. 36",64.  
 Assumed Co-latitude = 37°. 47'. 8",28.

THE following Differences of N.P.D. were observed with the Micrometer, and require no further Reduction.

Day of Observation. 1835.	Principal Star.	Small Star.	Micrometer.	Difference of N.P.D.	Apparent N.P.D. of small Star.
April 2 8 14	Castor (large star).....	Castor (preceding or small star)...	r	"	° ' "
	Castor (large star).....	Castor (preceding or small star)...	10,009	+ 1,08	57. 45. 19,33
	Castor (large star).....	Castor (preceding or small star)...	10,001	+ 1,25	.....
			10,017	+ 0,85	57. 45. 17,76

The numbers in the following Tables are formed by subtracting the observed zenith distance of the Sun's or Moon's N.L., corrected for refraction and parallax, from that of the S.L. When both limbs are not equally illuminated, her diameter is corrected as is described in the Introduction.

VERTICAL DIAMETERS OF THE SUN, DEDUCED FROM EACH DAY'S OBSERVATION,  
AND CORRECTED FOR REFRACTION AND PARALLAX.

Day of Observation. 1835.	Apparent Diameter.	Day of Observation. 1835.	Apparent Diameter.	Day of Observation. 1835.	Apparent Diameter.	Day of Observation. 1835.	Apparent Diameter.
Jan. 3	32. 34,69	April 13	31. 50,75	July 4	31. 30,06	Sept. 7	31. 46,59
5	32. 34,86	14	31. 54,48	6	31. 27,00	14	31. 53,86
6	32. 38,00	22	31. 51,78	7	31. 28,24	16	31. 53,54
10	32. 35,60	27	31. 49,05	11	31. 32,44	17	31. 54,17
13	32. 33,17			17	31. 30,21	18	31. 53,75
15	32. 32,66	May 5	31. 46,45	18	31. 32,19	19	31. 56,72
17	32. 36,21	6	31. 45,89	21	31. 36,33	28	32. 0,44
20	32. 33,66	8	31. 43,73	28	31. 32,36		
21	32. 34,73	9	31. 43,20	29	31. 34,04	Oct. 5	32. 3,91
22	32. 33,13	11	31. 41,48	30	31. 32,18	8	32. 4,20
26	32. 33,81	12	31. 44,70	31	31. 35,61	10	32. 5,80
		13	31. 39,03			12	32. 4,30
Feb. 4	32. 31,95	16	31. 42,79	Aug. 1	31. 37,01	14	32. 9,63
5	32. 27,04	18	31. 44,02	3	31. 35,31	15	32. 5,75
6	32. 27,22	19	31. 41,22	4	31. 35,34	17	32. 12,21
9	32. 27,52	21	31. 36,97	5	31. 38,43	19	32. 10,85
10	32. 26,73	22	31. 37,94	8	31. 37,92	21	32. 14,11
13	32. 25,02	25	31. 34,71	10	31. 37,46	22	32. 11,30
20	32. 25,30	29	31. 34,30	11	31. 33,17	23	32. 14,11
24	32. 20,18	30	31. 35,26	12	31. 38,03	24	32. 12,86
				13	31. 39,72	26	32. 15,37
March 3	32. 16,62	June 6	31. 34,59	15	31. 37,67	27	32. 14,67
5	32. 16,00	8	31. 34,21	18	31. 40,56	28	32. 16,56
6	32. 17,13	9	31. 33,41	19	31. 39,37		
10	32. 17,13	10	31. 34,45	20	31. 42,35	Nov. 2	32. 16,11
13	32. 11,72	12	31. 34,68	21	31. 40,72	11	32. 22,16
16	32. 13,81	15	31. 32,57	22	31. 41,90	12	32. 21,17
19	32. 8,31	19	31. 26,34	28	31. 42,72	16	32. 21,67
		22	31. 28,42	29	31. 42,20	25	32. 28,12
April 1	32. 1,46	27	31. 30,66	31	31. 44,49	28	32. 32,48
2	32. 3,53	29	31. 29,36				
6	32. 0,43	30	31. 32,62	Sept. 1	31. 44,76	Dec. 1	32. 30,19
7	31. 57,56			2	31. 49,11	2	32. 29,93
8	31. 59,84	July 1	31. 31,51	3	31. 47,87	3	32. 30,37
11	31. 54,35	3	31. 33,94	4	31. 46,72	4	32. 31,80

VERTICAL DIAMETERS OF THE MOON, DEDUCED FROM THE OBSERVATIONS OF EACH DAY ON WHICH BOTH LIMBS WERE OBSERVED, AND CORRECTED FOR REFRACTION AND PARALLAX.

Day of Observation. 1835.	Apparent Diameter.	Day of Observation. 1835.	Apparent Diameter.	Day of Observation. 1835.	Apparent Diameter.	Day of Observation. 1835.	Apparent Diameter.
Feb. 10	31. 9,24	June 10	33. 11,12	Sept. 7	30. 37,36	Nov. 5	29. 32,30
		11	32. 53,94	15	29. 49,93		
March 8	30. 19,73	Aug. 8	31. 34,81			Dec. 3	29. 27,98
15	33. 5,00	9	31. 13,41	Oct. 7	29. 50,15	4	29. 27,63



MEAN NORTH POLAR DISTANCES OF STARS

OBSERVED IN THE YEAR 1835,

AS DEDUCED FROM EACH DAY'S OBSERVATION;

(WITHOUT CORRECTION FOR THE DISCORDANCE OF ZENITH POINTS,  
OR FOR THE ALTERATION OF CO-LATITUDE);

WITH

A CATALOGUE

OF THE

CONCLUDED MEAN NORTH POLAR DISTANCES,

JANUARY 1, 1835.

(CORRECTED FOR THE DISCORDANCE OF ZENITH POINTS,  
AND FOR THE ALTERATION OF CO-LATITUDE).

$\gamma$ Pegasi.		$m$ Ceti.		Polaris R. <i>continued.</i>		Polaris SP. <i>continued.</i>	
Jan. 5	75.44.1,01	Jan. 5	92.2.28,16	June 8	1.34.15,70	Oct. 27	1.34.14,47
			28,28	Oct. 4	14,24	Nov. 18	14,44
$\gamma$ Pegasi R.		$\epsilon$ Piscium.		7	14,65	24	15,24
Jan. 5	75.44.1,64			19	13,86	26	15,20
$\alpha$ Cassiopeia.		Nov. 30	83.0.0,88	21	13,78	30	15,70
Jan. 3	34.22.6,34	$\epsilon$ Piscium R.		27	15,21	Dec. 1	14,52
5	6,08	Nov. 30	83.0.1,48	29	13,65	$\mu$ Piscium.	
Oct. 7	7,42	$\epsilon$ Piscium R.		Nov. 3	13,39	Jan. 6	84.42.31,79
29	5,93	Nov. 30	83.0.1,48	6	15,69	Nov. 3	32,64
Nov. 25	7,43	Polaris.		18	14,68	$\mu$ Piscium R.	
28	6,61	Jan. 1	1.34.13,91	19	14,69	March 19	1.34.17,78
Dec. 4	6,78	3	15,13	21	13,94	April 6	15,80
$\alpha$ Cassiopeia R.		5	14,20	25	13,63	8	12,95
Jan. 3	34.22.6,37	6	14,11	27	13,42	9	14,21
5	7,56	March 19	14,60	28	14,46	12	14,50
Oct. 7	7,10	April 1	12,97	Dec. 1	13,94	14	15,33
29	6,39	13	14,27	3	13,80	21	16,51
Nov. 25	5,81	21	15,27	4	14,51	27	16,99
28	6,18	26	19,77	Polaris SP.		28	17,65
Dec. 4	7,89	May 17	14,20	March 19	1.34.13,76	May 7	14,96
$\alpha$ Cassiopeia SP.		18	14,38	April 6	12,82	9	14,54
April 6	34.22.7,44	22	14,69	8	15,55	15	14,99
8	9,12	June 8	13,39	9	14,37	16	14,17
May 16	7,35	Oct. 4	15,36	12	15,34	18	12,18
18	8,11	7	13,52	14	14,08	21	15,84
21	6,98	19	17,29	21	15,28	25	16,13
$\alpha$ Cassiopeia SP. R.		21	15,20	27	11,95	26	15,71
April 6	34.22.5,89	27	14,37	28	12,97	27	14,05
8	3,98	29	15,27	May 7	14,30	28	15,07
May 16	6,31	Nov. 3	14,82	8	15,59	29	14,29
18	5,44	6	15,09	18	15,59	June 2	16,13
21	6,40	18	14,82	21	13,40	6	14,36
$\beta$ Ceti.		19	15,87	25	14,55	8	15,73
Jan. 6	108.53.34,50	27	13,90	26	14,85	10	15,54
$\beta$ Ceti R.		25	13,62	27	15,35	22	16,87
Jan. 6	108.53.35,13	27	14,02	28	14,71	23	15,72
		28	15,00	29	13,95	29	14,55
		30	13,14	June 2	15,61	July 1	15,98
		Dec. 1	14,01	6	15,74	3	15,35
		3	14,55	8	15,87	Oct. 16	14,45
		4	15,11	10	15,71	20	13,60
		Polaris R.		22	16,14	22	13,69
		Jan. 1	1.34.13,12	23	15,50	23	13,96
		3	12,99	29	15,09	26	15,07
		5	14,08	30	15,17	27	14,72
		6	14,12	July 1	15,37	Nov. 18	14,85
		May 17	11,32	3	15,62	24	14,51
				Oct. 16	14,09	26	14,10
				20	14,23	30	13,55
				22	15,15	Dec. 1	14,11
				23	14,01	$\mu$ Piscium.	
				26	14,12	Jan. 6	84.42.31,79
						Nov. 3	32,64



ν Piscium.		α Ceti R.		ε Persei.		Aldebaran R. <i>continued.</i>	
Jan. 6	85. 20. 58,22	Nov. 5	86. 33. 43,88	Feb. 12	50. 28. 24,63	March 10	73. 49. 45,25
ο Piscium.		ζ Arietis.		ε Persei R.		13	44,99
Oct. 7	81. 40. 32,63	Feb. 6	69. 34. 18,70	Feb. 12	50. 28. 27,51	19	45,69
Dec. 1	33,02	α Persei.		ω <sup>2</sup> Tauri.		Dec. 11	43,76
ο Piscium R.		Jan. 17	40. 43. 56,47	Dec. 4	69. 50. 4,38	ι Tauri.	
Oct. 7	81. 40. 30,61	Feb. 9	57,89	δ <sup>1</sup> Tauri.		Dec. 4	68. 39. 10,30
α Arietis.		12	57,71	Dec. 4	72. 51. 4,66	Capella.	
Jan. 24	67. 19. 16,34	Nov. 23	58,10	Aldebaran.		Jan. 16	44. 10. 44,16
26	18,01	Dec. 2	58,87	Jan. 3	73. 49. 44,44	17	44,34
27	17,98	3	59,97	5	43,74	20	44,12
30	15,32	α Persei R.		6	43,63	22	43,14
Nov. 3	16,46	Jan. 17	40. 43. 59,27	12	44,11	23	43,79
α Arietis R.		Feb. 9	57,80	16	44,61	26	44,20
Jan. 24	67. 19. 16,99	12	58,22	17	42,51	27	41,88
26	18,20	Nov. 23	59,19	20	44,63	Feb. 4	43,02
27	14,45	Dec. 2	57,44	22	44,68	9	43,22
30	17,96	3	58,52	23	44,17	23	42,42
Nov. 3	16,06	* R 3 <sup>h</sup> . 21 <sup>m</sup> . 20 <sup>s</sup> .		24	44,06	March 3	43,00
ζ <sup>1</sup> Ceti.		Feb. 6	77. 40. 5,79	Feb. 2	43,53	6	43,22
Nov. 3	81. 55. 51,54	f Tauri.		10	45,65	8	44,12
Piazzii II. 64.		Feb. 6	77. 38. 2,16	21	44,49	13	43,12
Nov. 6	40. 44. 51,75	Dec. 2	3,59	23	43,95	19	43,76
Piazzii II. 64. R.		3	4,59	24	44,15	April 1	41,40
Nov. 6	40. 44. 46,16	δ Eridani.		March 6	44,70	11	43,84
γ Ceti.		Feb. 12	100. 19. 35,92	10	44,67	14	42,50
Jan. 24	87. 27. 48,92	δ Eridani R.		13	44,22	Dec. 5	45,80
γ Ceti R.		Feb. 12	100. 19. 36,24	19	45,13	11	45,30
Jan. 24	87. 27. 50,33	η Tauri.		Dec. 11	43,99	Capella R.	
α Ceti.		Nov. 6	66. 24. 42,56	Aldebaran R.		Jan. 16	44. 10. 42,16
Nov. 5	86. 33. 43,78	Aldebaran R.		Jan. 3	73. 49. 45,26	17	42,17
				5	45,48	20	42,33
				6	44,69	22	43,20
				12	45,85	23	44,24
				16	45,40	26	42,74
				17	43,98	27	44,88
				20	43,66	Feb. 4	43,25
				22	45,21	9	44,63
				23	45,08	23	43,37
				24	45,46	March 3	44,59
				Feb. 2	45,12	6	44,46
				10	43,92	8	43,08
				21	45,27	13	43,56
				23	45,28	19	44,32
				24	43,57	April 1	45,23
				March 6	45,11	11	43,34
						14	45,15
						Dec. 5	43,75
						11	42,62

110 MEAN NORTH POLAR DISTANCES OF STARS OBSERVED IN THE YEAR 1835.

$\beta$ Tauri.		$\zeta$ Orionis R.		$\beta$ Aurigæ R.		* $\mathcal{R}$ 6 <sup>h</sup> . 12 <sup>m</sup> . 50 <sup>s</sup> .			
Jan. 17	61. 32. 21,72	March 8	92. 2. 12,12	March 10	45. 4. 41,91	Jan 20	62. 44. 17,29		
20	22,30	B Tauri.		139 Tauri.		23	16,88		
Feb. 2	20,30					24	15,73		
4	22,41					26	18,66		
8	24,93					* $\mathcal{R}$ 6 <sup>h</sup> . 13 <sup>m</sup> . 10 <sup>s</sup> .			
23	21,06	March 8	65. 29. 44,32	Dec. 2	64. 4. 29,52	Jan. 20	62. 48. 29,05		
24	21,38	13	44,19	4	28,66	23	28,73		
March 4		31 Camelopardali.		2 Geminorum.		26	29,99		
						6	23,12	11	28,45
						8	21,93	* $\mathcal{R}$ 6 <sup>h</sup> . 18 <sup>m</sup> . 35 <sup>s</sup> .	
						13	22,43		
						19	22,45		
19	22,44								
April 11		31 Camelopardali R.		$a$ Lyncis.		Feb. 2	27,13		
						3	30,66		
Aug. 17		31 Camelopardali R.		$\beta$ Canis Majoris.		4	29,75		
						* $\mathcal{R}$ 6 <sup>h</sup> . 13 <sup>m</sup> . 10 <sup>s</sup> .			
Dec. 5		March 6		30. 9. 37,45		March 19	107. 52. 45,02		
						* $\mathcal{R}$ 6 <sup>h</sup> . 18 <sup>m</sup> . 35 <sup>s</sup> .			
$\beta$ Tauri R.		31 Camelopardali SP.		March 11		28. 26. 35,60			
Jan. 17	61. 32. 20,59	31 Camelopardali SP.		$a$ Lyncis R.		* $\mathcal{R}$ 6 <sup>h</sup> . 18 <sup>m</sup> . 35 <sup>s</sup> .			
20	22,44								
Feb. 2	23,28								
4	22,97								
8	21,04	June 30	30. 9. 35,52	March 11	28. 26. 35,20	Dec. 2	59. 24. 45,59		
23	22,75	July 1	35,51	4	45,84	11	48,83		
24	22,74	3	35,86	$a$ Lyncis S.P.		* $\mathcal{R}$ 6 <sup>h</sup> . 18 <sup>m</sup> . 50 <sup>s</sup> .			
March 4		6	36,20						
		6	21,82						
		8	22,80						
		13	22,90						
		19	23,46						
April 11		31 Camelopardali SP. R.		$a$ Lyncis SP. R.		* $\mathcal{R}$ 6 <sup>h</sup> . 18 <sup>m</sup> . 50 <sup>s</sup> .			
								* $\mathcal{R}$ 6 <sup>h</sup> . 20 <sup>m</sup> . 10 <sup>s</sup> .	
								* $\mathcal{R}$ 6 <sup>h</sup> . 20 <sup>m</sup> . 30 <sup>s</sup> .	
Aug. 17		June 30		30. 9. 35,66		$\nu$ Geminorum.			
								* $\mathcal{R}$ 6 <sup>h</sup> . 20 <sup>m</sup> . 10 <sup>s</sup> .	
								* $\mathcal{R}$ 6 <sup>h</sup> . 20 <sup>m</sup> . 30 <sup>s</sup> .	
Dec. 5		July 1		37,65		* $\mathcal{R}$ 6 <sup>h</sup> . 20 <sup>m</sup> . 10 <sup>s</sup> .			
								* $\mathcal{R}$ 6 <sup>h</sup> . 20 <sup>m</sup> . 10 <sup>s</sup> .	
								* $\mathcal{R}$ 6 <sup>h</sup> . 20 <sup>m</sup> . 30 <sup>s</sup> .	
$\zeta$ Tauri.		$a$ Orionis.		36,39		* $\mathcal{R}$ 6 <sup>h</sup> . 20 <sup>m</sup> . 10 <sup>s</sup> .			
								* $\mathcal{R}$ 6 <sup>h</sup> . 20 <sup>m</sup> . 10 <sup>s</sup> .	
								* $\mathcal{R}$ 6 <sup>h</sup> . 20 <sup>m</sup> . 30 <sup>s</sup> .	
March 8		Jan. 23		82. 37. 49,15		* $\mathcal{R}$ 6 <sup>h</sup> . 20 <sup>m</sup> . 10 <sup>s</sup> .			
								* $\mathcal{R}$ 6 <sup>h</sup> . 20 <sup>m</sup> . 10 <sup>s</sup> .	
								* $\mathcal{R}$ 6 <sup>h</sup> . 20 <sup>m</sup> . 30 <sup>s</sup> .	
March 8		March 8		49,03		* $\mathcal{R}$ 6 <sup>h</sup> . 20 <sup>m</sup> . 10 <sup>s</sup> .			
								* $\mathcal{R}$ 6 <sup>h</sup> . 20 <sup>m</sup> . 10 <sup>s</sup> .	
								* $\mathcal{R}$ 6 <sup>h</sup> . 20 <sup>m</sup> . 30 <sup>s</sup> .	
$\epsilon$ Orionis.		$a$ Orionis R.		49,90		* $\mathcal{R}$ 6 <sup>h</sup> . 20 <sup>m</sup> . 10 <sup>s</sup> .			
								* $\mathcal{R}$ 6 <sup>h</sup> . 20 <sup>m</sup> . 10 <sup>s</sup> .	
								* $\mathcal{R}$ 6 <sup>h</sup> . 20 <sup>m</sup> . 30 <sup>s</sup> .	
Feb. 24		Jan. 23		82. 37. 50,03		* $\mathcal{R}$ 6 <sup>h</sup> . 20 <sup>m</sup> . 10 <sup>s</sup> .			
								* $\mathcal{R}$ 6 <sup>h</sup> . 20 <sup>m</sup> . 10 <sup>s</sup> .	
								* $\mathcal{R}$ 6 <sup>h</sup> . 20 <sup>m</sup> . 30 <sup>s</sup> .	
$\epsilon$ Orionis R.		March 8		48,98		* $\mathcal{R}$ 6 <sup>h</sup> . 20 <sup>m</sup> . 10 <sup>s</sup> .			
								* $\mathcal{R}$ 6 <sup>h</sup> . 20 <sup>m</sup> . 10 <sup>s</sup> .	
								* $\mathcal{R}$ 6 <sup>h</sup> . 20 <sup>m</sup> . 30 <sup>s</sup> .	
Feb. 24		March 11		50,30		* $\mathcal{R}$ 6 <sup>h</sup> . 20 <sup>m</sup> . 10 <sup>s</sup> .			
								* $\mathcal{R}$ 6 <sup>h</sup> . 20 <sup>m</sup> . 10 <sup>s</sup> .	
								* $\mathcal{R}$ 6 <sup>h</sup> . 20 <sup>m</sup> . 30 <sup>s</sup> .	
Feb. 24		March 13		50,10		* $\mathcal{R}$ 6 <sup>h</sup> . 20 <sup>m</sup> . 10 <sup>s</sup> .			
								* $\mathcal{R}$ 6 <sup>h</sup> . 20 <sup>m</sup> . 10 <sup>s</sup> .	
								* $\mathcal{R}$ 6 <sup>h</sup> . 20 <sup>m</sup> . 30 <sup>s</sup> .	
$\zeta$ Orionis.		$\beta$ Aurigæ.		59,58		* $\mathcal{R}$ 6 <sup>h</sup> . 23 <sup>m</sup> . 10 <sup>s</sup> .			
								* $\mathcal{R}$ 6 <sup>h</sup> . 23 <sup>m</sup> . 10 <sup>s</sup> .	
								* $\mathcal{R}$ 6 <sup>h</sup> . 23 <sup>m</sup> . 10 <sup>s</sup> .	
March 8		March 10		45. 4. 41,92		* $\mathcal{R}$ 6 <sup>h</sup> . 11 <sup>m</sup> . 30 <sup>s</sup> .			
								* $\mathcal{R}$ 6 <sup>h</sup> . 11 <sup>m</sup> . 30 <sup>s</sup> .	
								* $\mathcal{R}$ 6 <sup>h</sup> . 11 <sup>m</sup> . 30 <sup>s</sup> .	
March 8		Dec. 2		59. 58. 5,35		* $\mathcal{R}$ 6 <sup>h</sup> . 11 <sup>m</sup> . 30 <sup>s</sup> .			
								* $\mathcal{R}$ 6 <sup>h</sup> . 11 <sup>m</sup> . 30 <sup>s</sup> .	
								* $\mathcal{R}$ 6 <sup>h</sup> . 11 <sup>m</sup> . 30 <sup>s</sup> .	
March 8		4		4,17		* $\mathcal{R}$ 6 <sup>h</sup> . 11 <sup>m</sup> . 30 <sup>s</sup> .			
								* $\mathcal{R}$ 6 <sup>h</sup> . 11 <sup>m</sup> . 30 <sup>s</sup> .	
								* $\mathcal{R}$ 6 <sup>h</sup> . 11 <sup>m</sup> . 30 <sup>s</sup> .	
March 8		11		3,75		* $\mathcal{R}$ 6 <sup>h</sup> . 11 <sup>m</sup> . 30 <sup>s</sup> .			
								* $\mathcal{R}$ 6 <sup>h</sup> . 11 <sup>m</sup> . 30 <sup>s</sup> .	
								* $\mathcal{R}$ 6 <sup>h</sup> . 11 <sup>m</sup> . 30 <sup>s</sup> .	



* R 6 <sup>h</sup> . 26 <sup>m</sup> . 30 <sup>s</sup> .		37 Geminorum.		* R 6 <sup>h</sup> . 59 <sup>m</sup> . 27 <sup>s</sup> .		Castor.	
Dec. 2	55. 23. 24,99	Jan. 3	64. 25. 32,53	March 6	64. 0. 28,32	March 4	57. 45. 27,12
		March 4	32,74	13	27,10	April 2	25,34
* R 6 <sup>h</sup> . 31 <sup>m</sup> . 25 <sup>s</sup> .		6	31,07	* R 6 <sup>h</sup> . 59 <sup>m</sup> . 35 <sup>s</sup> .		14	24,36
Jan. 16	62. 46. 20,51	10	31,78			Castor R.	
17	20,22	11	30,86	March 11	64. 0. 28,34	March 4	57. 45. 26,82
March 6	18,47	<i>γ</i> <sup>1</sup> Geminorum.		13	28,56	April 2	26,39
11	18,47	March 4	63. 42. 35,63	19	28,14	14	27,13
ε Geminorum.		6	34,75	47 Geminorum.			
Jan. 6	64. 42. 46,91	10	35,81	Jan. 3	62. 52. 44,88	* R 7 <sup>h</sup> . 24 <sup>m</sup> . 55 <sup>s</sup> .	
March 4	48,30	11	33,16	March 6	45,88	March 13	64. 40. 40,40
6	47,10	* R 6 <sup>h</sup> . 49 <sup>m</sup> . 0 <sup>s</sup> .		10	46,06	19	42,13
8	46,80	March 6	63. 52. 22,18	11	46,16	ν Geminorum.	
ε Geminorum R.		13	21,74	δ Geminorum.		March 10	62. 44. 39,60
March 4	64. 42. 46,14	<i>γ</i> <sup>2</sup> Geminorum.		Feb. 10	67. 43. 14,49	* R 7 <sup>h</sup> . 26 <sup>m</sup> . 0 <sup>s</sup> .	
ζ <sup>1</sup> Geminorum.		March 4	63. 52. 10,27	April 6	12,75	March 19	64. 44. 16,88
Feb. 10	69. 10. 9,33	6	8,79	8	14,52	Procyon.	
ζ <sup>2</sup> Geminorum.		10	9,14	10	15,52	April 2	84. 21. 28,60
Feb. 10	69. 11. 40,19	11	8,66	δ Geminorum R.		22	29,69
* R 6 <sup>h</sup> . 37 <sup>m</sup> . 0 <sup>s</sup> .		13	8,71	April 10	67. 43. 15,05	Procyon R.	
Jan. 16	62. 45. 45,74	* R 6 <sup>h</sup> . 51 <sup>m</sup> . 20 <sup>s</sup> .		* R 7 <sup>h</sup> . 11 <sup>m</sup> . 30 <sup>s</sup> .		April 2	84. 21. 28,88
Sirius.		Jan. 3	63. 12. 5,15	March 13	63. 50. 8,63	22	29,13
Feb. 10	106. 29. 43,41	March 4	7,78	A Geminorum.		κ Geminorum.	
March 19	43,41	10	5,83	March 13	64. 38. 21,90	March 13	65. 12. 46,57
Sirius R.		11	5,06	* R 7 <sup>h</sup> . 21 <sup>m</sup> . 40 <sup>s</sup> .		19	46,79
Feb. 10	106. 29. 43,35	19	6,68	March 10	65. 39. 38,40	April 8	47,12
March 19	42,78	* R 6 <sup>h</sup> . 52 <sup>m</sup> . 10 <sup>s</sup> .		13	37,79	10	47,23
* R 6 <sup>h</sup> . 39 <sup>m</sup> . 45 <sup>s</sup> .		Jan. 3	63. 10. 41,28	19	38,71	κ Geminorum R.	
Jan. 16	62. 49. 2,29	* R 6 <sup>h</sup> . 52 <sup>m</sup> . 35 <sup>s</sup> .		* R 7 <sup>h</sup> . 22 <sup>m</sup> . 5 <sup>s</sup> .		April 8	65. 12. 47,15
17	1,57	March 10	63. 4. 9,94	March 10	65. 41. 51,42	* R 7 <sup>h</sup> . 35 <sup>m</sup> . 0 <sup>s</sup> .	
March 4	2,97	A.S.C. 874.		13	52,84	March 13	65. 17. 27,79
6	2,30	March 6	7. 17. 47,31	19	52,28		
10	3,34	13	48,27	* R 7 <sup>h</sup> . 22 <sup>m</sup> . 55 <sup>s</sup> .			
13	2,39	A.S.C. 874. R.		March 13	66. 46. 3,60		
		March 6	7. 17. 45,99				
		13	47,44				

112 MEAN NORTH POLAR DISTANCES OF STARS OBSERVED IN THE YEAR 1835.

Pollux.		$\lambda$ Leonis.		$\rho$ Leonis.		$\alpha$ Ursæ Majoris SP. R.	
Feb. 10	61. 34. 55,57	March 11	66. 18. 31,41	March 13	79. 50. 47,78	Sept. 9	27. 21. 35,98
March 10	54,56	$\eta$ Leonis.		* $\mathcal{R}$ 10 <sup>h</sup> . 38 <sup>m</sup> . 35 <sup>s</sup> . SP.		17	35,33
April 11	55,78	April 8	72. 26. 8,28	Oct. 26	31. 52. 2,96	Nov. 27	35,01
28	54,90	11	8,63	$l$ Leonis.		28	35,65
Pollux R.		Regulus.		April 11		$\chi$ Leonis.	
March 10	61. 34. 53,95	March 15	77. 13. 45,90	21	78. 35. 0,81	April 10	81. 46. 28,09
April 11	54,45	April 1	44,99	21	0,94	11	24,02
28	54,54	6	44,59	* $\mathcal{R}$ 10 <sup>h</sup> . 44 <sup>m</sup> . 25 <sup>s</sup> . SP.		$\nu$ Leonis.	
* $\mathcal{R}$ 7 <sup>h</sup> . 40 <sup>m</sup> . 45 <sup>s</sup> .		22	46,27	Oct. 21	26. 10. 25,55	April 10	75. 47. 37,29
March 10	65. 25. 47,29	28	45,80	$\beta$ Ursæ Majoris.		11	35,27
13	46,08	May 4	47,04	April 6	32. 44. 5,50	* $\mathcal{R}$ 11 <sup>h</sup> . 9 <sup>m</sup> . 15 <sup>s</sup> . SP.	
19	46,40	16	45,34	8	3,11	Oct. 10	26. 55. 6,35
$\phi$ Geminorum.		19	45,48	14	5,32	$\iota$ Leonis.	
Feb. 10	62. 48. 49,51	Regulus R.		21	6,53	March 13	78. 33. 45,79
6 Cancri.		March 15	77. 13. 44,82	25	3,57	May 7	45,67
April 6	61. 44. 55,74	April 1	44,49	$\beta$ Ursæ Majoris R.		$\iota$ Leonis R.	
8	58,00	6	43,00	April 6	32. 44. 4,65	May 7	78. 33. 44,77
$\gamma$ Cancri.		22	42,79	8	3,86	$\beta$ Leonis.	
March 10	67. 56. 36,45	28	43,76	14	5,28	April 6	74. 30. 19,65
11	36,90	May 4	46,13	21	6,18	8	17,55
$\delta$ Cancri.		16	46,30	25	9,20	28	20,75
March 10	71. 14. 39,85	19	45,57	$\alpha$ Ursæ Majoris.		May 16	20,27
11	39,82	A.S.C. 1215.		March 15	27. 21. 36,91	18	19,38
$\xi$ Cancri.		April 11	96. 30. 22,34	April 28	37,26	21	19,91
Feb. 12	67. 17. 31,16	* $\mathcal{R}$ 10 <sup>h</sup> . 5 <sup>m</sup> . 40 <sup>s</sup> . SP.		May 16	35,33	$\beta$ Leonis R.	
$\alpha$ Hydræ.		Oct. 26	35. 21. 15,12	18	34,33	April 6	74. 30. 21,29
March 11	97. 56. 49,52	$\gamma$ Leonis.		$\alpha$ Ursæ Majoris R.		8	22,38
April 10	49,69	March 13	69. 19. 35,63	March 15	27. 21. 35,47	28	18,40
21	49,78	April 8	35,80	April 28	35,27	May 16	21,73
$\alpha$ Hydræ R.		11	35,71	May 16	36,39	18	21,37
March 11	97. 56. (43,41)	$\gamma$ Leonis R.		18	36,21	21	19,75
April 10	48,67	April 8	69. 19. 36,89	$\alpha$ Ursæ Majoris SP.		$\beta$ Virginis.	
21	48,76	* $\mathcal{R}$ 10 <sup>h</sup> . 23 <sup>m</sup> . 30 <sup>s</sup> .		Sept. 9	27. 21. 33,49	April 10	87. 18. 21,46
		April 11	62. 51. 55,71	17	34,21	11	19,92
				Nov. 27	36,47		
				28	35,12		



$\beta$ Virginis R.		* $R$ 12 <sup>h</sup> . 41 <sup>m</sup> . 20 <sup>s</sup> . SP.		$\zeta^1$ Ursæ Majoris R. <i>continued.</i>		$\kappa$ Virginis.	
April 10	87. 18. 17,29	Oct. 11	28. 16. 41,00	June 1	34. 12. 38,90	May 10	99. 30. 4,11
				2	38,86		
$\pi$ Virginis.		$\delta$ Virginis.		4	37,80	$\kappa$ Virginis R.	
April 10	82. 27. 56,53	April 11	85. 42. 14,82	8	37,15	May 10	99. 30. 7,48
11	52,46	12	15,21	$\zeta^1$ Ursæ Majoris SP.		Arcturus.	
$r$ Virginis.		Spica.		Oct. 19	34. 12. 35,60		
April 28	87. 10. 30,61	May 16	100. 17. 49,61	Nov. 6	39,23	May 9	69. 57. 17,71
$\delta$ Ursæ Majoris.		18	50,05	$\zeta^1$ Ursæ Majoris SP. R.		18	17,49
May 7	32. 2. 60,79	21	49,95	Oct. 19	34. 12. 39,69	25	15,54
9	59,62	28	48,64	Nov. 6	36,87	28	17,66
16	59,51	29	48,58	$\zeta^2$ Ursæ Majoris.		29	17,72
21	61,00	30	50,74	April 27	34. 12. 50,80	June 1	17,87
25	60,52	June 10	50,09	May 9	50,41	11	17,01
$\delta$ Ursæ Majoris R.		23	49,84	15	50,31	18	16,92
May 7	32. 2. 60,09	July 1	50,12	25	52,19	23	16,13
9	59,52	3	49,93	June 1	50,44	29	18,00
16	60,50	Spica R.		8	50,31	30	18,12
21	60,73	May 16	100. 17. 50,55	$\zeta^2$ Ursæ Majoris R.		July 1	18,03
25	60,00	18	50,34	April 27	34. 12. 50,88	7	17,63
$\delta$ Ursæ Majoris SP.		21	49,37	May 9	50,08	18	17,86
Oct. 10	32. 2. 59,63	28	49,88	15	50,17	21	18,15
11	59,18	29	(45,78)	25	51,54	Arcturus R.	
$\eta$ Virginis.		30	48,57	June 1	50,55	May 9	69. 57. 18,41
March 15	89. 44. 59,75	June 10	50,82	8	48,59	18	17,92
May 9	56,27	23	50,72	$\alpha$ Draconis.		25	19,13
$\beta$ Corvi.		July 1	52,85	May 10	24. 50. 1,23	28	16,61
April 28	112. 28. 58,64	3	50,33	18	0,49	29	17,44
$\beta$ Corvi R.		$\zeta^1$ Ursæ Majoris.		28	0,81	June 1	19,70
April 28	112. 28. 63,72	April 27	34. 12. 41,06	29	1,85	11	19,10
$\gamma$ Virginis.		May 9	39,18	30	1,78	18	16,72
April 11	90. 32. 35,08	15	38,46	$\alpha$ Draconis R.		23	18,76
June 6	34,87	25	39,93	May 10	24. 50. 0,52	29	19,45
$\delta$ Ursæ Majoris R.		26	36,98	18	2,36	30	18,15
April 28	112. 28. 63,72	June 1	38,87	28	0,91	July 1	18,04
$\zeta^1$ Ursæ Majoris R.		2	39,40	29	1,81	7	18,60
April 27	34. 12. 40,65	4	39,73	30	1,78	18	19,87
May 9	39,21	8	38,57	$\lambda$ Virginis.		21	19,26
15	39,12	$\alpha$ Draconis R.		May 10	102. 36. 24,12	$\lambda$ Virginis R.	
25	39,16	May 10	24. 50. 0,52	18	2,36		
26	38,22	18	2,36	28	0,91		
		25	0,91	29	1,81		
		26	0,03	30	0,03		
						May 10	102. 36. 26,91

<i>ε</i> Bootis.		<i>β</i> Ursæ Minoris R.		<i>α</i> Coronæ Borealis R. <i>continued.</i>		<i>θ</i> Libræ.	
May 30	62 . 13 . 34,13	June 2	15 . 10 . 11,18	June 9	62 . 43 . 31,50	June 8	106 . 14 . 18,23
June 10	32,60	6	12,39	10	31,53	9	18,50
July 6	34,21	18	9,98	13	30,20	<i>β</i> <sup>1</sup> Scorpii.	
<i>ε</i> Bootis R.		29	12,93	20	30,77		
		July 3	10,92	July 2	30,80	May 29	109 . 20 . 47,49
May 30	62 . 13 . 32,47	5	11,91	4	30,28	30	48,70
June 10	35,34	6	11,51	8	31,56	June 9	48,91
July 6	33,65	17	11,76	11	30,93	13	47,58
<i>α</i> <sup>1</sup> Libræ.		19	12,27	19	30,43	20	48,81
		21	13,42	Aug. 21	32,50	<i>β</i> <sup>1</sup> Scorpii R.	
June 8   105 . 18 . 21,52		<i>β</i> Ursæ Minoris SP.		<i>η</i> Libræ.			
		Jan. 26	15 . 10 . 13,30	June 8	105 . 8 . 25,73	30	47,11
<i>α</i> <sup>1</sup> Libræ R.		27	11,88	9	26,33	June 9	48,36
		30	14,74	<i>η</i> Libræ R.		13	47,34
June 8   105 . 18 . 20,50		<i>β</i> Ursæ Minoris SP. R.		<i>η</i> Libræ R.		20	49,19
		Jan. 26	15 . 10 . 15,33	June 8	105 . 8 . 25,65	<i>β</i> <sup>2</sup> Scorpii.	
27	15,31	9	24,40				
<i>α</i> <sup>2</sup> Libræ.		30	13,19	<i>α</i> Serpentis.		May 29	109 . 20 . 32,58
		<i>γ</i> Libræ.		<i>α</i> Serpentis.		30	34,14
June 6	105 . 21 . 3,26	July 5	104 . 13 . 59,72	May 26	83 . 2 . 59,02	June 13	33,82
8	2,77	6	58,07	June 1	57,87	<i>β</i> <sup>2</sup> Scorpii R.	
18	2,07	<i>α</i> Coronæ Borealis.		7	60,05		
<i>α</i> <sup>2</sup> Libræ R.		<i>α</i> Coronæ Borealis.		11	59,02	May 30	109 . 20 . 33,60
		May 26	62 . 43 . 30,39	13	59,63	<i>δ</i> Ophiuchi.	
June 6	105 . 21 . 4,07	June 1	30,31	20	58,96		
8	3,95	2	30,60	23	58,02	July 2   93 . 15 . 48,16	
18	4,31	6	30,92	29	59,13		
<i>ξ</i> <sup>2</sup> Libræ.		7	31,63	30	59,63	<i>δ</i> Ophiuchi R.	
		9	30,32	July 4	58,71		
June 7   100 . 44 . 21,51		10	30,94	5	58,17	July 2   93 . 15 . 48,81	
		8	20,10	7	58,82		
<i>β</i> Ursæ Minoris.		13	30,93	11	58,72	Antares.	
		20	30,58	<i>α</i> Serpentis R.			
June 2   15 . 10 . 11,71		July 2	29,81	May 26	83 . 2 . 58,86	Feb. 19	116 . 3 . 29,19
		4	30,71	June 1	60,66	May 28	24,73
6	12,56	8	30,92	7	60,02	29	26,79
18	13,74	11	31,65	11	59,81	June 1	28,17
29	12,93	19	31,03	13	59,08	8	30,06
July 3   12,33		Aug. 21	30,51	20	61,61	10	29,45
		<i>α</i> Coronæ Borealis R.		<i>α</i> Serpentis R.		<i>ω</i> Ophiuchi.	
5	13,34	May 26	62 . 43 . 31,88	23	(55,56)		
6	11,41	June 1	30,99	29	58,77	Feb. 19   111 . 6 . 18,98	
17	12,81	2	32,08	30	59,61		
19	12,91	6	30,84	July 4	59,97	June 9	21,33
21	12,44	7	30,56	5	59,82	10	21,86
				7	58,13		
				11	59,21		



$\alpha$ Herculis.		A.S.C. 2085.		$\delta$ Ursæ Minoris R. <i>continued.</i>		$\alpha$ Lyrae.	
June 25	75.24.55,82	Aug. 4	118.27.58,98	July 6	3.24.41,69	Feb. 21	51.21.55,36
July 10	55,56	$\mu^1$ Sagittarii.		10	41,26	March 4	57,28
17	55,44			29	40,23	June 30	55,23
29	57,27			30	40,04	July 3	55,31
30	56,16			31	38,82	6	54,73
Aug. 17	56,33			7	41,73	10	55,74
$\alpha$ Herculis R.		June 11	111.5.35,48	13	40,06	11	56,73
		Aug. 4	35,32	18	40,39	Aug. 6	54,85
		* $R$ 18 <sup>h</sup> . 18 <sup>m</sup> . 20 <sup>s</sup> .		19	41,02	7	55,79
June 25	75.24.56,47	Aug. 6	38.32.17,24	28	39,40	10	54,92
July 10	58,52	7	18,67	31	40,11	13	55,72
17	55,75	10	17,52	Sept. 3	39,81	19	55,29
29	56,14	12	19,01	7	42,87	22	54,55
30	57,21	18	18,50	9	40,93	Sept. 3	55,24
Aug. 17	57,41	19	18,36	$\delta$ Ursæ Minoris SP.			
$\alpha$ Ophiuchi.		$\delta$ Ursæ Minoris.		Jan. 20	3.24.40,02	$\alpha$ Lyrae R.	
July 28	77.18.49,49	Jan. 9	3.24.39,63	23	42,41	Feb. 21	51.21.56,55
Aug. 18	49,39	20	41,90	24	42,14	March 4	54,69
29	48,50	Feb. 3	42,85	26	38,93	June 30	55,84
$\alpha$ Ophiuchi R.		19	40,39	Feb. 2	43,50	July 3	55,80
July 28	77.18.49,46	20	39,03	4	41,21	6	55,40
Aug. 18	49,79	March 4	42,17	5	41,56	10	55,49
29	50,08	6	41,03	6	41,22	11	52,71
$\omega$ Draconis SP.		June 30	41,80	10	41,61	Aug. 6	56,23
Feb. 24	21.9.58,71	July 3	40,71	12	42,98	7	55,57
$\omega$ Draconis SP. R.		6	41,41	21	42,70	10	57,63
Feb. 24	21.9.62,71	10	42,46	23	42,14	13	55,44
$b$ Sagittarii.		29	40,99	24	40,91	19	56,11
Aug. 31	113.47.31,77	30	42,07	March 10	41,63	22	54,57
Sept. 1	32,24	31	43,49	11	42,28	Sept. 3	55,57
$\gamma$ Draconis.		Aug. 4	39,27	19	40,62	7	56,61
Aug. 6	38.29.17,78	7	41,67	$\delta$ Ursæ Minoris SP. R.			
7	19,76	10	39,84	Jan. 20	3.24.41,14	9	55,44
10	18,36	13	42,13	23	41,94	10	55,58
12	20,47	18	41,03	24	43,27	28	53,79
18	18,75	19	40,87	26	42,60	$\phi$ Sagittarii.	
19	18,89	28	41,12	Feb. 2	43,66	Sept. 1	117.9.6,82
		31	40,79	4	41,96	$\beta^1$ Lyrae.	
		Sept. 3	40,41	5	40,91	July 29	56.49.26,48
		7	39,96	6	43,36	30	27,32
		9	41,35	10	41,75	31	28,22
		$\delta$ Ursæ Minoris R.		12	42,07	Aug. 4	25,25
		June 30	3.24.39,65	21	44,63		
		July 3	41,81	23	42,39		
				24	41,85		
				March 10	41,51		
				11	40,48		
				19	40,33		

<i>β<sup>1</sup> Lyrae continued.</i>		<i>γ Aquilæ.</i>		<i>α<sup>1</sup> Capricorni.</i>		<i>λ Ursæ Minoris R.</i>	
Aug. 18	56. 49. 27,20	Aug. 20	79. 46. 59,35	Aug. 19	103. 0. 40,02	Aug. 20	1. 11. 13,67
28	26,35	Sept. 16	58,50	20	41,63	Sept. 1	12,97
Sept. 10	28,17	<i>γ Aquilæ R.</i>		Sept. 1	40,33	2	14,59
<i>β<sup>1</sup> Lyrae R.</i>		Aug. 20	79. 46. 59,82	7	42,58	5	14,19
July 29	56. 49. 28,53	Sept. 16	59,82	16	42,18	16	14,72
30	27,40	<i>α Aquilæ.</i>		<i>α<sup>1</sup> Capricorni R.</i>		<i>α Cygni.</i>	
31	24,91	Aug. 8	81. 33. 39,79	Aug. 19	103. 0. 42,63	Aug. 3	45. 18. 22,13
Aug. 4	27,70	11	40,78	20	42,67	11	19,54
18	29,25	13	40,20	Sept. 1	41,68	20	20,86
28	26,30	20	40,99	7	45,13	29	22,07
Sept. 10	27,05	31	40,84	16	42,60	Sept. 2	20,85
<i>β<sup>2</sup> Lyrae.</i>		<i>α<sup>2</sup> Capricorni.</i>		<i>α<sup>2</sup> Capricorni.</i>		11	22,17
Aug. 4	56. 50. 5,89	Sept. 1	39,10	Aug. 10	103. 2. 58,65	14	20,84
<i>β<sup>2</sup> Lyrae R.</i>		3	41,16	13	60,22	16	22,36
Aug. 4	56. 50. 5,05	5	39,90	18	58,67	28	21,40
<i>σ Sagittarii.</i>		19	42,45	19	58,34	Oct. 2	21,34
Sept. 1	116. 29. 34,30	Oct. 26	42,06	20	58,86	6	20,68
<i>δ Draconis SP.</i>		27	41,58	31	59,03	19	21,55
Feb. 12	22. 37. 43,95	Nov. 15	42,81	Sept. 1	57,92	<i>α Cygni R.</i>	
March 6	43,51	<i>α Aquilæ R.</i>		7	58,65	Aug. 3	45. 18. 20,22
10	42,51	Aug. 8	81. 33. 39,47	16	58,59	11	22,17
11	44,37	11	43,10	Oct. 2	59,52	20	20,87
<i>δ Draconis SP. R.</i>		13	40,08	<i>α<sup>2</sup> Capricorni R.</i>		29	22,79
Feb. 12	22. 37. 42,34	20	41,55	Aug. 10	103. 2. 59,68	Sept. 2	22,26
March 6	42,18	31	40,96	13	58,07	11	20,71
10	42,51	Sept. 1	37,79	18	61,90	14	22,14
11	44,37	3	41,53	19	63,10	16	21,03
<i>δ Aquilæ.</i>		5	(46,16)	20	59,35	28	19,51
Oct. 21	87. 12. 29,23	19	41,99	31	59,97	Oct. 2	22,30
<i>δ Aquilæ R.</i>		Oct. 26	41,45	Sept. 1	58,58	6	22,08
Oct. 21	87. 12. 29,29	27	41,57	7	59,93	19	21,13
<i>c Sagittarii.</i>		Nov. 15	41,55	16	60,14	<i>χ<sup>1</sup> Capricorni.</i>	
Sept. 2	118. 9. 41,15	<i>β Aquilæ.</i>		Oct. 2	59,83	Aug. 8	111. 51. 2,27
<i>γ Aquilæ R.</i>		Nov. 15	83. 59. 59,88	<i>π Capricorni.</i>		Oct. 29	3,85
<i>α Aquilæ R.</i>		<i>β Aquilæ R.</i>		Aug. 7	108. 44. 45,45	<i>α Cephei.</i>	
<i>α Aquilæ R.</i>		Nov. 15	83. 59. 58,25	<i>λ Ursæ Minoris.</i>		Aug. 9	28. 6. 41,71
<i>α Aquilæ R.</i>		<i>c Sagittarii.</i>		Aug. 20	1. 11. 14,82	Sept. 1	43,15
<i>α Aquilæ R.</i>		Sept. 2	118. 9. 41,15	Sept. 1	14,88	6	41,10
<i>α Aquilæ R.</i>		<i>c Sagittarii.</i>		2	14,57	11	42,95
<i>α Aquilæ R.</i>		<i>c Sagittarii.</i>		5	14,58	12	43,51
<i>α Aquilæ R.</i>		<i>c Sagittarii.</i>		16	14,42	14	41,69
<i>α Aquilæ R.</i>		<i>c Sagittarii.</i>		<i>λ Ursæ Minoris.</i>		19	41,84
<i>α Aquilæ R.</i>		<i>c Sagittarii.</i>		Aug. 20	1. 11. 14,82	Oct. 7	40,84
<i>α Aquilæ R.</i>		<i>c Sagittarii.</i>		Sept. 1	14,88	9	42,68
<i>α Aquilæ R.</i>		<i>c Sagittarii.</i>		2	14,57		
<i>α Aquilæ R.</i>		<i>c Sagittarii.</i>		5	14,58		
<i>α Aquilæ R.</i>		<i>c Sagittarii.</i>		16	14,42		



<i>α Cephei continued.</i>		<i>β Aquarii continued.</i>		<i>β Cephei SP. R.</i>		<i>ε Cephei continued.</i>	
Oct. 19	28 . 6 . 40,42	Aug. 29	96 . 17 . 32,44	March 19	20 . 9 . 47,59	Oct. 21	33 . 46 . 36,86
27	41,89	Sept. 2	33,04	April 11	46,01	24	36,97
29	41,53	6	31,88	14	45,77	Nov. 18	35,94
Nov. 19	40,87	12	33,70	21	43,87	21	35,45
<i>α Cephei R.</i>		Oct. 24	32,95	<i>δ Capricorni.</i>		<i>ε Cephei R.</i>	
Aug. 9	28 . 6 . 41,68	27	34,04	Sept. 5	106 . 52 . 17,39	Aug. 21	33 . 46 . 36,95
Sept. 1	43,06	29	33,51	Nov. 25	19,49	Sept. 17	37,55
6	40,45	Nov. 1	33,62	<i>α Aquarii.</i>		Oct. 5	37,84
11	41,46	19	34,23	Aug. 1	91 . 7 . 6,79	10	37,59
12	40,53	25	34,56	3	6,55	21	37,80
14	(37,68)	Dec. 2	33,11	7	4,02	24	36,84
19	42,02	4	34,04	14	5,48	Nov. 18	37,78
Oct. 7	42,30	<i>β Aquarii R.</i>		21	4,88	21	(41,26)
9	41,75	Aug. 9	96 . 17 . 34,88	22	4,74	<i>σ Aquarii.</i>	
19	42,02	28	33,79	Sept. 9	5,48	Aug. 9	101 . 31 . 9,30
27	40,85	29	33,20	17	5,53	<i>τ<sup>2</sup> Aquarii.</i>	
29	42,13	Sept. 2	33,24	Oct. 5	4,92	Nov. 27	104 . 27 . 40,92
Nov. 19	41,27	6	34,40	Nov. 1	4,54	28	39,82
<i>α Cephei SP.</i>		12	33,28	<i>α Aquarii R.</i>		<i>δ Aquarii.</i>	
March 13	28 . 6 . 40,76	Oct. 24	33,92	Aug. 1	91 . 7 . 3,98	Sept. 6	106 . 41 . 44,80
19	39,68	27	34,32	3	3,44	Nov. 27	46,17
April 11	40,51	29	34,32	7	3,77	28	45,20
14	42,82	Nov. 1	34,16	14	3,83	<i>α Pegasi.</i>	
21	42,78	19	33,45	21	3,93	Jan. 3	75 . 40 . 50,24
Dec. 1	42,06	25	33,28	22	3,25	5	50,47
2	41,62	Dec. 2	32,88	Sept. 9	3,54	17	49,91
<i>α Cephei SP. R.</i>		4	33,98	17	4,33	Oct. 4	49,96
March 13	28 . 6 . 43,27	<i>β Cephei.</i>		Nov. 1	5,88	8	50,54
19	42,36	Aug. 3	20 . 9 . 47,15	<i>35 Aquarii.</i>		Nov. 18	50,51
April 11	42,28	8	45,06	Aug. 8	109 . 19 . 22,53	Dec. 3	51,44
14	41,68	14	46,57	9	24,20	<i>α Pegasi R.</i>	
21	43,34	17	46,85	<i>ε Cephei.</i>		Jan. 3	75 . 40 . 51,03
Dec. 1	41,45	<i>β Cephei R.</i>		Aug. 21	33 . 46 . 36,63	5	51,56
2	41,04	Aug. 3	20 . 9 . 43,70	Sept. 17	37,25	17	52,71
<i>ζ Capricorni.</i>		8	44,91	Oct. 5	6,72	Oct. 4	51,07
Aug. 7	113 . 7 . 15,87	14	45,59	Nov. 1	5,88	8	51,51
8	14,27	17	44,95	<i>35 Aquarii.</i>		Nov. 18	51,38
Oct. 2	14,30	<i>β Cephei SP.</i>		Aug. 8	109 . 19 . 22,53	Dec. 3	(55,67)
<i>β Aquarii.</i>		March 19	20 . 9 . 44,95	9	24,20	<i>α Cephei.</i>	
Aug. 9	96 . 17 . 32,71	April 11	41,74	<i>ε Cephei.</i>		Aug. 21	33 . 46 . 36,63
28	33,37	14	45,95	Sept. 17	37,25	Oct. 4	51,07
		21	45,71	Oct. 5	37,05	8	51,51
				Oct. 10	37,93	Nov. 18	51,38
						Dec. 3	(55,67)

$\psi^1$ Aquarii.		$\psi^3$ Aquarii <i>continued.</i>		$r$ Piscium.		$\alpha$ Andromedæ <i>continued.</i>			
Oct. 4 5	$99^{\circ} . 59' . 53''$ 5,38 5,49	Oct. 4 5	$100^{\circ} . 30' . 40''$ 75 39,89	Jan. 5	$96^{\circ} . 55' . 50''$ 90	Nov. 5 18 27	$61^{\circ} . 49' . 13''$ 63 13,19 13,62		
$\chi$ Aquarii.		$n$ Piscium.		$s$ Piscium.		$\alpha$ Andromedæ R.			
		Jan. 3	$98^{\circ} . 37' . 37''$ 53	Sept. 7	$93^{\circ} . 40' . 41''$ 91			Jan. 5	$96^{\circ} . 37' . 48''$ 82
$\psi^3$ Aquarii.		$p$ Piscium.		$\alpha$ Andromedæ.		Jan. 3		Nov. 28	48,15
								Nov. 1 27 28	40,50 41,19 42,05
Jan. 3	$100^{\circ} . 30' . 39''$ 43	Nov. 1	$94^{\circ} . 28' . 16''$ 91	Oct. 8 10	12,88 15,38	Jan. 3	$61^{\circ} . 49' . 12''$ 99		
				Oct. 8 10	15,27 14,06 15,87	Oct. 8 10	15,60 13,78		
				Nov. 5 18 27	15,27 14,06 15,87	Nov. 5 18 27	15,27 14,06 15,87		



CATALOGUE of the CONCLUDED MEAN NORTH POLAR DISTANCES, Jan. 1, 1835,  
with the Annual Variations.

(The N.P.D. have been corrected for the Discordance of Zenith Points, as is explained in the Introduction, and for the Correction of Latitude mentioned in the Addendum to the Volume for 1834. The Annual Variations are taken from the Royal Astronomical Society's Catalogue, or are computed by the same formulæ.)

