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## HELIOMETER OBSERVATIONS

FOR

# DETERMINATION OF STELLAR PARALLAX 

MADE AT THE

# ROYAL OBSERVATORY, CAPE 0F GO0D H0PE, Poyol obsen 

BY

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HER MAJESTY'S ASTRONOMER AT THE CAPE.

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## INTRODUCTION.

Soon after I had the honour of being appointed Her Majesty's Astronomer at the Cape, in 1879, I directed the attention of the Lords Commissioners of the Admiralty to the fact that no adequate equipment for refined extra meridian observations existed at the Observatory. Before making further official proposals to remedy this defect I had the good fortune to procure, by private purchase, the Heliometer which I had used at Dun Echt, and in connexion with the expedition of Lord Lindsay (now the Earl of Crawford and Balcarres) to the Island of Mauritius in 1874, when I observed with it the opposition of the minor planet Juno,* and which I afterwards employed by Lord Lindsay's kind permission, in the Royal Astronomical Society's expedition to the Island of Ascension to observe the opposition of Mars in 1877. $\dagger$

The instrument as employed at Mauritius and Ascension is fully described in the Dun Echt publications, Vol. II. For use at the Cape I could not obtain the original equatoreal mounting, and therefore ordered a new stand for the Heliometer tube and cradle from Sir H. Grubb of Dublin, taking advantage of the opportunity thus offered to have some alterations made on the instrument which previous experience had proved to be desirable. These alterations were chiefly in connexion with the slow motion of the tube in position-angle. In the original instrument the quick motion in position-angle was accomplished by turning a rod, which carried a pinion which acted on a wheel of which the Heliometer tube formed the axis. Slow motion was given by rotating this rod very slowly by means of a toothed wheel acted on by a tangent screw, but the effect was to create a certain amount of torsion of the rod before any rotation of the tube took place, so that there was wanting that immediate and precise response to the observer's action which is essential for easy and accurate measurement. I therefore planned the following arrangement.

At the end of the cradle next to the observer, there is fitted on the tube (or rather on one of the collars attached to the tube)

[^0]a ratchet wheel with square cut teeth. This wheel is so fitted as to turn smoothly on the collar, but, when the observer so desires, it can be clamped firmly to the tube by a handle coming down to the eye-end. A steei screw with a square-cut thread (such as Grubb uses for the driving screws of his Equatoreals) acts on the teeth of this wheel, whilst the pivots of this screw rest in bushes in a frame attached to the cradle. The screw is turned by bevel wheels acted on by a handle coming down to the eye-end. When the observer turns the handle the wheel slowly rotates; and, if the tube is clamped to the wheel, a smooth easy rotation is communicated to the tube. This slow motion as well as the Equatoreal mounting, and the driving clock were admirably constructed by Sir. H. Grubb and the instrument was in every respect efficient, stable, and convenient.

During a visit to some of the principal European observatories, before my departure for the Cape, I met Mr. W. L. Elkin, a student under Professor Winnecke, who was then engaged in preparing his "Inaugural Dissertation" for the Degree of Doctor of Philosophy at the University of Strasburg. The subject he had selected was the orbit and parallax of a Centauri and he applied to me for any observations of a Centauri as a double star, or any unpublished meridian observations of $\alpha \beta$ Centauri which I might find on the records of the Cape Observatory.* In the course of conversation I informed Mr. Elkin of my purchase of the Heliometer, and of the purposes to which I intended to apply it. He expressed much interest in my programme and his keen desire to take part in such work, It was finally arranged that, on the completion of his curriculum and on the arrival of the Heliometer, Dr. Elkin should come to the Cape and share my labours.

The Heliometer reached the Cape in the end of December 1880 (the Lords Commissioners of the Admiralty having defrayed the cost of transport), and I proceeded at once to erect it in an old observatory which had been built by Sir Thomas Maclear in 1847, to cover a small telescope by Dollond. This observatory is described in Mem. R.A.S., vol. xx., pp. 31-34. I had duly completed the necessary alterations of the building, and the adjustments of the instrument when Dr. Elkin arrived at the Cape, on 1881, January 31. The following month was spent in preliminary experiments, in the selection of stars of comparison, and in the preparation of a programme.

[^1]This settled, I was on the point of leaving for Durban and Aden to carry out the longitude operations connecting these places with the Cape, when I was suddenly recalled to England on urgent private affairs. I made new arrangements for the longitude work, so that when I returned to the Cape on 1881, June 30, I was enabled to take up the programme of the Heliometer observations at an earlier date than I originally intended. Dr. Elkin occupied my house in my absence, and remained as my guest, and as a member of my family circle until the completion of our programme. He sailed from the Cape on 1883, May 16. His work from first to last was a labour of love.

The resuits of the observations contained in this volume have been published in the Memoirs of the Royal Astronomical Society, vol. xlviii. ; but in connexion with such work it is usual and desirable to publish sufficient details of the original observations to enable other Astronomers to verify the subsequent computations.

In the selection of comparison stars the conditions aimed at were :-

1. Symmetrical situation with respect to the star whose parallax is to be determined, that is to say, nearly at equal distances from it, and different in position-angle nearly $180^{\circ}$. As far as possible these position-angles should nearly coincide with the position-angle of the major axis of the parallactic ellipse, but when several pairs of comparison stars are employed this condition cannot of course be fulfilled.
2. Both comparison stars should be nearly of equal magnitude.
3. They should be stars having little or no proper motion.

The following are the positions of the comparison stars as determined with the Cape Transit Circle, and the adopted position-angle and distance from the principal star; the other existing observations reduced to the same equinox will be found in the Mem. R.A.S., loc. cit.


A complete observation consists of the following processes :-

1. The Position Circle is set to the required position-angle and the segments separated in distance the requisite amount.
2. The axis of the tube is directed, by means of the Hour and Declination Circles, to the middle point between the stars to be observed, when the images of the two stars are seen together in the field of view.
3. The observer, by slow motion in position-angle and distance, now brings the images to near contact, especially adjusting the distance as nearly as possible. This latter adjustment cannot be accurately made by superposing the images ; the best practical method is to first place the images of the two stars so that, while the dises are nearly in contact, the line joining their centres shall be at right angles to the direction of measurement. The estimation of this condition is facilitated in two ways: 1st, the images formed by semi-lenses are not circles but ellipses, and when the definition is good and the stars are sufficiently bright, the most accurate plan is to make the major axes of the two ellipses coincident. The accuracy of this estimation is greatly enhanced by immediate and frequent interchange of the two images by use of the slow motion in position-angle. The symmetrical emergence of the elliptical discs from behind each other in alternate opposite directions forms the most refined method of "pointing" known to astronomers. When the images are very faint or ill-defined, the power of estimating distances in this way is not available, because the major axis of the ellipse cannot be precisely distinguished. To provide for this, four flat intersecting wires were inserted, in the common focus of the object glass and eye-piece, forming a square, in the centre of the field, two sides of the square are parallel to the direction of motion in distance, and two at right angles to this direction. The observer takes the latter pair of wires as his guides, and by motion of the "distance-handle" adjusts the position angle of the artificial close double star parallel to the direction of these wires. This observation is analogous to that in which an observer with a parallelwire micrometer adjusts the wires parallel to the line joining the centres of the double star whose position angle he is measuring, but with this difference, that the latter moves the position-angle of his micrometer till the
wires are parallel to the stars under observation, whilst the Heliometer observer changes the apparent positionangle of the artificial double star by motions of his "distance-handle" until the line joining the components is parallel to his guiding wires. Immediately "crossing through " (i.e., exchanging the relative positions of the two stars), he verifies his former observation, and, if he finds it confirmed, proceeds to read the scales. The eye is very sensitive to the symmetrical crossing of the stars and readily detects any apparent change of parallelism in the guiding wires as such error in the first pointing is doubled after "crossing through."

The accuracy in pointing by either of these methods is greatly enhanced when the two images are precisely similar, hence the great attention paid to the construction of the screens employed to equalize the images. These screens were constructed of one, two, and three thicknesses of wire gauze of different mesh, and by careful selection and trial little difficulty was found in procuring satisfactory equalization of the images; the light of Sirius, for example, being reduced to such perfect equality with that of the comparison stars $\alpha$ and $\beta$ (7th magnitude) that it was impossible to distinguish the image of Sirius from that of the comparison stars, either by the difference of brilliancy or by the appearance of the disc, when both were viewed near the centre of the square. If the images of the comparison stars differed in magnitude the screen was, as a rule, adjusted so as to reduce the brilliancy of the principal star to the mean brightness of the comparison stars.

When the observer has completed a "pointing " in the manner described, he reads the scales as already mentioned.

The "scales" are of silver, attached to the two slides which carry the halves of the object-glass and are divided into 150 divisions figured at each tenth division. The microscope views both scales at once and (approximately) when the readings of the scale are identical the optical centres of the segments are in coincidence. If this condition could always be realised, the difference of the readings of the two scales would give directly the distance measured in terms of the scale.

In practice it is of course necessary to find accurately the difference of the readings when the optical centres are in coincidence; this difference is termed the "Index-error."

Two turns of the micrometer-screw correspond very nearly with one division of the scale.

An account of the investigation of the division-errors of the scales is given in Dun Echt publications, Vol. II., pp. 11-51.

As the object throughout the following series of observations was to determine not the absolute distance of the primary star from its comparison stars but the change of these distances as produced by proper motion and parallax, the same divisions were employed throughout the whole of the observations of the same distance, and no corrections for division-error have been applied except for determining the Runs.

In reading the scales a pointer marks the centre of the field of view of the microscope, and the division preceding and following the pointer is read on each scale.

The segments and screen are reversed after each observation, a second pointing is made, and the scales again read.

The instrument is then set for the position-angle and distance of the second comparison star and directed by the circles to the middle point for the new pair, a pointing made, the scales read, the segments and screen reversed, the stars again pointed and the scales read.

Thus the distance of each of the two opposite comparison stars is measured once in each of the two opposite positions of the segments, and so also the effect of Index-error is eliminated. But such an observation is not complete, because it is non-symmetrical-a progressive change in the relative temperatures of different parts of the instrument may, as a matter of fact frequently does, create a change of scale-value which can only be eliminated by arranging the observations in symmetrical order. Therefore the same observations are repeated in the reverse order, that is to say, if the first pair be made in the order $a b$, the second pair would be in the order $b a$. The instrument having been reversed $180^{\circ}$ in position-angle similar observations are made in the order $a b b a$. To complete the symmetry of the work, care was taken on the following night of observation to arrange the order $b a a b$.

The following is a copy of the form in which the observations were entered with the original record as entered by the observer.*

[^2]

Heliometer Obserfations at the Cape of Good Hope, 6 July 1881.


Objects : $a_{2}$ Centauri and $a$.
Group 2. Gile.
Chronometer.


The times entered are those of the Sidereal Chronometer employed. In the block of "Readings the left-hand column gives the reading of the scale division on the further side of the pointer from the micrometer head, the webs approach the head with increased readings of the head.

The middle column gives the division which is read on the side of the pointer next the micrometer head, and the righthand column the micrometer reading on the named division.

The scale readings increase as the micrometer readings decrease ; therefore, if we refer the scale readings to the zero of the micrometer, it is clear that were there no index-error, no error of Run, and no error of the micrometer-screw, the true reading for scale A. would be 105 divisions $=210$ revolutions $+1 \cdot 600$ revolutions. But if we suppose for the moment that the division-errors are insensible, the error of Run on scale A. is $\cdot 603-600=+0 \cdot 003$ rev. over two revolutions, or $+\cdot 0015$ per revolution ; because if the pointings were exact, and there were no division-error, both readings should agree or rather should differ exactly 2 rev. But since there are accidental errors of pointing in reading the micrometer scales, it is better to deduce the Run from all the scale readings made in the same complete observation, and this is accordingly done. In the example in question we have the following differences in order:-
$\left.\begin{array}{c|c||c|c}\hline \text { Scale A. } & \begin{array}{c}\text { Corr. for } \\ \text { Screw-error.* }\end{array} & \text { Scale B. } & \begin{array}{c}\text { Corr. for } \\ \text { Screw-error. }\end{array} \\ \hline \mathbf{r} & & & \\ +0.003 & \mathbf{r} & & \\ -.010 & .0 .001\end{array}\right)$

[^3]where $u$ is the reading of the screw-head, and $n$ the number of revolutions from $0 \cdot 00$.

Having thus determined the correction for Run for one revolution, the corresponding correction is to be applied to the readings. These corrections might be applied only to the reading of the division next the micrometer-head, but in this way some accuracy would be lost. It is more exact to suppose that our point of reference is the middle point between the two divisions, and to shift our reference point in imagination, one revolution farther from the micrometer-head. The reduction is then precisely the same as if we used only one division and a known Run, except that the mean of the readings of the two scales is entered instead of the reading of only one.

Tables were prepared which give the correction for screwerror applicable to the mean of the readings of the two scales with the argument " lower reading."

The computation of the distances is then effected as follows :-
Where the sign of B-A refers only to the sign of the correction for index-error.

Computation of Corrected

\begin{tabular}{|c|c|c|c|c|}
\hline Name and Group Date and Time Scale - \& \(\frac{1881, \text { July }}{\text { A }}\) \& \multicolumn{2}{|c|}{\[
\begin{aligned}
\& \mathrm{h} \mathrm{~m} \\
\& \mathrm{I} 5^{\circ} 4^{\circ} \mathrm{I}
\end{aligned}
\]} \& \(a_{2}\) Centaui \\
\hline Follg. Div. \(\times 2-\)
Mean Screw Reading -
Screw-error
Run - - \& +
+
+
+ \& \(\begin{array}{rr} \& 92 \\ +\quad 1086 \\ + \& 4 \\ +\quad 6\end{array}\) \& \(\begin{array}{rr} \& 90 \\ + \& 2.305 \\ + \& 1 \\ + \& 7\end{array}\) \& 210
\(+\quad 20480\)
\(+\quad 2\)
\(+\quad 7\) \\
\hline Sum \& 211.611 \& 93.886 \& \(92 \cdot 313\) \& 212.489 \\
\hline \(\mathbf{B - A} \left\lvert\, \begin{aligned} \& \text { Diff. } \\ \& \text { Refn. }\end{aligned}\right.\) \& \(-11\) \& \& \& \\
\hline Distance - \& \multicolumn{4}{|c|}{237-974} \\
\hline Name and Group \& \multicolumn{4}{|r|}{\multirow[t]{2}{*}{}} \\
\hline Date and Time \& \& \& \& \\
\hline Scale - - - \& \multicolumn{4}{|l|}{} \\
\hline Follg. Div. \(\times 2-\) Mean Screw Reading \& \(76 \cdot\)
1.251 \& 226.
1.502 \& \& 78. \\
\hline Screw-error - \& \& 1502
\(+\quad 2\) \& \(+\quad 5\) \& \(+\quad 0.968\)
\(+\quad 4\) \\
\hline Run - - \& 4 \& + 5 \& \& \\
\hline Sum \& \(77 \cdot 257\) \& 227.509 \& \(226 \cdot 787\) \& \(78 \cdot 975\) \\
\hline B-A \(\left.\right|^{\text {Diff. }}\) Refn. \& \multicolumn{4}{|l|}{\[
\begin{array}{r}
298 \cdot 064 \\
89
\end{array}
\]} \\
\hline \multicolumn{5}{|l|}{Distance - -} \\
\hline \multicolumn{5}{|l|}{\multirow[t]{2}{*}{\begin{tabular}{lc|cc} 
Name and Group \& - \& h m \& \(a_{2}\) Centauri \\
Date and Time - \& - \& \(15 \cdot 54^{\circ} 3\) \&
\end{tabular}}} \\
\hline \& \& \& \& \\
\hline Scale - - - \& \multicolumn{4}{|l|}{} \\
\hline \multirow[t]{4}{*}{Follg. Div. \(\times 2\) Mean Screw Reading Screw-error Kun} \& \multirow[t]{4}{*}{210
\(+\quad 10747\)
\(+\quad 5\)
\(+\quad 5\)} \& \multirow[t]{4}{*}{+
+
+
+} \& \multirow[t]{4}{*}{\(90^{\circ}\)
2.896
i

9} \& \multirow[t]{4}{*}{210
$+\quad 3.089$
$+\quad 2$
$+\quad 9$} <br>
\hline \& \& \& \& <br>
\hline \& \& \& \& <br>
\hline \& \& \& \& <br>
\hline Sum - - - - \& 211*757 \& $94 \cdot 042$ \& 92.908 \& 213.100 <br>

\hline \multirow[t]{2}{*}{| $\text { B-A } \left\lvert\, \begin{aligned} & \text { Diff. } \\ & \text { Refn. } \end{aligned}\right.$ |
| :--- |
| Distance |} \& \multicolumn{2}{|l|}{-117.715

120.192} \& \multicolumn{2}{|c|}{$$
\begin{array}{r}
237.907 \\
67
\end{array}
$$} <br>

\hline \& \multicolumn{4}{|c|}{2370974} <br>

\hline \multirow[t]{2}{*}{| Name and Group |
| :--- |
| Date and Time |} \& \multicolumn{4}{|r|}{\multirow[t]{2}{*}{}} <br>

\hline \& \& \& \& <br>
\hline Scale - - - \& A \& B \& A \& B <br>
\hline \multirow[t]{4}{*}{Follg. Div. $\times 2$ Mean Screw Reading Screw-error Run} \& 76. \& \multirow[t]{4}{*}{$\begin{array}{rr} & 226 \\ +\quad 1.718 \\ +\quad 5 \\ +\quad 5\end{array}$} \& \multirow[t]{4}{*}{$\begin{array}{rr} & 226 \\ + & 1 \cdot 003 \\ + & 3 \\ + & 3\end{array}$} \& \multirow[t]{4}{*}{$\begin{array}{rr} & 78 \\ +\quad 1211 \\ + & 2 \\ + & 4\end{array}$} <br>
\hline \& $1 \cdot 452$ \& \& \& <br>
\hline \& \& \& \& <br>
\hline \& 4 \& \& \& <br>
\hline Sum - - - \& $77 \cdot 457$ \& 227.728 \& 227009 \& $79 \cdot 217$ <br>

\hline B-A ${ }^{\text {Diff. }}$ \& \multicolumn{2}{|l|}{\multirow[t]{2}{*}{$$
\begin{array}{r}
-150.271 \\
147.792
\end{array}
$$}} \& \multicolumn{2}{|c|}{\multirow[t]{2}{*}{$298 \cdot 063$

85}} <br>
\hline B-A Refn. \& \& \& \& <br>
\hline Distance - \& \multicolumn{2}{|l|}{} \& \multicolumn{2}{|c|}{$298 \cdot 148$} <br>
\hline
\end{tabular}

Scale and Screw Readings.


The correction for chronometer error on July 6, derived from comparison with the transit-clock, was $+5 \cdot 8 \mathrm{~m}$. which applied to the mean of each pair of chronometer times of observation gives the sidereal time for each pair of pointings as printed in the results.

The refraction is computed, having regard to the readings of the meteorological instruments, for each of these epochs; and being applied the result is the true observed distance free from index-error. The mean of four such determinations of each pair constitutes a complete observation for parallax. The reader who may desire to verify the refraction corrections has only to take the sum of the two distances marked $r$, the difference between this sum and the column marked R is the refraction. The figures in the column marked $R$ give the distance in semirevolutions of the micrometer-screw. In computing the effect of proper motion and aberration, and in the deduction of the parallaxes, a semi-revolution ( R ) of the micrometer-screw bas been taken :-

$$
\mathrm{R}=12^{\prime \prime} \cdot 865
$$

The mean results of these observations and all details of their subsequent discussion are given in the Memoirs of the Royal Astronomical Society, vol. xlviii., and need not, therefore, be repeated here. The concluded results are:-

| Star. | Observer. | Parallax. | Probable <br> Error. | Magnitude of <br> Comparison Stars. |
| :--- | :---: | :---: | :---: | :---: | :---: |

On the publication of these results (loc. cit.), I submitted to the Lords Commissioners of the Admiralty a proposal to acquire a new Heliometer, of seven inches aperture, for the observatory to continue the work on stellar parallax thus begun, and to determine the Solar Parallax by observations of Minor Planets. Their Lordships responded favourably to this appeal. The instrument was ordered from Messrs. Repsold and Söhne of

Hamburg in 1884, was completed early in 1887, slightly modified in a few details after inspection by me in Hamburg, and was erected, and at work at the Cape before the end of the same year. This instrument has in every respect fulfilled the high expectations which I had formed of its powers, and the results already obtained, and which will shortly be published, will, I trust, be found to have amply justified the liberality of the Lords Commissioners of the Admiralty.

David Gill.
Royal Observatory,
Cape of Good Hope, 1893, January 13.




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## HELIOMETER OBSERVATIONS.

## HELIOMETER OBSERVATIONS FOR STELLAR PARALLAX.

MR. GILL'S OBSERVATIONS.


$\alpha_{2}$ Centauri.<br>1881, July 8.



Bar. $30^{\circ} 38$. Ther. $49^{\circ}$. . Run $+3 \cdot \%$ Images 3. Steadiness 3 .
$\epsilon$ Indi.
1881, July 8.

| h m | $r$ |  |  | h m | $r$ |  | R |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $1918 \cdot 7$ | 84.035 | 81.593 | $165 \cdot 692$ | $19.32 \cdot 2$ | 101.447 | $103 \cdot 899$ | 205.430 |
| $1958 \cdot 8$ | $8 \mathrm{I} \cdot 605$ | 84.044 | 165.706 | $1946 \cdot 9$ | 103.919 | 101•459 | $205 \cdot 456$ |
| $20 \quad 9.4$ | 84.062 | $8 \mathrm{r} \cdot 6 \mathrm{ro}$ | 165.728 | 2025 I | 101.469 | 103.920 | $205 \cdot 458$ |
| 2054.4 | 8I•602 | $84^{-081}$ | $165 \cdot 734$ | $2042 \cdot 6$ | 103.922 | 101* 465 | $205 \cdot 454$ | Bar. $30^{\circ} 35^{\circ}$. Ther. $48^{\circ}$. Run $+4^{\circ}$. . Images $\mathbf{I - 2}$ \& 2 . Steadiness $1-2$ \& 2 .

$\alpha_{2}$ Centauri.

|  | r | r | R | h m | $r$ | r | R |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $15.49^{\circ}$ | $147 \cdot 782$ | $150 \cdot 263$ | 298 133 | $155^{8 \cdot 1}$ | 120.184 | 117•739 | 237.992 |
| 1616.4 | 150.251 | $147 \cdot 789$ | 298-126 | 16 7.0 | 117.705 | 120.191 | $237 \cdot 965$ |
| $17 \quad 7 \cdot 5$ | $147 \cdot 785$ | $150 \cdot 262$ | 298-134 | $17818 \cdot 3$ | 120.188 | 117.699 | $237 \cdot 95^{8}$ |
| 1734.8 | 150. 266 | $147 \cdot 803$ | 298-159 | $1726 \cdot 5$ | 117.743 | 120.181 | $237 \times 995$ |

Bar. $30^{\circ} 57$. Ther. $49^{\circ}$. $\quad$ Run +3.5 . Images $\mathbf{1 - 2}$. Steadiness 2 \& $1-2$.

## $\beta$ Centauri.

1881, July 11.

| $\gamma$ |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| h | m | r | r | R |
| I 6 | $3 \mathrm{r} \cdot 9$ | $35^{\bullet} \cdot 715$ | $38^{\circ} \cdot 176$ | $73 \cdot 916$ |
| 16 | $47 \cdot 3$ | $38 \cdot 192$ | $35 \cdot 719$ | $73 \cdot 937$ |

Bar. $30^{\circ}{ }^{\circ} 56$. Ther. $59^{\circ}$. . Run +5.3 . Images $\mathbf{j}-2$. Steadiness $\mathbf{I - 2}$.
$0_{2}$ Eridani.
1881, July 11.
$\beta$

| h |  | $\mathbf{r}$ |  | R |
| :---: | :---: | :---: | :---: | :---: |
|  | $38 \cdot 1$ | $250 \cdot 751$ | 253.281 | 505.027 |
| - | $26 \cdot 1$ | 25.3 .476 | 251.040 | 505.033 |
| $\bigcirc$ | $37 \cdot 3$ | $251 \cdot 064$ | $253 \cdot 55^{2}$ | 505.074 |
| 1 | $19^{\circ} 4$ | $253 \cdot 623$ | 251.132 | 505•076 |


| h | m | $r$ | r | R |
| :---: | :---: | :---: | :---: | :---: |
| 23 | 54.5 | 244.595 | 242.173 | $487 \cdot 420$ |
| $\bigcirc$ | 10.5 | 242 189 | 244*729 | $487 \cdot 448$ |
| - | $51 \cdot 2$ | 244*775 | $24^{2} \cdot 323$ | $487 \cdot 453$ |
| 1 | 5*6 | 242•349 | 244*814 | $487 \cdot 483$ |

Bar. $30^{\circ}$ in 57 . Ther. $47^{\circ} 9$. Run $+2 \cdot 9$. Images 3 \& $2-3$. Steadiness $3-4$ \& 3 .

| $\begin{array}{rr} \mathrm{h} & \mathrm{~m} \\ \text { 17 } 7 & 32 \cdot 9 \\ 18 & 21 \cdot 9 \\ 19 & 6 \cdot 8 \\ 19 & 46 \cdot 8 \end{array}$ |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  |  | $\beta$ Centauri. $\begin{array}{cc} \stackrel{r}{r} & \stackrel{r}{\cdot} \\ 38 \cdot 187 & 35 \cdot 695 \\ 35 \cdot 695 & 38 \cdot 187 \end{array}$ <br> Ther. $4 I^{\circ} \cdot 0$. | $\begin{gathered} 1881, \\ \\ R \\ 73^{\circ} \cdot 932 \\ 73^{\circ} 93^{2} \\ \text { Run }+2.5 . \end{gathered}$ | y 12. |
| $\begin{array}{cc}\text { h } & \mathrm{m} \\ \text { O } & 27 \cdot 5 \\ \mathrm{I} & 7 \cdot 6 \\ \mathrm{l} & 18 \cdot 3 \\ \mathrm{l} & 49 \cdot 8\end{array}$ | r r <br> $242 \cdot 26 \mathrm{I}$ 244.82 I <br> 244.839 242.3 I 3 <br> 242.37 I 244.855 <br> 244.853 242.330 <br> Bar. 30.45.  | $0_{2}$ Eridani. $\begin{array}{c\|cc}  & & \\ R & h & m \\ 487 \cdot 521 & 0 & 41 \cdot 8 \\ 487 \cdot 464 & 0 & 56 \cdot 1 \\ 487 \cdot 515 & 1 & 29 \cdot 2 \\ 487 \cdot 42 \mathrm{I} & \text { I } & 42 \cdot 5 \end{array}$ <br> Ther. $5^{1}{ }^{\circ}{ }^{1}$. |  | aly 14. $\begin{gathered} \quad \mathrm{R} \\ 505.096 \\ 504.991 \\ 505.085 \\ 505.035 \end{gathered}$ |
| h m <br> - 4.4 <br> - $47 \cdot 8$ <br> - $58 \cdot 6$ <br> $135^{\circ} 3$ | $\begin{array}{cc} \mathrm{r} & \mathrm{r} \\ 253^{\circ} \cdot 5^{\circ} 3 & 250^{\circ} 847 \\ 250^{\circ} 95 \mathrm{I} & 253 \cdot 662 \\ 253 \cdot 713 & 250 \cdot 985 \\ 25 \mathrm{I}^{\circ} \cdot 657 & 253^{\circ} 705 \\ \text { Bar. } & \text { in } \\ 0^{\circ} 25 . \end{array}$ | $0_{2}$ Eridani. <br> Ther. $42^{\circ} 5$. | $\begin{array}{cc}  & 1881, J \\ \alpha & \\ \mathbf{r} & \mathbf{r} \\ 242 \cdot 14 \mathrm{I} & 244 \cdot 81_{5} 5 \\ 244 \cdot 87 \mathrm{I} & 242 \cdot 185 \\ 242 \cdot 244 & 244 \cdot 907 \\ 244 \cdot 926 & 242 \cdot 266 \\ \text { Run }+4 \cdot \mathrm{I} . \end{array}$ | aly 15. $\begin{gathered} \mathrm{R} \\ 487^{\circ} \cdot 445 \\ 487 \cdot 660 \\ 487 \cdot 460 \\ 487 \cdot 476 \end{gathered}$ |
| $\begin{array}{cc} \text { h } & \mathrm{m} \\ 15 & 48 \cdot 8 \\ 16 & 41 \cdot 5 \\ 16 & 55 \cdot 5 \\ 17 & 37 \cdot 0 \end{array}$ | $\beta_{1}$  <br> $\mathbf{r}$  <br> 213.557 $210^{\prime} .975$ <br> 210.949 213.521 <br> 213.557 210.962 <br> 210.922 213.494 <br> in  <br> Bar. $29^{\circ} 99$.  | $\alpha_{2}$ Centauri. <br>    <br> $R$ h m <br> $424 \cdot 659$ 16 $6 \cdot 1$ <br> $424 \cdot 618$ 16 $22 \cdot 6$ <br> $424 \cdot 674$ 17 $11 \cdot 8$ <br> $424 \cdot 600$ 17 24.9 <br> Ther. $57^{\circ} 5^{\text {. }}$ |  | aly 16. $\begin{gathered} \mathrm{R} \\ 467 \cdot 359 \\ 467 \cdot 369 \\ 467 \cdot 330 \\ 467 \cdot 363 \end{gathered}$ |


$\alpha_{2}$ Centauri.

| $\alpha_{1}$ |  |  |  | $\beta_{1}$ |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | $\mathbf{r}$ | R | h m |  | r |  |
| $1636 \cdot 2$ | $234 \cdot 895$ | $232 \cdot 248$ | $467 \cdot 312$ | 1651.2 | $210 \cdot 878$ | 213.572 | 424.609 |
| $1716 \cdot 6$ | $232 \cdot 198$ | $234 \cdot 899$ | $467 \cdot 296$ | $174^{\circ} \mathrm{O}$ | 213.584 | $210 \cdot 881$ | $424 \cdot 632$ |
| $1732 \cdot 3$ | 234.867 | 232.218 | $467 \cdot 298$ | $1744^{\circ} \mathrm{O}$ | $210 \cdot 879$ | 213.580 | $424 \cdot 657$ |
| 1812.4 | $232 \cdot 168$ | $234 \cdot 867$ | $467 \cdot 296$ | 1759.3 | 213.554 | $210 \cdot 867$ | $424 \cdot 633$ |
|  | Bar. | $\operatorname{in}_{30^{\circ} 09}$ | Ther | $\stackrel{\circ}{8}$ | Run + | $3^{1} 1$. |  |

1881, July 20.
$\beta_{1}$



$\alpha_{2}$ Centauri.
$\beta$


1881, August 29.
$\alpha$
$\beta$

| h m | $r$ | r | 1 | h m | $\mathbf{r}$ | r | R |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $1730 \cdot 1$ | ${ }^{150 \cdot 219}$ | $147 \cdot 719$ | $298 \cdot 025$ | $1739{ }^{\circ} 2$ | $117^{\circ} 703$ | $120 \cdot 230$ | $238 \cdot 004$ |
| 18007 | $147 \cdot 728$ | $150 \cdot 226$ | 298.050 | $175^{1} \cdot 5$ | $120 \cdot 191$ | $117 \cdot 738$ | $238 \cdot 002$ |
| $18 \quad 12 \cdot 2$ | $150^{\circ} 213$ | 147.721 | 298.033 | 1823.5 | $117^{\circ} 7 \mathrm{y}$ | $120 \cdot 227$ | $238 \cdot 010$ |
| $1845 \cdot 7$ | $147 \cdot 706$ | 150.212 | 298.035 | 1833.4 | 120.200 | $117 \% 700$ | $237 \cdot 986$ |
| $\begin{gathered} \text { in } \\ \text { Bar. } 30^{\circ} 33 . \end{gathered}$ |  |  | Ther. $57^{\circ} 8$. |  | Run $+4^{2} \mathbf{2}$. |  |  |

Sirius.

| h m |  | ${ }^{\mathbf{r}}$ | ${ }^{\text {R }}$ |
| :---: | :---: | :---: | :---: |
| $220 \cdot 6$ | 144.380 | 141.886 | 286.374 |
| $3 \quad 0 \cdot 5$ | 141.879 | 144.385 | $286 \cdot 360$ |
| 312.3 | 144.363 | $141 \cdot 884$ | $286 \cdot 340$ |
| $349{ }^{\circ} 3$ | $141 \cdot 870$ | $144 \cdot 385$ | $286 \cdot 342$ |

1881, August 29.

## $\beta$

| h | m | r | r | R |
| :---: | :---: | :---: | :---: | :---: |
| 2 | $33^{\circ} \cdot 3$ | $139^{\circ} \cdot 713$ | $142^{\circ} \cdot 233$ | $282^{\circ} \cdot 027$ |
| 2 | $47 \cdot 9$ | $142 \cdot 232$ | $139^{\circ} \cdot 735$ | $282^{\circ} \cdot 048$ |
| 3 | $25 \cdot 3$ | $139^{\circ} \cdot 748$ | $142 \cdot 222$ | $282 \cdot 051$ |
| 3 | $36 \cdot 9$ | $142 \cdot 224$ | $139^{\circ} 713$ | $282 \cdot 018$ |

Run +4.5 .



|  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| $\begin{array}{cc}\text { h } & \mathrm{m} \\ 17 & 57 \cdot 0 \\ 18 & 38 \cdot 8 \\ 18 & 49 \\ 19 & 24.3\end{array}$ |  | $\alpha_{2}$ Centauri. $\begin{array}{c\|cc}  & & \\ R & \mathrm{~h} & \mathrm{~m} \\ 467 \cdot 270 & 18 & 13 \cdot 3 \\ 467 \cdot 255 & 18 & 27 \cdot 2 \\ 467 \cdot 314 & 19 & 3.5 \\ 467 \cdot 217 & 19 & 16 \cdot 2 \end{array}$ <br> Ther. $57^{\circ}$. | 1881, Septem $\begin{array}{cc} \beta_{1} \\ \mathrm{r} & \mathrm{r} \\ 210.95 .3 & 213.424 \\ 213.456 & 210.958 \\ 210.915 & 213.416 \\ 213.416 & 210.957 \\ \text { Run }+2.7 . \end{array}$ | er 10. $\begin{gathered} \mathrm{R} \\ 424 \cdot 597 \\ 424 \cdot 649 \\ 424 \cdot 612 \\ 424 \cdot 673 \end{gathered}$ |
| $\begin{array}{cc}\text { h } & \mathrm{m} \\ 22 & 19^{\circ} 8 \\ 23 & 0 . \\ 23 & 15^{\circ} \\ 23 & 55^{\circ} \\ \\ \end{array}$ | $\beta$  <br> $r$ $r$ <br> 103.887 101.418 <br> 101.403 103.859 <br> 103.918 101.399 <br> 101.420 103.914 <br> Bar. 30.17.  | $\epsilon$ Indi. <br> Ther. $53^{\circ} 3$. | 1881, Septem <br> - <br> $\begin{array}{cc}r & \stackrel{r}{r} \\ 8 \mathrm{I} \cdot 6 \mathrm{I} 5 & 84^{\cdot 069} \\ 8 \mathrm{I}^{\circ} \cdot 055 & 8 \mathrm{I} \cdot 602 \\ 8 \mathrm{I} \cdot 6 \mathrm{I} 8 & 84^{\circ} \cdot 067 \\ 84 \cdot 060 & 8 \mathrm{I} \cdot 6 \mathbf{3}^{2}\end{array}$ <br> Run +4.4 . | $\text { r } 10 .$ $\begin{gathered} \quad \mathrm{R} \\ 165^{\circ} 732 \\ 165^{\circ} \cdot 706 \\ 165^{\circ} 738 \\ 165^{\circ} .747 \end{gathered}$ |
| $\begin{array}{cc} \mathrm{h} & \mathrm{~m} \\ \mathrm{I} 7 & 57^{\circ} \mathrm{n} \\ 18 & 29^{\circ} \mathrm{g} \\ 18 & 42.2 \\ 19 & 18.8 \end{array}$ | $\alpha$ | $\alpha_{2}$ Centauri. <br>    <br> $R$ $h$ $m$ <br> $298 \cdot 060$ 18 $9^{\cdot} \cdot 6$ <br> $298 \cdot 064$ 18 $2 I \cdot I$ <br> $298 \cdot 049$ 18 $54 \cdot 9$ <br> $298 \cdot 102$ 19 $4 \cdot 7$ <br> Ther. $49^{\circ} 3$. | 1881, Septem $$ | ber 13. $\begin{gathered} \mathrm{R}^{\prime} \\ 238^{\circ} \cdot 036 \\ 238 \cdot 021 \\ 238 \cdot .035 \\ 238 \cdot 018 \end{gathered}$ |
| $\begin{array}{cc} \mathrm{h} & \mathrm{~m} \\ 22 & 30^{\circ} \\ 23 & 122^{\circ} \\ 23 & 24^{\circ} \\ 0 & 5^{\circ} \end{array}$ | $\beta$  <br> $r$ $r$ <br> 101.401 $103^{.895}$ <br> 103.907 101.422 <br> 101.384 103.891 <br> 103.899 101.430 <br> Bar. 30.35.  |  | 1881, Septem <br> $\alpha$ | ber 13. $\begin{gathered} \quad \mathrm{R} \\ 165^{\circ} 710 \\ 165^{\circ} 689 \\ 165^{\circ} 693 \\ 165^{\circ} \cdot 712 \end{gathered}$ |



Sirius. $\quad$ 1881, September 14.