Name of Star.	Number of Observations.	Mean N.P.D. Jan. 1, 1835.	Annual Variation.	Name of Star.	Number of Observations.	Mean N.P.D. Jan. 1, 1835.	Annual Variation.
$\gamma$ Pegasi.....	1	75. 44. 1,37	- 20,039	$\zeta$ Orionis.....	1	92. 2. 10,53	- 2,427
$\gamma$ Pegasi R.....	1	1,58		$\zeta$ Orionis R.....	1	12,12	
$\alpha$ Cassiopeiæ.....	7	34. 22. 6,76	- 19,861	$\beta$ Tauri.....	2	65. 29. 44,64	- 1,871
$\alpha$ Cassiopeiæ R.....	7	6,96		31 Camelopardali....	1	30. 9. 37,27	- 1,770
$\alpha$ Cassiopeiæ SP.....	5	7,73		31 Camelopardali R.	1	37,76	
$\alpha$ Cassiopeiæ SP. R....	5	5,38		31 Camelopardali SP.	4	35,82	
$\beta$ Ceti.....	1	108. 53. 34,71	- 19,809	31 Camel. SP. R.....	4	36,83	
$\beta$ Ceti R.....	1	35,22		$\alpha$ Orionis.....	4	82. 37. 49,67	- 1,226
$m$ Ceti.....	2	92. 2. 28,52	- 19,669	$\alpha$ Orionis R.....	4	49,82	
$\epsilon$ Piscium.....	1	83. 0. 1,22	- 19,486	$\beta$ Aurigæ.....	1	45. 4. 42,23	- 1,131
$\epsilon$ Piscium R.....	1	1,45		$\beta$ Aurigæ R.....	1	41,90	
Polaris.....	31	1. 34. 14,58	- 19,340	139 Tauri.....	3	64. 4. 29,26	- 1,097
Polaris R.....	24	14,46		2 Geminorum.....	3	66. 21. 16,01	- 0,311
Polaris SP.....	41	14,83		$a$ Lyncis.....	1	28. 26. 35,57	+ 0,195
Polaris SP. R.....	40	14,61		$a$ Lyncis R.....	1	35,53	
$\mu$ Piscium.....	2	84. 42. 32,55	- 18,795	$a$ Lyncis SP.....	5	34,15	
$\nu$ Piscium.....	1	85. 20. 58,55	- 18,429	$a$ Lyncis SP. R.....	5	34,00	
$\sigma$ Piscium.....	2	81. 40. 33,17	- 18,295	A. S. C. 784.....	4	62. 44. 1,85	+ 0,672
$\sigma$ Piscium R.....	1	30,57		* $\mathcal{R}$ . 6 <sup>h</sup> . 11 <sup>m</sup> . 30 <sup>s</sup> ....	3	59. 58. 4,81	+ 1,008
$\alpha$ Arietis.....	5	67. 19. 17,20	- 17,461	* $\mathcal{R}$ . 6 <sup>h</sup> . 12 <sup>m</sup> . 50 <sup>s</sup> ....	4	62. 44. 17,52	+ 1,107
$\alpha$ Arietis R.....	5	16,66		* $\mathcal{R}$ . 6 <sup>h</sup> . 13 <sup>m</sup> . 10 <sup>s</sup> ....	7	62. 48. 29,52	+ 1,130
$\xi^1$ Ceti.....	1	81. 55. 51,88	- 17,180	$\beta$ Canis Majoris.....	1	107. 52. 45,24	+ 1,329
Piazzi II. 64.....	1	40. 44. 52,01	- 16,677	$z$ Aurigæ.....	3	59. 24. 47,14	+ 1,541
Piazzi II. 64. R.....	1	46,21		* $\mathcal{R}$ . 6 <sup>h</sup> . 18 <sup>m</sup> . 35 <sup>s</sup> ....	4	62. 56. 1,42	+ 1,630
$\gamma$ Ceti.....	1	87. 27. 49,24	- 15,658	* $\mathcal{R}$ . 6 <sup>h</sup> . 18 <sup>m</sup> . 50 <sup>s</sup> ....	1	62. 52. 33,17	+ 1,648
$\gamma$ Ceti R.....	1	50,31		$\nu$ Geminorum.....	1	69. 41. 26,61	+ 1,648
$\alpha$ Ceti.....	1	86. 33. 44,11	- 14,575	* $\mathcal{R}$ . 6 <sup>h</sup> . 20 <sup>m</sup> . 10 <sup>s</sup> ....	2	57. 8. 10,43	+ 1,762
$\alpha$ Ceti R.....	1	43,85		* $\mathcal{R}$ . 6 <sup>h</sup> . 20 <sup>m</sup> . 30 <sup>s</sup> ....	2	57. 5. 28,70	+ 1,790
$\zeta$ Arietis.....	1	69. 34. 19,07	- 13,851	* $\mathcal{R}$ . 6 <sup>h</sup> . 23 <sup>m</sup> . 10 <sup>s</sup> ....	2	56. 51. 47,27	+ 2,030
$\alpha$ Persei.....	6	40. 43. 58,43	- 13,397	* $\mathcal{R}$ . 6 <sup>h</sup> . 26 <sup>m</sup> . 30 <sup>s</sup> ....	1	55. 23. 25,37	+ 2,314
$\alpha$ Persei R.....	6	58,46		* $\mathcal{R}$ . 6 <sup>h</sup> . 31 <sup>m</sup> . 25 <sup>s</sup> ....	4	62. 46. 19,80	+ 2,740
* $\mathcal{R}$ . 3 <sup>h</sup> . 21 <sup>m</sup> . 20 <sup>s</sup> ....	1	77. 40. 6,15	- 12,785	$\epsilon$ Geminorum.....	4	64. 42. 47,66	+ 2,916
$f$ Tauri.....	3	77. 38. 3,81	- 12,783	$\epsilon$ Geminorum R.....	1	46,06	
$\delta$ Eridani.....	1	100. 19. 36,17	- 11,243	* $\mathcal{R}$ . 6 <sup>h</sup> . 37 <sup>m</sup> . 0 <sup>s</sup> ....	1	62. 45. 46,12	+ 3,222
$\delta$ Eridani R.....	1	36,29		Sirius.....	2	106. 29. 43,63	+ 4,418
$\eta$ Tauri.....	1	66. 24. 42,94	- 11,682	Sirius R.....	2	43,15	
$\epsilon$ Persei.....	1	50. 28. 25,00	- 11,028	* $\mathcal{R}$ . 6 <sup>h</sup> . 39 <sup>m</sup> . 45 <sup>s</sup> ....	6	62. 49. 2,86	+ 3,463
$\epsilon$ Persei R.....	1	27,44		37 Geminorum.....	5	64. 25. 32,18	+ 3,897
$\omega^2$ Tauri.....	1	69. 50. 4,75	- 9,463	$\gamma^1$ Geminorum.....	4	63. 42. 35,22	+ 4,192
$\delta^1$ Tauri.....	1	72. 51. 5,02	- 9,011	* $\mathcal{R}$ . 6 <sup>h</sup> . 49 <sup>m</sup> . 0 <sup>s</sup> ....	2	63. 52. 22,34	+ 4,245
Aldebaran.....	20	73. 49. 44,61	- 7,979	$\gamma^2$ Geminorum.....	5	63. 52. 9,49	+ 4,249
Aldebaran R.....	20	44,84		* $\mathcal{R}$ . 6 <sup>h</sup> . 51 <sup>m</sup> . 20 <sup>s</sup> ....	5	63. 12. 6,48	+ 4,450
$\iota$ Tauri.....	1	68. 39. 10,67	- 5,782	* $\mathcal{R}$ . 6 <sup>h</sup> . 52 <sup>m</sup> . 10 <sup>s</sup> ....	1	63. 10. 41,66	+ 4,520
Capella.....	20	44. 10. 43,82	- 4,837	* $\mathcal{R}$ . 6 <sup>h</sup> . 52 <sup>m</sup> . 35 <sup>s</sup> ....	1	63. 4. 10,32	+ 4,556
Capella R.....	20	43,65		$\zeta^1$ Geminorum.....	1	69. 10. 9,70	+ 4,681
$\beta$ Tauri.....	15	61. 32. 22,77	- 3,863	$\zeta^2$ Geminorum.....	1	69. 11. 40,56	+ 4,681
$\beta$ Tauri R.....	15	22,56		A. S. C. 874.....	2	7. 17. 47,64	+ 4,747
$\zeta$ Tauri.....	1	68. 57. 55,12	- 2,835	A. S. C. 874. R.....	2	47,18	
$\epsilon$ Orionis.....	1	91. 18. 48,32	- 2,825	* $\mathcal{R}$ . 6 <sup>h</sup> . 59 <sup>m</sup> . 25 <sup>s</sup> ....	2	64. 0. 28,09	+ 5,113
$\epsilon$ Orionis R.....	1	48,29		* $\mathcal{R}$ . 6 <sup>h</sup> . 59 <sup>m</sup> . 35 <sup>s</sup> ....	3	64. 0. 28,73	+ 5,123

CATALOGUE of the Concluded Mean North Polar Distances, &c. *continued.*

Name of Star.	Number of Observations.	Mean N.P.D. Jan. 1, 1835.		Annual Variation.	Name of Star.	Number of Observations.	Mean N.P.D. Jan. 1, 1835.		Annual Variation.		
		°	'				''	°		'	''
47 Geminorum.....	4	62	52	46,13	+ 5,257	$\eta$ Virginis.....	2	89	44	58,32	+ 20,019
$\delta$ Geminorum.....	4	67	43	14,69	+ 6,024	$\beta$ Corvi.....	1	112	28	58,83	+ 19,919
$\delta$ Geminorum R.....	1			14,97		$\beta$ Corvi R.....	1			63,83	
* R. 7 <sup>h</sup> . 11 <sup>m</sup> . 30 <sup>s</sup> ....	1	63	50	9,01	+ 6,152	$\gamma$ Virginis.....	2	90	32	35,29	+ 19,835
A Geminorum.....	1	64	38	22,28	+ 6,285	* R. 12 <sup>h</sup> . 41 <sup>m</sup> . 20 <sup>s</sup> . SP.	1	28	16	41,04	+ 19,717
* R. 7 <sup>h</sup> . 21 <sup>m</sup> . 40 <sup>s</sup> ....	3	63	39	38,68	+ 6,992	$\delta$ Virginis.....	2	85	42	15,35	+ 19,622
* R. 7 <sup>h</sup> . 22 <sup>m</sup> . 5 <sup>s</sup> .....	3	65	41	52,56	+ 7,049	Spica.....	10	100	17	50,01	+ 18,944
* R. 7 <sup>h</sup> . 22 <sup>m</sup> . 55 <sup>s</sup> ....	1	66	46	3,98	+ 7,100	Spica R.....	9			50,43	
Castor.....	3	57	45	25,99	+ 7,161	$\zeta^1$ Ursæ Majoris.....	9	34	12	39,25	+ 18,921
Castor R.....	3			26,70		$\zeta^1$ Ursæ Majoris R...	9			39,00	
* R. 7 <sup>h</sup> . 24 <sup>m</sup> . 55 <sup>s</sup> ....	2	64	40	41,65	+ 7,259	$\zeta^1$ Ursæ Majoris SP..	2			37,35	
$\nu$ Geminorum.....	1	62	44	39,98	+ 7,300	$\zeta^1$ Ursæ Majoris SP. }	2			38,05	
* R. 7 <sup>h</sup> . 26 <sup>m</sup> . 0 <sup>s</sup> ....	1	64	44	17,26	+ 7,346	R.....	2				
Procyon.....	2	84	21	29,48	+ 8,682	$\zeta^2$ Ursæ Majoris.....	6	34	12	50,86	+ 18,914
Procyon R.....	2			28,97		$\zeta^2$ Ursæ Majoris R...	1			50,51	
$\kappa$ Geminorum.....	4	65	12	47,31	+ 8,005	$\alpha$ Draconis.....	5	24	50	1,16	+ 17,367
$\kappa$ Geminorum R.....	1			47,53		$\alpha$ Draconis R.....	5			1,50	
* R. 7 <sup>h</sup> . 35 <sup>m</sup> . 0 <sup>s</sup> ....	1	65	17	28,17	+ 8,064	$\kappa$ Virginis.....	1	99	30	4,36	+ 17,187
Pollux.....	4	61	34	55,58	+ 8,064	$\kappa$ Virginis R.....	1			7,53	
Pollux R.....	4			54,23		Arcturus.....	15	69	57	17,83	+ 18,962
* R. 7 <sup>h</sup> . 40 <sup>m</sup> . 45 <sup>s</sup> ....	1	65	25	46,97	+ 8,539	Arcturus R.....	15			18,41	
$\phi$ Geminorum.....	1	62	48	49,89	+ 8,713	$\lambda$ Virginis.....	1	102	36	24,35	+ 16,907
$\delta$ Cancri.....	2	61	44	57,26	+ 9,491	$\lambda$ Virginis R.....	1			26,98	
$\gamma$ Cancri.....	2	67	56	37,06	+ 12,438	$\epsilon$ Bootis.....	3	62	13	34,04	+ 15,490
$\delta$ Cancri.....	2	71	14	40,21	+ 12,546	$\epsilon$ Bootis R.....	3			33,74	
$\xi$ Cancri.....	1	67	17	31,54	+ 14,146	$\alpha^1$ Libræ.....	1	105	18	21,74	+ 15,280
$\alpha$ Hydræ.....	3	97	56	49,93	+ 15,310	$\alpha^1$ Libræ R.....	1			20,57	
$\alpha$ Hydræ R.....	2			48,76		$\alpha^2$ Libræ.....	3	105	21	2,92	+ 15,270
$\lambda$ Leonis.....	1	66	18	31,79	+ 15,466	$\alpha^2$ Libræ R.....	3			4,18	
$\eta$ Leonis.....	2	72	26	8,82	+ 17,271	$\xi^2$ Libræ.....	2	100	44	21,06	+ 14,921
Regulus.....	8	77	13	46,03	+ 17,327	$\beta$ Ursæ Minoris.....	10	15	10	12,47	+ 14,701
Regulus R.....	8			44,55		$\beta$ Ursæ Minoris R...	10			12,28	
A. S. C. 1215.....	1	96	30	22,61	+ 17,478	$\beta$ Ursæ Minoris SP..	3			13,46	
* R. 10 <sup>h</sup> . 5 <sup>m</sup> . 40 <sup>s</sup> . SP.	1	35	21	15,05	+ 17,600	$\beta$ Ursæ Minoris SP. R.	3			14,28	
$\gamma$ Leonis.....	3	69	19	36,08	+ 17,802	$\gamma$ Libræ.....	2	104	13	59,13	+ 12,475
$\gamma$ Leonis R.....	1			36,82		$\alpha$ Coronæ Borealis...	15	62	43	31,13	+ 12,375
* R. 10 <sup>h</sup> . 23 <sup>m</sup> . 30 <sup>s</sup> ....	1	62	51	56,09	+ 18,292	$\alpha$ Coronæ Borealis R.	15			31,04	
$\rho$ Leonis.....	1	79	50	48,13	+ 18,305	$\eta$ Libræ.....	2	105	8	26,25	+ 11,885
* R. 10 <sup>h</sup> . 33 <sup>m</sup> . 35 <sup>s</sup> . SP.	1	31	52	2,95	+ 18,789	$\eta$ Libræ R.....	2			25,10	
$\iota$ Leonis.....	2	78	35	1,23	+ 18,843	$\alpha$ Serpentis.....	13	83	2	59,23	+ 11,788
* R. 10 <sup>h</sup> . 44 <sup>m</sup> . 25 <sup>s</sup> . SP.	1	26	10	25,52	+ 18,962	$\alpha$ Serpentis R.....	12			59,59	
$\beta$ Ursæ Majoris.....	5	32	44	4,87	+ 19,155	$\theta$ Libræ.....	2	106	14	18,59	+ 11,196
$\beta$ Ursæ Majoris R...	5			6,06		$\beta^1$ Scorpil.....	5	109	20	48,50	+ 10,355
$\alpha$ Ursæ Majoris.....	4	27	21	35,91	+ 19,196	$\beta^1$ Scorpil R.....	5			48,47	
$\alpha$ Ursæ Majoris R...	4			36,19		$\beta^2$ Scorpil.....	3	109	20	33,71	+ 10,355
$\alpha$ Ursæ Majoris SP...	4			34,81		$\beta^2$ Scorpil R.....	1			33,70	
$\alpha$ Ursæ Majoris SP. R.	4			35,22		$\delta$ Ophiuchi.....	1	93	16	48,45	+ 9,607
$\chi$ Leonis.....	2	81	46	26,40	+ 19,272	$\delta$ Ophiuchi R.....	1			48,81	
$\nu$ Leonis.....	2	75	47	36,64	+ 19,508	Antares.....	6	116	3	28,25	+ 8,550
* R. 11 <sup>h</sup> . 9 <sup>m</sup> . 15 <sup>s</sup> . SP.	1	26	55	6,40	+ 19,550	$\omega$ Ophiuchi.....	3	111	6	20,92	+ 8,306
$\iota$ Leonis.....	2	78	33	46,08	+ 19,658	$\alpha$ Herculis.....	6	75	24	56,48	+ 4,603
$\iota$ Leonis R.....	1			44,72		$\alpha$ Herculis R.....	6			56,86	
$\beta$ Leonis.....	6	74	30	19,95	+ 19,969	$\alpha$ Ophiuchi.....	3	77	18	49,49	+ 2,872
$\beta$ Leonis R.....	6			20,76		$\alpha$ Ophiuchi R.....	3			49,72	
$\beta$ Virginis.....	2	87	18	21,01	+ 19,980	$\omega$ Draconis SP.....	1	21	9	58,59	+ 1,926
$\beta$ Virginis R.....	1			17,27		$\omega$ Draconis SP. R....	1			62,41	
$\pi$ Virginis.....	2	82	27	54,84	+ 20,031	$b$ Sagittarii.....	2	113	47	32,20	+ 0,925
$r$ Virginis.....	1	87	10	30,93	+ 20,042	$\gamma$ Draconis.....	6	38	29	19,19	+ 0,642
$\delta$ Ursæ Majoris.....	5	32	2	60,33	+ 20,033	A. S. C. 2085.....	1	118	27	59,16	+ 0,235
$\delta$ Ursæ Majoris R.....	5			60,43		$\mu^1$ Sagittarii.....	2	111	5	35,59	- 0,314
$\delta$ Ursæ Majoris SP...	2			59,35		* R. 18 <sup>h</sup> . 18 <sup>m</sup> . 20 <sup>s</sup> ..	6	38	32	18,41	- 1,600



CATALOGUE of the Concluded Mean North Polar Distances, &c. *continued.*

Name of Star.	Number of Observations.	Mean N.P.D. Jan. 1, 1835.			Annual Variation.	Name of Star.	Number of Observations.	Mean N.P.D. Jan. 1, 1835.			Annual Variation.
		°	'	"				°	'	"	
δ Ursæ Minoris.....	25	3	24	41,00	- 2,224	χ <sup>1</sup> Capricorni.....	2	111	51	3,25	- 14,099
δ Ursæ Minoris R....	18			41,08		α Cephei.....	13	28	6	41,83	- 15,040
δ Ursæ Minoris SP...	16			41,71		α Cephei R.....	12			41,96	
δ Ursæ Minoris SP. R.	16			41,73		α Cephei SP.....	7			41,50	
α Lyræ.....	18	51	21	55,84	- 2,718	α Cephei SP. R.....	7			41,94	
α Lyræ R.....	18			55,43		ζ Capricorni.....	3	113	7	15,00	- 15,180
φ Sagittarii.....	1	117	9	10,82	- 3,052	β Aquarii.....	14	96	17	33,64	- 15,499
β Lyræ.....	7	56	49	27,38	- 3,807	β Aquarii R.....	14			33,82	
β Lyræ R.....	7			27,22		β Cephei.....	4	20	9	46,28	- 15,708
β <sup>2</sup> Lyræ.....	1	56	50	6,27	- 3,807	β Cephei R.....	4			45,22	
β <sup>2</sup> Lyræ R.....	1			4,95		β Cephei SP.....	4			44,60	
σ Sagittarii.....	1	116	29	37,56	- 3,886	β Cephei SP. R.....	4			45,50	
δ Draconis SP.....	4	22	37	43,69	- 6,234	δ Capricorni.....	2	106	52	18,65	- 16,299
δ Draconis SP. R....	4			42,15		α Aquarii.....	10	91	7	5,59	- 17,227
δ Aquilæ.....	1	87	12	29,52	- 6,601	α Aquarii R.....	10			4,27	
δ Aquilæ R.....	1			29,27		35 Aquarii.....	2	109	19	23,58	- 17,342
γ Aquilæ.....	2	79	46	59,28	- 8,326	ε Cephei.....	8	33	46	36,84	- 17,728
γ Aquilæ R.....	2			59,77		ε Cephei R.....	7			37,69	
α Aquilæ.....	12	81	33	41,31	- 8,667	σ Aquarii.....	1	101	31	9,54	- 18,225
α Aquilæ R.....	11			40,96		τ <sup>2</sup> Aquarii.....	2	104	27	40,60	- 18,851
β Aquilæ.....	1	83	59	60,21	- 8,478	δ Aquarii.....	3	106	41	45,61	- 18,996
β Aquilæ R.....	1			58,22		α Pegasi.....	7	75	40	50,80	- 19,273
c Sagittarii.....	1	118	9	41,33	- 9,424	α Pegasi R.....	6			51,48	
α <sup>1</sup> Capricorni.....	5	103	0	41,58	- 10,637	ψ <sup>1</sup> Aquarii.....	2	99	59	5,69	- 19,509
α <sup>1</sup> Capricorni R.....	5			43,00		χ Aquarii.....	1	98	37	37,79	- 19,530
α <sup>2</sup> Capricorni.....	10	103	2	59,08	- 10,667	ψ <sup>3</sup> Aquarii.....	3	100	30	40,28	- 19,570
α <sup>2</sup> Capricorni R.....	10			60,12		n Piscium.....	4	93	40	41,70	- 19,960
π Capricorni.....	1	108	44	45,66	- 11,322	p Piscium.....	1	94	28	17,19	- 20,023
λ Ursæ Minoris.....	5	1	11	14,53	- 11,958	r Piscium.....	1	96	55	51,17	- 20,034
λ Ursæ Minoris R....	5			14,45		s Piscium.....	2	96	37	48,77	- 20,040
α Cygni.....	12	45	18	21,63	- 12,588	α Andromedæ.....	6	61	49	14,00	- 20,043
α Cygni R.....	12			21,42		α Andromedæ R.....	6			14,52	





RIGHT ASCENSIONS AND NORTH POLAR DISTANCES

(THE LATTER CORRECTED FOR THE DISCORDANCE OF ZENITH POINTS  
AND FOR THE ALTERATION OF THE CO-LATITUDE)

OF THE CENTERS OF THE

SUN, MOON, AND PLANETS,

OBSERVED IN THE YEAR 1835,

WITH THE

GREENWICH MEAN SOLAR TIME OF OBSERVATION,

AND COMPARED WITH THE PLACES INTERPOLATED FROM  
THE NAUTICAL ALMANAC.

Greenwich Mean Solar Time of Transit of Center.				Limb Observed.	Apparent R. A. of Center.	Seconds of Tabular R.A.	Errors of Tables.	Limb Observed.	Apparent N.P.D. of Center.	Seconds of Tabular N.P.D.	Errors of Tables.
d.	h.	m.	s.		h. m. s.	s.	s.		° ' "	"	"
Jan.	3.	0.	4.15,8		18.54.13,38	13,10	-0,28		112.52.32,34	33,70	+1,36
	5.	0.	5.10,9		19.3.1,74	1,30	-0,44		112.40.13,86	14,11	+0,25
	6.	0.	5.37,7		19.7.25,11	24,73	-0,38		112.33.23,76	23,82	+0,06
	10.	0.	7.19,7		19.24.53,66	53,37	-0,29		112.1.35,34	37,45	+2,11
	13.	0.	8.30,4		19.37.54,22	53,83	-0,39		111.33.15,27	16,27	+1,00
	15.	0.	9.14,3		19.46.31,37	30,98	-0,39		111.12.14,26	17,08	+2,82
	17.	0.	9.58,2						110.49.35,73	40,59	+4,86
	20.	0.	10.51,9		20.7.52,05	51,84	-0,21		110.12.49,39	48,41	-0,98
	21.	0.	11.9,2		20.12.5,92*	5,84	-0,08		109.59.42,67	45,02	+2,35
	22.	0.	11.26,3		20.16.19,56	19,11	-0,45		109.46.18,21	19,33	+1,12
	26.	0.	12.25,1		20.33.4,82	4,51	-0,31		108.48.62,59	59,05	-3,54
Feb.	4.	0.	13.50,5		21.9.59,41	59,17	-0,24		106.20.36,63	34,69	-1,94
	5.	0.	13.56,0		21.14.1,52	1,06	-0,46		106.2.32,97	35,40	+2,43
	6.	0.	14.0,3		21.18.2,40	2,11	-0,29		105.44.17,24	19,60	+2,36
	9.	0.	14.8,9		21.30.0,67	0,36	-0,31		104.47.57,43	57,61	+0,18
	10.	0.	14.9,8		21.33.58,14	58,14	0,00		104.28.39,64	40,22	+0,58
	13.	0.	14.8,9		21.45.46,92	46,79	-0,13		103.29.21,25	23,53	+2,28
	20.	0.	13.40,8		22.12.54,62	54,54	-0,08		101.3.40,35	42,75	+2,40
	21.	0.	13.34,1		22.16.44,43	44,36	-0,07	N.	100.42.5,98	9,25	+3,27
	24.	0.	13.10,3		22.28.10,28	10,08	-0,20		99.36.30,34	30,76	+0,42
Mar.	3.	0.	11.54,4		22.54.29,95	29,82	-0,13		96.58.32,63	34,78	+2,15
	5.	0.	11.28,2		23.1.56,86	56,51	-0,35		96.12.27,94	28,68	+0,74
	6.	0.	11.14,2		23.5.39,38	39,15	-0,23		95.49.16,50	17,88	+1,38
	10.	0.	10.14,5		23.20.25,67	25,52	-0,15		94.15.51,91	52,68	+0,77
	13.	0.	9.26,0		23.31.26,74	26,46	-0,28		93.5.13,12	15,09	+1,97
	16.	0.	8.34,9		23.42.25,14	24,81	-0,33		91.54.17,76	19,59	+1,83
	19.	0.	7.41,5						90.43.15,07	15,29	+0,22
April	1.	0.	3.43,1		0.40.37,39	37,17	-0,22		85.37.24,20	26,88	+2,68
	2.	0.	3.24,8		0.44.15,62	15,48	-0,14		85.14.16,94	18,78	+1,84
	6.	0.	2.13,6		0.58.50,46	49,95	-0,51		83.42.37,60	41,27	+3,67
	7.	0.	1.55,7		1.2.28,99	28,96	-0,03		83.20.1,51	2,57	+1,06
	8.	0.	1.38,3		1.6.8,15	8,17	+0,02		82.57.29,10	30,77	+1,67
	9.	0.	1.21,5	II.	1.9.47,83	47,60	-0,23	N.	82.35.6,98	6,27	-0,71
	11.	0.	0.48,1	II.	1.17.7,42	7,16	-0,26		81.50.40,79	40,26	-0,53
	13.	0.	0.15,8		1.24.28,17	27,84	-0,33		81.6.45,35	47,16	+1,81
	14.	0.	0.0,0		1.28.8,86	8,64	-0,22		80.45.1,92	3,87	+1,95
	21.	23.	58.7,7		1.57.48,73	48,73	0,00		77.57.12,64	11,74	-0,90
	24.	23.	57.33,3	II.	2.9.3,85	3,46	-0,39	S.	76.57.20,65	19,22	-1,43
	26.	23.	57.12,4		2.16.36,02	35,71	-0,31		76.18.31,91	27,51	-4,40
May	4.	23.	56.9,8	I.	2.47.5,71	5,35	-0,36		73.52.24,66	25,28	+0,62
	5.	23.	56.4,3		2.50.56,75	56,44	-0,31		73.35.18,73	19,07	+0,34
	7.	23.	55.55,0		2.58.40,56	40,29	-0,27		73.1.56,06	55,97	-0,09
	8.	23.	55.51,1		3.2.33,16	33,04	-0,12		72.45.38,52	39,86	+1,34
	10.	23.	55.45,3		3.10.20,44	20,26	-0,18		72.13.59,21	59,75	+0,54
	11.	23.	55.43,3		3.14.14,97	14,72	-0,25		71.58.35,57	36,25	+0,68
	12.	23.	55.41,6		3.18.9,83	9,78	-0,05		71.43.30,57	30,84	+0,27
	15.	23.	55.40,5		3.29.58,46	58,42	-0,04		71.0.5,53	5,73	+0,20
	17.	23.	55.42,8		3.37.53,90	53,75	-0,15		70.32.43,14	44,22	+1,08
	18.	23.	55.45,1		3.41.52,76	52,29	-0,47		70.19.32,38	32,91	+0,53
	20.	23.	55.50,6		3.49.51,35	51,08	-0,27		69.54.11,19	10,20	-0,99
	21.	23.	55.54,3		3.53.51,58	51,31	-0,27		69.41.60,85	59,40	-1,45
	24.	23.	56.8,6		4.5.55,58	55,30	-0,28		69.7.30,59	32,58	+1,99
	26.	23.	56.20,6		4.14.0,73	0,56	-0,17				

\* This depends on one star only.



Greenwich Mean Solar Time of Transit of Center.	Limb Observed.	Apparent R. A. of Center.	Seconds of Tabular R.A.	Errors of Tables.	Limb Observed.	Apparent N.P.D. of Center.	Seconds of Tabular N.P.D.	Errors of Tables.
d. h. m. s.		h. m. s.	s.	s.		° ' "	"	"
May 28 . 23 . 56 . 34,9		4 . 22 . 8,22	7,78	- 0,44		68 . 26 . 37,62	38,36	+ 0,74
29 . 23 . 56 . 42,3		4 . 26 . 12,16	12,06	- 0,10		68 . 17 . 19,28	20,25	+ 0,97
June 5 . 23 . 57 . 47,3		4 . 54 . 53,31	53,13	- 0,18		67 . 22 . 55,99	57,01	+ 1,02
7 . 23 . 58 . 9,0		5 . 3 . 8,14	7,89	- 0,25		67 . 10 . 56,45	56,49	+ 0,04
8 . 23 . 58 . 20,1		5 . 7 . 15,83	15,70	- 0,13		67 . 5 . 31,06	32,28	+ 1,22
9 . 23 . 58 . 31,8		5 . 11 . 24,14	23,77	- 0,37		67 . 0 . 32,34	32,08	- 0,26
10 . 23 . 58 . 43,4		5 . 15 . 32,31	32,11	- 0,20	N.	66 . 55 . 53,45	56,17	+ 2,72
11 . 23 . 58 . 55,3		5 . 19 . 40,79	40,63	- 0,16		66 . 51 . 45,67	44,47	- 1,20
14 . 23 . 59 . 32,1						66 . 41 . 35,78	36,04	+ 0,26
15 . 23 . 59 . 44,7					S.	66 . 39 . 2,64	2,44	- 0,20
19 . 0 . 0 . 23,4		5 . 48 . 45,11	44,97	- 0,14		66 . 33 . 53,03	49,52	- 3,51
22 . 0 . 1 . 2,7	I.	6 . 1 . 14,11	13,89	- 0,22		66 . 32 . 20,58	19,70	- 0,88
27 . 0 . 2 . 6,8		6 . 22 . 1,20*	1,35	+ 0,15		66 . 38 . 4,27	5,76	+ 1,49
29 . 0 . 2 . 32,0		6 . 30 . 19,61	19,43	- 0,18		66 . 43 . 16,00	17,15	+ 1,15
30 . 0 . 2 . 44,2		6 . 34 . 28,42	28,17	- 0,25		66 . 46 . 29,95	29,74	- 0,21
July 1 . 0 . 2 . 56,1		6 . 38 . 36,88	36,66	- 0,22		66 . 50 . 7,18	6,74	- 0,44
3 . 0 . 3 . 19,0	I.	6 . 46 . 52,96	52,86	- 0,10		66 . 58 . 31,92	33,52	+ 1,60
4 . 0 . 3 . 30,8	II.	6 . 51 . 1,39	0,50	- 0,89		67 . 3 . 21,94	23,22	+ 1,28
6 . 0 . 3 . 51,2						67 . 14 . 14,06	14,60	+ 0,54
7 . 0 . 4 . 1,4		7 . 3 . 21,72	21,46	- 0,26		67 . 20 . 14,14	15,80	+ 1,66
10 . 0 . 4 . 29,4		7 . 15 . 39,45	39,08	- 0,37				
11 . 0 . 4 . 37,7		7 . 19 . 44,38	44,15	- 0,23		67 . 48 . 13,79	14,67	+ 0,88
17 . 0 . 5 . 19,1		7 . 44 . 5,18	4,98	- 0,20		68 . 41 . 34,32	35,54	+ 1,22
18 . 0 . 5 . 24,5		7 . 48 . 7,21	6,79	- 0,42		68 . 51 . 46,48	46,43	- 0,05
20 . 0 . 5 . 33,2		7 . 56 . 9,03	8,85	- 0,18	S.	69 . 13 . 13,06	12,32	- 0,74
21 . 0 . 5 . 37,0		8 . 0 . 9,36	9,09	- 0,27		69 . 24 . 26,05	27,11	+ 1,06
28 . 0 . 5 . 47,0		8 . 27 . 55,34	54,89	- 0,45		70 . 52 . 37,38	38,88	+ 1,50
29 . 0 . 5 . 45,9		8 . 31 . 50,73	50,47	- 0,26		71 . 6 . 33,38	32,87	- 0,51
30 . 0 . 5 . 44,1		8 . 35 . 45,56	45,44	- 0,12		71 . 20 . 46,19	45,67	- 0,52
31 . 0 . 5 . 42,0		8 . 39 . 39,93	39,77	- 0,16		71 . 35 . 17,82	16,76	- 1,06
Aug. 1 . 0 . 5 . 39,2		8 . 43 . 33,69	33,49	- 0,20		71 . 50 . 7,48	5,86	- 1,62
3 . 0 . 5 . 31,7		8 . 51 . 19,26	19,07	- 0,19		72 . 20 . 39,08	37,45	- 1,63
4 . 0 . 5 . 27,0		8 . 55 . 11,19	10,92	- 0,27		72 . 36 . 20,15	19,14	- 1,01
5 . 0 . 5 . 21,9	I.	8 . 59 . 2,60	2,16	- 0,44		72 . 52 . 15,70	17,64	+ 1,94
8 . 0 . 5 . 2,3		9 . 10 . 32,61	32,24	- 0,37		73 . 41 . 52,28	51,72	- 0,56
10 . 0 . 4 . 46,4		9 . 18 . 9,78	9,33	- 0,45		74 . 16 . 13,65	13,32	- 0,33
11 . 0 . 4 . 37,4		9 . 21 . 57,28	57,01	- 0,27		74 . 33 . 45,27	46,91	+ 1,64
12 . 0 . 4 . 27,9		9 . 25 . 44,35	44,14	- 0,21		74 . 51 . 36,09	35,61	- 0,48
13 . 0 . 4 . 17,7		9 . 29 . 30,69	30,71	+ 0,02		75 . 9 . 40,17	38,70	- 1,47
15 . 0 . 3 . 56,5		9 . 37 . 2,52	2,24	- 0,28		75 . 46 . 28,11	27,40	- 0,71
18 . 0 . 3 . 20,3		9 . 48 . 15,88	15,70	- 0,18		76 . 43 . 24,47	22,38	- 2,09
19 . 0 . 3 . 7,2		9 . 51 . 59,31	59,20	- 0,11		77 . 2 . 48,25	46,68	- 1,57
20 . 0 . 2 . 53,9		9 . 55 . 42,47	42,23	- 0,24		77 . 22 . 22,72	23,28	+ 0,56
21 . 0 . 2 . 39,9		9 . 59 . 25,08	24,78	- 0,30		77 . 42 . 11,84	12,17	+ 0,33
22 . 0 . 2 . 25,2						78 . 2 . 13,90	12,67	- 1,23
28 . 0 . 0 . 50,0	II.	10 . 25 . 10,70	10,21	- 0,49		80 . 6 . 6,76	4,45	- 2,31
29 . 0 . 0 . 32,5		10 . 28 . 49,72	49,37	- 0,35		80 . 27 . 19,31	18,05	- 1,26
30 . 23 . 59 . 56,8		10 . 36 . 6,99	6,56	- 0,43		81 . 10 . 12,37	12,05	- 0,32
31 . 23 . 59 . 38,2		10 . 39 . 44,96	44,64	- 0,32		81 . 31 . 53,48	51,75	- 1,73
Sept. 1 . 23 . 59 . 19,7		10 . 43 . 22,82	22,41	- 0,41		81 . 53 . 40,70	39,54	- 1,16
2 . 23 . 59 . 0,6		10 . 46 . 60,39	59,87	- 0,52		82 . 15 . 36,38	35,14	- 1,24
3 . 23 . 58 . 41,0	II.	10 . 50 . 37,30	37,04	- 0,26		82 . 37 . 38,38	38,04	- 0,34
4 . 23 . 58 . 21,2	I.	10 . 54 . 14,00	13,94	- 0,06	N.	82 . 59 . 47,66	48,14	+ 0,48

\* Only one star.

Greenwich Mean Solar Time of Transit of Center.	Limb Observed.	Apparent R. A. of Center.	Seconds of Tabular R.A.	Errors of Tables.	Limb Observed.	Apparent N.P.D. of Center.	Seconds of Tabular N.P.D.	Errors of Tables.	
d. h. m. s.		h. m. s.	s.	s.		° ' "	"	"	
Sept. 6. 23. 57. 41,5	I.	11. 1. 27,29	27,04	- 0,25	N.	83. 44. 28,21	28,33	+ 0,12	
8. 23. 57. 0,7		11. 8. 39,44	39,35	- 0,09		84. 29. 31,96	33,33	+ 1,37	
13. 23. 55. 16,8		11. 26. 38,06	37,80	- 0,26		86. 23. 49,76	48,33	- 1,43	
15. 23. 54. 34,7		11. 33. 48,94	48,71	- 0,23		87. 10. 1,80	0,82	- 0,98	
16. 23. 54. 13,7		11. 37. 24,38	24,15	- 0,23		87. 33. 13,46	12,42	- 1,04	
17. 23. 53. 52,7		11. 40. 59,91	59,57	- 0,34		87. 56. 28,62	26,92	- 1,70	
18. 23. 53. 31,4						88. 19. 43,63	44,22	+ 0,59	
27. 23. 50. 26,0			12. 16. 58,19	58,11		- 0,08	91. 50. 21,36	20,62	- 0,74
Oct. 4. 23. 48. 12,7		II.	12. 42. 20,35	20,30		- 0,05	94. 33. 30,31	30,73	+ 0,42
7. 23. 47. 20,6		12. 53. 17,76	17,55	- 0,21	95. 42. 43,13	42,53	- 0,60		
8. 23. 47. 3,9	I.	12. 56. 57,70	57,46	- 0,24	96. 5. 37,55	38,13	+ 0,58		
9. 23. 46. 47,6	I.	13. 0. 37,86	37,80	- 0,06	96. 28. 29,45	28,93	- 0,52		
11. 23. 46. 17,2		13. 7. 60,46	59,96	- 0,50	97. 13. 53,80	55,13	+ 1,33		
13. 23. 45. 48,3		13. 15. 24,57	24,17	- 0,40	97. 58. 57,41	58,13	+ 0,72		
14. 23. 45. 34,3		13. 19. 7,05	7,09	+ 0,04	98. 21. 21,73	20,03	- 1,70		
16. 23. 45. 9,0		13. 26. 34,86	34,64	- 0,22	99. 5. 42,07	42,54	+ 0,47		
18. 23. 44. 45,8		13. 34. 4,65	4,62	- 0,03	99. 49. 30,31	34,24	+ 3,93		
20. 23. 44. 25,3		13. 41. 37,21	37,09	- 0,12	100. 32. 51,51	51,75	+ 0,24		
21. 23. 44. 16,2	II.	13. 45. 24,62	24,32	- 0,30	100. 54. 15,84	16,75	+ 0,91		
22. 23. 44. 7,4		13. 49. 12,36	12,20	- 0,16	101. 15. 30,93	31,95	+ 1,02		
23. 23. 43. 59,5		13. 53. 0,97	0,78	- 0,19	101. 36. 36,43	36,86	+ 0,43		
25. 23. 43. 45,9		14. 0. 40,44	40,02	- 0,42	102. 18. 14,46	14,56	+ 0,10		
26. 23. 43. 32,3					102. 38. 47,21	46,56	- 0,65		
27. 23. 43. 35,0		14. 8. 22,35	22,14	- 0,21	102. 59. 7,02	6,47	- 0,55		
Nov. 1. 23. 43. 20,2		14. 27. 50,62	50,49	- 0,13	104. 37. 33,86	34,09	+ 0,23		
10. 23. 43. 45,2		15. 3. 44,67	44,44	- 0,23	107. 19. 14,36	15,92	+ 1,56		
11. 23. 43. 52,2	I.	15. 7. 48,21	48,05	- 0,16	107. 35. 51,00	50,22	- 0,78		
15. 23. 44. 28,6					108. 39. 2,39	1,95	- 0,44		
17. 23. 44. 52,5	II.	15. 32. 28,06	27,76	- 0,30					
18. 23. 45. 5,4	I.	15. 36. 37,55	37,39	- 0,16	N.	109. 22. 59,49	59,47	- 0,02	
24. 23. 46. 40,6		16. 1. 52,30	52,11	- 0,19	110. 41. 18,34	18,21	- 0,13		
27. 23. 47. 38,3		16. 14. 39,86	39,72	- 0,14	111. 15. 19,97	19,02	- 0,95		
30. 23. 48. 42,4		16. 27. 33,78	33,55	- 0,23	111. 45. 43,84	42,24	- 1,60		
Dec. 1. 23. 49. 5,1	II.	16. 31. 53,10	52,79	- 0,31		111. 54. 59,91	60,25	+ 0,34	
2. 23. 49. 28,3		16. 36. 12,99	12,68	- 0,31		112. 3. 53,56	52,86	- 0,70	
3. 23. 49. 52,1		16. 40. 33,37	33,15	- 0,22		112. 12. 19,75	19,96	+ 0,21	



Greenwich Mean Solar Time of Transit of Limb.				Limb Observed.	Apparent R.A. of Center.		Seconds of Tabular R.A.	Errors of Tables.	Effect of increasing Semi-diameter $\frac{1}{1000}$	Greenwich Mean Solar Time of Transit of Center.			Limb Observed.	Apparent N.P.D. of Center.		Seconds of Tabular N.P.D.	Errors of Tables.	Effect of increasing Semi-diameter $\frac{1}{1000}$	Effect of increasing Parallax $\frac{1}{1000}$	Effect of assuming the Earth Spherical
d.	h.	m.	s.		h.	m.	s.	s.	s.	h.	m.	s.		°	'	"	"	"	"	"
Jan.	3.	3.48.51,7		I.	22.40.28,78	28,91		+0,13	-,065	3.49.56,3			S.	103.56.10,19	11,56		+1,37	+0,91	+3,08	+10,67
	5.	5.14.50,9		I.	0.14.32,29	32,59		+0,10	-,062	5.15.52,3			S.	93.56.24,21	21,57		-2,64	+0,89	2,74	11,55
	6.	5.55.18,5		I.	0.59.2,57	2,80		+0,23	-,061	5.56.19,4			S.	88.44.40,35	35,79		-4,56	+0,89	2,55	11,91
Feb.	4.	5.11.14,2		I.	2.9.11,85	11,84		-0,01	-,062	5.12.15,8			S.	80.34.41,26	32,56		-8,70	+0,89	2,23	12,35
	6.	6.37.14,0		I.	3.43.21,53	21,79		+0,26	-,065	6.38.18,5			S.	71.50.14,25	8,40		-5,85	+0,89	1,85	12,65
	7.									7.25.17,2			S.	68.28.21,75	13,03		-8,72	+0,90	1,71	12,75
	8.	8.14.20,4		I.	5.28.40,70	40,73		+0,03	-,069	8.15.29,0			S.	66.4.33,32	25,61		-7,71	+0,91	1,60	12,86
	9.									9.8.47,5			N.	64.53.30,16	26,43		-3,73	-0,92	1,52	13,00
	10.10.	3.6,1		I.	7.25.39,68	39,88		+0,20	-,071	10.4.17,3		S & N	65.7.59,62	51,49		-8,13		1,58	13,18	
	12.11.	5.14,0		I.	9.25.58,37	59,46		+1,09	-,071	11.56.24,4		N.	70.10.34,22	31,28		-2,94	-0,96	1,88	13,58	
	19.18.	1.37,5		II.	15.58.42,02	42,26		+0,24	+,071	18.0.26,8		S.	109.24.12,15	17,86		+5,71	+0,97	3,37	10,48	
	20.18.	57.49,1		II.	16.58.58,29	58,49		+0,20	+,072	18.56.37,1		S.	112.52.30,60	36,89		+6,29	+0,96	3,40	9,85	
Mar.	5.	4.31.2,8		I.	3.23.15,77	15,78		+0,01	-,064				S.	69.29.53,22	46,70		-6,52	+0,89	1,74	12,63
	6.	5.16.19,3		I.	4.12.37,85	38,06		+0,21	-,066	5.17.24,7			S & N	65.0.43,20	37,40		-5,80		1,53	12,83
	8.	6.55.27,5		I.	5.59.58,89	58,87		-0,02	-,069	6.56.36,6		N.	65.40.40,90	35,21		-5,69	-0,94	1,60	13,22	
	10.	8.44.8,2		I.	7.56.52,23	52,18		-0,05	-,071	8.45.19,2		N.	68.14.52,36	47,31		-5,05	-0,95	1,77	13,47	
	11.	9.39.37,7		I.	8.56.27,16	27,27		+0,11	-,071	9.40.48,5		N.	72.14.43,05	36,99		-6,06	-0,96	2,00	13,68	
	12.10.	34.26,2		I.	9.55.20,60	20,60		0,00	-,070	10.35.36,2		N.	77.27.7,63	3,35		-4,28	-0,98	2,29	13,75	
	13.11.	28.0,2		I.	10.52.59,10	59,33		+0,23	-,069	11.29.9,3		N.	90.6.21,55	16,75		-4,80		2,89	13,18	
	15.13.	14.28,5		II.	12.45.25,31	25,20		-0,11	+,069	13.13.20,1		S & N								
Apr.	6.	6.32.33,7		I.	7.31.22,19	21,99		-0,20	-,070	6.33.43,8			N.	64.47.45,72	42,65		-3,07	-0,92	1,52	12,96
	8.	8.20.9,5		I.	9.27.8,52	8,42		-0,10	-,070	8.21.19,3			N.	69.57.39,88	35,32		-4,56	-0,95	1,85	13,46
	10.10.	5.3,8		I.	11.20.12,12	11,92		-0,20	-,070	10.6.12,4		N.	80.11.26,74	21,09		-5,65	-0,98	2,43	13,69	
	11.10.	56.45,0		I.	12.15.58,35	58,37		+0,02	-,070	10.57.53,6		N.	86.35.17,09	14,22		-2,87	-0,99	2,74	13,49	
	12.11.	48.54,6		I.	13.12.13,54	13,83		+0,29	-,070				S.	105.56.33,66	31,93		-1,73	+1,00	3,42	11,38
	14.13.	40.44,4		II.	15.9.58,92	59,36		+0,44	+,072	13.39.32,5		S.								
May	4.	5.18.55,4		I.	8.7.54,77	54,96		+0,19	-,070	5.20.4,8			N.	65.38.31,04	24,20		-6,84	-0,92	1,57	12,95
	6.	7.2.47,8		I.	9.59.56,35	56,32		-0,03	-,069	7.3.56,2			N.	72.17.17,26	14,45		-2,81	-0,94	1,96	13,38
	7.	7.53.19,1		I.	10.54.32,08	32,32		+0,24	-,068	7.54.26,9			N.	77.20.45,62	44,42		-1,20	-0,96	2,25	13,52
	10.10.	25.34,1		I.	13.39.3,13	3,58		+0,45	-,070	10.26.43,5			N.	96.27.4,24	7,85		+3,61	-1,00	3,14	12,68
	18.18.	13.32,9		II.	21.57.39,62	39,20		-0,42	+,067											
June	1.	4.7.9,4		I.	8.46.19,86	20,36		+0,50	-,069				N.	93.22.59,81	64,90		+5,09	-0,98	2,97	12,77
	2.	4.58.5,9		I.	9.41.20,49	20,88		+0,39	-,068	8.14.43,7			N.	99.46.38,45	43,55		+5,10	-0,99	3,21	12,19
	3.	5.47.38,5		I.	10.34.57,07	57,37		+0,30	-,067	9.6.3,1			N.	105.43.18,61	25,29		+6,68	-1,00	3,39	11,46
	6.	8.13.36,0		I.	13.13.8,87	9,08		+0,21	-,068	10.0.40,0			N.	110.41.15,83	24,45		+8,62	-1,00	3,50	10,72
	7.	9.4.53,7		I.	14.8.33,05	33,07		+0,02	-,070	12.1.27,7		N & S	114.9.44,27	51,84		+7,57		3,55	10,05	
	8.	9.59.28,3		I.	15.7.15,21	15,29		+0,08	-,072	13.5.32,2		S & N	115.45.55,04	62,26		+7,22		3,54	9,67	
	9.10.	58.0,8		I.	16.9.56,00	56,40		+0,40	-,074	19.2.21,0		N.	89.25.17,68	7,91		-9,77	-0,89	2,57	11,96	
	10.12.	0.11,6		I.	17.16.15,07	15,35		+0,28	-,076											
	10.12.	2.43,7		II.	17.16.22,36	22,20		-0,16	+,076											
	11.13.	6.48,4		II.	18.24.33,86	33,85		-0,01	+,076											
	18.19.	3.22,2		II.	0.49.55,55	55,27		-0,28	+,061											
	22.21.	51.8,6		II.	3.53.52,67	51,50		-1,17	+,065											
July	1.	4.33.36,9		I.	11.11.6,16	6,66		+0,50	-,066	4.34.43,0			N.	79.7.55,35	57,64		+2,29	-0,94	2,29	13,21
	2.	5.20.59,2		I.	12.2.32,51	32,92		+0,41	-,066	5.22.5,0			N.	84.57.45,19	48,37		+3,18	-0,95	2,57	13,07
	3.	6.8.25,4		I.	12.54.3,52	4,00		+0,48	-,066	6.9.31,7			N.	91.9.48,17	50,76		+2,59	-0,96	2,84	12,74
	5.	7.48.26,8		I.	14.42.17,41	17,58		+0,17	-,070	7.49.36,3			N.	103.24.22,65	26,74		+4,09	-0,98	3,28	11,59
	7.	9.42.18,3		I.	16.44.24,88	24,69		-0,19	-,074	9.43.32,6			N.	112.45.37,94	45,97		+8,03	-0,99	3,49	10,25
	16.17.	40.5,5		II.	1.16.48,54	48,50		-0,04	+,062	17.39.4,1			N.	86.1.30,56	29,64		-0,92	-0,89	2,45	12,21
	18.19.	2.44,8		II.	2.47.33,43	33,19		-0,24	+,063	19.1.42,2			N.	76.0.15,23	11,03		-4,20	-0,89	2,01	12,50
	21.21.	21.19,9		II.	5.18.16,48	15,80		-0,68	+,068											
	29.	3.19.10,0		I.	11.46.50,46	51,12		+0,66	-,066											
	30.	4.6.34,2		I.	12.38.19,07	19,83		+0,76	-,066	4.7.40,2			N.	89.27.25,17	28,02		+2,85	-0,96	2,76	12,82
	31.	4.54.27,3		I.	13.30.17,25	17,91		+0,66	-,069	4.55.34,0			N.	95.42.35,77	32,01		-3,76	-0,96	+3,00	+12,32



Greenwich Mean Solar Time of Transit of Limb.	Limb Observed.	Apparent R.A. of Center.	Seconds of Tabular R.A.	Errors of Tables.	Effect of increasing Semi-diameter $\frac{1}{1000}$	Greenwich Mean Solar Time of Transit of Center.	Limb Observed.	Apparent N.P.D. of Center.	Seconds of Tabular N.P.D.	Errors of Tables.	Effect of increasing Semi-diameter $\frac{1}{1000}$	Effect of increasing Parallax $\frac{1}{1000}$	Effect of assuming the Earth Spherical.
d. h. m. s.		h. m. s.	s.	s.	s.	h. m. s.		° ' "	"	"	"	"	"
Aug. 1. 5.44.16	I.	14.23.57,61	57,87	+ 0,26	-,068	5.45. 9,8	N.	101.43.38,77	34,65	- 4,12	- 0,97	+ 3,19	+ 11,68
3. 7.32.16,8	I.	16.20.27,46	27,75	+ 0,29	-,073	7.33.29,3	N.	111.33.39,22	39,24	+ 0,02	- 0,97	3,43	10,31
4. 8.31.36,8	I.	17.23.55,36	55,41	+ 0,05	-,074	8.32.51,0	N.	114.34.27,03	32,89	+ 5,86	- 0,97	3,47	9,81
7.11.33.43,7	I.	20.38.19,79	20,71	+ 0,92	-,072	11.34.55,7	S.	113. 1. 7,25	5,55	- 1,70	+ 0,96	3,40	9,81
8.12.31.11,1	II.	21.37.37,22	37,93	+ 0,71	+ ,069	12.30. 1,9	S & N	109.18.60,91	61,76	+ 0,85		3,30	10,33
9.13.21.52,0	II.	22.32.25,40	26,10	+ 0,70	+ ,067	13.20.45,5	S & N	104.36.57,09	55,92	- 1,17		3,16	10,87
17.19.13.10,9	II.	4.56.14,01	13,31	- 0,70	+ ,067	19.12. 3,9	N.	66.25.23,80*	11,16	-12,64	- 0,89	1,56	12,61
19.20.55.54,0	II.	6.47. 4,73	4,42	- 0,31	+ ,070								
20.21.49.33,4	II.	7.44.49,25	49,63	+ 0,38	+ ,070								
29. 4.32.50,2	I.	15. 2.59,46	60,28	+ 0,82	-,070								
30. 5.27.32,6	I.	16. 1.49,06	49,47	+ 0,41	-,072	5.28.44,3	N.	110.36. 8,48	2,02	- 6,46	- 0,97	3,40	10,43
31. 6.25.15,5	I.	17. 3.39,55	39,59	+ 0,04	-,074	6.26.28,9	N.	114. 1.53,90	54,11	+ 0,21	- 0,97	3,44	9,84
Sept. 1. 7.25. 9,4	I.	18. 7.40,50	40,74	+ 0,24	-,074	7.26.23,6	S.	115.50.34,18	29,17	- 5,01	+ 0,96	3,46	9,40
2. 8.25.30,5	I.	19.12. 7,71	8,16	+ 0,45	-,074	8.26.44,3	S.	115.52.30,89	27,02	- 3,87	+ 0,96	3,44	9,34
6.11.59. 8,0	I.	23. 1.58,55	59,84	+ 1,29	-,065	12. 0.13,1	S.	101.33.40,65	31,46	- 9,19	+ 0,92	3,06	11,10
6.12. 1.18,3	II.	23. 2. 3,51	4,25	+ 0,74	+ ,065								
7.12.46. 4,3	II.	23.50.55,01	55,75	+ 0,74	+ ,063	12.45. 1,2	S & N	96. 1.40,88	31,81	- 9,07		2,87	11,64
15.18.45.21,1	II.	6.22.37,92	37,47	- 0,45	+ ,069	18.44.12,1	S & N	63.51.41,33	32,92	- 8,41		1,46	12,66
16.19.37.57,5	II.	7.19.18,89	18,82	- 0,07	+ ,070	19.36.47,8	S.	64. 6.28,36	30,94	+ 2,58	+ 0,91	1,50	12,80
17.20.31. 6,8	II.	8.16.33,50	33,87	+ 0,37	+ ,070								
28. 5.19.42,3	I.	17.48.20,17	19,75	- 0,42	-,075	5.20.56,9	N.	115.43.30,20	32,47	+ 2,27	- 0,97	3,47	9,57
Oct. 4.10.40. 5,4	I.	23.33. 5,08	5,61	+ 0,53	-,063	10.41. 8,7	S.	98. 8.14,41	5,98	- 8,43	+ 0,91	2,93	11,37
5.11.22.55,4	I.	0.19.57,53	58,58	+ 1,05	-,062	11.23.57,5	S.	92.29.60,69	49,47	-11,22	+ 0,91	2,73	11,83
7.12.48. 8,1	II.	1.51.16,91	17,41	+ 0,50	+ ,062	12.47. 6,2	S & N	81.23.47,69	41,04	- 6,65		2,27	12,41
27. 5.13.22,6	I.	19.36.19,09	20,28	+ 1,19	-,074	5.14.36,7	S.	115.48.56,48	56,91	+ 0,43	+ 0,96	3,46	9,40
29. 7. 4.35,5	I.	21.35.38,42	39,54	+ 1,12	-,069	7. 5.44,1	S.	109.48.11,78	10,81	- 0,97	+ 0,94	3,27	10,11
Nov. 1. 9.21.48,1	I.	0. 4.57,37	57,88	+ 0,51	-,062	9.22.50,3	S.	94.25.18,67	17,08	- 1,59	+ 0,90	2,79	11,64
3.10.44.10,1	I.	1.35.25,35	25,75	+ 0,40	-,062	10.45.11,6	S.	83.15.51,68	44,14	- 7,54	+ 0,89	2,35	12,29
5.12.10.39,2	II.	3. 8. 0,52	0,58	+ 0,06	+ ,064	12. 9.35,9	N & S	73.20.54,83	49,90	- 4,93		1,89	12,52
6.12.55.28,7	II.	3.56.52,64	52,74	+ 0,10	+ ,065	12.54.23,9	N.	69.20.53,27	49,77	- 3,50	- 0,88	1,69	12,51
25. 4.58.21,7	I.	21.15.32,77	33,94	+ 1,17	-,071	4.59.32,4	S.	111.18.27,63	24,58	- 3,05	+ 0,95	3,36	10,06
27. 6.37.22,9	I.	23. 2.38,05	38,75	+ 0,70	-,065	6.38.27,7	S.	101.43.52,46	48,58	- 3,88	+ 0,92	3,06	11,07
28. 7.21.12,0	I.	23.50.29,10	29,93	+ 0,83	-,063	7.22.14,8	S.	96.13.11,19	5,46	- 5,73	+ 0,91	2,87	11,55
30. 8.43.40,5	I.	1.21. 3,00	3,45	+ 0,45	-,062	8.44.41,9	S.	85. 1.30,46	22,20	- 8,26	+ 0,89	2,43	12,22
Dec. 1. 9.24.38,1	I.	2. 6. 4,19	4,44	+ 0,25	-,062	9.25.39,9	S.	79.43.16,85	8,59	- 8,26	+ 0,89	2,20	12,40
2.10. 6.42,8	I.	2.52.13,34	13,47	+ 0,13	-,063	10. 7.45,6	S.	74.50.63,29	55,27	- 8,02	+ 0,88	1,98	12,49
3.10.50.39,4	I.	3.40.14,94	15,06	+ 0,12	-,064	10.51.43,6	N & S	70.36.13,19	6,25	- 6,94		1,76	12,51
4.11.36.54,4	I.	4.30.35,59	35,60	+ 0,01	-,066								
4.11.39. 6,3	II.	4.30.40,40†	40,15	- 0,25	+ ,066	11.38. 0,4	N & S	67.10.51,70	49,01	- 2,69		1,60	12,49
5.12.27.43,6	II.	5.23.20,86	20,68	- 0,18	+ ,067	12.26.36,3	N.	64.47. 9,25	7,93	- 1,32	- 0,88	+ 1,47	+ 12,46

\* See the Note on this observation.

† The observed  $\mathcal{R}$ . of this limb is increased  $0^{\circ},07$  for the defect of illumination, agreeably to the method described in the Introduction.



RIGHT ASCENSIONS AND NORTH POLAR DISTANCES OF MERCURY. 1835. 129

Greenwich Mean Solar Time of Transit of Limb.				Limb Observed.	Apparent R.A. of Center.			Seconds of Tabular R.A.	Errors of Tables.	Apparent N.P.D. of Center.			Seconds of Tabular N.P.D.	Errors of Tables.
d.	h.	m.	s.		h.	m.	s.	s.	s.	°	'	"	"	"
Feb.	4.	0.	44.	1,1	I.	21.	40.	15,14	14,84	-0,30				
	6.	0.	49.	59,0	I.	21.	54.	7,15	7,01	-0,14	104.	29.	59,94	62,28 + 2,34
	9.	0.	58.	31,1	I.	22.	14.	30,36	30,03	-0,33	102.	18.	30,89	29,44 - 1,45
	10.	1.	1.	12,0	I.	22.	21.	8,24	8,28	+0,04	101.	32.	31,24	30,56 - 0,68
	20.	1.	18.	47,2	I.	23.	18.	11,91	11,80	-0,11				
	21.	1.	19.	0,3	I.	23.	22.	21,61	21,29	-0,32				
	23.	1.	18.	10,1	I.	23.	29.	24,41	23,85	-0,56	91.	40.	25,29	23,08 - 2,21
	24.	1.	17.	3,0	I.	23.	32.	13,68	13,12	-0,56	91.	5.	61,42	59,24 - 2,18
May	29.	0.	54.	47,4							64.	57.	26,87	24,81 - 2,06
June	6.	1.	26.	50,1	I.	6.	24.	10,96	11,01	+0,05	64.	33.	6,92	7,62 + 0,70
	8.	1.	32.	50,5	I.	6.	38.	5,40	5,48	+0,08				
	9.	1.	35.	30,6	I.	6.	44.	42,54	42,63	+0,09				
	22.	1.	48.	15,4	I.	7.	48.	44,72	44,51	-0,21	68.	40.	44,57	51,76 + 7,19
	23.	1.	47.	25,2	I.	7.	51.	50,95	50,58	-0,37				
Aug.	7.	22.	47.	12,5	II.	7.	52.	29,75	29,62	-0,13	69.	57.	20,34	17,13 - 3,21
	9.	22.	50.	19,8	II.	8.	3.	30,71	30,93	+0,22	69.	58.	2,49	2,36 - 0,13
	11.	22.	54.	53,2	II.	8.	15.	58,00	57,55	-0,45	70.	8.	10,59	10,68 + 0,09
	17.	23.	14.	42,9	II.	8.	59.	30,33	30,36	+0,03	71.	42.	29,96	28,31 - 1,65
	18.	23.	18.	34,4	II.	9.	7.	18,98	19,17	+0,19	72.	7.	39,53	38,57 - 0,96
	19.	23.	22.	30,0	II.	9.	15.	11,77	12,11	+0,34	72.	35.	20,34	19,73 - 0,61
	20.	23.	26.	28,2	II.	9.	23.	7,21	7,35	+0,14	73.	5.	24,27	24,69 + 0,42
Nov.	17.	22.	36.	44,5	II.	14.	24.	8,54	7,71	-0,83				
Dec.	1.	22.	35.	26,9	II.	15.	18.	2,65	2,40	-0,25				

RIGHT ASCENSIONS AND NORTH POLAR DISTANCES OF VENUS. 1835.

Greenwich Mean Solar Time of Transit of Limb.				Limb Observed.	Apparent R.A. of Center.			Seconds of Tabular R.A.	Errors of Tables.	Apparent N.P.D. of Center.			Seconds of Tabular N.P.D.	Errors of Tables.
d.	h.	m.	s.		h.	m.	s.	s.	s.	°	'	"	"	"
Jan.	4.	22.	30.	40,1	II.	17.	28.	13,48	11,63	-1,85	108.	10.	0,72	5,02 + 4,30
	5.	22.	25.	53,2	II.	17.	27.	22,30	20,47	-1,83	108.	2.	46,77	52,81 + 6,04
	14.	21.	50.	22,3	II.	17.	27.	14,89	13,53	-1,31	107.	30.	7,94	13,41 + 5,47
	19.	21.	36.	6,3	II.	17.	32.	39,48	38,35	-1,13	107.	32.	50,76	54,97 + 4,21
	21.	21.	31.	21,6	II.	17.	35.	47,09	45,84	-1,25	107.	36.	52,18	55,96 + 3,78
	25.	21.	23.	18,9	II.	17.	43.	29,47	28,45	-1,02	107.	48.	22,97	25,55 + 2,58
	28.	21.	18.	25,9	II.	17.	50.	25,40	24,30	-1,10	107.	58.	54,32	59,34 + 5,02
Feb.	3.	21.	11.	10,3	II.	18.	6.	48,01	47,08	-0,93	108.	21.	24,96	25,14 + 0,18
	5.	21.	9.	23,9	II.	18.	12.	54,45	53,71	-0,74	108.	28.	22,37	28,34 + 5,97
	8.	21.	7.	16,6	II.	18.	22.	36,54	35,55	-0,99	108.	37.	54,81	57,95 + 3,14
	9.	21.	6.	41,6	II.	18.	25.	58,05	57,40	-0,65	108.	40.	40,39	45,06 + 4,67
	12.	21.	5.	19,2	II.	18.	36.	25,13	24,62	-0,51	108.	47.	37,19	41,17 + 3,98
	19.	21.	3.	56,6	II.	19.	2.	38,25	37,62	-0,63	108.	53.	15,86	19,71 + 3,85
	20.	21.	3.	55,5	II.	19.	6.	33,75	32,98	-0,77	108.	52.	38,82	42,11 + 3,29
	22.	21.	4.	0,1	II.	19.	14.	31,51*	30,44	-1,07	108.	50.	12,05	15,13 + 3,08
	23.	21.	4.	5,2	II.	19.	18.	33,16	32,34	-0,82	108.	48.	19,60	24,33 + 4,73

\* An imperfect transit, noticed by the observer as very bad.

130 RIGHT ASCENSIONS AND NORTH POLAR DISTANCES OF VENUS. 1835. *Continued.*

	Greenwich Mean Solar Time of Transit of Limb.				Limb Observed.	Apparent R.A. of Center.			Seconds of Tabular R.A.	Errors of Tables.	Apparent N.P.D. of Center.			Seconds of Tabular N.P.D.	Errors of Tables.	
	d.	h.	m.	s.		h.	m.	s.			°	'	"			"
March	4.	21.	6.	8,5	II.	19.	56.	5,84	5,14	-0,70	108.	11.	43,13	44,50	+1,37	
	5.	21.	6.	28,9	II.	20.	0.	22,90	22,15	-0,75	108.	5.	17,38	20,51	+3,13	
	6.	21.	6.	50,2	II.	20.	4.	40,78	40,15	-0,63	107.	58.	25,41	27,52	+2,11	
	9.	21.	7.	59,7	II.	20.	17.	40,24	39,66	-0,58	107.	34.	51,52	54,74	+3,22	
	12.	21.	9.	16,2	II.	20.	30.	46,57	45,96	-0,61	107.	6.	57,33	59,36	+2,03	
	15.	21.	10.	37,7	II.	20.	43.	57,99	57,41	-0,58	106.	34.	40,46	42,88	+2,42	
April	1.	21.	18.	51,0	II.	21.	59.	14,11	13,54	-0,57	102.	13.	45,57	47,61	+2,04	
	5.	21.	20.	42,8	II.	22.	16.	52,47	51,73	-0,74	100.	55.	5,43	9,53	+4,10	
	6.	21.	21.	9,9	II.	22.	21.	16,19	15,66	-0,53	100.	34.	37,14	36,94	-0,20	
	7.	21.	21.	36,8	II.	22.	25.	39,78	39,33	-0,45	100.	13.	43,94	44,24	+0,30	
	13.	21.	24.	13,6	II.	22.	51.	56,40	55,97	-0,43	98.	1.	53,69	53,58	-0,11	
	14.	21.	24.	39,0	II.	22.	56.	18,38	17,89	-0,49	97.	38.	54,19	54,38	+0,19	
	21.	21.	27.	29,6								94.	51.	13,68	12,10	-1,58
	24.	21.	28.	42,0	II.	23.	39.	47,59	47,03	-0,56	93.	36.	17,06	14,61	-2,45	
	26.	21.	29.	29,0	II.	23.	48.	27,92	27,36	-0,56	92.	45.	33,09	27,12	-5,97	
May	17.	21.	38.	11,3	II.	1.	19.	59,33	58,97	-0,36	83.	35.	9,16	6,23	-2,93	
	18.	21.	38.	40,1	II.	1.	24.	24,76	24,36	-0,40	83.	9.	4,41	3,52	-0,89	
	22.	21.	40.	41,3	II.	1.	42.	12,54	12,10	-0,44	81.	25.	61,08	58,42	-2,66	
	24.	21.	41.	46,0	II.	1.	51.	10,46	10,05	-0,41	80.	35.	15,78	15,21	-0,57	
	25.	21.	42.	19,3	II.	1.	55.	40,44	40,13	-0,31	80.	10.	10,32	8,31	-2,01	
	26.	21.	42.	53,3	II.	2.	0.	11,14	10,99	-0,15	79.	45.	13,89	12,41	-1,48	
	28.	21.	44.	4,4	II.	2.	9.	15,40	15,11	-0,29	78.	55.	57,72	55,30	-2,42	
June	1.	21.	46.	36,3	II.	2.	27.	34,05	33,71	-0,34	77.	20.	3,78	1,48	-2,30	
	5.	21.	49.	23,2	II.	2.	46.	7,71	7,36	-0,35	75.	48.	20,26	18,27	-1,99	
	7.	21.	50.	52,7	II.	2.	55.	30,54	30,26	-0,28	75.	4.	17,07	14,46	-2,61	
	8.	21.	51.	39,2	II.	3.	0.	13,73	13,29	-0,44	74.	42.	41,61	41,85	+0,24	
	9.	21.	52.	26,5	II.	3.	4.	57,72	57,40	-0,32	74.	21.	32,83	29,74	-3,09	
	10.	21.	53.	15,1	II.	3.	9.	42,98	42,61	-0,37	74.	0.	37,00	38,84	+1,84	
	11.	21.	54.	4,4	II.	3.	14.	29,03	28,90	-0,13	73.	40.	13,60	9,93	-3,67	
	15.	21.	57.	33,7								72.	22.	9,37	6,41	-2,96
	21.	22.	3.	22,8	II.	4.	3.	14,51	14,38	-0,13	70.	37.	53,37	53,06	-0,31	
	22.	22.	4.	24,9	II.	4.	8.	13,36	13,16	-0,20	70.	22.	10,18	9,65	-0,53	
	26.	22.	8.	43,6	II.	4.	28.	19,00*	19,02	+0,02	69.	24.	23,83	21,82	-2,01	
	30.	22.	13.	19,0	II.	4.	48.	41,37	41,17	-0,20	68.	35.	13,50	12,08	-1,42	
	July	2.	22.	15.	42,3	II.	4.	58.	58,19	57,83	-0,36	68.	14.	2,67	2,76	+0,09
3.		22.	16.	55,2	II.	5.	4.	7,82	7,44	-0,38	68.	4.	21,71	21,16	-0,55	
6.		22.	20.	38,3	II.	5.	19.	41,25	41,08	-0,17	67.	38.	54,90	54,52	-0,38	
9.		22.	24.	28,2	II.	5.	35.	21,47	21,10	-0,37	67.	19.	5,70	3,49	-2,21	
16.		22.	33.	42,3	II.	6.	12.	12,98	12,80	-0,18	66.	55.	20,25	20,72	+0,47	
17.		22.	35.	2,4								66.	54.	35,52	36,01	+0,49
21.		22.	40.	26,5	II.	6.	38.	41,09	40,86	-0,23						
28.		22.	49.	49,4	II.	7.	15.	41,43	41,18	-0,25	67.	30.	41,53	42,89	+1,31	
29.		22.	51.	8,4	II.	7.	20.	57,19	57,16	-0,03	67.	37.	58,67	60,28	+1,61	
30.		22.	52.	27,2	II.	7.	26.	12,79	12,69	-0,10	67.	45.	57,62	57,06	-0,56	
31.		22.	53.	45,6	II.	7.	31.	27,90	27,71	-0,19	67.	54.	33,12	32,95	-0,17	
Aug.		2.	22.	56.	20,2	II.	7.	41.	56,03	56,07	+0,04	68.	13.	41,07	40,93	-0,14
		3.	22.	57.	36,8	II.	7.	47.	9,39	9,33	-0,06	68.	24.	12,21	12,42	+0,21
	4.	22.	58.	52,8	II.	7.	52.	22,16	21,94	-0,22	68.	35.	19,48	21,91	+2,43	
	7.	23.	2.	35,9	II.	8.	7.	55,56	55,38	-0,18	69.	12.	31,30	32,88	+1,58	
	9.	23.	5.	0,7	II.	8.	18.	13,95	13,72	-0,23	69.	40.	19,39	22,16	+2,77	
	11.	23.	7.	22,1	II.	8.	28.	28,77	28,71	-0,06	70.	10.	30,85	32,74	+1,89	
	14.	23.	10.	47,7	II.	8.	43.	44,60	44,44	-0,16	71.	0.	4,91	4,72	-0,19	
	17.	23.	14.	4,9								71.	54.	29,22	31,09	+1,87
	18.	23.	15.	8,8	II.	9.	3.	52,63	52,06	-0,57	72.	13.	43,42	42,48	-0,94	
	19.	23.	16.	11,5	II.	9.	8.	52,06	51,51	-0,55	72.	33.	21,55	24,27	+2,72	

\* This depends on only one star, the same as that by which the Sun's place is deduced on June 27.



RIGHT ASCENSIONS AND NORTH POLAR DISTANCES OF VENUS. 1835. *Continued.* 131

Greenwich Mean Solar Time of Transit of Limb.	Limb Observed.	Apparent R.A. of Center.	Seconds of Tabular R.A.	Errors of Tables.	Apparent N.P.D. of Center.	Seconds of Tabular N.P.D.	Errors of Tables.
d. h. m. s.		h. m. s.	s.	s.	° ' "	"	"
Aug. 20. 23. 17. 13,0	II.	9. 13. 50,32	49,96	- 0,36	72. 53. 32,39	35,76	+ 3,37
27. 23. 23. 57,5	II.	9. 48. 11,86	11,08	- 0,78	75. 27. 51,33	51,71	+ 0,38
28. 23. 24. 51,1	II.	9. 53. 2,17	1,58	- 0,59			
30. 23. 26. 35,8	II.	10. 2. 40,38	39,67	- 0,71	76. 40. 16,85	16,70	- 0,15
Sept. 1. 23. 28. 17,1	II.	10. 12. 14,91	14,07	- 0,84	77. 30. 24,54	25,28	+ 0,74
2. 23. 29. 6,2	II.	10. 16. 60,76	59,92	- 0,84			
13. 23. 37. 15,9	II.	11. 8. 33,87	33,31	- 0,56	82. 57. 1,82	1,03	- 0,79
15. 23. 38. 36,8	II.	11. 17. 48,07	47,58	- 0,49	83. 54. 50,44	50,92	+ 0,48
16. 23. 39. 16,7	II.	11. 22. 24,64	24,02	- 0,62	84. 24. 1,49	2,32	+ 0,83
Oct. 23 0. 3. 34,3	I.	14. 8. 42,74	42,21	- 0,53			
24. 0. 4. 24,9	I.	14. 13. 30,05	29,60	- 0,45	102. 36. 4,07	3,26	- 0,81
27. 0. 7. 3,2	I.	14. 27. 58,44	57,92	- 0,52	103. 55. 13,87	14,28	+ 0,41
28. 0. 7. 58,1	I.	14. 32. 50,09	49,51	- 0,58	104. 20. 58,88	57,58	- 1,30
Nov. 2. 0. 12. 49,4	I.	14. 57. 25,00	24,47	- 0,53	106. 23. 56,62	55,61	- 1,01
11. 0. 22. 50,2	I.	15. 42. 56,43	55,81	- 0,62	109. 37. 21,92	22,59	+ 0,67
Dec. 2. 0. 52. 6,3	I.	17. 35. 5,04	4,77	- 0,27	114. 4. 25,22	24,71	- 0,51

RIGHT ASCENSIONS AND NORTH POLAR DISTANCES OF MARS. 1835.

Greenwich Mean Solar Time of Transit of Limb.	Limb Observed.	Apparent R.A. of Center.	Seconds of Tabular R.A.	Errors of Tables.	Apparent N.P.D. of Center.	Seconds of Tabular N.P.D.	Errors of Tables.
d. h. m. s.		h. m. s.	s.	s.	° ' "	"	"
Jan. 3. 11. 57. 36,1	I. & II.	6. 49. 30,87	30,64	- 0,23	63. 8. 75,53	59,05	- 16,48
5. 11. 46. 15,8	I. & II.	6. 46. 1,83	1,67	- 0,16	63. 3. 31,10	15,44	- 15,66
6. 11. 40. 36,2	I.	6. 44. 18,39*	18,55	+ 0,16	63. 0. 54,76	40,64	- 14,12
16. 10. 45. 45,1	I. & II.	6. 28. 43,29	43,14	- 0,15	62. 45. 19,58	4,41	- 15,17
17. 10. 40. 29,2	I. & II.	6. 27. 23,07	22,74	- 0,33	62. 44. 43,46	27,51	- 15,95
20. 10. 24. 58,0	I.	6. 23. 39,45	39,43	- 0,02	62. 43. 44,94	30,40	- 14,54
23. 10. 9. 57,2	I. & II.	6. 20. 25,39	24,95	- 0,44	62. 43. 58,41	44,89	- 13,52
24. 10. 5. 3,2	I. & II.	6. 19. 27,12	26,87	- 0,25	62. 44. 16,48	3,79	- 12,69
26. 9. 55. 25,8	I. & II.	6. 17. 41,32	41,18	- 0,14	62. 45. 14,35	0,49	- 13,86
Feb. 2. 9. 23. 38,6	I. & II.	6. 13. 24,80	24,55	- 0,25	62. 50. 65,89	54,78	- 11,11
3. 9. 19. 20,5	I. & II.	6. 13. 2,50	2,39	- 0,11	62. 52. 14,79	0,88	- 13,91
4. 9. 15. 6,2	I. & II.	6. 12. 44,01	43,80	- 0,21	62. 53. 22,11	9,88	- 12,23
5. 9. 10. 54,7	I.	6. 12. 28,87	28,77	- 0,10	62. 54. 30,39	21,68	- 8,71
6. 9. 6. 47,4	I.	6. 12. 17,46	17,26	- 0,20	62. 55. 47,19	36,08	- 11,11
7. 9. 2. 43,4	I.	6. 12. 9,31	9,22	- 0,09	62. 56. 64,64	52,68	- 11,96
10. 8. 50. 52,0	I.	6. 12. 5,59	5,54	- 0,05	63. 0. 65,06	54,98	- 10,08
12. 8. 43. 14,3	I.	6. 12. 19,78	19,64	- 0,14	63. 3. 56,14	45,98	- 10,16
21. 8. 11. 25,4	I.	6. 15. 54,60	54,46	- 0,14	63. 17. 60,73	52,57	- 8,16
23. 8. 4. 52,4	I.	6. 17. 13,63	13,32	- 0,31	63. 21. 24,73	17,47	- 7,26
24. 8. 1. 39,6	I.	6. 17. 56,84	56,70	- 0,14	63. 23. 9,68	2,27	- 7,41

\* Imperfect: bad observation.

132 RIGHT ASCENSIONS AND NORTH POLAR DISTANCES OF MARS. 1835. *Continued.*

Greenwich Mean Solar Time of Transit of Limb.	Limb Observed.	Apparent R.A. of Center.	Seconds of Tabular R.A.	Errors of Tables.	Apparent N.P.D. of Center.	Seconds of Tabular N.P.D.	Errors of Tables.
d. h. m. s.		h. m. s.	s.	s.	° ' "	"	"
March 3.7.40.19,5	I.	6.24.9,13	9,24	+0,11	63.36.12,67	7,47	-5,20
4.7.37.25,9	I.	6.25.11,60	11,66	+0,06	63.38.16,11	8,17	-7,94
6.7.31.45,0	I.	6.27.22,83	22,85	+0,02	63.42.22,31	16,87	-5,44
8.7.26.12,5					63.46.42,85	36,06	-6,79
10.7.20.47,1	I.	6.32.9,39	9,11	-0,28	63.51.12,69	6,46	-6,23
11.7.18.6,9	I.	6.33.25,31	25,36	+0,05	63.53.33,57	26,26	-7,31
13.7.12.52,6	I.	6.36.3,20	3,13	-0,07	63.58.21,97	15,66	-6,31
19.6.57.48,0	I.	6.44.35,45	35,28	-0,17	64.14.16,17	10,95	-5,22
April 2.6.25.46,6	I.	7.7.40,43	40,08	-0,35	65.1.43,24	39,23	-4,01
6.6.17.16,9	I.	7.14.55,58	55,19	-0,39	65.18.22,34	21,03	-1,31
7.6.15.11,8	I.	7.16.46,66	46,23	-0,43			
8.6.13.7,2	I.	7.18.38,31	38,11	-0,20	65.27.20,56	16,82	-3,74
10.6.9.1,0	I.	7.22.24,50	24,30	-0,20	65.36.40,29	36,52	-3,77
11.6.6.59,1	I.	7.24.18,81	18,53	-0,28	65.41.28,49	25,52	-2,97
14.6.0.57,5	I.	7.30.5,91	5,56	-0,35	65.56.33,38	30,11	-3,27
28.5.34.1,4	I.	7.58.17,16	17,09	-0,07	67.19.45,94	43,99	-1,95
May 4.5.22.57,8					68.2.14,07	10,68	-3,39
7.5.17.30,5	I.	8.17.12,55	12,37	-0,18	68.24.58,78	57,17	-1,61
12.5.8.30,8	I.	8.27.54,09	54,05	-0,04	69.5.13,78	13,06	-0,72
19.4.56.5,2	I.	8.43.2,33	1,95	-0,38	70.6.20,92	22,05	+1,13
25.4.45.32,8	I.	8.56.7,54	7,45	-0,09	71.3.10,47	11,14	+0,67
29.4.38.34,5	I.	9.4.54,20	54,05	-0,15	71.43.17,61	17,13	-0,48
30.4.36.50,0	I.	9.7.6,06	6,01	-0,05	71.53.35,66	35,03	-0,63
June 29.3.45.11,6	I.	10.13.35,97	35,61	-0,36			
July 1.3.41.46,4	I.	10.18.3,33	3,17	-0,16	78.29.3,87	5,28	+1,41
2.3.40.4,0					78.56.7,73	10,28	+2,55
4.3.36.39,2	I.	10.24.44,95	44,78	-0,17			

RIGHT ASCENSIONS AND NORTH POLAR DISTANCES OF VESTA. 1835.

Greenwich Mean Solar Time of Transit.	Apparent R.A.	Apparent N.P.D. of Center.
d. h. m. s.	h. m. s.	° ' "
Jan. 3.8.24.36,0	3.15.55,80	77.51.6,98
5.8.16.27,8	3.15.39,31	
16.7.33.44,6	3.16.11,25	
17.7.30.1,6	3.16.24,23	76.54.13,23
20.7.19.1,7	3.17.12,16	76.39.58,65
22.7.11.49,6	3.17.51,97	76.30.6,15
24.7.4.43,5	3.18.37,83	76.19.56,57
26.6.57.43,4	3.19.29,66	76.9.36,58
27.6.54.15,6	3.19.57,89	76.4.18,95
30.6.44.0,5	3.21.30,75	75.48.7,51
Feb. 4.6.27.23,3	3.24.33,55	75.20.17,45
6.6.20.53,6	3.25.55,98	75.8.47,05
9.6.11.18,3	3.28.8,64	74.51.22,66
12.6.1.53,7	3.30.32,28	74.33.43,31



Greenwich Mean Solar Time of Transit.	Apparent R.A.	Seconds of Tabular R.A.	Errors of Tables.	Apparent N.P.D. of Center.	Seconds of Tabular N.P.D.	Errors of Tables.		
d. h. m. s.	h. m. s.	s.	s.	o. ' "	"	"		
May	16.13.46.25,1	17.22.59,49	66,73	+7,24	65.56.15,98	38,02	+22,04	
	21.13.23.7,1	17.19.20,46	27,95	+7,49	65.21.28,58	48,80	+20,22	
	28.12.50.0,9	17.13.44,75	52,42	+7,67	64.44.52,78	71,97	+19,19	
	29.12.45.15,0	17.12.54,58	62,48	+7,90	64.40.53,53	71,46	+17,93	
	30.12.40.29,7	17.12.5,08	12,17	+7,09	64.37.8,90	30,06	+21,16	
June	1.12.30.56,4	17.10.23,31	30,69	+7,38	64.30.48,49	64,05	+15,56	
	6.12.7.1,0	17.6.6,82	14,18	+7,36	64.20.21,17	34,72	+13,55	
	8.11.57.26,6	17.4.23,88	31,48	+7,60	64.18.26,06	37,71	+11,65	
	9.11.52.38,8	17.3.31,86	40,29	+8,43	64.17.52,82	67,91	+15,09	
	10.11.47.53,1	17.2.41,96	49,26	+7,30	64.17.39,07	57,50	+18,43	
	13.11.33.33,8				64.19.5,23	20,88	+15,65	
	18.11.9.50,0	16.56.5,13	12,46	+7,33	64.27.38,99	57,36	+18,37	
	20.11.0.24,1	16.54.30,73	37,98	+7,25	64.33.7,72	32,45	+24,73	
	23.10.46.19,9	16.52.13,92	21,19	+7,27	64.43.37,39	68,14	+30,75	
	25.10.37.0,5	16.50.46,06	53,71	+7,65	64.51.59,63	98,03	+38,40	
	29.10.18.33,1	16.48.2,01	9,00	+6,99	65.12.0,43	54,11	+53,68	
	30.10.13.58,0	16.47.22,67	30,09	+7,42	65.17.42,16	96,60	+54,44	
	July	1.10.9.24,7	16.46.45,13	52,18	+7,05	65.23.34,99	93,80	+58,81
		2.10.4.52,0	16.46.8,28	15,28	+7,00	65.29.42,57	105,70	+63,13
3.10.0.20,6		16.45.32,63	39,42	+6,79	65.36.6,20	71,99	+65,79	
4.9.55.50,0		16.44.57,89	64,64	+6,75	65.42.42,97	112,79	+69,82	
17.8.58.56,1		16.39.9,87						

Greenwich Mean Solar Time of Transit.	Apparent R.A.	Seconds of Tabular R.A.	Errors of Tables.	Apparent N.P.D. of Center.	Seconds of Tabular N.P.D.	Errors of Tables.	
d. h. m. s.	h. m. s.	s.	s.	o. ' "	"	"	
May	16.13.58.48,4	17.35.24,85	25,95	+1,10	111.31.34,96	25,96	-9,00
	21.13.35.34,4				111.44.50,34	48,06	-2,28
	25.13.16.33,3	17.28.31,77	33,06	+1,29	111.55.27,02	18,36	-8,66
	28.13.2.9,6	17.25.55,42	56,67	+1,25			
	29.12.57.20,2	17.25.1,74	2,91	+1,17	112.5.64,33	53,56	-10,77
30.12.52.30,0	17.24.7,39	8,41	+1,02	112.8.41,57	31,06	-10,51	
June	1.12.42.48,1	17.22.16,98	17,46	+0,48	112.13.55,51	44,56	-10,95
	2.12.37.55,4	17.21.20,01	21,17	+1,16	112.16.31,03	20,26	-10,77
	8.12.8.35,1	17.15.34,30	35,26	+0,96	112.31.47,63	35,56	-12,07
	18.11.19.38,1	17.5.54,75	55,96	+1,21	112.55.40,50	28,36	-12,14
	20.11.9.54,7	17.4.2,89	4,06	+1,17	113.0.9,31	0,06	-9,25
	25.10.45.47,3	16.59.34,31	35,99	+1,68	113.10.69,52	58,06	-11,46
	29.10.26.46,3	16.56.16,44	17,25	+0,81	113.19.39,15	26,36	-12,79
	30.10.22.3,3	16.55.29,26	30,16	+0,90	113.21.40,34	31,46	-8,88
July	1.10.17.20,7	16.54.42,42	44,21	+1,79	113.23.46,61	36,16	-10,45
	3.10.8.1,2	16.53.14,47	15,85	+1,38	113.27.56,44	43,67	-12,77
	6.9.54.7,9				113.33.61,93	51,07	-10,86
	10.9.36.2,2	16.48.46,16			113.42.7,17		
	11.9.31.33,4	16.48.13,20			113.44.4,65		
	17.9.5.12,7	16.45.27,46			113.56.12,97		

Greenwich Mean Solar Time of Transit.				Apparent R.A.			Seconds of Tabular R.A.	Errors of Tables.	Apparent N.P.D. of Center.			Seconds of Tabular N.P.D.	Errors of Tables.
d.	h.	m.	s.	h.	m.	s.	s.	s.	°	'	"	"	"
Jan.	1.	9.	19.50,6	4.	3.	6,28	7,15	+0,87	70.	1.	54,96	50,49	-4,47
	3.	9.	10.59,7	4.	2.	27,12	27,63	+0,51	70.	3.	15,48	12,79	-2,69
	5.	9.	2.31,4	4.	1.	50,50	51,12	+0,62	70.	4.	29,68	26,69	-2,99
	6.	8.	58.18,4	4.	1.	33,33	34,02	+0,69	70.	5.	5,41	0,49	-4,92
	12.	8.	33.17,4	4.	0.	7,64	8,16	+0,52	70.	7.	38,19	36,19	-2,00
	16.	8.	16.53,0	3.	59.	26,72	27,28	+0,56	70.	8.	36,43	34,00	-2,43
	17.	8.	12.49,0	3.	59.	18,65	19,14	+0,49	70.	8.	43,32	42,50	-0,82
	20.	8.	0.42,0	3.	58.	59,32	59,79	+0,47	70.	8.	56,74	53,10	-3,64
	22.	7.	52.41,5	3.	58.	50,59	51,13	+0,54	70.	8.	52,09	48,00	-4,09
	23.	7.	48.42,7	3.	58.	47,73	48,09	+0,36	70.	8.	45,39	41,90	-3,49
	24.	7.	44.44,5	3.	58.	45,43	45,88	+0,45	70.	8.	36,89	33,30	-3,59
	26.	7.	36.50,7	3.	58.	43,38	44,03	+0,65	70.	8.	17,06	8,80	-8,26
	27.	7.	32.55,2	3.	58.	43,88	44,39	+0,51	70.	7.	55,35	52,90	-2,45
	30.	7.	21.13,6	3.	58.	50,03	50,59	+0,56	70.	6.	52,47	50,51	-1,96
Feb.	2.	7.	9.39,8	3.	59.	3,97	4,44	+0,47	70.	5.	29,98	26,41	-3,57
	4.	7.	2.1,6	3.	59.	17,59	17,89	+0,30	70.	4.	27,25	18,51	-8,74
	6.	6.	54.26,4	3.	59.	34,24	34,64	+0,40	70.	3.	2,31	1,31	-1,00
	7.	6.	50.40,0	3.	59.	43,78	44,25	+0,47	70.	2.	23,20	19,31	-3,89
	8.	6.	46.54,5	3.	59.	54,21	54,67	+0,46					
	9.	6.	43.9,7	4.	0.	5,42	5,90	+0,48	70.	0.	51,08	48,51	-2,57
	10.	6.	39.25,6	4.	0.	17,27	17,93	+0,66	69.	59.	63,00	59,81	-3,19
	12.	6.	32.0,5	4.	0.	44,06	44,39	+0,33	69.	58.	18,57	16,11	-2,46
	21.	5.	59.14,1	4.	3.	21,18	21,63	+0,45	69.	48.	52,50	50,12	-2,38
	23.	5.	52.5,4	4.	4.	4,43	4,80	+0,37	69.	46.	26,73	23,82	-2,91
	24.	5.	48.32,0						69.	45.	10,83	8,02	-2,81
	Mar.	6.	5.	13.37,1	4.	8.	51,86	52,25	+0,39	69.	31.	8,96	5,12
19.		4.	29.47,5	4.	16.	10,31	10,53	+0,22	69.	9.	53,47	48,43	-5,04
Apr.	8.	3.	25.13,8	4.	30.	17,10	17,38	+0,28					
	11.	3.	15.47,8	4.	32.	39,19	39,43	+0,24	68.	28.	17,85	16,93	-0,92
	14.	3.	6.25,1	4.	35.	4,61	4,84	+0,23					
	22.	2.	41.39,2	4.	41.	47,06	47,70	+0,64					
Aug.	7.	21.	19.38,1	6.	24.	41,27	41,37	+0,10	66.	51.	52,60	50,78	-1,82
	9.	21.	13.29,8	6.	26.	25,01	25,03	+0,02	66.	52.	44,22	44,48	+0,26
	11.	21.	7.20,0	6.	28.	7,23	7,49	+0,26					
	13.	21.	1.8,9	6.	29.	48,29	48,67	+0,38	66.	54.	45,65	42,29	-3,36
	17.	20.	48.43,3	6.	33.	6,92	6,99	+0,07	66.	56.	52,87	52,39	-0,48
	20.	20.	39.20,0	6.	35.	31,76	31,99	+0,23					
	28.	20.	14.1,2	6.	41.	41,21	41,47	+0,26	67.	3.	39,60	39,59	-0,01
	30.	20.	7.37,2	6.	43.	9,29	9,59	+0,30	67.	4.	60,60	59,29	-1,31
	31.	20.	4.24,7	6.	43.	52,81	52,98	+0,17	67.	5.	41,94	39,49	-2,45
	Sept.	2.	19.	57.58,0	6.	45.	18,13	18,37	+0,24	67.	6.	58,45	60,89
8.		19.	38.26,6	6.	49.	22,85	23,10	+0,25	67.	11.	9,59	8,29	-1,30
16.		19.	11.56,0	6.	54.	20,34	20,52	+0,18	67.	16.	34,87	36,49	+1,62
17.		19.	8.34,6	6.	54.	54,92	55,19	+0,27	67.	17.	16,73	16,49	-0,24



Greenwich Mean Solar Time of Transit.	Apparent R.A.	Seconds of Tabular R.A.	Errors of Tables.	Apparent N.P.D. of Center.	Seconds of Tabular N.P.D.	Errors of Tables.
d. h. m. s.	h. m. s.	s.	s.	° ' "	"	"
Mar. 15. 13. 52. 5,2	13. 24. 14,22	14,55	+ 0,33	95. 54. 29,83	48,22	+ 18,39
19. 13. 35. 24,1	13. 23. 16,58	16,55	- 0,03	95. 48. 6,15	24,83	+ 18,68
April 6. 12. 19. 46,6	13. 18. 24,59	24,40	- 0,19	95. 17. 11,60	31,53	+ 19,93
8. 12. 11. 20,3	13. 17. 50,05	50,23	+ 0,18	95. 13. 39,12	61,63	+ 22,51
9. 12. 7. 7,6	13. 17. 33,19	33,11	- 0,08	95. 11. 56,09	76,93	+ 20,84
10. 12. 2. 54,6				95. 10. 11,16	32,53	+ 21,37
11. 11. 58. 41,5	13. 16. 58,80	58,86	+ 0,06	95. 8. 28,00	48,43	+ 20,43
14. 11. 46. 2,7	13. 16. 7,52	7,55	+ 0,03	95. 3. 17,85	38,73	+ 20,88
20. 11. 20. 45,9	13. 14. 25,97	26,07	+ 0,10	94. 53. 14,41	34,73	+ 20,32
25. 10. 59. 44,0	13. 13. 3,34	3,79	+ 0,45	94. 45. 10,88	33,83	+ 22,95
27. 10. 51. 20,7	13. 12. 31,75	31,72	- 0,03	94. 42. 9,01	28,82	+ 19,81
28. 10. 47. 9,1	13. 12. 16,04	15,89	- 0,15	94. 40. 37,04	58,12	+ 21,08
May 9. 10. 1. 12,0	13. 9. 33,57	33,77	+ 0,20	94. 25. 32,19	51,92	+ 19,73
10. 9. 57. 2,6				94. 24. 17,98	38,92	+ 20,94
16. 9. 32. 11,9	13. 8. 4,52	4,68	+ 0,16	94. 17. 37,10	58,62	+ 21,52
18. 9. 23. 57,0	13. 7. 41,43	41,58	+ 0,15	94. 15. 39,31	60,12	+ 20,81
21. 9. 11. 36,9	13. 7. 8,99	9,11	+ 0,12	94. 12. 56,59	77,22	+ 20,63
25. 8. 55. 14,3	13. 6. 29,82	30,01	+ 0,19	94. 9. 49,60	68,71	+ 19,11
26. 8. 51. 9,4	13. 6. 20,81	21,01	+ 0,20	94. 9. 5,25	26,91	+ 21,66
27. 8. 47. 4,8	13. 6. 12,17	12,33	+ 0,16			
28. 8. 43. 0,7	13. 6. 3,97	3,98	+ 0,01	94. 7. 47,22	69,71	+ 22,49
29. 8. 38. 56,9	13. 5. 55,98	55,96	- 0,02	94. 7. 12,48	34,41	+ 21,93
30. 8. 34. 53,1	13. 5. 48,11	48,27	+ 0,16	94. 6. 41,30	61,31	+ 20,01
June 1. 8. 26. 46,9	13. 5. 33,71	33,89	+ 0,18			
2. 8. 22. 44,3				94. 5. 17,60	35,61	+ 18,01
4. 8. 14. 40,2	13. 5. 14,70	14,91	+ 0,21	94. 4. 30,37	49,91	+ 19,54
6. 8. 6. 37,5	13. 5. 3,78	3,99	+ 0,21	94. 3. 53,77	73,40	+ 19,63
8. 7. 58. 36,2	13. 4. 54,32	54,48	+ 0,16	94. 3. 25,75	45,90	+ 20,15
10. 7. 50. 38,0	13. 4. 47,91	46,38	- 1,53	94. 3. 7,05	27,50	+ 20,45
22. 7. 3. 7,4	13. 4. 28,16	28,10	- 0,06	94. 4. 35,01	51,99	+ 16,98
23. 6. 59. 12,3	13. 4. 28,98	28,96	- 0,02	94. 5. 1,71	14,09	+ 12,38

RIGHT ASCENSIONS AND NORTH POLAR DISTANCES OF URANUS 1835.

Greenwich Mean Solar Time of Transit.	Apparent R.A.	Seconds of Tabular R.A.	Errors of Tables.	Apparent N.P.D. of Center.	Seconds of Tabular N.P.D.	Errors of Tables.
d. h. m. s.	h. m. s.	s.	s.	° ' "	"	"
July 29. 13. 39. 9,1	22. 7. 27,62	30,67	+ 3,05	102. 24. 8,78	5,19	- 3,59
30. 13. 35. 4,9	22. 7. 19,26	22,52	+ 3,26	102. 24. 55,55	51,09	- 4,46
31. 13. 31. 0,8	22. 7. 11,02	14,28	+ 3,26	102. 25. 43,80	37,49	- 6,31
Aug. 1. 13. 26. 56,7	22. 7. 2,80	5,96	+ 3,16	102. 26. 31,69	24,29	- 7,40
3. 13. 18. 47,8	22. 6. 45,67	49,09	+ 3,42	102. 27. 64,51	58,79	- 5,72
4. 13. 14. 43,5	22. 6. 37,33	40,55	+ 3,22	102. 28. 50,19	46,59	- 3,60
7. 13. 2. 29,9	22. 6. 11,34	14,56	+ 3,22	102. 31. 17,26	11,59	- 5,67
8. 12. 58. 25,1	22. 6. 2,44	5,79	+ 3,35	102. 32. 3,39	0,39	- 3,00
9. 12. 54. 20,7	22. 5. 54,00	56,97	+ 2,97	102. 32. 55,34	49,39	- 5,95
11. 12. 46. 11,0	22. 5. 35,99	39,19	+ 3,20	102. 34. 31,23	27,89	- 3,34
13. 12. 38. 1,3	22. 5. 18,13	21,23	+ 3,10	102. 36. 12,44	7,09	- 5,35
14. 12. 33. 56,4	22. 5. 9,08	12,20	+ 3,12	102. 36. 62,82	56,89	- 5,93

136 RIGHT ASCENSIONS AND NORTH POLAR DISTANCES OF URANUS. 1835. *Continued.*

Greenwich Mean Solar Time of Transit.				Apparent R.A.			Seconds of Tabular R.A.	Errors of Tables.	Apparent N.P.D. of Center.			Seconds of Tabular N.P.D.	Errors of Tables.
d.	h.	m.	s.	h.	m.	s.	s.	s.	°	'	"	"	"
Aug.	17.	12.	21.41,2	22.	4.	41,53	44,93	+ 3,40	102.	39.	31,89	26,89	- 5,00
	18.	12.	17.36,2	22.	4.	32,37	35,78	+ 3,41	102.	40.	20,60	16,99	- 3,61
	19.	12.	13.31,3	22.	4.	23,42	26,63	+ 3,21	102.	41.	11,56	7,09	- 4,47
	21.	12.	5.21,5	22.	4.	5,35	8,28	+ 2,93	102.	42.	51,01	47,39	- 3,62
	22.	12.	1.16,1	22.	3.	55,86	59,09	+ 3,23	102.	43.	40,47	37,39	- 3,08
	28.	11.	36.45,7	22.	3.	0,75	4,16	+ 3,41	102.	48.	39,63	35,09	- 4,54
	29.	11.	32.40,8	22.	2.	51,75	55,07	+ 3,32	102.	49.	28,19	24,09	- 4,10
	31.	11.	24.31,0	22.	2.	33,65	36,96	+ 3,31	102.	51.	6,87	1,59	- 5,28
Sept.	1.	11.	20.26,0	22.	2.	24,59	27,95	+ 3,36	102.	51.	54,37	49,99	- 4,38
	2.	11.	16.21,4	22.	2.	15,82	18,98	+ 3,16	102.	52.	41,97	38,09	- 3,88
	7.	10.	55.57,8	22.	1.	31,66	34,87	+ 3,21	102.	56.	37,51	33,79	- 3,72
	9.	10.	47.48,7	22.	1.	14,32	17,62	+ 3,30	102.	58.	10,85	5,49	- 5,36
	11.	10.	39.39,8	22.	0.	57,23	0,64	+ 3,41	102.	59.	40,28	35,59	- 4,89
	14.	10.	27.28,5	22.	0.	32,58	35,72	+ 3,14	103.	1.	52,56	46,79	- 5,77
	16.	10.	19.19,7	22.	0.	16,55	19,50	+ 2,95	103.	3.	14,99	11,99	- 3,00
	17.	10.	15.15,8	22.	0.	8,54	11,53	+ 2,99	103.	3.	57,82	53,79	- 4,03
	28.	9.	30.40,5	21.	58.	47,97	50,95	+ 2,98	103.	10.	57,23	51,19	- 6,04
Oct.	5.	9.	2.25,9	21.	58.	4,64	7,61	+ 2,97					
	8.	8.	50.21,7	21.	57.	48,08	51,22	+ 3,14	103.	15.	56,00	53,39	- 2,61
	10.	8.	42.19,6	21.	57.	37,85	41,07	+ 3,22	103.	16.	49,01	43,79	- 5,22
	19.	8.	6.19,2	21.	57.	0,43	3,49	+ 3,06	103.	19.	49,90	45,90	- 4,00
	21.	7.	58.20,8	21.	56.	53,87	57,06	+ 3,19	103.	20.	18,46	15,80	- 2,66
	24.	7.	46.24,9	21.	56.	45,69	48,77	+ 3,08	103.	20.	57,34	53,20	- 4,14
	26.	7.	38.28,4						103.	21.	18,34	13,40	- 4,94
	27.	7.	34.30,6	21.	56.	39,10	42,13	+ 3,03	103.	21.	26,88	22,00	- 4,88
	29.	7.	26.35,1	21.	56.	35,43	38,65	+ 3,22	103.	21.	40,65	36,00	- 4,65
Nov.	18.	6.	8.5,2	21.	56.	43,69	46,55	+ 2,86	103.	20.	11,24	7,10	- 4,14
	19.	6.	4.11,7	21.	56.	46,10	49,01	+ 2,91	103.	19.	55,72	51,71	- 4,01
	21.	5.	56.25,2	21.	56.	51,49	54,50	+ 3,01	103.	19.	22,92	17,81	- 5,11
	25.	5.	40.54,9	21.	57.	4,89	7,84	+ 2,95	103.	17.	63,38	57,61	- 5,77
	27.	5.	33.10,9	21.	57.	12,67	15,68	+ 3,01	103.	17.	16,09	11,31	- 4,78
	28.	5.	29.19,1	21.	57.	16,81	19,88	+ 3,07					
Dec.	1.	5.	17.44,8	21.	57.	30,70	33,62	+ 2,92	103.	15.	29,62	26,71	- 2,91
	2.	5.	13.54,1	21.	57.	35,49	38,58	+ 3,09	103.	14.	61,25	58,01	- 3,24
	3.	5.	10.3,3	21.	57.	40,60	43,70	+ 3,10	103.	14.	34,43	28,41	- 6,02
	4.	5.	6.12,7	21.	57.	45,93	49,02	+ 3,06	103.	13.	62,18	57,81	- 4,37

RIGHT ASCENSIONS AND NORTH POLAR DISTANCES OF HALLEY'S COMET. 1835.

Greenwich Mean Solar Time of Transit SP.				Apparent R.A.			Seconds of Tabular R.A.	Errors of Tables.	Apparent N.P.D. of Center.			Seconds of Tabular N.P.D.	Errors of Tables.
d.	h.	m.	s.	h.	m.	s.	s.	s.	°	'	"	"	"
Oct.	8.	7.	29.36,1	8.	36.	49,22	46,41	- 2,41	32.	5.	53,23	30,33	- 22,90
	9.	8.	21.40,2	9.	32.	58,48	58,82	+ 0,34	28.	23.	19,91	42,47	+ 22,56
	10.	9.	42.34,5	10.	58.	2,60	0,98	- 1,62	26.	18.	48,33	60,06	+ 11,73
	11.	11.	21.2,5	12.	40.	43,27	39,57	- 3,70	28.	13.	40,38	40,62	+ 0,24



COMPARISONS OF CLOCKS

AND

CHRONOMETERS.

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1835.

(THE letter *H* is used as an abbreviation for Hardy, the Transit Clock: *G* for Graham, the Clock in the dome, commonly used with the equatoreal: *M* for Molyneux, the Clock near the mural circle: *U* is a Sidereal Chronometer, beating half-seconds.)

Day of Comparison.	Clock.	Clock Time.	Chron.	Chronometer Time.	Day of Comparison.	Clock.	Clock Time.	Chron.	Chronometer Time.	
		<i>h. m. s.</i>		<i>h. m. s.</i>			<i>h. m. s.</i>		<i>h. m. s.</i>	
Jan. 3	H.	2.29.0	U.	2.30.31,5	Feb 23	G.	4.59.44	U.	7.7.55,0	
	H.	2.29.13	U.	2.30.44,5		G.	5.0.14	U.	7.8.25,0	
	G.	2.29.28	U.	2.32.39,7		H.	7.6.41	U.	7.10.0,0	
	G.	2.29.39	U.	2.32.50,7		H.	7.6.52	U.	7.10.11,0	
5	H.	4.29.42	U.	4.31.45,5	March 19	G.	5.39.38	U.	6.48.55,0	
	H.	4.29.52	U.	4.31.55,5		G.	5.39.53	U.	6.49.10,0	
	G.	4.29.19	U.	4.32.49,3		G.	6.3.58	U.	7.13.15,0	
	G.	4.29.40	U.	4.33.10,2		G.	6.4.38	U.	7.13.55,0	
6	G.	3.21.8	U.	3.24.40,2	April 6	H.	7.19.25	U.	7.20.37,0	
	G.	3.21.28	U.	3.25.0,0		H.	7.19.38	U.	7.20.50,0	
	H.	3.26.23	U.	3.28.35,0		H.	8.34.44	U.	8.35.54,6	
	H.	3.26.33	U.	3.28.45,0			H.	8.35.4	U.	8.36.14,7
16	G.	2.58.51	U.	3.3.7,7	G.		8.37.27	U.	8.38.26,0	
	G.	2.59.4	U.	3.3.20,7	G.		8.37.37	U.	8.38.36,0	
	H.	3.2.17	U.	3.5.29,4	G.	10.5.55	U.	10.6.54,8		
	H.	3.2.33	U.	3.5.45,2	G.	10.6.10	U.	10.7.9,8		
17	H.	2.54.26	U.	2.57.45,0	12	H.	10.11.14	U.	10.12.25,0	
	H.	2.54.41	U.	2.58.0,0		H.	10.11.29	U.	10.12.40,0	
	G.	7.0.50	U.	7.2.30,0		H.	15.19.51	U.	15.21.24,6	
	H.	7.33.10	U.	7.36.30,0		H.	15.20.6	U.	15.21.39,6	
23	H.	17.36.29	U.	17.38.49,5	21	G.	15.21.23	U.	15.24.5,1	
	24	H.	5.29.53	U.		5.32.15,0	G.	15.21.43	U.	15.24.25,0
H.		5.30.3	U.	5.32.25,0		G.	16.31.42	U.	16.34.25,0	
25	H.	7.4.46	U.	7.7.15,0		H.	16.34.17	U.	16.35.50,5	
	H.	7.5.6	U.	7.7.35,0	28	G.	9.42.20	U.	9.46.25,0	
26	H.	6.57.17	U.	6.59.49,9		G.	9.42.35	U.	9.46.40,0	
	H.	6.57.52	U.	7.0.24,8		H.	10.1.0	U.	10.1.40,1	
27	H.	3.49.0	U.	3.51.35,0		31	H.	10.1.15	U.	10.1.55,0
	H.	3.49.5	U.	3.51.40,0	H.		11.5.0	U.	11.5.10,0	
30	H.	3.43.22	U.	3.46.4,9	July 6		H.	11.5.25	U.	11.5.35,0
	H.	3.43.42	U.	3.46.24,8			G.	11.0.11	U.	11.7.5,5
Feb. 4	G.	11.12.44	U.	3.13.39,7		H.	11.0.35	U.	11.7.30,0	
	G.	11.34.19	U.	3.35.15,0			Aug. 29	H.	17.23.6	U.
	H.	3.37.21	U.	3.40.14,5	H.			17.23.16	U.	17.24.50,0
	H.	3.37.36	U.	3.40.29,5				G.	18.51.12	U.
5	H.	22.24.44	U.	22.27.40,0		H.		18.49.59	U.	18.49.55,0
	H.	22.24.57	U.	22.27.53,0			31	G.	12.32.4	U.
9	H.	4.4.34	U.	4.7.45,0	H.	12.33.53		U.	12.33.50,1	
	H.	4.4.44	U.	4.7.55,0		Sept. 1	G.	11.29.13	U.	11.29.14,7
19	H.	16.8.16	U.	16.12.14,6	H.		11.25.37	U.	11.25.34,9	
	H.	16.8.26	U.	16.12.24,5			2	G.	11.32.43	U.
					H.			11.31.15	U.	11.31.15,6
					G.	6.49.57	U.	6.51.59,5*		
					H.	6.52.18	U.	6.54.19,6		

\* Before this comparison *U* was put forward 2<sup>m</sup>.



COMPARISONS OF CLOCKS AND CHRONOMETERS IN THE YEAR 1835. *Continued.* 139

Day of Comparison.	Clock.	Clock Time.	Chron.	Chronometer Time.	Day of Comparison.	Clock.	Clock Time.	Chron.	Chronometer Time.
		<i>h. m. s.</i>		<i>h. m. s.</i>			<i>h. m. s.</i>		<i>h. m. s.</i>
Sept. 4	H.	8.10.50	U.	8.12.50,1	Oct. 23	H.	11.18.4	U.	11.19.35,0
	G.	8.12.57	U.	8.14.55,0		H.	11.18.39	U.	11.20.10,0
7	H.	8.41.12	U.	8.43.10,0		G.	11.20.52	U.	11.21.40,1
	G.	8.43.31	U.	8.45.15,2		G.	11.21.22	U.	11.22.10,0
10	H.	12.55.7	U.	12.57.5,0	25	H.	11.51.6	U.	11.52.45,0
	G.	12.57.10	U.	12.58.45,1		G.	11.53.50	U.	11.54.44,5
19	H.	14.46.20	U.	14.48.24,5	26	G.	0.49.15	U.	0.50.10,5
	G.	14.48.34	U.	14.49.50,0		H.	0.50.25	U.	0.52.5,1
20	H.	7.54.46	U.	7.56.45,0	27	G.	20.56.26	U.	20.57.25,1
	G.	7.58.24	U.	7.59.29,5		H.	20.59.0	U.	20.59.15,0
22	H.	12.10.59	U.	12.13.5,1	29	G.	20.51.4	U.	20.52.9,5
	G.	12.14.16	U.	12.13.25,0		H.	20.52.36	U.	20.54.29,6*
24	H.	14.19.25	U.	14.20.19,6	Nov. 1	G.	20.56.27	U.	20.57.45,0
	G.	14.19.54	U.	14.19.45,0		H.	20.57.48	U.	20.59.54,4
27	H.	15.12.42	U.	15.12.30,0	4	H.	12.5.20	U.	12.6.50,0
	G.	15.16.20	U.	15.16.0,5		G.	12.7.13	U.	12.8.49,4
	H.	18.49.17	U.	18.49.5,0	8	G.	20.50.8	U.	20.52.0,0
	G.	18.50.40	U.	18.50.20,1		H.	20.52.51	U.	20.54.39,6
30	H.	9.37.57	U.	9.37.50,0	10	G.	21.9.45	U.	21.11.50,5
	G.	9.39.19	U.	9.39.0,0		H.	21.11.19	U.	21.13.25,0
Oct. 5	G.	2.24.33	U.	2.24.30,0	12	G.	20.39.59	U.	20.42.19,8
	H.	2.25.19	U.	2.25.40,0		H.	20.41.59	U.	20.44.25,0
9	H.	21.42.50	M.	21.43.25,0	15	G.	21.25.20	U.	21.28.1,5
10	H.	12.52.36	U.	12.53.9,7		H.	21.27.30	U.	21.30.25,5
	G.	12.55.22	U.	12.55.20,0	18	G.	21.25.26	U.	21.28.15,4
	M.	12.54.7	U.	12.54.0,1		H.	21.27.17	U.	21.30.34,9
17	H.	22.10.48	U.	22.11.40,0	Dec. 4	H.	6.0.7	U.	6.4.29,7
	G.	22.13.49	U.	22.13.55,0		G.	6.2.51	U.	6.5.45,6
19	H.	14.32.27	U.	14.33.24,5	10	H.	11.26.18	U.	11.32.4,9
	G.	14.35.11	U.	14.35.25,0		H.	11.27.11	U.	11.32.57,9
	M.	14.34.27	U.	14.34.20,0		G.	11.31.20	U.	11.35.5,1
	G.	1.34.18	U.	1.34.34,5		G.	11.31.50	U.	11.35.35,0
	H.	1.34.50	U.	1.35.50,0		G.	12.20.54	U.	12.24.40,1
21	H.	12.22.40	U.	12.24.5,0		G.	12.21.30	U.	12.25.16,0
	G.	12.25.34	U.	12.26.14,8		H.	12.20.58	U.	12.26.45,6
						H.	12.21.42	U.	12.27.29,6

\* This comparison appears to be 2<sup>m</sup> in error.

THE following TRANSITS were observed, merely for Clock Error, for the reduction of some Observations made in 1836, which it appears desirable to print in the present Volume.

Month and Day.	NAME OF STAR.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Mean of Wires.	Tabulated place from Nautical Almanac.	Hardy slow.
1836.		s.	s.	s.	s.	s.	s.	h. m. s.	h. m. s.	h. m. s.	s.
Jan. 15	$\epsilon$ Bootis.....			43,4	58,5	14,0		14. 37.	14. 36. 58,63	14. 37. 48,64	50,01
	$\alpha^2$ Libræ.....	15,2	29,5	43,4	57,2	11,4	25,3	14. 41. 39,1	14. 40. 57,30	14. 41. 48,01	50,71
16	$\epsilon$ Bootis.....	12,0	26,9	42,3	57,5	13,0	28,0	14. 37. 42,9	14. 36. 57,52	14. 37. 48,67	51,15
	$\alpha^2$ Libræ. ....	14,3	28,3	42,2	56,1	10,3	24,2	14. 41. 38,0	14. 40. 56,20	14. 41. 48,04	51,84

THE following COMPARISONS of CLOCKS were made in the beginning of 1836.

Day of Comparison.	Clock.	Clock Time.	Chron.	Chronometer Time.
1836.				
Jan. 15	H.	<i>h. m. s.</i> 0. 29. 33	U.	<i>h. m. s.</i> 0. 42. 25,0
	G.	0. 35. 31	U.	0. 43. 49,0*
	G.	14. 38. 2	U.	14. 33. 24,7
	G.	14. 38. 27	U.	14. 33. 49,5
	H.	14. 38. 47	U.	14. 38. 45,1
	H.	14. 39. 4	U.	14. 39. 2,0
16	G.	14. 29. 58	U.	14. 25. 25,0
	G.	14. 30. 20	U.	14. 25. 46,8
	H.	14. 27. 7	U.	14. 27. 15,1
	H.	14. 27. 22	U.	14. 27. 30,0
17	H.	6. 59. 40	U.	6. 59. 55,4
	H.	7. 0. 4	U.	7. 0. 19,3
	G.	7. 5. 46	U.	7. 5. 58,0
	G.	7. 1. 15	U.	7. 1. 27,0
27	H.	18. 4. 27	U.	18. 6. 29,8
	G.	18. 11. 31	U.	18. 7. 44,5

\* After this comparison *U* was put back '13<sup>m</sup>.



OBSERVATIONS

OF

THE ELONGATION IN RIGHT ASCENSION

OF

JUPITER'S FOURTH SATELLITE.

---

1836.

TRANSITS of JUPITER and his FOURTH SATELLITE, observed with the Equatoreal  
and the Clock Graham.

Month and Day.	Position of Graduated Face of Declination Circle.	Object Observed.	I.	II.	III. Wire.	Mean.	Difference of Mean for Planet and Satellite.
			s.	s.	h. m. s.	h. m. s.	s.
Jan. 17	West.	4th Satellite Jupiter, 1 L.	53,0 35,3	4,2 47,0	6.40.15,2 6.40.58,1	6.40.4,13 6.40.46,80	42,67
		4th Satellite Jupiter, 2 L.	33,0 18,8	44,5 30,3	6.42.55,9 6.43.41,6	6.42.44,47 6.43.30,23	45,76
		4th Satellite Jupiter, 1 L.	9,8 51,9	20,9 3,2	6.44.32,1 6.45.15,0	6.44.20,93 6.45.3,37	42,44
		4th Satellite Jupiter, 2 L.	37,0 23,0	48,3 34,3	6.45.59,8 6.46.45,3	6.45.48,37 6.46.34,20	45,83
		4th Satellite Jupiter, 1 L.	10,1 52,9	21,9 4,0	6.47.33,0 6.48.15,8	6.47.21,67 6.47.4,23	42,56
		4th Satellite Jupiter, 2 L.	39,1 25,2	50,8 36,4	6.49.2,0 6.49.48,0	6.48.50,63 6.49.36,53	45,90
	East.	4th Satellite Jupiter, 1 L.	2,0 44,0	13,0 56,0	6.52.24,8 6.53.7,2	6.52.13,27 6.52.55,73	42,46
		4th Satellite Jupiter, 2 L.	36,7 23,0	48,0 34,3	6.54.0,2 6.54.45,5	6.53.48,30 6.54.34,27	45,97
		4th Satellite Jupiter, 1 L.	11,3 54,0	22,4 5,2	6.55.34,0 6.56.17,1	6.55.22,57 6.56.5,43	42,86
		4th Satellite Jupiter, 2 L.	37,0 23,2	48,2 35,2	6.57.0,0 6.57.46,2	6.56.48,40 6.57.34,87	46,47
		4th Satellite Jupiter, 1 L.	9,2 52,1	20,3 3,8	6.58.32,1 6.59.15,0	6.58.20,53 6.59.3,63	43,10
		4th Satellite Jupiter, 2 L.	32,1 18,4	43,5 30,0	6.59.55,0 7.0.41,2	6.59.43,53 7.0.29,87	46,34

The mean of the times by Graham of the observation of the Satellite, and the corresponding time by Hardy, with the mean of the intervals of Transit of Jupiter's Center and the Satellite, and the elements for the calculation of refraction, are as follows:

Mean of Times by Graham, for observation of Satellite.	Corresponding Time by Hardy.	Mean of intervals of Transit of Jupiter's Center and Fourth Satellite.	Relative Position of Satellite in N.P.D.	Hour-angle West of Meridian.
h. m. s.	h. m. s.	s.		h. m.
6.50.27,23	6.50.23,88	44,363	N. 0,6	0.7

The Greenwich Mean Solar Time of observation of the Satellite, with the true difference of Right Ascension of Jupiter's Center and the Satellite (found by correcting the intervals of transit for Jupiter's motion in right ascension, the refraction being insensible) are as follows:

Greenwich Mean Solar Time of Observation of Satellite.	Difference of A.R. of Jupiter's Center and the 4th Satellite.	Position of Satellite with regard to Jupiter.
d. h. m. s.	s.	
Jan. 17. 11. 5. 15,3	44,379	Preceding.

The rate of Graham was small.



OBSERVATIONS  
OF  
A SPOT ON JUPITER'S DISK,  
WITH THE EQUATOREAL,  
AND THE CLOCK GRAHAM.