\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline \& \& \& $\alpha_{2} \mathrm{Ce}$ \& auri. \& 188 \& , Septer \& er 20. <br>
\hline \& \& \& \& \& \& \& <br>
\hline \& \& \& \& h m \& \& \& <br>
\hline 1826.6 \& ${ }_{11}{ }^{\circ} 766$ \& $120 \cdot 185$ \& $238 \cdot 034$ \& 1837.4 \& 150.188 \& 147:719 \& $298 \cdot 019$ <br>
\hline 192.6 \& 120.179 \& $117 \cdot 726$ \& \& $1851^{\cdot 1} 1$ \& 147.740 \& ${ }^{150 \cdot 186}$ \& 298.047 <br>
\hline 1912.8

19 \& ${ }^{11} 17.736$ \& 120.194 \& ${ }^{238} 3 \cdot 038$ \& 1922.4 \& ${ }_{150} 168$ \& 147.695 \& $298 \cdot 013$ <br>
\hline $1944{ }^{\circ}$ \& 120.183 \& $117{ }^{\circ} 73^{6}$ \& $238 \cdot 056$ \& $1934{ }^{\circ}$ \& 147.715 \& ${ }^{150} 15$ \& $298 \cdot 033$ <br>
\hline \& Bar. \& $30 \cdot 32$ \& Ther. \& $8{ }^{\circ}$. \& Run + \& $4^{\cdot 1}$. \& <br>
\hline
\end{tabular}

| Indi. |  |  |  |  | 1881, September 20. |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| h m |  |  | ${ }^{\text {R }}$ | 1 m | r | r | R |
| 2016.2 | 81.607 | $84 \cdot 063$ | 165*724 | 2029.2 | 103.855 | $101 \cdot 427$ | 205.350 |
| $20.56 \cdot 4$ | $84^{\circ} 082$ | $8 \mathrm{I} \cdot 627$ | 165.759 | $2043 \cdot 6$ | 101.417 | 103.843 | 205. ${ }^{26}$ |
| 2173 | $8 \mathrm{I} \cdot 604$ | $84 \cdot 061$ | $165 \cdot 714$ | 2119.8 | 103.880 | 101* 425 | $205 \cdot 365$ |
| $214{ }^{\circ} \mathrm{O}$ | 84.055 | $8 \mathrm{I} \cdot 635$ | $16_{5} \cdot 736$ | 2132.4 | 101.424 | 103.868 | ${ }^{20} 5^{\circ} 353$ |
| Bar. $30 \cdot 33$. |  |  | Ther. $56^{\circ} \mathrm{O}$. |  | Run $+5^{\circ} \mathrm{O}$. |  |  |
| $\begin{array}{ccc}\text { Sirius. } & \text { 1881, September } 20 .\end{array}$ |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
| h ma | $\stackrel{\mathrm{r}}{\text { r }}$ |  |  | h m |  |  |  |
| 3.1 .6 | 142.230 | $139^{\prime} 718$ |  |  | $141^{\circ} 890$ | 144.386 |  |
| 33 3 3 $0^{\circ} 78$ | 139.709 142.247 | 142.247 139 10.70 | $282 \cdot 036$ $282 \cdot 037$ | $\begin{array}{ll}3 & 19.6 \\ 3 & 90\end{array}$ | 144.413 | 141.867 144.420 | $286 \cdot 371$ $286 \cdot 384$ |
| $340 \cdot 8$ 488 | 142.247 139.713 | $139 \cdot 710$ $142 \cdot 245$ | $282 \cdot 037$ $282 \cdot 037$ | 3 3 3 499.7 | 141.867 144.394 | 144.420 141 | $286 \cdot 384$ $286 \cdot 363$ |
|  |  |  |  |  |  |  |  |



Sirius.

|  |  |  |  |  | r |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $347 \%$ | 141.869 | 144.375 | $286 \cdot 330$ | $35^{\circ} 5$ | $142 \cdot 249$ | 139.728 | $282 \cdot 055$ |
| 416.4 | 144.391 | 141.871 | $286 \cdot 346$ | $46 \cdot 5$ | 139.708 | 142.231 | $282 \cdot 017$ |
| $444^{\circ} 7$ | $141 \cdot 885$ | 144.415 | $286 \cdot 382$ | $435^{\circ} \circ$ | $142 \cdot 256$ | $139 \cdot 699$ | 282.034 |
| 51.0 | 144*395 | 141.900 | $286 \cdot 376$ | 449.9 | $139{ }^{\circ} 724$ | 142.204 | $282 \cdot 007$ |
|  | Bar. | in $30 \cdot 24$. | Ther |  | Run + | 1.7. |  |

$\epsilon$ Indi.
$a$

|  | $\alpha$ |  |  | $\beta$ |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ${ }_{\text {b }}^{\text {b }}$ m |  |  |  | $\mathrm{h} \quad \mathrm{m}$ | $\stackrel{r}{\text { r }}$ | ${ }^{\text {r }}$ | ${ }^{\text {R }}$ |
| 23 56•0 | $81 \cdot 632$ | 84.086 | 165.776 | - 7.4 | 103.924 | 101.440 | 205.434 |
| - 35.8 | 84.074 | $8{ }^{81} \cdot 603$ | $16^{5} \cdot 744$ | 21.2 | 101. 447 | 103.896 | 205.416 |
| $\bigcirc 5^{\circ} \mathrm{I}$ | $81 \cdot 612$ | $84 \cdot 042$ | 165.724 | - 55.4 | 103.900 | 101.402 | 205.385 |
| 123.7 | $84 \cdot 093$ | $8 \mathrm{I} \cdot 585$ | 165.762 | 9.4 | 101.415 | 103.880 | $205 \cdot 383$ |
|  | Bar. | $\begin{aligned} & \text { in } \\ & 30 \cdot 20 . \end{aligned}$ | Ther |  | Run + | 4.0. |  |

$\alpha_{2}$ Centauri. 1881, September 26.

| $\alpha$ |  |  |  | $\beta$ |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| h | $\stackrel{\mathrm{r}}{\text { r }}$ | ${ }^{\text {r }}$ |  |  | $\stackrel{\mathrm{r}}{ }$ | $\stackrel{\text { r }}{ }$ |  |
| 19 1.2 | $147 \cdot 716$ | 150'199 | 298.043 | 198.4 | 120.190 | 117.711 | $238 \cdot 006$ |
| 1929.9 | $150 \cdot 215$ | 147.721 | 298.095 | 1928.9 | 117.730 | 120.197 | $238 \cdot 049$ |
| 1938.5 | 147'704 | $150 \cdot 164$ | 298.037 | 1947.8 | 120'194 | 117•713 | $238 \cdot 048$ |
| $206 \cdot 3$ | 150'151 | 147.713 | 298.080 | 208.5 | 117-699 | $120 \cdot 182$ | $238 \cdot 049$ |
|  | Bar | 30. ${ }^{\text {in }}$. | Ther | 3.2 | Run + |  |  |



Sirius. 1881, October 4.

| h m | r | r | R |  | r | r | 18 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $4 \quad 1 \cdot 2$ | $142 \cdot 240$ | $139^{\circ} 721$ | 282 ${ }^{\circ} 039$ | $4 \quad 9.8$ | $141 \cdot 876$ | $144 \cdot 384$ | 286.344 |
| $44^{\circ} \mathrm{O}$ | 1 $39{ }^{\circ} 745$ | 142.227 | 282 ${ }^{\circ} 051$ | $422 \cdot 8$ | $144 \cdot 388$ | $141 \cdot 889$ | $286 \cdot 360$ |
| $450^{\circ}$ | $14^{2 \cdot 233}$ | $139^{\circ} 731$ | $282{ }^{\circ} 043$ | 50.6 | $141 \cdot 887$ | $144 \cdot 397$ | $286 \cdot 364$ |
| $526 \cdot 6$ | $142 \cdot 250$ | 139*757 | $282^{\circ} 077$ | $5 \quad 12 \cdot 8$ | 14I'908 | $144^{\circ} 400$ | 286.388 |



$$
a_{2} \text { Centauri. } \quad \text { 1881, October } 6
$$

| h | m | r | r | R | h | m | r | r | R |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 21 | $4 \cdot 9$ | $147^{\circ} 583$ | $150^{\circ} 110$ | 298.080 |  | $15^{\circ} 1$ | $120^{\circ} 109$ | 117.618 | $238^{\circ} 050$ |
| 2 I | $37^{\circ} 4$ | $150^{\circ} 025$ | $147^{\circ} 519$ | 298.097 |  | $27^{\circ} 0$ | $117 \cdot 603$ | 120.078 | 238.048 |
|  | $45^{\circ} 5$ | 147* 495 | $149^{\circ} 930$ | $298 \cdot 033$ | 21 | $52 \cdot 4$ | 119.975 | II 7* 526 | $237 \cdot 986$ |
| 22 | $22^{\circ} 5$ | 149.802 | $147^{\circ} 290$ | 298.029 | 22 | $7{ }^{\circ}$ | 117* 472 | II9 ${ }^{\circ} 95^{\text {I }}$ | $237^{\circ} 993$ |




Sirius.

|  |  |
| :---: | :---: |
| $h$ | $m$ |
| 2 | $44 \cdot 1$ |
| 3 | $16 \cdot 1$ |
| 3 | $23 \cdot 9$ |
| 3 | $55 \cdot 8$ |

1881, October 16.
$\beta$

| $h$ | $m$ | $r$ | $r$ | $R$ |
| :---: | :---: | :---: | :---: | :---: |
| 2 | $54^{\circ} \cdot 6$ | $139^{\circ} \cdot 762$ | $142^{\circ} \cdot 180$ | $282^{\circ} \cdot 021$ |
| 3 | $6 \cdot \circ$ | $142 \cdot 201$ | $139^{\circ} \cdot 736$ | $282^{\circ} \cdot 016$ |
| 3 | $34^{\circ} 2$ | $139^{\circ} \cdot 73^{8}$ | $142 \cdot 205$ | $282^{\circ} \cdot 022$ |
| 3 | $45^{\circ} \cdot$ | $142 \cdot 190$ | $139^{\circ} 765$ | $282 \cdot 034$ | Bar. $30^{\circ}$ in $\quad$ Ther. $59^{\circ}$. $\quad$ Run +3.2 .

## Sirius.

1881, October 19.


| h | $r$ | $\mathbf{r}$ | R |
| :---: | :---: | :---: | :---: |
| $413^{\circ} \mathrm{I}$ | $141 \cdot 925$ | $144^{\circ} 371$ | 286•379 |
| $422 \cdot 7$ | $144^{\circ} 375$ | 141.937 | 286*394 |
| $457{ }^{\circ}$ | 141.920 | 144.375 | $286 \cdot 375$ |
| $55^{\circ} 3$ | $144 * 375$ | 141.935 | 286.390 |

Bar. $30^{\circ} \cdot 2$. Ther. $60^{\circ}$. . Run +2.3 . Images 1-2. Steadiness I-2.
$a_{2}$ Centauri. 1881, October 28.

| $\beta$ |  |  |  | $a$ |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| h |  |  | R |  |  |  |  |
| 2113.0 | 120.078 | ${ }^{11} 7 \cdot 589$ | 237•982 | 2122.2 | 147* 548 | 149.987 | 298-000 |
| $2144^{\circ} \mathrm{O}$ | 1179526 | 120.010 | $237 \cdot 978$ | 2131.4 | 149'984 | 147.503 | 298.003 |
| $2153{ }^{\circ} 7$ | 119.994 | 117.513 | 237.994 | 223.9 | $147 \cdot 461$ | 149.837 | 298.046 |
| 2224.7 | 117.405 | 119.914 | $238 \cdot 014$ | 2213.4 | 149.813 | $147 \cdot 357$ | 298-008 |
|  | Bar. | in 30 | The | $4{ }^{\circ} 3$. | Run + | $2 \cdot 2$. |  |

## $\epsilon$ Indi.

$\alpha$

| h m | ${ }^{\mathbf{r}}$ | r | R | h | m | r | $r$ | R |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| - $2 \cdot 8$ | 8I 616 | $84^{\circ} 070$ | $165 \cdot 746$ |  | $10^{\circ} 7$ | 103.885 | 101.399 | 205.354 |
| - $32 \cdot 6$ | $84^{\circ} 100$ | $8 \mathrm{I} \cdot 617$ | $165 \cdot 783$ | $\bigcirc$ | $20 \cdot 6$ | 101.406 | $103 \cdot 872$ | 205.352 |
| - $4^{\circ} \cdot 3$ | 81.6I7 | $84^{\circ} 095$ | $165 \cdot 781$ | $\bigcirc$ | $53^{\circ} 3$ | $103 \cdot 884$ | 101.398 | 205.364 |
| 113.5 | 84.081 | 81.605 | $165 \cdot 765$ | 1 | $5^{\circ} \mathrm{I}$ | 101•398 | $103 \cdot 858$ | 205*343 |

Bar. $29^{\circ} 98$. Ther. $49 \circ$. 2 Run $+4^{\circ}$. . Images I. Steadiness 1.

Sirius.
$\alpha$

|  | $\alpha$ |  |  | $\beta$ |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| h m | r | $\mathbf{r}$ | R | h m | $\mathbf{r}$ | r | R |
| $455^{\circ} \mathrm{I}$ | 144.397 | $141 \cdot 905$ | $286 \cdot 383$ | $5 \quad 6 \cdot 7$ | $139^{\circ} 725$ | 142.220 | $282^{\circ} 025$ |
| $533 \cdot 7$ | 141.920 | 144.380 | 286.38r | $520^{\circ}$ | $142 \cdot 206$ | $139^{\circ} 743$ | $282^{\circ} 029$ |
| $543 \cdot 9$ | $144^{\circ} 378$ | $141 \cdot 890$ | 286.349 | 554.4 | $139^{\circ} 733$ | $142 \cdot 211$ | 282.025 |
| $621^{\circ}$ | 141*914 | 144.379 | $286 \cdot 376$ | $68 \cdot 1$ | $14^{\circ} 216$ | $139^{\circ} 749$ | 282.047 |

in
Bar. $29^{\circ} 87$.
Ther. $47^{\circ} 3 . \quad$ Run $+3 \circ 3 . \quad$ Images $1-2 . \quad$ Steadiness 2.

1881, October 31.

|  | $\alpha$ |  |  | $\beta$ |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| h m | r | r | R | h m | r | $r$ | R |
| $2355 \cdot 8$ | $81 \cdot 607$ | $84^{\circ} 075$ | $165 \cdot 741$ | - 6.3 | $103 \cdot 890$ | 101.415 | 205.374 |
| - 23.8 | $84 \cdot 092$ | $81 \cdot 615$ | 165.771 | -13.7 | IOI'379 | $103 \cdot 876$ | 205.327 |
| - $32 \cdot 7$ | $8 \mathrm{I} \cdot 599$ | $84^{\circ} 070$ | $165 \cdot 736$ | - $42 \cdot 7$ | $103 \cdot 875$ | IOI•395 | 205.350 |
| 17.5 | $84 \cdot 078$ | 8I.612 | $165 \cdot 769$ | -52.5 | 101.380 | $103 \cdot 860$ | $205 \cdot 323$ |

Bar. $30^{\circ} 41 . \quad$ Ther. $5^{\circ} \cdot 7 . \quad$ Run +4.9 . Images 2-3. $\quad$ Steadiness 2-3.

$$
\text { Lacaille 9352. } \quad 1881, \text { October } 31 .
$$



Lacaille 9352.
$a$

| $\alpha$ |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| h | m | r | r |  |
| I | $33^{\circ} \cdot 7$ | $263^{\circ} \cdot 906$ | $266^{\circ} \cdot 407$ | $530 \cdot 504$ |
| 2 | $1 \cdot 6$ | $266 \cdot 397$ | $263 \cdot 904$ | $530 \cdot 510$ |
| 2 | $1 \mathrm{I} \cdot 4$ | $263 \cdot 878$ | $266 \cdot 443$ | $530 \cdot 537$ |
| 2 | $37 \cdot 6$ | $266 \cdot 420$ | $263 \cdot 893$ | $530 \cdot 553$ |

1881, November 3.
$\beta$

| h | m | $\mathbf{r}$ | r | R |
| :---: | :---: | :---: | :---: | :---: |
| 1 | $42^{\circ} 1$ | $172 \cdot 495$ | $170^{\circ} 044$ | $342 \cdot 660$ |
| 1 | $5^{2 \cdot} 3$ | $170^{\circ} 026$ | 172.525 | . $342 \cdot 678$ |
| 2 | $21 \cdot 4$ | 172.529 | $170^{\circ} 046$ | $34{ }^{\circ} 713$ |
| 2 | $30^{\circ} 3$ | $170^{\circ} 018$ | 172.490 | $342 \cdot 652$ |

in
Bar. $30^{\circ}$ 10. Ther. $59^{\circ} 5 . \quad$ Run $+4^{\circ} 4$. Images 2. Steadiness 2.

Sirius.
1881, November 3.

| h m |  |  | R | h m | r |  | R |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $254^{\circ} 3$ | $139^{\circ} 713$ | $142 \cdot 212$ | 282.004 | $3 \quad 40$ | 144*396 | $141 \cdot 898$ | $286 \cdot 386$ |
| $321 \cdot 2$ | 142.229 | $137 \cdot 707$ | 282.015 | $312 \cdot 5$ | $141^{\circ} 901$ | 144.419 | $286 \cdot 411$ |
| $329^{\circ} \mathrm{I}$ | ${ }^{1} 39^{\circ} 726$ | 142.210 | 282.015 | $337 \cdot 4$ | 144.407 | 141.912 | 286.406 |
| $356 \cdot 4$ | $142 \cdot 214$ | $139 \cdot 727$ | 282.020 | $346 \cdot 9$ | 141.903 | $144 \cdot 378$ | $286 \cdot 367$ |
| Bar. $30^{\circ} 10$. |  |  | Ther. $59{ }^{\circ} 5$ |  |  |  |  |

Lacaille 9352.
1881, November 5.
$\beta$


1881, November 5.

$\epsilon$ Indi.
1881, November 10.


Sirius.
1881, November 13.

$\epsilon$ Indi.
$\beta$

|  |  |  | R | h m | ${ }^{\text {r }}$ | ${ }^{\mathbf{r}}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| - $36 \cdot 2$ | 101.362 | $103 \cdot 838$ | 205 276 | - $46 \cdot 8$ | $84 \cdot 093$ | $8 \mathrm{I} \cdot 602$ | $165 \cdot 766$ |
| 17.9 | $103 \cdot 865$ | 101*399 | $205 \cdot 351$ | 10.2 | 81.584 | 84.083 | 165.741 |
| $115{ }^{\circ} 7$ | 101.386 | $103 \cdot 858$ | $205 \cdot 335$ | 125.9 | $84 \cdot 084$ | $8 \mathrm{I} \cdot 6 \mathrm{I} 2$ | 165.78i |
| $14^{6 \cdot 2}$ | 103.868 | 101•398 | $205 \cdot 373$ | $137^{\circ} 1$ | 81. 598 | $84 \cdot 064$ | 165.751 |
| Bar. $30 \cdot 0 \%$ in |  |  | Ther. $54 \stackrel{\circ}{7}$. |  | Run +3.7 |  |  |

Sirius.
$\alpha$

| h m | $r$ | r | R | h m | r | $r$ | R |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 329.4 | $141^{\circ} 910$ | $144 * 395$ | 286*394 | $337{ }^{\circ} 9$ | 142.215 | $139^{\circ} 733$ | 282.028 |
| 3 58.6 | 144.413 | 141.917 | $286 \cdot 415$ | $34^{\circ} \cdot$ | 139*759 | $14^{2} \cdot 217$ | $282 \cdot 056$ |
| $410^{\circ} 2$ | $141 \cdot 917$ | $144 * 38$ | $286 \cdot 387$ | $419{ }^{\circ} 7$ | $14^{\circ} 213$ | $139^{\circ} 75^{1}$ | $282 \cdot 043$ |
| $438 \cdot$ | $144{ }^{\circ} 400$ | $141 \cdot 902$ | $286 \cdot 385$ | $429^{\circ}$ | $139^{\circ} 741$ | $14^{\circ} 210$ | $282 \cdot 031$ |

1881, November 18. $\beta$

Run $+1 \cdot 9$.

## Lacaille 9352.

|  | $\alpha$ |  |  | $\beta$ |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| h m | r | r | R | h m | r | $r$ | R |
| $152 \cdot 7$ | $263 \cdot 926$ | $266 \cdot 412$ | $530 \cdot 541$ | 20.5 | 172.495 | 169.998 | $342 \cdot 623$ |
| $217{ }^{\circ} 4$ | $266 \cdot 385$ | $263^{\circ} 912$ | $530^{\circ} 518$ | $29^{\circ} 2$ | $170^{\circ} 011$ | 172.479 | $342 \cdot 624$ |
| $225^{\circ} 8$ | 263.902 | $266 \cdot 384$ | $530^{\circ} 515$ | 233.5 | 172.471 | $170 \cdot 012$ | $342 \cdot 629$ |
| $257 * 4$ | $266 \cdot 38$ I | $263 \cdot 883$ | $530^{\circ} 527$ | $243{ }^{\circ} \mathrm{I}$ | 169.996 | 172.453 | $342^{\circ} 601$ |
|  | Bar | in $30^{\circ} 02$. | The | - 8. | Run + | $3^{\circ} 4$ |  |

$\epsilon$ Indi.
$\beta$


1881, November 20.
$\beta$

| $h$ | $m$ | $r$ | $r$ |
| :---: | :---: | :---: | :---: |
| 0 | $20^{\circ} \cdot 7$ | $103 \cdot 874$ | $101 \cdot 375$ |
| 0 | $56 \cdot 6$ | $101 \cdot 375$ | $103 \cdot 865$ |
| 1 | 9.4 | $103 \cdot 847$ | $101 \cdot 357$ |
| 1 | $4^{\circ} \cdot 7$ | $101 \cdot 364$ | $103 \cdot 850$ |

Bar. in $_{2 \cdot} 85$.
Ther. $59^{\circ} \circ$.

Lacaille 9352. 1881, November 20.

|  | . |  | ${ }^{\text {R }}$ | 3.323 |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 321.9 | 172.502 | 169.965 | $342 \cdot 650$ | $\begin{array}{ll}3 & 32 \cdot 3\end{array}$ | 263.850 | $266 \cdot 340$ | $530^{\circ} 499$ |
| 352.6 | $169^{9} 967$ | 172.475 | $342 \cdot 658$ | $342 \cdot 0$ | $266 \cdot 354$ | $263 \cdot 854$ 26631 | $530 \cdot 533$ $530 \cdot 508$ |
| $4 \mathrm{I} \cdot 2$ | $172 \cdot 457$ | 169.943 | $342 \cdot 628$ | 4 <br> 4 <br> 4 <br> 12.7 | 263.783 266.291 | $266 \cdot 331$ 26306 | 530.508 |

Bar. $29 \cdot 85$ Ther. $55^{\circ} 8 . \quad$ Run +4.2 .
$\epsilon$ Indi. 1881, November 24.

in
Bar. $30^{\circ} 19$.$\quad$ Ther. $58^{\circ} .4 . \quad$ Run +2.9 .

Sirius.
1881, November 24.

| $\beta$ |  |  |  | $\alpha$ |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | R | h |  |  |  |
| 223.3 | 142.230 | 139.717 | 282.026 | $232 \cdot 2$ | 141.900 | 144*379 | $286 \cdot 378$ |
| $251 \cdot 3$ | $139 \cdot 726$ | 142.209 | $282 \cdot 013$ | ${ }^{2} 41^{\circ} 9$ | 144.376 | 141.907 | 286.381 |
| 4.0 | $142 \cdot 236$ | 139.743 | $282 \cdot 057$ | 314.4 | 141.907 | $144 \cdot 386$ | $286 \cdot 383$ |
| $334 \cdot 8$ | 139.724 | 142.228 | 282.030 | 324.7 | 144*391 | 141.908 | 286.386 |
|  | Bar | in $30 \cdot 0$ | Ther |  | Run + | $2 \cdot 1$. |  |

Lacaille 9352. 1881, November 26.

| h m | r | r | R | h m | r | r | R |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $123{ }^{\circ} \mathrm{I}$ | $266 \cdot 441$ | $263 \cdot 939$ | $530 \cdot 565$ | I $35^{\circ} 6$ | 169.987 | 172.496 | $342 \cdot 602$ |
| I $55^{\circ} \mathrm{I}$ | $263^{\circ} 923$ | 266.409 | $530 \cdot 536$ | I $45^{\circ} 9$ | $172^{\circ} 510$ | $170^{\circ} 024$ | $342 \cdot 657$ |
| $25^{\circ} \mathrm{I}$ | $266 \cdot 409$ | $263 \cdot 925$ | $530^{\circ} 544$ | $213^{\circ} 9$ | 170.005 | 172.492 | $342 \cdot 632$ |
|  |  |  |  | $224^{\circ} 4$ | $172^{\circ} 513$ | 169.998 | $342{ }^{\circ} \mathrm{5}$ I |

in
Bar.
$29^{\circ} 85$.
Ther. $56^{\circ} \circ$$\quad$ Run +5.4 .

Sirius. 1881, November 28.

| $a$ |  |  |  | $\beta$ |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| h m | $r$ | r |  | h m | $r$ | r |  |
| $4 \quad 6 \cdot 3$ | 144.430 | 141.933 | $286 \cdot 447$ | 414.5 | ${ }^{139} 9^{\prime 7} 71$ | 142.254 | $282 \cdot 092$ |
| $433 \cdot 2$ | 141.920 | 144.420 | $286 \cdot 422$ | $423 \cdot 8$ | 142.254 | 139.757 | 282.089 |
| 447.3 | 144.417 | 141.922 | $286 \cdot 42 \mathrm{I}$ | $456^{1} 1$ | 139.741 | $142 \cdot 235$ | $282 \cdot 055$ |
| $520 \cdot 9$ | 141*934 | 144.431 | $286 \cdot 445$ | 5788 | 142.249 | 139.760 | 282.088 |
|  | Bar. | in 30 | The |  | Run + | $1 \cdot 6$. |  |

## Lacaille 9352. <br> 1881, November 29.



Bar. $29^{\circ} 9$. Ther. $55^{\circ} 3^{\circ}$. Run $+4^{\circ}$. Images 2. Steadiness 2.

$\alpha_{2}$ Centauri. 1881, December 1.

|  | r | $\mathbf{r}$ | ${ }^{\mathbf{R}}$ | h m | r |  | R |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $74^{\circ} 6$ | $150^{\circ} 205$ | 147.730 | 298.030 | $8 \quad 0^{\circ} 9$ | 117.742 | $120^{\circ} 203$ | $238^{\circ} 026$ |
| $825^{\circ} 4$ | $147^{\circ} 747$ | $150^{\circ} 181$ | $29^{\circ} 037$ | $814^{\circ} \mathrm{I}$ | $120^{\circ} 181$ | $117^{\circ} 740$ | $238^{\circ} 006$ |

Lacaille 9352. 1881, December 8.


Sirius. 1881, December 8.


$\alpha_{2}$ Centauri. 1881, December 10.

|  |  | ${ }^{r}$ | R | h |  | r | r | ${ }^{\text {R }}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $837^{\circ} 7$ | $117^{\circ} 753$ | $120^{\circ} 163$ | $238^{\circ} 005$ |  | $44^{\circ} 7$ | $150 \cdot 169$ | $147^{\circ} 762$ | 298•043 |
| $911{ }^{-8}$ | $120^{\circ} 162$ | $117^{\circ} 762$ | $238^{\circ} 020$ | 8 | $55^{\circ} 7$ | $147 \cdot 779$ | 150'153 | $298 \cdot 046$ |
| $918^{1}$ i | $117^{\circ} 742$ | 120* 133 | 237* 973 | 9 | $27^{\circ} \mathrm{O}$ | 150'146 | $147 \cdot 770$ | 298.037 |

$$
\begin{array}{ccc}
\text { in } & \text { Bar. } 30^{\circ} 02 . & \text { Ther. } 60^{\circ} 5 .
\end{array} \quad \text { Run }+2.8
$$

Sirius.



## Sirius.

$\beta$

| h m |  | r | R | h m | ${ }^{\mathbf{r}}$ | r | R |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 314.1 | ${ }^{1} 39.812$ | 142.179 | 282.069 | $325 \cdot 8$ | 144*346 | 141.988 | $286 \cdot 421$ |
| $345^{\circ} 2$ | 142.203 | 139.786 | 282.067 | $33^{6 \cdot 2}$ | 141.965 | 144.348 | $286 \cdot 399$ |
| 353.3 | $139^{\circ} 793$ | 142.186 | $282 \cdot 057$ | $42 \cdot 1$ | $144 * 368$ | 141.975 | $286 \cdot 425$ |
| 428.2 | $142 \cdot 182$ | 139.802 | $282 \cdot 062$ | $416 \cdot 4$ | 141'979 | 144.387 | $286 \cdot 447$ |
| $\begin{gathered} \text { in } \\ \text { Bar. } 29^{\circ} 89 . \end{gathered}$ |  |  | Ther. $59^{\circ} 8$. |  | Run $+2 \cdot \%$. |  |  |


| - |  |  | $\epsilon$ Indi. |  | 1881, December 18. |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\beta$ |  |  |  |  |  |  |  |
| h m |  | r |  | h m | ${ }_{8}{ }^{\text {r }}$ | r | R |
| 21709 | 103.759 | 101.392 | 205*280 | $227 \cdot 6$ | 81.666 | $84 \cdot 026$ | 165.808 |
| 251.2 | 101.394 | $103 \cdot 766$ | $205 \cdot 32 \mathrm{I}$ | $238 \cdot 6$ | 84.025 | 81.657 | $165 \cdot 805$ |
| $\operatorname{in}_{30^{\circ} 23 .}$ |  |  | Ther. $59^{\circ} \mathrm{O}$. |  | Run +53. |  |  |


in
Bar. $30^{\circ} 15$.$\quad$ Ther. $57^{\circ} 6 . \quad$ Run +1.1.

Sirius.

|  | $\alpha$ |  |  | $\beta$ |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| h m | r | r | R | h m | $\mathbf{r}$ | r | R |
| $333 \cdot 7$ | $144{ }^{\circ} 404$ | 141.913 | $286 \cdot 404$ | $343 \cdot 2$ | ${ }^{1} 39^{\circ} 735$ | $142 \cdot 229$ | 282.042 |
| $4 \quad 0.9$ | $141 \cdot 941$ | 144.426 | $286 \cdot 451$ | $352 \cdot 8$ | $142 \cdot 241$ | $139^{\circ} 738$ | 282.059 | Bar. $30^{\circ} 14$. Ther. $64^{\circ}{ }^{\circ}$. $\quad$ Run $+2 \cdot 0$ Images 2. Steadiness 2.

$\epsilon$ Indi.


1881, December 24.
$\beta$

| $\mathbf{r}$ | $\mathbf{r}$ | $\mathbf{R}$ |
| :---: | :---: | :---: |
| $101 \cdot 364$ | $103 \cdot 821$ | $205 \cdot 331$ |
| $103 \cdot 824$ | $101 \cdot 301$ | $205 \cdot 286$ |
| $101 \cdot 300$ | $103 \cdot 715$ | $205^{\circ} 215$ |
| $103 \cdot 753$ | $101 \cdot 277$ | $205 \cdot 246$ |

Run $+3 \%$.

\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline  \&  \&  \&  \&  \&  \& Decem

r
81
84.596
$84 \cdot 066$
81.572
84.037 \& cer 25. <br>
\hline \multicolumn{8}{|r|}{$\begin{array}{ccc}\text { a } & \alpha_{2} \text { Centauri. } & \text { 1881, December 2 } \\ \beta & \alpha\end{array}$} <br>
\hline ${ }_{8}^{\mathrm{h}} \mathrm{Sa}^{\mathrm{m}}{ }^{\text {a }}$ \& $\stackrel{r}{r}{ }_{120}{ }^{168}$ \& ${ }_{117}{ }^{\text {r }} 705$ \& $\stackrel{R}{237}{ }^{\text {a }}$, 63 \& ${ }_{8}^{\mathrm{h}} \mathrm{m}^{\mathrm{m}}{ }^{\text {2 }}$ \& $\stackrel{\mathrm{r}}{147}{ }^{\text {P26 }}$ \& $\stackrel{r}{\text { r }}$ \& ${ }_{298}{ }^{\mathrm{R}} 029$ <br>
\hline $922 \cdot 7$ \& 117.689 \& 120.194 \& $237 \cdot 981$ \& 913.9 \& $150 \cdot 182$ \& 147.706 \& $298 \cdot 007$ <br>
\hline $931 \cdot 1$ \& 120.170 \& 117.710 \& 237.979 \& $940 \cdot 9$ \& 147* ${ }^{2} 7$ \& 150'196 \& 298.045 <br>
\hline $959{ }^{\text {I }}$ \& 117*797 \& 120.179 \& $237 \cdot 987$ \& 950.6 \& 150.173 \& 147*715 \& 298.011 <br>

\hline \multicolumn{3}{|r|}{$$
\text { Bar. } 30^{\text {in }} 06 .
$$} \& \multicolumn{2}{|l|}{Ther. $59{ }^{\circ} 5$.} \& \multicolumn{3}{|l|}{Run $+1 \cdot 5$.} <br>

\hline
\end{tabular}

$\alpha_{2}$ Centauri.
$a$

| h | m |  |  | R |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 9 | 11.0 | $147 \cdot 749$ | 150.180 | 298-047 | $921 \cdot 3$ |
| 9 | 41•8 | $150 \cdot 173$ | $147 \cdot 735$ | $298 \cdot 031$ | $931 \cdot 7$ |
| 9 | $54 \cdot 3$ | $147^{\circ} 717$ | $150 \cdot 170$ | $298 \cdot 011$ | $10 \quad 7 \cdot 3$ |
| 10 | $27^{\circ}$ | $150 \cdot 204$ | 147*711 | 298.040 | 10.17.6 |

Bar. $30 \cdot 00$.
Ther. $57^{\circ} 0$.

1881, December 26.
$\beta$

| r | $\mathbf{r}$ | $\mathbf{R}$ |
| :---: | :---: | :---: |
| $120^{\circ} 182$ | $117 \cdot 719$ | $237^{\circ} 999$ |
| $117 \cdot 706$ | $120^{\circ} 181$ | $237^{\circ} 986$ |
| $120^{\circ} 187$ | $1177^{\circ} 706$ | $237^{\circ} 994$ |
| $117 \cdot 713$ | $120^{\circ} 179$ | $237^{\circ} 993$ |

Run +0.4 .


Sirius.
$\beta$

|  |  | P |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $34.3 \cdot 8$ | $142 \cdot 214$ | 139.774 | $282 \cdot 064$ | 3 52•0 | 141.933 | $144 \cdot 360$ | $286 \cdot 377$ |
| 418.3 | $139 \cdot 761$ | 142.199 | 282.037 | $4 \quad 63$ | 144.364 | 141.942 | $286 \cdot 388$ |
| 428.6 | 142.221 | ${ }^{13} 3.770$ | 282.069 | $43^{8 \cdot 1}$ | 141.917 | 144.402 | $286 \cdot 399$ |
| 4.9 | 139.794 | 142.205 | 282.077 | $451 \cdot$ | 144.375 | 141.951 | $286 \cdot 406$ |
|  |  | in 30 | Ther |  | Run |  |  |


|  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |



$$
\alpha^{2} \text { Centauri. } \quad \text { 1882, January } 11 .
$$

| h m | r | r | 1 | h m | r | r | R |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 954.4 | 150'188 | $147 \cdot 680$ | 297*990 | $104{ }^{\circ} \mathrm{O}$ | $117 \cdot 684$ | 120.176 | 237.960 |
| $1020 \cdot 6$ | $147 \cdot 670$ | $150 \cdot 199$ | $297 * 992$ | 10 13.1 | 120.194 | 117.666 | 237.960 |
| $1028 \cdot 7$ | 150.219 | 147.676 | 298.018 | 10 $37 \cdot 2$ | 117.660 | $120 \cdot 177$ | ${ }^{2} 37 \cdot 938$ |
| $1056 \cdot 7$ | $147 \cdot 669$ | $150 \cdot 185$ | 297*976 | IO $48 \cdot 4$ | $120 \cdot 187$ | $117 \cdot 689$ | $237 \cdot 976$ |
|  | Bar. | $\operatorname{inn}_{30 \cdot 04}$ | Ther | - | Run + |  |  |

## $\beta$ Centauri.

$\gamma$
in
Bar. $30^{\circ} \circ \mathrm{O} . \quad$ Ther. $62^{\circ}{ }^{\circ} 5 . \quad$ Run $+I^{\circ} 3$.