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1835.

OBSERVATIONS OF A SPOT ON JUPITER'S DISK. 1835.

Day of Observation, 1835.	Object.	I.	II.	III.	IV.	V. Wire.	Mean.	Difference of 1 L. and Spot.	Difference of 2 L. and Spot.
		s.	s.	s.	s.	h. m. s.	h. m. s.	s.	s.
Jan. 3	*Jupiter 1 L.	24,2	.....	.....	.....	5.22.19,3	5.21.51,75	0,65	2,70
	Spot.	.....	.....	52,4	.....	5.21.....	5.21.52,40		
	Jupiter 2 L.	.....	41,2	.....	9,0	5.22.....	5.21.55,10		
	Jupiter 1 L.	.....	0,9	.....	28,0	5.23.....	5.23.14,45	0,85	2,35
	Spot.	.....	.....	15,3	.....	5.23.....	5.23.15,30		
	Jupiter 2 L.	50,1	.....	.....	.....	5.23.45,2	5.23.17,65		
	Jupiter 1 L.	.....	39,3	.....	6,2	5.25.....	5.24.52,75	1,35	2,20
	Spot.	26,3	.....	.....	.....	5.25.21,9	5.24.54,10		
	Jupiter 2 L.	.....	.....	56,3	.....	5.24.....	5.24.56,30		
	Jupiter 1 L.	.....	.....	47,8	.....	5.27.....	5.27.47,80	1,10	2,20
	Spot.	21,3	.....	.....	.....	5.28.16,5	5.27.48,90		
	Jupiter 2 L.	.....	37,2	.....	5,0	5.28.....	5.27.51,10		
Jupiter 1 L.	5,7	.....	.....	.....	5.30.1,0	5.29.33,35	1,10	2,15	
Spot.	.....	20,8	.....	48,1	5.29.....	5.29.34,45			
Jupiter 2 L.	.....	.....	36,6	.....	5.29.....	5.29.36,60			
Jupiter 1 L.	.....	.....	58,2	.....	5.30.....	5.30.58,20	1,50	2,40	
Spot.	.....	45,9	.....	13,5	5.31.....	5.30.59,70			
Jupiter 2 L.	34,4	.....	.....	.....	5.31.29,8	5.31.2,10			
Jupiter 1 L.	.....	.....	45,1	.....	5.32.....	5.32.45,10	1,40	2,35	
Spot.	19,0	.....	.....	.....	5.33.14,0	5.32.46,50			
Jupiter 2 L.	.....	35,0	.....	2,7	5.33.....	5.32.48,85			
Jupiter 1 L.	.....	56,1	.....	24,0	5.34.....	5.34.10,05	0,50	2,75	
Spot.	43,4	.....	.....	.....	5.34.37,7	5.34.10,55			
Jupiter 2 L.	.....	.....	13,3	.....	5.34.....	5.34.13,30			
Jupiter 1 L.	11,0	.....	.....	.....	5.36.6,0	5.35.38,50	1,40	2,20	
Spot.	.....	.....	39,9	.....	5.35.....	5.35.39,90			
Jupiter 2 L.	.....	28,2	.....	56,0	5.35.....	5.35.42,10			
Jupiter 1 L.	.....	48,0	.....	15,2	5.36.....	5.37.1,60	1,10	2,50	
Spot.	.....	.....	2,7	.....	5.37.....	5.37.2,70			
Jupiter 2 L.	37,5	.....	.....	.....	5.37.32,9	5.37.5,20			
Jan. 6	†Jupiter 1 L.	8,1	.....	.....	.....	2.6.3,0	2.5.35,55	1,85	1,60
	Spot.	.....	.....	37,4	.....	2.5.....	2.5.37,40		
	Jupiter 2 L.	.....	25,1	.....	52,9	2.5.....	2.5.39,00		
	Jupiter 1 L.	.....	39,4	.....	7,0	2.6.....	2.6.53,20	2,00	1,35
Spot.	.....	.....	55,2	.....	2.6.....	2.6.55,20			
Jupiter 2 L.	29,0	.....	.....	.....	2.7.24,1	2.6.56,55			

\* The planet well defined: the spot generally faint, but at other times black and sharp.  
 † Jupiter well defined, and both the spots sharp. The observations are made on the 2<sup>d</sup> spot.



## OBSERVATIONS OF A SPOT ON JUPITER'S DISK. 1835.

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Day of Observation, 1835.	Object.	I.	II.	III.	IV.	V. Wire.			Mean.			Difference of 1 L. and Spot.	Difference of 2 L. and Spot.
		s.	s.	s.	s.	h.	m.	s.	h.	m.	s.	s.	s.
Jan. 6	Jupiter 1 L.	.....	9,8	.....	37,1	2 . 8 .....			2 . 8 . 23,45			2,35	1,20
	Spot.	58,2	.....	.....	.....	2 . 8 . 53,4			2 . 8 . 25,80				
	Jupiter 2 L.	.....	.....	27,0	.....	2 . 8 .....			2 . 8 . 27,00				
	Jupiter 1 L.	.....	.....	1,1	.....	2 . 10 .....			2 . 10 . 1,10			2,05	1,35
	Spot.	35,3	.....	.....	.....	2 . 10 . 31,0			2 . 10 . 3,15				
	Jupiter 2 L.	.....	50,9	.....	18,1	2 . 10 .....			2 . 10 . 4,50				
	Jupiter 1 L.	.....	.....	24,1	.....	2 . 11 .....			2 . 11 . 24,10			2,55	1,05
	Spot.	.....	12,9	.....	40,4	2 . 11 .....			2 . 11 . 26,65				
	Jupiter 2 L.	0,2	.....	.....	.....	2 . 11 . 55,2			2 . 11 . 27,70				
	Jupiter 1 L.	21,0	.....	.....	.....	2 . 13 . 16,0			2 . 12 . 48,50			1,95	1,35
	Spot.	.....	36,9	.....	4,0	2 . 13 .....			2 . 12 . 50,45				
	Jupiter 2 L.	.....	.....	51,8	.....	2 . 12 .....			2 . 12 . 51,80				
	Jupiter 1 L.	28,6	.....	.....	.....	2 . 15 . 24,0			2 . 14 . 56,30			1,80	1,40
	Spot.	.....	.....	58,1	.....	2 . 14 .....			2 . 14 . 58,10				
	Jupiter 2 L.	.....	45,8	.....	13,2	2 . 15 .....			2 . 14 . 59,50				
	Jupiter 1 L.	.....	3,9	.....	31,0	2 . 16 .....			2 . 16 . 17,45			1,85	1,25
	Spot.	.....	.....	19,3	.....	2 . 16 .....			2 . 16 . 19,30				
	Jupiter 2 L.	53,1	.....	.....	.....	2 . 16 . 48,0			2 . 16 . 20,55				
	Jupiter 1 L.	.....	38,0	.....	5,2	2 . 18 .....			2 . 17 . 51,60			2,00	1,10
	Spot.	26,0	.....	.....	.....	2 . 18 . 21,2			2 . 17 . 53,60				
Jupiter 2 L.	.....	.....	54,7	.....	2 . 17 .....			2 . 17 . 54,70					
Jupiter 1 L.	.....	.....	18,1	.....	2 . 19 .....			2 . 19 . 18,10			2,45	1,15	
Spot.	53,0	.....	.....	.....	2 . 19 . 48,1			2 . 19 . 20,55					
Jupiter 2 L.	.....	8,0	.....	35,4	2 . 19 .....			2 . 19 . 21,70					
Jupiter 1 L.	.....	.....	48,0	.....	2 . 20 .....			2 . 20 . 48,00			2,05	1,45	
Spot.	.....	36,1	.....	4,0	2 . 21 .....			2 . 20 . 50,05					
Jupiter 2 L.	24,0	.....	.....	.....	2 . 21 . 19,0			2 . 20 . 51,50					
Jupiter 1 L.	48,3	.....	.....	.....	2 . 22 . 43,4			2 . 22 . 15,85			2,00	1,45	
Spot.	.....	4,2	.....	31,5	2 . 22 .....			2 . 22 . 17,85					
Jupiter 2 L.	.....	.....	19,3	.....	2 . 22 .....			2 . 22 . 19,30					
Jupiter 1 L.	45,4	.....	.....	.....	2 . 24 . 41,0			2 . 24 . 13,20			1,70	1,30	
Spot.	.....	2,4	.....	30,0	2 . 24 ... ..			2 . 24 . 14,90					
Jupiter 2 L.	.....	.....	14,9	.....	2 . 24 .....			2 . 24 . 16,20					
Jupiter 1 L.	.....	25,1	.....	52,0	2 . 25 .....			2 . 25 . 38,55			1,95	1,30	
Spot.	.....	.....	40,5	.....	2 . 25 .....			2 . 25 . 40,50					
* Jupiter 2 L.	14,6	.....	.....	.....	2 . 26 . 9,0			2 . 25 . 41,80					
Jupiter 1 L.	.....	40,0	.....	7,1	2 . 28 .....			2 . 27 . 53,55			2,00	1,35	
Spot.	28,0	.....	.....	.....	2 . 28 . 23,1			2 . 27 . 55,55					
Jupiter 2 L.	.....	.....	56,9	.....	2 . 27 .....			2 . 27 . 56,90					
Jupiter 1 L.	.....	.....	18,1	.....	2 . 29 .....			2 . 29 . 18,10			1,50	1,50	
Spot.	52,0	.....	.....	.....	2 . 29 . 47,2			2 . 29 . 19,60					
Jupiter 2 L.	.....	7,2	.....	35,0	2 . 29 .....			2 . 29 . 21,10					
Jupiter 1 L.	19,9	.....	.....	.....	2 . 31 . 15,0			2 . 30 . 47,45			1,60	1,65	
Spot.	.....	35,1	.....	3,0	2 . 31 .....			2 . 30 . 49,05					
Jupiter 2 L.	.....	.....	50,7	.....	2 . 30 .....			2 . 30 . 50,70					

\* The last wire was set down 8,0.

Day of Observation, 1835.	Object.	I.	II.	III.	IV.	V. Wire.			Mean.			Difference of 1 L. and Spot.	Difference of 2 L. and Spot.
		s.	s.	s.	s.	h.	m.	s.	h.	m.	s.	s.	s.
Jan. 6	Jupiter 1 L.	.....	.....	30,0	.....	3.31	.....	.....	2.31	30,00	.....	1,50	2,00
	Spot.	.....	17,9	.....	45,1	2.31	.....	.....	2.31	31,50	.....		
	Jupiter 2 L.	6,0	.....	.....	.....	2.32	1,0	.....	2.31	33,50	.....		
	Jupiter 1 L.	15,0	.....	.....	.....	2.35	10,0	.....	2.34	42,50	.....	1,50	1,55
	Spot.	.....	.....	44,0	.....	2.34	.....	.....	2.34	44,00	.....		
	Jupiter 2 L.	.....	31,9	.....	59,2	2.34	.....	.....	2.34	45,55	.....		
	Jupiter 1 L.	.....	49,0	.....	15,1	2.36	.....	.....	2.36	2,55	.....	1,55	1,70
	Spot.	.....	.....	4,1	.....	2.36	.....	.....	2.36	4,10	.....		
	Jupiter 2 L.	38,3	.....	.....	.....	2.36	33,3	.....	2.36	5,80	.....		
Jan. 16	*Jupiter 1 L.	47,0	.....	.....	.....	1.45	42,7	.....	1.45	14,85	.....	1,15	2,05
	Spot.	.....	.....	16,0	.....	1.45	.....	.....	1.45	16,00	.....		
	Jupiter 2 L.	.....	4,3	.....	31,8	1.45	.....	.....	1.45	18,05	.....		
	Jupiter 1 L.	.....	40,2	.....	7,9	1.47	.....	.....	1.46	54,05	.....	0,95	2,00
	Spot.	.....	.....	55,0	.....	1.46	.....	.....	1.46	55,00	.....		
	Jupiter 2 L.	29,3	.....	.....	.....	1.47	24,7	.....	1.46	57,00	.....		
	Jupiter 1 L.	.....	18,9	.....	46,0	1.48	.....	.....	1.48	32,45	.....	0,55	1,90
	Spot.	.....	.....	34,9	.....	1.48	.....	.....	1.48	33,00	.....		
	Jupiter 2 L.	5,0	.....	.....	.....	1.49	1,0	.....	1.48	34,90	.....		
	Jupiter 1 L.	.....	.....	4,6	.....	1.50	.....	.....	1.50	4,60	.....	1,40	2,00
	Spot.	38,7	.....	.....	.....	1.50	33,3	.....	1.50	6,00	.....		
	Jupiter 2 L.	.....	54,0	.....	22,0	1.50	.....	.....	1.50	8,00	.....		
	Jupiter 1 L.	17,3	.....	.....	.....	1.52	12,9	.....	1.51	45,10	.....	1,35	1,95
	Spot.	.....	33,0	.....	59,9	1.51	.....	.....	1.51	46,45	.....		
	Jupiter 2 L.	.....	.....	48,4	.....	1.51	.....	.....	1.51	48,40	.....		
Jupiter 1 L.	.....	.....	2,1	.....	1.53	.....	.....	1.53	2,10	.....	1,20	2,35	
Spot.	.....	49,1	.....	17,5	1.53	.....	.....	1.53	3,30	.....			
Jupiter 2 L.	38,1	.....	.....	.....	1.53	33,2	.....	1.53	5,65	.....			
Jupiter 1 L.	19,1	.....	.....	.....	1.55	14,7	.....	1.54	46,90	.....	1,00	2,10	
Spot.	.....	.....	47,9	.....	1.54	.....	.....	1.54	47,90	.....			
Jupiter 2 L.	.....	36,1	.....	3,9	1.54	.....	.....	1.54	50,00	.....			
Jupiter 1 L.	.....	59,9	.....	26,8	1.56	.....	.....	1.55	13,35	.....	0,65	2,55	
Spot.	.....	.....	14,0	.....	1.56	.....	.....	1.55	14,00	.....			
Jupiter 2 L.	49,1	.....	.....	.....	1.56	44,0	.....	1.55	16,55	.....			
Jupiter 1 L.	.....	0,9	.....	28,0	1.58	.....	.....	1.58	14,45	.....	1,15	1,70	
Spot.	48,0	.....	.....	.....	1.58	43,2	.....	1.58	15,60	.....			
Jupiter 2 L.	.....	.....	17,3	.....	1.58	.....	.....	1.58	17,30	.....			
Jupiter 1 L.	.....	.....	43,0	.....	1.59	.....	.....	1.59	43,00	.....	1,10	2,10	
Spot.	16,3	.....	.....	.....	2.0	11,9	.....	1.59	44,10	.....			
Jupiter 2 L.	.....	32,4	.....	0,0	2.0	.....	.....	1.59	46,20	.....			
Jan. 17	†Jupiter 1 L.	42,0	.....	.....	.....	7.3	37,1	.....	7.3	9,55	.....	1,95	1,40
	Spot.	.....	.....	11,5	.....	7.3	.....	.....	7.3	11,50	.....		
	Jupiter 2 L.	.....	59,1	.....	26,7	7.3	.....	.....	7.3	12,90	.....		

\* Dark clouds passing, and the wind so loud that the clock could scarcely be heard; much of these transits is mere guess-work.

† The planet well defined: the spots faint but sometimes sharp: the observations generally good. Graham had stopped, and was kept going only by occasionally touching the pendulum.



## OBSERVATIONS OF A SPOT ON JUPITER'S DISK. 1835.

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Day of Observation, 1835.	Object.	I.	II.	III.	IV.	V. Wire.	Mean.	Difference of 1 L. and Spot.	Difference of 2 L. and Spot.
		s.	s.	s.	s.	h. m. s.	h. m. s.	s.	s.
Jan. 17	Jupiter 1 L.	.....	18,0	.....	45,8	7. 4.....	7. 4. 31,90	1,50	1,40
	Spot.	.....	.....	33,4	.....	7. 4.....	7. 4. 33,40		
	Jupiter 2 L.	7,3	.....	.....	.....	7. 5. 2,3	7. 4. 34,80		
	Jupiter 1 L.	.....	1,3	.....	29,0	7. 6.....	7. 6. 15,15	1,45	1,70
	Spot.	49,2	.....	.....	.....	7. 6. 44,0	7. 6. 16,60		
	Jupiter 2 L.	.....	.....	18,3	.....	7. 6.....	7. 6. 18,30		
	Jupiter 1 L.	.....	.....	12,9	.....	7. 8.....	7. 8. 12,90	1,35	1,60
	Spot.	46,5	.....	.....	.....	7. 8. 42,0	7. 8. 14,25		
	Jupiter 2 L.	.....	2,0	.....	29,7	7. 8.....	7. 8. 15,85		
	Jupiter 1 L.	50,0	.....	.....	.....	7. 10. 45,0	7. 10. 17,50	2,05	0,95
	Spot.	.....	5,1	.....	34,0	7. 10.....	7. 10. 19,55		
	Jupiter 2 L.	.....	.....	20,5	.....	7. 10.....	7. 10. 20,50		
	Jupiter 1 L.	.....	.....	33,7	.....	7. 11.....	7. 11. 33,70	1,20	1,65
	Spot.	.....	21,1	.....	48,7	7. 11.....	7. 11. 34,90		
	Jupiter 1 L.	9,0	.....	.....	.....	7. 12. 4,1	7. 11. 36,55		
	Jupiter 1 L.	30,0	.....	.....	.....	7. 13. 25,0	7. 12. 57,50	1,50	1,60
	Spot.	.....	.....	59,0	.....	7. 12.....	7. 12. 59, 0		
	Jupiter 2 L.	.....	46,9	.....	14,3	7. 13.....	7. 13. 0,60		
	Jupiter 1 L.	.....	8,1	.....	35,9	7. 14.....	7. 14. 22,00	1,80	1,25
	Spot.	.....	.....	23,8	.....	7. 14.....	7. 14. 23,80		
Jupiter 2 L.	57,4	.....	.....	.....	7. 14. 52,7	7. 14. 25,05			
Jupiter 1 L.	.....	33,3	.....	1,0	7. 16.....	7. 15. 47,15	1,70	1,85	
Spot.	21,2	.....	.....	.....	7. 16. 16,5	7. 15. 48,85			
Jupiter 2 L.	.....	.....	50,7	.....	7. 15.....	7. 15. 50,70			
Jupiter 1 L.	.....	.....	23,2	.....	7. 17.....	7. 17. 23,20	1,50	1,55	
Spot.	57,1	.....	.....	.....	7. 17. 52,3	7. 17. 24,70			
Jupiter 2 L.	.....	12,4	.....	40,1	7. 17.....	7. 17. 26,25			
Jupiter 1 L.	34,9	.....	.....	.....	7. 19. 30,0	7. 19. 2,45	1,60	1,85	
Spot.	.....	50,2	.....	17,9	7. 19.....	7. 19. 4,05			
Jupiter 2 L.	.....	.....	5,9	.....	7. 19.....	7. 19. 5,90			
Jupiter 1 L.	.....	.....	25,4	.....	7. 20... ..	7. 20. 25,40	1,45	1,65	
Spot.	.....	13,0	.....	40,7	7. 20.....	7. 20. 26,85			
Jupiter 2 L.	1,0	.....	.....	.....	7. 20. 56,0	7. 20. 28,50			
Jupiter 1 L.	32,1	.....	.....	.....	7. 22. 27,2	7. 21. 59,65	1,15	2,35	
Spot.	.....	.....	0,8	.....	7. 22.....	7. 22. 0,80			
Jupiter 2 L.	.....	49,3	.....	17,0	7. 22.....	7. 22. 3,15			
Jupiter 1 L.	.....	7,2	.....	35,0	7. 23.....	7. 23. 21,10	1,40	1,85	
Spot.	.....	.....	22,5	.....	7. 23.....	7. 23. 22,50			
Jupiter 2 L.	56,7	.....	.....	.....	7. 23. 52,0	7. 23. 24,35			
Jupiter 1 L.	.....	40,1	.....	8,0	7. 25.....	7. 24. 54,05	1,45	1,90	
Spot.	27,8	.....	.....	.....	7. 25. 23,2	7. 24. 55,50			
Jupiter 2 L.	.....	.....	57,4	.....	7. 24.....	7. 24. 57,40			
Jupiter 1 L.	.....	.....	51,0	.....	7. 26.....	7. 26. 51, 0	1,20	1,90	
Spot.	24,4	.....	.....	.....	7. 27. 20,0	7. 26. 52,20			
Jupiter 2 L.	.....	40,2	.....	8,0	7. 27.....	7. 26. 54,10			
Jupiter 1 L.	50,3	.....	.....	.....	7. 28. 45,0	7. 28. 17,65	1,55	1,80	
Spot.	.....	5,4	.....	33,0	7. 28.....	7. 28. 19,20			
Jupiter 2 L.	.....	.....	21,0	.....	7. 28.....	7. 28. 21,00			

Day of Observation, 1835.	Object.	I.	II.	III.	IV.	V. Wire.	Mean.	Difference of 1 L. and Spot.	Difference of 2 L. and Spot.
		s.	s.	s.	s.	h. m. s.	h. m. s.	s.	s.
Jan. 17	Jupiter 1 L.	.....	.....	51,9	.....	7.29.....	7.29.51,90	1,10	1,70
	Spot.	.....	39,0	.....	7,0	7.30.....	7.29.53,00		
	Jupiter 2 L.	27,1	.....	.....	.....	7.30.22,3	7.29.54,70		
Feb. 4	*Jupiter 1 L.	44,5	.....	.....	.....	11.15.39,9	11.15.12,20	1,00	1,70
	Spot.	.....	.....	13,2	.....	11.15.....	11.15.13,20		
	Jupiter 2 L.	.....	1,0	.....	28,8	11.15.....	11.15.14,90	1,40	1,55
	Jupiter 1 L.	.....	22,0	.....	49,6	11.16.....	11.16.35,80		
	Spot.	.....	.....	37,2	.....	11.16.....	11.16.37,20		
	Jupiter 2 L.	11,0	.....	.....	.....	11.17.6,5	11.16.38,75	1,60	1,35
	Jupiter 1 L.	.....	8,3	.....	36,0	11.18.....	11.18.22,15		
	Spot.	56,0	.....	.....	.....	11.18.51,5	11.18.23,75		
	Jupiter 2 L.	.....	.....	25,1	.....	11.18.....	11.18.25,11	1,15	1,75
	Jupiter 1 L.	.....	.....	48,8	.....	11.19.....	11.19.48,80		
	Spot.	22,3	.....	.....	.....	11.20.17,6	11.19.49,95		
	Jupiter 2 L.	.....	37,9	.....	5,5	11.20.....	11.19.51,70	1,45	1,60
	Jupiter 1 L.	57,0	.....	.....	.....	11.21.52,1	11.21.24,55		
	Spot.	.....	12,1	.....	39,9	11.21.....	11.21.26,00		
	Jupiter 2 L.	.....	.....	27,6	.....	11.21.....	11.21.27,60	1,65	1,50
	Jupiter 1 L.	.....	.....	51,4	.....	11.22.....	11.22.51,40		
	Spot.	.....	39,0	.....	7,1	11.23.....	11.22.53,05		
	Jupiter 2 L.	27,0	.....	.....	.....	11.23.22,1	11.22.54,55	0,70	2,05
Jupiter 1 L.	14,8	.....	.....	.....	11.26.10,0	11.25.42,40			
Spot.	.....	.....	43,1	.....	11.25.....	11.25.43,10			
Jupiter 2 L.	.....	31,3	.....	59,0	11.25.....	11.25.45,15	1,30	1,60	
Jupiter 1 L.	.....	53,0	.....	20,2	11.27.....	11.27.6,60			
Spot.	.....	.....	7,9	.....	11.27.....	11.27.7,90			
Jupiter 2 L.	42,0	.....	.....	.....	11.27.37,0	11.27.9,50	1,35	1,75	
Jupiter 1 L.	.....	31,4	.....	59,0	11.28.....	11.28.45,20			
Spot.	18,9	.....	.....	.....	11.29.14,2	11.28.46,55			
Jupiter 2 L.	.....	.....	48,3	.....	11.28.....	11.28.48,30	0,65	2,00	
Jupiter 1 L.	.....	.....	10,0	.....	11.30.....	11.30.10,00			
Spot.	43,0	.....	.....	.....	11.30.38,3	11.30.10,65			
Jupiter 2 L.	.....	59,0	.....	26,3	11.30.....	11.30.12,65	1,50	1,45	
Jupiter 1 L.	23,2	.....	.....	.....	11.32.18,9	11.31.51,05			
Spot.	.....	38,1	.....	7,0	11.32.....	11.31.52,55			
Jupiter 2 L.	.....	.....	54,0	.....	11.31.....	11.31.54,00	1,15	1,60	
Jupiter 1 L.	.....	.....	30,9	.....	11.32.....	11.32.30,90			
Spot.	.....	18,1	.....	46,0	11.32.....	11.32.32,05			
Jupiter 2 L.	6,2	.....	.....	.....	11.33.1,1	11.32.33,65	0,85	2,05	
March 19	†Jupiter 1 L.	24,2	.....	.....	.....	5.43.20,1			5.42.52,15
Spot.	.....	.....	53,0	.....	.....	5.42.....			5.42.53,00
Jupiter 2 L.	.....	41,1	.....	9,0	.....	5.43.....	5.42.55,05		

\* Spot faint and indistinct: observations not very good. Graham had stopped.

† The spot very faint, so as to make much of these transits mere guess-work. Graham had stopped, and it was necessary to touch the pendulum occasionally.



Day of Observation, 1835.	Object.	I.	II.	III.	IV.	V. Wire.	Mean.	Difference of 1 L. and Spot.	Difference of 2 L. and Spot.
		s.	s.	s.	s.	h. m. s.	h. m. s.	s.	s.
March 19	Jupiter 1 L.	.....	58,0	.....	26,0	5.44.....	5.44.12,00	0,20	2,25
	Spot.	.....	.....	12,2	.....	5.44.....	5.44.12,20		
	Jupiter 2 L.	46,3	.....	.....	.....	5.44.42,6	5.44.14,45		
	Jupiter 1 L.	.....	52,0	.....	19,8	5.47.....	5.47.5,90	0,30	2,10
	Spot.	38,2	.....	.....	.....	5.47.34,2	5.47.6,20		
	Jupiter 2 L.	.....	.....	8,3	.....	4.47.....	5.47.8,30		
	Jupiter 1 L.	.....	.....	24,4	.....	5.49.....	5.49.24,40	1,10	1,60
	Spot.	57,0	.....	.....	.....	5.49.54,0	5.49.25,50		
	Jupiter 2 L.	.....	13,2	.....	41,0	5.49.....	5.49.27,10		
	Jupiter 1 L.	52,0	.....	.....	.....	5.51.47,2	5.51.19,60	0,40	2,00
	Spot.	.....	6,0	.....	34,0	5.51.....	5.51.20,00		
	Jupiter 2 L.	.....	.....	22,0	.....	5.51.....	5.51.22,00		
	Jupiter 1 L.	.....	.....	41,8	.....	5.52.....	5.52.41,80	0,45	2,10
	Spot.	.....	28,5	.....	56,0	5.52.....	5.52.42,25		
	Jupiter 2 L.	16,7	.....	.....	.....	5.53.12,0	5.52.44,35		
Jupiter 1 L.	3,7	.....	.....	.....	5.54.59,2	5.54.31,45	0,55	2,00	
Spot.	.....	.....	32,0	.....	5.54.....	5.54.32,00			
Jupiter 2 L.	.....	20,0	.....	48,0	5.54.....	5.54.34,00			
Jupiter 1 L.	.....	10,0	.....	37,2	5.56.....	5.56.23,60	0,50	2,90	
Spot.	.....	.....	24,1	.....	5.56.....	5.56.24,10			
Jupiter 2 L.	59,0	.....	.....	.....	5.56.55,0	5.56.27,00			
Jupiter 1 L.	.....	2,2	.....	30,0	5.58.....	5.58.16,10	0,60	1,60	
Spot.	48,9	.....	.....	.....	5.58.44,5	5.58.16,70			
Jupiter 2 L.	.....	.....	18,3	.....	5.58.....	5.58.18,30			
Jupiter 1 L.	.....	.....	42,1	.....	5.59.....	5.59.42,10	0,45	2,45	
Spot.	15,0	.....	.....	.....	6.0.10,1	5.59.42,55			
Jupiter 2 L.	.....	31,0	.....	59,0	5.59.....	5.59.45,00			
Jupiter 1 L.	50,0	.....	.....	.....	6.1.45,9	6.1.17,95	0,10	2,15	
Spot.	.....	4,1	.....	32,0	6.1.....	6.1.18,05			
Jupiter 2 L.	.....	.....	20,2	.....	6.1.....	6.1.20,20			
Jupiter 1 L.	.....	.....	45,2	.....	6.2.....	6.2.45,20	0,90	2,20	
Spot.	.....	32,1	.....	0,1	6.3.....	6.2.46,10			
Jupiter 2 L.	20,3	.....	.....	.....	6.3.16,3	6.2.48,30			

THE following are the Means of the Distances (in Right Ascension) of the SPOT from each of Jupiter's Limbs, with the Mean of the Times of the corresponding Observations of the Spot.

Day of Observation, 1835.	Comparison.	Difference of Right Ascension.	Mean of Times by Graham.	Time by Hardy.	Camb. Sidereal Time.
		<i>s.</i>	<i>h. m. s.</i>	<i>h. m. s.</i>	<i>h. m. s.</i>
January 3	Spot with 1 L. Spot with 2 L.	1,10 2,38	5 . 29 . 48,5	5 . 31 . 27,6	5 . 32 . 1,3
January 6	Spot with 1 L. Spot with 2 L.	1,91 1,40	2 . 20 . 21,9	2 . 21 . 42,0	2 . 22 . 21,6
January 16	Spot with 1 L. Spot with 2 L.	1,05 2,07	1 . 52 . 22,1	1 . 53 . 26,5	1 . 54 . 22,6
January 17	Spot with 1 L. Spot with 2 L.	1,49 1,66	7 . 16 . 38,9	7 . 14 . 58,9	7 . 15 . 57,1
February 4	Spot with 1 L. Spot with 2 L.	1,24 1,66	11 . 24 . 13,0	3 . 22 . 15,4	3 . 22 . 43,3
March 19	Spot with 1 L. Spot with 2 L.	0,53 2,12	5 . 53 . 23,2	7 . 1 . 28,2	7 . 2 . 12,9



DIFFERENCES  
OF  
NORTH POLAR DISTANCE OF MARS  
AND STARS NEAR HIM,  
*OBSERVED WITH THE EQUATOREAL,*  
AND  
COMPARED WITH THE NORTH POLAR DISTANCES,  
INTERPOLATED FROM THE NAUTICAL ALMANAC.

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1835.

Month and Day 1835.	Position of Graduated Face of Declination Circle.	Number of Series.	Object Observed.	Pointer.	Microscope A.	Corr. for Error of Division.	Correc- tion for Run.	Microscope B.	Corr. for Error of Division.	Correc- tion for Run.	Name of Microm.	Microm- eter Reading.	Correction.	Name of Microm.	Microm- eter for opposite Limb.		
				° ' "	" "	" "	" "	" "	" "	" "		" "	" "				
*Jan. 3	West.	40	Mars S.L.	243.10	2. 6,2	+18,1	-1,9	1. 36,2	+83,9	-0,6	b	3,322	+1. 48,21	a	0,649		
			†(u) M.	243.10	2. 6,2	+18,1	-1,9	1. 36,2	+83,9	-0,6							
			47 Geminor. M.	242.50	3. 24,0	+17,1	-3,1	2. 51,9	+88,6	-1,1						2,266	+1. 12,90
		41	37 Geminorum	244.25	2. 23,9	+12,9	-2,2	1. 58,5	+85,8	-1,1	b	3,975	+2. 8,30	b	0,682		
			Mars N.L.	243.10	1. 54,2	+18,1	-1,7	1. 25,8	+83,9	-0,6							
			†(u) M.	243.10	1. 54,2	+18,1	-1,7	1. 25,8	+83,9	-0,6							
		42	37 Geminorum	244.25	2. 37,8	+12,9	-2,3	2. 8,7	+85,8	-1,2	b	3,541	+1. 55,53	a	0,596		
			Mars S.L.	243.10	2. 17,8	+18,1	-2,0	1. 51,3	+83,9	-0,8							
			(u) M.	243.10	2. 17,8	+18,1	-2,0	1. 51,3	+83,9	-0,8							
		43	37 Geminorum	244.25	2. 41,2	+12,9	-2,4	2. 15,1	+85,8	-1,3	b	4,586	+2. 30,46	b	0,561		
			Mars N.L.	243.10	2. 5,6	+18,1	-1,9	1. 40,0	+83,9	-0,7							
			47 Geminor. M.	242.50	2. 32,7	+17,1	-2,3	2. 2,3	+88,6	-0,8							
‡Jan. 5	East.	44	Mars S.L.	116.55	4. 55,2	+62,2	-3,4	5. 38,8	+49,6	-0,1	b	2,598	+1. 24,00	b	0,602		
			40 Geminorum	116.10	1. 56,2	+53,1	-1,3	2. 43,5	+51,1	+0,1							
			†(u)	116.50	1. 58,6	+58,2	-1,3	2. 50,6	+47,3	-0,3							
			†* M.	116.50	1. 58,6	+58,2	-1,3	2. 50,6	+47,3	-0,3							
			§47 Geminorum	117.10	1. 14,9	+57,2	-0,8	2. 4,0	+48,3	-1,2							
		45	Mars N.L.	117. 0	0. 4,2	+60,7	0,0	0. 56,9	+49,6	-0,1	b	9,018	+4. 58,62	a	0,572		
			39 Geminor. M.	116.15	1. 29,1	+53,0	-1,0	2. 19,0	+49,0	-0,2							
			40 Geminor. M.	116.15	1. 29,1	+53,0	-1,0	2. 19,0	+49,0	-0,2							
			¶(u)	116.50	1. 53,8	+58,2	-1,1	2. 43,3	+47,3	-0,3							
		46	Mars S.L.	116.55	4. 51,9	+62,2	-3,3	5. 37,9	+49,6	-0,1	b	8,780	+4. 50,67	b	0,625		
			39 Geminor. M.	116.15	1. 32,2	+53,0	-1,0	2. 24,9	+49,0	-0,2							
			40 Geminor. M.	116.15	1. 32,2	+53,0	-1,0	2. 24,9	+49,0	-0,2							
			(u)	116.50	1. 51,1	+58,2	-1,3	2. 40,1	+47,3	-0,3							
			* M.	116.50	1. 51,1	+58,2	-1,3	2. 40,1	+47,3	-0,3							
			§47 Geminorum	117.10	1. 8,3	+57,2	-0,8	1. 59,8	+48,3	-0,2							
		47	Mars N.L.	117. 0	0. 2,0	+60,7	0,0	0. 53,9	+49,6	-0,1	b	10,722	+5. 55,58	a	0,545		
			39 Geminor. M.	116.15	0. 19,1	+53,0	-0,2	1. 12,3	+49,0	-0,1							
			40 Geminor. M.	116.15	0. 19,1	+53,0	-0,2	1. 12,3	+49,0	-0,1							
			§47 Geminorum	117.10	1. 6,7	+57,2	-0,8	1. 57,1	+48,3	-0,2							
		**Jan. 6	West.	48	ε Geminorum	244.40	4. 56,2	+13,8	-4,4	4. 28,5	+87,3	-2,6	a	8,010	-4. 25,96	a	0,621
					* M.	242.45	3. 55,9	+17,2	-3,5	3. 26,7	+86,3	-1,4					
* M.	242.45				3. 55,9	+17,2	-3,5	3. 26,7	+86,3	-1,4							
Mars S.L.	243. 0				4. 0,0	+16,5	-3,6	3. 30,0	+87,7	-1,4							
39 Geminor. M.	243.45				4. 44,8	+14,3	-4,2	4. 18,5	+88,8	-1,7							
40 Geminor. M.	243.45				4. 44,8	+14,3	-4,2	4. 18,5	+88,8	-1,7							
49	ε Geminorum			244.40	5. 15,4	+13,0	-0,2	4. 51,9	+87,3	-2,9	a	8,302	-4. 35,73	b	0,583		
	††*			242.40	0. 27,7	+17,6	-0,4	0. 2,0	+89,1	0,0							
	Mars N.L.			243. 0	3. 57,9	+16,5	-3,5	3. 29,7	+87,7	-1,4							
	39 Geminor. M.			243.45	4. 44,1	+14,3	-4,2	4. 16,9	+88,8	-1,7							
	40 Geminor. M.			243.45	4. 44,1	+14,3	-4,2	4. 16,9	+88,8	-1,7							
	(u)			243.10	4. 42,3	+18,1	-4,2	4. 14,0	+83,9	-1,7							

The numeration of the series is continued from the volume for 1834.

\* Observations pretty good.  
 † Very faint.  
 ‡ Planet well defined and observations pretty good.  
 The center of the planet much darker than the edges.  
 || Micrometer placed on the next division.  
 § Very good.

¶ Microscope A was set down 1.33,8, but there seems no doubt that the conjectural alteration is correct.  
 \*\* The air was foggy, but on the whole the observations are good.  
 †† The degrees were set down 240.



Semi-diameter.	Concluded N.P.D. of Center by Circle, uncorrected.	Hour-angle East of Meridian.	Assumed Horizontal Equatorial Parallax.	Refraction in N.P.D.	Parallax in N.P.D.	Corrected N.P.D. by Circle, subject to Index-error.	Time of Observation by Graham.	Wire at which the Observ. was made.	Corresponding Time by Hardy.
"	o ' "	h. m.	"	"	"	o ' "	h. m. s.		h. m. s.
9,95	63.12.31,00 63.14.29,16 62.55.11,60	5.26	13,77	86,50 86,68 85,65	9,10	63.13.48,40 63.15.55,84 62.56.37,25	1.21.11 1.22.39 1.32.26		1.22.51
9,97	64.27.58,90 63.12.39,82 63.14.38,15	5.5	13,77	78,42 74,87 74,96	8,76	64.29.17,32 63.13.45,93 63.15.53,11	1.37.10 1.41.54 1.43.36	IV.	1.43.34
9,06	64.28.10,85 63.12.45,09 63.14.49,68	4.47	13,77	69,86 66,79 66,90	8,47	64.29.20,71 63.13.43,41 63.15.56,58	1.56.6 2.0.48 2.2.35		2.2.28
7,96	64.28.15,65 63.12.50,46 62.55.39,26	4.38	13,77	66,12 63,24 62,65	8,33	64.29.21,77 63.13.45,37 62.56.41,91	2.5.19 2.10.1 2.21.18		2.11.41
8,64	62.58.40,21 63.46.48,65 63.6.43,45 63.5.19,45 62.47.28,30	3.20	13,70	42,26 43,53 42,43 42,40 42,01	7,16	62.59.15,31 63.47.32,18 63.7.25,88 63.6.1,85 62.48.10,31	3.23.47 3.26.48 3.28.56 3.29.21 3.38.39		3.25.14
8,66	62.58.43,01 63.37.16,93 63.46.54,88 63.6.49,40	3.2	13,70	39,23 40,22 40,49 39,46	6,93	62.59.15,31 63.37.57,15 63.47.35,37 63.7.28,86	3.41.47 3.44.9 3.44.49 3.47.20		3.43.14
9,03	62.58.41,87 63.37.20,38 63.46.56,63 63.6.52,45 63.5.27,98 62.47.33,70	2.53	13,70	37,87 38,83 39,02 37,98 37,96 37,49	6,83	62.59.12,91 63.37.59,21 63.47.35,65 63.7.30,43 63.6.5,94 62.48.11,19	3.51.8 3.53.30 3.54.10 3.56.30 3.56.40 4.6.3	IV.	3.52.35
8,21	62.58.45,16 63.37.27,87 63.47.0,36 62.47.35,85	2.34	13,70	35,46 36,38 36,61 35,23	6,63	62.59.13,99 63.38.4,25 63.47.36,97 62.48.11,08	4.9.21 4.12.16 4.12.41 4.24.18	V. IV.	4.10.48
9,47	64.45.29,40 62.45.4,64 62.40.42,68 63.4.25,13 63.45.20,83 63.54.58,45	4.53	13,66	73,35 68,20 68,10 69,02 70,78 71,11	8,48	64.46.42,75 62.46.12,84 62.41.50,78 63.5.34,15 63.46.31,61 63.56.9,56	1.38.44 1.41.46 1.43.48 1.49.39 1.53.34 1.54.14		1.50.59
8,33	64.45.52,25 62.41.8,00 63.4.41,78 63.45.43,37 63.55.18,29 63.15.16,20	3.51	13,66	51,79 48,12 48,78 49,99 50,29 49,08	7,55	64.46.44,04 62.41.56,12 63.5.23,01 63.46.33,36 63.56.8,58 63.16.5,28	2.40.24 2.45.29 2.51.14 2.55.15 2.55.55 2.58.0		2.52.34

Month and Day 1835.	Position of Graduated Face of Declination Circle.	Number of Series.	Object Observed.	Pointer.	Microscope A.	Corr. for Error of Division.	Correction for Run.	Microscope B.	Corr. for Error of Division.	Correction for Run.	Name of Microm.	Micrometer Reading.	Correction.	Name of Microm.	Micrometer for opposite Limb.			
				o	"	"	"	"	"	r		"	r					
Jan. 6	West.	50	ε Geminorum	244.40	*5.20,0	+13,0	-0,3	4.52,2	+86,1	-2,9	a	8,032	-4.26,70	a	0,543			
			* Mars S.L.	242.40	0.37,0	+17,6	-0,5	0.11,6	+89,1	-0,0								
			39 Geminor. M.	243.0	4.18,1	+16,5	-3,9	3.49,7	+87,7	-1,5								
			40 Geminor. M.	243.45	4.42,5	+14,3	-4,3	4.13,2	+88,8	-1,7								
†Jan. 16	West.	51	Mars N.L.	242.45	3.1,9	+17,2	-2,7	2.28,3	+86,3	-1,0	b	1,520	+0.47,97	b	0,580			
			(z) M.	242.45	3.1,9	+17,2	-2,7	2.28,3	+86,3	-1,0								
			ε Geminorum	244.40	*5.15,5	+13,0	-0,2	4.46,2	+87,3	-2,9								
			* M.	242.50	1.23,0	+17,1	-1,3	0.53,9	+88,6	-0,4								
		(y) M.	242.50	1.23,0	+17,1	-1,3	0.53,9	+88,6	-0,4	b	0,472	+0.12,93						
		52	† Mars S.L. M.	242.50	1.23,0	+17,1	-1,3	0.53,9	+88,6	-0,4	a	5,446	-3.0,26	a	6,081			
			(z) M.	242.50	1.23,0	+17,1	-1,3	0.53,9	+88,6	-0,4	a	4,471	-2.27,59					
			ε Geminorum	244.40	*5.19,0	-13,0	-0,3	4.46,0	+87,3	-2,9								
		53	Mars N.L.										b	1,563	+49,41	b	0,570	
			(z) M.															
		54	Mars N.L. M.										a	0,112	-1,94	b	0,582	
			(z) M.															b
55	Mars S.L.										b	1,131	+34,97	a	0,592			
	(z) M.																	
§Jan. 17	East.	56	Mars S.L.								a	2,353	+1.16,86	b	0,570			
			(z) M.															
		* M.										b	13,077	-7.17,15				
57	Mars N.L.										b	5,042	-2.48,56	a	0,586			
	¶ * M.															b	12,530	-6.56,03
58	Mars S.L.										a	2,202	+1.11,80	b	0,550			
	(z) M.															b	5,130	-2.51,49
	* M.																	
* M.																		
59	Mars N.L.										a	2,698	+1.28,39	a	0,610			
	(z) M.															b	4,740	-2.35,62
	* M.																	
* M.																		
**Jan. 23	West.	60	(43) Aurigæ								b	0,448	+12,14	b	0,466			
			¶(B) M.															
			¶(C) M.															
		Mars N.L. M.										a	0,180	-4,21				
61	(43) Aurigæ										b	0,562	+15,94	b	0,475			
	¶(B) M.															b	8,146	+4.29,47
	¶(C) M.																	
Mars N.L. M.																		

\* The micrometer placed on the next division.  
 † Flying dark clouds: the observations not of the best kind.  
 ‡ The circle in the same position as in series 51, the clamp not being touched.  
 || The circle in the same position as in series 53.  
 § The planet pretty well defined: occasional passing

clouds. Graham had stopped, and was set going about 56° behind Hardy: it stopped again after series 56: the times in series 56 are by Graham, and those in the other series by U. The star (y) is much brighter than (z), and the observations much more satisfactory.  
 ¶ Very faint.  
 \*\* The observations pretty good: the times by U.



Semi-diameter.	Concluded N.P.D. of Center by Circle, uncorrected.	Hour-angle East of Meridian.	Assumed Horizontal Equatoreal Parallax.	Refraction in N.P.D.	Parallax in N.P.D.	Corrected N.P.D. by Circle, subject to Index-error.	Time of Observation by Graham or U.	Wire at which the Observ. was made.	Corresponding Time by Hardy.
"	o ' "	h. m.	"	"	"	o ' "	h. m. s.		h. m. s.
8,17	64.45.54,05 62.41.17,40 63.4.45,13 63.45.49,75 63.55.23,22	3.30	13,66	46,90 43,49 44,14 45,26 45,53	7,26	64.46.40,95 62.42.0,89 63.5.22,01 63.46.35,01 63.56.8,75	3.1.7 3.6.13 3.11.55 3.15.57 3.16.38		3.13.15
8,27	62.48.43,27 62.49.22,97 64.45.49,45 62.41.2,30 62.52.13,38	4.14	13,05	54,41 54,43 58,28 54,18 54,54	7,49	62.49.30,19 62.50.17,40 64.46.47,73 62.41.56,48 62.53.7,92	2.12.49 2.15.15 2.17.38 2.23.11 2.23.38	V.	2.13.53
10,61	62.48.49,58 62.49.32,86 64.45.51,05	4.0	13,05	50,53 50,53 54,13	7,30	62.49.32,81 62.50.23,39 64.46.45,18	2.26.20 2.28.48 2.31.11		2.27.24
8,11		3.48	13,05		7,13	+0,98 +49,41	2.39.1 2.41.30		2.40.5
9,28		3.44	13,05		7,08	+0,26 +51,37	2.42.42 2.45.9		2.43.46
8,99		3.40	13,05		7,02	-16,01 +34,97	2.46.7 2.49.34		2.47.11
8,11		4.29	12,97	59,10 59,15 58,86	7,66	+43,33 +2.16,01 -6.18,29	2.0.18 2.4.4 2.12.0	V.	2.1.14
8,89		4.15	12,97	54,66 54,56 54,44	7,46	+56,09 -1.54,00 -6.1,59	2.14.40 2.24.13 2.25.52	V.	2.11.21
7,78		4.2	12,97	51,03 51,06 50,94 50,82	7,27	+35,98 +2.2,86 -2.0,55 -6.23,36	2.27.29 2.30.20 2.37.18 2.38.43	V.	2.24.10
9,29		3.49	12,97	47,81 47,84 47,72 47,61	7,10	+50,00 +2.16,23 -1.47,90 -6.8,25	2.40.42 2.43.30 2.50.2 2.51.57		2.37.23
8,47		1.29	12,42	29,13 29,15 29,22 29,13	5,45	+29,13 +41,29 +4.56,72 +27,94	4.41.37 4.46.25 4.46.48 4.54.6		4.51.46
7,84		1.14	12,42	28,32 28,34 28,40 28,32	5,37	+28,32 +44,28 +4.57,87 +24,65	4.56.38 5.1.25 5.1.47 5.9.35	V.	5.7.15

Month and Day 1835.	Position of Graduated Face of Declination Circle.	Number of Series.	Object Observed.	Pointer.	Microscope A.	Corr. for Error of Division.	Correction for Run.	Microscope B.	Corr. for Error of Division.	Correction for Run.	Name of Microm.	Micrometer Reading.	Correction.	Name of Microm.	Micrometer for opposite Limb.
				"	"	"	"	"	"	"	"	"	"	"	"
*Jan. 23	West.	62	(45) Aurigæ M. †(B) M. †(C) M. ‡Mars N.L.								b	0,173	+ 2,94		
											b	0,598	+ 17,14		
											b	8,220	+ 4. 31,94	b	0,561
		63	(43) Aurigæ. †(B) M. †(C) M. Mars SL. M.								b	0,600	+ 17,21		
											b	8,127	+ 4. 28,84		
											b	0,413	+ 10,97	a	0,162
*Jan. 24	East.	64	(43) Aurigæ. * M. (B) M. (C) M. Mars SL. M.								b	19,411	-10. 46,05		
											a	0,591	+ 17,94		
											a	8,152	+ 4. 30,71		
											a	1,091	+ 34,66	b	99,492
		65	(43) Aurigæ. * M. * M. (B) M.    (C) M. Mars NL. M.								b	19,352	-10. 46,92		
											b	8,498	- 4. 44,08		
											a	0,502	+ 14,98		
											a	8,215	+ 4. 32,81		
											b	99,673	- 13,77	a	0,993
		66	(43) Aurigæ. * M. * M. (B) M. (C) M. (A) M. Mars SL. M.								b	19,522	-10. 46,25		
											b	8,563	- 4. 43,41		
											b	99,632	+ 15,14		
											a	8,061	+ 4. 27,66		
											a	21,740	+12. 4,94		
											a	0,993	+ 31,39	b	99,640
§Jan. 26	West.	67	¶(43) Aurigæ. (C) M. Mars NL. M. (A) M.								b	7,723	+ 4. 15,33		
											b	2,240	+ 1. 12,04		
											b	21,180	+11. 41,68	b	1,734
		68	(43) Aurigæ. ** (C) M. ** (B) M. Mars NL. M. (A) M.								b	7,056	+ 3. 53,03		
											a	99,466	+ 19,65		
											b	2,239	+ 1. 12,00		
											b	21,651	+11. 59,18	b	2,751
		69	(43) Aurigæ M. (B) M. (C) M. Mars SL. M. (A) M.								a	2,545	- 1. 23,28		
											a	2,223	- 1. 12,51		
											b	5,671	+ 3. 6,72		
											b	0,857	+ 25,81		
											b	19,676	+10. 54,90	a	99,820
††Jan. 27	East.	70	(43) Aurigæ. * M. (B) M. (C) M. Mars NL. M.								b	19,430	-10. 46,69		
											b	99,581	+ 16,84		
											a	8,150	+ 4. 30,64		
											a	3,712	+ 2. 2,29	a	3,206

\* The observations pretty good: the times by U.  
 † Very faint.  
 ‡ Ill defined and bad.  
 || The observer thought that the declination tangent-screw had been touched before this observation: but there appears no reason for thinking so.

§ The wires out of focus, and the observations not good: the times are by U.  
 ¶ The observations of this series are wholly irreconcilable, except perhaps the two last.  
 \*\* Bad: the result from C is bad.  
 †† The times by U.



Semi-diameter.	Concluded N.P.D. of Center by Circle, uncorrected.	Hour-angle East of Meridian.	Assumed Horizontal Equatoreal Parallax.	Refraction in N.P.D.	Parallax in N.P.D.	Corrected N.P.D. by Circle, subject to Index-error.	Time of Observation by U.	Wire at which the Observ. was made.	Corresponding Time by Hardy.
"	o ' "	h. m.	"	"	"	o ' "	h. m. s.		h. m. s.
7,96		0. 58	12,42	27,62 27,64 27,70 27,62	5,30	+ 30,56 + 44,78 + 4. 59,64 + 30,28	5. 12. 57 5. 17. 45 5. 18. 8 5. 25. 27		5. 23. 7
7,29		0. 41	12,42	27,05 27,07 27,13 27,05	5,25	+ 27,05 + 44,28 + 4. 55,97 + 25,48	5. 30. 19 5. 35. 7 5. 35. 28 5. 42. 45		5. 40. 25
7,42		1. 52	12,32	30,76 30,55 30,77 30,85 30,76	5,56	+ 30,76 - 10. 15,50 + 48,71 + 5. 1,56 + 52,44	4. 17. 53 4. 19. 35 4. 22. 42 4. 23. 3 4. 29. 25		4. 27. 3
8,81		1. 6	12,32	27,95 27,76 27,86 27,95 28,03 27,95	5,29	+ 27,95 - 10. 19,16 - 4. 16,22 + 42,93 + 5. 0,84 + 45,24	*5. 5. 11 5. 6. 10 5. 6. 33 5. 8. 48 5. 9. 38 5. 15. 28	V. V. V.	5. 13. 6
8,26		0. 54	12,32	27,45 27,23 27,36 27,45 27,53 27,70 27,45	5,24	+ 27,45 - 10. 19,02 - 4. 16,05 + 42,59 + 4. 55,19 + 12. 32,64 + 45,34	5. 16. 49 5. 18. 1 5. 18. 54 5. 21. 37 5. 22. 0 5. 27. 12 5. 28. 19	I. II.	5. 25. 57
8,46		0. 3	12,13	26,52 26,60 26,54 26,76	5,07	+ 26,52 + 4. 41,93 + 1. 25,06 + 12. 8,44	6. 7. 10 6. 12. 20 6. 16. 51 6. 18. 15	V.	6. 14. 18
8,57		- 0. 22	12,13	26,68 26,76 26,68 26,70 26,93	5,09	+ 26,68 + 4. 19,79 + 46,33 + 1. 42,18 + 12. 26,11	6. 32. 28 6. 37. 39 6. 37. 48 6. 42. 7 6. 43. 18	V. IV.	6. 39. 54
9,00		- 0. 37	12,13	26,97 26,97 27,05 26,99 27,21	5,11	- 56,31 - 45,54 + 3. 33,77 + 38,70 + 11. 22,11	6. 46. 43 6. 51. 34 6. 51. 54 6. 56. 24 6. 57. 20		6. 53. 51
8,46		3. 3	12,04	38,93 38,71 38,93 39,03 38,98	6,06	+ 38,93 - 10. 7,98 + 55,77 + 5. 9,67 + 2. 26,75	3. 7. 54 3. 9. 37 3. 12. 43 3. 13. 4 3. 16. 54		3. 14. 19

\* It would seem that the minute is wrong, and that the observation was made at the IV. wire.

Month and Day 1835.	Position of Graduated Face of Declination Circle.	Number of Series.	Object Observed.	Pointer.	Microscope A.	Corr. for Error of Division.	Correction for Run.	Microscope B.	Corr. for Error of Division.	Correction for Run.	Name of Microm.	Micrometer Reading	Correction.	Name of Microm.	Micrometer for opposite Limb.		
				"	"	"	"	"	"	"	"	"	r	"	r		
Jan. 27	East.	71	(43) Aurigæ M.								b	3,420	- 1. 51,49	a	0,373		
			* M.								b	22,732	- 12. 37,07				
			(B) M.								b	2,959	- 1. 36,07				
			(C) M.								a	4,743	+ 2. 36,75				
			Mars N.L. M.								b	0,265	- 6,01				
			(A) M.								a	18,375	+ 10. 12,45				
		* M.								a	12,087	+ 6. 42,22					
		72	* (43) Aurigæ M.										b	3,442	- 1. 52,22	b	99,897
			* M.										b	22,690	- 12. 35,67		
* M.											b	11,486	- 6. 21,12				
(B) M.											b	2,625	- 1. 24,90				
(C) M.											a	5,125	+ 2. 49,52				
73	Mars S.L. M.										a	0,719	+ 22,24				
	(43) Aurigæ M.										b	3,296	- 1. 47,34	a	0,515		
	* M.										b	22,655	- 12. 34,49				
	* M.										b	11,763	- 6. 31,82				
	(B) M.										b	2,880	- 1. 33,44				
(C) M.										a	4,991	+ 2. 45,04					
Mars N.L. M.											b	0,196	- 3,70				
	† Jan. 30	West.	74	(43) Aurigæ M.							a	7,550	- 4. 10,58	a	0,200		
	* M.											b	16,698			+ 9. 11,84	
	(B) M.											a	6,895			- 3. 48,68	
	(C) M.										b	0,730	+ 21,56				
	Mars S.L. M.										b	0,443	+ 11,97				
75	(43) Aurigæ M.										a	7,437	- 4. 6,80				
* M.										b	16,796	+ 9. 18,62					
(B) M.										a	7,009	- 3. 52,50					
(C) M.										b	0,781	+ 23,27					
76	Mars N.L.										a	7,389	- 4. 5,20	a	0,105		
	(B) M.									a	6,883	- 3. 48,28					
	(C) M.									b	0,780	+ 23,24					
	Mars S.L. M.									b	0,499	+ 13,83					
Feb. 4	West.	77	Mars S.L.								a	9,030	- 5. 0,06	a	0,522		
			(C) M.								b	4,647	+ 2. 32,51				
			(A) M.								a	1,804	- 58,50				
		78	Mars N.L.	242. 55	1. 19,8	+ 17,1	- 1,2	0. 43,5	+ 84,8	- 0,3					b	0,507	
			(B) M.	242. 55	1. 19,8	+ 17,1	- 1,2	0. 43,5	+ 84,8	- 0,3	a	16,330	- 9. 4,09				
			(C) M.	242. 55	1. 19,8	+ 17,1	- 1,2	0. 43,5	+ 34,8	- 0,3	a	8,683	- 4. 48,46				
			(A) M.	242. 55	1. 19,8	+ 17,1	- 1,2	0. 43,5	+ 84,8	- 0,3	b	5,080	+ 2. 46,99				
			* M.	242. 55	1. 19,8	+ 17,1	- 1,2	0. 43,5	+ 84,8	- 0,3	a	1,310	- 41,99				
			49 Aurigæ.	241. 50	4. 33,8	+ 9,9	- 4,1	3. 56,0	+ 92,7	- 1,6							
		79	Mars N.L.	242. 55	1. 25,0	+ 17,1	- 1,3	0. 45,9	+ 84,8	- 0,3					b	0,479	
			† (B) M.	242. 55	1. 25,0	+ 17,1	- 1,3	0. 45,9	+ 84,8	- 0,3	a	16,513	- 9. 10,20				
			(C) M.	242. 55	1. 25,0	+ 17,1	- 1,3	0. 45,9	+ 84,8	- 0,3	a	8,787	- 4. 51,93				
			(A) M.	242. 55	1. 25,0	+ 17,1	- 1,3	0. 45,9	+ 84,8	- 0,3	b	5,008	+ 2. 44,58				
			* M.	242. 55	1. 25,0	+ 17,1	- 1,3	0. 45,9	+ 84,8	- 0,3	a	1,362	- 43,73				
			* M.	242. 55	1. 25,0	+ 17,1	- 1,3	0. 45,9	+ 84,8	- 0,3	b	6,715	+ 3. 43,07				
* M.	241. 50		4. 44,6	+ 9,9	- 4,2	4. 1,1	+ 92,7	- 1,6	b	5,082	+ 2. 47,05						
49 Aurigæ.	241. 50		4. 44,6	+ 9,9	- 4,2	4. 1,1	+ 92,7	- 1,6	a	0,273	- 7,32						

\* It would seem that after the second observation of this series the telescope was disturbed.  
 † Series 74 and 75 very good: 76 clouded. Times by U.

‡ Very bad.  
 || Observations generally good: times by U.



Semi-diameter.	Concluded N.P.D. of Center by Circle, uncorrected.	Hour-angle East of Meridian.	Assumed Horizontal Equatoreal Parallax.	Refraction in N.P.D.	Parallax in N.P.D.	Corrected N.P.D. by Circle, subject to Index-error.	Time of Observation by U.	Wire at which the Observ. was made.	Corresponding Time by Hardy.
"	o / "	h. m.	"	"	"	o / "	h. m. s.		m. s.
8,34		2.52		37,28 37,06 37,28 37,38 37,33 37,57 37,48	5,94	- 1.14,21 - 12. 0,01 - 58,79 + 3.14,13 + 33,71 + 10.50,02 + 7.19,70	3.18. 4 3.19.48 3.22.54 3.23.15 3.27. 3 3.28.12 3.28.52	I.	3.24.28
7,97		2.40		35,65 35,45 35,56 35,65 35,74 35,70	5,82	- 1.16,57 - 12. 0,22 - 5.45,56 - 49,25 + 3.25,26 + 44,14	3.30.53 3.32.35 *3.33.25 3.35.41 3.36. 2 3.39.52		3.37.17
9,56		2.30		34,44 34,24 34,35 34,44 34,52 34,48	5,73	- 1.12,90 - 12. 0,25 - 5.57,47 - 59,00 + 3.19,56 + 34,61	3.40.52 3.42.37 3.43.11 3.45.42 3.46. 3 3.49.52	IV.	3.47.17
8,42		2.53		37,42 37,72 37,42 37,52 37,53	5,81	- 3.33,16 + 9.49,56 - 3.11,26 + 59,08 + 35,27	3.16.47 3.18.16 3.21.36 3.21.58 3.23.44	V.	3.21. 1
8,12		2.45		36,32 36,61 36,31 36,41 36,42	5,73	- 3.30,48 + 9.55,23 - 3.16,19 + 59,68 + 38,81	3.35.11 †3.26.25 3.30. 0 3.30.23 3.32. 9		3.29.26
7,77		2.37		35,28 35,29 35,37 35,36	5,66	- 3.29,92 - 3.12,99 + 58,61 + 35,77	3.33.23 3.38. 9 3.38.32 3.40.19		3.37.36
7,83		2.28	11,21	34,41 34,30 34,48 34,40	5,34	+ 21,24 - 4.25,76 + 3. 6,99 - 24,10	3.47.11 3.47.35 3.53. 2 3.53.44	V.	3.44.17
7,06	62.56.58,91 62.47.47,76 62.52. 3,39 62.59.38,84 62.56. 9,86 61.55. 3,35	2.20	11,21	33,51 33,28 33,40 33,58 33,50 32,14	5,28	62.57.27,14 62.48.21,04 62.52.36,79 63. 0.12,42 62.56.43,36 61.55.35,49	3.54.59 3.55. 2 3.55.23 ‡3.59.47 4. 1. 5 4. 7. 3		3.52. 5
6,59	62.57. 2,19 62.47.45,40 62.52. 3,67 62.59.40,18 62.56.11,87 63. 0.38,67 61.57.58,30 61.55. 3,93	2. 3	11,21	31,88 31,66 31,77 31,95 31,86 31,96 30,59 30,54	5,16	62.57.28,91 62.48.17,06 62.52.35,44 63. 0.12,13 62.56.43,73 63. 1.10,63 61.58.28,89 61.55.34,47	4.12.36 4.12.38 4.13.17 4.18.28 4.18.40 4.19.28 4.23.10 4.24.41	IV. II.	4. 9.42
* This observation appears to have been made at the V wire.						† This observation appears to have been made at the IV wire.			
						‡ The time is undoubtedly 1 <sup>m</sup> too small.			

## NORTH POLAR DISTANCES OF MARS AND STARS NEAR HIM,

Month and Day 1835.	Position of Graduated Face of Declination Circle.	Number of Series.	Object Observed.	Pointer.	Microscope A.	Corr. for Error of Division.	Correction for Run.	Microscope B.	Corr. for Error of Division.	Correction for Run.	Name of Microm.	Micrometer Reading.	Correction.	Name of Microm.	Micrometer for opposite Limb.
				° ' "	" "	" "	" "	" "	" "	" "		" "	" "		
*Feb. 9	West.	80	Mars S.L. (A) M.								a	6,895	- 3 . 48,68	a	0,473
		81	Mars N.L. †(C) M. (A) M.								a	20,096	- 11 . 9,99	b	0,621
										a	6,454	- 3 . 33,94			
		82	Mars S.L. (C) M. (A) M.									a	20,570	- 11 . 25,79	a
								a	6,930	- 3 . 49,85					
83	Mars N.L. (C) M. ‡(A) M.										a	20,100	- 11 . 10,12	b	0,531
								a	6,898	- 3 . 48,78					

\* Circumstances not very favorable: times by *U*.

† Not good.

‡ Cloudy.



Semi-diameter.	Concluded N.P.D. of Center by Circle, uncorrected.	Hour-angle East of Meridian.	Assumed Horizontal Equatoreal Parallax.	Refraction in N.P.D.	Parallax in N.P.D.	Corrected N.P.D. by Circle, subject to Index-error.	Time of Observation by U.	Wire at which the Observ. was made.	Corresponding Time by Hardy.
"	o ' "	h. m.	"	"	"	o ' "	h. m. s.		h. m. s.
7,00		2.38	10,70	35,76 35,67	5,20	+23,56 -3.13,01	3.36.35 3.43.8		3.33.24
8,96		2.30	10,70	34,79 34,52 34,71	5,13	+38,62 -10.35,47 -2.59,23	3.44.46 3.45.53 3.51.20		3.41.35
9,46		2.23	10,70	34,00 33,74 33,92	5,08	+19,46 -10.52,05 -3.15,93	3.51.49 3.52.55 3.58.22		3.48.38
7,46		2.16	10,70	33,27 33,00 33,17	5,03	+35,70 -10.37,12 -3.15,61	3.58.50 3.59.58 4.5.21		3.55.39

CORRECTION FOR INDEX ERRORS, OBTAINED BY COMPARING THE CORRECTED N.P.D.  
WITH ASSUMED N.P.D.

Month and Day 1835.	Position of Graduated Face of Declination Circle.	Number of Series.	Star's Name.	Assumed N.P.D.	Correction for Index Error.
				° ' "	° ' "
January 3	West.	40	(u) 47 Geminorum	63. 12. 3,40 62. 52. 45,20	- 3. 52,44 - 3. 52,05
		41	37 Geminorum (u)	64. 25. 27,90 63. 12. 3,40	- 3. 49,42 - 3. 49,71
		42	37 Geminorum (u)	64. 25. 27,90 63. 12. 3,40	- 3. 52,81 - 3. 53,18
		43	37 Geminorum 47 Geminorum	64. 25. 27,90 62. 52. 45,20	- 3. 53,87 - 3. 56,71
January 5	East.	44	40 Geminorum (u) 47 Geminorum	63. 52. 5,30 63. 12. 3,30 62. 52. 45,10	+ 4. 33,12 + 4. 37,42 + 4. 34,79
		45	39 Geminorum 40 Geminorum (u)	63. 42. 32,50 63. 52. 5,30 63. 12. 3,30	+ 4. 35,35 + 4. 29,93 + 4. 34,44
		46	39 Geminorum 40 Geminorum (u) 47 Geminorum	63. 42. 32,50 63. 52. 5,30 63. 12. 3,30 62. 52. 45,10	+ 4. 33,29 + 4. 29,65 + 4. 32,87 + 4. 33,91
		47	39 Geminorum 40 Geminorum 47 Geminorum	63. 42. 32,50 63. 52. 5,30 62. 52. 45,10	+ 4. 28,25 + 4. 28,33 + 4. 34,02
January 6	West.	48	ε Geminorum 39 Geminorum 40 Geminorum	64. 42. 44,80 63. 42. 32,50 63. 52. 5,30	- 3. 57,95 - 3. 59,11 - 4. 4,26
		49	ε Geminorum 39 Geminorum 40 Geminorum (u)	64. 42. 44,80 63. 42. 32,50 63. 52. 5,30 63. 12. 3,30	- 3. 59,24 - 4. 0,86 - 4. 3,28 - 4. 1,98
		50	ε Geminorum 39 Geminorum 40 Geminorum	64. 42. 44,80 63. 42. 32,50 63. 52. 5,30	- 3. 56,15 - 4. 2,51 - 4. 3,45
January 16	West.	51	(z) ε Geminorum (y)	62. 46. 21,30 64. 42. 44,80 62. 48. 54,80	- 3. 56,10 - 4. 2,93 - 4. 13,12
		52	(z) ε Geminorum	62. 46. 21,30 64. 42. 44,80	- 4. 2,09 - 4. 0,38
		53	(z)	62. 46. 21,30	*62. 45. 31,89
		54	(z)	62. 46. 21,30	*62. 45. 29,93
		55	(z)	62. 46. 21,30	*62. 45. 46,33

\* Refraction and circle-reading omitted.



Month and Day 1835.	Position of Graduated Face of Declination Circle.	Number of Series.	Star's Name.	Assumed N.P.D.	Correction for Index Error.
				o ' "	o ' "
January 17	East.	56	(z)	62.46.21,30	*62.44.5,29
		57	*R. 6 <sup>h</sup> .38 <sup>m</sup> .51 <sup>s</sup> .	†62.37.52,51	*62.43.54,10
		58	(z)	62.46.21,30	*62.44.18,44
		59	(z)	62.46.21,30	*62.44.5,07
January 23	West.	60	(43) Aurigæ	62.43.55,40	*62.43.26,27
			(B)	62.44.13,90	62.43.32,61
			(C)	62.48.24,50	62.43.27,78
		61	(43) Aurigæ	62.43.55,40	*62.43.27,08
(B)	62.44.13,90		62.43.29,62		
62	(43) Aurigæ	62.43.55,40	*62.43.24,84		
	(B)	62.44.13,90	62.43.29,12		
63	(43) Aurigæ	62.43.55,40	*62.43.28,35		
	(B)	62.44.13,90	62.43.29,62		
63	(C)	62.48.24,50	62.43.28,53		
	January 24	East.	64	(43) Aurigæ	62.43.55,40
(B)				62.44.13,90	62.43.25,19
(C)				62.48.24,50	62.43.22,94
65	(43) Aurigæ	62.43.55,40	*62.43.27,45		
	(B)	62.44.13,90	62.43.30,97		
66	(43) Aurigæ	62.43.55,40	*62.43.27,95		
	(B)	62.44.13,90	62.43.31,31		
66	(C)	62.48.24,50	62.43.29,31		
	(A)	62.55.55,50	62.43.22,86		
January 26	West.	67	(43) Aurigæ	62.43.55,30	*62.43.28,78
			(C)	62.48.24,40	62.43.42,47
			(A)	62.55.55,50	62.43.47,06
68	(43) Aurigæ	62.43.55,30	*62.43.28,62		
	(C)	62.48.24,40	62.44.4,61		
68	(B)	62.44.13,90	62.43.27,57		
	(A)	62.55.55,50	62.43.29,39		
69	(43) Aurigæ	62.43.55,30	*62.44.51,61		
	(B)	62.44.13,90	62.44.59,44		
69	(C)	62.48.24,40	62.44.50,63		
	(A)	62.55.55,50	62.44.33,39		
January 27	East.	70	(43) Aurigæ	62.43.55,30	*62.43.16,37
			(B)	62.44.13,80	62.43.18,03
			(C)	62.48.24,30	62.43.14,63

\* Circle-reading omitted.

† This N.P.D. is the mean of several results, apparently for the same star, in the Section of *N.P.D. of small stars &c.*

## CORRECTION FOR INDEX ERRORS, &amp;c.

Month and Day 1835.	Position of Graduated Face of Declination Circle.	Number of Series.	Star's Name.	Assumed N.P.D.	Correction for Index Error.
				° ' "	° ' "
January 27	East.	71	(43) Aurigæ	62.43.55,30	*62.45.9,51
			(B)	62.44.13,80	62.45.12,59
			(C)	62.48.24,30	62.45.10,17
			(A)	62.55.55,50	62.45.5,48
		72	(43) Aurigæ	62.43.55,30	*62.45.11,87
			(B)	62.44.13,80	62.45.3,05
			(C)	62.48.24,30	62.44.59,04
		73	(43) Aurigæ	62.43.55,30	*62.45.8,20
			(B)	62.44.13,80	62.45.12,80
(C)	62.48.24,30		62.45.4,74		
January 30	West.	74	(43) Aurigæ	62.43.55,10	*62.47.28,26
			(B)	62.44.13,70	62.47.24,96
			(C)	62.48.24,20	62.47.25,12
		75	(43) Aurigæ	62.43.55,10	*62.47.25,58
			(B)	62.44.13,70	62.47.29,89
			(C)	62.48.24,20	62.47.24,52
		76	(43) Aurigæ	62.43.55,10	*62.47.25,02
			(B)	62.44.13,70	62.47.26,69
			(C)	62.48.24,20	62.47.25,59
February 4	West.	77	(C)	62.48.24,10	*62.52.49,86
			(A)	62.55.55,20	62.52.48,21
		78	(B)	62.44.13,60	-4.7,44
			(C)	62.48.24,10	-4.12,69
			(A)	62.55.55,20	-4.17,22
			49 Aurigæ	61.51.23,30	-4.12,19
		79	(B)	62.44.13,60	-4.3,46
			(C)	62.48.24,10	-4.11,34
			(A)	62.55.55,20	-4.16,93
49 Aurigæ	61.51.23,30	-4.11,17			
February 9	West.	80	(A)	62.55.54,90	*62.59.7,91
			(C)	62.48.23,90	*62.58.59,37
		81	(A)	62.55.54,90	62.58.54,13
			(C)	62.48.23,90	*62.59.15,95
		82	(A)	62.55.54,90	62.59.10,83
			(C)	62.48.23,90	*62.59.1,02
		83	(A)	62.55.54,90	62.59.10,51
			(C)	62.48.23,90	

\* Circle-reading omitted.



APPARENT N.P.D. OF THE CENTER OF MARS,  
DETERMINED FROM THE INDEX-ERRORS, AND COMPARED WITH THE N.P.D.  
FROM THE NAUTICAL ALMANAC.

(The letter M, affixed to the Index-error Star, denotes that the Comparison with that Star depends on the  
Micrometer only, and not on the divisions of the Circle.)

Greenwich Mean Solar Time, 1835.				Number of Series.	Star used for Index Error.	Apparent N.P.D. of Mars' Center.			Seconds of Interpolated N.P.D.	Error of Tables.	Correction applied for Parallax.
<i>d.</i>	<i>h.</i>	<i>m.</i>	<i>s.</i>			<i>o</i>	<i>'</i>	<i>"</i>			
Jan.	3	6	32 . 23,3	40	( <i>u</i> ) M. 47 Geminorum	63 . 9 . 55,96 63 . 9 . 56,35		40,78	- 15,18 - 15,57	9,10	
Jan.	3	6	53 . 2,9	41	37 Geminorum ( <i>u</i> ) M.	63 . 9 . 56,51 63 . 9 . 56,22		38,11	- 18,40 - 18,11	8,76	
Jan.	3	7	11 . 53,8	42	37 Geminorum ( <i>u</i> ) M.	63 . 9 . 50,60 63 . 9 . 50,23		35,67	- 14,93 - 14,56	8,47	
Jan.	3	7	21 . 5,3	43	37 Geminorum 47 Geminorum	63 . 9 . 51,50 63 . 9 . 48,66		34,50	- 17,00 - 14,16	8,33	
Jan.	5	8	26 . 38,3	44	40 Geminorum ( <i>u</i> ) 47 Geminorum	63 . 3 . 48,43 63 . 3 . 52,73 63 . 3 . 50,10		37,84	- 10,59 - 14,89 - 12,26	7,16	
Jan.	5	8	44 . 35,4	45	39 Geminorum 40 Geminorum ( <i>u</i> )	63 . 3 . 50,86 63 . 3 . 45,24 63 . 3 . 49,75		35,81	- 15,05 - 9,43 - 13,94	6,93	
Jan.	5	8	53 . 54,8	46	39 Geminorum 40 Geminorum ( <i>u</i> ) 47 Geminorum	63 . 3 . 46,20 63 . 3 . 42,56 63 . 3 . 45,78 63 . 3 . 46,82		34,76	- 11,44 - 7,80 - 11,02 - 12,06	6,83	
Jan.	5	9	12 . 4,9	47	39 Geminorum 40 Geminorum 47 Geminorum	63 . 3 . 42,24 63 . 3 . 42,32 63 . 3 . 48,01		32,72	- 9,52 - 9,60 - 15,29	6,63	
Jan.	6	6	48 . 45,1	48	$\epsilon$ Geminorum 39 Geminorum 40 Geminorum	63 . 1 . 27,72 63 . 1 . 26,56 63 . 1 . 21,41		11,21	- 16,51 - 15,35 - 10,20	8,48	
Jan.	6	7	50 . 10,1	49	$\epsilon$ Geminorum ( <i>u</i> ) 39 Geminorum 40 Geminorum	63 . 1 . 23,77 63 . 1 . 21,03 63 . 1 . 22,15 63 . 1 . 19,73		4,75	- 19,02 - 16,28 - 17,40 - 14,98	7,55	
Jan.	6	8	10 . 47,7	50	$\epsilon$ Geminorum 39 Geminorum 40 Geminorum	63 . 1 . 25,86 63 . 1 . 19,50 63 . 1 . 18,56		2,59	- 23,27 - 16,91 - 15,97	7,26	
Jan.	16	6	32 . 32,9	51	( <i>z</i> ) M. $\epsilon$ Geminorum ( <i>y</i> )	62 . 45 . 34,09 62 . 45 . 27,26 62 . 45 . 17,07		11,89	- 22,20 - 15,37 - 5,18	7,49	
Jan.	16	6	46 . 1,7	52	( <i>z</i> ) M. $\epsilon$ Geminorum	62 . 45 . 30,53 62 . 45 . 32,43		11,48	- 19,05 - 20,95	7,30	
Jan.	16	6	58 . 40,7	53	( <i>z</i> ) M.	62 . 45 . 32,87		11,09	- 21,78	7,13	

Greenwich Mean Solar Time, 1835.				Number of Series.	Star used for Index Error.	Apparent N.P.D. of Mars' Center.	Seconds of Interpolated N.P.D.	Error of Tables.	Correction applied for Parallax.
d.	h.	m.	s.			°	'	"	"
Jan. 16	7	2	21,1	54	(z) M.	62 . 45 . 30,19	10,98	- 19,21	7,08
Jan. 16	7	5	45,5	55	(z) M.	62 . 45 . 30,32	10,88	- 19,44	7,02
Jan. 17	6	12	43,0	56	(z) M.	62 . 44 . 48,62	33,66	- 14,96	7,66
Jan. 17	6	26	6,8	57	* $\mathcal{A}$ . 6 <sup>h</sup> . 38 <sup>m</sup> . 51 <sup>s</sup> . M.	62 . 44 . 50,19	33,34	- 16,85	7,46
Jan. 17	6	38	53,7	58	(z) M.	62 . 44 . 54,42	33,04	- 21,38	7,27
Jan. 17	6	52	4,6	59	(z) M.	62 . 44 . 55,07	32,73	- 22,34	7,10
Jan. 23	8	41	37,7	60	(43) Aurigæ M. (B) M. (C) M.	62 . 43 . 54,21 62 . 44 . 0,55 62 . 43 . 55,72	43,93	- 10,28 - 16,62 - 11,79	5,45
Jan. 23	8	57	4,2	61	(43) Aurigæ M. (B) M. (C) M.	62 . 43 . 51,73 62 . 43 . 54,27 62 . 43 . 51,28	44,10	- 7,63 - 10,17 - 7,18	5,37
Jan. 23	9	12	53,6	62	(43) Aurigæ M. (B) M. (C) M.	62 . 43 . 55,12 62 . 43 . 59,40 62 . 43 . 55,14	44,27	- 10,85 - 15,13 - 10,87	5,30
Jan. 23	9	30	8,8	63	(43) Aurigæ M. (B) M. (C) M.	62 . 43 . 53,83 62 . 43 . 55,10 62 . 43 . 54,01	44,45	- 9,38 - 10,65 - 9,56	5,25
Jan. 24	8	13	4,8	64	(43) Aurigæ M. (B) M. (C) M.	62 . 44 . 17,08 62 . 44 . 17,63 62 . 44 . 15,38	2,05	- 15,03 - 15,58 - 13,33	5,56
Jan. 24	8	59	0,3	65	(43) Aurigæ M. (B) M. (C) M.	62 . 44 . 12,69 62 . 44 . 16,21 62 . 44 . 8,90	2,75	- 9,94 - 13,46 - 6,15	5,29
Jan. 24	9	11	49,2	66	(43) Aurigæ M. (B) M. (C) M. (A) M.	62 . 44 . 13,29 62 . 44 . 16,65 62 . 44 . 14,65 62 . 44 . 8,20	2,94	- 10,35 - 13,71 - 11,71 - 5,26	5,24
Jan. 26	9	52	14,2	67	(43) Aurigæ M. (C) M. (A) M.	62 . 44 . 53,84 62 . 44 . 67,53 62 . 44 . 72,12	60,38	+ 6,54 - 7,15 - 11,74	5,07
Jan. 26	10	17	46,0	68	(43) Aurigæ M. (C) M. (B) M. (A) M.	62 . 45 . 10,80 62 . 45 . 46,79 62 . 45 . 9,75 62 . 45 . 11,57	0,98	- 9,82 - 45,81 - 8,77 - 10,59	5,09
Jan. 26	10	31	41,8	69	(43) Aurigæ M. (B) M. (C) M. (A) M.	62 . 45 . 30,31 62 . 45 . 38,14 62 . 45 . 29,33 62 . 45 . 12,09	1,32	- 28,99 - 36,82 - 28,01 - 10,79	5,11
Jan. 27	6	48	50,4	70	(43) Aurigæ M. (B) M. (C) M.	62 . 45 . 43,12 62 . 45 . 44,78 62 . 45 . 41,38	32,31	- 10,81 - 12,47 - 9,07	6,06
Jan. 27	6	58	57,8	71	(43) Aurigæ M. (B) M. (C) M. (A) M.	62 . 45 . 43,22 62 . 45 . 46,30 62 . 45 . 43,88 62 . 45 . 39,19	32,59	- 10,63 - 13,71 - 11,29 - 6,60	5,94



Greenwich Mean Solar Time, 1835.	Number of Series.	Star used for Index Error.	Apparent N.P.D. of Mars' Center.	Seconds of Interpolated N.P.D.	Error of Tables.	Correction applied for Parallax.
d. h. m. s.			o ' "	"	"	"
Jan. 27 . 7 . 11 . 44,7	72	(43) Aurigæ M. (B) M. (C) M.	62 . 45 . 56,01 62 . 45 . 47,19 62 . 45 . 43,18	32,95	- 23,06 - 14,24 - 10,23	5,82
Jan. 27 . 7 . 21 . 43,1	73	(43) Aurigæ M. (B) M. (C) M.	62 . 45 . 42,81 62 . 45 . 47,41 62 . 45 . 39,35	33,21	- 9,60 - 14,20 - 6,14	5,73
Jan. 30 . 6 . 43 . 48,5	74	(43) Aurigæ M. (B) M. (C) M.	62 . 47 . 63,53 62 . 47 . 60,23 62 . 47 . 60,39	51,01	- 12,52 - 9,22 - 9,38	5,81
Jan. 30 . 6 . 52 . 12,1	75	(43) Aurigæ M. (B) M. (C) M.	62 . 47 . 64,39 62 . 47 . 68,70 62 . 47 . 63,33	51,32	- 13,07 - 17,58 - 12,01	5,73
Jan. 30 . 7 . 0 . 20,8	76	(43) Aurigæ M. (B) M. (C) M.	62 . 47 . 60,79 62 . 47 . 62,46 62 . 47 . 61,36	51,62	- 9,17 - 10,84 - 9,74	5,66
Feb. 4 . 6 . 47 . 31,4	77	(C) M. (A) M.	62 . 53 . 11,10 62 . 53 . 9,45	2,70	- 8,40 - 6,75	5,34
Feb. 4 . 6 . 55 . 18,2	78	(B) M. (C) M. (A) M. 49 Aurigæ	62 . 53 . 19,70 62 . 53 . 14,45 62 . 53 . 9,92 62 . 53 . 14,95	3,08	- 16,62 - 11,37 - 6,84 - 11,87	5,28
Feb. 4 . 7 . 12 . 52,3	79	(B) M. (C) M. (A) M. 49 Aurigæ	62 . 53 . 25,45 62 . 53 . 17,57 62 . 53 . 11,98 62 . 53 . 15,50	3,94	- 21,51 - 13,63 - 8,04 - 11,56	5,16
Feb. 9 . 6 . 17 . 11,9	80	(A) M.	62 . 59 . 31,47	23,35	- 8,12	5,20
Feb. 9 . 6 . 25 . 21,6	81	(C) M. (A) M.	62 . 59 . 37,99 62 . 59 . 32,75	23,82	- 14,17 - 8,93	5,13
Feb. 9 . 6 . 32 . 23,4	82	(C) M. (A) M.	62 . 59 . 35,41 62 . 59 . 30,29	24,21	- 11,20 - 6,08	5,08
Feb. 9 . 6 . 39 . 23,3	83	(C) M. (A) M.	62 . 59 . 36,72 62 . 59 . 46,21	24,60	- 12,12 - 21,61	5,03

## APPARENT N.P.D. OF SMALL STARS, OBSERVED WITH MARS.

(The letter M. denotes that the Comparison is made with the Micrometer only. The R.A. are inferred from the time of passing the middle wire, compared with the time of passage of the Index-error Star: it is probable that the wrong wire has sometimes been noted, and that the  $\mathcal{R}$ . is  $16^s$  in error. The wires mentioned conjecturally in the Notes to the Observations are adopted here.)

Month and Day, 1835.	Number of Series.	Approximate Right Ascension of Small Star.			Star used for Index Error.	Apparent N.P.D. of Small Star.		
		<i>h.</i>	<i>m.</i>	<i>s.</i>		<i>o</i>	<i>'</i>	<i>"</i>
January 5	44	6 . 51 . 47			( <i>u</i> ) M.	63 . 10 . 39,27		
	46	6 . 51 . 48			( <i>u</i> ) M.	63 . 10 . 38,81		
January 6	48	6 . 36 . 49			39 Geminorum	62 . 42 . 13,73		
		6 . 38 . 51			39 Geminorum	62 . 37 . 51,67		
	49	6 . 38 . 52			39 Geminorum	62 . 37 . 55,26		
	50	6 . 38 . 53			39 Geminorum	62 . 37 . 58,38		
January 16	51	6 . 38 . 50			( <i>y</i> ) M.	62 . 37 . 43,36		
January 17	56	*6 . 38 . 51			( <i>z</i> ) M.	62 . 37 . 47,00		
	58	*6 . 37 . 54			( <i>z</i> ) M.	62 . 42 . 17,89		
		*6 . 39 . 48			( <i>z</i> ) M.	62 . 37 . 55,08		
59	*6 . 37 . 57			( <i>z</i> ) M.	62 . 42 . 17,17			
		*6 . 39 . 52			( <i>z</i> ) M.	62 . 37 . 56,82		
January 24	64	*6 . 9 . 43			(43) Aurigæ M.	62 . 33 . 9,14		
	65	*6 . 9 . 41			(43) Aurigæ M.	62 . 33 . 8,29		
		*6 . 10 . 4			(43) Aurigæ M.	62 . 39 . 11,23		
	66	*6 . 9 . 43			(43) Aurigæ M.	62 . 33 . 8,93		
		*6 . 10 . 6			(43) Aurigæ M.	62 . 39 . 11,90		
	70	*6 . 9 . 44			(43) Aurigæ M.	62 . 33 . 8,39		
	71	*6 . 9 . 45			(43) Aurigæ M.	62 . 33 . 9,50		
*6 . 18 . 48				(A) M.	62 . 52 . 25,18			
72	*6 . 9 . 43			(43) Aurigæ M.	62 . 33 . 11,65			
	*6 . 10 . 5			(43) Aurigæ M.	62 . 39 . 17,49			
73	*6 . 9 . 46			(43) Aurigæ M.	62 . 33 . 7,95			
	*6 . 10 . 5			(43) Aurigæ M.	62 . 39 . 15,33			
January 30	74	*6 . 8 . 58			(43) Aurigæ M.	62 . 57 . 17,82		
	75	*6 . 9 . 0			(43) Aurigæ M.	62 . 57 . 20,81		
	77	*6 . 18 . 49			(A) M.	62 . 52 . 24,11		
	78	*6 . 18 . 54			(A) M.	62 . 52 . 26,14		
	79	*6 . 18 . 49			(A) M.	62 . 52 . 26,80		
*6 . 19 . 52				(C) M.	62 . 56 . 59,29			
6 . 23 . 19				49 Aurigæ M.	61 . 54 . 17,72			

It appears doubtful whether the stars  $\mathcal{R}$ .  $6^h. 38^m. 50^s$ . and  $\mathcal{R}$ .  $6^h. 39^m. 50^s$ . are or are not the same star.

\* In the same position of the telescope with Mars.



RIGHT ASCENSIONS  
AND  
NORTH POLAR DISTANCES  
OF  
HALLEY'S COMET  
AND STARS,  
OBSERVED WITH THE EQUATOREAL  
AND THE CLOCK GRAHAM.

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1835 AND 1836.

Day, 1835.	No. of Series.	Object.	Entrance.	I.	II.	III.	IV.	V. Wire.	Departure.	Cor. for Wires omitted.	Cor. for Position of Wires.
			<i>h. m. s.</i>	<i>s.</i>	<i>s.</i>	<i>s.</i>	<i>s.</i>	<i>h. m. s.</i>	<i>h. m. s.</i>	<i>s.</i>	<i>s.</i>
Sept. 2	100	*Comet <i>A</i>				11 45		0.32 0.49			
	101	Comet 2 Geminorum				40		0.51 0.56.46,0		-28,42	
	102	139 Tauri Comet 2 Geminorum			33,0 31,7	47,5 46,9	2,0 1,0	1.3 1.7 1.12		-14,50	
	103	Comet 2 Geminorum			26,0	12,0 41,3	55,0	1.37 1.41			
Sept. 20	104	<i>B</i> †Comet	22.44.10						22.45.26 22.46.21	-78,51 -9,53	
	105	<i>B</i> Comet	22.51.55 22.53.1						22.54.15 22.55.12,5	-9,53 -9,53	
	106	<i>B</i> Comet	22.55.58 22.57.2						22.58.18 22.59.16	-9,53 -9,53	
	107	‡ <i>B</i> Comet	22.59.55 23.1.25						23.2.15 23.3.11,5	-9,53 -9,53	
	108	<i>B</i> Comet	23.4.7 23.5.14,5						23.6.24 23.7.24	-9,53 -9,53	
	113	<i>B</i> Comet	23.48.31 23.49.37						23.50.51 23.51.53,5	-9,53 -9,53	
	114	<i>B</i> Comet	23.55.58 23.57.6						23.58.20 23.59.19,5	-9,53 -9,53	
	115	β Aquarii		48,2	1,1	13,9	27,0	21.55.40,8			
	116	z Aurigæ		31,4	46,0	1,5	16,8	0.4.31,4			
	117	α Andromedæ		32,3	47,0	2,0	16,7	0.17.31,3			
Sept. 25	118	§ <i>E</i> Comet	22.37.54						22.40.17	-9,78	
		<i>F</i>	22.38.33					22.41.1	-9,82		
			22.39.7					22.41.32	-9,78		
	119	<i>E</i> Comet	22.44.52						22.47.14	-9,78	
		<i>F</i>	22.45.37						22.47.59,5	-9,82	
			22.46.5						22.48.30	-9,78	
124	<i>E</i> Comet	23.34.53						23.37.17	-9,78		
	<i>F</i>	23.35.44						23.38.6	-9,82		
		23.36.5						23.38.32	-9,78		

\* The Comet exceedingly faint: would not admit a light near the instrument: power used 46. The first two observations are merely a belief that the Comet was near the center of the field. The microscopes of the hour circle were not read.

† The Comet would not bear illumination. Observations pretty good.

‡ In series 107 the hour circle was not read.

|| The reading of microscope D is inferred from that of C, by applying the difference obtained from other readings in the same part of the circle. This observation has inadvertently been put in the wrong place, according to the order of time.

§ Observations pretty good.



Concluded Transit.	Hour Circle.			Apparent A.R. by Equatorial, uncorrected.	Approximate N.P.D.	Refraction.	Parallax.	A.R. subject to Clock Error and Index Error.
	Pointer.	Microscopes.						
		C	D					
<i>h. m. s.</i>	<i>h. m.</i>	<i>s.</i>	<i>s.</i>	<i>h. m. s.</i>	<i>o. /</i>	<i>s.</i>	<i>s.</i>	<i>h. m. s.</i>
0.32.11 0.49.45	5.19	10,0		5.51.21 6.8.55	64.52 66.52	+5,83 +6,07	-0,25	5.51.26,58 6.9.1,07
0.51.40 0.56.17,58	4.59	55,0		5.51.35 5.56.12,58	64.52 66.21	+5,18 +5,31	-0,24	5.51.39,94 5.56.17,89
1.2.47,50 1.7.9,50 1.11.46,53	4.44	15,0		5.47.2,50 5.51.24,50 5.56.1,53	64.4 64.52 66.21	+4,66 +4,71 +4,81	-0,24	5.47.7,16 5.51.28,97 5.56.6,34
1.37.12 1.41.40,77	4.14	5,0		5.51.17 5.55.45,77	64.50 66.21	+3,95 +4,01	-0,23	5.51.20,72 5.55.49,78
22.44.7,49 22.45.5,97	7.27	8,0		6.11.15,49 6.12.13,97	59.58 59.56		-0,43	6.11.15,49 6.12.13,54
22.52.55,47 22.53.57,22	7.18	20,0		6.11.15,47 6.12.17,22	59.58 59.56		-0,44	6.11.15,47 6.12.16,78
22.56.58,47 22.57.59,47	7.14	8,0		6.11.6,47 6.12.7,47	59.58 59.56		-0,44	6.11.6,47 6.12.7,03
23.0.55,47 23.1.57,47	(7.10)	(8,0)		6.11.3,47 6.12.5,47	59.58 59.55		-0,44	6.11.3,47 6.12.5,03
23.5.5,97 23.6.9,72	7.6	8,0		6.11.13,97 6.12.17,72	59.58 59.55		-0,44	6.11.13,97 6.12.17,28
23.49.31,47 23.50.35,72	6.21	46,5	35,0	6.11.12,22 6.12.16,47	59.58 59.55		-0,46	6.11.12,22 6.12.16,01
23.56.59,47 23.58.3,22	6.14	18,8	7,6	6.11.12,67 6.12.16,42	59.58 59.55		-0,46	6.11.12,67 6.12.15,96
21.55.14,20	23.27	32,7	(25,9)	21.22.43,50	96.18	-0,62		21.22.42,88
0.4.1,42	6.13	45,0	33,8	6.17.40,82	59.25	+7,25		6.17.48,07
0.17.1,86	23.42	44,8	38,0	23.59.43,26	61.50	-0,21		23.59.43,05
22.38.55,72 22.39.37,18 22.40.9,72	7.42	39,8	22,1	6.21.26,67 6.22.8,13 6.22.40,67	57.4 56.58 56.52		-0,54	6.21.26,67 6.22.7,59 6.22.40,67
22.45.53,22 22.46.38,43 22.47.7,72	7.35	37,6	24,0	6.21.24,02 6.22.9,23 6.22.38,52	57.4 56.57 56.52		-0,55	6.21.24,02 6.22.8,68 6.22.38,52
23.35.55,22 23.36.45,18 23.37.8,72	6.45	39,8	23,3	6.21.26,77 6.22.16,73 6.22.40,27	57.4 56.56 56.52		-0,59	6.21.26,77 6.22.16,14 6.22.40,27

Day, 1835.	No. of Series.	Object.	Entrance.	I.	II.	III.	IV.	V. Wire.	Departure.	Cor. for Wires omitted.	Cor. for Position of Wires.
			<i>h. m. s.</i>	<i>s.</i>	<i>s.</i>	<i>s.</i>	<i>s.</i>	<i>h. m. s.</i>	<i>h. m. s.</i>	<i>s.</i>	<i>s.</i>
Sept. 25	125	<i>C</i>							23.42.18	- 80,88	
		<i>D</i>							23.42.33	- 81,11	
		<i>E</i>	23.41.58						23.44.24	- 9,78	
		Comet	23.42.54						23.45.16	- 9,82	
		<i>F</i>	23.43.13					23.45.38	- 9,78		
	126	A. S. C. 808				44,0		23.51			
	127	Comet <i>F</i>							23.58.12 23.58.33	- 81,22 - 80,95	
	128	Capella		2,9	21,6	39,9	58,8	0.8.17,5			
Sept. 27	129	<i>G</i>	22.30.31						22.32.57	- 9,98	
		<i>H</i>	22.30.46						22.33.10	- 9,98	
		<i>I</i>	22.31.9						22.33.35	- 9,98	
<i>J</i>		22.31.33						22.34.2	- 9,98		
*Comet		22.32.13,5						22.34.45	- 9,98		
	131	<i>K</i> Comet	22.58.13 22.58.55							+ 62,63 + 62,79	
	132	$\alpha$ Andromedæ		15,0	29,1	43,5	58,3	23.27.13,0			
Sept. 30	133	<i>L</i>	23.24.13						23.26.39	- 10,44	
		†Comet	23.24.26						23.27.5	- 10,48	
		<i>M</i>							23.27.41	- 86,38	
		<i>N</i>							23.27.56	- 86,38	
		<i>O</i>							23.29.10	- 86,38	
Oct. 2	135	‡Comet	22.2.10			21,0			22.4.51	- 7,29	
	136	Comet		41,0		12,0		23.13.50,0			
	140	Comet 63 Aurigæ		43,5	0,0	43,5 17,0	59,0 34,0	1.8.14,0 1.16.50,9		- 17,52	
	141	Castor		31,0	46,5	2,0	17,7	1.40.33,0			
	142	Pollux		26,0	41,2	55,4	10,5	1.44.25,4			
Oct. 4	144	Comet	23.52.8						23.55.0	- 11,81	
		<i>P</i>	23.52.8						23.55.0	- 11,75	
	145	<i>P</i> Comet	0.18.35 0.18.47			51,0		0.19	0.21.30 0.21.41	- 7,82 - 11,81	
	147	Capella			5,2	22,8	41,1	0.42			

\* The observations tolerable. Clouds collecting on all sides.

† The Comet now visible to the naked eye. The remainder of the night heavily clouded.

‡ In the first of these observations the sky was clouded and no star could be found. It was afterwards clear: the Comet then had the appearance of a

planetary star surrounded by a halo: not more than 1' in diameter, and to the naked eye brighter than  $\theta$  Geminorum.

|| The Moon bright and the Comet clouded: would bear no light near. The seconds of the hour circle not read in series 144: the Star and the Comet appeared to enter together and to depart together.



Concluded Transit.	Hour Circle.			Apparent A.R. by Equatorial, uncorrected.	Approximate N.P.D.	Refraction.	Parallax.	A.R. subject to Clock Error and Index Error.
	Pointer.	Microscopes.						
		C	D					
<i>h. m. s.</i>	<i>h. m.</i>	<i>s.</i>	<i>s.</i>	<i>h. m. s.</i>	<i>o. ' "</i>	<i>s.</i>	<i>s.</i>	<i>h. m. s.</i>
23.40.57,12 23.41.11,89 23.43.1,22 23.43.55,18 23.44.15,72	6.38	33,0	16,3	6.19.21,77 6.19.36,54 6.21.25,87 6.22.19,83 6.22.40,37	57.8 57.3 57.4 56.56 56.52		-0,59	6.19.21,77 6.19.36,54 6.21.25,87 6.22.19,24 6.22.40,37
23.51.44,0	6.29	52,0	35,6	6.21.27,80	57.26	+7,66		6.21.35,46
23.56.50,78 23.57.12,05	6.25	35,5	19,5	6.22.18,28 6.22.39,55	56.56 56.52	+7,39 +7,38	-0,60	6.22.25,07 6.22.46,93
0.7.40,14	4.56	49,0	39,8	5.4.24,54	44.11	+4,71		5.4.29,25
22.31.34,02 22.31.48,02 22.32.12,02 22.32.37,52 22.33.19,27	7.54	22,5	5,9	6.25.48,22 6.26.2,22 6.26.26,22 6.26.51,72 6.27.33,47	55.21   55.18		-0,61	6.25.48,22 6.26.2,22 6.26.26,22 6.26.51,72 6.27.32,86
22.59.15,63 22.59.57,79	7.27	52,0	35,3	6.26.59,28 6.27.41,44	55.17 55.17		-0,64	6.26.59,28 6.27.40,80
23.26.43,78	0.32	65,2	55,5	23.59.44,13	61.50	+0,41		23.59.44,54
23.25.15,56 23.25.35,02 23.26.14,62 23.26.29,62 23.27.43,62	7.13	55,8	39,1	6.39.3,01 6.39.22,47 6.40.2,07 6.40.17,07 6.41.31,07	51.53 51.54  51.54		-0,83	6.39.3,01 6.39.21,64 6.40.2,07 6.40.17,07 6.41.31,07
22.3.20,04	8.47	24,5	7,4	6.50.35,99	48.53	+10,77	-0,79	6.50.45,97
23.13.14,33	7.37	48,3	32,3	6.50.54,63	48.53	+8,54	-0,97	6.51.2,20
1.7.41,31 1.16.17,08	5.43	56,8	43,4	6.51.31,41 7.0.7,18	48.39 50.25	+5,58 +5,61	-1,07	6.51.35,92 7.0.12,79
1.40.2,04	5.43	56,7	43,3	7.23.52,04	57.46	+6,00		7.23.58,04
1.43.55,70	5.50	72,6	58,2	7.35.1,10	61.35	+6,66		7.35.7,76
23.53.22,19 23.53.22,25	7.16			7.9.22,19 7.9.22,25	44.29 44.29		-1,28	7.9.20,91 7.9.22,25
0.19.50,85 0.20.2,19	6.49	27,2	15,5	7.9.12,20 7.9.23,54	44.29 44.30		-1,33	7.9.12,20 7.9.22,21
0.42.23,03	4.22	8,0	0,0	5.4.27,03	44.11	+4,09		5.4.31,12

Day, 1835.	No. of Series.	Object.	Entrance.	I.	II.	III.	IV.	V. Wire.	Departure.	Cor. for Wires omitted.	Cor. for Position of Wires.
			<i>h. m. s.</i>	<i>s.</i>	<i>s.</i>	<i>s.</i>	<i>s.</i>	<i>h. m. s.</i>	<i>h. m. s.</i>	<i>s.</i>	<i>s.</i>
Oct. 5	148	*Comet <i>U</i>	0.45.43			8,0		0.50	0.48.47 0.51.49	-12,44 -51,05	
	149	<i>Q</i> <i>R</i> <i>S</i> Comet				16,0 39,5 46,0		1.4 1.4 1.4	1.13.13,0	-103,01	
	150	<i>R</i> <i>S</i> Comet	1.35.40			48,0 55,0		1.29 1.29 1.37.30,6	1.38.36	-21,47	
	151	<i>T</i> Comet <i>U</i> <i>W</i>	1.43.17 1.44.34			16,0 13,3	33,0	1.48 1.51.53,0	1.46.17 1.47.35 1.49.57	-12,34 -12,47 -50,66	
	152	Castor			35,0	53,8	23,6	38,8	54,0	2.22	
Oct. 7	153	†Comet Piazzì VIII. 15	23.42.54 23.43.6						23.46.32	+91,03 -14,22	
	154	‡Comet Piazzì VIII. 15				30,0 30,0		23.54 23.54			
	155	Piazzì VIII. 15	0.5.10			37,0		0.6	0.8.33	-9,49	
	156	Piazzì VIII. 15 <i>X</i> Comet	1.6.48 1.6.56 1.8.25						1.10.15 1.10.29 1.11.56	-14,22 -14,35 -14,60	
	157	Piazzì VIII. 15 Comet					39,0	1.18	1.19.30 1.20.17	-117,43 -72,10	
	158	<i>X</i>   Comet	1.57.56						1.58.55,0 2.1.27,0	-118,44 -14,62	
	159	Pollux			37,7	48,0	59,0	2.5			
Oct. 8	160	<i>Y</i> §Comet				10,0		22.23	22.23.53 22.25.22	-128,54 -66,46	
	161	<i>Y</i> Comet		1,5	41,0 28,2	5,2 52,0	29,5 19,2	22.33 22.35.45,5			
	162	<i>Y</i> Comet		22,9	41,2 48,2	5,8 12,2	39,0	22.43.55,2 22.46.5,0		-8,29	
	163	Capella			24,2	43,0	1,5	23.38			
	164	β Tauri			6,5	21,4	36,0	23.42			

\* From a defect in the apparatus for moderating the illumination, the Comet could not be observed on the wires till late in the evening. The nucleus well defined with various powers.

† The observations difficult and unsatisfactory. No nucleus visible till near the last series.

‡ The Star and the Comet appeared to coincide exactly. The hour circle was not read.

|| The Comet appeared as a blur, three or four minutes in diameter.

§ The nucleus sharp and well defined, bearing illumination well: appeared like a star of the 7th magnitude, and the observations are as good as could be made on a star.



Concluded Transit.	Hour Circle.			Apparent A.R. by Equatoreal, uncorrected.	Approximate N.P.D.	Refraction.	Parallax.	A.R. subject to Clock Error and Index Error.
	Pointer.	Microscopes.						
		C	D					
<i>h. m. s.</i>	<i>h. m.</i>	<i>s.</i>	<i>s.</i>	<i>h. m. s.</i>	<i>o. ' .</i>	<i>s.</i>	<i>s.</i>	<i>h. m. s.</i>
0.47.25,6 0.50.7,45	6.35	56,0	44,5	7.22.52,81 7.25.57,70	41.48 41.53		-1,60	7.22.51,21 7.25.57,70
1.4.16,00 1.4.39,50 1.4.46,00 1.11.29,99	6.11	46,5	34,2	7.15.56,35 7.16.19,85 7.16.26,35 7.23.10,34	41.37 41.45 41.30 41.45		-1,62	7.15.56,35 7.16.19,85 7.16.26,35 7.23.8,72
1.29.48,00 1.29.55,00 1.36.54,06	5.46	38,6	27,1	7.16.20,85 7.16.27,85 7.23.26,91	41.45 41.30 41.42		-1,62	7.16.20,85 7.16.27,85 7.23.25,29
1.44.34,66 1.45.52,03 1.48.15,84 1.51.13,62	5.37	46,0	36,3	7.22.15,81 7.23.33,18 7.25.56,99 7.28.54,77	41.28 41.41 41.53 41.30		-1,62	7.22.15,81 7.23.31,56 7.25.56,99 7.28.54,77
2.22.38,80	5.1	22,6	12,8	7.23.56,50	57.46	+4,81		7.24.1,31
23.44.25,03 23.44.34,78	8.20	56,7	44,1	8.5.15,43 8.5.25,18	35.22 35.21		-1,82	8.5.13,61 8.5.25,18
23.54.30 23.54.30	(8.10)			8.4.30,00 8.4.30,00	35.21 35.21		-1,88	8.4.28,12 8.4.30,00
0.6.37,18	7.58	52,6	40,2	8.5.23,58	35.21	+7,48		8.5.31,06
1.8.17,28 1.8.28,15 1.9.55,90	6.57	15,3	3,2	8.5.26,53 8.5.37,40 8.7.5,15	35.21 34.56 35.9		-2,18	8.5.26,53 8.5.37,40 8.7.2,97
1.17.32,57 1.18.15,90	6.48	66,1	55,3	8.6.33,27 8.7.16,60	35.21 35.8		-2,20	8.6.33,27 8.7.14,40
1.56.56,56 1.59.26,88	6.8	47,7	36,9	8.5.38,86 8.8.9,18	34.56 35.1		-2,27	8.5.38,86 8.8.6,91
2.5.48,23	5.29	36,0	26,2	7.35.19,33	61.35	+5,88		7.35.25,21
22.21.44,46 22.23.9,54	10.16	58,5	46,6	8.38.37,01 8.40.2,09	31.52 31.49		-1,24	8.38.37,01 8.40.0,85
22.33.5,23 22.34.53,28	10.5	36,4	23,5	8.38.35,18 8.40.23,23	31.52 31.47		-1,30	8.38.35,18 8.40.21,93
22.43.5,78 22.45.13,46	9.55	34,9	22,7	8.38.34,58 8.40.42,26	31.52 31.45		-1,40	8.38.34,58 8.40.40,86
23.37.42,90	5.26	51,4	42,5	5.4.29,85	44.10	+5,27		5.4.35,12
23.42.21,30	5.33	32,2	22,8	5.15.48,80	61.32	+5,97		5.15.54,77

Day, 1835.	No. of Series.	Object.	Entrance.			I.	II.	III.	IV.	V. Wire.			Departure.			Cor. for Wires omitted.	Cor. for Position of Wires.
			<i>h.</i>	<i>m.</i>	<i>s.</i>	<i>s.</i>	<i>s.</i>	<i>s.</i>	<i>s.</i>	<i>s.</i>	<i>h.</i>	<i>m.</i>	<i>s.</i>	<i>h.</i>	<i>m.</i>	<i>s.</i>	<i>s.</i>
Oct. 10	165	Z *Comet				48,5	19,0	34,0 52,5	24,6	19.56 19.59.54,5							
	166	Comet <i>b</i>					18,5	48,5	21,0	21.24 21.29.56,0				-65,95			
	167	<i>a</i> Comet						42,0 13,0		21.33 21.34							
	168	Comet $\alpha$ Ursæ Majoris					9,5	41,0	9,7 25,0	21.43 21.43.53,0				-42,71			
	169	Comet $\alpha$ Ursæ Majoris				19,0	47,5	20,0		21.51 21.51.59,0				+31,02 -42,71			
	170	Comet					51,0	21,0	51,5	22.17							
	171	$\alpha$ Ursæ Majoris Comet				27,0 1,0	54,5 30,5	22,3 1,5	51,0 33,0	22.26.19,0 22.29.3,0							
	172	$\alpha$ Ursæ Majoris Comet				9,7 32,0	37,8 5,0	5,8 36,0	33,9 7,0	22.39.3,0 22.42.37,5							
	173	Comet							16,0	0.55							
	174	<i>c</i> Comet					58,0	24,0 29,0	3,0	4.6 4.8							
Oct. 17	177	†Comet				56,0	10,0	23,8	37,5	19.31.51,5							
	178	Comet <i>e</i>				49,8 29,0	4,0	18,0 57,0	31,0	19.38.44,0 19.39.23,8					-0,92		
	179	Comet <i>e</i>				47,8 24,0	2,0 38,0	16,0	28,5 6,0	19.43.42,0 19.44			+9,00	-0,92			
	180	<i>d</i> Comet <i>e</i>				30,0		3,0 58,0 32,0		19.47 19.48.26,0 19.48					-1,40 +0,39 -0,87		
	181	Comet <i>e</i>					12,0	26,0 59,0	41,0	19.52 19.52					-1,37		
	182	Comet					29,0	43,0	56,5	19.59							
	183	Comet				31,0	45,0	0,0		20.20.26,0				+3,38			
	184	$\alpha$ Lyræ				31,5	48,5	5,4	22,0	20.27.38,6							
Oct. 18	185	†Comet					15,5	28,5	43,0	20.53							

\* The Comet near  $\alpha$  Ursæ Majoris, and about equally bright. The light of the Comet filled 3-4ths of the field, but its nucleus was not more than 40" in diameter. The illuminating apparatus is improved.

† Before these observations, thicker wires had been inserted in the wire-frame, in the same places (as nearly as possible) as those used before. The wires

were not properly adjusted in position. Observations made among clouds: sometimes a brilliant and sharp nucleus visible, but generally the observations are not good.

‡ The observations on the whole are very good: the wires too thick. The sky clear.



Concluded Transit.	Hour Circle.			Apparent A.R. by Equatorial, uncorrected.	Approximate N.P.D.	Refraction.	Parallax.	A.R. subject to Clock Error and Index Error.
	Pointer.	Microscopes.						
		C	D					
<i>h. m. s.</i>	<i>h. m.</i>	<i>s.</i>	<i>s.</i>	<i>h. m. s.</i>	<i>o. /</i>	<i>s.</i>	<i>s.</i>	<i>h. m. s.</i>
19.56.34,0 19.58.51,82	14.47	45,0	32,8	10.44.12,90 10.46.30,72	26.11 26.24	-6,92 -6,91	+2,57	10.44.5,98 10.46.26,38
21.23.49,33 21.28.50,05	13.28	29,0	17,3	10.52.12,48 10.57.13,20	26.21 23.16	-4,31 -4,40	+1,45	10.52.9,62 10.57.8,80
21.33.42,00 21.34.13,00	13.18	43,2	31,8	10.52.19,50 10.52.50,50	26.11 26.21		+1,31	10.52.19,50 10.52.51,81
21.42.40,07 21.42.56,29	13.10	49,0	37,5	10.53.23,32 10.53.39,54	26.21 27.22		+1,17	10.53.24,49 10.53.37,76
21.51.19,85 21.51.2,04	13.2	42,8	31,1	10.53.56,80 10.53.38,99	26.20 27.22		+1,04	10.53.57,84 10.53.38,99
22.17.21,17	12.38	20,0	7,8	10.55.35,07	26.20	-1,96	+0,64	10.55.33,75
22.25.22,76 22.28.1,80	12.28	21,2	8,3	10.53.37,51 10.56.16,55	27.22 26.20		+0,47	10.53.37,51 10.56.17,02
22.38.6,04 22.41.35,50	12.15	37,6	26,3	10.53.37,99 10.57.7,45	27.22 26.19		+0,24	10.53.37,99 10.57.7,69
0.55.16,00	10.10	43,6	28,1	11.5.51,85	26.18	+5,15	-1,81	11.5.55,19
4.6.24,00 4.7.30,00	7.10	52,1	40,8	11.17.10,45 11.18.16,45	25.58 26.19	+8,05 +7,99	-3,77	11.17.18,50 11.18.20,67
19.31.23,76	20.56	9,2	3,2	16.27.29,96	70.44	-2,68	+1,00	16.27.28,28
19.38.17,36 19.38.55,68	20.49	18,0	11,7	16.27.32,21 16.28.10,53	70.46 70.42		+1,03	16.27.33,24 16.28.10,53
19.43.15,26 19.43.50,75	20.44	22,7	16,5	16.27.34,86 16.28.10,35	70.47 70.42		+1,05	16.27.35,91 16.28.10,35
19.47.1,60 19.47.58,39 19.48.31,13	20.39	42,7	36,2	16.26.41,05 16.27.37,84 16.28.10,58	70.39 70.48 70.42		+1,06	16.26.41,05 16.27.38,90 16.28.10,58
19.52.26,33 19.52.57,63	20.35	16,3	10,0	16.27.39,48 16.28.10,78	70.49 70.42		+1,08	16.27.40,56 16.28.10,78
19.59.42,83	20.27	63,6	57,1	16.27.43,18	70.51	-3,22	+1,09	16.27.41,05
20.19.58,88	20.7	57,7	51,3	16.27.53,38	70.55	-3,70	+1,17	16.27.50,85
20.27.5,20	22.4	16,6	12,6	18.31.19,80	51.22	-1,58		18.31.18,22
20.53.29,00	19.44	42,1	35,1	16.38.7,60	75.47	-4,71	+1,09	16.38.3,98

Day, 1835.	No. of Series.	Object.	Entrance.			I.	II.	III.	IV.	V. Wire.			Departure.			Cor. for Wires omitted.		Cor. for Position of Wires.	
			<i>h.</i>	<i>m.</i>	<i>s.</i>	<i>s.</i>	<i>s.</i>	<i>s.</i>	<i>s.</i>	<i>s.</i>	<i>h.</i>	<i>m.</i>	<i>s.</i>	<i>h.</i>	<i>m.</i>	<i>s.</i>	<i>s.</i>	<i>s.</i>	
Oct. 18	186	Comet				10,0	23,0	36,0	20.56										
	187	Comet				42,0	55,5	8,0	22,0	21.15.35,5									
	188	<i>g</i> Comet <i>h</i> <i>i</i>				42,5	31,0 56,5	44,5 10,0 38,0 19,0	58,0 22,5	21.29 21.31.36,0 21.32 21.33								+0,90 -0,54 +0,51 +1,27	
	189	<i>g</i> Comet <i>h</i> <i>i</i>				7,0	54,0 20,5 28,5	7,0 0,5 41,5	47,5 55,0	21.36 21.38.1,5 21.39 21.39				+6,65			+0,95 -0,41 +0,57 +1,22		
	190	<i>g</i> Comet <i>i</i>				44,5 49,0	27,0 58,0 2,0	41,0 10,5 15,8	24,0 29,0	21.44 21.46.37,0 21.48.42,5				+6,65			+0,87 -0,16 +1,22		
	191	<i>g</i> Comet <i>i</i>				2,0	43,5 16,0 18,0	56,5 29,0 31,5	10,0 42,5 45,0	21.52 21.53.56,0 21.55							+0,19 -0,62 +0,51		
	192	Comet <i>i</i>				12,0 9,0	25,0 23,0	40,0 36,0	52,0 49,5	22.11.6,0 22.13.3,0							-0,27 +0,42		
	193	Comet <i>f</i>				8,5 59,0	23,5 12,0	37,0 25,0	50,5 38,0	22.39.4,5 22.40.52,0							-0,10		
	194	$\alpha$ Aquilæ				28,5	40,5	53,5	6,5	22.46.19,5									
	195	$\beta$ Aquilæ				23,0	36,8	49,0	2,0	22.49.15,6									
	196	$\alpha$ Aquilæ					43,0	55,8	9,0	22.52									
	Oct. 19	197	*Comet , Ophiuchi				12,0	39,5	53,0 38,0	7,0	19.25 19.26.4,6								
198		Comet , Ophiuchi					31,8	45,2 29,0	58,8	19.28 19.29									
203		Comet , Ophiuchi				6,5	19,7	33,0 27,0	46,5	19.42.0,5 19.42.40,8						-19,98			
204		Comet , Ophiuchi				15,0	48,5 29,0	2,0 41,0	55,0	19.45.29,0 19.46.8,0						-4,47			
205		Comet , Ophiuchi						0,0 38,0		19.48 19.48							+0,19 +0,35		
207		Comet , Ophiuchi						4,0 41,0		19.52 19.52							+0,28 +0,35		
209		Comet , Ophiuchi						48,0 24,0		19.55 19.56							+0,36 +0,35		
210		Comet , Ophiuchi					24,2	36,8 12,5	50,0 26,4	19.58 19.59.39,0						-13,32			
211		Comet , Ophiuchi					38,5 14,0	52,0 27,0	5,0 39,9	20.2 20.2									

\* The observations pretty good. The nucleus of the Comet had no distinct boundary. After this day's observations, the position of the wires was adjusted.