$a_{2}$ Centauri. 1882, January 18.

|  |  |  | ${ }^{1}$ | h m | r |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $1016 \cdot 1$ | 117.691 | $120 \cdot 159$ | $237 \cdot 951$ | 1026.7 | 150.201 | 147.706 | $298 \cdot 031$ |
| 1045.3 | 120.161 | 117.700 | $237 \cdot 963$ | $1036 \cdot 8$ | 147. 702 | $150 \cdot 193$ | 298.019 |
| 10 53.1 | 117.717 | 120. 168 | $237 \cdot 986$ | 1129 | 150.184 | 147.716 | $298 \cdot 023$ |
| $1120 \cdot 8$ | 120.188 | 117•709 | 237.997 | 1113.6 | 147.703 | $150 \cdot 182$ | 298-008 |
|  |  |  |  |  |  |  |  |

## $\beta$ Centauri. $\quad$ 1882, January 18.

| h | m | r | r | $\mathbf{R}$ |
| :---: | :---: | :---: | :---: | :---: |
| II | $3^{\prime} \cdot 1$ | $35^{\circ} 714$ | $3^{\circ} \cdot 179$ | $73^{\circ} 923$ |
| II | $41^{\circ} 8$ | $3^{8 \cdot 186}$ | $35^{\circ} 702$ | $73^{\circ} 9^{1} 7$ |

Sirius.
1882, January 19.

a Centauri.
$\beta$

| h m | r | r | R | h m | r | $r$ | R |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $1026 \cdot 1$ | 210.948 | 213.378 | 424.583 | 10 $40 \cdot 3$ | 234*639 | $232 \cdot 257$ | 467. 197 |
| $118 \cdot 1$ | 213.383 | $210 \cdot 994$ | $424 \cdot 587$ | $1056 \cdot 4$ | 232.274 | 234.671 | $467 \cdot 178$ |
| $1117 \times 7$ | 210.974 | 213.402 | 424.576 | 1129.8 | 234.712 | $232 \cdot 264$ | $467 \cdot 178$ |
| $1158 \cdot 7$ | 213.431 | 210.990 | $424 \cdot 589$ | II 42.5 | $232 \cdot 311$ | 234*693 | $467 \cdot 195$ |


|  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |


$\alpha_{2}$ Centauri.

in
Bar. $30^{\circ} 08$.$\quad$ Ther. $65^{\circ} \circ . \quad$ Run $+3 \cdot 1$.
$\beta$

1882, February 8.

| r | r | R |
| :---: | :---: | :---: |
| 213.381 | $210 \cdot 976$ | 424. 594 |
| 210.968 | 213.409 | 424.601 |
| ${ }^{21} 3^{\circ} 419$ | $210.989^{\circ}$ | 424. 599 |
| 210.987 | 213.410 | 424*579 |

$\alpha_{2}$ Centauri.
$\beta$

| h m | r | $\mathbf{r}$ | R | h |  | r | r | R |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 123.9 | 117.722 | 120.157 | $237 \times 973$ |  | 14.5 | 150'176 | $147 \cdot 742$ | 298.032 |
| $1240 \cdot 1$ | 120.173 | 117.731 | 237*994 |  | $28 \cdot 5$ | $147 \cdot 735$ | $150{ }^{\circ} 181$ | $298 \cdot 029$ |
| 12 50*0 | $117{ }^{\circ} 731$ | 120.179 | 237*999 | 13 | $4 \cdot 6$ | ${ }^{150} 15^{\circ}$ | $147^{\circ} 75^{\circ}$ | 298.013 |
| $133^{1 .} 4$ | 120.164 | 117*745 | $237 * 992$ | 13 | 12.3 | $147 \cdot 745$ | $150 \cdot 145$ | 298-006 |

$\beta$ Centauri. $\quad 1882$, February 10.

| h | m |
| :---: | :---: |
| 7 | $22 \cdot 0$ |
| 7 | $33 \cdot 7$ |$|$

in
Bar. $29^{\circ}{ }^{\circ}{ }^{\text {in }}$.
Ther. $68^{\circ}{ }_{5}$.
$\alpha_{2}$ Centauri.

| $\alpha$ |  |  |  | $\beta$ |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| h m | $\mathbf{r}$ | r | R | h m | r | r | R |
| 833.5 | 150'144 | $147 \cdot 744$ | 297*996 | $84^{6}$ I | $117{ }^{\circ} 709$ | $120 \cdot 112$ | 237*911 |
| $98 \cdot 3$ | $147 \cdot 764$ | ${ }^{15} 0^{\circ} 163$ | 298.044 | 859.4 | 120.137 | $117{ }^{\circ} 736$ | ${ }^{2} 37 \cdot 966$ |
| 914.8 | ${ }^{1} 50 \cdot 193$ | $147 \cdot 744$ | 298.055 | $923 \cdot 1$ | 117.750 | -120.176 | $238 \cdot 023$ |
| 943.9 | $147 \cdot 747$ | $150 \cdot 165$ | 298.034 | $933 * 9$ | 120.156 | 117*726 | ${ }^{23} 7^{\circ} 980$ |
| $\stackrel{\text { in }}{\text { Bar. } 29^{\circ} 95 .}$ |  |  | Ther. $63{ }^{\circ}{ }^{\circ}$. |  | Run +0.8 |  |  |


$0_{2}$ Eridani.
1882, February 14.

$\alpha_{2}$ Centauri.
1882, February 15.

| $a$ |  |  |  | $\beta$ |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |
| $8 \quad 5 \cdot 3$ | $232 \cdot 113$ | $234 * 491$ | 466.994 | $830 \cdot 3$ | 213.258 | $210 \cdot 8 \% 3$ | 424*598 |
| 8 56.0 | 234.603 | $232 \cdot 222$ | $467 \cdot 232$ | $844^{\circ} 2$ | $210 \cdot 876$ | 213.289 | 424.599 |
| $96 \cdot 5$ | 232.196 | $234 \cdot 618$ | $467 \cdot 202$ | $917 \cdot 6$ | 213.322 | 210.919 | 424.605 |
| 948.2 | $234 \cdot 661$ | $232 \cdot 225$ | $467^{\circ 203}$ | 935.5 | 210.897 | $213 \cdot 318$ | $424 \cdot 546$ |
| Bar. $3^{\text {in }}$ |  |  |  |  |  |  |  |

## Sirius.

1882, February 16.
$\beta$

| ${ }_{\text {m }}$ | 139.783 | ${ }_{142}{ }^{\text {P27 }}$ | ${ }_{28}{ }^{\text {R }}$. ${ }^{\text {r }}$ |
| :---: | :---: | :---: | :---: |
| $3{ }^{-2}$ | 139.783 | $142 \cdot 227$ | 282.112 |
| $90 \cdot 9$ | 142.211 | 139.744 | $282 \cdot 099$ |
| $9 \cdot 7$ | 139.790 | $142 \cdot 205$ | $282 \cdot 113$ |
| 50.0 | $142 \cdot 212$ | 139 788 | $282 \cdot 146$ |


| m |  |  |  |
| :---: | :---: | :---: | :---: |
| $40^{\circ} \mathrm{O}$ | 144.363 | 141.940 | 286.415 |
| $849 \cdot 8$ | 141.917 | $144 \cdot 355$ | 286 |
| 921.9 | $144 \cdot 361$ | 141911 | 286 |
| 34.6 | 141.899 | $144 \cdot 347$ |  |

Bar. $30^{\circ}{ }^{\circ} 23 . \quad$ Ther. $61^{\circ}{ }^{\circ} . \quad$ Run +3.0.
$\alpha_{2}$ Centauri.

|  |  |  |  |  | $\alpha$ |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| h |  |  |  |  |  |  |  |  |
| 10 | $13 \cdot 3$ | $213 \cdot 362$ | $210 \cdot 944$ | $424 \cdot 583$ | 1027.3 | $232 \cdot 246$ | $234 \cdot 660$ | $467 \cdot 177$ |
| 10 | $43^{1}$ 1 | 210.985 | 213.397 | $424 \cdot 620$ | 10 $34 \cdot 3$ | $234 \cdot 676$ | $232 \cdot 251$ | $467 \cdot 186$ |
| 10 | $49^{\circ} 9$ | 213.414 | $210 \cdot 966$ | 424.611 | 11 I.9 | $232 \cdot 262$ | $234 \cdot 665$ | $467 \cdot 146$ |
| 11 | 21.4 | $210 \cdot 991$ | 213.396 | $424 \cdot 587$ | II 12.8 | 234.690 | $232 \cdot 262$ | $467 \cdot 170$ |

$\beta$ Centauri. $\quad$ 1882, February 22.

|  | $38 \cdot{ }^{\mathrm{r}}$ [42 | ${ }^{\mathrm{r}} \mathrm{r}^{7} 20$ | 73.911 |
| :---: | :---: | :---: | :---: |
| $833 \cdot 9$ | $35 \cdot 732$ | $38 \cdot 128$ | $73 \cdot 908$ |

$\begin{array}{ccc}\text { in } \\ \text { in } & 0.04 . & \text { Ther. } 54^{\circ} 5 .\end{array} \quad$ Run +1.6.
$\alpha_{2}$ Centauri.

| $\alpha$ |  |  |  | $\beta$ |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| h | r |  |  | m |  | ${ }^{\mathbf{r}}$ | R |
| $845 \%$ | 150.147 | 147*739 | 298•000 | $855^{\prime}$ I | 117.731 | 120.166 | $237 \cdot 991$ |
| 925.9 | 147.740 | $150 \cdot 189$ | $298 \cdot 0{ }^{2}$ | $98 \cdot 1$ | 120.153 | $117 \cdot 725$ | ${ }^{237} \cdot 975$ |
| $937 \cdot 2$ | 150'194 | 147*731 | 298.049 | $946 \cdot 1$ | 117*718 | 120.159 | $237 \cdot 979$ |
| 10 19.2 | 147*723 | $150 \cdot 162$ | 298-011 | 106.7 | 120'170 | $117 \times 748$ | $238 \cdot 021$ |
|  | Bar | $30^{\mathrm{in}} 0 \%$ | Ther |  | Run + | 2.4. |  |

$\alpha_{2}$ Centauri.

| $\beta$ |  |  |  |
| :---: | :---: | :---: | :---: |
| ${ }_{\text {h }} \quad \mathrm{m}$ | 213.417 |  |  |
| 11 6.0 | 213.417 | $210 \cdot 985$ | 424.618 |
| $1141^{\circ} \mathrm{O}$ | 210.990 | 213.904 | $424 \cdot 580$ |
| 1148.3 | 213.437 | 210.998 | 424.614 |
| 1228.9 | 210'994 | 213.424 | 424.571 |

Bar. $30 \cdot \circ$ in $\quad$ Ther. $51 \circ{ }^{\circ}$.

1882, February 22.
$\alpha_{2}$ Centauri.

|  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | $\begin{aligned} & \text { h } \quad \text { m } \\ & \text { 10 } 37^{\circ} 9 \\ & 10 \\ & \text { in } \\ & \text { in } \\ & 30^{\circ} .00 . \end{aligned}$ | $\begin{gathered} \beta \mathrm{Ce} \\ \begin{array}{c} \mathrm{r} \\ 38^{\mathrm{r}}{ }^{147} \\ 35^{\circ} 730 \\ \text { Ther. } \end{array} \end{gathered}$ | auri. $\begin{aligned} & \quad \mathrm{r} \\ & 35 \cdot 731 \\ & 38 \cdot 143 \\ & \hat{\sigma}^{\circ} \cdot 0 . \end{aligned}$ | R <br> 73.914 <br> $73 \cdot 908$ <br> Run | Febr 3•8 | ry 23. |

$\beta$ Centauri. $\quad$ 1882, February 23.

1882, February 24. $\beta$

|  |  |  | R |  |  | $r$ | R |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $90 \cdot 1$ | 144*356 | 141.923 | $286 \cdot 402$ | $98 \cdot 7$ | $139 \cdot 780$ | $142^{\cdot 203}$ | $282 \cdot 101$ |
| $932 \cdot 1$ | 141.919 | 144.348 | 286.416 | $921 \cdot 1$ | 142.193 | $139^{\circ} 765$ | 282.082 |
| $940 \cdot 6$ | $144.35^{2}$ | $141^{\circ} 905$ | $286 \cdot 413$ | $949^{\circ} 6$ | 139.758 | $142 \cdot 192$ | 282.096 |
| 1011.6 | $141 \times 887$ | 144*318 | $286 \cdot 400$ | $100 \cdot 1$ | $142 \cdot 198$ | 1 $39 \times 756$ | 282.110 |
|  | Bar. | in $30^{\circ} 20$. | Ther | $8^{\circ} 5$. | Run + |  |  |

Sirius.
1882, February 27.

$\alpha_{2}$ Centauri.

|  |  | $\alpha_{1}$ |  |
| :---: | :---: | :---: | :---: |
| h | m | r | r |
| 10 | $54^{\circ} 7$ | 234.669 | $232 \cdot 289$ |
| 12 | 0.6 | $232 \cdot 242$ | 234.710 |
| 12 | $9 \cdot 0$ | 234.715 | $232 \cdot 241$ |
| 13 | 2.9 | ${ }^{232}{ }^{26} 3$ | 234*707 |
|  |  | Bar | in $29^{\circ} 91$. |





## $\beta$ Centauri.

1882, March 5.

Bar. $30^{\text {in }} 14$. Ther. $65^{\circ} \circ$. Run $+2 \cdot 2$. Images 2. Steadiness 2.

## $\alpha_{2}$ Centauri.

$\beta$

|  |  |  | R | h m | r |  | ${ }^{\text {R }}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $831 \cdot 6$ | 120.172 | 117*715 | 237.974 | $84{ }^{1} 1$ | $147 \cdot 725$ | $150 \cdot 164$ | 298.000 |
| $91 \cdot 0$ | $117 \times 734$ | $120 \cdot 151$ | 237*979 | 851.5 | $150 \cdot 162$ | $147{ }^{\prime} 725$ | 298.000 |
| $9 \quad 9.5$ | $120 \cdot 152$ | 117*716 | $237 \cdot 963$ | 919.2 | $147 \cdot 722$ | $150 \cdot 173$ | 298-014 |
| $942 \%$ | $117 \% 716$ | $120^{\prime 1} 53$ | 237.968 | $93^{2 \cdot 1}$ | 150'183 | $147{ }^{\prime} 710$ | 298-013 |

1882, March 5.
$\alpha$
R
$298 \cdot 000$
$298 \cdot 000$
$298 \cdot 014$
$298 \cdot 013$

Sirius.

| h m | r | r | ${ }^{\text {R }}$ |
| :---: | :---: | :---: | :---: |
| $958 \cdot 4$ | ${ }^{1} 39 \cdot 744$ | $142 \cdot 212$ | 282. 108 |
| $1023 \cdot 7$ | 142.177 | 139.723 | $282 \cdot 083$ |
| 1031.4 | 139.712 | 142.160 | 282.068 |
| $1057 \cdot 2$ | $142 \cdot 143$ | $139 \cdot 697$ | $282 \cdot$ |

1882, March 5.
$a$

| $h$ | $m$ |
| :---: | :---: |
| 10 | $6 \cdot 5$ |
| 10 | $15 \cdot 3$ |
| 10 | $40 \cdot 9$ |
| 10 | $48 \cdot 5$ |


| $r$ | $r$ | $\mathbf{r}$ |
| :---: | :---: | :---: |
| $144 \cdot 341$ | $141 \cdot 883$ | $286 \cdot 407$ |
| $141 \cdot 873$ | $144 \cdot 336$ | $286 \cdot 406$ |
| $144^{\circ} \cdot 300$ | $14 I \cdot 861$ | $286 \cdot 418$ |
| $14 I \cdot 85 I$ | $144 \cdot 284$ | $286 \cdot 412$ | | $14 \mathrm{I} \cdot 85 \mathrm{I}$ | $144^{\circ} \cdot 284$ | $286 \cdot 412$ |
| :--- | :--- | :--- | Bar. $30^{\circ} 14$. Ther. $65^{\circ} \circ$. Run $+3 \cdot 6$. Images 2-3. Steadiness 2-3.



## $\beta$ Centauri.

| m | r |  |  |
| :---: | :---: | :---: | :---: |
| $1214 \%$ | $38 \cdot 151$ | $35^{*} 7^{22}$ | 73.900 |
| 1227.9 | $35 \cdot 707$ | $38 \cdot 160$ | 73.894 |

Bar. $\mathrm{in}^{\text {in }}{ }^{15}$. Ther. $55^{\circ}$. . Ran $+2 \cdot 5$. Images $\mathbf{1 - 2}$. Steadiness I-2.

|  | $\beta$ Centauri. |  |  |  |  |  |  | 1882, March 9. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |

in
Bar. $30^{\circ} 21$$\quad$ Ther. $61^{\circ} \circ$. Run +0.3 . Images 2. Steadiness 2.
$\alpha_{2}$ Centauri. $\quad$ 1882, March 9.
$\beta$

|  |  |  | B | h |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $1 \cdot 1$ | 120.172 | $118 \cdot 211$ |  | 9 | $8 \cdot 7$ | 147:700 | $150 \cdot 166$ | $297 \cdot 984$ |
| $932 \cdot$ | $117 \%$ \% | 120.150 | 237.950 | 9 | $19 \cdot 3$ | $150 \cdot 159$ | 147. 724 | 298.003 |
| $949^{\circ}$ | $120 \cdot 178$ | $117 \cdot 729$ | $238 \cdot 008$ |  | $59^{\circ} 2$ | $147 \cdot 718$ | $150 \cdot 158$ | 297•999 |
| 1019.3 | 117687 | $120 \cdot 151$ | $237 \cdot 940$ | 10 | $9 \cdot 8$ | $150 \cdot 159$ | $14 \% \cdot 70$ | 297.985 |

$\epsilon$ Indi. 1882, March 9.


Bar. $30^{\circ}{ }^{\text {in }}{ }_{5}$. Ther. $6 \mathbf{I}^{\circ} \stackrel{\circ}{5}^{\prime} \quad$ Run $+3 \cdot 3$. Images $3-4$. Steadiness $3-4$.


Bar. $30^{\circ} 06$. Ther. $67^{\circ} \circ$. Run $+2 \cdot 3$. Images 3. Steadiness 3 .
$\alpha_{2}$ Centauri.
$\alpha$

| h m | r | $r$ | R | h | $r$ |  | R |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $1120 \cdot 6$ | 147* 723 | $15^{\circ} 153$ | 297*997 | II 28.9 | 120.179 | 117.724 | $238 \cdot 001$ |
| II $46 \cdot 1$ | $150 \cdot 163$ | $147 \cdot 714$ | $297 * 994$ | (1) $37 \cdot 8$ | -117.731 | 120.176 | $238 \cdot 005$ |
| $1156 \cdot 7$ | $147 \cdot 729$ | $150 \cdot 165$ | $298 \cdot 010$ | 12.704 | 120.174 | 117* ${ }^{1} 22$ | 237.990 |
| $1227 \cdot 8$ | $150 \cdot 163$ | 147.717 | $297 * 993$ | $1219.5{ }_{4}^{*}$ | $117 \times 736$ | 120.176 | $238 \cdot 004$ |

1882, Märch 10.
$\beta$

Bar. $30^{\circ} \cdot 02$ Ther. $65^{\circ} 5$. Run $+1 \cdot 6$. Images 2. Steadiness 2-3.
Bar. $30^{\circ} \cdot 02$ Ther. $65^{\circ} 5$. Run $+1 \cdot 6$. Images 2. Steadiness 2-3.
$\beta$ Centauri.
1882, March 11.

| h | m | r | r | R |
| :---: | :---: | :---: | :---: | :---: |
| 8 | $49^{\circ} \cdot$ | $35^{\circ} \cdot 113$ | $38^{\circ} \cdot 147$ | $73^{\circ} \cdot 907$ |
| 9 | $2 \cdot 6$ | $38^{\circ} \cdot 158$ | $35 \cdot 699$ | $73 \cdot 902$ |

in
Bar. $29^{\circ} 97$. Ther. $63^{\circ} \circ$. Run $+1 \times 3$. Images 2-3. Steadiness 3.
$a_{2}$ Centauri.
$\beta$

|  | , |  | P | ${ }^{\text {R }}$ |  |  | r | $r$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 9 | $17^{\circ} 1$ | 120.154 | 117.726 | 237*977 |  | $28 \cdot 4$ | $147 \cdot 719$ | 150.150 | 97.99 |
| 9 | $55^{\circ} 2$ | $117 \times 703$ | 120.136 | 237.941 | 9 | $41 \cdot 8$ | 150.176 | $147^{\circ} 7^{2}$ | $298 \cdot 02$ |
| - | $10 \cdot 9$ | $120 \cdot 152$ | $117 \cdot 703$ | $237 * 957$ | 10 | $27^{\circ} 7$ | $147 \cdot 718$ | $150 \cdot 198$ | $298 \cdot$ |

Bar. $30^{\circ} 03$. Ther. $5^{\circ} \cdot 0$. Run $+1 \cdot 8$. Images 2. Steadiness 4.
$\varepsilon$ Indi.
$\beta$

| h | $r$ |  | R | h |  | r | r |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $15 \quad 3 \cdot 8$ | 101. 220 | 103.641 | 205.111 |  | $17 \cdot 3$ | 84.036 | 81.592 | 165.859 |
| ${ }^{15} 40 \cdot 2$ | 103.701 | $101 \cdot 241$ | $205 \cdot 155$ | 15 | $27^{\circ} \mathrm{I}$ | $81 \cdot 621$ | $84^{\circ} 020$ | 165.857 |
| $1551 \cdot 6$ | 101. 235 | $103 \cdot 738$ | 205.175 | 16 | $0 \cdot 5$ | 84.090 | $8 \mathrm{I} \cdot 652$ | 165.914 |
| 1616.0 | $103 \cdot 724$ | 101*291 | 205'195 | 16 | $8 \cdot 3$ | 81.639 | $84^{\circ} 091$ | $165 \cdot 898$ | in

in
Bar. $30^{\circ} 16 . ~ T h e r . ~$
$63^{\circ} 75$.
. Run $+4^{\circ} \circ$ Images 3. Steadiness 3 .
$\epsilon$ Indi.
$a$

| h m | ${ }^{\mathbf{r}}$ | r | R |
| :---: | :---: | :---: | :---: |
| 1454.4 | $81 \cdot 618$ | S4.006 | $165{ }^{\circ} \mathrm{S} 93$ |
| $1532 \cdot 8$ | $84^{\circ} 067$ | $81 \cdot 603$ | $165 \cdot 879$ |
| $1540^{\circ} 3$ | SI.637 | 84.039 | $165 \cdot 875$ |
| $1610^{\circ} 4$ | S4*076 | $81 \cdot 644$ | $165 \cdot 887$ |

Bar. $30^{\circ} 10$
Ther. $59^{\circ} \mathrm{O}$.
Run $+2 \cdot 8$.

| $h$ | $m$ |
| :---: | :---: |
| 15 | $6^{\circ} 4$ |
| 15 | $19^{\circ} 8$ |
| 15 | $50^{\circ} 3$ |
| 16 | $0^{\circ} 3$ |

$r$
$103 \cdot 672$
$101 \cdot 241$
$103 \cdot 694$
101.242
r
$101 \cdot 258$
$103 \cdot 684$
$101 \cdot 273$
$103^{\circ} 710$
$205^{\circ} 178$
$205^{\circ} 160$
$205^{\circ} 17^{2}$
$205^{\circ} 148$

1882, March 13.
$\beta$

Steadiness 2-3.
$\beta$ Centauri.
1882, March 14.

| h | m | r | r | R |
| :---: | :---: | :---: | :---: | :---: |
| 8 | $17 \cdot 9$ | $35^{\circ} \cdot 691$ | $38^{\circ} \cdot 161$ | $73^{\circ} \cdot 902$ |
| 8 | $27^{\circ} \cdot 8$ | $33^{\circ} \cdot 167$ | $35 \cdot 693$ | $73^{\circ} 909$ |

Bar. $30^{\circ} 14$. Ther. $62^{\circ}$. . Run +0.4 Images 2. Steadiness 2-3.

|  |  |  | $x_{2}$ C | ari. |  | 882, M | h 14. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |
|  |  | r | E |  |  | $r$ |  |
| $839^{\circ} 6$ | 14\% ${ }^{\circ} 691$ | $150 \cdot 184$ | 297*986 | $85^{2 \cdot 5}$ | 120.208 | 117.707 | $238 \cdot 007$ |
| $913^{\circ} 0$ | 150.178 | $147 \cdot 703$ | 297.999 | $9 \quad 3 \cdot 3$ | $117 \times 703$ | $120{ }^{17}{ }^{8}$ | 237.975 |
| 923.4 | $147 \cdot 712$ | ${ }^{150 \cdot 183}$ | $298^{\circ} 014$ | $9.32 \cdot 3$ | $120{ }^{1} 176$ | $117 \cdot 708$ | $237 \cdot 982$ |
| $95^{1} \cdot$ | 150-196 | $147 \cdot 687$ | $298 \cdot 006$ | $942 \cdot 1$ | 117.686 | 120.194 | $237 \cdot 979$ | Bar. $\left(30^{\circ} 14\right)$. Ther. $\left(63^{\circ} 5\right)$. Run $+0^{\circ} 1$. Images 2. Steadiness 2-3.

$\beta$ Centauri.

| h | m | r | r | R |
| :---: | :---: | :---: | :---: | :---: |
| 10 | $2 \cdot 5$ | $38 \cdot 175$ | $35 \cdot 704$ | $73 \cdot 918$ |
| 10 | $11 \cdot 7$ | $35 \cdot 695$ | $38 \cdot 166$ | $73 \cdot 899$ |



## Sirius.

$\beta$

|  |  | + |  |
| :---: | :---: | :---: | :---: |
| $949 \%$ | 142.189 | 139 739 | $282 \cdot 0 \% 2$ |
| 1023.3 | $139{ }^{-727}$ | $14^{2 \cdot 17}{ }^{2}$ | $282 \cdot 082$ |
| $1035^{\circ} 7$ | $14^{2} 160$ | 139*708 | 282.0\%4 |
| 11. $8 \cdot 7$ | ${ }^{1} 39^{\circ} 688$ | 142.109 | 282.090 |

Run
Images 1-2.
Steadiness 2-3.
$\alpha_{2}$ Centauri.
$\beta$

|  | r | r | R | h m | r | $\mathbf{r}$ | R |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| I $134^{\circ} 8$ | $117 \cdot 739$ | $120^{\circ} 160$ | $237 \cdot 997$ | $1143 \cdot 3$ | $150^{\circ} 131$ | $147 \cdot 722$ | 297.972 |
| $122^{1} 1$ | $120^{\circ} 163$ | $117 \cdot 716$ | 237.974 | $1155^{\circ} 3$ | $147^{\circ} 714$ | $150 \cdot 164$ | 297.995 |
| $1210 \cdot 5$ | $117^{\circ} 717$ | $120 \cdot 164$ | 237.975 | $1220{ }^{\circ} 1$ | 150.154 | $147^{\circ} 718$ | $297{ }^{\circ} 987$ |
| $123^{8 \cdot 8}$ | $120 \cdot 164$ | $117 \cdot 735$ | $237^{\circ} 990$ | 1229.4 | $147^{\circ} 702$ | $150^{\circ} 149$ | $297 \cdot 965$ |

$$
\text { Bar. } 30^{\circ} 07 . \quad \text { Ther. } 61^{\circ} 5 . \quad \text { Run }+1 \cdot 1 . \quad \text { Images } 1-2 . \quad \text { Steadiness } 2-3 .
$$



## Sirius.

1882, March 18. .
$\alpha$


Bar. $30^{\circ}$ in. Ther. $64^{\circ} 3$. Run $+1 \cdot 3$. Images 3. Steadiness 3 .

Sirius.


Bar. $30^{\circ} 15$ Ther. $63^{\circ} 8$. Run +0.2 . Images 2. Steadiness 2.

|  |  |  |  |  |  | 82, Ma | ch 20. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |
| h m |  |  |  | h m |  |  |  |
| $1541 \cdot 7$ | 103.665 | 101. 292 | 205•169 | 1555.7 | $8 \mathrm{I} \cdot 658$ | 84.056 | 165.895 |
| 1618.2 | 101. 292 | 103.679 | 205.150 | $167 \cdot 0$ | $84 \cdot 045$ | $8 \mathrm{I} \cdot 660$ | 165.875 |
| $1630 \cdot 4$ | 103.704 | 101. 304 | 205'179 | $1640 \cdot 7$ | 81.667 | 84.059 | 165.863 |
| $170 \%$ | $101 \cdot 323$ | 103.720 | 205•191 | $1650 \cdot 0$ | $84 \cdot 065$ | $81 \cdot 683$ | 165.877 |

[^4]
$\alpha_{2}$ Centauri. 1882, March 23.

|  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $829^{\circ} 7$ | 117.733 | $120 \cdot 138$ | 237.957 | $841 \cdot 1$ | 150.114 | 147.747 | 297*971 |
| 9 1-3 | $120 \cdot 134$ | $117 \times 732$ | $237 \cdot 959$ | $85^{2 \cdot 8}$ | $147^{\circ} 731$ | $150 \cdot 146$ | 297.990 |
| 910.2 | 117.730 | 120.141 | $237 \cdot 965$ | 922.5 | $150 \cdot 147$ | 147.731 | 297.996 |
| $951{ }^{\circ} 5$ | $120 \cdot 134$ | $117 \times 759$ | $237 \cdot 992$ | $937 \cdot 5$ | $147 \cdot 744$ | $150 \cdot 139$ | $298 \cdot 003$ | Bar. $30^{\circ} 03$. Ther. $67^{\circ} 5^{\circ}$ Run +0.5 . Images 2-3. Steadiness 3 .

$$
\beta \text { Centauri. } \quad 1882, \text { March } 23 .
$$

| h | m | r |  |  |
| :---: | :---: | :---: | :---: | :---: |
| 10 | $3 \cdot 5$ | $35^{\circ} 730$ | $38 \cdot 132$ | $73^{\circ} 901$ |
| 10 | $12 \cdot 8$ | $38 \cdot 130$ | $35 \cdot 728$ | $73 \cdot 896$ |

Bar. $30^{\text {in }} 0$. Ther. $64^{\circ} \cdot 0$. Run $+x \cdot 3$. Images 2. Steadiness 2.


Sirius.

|  |  |  |  |
| :---: | :---: | :---: | :---: |
| 8827.9 | $144 \cdot 326$ | $14 \mathrm{r} \cdot 957$ | $286 \cdot 388$ |
| 858.4 | 141.940 | 144.338 | $286 \cdot 397$ |
| 913.1 | $144.35^{2}$ | 141:931 | $286 \cdot 413$ |
| $950 \cdot 3$ | $141 \cdot 918$ | 144.319 | 286.399 |

1882, March 24. $\beta$

| h | m | r | r | R |
| :---: | :---: | :---: | :---: | :---: |
| 8 | $38^{\circ} \cdot 3$ | $139^{\cdot 794}$ | $142 \cdot 193$ | $282^{\circ} \cdot 090$ |
| 8 | $48^{\circ} \cdot 9$ | $142 \cdot 190$ | $139 \cdot 795$ | $282 \cdot 091$ |
| 9 | $23^{\circ} \cdot 7$ | $139^{\circ} \cdot 793$ | $142 \cdot 189$ | $282 \cdot 106$ |
| 9 | $32 \cdot 2$ | $142 \cdot 188$ | $139^{\circ} \cdot 783$ | $282 \cdot 100$ |

Bar. $29^{\circ} 86$. Ther. $64^{\circ} \circ$. Run $+2 \cdot \%$ Images 2. Steadiness 2.

$\beta$ Centauri.
1882, April 2.

| m | r | r |  |
| :---: | :---: | :---: | :---: |
| $925 \cdot 8$ | $38 \cdot 070$ | $35^{\circ} 769$ | $73^{\circ} 882$ |
| $935 \cdot 6$ | $35^{\circ} 78$ 1 | $38 \cdot 077$ | 73.900 |

Bar. $30^{\circ} 11$. Ther. $63^{\circ} 0 . \quad$ Run $+2 \cdot 0$.
$\alpha_{2}$ Centauri.
$\beta$


Sirius.
$\alpha$

1882, April 3.
$\beta$

## in

Bar. $30 \cdot 18$. Ther. $62{ }^{\circ} \circ$. Run +3.5 . Images 3-4. Steadiness 3-4.

Sirius.

|  |  |  |  |
| :---: | :---: | :---: | :---: |
| $910 \cdot 2$ | 144*289 | 141.984 | $286 \cdot 402$ |
| $937 \cdot 7$ | $141^{\circ} 991$ | 144.290 | 286.434 |
| $944 \cdot 8$ | 144.287 | $141^{.972}$ | 286.420 |
| 1013.4 | 141.957 | $144.25^{\circ}$ | $286 \cdot 405$ |

1882, April 5.
$\beta$

| h | m | r | r | R |
| ---: | :---: | :---: | :---: | :---: |
| 9 | $20 \cdot 8$ | $139 \cdot 840$ | $142 \cdot 135$ | $282 \cdot 099$ |
| 9 | $30 \cdot 8$ | $142 \cdot 143$ | $139 \cdot 835$ | $282 \cdot 109$ |
| 9 | $52 \cdot 8$ | $139 \cdot 853$ | $142 \cdot 149$ | $282 \cdot 15^{2}$ |
| 10 | $4 \cdot 8$ | $142 \cdot 128$ | $139 \cdot 830$ | $282 \cdot 121$ |

Bar. $30^{\circ} \circ$. Ther. $56^{\circ}$. 8 . Run $+3 \cdot 8$. Images 2-3. Steadiness 2-3.

Bar. $30 \cdot 20$. Ther. $63{ }^{\circ} 5$. Run $+2 \cdot 6$. Images 3. Steadiness 3 .

## Sirius.

$\beta$

| h m |  | $r$ |  |
| :---: | :---: | :---: | :---: |
| $858 \cdot 3$ | 139.840 | $142 \cdot 164$ | 282.116 |
| 943.4 | 142.150 | 139.813 | 282. 103 |
| $950 \cdot 6$ | $139 \cdot 823$ | $142 \cdot 140$ | 282.109 |
| $1025^{\circ} 2$ | $142 \cdot 098$ | 139'798 | 282.084 |

Bar. $30 \cdot 20$. Ther. $63 \circ 5$.

| h | m |
| ---: | ---: |
| 9 | $9^{\circ} 9$ |
| 9 | $22^{\circ} \cdot 5$ |
| 10 | $10^{\circ}$ |
| 10 | $13^{\circ}$ |


| $\stackrel{\mathrm{r}}{144}{ }^{296}$ | $14$ |
| :---: | :---: |
| 141.981 | 144.269 |
| 144.268 | 141.961 |
| 141.938 | 144.272 |




Bar. $30^{\circ} 12$. Ther. $62^{\circ} \circ$. Run +2.5 . Images 2-3. Steadiness 3 .

|  |  |  | $\alpha_{2} \mathrm{C}$ | uri. |  | 1882, April 7. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |
| h m |  |  | R | h m | r | r | R |
| 17 41:9 | $147 \cdot 830$ | $150 \cdot 089$ | 298.008 | $1753{ }^{\circ} \mathrm{O}$ | 120.122 | 117.840 | $238 \cdot 034$ |
| 1811.9 | $150 \cdot 096$ | $147 \cdot 783$ | 297.977 | $18 \quad 2 \cdot 8$ | 117.827 | $120 \cdot 143$ | $238 \cdot 044$ |
| $1823 \cdot 8$ | $147 \cdot 786$ | 150.071 | 297.960 | 1833.3 | $120 \cdot 136$ | 117.813 | $238 \cdot 034$ |
| $1849 \cdot 6$ | $150 \cdot 065$ | $147 \cdot 796$ | $297 * 979$ | $184 \mathrm{I} \cdot 3$ | 117.812 | 120.086 | 237.986 | Bar. $\left(30^{\circ} 11\right)$. Ther. $\left(62^{\circ} \cdot 0\right)$. Run $+2 \cdot 0$. Images 2. Steadiness 2-3.