Concluded Transit.	Hour Circle.			Apparent A.R. by Equatorial, uncorrected.	Approximate N.P.D.	Refraction.	Parallax.	A.R. subject to Clock Error and Index Error.
	Pointer.	Microscopes.						
		C	D					
<i>h. m. s.</i>	<i>h. m.</i>	<i>s.</i>	<i>s.</i>	<i>h. m. s.</i>	<i>o. '.</i>	<i>s.</i>	<i>s.</i>	<i>h. m. s.</i>
20.56.23,00	19.41	49,4	42,3	16.38.8,85	75.48	-4,82	+1,10	16.38.5,13
21.15.8,60	19.23	11,4	4,2	16.38.16,40	75.52	-5,56	+1,13	16.38.11,97
21.29.45,40 21.31.8,96 21.32.38,51 21.33.20,27	19.7	18,1	11,0	16.36.59,95 16.38.23,51 16.39.53,06 16.40.34,82	76.4 75.54 76.2 76.6		+1,16	16.36.59,95 16.38.24,67 16.39.53,06 16.40.34,82
21.36.8,10 21.37.33,71 21.39.1,07 21.39.42,89	19.0	56,2	48,9	16.37.0,65 16.38.26,26 16.39.53,62 16.40.35,44	76.4 75.56 76.2 76.6		+1,17	16.37.0,65 16.38.27,43 16.39.53,62 16.40.35,44
21.44.41,52 21.46.10,64 21.48.16,88	18.52	23,5	15,9	16.37.1,22 16.38.30,34 16.40.36,58	76.4 75.57 76.6		+1,18	16.37.1,22 16.38.31,52 16.40.36,58
21.51.56,86 21.53.28,48 21.55.32,01	18.45	4,7	0,6	16.36.59,51 16.38.31,13 16.40.34,66	76.4 75.58 76.6		+1,18	16.36.59,51 16.38.32,31 16.40.34,66
22.10.38,73 22.12.36,52	18.27	65,6	56,4	16.38.39,73 16.40.37,52	76.2 76.6		+1,19	16.38.40,92 16.40.37,52
22.38.36,80 22.40.25,10	17.55	22,1	12,3	16.32.54,00 16.35.42,30	76.7 76.6		+1,20	16.33.55,20 16.35.42,30
22.45.53,70	20.56	54,5	47,6	19.42.44,75	81.34	-3,14		19.42.41,61
22.48.40,28	20.58	23,9	20,6	19.47.11,53	84.0	-3,27		19.47.8,26
22.51.55,93	20.50	52,3	44,9	19.42.44,53	81.34	-3,27		19.42.41,26
19.24.53,17 19.25.38,20	21.20	32,2	25,7	16.45.22,12 16.46.7,15	79.29 79.33		+0,69	16.45.22,81 16.46.7,15
19.28.45,27 19.29.29,00	21.16	40,8	34,4	16.45.22,87 16.46.6,60	79.29 79.33		+0,71	16.45.23,58 16.46.6,60
19.41.33,24 19.42.13,92	21.3	56,5	49,4	16.45.26,19 16.46.6,87	79.31 79.33		+0,78	16.45.26,97 16.46.6,87
19.45.2,03 19.45.41,60	21.0	29,0	22,1	16.45.27,58 16.46.7,15	79.31 79.33		+0,77	16.45.28,35 16.46.7,15
19.48.0,19 19.48.38,35	20.57	10,0		16.45.10,19 16.45.48,35	79.32 79.33		+0,79	16.45.10,98 16.45.48,35
19.52.4,28 19.52.41,35	20.53	20,0		16.45.24,28 16.46.1,35	79.32 79.33		+0,81	16.45.25,09 16.46.1,35
19.55.48,36 19.56.24,35	20.49	50,0		16.45.38,36 16.46.14,35	79.33 79.33		+0,81	16.45.39,17 16.46.14,35
19.58.37,00 19.59.12,65	20.46	58,4	51,3	16.45.31,85 16.46.7,50	79.34 79.33		+0,82	16.45.32,67 16.46.7,50
20.1.51,83 20.2.26,97	20.43	44,0	36,5	16.45.32,08 16.46.7,22	79.34 79.33		+0,82	16.45.32,90 16.46.7,22

Day, 1835.	No. of Series.	Object.	Entrance.			I.	II.	III.	IV.	V. Wire.			Departure.			Cor. for Wires omitted.	Cor. for Position of Wires.
			<i>h.</i>	<i>m.</i>	<i>s.</i>					<i>h.</i>	<i>m.</i>	<i>s.</i>	<i>h.</i>	<i>m.</i>	<i>s.</i>	<i>h.</i>	<i>m.</i>
Oct. 19	212	Comet , Ophiuchi				47,0	0,0 14,5	26,0			21 . 31 . 40,0 21 . 31				+ 4,30 + 6,55		
	213	Comet , Ophiuchi				4,5		32,0 42,0			21 . 37 . 58,0 21 . 37						
	214	Comet , Ophiuchi						32,0 41,5			21 . 40 21 . 40					+ 1,17 - 1,24	
	215	Comet , Ophiuchi						59,0 8,0			21 . 41 21 . 42					+ 1,17 - 1,24	
	216	Comet , Ophiuchi						57,0 4,0			21 . 42 21 . 43					+ 1,17 - 1,24	
	217	Comet , Ophiuchi						14,0 23,0			21 . 44 21 . 44					+ 1,20 - 1,24	
	218	Comet , Ophiuchi				3,0 11,0		29,0 37,5			21 . 45 . 55,0 21 . 46 . 4,0						
	219	Pollux				43,5	58,0	13,5	28,0		1 . 31 . 43,5						
Oct. 21	220	* $\alpha$ Aquilæ				4,2	17,0	30,3	43,6		18 . 22 . 56,7						
	221	Comet				41,5	54,5	7,6	20,6		19 . 30 . 33,8						
	222	Comet						16,5			19 . 33						
	223	Comet <i>l</i>				49,3	2,4	16,0 51,5	28,8		19 . 39 . 42,5 19 . 42						
	224	Comet <i>n</i>				25,0	38,0	50,9 56,0	4,5		19 . 48 . 17,6 19 . 51						
	225	Comet <i>l</i>				35,5 8,4	21,8	2,0 34,5	48,0		19 . 54 . 27,0 19 . 58 . 0,5						
	226	Comet <i>k</i> <i>l</i>				45,0 56,5	58,2 9,2	11,6 23,0 43,0	24,5 35,3		19 . 59 . 37,5 20 . 1 . 48,0 20 . 2						
	227	Comet <i>l</i>				15,0 45,5	27,9 58,8	41,0 11,6	54,0 25,5		20 . 5 . 6,9 20 . 8 . 37,8						
	228	Comet <i>l</i>				9,9	23,5 53,0	36,6 6,0	49,2 19,0		20 . 12 . 2,0 20 . 15						
	229	Comet $\dagger m$				54,8 17,5	8,2 30,4	21,5	34,5		21 . 39 . 46,0 21 . 42				+ 19,40		
	230	$\alpha$ Aquilæ				43,0	56,0	9,0	22,0		22 . 22 . 35,2						
	231	$\beta$ Aquilæ				25,5	38,5	51,6	4,5		22 . 28 . 18,0						
Oct. 22	232	$\ddagger$ Comet				36,2	49,0	1,6	15,0		19 . 30 . 28,0						

\* The observations generally good.

$\dagger$  From later observations of this star, there is reason to think that the transit here ought to be increased  $1^m$ .

$\ddagger$  The nucleus bright: the Comet visible with the telescope before any stars could be seen with the naked eye. About as bright to the eye as  $\beta$  Aquilæ. The pointer of the hour circle seems to have been disturbed, and to read too much by  $30^s$ .



Concluded Transit.	Hour Circle.			Apparent A.R. by Equatoreal, uncorrected.	Approximate N.P.D.	Refraction.	Parallax.	A.R. subject to Clock Error and Index Error.
	Pointer.	Microscopes.						
		C	D					
<i>h. m. s.</i>	<i>h. m.</i>	<i>s.</i>	<i>s.</i>	<i>h. m. s.</i>	<i>o. /</i>	<i>s.</i>	<i>s.</i>	<i>h. m. s.</i>
21.31.13,30 21.31.26,80	19.14	53,5	44,3	16.46.2,20 16.46.15,70	79.47 79.33	-6,74 -6,71	+1,02	16.45.56,48 16.46.8,99
21.37.31,50 21.37.42,00	19.8	38,5	30,0	16.46.5,75 16.46.16,25	79.47 79.33	-7,12 -7,08	+1,03	16.45.59,66 16.46.9,17
21.40.33,17 21.40.40,26	19.6			16.46.33,17 16.46.40,26	79.48 79.33	-7,25 -7,22	+1,03	16.46.26,95 16.46.33,04
21.42.0,17 21.42.6,76	19.4			16.46.0,17 16.46.6,76	79.48 79.33	-7,46 -7,42	+1,03	16.45.53,74 16.45.59,34
21.42.58,17 21.43.2,76	19.3			16.45.58,17 16.46.2,76	79.48 79.33	-7,46 -7,43	+1,03	16.45.51,74 16.45.55,33
21.44.15,20 21.44.21,76	19.2			16.46.15,20 16.46.21,76	79.49 79.33	-7,53 -7,50	+1,04	16.46.8,71 16.46.14,26
21.45.29,00 21.45.37,50	19.0	43,6	38,8	16.46.10,20 16.46.18,70	79.49 79.33	-7,68 -7,64	+1,04	16.46.3,56 16.46.11,06
1.31.13,30	6.3	55,3	41,9	7.35.1,90	61.35	+7,22		7.35.9,12
18.22.30,36	1.20	11,1	1,8	19.42.36,81	81.34	+1,17		19.42.37,98
19.30.7,60	21.26	27,4	18,6	16.56.30,60	85.25	-2,68	+0,55	16.56.28,47
19.33.16,50	21.23	19,0	10,1	16.56.31,05	85.25	-2,76	+0,56	16.56.28,85
19.39.15,80 19.42.51,50	21.17	21,3	12,2	16.56.32,55 17.0.8,25	85.26 85.21		+0,58	16.56.33,13 17.0.8,25
19.47.51,20 19.51.56,00	21.8	47,6	38,2	16.56.34,10 17.0.38,90	85.27 85.20		+0,60	16.56.34,70 17.0.38,90
19.54.1,50 19.57.34,64	21.2	35,9	24,7	16.56.31,80 17.0.4,94	85.28 85.21		+0,61	16.56.32,41 17.0.4,94
19.59.11,36 20.1.22,40 20.2.43,00	20.57	25,6	20,6	16.56.34,46 16.58.45,50 17.0.6,10	85.29 85.25 85.21		+0,63	16.56.35,09 16.58.45,50 17.0.6,10
20.4.40,96 20.8.11,84	20.51	61,5	46,1	16.56.34,76 17.0.5,64	85.29 85.21		+0,64	16.56.35,40 17.0.5,64
20.11.36,24 20.15.6,00	20.44	67,3	58,0	16.56.38,89 17.0.8,65	85.30 85.21		+0,66	16.56.39,55 17.0.8,65
21.39.21,00 21.42.43,35	19.17	41,5	32,0	16.56.57,75 17.0.20,10	85.39 85.46		+0,84	16.56.58,59 17.0.20,10
22.22.9,04	21.20	38,3	26,6	19.42.41,49	81.34	-2,61		19.42.38,88
22.27.51,62	21.19	20,1	12,0	19.47.7,67	84.0	-2,75		19.47.4,92
19.31.1,96	21.29	31,0	23,6	17.0.29,26	87.42	-2,74	+0,49	17.0.27,01

## RIGHT ASCENSIONS OF HALLEY'S COMET AND STARS,

Day, 1835.	No. of Series.	Object.	Entrance.	I.	II.	III.	IV.	V. Wire.	Departure.	Cor. for Wires omitted.	Cor. for Position of Wires.
			<i>h. m. s.</i>	<i>s.</i>	<i>s.</i>	<i>s.</i>	<i>s.</i>	<i>h. m. s.</i>	<i>h. m. s.</i>	<i>s.</i>	<i>s.</i>
Oct. 22	233	Comet		36,8	50,0	2,0	15,0	19.34.28,8			
	234	Comet		48,4	2,0	15,0	27,2	19.39.40,0			
	235	Comet <i>t</i>		19,0	31,3	44,4	57,0	19.43.10,0			
				37,5	50,4	3,0	16,0	19.50.29,0			
	236	Comet <i>p</i> <i>t</i>		59,0	12,0	25,0	37,5	19.56.50,7			
			23,0	36,5	49,2	2,0	20.0.15,0				
			16,5	29,4	42,0	55,0	20.4.8,0				
237	Comet <i>p</i> <i>t</i>		58,0	11,0	24,2	37,0	20.9.50,4				
			20,8	34,0	45,2	59,0	20.13.12,0				
			13,5	26,3	39,0	52,2	20.17.5,0				
Oct. 23	238	<i>o</i> *Comet <i>q</i>			3,5	18,0	31,5	20.9			
					42,5	55,0	8,0	20.10			
						27,5		20.10			
	239	Comet <i>q</i>			25,5	38,5	51,0	20.13			
						10,5	23,0	20.14		-6,62	
	240	Comet			0,0	12,0	24,8	20.16			
	241	Comet <i>q</i>			57,0	9,0	22,3	20.19			
				29,0	40,0	53,0	20.19				
242	Comet <i>q</i>			17,0	30,0	42,5	20.21				
						14,0	20.22.27,5		-19,65		
243	Regulus		49,6	3,0	16,0	29,5	10.24.43,0				
244	†Regulus		15,0	29,3	42,3	56,0	10.32.9,1				
Oct. 24	245	‡Comet		22,0	35,6	47,0	1,2	19.30.13,1			
	246	<i>r</i> Comet <i>s</i>				24,5		20.45			
						51,5		20.45			
							37,5		20.46		-13,23
	247	Comet <i>u</i>		24,5	38,0	50,5	3,5	20.53.16,5			
					2,5	16,0	29,0	20.56			
	248	Comet <i>u</i>		20,5	33,5	47,0	0,0	20.59.12,0			
				59,0	12,0	24,5	21.2				
249	Comet <i>u</i>		3,5	16,0	29,0	41,8	21.4.55,5				
			27,5	40,5	54,0	6,7	21.8.19,5				
250	Comet <i>u</i>		31,5	44,5	57,4	9,5	21.11.23,0				
			56,0	7,0	20,5	33,0	21.14.46,0				
251	Comet <i>u</i>		46,2	0,0	12,3	25,6	21.30.39,0				
			8,5	20,5	33,0	47,0	21.34.1,0				

\* The Comet blurred: the observations not quite satisfactory.

† After this observation, moved the pointer, so as to make it read about 30° less.

‡ Clouds immediately after the first series: all the others pretty good.



Concluded Transit.	Hour Circle.			Apparent A.R. by Equatorial, uncorrected.	Approximate N.P.D.	Refraction.	Parallax.	A.R. subject to Clock Error and Index Error.
	Pointer.	Microscopes.						
		C	D					
<i>h. m. s.</i>	<i>h. m.</i>	<i>s.</i>	<i>s.</i>	<i>h. m. s.</i>	<i>o. '.</i>	<i>s.</i>	<i>s.</i>	<i>h. m. s.</i>
19.34.25,2	21.26	28,7	23,2	17.0.28,47	87.42	-2,84	+0,50	17.0.26,13
19.39.14,52	21.21	20,8	12,2	17.0.31,02	87.43	-2,97	+0,52	17.0.28,57
19.42.44,34 19.50.3,18	21.17	50,1	42,5	17.0.30,64 17.7.49,48	87.43 87.38		+0,53	17.0.31,17 17.7.49,48
19.56.24,84 19.59.49,14 20.3.42,18	21.4	11,7	4,1	17.0.32,74 17.3.57,04 17.7.50,08	87.44 87.40 87.38		+0,56	17.0.33,30 17.3.57,04 17.7.50,08
20.9.24,12 20.12.46,20 20.16.39,20	20.51	15,3	3,4	17.0.33,47 17.3.55,55 17.7.48,55	87.45 87.40 87.38		+0,60	17.0.34,07 17.3.55,55 17.7.48,55
20.9.17,67 20.9.55,17 20.10.27,50	20.53	57,5	49,7	17.3.11,27 17.3.48,77 17.4.21,10	89.30 89.41 89.27		+0,54	17.3.11,27 17.3.49,31 17.4.21,10
20.13.38,33 20.14.10,13	20.50	15,1	7,4	17.3.49,58 17.4.21,38	89.41 89.27		+0,55	17.3.50,13 17.4.21,38
20.16.12,27	20.47	41,6	34,7	17.3.50,42	89.41		+0,56	17.3.50,98
20.19.9,43 20.19.40,67	20.44	44,4	37,2	17.3.50,23 17.4.21,47	89.42 89.27		+0,57	17.3.50,80 17.4.21,47
20.21.29,83 20.22.1,10	20.42	24,2	17,2	17.3.50,53 17.4.21,80	89.42 89.27		+0,57	17.3.51,10 17.4.21,80
10.24.16,22	23.35	11,3	3,3	9.59.23,52	77.14	-0,33		9.59.23,19
10.31.42,34	23.27	44,9	36,8	9.59.23,19	77.14	-0,43		9.59.22,76
19.29.47,78	21.36	40,6	36,9	17.6.26,53	91.18	-2,86	+0,41	17.6.24,08
20.45.24,50 20.45.51,50 20.46.24,27	20.20	46,2	38,1	17.6.6,65 17.6.33,65 17.7.6,42	91.6 91.23 91.5	-5,66 -5,72 -5,65	+0,57	17.6.0,99 17.6.28,50 17.7.0,77
20.52.50,60 20.56.15,83	20.13	48,8	40,3	17.6.35,15 17.10.0,38	91.23 91.19		+0,58	17.6.35,73 17.10.0,38
20.58.46,60 21.2.11,83	20.7	53,7	44,7	17.6.35,80 17.10.1,03	91.24 91.19		+0,59	17.6.36,39 17.10.1,03
21.4.29,16 21.7.53,64	20.2	12,2	3,3	17.6.36,91 17.10.1,39	91.24 91.19		+0,60	17.6.37,51 17.10.1,39
21.10.57,18 21.14.20,50	19.55	44,7	36,9	17.6.37,98 17.10.1,30	91.24 91.19		+0,61	17.6.38,59 17.10.1,30
21.30.12,62 21.33.34,00	19.36	38,0	24,7	17.6.43,97 17.10.5,35	91.26 91.19		+0,63	17.6.44,60 17.10.5,35

Day, 1835.	No. of Series.	Object.	Entrance.			I.	II.	III.	IV.	V. Wire.			Departure.			Cor. for Wires omitted.	Cor. for Position of Wires.
			<i>h.</i>	<i>m.</i>	<i>s.</i>	<i>s.</i>	<i>s.</i>	<i>s.</i>	<i>s.</i>	<i>h.</i>	<i>m.</i>	<i>s.</i>	<i>h.</i>	<i>m.</i>	<i>s.</i>	<i>s.</i>	<i>s.</i>
Oct. 26	252	*Comet A.S.C. 1998				14,8 29,5	28,0 42,0	40,5 55,4	53,4 8,0	19.50. 7,0 19.57. 21,0							
	253	Comet <i>v</i> A.S.C. 1998				18,5 46,5 32,3	33,0 45,5	13,6 58,0	59,0 11,3	20.16. 12,5 20.16. 39,5 20.23. 24,2							
	254	Comet <i>v</i>				42,0 10,0	55,5	9,0 35,5	22,0	20.27. 35,0 20.28. 0,6							
	255	Comet A.S.C. 1998				57,0 9,0	10,0 22,0	23,0	37,0	20.45. 49,8 20.52					+ 19,42		
	256	$\alpha$ Aquilæ				57,0	9,9	23,0	36,0	18.39. 49,0							
Oct. 27	257	†Comet A.S.C. 1998				10,0 54,2	23,5 7,0	36,5 20,3	50,0 33,0	19.50. 3,0 19.55. 46,3							
	258	Comet A.S.C. 1998				58,5 42,0	12,0 55,4	24,5 8,0	37,0 21,0	19.57. 50,3 20. 3. 34,0							
	259	Comet A.S.C. 1998				21,0 3,3	34,2 16,3	46,3 29,3	59,5 42,1	20. 6. 12,4 20.11. 55,5							
	260	Comet <i>x</i> A.S.C. 1998				25,0 44,3	38,6 57,6 22,0	51,8 11,0 35,0	5,0 24,0 48,2	20.14. 17,5 20.17. 36,3 20.19							
	261	Comet <i>x</i> A.S.C. 1998				58,0 15,0 39,8	11,0 28,5 52,5	24,3 41,5 5,7	37,0 55,0 18,5	20.25. 50,0 20.29. 8,3 20.31. 31,8							
	262	Comet <i>x</i> A.S.C. 1998				43,0 0,5 24,8	56,4 13,9 37,6	8,5 26,4 50,5	22,5 39,0 3,5	20.33. 35,2 20.36. 52,3 20.39. 17,0							
	263	$\alpha$ Aquilæ				5,0	18,8	31,0	44,7	20.54. 57,5							
Oct. 29	264	<i>w</i> ‡Comet				42,3 53,1	56,2 6,7	19,0	22,2 33,0	20. 4. 36,2 20. 4. 44,0							
	265	<i>w</i> Comet				57,0 7,5	10,4 21,2	23,4 34,3	37,5 47,0	20. 8. 50,2 20. 9. 0,0							
	266	<i>w</i> Comet				14,0 24,3	27,1 38,3	41,2 51,0	53,3 3,9	20.12. 6,2 20.12. 17,5							
	267	<i>w</i> Comet				44,0 55,0	57,0 7,6	10,0 21,0	23,2 34,0	20.14. 36,2 20.14. 47,3							
	268	<i>w</i> Comet				12,3 23,0	25,0 36,3	38,3 48,2	50,5 2,3	20.17. 4,4 20.17. 15,6							
	269	<i>w</i> Comet				4,5 15,5	18,0 29,0	31,0 42,5	44,4 55,0	20.20. 57,3 20.21. 7,5							

\* Comet ill defined: clouds floating about: observations difficult.

† Comet very clear; nucleus sharp: observations excellent.

‡ Observations pretty good.



Concluded Transit.	Hour Circle.			Apparent A.R. by Equatorial, uncorrected.	Approximate N.P.D.	Refraction.	Parallax.	A.R. subject to Clock Error and Index Error.
	Pointer.	Microscopes.						
		C	D					
<i>h. m. s.</i>	<i>h. m.</i>	<i>s.</i>	<i>s.</i>	<i>h. m. s.</i>	<i>o. /</i>	<i>s.</i>	<i>s.</i>	<i>h. m. s.</i>
19.49.40,74 19.56.55,18	21.20	47,7	39,6	17.10.24,39 17.17.38,83	94.2 94.55	-3,64 -3,76	+0,39	17.10.21,14 17.17.35,07
20.15.45,75 20.16.13,20 20.22.58,26	20.54	46,3	37,7	17.10.27,75 17.10.55,20 17.17.40,26	94.3 93.53 94.55	-4,60 -4,58 -4,76	+0,44	17.10.23,59 17.10.50,62 17.17.35,50
20.27.8,70 20.27.35,37	20.43	23,9	15,8	17.10.28,55 17.10.55,22	94.4 93.53	-5,16 -5,14	+0,46	17.10.23,85 17.10.50,08
20.45.23,86 20.52.34,92	20.25	11,8	3,5	17.10.31,01 17.17.42,57	94.4 94.55	-6,17 -6,73	+0,54	17.10.25,88 17.17.35,84
18.39.22,98	1.3	10,9	3,6	19.42.30,23	81.34	+0,92		19.42.31,15
19.49.36,60 19.55.20,16	21.22	21,2	14,7	17.11.54,45 17.17.38,11	95.9 94.55	-3,72 -3,68	+0,36	17.11.51,09 17.17.34,43
19.57.24,46 20.3.8,08	21.14	38,2	26,9	17.11.57,01 17.17.40,63	95.9 94.55	-4,01 -3,98	+0,37	17.11.53,37 17.17.36,65
20.5.46,68 20.11.29,30	21.6	12,9	6,3	17.11.56,28 17.17.38,90	95.10 94.55	-4,33 -4,29	+0,39	17.11.52,34 17.17.34,61
20.13.51,58 20.17.10,64 20.19.35,07	20.58	8,3	1,1	17.11.56,28 17.15.15,34 17.17.39,77	95.10 95.10 94.55	-4,68 -4,68 -4,63	+0,40	17.11.52,00 17.15.10,66 17.17.35,14
20.25.24,06 20.28.41,66 20.31.5,66	20.46	37,6	31,0	17.11.58,36 17.15.15,96 17.17.39,96	95.10 95.10 94.55	-5,25 -5,25 -5,19	+0,43	17.11.53,54 17.15.10,71 17.17.34,77
20.33.9,12 20.36.26,42 20.38.50,68	20.38	53,0	46,0	17.11.58,62 17.15.15,92 17.17.40,18	95.11 95.10 94.55	-5,69 -5,69 -5,63	+0,44	17.11.53,37 17.15.10,23 17.17.34,55
20.54.31,40	22.47	58,9	52,6	19.42.27,15	81.34	-1,05		19.42.26,10
20.4.9,22 20.4.19,16	21.9	49,7	43,5	17.13.55,82 17.14.5,76	96.56 97.4		+0,35	17.13.55,82 17.14.6,11
20.8.23,70 20.8.34,00	21.5	39,6	30,0	17.13.58,50 17.14.8,80	96.56 97.4		+0,36	17.13.58,50 17.14.9,16
20.11.40,36 20.11.51,00	21.2	19,5	13,5	17.13.56,86 17.14.7,50	96.56 97.4		+0,36	17.13.56,86 17.14.7,86
20.14.10,08 20.14.20,98	20.59	48,8	42,9	17.13.55,93 17.14.6,83	96.56 97.4		+0,37	17.13.55,93 17.14.7,20
20.16.38,10 20.16.49,08	20.57	21,0	15,2	17.13.56,20 17.14.7,18	96.56 97.4		+0,37	17.13.56,20 17.14.7,55
20.20.31,04 20.20.41,90	20.53	28,7	22,6	17.13.56,69 17.14.7,55	96.56 97.4		+0,37	17.13.56,69 17.14.7,92

Day, 1835.	No. of Series.	Object.	Entrance.	I.	II.	III.	IV.	V. Wire.	Departure.	Cor. for Wires omitted.	Cor. for Position of Wires.
			<i>h. m. s.</i>	<i>s.</i>	<i>s.</i>	<i>s.</i>	<i>s.</i>	<i>h. m. s.</i>	<i>h. m. s.</i>	<i>s.</i>	<i>s.</i>
Oct. 29	270	<i>w</i> Comet		59,5 10,5	13,0 24,2	26,0 36,3	38,8 49,5	20.23.52,0 20.24.3,0			
	271	<i>w</i> Comet		52,4 3,5	17,0	18,4 29,6	43,2	20.26.45,0 20.26.55,8			
	272	<i>w</i> Comet		18,5 29,6		44,5 56,0		20.56.11,0 20.36.21,6			
	273	<i>w</i> Comet		17,5 28,8		43,5 54,8		20.39.9,5 20.39.20,6			
	274	$\alpha$ Aquilæ		51,7	5,0	18,2	31,4	20.49.44,6			
Nov. 1	275	*Comet				4,5		19.37			
	276	Piazzi xvii. 79 Comet		11,3 17,8	24,4 31,2	37,8 44,2	51,0 57,8	20.34.4,4 20.35.10,3			
	277	Piazzi xvii. 79 Comet			2,0	15,5	28,4 35,5	20.43 20.44.47,5		-19,94	
	278	$\alpha$ Aquilæ		58,1	11,4	24,3	37,5	20.52.50,7			
Nov. 4	279	†Comet				46,3		20.24			
	280	Comet			1,0	16,0	30,0	20.31			
Nov. 8	281	‡ <i>v</i> Serpentis Comet		36,1 3,0	49,3 16,0	2,8 29,6	16,5 42,7	20.16.29,8 20.19.56,3			
	282	<i>v</i> Serpentis Comet		57,0 22,8	10,0 36,3	23,5 49,4	36,9 2,6	20.21.50,3 20.25.15,8			
	283	<i>v</i> Serpentis Comet		18,5 45,0	32,0 58,2	45,2 11,4	58,5 25,0	20.28.11,6 20.31.38,3			
	284	<i>v</i> Serpentis Comet		26,2 52,0	39,5 5,3	52,6 18,8	6,0 32,0	20.33.19,0 20.36.45,3			
	285	<i>v</i> Serpentis Comet		32,2 58,3	46,3 12,0	59,0 25,1	12,2 38,4	20.38.25,4 20.41.51,5			
	286	<i>v</i> Serpentis Comet		33,0 57,0	46,1	59,3 24,5	12,7	20.43.26,0 20.46		+13,24	
Nov. 10	287	Comet		18,4	31,5	44,0	57,0	20.47.10,0			

\* Observations interrupted by clouds.

† The Comet seen for a short time only among clouds: the observations only tolerable. The Comet appeared in the second series as a faint mist.

‡ Every circumstance favourable: the observations excellent, except the last, when the object became clouded.

|| A hurried observation taken among clouds.



Concluded Transit.	Hour Circle.			Apparent A.R. by Equatoreal, uncorrected.	Approximate N.P.D.	Refraction.	Parallax.	A.R. subject to Clock Error and Index Error.
	Pointer.	Microscopes.						
		C	D					
<i>h. m. s.</i>	<i>h. m.</i>	<i>s.</i>	<i>s.</i>	<i>h. m. s.</i>	<i>o. /</i>	<i>s.</i>	<i>s.</i>	<i>h. m. s.</i>
20.23.25,86 20.23.36,70	20.50	33,9	28,0	17.13.56,81 17.14.7,65	96.56 97.4		+0,38	17.13.56,81 17.14.8,03
20.26.18,60 20.26.29,84	20.47	41,0	35,4	17.13.56,80 17.14.8,02	96.56 97.4		+0,38	17.13.56,80 17.14.8,40
20.35.44,67 20.35.55,73	20.38	16,4	10,2	17.13.57,97 17.14.9,03	96.56 97.4		+0,39	17.13.57,97 17.14.9,42
20.38.43,50 20.38.54,73	20.35	(13,42)		17.13.56,92 17.14.8,15	96.56 97.4		+0,39	17.13.56,92 17.14.8,54
20.49.18,18	22.53	11,3	5,3	19.42.26,48	81.34	-0,97		19.42.25,51
19.37.4,50	21.38	40,0	34,6	17.15.41,80	99.16	-3,72	+0,26	17.15.38,34
20.33.37,78 20.34.44,26	20.40	64,3	57,7	17.14.38,78 17.15.45,26	99.12 99.17		+0,34	17.14.38,78 17.15.45,60
20.43.15,30 20.44.21,56	20.31	27,4	20,6	17.14.39,30 17.15.45,56	99.12 99.18		+0,35	17.14.39,30 17.15.45,91
20.52.24,40	22.49	60,0	54,4	19.42.21,60	81.34	-1,02		19.42.20,58
20.24.46,30	20.51	21,7	10,8	17.16.2,55	101.1	-6,76	+0,29	17.15.56,08
20.31.15,67	20.44	50,0	43,2	17.16.2,27	101.2	-7,60	+0,30	17.15.54,97
20.16.2,90 20.19.29,52	20.55	15,0	8,8	17.11.14,80 17.14.41,42	102.40 102.51	-7,18 -7,27	+0,25	17.11.7,62 17.14.34,40
20.21.23,54 20.24.49,38	20.49	55,6	49,6	17.11.16,14 17.14.41,98	102.40 102.51	-7,63 -7,73	+0,25	17.11.8,51 17.14.34,50
20.27.45,16 20.31.11,58	20.43	38,4	27,7	17.11.18,21 17.14.44,63	102.40 102.51	-8,24 -8,35	+0,26	17.11.9,97 17.14.36,54
20.32.52,66 20.36.18,68	20.38	27,7	20,6	17.11.16,81 17.14.42,83	102.40 102.51	-8,90 -9,02	+0,26	17.11.7,91 17.14.34,07
20.37.59,02 20.41.25,00	20.33	21,9	15,3	17.11.17,62 17.14.43,66	102.40 102.51	-9,53 -9,68	+0,27	17.11.8,09 17.14.34,25
20.42.59,42 20.46.23,99	20.28	22,0	15,6	17.11.18,22 17.14.42,79	102.40 102.51	-10,22 -10,40	+0,27	17.11.8,00 17.14.32,66
20.46.44,18	20.26	51,2	43,7	17.13.31,63	103.38	-11,27	+0,26	17.13.20,62

Day, 1835.	No. of Series.	Object.	Entrance.			I.	II.	III.	IV.	V. Wire.			Departure.			Cor. for Wires omitted.	Cor. for Position of Wires.
			<i>h.</i>	<i>m.</i>	<i>s.</i>	<i>s.</i>	<i>s.</i>	<i>s.</i>	<i>s.</i>	<i>h.</i>	<i>m.</i>	<i>s.</i>	<i>h.</i>	<i>m.</i>	<i>s.</i>	<i>s.</i>	<i>s.</i>
Nov. 12	288	*Comet				10,0	23,5	36,8	50,0	20.25.3,5							
	289	Comet				42,3	55,8	9,1	22,2	20.30.35,8							
	290	Comet				12,5	26,0	39,3	52,6	20.34.6,2							
Nov. 15	291	†Comet				11,0	25,0	37,5	52,0	20.21.5,0							
	292	Comet				43,8	57,9	11,3	24,3	20.25.38,3							
	293	Comet				37,5	51,4	4,5	18,0	20.30.31,2							
	294	Comet ν Serpentis				25,8	39,3	52,5	6,8	20.33.19,6							
						27,3	41,0	54,0	7,5	20.35.20,8							
	295	Comet ν Serpentis				28,3	42,1	55,3	9,5	20.39.22,8							
						30,3	44,0	57,0	10,2	20.41.24,0							
	296	Comet ν Serpentis				22,8	36,8	50,3	3,5	20.46.17,3							
							38,0	51,3	5,0	20.48							
	297	Comet ν Serpentis				59,5	13,3	26,6	39,5	20.51.53,6							
					1,0	14,1	28,0	41,0	20.53.54,4								
298	η Ophiuchi Comet ν Serpentis				41,3	54,3	8,6	22,0	21.0.35,6								
					12,0	26,5	40,0	53,0	21.9.6,5								
					13,0	27,0	40,4	54,0	21.11.7,0								
299	α Aquilæ				2,3	15,4	28,5	41,5	21.20.54,5								
300	α Aquilæ					49,0	1,5	15,4	21.23								
Nov. 18	301	‡Comet				11,0	25,0	38,5	51,5	20.41.5,5							
	302	η Ophiuchi Comet				9,5	24,0	36,8	50,5	20.47.4,0							
						33,5	47,0	0,4	13,5	20.52.27,5							
	303	η Ophiuchi Comet				48,0	1,0	14,4	28,0	20.55.42,0							
						10,2	24,4	38,0	53,0	21.1.6,0							
	304	η Ophiuchi Comet				57,0	11,0	24,3	37,4	21.4.51,0							
					19,8	34,5	47,4	1,0	21.10.15,0								
305	η Ophiuchi Comet				30,5	43,0	56,2	10,0	21.13.23,5								
					53,0	7,0	20,0	34,0	21.18.48,0								
306	α Aquilæ				24,4	37,2	50,0	3,5	21.24.16,6								

\* Observations made before dark, and interrupted by clouds.

† The two first observations made shortly after sunset, and the Comet too faint. The other observations are pretty good. No illumination used. For

the observations of this day and Nov. 18, the refraction is computed with great accuracy.

‡ Observations not very good: the Comet very faint, and the wind so loud as sometimes to drown the beats of the clock completely.



Concluded Transit.	Hour Circle.			Apparent A.R. by Equatorial, uncorrected.	Approximate N.P.D.	Refraction.	Parallax.	A.R. subject to Clock Error and Index Error.
	Pointer.	Microscopes.						
		C	D					
<i>h. m. s.</i>	<i>h. m.</i>	<i>s.</i>	<i>s.</i>	<i>h. m. s.</i>	<i>o. /</i>	<i>s.</i>	<i>s.</i>	<i>h. m. s.</i>
20.24.36,76	20.47	29,2	21,6	17.12.21,6	104.20	-8,97	+0,23	17.11.53,42
20.30.9,04	20.41	56,5	50,1	17.12.23,4	104.20	-9,61	+0,23	17.11.52,96
20.33.39,32	20.38	27,7	20,1	17.12.32,2	104.20	-10,18	+0,24	17.11.53,28
20.20.38,10	20.48	47,8	40,2	17.9.22,10	105.13	-9,26	+0,21	17.9.13,05
20.25.11,12	20.44	15,1	7,6	17.9.22,47	105.13	-9,84	+0,21	17.9.12,84
20.30.4,52	20.39	22,2	15,1	17.9.23,17	105.13	-10,55	+0,22	17.9.12,84
20.32.52,80 20.34.54,12	20.36	38,7	27,6	17.9.25,95 17.11.27,27	105.13 102.36	-11,02 -8,92	+0,22	17.9.15,15 17.11.18,35
20.38.55,60 20.40.57,10	20.30	36,7	25,6	17.9.26,75 17.11.28,25	105.13 102.36	-12,04 -9,64	+0,23	17.9.14,94 17.11.18,61
20.45.50,14 20.47.51,43	20.23	39,9	32,7	17.9.26,44 17.11.27,73	105.12 102.35	-13,44 -10,60	+0,23	17.9.13,23 17.11.17,13
20.51.26,50 20.53.27,70	20.17	64,0	56,0	17.9.26,50 17.11.27,70	105.12 102.35	-14,80 -11,49	+0,23	17.9.11,93 17.11.16,21
21.0.8,36 21.8.39,60 21.10.40,28	20.0	56,0	48,2	17.1.0,46 17.9.31,70 17.11.32,38	105.22 105.10 102.34	-21,34 -20,77 -15,20	+0,24	17.0.39,12 17.9.11,17 17.11.17,18
21.20.28,44	22.21	63,4	56,5	19.42.28,39	81.34	-1,50		19.42.26,89
21.23.1,97	22.19	31,0	24,6	19.42.29,77	81.34	-1,50		19.42.28,27
20.40.38,30	20.25	48,4	41,0	17.6.23,00	106.4	-14,17	+0,21	17.6.9,04
20.46.36,96 20.52.0,38	20.14	29,8	22,5	17.1.3,11 17.6.26,53	105.24 106.3	-16,17 -17,50	+0,22	17.0.46,94 17.6.9,25
20.55.14,68 21.0.38,32	20.5	55,2	47,5	17.1.6,03 17.6.29,67	105.23 106.2	-19,14 -20,90	+0,23	17.0.46,89 17.6.9,00
21.4.24,14 21.9.47,54	19.56	50,1	42,1	17.1.10,24 17.6.33,64	105.22 106.1	-23,56 -26,02	+0,23	17.0.46,68 17.6.7,85
21.12.56,64 21.18.20,40	19.48	24,0	16,1	17.1.16,69 17.6.40,45	105.20 105.59	-29,25 -32,97	+0,24	17.0.47,44 17.6.7,72
21.23.50,34	22.18	50,0	44,2	19.42.37,44	81.34	-1,51		19.42.35,93

## RIGHT ASCENSIONS OF HALLEY'S COMET AND STARS,

Day, 1836.	No. of Series.	Object.	Entrance.	I.	II.	III.	IV.	V. Wire.	Departure.	Cor. for Wires omitted.	Cor. for Position of Wires.
			<i>h. m. s.</i>	<i>s.</i>	<i>s.</i>	<i>s.</i>	<i>s.</i>	<i>h. m. s.</i>	<i>h. m. s.</i>	<i>s.</i>	<i>s.</i>
Jan. 15	307	*Antares	15. 18. 11,5	42,8	55,0	6,5	18,2	15. 19. 33,0	15. 20. 24,5	- 3,30	
Jan. 16	308	†Comet c <sup>2</sup> Scorpii	13. 50. 50,0 13. 54. 52,0						13. 53. 10,0 13. 57. 11,0	- 11,50 - 11,50	
	309	Comet c <sup>2</sup> Scorpii	14. 3. 29,0 14. 7. 28,0						14. 5. 46,0 14. 9. 44,0	- 11,50 - 11,50	
	310	Comet c <sup>2</sup> Scorpii	14. 14. 14,0 14. 18. 19,0			14,0		14. 19	14. 16. 35,0 14. 20. 34,0	- 11,50 - 7,67	
	311	Antares	15. 21. 39,0	10,5	22,0	33,5	45,3	15. 22. 57,0	15. 23. 51,0	- 3,30	
Jan. 27	312	‡Comet	14. 35. 12,0						14. 37. 40,0	- 11,73	

\* A new system of wires had been inserted in the eye-piece.

† The Comet seen as a very faint mist.  
‡ Faint: clouds prevented further observations.



Concluded Transit.	Hour Circle.			Apparent A.R. by Equatorial, uncorrected.	Approximate N.P.D.	Refraction.	Parallax.	A.R. subject to Clock Error and Index Error.
	Pointer.	Microscopes.						
		C	D					
<i>h. m. s.</i>	<i>h. m.</i>	<i>s.</i>	<i>s.</i>	<i>h. m. s.</i>	<i>o. ' .</i>	<i>s.</i>	<i>s.</i>	<i>h. m. s.</i>
15.19. 6,92	1. 5	47,0	41,4	16.24.51,12	116. 4	+ 3,98		16.24.55,10
13.51.48,50 13.55.50,00	2.11	44,0	42,0	16. 3.31,50 16. 7.33,00	117.31 117.29	+15,87 +15,72	-0,13	16. 3.47,24 16. 7.48,72
14. 4.26,00 14. 8.24,50	1.59	5,0	11,0	16. 3.34,00 16. 7.32,50	117.31 117.29	+12,54 +12,43	-0,12	16. 3.46,42 16. 7.44,93
14.15.13,00 14.19.14,66	1.48	14,8	3,0	16. 3.21,90 16. 7.23,56	117.31 117.29	+10,06 + 9,99	-0,11	16. 3.31,85 16. 7.33,55
15.22.33,60	1. 2	30,3	19,4	16.24.58,45	116. 4	+ 3,78		16.25. 2,23
14.36.14,27	1. 8	20,9	11,4	15.44.30,42	119.28	+ 6,42	-0,07	15.44.36,77

Month and Day, 1835.	No. of Series.	Object observed.	Pointer.	Microscope A	Cor. for Error of Division.	Cor. for Runs.	Microscope B	Cor. for Error of Division.	Cor. for Runs.	Name of Microm.	Microm. Reading.	Correction.	Cor. for Position of Wires.
			o /	/ "	/ "	/ "	/ "	/ "	/ "		/ "	Rev.	/ "
Sept. 2	100	*Comet A	244.50	3.27,9	14,4	-3,4	3.54	92,0	+0,1				
			246.50	3.20,7	15,5	-3,2	2.57,9	94,2	+0,1				
	101	Comet 2 Geminorum	244.50	2.59,0	14,4	-2,8	2.33,5	92,0	+0,1				
			246.20	2.31,8	14,5	-2,5	2.9,2	94,7	+0,1				
102	139 Tauri Comet 2 Geminorum	244.5	1.18,8	14,3	-1,2	0.53,3	87,7	+0,1					
		244.50	4.38,8	14,4	-4,5	4.13,3	92,0	+0,2					
	246.20		2.52,7	14,5	-2,8	2.33,2	94,7	+0,1					
103		Comet 2 Geminorum	244.50	2.3,1	14,4	-2,0	1.40,3	92,0	+0,1				
	246.20		3.5,3	14,5	-3,0	2.47,3	94,7	+0,1					
Sept. 20		109	B M. †Comet	239.55	1.11,0	7,0	-1,2	0.40,0	98,3	+0,1	b	4,456	+2.26,09
	239.55			1.11,0	7,0	-1,2	0.40,0	98,3	+0,1				
	110	B M. Comet	239.55	1.20,7	7,0	-1,3	1.0,0	98,3	+0,1	b	4,500	+2.27,55	
			239.55	1.20,7	7,0	-1,3	1.0,0	98,3	+0,1				
	111	B M. Comet	239.55	1.22,8	7,0	-1,3	0.54,8	98,3	+0,1	b	4,502	+2.27,62	
239.55			1.22,8	7,0	-1,3	0.54,8	98,3	+0,1					
112	B M. Comet	239.55	1.20,2	7,0	-1,3	0.54,7	98,3	+0,1	b	4,500	+2.27,55		
		239.55	1.20,2	7,0	-1,3	0.54,7	98,3	+0,1					
116	z Aurigæ	239.25	1.13,3	6,8	-1,1	0.43,3	97,9	+0,1					
Sept. 25	120	†Comet F M.	236.55	2.37,7	5,4	-2,6	2.11,0	96,5	+0,1	a	11,010	-6.6,25	
			236.55	2.37,7	5,4	-2,6	2.11,0	96,5	+0,1				
	121	Comet F M.	236.55	2.8,9	5,4	-2,1	1.44,7	96,5	+0,1	a	9,350	-5.10,75	
			236.55	2.8,9	5,4	-2,1	1.44,7	96,5	+0,1				
	122	Comet F M.	236.55	2.5,8	5,4	-2,0	1.41,9	96,5	+0,1	a	8,805	-4.52,53	
			236.55	2.5,8	5,4	-2,0	1.41,9	96,5	+0,1				
123	Comet F M.	236.55	2.13,0	5,4	-2,2	1.45,0	96,5	+0,1	a	8,735	-4.50,19		
		236.55	2.13,0	5,4	-2,2	1.45,0	96,5	+0,1					
126	A.S.C. 808	237.25	2.1,7	5,4	-2,0	1.31,2	95,2	+0,1					
127	Comet F M.	236.55	2.27,0	5,4	-2,4	2.4,7	96,5	+0,1	a	8,073	-4.20,06		
		236.55	2.27,0	5,4	-2,4	2.4,7	96,5	+0,1					
Sept. 27	130	G M.   Comet	235.15	2.39,8	4,9	-2,5	2.5,2	95,3	+0,1	b	5,780	+3.10,34	
			235.15	2.39,8	4,9	-2,5	2.5,2	95,3	+0,1				
131	Comet	235.15	2.22,5	4,9	-2,3	1.40,3	95,3	+0,1					

\* The observations of Sept. 2 very doubtful, from the extreme faintness of the Comet. Series 103 is the best.

† The Comet was observed on Sept. 20, by making it pass through the great notch of the comb-plate, as its faintness prevented the use of illumination for the wires. The observations good.

‡ The Comet observed as on Sept. 20.

|| On Sept. 27 the Comet was bisected with the fixed wire. The observation of the star G very unsatisfactory: the instrumental absolute determination of the Comet's place is probably as good as the differential determination.



Concluded N.P.D. by Circle, uncorrected.	Hour Angle East of Meridian.	Refraction in N.P.D.	Parallax in N.P.D.	Corrected N.P.D. by Circle, subject to Index Error.	Time of Observation by Graham.	Corresponding Time by Hardy.
o ' "	h. m.	' "	"	o ' "	h. m. s.	h. m. s.
64.54. 8,20 66.54. 2,60	+5.19	1.27,78 1.34,93	3,72	64.55.32,26 66.55.37,53	0.32.11	0.32.12,2
64.53.38,10 66.23.13,90	+5.0	1.17,04 1.21,41	3,61	64.54.51,53 66.24.35,31	0.51.40	0.51.41,2
64.6.56,50 64.55.17,05 66.23.36,20	+4.44	1.7,70 1.9,60 1.13,45	3,52	64.8.4,20 64.56.23,13 66.24.49,65	1.7.24	1.7.25,2
64.52.43,95 66.23.49,45	+4.14	58,55 1.1,70	3,35	64.53.39,15 66.24.51,15	1.37.12	1.37.13,2
59.59.13,69 59.56.47,60	+6.56	2.42,34 2.41,90	7,37	60.1.56,03 59.59.22,13	*23.16.17	23.15.24,4
59.59.29,95 59.57.2,40	+6.44	2.24,22 2.23,85	7,20	60.1.54,17 59.59.19,05	*23.28.22	23.27.29,4
59.59.28,47 59.57.0,85	+6.31	2.7,83 2.7,53	7,06	60.1.36,30 59.59.1,32	*23.41.27	23.40.34,4
59.59.27,05 59.56.59,50	+6.27	2.3,37 2.3,10	7,00	60.1.30,42 59.58.55,60	*23.45.26	23.44.33,4
59.26.50,15	+6.14	1.47,60		59.28.37,75		
56.58.14,05 56.52.7,80	+7.28	3.8,20 3.7,03	9,68	57.1.12,57 56.55.14,83	*22.54.28	22.54.21,5
56.57.46,75 56.52.36,00	+7.16	2.46,35 2.45,54	9,51	57.0.23,59 56.55.21,54	*23.6.28	23.6.21,5
56.57.43,85 56.52.51,32	+7.8	2.35,06 2.34,34	9,37	57.0.9,54 56.55.25,66	*23.14.48	23.14.41,4
56.57.48,90 56.52.58,71	+6.55	2.16,71 2.16,15	9,14	56.59.56,47 56.55.14,86	*23.27.18	23.27.11,4
57.27.35,80	+6.30	1.52,93		57.29.28,73		
56.58.5,65 56.53.37,59	+6.26	1.46,98 1.46,61	8,64	56.59.43,99 56.55.24,20	23.56.51	23.56.44,4
55.21.21,74 55.18.11,40	+7.44	3.19,90 3.19,25	11,06	55.24.41,64 55.21.19,59	*22.43.43	22.43.35,1
55.17.54,90	+7.28	2.49,86	10,76	55.20.34,00	22.59.58	22.59.50,1

\* The time was not noted, but is inferred from the hour angle. In series 110 the hour angle was not read: it is given by conjecture.

Month and Day, 1835.	No. of Series.	Object observed.	Pointer.	Microscope A	Cor. for Error of Division.	Cor. for Runs.	Microscope B	Cor. for Error of Division.	Cor. for Runs.	Name of Microm.	Microm. Reading.	Correction.	Cor. for Position of Wires.
			o	"	"	"	"	"	Rev.		"		
Sept. 30	133	Comet L M.	231 . 50	4 . 33,6	4,5	- 4,5	4 . 21,9	80,7	+ 0,2	a	0,822	- 25,68	
			231 . 50	4 . 33,6	4,5	- 4,5	4 . 21,9	80,7	+ 0,2				
Oct. 2	134	*Comet	228 . 50	2 . 35,3	5,7	- 2,5	2 . 14,0	83,0	+ 0,1				
	137	Comet	228 . 45	2 . 13,0	5,8	- 2,2	1 . 59,1	82,5	+ 0,1				
	138	Comet	228 . 45	1 . 53,3	5,8	- 1,8	1 . 34,1	82,5	+ 0,1				
	139	64 Aurigæ	228 . 50	0 . 49,7	5,7	- 0,8	0 . 35,7	83,0	0,0				
	140	Comet 63 Aurigæ	228 . 40 230 . 25	0 . 24,2 1 . 55,9	8,4 3,4	- 0,4 - 1,9	0 . 5,0 1 . 36,3	83,3 78,7	+ 0,0 + 0,1				
Oct. 4	143	†Comet P M.	224 . 35 224 . 35	0 . 51,7 0 . 51,7	6,9 6,9	- 0,8 - 0,8	0 . 36,9 0 . 36,9	91,3 91,3	+ 0,0 + 0,0	a	9,070	- 5 . 1,39	
	144	Comet P M.	224 . 30 224 . 30	4 . 44,8 4 . 44,8	6,7 6,7	- 4,7 - 4,7	4 . 20,0 4 . 20,0	92,9 92,9	+ 0,2 + 0,2	a	8,297	- 4 . 35,56	
	145	P M. Comet	224 . 30 224 . 30	1 . 29,2 1 . 29,2	6,7 6,7	- 1,4 - 1,4	1 . 9,3 1 . 9,3	92,9 92,9	+ 0,1 + 0,1	a	2,390	- 1 . 18,09	
	146	P Comet	On same parallel										
Oct. 5	148	†Comet U M.	221 . 50 221 . 50	0 . 8,8 0 . 8,8	9,2 9,2	- 0,1 - 0,1	0 . 0,9 0 . 0,9	82,1 82,1	0,0 0,0	b	8,465	+ 4 . 40,10	
	149	Q M. R Comet	221 . 45 221 . 45 221 . 45	1 . 54,3 1 . 54,3 1 . 32,8	12,1 12,1 12,1	- 1,8 - 1,8 - 1,5	1 . 47,0 1 . 47,0 1 . 25,5	80,4 80,4 80,4	+ 0,1 + 0,1 + 0,1	a	14,933	- 8 . 17,39	
	150	R M. S M. Comet	221 . 35 221 . 35 221 . 40	3 . 47,2 3 . 47,2 4 . 28,2	11,3 11,3 11,2	- 3,7 - 3,7 - 4,4	3 . 36,3 3 . 36,3 4 . 14,5	78,9 78,9 80,9	+ 0,1 + 0,1 + 0,1	b a	15,560 12,832	+ 8 . 37,28 - 7 . 7,16	
	151	Comet T M. U M. W M.	221 . 40 221 . 40 221 . 40 221 . 40	3 . 26,3 3 . 26,3 3 . 26,3 3 . 26,3	11,2 11,2 11,2 11,2	- 3,4 - 3,4 - 3,4 - 3,4	3 . 14,3 3 . 14,3 3 . 14,3 3 . 14,3	80,9 80,9 80,9 80,9	+ 0,1 + 0,1 + 0,1 + 0,1	a b a	24,920 21,275 21,160	- 13 . 51,25 + 11 . 48,32 - 11 . 45,55	
Oct. 7	153	Comet PiazzivIII.15.M.	215 . 20 215 . 20	3 . 48,8 3 . 48,8	15,1 15,1	- 3,7 - 3,7	3 . 32,7 3 . 32,7	90,3 90,3	+ 0,1 + 0,1	a	1,900	- 1 . 1,71	
	154	Comet PiazzivIII. 15	In coinci- dence										
	155	PiazzivIII.15.M Comet	215 . 20 215 . 20	0 . 28,6 0 . 28,6	15,1 15,1	- 0,4 - 0,4	0 . 20,0 0 . 20,0	90,3 90,3	0,0 0,0	b	4,050	+ 2 . 12,52	

\* No star could be found within a considerable distance of the Comet.

† The observations difficult, but not very bad. The micrometer for P in series 145, was not read till the morning following the observations: there is not, however, any reason to think that it had been disturbed.

It seems probable that in series 143 the micrometer was read wrong by two revolutions, or 1'.7'' nearly.

‡ On Oct. 5 the Comet was observed by making it pass through the deep notch of the comb.

|| Comet extremely faint, and observations made with great difficulty.



Concluded N.P.D. by Circle, uncorrected.	Hour Angle East of Meridian.	Refraction in N.P.D.	Parallax in N.P.D.	Corrected N.P.D. by Circle, subject to Index Error.	Time of Observation by Graham.	Corresponding Time by Hardy.
o ' "	h. m.	' "	"	o ' "	h. m. s.	h. m. s.
51.55. 8,20 51.54. 42,52	+ 7.14	2. 6,34 2. 6,34	12,43	51.57. 2,11 51.56. 48,86	23.25.35	23.25.23,5
48.53. 7,80	+ 8.54	4. 5,59	16,98	48.56.56,41	*21.57. 6	21.56.52,3
48.47.49,15	+ 7.22	1.56,52	14,36	48.49.31,31	*23.28.51	23.28.37,2
48.47.27,01	+ 7.18	1.53,19	14,26	48.49. 5,94	*23.32.50	23.32.36,2
48.51.26,65	+ 7.31	2. 5,00		48.53.31,65		
48.41. 0,25 50.27.26,25	+ 5.44	58,32 1. 1,82	11,11	48.41.47,46 50.28.28,07	1. 8.14	1. 8. 0,1
44.36.33,00 44.31.31,61	+ 7.28	1.41,73 1.41,38	16,63	44.37.58,10 44.33.12,99	23.40.37	23.40.15,8
44.35.19,95 44.30.44,39	+ 7.16	1.33,63 1.33,40	16,15	44.36.37,43 44.32.17,79	23.52. 8	23.51.46,8
44.30.50,31 44.32. 8,40	+ 6.49	1.17,90 1.17,93	15,10	44.32. 8,21 44.33.11,23	0.18.47	0.18.25,8
	+ 6.37		14,60	0. 0. 0,00 - 14,60	0.30. 0	0.29.38,8
41.50.50,45 41.55.30,55	+ 6.36	1. 4,92 1. 5,12	15,75	41.51.39,62 41.56.35,67	0.47. 3	0.46.39,2
41.39.18,66 41.47.36,05 41.47.14,70	+ 6.12	54,60 54,83 54,83	14,45	41.40.13,26 41.48.30,88 41.47.55,08	1.10.13	1. 9.49,1
41.48. 2,33 41.32.17,89 41.45. 5,25	+ 5.47	46,22 45,80 46,16	13,16	41.48.48,55 41.33. 3,69 41.45.38,25	1.36.54	1.36.30,1
41.44. 4,70 41.30.13,45 41.55.53,02 41.32.19,15	+ 5.38	43,76 43,29 43,97 43,35	12,75	41.44.35,71 41.30.56,74 41.56.36,99 41.33. 2,50	1.44.34	1.44.10,1
35.24.31,65 35.23.29,94	+ 8.21	1.36,58 1.36,50	23,45	35.25.44,78 35.25. 6,44	23.44.25	23.43.56,2
	+ 8.11		22,85	- 22,85 0. 0. 0,00	23.54.30	23.54. 1,1
35.23.29,32 35.21.16,80	+ 7.59	1.25,80 1.25,68	22,13	35.24.55,12 35.22.20,35	*0. 6.37	0. 6. 8,2

\* The time was not noted, but is inferred from the hour angle.