## $\beta$ Centauri.

1882, April 7.

$$
\begin{array}{cc|cc|c}
\mathbf{h} & \mathrm{m} & \mathrm{r} & \mathrm{r} & \mathbf{R} \\
18 & 59^{\circ} 9 & 35 \cdot 803 & 38 \cdot 080 & 73^{\circ} 939 \\
19 & 7 \cdot 2 & 38 \cdot 076 & 35 \cdot 806 & 73 \cdot 940
\end{array}
$$

Bar. $\left(30^{\circ} 10\right)$ Ther. $62^{\circ} \cdot 0$ Run $+2 \cdot 0$ Images 2. Steadiness 2.

$$
\alpha_{2} \text { Centauri. } \quad 1882, \text { April } 8
$$


in
Bar. $30^{\circ} 03$.$\quad$ Ther. $60^{\circ} 5^{\circ} \quad$ Run $+1 \cdot 9 . \quad$ Images 1-2. Steadiness 2.
$\beta$ Centauri. $\quad 1882$, April 8.

| h | $\mathbf{m}$ | r | r | R |
| :---: | :---: | :---: | :---: | :---: |
| II | $0 \cdot 4$ | $38^{\circ} \cdot 92$ | $35^{\circ} \cdot 783$ | $73^{\circ} \cdot 908$ |
| II | $9^{\wedge} 8$ | $35 \cdot 807$ | $38 \cdot 085$ | $73 \cdot 924$ |

in
Bar. $30^{\text {in }} 03$ Ther. $56^{\circ}{ }_{5}$. Run $+2 \cdot 5$ Images 1-2. Steadiness $\mathbf{1 - 2}$.
$\epsilon$ Indi.
$\alpha$

| h ${ }^{1} 8$ | , |  | R |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $1641 \cdot 8$ | $81 \cdot 73^{6}$ | $84 \cdot 038$ | 165.912 | $165^{1 \cdot 2}$ | 103.659 | $101 \cdot 333$ | 205.147 |
| 178.2 | 84.034 | 81.739 | 165.892 | 1659.6 | 101.344 | 103.661 | $205 \cdot 153$ |
| 1718.2 | $81 \cdot 736$ | 84.038 | 165.886 | 1728.4 | 103.662 | $101 \cdot 345$ | 205.138 |
| $1755^{\circ} 5$ | 84.049 | 81•749 | $165 \cdot 891$ | $1744^{\circ}$ | $101 \cdot 332$ | 103.649 | 5•104 |

Bar. $30^{\circ} 07$. Ther. $61^{\circ} \cdot 5^{\prime}$ Run $+2 \cdot 4$. Images 1-2. Steadiness I-2.
$\alpha_{2}$ Centauri.

|  | r |  | R | h m |  | r |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $18 \quad 9 \cdot 7$ | $150 \cdot 092$ | $147 \cdot 782$ | 297.970 | $1817 \cdot 3$ | 117.836 | $120 \cdot 125$ | $238 \cdot 039$ |
| $1835^{\circ} 6$ | $147 \cdot 775$ | 150.080 | $297 \cdot 964$ | $1827{ }^{\circ}$ | 120.134 | 117.807 | $238 \cdot 024$ |
| $1841^{1} \mathrm{I}$ | 150.090 | $147 \cdot 782$ | 297* 984 | $1849{ }^{\circ} 5$ | 117.831 | 120.123 | $238 \cdot 043$ |
| $193 \cdot 1$ | $147 \cdot 766$ | $150 \cdot 083$ | 297*977 | $1856 \cdot 3$ | 120'128 | $117 \cdot 826$ | $238 \cdot 050$ | Bar. $30^{\circ} 07$. Ther. $6 I^{\circ} 5^{\circ}$. Run $+1^{\circ} 4$. Images 2. Steadiness 2-3.

Sirius. 1882, April 10.

|  | $r$ | $r$ | R |  |  | $\boldsymbol{r}$ |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 9 11.5 | 141971 | 144.287 | $286 \cdot 388$ |  | $23^{\circ} 0$ | $142 \cdot 137$ | $139^{\circ} 820$ | 282.082 |
| $94^{\circ} \mathrm{I}$ | 144*271 | 141.948 | $286 \cdot 378$ | 9 | $32 \cdot 8$ | 139.827 | $142 \cdot 138$ | 282.097 |
| $950 \cdot 9$ | 141.951 | $144 \cdot 264$ | $286 \cdot 382$ | 9 | $58 \cdot 6$ | $142 \cdot 122$ | 139.796 | $282 \cdot 0{ }^{2}$ |
| $1018 \cdot 2$ | 144.249 | 141*925 | $286 \cdot 381$ | 10 | $7 \cdot 8$ | 139.803 | 142-119 | $282 \cdot 085$ |

$\alpha_{2}$ Centauri. $\quad 1882$, April 11.


Bar. $30^{\circ} 10$. Ther. $61^{\circ} \cdot 5$. Run $+0^{\circ} 9$. Images 1. Steadiness 2.
$\beta$ Centauri. $\quad 1882$, April 11.

$$
\begin{array}{cc|cc|c}
\mathrm{h} & \mathrm{~m} & \mathrm{r} & \mathrm{r} & \mathrm{r} \\
\text { 10 } & 22 \cdot \cdot 7 & 35 \cdot 787 & 38^{\circ} \cdot 083 & 73 \cdot 907 \\
10 & 34^{\circ} & 38 \cdot 095 & 35 \cdot 778 & 73 \cdot 909
\end{array}
$$

Bar. $30^{\circ} \mathrm{in}$. Ther. $58^{\circ} \cdot 3$. Run $+3^{\circ}$. Images $1 . \quad$ Steadiness 2 .



Sirius.


$$
\text { Bar. } 30^{\circ} 17 . \quad \text { Then. } 61^{\circ} 3 . \quad \text { Run }+1 \cdot 4 . \quad \text { Images } 1-2 . \quad \text { Steadiness } 2-3 .
$$

## $\alpha_{2}$ Centauri.

1882, April 25.
$\beta$


Bar. $30^{\circ} 15$. There. $58^{\circ} \cdot 5$. Run $+2 \cdot 1$. Images $1-2$. Steadiness 2.
$\beta$ Centauri.
1882, April 25.

| h | m | r | r | R |
| :---: | :---: | :---: | :---: | :---: |
| I2 | $27^{\circ} \cdot \mathbf{1}$ | $38^{\circ} \cdot 082$ | $35^{\circ} 790$ | $73^{\circ} 899$ |
| I2 | $37^{\circ} 6$ | $35^{\circ} 804$ | $38^{\circ} \cdot 082$ | $73^{\circ} 912$ |

Ther. $58^{\circ} \cdot 0$.
Run $+1 \cdot 5$.

Sirius.
1882, April 26.
$a$

| m | $\mathbf{r}$ | $\mathbf{r}$ |  | h | m | r | $\mathbf{r}$ |  | R |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $949^{\circ} \mathrm{I}$ | $144^{\circ} 2$ | $141 \cdot 953$ | $286 \cdot 364$ | 10 | $0 \cdot 7$ | 139.81 | 7 |  | 2 |
| $22^{\circ}$ | $141 \cdot 93$ | $144^{\circ} 219$ | 286.370 | 10 | $9 \cdot 4$ | $142 \cdot 106$ | 139 |  | $28{ }^{\circ}$ | in

Bar. $30^{\circ} \cdot 08$. Ther. $62^{\circ} \cdot 0 . \quad$ Run $+2 \cdot 1$. Images $\mathbf{1 - 2}$. Steadiness I-2.

Sirius. $\quad$ 1882, April 28.

| m |  | r | R | h m | $\mathbf{r}$ | r | R |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $833^{\circ} 5$ | ${ }^{1} 39 \cdot 832$ | $142^{*} 145$ | $282 \cdot 080$ | $843^{\circ} \mathrm{I}$ | 144.277 | 141.966 | $286 \cdot 356$ |
| $92^{\circ} \mathrm{O}$ | $142 \cdot 141$ | $139^{\circ} 823$ | $282 \cdot 078$ | $851 \cdot 8$ | 141.976 | 1 $44 \cdot 265$ | $286 \cdot 359$ |
| $9 \quad 9.5$ | 139.839 | 142.118 | $282^{\circ} 074$ | 920.0 | $144{ }^{\circ} 280$ | $141 \cdot 960$ | 286.377 |
| $95^{1} 1$ | 142.113 | $139{ }^{\circ} 804$ | $282 \cdot 064$ | $93^{8 \cdot 1}$ | $141 \cdot 983$ | $144{ }^{\circ} 245$ | $286 \cdot 380$ | Bar. $30^{\circ}{ }^{\circ} 10$. Ther. $60^{\circ} \circ$. Run $+1 \cdot 9$. Images $\mathbf{1 - 2}$. Steadiness $\mathbf{1 - 2 .}$

$\beta$ Centauri. $\quad$ 1882, April 28.

| h | m | r | r | R |
| :---: | :---: | :---: | :---: | :---: |
| II | $15^{\circ} \cdot 2$ | $35^{\circ} \cdot 800$ | $3^{\circ} \cdot 080$ | $73^{\circ} 912$ |
| II | $23^{\circ} \cdot 9$ | $3^{\circ} \cdot 080$ | $35^{\circ} 791$ | $73^{\circ} 902$ |

Bar. $30^{\text {in } 13}$. Ther. $59^{\circ}$. $\quad$ Run $+3 \cdot \mathbf{1}$. Images I. Steadiness I.

$$
\alpha_{2} \text { Centauri. } \quad 1882, \text { April } 28
$$



[^5]
## Sirius.

1882, May 2.


Bar. $30^{\text {in } 15 . ~ T h e r . ~} 56^{\circ} \cdot 7$. Run $+3 \cdot 4$. Images 2-3. Steadiness 2-3.

Lacaille 9352. 1882, May 2.

| h m |  |  | ${ }^{1}$ |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $1839^{\circ}$ | 264.024 | $266 \cdot 340$ | $530 \cdot 738$ | 1849.9 | $172 \cdot 181$ | $169 \cdot 874$ | $342 \cdot 290$ |
| 19 14* | $266 \cdot 367$ | $264 \cdot 053$ | $530 \cdot 708$ | 190.8 | 169.863 | $172^{\circ} 201$ | $342 \cdot 279$ |
| $1923{ }^{\circ}$ | 264.037 | $266 \cdot 388$ | 530*694 | $19.32 \cdot 9$ | 172.215 | 169.917 | $34^{\prime} \cdot 304$ |
| 19 55 | 266.405 | 264•100 | $530 \cdot 728$ | $1945^{\circ} \mathrm{I}$ | $169 \cdot 886$ | $172 \cdot 235$ | $342 \cdot 282$ |

Bar. $3^{\text {in }} 15$. Ther. $50^{\circ} \cdot 3$. Run $+6 \cdot 6$. Images 1-2. Steadiness 1-2.

Sirius.
1882, May 3.

|  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $918 \cdot 1$ | $139 \cdot 842$ | $142 \cdot 108$ | $282 \cdot 074$ | $928 \cdot 2$ | 144.271 | 141.962 | - 379 |
| 944.4 | $142 \cdot 122$ | $139 \cdot 812$ | $282 \cdot 076$ | $937 \cdot 0$ | 141.968 | $144{ }^{\circ} 254$ | $286 \cdot 375$ |
| $957^{\circ} 2$ | $139^{\circ} 782$ | $142 \cdot 124$ | $282 \cdot 060$ | $1018 \cdot 5$ | $144{ }^{\circ} 25^{2}$ | 141.926 | 86.387 |
| - $40{ }^{\circ} \mathrm{I}$ | $142 \cdot 072$ | 139.777 | $282 \cdot 068$ | $1030 \cdot 5$ | $141 \cdot 937$ | 144*221 | 286.39 | in

## in

Bar. $30^{\circ}$ 28. Ther. $5^{\circ}{ }^{\circ}$. . Run +2.4 . Images 2-3. Steadiness 2-3.

## Sirius.

1882, May 5.


Bar. $30^{\circ} \cdot 20$. Ther. $61^{\circ} \cdot 5$. Run $+2 \cdot 6$. Images 3. Steadiness 3 .

## Lacaille 9352.

1882, May 5.
$\beta$


Bar. $3^{\circ} \mathrm{in}$. Ther. $60^{\circ}$. $\quad$ Run $+4^{\circ} 0^{\circ} \quad$ Images 2. Steadiness 2.
$\epsilon$ Indi.
$\alpha \quad \mid$

| h | m | r |  |  |
| :---: | :---: | :---: | :---: | :---: |
| 18 | $\mathrm{r} \cdot 8$ | $8 \mathrm{r} \cdot 783$ | $84 \cdot 074$ | $165 \cdot 930$ |

$1915 \cdot 8$
$1922 \cdot 9$
201.0
$\begin{array}{ll}84 \cdot 058 & 8 \mathrm{r} \cdot 78 \mathrm{I} \\ 8 \mathrm{I} \cdot 790 & 84 \cdot 063\end{array}$
$.84^{\circ}$

Bar. $30 \cdot \circ$. Ther. $5 \mathrm{I}^{\circ} \stackrel{\circ}{3}$. Run $+2 \cdot 6$. Images 2. Steadiness 2.

## Lacaille 9352.



Bar. $30 \% 24$. Ther. $52 \circ$. $\quad$. Run $+3 . \%$ Images I-2. Steadiness $2-3$.
$\alpha_{2}$ Centauri.
1882, May 7.
 Bar. $30^{\circ}{ }^{\text {in }}$ 2\% Ther. $48^{\circ} \circ$. Run +2.5 Images 2. Steadiness 2-3.

## Sirius.

$\beta$

| m | r | r |  |  | $\mathbf{r}$ |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $957 \cdot 8$ | $142 \cdot 115$ | 139 ${ }^{\prime} 795$ | $282 \cdot 064$ | 10 $5^{\circ} 6$ | 141.949 | $144^{\circ} 249$ | 286.381 |
| $1027 \cdot 5$ | 139.771 | $142 \cdot 101$ | 282.064 | 10 16.2 | 144. 220 | 141.924 | $286 \cdot 345$ |

$\alpha_{2}$ Centauri.
$\alpha$

| h m |  |  |  | h m |
| :---: | :---: | :---: | :---: | :---: |
| 925.0 | $147 \cdot 785$ | $150 \cdot 058$ | 297.966 | $935^{\circ} 7$ |
| 954.9 | 150.044 | 147* 767 | $297 \cdot 936$ | $45^{\circ} 8$ |
| 102.0 | $147 \cdot 766$ | $150 \cdot 059$ | $297.95^{\circ}$ | $1010 \cdot 8$ |
| $1027 \cdot 4$ | $150 \cdot 046$ | $147 \% 755$ | 297*927 | 10 |


| r | r | R |
| :---: | :---: | :---: |
| $120 \cdot 100$ | $117 \cdot 823$ | $238 \cdot \cdot 025$ |
| $117 \cdot 839$ | $120 \cdot 110$ | $238 \cdot \cdot 5^{2}$ |
| $120 \cdot 102$ | $117 \cdot 832$ | $238 \cdot 037$ |
| $117 \cdot 824$ | $120 \cdot 117$ | $238 \cdot 045$ |

Bar. $30^{\circ}$ in 29 Ther. $55^{\circ}$. Run $+3 \cdot 0$. Images 2. Steadiness 2-3.

## $\beta$ Centauri.

1882, May 9.

| h m |  |  | R |
| :---: | :---: | :---: | :---: |
| 1041.6 | $35^{\circ} 801$ | $38 \cdot 078$ | $73 \cdot 915$ |
| 1049.9 | 38.080 | $35 \cdot 811$ | 73.926 |

in
Bar. $30^{\circ} \cdot 29$. Ther. $56^{\circ} \circ$. Run +4.5 . Images I . Steadiness I .

Lacaille 9352.
$\beta$

| 4 m | r |  | R | h |  |  | R |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $18 \quad 18 \cdot 2$ | 172.124 | $169 \cdot 843$ | $342 \cdot 278$ | $18 \quad 28 \cdot 5$ | $4^{\circ} 007$ | $66^{\cdot} 316$ | $530^{\circ} 727$ |
| $185 \mathrm{I} \cdot 5$ | 169.878 | 172.194 | $342 \cdot 301$ | $1841^{\circ} 0$ | $266 \cdot 358$ | $264^{\circ} 050$ | $5.30 \cdot 772$ |
| 190.3 | $172 \cdot 185$ | 169.905 | $342^{\circ} 304$ | $1910^{\circ} 5$ | $264 \cdot 063$ | $266 \cdot 372$ | $530 \cdot 726$ |
| $1930 \cdot 8$ | $169^{\circ} 901$ | 1720.212 | $342 \cdot 285$ | 1921.3 | $266 \cdot 382$ | $264^{\circ} 074$ | $530 \cdot 726$ |

$\alpha_{2}$ Centauri.

|  |  |  | ${ }^{\text {R }}$ | h |  |  | $r$ | R |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $1950 \cdot 4$ | 120.115 | $117 \cdot 829$ | $238 \cdot 088$ |  | $58 \cdot 3$ | $147 \cdot 737$ | $150 \cdot 016$ | 297.953 |
| $20 \quad 18 \cdot 7$ | $117 \times 773$ | $120 \cdot 078$ | 238.034 |  | $8 \cdot 3$ | 150.017 | 147.714 | 297.950 |
| 20.25 | 120.081 | $117 \times 797$ | $238 \cdot 074$ |  | $34^{\circ} 3$ | $147 \cdot 699$ | 149*999 | 297.978 |
| $2056 \cdot 6$ | $117 \cdot 766$ | $120 \cdot 022$ | $238 \cdot 055$ |  | $43^{\circ} 6$ | 149.994 | $147 \cdot 696$ | 297*999 |

Sirius.
1882, May 18.

$\alpha_{2}$ Centauri.

| h m |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 190.6 | $120 \cdot 136$ | 117.818 | $238 \cdot 056$ |  | $11 \cdot 3$ | 147.740 | $150 \cdot 039$ | 297.920 |
| $1932 \cdot 8$ | 117.843 | 120.135 | $238 \cdot 107$ |  |  | 150.040 | 147 $7^{21}$ | 297.913 |
| 1942.0 | $120 \cdot 126$ | 117.799 | $238 \cdot 063$ |  |  | $147 \cdot 696$ | 150.030 | 297.919 |
| 2017.2 | 117.804 | $120 \cdot 117$ | 238-108 | 20 | $6 \cdot 1$ | $150 \cdot 019$ | $147 \cdot 699$ | 297* 938 |

Bar. $30^{\circ}$ in . Ther. $46^{\circ} .{ }_{5}$. Run $+2 \cdot 2$. Images 2. Steadiness 3 .


Sirius.


$$
\begin{array}{ll}
\text { Bar. } 30^{\text {in }} \cdot 04 . & \text { Ther. } 56^{\circ} \cdot 3 . \\
& \text { Run }+3.4 . \\
\alpha_{2} \text { Centauri. }
\end{array}
$$

$\beta$

|  |  |  |  | h |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1127.1 | 120.167 | 117.839 | $238 \cdot 106$ |  |  | 147.748 | 150.062 | 297.931 |
| 1154.9 | 117.820 | $120 \cdot 155$ | $238 \cdot 072$ | 11 | $44 \cdot 6$ | $150 \cdot 063$ | $145 \cdot 740$ | $297 \cdot 923$ |
| $12 \quad 0 \cdot 3$ | 120.140 | 117.822 | $238 \cdot 058$ | 12 | $7 \cdot 9$ | $147 \cdot 743$ | 150.075 | 297.935 |
| $1225{ }^{\circ}$ | $117 \cdot 847$ | $120 \cdot 167$ | $238 \cdot 108$ | 12 | 15 | $150 \cdot 078$ | $147 \cdot 741$ | 297.936 |

$\begin{array}{ll}\text { Bar. } 30^{\text {in }} 04 . & \text { Ther. } 56 \cdot 8 . \\ & \text { Run }+1 \cdot 0 . \\ \text { Lacaille } 9352 .\end{array}$
 in
Bar. $29^{\circ} 99 . \quad$ Ther. $47^{\circ} \circ$ Run $+4^{\circ} 8$
Sirius.

 Bar. $30^{\circ} 30$. Ther. $53^{\circ} 5^{\prime}$. Run $+1 \cdot 9$. Images 1-2. Steadiness 2-3.

Sirius.
$\beta$


Bar. $30^{\circ} 40$. Ther. $55^{\circ} 5^{\circ}$ Run +3.2 . Images 2. Steadiness 2-3.


Bar. $30^{\circ} \mathbf{4 n}^{\text {in }}$. Ther. $56^{\circ} 0^{\circ}$. Run $+4 \cdot 1$. Images 1-2. Steadiness 2.

Lacaille 9352.
1882, May 23.


Bar. $30^{\text {in }} 4$ 2. Ther. $55^{\circ}{ }^{\circ}$. Run $+3 \cdot 8$. Images 2. Steadiness 2.
$\epsilon$ Indi.
$\beta$

|  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $1630 \cdot 3$ | 101.213 | $103 \cdot 687$ | 205 $\cdot 073$ | $1640 \cdot 3$ | 84.093 | 81.662 | $165 \cdot 898$ |
| $17 \begin{array}{ll}178\end{array}$ | 103.702 | $101 \cdot 237$ | 205.090 | 16 49** | 81.670 | $84 \cdot 129$ | 165.935 |
| 1790 | 101.236 | 103.689 | $205 \cdot 070$ | $1720 \cdot 7$ | $84 \cdot 107$ | 81.689 | 165.910 |
| $1744^{\circ} \mathrm{O}$ | -03. 729 | 101. 249 | 205 |  | 81. | 84.12 | 165.91 |

in
Bar. $30^{\circ} 45$. Ther. $5^{\circ} \cdot{ }^{\circ}$. Run $+3 \cdot$ 1. Images 2. Steadiness 2.
$\alpha_{2}$ Centauri.
$\beta$

| h | m | r | r | R |
| ---: | :---: | :---: | :---: | :---: |
| 9 | $58 \cdot 1$ | $120 \cdot 227$ | $117 \cdot 737$ | $238 \cdot 066$ |
| 10 | $24 \cdot 6$ | $117 \cdot 732$ | $120 \cdot 221$ | $238 \cdot 056$ |
| 10 | $32 \cdot 1$ | $120 \cdot 208$ | $117 \cdot 744$ | $238 \cdot 055$ |
| 10 | $58 \cdot 6$ | $117 \cdot 728$ | $120 \cdot 220$ | $238 \cdot 050$ |

1882, May 26.
$\alpha$

| h | m | r | r | R |
| :---: | :---: | :---: | :---: | :---: |
| 10 | $7 \cdot 8$ | $147 \cdot 630$ | $150 \cdot 140$ | $297 \cdot 895$ |
| 10 | $16 \cdot 5$ | $150 \cdot 128$ | $147 \cdot 662$ | $297 \cdot 916$ |
| 10 | $41 \cdot 5$ | $147 \cdot 636$ | $150 \cdot 156$ | $297 \cdot 918$ |
| 10 | $50 \cdot 1$ | $150 \cdot 137$ | $147 \cdot 636$ | $297 \cdot 898$ |

$$
\text { Bar. } 30^{\circ} 36 . \quad \text { Ther. } 59^{\circ} \circ . \quad \text { Run }+1 \cdot 5 . \quad \text { Images 2. } \quad \text { Steadiness } 2-3 .
$$

$\beta$ Centauri.
1882, May 26.

| m |  | r | R |
| :---: | :---: | :---: | :---: |
| 11.71 | 38•172 | 35.701 | 73.906 |
| 1116.5 | $35 \cdot 699$ | $38 \cdot 163$ | 73.894 |

Bar. $30^{\text {in }} 3$. Ther. $59^{\circ} \circ$. Run $+4 \cdot 6$. Images 2. Steadiness 2.

$\alpha_{2}$ Centauri.
$\beta$

|  |  |  |  | h |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $1710 \cdot 9$ | 120.253 | 117.769 | 238.090 |  |  | $147 \cdot 655$ | $150 \cdot 150$ | 297-891 |
| $1740 \cdot 2$ | $117 \cdot 781$ | 120.257 | $238 \cdot 109$ |  |  | $150 \cdot 140$ | 147*674 | 297.901 |
| $1750 \cdot 8$ | 120.261 | $117 \cdot 783$ | $238 \cdot 117$ | 18 | $0 \cdot 0$ | $147 \cdot 666$ | $150 \cdot 145$ | 297.905 |
| 1819.2 | 117*758 | 120.275 | $238 \cdot 113$ | 18 | 9 | $150 \cdot 140$ | $147 \cdot 626$ | $297 \cdot 864$ | $\begin{array}{ll}\frac{\text { in }}{}\left(30^{\circ} 37\right) . & \text { Ther. } 60^{\circ} \circ .0 \\ & \text { Run }+1 \cdot 9 . \\ & \text { Lacaille } 9352 .\end{array}$



Bar. $30^{\circ} \circ 5_{5}$. Ther. $54^{\circ} \circ$. Run $+2 \cdot 3$. Images 2. Steadiness $2-3$.

|  |  |  |  | $a_{2} \mathrm{C}$ | auri. |  | 1882, | 13. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  |
| h |  |  |  |  | h m |  |  |  |
| 11 | 13.8 | $117 \cdot 847$ | $120 \cdot 266$ | $238 \cdot 213$ | I1 $25^{\circ} 6$ | $150 \cdot 162$ | 147* 728 | 298.010 |
| 11 | $45^{\circ} 2$ | $120 \cdot 286$ | $117 \cdot 852$ | $238 \cdot 234$ | 11 34.6 | $147 \cdot 725$ | $150 \cdot 183$ | $298 \cdot 027$ |
| 12 | 3.9 | ${ }_{11} 7 \cdot 860$ | $120 \cdot 292$ |  | 1217.5 | $150 \cdot 181$ | $147 \cdot 744$ | $298 \cdot 040$ |
| 12 | $53 \cdot 8$ | 120.300 | 117.873 | $238 \cdot 263$ | $1236 \%$ | $147 \cdot 744$ | $150 \cdot 190$ | $298 \cdot 047$ |
|  | Bar. | $0 \cdot 12$ | Ther. 63 | Run | -3. | mages 2. | Steadi |  |

$\alpha_{2}$ Centauri.

| $\beta$ |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| h | m | r | r |  |
| 18 | $27 \cdot 4$ | $117 \cdot 87$ | $120 \cdot 283$ | $238 \cdot 203$ |
| 18 | $55 \cdot 5$ | 120.283 | $117 \cdot 830$ | $238 \cdot 209$ |
| 19 | 4.2 | $117 \cdot 846$ | $120 \cdot 299$ | $238 \cdot 246$ |
| 19 | $42 \cdot 8$ | $120 \cdot 255$ | $117 \cdot 833$ | $238 \cdot 223$ |

1882, June 13.
a
 in
Bar. $30^{\circ}{ }^{\text {in }} \mathbf{1 6}$. Ther. $59^{\circ} \cdot 0$. Run $+1 \cdot 4$. Images 2-3. Steadiness 2.
$\alpha_{2}$ Centauri.


1882, June 19.
$\alpha$


Bar. $30^{\text {in }} 3 \mathrm{I}$. Ther. $57^{\circ} 8$. Run $+I^{\circ} 8$. Images I-2. Steadiness I-2.
Bar. $30^{\text {in }}{ }^{\circ}$ 1. Ther. $57^{\circ}$. . Run $+1 \cdot 8$. Images I-2. Steadiness I-2. Steadiness I-2.

1882, June 20.
 Bar. $30^{\circ} \cdot 20$. Ther. $47^{\circ} \circ$. Run $+3 \cdot 6$. Images I-2. Steadiness I-2.
$\alpha_{2}$ Centauri.


Bar. 30.06 .
Ther. $56^{\circ}{ }_{3} . \quad \operatorname{Run}+1 \cdot 8$.
$\epsilon$ Indi.
1882, June 24.

|  | $r$ | ${ }^{\mathbf{r}}$ | R | h m | $\mathbf{r}$ | $r$ | R |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $1746{ }^{\circ} 9$ | 81.750 | $84^{\circ} 184$ | 166.033 | $1757{ }^{\circ} 5$ | $103^{\circ} 721$ | 101* 270 | $205^{\circ} 111$ |
| $1834{ }^{\circ}$ | $84^{\circ} 177$ | 8r.754 | $166^{\circ} 009$ | 18 19.4 | $10 \mathrm{I}^{*} 287$ | 103'709 | $205^{\circ} 105$ |
| 1845.3 | 81.743 | $84^{\circ} 199$ | 166.017 | $1858^{\circ} \mathrm{I}$ | $103^{\circ} 735$ | 101* 290 | 205* 116 |
| 19 16.6 | $84^{\circ} 203$ | 81* 775 | $166{ }^{\circ} 042$ | $19 \quad 8.4$ | 101.278 | 103 ${ }^{\prime} 753$ | $205^{\circ} 119$ |

$\alpha_{2}$ Centauri. 1882, June 29.

| 8 |  |  | ${ }^{\text {R }}$ R ${ }^{\text {P }}$ | $\begin{array}{cc}\mathrm{h} & \mathrm{m} \\ \text { 18 } \\ \text { 50 }\end{array}$ |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 18 19 19 16.9 | 117 120.881 | 117847 | ${ }_{238}{ }_{23}{ }^{24} 243$ | $118{ }^{18} 50.8$ | 150.131 $147^{\circ} 690$ | 150137 | ${ }^{297}{ }^{297} \cdot 931$ |
| $193{ }^{10} 7$ | ${ }_{11} 7^{\circ} 832$ | $120^{\circ} 275$ | $238^{\text { }} 234$ | 19 44* | 150140 | $145^{\circ} 688$ | $298{ }^{\circ}$ |
| $205 \%$ | $120 \cdot 258$ | $117 \times 79^{6}$ | $238 \cdot 221$ | $1955^{\circ} 8$ | $147 \cdot 655$ | $150 \cdot 118$ | $297{ }^{\circ} 9$ | Bar. $30^{\circ} 17$. Ther. $46^{\circ}$. $\quad$ Run $+2^{\circ} 3$. Images 1-2. Steadiness 2.

## $\alpha_{2}$ Centauri.

$a$

| h | m | r | r | R |
| :---: | :---: | :---: | :---: | :---: |
| 18 | $32 \cdot \cdot$ | $147 \cdot 658$ | $150 \cdot 096$ | $297 \cdot 867$ |
| 19 | $8 \cdot 5$ | $150 \cdot 089$ | $147 \cdot 647$ | $297 \cdot 875$ |
| 19 | $21 \cdot 0$ | $147 \cdot 648$ | $150 \cdot 082$ | $297 \cdot 882$ |
| 19 | $58 \cdot 3$ | $150 \cdot 062$ | $147 \cdot 607$ | $297 \cdot 875$ |

Bar. $30^{\circ} 30$. Ther. $43^{\circ} 5^{\circ}$. Run $+2^{\circ}$. Images 1 . Steadiness 2-3.


Bar. $30^{\circ} \cdot 15$. Ther. $45^{\circ}$. $\quad$ Run +3.5 . Images 1-2. Steadiness 1-2.



$0_{2}$ Eridani. 1882, July 22.

| m | , | r | R |  |  | r | $\mathbf{r}$ | R |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| - 51.8 | 244.600 | $242 \cdot 147$ | $487 \cdot 097$ |  | $6^{\circ} 0$ | $251 \cdot 238$ | 253.709 | 505.299 |
| I 28.9 | $242 \cdot 185$ | 244.632 | $487 \cdot 087$ | 1 | $17 \cdot 3$ | $253 \cdot 736$ | $251 \cdot 271$ | $505 \cdot 328$ |
| $137^{\circ} 3$ | 244.668 | $242 \cdot 189$ | $487^{\circ} 113$ | 1 | $48 \cdot 4$ | $251 \cdot 282$ | $253 \cdot 766$ | $505 \cdot 313$ |
| $26 \cdot 5$ | $242 \cdot 201$ | $244 \cdot 693$ | 487.114 | 1 | $57^{\circ} 2$ | $253 \cdot 748$ | $251 \cdot 309$ | $505 \cdot 309$ |

Bar. $30^{\circ} 19$. Ther. $49^{\circ} 3$. Run $+2 \cdot 1$. Images 2. Steadiness 3 .
$\epsilon$ Indi.
1882, July 26.
$\beta$

| m | r | r | R |
| :---: | :---: | :---: | :---: |
| $1635 \cdot 6$ | $84 \cdot 176$ | 81. 701 | 166.023 |
| $1722 \cdot 6$ | 81•723 | 84-170 | 166.006 |


| h | m |
| :---: | :---: |
| 16 | $47^{\circ} \cdot 6$ |
| 17 | $5 \cdot 7$ |$|$

$r$
$101 \cdot 214$
$103 \cdot 679$

| $r$ | $R$ |
| :---: | :---: |
| $103 \cdot 669$ | $205 \cdot 045$ |
| $101 \cdot 219$ | $205 \cdot 047$ |

Bar. $30^{\circ}$ in 39 Ther. $5^{\circ}$. 3 . Run $+4^{\circ} 3$. Images 3. Steadinesss 3 .

1882, July 26.
$\alpha$

| h | m |
| :---: | :---: |
| 0 | $55^{\circ} \cdot 6$ |
| I | $7 \cdot 2$ |
| I | $40^{\circ} \cdot \mathrm{O}$ |
| I | $54^{\circ} \cdot 4$ |$|$

$r$
$242 \cdot 153$
$244 \cdot 648$
$242 \cdot 209$
$244 \cdot 691$

| $\mathbf{r}$ | R |
| :---: | :---: |
| $244 \cdot 623$ | $487 \cdot 115$ |
| $242 \cdot 180$ | $487 \cdot 138$ |
| $244 \cdot 642$ | $487 \cdot 104$ |
| $242 \cdot 223$ | $487 \cdot 149$ |

## in

Bar. $30^{\circ}$ 34. Ther. $51^{\circ}{ }^{\circ}$. Run $+2 \cdot 8$. Images 2-3. Steadiness 3 .
$\beta$ Centauri.

|  | r |  |  |
| :---: | :---: | :---: | :---: |
| $1643^{\circ} 1$ | $35^{\cdot 726}$ | $38 \cdot 149$ | $73^{*} 901$ |
| 16 53'1 | 38:187 | 35*733 | 73.947 |

Bar. $30^{\circ} 26$. Ther. $5^{\circ} \circ$. Rún +3.9 . Images $2-3$. Steadiness $2-3$.


Bar. $30^{\circ} 17$. Ther. $45^{\circ} 5 . \quad$ Run $+2 \cdot 6$. Images $\mathbf{1}-2$. Steadiness 2 .

$0_{2}$ Eridani.
 Bar. $30^{\circ} 41$. Ther. $54^{\circ} \circ$. Run $+2 \cdot 8$. Images 1-2. Steadiness 2 .
$\alpha_{2}$ Centauri.
$a^{1}$

|  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1739 | $232 \cdot 157$ | $234 \cdot 614$ | $466 \cdot 988$ | ${ }^{17} 53^{\circ} \mathrm{I}$ | 213.558 | 21 |  |
| 1827 | 234.590 | $232 \cdot 163$ | $467 \cdot 030$ | 1810.5 | 211.124 | 213.568 | 424 |
| 18 | $232 \cdot 147$ | 234.597 | $467 \cdot 034$ | $1855^{\circ} 3$ | 213.558 | 211.086 |  |
| 1927 | 234.531 | 232.08 | 466 |  |  | $213{ }^{\circ}$ |  |

$\begin{array}{ll}\text { Bar. } 30^{\circ} \cdot 46 . & \text { Ther. } 55^{\circ} 8 . \\ & \text { Run }+2.4 . \\ & \beta \text { Centauri. }\end{array}$

| h m | r |  |  |
| :---: | :---: | :---: | :---: |
| 2025.4 | $35^{\circ} 700$ | $38 \cdot 135$ | 73.949 |
| $2036 \cdot 7$ | $38 \cdot 144$ | $35 \cdot 691$ | $73 \cdot 959$ |

Bar. $\left(30^{\circ} 45\right)$. Ther. $55^{\circ} 5$. Run $+4^{\circ}$. Images 2. Steadiness 2 .

$$
a^{2} \text { Centauri. } \quad 1882, \text { July } 31 .
$$

$\alpha$
 Bar. $30^{\text {in }} \cdot \mathbf{4 5}$. Ther. $55^{\circ} \circ$. $\quad$ Run $+2 \cdot 6$. Images $2-3$. Steadiness 3 .
$\beta$ Centauri.


Bar. $30^{\circ} 4 \mathrm{In}$. Ther. $57^{\circ} \circ$. Run $+4^{\circ}$. . Images 2. Steadiness 2.
$a_{2}$ Centauri. $\quad$ 1882, August 1.
$a$

Bar. $30^{\circ} 47$. Ther. $57^{\circ} \circ$. Run +2.5 . Images 2-3. Steadiness 2-3.

|  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |

Bar. $30^{\text {in }} 34$. Ther. $56^{\circ} 0^{\circ}$. Run +4.4 Images 2-3. Steadiness 2-3.

$$
a_{2} \text { Centauri }
$$

$\beta$
 Bar. $30^{\circ}$ in 34 . Ther. $55^{\circ}{ }_{5}$. Run +3.9 . Images 3. Steadiness 3 .

## Sirius.

1882, August 4.
$a$

|  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $44^{\circ} 6$ | 139 738 | $142 \cdot 161$ | $28 \mathrm{r} \cdot 983$ | $15^{\circ} \mathrm{P}$ | 144.331 | 141.917 | $286 \cdot 3{ }^{1}$ |
| $21^{\circ} 2$ | $142 \cdot 183$ | $139 \cdot 723$ | $281 \cdot 989$ | $9 \cdot 9$ | 141.897 | 144.393 | $286 \cdot 405$ |
| $29^{\circ} 5$ | $139^{\circ} 760$ | $142 \cdot 208$ | 282.050 | 243.2 | $144{ }^{\circ} 381$ | 141.916 | $286 \cdot 399$ |
| $8 \cdot 7$ | 142'193 | $139^{\circ} 749$ | $282 \cdot 024$ | 53.7 | 141.922 | 144.370 | $286 \cdot 391$ |

Bar. $30^{\circ}$ in 3 . Ther. $43^{\circ} 3$. Run $+2 \cdot 9$. Images 2-3. Steadiness 2.
$\alpha_{2}$ Centauri. $\quad$ 1882, August 5.
 Bar. $30^{\circ} 27$. Ther. $4^{\circ}{ }^{\circ}$. Run +2.5 . Images 2-3. Steadiness 3 .
$\alpha_{2}$ Centauri.
$\beta^{1}$
 in
Bar. $30^{\circ} 29$. Ther. $55^{\circ}$. Run +3.5 . Images 2-3. Steadiness 2-3.

## Sirius.

| h m | r | r | ${ }^{\text {R }}$ | h |  |  | r | R |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $52 \cdot 8$ | 141*945 | 144*349 | $286 \cdot 419$ | 2 | $3 \cdot 7$ | 142.153 | $139^{\circ} 792$ | 282.027 |
| $34^{\circ} 2$ | 144.352 | 141.947 | 286.402 |  | 17.1 | $139^{\circ} 770$ | $142 \cdot 184$ | $282 \cdot 036$ |
| $44 \cdot 3$ | 141.945 | 144.332 | $286 \cdot 377$ | 2 | $54 \cdot 2$ | $142 \cdot 163$ | $139 * 769$ | $282 \cdot 013$ |
| 313.8 | 144.341 | 141'981 | 286.415 | 3 | $5^{\circ}$ | $139 \cdot 789$ | $142 \cdot 145$ | 282.015 |

$\alpha_{2}$ Centauri.

| $\mathrm{h} \quad \mathrm{m}$ | r |  | R |  |
| :---: | :---: | :---: | :---: | :---: |
| 1711.6 | 234. 599 | $232 \cdot 212$ | $467 \cdot 002$ | 17 28.9 |
| 1754.6 | $232 \cdot 211$ | 234.572 | $467 \cdot 024$ | 1743.9 |
| $18 \quad 8 \cdot 9$ | 234.604 | $232^{1} 130$ | $466 \cdot 991$ | 1821.6 |
| $1848 \cdot 9$ | 232.191 | 234.512 | $467 \cdot 011$ | $1838 \cdot 1$ |

Bar. $30^{\circ} 24$. Ther. $5^{\circ}$. 3 . Run $+2 \cdot 8$. Images 2. Steadiness 2
$\epsilon$ Indi.
$\alpha$


$\alpha_{2}$ Centauri.

|  |  | $\alpha^{1}$ |  |
| :---: | :---: | :---: | :---: |
| $h$ | $m$ | $r$ | $r$ |
| 17 | $33 \cdot 9$ | $234 \cdot 558$ | $232 \cdot 170$ |
| 17 | $59 \cdot 8$ | $232 \cdot 184$ | $234 \cdot 552$ |
| 18 | $6 \cdot 9$ | $234 \cdot 550$ | $232 \cdot 165$ |
| 18 | $33 \cdot 6$ | $232 \cdot 205$ | 234.518 |

$R$
$466 \cdot 941$
$466 \cdot 977$
$466 \cdot 965$
$467 \cdot 009$

| $h$ | $m$ |
| :---: | :---: |
| 17 | $42^{\circ}$ |
| 17 | $50^{\circ} 7$ |
| 18 | $14^{\circ} 6$ |
| 18 | $23^{\circ}$ |$|$

1882, August 14. $\beta^{1}$

Bar. $3^{\text {in }} 43$. Ther. $5^{\circ} 9$.

$\left|\begin{array}{cc}r & r \\ 211 \cdot 177 & 213^{\cdot} \cdot 519 \\ 213 \cdot 521 & 211 \cdot 142 \\ 211 \cdot 130 & 213 \cdot 512 \\ 213 \cdot 518 & 211 \cdot 136\end{array}\right|$ | $R$ |
| :---: |
| $424 \cdot 889$ |
| $424 \cdot 864$ |
| $424 \cdot 868$ |
| $424 \cdot 889$ |

Bar. $30^{\circ}$ 43. Ther. $5^{\circ} \cdot 9$. Run $+2 \cdot 8$. Images $1 . \quad$ Steadiness $\mathbf{1 - 2}$.
$\alpha_{2}$ Centauri.

| m | r | r | R |
| :---: | :---: | :---: | :---: |
| 17 $799^{\circ} 3$ | $213 \cdot 554$ | $211 \cdot 138$ | $424 \cdot 892$ |
| $18 \quad 14^{\circ} 3$ | 211.128 | $213 \cdot 523$ | $424 \cdot 876$ |
| $1826^{\circ}$ | 213.532 | 211'134 | 424.904 |
| 194.9 | 211.113 | 213*495 | $424 \cdot 897$ |

1882, August 16.
$\alpha^{1}$

| h | m | r | r | R |
| :---: | ---: | :---: | :---: | :---: |
| $\mathbf{1 7}$ | $57^{\circ} \cdot 4$ | $232^{\circ} \cdot 198$ | $234^{\circ} \cdot 549$ | $466^{\circ} \cdot 986$ |
| 18 | $5^{\circ} \cdot 1$ | $234 \cdot 575$ | $232 \cdot 189$ | $467 \cdot 012$ |
| 18 | $37^{\circ} \cdot 5$ | $232 \cdot 150$ | $234^{\circ} \cdot 524$ | $466 \cdot 967$ |
| 18 | $53^{\circ} \cdot 6$ | $234^{\circ} 530$ | $232 \cdot 127$ | $466 \cdot 976$ |

Bar. $30 \cdot 44$
Ther. $52^{\circ}$.
Run +2.5 . Images 1-2. Steadiness I-2.
$0_{2}$ Eridani.
$\alpha$


1882, August 16.
$\beta$

Bar. $30^{\circ} 42$. Ther. $49^{\circ} \circ$. Run $+4 \cdot 6$. Images 2-3. Steadiness 3 .
$\epsilon$ Indi.

1882, August 16.
$\beta$

| h | m | r | r | R |
| ---: | ---: | :---: | :---: | :---: |
| 2 | $15 \cdot 0$ | $101 \cdot 250$ | $103 \cdot 679$ | $205^{\circ} 060$ |
| 2 | $34 \cdot 7$ | $103 \cdot 644$ | $101 \cdot 244$ | $205^{\circ} 035$ |
| 3 | $7 \cdot 8$ | $101 \cdot 239$ | $103 \cdot 625$ | $205^{\circ} 048$ |
| 3 | $20 \cdot 2$ | $103 \cdot 651$ | $101 \cdot 228$ | $205 \cdot 080$ |


$a_{2}$ Centauri.
$a$

| h m | $r$ | $r$ | E. | h |  | $r$ | $r$ | ${ }^{\mathbf{R}}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $1730 \cdot 5$ | $147^{\circ} 775$ | $150^{\circ} 141$ | $298 \cdot 004$ | 17 | $42^{\circ} 3$ | $120^{\circ} 340$ | $117^{\circ} 971$ | $238 \cdot 283$ |
| $187^{\circ} 5$ | 150.168 | $147 \cdot 771$ | $298 \cdot 037$ | 17 | $56^{\circ}$ | $117{ }^{\circ} 943$ | $120^{\circ} 354$ | $238 \cdot 372$ |
| $1823^{\circ} 7$ | $147 \cdot 669$ | $150^{\circ} 053$ | 297.827 | 18 | $33^{\circ} 1$ | $120 \cdot 285$ | 117.894 | $238 \cdot 266$ |
| $185^{1} 0$ | $150 \cdot 066$ | $147 \cdot 658$ | $297 \cdot 846$ | 18 | $42 \cdot 6$ | $117 \cdot 887$ | $120^{\circ} 277$ | $238 \cdot 255$ |

Bar. $30^{\circ} \cdot 24$. Ther. $52^{\circ}{ }^{\circ}$. Run $+2 \cdot 9$. Images 2-3. Steadiness 2-3.
$\beta$ Centauri. $\quad$ 1882, August 18.

| h m | $\mathbf{r}$ | ${ }^{\mathbf{r}}$ | R |
| :---: | :---: | :---: | :---: |
| 19 2.1 | $35 \cdot 742$ | 38-134 | 73.935 |
| $1910 \cdot 3$ | $3^{8 \cdot 116}$ | $35 \cdot 732$ | 73.909 |
| Bar. 30.23. | Ther. |  | Run + |

$$
\alpha_{2} \text { Centauri. } \quad \text { 1882, August } 19
$$



Bar. $30^{\text {in } 12 . ~ T h e r . ~} 5^{\circ} \circ 0^{\circ}$. Run $+3 \%$. Images 2-3. Steadiness 3.
$\beta$ Centauri.
1882, August 19.

| h | m | r | r | R |
| :---: | :---: | :---: | :---: | :---: |
| 19 | $13 \cdot 8$ | $35^{\circ} \cdot 750$ | $38^{\cdot 1} \cdot 13$ | $73^{\circ} 949$ |
| 19 | $25 \cdot 1$ | $3^{\circ} \cdot 110$ | $35^{\circ} \cdot 754$ | $73^{\circ} \cdot 93^{2}$ |

Bar. $30^{\circ} 12$. Ther. $50^{\circ}{ }^{\circ}$. Run $+4^{\circ}$. . Images 2-3. Steadiness 2-3.

|  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |

Bar. $30^{\text {in }} \mathbf{2 3}$. Ther. $54^{\circ}$ O. Run $+4^{\circ}$ 2. Images 2. Steadiness 2-3.



|  |  |  |  |  |  | 82, A | ust 22. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |
| b m |  |  | R | h m |  | r | R |
| 1755.4 | 101. 262 | 103.670 | 205.051 | 18 5.3 | $84^{1} 137$ | 81.747 | $165^{\circ} 974$ |
| 1823.3 | 103.662 | 101. 292 | 205.060 | 1814.2 | 81.799 | $84^{\cdot 144}$ | 166.029 |
| $1831 \cdot 6$ | 101.291 | 103.672 | $205 \cdot 065$ | $1842 \cdot 8$ | $84^{1} 152$ | $8 \mathrm{I} \cdot 767$ | 165.994 |
| $1856 \cdot 9$ | $103 \cdot 673$ | 101.285 | 205.049 | $1850^{\circ} 5$ | $81 \cdot 770$ | $84 \cdot 165$ | 166:006 |
|  | Bar. | $0^{\circ} 21$ | Ther | 15. | Run | $3 \cdot 8$ |  |

$a_{2}$ Centauri.
$\beta$

Bar. $30^{\circ}$ io. Ther. $5^{\circ}{ }^{\circ} 0 . \quad$ Run $+2 \cdot 2$. Images 2. Steadiness 2-3.

## $\beta$ Centauri.

1882, August 23.

|  |  |  | r | R |
| :---: | :---: | :---: | :---: | :---: |
| 18 | $37 \cdot 3$ | $38 \cdot 136$ | $35^{*} 729$ | 73.915 |
| 18 | $46 \cdot 7$ | 35.735 | 38.134 | 73.921 |

Bar. $30^{\text {in }} 1$. Ther. $50^{\circ}$. . Run +5.5 Images 2. Steadiness 2.
 in $30^{\circ} 13$. Ther. $55^{\circ}$. Run $+5^{\circ}$. Images 1 . Steadiness I-2.
$\epsilon$ Indi.
1882, August 26.

|  |  |  | R | h |  |  | ${ }^{\text {R }}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $18 \quad 3.2$ | $84^{\cdot 210}$ | $8 \mathrm{r} \cdot 737$ | 166.039 | 1813.7 | 101.233 | 103.697 | $205 \cdot 040$ |
| $1832 \cdot 1$ | 81.768 | $84 \cdot 196$ | $166 \cdot 043$ | $1823 \cdot 3$ | 103.699 | 101.271 | 205.072 |
| $1842 \cdot 0$ | 84.209 | $81 \cdot 741$ | 166.025 | $1850 \cdot 6$ | 101•234 | 103.716 | 205.044 |
| 1910.8 | $81 \cdot 735$ | 84.205 | $166 \cdot 005$ | $192 \cdot 0$ | 103.726 | 101-223 | 205*39 |
|  |  | 30. 17. |  | $55^{\circ}$. | Run | $6 \cdot 1$. |  |

$\epsilon$ Indi. 1882, August 31.

|  |  |  | R | h m | ${ }^{\mathbf{r}}$ | r | R |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $184^{\circ} \mathrm{O}$ | 101. 242 | 103.689 | 205•048 | 18 11.6 | $84^{-207}$ | 81.758 | $166 \cdot 054$ |
| נ $826 \cdot 6$ | 103.693 | $101 \cdot 236$ | 205.035 | $1820 \cdot 6$ | 81 $\cdot 734$ | 84.205 | 166.022 |
| $1836 \cdot 6$ | $101 \cdot 270$ | 103.696 | 205.068 | $1846 \cdot 5$ | $84^{.209}$ | $81 \cdot 751$ | $166 \cdot 035$ |
| 192.0 | 103.712 | 101•266 | $205 \cdot 065$ | 1854.9 | $81 \cdot 762$ | 84.218 | $166 \cdot 05^{2}$ |

Bar. $30^{\circ}$ in 43 Ther. $5^{\circ}{ }^{\circ}$. $\quad$ Run $+4^{\circ} 9$. Images 2 . Steadiness 2.
$\alpha_{2}$ Centauri. 1882, September 1.

|  |  |  | 1 |  |  | r | R |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $18 \quad 7 \cdot 2$ | $150 \cdot 095$ | 147.619 | $297 \cdot 812$ | $1816 \cdot 1$ | $117 \cdot 844$ | $120 \cdot 342$ | $238 \cdot 267$ |
| $1839^{\circ} 5$ | $147 \cdot 618$ | 150.086 | $297 \cdot 819$ | 1829.4 | 120.336 | $117 \cdot 872$ | $2.38 \cdot 294$ |
| $1846 \cdot 4$ | $150 \cdot 101$ | 147.624 | $297 \cdot 844$ | 18 56.7 | $117{ }^{*} 85^{6}$ | $120 \cdot 323$ | ${ }^{2} 38 \cdot 278$ |
| $1918 \cdot 4$ | 147.638 | 150.089 | $297 \cdot 873$ | $199^{\circ}$ | 120.334 | $117 \cdot 843$ | $238 \cdot 284$ |

Bar. $30^{\circ} 24$. Ther. $48^{\circ}$. . Run $+4^{\circ}$. Images 2. Steadiness 2-3.


$a_{2}$ Centauri. 1882, October 2.
$\alpha$


Bar. $3^{\text {in }} 0^{\circ} 19$. Ther. $58^{\circ} 8$. Run $+3 \cdot 7$. Images 2. Steadiness 2.
 Bar. $\left(30^{\circ} 13\right)$. Ther. $55^{\circ}$. . Run +4.3 . Images 1 . Steadiness 1 .

Sirius.
$\alpha$

| $\alpha$ |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| h | m | r | r | R |
| 3 | $53^{\circ} 1$ | $144^{\circ} 412$ | $141^{\circ} 95^{\circ}$ | $286^{\circ} 448$ |
| 4 | $29^{\circ} 6$ | $141^{\circ} 967$ | $144^{\circ} 395$ | $286 \cdot 445$ |

1882, November 9.

| l | m | r | r | r |
| :---: | :---: | :---: | :---: | :---: |
| 4 | $9^{\circ} \cdot 2$ | $139^{\circ} 703$ | $14^{\circ} 177$ | $281^{\circ} 959$ |
| 4 | $20^{\circ} 2$ | $142^{\circ} 177$ | $139^{\circ} 755$ | $282^{\circ} \cdot 11$ |

Sirius.


Bar. $30^{\circ}{ }^{\circ}$ 28. Ther. $55^{\circ} \cdot 5$. Run $+3 \cdot 2$. Images $\mathbf{1 - 2}$. Steadiness $\mathbf{1 - 2}$.


Sirius.


1882, November 24.

| Sirius. 1882, November 24. |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\alpha$ |  |  |  |  |  |  |  |
| h m | $\mathbf{r}$ |  | R | h m |  | r |  |
| $3 \quad 4 \cdot 7$ | 141.955 | 144*388 | $286 \cdot 435$ | $313{ }^{\circ}$ | $142 \cdot 184$ | $139^{\circ} 709$ | 281.972 |
| $330 \cdot 8$ | 144.391 | 141.964 | 286.442 | 322.9 | 1 $39^{\circ} 744$ | $142 \cdot 174$ | 281.997 |
| $336 \cdot 5$ | $141 \cdot 936$ | 144.391 | $286 \cdot 413$ | 344.9 | $142 \cdot 191$ | 139.734 | 282.004 |
| $359{ }^{\circ} 3$ | $144^{\circ} 4^{16}$ | 141.952 | $286 \cdot 45^{2}$ | $35^{2 \cdot 5}$ | $139^{\circ} 743$ | $142 \cdot 198$ | $282 \cdot 020$ |

Bar. $30^{\circ} 08$. Ther. $59^{\circ} 5 . \quad$ Run $+1 \cdot 3$. Images 3. Steadiness 3.

Sirius.
$a$

| $\mathbf{h}$ | $m$ | $\mathbf{r}$ | $\mathbf{r}$ | $\mathbf{R}$ |
| :---: | :---: | :---: | :---: | :---: |
| 2 | $7^{\circ} \cdot 9$ | $14 I^{\circ} \cdot 93^{6}$ | $144^{\circ} \cdot 374$ | $286^{\prime} \cdot 421$ |
| 2 | $38 \cdot 8$ | $144^{\circ} \cdot 362$ | $14 I^{\circ} \cdot 939$ | $286 \cdot 399$ |
| 2 | $46 \cdot 9$ | $14 I^{\circ} \cdot 95^{2}$ | $144 \cdot 392$ | $286 \cdot 439$ |
| 3 | $16 \cdot 3$ | $144^{\circ} 399$ | $14 I^{\circ} \cdot 936$ | $286 \cdot 424$ |

1882, November 25. in
Bar. $30 \cdot 00$. Ther. $60 \circ 5$.
Bar. $30^{\circ} 00$. Ther. $60^{\circ} 5 . \quad$ Run $+2 \cdot \%$ Images 2-3. $\quad$ Steadiness 2-3.

| h | m |
| :---: | :---: |
| 2 | $16 \cdot 3$ |
| 2 | $25 \cdot 8$ |
| 2 | $58 \cdot 3$ |
| 3 | $7 \cdot 4$ |


| $r$ | $r$ |
| :---: | :---: |
| $142^{\circ} \cdot 169$ | $139^{\circ} \cdot 726$ |
| $139^{\circ} \cdot 744$ | $142 \cdot 165$ |
| $142 \cdot 166$ | $139^{\circ} \cdot 735$ |
| $139^{\circ} \cdot 714$ | $142 \cdot 170$ |

${ }^{28}{ }^{\text {R }}$ 281. 987

281•979 281.962

Lacaille 9352.
$\beta$

|  |  |  | ${ }^{\text {R }}$ |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $25 \cdot 9$ | ${ }_{172} \cdot 233$ | $160^{\circ} 794$ | $342 \cdot 143$ | $137^{\circ} \circ$ | $264{ }^{\circ} 217$ | $266 \cdot 661$ | 531.069 |
| $\bigcirc$ | 169.761 | 172.232 | $342 \cdot 122$ | $51^{\circ}$ | $266 \cdot 682$ | 4.223 | $531 \cdot 106$ |
| $6 \cdot 7$ | $172 \cdot 232$ | $169 \cdot 764$ | $342 \cdot 12$ | 18. |  | $266 \cdot 645$ | $531^{\circ} \mathrm{O}$ |
| $0 \cdot 3$ | 169.7 | 172.211 | $342^{1} 11$ | 28. | 266.621 | $264 \cdot 1$ |  |

1882, November 27.

Sirius.
$\beta$

| m | r |  |
| :---: | :---: | :---: |
| $4 \cdot 9$ | 142.190 | $139 \cdot 716$ |
| $33^{2 \cdot} 7$ | 139.730 | $142 \cdot 182$ |
| $34^{1} 3$ | $142 \cdot 170$ | $139^{\prime 722}$ |
| 3.4 | 139.741 | $142 \cdot 183$ |



Bar. $\left(30^{\circ} 04\right)$. Ther. $62^{\circ}{ }_{5}$. Run $+5^{\circ}$. Images 2. Steadiness $2-3$. Bar. $30^{\circ} 04$. Ther. $62^{\circ} \circ^{\circ}$. Run +2.5 . Images $2-3$. Steadiness $2-3$.

1882, November 27.
$\alpha$


Lacaille 9352. * 1882, November 28.

|  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $149 \cdot 8$ | 169.791 | $172 \cdot 197$ | $342 \cdot 112$ | 157.3 | $266 \cdot 689$ | $264 \cdot 200$ | $531 \cdot 092$ |
| 218.4 | 172.241 | 169. 776 | $342 \cdot 153$ | 26.8 | $264 \cdot 196$ | $266 \cdot 652$ | $531 \cdot 0{ }^{8}$ |
| 225.7 | 169.763 | 172.224 | 342'126 | $236 \cdot 7$ | $266 \cdot 664$ | 264-194 | $531 \cdot 093$ |
| $57^{-8}$ | 172.233 | 169.784 | $342 \cdot 177$ | 245.9 | 264. 203 | $266 \cdot 668$ | $531 \cdot 115$ |

Bar. (30.07). Ther. $64^{\circ} 8$. Run $+5^{\circ}$. Images 2-3. Steadiness 2-3.

Sirius.


Lacaille 9352. 1882, November 29.


Sirius.

| h m | r | r | R | h m | r | r | 1 L |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $237^{\circ} 3$ | $139^{\circ} 721$ | $142 \cdot 180$ | 28I•980 | $244^{\circ} 2$ | $144 \cdot 388$ | 141.954 | $286 \cdot 439$ |
| $3 \quad 4 \cdot 9$ | $14^{2} \cdot 186$ | $139^{\circ} 713$ | 281.978 | $255^{\circ} 7$ | $141 \cdot 934$ | 144.402 | 286.430 |
| $313 \cdot 8$ | 139*71 7 | $142 \cdot 180$ | 281.976 | $\begin{array}{lll}3 & 23 \cdot 6\end{array}$ | 1 44.395 | 141.952 | $286 \cdot 436$ |
| $34^{\circ} 2$ | $142 \cdot 184$ | $139^{\circ} 746$ | $282{ }^{\circ} 009$ | $332 \cdot 7$ | 141.950 | $144 * 394$ | $286 \cdot 433$ |

Bar. $30^{\circ} \mathbf{2 2}$. Ther. $60^{\circ} \circ$. Run +3.9 . Innages $\mathbf{1 - 2 .} \quad$ Steadiness 2.

Lacailie 9352. 1882, December 4.


Sirius.
1882, December 4. $\beta$

|  | m | r | r |
| :---: | :---: | :---: | :---: |
| 2 | 58•9 | 141.938 | $144 \cdot 384$ |
| 3 | $25 \cdot 9$ | 144.406 | 141'934 |
| 3 | 30'7 | 141.919 | 144.394 |
| 3 | 52.9 | $144 \cdot 408$ | 141.95 | R

$286 \cdot 416$
$286 \cdot 429$
286.401

286.445 | h | m | r | r | r |
| :---: | :---: | :---: | :---: | :---: |
| 3 | $8^{\circ} \cdot 1$ | $142^{\circ} \cdot 145$ | $139^{\circ} \cdot 709$ | $281^{\circ} \cdot 933$ |
| 3 | $18 \cdot 5$ | $139^{\circ} \cdot 701$ | $142 \cdot 191$ | $281 \cdot 971$ |
| 3 | $38 \cdot 9$ | $142 \cdot 185$ | $139^{\circ} \cdot 701$ | $281 \cdot 965$ |
| 3 | $46 \cdot 5$ | $139^{\circ} \cdot \mathrm{I}^{12}$ | $142^{\circ} \cdot 175$ | $281 \cdot 966$ | Bar. $30^{\circ} 23$. Ther. $58^{\circ} \cdot 7$. Run $+2 \cdot 7$. Images 1-2. Steadiness $\mathbf{1 - 2}$.

Lacaille 9352. $\quad 1882$, December 9.

Bar. $29^{\text {in }}{ }^{\circ}$ Ther. $70^{\circ} 5$.
Run $+6 \cdot 1$.
Images 2-3. Steadiness 2-3.

## Lacaille 9352.

$\beta$

| h m | $\mathbf{r}$ |  | R | $\mathrm{h} \quad \mathrm{m}$ |  |  | R |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $29^{\circ} 1$ | 172.211 | 169.692 | $342 \cdot 038$ | 222.0 | 264-198 | $266 \cdot 657$ | 531-082 |
| 226.2 | 169.725 | 172.171 | $342 \cdot 039$ | 232.4 | 266.671 | 264. 186 | $531 \cdot 093$ |
| 254.8 | 172.199 | $169^{\circ} 733$ | $342 \cdot 093$ | $3 \quad 6 \cdot 7$ | 264. 143 | $266 \cdot 656$ | 531.075 |
| 329.9 | $169^{\circ} 711$ | $172 \cdot 185$ | $342 \cdot 089$ | 318.3 | $266 \cdot 676$ | 264* 165 | $53{ }^{1} 134$ |

Bar. $30^{\circ}{ }^{\circ}$ 28. Ther. $57^{\circ}$. . Run $+6 \cdot 5$. Images 2-3. Steadiness 2-3.

Sirius. 1882, December 18.

| h m | 1 | r |  | h m | r | r | R |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $311 \cdot 4$ | 139.716 | $142 \cdot 190$ | 281.983 | $323{ }^{\circ}$ | 144.414 | 141.944 | $286 \cdot 444$ |
| 339.7 | $142 \cdot 215$ | $139^{\circ} 710$ | 282.002 | $33^{1.4}$ | 141.941 | $144{ }^{\circ} 427$ | 286.453 |
| $34^{\circ} 5$ | $139 \cdot 704$ | 142.213 | 281.994 | 359.4 | 144.453 | 141.926 | $286 \cdot 461$ |
| 419.6 | $14^{\prime} \cdot 191$ | 139.717 | 28I•984 | $410 \cdot 3$ | $141^{\circ} 934$ | $144{ }^{-421}$ | $286 \cdot 435$ |
| Bar. $29^{\circ} 90.9$ Ther. $70^{\circ} 0.0$ Run $+2 \cdot 6$ |  |  |  |  |  |  |  |

Sirius. $\quad 1882$, December 24.
$a$

|  | m | r | r | R |
| :---: | :---: | :---: | :---: | :---: |
| 2 | $37^{\circ} 2$ | 141.926 | 144.407 | $286 \cdot 433$ |
|  | 14.6 | 144.438 | 141.942 | 286.47 I |
| 3 | 22.6 | 141.936 | $144^{\circ} 407$ | $286 \cdot 43^{2}$ |
| 3 | $56 \cdot 2$ | 144.415 | $141 \cdot 943$ | $286 \cdot 443$ |

Sirius. $\quad 1882$, December 24.

|  |  |  | R |  |  |  |  | R |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $917 \times 9$ | 141.900 | 144.374 | $286 \cdot 411$ |  | $27^{\circ} 9$ | $142 \cdot 165$ | 139.684 | 281.978 |
| $954 * 3$ | $141 \cdot 877$ | 144.363 | 286.412 | 9 | $45^{\circ} 8$ | 142.170 | 139.668 | $28 \mathrm{I} \cdot 98 \mathrm{I}$ |
| $10 \quad 2 \cdot 3$ | 144.375 | $141 \cdot 904$ | $286 \cdot 461$ |  | 12.5 | 139.671 | $142 \cdot 129$ | $281 \cdot 97{ }^{2}$ |
| 1031.5 | 141.876 | 144*327 | $286 \cdot 441$ | 10 | $21^{\circ} 2$ | $142 \cdot 157$ | 139.659 | 282.000 |

${ }_{0}$ Eridani.

| h | m |
| :--- | :---: |
| 2 | $45^{\circ} \cdot 9$ |
| 2 | $59^{\circ} \cdot 2$ |
| 3 | $3 I^{\prime} \cdot 7$ |
| 3 | $42 \cdot 8$ |

$\beta$

|  | 1 | R |
| :---: | :---: | :---: |
| $142 \cdot 184$ | $139^{\circ} 731$ | 281.995 |
| 139.722 | $142^{\circ} 18 \mathrm{I}$ | 28I $\cdot 983$ |
| $142 \cdot 205$ | $139^{\circ} 711$ | 28I'996 |
| 1 $39^{\circ} 736$ | $142 \cdot 180$ | 281.99 |

Run $+3 \cdot 6$.
Images 2-3. Steadiness 2-3.



Bar. $29^{\circ} 96 . \quad$ Ther. $63^{\circ} \circ$. Run $+2.70^{\circ}$

| $\beta \quad{ }_{2} \mathrm{E}$ |  |  |  | ni. 1883, February 13. |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| h m | r | r | R | h m | r | r | R |
| $634^{\circ} \mathrm{I}$ | 253.921 | $25 \mathrm{I} \cdot 522$ | $505 \cdot 582$ | 644.4 | $242 \cdot 224$ | $244 \cdot 644$ | $487^{\circ} 002$ |
| $7 \quad 5 \cdot 3$ | $251 \cdot 542$ | 253.916 | 505.598 | $655^{\circ} 2$ | $244 \cdot 615$ | $242 \cdot 218$ | $486 \cdot 967$ |
| 713.3 | 25.3 .929 | $251 \cdot 512$ | 505.580 | $721 \cdot 4$ | $242 \cdot 206$ | 244.621 | $486 \cdot 962$ |
| $749^{\circ} \mathrm{O}$ | 251.510 | $253 * 942$ | 505*596 | 734.6 | 244.642 | $242 \cdot 222$ | $487 \cdot 000$ |

Bar. $30^{\circ} 13$. Ther. $63^{\circ}$. . Run $+3 \cdot 7$. Images 1-2. Steadiness 2-3.


| $\begin{array}{cc} \mathrm{h} & \mathrm{~m} \\ 6 & 30^{\circ} \mathrm{I} \end{array}$ | $0_{2}$ Eridani. |  |  |  | 1883, February 14. |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | r | R | h m | r | r |  |
|  | 244.616 | $242 \cdot 207$ | $486 \cdot 957$ | 6. $41 \cdot 4$ | ${ }^{251}$ 1.558 | ${ }^{2} 53 \cdot 943$ | 505.640 |
| $7 \quad 7 \cdot 7$ | 242.231 | 244.629 | $486 \cdot 994$ | 653.2 | 253.955 | $251 \cdot 532$ | $505 \cdot 626$ |
| $7{ }_{8} 5^{\circ} 9$ | $244 \cdot 647$ | $242 \cdot 192$ | $486 \cdot 974$ | $727^{\circ} 5^{\prime}$ | $25 \mathrm{I} \cdot 545$ | 253.926 | 505.612 |
| $8 \quad 0.3$ | $24^{2} 220$ | 244.627 | $486 \cdot 986$ | $743^{\circ}$ | 253.945 | ${ }_{251} 5^{6} 6$ | 505.650 |

Bar. $30^{\circ}$ 12. Ther. $64^{\circ}$. ${ }^{\circ} \quad$ Run $+4^{\circ}$. Images 2-3. Steadiness 2-3.

| $a_{2}$ Centauri. <br> 1883, February 14. |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | r | R | h m | ${ }^{\mathbf{r}}$ | r |  |
| $848 \cdot 8$ | $213 \cdot 382$ | 211.001 | $424 \cdot 808$ | $9 \quad 3 \cdot 4$ | $232 \cdot 067$ | 234.481 | $466 \cdot 943$ |
| 924.1 | 211.052 | 213.452 | $424 \cdot 857$ | 914.2 | $234 \cdot 466$ | $232 \cdot 067$ | $466 \cdot 908$ |
| $932 \cdot 7$ | 213.467 | 211.067 | 424.871 | $946 \cdot 9$ | $232 \cdot 099$ | 234.509 | $466 \cdot 932$ |
| 109.8 | 211-079 | $213.4 \%$ | $424 \cdot 836$ | 9571 | 234.502 | $232 \cdot 121$ | 466.927 |
| Bar. $30^{\circ} 12$. Ther. $63^{\circ} 5 . \quad$ Run $+3 \cdot 7$. |  |  |  |  |  |  |  |

$$
\circ_{2} \text { Eridani. } \quad 1883, \text { February } 15 .
$$

|  |  |  | ${ }^{\text {a }}$ |  |  |  | r | ${ }^{\text {R }}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $648 \cdot 5$ | $251 \cdot 521$ | 253.944 | 505.605 | 7 | $0 \cdot 9$ | 244.629 | $242 \cdot 231$ | 486.994 |
| 723.6 | ${ }^{2} 53.956$ | ${ }_{251} \cdot 539$ | $505 \cdot 636$ |  | 12.9 | $242 \cdot 224$ | 244.627 | $486 \cdot 987$ |

Bar. $3^{\circ}{ }^{\circ}$ in 18 . Ther. $62 \cdot 8$. Run $+3 \cdot 4$. Images $2-3$. Steadiness 2-3.
$0_{2}$ Eridani. $\quad$ 1883, February 18.


> in Bar. $29^{\circ} 89 . \quad$ Ther. $77^{\circ} 8 . \quad$ Run $+4.1 . \quad$ Images 3. Steadiness 3.
$\beta$ Centauri. 1883, February 18.

| h m | r | , | R |
| :---: | :---: | :---: | :---: |
| $927 \cdot 3$ | 35 747 | $38 \cdot 130$ | 73.920 |
| $938 \cdot 3$ | $3^{8 \cdot 1} 3^{2}$ | $35^{\prime} 747$ | 73.921 |

Bar. $29^{\circ} \cdot 88$. Ther. $72^{\circ} \cdot 0$. Run $+4 \cdot 2$. Images 2-3. Steadiness 2.

$$
\alpha^{2} \text { Centauri. } \quad 1883, \text { February } 18 .
$$



| $\beta$ |  | ${ }^{\circ}$ |  | ani. | 1883, February 19. |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | $a$ |
| h m | r |  |  | r |  |  |  |  |  |
| $651 \cdot 3$ | 253.932 | $251 \cdot 566$ | 505•634 | $\begin{array}{lll}7 & 0.8\end{array}$ | 242. 206 | 244.614 | $486 \cdot 951$ |
| $723 \cdot 6$ | $251 \cdot 537$ | 253.954 | $505 \cdot 628$ | $\begin{array}{ll}7 & 9.9\end{array}$ | 244. 591 | $242 \cdot 195$ | 486.918 |
| 734.9 | 253.929 | $251 \cdot 523$ | $505 \cdot 590$ | $745^{\circ} 2$ | 242.212 | 244.621 | $486 \cdot 967$ |
|  |  |  |  | 759.5 | 244.62 1 | $242 \cdot 231$ | $486 \cdot 988$ |



Sirius. 1883, February 20.

| h m |  | $r$ | R | h m | $r$ |  | R |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $922 \cdot 2$ | $139^{\circ} 750$ | $142 \cdot 146$ | 282.018 | $930 \cdot 3$ | 144.350 | 141.966 | $286 \cdot 459$ |
| $948 \cdot 3$ | $142 \cdot 146$ | $139^{\circ} 750$ | $282 \cdot 038$ | $939^{\circ} 7$ | 141.954 | $144^{\circ} 353$ | $286 \cdot 459$ |
| $955^{\circ}$ | $139 \cdot 748$ | $14^{2} 146$ | $282 \cdot 042$ | 104.5 | 144.342 | $141 \cdot 832$ | (286-354) |



Sirius. $\quad 1883$, February 21.

in
Bar. $29^{\circ} 95$.
Ther. $60^{\circ}$ . Run $+4^{\prime} 3$.
$\alpha_{2}$ Centauri. 1883, February 26.

|  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 10 $39^{\circ}$ | 213.492 | 211.104 | $424 \cdot 835$ | $105^{\circ} \cdot 0$ | $232 \cdot 127$ | $234 \cdot 514$ | $466 \cdot 876$ |
| 1123.5 | 211.126 | 213.535 | $424 \cdot 855$ | II $8 \cdot 9$ | 234.517 | $232 \cdot 142$ | $466 \cdot 877$ | Bar. $29^{\circ} 95^{\circ} \quad$ Ther. $65^{\circ} 3^{\circ}$. Run $+4^{\circ}$. $\quad$ Images $1-2$. Steadiness 2.