Month and Day, 1835.	No. of Series.	Object observed.	Pointer.	Microscope A	Cor. for Error of Division.	Cor. for Runs.	Microscope B	Cor. for Error of Division.	Cor. for Runs.	Name of Microm.	Microm. Reading.	Correction.	Cor. for Position of Wires.
			o /	' "	"	"	' "	"	"		Rev.	' "	"
Oct. 7	157	PiazzivIII.15.M X M. Comet	215. 5	4. 47,3	17,1	-4,7	4. 28,2	89,9	+0,2	b	24,260	+13. 28,11	
			215. 5	4. 47,3	17,1	-4,7	4. 28,2	89,9	+0,2	a	21,090	-11. 43,21	
215. 5			4. 47,3	17,1	-4,7	4. 28,2	89,9	+0,2					
	158	X M. Comet	215. 0	3. 40,0	18,0	-3,6	3. 24,9	89,6	+0,1	a	10,010	-5. 32,82	
			215. 0	3. 40,0	18,0	-3,6	3. 24,9	89,6	+0,1				
Oct. 8	160	*Y M. Comet	211. 45	+5. 4,3	17,3	0,0	4. 35,5	88,4	+0,2	b	5,410	+2. 57,98	
			211. 45	+5. 4,3	17,3	0,0	4. 35,5	88,4	+0,2				
	161	†Y Comet M.	211. 50	3. 3,0	17,3	-3,0	2. 47,2	87,0	+0,1				
			211. 50	3. 3,0	17,3	-3,0	2. 47,2	87,0	+0,1	a	9,233	-5. 6,84	
	162	Y Comet M.	211. 50	3. 15,5	17,3	-3,2	2. 58,0	87,0	+0,1				
			211. 50	3. 15,5	17,3	-3,2	2. 58,0	87,0	+0,1	a	12,412	-6. 53,12	
Oct. 10	165	Z M. Comet M.	206. 15	3. 37,1	13,7	-3,6	3. 9,0	85,8	+0,1	a	10,711	-5. 56,25	
			206. 15	3. 37,1	13,7	-3,6	3. 9,0	85,8	+0,1	b	14,030	+7. 46,14	
	166	Comet M. b	206. 15	3. 50,0	13,7	-3,8	3. 23,8	85,8	+0,1				
			203. 15	2. 39,2	17,3	-2,6	2. 17,7	88,6	+0,1	b	8,220	+4. 31,90	
	167	Comet M. a M.	206. 10	2. 25,2	12,1	-2,4	2. 3,7	89,7	+0,1				
			206. 10	2. 25,2	12,1	-2,4	2. 3,7	89,7	+0,1	b	19,875	+11. 1,52	
										a	20,347	-11. 18,38	
	168	Comet M. a Ursæ Majoris	206. 20	3. 7,3	12,9	-3,0	2. 45,9	86,2	+0,1				
			207. 20	2. 57,5	15,4	-2,9	2. 32,1	85,1	+0,1	a	1,197	-38,21	
	169	Comet M. a Ursæ Majoris	206. 20	2. 35,7	12,9	-2,5	2. 19,2	86,2	+0,1				
		207. 20	3. 2,2	15,4	-3,0	2. 38,3	85,1	+0,1	a	0,579	-17,55		
170	Comet M.	206. 20	2. 18,2	12,9	-2,2	1. 53,0	86,2	+0,1					
									a	1,895	-1. 1,54		
171	a Urs. Maj. M. Comet	207. 20	3. 11,5	15,4	-3,1	2. 49,2	85,1	+0,1					
		206. 20	1. 33,8	12,9	-1,5	1. 8,0	86,2	+0,1	a	0,186	-4,41		
172	a Urs. Maj. M. Comet	207. 20	2. 46,9	15,4	-2,7	2. 28,9	85,1	+0,1					
		206. 15	5. 13,1	13,7	-5,2	4. 52,3	85,8	+0,2	b	0,462	+12,57		
173	Comet	206. 15	4. 36,7	13,7	-4,6	4. 33,2	85,8	+0,2					
174	c M. Comet M.	206. 10	2. 39,5	12,1	-2,6	2. 32,7	89,7	+0,1					
		206. 10	2. 39,5	12,1	-2,6	2. 32,7	89,7	+0,1	a	21,898	-12. 10,22		
									b	14,817	+8. 12,44		
Oct. 17	177	§Comet	250. 40	4. 26,0	24,0	-4,3	3. 58,8	90,4	+0,2				
	178	Comet e M.	250. 45	0. 53,5	22,3	-0,8	0. 31,9	90,4	0,0				
			250. 45	0. 53,5	22,3	-0,8	0. 31,9	90,4	0,0	a	9,982	-5. 32,52	+0,18
	180	d M. Comet M. e M.	250. 45	0. 53,5	22,3	-0,8	0. 31,9	90,4	0,0				
			250. 45	0. 53,5	22,3	-0,8	0. 31,9	90,4	0,0	a	15,130	-8. 24,62	+0,29
			250. 45	0. 53,5	22,3	-0,8	0. 31,9	90,4	0,0	b	4,152	+2. 18,60	
			250. 45	0. 53,5	22,3	-0,8	0. 31,9	90,4	0,0	a	9,419	-5. 13,69	+0,15

\* The micrometer was not read till the next morning, but there is no reason to think that it had been touched.

† The microscope-micrometer placed on the next division.

‡ This series beautiful.

|| The name of the micrometer was not noted.

§ The observations hurried, as the sky was occasionally clouded. New wires had been inserted, which were not yet adjusted in position.



Concluded N.P.D. by Circle, uncorrected.	Hour Angle East of Meridian.	Refraction in N.P.D.	Parallax in N.P.D.	Corrected N.P.D. by Circle, subject to Index Error.	Time of Observation by Graham.	Corresponding Time by Hardy.
° ' "	h. m.	' "	"	° ' "	h. m. s.	h. m. s.
35.23.57,11 34.58.45,79 35.10.29,00	+6.49	56,40 55,59 55,99	17,80	35.24.53,51 34.59.41,38 35.11.7,19	1.18.16	1.17.47,0
34.58.51,68 35.4.24,50	+6.9	42,44 42,57	14,98	34.59.34,12 35.4.52,09	1.57.56	1.57.27,0
31.53.40,83 31.50.42,85	+10.12	2.11,10 2.10,80	30,60	31.55.51,93 31.52.23,05	22.22.20	22.21.49,8
31.53.45,80 31.48.38,96	+10.6	2.8,44 2.7,95	30,35	31.55.54,24 31.50.16,56	22.34.52	22.34.21,8
31.53.57,35 31.47.4,23	+9.56	2.4,51 2.3,83	30,02	31.56.1,86 31.48.38,04	22.45.12	22.44.41,8
26.13.14,80 26.26.57,19	-9.12	1.25,21 1.25,90	31,61	26.14.40,01 26.27.51,48	19.58.52	19.58.17,9
26.23.56,70 23.18.20,15	-10.32	1.47,60 1.34,80	36,06	26.25.8,24 23.19.54,95	21.23.48	21.23.13,7
26.24.5,72 26.1.45,82	-10.41	1.49,42 1.47,75	36,39	26.25.18,75 26.3.33,57	21.34.13	21.33.38,7
26.23.6,49 27.23.33,65	-10.50	1.50,92 1.55,93	36,72	26.24.20,69 27.25.29,58	21.42.41	21.42.6,6
26.22.58,25 27.23.39,05	-10.57	1.52,43 1.57,57	36,92	26.24.13,76 27.25.36,62	21.51.20	21.50.45,6
26.21.52,56	-11.22	1.55,58	37,53	26.23.10,61	22.17.21	22.16.46,6
27.23.44,69 26.22.9,75	-11.32	2.1,96 1.56,44	37,70	27.25.46,65 26.23.28,49	22.28.1	22.27.26,6
27.23.39,42 26.20.49,95	-11.45	2.2,72 1.57,14	37,85	27.25.42,14 26.22.9,24	22.41.36	22.41.1,6
26.20.22,50	+10.11	1.42,50	35,53	26.21.29,47	0.55.16	0.54.41,2
26.1.15,53 26.21.38,19	+7.11	46,90 47,47	22,15	26.2.2,43 26.22.3,51	4.7.30	4.6.55,1
70.45.7,55	-3.4	52,24	19,33	70.45.40,46	19.31.23	19.30.37,3
70.46.38,65 70.41.6,31	-3.11	53,69 53,53	19,44	70.47.12,90 70.41.59,84	19.38.18	19.37.32,3
70.38.14,32 70.48.57,25 70.41.25,11	-3.20	55,76 55,99 55,82	19,66	70.38.50,42 70.49.53,24 70.42.20,93	19.47.58	19.47.12,3

Month and Day, 1835.	No. of Series.	Object observed.	Pointer.	Microscope A	Cor. for Error of Division.	Cor. for Runs.	Microscope B	Cor. for Error of Division.	Cor. for Runs.	Name of Microm.	Microm. Reading.	Correction.	Cor. for Position of Wires.
			o	"	"	"	"	"	"		"	Rev.	"
Oct. 17	181	Comet <i>e</i> M.	250.45	3.53,2	22,3	-3,8	3.23,2	90,4	+0,1	<i>a</i>	14,660	-8.10,51	+21,70
			250.45	3.53,2	22,3	-3,8	3.23,2	90,4	+0,1				+21,97
	182	Comet	250.50	0.29,7	23,5	-0,4	0.1,9	95,5	0,0				
	183	Comet	250.50	4.48,2	23,5	-4,7	4.15,7	95,5	+0,2				+21,70
Oct. 18	186	*Comet	255.45	2.32,6	26,2	-2,5	2.17,7	80,7	+0,1				
	187	Comet	255.50	0.48,0	26,0	-0,8	0.30,0	80,8	0,0				
	188	<i>g</i> M. Comet M. <i>h</i> M. <i>i</i> M.	255.55	1.48,0	27,0	-1,8	1.36,3	81,3	+0,1	<i>b</i>	10,153	+5.39,20	-0,12
			255.55	1.48,0	27,0	-1,8	1.36,3	81,3	+0,1	<i>a</i>	6,223	-3.26,85	
			255.55	1.48,0	27,0	-1,8	1.36,3	81,3	+0,1	<i>b</i>	5,760	+3.12,35	
			255.55	1.48,0	27,0	-1,8	1.36,3	81,3	+0,1	<i>b</i>	13,950	+7.46,14	-0,16
	189	<i>g</i> M. Comet M. <i>h</i> M. <i>i</i> M.	255.55	1.48,0	27,0	-1,8	1.36,3	81,3	+0,1	<i>b</i>	10,549	+5.52,44	-0,15
			255.55	1.48,0	27,0	-1,8	1.36,3	81,3	+0,1	<i>a</i>	4,442	-2.27,32	
			255.55	1.48,0	27,0	-1,8	1.36,3	81,3	+0,1	<i>b</i>	6,280	+3.29,73	
			255.55	1.48,0	27,0	-1,8	1.36,3	81,3	+0,1	<i>b</i>	13,560	+7.33,09	-0,16
	190	<i>g</i> M. Comet M. <i>i</i> M.	255.55	1.48,0	27,0	-1,8	1.36,3	81,3	+0,1	<i>b</i>	9,467	+5.16,31	+21,56
			255.55	1.48,0	27,0	-1,8	1.36,3	81,3	+0,1	<i>a</i>	1,836	-1.0,19	
255.55			1.48,0	27,0	-1,8	1.36,3	81,3	+0,1	<i>b</i>	13,520	+7.31,75	-0,16	
191	<i>g</i> M. Comet M. <i>i</i> M.	256.0	1.0,0	26,8	-1,0	0.44,3	82,3	0,0	<i>b</i>	2,200	+1.13,34	+0,10	
		256.0	1.0,0	26,8	-1,0	0.44,3	82,3	0,0	<i>a</i>	6,945	-3.50,99		
		256.0	1.0,0	26,8	-1,0	0.44,3	82,3	0,0	<i>b</i>	5,712	+3.10,75		
192	Comet M. <i>i</i> M.	256.0	1.0,0	26,8	-1,0	0.44,3	82,3	0,0	<i>a</i>	3,000	-1.39,13		
		256.0	1.0,0	26,8	-1,0	0.44,3	82,3	0,0	<i>b</i>	4,695	+2.36,75		
193	Comet <i>f</i> M.	256.0	3.26,9	26,8	-3,4	3.7,5	82,3	+0,1					
		256.0	3.26,9	26,8	-3,4	3.7,5	82,3	+0,1	<i>a</i>	1,162	-37,59		
Oct. 19	199	Comet M. <i>i</i> Ophiuchi M.	259.25	4.62,0	33,3	-4,9	4.50,5	78,1	+0,2	<i>a</i>	2,352	-1.17,45	
			259.25	4.62,0	33,3	-4,9	4.50,5	78,1	+0,2	<i>b</i>	3,940	+2.11,51	
	200	Comet M. <i>i</i> Ophiuchi M.	259.25	4.62,0	33,3	-4,9	4.50,5	78,1	+0,2	<i>a</i>	1,200	-38,95	
			259.25	4.62,0	33,3	-4,9	4.50,5	78,1	+0,2	<i>b</i>	4,000	+2.13,52	
	201	Comet M. <i>i</i> Ophiuchi M.	259.25	4.62,0	33,3	-4,9	4.50,5	78,1	+0,2	<i>a</i>	0,830	-26,58	
			259.25	4.62,0	33,3	-4,9	4.50,5	78,1	+0,2	<i>b</i>	3,830	+2.7,83	
	202	Comet M. <i>i</i> Ophiuchi M.	259.25	4.62,0	33,3	-4,9	4.50,5	78,1	+0,2	<i>a</i>	0,476	-14,74	
			259.25	4.62,0	33,3	-4,9	4.50,5	78,1	+0,2	<i>b</i>	3,930	+2.11,18	
	205	Comet M. <i>i</i> Ophiuchi M.	259.25	4.62,0	33,3	-4,9	4.50,5	78,1	+0,2	<i>b</i>	1,983	+1.6,09	
			259.25	4.62,0	33,3	-4,9	4.50,5	78,1	+0,2	<i>b</i>	3,763	+2.5,59	
206	Comet M. <i>i</i> Ophiuchi M.	259.25	4.62,0	33,3	-4,9	4.50,5	78,1	+0,2	<i>b</i>	2,552	+1.25,11		
		259.25	4.62,0	33,3	-4,9	4.50,5	78,1	+0,2	<i>b</i>	3,701	+2.3,53		
207	Comet M. <i>i</i> Ophiuchi M.	259.25	4.62,0	33,3	-4,9	4.50,5	78,1	+0,2	<i>b</i>	3,100	+1.43,43		
		259.25	4.62,0	33,3	-4,9	4.50,5	73,1	+0,2	<i>b</i>	3,773	+2.5,93		
208	Comet M. <i>i</i> Ophiuchi M.	259.25	4.62,0	33,3	-4,9	4.50,5	78,1	+0,2	<i>b</i>	3,587	+1.59,70		
		259.25	4.62,0	33,3	-4,9	4.50,5	78,1	+0,2	<i>b</i>	3,747	+2.5,05		

\* The observations on the whole are very good. The wires rather too thick.



Concluded N.P.D. by Circle, uncorrected.	Hour Angle East of Meridian.	Refraction in N.P.D.	Parallax in N.P.D.	Corrected N.P.D. by Circle, subject to Index Error.	Time of Observation by Graham.	Corresponding Time by Harly.
° ' "	h. m.	' "	"	° ' "	h. m. s.	h. m. s.
70. 49. 54,40 70. 41. 44,16	- 3. 25	56,98 56,74	19,75	70. 50. 31,63 70. 42. 40,90	19. 53. 10	19. 52. 24,3
70. 51. 15,10	- 3. 32	58,52	19,88	70. 51. 53,74	19. 59. 43	19. 58. 57,3
70. 55. 50,90	- 3. 52	1. 4,55	20,35	70. 56. 35,10	20. 20. 39	20. 19. 53,3
75. 48. 17,40	- 4. 18	1. 28,90	20,00	75. 49. 26,30	20. 56. 23	20. 55. 38,4
75. 51. 32,00	- 4. 37	1. 40,83	20,32	75. 51. 52,51	21. 15. 8	21. 14. 23,4
76. 3. 14,53 75. 54. 8,60 76. 0. 47,80 76. 5. 21,43	- 4. 53	1. 53,76 1. 53,00 1. 53,60 1. 53,92	20,58	76. 5. 8,29 75. 55. 41,02 76. 2. 41,40 76. 7. 15,35	21. 31. 10	21. 30. 25,4
76. 3. 27,74 75. 55. 8,13 76. 1. 5,18 76. 5. 8,38	- 4. 59	1. 59,24 1. 58,53 1. 59,07 1. 59,43	20,68	76. 5. 26,98 75. 56. 45,98 76. 3. 4,25 76. 7. 7,81	21. 37. 34	21. 36. 49,4
76. 3. 13,32 75. 56. 35,26 76. 5. 7,04	- 5. 8	2. 8,65 2. 7,94 2. 8,83	20,84	76. 5. 21,97 75. 58. 22,36 76. 7. 15,87	21. 46. 10,5	21. 45. 25,9
76. 2. 59,54 75. 57. 55,31 76. 4. 56,95	- 5. 15	2. 17,30 2. 16,71 2. 17,50	20,97	76. 5. 16,84 75. 59. 51,05 76. 7. 14,45	21. 53. 29,0	21. 52. 44,5
76. 0. 7,07 76. 4. 22,95	- 5. 31	2. 39,96 2. 40,55	21,25	76. 2. 25,78 76. 7. 3,50	22. 10. 40	22. 9. 55,5
76. 4. 10,10 76. 3. 32,51	- 6. 5	4. 7,58 4. 7,58	21,83	76. 7. 55,85 76. 7. 40,09	22. 38. 37	22. 37. 52,5
79. 29. 32,15 79. 33. 1,11	- 2. 46	1. 5,96 1. 6,12	18,00	79. 30. 20,11 79. 34. 7,23	*19. 32. 22	19. 31. 38,5
79. 30. 10,65 79. 33. 3,12	- 2. 50	1. 7,34 1. 7,46	18,00	79. 30. 59,99 79. 34. 10,58	*19. 36. 22	19. 35. 38,5
79. 30. 23,02 79. 32. 57,43	- 2. 52	1. 7,84 1. 7,94	18,04	79. 31. 12,82 79. 34. 5,37	*19. 38. 22	19. 37. 38,5
79. 30. 34,86 79. 33. 0,78	- 2. 54	1. 8,34 1. 8,42	18,06	79. 31. 25,14 79. 34. 9,20	*19. 40. 16	19. 39. 32,5
79. 31. 55,69 79. 32. 55,19	- 3. 3	1. 10,73 1. 10,78	18,10	79. 32. 48,32 79. 34. 5,97	19. 48. 0	19. 47. 16,5
79. 32. 14,71 79. 32. 53,13	- 3. 5	1. 11,29 1. 11,31	18,11	79. 33. 7,89 79. 34. 4,44	19. 50. 13	19. 49. 29,5
79. 32. 33,03 79. 32. 55,53	- 3. 7	1. 11,83 1. 11,83	18,14	79. 33. 26,72 79. 34. 7,36	19. 52. 4	19. 51. 20,5
79. 32. 49,30 79. 32. 54,65	- 3. 8	1. 12,11 1. 12,11	18,19	79. 33. 43,22 79. 34. 6,76	*19. 53. 19	19. 52. 35,0

\* The time of observation was not noted, but is inferred from the hour angle.

## NORTH POLAR DISTANCES OF HALLEY'S COMET AND STARS,

Month and Day, 1835.	No. of Series.	Object observed.	Pointer.	Microscope A	Cor. for Error of Division.	Cor. for Runs.	Microscope B	Cor. for Error of Division.	Cor. for Runs.	Name of Microm.	Microm. Reading.	Correction.	Cor. for Position of Wires.
			° ' "	" "	" "	" "	" "	" "	Rev.		' "	" "	
Oct. 19	209	Comet M. i Ophiuchi M.	259.25	4.62,0	33,3	-4,9	4.50,5	78,1	+0,2	b	3,942	+2.11,58	
			259.25	4.62,0	33,3	-4,9	4.50,5	78,1	+0,2	b	3,822	+2.7,56	
	214	Comet M. i Ophiuchi M.								b	13,720	+7.38,44	-0,15
										a	14,383	-7.59,65	+0,15
	215	Comet M. i Ophiuchi M.								b	13,802	+7.41,19	-0,15
									a	14,400	-8.0,22	+0,15	
216	Comet M. i Ophiuchi M.								b	13,938	+7.45,74	-0,15	
									a	14,460	-8.2,22	+0,15	
217	Comet M. i Ophiuchi M.								b	14,230	+7.55,50	-0,15	
									a	14,452	-8.1,94	+0,15	
Oct. 21	222	*Comet	265.25	0.24,0	37,1	-0,4	0.23,9	77,0	0,0				
	223	Comet M. l M.	265.25	0.24,0	37,1	-0,4	0.23,9	77,0	0,0	b	1,245	+41,88	
			265.25	0.24,0	37,1	-0,4	0.23,9	77,0	0,0	a	10,742	-5.59,03	
	224	Comet M. n M.	265.25	0.24,0	37,1	-0,4	0.23,9	77,0	0,0	b	2,798	+1.33,80	
			265.25	0.24,0	37,1	-0,4	0.23,9	77,0	0,0	a	12,252	-6.49,51	
	225	Comet M. l M.	265.25	0.24,0	37,1	-0,4	0.23,9	77,0	0,0	b	3,922	+2.11,38	
			265.25	0.24,0	37,1	-0,4	0.23,9	77,0	0,0	a	10,959	-6.6,28	
	226	Comet M. k M. l M.	265.25	0.24,0	37,1	-0,4	0.23,9	77,0	0,0	b	4,713	+2.37,82	
			265.25	0.24,0	37,1	-0,4	0.23,9	77,0	0,0	a	3,935	-2.11,99	
265.25			0.24,0	37,1	-0,4	0.23,9	77,0	0,0	a	10,863	-6.3,06		
227	Comet M. l M.	265.25	0.24,0	37,1	-0,4	0.23,9	77,0	0,0	b	5,862	+3.16,23		
		265.25	0.24,0	37,1	-0,4	0.23,9	77,0	0,0	a	10,984	-6.7,12		
228	Comet M. l M.	265.25	0.24,0	37,1	-0,4	0.23,9	77,0	0,0	b	6,909	+3.51,22		
		265.25	0.24,0	37,1	-0,4	0.23,9	77,0	0,0	a	11,000	-6.7,65		
229	Comet	265.35	2.2,5	38,2	-2,0	2.5,0	78,6	+0,1					
Oct. 22	233	†Comet	267.40	1.35,3	40,4	-1,5	1.41,0	79,3	0,0				
	234	Comet M.	267.40	1.35,3	40,4	-1,5	1.41,0	79,3	0,0	b	0,890	+30,02	
	235	Comet M. t M.	267.40	1.35,3	40,4	-1,5	1.41,0	79,3	0,0	b	1,321	+44,43	
			267.40	1.35,3	40,4	-1,5	1.41,0	79,3	0,0	a	10,431	-5.48,63	
			267.40	1.35,3	40,4	-1,5	1.41,0	79,3	0,0	a	10,492	-5.50,67	
	237	Comet p M. t M.	267.40	4.43,0	40,4	-4,7	4.43,0	79,3	+0,2				
267.40			4.43,0	40,4	-4,7	4.43,0	79,3	+0,2	a	10,925	-6.5,15		
267.40			4.43,0	40,4	-4,7	4.43,0	79,3	+0,2	a	15,930	-8.52,47		

\* Before this observation, the wires were adjusted in position. The observations good.

† The Comet's nucleus bright.



Concluded N.P.D. by Circle, uncorrected.	Hour Angle East of Meridian.	Refraction in N.P.D.	Parallax in N.P.D.	Corrected N.P.D. by Circle, subject to Index Error.	Time of Observation by Graham.	Corresponding Time by Hardy.
° ' "	h. m.	' "	"	° ' "	h. m. s.	h. m. s.
79.33. 1,18 79.32. 57,16	- 3. 10	1. 12,68 1. 12,68	18,19	79.33. 55,67 79.34. 9,84	19. 55. 48	19. 55. 4,5
+ 7. 38,29 - 7. 59,50	- 4. 54	2. 16,82 2. 15,15	19,21	+ 9. 35,90 - 5. 44,35	21. 40. 32	21. 39. 48,5
+ 7. 41,04 - 8. 0,07	- 4. 56	2. 19,34 2. 17,62	19,22	+ 9. 41,16 - 5. 42,45	21. 41. 59	21. 41. 15,5
+ 7. 45,59 - 8. 2,07	- 4. 57	2. 20,49 2. 18,76	19,22	+ 9. 46,86 - 5. 43,31	21. 42. 57	21. 42. 13,5
+ 7. 55,35 - 8. 1,79	- 4. 58	2. 21,69 2. 19,91	19,23	+ 9. 57,81 - 5. 41,88	21. 44. 14	21. 43. 30,5
85.26. 20,80	- 2. 37	1. 19,68	16,11	85.27. 24,37	19. 33. 16,5	19. 32. 32,6
85.27. 2,68 85.20. 21,77	- 2. 43	1. 21,45 1. 21,11	16,12	85.28. 8,01 85.21. 42,88	19. 39. 16,0	19. 38. 32,1
85.27. 54,60 85.19. 31,29	- 2. 51	1. 23,93 1. 23,54	16,14	85.29. 2,59 85.20. 54,83	19. 47. 50,9	19. 47. 6,0
85.28. 32,18 85.20. 14,52	- 2. 58	1. 26,27 1. 25,80	16,16	85.29. 42,29 85.21. 40,32	19. 54. 2,0	19. 53. 18,1
85.28. 58,62 85.24. 8,81 85.20. 17,74	- 3. 3	1. 27,88 1. 27,64 1. 27,40	16,17	85.30. 10,33 85.25. 36,45 85.21. 45,14	19. 59. 11,6	19. 58. 27,7
85.29. 37,03 85.20. 13,68	- 3. 9	1. 30,31 1. 29,77	16,18	85.30. 51,16 85.21. 43,45	20. 4. 41,0	20. 3. 57,1
85.30. 12,02 85.20. 13,15	- 3. 15	1. 32,73 1. 32,10	16,20	85.31. 28,55 85.21. 45,25	20. 11. 36,6	20. 10. 52,7
85.38. 1,20	- 4. 46	2. 53,02	16,48	85.40. 37,74	21. 39. 21,5	21. 38. 37,6
87.42. 37,25	- 2. 34	1. 25,86	15,20	87.43. 47,91	19. 34. 2,0	19. 33. 17,5
87.43. 7,27	- 2. 39	1. 27,40	15,20	87.44. 19,47	19. 39. 15,0	19. 38. 30,5
87.43. 21,68 87.36. 48,62	- 2. 41	1. 28,11 1. 27,78	15,20	87.44. 34,59 87.38. 16,40	19. 43. 10,0	19. 42. 25,5
87.44. 24,38 87.39. 26,43 87.36. 46,58	- 2. 56	1. 33,39 1. 33,09 1. 32,96	15,21	87.45. 42,56 87.40. 59,52 87.38. 19,54	19. 56. 50,7	19. 56. 6,2
87.45. 40,60 87.39. 35,45 87.36. 48,13	- 3. 9	1. 38,74 1. 38,34 1. 38,13	15,22	87.47. 4,12 87.41. 13,79 87.38. 26,26	20. 9. 50,4	20. 9. 5,9

Month and Day, 1835.	No. of Series.	Object observed.	Pointer.	Microscope A	Cor. for Error of Division.	Cor. for Runs.	Microscope B	Cor. for Error of Division.	Cor. for Runs.	Name of Microm.	Microm. Reading.	Correction.	Cor. for Position of Wires.
			'	' "	"	"	' "	"	"		Rev.	' "	"
Oct. 23	238	o M.	269.30	4.25,9	41,4	-4,4	4.20,5	77,2	+0,2	a	11,277	-6.16,92	
		*Comet M.	269.30	4.25,9	41,4	-4,4	4.20,5	77,2	+0,2	b	10,261	+5.43,29	
		q M.	269.30	4.25,9	41,4	-4,4	4.20,5	77,2	+0,2	a	17,043	-9.29,66	
	239	Comet M q M.	269.30	4.25,9	41,4	-4,4	4.20,5	77,2	+0,2	b	10,525	+5.52,10	
			269.30	4.25,9	41,4	-4,4	4.20,5	77,2	+0,2	a	17,271	-9.37,29	
	240	Comet M.	269.30	4.25,9	41,4	-4,4	4.20,5	77,2	+0,2	b	10,820	+6.1,97	
	241	Comet M. q M.	269.30	4.25,9	41,4	-4,4	4.20,5	77,2	+0,2	b	11,019	+6.8,62	
			269.30	4.25,9	41,4	-4,4	4.20,5	77,2	+0,2	a	17,420	-9.42,26	
	242	Comet M. q M.	269.30	4.25,9	41,4	-4,4	4.20,5	77,2	+0,2	b	11,542	+6.26,10	
			269.30	4.25,9	41,4	-4,4	4.20,5	77,2	+0,2	a	17,485	-9.44,43	
Oct. 24	245	†Comet	271.15	2.7,0	41,1	-2,0	2.10,0	77,4	+0,1				
	246	Comet M. r M.	271.10	3.31,3	40,8	-3,5	3.35,1	78,0	+0,1	b	14,172	+7.54,02	
			271.10	3.31,3	40,8	-3,5	3.35,1	78,0	+0,1	a	17,371	-9.40,63	
	247	Comet M. u M.	271.10	3.31,3	40,8	-3,5	3.35,1	78,0	+0,1	b	14,827	+8.15,92	
			271.10	3.31,3	40,8	-3,5	3.35,1	78,0	+0,1	b	7,540	+4.12,32	
	248	Comet M. u M.	271.10	3.31,3	40,8	-3,5	3.35,1	78,0	+0,1	b	15,240	+8.29,74	
			271.10	3.31,3	40,8	-3,5	3.35,1	78,0	+0,1	b	7,150	+3.59,28	
249	Comet M. u M.	271.10	3.31,3	40,8	-3,5	3.35,1	78,0	+0,1	b	15,620	+8.42,44		
		271.10	3.31,3	40,8	-3,5	3.35,1	78,0	+0,1	b	7,025	+3.55,10		
250	Comet M. u M.	271.10	3.31,3	40,8	-3,5	3.35,1	78,0	+0,1	b	16,192	+9.1,55		
		271.10	3.31,3	40,8	-3,5	3.35,1	78,0	+0,1	b	6,752	+3.45,98		
251	Comet M. ‡u M.	271.20	1.28,0	40,0	-1,4	1.27,1	77,8	+0,1	b	3,379	+1.53,22		
		271.20	1.28,0	40,0	-1,4	1.27,1	77,8	+0,1	a	9,920	-5.31,55		
Oct. 26	252	Comet A.S.C. 1998	274.5	0.15,0	38,7	-0,2	0.21,9	81,2	0,0				
			274.55	3.53,1	41,0	-3,8	3.57,5	77,3	+0,2				
	253	Comet M. v M. A.S.C. 1998.M.	274.0	1.35,0	39,6	-1,5	1.36,9	80,2	+0,1	b	8,661	+4.49,80	
			274.0	1.35,0	39,6	-1,5	1.36,9	80,2	+0,1	a	11,874	-6.36,87	
274.55			2.36,1	41,0	-2,5	2.41,5	77,3	+0,1	b	1,853	+1.2,21		
254	Comet M.	273.55	4.5,5	38,9	-4,0	4.12,0	78,9	+0,2	b	13,737	+7.39,49		
255	Comet	274.5	2.29,0	38,7	-2,4	2.31,2	81,2	+0,1					
Oct. 27	257	§Comet M. A.S.C. 1998.M.	275.5	0.15,7	38,2	-0,2	0.20,7	77,0	0,0	b	12,023	+6.42,18	
			275.5	0.15,7	38,2	-0,2	0.20,7	77,0	0,0	a	12,151	-6.46,13	
	258	Comet M. A.S.C. 1998.M.	275.5	0.15,7	38,2	-0,2	0.20,7	77,0	0,0	b	12,513	+6.58,56	
			275.5	0.15,7	38,2	-0,2	0.20,7	77,0	0,0	a	12,320	-6.51,78	

\* The nucleus ill defined, and the observations therefore unsatisfactory.

† Clouded immediately after the first observation: all the others pretty good.

‡ It appears that there is some error in this observation.

|| Comet ill defined: observations taken with difficulty. It seems that the pointer is shifted so as to increase the readings by 5'.

§ Every circumstance favourable: the observations beautiful.



Concluded N.P.D. by Circle, uncorrected.	Hour Angle East of Meridian.	Refraction in N.P.D.	Parallax in N.P.D.	Corrected N.P.D. by Circle, subject to Index Error.	Time of Observation by Graham.	Corresponding Time by Hardy.
° ' "	h. m.	' "	"	° ' "	h. m. s.	h. m. s.
89.29.34,8 89.41.3,69 89.25.50,74	-3.6	1.44,40 1.45,12 1.44,18	14,32	89.30.47,88 89.42.34,49 89.27.34,92	20.10.21,0	20.9.37,7
89.41.12,50 89.25.43,11	-3.10	1.47,13 1.46,10	14,32	89.42.45,31 89.27.29,21	20.14.4,0	20.13.20,7
89.41.22,37	-3.12	1.48,20	14,31	89.42.56,26	20.16.37,8	20.15.54,5
89.41.29,02 89.25.38,14	-3.15	1.49,75 1.48,65	14,31	89.43.4,46 89.27.26,79	20.19.35,0	20.18.51,7
89.41.46,50 89.25.35,97	-3.18	1.51,40 1.50,28	14,31	89.43.23,59 89.27.26,25	20.21.55,5	20.21.12,2
91.18.6,80	-2.23	1.35,57	13,53	91.19.28,84	19.30.13,1	19.29.30,1
91.22.24,92 91.4.50,27	-3.40	2.16,27 2.14,52	13,45	91.24.27,74 91.7.4,79	20.46.18,0	20.45.35,0
91.22.46,82 91.18.43,22	-3.46	2.22,65 2.22,20	13,43	91.24.56,02 91.21.5,42	20.53.16,5	20.52.33,5
91.23.0,64 91.18.30,18	-3.52	2.29,14 2.28,63	13,43	91.25.16,35 91.20.58,81	20.59.12,0	20.58.29,0
91.23.13,34 91.18.26,00	-3.58	2.35,80 2.35,20	13,42	91.25.35,72 91.21.1,20	21.4.55,5	21.4.12,5
91.23.32,45 91.18.16,88	-4.4	2.43,72 2.42,95	13,40	91.26.2,77 91.20.59,83	21.11.23,0	21.10.40,0
91.24.19,02 91.16.54,25	-4.23	3.15,56 3.14,30	13,38	91.27.21,20 91.20.8,55	21.30.39,0	21.29.56,0
94.6.18,30 94.59.52,65	-2.40	1.53,50 1.57,92	12,11	94.7.59,69 95.1.50,57	19.50.7,0	19.49.22,6
94.7.24,95 93.55.58,28 94.59.38,96	-3.5	2.7,23 2.6,16 2.12,47	12,05	94.9.20,13 93.58.4,44 95.1.51,43	20.16.12,5	20.15.28,1
94.7.45,24	-3.17	2.15,83	12,01	94.9.49,06	20.27.35,0	20.26.50,6
94.8.28,90	-3.35	2.32,20	11,98	94.10.49,12	20.45.49,8	20.45.5,4
95.12.57,88 94.59.29,57	-2.38	1.58,17 1.56,95	11,49	95.14.44,56 95.1.26,52	19.50.3,0	19.49.18,6
95.13.14,26 94.59.23,92	-2.46	2.2,43 2.1,06	11,47	95.15.5,22 95.1.24,98	19.57.50,3	19.57.5,9

## NORTH POLAR DISTANCES OF HALLEY'S COMET AND STARS,

Month and Day, 1835.	No. of Serics.	Object observed.	Pointer.	Microscope A	Cor. for Error of Division.	Cor. for Runs.	Microscope B	Cor. for Error of Division.	Cor. for Runs.	Name of Microm.	Microm. Reading.	Correction.	Cor. for Position of Wires.	
			o	"	"	"	"	"	"		Rev.	"	"	
Oct. 27	259	Comet M. A.S.C. 1998. M.	275 . 5	0 . 15,7	38,2	- 0,2	0 . 20,7	77,0	0,0	b	13,043	+ 7 . 16,28		
			275 . 5	0 . 15,7	38,2	- 0,2	0 . 20,7	77,0	0,0	a	12,368	- 6 . 53,39		
	260	Comet M. x M. A.S.C. 1998. M.	275 . 5	0 . 15,7	38,2	- 0,2	0 . 20,7	77,0	0,0	b	13,672	+ 7 . 37,31		
			275 . 5	0 . 15,7	38,2	- 0,2	0 . 20,7	77,0	0,0	b	12,141	+ 6 . 46,13		
			275 . 5	0 . 15,7	38,2	- 0,2	0 . 20,7	77,0	0,0	a	12,551	- 6 . 59,50		
Oct. 27	261	Comet M. x M. A.S.C. 1998. M.	275 . 5	0 . 15,7	38,2	- 0,2	0 . 20,7	77,0	0,0	b	14,142	+ 7 . 53,02		
			275 . 5	0 . 15,7	38,2	- 0,2	0 . 20,7	77,0	0,0	b	12,009	+ 6 . 41,71		
				275 . 5	0 . 15,7	38,2	- 0,2	0 . 20,7	77,0	0,0	a	12,760	- 7 . 6,49	
	262	Comet M. x M. A.S.C. 1998. M.	275 . 5	0 . 15,7	38,2	- 0,2	0 . 20,7	77,0	0,0	b	14,840	+ 8 . 16,35		
275 . 5			0 . 15,7	38,2	- 0,2	0 . 20,7	77,0	0,0	b	11,910	+ 6 . 38,41			
			275 . 5	0 . 15,7	38,2	- 0,2	0 . 20,7	77,0	0,0	a	13,036	- 7 . 15,68		
Oct. 29	264	*v M. Comet M.	277 . 0	2 . 51,0	40,9	- 2,8	2 . 53,7	79,4	+ 0,1	a	8,077	- 4 . 29,94		
			277 . 0	2 . 51,0	40,9	- 2,8	2 . 53,7	79,4	+ 0,1	b	5,631	+ 3 . 8,51		
	265	v M. Comet M.	277 . 0	2 . 51,0	40,9	- 2,8	2 . 53,7	79,4	+ 0,1	a	8,083	- 4 . 30,13		
			277 . 0	2 . 51,0	40,9	- 2,8	2 . 53,7	79,4	+ 0,1	b	5,767	+ 3 . 13,06		
	266	v M. Comet M.	277 . 0	2 . 51,0	40,9	- 2,8	2 . 53,7	79,4	+ 0,1	a	8,112	- 4 . 31,10		
			277 . 0	2 . 51,0	40,9	- 2,8	2 . 53,7	79,4	+ 0,1	b	5,869	+ 3 . 16,46		
	267	v M. Comet M.	277 . 0	2 . 51,0	40,9	- 2,8	2 . 53,7	79,4	+ 0,1	a	8,127	- 4 . 31,61		
			277 . 0	2 . 51,0	40,9	- 2,8	2 . 53,7	79,4	+ 0,1	b	6,040	+ 3 . 22,18		
	268	v M. Comet M.	277 . 0	2 . 51,0	40,9	- 2,8	2 . 53,7	79,4	+ 0,1	a	8,277	- 4 . 36,63		
			277 . 0	2 . 51,0	40,9	- 2,8	2 . 53,7	79,4	+ 0,1	b	6,177	+ 3 . 26,75		
	269	v M. Comet M.	277 . 0	2 . 51,0	40,9	- 2,8	2 . 53,7	79,4	+ 0,1	a	8,310	- 4 . 37,73		
277 . 0			2 . 51,0	40,9	- 2,8	2 . 53,7	79,4	+ 0,1	b	6,280	+ 3 . 30,20			
270	v M. Comet M.	277 . 0	2 . 51,0	40,9	- 2,8	2 . 53,7	79,4	+ 0,1	a	8,550	- 4 . 45,75			
		277 . 0	2 . 51,0	40,9	- 2,8	2 . 53,7	79,4	+ 0,1	b	6,412	+ 3 . 34,61			
271	v M. Comet M.	277 . 0	2 . 51,0	40,9	- 2,8	2 . 53,7	79,4	+ 0,1	a	8,490	- 4 . 43,74			
		277 . 0	2 . 51,0	40,9	- 2,8	2 . 53,7	79,4	+ 0,1	b	6,540	+ 3 . 38,90			
272	v M. Comet M.	277 . 0	2 . 51,0	40,9	- 2,8	2 . 53,7	79,4	+ 0,1	a	8,872	- 4 . 56,51			
		277 . 0	2 . 51,0	40,9	- 2,8	2 . 53,7	79,4	+ 0,1	b	6,743	+ 3 . 45,67			
273	v M. Comet M.	277 . 0	2 . 51,0	40,9	- 2,8	2 . 53,7	79,4	+ 0,1	a	9,045	- 5 . 2,30			
		277 . 0	2 . 51,0	40,9	- 2,8	2 . 53,7	79,4	+ 0,1	b	6,780	+ 3 . 46,91			
Nov. 1	275	†Comet	279 . 15	3 . 43,2	39,6	- 3,6	3 . 43,8	78,6	+ 0,1					
	276	Piazzixvii.79.M Comet M.	279 . 15	1 . 55,9	39,6	- 1,8	1 . 56,8	78,6	+ 0,1	a	7,067	- 3 . 56,18		
			279 . 15	1 . 55,9	39,6	- 1,8	1 . 56,8	78,6	+ 0,1	b	4,462	+ 2 . 29,43		
277	Comet M.	279 . 15	1 . 55,9	39,6	- 1,8	1 . 56,8	78,6	+ 0,1	b	4,300	+ 2 . 24,02			
Nov. 4	279	‡Comet	281 . 0	2 . 48,0	41,7	- 2,7	2 . 49,0	83,7	+ 0,1					

\* Observations pretty good.

† Generally cloudy: series 276 is pretty good.

‡ The sky heavily clouded, but this observation is pretty good.



Concluded N.P.D. by Circle, uncorrected.	Hour Angle East of Meridian.	Refraction in N.P.D.	Parallax in N.P.D.	Corrected N.P.D. by Circle, subject to Index Error.	Time of Observation by Graham.	Corresponding Time by Hardy.
° ' "	h. m.	' "	"	° ' "	h. m. s.	h. m. s.
95.13.31,98 94.59.22,31	-2.54	2.6,94 2.5,46	11,46	95.15.27,46 95.1.27,77	20.6.12,4	20.5.28,0
95.13.53,01 95.13.1,83 94.59.16,20	-3.2	2.12,04 2.11,91 2.10,47	11,43	95.15.53,62 95.15.13,74 95.1.26,67	20.14.17,5	20.13'.33,1
95.14.8,72 95.12.57,41 94.59.9,21	-3.14	2.20,96 2.20,83 2.19,09	11,40	95.16.18,28 95.15.18,24 95.1.28,30	20.25.50,0	20.25.5,6
95.14.32,05 95.12.54,11 94.59.0,02	-3.22	2.27,98 2.27,83 2.25,95	11,37	95.16.48,66 95.15.21,94 95.1.25,97	20.33.35,2	20.32.50,8
96.59.21,21 97.6.59,66	-2.51	2.16,20 2.16,94	10,38	97.1.37,41 97.9.6,22	20.4.46,0	20.3.58,0
96.59.21,02 97.7.4,21	-2.55	2.18,87 2.19,70	10,37	97.1.39,89 97.9.13,54	20.9.0,0	20.8.12,0
96.59.20,05 97.7.7,61	-2.58	2.21,10 2.21,91	10,35	97.1.41,15 97.9.19,17	20.12.17,5	20.11.29,5
96.59.19,54 97.7.13,33	-3.0	2.22,64 2.23,54	10,34	97.1.42,18 97.9.26,53	20.14.47,3	20.13.59,3
96.59.14,52 97.7.17,90	-3.3	2.24,95 2.25,85	10,33	97.1.39,47 97.9.33,42	20.17.15,6	20.16.27,5
96.59.13,42 97.7.21,35	-3.7	2.28,26 2.29,18	10,32	97.1.41,68 97.9.40,21	20.21.7,5	20.20.19,4
96.59.5,40 97.7.25,76	-3.10	2.30,74 2.31,67	10,31	97.1.36,14 97.9.47,12	20.24.3,0	20.23.14,9
96.59.7,41 97.7.30,05	-3.13	2.33,43 2.34,39	10,30	97.1.40,84 97.9.54,14	20.26.55,8	20.26.7,7
96.58.54,64 97.7.36,82	-3.22	2.42,63 2.43,70	10,28	97.1.37,27 97.10.10,24	20.36.21,6	20.35.33,5
96.58.48,85 97.7.38,06	-3.25	2.46,05 2.47,15	10,27	97.1.34,90 97.10.14,94	20.39.20,6	20.38.32,5
99.19.40,85	-2.21	2.13,85	9,17	99.21.45,53	19.37.4,5	19.36.16,1
99.13.58,42 99.20.24,03	-3.19	3.2,10 3.3,20	8,97	99.17.0,52 99.23.18,26	20.35.10,3	20.34.21,9
99.20.18,62	-3.29	3.18,15	8,94	99.23.27,83	20.44.47,5	20.43.59,1
101.3.49,90	-3.9	3.9,41	8,00	101.6.51,31	20.24.46,3	20.24.53,6

Month and Day, 1835.	No. of Series.	Object observed.	Pointer.	Microscope A	Cor. for Error of Division.	Cor. for Runs.	Microscope B	Cor. for Error of Division.	Cor. for Runs.	Name of Microm.	Microm. Reading.	Correction.	Cor. for Position of Wires.
			" "	" "	" "	" "	" "	" "	Rev.		" "		
Nov. 8	281	* $\nu$ Serpente M. Comet M.	282.45	4. 8,3	45,1	-4,0	4. 4,6	78,4	+0,2	a	14,046	-7.49,48	
			282.45	4. 8,3	45,1	-4,0	4. 4,6	78,4	+0,2	b	5,893	+3.17,27	
	282	$\nu$ Serpente M. Comet M.	282.45	4. 8,3	45,1	-4,0	4. 4,6	78,4	+0,2	a	14,070	-7.50,29	
			282.45	4. 8,3	45,1	-4,0	4. 4,6	78,4	+0,2	b	5,842	+3.15,56	
	283	$\nu$ Serpente M. Comet M.	282.45	4. 8,3	45,1	-4,0	4. 4,6	78,4	+0,2	a	14,622	-8. 8,74	
282.45			4. 8,3	45,1	-4,0	4. 4,6	78,4	+0,2	b	5,738	+3.12,09		
284	$\nu$ Serpente M. Comet M.	282.45	4. 8,3	45,1	-4,0	4. 4,6	78,4	+0,2	a	14,920	-8.18,70		
		282.45	4. 8,3	45,1	-4,0	4. 4,6	78,4	+0,2	b	5,512	+3. 4,53		
285	$\nu$ Serpente M. Comet M.	282.45	4. 8,3	45,1	-4,0	4. 4,6	78,4	+0,2	a	15,213	-8.28,48		
		282.45	4. 8,3	45,1	-4,0	4. 4,6	78,4	+0,2	b	5,418	+3. 1,39		
Nov. 10	287	†Comet M.	283.35	0.26,1	44,3	-0,4	0.28,1	80,1	0,0	b	4,300	+2.24,02	
Nov. 12	288	‡Comet M.	284.15	4. 6,8	44,9	-4,0	4. 9,6	80,7	+0,2	b	3,092	+1.43,63	
	289	Comet M.	284.15	4. 6,8	44,9	-4,0	4. 9,6	80,7	+0,2	b	2,909	+1.37,51	
	290	Comet M.	284.15	4. 6,8	44,9	-4,0	4. 9,6	80,7	+0,2	b	2,918	+1.37,82	
Nov. 15	291	Comet M.	285.15	0.13,8	46,1	-0,2	0.21,7	81,6	0,0	b	4,823	+2.41,49	
	292	Comet M.	285.15	0.13,8	46,1	-0,2	0.21,7	81,6	0,0	b	4,830	+2.41,73	
	293	Comet M.	285.15	0.27,8	46,1	-0,4	0.21,9	81,6	0,0	b	4,500	+2.30,70	
	294	Comet M. $\nu$ Serpente M.	285.15	0.27,8	46,1	-0,4	0.21,9	81,6	0,0	b	4,329	+2.24,98	
			282.35	2.17,2	43,4	-2,2	2.18,1	81,7	+0,1	b	5,938	+3.18,78	
	295	Comet M. $\nu$ Serpente M.	285.15	1.11,1	46,1	-1,1	1.10,7	81,6	+0,1	b	2,572	+1.25,24	
			282.35	2.46,3	43,4	-2,6	2.48,0	81,7	+0,1	b	4,742	+2.38,79	
	296	Comet M. $\nu$ Serpente M.	285.15	0.43,5	46,1	-0,6	0.49,7	81,6	0,0	b	2,533	+1.24,94	
282.40			0. 4,0	45,3	0,0	0. 9,2	81,7	0,0					
297	Comet $\nu$ Serpente M.	285.15	1.43,3	46,1	-1,6	1.50,1	81,6	+0,1					
		282.35	4.52,3	43,4	-4,8	4.53,0	81,7	+0,2					
298	$\eta$ Ophiuchi M. Comet M. $\nu$ Serpente M.	285.15	4.53,2	46,1	-4,8	4.51,3	81,6	+0,2	b	12,062	+6.43,49		
		285.15	4.53,2	46,1	-4,8	4.51,3	81,6	+0,2	a	8,800	-4.54,11		
		282.35	3.42,5	43,4	-3,6	3.40,3	81,7	+0,2					
Nov. 18	301	§Comet	286. 5	4. 4,1	43,2	-4,0	4. 2,0	81,6	+0,2				
	302	$\eta$ Ophiuchi Comet	285.25	3.38,0	46,9	-3,6	3.40,6	85,8	+0,1				
			286. 5	3. 3,0	43,2	-3,0	3. 1,7	81,6	+0,1				
303	$\eta$ Ophiuchi Comet M.	285.25	2.33,0	46,9	-2,5	2.38,2	85,8	+0,1					
			286. 5	3.41,7	43,2	-3,6	3.42,0	81,6	+0,1	a	3,400	-1.53,60	

\* Every circumstance favourable, and all the observations good.

† A mere guess, between clouds.

‡ Clouds rapidly collecting: no star could be found.

|| All the observations good except the two first.  
§ The Comet very faint: the observations difficult and cannot be very good.



Concluded N.P.D. by Circle, uncorrected.	Hour Angle East of Meridian.	Refraction in N.P.D.	Parallax in N.P.D.	Corrected N.P.D. by Circle, subject to Index Error.	Time of Observation by Graham.	Corresponding Time by Hardy.
° ' "	h. m.	' "	"	° ' "	h. m. s.	h. m. s.
102.42.16,82 102.53.23,57	- 3. 5	3.25,31 3.27,88	7,01	102.45.42,13 102.56.44,44	20.19.56,3	20.19.59,7
102.42.16,01 102.53.21,86	- 3.10	3.33,01 3.35,78	6,98	102.45.49,02 102.56.50,66	20.25.15,8	20.25.19,2
102.41.57,56 102.53.18,39	- 3.16	3.44,19 3.47,25	6,96	102.45.41,75 102.56.58,68	20.31.38,3	20.31.41,7
102.41.47,60 102.53.10,83	- 3.22	3.55,94 3.59,28	6,94	102.45.43,54 102.57. 3,17	20.36.45,3	20.36.48,7
102.41.37,82 102.53. 7,69	- 3.27	4. 7,58 4.11,60	6,92	102.45.45,40 102.57.12,37	20.41.51,5	20.41.54,9
103.38.53,12	- 3.33	4.45,69	6,50	103.43.32,31	20.47.10,0	20.47. 9,5
104.21.52,73	- 3.13	4. 7,23	6,24	104.25.53,72	20.25. 3,5	20.24.58,4
104.21.46,61	- 3.18	4.18,88	6,22	104.25.59,27	20.30.35,8	20.30.30,7
104.21.46,92	- 3.22	4.29,71	6,21	104.26.10,42	20.34. 6,2	20.34. 1,1
105.19. 2,99	- 3.11	4.17,28	5,81	105.23.14,46	20.21. 5,0	20.20.51,1
105.19. 3,23	- 3.16	4.27,73	5,79	105.23.25,17	20.25.38,3	20.25.24,4
105.18.59,20	- 3.21	4.41,13	5,77	105.23.34,56	20.30.31,2	20.30.17,3
105.18.53,48 102.41.37,93	- 3.23	4.50,13 3.55,12	5,76	105.23.37,85 102.45.33,05	20.33.19,6	20.33. 5,7
105.18.39,49 102.41.27,24	- 3.29	5. 9,10 4. 7,97	5,74	105.23.42,85 102.45.35,21	20.39.22,8	20.39. 8,9
105.18.15,09 102.41.10,10	- 3.36	5.36,05 4.25,60	5,71	105.23.45,43 102.45.35,70	20.46.17,3	20.46. 3,4
105.17.49,80 102.40.52,90	- 3.42	6. 2,16 4.42,23	5,69	105.23.46,27 102.45.35,13	20.51.53,6	20.51.39,7
105.27.37,29 105.15.59,69 102.39.42,25	- 3.59	8.12,04 7.59,07 5.52,45	5,62	105.35.49,33 105.23.53,14 102.45.34,70	21. 9. 6,5	21. 8.52,6
106.10. 3,55	- 3.34	5.56,70	5,38	106.15.54,87	20.41. 5,5	20.40.37,1
105.29.43,90 106. 9. 3,30	- 3.45	6.30,75 7. 2,09	5,34	105.36.14,65 106.16. 0,05	20.52.27,5	20.51.59,1
105.28.40,75 106. 7.48,90	- 3.54	7.28,75 8. 9,21	5,30	105.36. 9,50 106.15.52,31	21. 1. 6,0	21. 0.37,6

The refractions for Nov. 15 and Nov. 18 have been computed with great care.

Month and Day, 1835.	No. of Series.	Object observed.	Pointer.	Microscope A	Cor. for Error of Division.	Cor. for Runs.	Microscope B	Cor. for Error of Division.	Cor. for Runs.	Name of Microm.	Microm. Reading.	Correction.	Cor. for Position of Wires.
			o	"	"	"	"	"	Rev.		"	"	
Nov. 18	304	$\eta$ Ophiuchi Comet M.	285.25 286.5	1.7,5 4.1,8	46,9 43,2	-1,0 -3,9	1.8,7 4.1,5	85,8 81,6	0,0 +0,2	a	6,182	-3.26,58	
	305	$\eta$ Ophiuchi Comet M.	285.20 286.5	4.10,9 4.36,5	46,3 43,2	-4,1 -4,5	4.10,0 4.40,2	84,8 81,6	+0,2 +0,2	a	11,289	-6.17,31	
1836. Jan. 16	308	*Comet $c^2$ Scorpii M.	297.25 297.25	2.2,0 2.2,0	49,0 49,0	-2,1 -2,1	2.43,9 2.43,9	50,5 50,5	+0,1 +0,1	a	4,520	-2.31,94	
	309	Comet $c^2$ Scorpii M.	297.25 297.25	3.41,0 3.41,0	49,0 49,0	-3,6 -3,6	4.19,0 4.19,0	50,5 50,5	+0,2 +0,2	a	5,800	-3.13,74	
	310	Comet $c^2$ Scorpii M.	297.25 297.25	4.44,0 4.44,0	49,0 49,0	-4,7 -4,7	†5.16,9 5.16,9	51,7 51,7	0,0 0,0	a	6,586	-3.40,00	
	311	Antares	296.0	2.24,0	49,9	-2,3	2.59,0	54,0	+0,1				
Jan. 27	312	‡Comet	299.25	1.26,5	46,4	-1,4	2.5,0	50,1	+0,1				

\* A new set of wires inserted. The Comet had nearly the same appearance as on Sept. 2, or was even more faint. The observations made by throwing in light enough to enable the observer to see the comb; then excluding it and endeavouring to bring the Comet to the parallel of the great notch.

† The micrometer placed on the next division.  
‡ The Comet seen several times among clouds, but no further observations could be made.



Concluded N.P.D. by Circle, uncorrected.	Hour Angle East of Meridian.	Refraction in N.P.D.	Parallax in N.P.D.	Corrected N.P.D. by Circle, subject to Index Error.	Time of Observation by Graham.	Corresponding Time by Hardy.
° ' "	h. m.	' "	"	° ' "	h. m. s.	h. m. s.
105. 27. 13,95 106. 6. 35,62	- 4. 3	8. 54,93 9. 49,66	5,26	105. 36. 8,88 106. 16. 20,02	21. 10. 15,0	21. 9. 46,5
105. 25. 14,05 106. 4. 21,29	- 4. 12	10. 48,78 12. 9,46	5,22	105. 36. 2,83 106. 16. 25,53	21. 18. 48,0	21. 18. 19,5
117. 28. 11,70 117. 25. 39,76	+ 2. 12	9. 53,89 9. 48,44	4,78	117. 38. 0,81 117. 35. 28,20	13. 52. 0	13. 47. 19,0
117. 29. 48,05 117. 26. 34,31	+ 1. 59	8. 28,20 8. 24,20	4,82	117. 38. 11,43 117. 34. 58,51	14. 4. 40	13. 59. 59,0
117. 30. 48,45 117. 27. 8,45	+ 1. 48	7. 38,78 7. 35,52	4,85	117. 38. 22,38 117. 34. 43,97	14. 15. 20	14. 10. 39,0
116. 3. 32,35	+ 1. 2	5. 2,01		116. 8. 34,36		
119. 27. 33,35	+ 1. 8	7. 37,62	5,32	119. 35. 5,65	14. 36. 26	14. 50. 37,0

THE FOLLOWING ARE THE APPROXIMATE PLACES OF THE STARS WITH WHICH  
THE COMET WAS IMMEDIATELY COMPARED.

STAR'S NAME.	Approximate A.R.			Approximate N.P.D.		STAR'S NAME.	Approximate A.R.			Approximate N.P.D.	
	<i>h.</i>	<i>m.</i>	<i>s.</i>	<i>o</i>	<i>'</i>		<i>h.</i>	<i>m.</i>	<i>s.</i>	<i>o</i>	<i>'</i>
139 Tauri	5	47	45	64	4	Z	10	44	10	26	11
2 Geminorum	5	56	50	66	21	<i>a</i>	10	52	15	26	0
<i>A</i>	6	9	40	66	52	$\alpha$ Ursæ Majoris	10	53	40	27	22
<i>B</i>	6	11	20	59	58	<i>b</i>	10	57	10	23	16
<i>z</i> Aurigæ	6	18	0	59	25	<i>c</i>	11	17	20	25	58
<i>C</i>	6	19	20	(57)	8	$c^2$ Scorpii	16	3	10	117	29
<i>D</i>	6	19	40	(57)	5	<i>d</i>	16	26	40	70	39
<i>E</i>	6	21	30	(57)	4	<i>e</i>	16	28	10	70	42
A.S.C. 808	6	21	40	57	26	<i>g</i>	16	37	0	76	4
<i>F</i>	6	22	45	56	52	<i>h</i>	16	40	0	76	2
<i>G</i>	6	25	55	55	21	<i>i</i>	16	40	40	76	6
<i>H</i>	6	26	10	(55)	20	$\iota$ Ophiuchi	16	46	15	79	33
<i>I</i>	6	26	30	(55)	20	<i>k</i>	16	58	50	85	25
<i>J</i>	6	27	0	(55)	20	<i>l</i>	17	0	20	85	21
<i>K</i>	6	27	5	(55)	17	<i>m</i>	17	0	29	(85)	46
<i>L</i>	6	39	10	51	54	<i>n</i>	17	0	50	85	20
<i>M</i>	6	40	10	(51)	54	$\eta$ Ophiuchi	17	0	54	105	30
<i>N</i>	6	40	25	(51)	54	<i>o</i>	17	3	20	89	30
<i>O</i>	6	41	40	(51)	54	<i>p</i>	17	4	0	87	40
63 Aurigæ	7	0	22	50	25	<i>q</i>	17	4	30	89	27
64 Aurigæ	7	6	35	48	50	<i>r</i>	17	6	10	91	7
<i>P</i>	7	9	20	44	29	<i>s</i>	17	7	10	(91)	5
<i>Q</i>	7	16	0	41	37	<i>t</i>	17	8	0	87	38
<i>R</i>	7	16	20	41	45	<i>u</i>	17	10	20	91	19
<i>S</i>	7	16	30	41	30	<i>v</i>	17	11	5	93	53
<i>T</i>	7	22	16	41	28	$\nu$ Serpentis	17	11	29	102	40
<i>U</i>	7	25	45	41	53	<i>w</i>	17	14	10	96	56
<i>W</i>	7	29	0	41	29	Piazzî xvii. 79	17	14	58	99	11
Piazzî viii. 15	8	5	34	35	21	<i>x</i>	17	15	30	95	10
<i>X</i>	8	5	40	34	56	A. S. C. 1998	17	17	50	94	56
<i>Y</i>	8	38	40	31	52						

In Series 193, of *Right Ascensions*, the hour-circle Pointer was read too little by 5<sup>m</sup>. The Right Ascensions of that series ought therefore to be increased 5<sup>m</sup>; and thus it appears that *f* is the same star with *i*.



THE following Table contains the GREENWICH MEAN SOLAR TIME of each of the Observations of the COMET in RIGHT ASCENSION and NORTH POLAR DISTANCE, with the place interpolated from the Ephemeris circulated by the Superintendent of the Nautical Almanac dated Dec. 30, 1835.

No. of Series.	Greenwich Mean Solar Time.				Interpolated A.R.			Interpolated N.P.D.			No. of Series.	Greenwich Mean Solar Time.				Interpolated A.R.			Interpolated N.P.D.				
	1835.	d.	h.	m.	s.	h.	m.	s.	o	'		"	1835.	d.	h.	m.	s.	h.	m.	s.	o	'	"
100	Sept.	2.	13.	46.	27	5.	52.	8,86	64.	50.	47,13	133	Sept.	30.	10.	49.	25	6.	39.	36,79	51.	53.	37,96
101	Sept.	2.	14.	5.	52	5.	52.	9,59	64.	50.	39,27	134	Oct.	2.	9.	13.	20				48.	53.	10,35
102	Sept.	2.	14.	21.	19	5.	52.	10,18	64.	50.	32,92	135	Oct.	2.	9.	19.	33	6.	50.	51,71			
				14.	21.	34						136	Oct.	2.	10.	29.	15	6.	51.	12,09			
103	Sept.	2.	14.	51.	17	5.	52.	11,31	64.	50.	20,89	137	Oct.	2.	10.	44.	50				48.	46.	20,99
104	Sept.	20.	10.	48.	26	6.	12.	32,09				138	Oct.	2.	10.	48.	48				48.	46.	3,15
105	Sept.	20.	10.	57.	16	6.	12.	32,68				140	Oct.	2.	12.	23.	24	6.	51.	45,92	48.	38.	53,24
106	Sept.	20.	11.	1.	17	6.	12.	32,96				143	Oct.	4.	10.	48.	38				44.	34.	3,26
107	Sept.	20.	11.	5.	15	6.	12.	33,22				144	Oct.	4.	11.	0.	7	7.	9.	19,88	44.	32.	53,14
108	Sept.	20.	11.	9.	26	6.	12.	33,50				145	Oct.	4.	11.	11.	21	7.	9.	32,57	44.	30.	10,45
109	Sept.	20.	11.	19.	32				59.	55.	34,95	146	Oct.	4.	11.	26.	42				44.	29.	1,87
110	Sept.	20.	11.	31.	35				59.	55.	20,65	148	Oct.	4.	11.	37.	53	7.	23.	0,85	41.	48.	11,67
111	Sept.	20.	11.	44.	38				59.	55.	5,16	149	Oct.	5.	11.	50.	56	7.	23.	16,47	41.	45.	25,76
112	Sept.	20.	11.	48.	36				59.	55.	0,45	150	Oct.	5.	12.	14.	2	7.	23.	32,78	41.	42.	14,09
113	Sept.	20.	11.	53.	45	6.	12.	36,52				151	Oct.	5.	12.	40.	39	7.	23.	38,56	41.	41.	18,89
114	Sept.	20.	12.	1.	11	6.	12.	37,02				153	Oct.	5.	12.	48.	18	8.	5.	17,20	35.	22.	9,76
118	Sept.	25.	10.	23.	12	6.	22.	25,14				154	Oct.	7.	10.	40.	35	8.	5.	29,91	35.	20.	37,01
119	Sept.	25.	10.	30.	12	6.	22.	25,86				155	Oct.	7.	10.	50.	38	8.	5.	45,42			
120	Sept.	25.	10.	38.	0				56.	57.	30,44	156	Oct.	7.	11.	2.	43	8.	7.	6,19			
121	Sept.	25.	10.	49.	59				56.	57.	7,96	157	Oct.	7.	12.	5.	52	8.	7.	16,93	35.	7.	44,06
122	Sept.	25.	10.	58.	17				56.	56.	52,33	158	Oct.	7.	12.	14.	10	8.	7.	16,93	35.	1.	36,69
123	Sept.	25.	11.	10.	45				56.	56.	28,87	159	Oct.	7.	12.	53.	44	8.	8.	10,45			
124	Sept.	25.	11.	20.	11	6.	22.	31,01				160	Oct.	7.	12.	12.	15	8.	8.	10,45	31.	48.	50,31
125	Sept.	25.	11.	27.	20	6.	22.	31,74				161	Oct.	8.	9.	14.	48	8.	40.	0,32	31.	46.	51,81
127	Sept.	25.	11.	40.	13	6.	22.	33,07	56.	55.	33,70	162	Oct.	8.	9.	27.	18	8.	40.	22,06	31.	45.	14,13
129	Sept.	27.	10.	9.	5	6.	27.	54,95					Oct.	8.	9.	37.	36	8.	40.	41,31			
130	Sept.	27.	10.	19.	27				55.	17.	42,19												
131	Sept.	27.	10.	35.	39	6.	27.	58,39	55.	17.	4,39												

INTERPOLATED PLACES OF HALLEY'S COMET.

No. of Series.	Greenwich Mean Solar Time.					Interpolated A.R.			Interpolated N.P.D.			No. of Series.	Greenwich Mean Solar Time.					Interpolated A.R.			Interpolated N.P.D.				
	1835.	d.	h.	m.	s.	h.	m.	s.	o	'	"		1835.	d.	h.	m.	s.	h.	m.	s.	o	'	"		
165	Oct.	10.	6.	43.	50	10.	46.	38,74	26.	23.	51,68	202	Oct.	19.	5.	49.	59					79.	30.	23,34	
166	Oct.	10.	8.	8.	32	10.	51.	59,87	26.	21.	7,77	203	Oct.	19.	5.	51.	16	16.	45.	31,81					
167	Oct.	10.	8.	18.	56	10.	52.	39,58	26.	20.	50,94	204	Oct.	19.	5.	54.	44	16.	45.	32,81					
168	Oct.	10.	8.	27.	22	10.	53.	11,86	26.	20.	37,76	205	Oct.	19.	5.	57.	41	16.	45.	33,66	79.	31.	32,12		
169	Oct.	10.	8.	36.	0	10.	53.	44,89	26.	20.	24,75	206	Oct.	19.	5.	59.	54				79.	31.	51,81		
170	Oct.	10.	9.	1.	57	10.	55.	24,47	26.	19.	48,43	207	Oct.	19.	6.	1.	45	16.	45.	34,83	79.	32.	8,25		
171	Oct.	10.	9.	12.	35	10.	56.	5,39	26.	19.	34,76	208	Oct.	19.	6.	2.	59				79.	32.	19,27		
172	Oct.	10.	9.	26.	8	10.	56.	57,56	26.	19.	18,38	209	Oct.	19.	6.	5.	28	16.	45.	35,91	79.	32.	41,39		
173	Oct.	10.	11.	39.	26	11.	5.	36,06	26.	17.	37,91	210	Oct.	19.	6.	8.	17	16.	45.	36,71					
174	Oct.	10.	14.	51.	8	11.	18.	15,00	26.	18.	42,39	211	Oct.	19.	6.	11.	31	16.	45.	37,65					
177	Oct.	17.	5.	48.	54	16.	27.	29,28	70.	44.	24,33	212	Oct.	19.	7.	40.	38	16.	46.	3,09					
178	Oct.	17.	5.	55.	48	16.	27.	32,64	70.	45.	56,17	213	Oct.	19.	7.	46.	55	16.	46.	4,87					
179	Oct.	17.	6.	0.	44	16.	27.	35,04				214	Oct.	19.	7.	49.	55	16.	46.	5,71	79.	48.	4,72		
180	Oct.	17.	6.	5.	26	16.	27.	37,32	70.	48.	4,38	215	Oct.	19.	7.	51.	22	16.	46.	6,13	79.	48.	17,46		
181	Oct.	17.	6.	9.	54	16.	27.	39,49				216	Oct.	19.	7.	52.	20	16.	46.	6,40	79.	48.	25,92		
				6.	10.	37			70.	49.	13,19	217	Oct.	19.	7.	53.	36	16.	46.	6,76	79.	48.	37,15		
182	Oct.	17.	6.	17.	9	16.	27.	43,00	70.	50.	39,99	218	Oct.	19.	7.	54.	51	16.	46.	7,11					
183	Oct.	17.	6.	37.	22	16.	27.	52,76				221	Oct.	21.	5.	32.	2	16.	56.	35,29					
				6.	38.	2			70.	55.	16,59														
185	Oct.	18.	7.	6.	53	16.	38.	9,09				222	Oct.	21.	5.	35.	11	16.	56.	35,87	85.	25.	51,61		
186	Oct.	18.	7.	9.	47	16.	38.	10,15	75.	48.	14,14	223	Oct.	21.	5.	41.	9	16.	56.	36,98	85.	26.	28,61		
187	Oct.	18.	7.	28.	29	16.	38.	16,96	75.	51.	34,93	224	Oct.	21.	5.	49.	41	16.	56.	38,55	85.	27.	21,36		
188	Oct.	18.	7.	44.	28	16.	38.	22,76	75.	54.	26,24	225	Oct.	21.	5.	55.	53	16.	56.	39,70	85.	27.	59,64		
189	Oct.	18.	7.	50.	51	16.	38.	25,07	75.	55.	34,56	226	Oct.	21.	6.	1.	1	16.	56.	40,65	85.	28.	31,42		
190	Oct.	18.	7.	59.	26	16.	38.	28,19	75.	57.	6,25	227	Oct.	21.	6.	6.	30	16.	56.	41,66	85.	29.	5,21		
191	Oct.	18.	8.	6.	44	16.	38.	30,82	75.	58.	24,06	228	Oct.	21.	6.	13.	24	16.	56.	42,93	85.	29.	47,76		
192	Oct.	18.	8.	23.	52	16.	38.	36,99	76.	1.	26,76	229	Oct.	21.	7.	40.	55	16.	56.	58,95	85.	38.	44,39		
193	Oct.	18.	8.	51.	44	16.	38.	47,02	76.	6.	22,97	232	Oct.	22.	5.	29.	1	17.	0.	36,00					
197	Oct.	19.	5.	34.	38	16.	45.	27,01				233	Oct.	22.	5.	32.	1	17.	0.	36,45	87.	42.	15,75		
198	Oct.	19.	5.	38.	30	16.	45.	28,12				234	Oct.	22.	5.	37.	13	17.	0.	37,23	87.	42.	43,01		
199	Oct.	19.	5.	42.	6				79.	29.	13,03	235	Oct.	22.	5.	40.	42	17.	0.	37,76					
									79.	29.	48,63					5.	41.	7		87.	43.	3,46			
200	Oct.	19.	5.	46.	5							236	Oct.	22.	5.	54.	20	17.	0.	39,82					
201	Oct.	19.	5.	48.	5				79.	30.	6,43					5.	54.	46		87.	44.	14,82			



INTERPOLATED PLACES OF HALLEY'S COMET.

No. of Series.	Greenwich Mean Solar Time.				Interpolated A.R.			Interpolated N.P.D.			No. of Series.	Greenwich Mean Solar Time.				Interpolated A.R.			Interpolated N.P.D.						
	1835.	d.	h.	m. s.	h.	m.	s.	o	'	"		1835.	d.	h.	m. s.	h.	m.	s.	o	'	"				
237	Oct.	22.	6.	7.17 6. 7.43	17.	0.	41,77				261	Oct.	27.	6.	3.41 6. 4. 7	17.	12.	11,62			95.	10.	26,87		
238	Oct.	23.	6.	3.55 6. 4.20	17.	3.	57,64			87.	45.	22,52	262	Oct.	27.	6.	11.25 6. 11. 51	17.	12.	12,05			95.	10.	47,27
239	Oct.	23.	6.	7.37 6. 8. 3	17.	3.	58,10			89.	40.	59,80	264	Oct.	29.	5.	34.47 5. 35. 14	17.	14.	21,04			97.	3.	8,80
240	Oct.	23.	6.	10.11 6. 10. 36	17.	3.	58,42			89.	41.	16,37	265	Oct.	29.	5.	39. 1 5. 39. 27	17.	14.	21,20			97.	3.	17,81
241	Oct.	23.	6.	13. 7 6. 13. 33	17.	3.	58,78			89.	41.	27,78	266	Oct.	29.	5.	42. 17 5. 42. 44	17.	14.	21,30			97.	3.	24,81
242	Oct.	23.	6.	15.27 6. 15. 53	17.	3.	59,07			89.	41.	40,94	267	Oct.	29.	5.	44.47 5. 45. 13	17.	14.	21,40			97.	3.	30,12
245	Oct.	24.	5.	19.59 5. 20. 25	17.	6.	34,75			91.	17.	51,19	268	Oct.	29.	5.	47. 15 5. 47. 41	17.	14.	21,49			97.	3.	35,37
246	Oct.	24.	6.	35.51 6. 36. 17	17.	6.	42,47			91.	22.	44,49	269	Oct.	29.	5.	51. 7 5. 51. 32	17.	14.	21,62			97.	3.	43,59
247	Oct.	24.	6.	42.49 6. 43. 15	17.	6.	43,18			91.	23.	10,89	270	Oct.	29.	5.	54. 1 5. 54. 27	17.	14.	21,73			97.	3.	49,81
248	Oct.	24.	6.	48.44 6. 49. 9	17.	6.	43,77			91.	23.	34,00	271	Oct.	29.	5.	56.54 5. 57. 20	17.	14.	21,83			97.	3.	55,93
249	Oct.	24.	6.	54.25 6. 54. 52	17.	6.	44,35			91.	23.	55,96	272	Oct.	29.	6.	6. 18 6. 6. 44	17.	14.	22,17			97.	4.	15,96
250	Oct.	24.	7.	0.52 7. 1. 18	17.	6.	45,01			91.	24.	20,71	273	Oct.	29.	6.	9. 17 6. 9. 42	17.	14.	22,27			97.	4.	22,27
251	Oct.	24.	7.	20. 5 7. 20. 31	17.	6.	46,94			91.	24.	20,71	275	Nov.	1.	4.	55.53	17.	16.	2,22			99.	15.	53,30
252	Oct.	26.	5.	31.58 5. 32. 25	17.	10.	39,75			91.	25.	34,46	276	Nov.	1.	5.	53.24 5. 53. 49	17.	16.	2,95			99.	17.	27,41
253	Oct.	26.	5.	57.59 5. 58. 26	17.	10.	41,54			94.	1.	41,00	277	Nov.	1.	6.	3. 0 6. 3. 25	17.	16.	3,08			99.	17.	42,95
254	Oct.	26.	6.	9.20 6. 9. 46	17.	10.	42,32			94.	2.	58,44	279	Nov.	4.	5.	31.39	17.	16.	18,60			101.	1.	9,16
255	Oct.	26.	6.	27.32 6. 27. 58	17.	10.	43,58			94.	3.	32,14	280	Nov.	4.	5.	38. 8	17.	16.	18,57					
257	Oct.	27.	5.	27.59 5. 28. 26	17.	12.	9,61			94.	4.	26,12	281	Nov.	8.	5.	10.42 5. 11. 8	17.	15.	0,24			102.	51.	0,03
258	Oct.	27.	5.	35.46 4. 36. 12	17.	12.	10,05			95.	8.	52,54	282	Nov.	8.	5.	16. 1 5. 16. 27	17.	15.	0,12			102.	51.	5,46
259	Oct.	27.	5.	44. 7 5. 44. 33	17.	12.	10,52			95.	9.	13,10	283	Nov.	8.	5.	22.22 5. 22. 48	17.	14.	59,98			102.	51.	11,97
260	Oct.	27.	5.	52. 11 5. 52. 36	17.	12.	10,97			95.	9.	35,18	284	Nov.	8.	5.	27.28 5. 27. 55	17.	14.	59,87			102.	51.	17,19
												285	Nov.	8.	5.	32.34 5. 33. 0	17.	14.	59,76			102.	51.	22,39	
												286	Nov.	8.	5.	37.32	17.	14.	59,65						





THE following TRANSITS of the COMET and STARS were observed with the Telescope of the Mural Circle: the Times being noted by the Clock Molyneux.

Day, 1835.	OBJECT.	Entrance.	Comb- Plate 1st Edge.	Comb- Plate Teeth.	I.	II.	III.	IV.	V Wire.	Departure.	Mean of Wires.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	h. m. s.	h. m. s.
Oct. 10	Comet SP.	54.46,0	55.24,5	56. 1,0	56.41,5	57.20,5	58. 0,0	58.41,5	59.20,0	23. 0.53,0	22.58. 0,70
	a' SP.				7.57,0	8.32,8	9. 8,9	9.45,0	10.22,5	23.10.58,0	23. 9. 9,24
	δ Urs. Maj. SP.	4.35,0	5. 9,5	5.35,5	6. 8,7	6.40,0	7.11,5	7.42,7	8.14,0	0.....	0. 7.11,38
Oct. 11	δ Urs. Maj. SP.			5.34,0	6.11,5	6.42,0	7.12,5	7.44,5	8.16,0	0. 9.43,0	0. 7.13,30
	c' SP.		34.23,0							0.....	
	b' SP.					35.12,0				0.....	
	Comet SP.	37.39,5	33.17,0	38.51,0	39.26,0	40. 5,0	40.42,0	41.19,5	41.55,5	0.43. 4,2	0.43.41,60
	d' SP.		39. 0,5		40. 7,0				42.26,3	0.44. 4,0	0.40.16,65

The Places of the Stars appear to be nearly as follows:

Star's Name.	Approximate A.R.			Approximate N.P.D.	
	h.	m.	s.	°	'
a'	11	{ 8 7}	. 58	26	. 55
b'	12	. 35	. 40	28	. 5
c'	12	. 36	. 40	28	. 5
d'	12	. 41	. 6	28	. 17

The Greenwich Mean Solar Time and the Interpolated Right Ascension may be supposed the same as those for the observations with the Transit in page 136.

THE following Physical Observations on the COMET were made at different times of its appearance.

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Sept. 25. 9<sup>h</sup>. 45<sup>m</sup>. to 12<sup>h</sup>. During the whole time the Comet (seen with the Equatoreal, 3 $\frac{3}{4}$ -inch aperture,) appeared to continue changing its figure: it passed over three stars (the nucleus covering one), which were distinctly visible during the whole time. About 11<sup>h</sup> I thought that I could discern its nucleus. The state of the atmosphere afterwards became so bad that it looked like a faint misty patch. The power generally used was 46. (G.)

Sept. 27. The stars in the measure of polar distance (Series 130 and 131) are about 8,9 magnitude. I saw the Comet when I could not see the stars; therefore the Comet must be about as bright as stars of the 7th magnitude. Clouds were collecting about the place when I began to observe, and kept closing about it, so that I merely had time to get its place, without observing whether it had a nucleus or not, or whether it kept changing its figure as before. (G.)

Sept. 30. 10<sup>h</sup>. The Comet is very much increased in brightness: the nucleus appears nearly in the center of the nebulous matter: its general appearance is smaller: in the course of the evening I saw it very plainly with the naked eye, nearly as bright as  $\theta$  Geminorum. (G.)

Oct. 2. 9<sup>h</sup>. Clouds thinner about the place of the Comet than in other parts of the sky: the Comet had the appearance of a pretty good star of 7,8 magnitude when clear: it continued in this state till 12<sup>h</sup>, merely visible by glimpses; about 12<sup>h</sup> the sky became very clear: the Comet now had the appearance of a star with a planetary disk surrounded with a dense halo: the Moon's light made it appear small, altogether not 1' in diameter, and to the naked eye a little brighter than  $\theta$  Geminorum. (G.)

Oct. 5. 12<sup>h</sup>. Sky very clear, and deep blue: the Moon shining brightly. I scarcely think the Comet has decreased in size: occasionally I saw a large



quantity of nebulous matter. I examined it with the powers 30, 46, 70, 100, 120, 180: its nucleus was well defined in all: it bore the power 180 very well: about 13<sup>h</sup>.30<sup>m</sup>. I saw it with the naked eye, but I could not see  $\theta$  Geminorum. (G.)

Oct. 7. 11<sup>h</sup>. Comet excessively faint, and no nucleus: at first appearing as a little mist, which would not have attracted any notice had we been ignorant of its being a Comet: it afterwards became brighter, but till after 13<sup>h</sup> no nucleus was visible: from 12<sup>h</sup> to 13<sup>h</sup> it appeared like a large bad blur, or as stars appear by reflexion under bad circumstances. (G.)

Oct. 8. 8<sup>h</sup>. The Moon is shining very brightly, and the Comet is visible to the naked eye. On examining it, the nucleus was sharp and well defined, enabling me to illuminate the field, when it appeared as a star of the 7th magnitude. During the time that I was observing, it did not appear to change, but kept a more uniform appearance than I have seen before. (G.)

Oct. 9. 7<sup>h</sup>. The Comet as bright as  $\beta$  Ursæ Majoris, or rather brighter, but not so sharp or with such shining light as that of a star, appearing larger than a star. (G.)

Oct. 10. 7<sup>h</sup>. The Comet is as bright as  $\alpha$  Ursæ Majoris, to which it is near. With the Equatoreal telescope the light of the Comet filled  $\frac{3}{4}$  or more of the field: the nucleus but 30'' or 40'' in diameter (estimated by the teeth of the comb). On the Moon rising, this lessened very much. At 11<sup>h</sup> nearly the Comet appeared through the Northumberland telescope (20 feet focal length, 11 $\frac{3}{4}$  inches aperture) with a nucleus, in the center of which was a sharp bright point (which none of the other telescopes would shew): the nucleus was extended up and down, or had a tendency to an elliptic form: no appearance of a tail, the only visible inequality of light seeming to be in the opposite direction. In Dollond (3 $\frac{3}{4}$  inches aperture) and the Equatoreal, the nucleus was circular: no point in it. (G.)

Oct. 10. 7<sup>h</sup>. &c. The Comet near  $\alpha$  Ursæ Majoris. When the eye was assisted by a lens which made the star appear like a point of light, the star appeared the brighter: but when both were viewed by the unassisted eye of

a very short-sighted person, so as to give to the star a diffused Cometary appearance, the light of the Comet clearly preponderated. At about 11<sup>h</sup> directed the Northumberland telescope to the Comet: with a low power (supposed to be 80) the nucleus appeared sharp, but in the judgment of all the observers (*A*, *G*, and two others) it was apparently elongated upwards to the right, and ill-defined there: in fact, as if it had a rudiment of a tail really turned toward the Sun. With a higher power (about 200) the nucleus had no boundary at all: it was quite impossible to say where were its limits. (*A*.)

Oct. 11. 9<sup>h</sup>. To the naked eye the Comet appeared to have a tail, but in the telescope nothing of this kind could be made out: its nucleus and its general appearance are the same. (*G*.)

Oct. 14. 6<sup>h</sup>. The Comet once seen well with the naked eye: it had a tail in the right direction. (*G*.)

Oct. 17. 6<sup>h</sup>. Sky clear and cloudy. At times a nucleus sharp and very brilliant: I thought I saw a tail, but could not be confident. (*G*.)

Oct. 18. 7<sup>h</sup> &c. Sky quite clear as the evening advanced: the Comet had a tail of 3° to 5°, or perhaps more, in length, directed from the Sun: its nucleus pretty well defined, but by no means so well as I have seen it: much light above the nucleus, and much below it, as it appeared in the telescope. (*G*.)

Oct. 18. 9<sup>h</sup>. Observed the Comet with the Northumberland telescope, and the same low power (80) as before. The nucleus bright, but no distinct sharp boundary. In the opinion of all the observers (*A*, *G*, Mr Whewell, and four others) the strongest light was defined by a line nearly vertical, the line proceeding upwards from the right-hand side of the nucleus, and the light to the right being fainter. *A* thought that there was a sort of horn projecting upwards (its right-hand boundary being the line above mentioned): Mr Whewell thought that the light was bounded by an obtuse angle, one side being the above-mentioned line, and the other a line sloping downwards to the left. The above appearances are as seen in the inverting telescope. The Comet was about as bright as *α* Aquilæ. (*A*.)



Oct. 19. 6<sup>h</sup>. With Equatoreal. The Comet nearly as last night. It was impossible to determine the limits of the nucleus, which appeared only as a condensation of light gradually shading off. Sometimes it appeared merely as a blur. Its tail not so long as last night. The nucleus appeared at times better defined on the apparent right than on the left. (*G.*)

Oct. 22. 6<sup>h</sup>. The nucleus bright. The Comet seen with the Equatoreal long before dark, and before any stars were visible: it was tolerably well defined on the apparent right, but on the left it shaded off so gradually into the nebulous matter, that I could not define its limits. It appears to consist of three different degrees of density: 1st. The nebulous light, whose limits cannot be made out: 2d. The nucleus: 3d. A very bright spot near the apparent lower edge of the nucleus, appearing at times brilliant and sparkling. To the naked eye the Comet is about as bright as  $\beta$  Aquilæ, with a tail about  $1^\circ$  or  $1\frac{1}{4}^\circ$  in length. (*G.*)

Oct. 23. 6<sup>h</sup>. The Comet blurred, no distinct nucleus: the sky not clear more than half an hour. (*G.*)

Oct. 24. 6<sup>h</sup>. The Comet better defined on the right than on the left, appearing much as usual: the tail about  $2^\circ$  long. The tail seemed to be supplied with light from the nucleus: several issuings of light from the nucleus were seen, having much the appearance of small streamers in an Aurora Borealis. No appearance of a second tail. (*G.*)

Oct. 26. 6<sup>h</sup>. Many clouds: when clear no tail of the Comet could be seen. (*G.*)

Oct. 27. 6<sup>h</sup>. The Comet very clear: the nucleus sharp and pretty equally defined on the right and on the left side: it was more nearly in the center of the nebulous matter than it has been lately. The Moon's light nearly obscured the tail: about  $2^\circ$  of length visible with the naked eye. In successive trials with the Equatoreal, the tail (as seen in the telescope) appeared to occupy  $3^m$ ,  $5^m$ , and  $6^m$  of right ascension. (*G.*)

Oct. 29. 6<sup>h</sup>. The nucleus best defined at the upper right-hand side: no sharp boundary at any other part. The nucleus elongated up and down; the

upper part leaning to the right. Supposing the nucleus an ellipse, then nearly at the right-hand extremity of the axis minor was a very sharp and well-defined spot, often brilliant and sparkling. The Moon was shining brightly, and very little light visible about the Comet: no tail visible either to the naked eye or with the telescope. (G.)

Nov. 1. 6<sup>h</sup>. Sometimes clear and sometimes cloudy. The Comet appeared about as bright as stars of the 3<sup>d</sup> magnitude: very little nebulosity: no tail. It appears probable that we shall not again see a tail, therefore I may remark, that I have never observed any curvature in it: it has always been directed from the Sun, and has gone round with the Sun: I have never seen a second tail in any direction: nor any thing to suggest the notion that it revolves on an axis: but from the attention with which I have watched it, I think, if such things had been, I should have seen them. (G.)

Nov. 8. 5<sup>h</sup>. Sky clear: the Comet about as bright as stars of the 5<sup>th</sup> magnitude: when the Comet was visible with the telescope, 47 Ophiuchi could not be seen with the telescope:  $\nu$  Serpentis was a little brighter than the Comet. It appears that the part of the Comet now seen, is the spot mentioned as imbedded in the nucleus on Oct. 29, &c. There was a little luminosity round it: sufficient to give warning of its approach to the field 7<sup>s</sup> or 8<sup>s</sup> before it entered. (G.)

Nov. 12. 5<sup>h</sup>. Comet seen for a few minutes only: probably as bright as stars of 6 mag. or 6,7 mag. under the same circumstances. (G.)

Nov. 15. 5<sup>h</sup>. I judged the Comet to have as much light as stars of the 5<sup>th</sup> magnitude, but it was a diffuse misty light: the impression on the eye was about equal to that of a star of the 6<sup>th</sup> magnitude. No stars could be seen in its neighbourhood, except  $\eta$  Ophiuchi and  $\nu$  Serpentis. I examined the sky for a considerable distance round the Comet's place: and therefore if there are stars, the Comet must be brighter than they are. A rudiment of a tail seen in the right direction. Twice during the observation, for a moment, a point of the Comet was as bright and with light as sharp as stars of the 2<sup>d</sup> magnitude when well defined and clear. (G.)



Nov. 18. 5<sup>h</sup>. The Comet about as bright as stars of the 9th magnitude under favourable circumstances. (*G.*)

Dec. 10. 19<sup>h</sup>. The sky very clear about the Comet's place, but the Comet could not be seen. (*G.*)

1836. Jan. 15. 18<sup>h</sup>. A nebula observed instead of the Comet: no other object visible. (*G.*)

Jan. 16. 18<sup>h</sup>. The same nebula seen. The Comet had nearly the same appearance as on Sept. 2, or if there was any difference it was fainter and not so large, appearing as a very faint mist. J. G. said that it appeared occasionally to him like a very faint star, which then spread itself into a mist. (*G.*) [The last-mentioned phenomenon is undoubtedly an ocular illusion, arising from the over-exertion of the eye. (*A.*)]

Jan. 27. 17<sup>h</sup>. The Comet seen several times between clouds: its appearance is much altered: it appears elliptical, the axes of the ellipse being about 1' and  $\frac{3}{8}$  of 1': the longer line being parallel to the horizon, or the preceding part perhaps a little higher in the field. (*G.*)

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ECLIPSES  
OF  
JUPITER'S SATELLITES,  
AND  
TRANSITS OF THE SATELLITES OVER JUPITER'S DISK,  
AND  
OCCULTATIONS OF STARS  
BY THE MOON;  
WITH THE  
EQUATIONS GIVEN BY THE OCCULTATIONS OF STARS.

1835.

ECLIPSES OF JUPITER'S SATELLITES,  
AND TRANSITS OF THE SATELLITES OVER JUPITER'S DISK.

Day of Observation.	Phenomenon.	Observer.	Instrument.	Clock or Chron.	Time noted.	Time by Hardy.	Cambridge Sidereal Time.	Greenwich Mean Solar Time.
					<i>h. m. s.</i>	<i>h. m. s.</i>	<i>h. m. s.</i>	<i>h. m. s.</i>
Jan. 6	(a) Ingress of 2d Satellite	G.	Equatoreal	G.	1.59.15,0	2.0.35,10	2.1.14,74	6.58.19,5
25	(b) Reappearance of 1st Satellite	G.	Equatoreal	U.	6.44.17,0	6.41.48,0	6.42.3,16	10.23.39,6
	Reappearance of 1st Satellite	J. G.	46-inch Dollond	H.		6.42.0,0		
Feb. 23	(c) Disappearance of 2d Satellite	G.	Equatoreal	G.	4.56.26,0	7.1.18,00	7.1.16,38	8.48.48,3
	Disappearance of 2d Satellite	J. G.	46-inch Dollond	U.	7.4.25,0	7.1.6,00		
Apr. 21	(d) Reappearance of 2d Satellite	G.	Equatoreal	G.	9.50.53,0	9.54.17,95	9.55.18,05	7.58.14,7
	Reappearance of 2d Satellite	J. G.	46-inch Dollond	U.	9.55.8,0	9.54.27,95		
28	(e) Ingress of 3d Satellite	G.	Equatoreal	G.	10.33.0,0	10.39.44,75	10.39.56,21	8.15.14,2
Oct. 19	(f) Disappearance of 2d Satellite	G.	Equatoreal	G.	1.25.6,0	1.24.22,50	1.25.7,82	11.33.52,5
29	(g) Egress of 1st Satellite	G.	Equatoreal	G.	1.56.30,0	1.55.42,00	1.56.39,94	11.26.0,3

(a) The time noted is that of bisection: it might be earlier, certainly not later.

(b) All circumstances favorable, except the constrained position in which J. G. was placed.

(c) The wind strong and the planet unsteady: the satellite often lost for 20". These remarks apply to both observers.

(d) All circumstances favorable.

(e) The planet ill defined, and the circumstances far from favorable. The time noted for contact with the planet was 10<sup>h</sup>. 31<sup>m</sup>. 15<sup>s</sup>: that for bisection 10<sup>h</sup>. 33<sup>m</sup>. 0<sup>s</sup>: and that for total disappearance 10<sup>h</sup>. 34<sup>m</sup>. 50<sup>s</sup>.

(f) Very good.

(g) Very unsatisfactory.



Day of Observation	Phenomenon.	Moon's Limb.	Observer.	Instrument.	Clock or Chron.	Time noted.	Time by Hardy.	Cambridge Sidereal Time.	Greenwich Mean Solar Time.
						<i>h. m. s.</i>	<i>h. m. s.</i>	<i>h. m. s.</i>	<i>h. m. s.</i>
Feb. 4	(a) Disappearance of $\xi^1$ Arietis	Dark	G.	Equatoreal	U.	6.43.52,6	6.40.58,69	6.41.27,02	9.43.44,6
19	(a) Reappearance of $\omega^2$ Scorpii	Dark	G.	Equatoreal	U.	16. 9. 3,3	16. 5. 4,75	16. 6. 2,73	18. 7.49,0
Apr. 6	(b) Disappearance of $\kappa$ Geminorum	Dark	G.	Equatoreal	G.	8.41.59,3	8.41.47,65	8.42. 6,78	7.44.14,05
	(b) Disappearance of $\kappa$ Geminorum	Dark	J. G.	46-inch Dollond	H.		8.41.47,10		
	(c) Disappearance of $\kappa$ Geminorum	Dark	R.			7.48.18,0		7.44.15,5	
	(d) Reappearance of $\kappa$ Geminorum	Bright	J. G.	46-inch Dollond	U.	9.50.45,2	9.49.34,2	9.49.53,71	8.51.49,9
	(e) Reappearance of $\kappa$ Geminorum	Bright	R.			8.56.49,8		8.52.47,3	
Apr. 12	(f) Disappearance of Saturn	Dark	J. G.	46-inch Dollond	U.	15.39.56,0			
	(g) Reappearance of Saturn	Bright	G.	Equatoreal	G.	16.23.....			
July 6	(h) Reappearance of $\lambda$ Libræ	Bright	J. G.	46-inch Dollond	U.	17.21. 5,0	17.19.30,95	17.20. 9,94	10.23. 4,5
Dec. 4	(i) Disappearance of $\tau$ Tauri	Bright	J. G.	46-inch Dollond	H.		5.12.11,80	5.13. 9,58	12.20.25,0
Dec. 10	(k) Disappearance of $\eta$ Leonis	Bright	G.	Equatoreal	G.	11.45.36,5	11.43.34,73	11.43.41,74	18.26.17,7
	(k) Reappearance of $\eta$ Leonis	Dark	G.	Equatoreal	G.	12.19.39,8	12.17.38,25	12.17.45,29	19. 0.15,7

(a) Pretty good.

(b) Excellent.

(c) Observed on the great tower of Trinity College by R. W. Rothman, Esq. The time was noted 7<sup>h</sup>.48<sup>m</sup>.18<sup>s</sup>. by a watch which was then 4<sup>m</sup>.18<sup>s</sup>. fast upon the clock of the Cambridge Philosophical Society. The next day, when the watch was 4<sup>m</sup>.27<sup>s</sup>. fast, 1<sup>h</sup>.1<sup>m</sup>.50<sup>s</sup>. of the watch corresponded to 1<sup>h</sup>.58<sup>m</sup>.0<sup>s</sup>. of Hardy.

(d) A little way from the Moon.

(e) Observed by R. W. Rothman, Esq., in the same manner as the disappearance, at 8<sup>h</sup>.56<sup>m</sup>.49<sup>s</sup>.8. of the watch.

(f) The sky clear, but the planet very faint. The lower limb and the ball appeared to touch at nearly the

same time (G. 15<sup>h</sup>.36<sup>m</sup>.56<sup>s</sup>. as observed by G., or U. 15<sup>h</sup>.39<sup>m</sup>.36<sup>s</sup>. as observed by J. G.); the ball bisected at U. 15<sup>h</sup>.39<sup>m</sup>.56<sup>s</sup>.: total disappearance at U. 15<sup>h</sup>.40<sup>m</sup>.15<sup>s</sup>. Very unsatisfactory.

(g) Not visible till the planet had nearly emerged: the second limb of the ball emerged at G. 16<sup>h</sup>.23<sup>m</sup>.50<sup>s</sup>.: the first edge of the second anse of the ring at 16<sup>h</sup>.24<sup>m</sup>.13<sup>s</sup>.: and the second edge at 16<sup>h</sup>.24<sup>m</sup>.20<sup>s</sup>.: the Moon very unsteady. The observations appear not worth reducing.

(h) A little distance from the Moon.

(i) The star hung on the limb more than a second.

(k) Pretty good.

## CALCULATION OF THE OCCULTATIONS.

DISAPPEARANCE of  $\zeta^1$  Arietis, 1835, Feb. 4.  $9^h. 43^m. 44^s. 6 + t$ , Greenwich Mean Solar Time.

Moon's Right Ascension in arc.....	$34. 23. 7,95 + x + 0,4607 \times t$
Moon's N.P.D.....	$79. 41. 36,68 + y - 0,1933 \times t$
Moon's Horizontal Equatoreal Parallax.....	$54. 11,40 \times \left(1 + \frac{m}{1000}\right)$
Moon's Semidiameter.....	$14. 46,07 \times \left(1 + \frac{n}{1000}\right)$
Star's Right Ascension in arc.....	$33. 59. 27,30 + e''$
Star's N.P.D. ....	$80. 8. 29,40 + f$
Geocentric R.A. of corresponding point, in arc	
	$34. 30. 27,54 + e + 1'',8602 \times m$
Geocentric N.P.D. of corresponding point.....	
	$79. 28. 47,89 + f - 2,3815 \times m$
Geocentric distance of center from corresponding point,	
	$14'. 42'',02 + 0'',4820 \times \{e - x - 0,4607 \times t + 1,8602 \times m\}$
	$- 0,8715 \times \{f - 2,3815 \times m\}$
	$+ 0,8717 \times \{y - 0,1933 \times t\}.$

### Final Equation.

$$4,05 = + 0,4820 \times e - 0,8715 \times f - 0,4820 \times x + 0,8717 \times y - 0,3904 \times t + 2,9721 \times m - 0,8861 \times n.$$



Reappearance of  $\omega^2$  Scorpii, 1835, Feb. 19.  $18^h.7^m.49^s.04 + t'$ , Greenwich Mean Solar Time.

Moon's Right Ascension in arc .....	$239.44.14,25 + x + 0,5939 \times t$
Moon's N.P.D. ....	$109.25.31,33 + y + 0,1663 \times t$
Moon's Horizontal Equatoreal Parallax.....	$58.56,61 \times \left(1 + \frac{m}{1000}\right)$
Moon's Semidiameter.....	$16.3,67 \times \left(1 + \frac{n}{1000}\right)$
Star's Right Ascension in arc .....	$239.25.55,35 + e''$
Star's N.P.D. ....	$110.24.55,70 + f$

Geocentric R.A. of corresponding point, in arc	$239.27.18,91 + e + 0'',0836 \times m$
Geocentric N.P.D. of corresponding point.....	$109.28.51,40 + f - 3,3643 \times m$
Geocentric distance of center from corresponding point,	

$$16', 18'',06 + 0'',9228 \times \{-e + x + 0,5939 \times t - 0,0836 \times m\}$$

$$+ 0,2037 \times \{f - 3,3643 \times m\}$$

$$- 0,2053 \times \{y + 0,1663 \times t\}.$$

Final Equation.

$$-14,39 = -0,9228 \times e + 0,2037 \times f + 0,9228 \times x - 0,2053 \times y + 0,5139 \times t - 0,7624 \times m - 0,9637 \times n.$$

Disappearance of  $\kappa$  Geminorum, 1835, April 6.  $7^h.44^m.14^s.1 + t''$ , Greenwich Mean Solar Time.

Moon's Right Ascension in arc .....	$113.32.9,75 + x + 0,5814 \times t$
Moon's N.P.D. ....	$64.51.4,16 + y + 0,0496 \times t$
Moon's Horizontal Equatoreal Parallax.....	$56.8,94 \times \left(1 + \frac{m}{1000}\right)$
Moon's Semidiameter.....	$15.18,02 \times \left(1 + \frac{n}{1000}\right)$
Star's Right Ascension in arc .....	$113.37.6,60 + e''$
Star's N.P.D. ....	$65.12.41,00 + f$

Geocentric R.A. of corresponding point, in arc  $113^{\circ}.48'.11,66 + e + 0,6651 \times m$   
 Geocentric N.P.D. of corresponding point.....  $64^{\circ}.46'.25,23 + f - 1,5758 \times m$   
 Geocentric distance of center from corresponding point,  
 $15'.14'',05 + 0,8616 \times \{e - x - 0,5814 \times t + 0,6651 \times m\}$   
 $- 0,3042 \times \{f - 1,5758 \times m\}$   
 $+ 0,3060 \times \{y + 0,0496 \times t\}.$

## Final Equation.

$$3,97 = + 0,8616 \times e - 0,3042 \times f - 0,8616 \times x + 0,3060 \times y - 0,4857 \times t + 1,0524 \times m - 0,9180 \times n.$$

Reappearance of  $\kappa$  Geminorum, 1835, April 6.  $8^{\text{h}}.51^{\text{m}}.49^{\text{s}},9 + t^{\text{s}}$ , Greenwich Mean Solar Time.

Moon's Right Ascension in arc .....  $114^{\circ}.11'.28,05 + x + 0,5817 \times t$   
 Moon's N.P.D. ....  $64^{\circ}.54'.28,22 + y + 0,0520 \times t$   
 Moon's Horizontal Equatoreal Parallax.....  $56'.11,27 \times \left(1 + \frac{m}{1000}\right)$   
 Moon's Semidiameter .....  $15'.18,64 \times \left(1 + \frac{n}{1000}\right)$   
 Star's Right Ascension in arc .....  $113^{\circ}.37'.6,60 + e''$   
 Star's N.P.D. ....  $65^{\circ}.12'.41,00 + f$   
 Geocentric R.A. of corresponding point, in arc  $113^{\circ}.58'.21,62 + e + 1'',2750 \times m$   
 Geocentric N.P.D. of corresponding point.....  $64^{\circ}.44'.35,61 + f - 1,6854 \times m$   
 Geocentric distance of center from corresponding point,  
 $15'.26'',15 + 0,6955 \times \{-e + x + 0,5817 \times t - 1,2750 \times m\}$   
 $- 0,6393 \times \{f - 1,6854 \times m\}$   
 $+ 0,6405 \times \{y + 0,0520 \times t\}.$

## Final Equation.

$$-7,51 = -0,6955 \times e - 0,6393 \times f + 0,6955 \times x + 0,6405 \times y + 0,4379 \times t + 0,1906 \times m - 0,9186 \times n.$$



Disappearance of  $\tau$  Tauri, 1835, Dec 4.  $12^h . 20^m . 25^s, 01 + t^s$ , Greenwich Mean Solar Time.

Moon's Right Ascension in arc .....	$68 . 1 . 31,80 + x + 0,5202 \times t$
Moon's N.P.D. ....	$67 . 5 . 48,77 + y - 0,1180 \times t$
Moon's Horizontal Equatoreal Parallax.....	$53 . 54,31 \times \left(1 + \frac{m}{1000}\right)$
Moon's Semidiameter .....	$14 . 41,31 \times \left(1 + \frac{n}{1000}\right)$
Star's Right Ascension in arc .....	$68 . 6 . 8,55 + e''$
Star's N.P.D. ....	$67 . 21 . 46,00 + f$
Geocentric R.A. of corresponding point, in arc	$68 . 12 . 30,33 + e + 0'',3818 \times m$
Geocentric N.P.D. of corresponding point.....	$66 . 55 . 10,20 + f - 1,5958 \times m$
Geocentric distance of center from corresponding point,	
	$14' . 40'',49 + 0,6338 \times \{e - x - 0,5202 \times t + 0,3818 \times m\}$
	$- 0,7248 \times \{f - 1,5958 \times m\}$
	$+ 0,7257 \times \{y - 0,1180 \times t\}.$

Final Equation.

$$0,82 = + 0,6338 \times e - 0,7248 \times f + 0,6338 \times x + 0,7257 \times y - 0,4154 \times t + 1,3914 \times m - 0,8813 \times n.$$

Disappearance of  $\eta$  Leonis, 1835, Dec. 10.  $18^h . 26^m . 17^s,69 + t^s$ , Greenwich Mean Solar Time.

Moon's Right Ascension in arc .....	$149 . 37 . 49,80 + x + 0,5198 \times t$
Moon's N.P.D. ....	$72 . 1 . 53,85 + y + 0,1777 \times t$
Moon's Horizontal Equatoreal Parallax.....	$55 . 54,10 \times \left(1 + \frac{m}{1000}\right)$
Moon's Semidiameter .....	$15 . 14,06 \times \left(1 + \frac{n}{1000}\right)$
Star's Right Ascension in arc .....	$149 . 35 . 33,60 + e''$
Star's N.P.D. ....	$72 . 26 . 21,30 + f$

$$\begin{aligned}
 &\text{Geocentric R.A. of corresponding point, in arc } 149^{\circ} . 51' . 34,62 + e + 0,9610 \times m \\
 &\text{Geocentric N.P.D. of corresponding point..... } 71^{\circ} . 53' . 43,32 + f - 1,9580 \times m \\
 &\text{Geocentric distance of center from corresponding point,} \\
 &\quad 15' . 25'',05 + 0,8061 \times \{e - x - 0,5198 \times t + 0,9610 \times m\} \\
 &\quad \quad - 0,5298 \times \{f - 1,9580 \times m\} \\
 &\quad \quad + 0,5308 \times \{y + 0,1777 \times t\}
 \end{aligned}$$

## Final Equation.

$$-10,99 = +0,8061 \times e - 0,5298 \times f + 0,8061 \times x + 0,5308 \times y - 0,3243 \times t + 1,8119 \times m - 0,9141 \times n.$$


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Reappearance of  $\eta$  Leonis, 1835, Dec. 10.  $19^{\text{h}} . 0^{\text{m}} . 15^{\text{s}},67 + t^{\text{s}}$ , Greenwich Mean Solar Time.

$$\begin{aligned}
 &\text{Moon's Right Ascension in arc..... } 149^{\circ} . 55' . 27,90 + x + 0,5190 \times t \\
 &\text{Moon's N.P.D. .... } 72^{\circ} . 7' . 58,21 + y + 0,1792 \times t \\
 &\text{Moon's Horizontal Equatoreal Parallax..... } 55' . 55,06 \times \left(1 + \frac{m}{1000}\right) \\
 &\text{Moon's Semidiameter..... } 15' . 14,37 \times \left(1 + \frac{n}{1000}\right) \\
 &\text{Star's Right Ascension in arc ..... } 149^{\circ} . 35' . 33,60 + e'' \\
 &\text{Star's N.P.D. .... } 72^{\circ} . 26' . 21,30 + f \\
 &\text{Geocentric R.A. of corresponding point, in arc } 149^{\circ} . 56' . 11,98 + e + 1'',2384 \times m \\
 &\text{Geocentric N.P.D. of corresponding point..... } 71^{\circ} . 52' . 56,23 + f - 2,0051 \times m \\
 &\text{Geocentric distance of center from corresponding point,} \\
 &\quad 15' . 2'',95 + 0,0442 \times \{e - x - 0,5190 \times t + 1,2384 \times m\} \\
 &\quad \quad - 0,9989 \times \{f - 2,0051 \times m\} \\
 &\quad \quad + 0,0998 \times \{y + 0,1792 \times t\}.
 \end{aligned}$$

## Final Equation.

$$11,42 = +0,0442 \times e - 0,9989 \times f - 0,0442 \times x + 0,9989 \times y + 0,1560 \times t + 2,0574 \times m - 0,9144 \times n.$$


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## METEOROLOGICAL OBSERVATIONS.

THE following OBSERVATIONS were made in conformity with the rule laid down by Sir J. HERSCHEL in a notice circulated by him from the Cape of Good Hope. The observations could not be commenced on June 21, 18<sup>h</sup>, as the notice was only received on June 21, about 21<sup>h</sup>. The observations of Dec. 21. were inadvertently omitted in the general confusion which my departure occasioned in the Observatory. The error of a chronometer had been previously computed, and by means of this the observations were made pretty accurately at the time indicated: as the error of time in no case amounted to one minute, it has not been thought necessary to mention the exact time. The direction of the wind was judged by personal sensations, as there is no vane on the Observatory. From 16<sup>h</sup> to 20<sup>h</sup> inclusive, the observations were made by me: the rest are by Mr Glaisher.

Day and Hour, 1835.	Barom.	Att. Ther.	Free Ther.	Direction of Wind.	Strength of Wind.	Nature of Clouds, and general Remarks on the Weather.
<i>h.</i>	Inches.	o	o			
June 21. 23	29,659	62,3	62,1	W. S. W.	Strong.	Cumulo-strati 30° high round the horizon: the zenith blue surrounded with cirri.
June 22. 0	29,648	64,2	64,8	S. W.	Very strong.	N.E. half of horizon cumulo-strati: S.W. half, clear with woolly clouds: cumuli about the zenith.
1	29,621	67,0	67,7	S. W.	Very strong: gusts.	Cumuli near the horizon: cirri and woolly clouds near the zenith.
2	29,620	68,2	68,3	S. W.	... ..	Near the same: clouds in W. massive and pyramidal.
3	29,606	68,2	68,8	S. W. b. W.	... ..	Nearly similar: clouds near horizon small: zenith still blue, with white fleecy clouds here and there.
4	29,593	68,2	67,8	S. W. b. W.	Very strong: often heavy gusts.	Large cumulo-strati in N.E. half of horizon: smaller in S.W. half: zenith blue, large cirro-cumuli near.
5	29,591	66,4	65,7	S. W. b. W.	Not so strong, but still blowing fresh.	N.E. horizon clear: the rest cumuli and light clouds: the zenith cloudy, connected with large clouds in N.W.
6	29,574	66,1	65,2	W. S. W.	Rather increased.	Cumulo-strati near the horizon all round: the rest of the sky clear.
7	29,562	64,3	63,8	S. W.	Gusts, but not so very strong.	Horizon the same: W. of zenith cirrus, dark clouds below.
8	29,550	62,5	62,2	S. W.	Stiff breeze: occasionally strong puffs.	H. cumulo-strati: Z. cirri: S. and E. of Z. blue with cirro-strati: N. and W. of Z. cirro-cumuli.
9	29,548	63,0	62,1	S. W.	... ..	Dark cumuli and cirro-strati every where except zenith, which is dirty blue.
10	29,545	62,2	60,6	S. W.	... ..	Black massive cirri every where: less heavy in the E.
11	29,531	61,2	60,3	S.	... ..	Black every where.
12	29,514	60,3	59,8	S. b. W.	More moderate.	Black: rainy appearance.
13	29,512	60,2	58,4	S. b. W.	Breeze.	Rain.
14	29,510	59,2	56,1	S. W.	Light breeze.	Rain.
15	29,500	57,8	55,5	S. W.	... ..	Heavy rain this last hour.
16	29,502	57,0	54,9	S. S. W.	No steady wind at all, only an occasional little puff.	Raining fast: the sky covered with nimbus: faint stratus in the N.W.
17	29,501	57,5	54,2	S. S. W.	Not quite steady: gentle.	No rain. In the W. to the height of 20° there is an appearance of cirro-strati with light below: all the rest black.
18	29,502	55,3	54,2	S. W. b. S.	Very gentle: not steady.	N.W. half of sky clear: light cirri above: light strati in the E.
19	29,508	56,0	55,2	S. W.	Gentle: pretty steady.	Nearly the same: eastern clouds cirrus, partly stratified.
20	29,525	56,5	56,2	S. W.	Stronger: not steady.	Cirri, cirro-cumuli, and stratified clouds, in blue sky, the E. side is still the heavier.
21	29,531	57,8	57,5	S. W.	Moderate breeze.	Globose cumuli in N. E. and W.: cirro-strati in S.: zenith nimbus in blue sky.
22	29,540	58,3	58,8	S. W.	Rather stronger: not steady	Zenith clear: cirro-cumuli scattered every where else.
23	29,552	60,4	60,4	S. W.	Stronger and steadier.	Zenith and N.E. nearly clear: cumulo-strati in N.W.: nimbus in S.W.: cirro-cumuli E.
June 23. 0	29,561	60,5	59,2	W. S. W.	Same as last: about 10 <sup>m</sup> since a sudden low gust.	A few drops of rain: nimbus near the zenith except on the E. side, which is clear: cirri near horizon.
1	29,563	60,4	61,4	S. W.	Strong breeze.	Zenith clear: cirro-cumuli scattered about.
2	29,570	61,3	62,2	S. W.	Moderate breeze.	Clear near the zenith, except on the W. side, where are cirri with cumuli below. S.E. nimbus, and rain at a distance: N. nimbus.

Day and Hour, 1835.	Barom.	Att. Ther.	Free Ther.	Direction of Wind.	Strength of Wind.	Nature of Clouds, and general Remarks on the Weather.	
<i>h.</i>	Inches.	o	o				
June 23.	3	29,579	61,8	61,5	W. S. W.	Moderate breeze.	Zenith clear: S.E. half, clear with cirro-cumuli above cumuli: N.W. half, large nimbus.
	4	29,579	61,2	61,0	W. S. W.	...	S. of zenith nimbus: cirro-cumuli and cumuli generally scattered.
	5	29,585	61,2	61,0	W.	...	The Sun obscured by nimbus: generally clear in other directions: cumuli and cirri near the horizon.
	6	29,589	60,9	59,8	W.	Steady light breeze.	A few cirri S. of zenith: cumuli scattered near the horizon.
Sept. 20.	19	29,789	57,5	55,0	S. S. W.	Light breeze.	Bright streak in E., every where else cloudy.
	20	29,790	57,0	55,5	S. S. W.	...	Very faint break in E.: cloudy.
	21	29,782	58,0	57,5	S. S. W.	...	Cloudy: Sun just visible.
	22	29,800	59,0	58,7	S. S. W.	...	The same.
	23	29,786	59,9	59,1	S S. W.	...	Slight rain.
Sept. 21.	0	29,765	60,0	59,5	S.	Light breeze.	Rain.
	1	29,765	59,0	57,6	S.	...	Raining fast.
	2	29,742	58,8	57,3	S.	...	Steady rain.
	3	29,734	57,5	57,5	S.	Extremely light.	Few drops of rain: clouds broken in the E.
	4	29,713	58,5	57,2	S.	...	Cloudy: mist forming.
	5	29,729	58,2	57,6	S.	Calm.	Steady rain.
	6	29,710	58,0	56,5	S.	...	Steady rain.
	7	29,704	57,2	55,1	S.	...	Little rain: a break in the clouds near N.W. horizon.
	8	29,704	56,3	54,7	S.	...	Every where black: very dark night.
	9	29,704	55,9	54,7	E.	Very calm.	The same, with a little rain.
	10	29,703	56,1	55,6	E.	Calm.	The same; no rain.
	11	29,700	56,2	55,4	E. b. N.	Very calm.	The same.
	12	29,683	56,6	55,0	E.	Calm.	The same: drizzly rain.
	13	29,660	56,5	55,1	E. b. N.	Scarcely perceptible.	The same.
	14	29,636	56,2	55,6	E. b. N.	...	The same: no rain.
	15	29,616	57,1	56,1	E.	...	Clouds breaking in N.: faint streak in E.: all the rest black nimbus.
	16	29,592	57,0	56,4	E. S. E.	Very gentle.	Very dark sky: a little light near the horizon in N.E., E., and S.
	17	29,571	57,5	57,0	E. S. E.	Gentle, not ateady.	As dark as is possible with so much dawn: a little light in the N.E.
	18	29,530	58,0	57,8	S. E.	Stronger.	Dusky sky: much mist: copious precipitation of moisture.
	19	29,503	58,0	58,5	E. S. E.	Very light and unsteady.	Much mist: dusky sky: light near horizon in E. and S.E.
	20	29,484	59,3	61,5	S. S. W.	Fresh breeze.	Sunshine: fog-clouds driving off in the W.: cirri and cumulo-strati generally scattered.
	21	29,470	63,7	64,9	S. S. W.	...	Cloudless near the zenith: cirri scattered over the sky, cumulo-strati in the S.W.
	22	29,468	66,0	67,7	S. W.	Strong breeze.	Cirri in zenith: cloudless round it: cumuli and cirri scattered about.
23	29,458	68,0	68,6	S. W.	Strong breeze: puffs.	Sky generally clear blue: misty in the E.	
Sept. 22.	0	29,432	69,0	69,4	S. S. W.	Stiff breeze: frequent puffs.	Cloudless near the zenith: cirri in the E. and generally scattered.
	1	29,430	69,2	69,6	S. S. W.	Not so strong.	Cumuli every where: massive in the S.
	2	29,422	69,2	68,7	S. S. W.	Strong breeze: occasional gusts.	From zenith to horizon, between N.W. and S.W., cloudy: in the rest of the sky detached cumuli.
	3	29,415	69,0	68,3	S. b. W.	Stiff breeze: gusts.	The S.W. half cloudy to the zenith: in the rest of the sky cirro-strati, cumuli, and cumulo-strati.
	4	29,400	68,0	67,5	S.	...	Cirro-cumuli in E. near horizon: bright streak near W., the rest of the sky covered, generally with nimbus.
	5	29,404	67,5	67,5	S.	More moderate.	Sky generally clouded: the horizon tolerably bright.
6	29,409	66,8	66,5	S.	Fresh breezes: not steady.	On S. side, midway between horizon and zenith, clear: every other part cloudy: nimbus in W. light clouds in E.: mild looking night.	









**University of Cambridge.  
Observatory.  
Astronomical observations.**