$\alpha_{2}$ Centauri.
$\alpha^{1}$

|  |  |  | ${ }^{\text {R }}$ |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $10.17^{\cdot 1}$ | 232-124 | 234.510 | 466.911 | '10 26.0 | 213.497 | $211 \cdot 106$ | $424 \cdot 858$ |
| 10.48 .3 | 234.511 | $232^{1} 13^{2}$ | $466 \cdot 884$ | ${ }^{10} 39^{-1}$ | 211.080 | 213.520 | 424.841 |
| 1059.8 | 232.129 | $234 \cdot{ }^{2} 7$ | $466 \cdot 884$ | 1111.4 | 213.519 | 211-107 | $424 \cdot 864$ |
| $1132 \cdot 0$ | 234.545 | $232 \cdot 149$ | $466 \cdot 894$ | II 21.3 | 2119107 | 213.540 | 424.845 |
|  |  | Bar. $30^{\text {in }}$ | Ther | $3^{\circ} 3$. | n $+3 \cdot 6$ |  |  |



|  |  |  |  | $\alpha_{2}$ C | tauri. |  | 1883, M | arch 8. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | $\alpha$ |  |  |  |  |  |
| h |  |  | ${ }^{\mathrm{r}}$ |  | h m |  |  |  |
|  | $33 \cdot 5$ | 147.637 | $150 \cdot 027$ | 297*789 | $1042 \cdot 6$ | 120.258 | $117 \cdot 874$ | $23^{8 \cdot 2} 34$ |
|  | $5^{\circ} \circ$ | 150.022 | 147* 743 | 297889 | I0 $5^{1 \cdot 3}$ | 117.906 | 120. 269 | ${ }^{238 \cdot 276}$ |
| 11 | 19.2 | 117.626 | $150 \cdot 122$ | 297871 |  | $120 \cdot 289$ | 117.887 | ${ }^{238} 8.274$ |
| 11 | $58 \cdot 8$ | $150 \cdot 015$ | 147•626 | 297.759 | 1149.8 | 117.877 | 120.279 | $238 \cdot 253$ |
| Bar. $30^{\text {in }} 17$. |  |  | Ther. $60{ }^{\circ} \mathrm{O}$. | Run $+4 \cdot \mathrm{i}$. |  | Images 3 . | Steadiness 3-4. |  |

## $\beta$ Centauri.

| h | m | r | r | R |
| ---: | :---: | :---: | :---: | :---: |
| 12 | $144^{\circ} 0$ | $35^{\circ} \cdot 757$ | $38^{\circ} \cdot 132$ | $73^{\circ} \cdot 915$ |
| 12 | 28.9 | $38 \cdot 141$ | $35 \cdot 749$ | 73.917 |

Bar. $30^{\text {in }} 17$. Ther. $60^{\circ} \circ$. Run $+3 \cdot 0$. Images 3. Steadiness 3 .
$\alpha_{2}$ Centauri. 1883, March 27.

| h m | r | r | R | h m |  | $r$ | R |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 118 | $120 \cdot 269$ | 117.884 | $238 \cdot 253$ | 111704 | $147 \cdot 615$ | 150.015 | 297*752 |
| $1138 \cdot 8$ | 117.889 | 120.271 | $238 \cdot 257$ | 1127.9 | 150.020 | $147 \cdot 623$ | 297.763 |
| $1147^{\circ} 1$ | 120.278 | 117.885 | 238-260 | 1220 | $147 \cdot 618$ | $150 \cdot 018$ | 297.753 |
| $1226 \cdot 5$ | 117.886 | 120. 284 | $238 \cdot 263$ | $1216 \cdot 9$ | 150.021 | 147.631 | 297* 76 |

Bar. $30^{\circ} 08$. Ther. $63^{\circ} \circ$. Run +4.3 . Images 2. Steadiness 2.
$\alpha_{2}$ Centauri. 1883, April 5.


Bar. $30^{\circ} 14 . \quad$ Ther. $55^{\circ} \circ$ O. Run +4.3.

$\alpha_{2}$ Centauri.
$\alpha$

|  |  |  | E | h |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $1711 \cdot 8$ | 147.606 | $150 \cdot 032$ | 297* 722 | $1726 \cdot 0$ | 120.309 | $117 \cdot 896$ | $238 \cdot 273$ |
| $1747^{\circ}$ | 150.007 | 147.630 | 297.728 | $1736 \cdot 8$ | 117.913 | $120 \cdot 304$ | $238 \cdot 286$ |
| $1755^{\circ}$ | $147 \cdot 630$ | 150.025 | 297•748 | $18 \quad 5 \cdot 2$ | $120 \cdot 317$ | 117.919 | $238 \cdot 312$ |
| $1829^{\circ} 5$ | 150.027 | 147.604 | $297 \cdot 738$ | $18 \quad 1709$ | 117.901 | 120. 299 | $238 \cdot 279$ |

Bar. $30^{\circ}{ }^{\text {in }}$ in Ther. $57^{\circ} 3$. Run $+3 \cdot 8$. Images $2-3$. Steadiness 2-3.
$a_{2}$ Centauri. $\quad 1883$, April 9.
$\beta$
a

| h | m | r | r | R |
| :---: | :---: | :---: | :---: | :---: |
| 17 | $36 \cdot 0$ | $150 \cdot 011$ | $147 \cdot 623$ | $297 \cdot 7^{2} 3$ |
| 17 | $52 \cdot 8$ | $147 \cdot 625$ | $150 \cdot 036$ | $297 \cdot 755$ |

Bar. $30^{\circ} \mathrm{in}$. Ther. $50^{\circ} 3$. Run $+4^{\circ} 9$. Images 3 . Steadiness 3 .
$a_{2}$ Centauri. $\quad 1883$, April 11.
$a$

| h m | r |  | R | h |  | r | r |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $1724^{\circ} 0$ | 150.033 | $147^{.623}$ | 297* 743 |  | $34^{\circ} 1$ | 117.906 | 120.309 | $238 \cdot 285$ |
| $184{ }^{\circ} 3$ | 147.628 | 150.017 | 297* 743 |  | $48 \cdot 8$ | 120.306 | 117.916 | $238 \cdot 295$ |
| $18 \quad 16 \cdot 3$ | 150.021 | $147^{\circ} 632$ | 297* 755 |  | $25^{\circ} 9$ | 117.926 | $120 \cdot 301$ | 238.310 |
| $1853 \cdot 8$ | $147^{\circ} 602$ | 150.020 | $297 \cdot 746$ | 18 | $40^{\circ} 2$ | 120.304 | 117.900 | $238 \cdot 294$ |

$\alpha_{2}$ Centauri. $\quad 1883$, April 15.

| m |  |  |  | h |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1025.5 | 120.307 | 117.901 | $238 \cdot 309$ | $1037 \cdot 1$ | $147 \cdot 628$ | 150.008 | $297 \cdot 759$ |
| $1057 \cdot 8$ | 117.895 | 120.324 | $238 \cdot 319$ | 1046.6 | $150 \cdot 017$ | $147 \cdot 624$ | 297•763 |
| 115 | $120 \cdot 301$ | 117.904 | 238.305 | 1118.2 | $147 \cdot 615$ | 150.021 | 297* 757 |
| 1139.5 | $117 \cdot 897$ | $120 \cdot 293$ | $238 \cdot 287$ | 1129.9 | $150 \cdot 007$ | $147 \cdot 643$ | 297*7\% |

Bar. $30^{\circ} 13$. Ther. $66^{\circ} 3$. Run $+3^{\circ} 4^{\circ} \quad$ Images 2. Steadiness 2.


Bar. $30^{\circ} 08$. Ther. $62^{\circ} 3$. Run +3.6 . Images 2-3. Steadiness 3 .
$\alpha_{2}$ Centauri.
$\alpha$



Bar. $29^{\circ} 95$. Ther. $56^{\circ} 8$. Ru1 $+4 \cdot 3$. Images 1-2. Steadiness 2-3.
$\alpha_{2}$ Centauri.
$a$

1883, April 23. $\beta$

| m | $r$ | r | R | $h$ | r | r |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $185^{8 \cdot 3}$ | 149.994 | $147{ }^{\circ} 59^{2}$ | 297.710 | $19 \quad 9{ }^{\circ} 5$ | 117.899 | 120. 293 | $238 \cdot 296$ |
| 1930.9 | 147.579 | $149^{\circ} 99^{2}$ | 297*728 | 1920.5 | $120 \cdot 303$ | $117 \cdot 899$ | $238 \cdot 315$ |
| $1941 \cdot 2$ | 149.988 | $147 \cdot 59^{2}$ | 297* 751 | 1949.9 | 117.894 | 120. 286 | $238 \cdot 321$ |
| 2098 | $147 \cdot 536$ | 149.952 | 297*706 | $1959{ }^{\circ}$ | $120 \cdot 284$ | $117 \cdot 873$ | $238 \cdot 310$ | Bar. $29^{\circ} 87$. Ther. $57^{\circ}$. . Run $+4^{\circ} 4$. Images 2. Steadiness 2.

$\alpha_{2}$ Centauri.
$\beta$

| h m | $r$ | 1 | R | h | m | r | r | R |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $1753 \cdot 8$ | 117.910 | $120^{\circ} 309$ | $238 \cdot 292$ | -8 | $3^{\cdot 1}$ | $150 \cdot 000$ | 147.624 | 297* ${ }^{2}$ |
| 1823.5 | $120 \cdot 315$ | 117.939 | $238 \cdot 336$ | 18 | 13.5 | 147.620 | $150 \cdot 005$ | 297* ${ }^{2}$ |
| $1834 * 7$ | 117.924 | 120.324 | $238 \cdot 335$ | 18 | $44^{\circ} 3$ | 150.009 | 147.611 | 297* 73 |
| 194 | $120 \cdot 310$ | 117.916 | $238 \cdot 328$ | 18 | $55^{\circ} 9$ | $147 \cdot 597$ | 150.003 | 297* 725 |

Bar. $30^{\circ} 18$. Ther. $5^{\circ} 6^{\circ} 0$. Run $+2 \cdot 5$. Images $1-2$. Steadiness 2.

Lacaille 9352.
$a$

| m | r | ${ }^{\text {r }}$ | R | h m | r | ${ }^{\mathbf{r}}$ | R |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1919.7 | 264.300 | 266.680 | 531•253 | $1927 \cdot 2$ | $172 \cdot 008$ | $169 \cdot 616$ | $341 \cdot 800$ |
| $1946 \cdot 1$ | $266 \cdot 721$ | 264.340 | $531 \cdot 293$ | $1934 \cdot 8$ | 169.641 | $172 \cdot 020$ | 341-829 |
| $1956 \cdot 6$ | $264 \cdot 318$ | 266.741 | 531-279 | $205^{\circ} \mathrm{O}$ | $172 \cdot 051$ | 169.643 | $341 \cdot 836$ |
| 2022.9 | $266 \cdot 718$ | 264.323 | $531 \cdot 237$ | 2013.7 | 169.662 | 172.041 | $341 \cdot 838$ |

1883, April 28.
$\beta$

Bar. $30^{\circ} 18$. Ther. $56^{\circ} \circ$. Run +5.9 .

Sirius.
$\alpha$

1883, April 30. $\beta$

|  | ${ }^{\text {r }}$ |  |  |
| :---: | :---: | :---: | :---: |
| $105^{\circ} 1$ | 144.320 | $141 \cdot 927$ | $286 \cdot 432$ |
| 1034.1 | 141.918 | 144.308 | 286.467 |
| 10 $39^{\circ} 8$ | 144.303 | 141.876 | $286 \cdot 437$ |
| 114 | 141.858 | 144.227 | $286 \cdot 433$ |


| h m | r | r | R |
| :---: | :---: | :---: | :---: |
| $1014{ }^{\circ} 4$ | 139*734 | $142^{\circ} 135$ | 282 ${ }^{\circ} 042$ |
| $1024^{\circ} 5$ | $142^{\circ} 120$ | $139^{\circ} 730$ | $282^{\circ} \mathrm{O} 3^{8}$ |
| $104^{*} 3$ | $139^{\circ} 717$ | $142^{\circ} 120$ | $282^{\circ} 071$ |
| $105^{\circ} \mathrm{I}$ | $142^{\circ} 096$ | $139^{\circ} 725$ | 282 ${ }^{\circ} 077$ |

Bar. $30^{\circ} 14 . \quad$ Ther. $5^{8^{\circ}} 3$. $\quad$ Run $+3 \cdot 6$. Images 2-3. Steadiness 3.


## Sirius.

1883, May 1.

|  | r | $r$ | ${ }^{\mathbf{R}}$ | h |  | r | r | ${ }^{\text {R }}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $94^{6 \cdot 0}$ | $142 \cdot 166$ | 139.777 | $282 \cdot 085$ | 9 | $54^{\circ} 3$ | 141.929 | 144.336 | 286.435 |
| 1016.0 | 139*743 | $14^{\prime} \cdot 137$ | $282 \cdot 054$ | 10 | $3 \cdot 1$ | $144{ }^{\circ} 20$ | (142.221) | (286.721) |
| $1025^{\circ}$ | $14^{1} 137$ | 139 745 | $282 \cdot 070$ | 10 | $33^{\circ} 6$ | 141.902 | $144{ }^{2} 56$ | $286 \cdot 397$ |
| $1055 \cdot 2$ | 139*712 | $14^{1} 110$ | $282 \cdot 072$ | 10 | $43^{\circ} 5$ | $144 \cdot 298$ | $141 \cdot 898$ | $286 \cdot 460$ |

Bar. $30^{\circ} 08$. Ther. $60^{\circ}$. . Run $+3 \cdot 6$. Images 2-3. Steadiness 2-3.

## Sirius.

1883, May 8.

|  | $r$ |  | R | h m |  |  | R |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 98.0 | 141.958 | 144.357 | $286 \cdot 441$ | 915.8 | $142 \cdot 150$ | $139 \cdot 765$ | $282 \cdot 034$ |
| $932 \cdot 2$ | $144 \cdot 341$ | 141.958 | $286 \cdot 443$ | $923 \cdot 1$ | 139.770 | $142 \cdot 156$ | 282.049 |
|  | in | Ther. 6 | Run | 3.2. | ages I . | Steadin |  |

Sirius.

|  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $96 \cdot 0$ | $142 \cdot 155$ | $139 \cdot 762$ | $282 \cdot 035$ | 9193 | 141.973 | $144 \cdot 319$ | 286.431 |
| 944.0 | 139.757 | 142.150 | $282 \cdot 050$ | 929.9 | 144.311 | 141:949 | $286 \cdot 407$ |
| 954.7 | 142.134 | 139.756 | $282 \cdot 043$ | 105.6 | 141.916 | $144{ }^{\circ} 33^{1}$ | $286 \cdot 436$ |
| 10 25.5 | 139.736 | 142.114 | 282.042 | 1016.9 | 144.302 | 141.923 | 286.433 |
|  |  | Bar. $3 \mathrm{in}^{\circ}$ | The | $4{ }^{\circ} 5$. | $\mathrm{n}+3.9$ |  |  |




Sirius.


Bar. $30^{\circ} \cdot 00$. Ther. $53^{\circ}$. Run $+3 \cdot 3$. Images 2-3. Steadiness 2-3.
$\alpha_{2}$ Centauri.


Bar. $30^{\circ} \circ 5$. Ther. $55^{\circ} \cdot 3$. Run +4.3 . Images 2. Steadiness 3 .
$\alpha_{2}$ Centauri.
 Bar. $29^{\circ} 9{ }^{\text {in }}$. Ther. $49^{\circ} \circ$ Ran $+4 \%$.


Bar. $29^{\circ} 9^{\circ} 9^{6}$. Ther. $57^{\circ}$. . Run $+5 \circ$. Inages $\mathbf{1 - 2}$. Steadiness $\mathbf{I - 2}$.

|  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |


$a_{2}$ Centaari. 1883, June 13.



Bar. $\left(30^{\circ} 3^{2}\right)$. Ther. $48^{\circ}{ }_{5}^{5}$. Run $+4^{\circ} 0$. Images $\mathbf{1 - 2 .}$ Steadiness 2-3.

## $a_{2}$ Centauri.

| 2- $a^{1}$ |  |  |  | $\beta^{1}$ |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| h m |  |  |  |  |  |  | B |
| 1127.6 | 232-095 | 234.510 | $466 \cdot 814$ | I1 $37 \times 3$ | 213.622 | $211 \cdot 248$ | $425 \cdot 059$ |
| 1149.1 | 234.490 | $232 \cdot 083$ | $466 \cdot 765$ | $1143{ }^{\circ} 3$ | 211. 235 | 213.653 | 425.073 |
| 1156 | $23^{\text {2 }} 114$ | 234.526 | $466 \cdot 827$ |  | 213.669 | $211 \cdot 247$ | 425.086 |
| 12175 | $234 \cdot 522$ | $232 \cdot 088$ | $466 \cdot 782$ | $1210 \cdot 8$ | 211.253 | 213.656 | $425 \cdot 074$ |

Bar. $30^{\circ}$ in 24 Ther. $5^{\circ}{ }^{\circ} 5 . \quad$ Run $+33^{\circ}$. $\quad$ Images 1-2. Steadiness 2.


Lacaille 9352.
$a$

| h | m | $\stackrel{\mathrm{r}}{\mathrm{r}}$ | r |
| :---: | :---: | :---: | :---: |
| 18 | $46 \cdot 0$ | $266 \cdot 793$ | $264 \cdot 346$ |

$\begin{array}{llll}19 & 12 \cdot 8 & 264 \cdot 402 & 266 \cdot 794\end{array}$
$\begin{array}{llll}19 & 22 \cdot 0 & 266 \cdot 804 & 264 \cdot 394\end{array}$
$\begin{array}{llll}1955 \cdot 0 & 264.429 & 266 \cdot 838\end{array}$
Bar. $30^{\circ} 44$. Ther. $5^{\circ} \cdot 5$.
$\begin{array}{cc}\mathrm{h} & \mathrm{m} \\ 18 & 53 \cdot 7 \\ 19 & 3 \cdot 5 \\ 19 & 3 \mathrm{I} \cdot 9 \\ 19 & 43 \cdot 0\end{array}$
$\beta$


Images 2. Steadiness 2.

Lacaille $9352 . \quad$ 1883, September 14.
 Bar. $30^{\circ} 34$. Ther. $53^{\circ} \circ$. Run $+6^{\circ} 1$. Images 2. Steadiness 2.

## Lacaille 9352. 1883, September 14.

| h m |  | r | R |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $239^{\circ} 5$ | 171.963 | 169.546 | $341 \cdot 662$ | $256 \cdot 4$ | 264.391 | $266 \cdot 8 \mathrm{r} 8$ | $531 \cdot 478$ |
| $321 \cdot 1$ | 169.517 | 171.976 | $341 \cdot 680$ | 311.9 | $266 \cdot 832$ | $264 \cdot 382$ | $531 \cdot 502$ |
| $33^{1} 3$ | 171.981 | 169.517 | $341 \cdot 695$ | 3413 | 264.396 | $266 \cdot 807$ | $531 \cdot 537$ |
| 478 | $169 \cdot 519$ | 171*937 | $341 \cdot 702$ | $35^{6 \cdot}$ | $266 \cdot 822$ | 264.375 | $531 \cdot 564$ |

Bar. $30^{\circ}{ }^{\text {in }}{ }^{25}$. Ther. $47^{\circ}$. . Run + $5^{\circ}$. . Inages 2-3. Steadiness 2-3.

Lacaille 9352. 1883, September 16.
$a$

|  |  |  | R |  | r | $r$ | R |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $183^{2} 1$ | 266.744 | 264.372 | $53 \mathrm{I} \cdot 509$ | $18 \quad 57 \cdot 8$ | $169^{\circ} 55^{\circ}$ | 171.937 | $34^{\text { }}$ |
| 1912.8 | 264.394 | 266•797 | $531 \cdot 478$ | $196 \cdot 3$ | 171.922 | $169^{\circ} 516$ | 341 |
| J9 20.9 | 266.812 | $264 \cdot 378$ | $53 \mathrm{I} \cdot 463$ | $1931 \cdot 3$ | $169^{\circ} 56$ | 171.952 | 341 |
| $1947^{\circ} 7$ | $264 \cdot 386$ | $266 \cdot 855$ | $531 \cdot 47^{2}$ | $1939^{\circ} 3$ | 171.977 | $169^{\circ} 5^{61}$ | 341 |

Bar. $30^{\circ} 13 . \quad$ Ther. $54^{\circ} 5 . \quad$ Run $+5^{\circ}$ 2. Images 2-3. $\quad$ Steadiness 2-3.

Lacaille $9352 . \quad$ 1883, September 19. $\beta$


|  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $30 \cdot 2$ | 171.967 | 169.551 | 341•664 | 244.5 | $264{ }^{\circ} 387$ | 66.818 | 531.4 |
| $232 \cdot 0$ | 169.543 | 171.969 | $341 \cdot 661$ | 5 | $266 \cdot 845$ | $264 \cdot 415$ | $53 \mathrm{I} \cdot 53$ | Bar. $30^{\text {in }} 2 \%$ Ther. $5^{\circ} \cdot 8$. Run $+6 \cdot 4$. Images 3. Steadiness 3.

Lacaille 9352. 1883, September 20.

| m | $r$ | $r$ |  | h m | ${ }^{\mathbf{r}}$ | r | R |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $1843 \cdot 9$ | 171.926 | ${ }^{169.512}$ | $341 \cdot 682$ | 1854.8 | $264 \cdot 368$ | 266. 798 | $531 \cdot 492$ |
| 19 11.2 | 169.520 | 171.975 | $341 \cdot 692$ | 193.7 | $266 \cdot 790$ | 264.399 | 531.494 |
| $1922 \cdot 2$ | 171.947 | 169.538 | 341.667 | $1932 \cdot 7$ | 264.435 | $266 \cdot 815$ | $53 \mathrm{I} \cdot 5^{\text {O1 }}$ |
| 1955.6 | 169.551 | $171 \cdot 961$ | $341 \cdot 661$ | $1943 \cdot 3$ | 266-813 | 264.428 | $531 \cdot 477$ |

Bar. $30^{\circ} 13$. Ther. $56^{\circ} 0^{\circ} \quad$ Run +6.4 . Images 2. Steadiness 2.

Lacaille $9352 . \quad$ 1883, September 20.


[^6]|  <br> Lacaille 9352. $\quad$ 1883, September 24. <br> Lacaille 9352. 1883, September 25. <br> Bar. $30^{\circ} 30$. Ther. $59^{\circ}$. . Run $+5 \cdot 6$. Images 2-3. Steadiness 2-3. |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
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|  |  |  |  |  |
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|  |  |  | Lacaille 9352. |  | 1883, September 25. |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  | $\beta$ |  |
|  |  |  | R | h m |  |  | R |
| $250 \%$ | 266.870 | 264.345 | $531 \cdot 470$ | $3 \quad 6 \cdot 2$ | $169 \cdot 546$ | 171.996 | $341 \cdot 712$ |
| $335^{\circ}$ | 264.420 | $266 \cdot 823$ | $53 \cdot 559$ | 321.5 | 171.945 | 169.518 | $341 \cdot 646$ |
|  | in ${ }^{1} 15$. | Ther. $56^{\circ}$ | Run | $7 \cdot 7$. | mages 3 . | Stead | ss 2. |


|  |  |  | Lacaille 9352. |  | 1883, September 29. |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\beta$ |  |  |  |  |  |  |  |
|  |  |  |  | h m |  |  | R |
| 229.5 | 171:984 | 169.549 | $34 \mathrm{I} \cdot 683$ | 239.5 | 264.417 | $266 \cdot 843$ | $53 \mathrm{I} \cdot 511$ |
| 3.4 .1 | 169.523 | 171.929 | 34I-623 | $250 \cdot 6$ | $266 \cdot 838$ | 264.414 | $531 \cdot 515$ |
| $311 \cdot 6$ | 171:964 | 169.543 | 341.688 | $3{ }^{21}{ }^{\circ} 9$ | 264.407 | $266 \cdot 803$ | $531 \cdot 516$ |
| $342 \cdot 5$ | 169.524 | 171:956 | $341 \cdot 692$ | $33^{2 \cdot 8}$ | 266:84I | 264*335 | 531-499 |
|  |  |  |  |  |  |  |  |

Lacaille 9352.
$\beta$

| m |  | $r$ |  | h |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1921.4 | 169.505 | 171.941 | 341.633 | 1929.3 | $266 \cdot 852$ | 264.417 | $531 \cdot 530$ |
| 19 41.9 | $17 \times 1932$ | 169.534 | $341 \cdot 630$ | $1935^{\circ} 3$ | $264 \cdot 385$ | 266.821 | $531 \cdot 458$ |

Bar. $30^{\circ} \cdot 44$. Ther. $52^{\circ} \cdot 8$. Run $+5 \%$ Images 3. Steadiness 3.

Lacaille 9352. 1883, October 3.
$\beta$

|  | $\mathbf{r}$ | r |  | h | m |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1929.8 | 171.971 | 169.531 | $341 \cdot 672$ |  | 42.9 | 264.430 | 266.877 | $531 \cdot 538$ |
| 1956.3 | 169.510 | 171.962 | 341:618 | 19 | 50.4 | 266.851 | 264.429 | $53 \mathrm{~F} \cdot 504$ |
| $20 \quad 0.8$ | 171-953 | 169.504 | 341-599 | 20 | $8 \cdot 4$ | 264.397 | $266 \cdot 892$ | 531-494 |
| 2021.5 | 169.543 | $171 \times 985$ | 341 ${ }^{657}$ | 20 | 14.9 | $266 \cdot 889$ | 264.418 | $531 \cdot 505$ |

Bar. $30^{\circ} \circ 00$. Ther. $62^{\circ}{ }_{4}$. Run +4.9 . Images 3. Steadiness 3 .

Lacaille 9352.

|  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $126 \cdot 3$ | 171*978 | 169.537 | $341 \cdot 633$ | 1 35.3 | 264.429 | $266 \cdot 907$ | $531 \cdot 529$ |
| 1 54.3 | 169.537 | 171-976 | $341 \cdot 640$ | 144.0 | $266 \cdot 887$ | 264.432 | ${ }_{53}{ }^{\text {r }} 517$ |
| $2 \cdot 0$ | 171.998 | 169.536 | $341 \cdot 665$ | 2 H1.1 | 264.423 | 266.898 | $53 \mathrm{~F} \cdot 538$ |
| 27.4 | 169.542 | 171-976 | $341 \cdot 660$ | 19.8 | 266.906 | 264.454 | $531 \cdot 584$ |

Lacaille 9352.
$a$

| m |  |  |
| :---: | :---: | :---: |
| 1952.5 | $266 \cdot 862$ | 264.414 |
| 2015.6 | 264.429 | $266 \cdot 863$ |
| $2021 \cdot 1$ | 266.911 | 264.414 |
| 2047.9 | $264 \cdot 402$ | $266 \cdot 886$ |

## Lacaille 9352.

a


1883, October 5.
$\beta$

| r | r | R |
| :---: | :---: | :---: | :---: |
| $169^{\circ} \cdot 552$ | $172 \cdot 012$ | $34 \mathrm{r}^{\mathrm{R}} \cdot 688$ |
| $171 \cdot 993$ | $169 \cdot 556$ | $341 \cdot 676$ |
| $169 \cdot 544$ | $171 \cdot 993$ | $341 \cdot 679$ |
| $172 \cdot 006$ | $169 \cdot 505$ | $341 \cdot 663$ |

Bar. $30^{\circ} 3^{\text {in }}$. Ther. $57^{\circ} \cdot 5$. Run $+6 \cdot 2$. Images 3 . Steadiness 3 .
1883, October 5.

## $\beta$

| R | h | r | $r$ | R |
| :---: | :---: | :---: | :---: | :---: |
| $531 \cdot 501$ | $20 \quad 2.4$ | 169.515 | 171.985 | 341•644 |
| 531.493 | $20 \quad 9 \cdot 6$ | 171.966 | 169.522 | $341 \cdot 627$ |
| $531 \cdot 522$ | $2028 \cdot 7$ | 169.515 | $171 \cdot 984$ | $341 \cdot 627$ |
| $53 \mathrm{I} \cdot 467$ | $2037 \cdot 7$ | $172 \cdot 003$ | 169.543 | $34 \times 669$ |

Lacaille 9352.
$\beta$

| h | m | r |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | $33^{\circ} 0$ | $171 \cdot 991$ | 169.527 | $341 \cdot 641$ |  | $4^{2} 1$ | 264.424 | $266 \cdot 890$ | 531.515 |
| 2 | $2 \cdot 7$ | 169.516 | 171.999 | 341.650 | 1 | $50 \cdot 3$ | $266 \cdot 890$ | 264.433 | $531 \cdot 530$ |
| 2 | 9*5 | 171.974 | 169.524 | $341 \cdot 635$ | 2 | $23^{\circ} 2$ | 264.429 | $266 \cdot 860$ | $531 \cdot 521$ |
| 2 | $45^{\circ} 5$ | 169.520 | 171.950 | $341 \cdot 627$ |  | $36 \cdot 5$ | 266.860 | 264.408 | $531 \cdot 512$ |

1883, October 12.
$a$

Bar. $3^{\text {in }} 15$. Ther. $47^{\circ}$. $\quad$ Run $+7 \cdot 3$. Images 2. Steadiness 2.

Lacaille 9352.
$\alpha$

| m |  |  | R |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $8 \cdot 9$ | 264.407 | $266 \cdot 883$ | 531'504 | $218 \cdot 2$ | $172 \cdot 002$ | 169.518 | 341-658 |
| $233 \cdot 5$ | $266 \cdot 879$ | 264.416 | $53^{1} 530$ | $225^{\circ} 5$ | 169.520 | $171 \cdot 985$ | $341 \cdot 646$ |
| $24^{1} 5$ | 264.415 | $266 \cdot 883$ | $531 \cdot 541$ | $25^{1} \cdot 3$ | 171.975 | 169.549 | 341 |
| $9 \cdot 3$ | $266 \cdot 867$ | 264.367 | $531 \cdot 510$ | 259.6 | 169.485 | 171.990 | 34 |

Bar. $30^{\circ} \circ$. Ther. $5^{\circ}{ }^{\circ}$. Run +5.6 .
$\epsilon$ Indi.
$\alpha$
h m
$\begin{array}{lc}\mathrm{h} & \mathrm{m} \\ \circ & 47^{\circ} 6 \\ \mathrm{r} & 9\end{array}$
I 9.3
I $16 \cdot 3$
$\begin{array}{lll}146 \cdot 3 & 84^{\circ} \cdot 352 & 81 \cdot 924 \\ 1 & 8 I^{\circ} \cdot 920 & 84^{\circ} \cdot 350\end{array}$
Bar. $30^{\circ} 17$. Ther. $54^{\circ} 5$.
Ther. $54{ }^{\circ} 5$.
Run $+3^{\circ}$

$$
\begin{aligned}
& { }^{R} \cdot\left(\begin{array}{l}
\text { 1 } \\
166 \cdot 349 \\
166 \cdot 376 \\
166 \cdot 364
\end{array}\right.
\end{aligned}
$$

1883, October 21.
$\beta$

| h m |  |
| :---: | :---: |
| $\bigcirc$ | $54^{\circ} 5$ |
| I | $2^{\circ} \mathrm{O}$ |
| 1 | $25^{\circ} 6$ |
|  | $37^{\circ}$ |


| $r$ | $r$ | $R$ |
| :---: | :---: | :---: |
| $101 \cdot 050$ | $103 \cdot 523$ | $204^{\circ} 655$ |
| $103 \cdot 510$ | $101 \cdot 084$ | $204^{\cdot 679}$ |
| $101 \cdot 052$ | $103 \cdot 531$ | $204^{\circ} 679$ |
| $103 \cdot 55^{\circ}$ | $101 \cdot 101$ | $\left(204^{\circ} 753\right)$ |

1883, October 14.
$\beta$

Images 2-3. $\quad$ Steadiness 3.
$\epsilon$ Indi. $\quad 1883$, October 22.
 Bar. $30^{\circ} 07$. Ther. $54^{\circ} 0$. Run $+4^{\circ} 4^{\text {. }}$ Images 2. Steadiness 2-3.
$\epsilon$ Indi.

Bar. $30^{\circ} 27$. Ther. $62^{\circ} 3$. Run +5.3 . Images 3. Steadiness 3.
$\epsilon$ Indi.
$\alpha$

1883, October 29.
$\beta$

| h | m | r | r | R |
| :---: | :---: | :---: | :---: | :---: |
| I | $\mathrm{I} \cdot 7$ | $8 \mathrm{I} \cdot 939$ | $84 \cdot 367$ | $166 \cdot 379$ |
| I | $37^{\circ} \cdot 0$ | $84^{\circ} \cdot 376$ | $8 \mathrm{I} \cdot 940$ | $166 \cdot 403$ |
| I | $45 \cdot 7$ | $8 \mathrm{r} \cdot 924$ | $84 \cdot 358$ | $166 \cdot 372$ |
| I | $26 \cdot 8$ | $84^{\circ} \cdot 342$ | $8 \mathrm{I} \cdot 9 \mathrm{r} 7$ | $166 \cdot 372$ |

Bar. $30^{\circ} \circ$ in Ther. $66^{\circ} 5^{\circ}$ Run $+5^{\circ} 0$.

| h | m | r | r |
| :---: | :---: | :---: | :---: |
| I | $11 \cdot 5$ | $103 \cdot 522$ | $101 \cdot 080$ |
| 1 | 23.5 | $101 \cdot 059$ | 103.521 |
| 2 | 0.1 | 103.514 | 101.057 |
| 2 | 12.7 | 101.069 | 103.465 |

$R$
$204 \cdot 689$
204.672
204.684
204.657

Steadiness 2-3.
$\epsilon$ Indi.
$\beta$

| h m | $r$ |  |  | h |  | r | $r$ | ${ }^{\text {R }}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $131^{\circ} 2$ | 101.055 | 103.480 | 204.634 |  | 42.4 | 84.353 | 81.937 | $166 \cdot 382$ |
| 26.7 | 103.515 | 101.046 | 204.683 | 1 | $54^{\circ} 1$ | 81.929 | $84 \cdot 336$ | $166 \cdot 362$ |
| 214.3 | 101.059 | 103.484 | 204.670 | 2 | 23.9 | 84.355 | $81 \cdot 876$ | 166.345 |
| $44^{.2}$ | 103.466 | 101.045 | 204.664 | 2 | $34^{\circ} 3$ | 81.917 | $84^{\circ} 33^{2}$ | 166.370 |

## ELKIN'S

HELIOMETER OBSERVATIONS.
(2)

## HELIOMETER OBSERVATIONS FOR STELLAR PARALLAX.

## MR. ELKIN'S OBSERVATIONS.

| [ $\alpha_{2}$ Centauri. 1881, March 7. |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  | $b$ |  |
|  | $\stackrel{\mathrm{r}}{194}{ }^{269}$ | $192 \cdot 192$ | $386 \cdot{ }^{\text {R }} 569$ | $\begin{array}{cc}\text { h } & \text { m } \\ 9 & 2.0\end{array}$ | $243 \cdot 136$ | $241{ }^{\text {r }} 170$ | $484 \cdot 442$ |
|  | 192.257 | 194.288 | $386 \cdot 651$ | $910 \cdot 8$ | 241.148 | $243 \cdot 191$ | $484 \cdot 473$ |
|  | 194.234 | $192 \cdot 248$ | $388 \cdot 589$ | 9 24.2 | $243 \cdot 170$ | $241 \cdot 146$ | 484.448 |
|  | 192.275 | 194.260 | $386 \cdot 643$ | $930 \cdot 6$ | 241-149 | $243 \cdot 15^{1}$ | $484 \cdot 431$ |
|  | $30^{\circ} \mathrm{i}$. | Ther. 69.9. | Run $+2 \cdot 6$. |  | Images 2. | Steadiness 2. |  |
| ¢ Tucanae. 1881, March 1 |  |  |  |  |  |  |  |
| $a \quad b$ |  |  |  |  |  |  |  |
| $\mathrm{h} \quad \mathrm{m}$ |  |  |  |  |  |  |  |
| 729.0 | 195.577 | 197.550 | 393.448 | 744.9 | $200 \cdot 613$ | $202 \cdot 699$ | $403 \cdot 697$ |
|  | 197.596 195.407 | 195.560 197 | $393 \cdot 501$ $393 \cdot 542$ | 754.0 88.9 | $202 \cdot 655$ $200 \cdot 616$ | $200 \cdot 672$ 202.680 | $403 \cdot 759$ 403.818 |
| 8126.1 833.9 | 195.407 19745 | 197.515 195.362 | 393.542 393.495 | $\begin{array}{ll}8 \\ 8 & 16.9\end{array}$ | $200 \cdot 616$ 20269 | $202 \cdot 680$ $200 \cdot 637$ | 403.818 403.872 |

Bar. $29^{\circ} 97$. Ther. $70^{\circ} 4$. Run $+4^{\circ}$. Images 2. Steadiness 2-3. F.P. $9^{\circ} 5^{8}$.

Sirius.
$a$

in
Bar. $29^{\circ}{ }^{\circ} 9$. Ther. $73^{\circ}$. 0 . Run +3.4 . Images 2. Steadiness 2. F.P. $9.5^{8 .}$

24 $a$

|  |  |  |  | h |  |  | r | R |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $1047 \cdot 8$ | $192 \cdot 185$ | 194.216 | $386 \cdot 519$ |  |  | 241-065 | $243 \cdot 094$ | 484:304 |
| 10.56 .6 | 194.253 | $192 \cdot 201$ | $386 \cdot 574$ |  |  | 243.09x | $24 \mathrm{I} \cdot 042$ | $484^{\text {2 } 281}$ |
| 12 11.0 | 192.173 | 194'178 | $386 \cdot 482$ | 11 | $40^{\circ} 5$ | 241-074 | $243 \cdot 089$ | $484 \cdot 313$ |
| $1216 \cdot 1$ | 194* 140 | $192 \cdot 136$ | $386 \cdot 457$ | 11 | $46 \cdot 1$ | $243 \cdot 101$ | $241 \cdot 047$ | 484.299 |



Bar. $30^{\circ} \circ 4$. Ther. $65^{\circ}{ }^{\circ}$. Run $+2 \cdot 9$. Images 3. Steadiness 3. F.P. $9.5^{8}$.

Sirius.


Bar. $30^{\circ} \circ{ }^{\circ}$. Ther. $65 \%$ Run $+3 \%$. Images 2-3._ Steadiness 3._ F.P. 9.58 .
$e$ Eridani.


1881, March 16. b

| h | m |
| :---: | :---: |
| 8 | $14 \cdot 0$ |
| 8 | $20 \cdot 8$ |
| 8 | $32 \cdot 5$ |
| 8 | $40 \cdot 4$ |




Bar. $3^{\circ} 15^{\circ}$. Ther. $5^{\circ}$. . Run $+3 \circ$. Images 1. Steadiness 2. F.P. $9^{\circ} 70$.

Sirius.


1881, March 16.
$a$

| h | m | r | r |  |
| ---: | ---: | :---: | :---: | :---: |
| 9 | $45 \cdot 6$ | $194 \cdot 857$ | $196 \cdot 880$ | $39 \mathrm{r} \cdot 874$ |
| 9 | 53.4 | $196 \cdot 917$ | $194 \cdot 865$ | $39 \mathrm{r} \cdot 922$ |
| 10 | 4.3 | $194 \cdot 822$ | 196.910 | $391 \cdot 879$ |
| 10 | $10 \cdot 6$ | $196 \cdot 916$ | $194 \cdot 814$ | $391 \cdot 88 \mathrm{I}$ |


| -16 [imatif : 13 |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $a_{2}$ Centauri. 1881, March 17. |  |  |  |  |  |  |  |
|  |  |  |  | h m ${ }^{\text {c }}$ | r |  |  |
| $9 \quad 5.6$ | $241 \cdot 042$ | $243 \cdot 080$ | 484:260 | $920 \cdot 4$ | $192 \cdot 132$ | $194 \cdot 131$ | $386 \cdot 37 \mathrm{x}$ |
| $911 \cdot 6$ | $243 \cdot 154$ | $241 \cdot 056$ | $484 \cdot 347$ | 927.9 | 194-193 | 192.197 | ${ }^{86} \cdot{ }^{499}$ |
| $95^{8 \cdot \circ}$ | 241.089 | $243 \cdot 096$ | 484*320 | 938.3 | $192 \cdot 158$ | 194*25 | $386 \cdot 520$ |
| $104 \%$ | $243 \cdot 102$ | $241 \cdot 056$ | 484.294 | $946 \cdot 9$ | 194*250 | 192.136 | $386 \cdot 497$ |

Bar. $30^{\circ} \cdot 18$. Ther. $60^{\circ}$. Run $+2 \%$ Images 2. Steadiness 3. F.P. $9 \cdot 70$.

Canopus.
b

|  |  |  | R |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1043.3 | $45 \cdot 323$ | 47-369 | 92.75 ${ }^{1}$ | 11.104 | $52 \cdot 699$ | 54*797 | 107.574 |
| 1050.7 | 47.377 | $45 \cdot 305$ | 92.743 | $11 \quad 9.3$ | $54 \cdot 811$ | $52^{\circ} 735$ | 107.629 |
| II $45^{\circ} 2$ | '45.326 | $47 \cdot 394$ | 92.801 | 1126.7 | $52 \cdot 736$ | $54 \cdot 778$ | 107.607 |
| $1152 \cdot 1$ | $47 \cdot 328$ | $45 \cdot 294$ | 92.706 | $1135^{\circ} 9$ | $54 \times 788$ | $52^{\circ} 75^{2}$ | 107.639 |

Bar. $30^{\circ} 17$. Ther. $60^{\circ}$. . Run +3.3 . Images 2-3. Steadiness 2-3. F.P. $9 \cdot 70$.

Sirius.
$a$


1881, March 18. b in
Bar. 30.05 . Ther. $56^{\circ} .9 . \quad$ Run +1.5 . $\quad$ Images 1. $\quad$ Steadiness 2. F.P. $9 \cdot 70$.
$\mu_{2}$ Centauri.



Canopus.
$a$

|  |  |  |  | h |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| If $3 \mathrm{r}^{\circ} 2$ | 52.730 | $54^{*} 783$ | $107{ }^{\circ} 608$ | II $44^{\circ} \mathrm{I}$ | $45^{\circ} 296$ | $47^{\circ} 404$ | $92^{\circ} 781$ |
| $1137^{\circ} 3$ | 54* 790 | $52 \cdot 724$ | $107^{\circ} 614$ | II $50^{\circ} 9$ | $47^{\circ} 379$ | $45^{\circ} 319$ | $92^{\circ} 781$ |
| 1215.4 | 52.719 | $54^{\circ} 732$ | $107 \cdot 582$ | $12 \quad 12$ | $45^{\circ} 302$ | $47^{\circ} 35^{\circ}$ | $92^{\circ} 741$ |
| 12214 | $54^{*} 779$ | $52^{\circ} 669$ | $107 \cdot 587$ | $12 \quad 7 * 8$ | $47 \cdot 341$ | $45^{\circ} 297$ | $92^{\circ} 730$ | Bar. $29^{\circ} 97$. Ther. $59^{\circ} \%$. Run $+2^{\circ} \%$ Images 1. Steadiness 2. F.P. $9^{\circ} \boldsymbol{y}^{\circ}$.



1881, March 19. b

## $\alpha_{2}$ Centauri.

b

|  |  |  |  |  | h |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | I | $241 \cdot 045$ | $243 \cdot 121$ | $484^{\circ} 3^{1}$ | 11 | $32^{\circ} \mathrm{O}$ | 192.15 | ${ }_{2} 1$ | $386^{\circ}$ |
| 11 | 21.9 | $243 \cdot 137$ | $241 \cdot 114$ | $484 \cdot 399$ | 11 | $39^{\circ} 5$ | 194.220 | 192 | 38 |
|  |  | $241 \cdot 119$ | 243•173 | $484^{4} 4{ }^{\circ}$ | 11 | 51.4 | 192. | 194.24 |  |
|  | 8. | $243 \cdot 116$ | $241 \cdot 069$ | $484 \cdot 344$ | 12 | . 3 | 194* | 192.12 | 386 | in

Bar. $29^{\circ} 90$. Ther. $59^{\circ} 6$. Run $+3 \%$. Images 3. Steadiness 3. F.P. $9 \cdot 70$.

Sirius.


|  |  | b | $\alpha_{2}$ Centauri. |  |  | 1881, March 24. |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| h m |  |  |  | h |  |  |  |  |
| 1047.0 | 243.081 | $241 \cdot 071$ | $484 \cdot 296$ |  |  | 194.231 | $192 \cdot 161$ | $386 \cdot 517$ |
| $1055^{\circ} 3$ | $241 \cdot 067$ | $243 \cdot 092$ | 484.304 |  | 13.6 | 192.190 | 194.208 | $386 \cdot 525$ |
| $1141 \times 9$ | $243 \cdot 106$ | 241-032 | $484 \cdot 292$ |  |  | 194-194 | 192-115 | $386 \cdot 437$ |
| 1149.2 | 241.021 | 243'111 | $484 \cdot 287$ | 11 | $31^{\circ} \mathrm{O}$ | 192.139 | 194'225 | 386-494 |

Bar. $30^{\circ} \cdot 23$. Ther. $59^{\circ} 8$. Run $+4 \cdot 0$. Images $2-3$. Steadiness 2-3. F.P. $9 \cdot 70$.

## $\alpha_{2}$ Centauri.



Sirius.

| , |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| 9 | $9 \cdot 8$ | 194.912 | 196.969 | 392.005 |
|  | 17.2 | 196.975 | $194 \cdot 871$ | 391.972 |
|  | 56.5 | $194.93{ }^{2}$ | $196 \cdot 928$ | $39^{\circ} \cdot 002$ |
| 10 | $4 \cdot 6$ | $196 \cdot 961$ | $194 \cdot 873$ | 391.980 |

1881, March 30. b
$a_{2}$ Centauri.
b

1881, March 30.
$a$

| 151 | $194 \cdot{ }^{\mathrm{r}} 207$ | $386 \cdot{ }^{\mathrm{R}}{ }^{\text {d }}$ |
| :---: | :---: | :---: |
| 194.216 | $192 \cdot 139$ | $3^{86} \cdot 479$ |
| $192 \cdot 131$ | 194.234 | $386 \cdot 49$ 1 |
| 194.232 | $192 \cdot 166$ | $386 \cdot 525$ | Bar. $30^{\circ}{ }^{\text {in }} 15$. Ther. $58 \circ^{\circ}$. Run $+3 \cdot 5$. Images $\mathbf{1 - 2}$.

$e$ Eridani.
$a$

| h m |  |  | R |  |
| :---: | :---: | :---: | :---: | :---: |
| 820.4 | 256•598 | 254.465 | 511.271 | $840 \cdot 9$ |
| $828 \cdot 9$ | 254.551 | $256 \cdot 599$ | $511 \cdot 3.59$ | $853^{\circ} \mathrm{O}$ |
| 929.2 | $256 \cdot 670$ | 254.534 | 511.410 | $95 \cdot 2$ |
| $935^{\circ} 7$ | 254. 554 | 256.644 | 5 11.403 | $914 \%$ |

1881, April 1. b

| r | r |  |
| :---: | :---: | :---: |
| $270 \cdot 312$ | $268 \cdot 099$ | $538 \cdot 614$ |
| $268 \cdot 100$ | $270 \cdot 289$ | $538 \cdot 592$ |
| $270 \cdot 201$ | $268 \cdot 145$ | $538 \cdot 594$ |
| $268 \cdot 146$ | $270 \cdot 292$ | $538 \cdot 638$ |

$538 \cdot 638$

Bar. $30^{\circ} \cdot 13$. Ther. $54^{\circ} 8.8$ Run $+3 \cdot 6$. Ima
$e$ Eridani.


Sirius.
b

|  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | $25^{\circ} \circ$ | 193.658 | 191.611 | 385.400 |
|  | $3^{2 \cdot 8}$ | 191.598 | 193.676 | $385 \cdot 408$ |
| 10 | 19.4 | 193.680 | 191.557 | 385.401 |
|  | 25.9 | 191-557 | 193.641 | $385 \cdot 367$ |


|  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | 41*8 | $196 \cdot 927$ | $194 \cdot 864$ | 391.929 |
|  | 49'I | 194.825 | 196.933 | 391-899 |
| 10 | 3.6 | 196.910 | 194.851 | 391*910 |
| 10 | [1'1 | 194.856 | 196.925 | 391'934 |

Bar. $30^{\text {in }} 33$. Ther. $54^{\circ}$.2. Run $+1 \cdot 0$. Images 1. Steadiness I. F.P. $9 \cdot 70$.

Sirius.

| h |  |  | R |
| :---: | :---: | :---: | :---: |
| 1029.4 | 196.903 | 194.848 | 391.917 |
| $1036 \cdot 8$ | 194.843 | 196.956 | 391-973 |
| $11{ }^{11} 22^{\circ}{ }^{\circ}$ | 196.932 | 194.825 | .391'997 |
| II 28.3 | 194.860 | $196 \cdot 875$ | 391-991 |

1881, April 4. $b$

Bar. $30^{\circ} \cdot 27$. Ther. $59 \circ$. ${ }^{\circ}$. Run +0.9 . Images 3. Steadiness 3. F.P. $9 \cdot 70$.



Sirius.
$a$

|  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $28 \cdot 7$ |  | $194 * 863$ | 391.928 | $942^{\circ} 3$ | 193678 |  |  |
| 934.9 | 194*827 | 196.981 | 391.939 | $949^{\circ}{ }^{2}$ | 191.596 | $193{ }^{\circ} 674$ |  |
| $17^{\circ} 4$ | 196.926 | 194.820 | 391.900 | $957^{\circ} 8$ | 193.708 | 191. ${ }^{661}$ |  |
| 1023.0 | 194*809 | 196 | 391•921 | $10 \quad 3.7$ | $19{ }^{1} 593$ |  |  | Bar. $30^{\text {in }} 13$. Ther. $61^{\circ} 9$. Run $+2 \cdot 0$. Images 2. Steadiness 2. F P. $9 \cdot 70$.

## $\alpha_{2}$ Centauri.

| h m | $\mathbf{r}$ | r | R | h |  | r | r | ${ }^{\text {R }}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $1045 \cdot 8$ | 192.144 | 194*278 | 386. 543 | 11 |  | 241:023 | $243 \cdot 164$ | 484.332 |
| $1051 \cdot 7$ | 194.275 | 192.139 | $386 \cdot 536$ | 11 | $7 \cdot 6$ | $243 \cdot 143$ | $241 \cdot 023$ | 484.312 |
| $1131 \cdot 7$ | 192.138 | 194*261 | $386 \cdot 528$ | 11 | 15.3 | 241-039 | $243 \cdot 124$ | 484.310 |
| $1140{ }^{\circ} 3$ | 194.265 | 192:119 | $386 \cdot 514$ | 11 | 21.7 | 243-122 | 241.028 | $484 \cdot 298$ |

Sirius.
b

| h m | r | r | R | h |  | r | r | R |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $838 \cdot 8$ | 191.573 | 193.704 | $385 \cdot 394$ |  | 53.4 | 194*819 | 196.971 | 391.910 |
| $84^{6 \cdot 1}$ | 193.719 | 191.573 | 385.411 |  | $58 \cdot 9$ | 196.994 | $194 \cdot 843$ | 391.958 |
| $923 \cdot 8$ | 191. 583 | 193.699 | 385.412 |  | $7 \cdot 9$ | 194.839 | 196.970 | 391.933 |
| $931 \cdot 3$ | 193.711 | 191. 584 | 385.428 | 9 | 14.9 | 196.95 ${ }^{1}$ | $194 \cdot 858$ | 391*935 |


|  |  |  | $\alpha_{2} \mathrm{C}$ | tauri. |  | 1881, | pril 7. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |
|  |  |  |  | h m |  |  |  |
| 954.6 | $243 \cdot 15^{6}$ | 240:974 | $484^{*} \cdot 266$ | $1010{ }^{\circ} \mathrm{O}$ | 194:278 | 192.112 | $3^{86}{ }^{\circ} 506$ |
| 1010 | $241 \cdot 013$ | 243.182 |  | 1016.8 |  |  | ${ }^{386 \cdot 544}$ |
| 1042.1 | 243.130 | 241.015 243 | $484^{\circ} \cdot 289$ $484^{\circ}$ | 10 10 10 $35^{\circ} \cdot 6$ | 194.248 | $192 \cdot 134$ 194.258 | ${ }_{386} 38 .{ }_{516}{ }^{501}$ |
| $1050 \cdot 8$ | $241 \cdot 024$ | $243 \cdot 158$ | $484^{\circ} 327$ | $1031^{\circ} 6$ | $192 \cdot 138$ | 194.258 | $386 \cdot 5$ |

Bar. $30^{\text {in }} 19$. Ther. $57^{\circ} 4^{\circ}$. Run $+1 \cdot 7$. Images 2. Steadiness 2. F.P. $9 \cdot 72$.

## Sirius.

|  | $a$ |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| h | m | r | r | r |
| 9 | $6 \cdot 9$ | $194 \cdot 833$ | $196 \cdot 957$ | $391 \cdot 913$ |
| 9 | 14.7 | 1966.943 | 194.848 | $391 \cdot 977$ |
| 9 | $52 \cdot 5$ | $194 \cdot 819$ | $196 \cdot 933$ | $391 \cdot 892$ |
| 9 | $58 \cdot 7$ | $196 \cdot 972$ | $194 \cdot 826$ | $391 \cdot 941$ |

1881, April 9. b

Bar. $30^{\circ} 15$. Ther. $5^{\circ} \cdot 0$. Run +3.9 . Images 2. Steadiness 2. F.P. $9^{\circ} 72$.

Canopus.
$a$

|  |  |  |  |  | r |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1025.4 | $5^{*}{ }^{*} 712$ | $54 * 863$ | $107 \cdot 639$ | 1040.4 | $45 \cdot 282$ | $47^{\circ} 406$ | $9^{2 \cdot} 744$ |
| $103{ }^{1} 9$ | 54.850 | $5^{2 \cdot} 735$ | $107{ }^{6} 5^{1}$ | 10 $47^{\circ} 6$ | $47^{\circ} 387$ | $45^{\circ} 284$ | $9^{2} 731$ |
| 1114.2 | 52.734 | $54 \cdot 828$ | $107 \cdot 648$ | $11{ }^{11}{ }^{1} 1$ | $45^{.291}$ | $47 \cdot 363$ | $9^{2 \cdot} 719$ |
| 1121.4 | $54 \cdot 830$ | $5^{2 \cdot} 707$ | 107*627 | 1188 | $47 \cdot 407$ | $45^{\circ} 294$ | $92 \cdot 767$ |

Bar. $30^{\circ}{ }^{15}$. Ther. $58^{\circ}$. . Run $+2 \cdot 2$. Images 2. Steadiness 2. F.P. $9^{\circ} 72$.


## Sirius.

## b

|  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 52.6 | 193.790 | $191 \cdot 492$ | $385 \cdot 402$ | 9 6.0 | 196.999 | 194.750 | $391 \cdot 872$ |
| $58 \cdot 7$ | 191.493 | 193.805 | 385.419 | $911 \cdot 3$ | 194.7\%1 | $197 \cdot 065$ | 391.961 |
| 32 | 193.768 | $191 \cdot 504$ | 38.5405 | 19.4 | 197.046 | 194.754 |  |
| 39 | 191 | 193. | 385 |  | 194 | 197 |  |

$\alpha_{2}$ Centauri.
$a$

|  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $59^{\circ} 3$ | 192.071 | 194.331 | $386 \cdot 516$ | 1016.4 | $240 \cdot 956$ | 243.253 |  |
| - 6.8 | $194 \cdot 329$ | 192.046 | 386.491 | 1022.1 | 243.234 | $240 \cdot 956$ | 48 |
| 1045.1 | $192 \cdot 058$ | 194*317 | $386 \cdot 497$ | $1030 \cdot 6$ | $240 \cdot 942$ | 243.241 | 48 |
| 51 |  | 192 | $386 \cdot 53{ }^{1}$ |  |  | 240 |  | in

Bar. $30^{\circ} 07$. Ther. $54^{\circ} 9$. Run +3.2 . Images 2. Steadiness 2. F.P. $9^{\circ} 72$.

Sirius.
$a$

| ${ }_{58}{ }^{\text {m }}$ | 194.784 | 197.045 | 39 |
| :---: | :---: | :---: | :---: |
| $4 \cdot 7$ | 197.039 | 194*781 | $391 \cdot 9$ |
| $55^{\circ} 9$ | 194.805 | $197^{\circ} \mathrm{O} 6$ | 391 |
| $3 \cdot 8$ | $197 \cdot 004$ | 194.765 | 39 |


| ${ }_{12} 2^{m}$ |
| :---: |
| 920.0 |
| 941.3 |

${ }^{r}$
$191 \cdot 544$
193.818
$191^{\circ} 501$
193.754
-r $193 \cdot 801$
191.557 193.706
191.51
$385 \cdot 409$

Bar. $30^{\text {in }} 1$
3. Ther. $5^{\circ} \cdot$

Bar. $30 \cdot 1$. Ther. $58 \cdot 5$. Run $+1 \cdot 5$. Images 2. Steadiness 2. F.P. $9 \cdot 74$.
Bar. $30 \cdot 13$. Ther. $58 \cdot 5$. Run $+1 \cdot 5$. Images 2. Steadiness 2. F.P. $9 \cdot 74$.

|  |  |  |  | $\alpha_{2}$ Centauri. |  | 1881, April 12. |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | h m |  |  |  |
|  | $30 \cdot 6$ | $243 \cdot 169$ | $240 \cdot 950$ | 484*261 | 1038.4 | $192 \cdot 069$ | 194.318 | $386 \cdot 508$ |
| 10 | $53^{\prime} 1$ | 240.941 | $243 \cdot 208$ | 484.295 | 10 45.4 | 194.310 | $192 \cdot 070$ | $386 \cdot 502$ |
| 11 | $1 \cdot 2$ | $243 \cdot 193$ | $240 \cdot 956$ | 484.297 | 118 | 192-061 | 194.342 | $386 \cdot 530$ |
| 11 | $29^{\circ}$ | $240 \cdot 974$ | $243 \cdot 213$ | 484.340 | 1119.1 | 194*315 | $192 \cdot 091$ | ${ }_{386} 535$ |

Bar. $30^{\text {in }} 13$. Ther. $54^{\circ} 9$. Run $+2 \cdot 6$. Images 2. Steadiness 3. F.P. $9 \cdot 74$.


Bar. $30^{\circ} \cdot 13$. Ther. $57^{\circ} \circ$. Run +3.2 . Images 2. Steadiness 3. F.P. $9 \cdot 74$.
$\zeta$ Tucanae.
$a$

|  | $r$ | r | - R |  |
| :---: | :---: | :---: | :---: | :---: |
| 1.8 | 197. 774 | 195.517 | 393.409 | 1818.9 |
| $8 \cdot 2$ | 195.536 | 197.796 | 393.447 | $18{ }^{27} 7 \cdot 6$ |
| 1854.4 | 197.775 | $195 \cdot 598$ | 393.483 | 18 |
| $19 \quad 0 \cdot 3$ | 195.574 | $197 \%$ |  |  |

1881, April 12. b

| $r$ | $r$ | R |
| :---: | :---: | :---: |
| $202 \cdot 916$ | $200 \cdot 675$ | $403 \cdot 712$ |
| $200 \cdot 674$ | $202 \cdot 944$ | $403 \cdot 736$ |
| $202 \cdot 920$ | $200 \cdot 710$ | $403 \cdot 745$ |
| $200 \cdot 693$ | $202 \cdot 907$ | $403 \cdot 715$ |

Bar. $30^{\text {in }} 14$. Ther. $56^{\circ} \cdot 9$. Run $+3 \cdot$. Images $2-3$. Steadiness 3. F.P. $9 \cdot 74$.

## Sirius

b

Bar. $30^{\circ} \cdot 09$. Ther. $533^{\circ}$. Run $+2 \cdot$. Images $2-3$. Steadiness 3. F.P. $8 \cdot 75$.

Sirius.
$a$

1881, April 20. b

|  |  |  | R |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $850 \cdot 8$ | 196.918 | 194.718 | 391*756 |  | 5.5 |
| $858 \cdot 2$ | 194.685 | $196 \cdot 887$ | 391.693 | 9 | 11.4 |
| 935.4 | $196 \cdot 878$ | 194.755 | 391•767 | 9 | $20 \cdot 3$ |
| 942.3 | 194.750 | $196 \cdot 895$ | 391•783 | 9 | $27^{1} 1$ |

Bar. $30^{\circ} \cdot 36$. Ther. $54^{\circ} 8$. Run $+1 \cdot 3$. Images 2. Steadiness 2. F.P. $8 \cdot 75$.


Bar. $30^{\circ} 39$. Ther. $54^{\circ} \circ$. Run $+2 \cdot 3$. Images I. Steadiness 2. F.P. $8 \cdot 75$.


Bar. $30^{\text {in }} 42$. Ther. $5^{\circ} \cdot{ }^{\circ} 9$. Run $+3 \cdot 6$. Images 2. Steadiness 3. F.P. 8. 75 .
$\zeta$ Tucanae.
$b$


Bar. $30^{\circ} 44$. Ther. $53^{\circ}$ 1. Run +2 . . Images 3. Steadiness 3. F.P. $8 \cdot 75$.

## Sirius.

$b$


Bar. $30^{\circ}$ in 49 . Ther. $59^{\circ}$ 2. Run $+1 \cdot 7$. Images 2-3. Steadiness 2-3. F.P. $8 \cdot 75$.

Canopus.
b
1881, April 22. $a$

| h m |  | r | ${ }^{1}$ |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $947 \cdot 7$ | $45 \cdot 286$ | 47.450 | 92.781 | 10 I'1 | $52 \cdot 711$ | $54 \cdot 868$ | 107.635 |
| 953.3 | $47 \cdot 456$ | $45^{\circ} 259$ | 92.760 | $107 \%$ | $54 \cdot 873$ | $52 \cdot 712$ | 107.643 |
| $1026 \cdot 9$ | 45.290 | $47 \cdot 451$ | 92.795 | $10{ }^{1} 5^{\circ} \mathrm{O}$ | $52^{\prime} 721$ | 54.861 | 107.642 |
| $1032 \cdot 8$ | $47 \cdot 461$ | 45.293 | 92.810 | 1021.0 | $54 \cdot 892$ | $52 \cdot 730$ | 107.684 |

Bar. $30^{\text {in }} 41$.
Ther. $60^{\circ} \%$.
Run $+2 \cdot 0$.
F.P. $9^{\circ} 75$.
$a_{2}$ Centauri.
b

| h |  |  |  |  | h |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $53 \cdot 8$ | $241 \cdot 013$ | $243 \cdot 252$ | 484.411 | 11 | $9 \cdot 3$ | $192 \cdot 130$ | 194.323 | $386 \cdot{ }^{\circ} 80$ |
| 11 | $0 \cdot 4$ | $243 \cdot 213$ | $241 \cdot 048$ | 484.408 | 11 | $14^{\circ} 7$ | 194.306 | $192 \cdot 121$ | $386 \cdot 555$ |
| 11 | 0.0 | $241 \cdot 056$ | $243 \cdot 205$ | 484.416 | 11 | $25^{1}$ | 192.142 | 194*292 | $386 \cdot 564$ |
| $11$ | $46 \cdot 3$ | $243 \cdot 213$ | $241 \cdot 041$ | 484 | It | $31^{1 .}$ | 194.29 | $192 \cdot 158$ | $386 \cdot 587$ |

Bar. $30^{\text {in }} 39$. Ther. $59^{\circ} \circ$. Run +3.3 . Images 2-3. Steadiness 2. F.P. $9 \cdot 75$.
$\epsilon$ Indi.
 Bar. $30^{\text {in }} 35$. Ther. $57^{\circ} 9$. Run $+2 \%$. Images $2 \%$. Steadiness 3. F.P. $9 \% 75$.

$\alpha_{2}$ Centauri. $\quad$ 1881, April 23.

|  |  |  |  | h |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1047.2 | $192 \cdot 145$ | 194*338 | $386 \cdot 603$ | II |  | $241 \cdot 032$ | $243 \cdot 213$ | $484 \cdot 389$ |
| 1053.8 | 194.319 | $192 \cdot 141$ | $386 \cdot{ }^{881}$ | 11 | $11^{\prime} 5$ | $243 \cdot 219$ | $241 \cdot 037$ | 484.402 |
| 1138.9 | $192 \cdot 136$ | 194.274 | $386 \cdot 5.39$ | 11 | 21.6 | 241.060 | $243 \cdot 223$ | $484.43{ }^{\circ}$ |
| 1145.3 | $194{ }^{301}$ | $192 \cdot 132$ | $386 \cdot 562$ | 11 | 28.4 | 243. 212 | 241*037 | 484*398 |

## Sirius.

$a$


Bar. $30^{\circ}$ 16. Ther. $64^{\circ} \%$. Run $+1 \cdot 6$. Images 2. Steadiness 2. F.P. 9. 75 .

$\epsilon$ Indi.
$a$

| h | m | r | r | R | h | m |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| I | $7 \cdot 5$ | $230 \cdot 85 \mathrm{I}$ | $228 \cdot 672$ | $459 \cdot 688$ | m | m | $26 \cdot 4$ | $204 \cdot 191$ | $202 \cdot 037$ |
| I | $\mathrm{I} 5 \cdot 6$ | $228 \cdot 683$ | $230 \cdot 819$ | $459 \cdot 663$ | 19 | $36 \cdot 4$ | $202 \cdot 003$ | $204 \cdot 222$ | $406 \cdot 361$ |
| 20 | $6 \cdot 6$ | $230 \cdot 849$ | $228 \cdot 702$ | $459 \cdot 690$ | 19 | $48 \cdot 9$ | $204 \cdot 165$ | $202 \cdot 032$ | $406 \cdot 322$ |
| 20 | $1 \mathrm{I} \cdot 9$ | $228 \cdot 684$ | $230 \cdot 872$ | $459 \cdot 694$ | 19 | $57 \cdot 4$ | $202 \cdot 025$ | $204 \cdot 208$ | $406 \cdot 355$ |

1881, April 28. b
$406 \cdot 355$

Bar. $30^{\circ} 03$. Ther. $44^{\circ} 8$. Run +3.1 . Images 2. Steadiness 2-3. F.P. 9•75.
$\alpha_{2}$ Centauri.
$b$

| h |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $47^{\circ} 7$ | $243 \cdot 218$ | $241^{\circ} 031$ | $484 \cdot 404$ | 12 |  | 194.316 | 192.141 | $386 \cdot 591$ |
| 11 | 56.0 | $240 \cdot 989$ | $243 \cdot 228$ | 484*375 | 12 | 12.5 | 192.149 | $194 * 333$ | $3^{86 \cdot 617}$ |
| 12 | $47^{\circ} 6$ | $243 \cdot 169$ | 241-002 | 484.333 | 12 | $23^{\circ} 3$ | 194.323 | 192.164 | 386.623 |
| 12 | 53.4 | 241.040 | 243.20 | $484 * 407$ | 12 | $30 \%$ | $192 \cdot 153$ | 194*345 | $386 \cdot 635$ |

Bar. $30^{\circ} \circ \mathrm{O}$. Ther. $5^{\circ}{ }^{\circ}$. Run $+5^{\circ}$. . Images 3. Steadiness 3. F.P. $9^{\circ} 75^{\circ}$.
$\epsilon$ Indi.
$b$

| h | m | r | r | R |
| :---: | :---: | :---: | :---: | :---: |
| I | $46^{\circ} \cdot 4$ | $201 \cdot 992$ | $204^{\circ} \cdot 198$ | $406^{\circ} \cdot 343$ |
| 18 | $53^{\circ} \mathrm{I}$ | $204^{\circ} \cdot 141$ | $202 \cdot 032$ | $406 \cdot 322$ |
| 19 | $40^{\circ} 2$ | $202 \cdot 043$ | $204 \cdot 180$ | $406 \cdot 349$ |
| 19 | $46 \cdot 6$ | $204 \cdot 204$ | $202 \cdot 009$ | $406 \cdot 337$ |

1881, May 6.
$a$

| h | m | r | r | R |
| :---: | :---: | :---: | :---: | :---: |
| 19 | $\mathrm{I} \cdot 0$ | $228^{\circ} \cdot 686$ | $230 \cdot 850$ | $459^{\circ} \cdot 703$ |
| 19 | $7 \cdot 5$ | $230 \cdot 790$ | $228 \cdot 600$ | $459^{\circ} \cdot 553$ |
| 19 | $17 \cdot 9$ | $228 \cdot 665$ | $230 \cdot 859$ | $459^{\circ} \cdot 682$ |
| 19 | $28 \cdot 8$ | $230 \cdot 822$ | $228 \cdot 650$ | $459 \cdot 623$ |

Bar. $30^{\circ} 09$. Ther. $5^{\circ} 1^{\circ} 9 . \quad$ Run +3.7 . Images 2-3. Steadiness 3. F.P. $9^{\circ} 5^{\circ}$.


## $\epsilon$ Indi.

$a$

1881, May 9. $b$

|  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1850.5 | $230 \cdot 792$ | 228.630 | 459•600 |  |  | 204. 144 | 201-96\% | $406 \cdot 255$ |
| $1855 \cdot 9$ | $228 \cdot 649$ | $230 \cdot 791$ | $459 \cdot 614$ | 19 |  | 201.993 | 204*161 | $406 \cdot 295$ |
| $1936 \cdot 5$ | $230 \cdot 812$ | $228 \cdot 628$ | $459 \cdot 59{ }^{\text {r }}$ | 19 | $20^{\circ}$ | 204* 159 | $202 \cdot 007$ | $406 \cdot 303$ |
| 1942.4 | $228 \cdot 623$ | $230 \cdot 8$ | $459.57^{2}$ | 19 | $25^{\circ} 8$ | 201 *946 | 204•143 | $406 \cdot 223$ | in

Bar. $30^{\circ} 17$. Ther. $44^{\circ}$.6. Run $+2 \cdot 9$. Images 2. Steadiness 2. F.P. $9 \cdot{ }^{\circ} 0$.

Sirius.

| ${ }_{\text {h m }}$ |  |  |  | h  <br> 9 m |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $936{ }^{3} \cdot 2$ | $196 \cdot 914$ | 194.828 | $391 \cdot 877$ | 943.6 | ${ }^{191}{ }^{1} 632$ | 193.721 | $385^{\circ} 492$ |
| 958.3 | 194.820 | 196.953 | 391.918 | $95{ }^{1} \cdot 4$ | 193.715 | 191.544 | 38.403 |
| $1010 \%$ | 196.898 | 194.815 | $391 \cdot 865$ | 1017.5 | 191.566 | $193 \cdot 650$ | 385.377 |
| 10 $35 \% 4$ | 194.792 | 196.936 | 391•900 | $1026 \cdot 1$ | 193.696 | 191.564 | $385 \cdot 429$ | Bar. $30 \cdot 28$. Ther. $54 \circ 9$. Run $+2 \cdot 8$. Images 3. Steadiness 3. F.P. $9 \cdot 50$.

Sirius.
b

| h |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | $40 \cdot 2$ | 193.716 | 191.630 | $385^{\circ} 483$ |
| 9 | $47 \cdot 4$ | 191. 526 | 193.687 | $385 \cdot 354$ |
| 10 | $24 \cdot 3$ | 193.692 | 191.560 | 385.419 |
| 10 | $30 \cdot 4$ | 191.528 | 193.686 | $385 \cdot 386$ |

1881, May 19. $a$

|  |  |  |  |
| :---: | :---: | :---: | :---: |
| 954.8 | 196.931 | 194*852 | 391.925 |
| 10.0 .4 | $194 \cdot 810$ | 196.923 | 391•878 |
| 10 11.6 | $196 \cdot 933$ | 194.841 | $391 \cdot 926$ |
| $1017 \cdot 6$ | 194.821 | $196 \cdot 883$ | $391 \cdot 861$ |

1881, May 18. b

## $\alpha_{2}$ Centauri.

b

1881, May 20. a

|  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 13 9.0 | 243.100 | $240 \cdot 99^{2}$ | 484.257 | $13.30{ }^{\prime} 3$ | 194.243 | $192 \cdot 145$ | $386 \cdot 527$ |
| 1322.0 | $240 \cdot 984$ | $243 \cdot 118$ | 484.269 | $1351^{1 \cdot 0}$ | 192'137 | 194.271 | $386 \cdot 546$ |
| 1429.2 | $243 \cdot 121$ | $241 \cdot 011$ | 484.299 | $14 \quad 7 \cdot 3$ | 194.231 | 192.097 |  |
| $1441 \cdot 5$ | $240 \cdot 9$ | $243 \cdot 164$ | 484.314 | $14{ }^{15} 3$ | 192 | 194*336 | 386 | Bar. $30^{\circ} \mathrm{in} 0$. Ther. $54^{\circ}{ }_{5}$. Run $+3 \%$. Images 3. Steadiness 3. F.P. 9.50 .

Sirius.
$a$

| h |  |  | r |  | h | r |  | ${ }^{\text {R }}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 49** | 196.904 | 194*793 | $39 \times 836$ | 10 0.1 | 191.592 | :93.699 | $385 \cdot 439$ |
| 10 | $19^{\circ} \mathrm{O}$ | $194 \cdot 840$ | 196.932 | 391•929 | 108.8 | 193.682 | $19 \times 553$ | $385 \cdot 388$ |
| 10 | 31.4 | 196.911 | 194* ${ }^{\text {7 }}$ \% 8 | $391 \cdot 857$ | 1043.6 | 191.565 | 193.675 | $385 \cdot 427$ |
| 12 | $2 \cdot 7$ | 194*786 | $196 \cdot 894$ | $391 \cdot 885$ | 1054.6 | 193.695 | 191.553 | 385.449 |

Bar. $29^{\circ} \cdot 93$. Ther. $53^{\circ} \cdot 3$. Run $+1 \cdot 5$. Images 3. Steadiness 3. F.P. 9.50 .
$\alpha_{2}$ Centauri.
$a$

1881, May 23.
b


Bar. $30^{\circ}{ }^{1}{ }^{15}$. Ther. $5^{\prime} \cdot{ }^{\circ}$. Run $+3 \cdot 3$. Images 2-3. Steadiness 3. F.P. $9 \cdot 50$.

1881, May 21. b

$\zeta$ Tucanae.

| $\mathrm{h} \quad \mathrm{m}$ |  |  | ${ }^{\text {R }}$ |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2123.2 | 197.886 | 195*427 | 393.457 |  |  | 202.990 | 200. 509 | 403.643 |
| 2130.9 | 195.385 | 197.877 | 393.407 |  | 47.4 | 200. 501 | 203.005 | $403 \cdot 650$ |
| 2214.8 | $197 \cdot 857$ | 195.412 | 393*422 |  |  | 203.007 | 200. 537 | $403 \cdot 691$ |
| 22.23 .1 | $195{ }^{409}$ | $197 \cdot 891$ | 393*454 | 22 | $5 \cdot 8$ | $200 \cdot 560$ | $203 \cdot 015$ | $403 \cdot{ }^{2} 23$ |

Bar. $3^{\text {in }} 4$. Ther. $55^{\circ}$. . Run +3.5 . Images 2-3. Steadiness 3. F.P. 9.50 .
$e$ Eridani.

| h | m | r | r |
| :---: | :---: | :---: | :---: |
| 22 | $4^{8 \cdot \circ}$ | $254 \cdot 275$ | $256^{\circ} \cdot 773$ |
| $\mathbf{2 2}$ | $54 \cdot 8$ | $256 \cdot 747$ | $254 \cdot 25^{2}$ |
| 23 | $41 \cdot 7$ | $254 \cdot 293$ | $25^{\circ} \cdot 820$ |
| 23 | $49 \cdot 3$ | $256 \cdot 799$ | $254 \cdot 314$ |


| h | m | r | r |
| :---: | :---: | :---: | :---: |
| 22 | $48^{\circ} \cdot \circ$ | $254 \cdot 275$ | $256 \cdot 773$ |
| $\mathbf{2 2}$ | $54 \cdot 8$ | $256 \cdot 747$ | $254 \cdot 25^{2}$ |
| 23 | $41 \cdot 7$ | $254 \cdot 293$ | $256 \cdot 820$ |
| 23 | $49^{\circ} 3$ | $256 \cdot 799$ | $254 \cdot 314$ |

## R

511•338
$5^{11} \cdot 275$
$511 \cdot 317$
511•308
$\begin{array}{cc}\mathrm{h} & \mathrm{m} \\ 23 & 2 \cdot 7 \\ 23 & 10 \cdot 0 \\ 23 & 23 \cdot 7 \\ 23 & 33 \cdot 2\end{array}$

| r | r | R |
| :---: | :---: | :---: |
| $267 \cdot 830$ | $270 \cdot 269$ | $538 \cdot 384$ |
| $270 \cdot 292$ | $267 \cdot 792$ | $538 \cdot 353$ |
| $267 \cdot 801$ | $270 \cdot 333$ | $538 \cdot 381$ |
| $270 \cdot 369$ | $267 \cdot 832$ | $538 \cdot 433$ | $\begin{array}{llll}270 \cdot 369 & 267 \cdot 832 & 538 \cdot 433\end{array}$

Bar. $30^{\circ} 46$. Ther. $55^{\circ} 3$. Run $+3 \circ$. Images $2-3$. Steadiness 3. F.P. $9 \cdot{ }^{\circ}$.

Canopus.


1881, June 21. b

| $1 \cdot$ | $r$ | R |
| :---: | :---: | :---: |
| $47^{\bullet 628}$ | 45'112 | $92 \cdot 843$ |
| $45^{\prime} 127$ | $47 \cdot 575$ | $92 \cdot 808$ |
| $47 \cdot 603$ | $45 \cdot 083$ | 92•799 |
| $45 \cdot 084$ | $47 \cdot 588$ | 92.791 |

Bar. $30^{\circ} 36$. Ther. $60^{\circ}$ 2. Run $+3 \cdot 9$. Images 3. Steadiness 3. F.P. $9 \cdot 50$.
$\alpha_{2}$ Centauri.
$a$

| h | m | r | r | R |
| :---: | :---: | :---: | :---: | :---: |
| 16 | $14 \cdot 8$ | $191 \cdot 959$ | $194 \cdot 502$ | $386 \cdot 586$ |
| 16 | 20.9 | 194.527 | $191 \cdot 996$ | $386 \cdot 645$ |
| 16 | $56 \cdot 0$ | 191.995 | $194 \cdot 498$ | $386 \cdot 608$ |
| 17 | 0.6 | 194.518 | $192 \cdot 009$ | $386 \cdot 64 \mathrm{I}$ |

1881, June 21.

## b

|  |  |  |  |
| :---: | :---: | :---: | :---: |
| $1628 \cdot 6$ | 240.770 | $243 \cdot 320$ | 484. 242 |
| $1634^{\circ} 1$ | $243 \cdot 296$ | $240 \cdot 801$ | 484.248 |
| $1642 \cdot 6$ | $240 \cdot 804$ | $243 \cdot 242$ | 484-196 |
| $1648 \cdot 2$ | $243 \cdot 284$ | $240 \cdot 805$ | $484^{-237}$ | Bar. $30^{\circ} 3$. Ther. $57^{\circ} 5$. Run +4.3 . F.P. $9{ }^{\circ} 5^{\circ}$.



Bar. $3^{\circ} 3$. Ther. $57^{\circ} 8$. Run +3 . 4 . Irnages 2. Steadiness 2-3. F.P. 9• 50 .


Bar. $30^{\circ} 21$. Ther. $49^{\circ} 8$. Run $+4^{\circ}$. . Images 2. Steadiness 2-3. F.P. $9^{\circ} 5^{\circ}$.


$$
\text { Bar. } 3^{\text {in }} 25 \text {. Ther. } 50^{\circ} 3 . \text { Run }+3.8 \text {. Images } 2-3 \text {. Steadiness 3. F.P. } 9 \cdot 50
$$

 in
Bar. $30^{\circ} 53$.$\quad$ Ther. $46^{\circ} 6$. Run +3.5 . F.P. $9 \cdot 50$.
$\alpha_{2}$ Centauri.
$b$

| m | $r$ |  | R | h |  | $r$ | $r$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $1526 \cdot 3$ | $243 \cdot 321$ | $240 \cdot 801$ | $484 \cdot 289$ |  | $4^{1} 0$ | 194.529 | 192.032 | $386 \cdot 694$ |
| $1532 \cdot 6$ | $240 \cdot 813$ | 243.308 | $484 \cdot 288$ | 15 | $50 \cdot 4$ | 192.045 | 194.538 | $386 \cdot 713$ |
| $1612 \cdot 8$ | 243.290 | $240 \cdot 823$ | $484 \cdot 274$ | 15 | $58 \cdot 5$ | 194.503 | 192.027 | 386.659 |
| $1620 \cdot 2$ | $240 \cdot 791$ | $243 \cdot 315$ | $484 \cdot 266$ | 16 | $4 \cdot 3$ | 192.023 | 194.513 | $386 \cdot 666$ | in $30 \cdot 49$. Ther. $42 \cdot 9$. Run $+4 \cdot$. Images 2. Steadiness 3 . F.P. $9 \cdot 50$.

 in
Bar. $30^{\circ} 50$. Ther. $40^{\circ} 9$. Run +3.3 . Images 3. Steadiness 3. F.P. 9. 50 .


Bar. $30^{\circ} 5^{8}$. Ther. $5^{1}{ }^{\circ}$ 2. Run $+4 \cdot 8$. Images 2-3. Steadiness 3. F.P. $9 \cdot 50$.


Bar. $30^{\circ} 56$. Ther. $46^{\circ} 4$. Run +3.2 . Images 2. Steadiness 3. F.P. $9 \cdot 50$.


Bar. $30^{\circ}{ }^{\text {in }} 5^{5}$. Ther. $50 \cdot 8$. Run +3.8 . Images 2. Steadiness 2-3. F.P. $9 \cdot 50$.


Bar. $30^{\circ} 49$. Ther. $46^{\circ} 8$. Run $+4^{\circ}$. . Images 2-3. Steadiness 3. F.P. $9^{\circ} 5^{\circ}$.
$\zeta$ Tucanae.
$a$

1881, July 5.
$b$
 $1925 \cdot 8$ $1937^{\circ} \circ$ 20 I. I
$2010^{\circ} 1$ $200 \cdot 57^{\circ} \quad 203 \cdot 038 \mid 403 \cdot 741$

| h m | $r$ | $\mathbf{r}$ | R | h m | 1 | r | R |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $1915{ }^{\circ}$ | 195.452 | $197^{\circ} 9^{22}$ | $393 \cdot 491$ | 1925.8 | 203.057 | 200*553 | 403.729 |
| $1944^{\circ} 4$ | 197*916 | $195{ }^{\circ} 455$ | $393 \cdot 493$ | $1937^{\circ} \mathrm{O}$ | $200 \cdot 574$ | $203 \cdot 025$ | 403.720 |
| 1953.8 | 195*432 | $197^{\circ} 917$ | 393.473 | 20 I. I | 203.035 | 200. 574 | 403.733 |
| $2017{ }^{\circ} 2$ | $197{ }^{\circ}{ }^{13}$ | 195.424 | $393{ }^{\circ} 4^{68}$ | $2010{ }^{\circ} 1$ | $200 \cdot 576$ | $203^{\circ} 03^{8}$ | $403 \cdot 741$ |

Bar. $30^{\circ} \cdot 37$. Ther. $43^{\circ}$ 2. Run $+4^{\circ} \%$. Images 2. Steadiness 2-3. F.P. $9 \cdot 5^{\circ}$.

| $\alpha_{2}$ Centauri. |  |  |  |  |  | 1881, July 6. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $a$ |  |  |  |  |  |  |  |
| h m | r | r |  | h m | ${ }^{\mathbf{r}}$ | r |  |
| $179{ }^{\circ} 1$ | 192.043 | 194.504 | $386 \cdot 661$ | 1719.5 | $243 \cdot 285$ | $240 \cdot 838$ | 484*267 |
| $1737^{\circ} 2$ | 194.495 | $192 \cdot 023$ | $386 \cdot 629$ | 1728.9 | $240 \cdot 815$ | $243 \cdot 307$ | 484.264 |
| $1746 \cdot 4$ | 192.033 | 194.520 | $386 \cdot 663$ | $1756 \cdot 5$ | $243 \cdot 323$ | $240 \cdot 822$ | $484^{\circ} 283$ |
| $1830 \cdot 3$ | 194.507 | $192 \cdot 058$ | $386 \cdot 674$ | $18 \quad 20 \cdot 7$ | $240 \cdot 852$ | $243 \cdot 310$ | $484 \cdot 299$ |

[^7]
## $\alpha_{2}$ Centauri.



| h m |  | r | A | h m | $r$ | $r$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $153{ }^{1} \cdot 1$ | $240 \cdot 830$ | $243 \cdot 292$ | $484 \cdot 286$ | ${ }^{15} 40{ }^{\circ} \mathrm{I}$ | 194.510 | 192.041 | $386 \cdot 681$ |
| $1558 \cdot 4$ | $243 \cdot 272$ | $240 \cdot 840$ | $484 \cdot 272$ | $1549 \cdot 5$ | 192.051 | 194.511 | $386 \cdot 690$ |
| $16 \quad 9{ }^{\circ} 2$ | 240.831 | $243 \cdot 269$ | $484 \cdot 258$ | $1617 \cdot 3$ | 194.490 | 192.041 | $386 \cdot 656$ |
| $1637^{\circ}$ | $2433^{16}$ | $240 \cdot 828$ | $484 \cdot 298$ | 1626.4 | 192.038 | 194.499 | $386 \cdot 660$ |

Bar. $30^{\circ} 38$. Ther. $50^{\circ} \circ$. Run $+5^{\circ} 3$. Images 2. Steadiness 2-3. F.P. $9^{\circ} 5^{\circ}$.
$e$ Eridani.

|  |  |  |  | $b$ |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| h m | ${ }^{\text {r }}$ | r | R | h m | ${ }^{\mathbf{r}}$ | 1 | R |
| 22.27 .3 | $256 \cdot 743$ | 254.259 | 511.353 | $2238 \cdot 9$ | 267.799 | $270 \cdot 274$ | $538 \cdot 425$ |
| $2258 \cdot 0$ | 254.307 | $256 \cdot 766$ | 511.347 | $2248 \cdot 5$ | 270.275 | 267.851 | $538 \cdot 449$ |
| $23 \quad 6 \cdot 2$ | $256 \cdot 830$ | $254{ }^{\circ} 31$ | 511.408 | $2317 \cdot 7$ | $267 \cdot 824$ | $270 \cdot 367$ | $538 \cdot 450$ |
| 23 39*3 | 254.336 | 256. 797 | 511*343 | 2329.2 | $270 \cdot 346$ | $267 \cdot 861$ | $538 \cdot 449$ |

Bar. $30^{\circ} 35^{\circ}$ Ther. $46^{\circ}$. Run $+5^{\circ}$. Images 3. Steadiness 3. F.P. $9^{\circ} 5^{\circ}$.

$\epsilon$ Indi.
1881, July 11.
b

|  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1752.6 | 204.273 | $201 \cdot 821$ | $406 \cdot 303$ |  |  | 228.486 | $230 \cdot 943$ | 45 |
| 1816.6 | 201.833 | 204-299 | $406 \cdot 314$ | 18 | $8 \cdot 5$ | $230 \cdot 949$ | $228 \cdot 470$ | $459 \cdot 641$ |
| $1826 \cdot 6$ | 204.321 | $201 \cdot 825$ | $406 \cdot 318$ |  | $35 \cdot 1$ | $228 \cdot 464$ | $230 \cdot 950$ | $459 \cdot 606$ |
| 1852.5 | $201 \cdot 856$ | 204*304 | $406 \cdot 312$ | 18 | $43 \cdot 3$ | $230 \cdot 937$ | 228. |  |

Bar. $30^{\circ} \cdot 57$. Ther. $49^{\circ} 8$. Run $+6 \cdot 1$ : Images 2. Steadiness 2. F.P. $9 \cdot 50$.


Bar. $30^{\circ} \cdot 57$. Ther. $48^{\circ}{ }_{4}$. Run +4.4 . Images 2. Steadiness 2. F.P. $9 \cdot 50$.
$\alpha_{2}$ Centauri.
$a$

|  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $1555^{\circ} 3$ | 194.513 | 192.001 | 386.644 | $16 \quad 2.4$ | $240 \cdot 819$ | $243 \cdot 309$ | 484.291 |
| $1616 \cdot 7$ | 191.998 | 194.511 | 386.635 | $1610 \cdot 8$ | 243.307 | $240 \cdot 804$ | $484^{272}$ |
| 1624.4 | 194. 506 | 192.000 | 386.631 | $1634^{+1}$ | $240 \cdot 820$ | $24.3 \cdot 282$ | 484.259 |
| 1658 | 191.992 | 194.498 | $386 \cdot 609$ |  | $243 \cdot 333$ | $240 \cdot 825$ | 48 |

Bar. $30^{\circ} 5^{\text {in }}$. Ther. $43^{\circ}$. . Run +5.9 . Images 2. Steadiness 2-3. F.P. $9^{\circ} 5^{\circ}$.

$$
\alpha_{2} \text { Centauri. }
$$

1881, July 12.
b
$\qquad$

|  |  |  | $\alpha_{2} \mathrm{C}$ | tauri. |  | 1881, | y 13. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
| 1549.9 1618.0 | ${ }_{243}^{240 \cdot 804}$ | ${ }_{24}^{243 \cdot 325}$ | ${ }_{484}^{484 \cdot 291}$ | 15 <br> 16 <br> 169.1 <br> 9.1 <br> 1 | 194.518 | $192 \cdot 007$ $194 \cdot 520$ | ${ }^{386 \cdot 653}$ |
| 16 53 ${ }^{\circ}$ | $240 \cdot 781$ | ${ }_{243} \cdot 324$ | ${ }_{484} \cdot 258$ | 1780.7 | ${ }_{194} 939$ | 192.010 | ${ }_{386} \mathbf{6 6 6}$ |
| ${ }_{17}{ }_{21} \cdot 6$ | $243 \cdot 321$ | $240 \cdot 836$ | 484-303 | $17 \quad 9.5$ | 192.004 | 194. | ${ }_{386} 6$ |

Bar. $30^{\circ}{ }^{\text {in }} 43$. Ther. $47^{\circ} 6$. Run $+4 \%$. Images $2-3$. Steadiness 3. F.P. $9 \cdot 50$.

$\alpha_{2}$ Centauri.
$b^{1}$

| $b^{1}$ |  |  |  | $a^{1}$ |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | h m | r | r | ${ }^{\text {R }}$ |
| 1540.7 | 112.836 | 115.594 | 228.500 | 1549.0 | 110.142 | 107.355 | 217.566 |
| 164.2 | 115.572 | 112.840 | 228.487 | 1557.4 | 107.351 | 110.138 | $217 \cdot 559$ |
| 1611.7 | 112.845 | 115.579 | 228.500 | 1618.7 | 110.118 | 107739 | $217 \cdot 562$ |
| 1631.0 | 115.575 | $112 \cdot 877$ | 228.532 | $1625^{\circ} \mathrm{Z}$ | $107 / 36_{5}$ | 110.099 | 217.540 |

Bar. $30^{\circ}{ }^{\circ} 40$ Ther. $42{ }^{\circ}{ }^{\circ} . \quad$ Run $+2 \cdot 1$ I. F.P. 9.50 .
 Bar. $30^{\circ}{ }^{\text {in }} 40$. Ther. $39^{\circ} 8$. Run $+4 \%$. Images 2-3. Steadiness 2-3. F.P. $9 \cdot 50$.

$\alpha_{2}$ Centauri.
b

|  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1818.9 | $243 \cdot 338$ | $240 \cdot 716$ | 484.190 | 1826.9 | 191.953 | 194.558 | $386 \cdot 619$ |
| $1845^{\prime} 6$ | ${ }^{240}{ }^{\circ} 702$ | $243 \cdot 369$ | 484.207 | $1836 \cdot 8$ | 194* $5^{81}$ | 191.928 | $386 \cdot 617$ |
| 1918.4 | $243 \cdot 362$ | $240 \cdot 702$ | 484.207 | $1926 \cdot 8$ | 191922 | 194.600 | $386 \cdot 6$ |

1881, August 8.
$a$

Bar. $30 \cdot \circ 5$ in Ther. $53 \circ .5$ Run +3.8 . F.P. $9 \cdot 50$.

| h m |  |  | R |  |  |  | 1 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2024.0 | 109.957 | 107.330 | 217.517 | $2033 * 2$ | 112.770 | 115.395 | 228.435 |
| 2052.4 | 107•343 | 109.930 | 217.541 | $2043{ }^{\circ}$ | 115.372 | 112.775 | 228.434 |
| $3 \cdot 3$ | 109*973 | $107 \cdot 315$ | 217.574 | 21 11'1 | 112.770 | 115.323 | $228 \cdot 430$ |
|  |  |  |  | $21 \cdot 4$ | $115 \cdot 365$ | 112.767 | $228 \cdot 491$ | Bar. $30^{\circ} \cdot 20$. Ther. $47^{\circ} 4$. Run $+2 \cdot 6$. Images 2-3. Steadiness 3. F.P. $9 \cdot 50$.



Bar. $30^{\circ} 57$. Ther. $45^{\circ} 8$. Run $+2 \cdot 4$. Images 1-2. Steadiness 2. F.P. $9^{\circ} 50$.
$\alpha_{2}$ Centauri.

| m | $\mathbf{r}$ | $\mathbf{r}$ |  |
| :---: | :---: | :---: | :---: |
| $1640 \cdot 3$ | 191.964 | 194.546 | $386 \cdot 631$ |
| $177^{\circ}$ | 194. 540 | 191.982 | $386 \cdot 64$ |
| 1744.8 | 191*979 | 194.556 | $386 \cdot 648$ |
| 18 9*1 | 194.563 | 191*974 | $386 \cdot 651$ |

1881, August 12. b

Bar. $30^{\circ} 57$. Ther. $47^{\circ} 9$. Run $+4^{\circ} 5$. Images 2. Steadiness 2. F.P. $9^{\circ} 50$.
$\epsilon$ Indi.

| $a$ |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| h | m | r | r | R |
| 19 | $38 \cdot 3$ | $23 \mathrm{I} \cdot 016$ | $228 \cdot 396$ | $459 \cdot 563$ |
| 20 | $1 \cdot 9$ | $228 \cdot 433$ | $230 \cdot 989$ | $459 \cdot 564$ |
| 20 | $9 \cdot 8$ | $230 \cdot 989$ | $228 \cdot 433$ | $459 \cdot 562$ |
| 20 | $36 \cdot 3$ | $228 \cdot 433$ | $230 \cdot 990$ | $459 \cdot 557$ |

1881, August 12. b

| $\mathbf{r}$ | $\mathbf{r}$ | $\boldsymbol{R}$ |
| :---: | :---: | :---: |
| $201 \cdot 797$ | $204 \cdot 402$ | $406 \cdot 326$ |
| $204 \cdot 356$ | $201 \cdot 812$ | $406 \cdot 293$ |
| $201 \cdot 800$ | $204 \cdot 370$ | $406 \cdot 289$ |
| $204 \cdot 385$ | $201 \cdot 804$ | $406 \cdot 307$ |

``` in
Bar. \(30^{\circ} 55^{\prime}\). Ther. \(49^{\circ}\) 8. Run \(+4^{\circ}\). Images 1-2. Steadiness 2. F.P. \(9^{\circ} 5^{\circ}\).
```

Sirius.
a
 in
Bar. $30^{\circ} 49$. Ther. $49^{\circ} 9$. Run $+3 \cdot$ r. Images 2. Steadiness 2. F.P. $9{ }^{\circ} 5^{\circ}$.


Bar. $30^{\circ} 39$. Ther. $5^{\circ}{ }^{\circ}$ 2. Run +3.2 . Images $1-2$. Steadiness 2. F.P. $9^{\circ} 5^{\circ}$.

| $\alpha_{2}$ |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\stackrel{\text { r }}{ }$ |  |  |  |  |  |  |
| 1827.7 | 243.335 | $240 \cdot 734$ | $484^{\cdot 207}$ | 1836.7 | $191 \cdot 985$ | 194.544 | $386 \cdot 639$ |
| 1853.5 | 240.757 | $243 \cdot 316$ | 484.212 | $1846 \cdot 4$ | $194.55{ }^{2}$ | 191.993 | $3^{86} \cdot 658$ |
| 1922.3 | 243:296 | $240 \cdot 742$ | $484^{-184}$ | 1934.3 | 191.976 | 194.535 | $386 \cdot 640$ |
| 1953.1 | 240'732 | $243 \cdot 348$ | 484.245 | $1943{ }^{\circ}$ | 194.561 | 191.952 | $386 \cdot 647$ | in

Bar. $30^{\circ}$ 39. Ther. $5^{\circ}{ }^{\circ} 5 . \quad$ Run $+4^{\circ} 5$. Images 1-2. Steadiness 2. F.P. 9. 50 .

Sirins.
$b$

1881, August 13.
$a$

| h m | - | , | R |
| :---: | :---: | :---: | :---: |
| $214^{\circ} \mathrm{I}$ | $196 \cdot 876$ | 194.321 | 391•707 |
| 222.4 | 194*398 | $196 \cdot 939$ | 391•797 |
| $249 \cdot 6$ | 196.976 | 194.437 | 391.750 |
| $3 \quad 0.2$ | $194^{*} 444$ | $197^{\circ} 023$ | 391*772 |


Bar. $29^{\text {in }} 24$. Ther. $54^{\circ} 3$. Run $+2 \cdot 9$. Images 3. Steadiness 3. F.P. $9 \cdot 50$.
$\epsilon$ Indi.
$b$

| $h$ |  | $r$ | R | h m |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2025.4 | 201.820 | 204*393 | $406 \cdot 329$ | 2033.9 | $230 \cdot 982$ | $228 \cdot 425$ | $459 \cdot 539$ |
| $20.56 \cdot 2$ | 204.405 | 201.780 | 406.300 | 2046.7 | 228.421 | $231 \cdot 026$ | 459.577 |
| $5 \cdot 2$ | $201 \cdot 796$ | 204*396 | $406 \cdot 307$ | 2113.7 | $231 \cdot 010$ | 228.418 | $459 \cdot 55^{8}$ |
| $31 \cdot 1$ | 204.370 | $201 \cdot 801$ | $406 \cdot 287$ | $2122 \cdot 1$ | 228.436 | $230 \cdot 993$ | 459 |

Bar. $30^{\text {in }} 24$. Ther. $54 \%$. Run $+5 \%$. Inages 2. Steadiness 2. F.P. $9 \cdot 50$.

$$
\alpha_{2} \text { Centauri. }
$$

$1746 \cdot 0$ 186.3 1833.8 194.566 $19 \mathbf{1 9}^{1.5649}$ | 18 | $56 \cdot 0$ | $191 \cdot 989$ | $194 \cdot 530$ |
| :--- | :--- | :--- | :--- |

1881, August 14.
$a$

Bar. $30^{\circ}$ in 42 . Ther. $55^{\circ} 8$. Run +4.9 . Images $1-2$. Steadiness $1-2$. F.P. $9 \cdot 50$.
$\alpha_{2}$ Centauri.

| $b^{1}$ |  |  |  | $a^{1}$ |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| h m | r |  | R | h m | r | $r$ |  |
| 1933.8 | 115.412 | 112.826 | 228.427 | i9 41.6 | 107*422 | 110.000 | 217.603 |
| 1959.4 | 112.817 | 115419 | 228.454 | 1951.4 | 109.973 | 107•392 | $217 \cdot 555$ |
| 2076 | 115.396 | 112.898 | $228 \cdot{ }^{2} 3$ | 2014.4 | 107.372 | 109.936 | 217.524 |
| 2029.5 | 112.785 | 115.358 | 228.404 | 2022.7 | 109.910 | 107.383 | 217.518 |

Bar. $30^{\text {in }} 4$. Ther. $55^{\circ} \cdot 8$. Ruu +3.4 . Images 2. Steadiness 2. F.P. $9 \cdot 50$.
$e$ Eridani.


1881, August 16. b

| h | m |
| :---: | :---: |
| 22 | 17 |
| 22 | $28 \cdot 3$ |
| 22 | $50 \cdot 4$ |

1881, August 16. -b

| h | m | r | r | R |
| :---: | :---: | :---: | :---: | :---: |
| 17 | $52 \cdot 9$ | $240 \cdot 754$ | $243 \cdot 325$ | $484 \cdot 219$ |
| 17 | $59 \cdot 0$ | $243 \cdot 328$ | $240 \cdot 725$ | $48 \cdot \cdot 192$ |
| 18 | $40 \cdot 3$ | 240.733 | $243 \cdot 339$ | $484 \cdot 210$ |
| 18 | $48 \cdot 0$ | $243 \cdot 300$ | $240 \cdot 747$ | $484 \cdot 185$ |

P. $9 \cdot 50$.

1881, August 16. $a^{1}$

| 107.422 | $110 \cdot 000$ | 217.603 |
| :--- | :--- | :--- | 109.973 - 107.392 217.55 $107.372 \quad 109.936$

217.524
217.518

Bar. $30^{\circ} 4 \mathrm{I}$. Ther. $54^{\circ}{ }^{\circ}$. Run +4.6 . Images 2. Steadiness $2-3$. E.P. 9.50 .

```
                        \epsilon Indi.
        a
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline & & & & h \({ }^{\text {m }}\) & & & \\
\hline 1712.9 & \({ }^{2} 30 \cdot 949\) & \(228 \cdot 265\) & 459.528 & 1723.2 & 201.703 & 204.404 & \\
\hline 1738 & \(228 \cdot 307\) & \(231 \cdot 059\) & 459.630 & \(173{ }^{1 \cdot} 4\) & 204*39 & \(201 \cdot 687\) & \\
\hline 1745.6 & \(231 \cdot 030\) & \(228 \cdot 327\) & \(459 \cdot 609\) & \(1754{ }^{\circ}\) & 201.73 & 204.458 & 406 \\
\hline \(1812 \cdot 8\) & \(228 \cdot 33^{1}\) & 231 & 459.6 & 18 & 204 & \(201 \cdot 71\) & \\
\hline
\end{tabular} Bar. \(30 \cdot{ }^{\text {in }}\) I . Ther. \(56^{\circ}{ }_{3}\). Run +3.3 . Images 3. Steadiness 3. F.P. \(9 \cdot 50\).
```



Bar. $30^{\circ} 2$ I. Ther. $55^{\circ}$. . Run +3 . r. Images 3. Steadiness 3. F.P. $9^{\circ} 5^{\circ}$.

## $a_{2}$ Centauri.

b

|  |  | r |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $18 \quad 6 \cdot 7$ | $240 \cdot 659$ | $243 \cdot 396$ | $484 \cdot 188$ | $1816 \cdot 0$ | 194*649 | 191.895 | $386 \cdot 652$ |
| 1833.9 | 243.371 | $240 \cdot 659$ | $484 \cdot 16_{5}$ | 1825.7 | 191.918 | 194.585 | $386 \cdot 611$ |
| $1910 \cdot 6$ | $240 \cdot 682$ | $243 \cdot 395$ | 484.216 | $1921 \cdot 3$ | 194.616 | 191.912 | $386 \cdot 648$ |
| 19 41.0 | $243 \cdot 375$ | $240 \cdot 648$ | 484*175 | $1935^{\circ} \mathrm{O}$ | 191*919 | 194*623 | $386 \cdot 669$ |

Bar. $30^{\text {in } 11 \text {. Ther. }} 5^{\circ}{ }^{\circ}$. . Run +4.6 . Imagés 2-3. Steadiness 3. F.P. 9. 50 .


Sirius. $a$

| h m | r | $\mathbf{r}$ | R | h m | r | r | R |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $246 \cdot 9$ | 196.996 | 194.430 | $39^{1} \cdot 782$ | $254 \cdot 0$ | 191. 227 | $193 \cdot 785$ | $385 \cdot 318$ |
| $311 \cdot 9$ | 194.486 | 197.014 | 391•780 | 34.7 | 193*774 | 191.245 | $385 \cdot 296$ |
| $318 \cdot 7$ | 197.016 | 194.514 | 391*795 | $328 \cdot 6$ | 191.287 | $193 \cdot 798$ | $385 \cdot 314$ |
| $345 \%$ | 194. 542 | 197.051 | 391-812 | $337 * 3$ | $193 \cdot 811$ | 191.264 | $385 \cdot 291$ |

Bar. $30^{\circ} 69$. Ther. $44^{\circ} 8$. Run +3.7 . Images 1-2. Steadiness 2. F.P. $9^{\circ} 5^{\circ}$.
$\alpha_{2}$ Centauri.
$b$

|  |  |  | . | $\mathrm{h}^{\mathrm{h}} \mathrm{m}$ |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1823.6 | 240.736 | $243 \cdot 276$ | 484. 149 | 1831.2 | 194.521 | 191.977 | $386 \cdot 608$ |
| 1845.5 | $243 \cdot 283$ | $240 \cdot 741$ | $484 \cdot 161$ | 1838.6 | 192.000 | 194.545 | $386 \cdot 656$ |
| 1852.3 | 240.753 | $243 \cdot 304$ | 484.195 | 1859.4 | 194.548 | 191.969 | 386.631 |
| 1916.6 | 243*302 | 240.773 | 484.218 | 198.8 | 191*999 | 194*524 | $386 \cdot 640$ |


| $6{ }^{\text {c }}$ |  |  |  | 1881, August 27. |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |
| 1934.7 | $201 \cdot 827$ | 204.373 | $406 \cdot 326$ | 1943.9 | $230 \cdot 986$ | 228.424 | $459 \cdot 556$ |
| 20.2 .4 | 204.381 | 201.829 | $406 \cdot 33 \mathrm{x}$ | $195^{2}{ }^{\circ} 9$ | $228 \cdot 426$ | $230 \cdot 979$ | 459.548 |
| 20.9 .3 | 201.860 | 204* 386 | $406 \cdot 366$ | 2017.2 | ${ }^{23} 3^{\circ} 968$ | $228 \cdot 444$ | 459.548 |
| $2036 \cdot 3$ | 204.380 | $201 \cdot 822$ | $406 \cdot 318$ | $2026 \cdot 7$ | 228.428 | $231 \cdot 005$ | $459{ }^{\circ} 5^{66}$ |

Bar. $30^{\circ} \cdot 39$. Ther. $53^{\circ} \cdot 5$. Run $+4 \cdot 5$. Images 2. Steadiness 2. F.P. $9 \cdot{ }_{5}$.


Bar. $30^{\circ} 34$. Ther. $49^{\circ} \circ$. Run $+4^{\circ}$. . Images 3. Steadiness 3. F.P. $9 \cdot 50$.

Sirius.

|  |  | ${ }^{\mathrm{r}}$ |  |
| :---: | :---: | :---: | :---: |
| 244.4 | 191*276 | 193.775 | $385 \cdot 383$ |
| $38 \cdot 1$ | 193.810 | 191.317 | 385.394 |
| 316.7 | 191.273 | $193 \cdot 835$ | $385 \cdot 356$ |
| $45^{\circ} \mathrm{O}$ | 193.824 | 191.324 | $385^{\circ} 35^{1}$ |

1881, August 28.
$a$

| h | m |  | $\mathbf{r}$ | ${ }_{1}$ |
| :---: | :---: | :---: | :---: | :---: |
| 2 | $5^{1 \cdot 5}$ | 196.991 | 194.427 | 391*753 |
| 3 | $0 \cdot 0$ | 194.456 | $196 \cdot 989$ | 391•753 |
| 3 | $25^{\circ} 3$ | $197 \cdot 033$ | 194.514 | 391•795 |
| 3 | $35^{\circ} 7$ | 194.532 | 197.006 | -391•768 |



Bar. $30^{\text {in }} 52$. Ther. $5^{\circ}{ }^{\circ}$. . Run $+4^{\circ}$. . Images 2. Steadiness 2. F.P. $9 \cdot 50$.
$\epsilon$ Indi.
$a$

```
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline & & & & & & & \\
\hline \(35 \cdot 6\) & 228.467 & \(230 \cdot 969\) & \(459 \cdot 568\) & \(2045 \cdot 1\) & 204.362 & \(201 \cdot 844\) & 06 \\
\hline \(1 \mathrm{l} 8 \cdot 0\) & \(230 \cdot 989\) & \(228 \cdot 505\) & 459.524 & \(2057^{\circ}\) & \(201 \cdot 835\) & 204.365 & \(406 \cdot 315\) \\
\hline 1 & \(228 \cdot 468\) & \(230 \cdot 956\) & 459.555 & 2126.5 & 204.365 & \(201 \cdot 825\) & 406•306 \\
\hline \(46 \cdot 6\) & \(230 \cdot 958\) & \(228 \cdot 493\) & \(459 \cdot 584\) & \(2137 \cdot 3\) & 201-869 & 204. 349 & \(406 \cdot 33\) \\
\hline
\end{tabular} Bar. \(30^{\circ} 33^{\text {in }}\). Ther. \(55^{\circ} 5^{\circ}\). Run \(+3 \cdot 8\). Images 2. Steadiness 2. F.P. \(9^{\circ} 5^{\circ}\).
```

Canopus.
$a$

| h | $r$ | r | R | h m | r | r | R |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $158 \cdot 8$ | 54.981 | $52 \cdot 480$ | 107.530 | 24.4 | $45^{1113}$ | 47'598 | 92.750 |
| 221.5 | $52 \cdot 506$ | $55 \cdot 002$ | 107.571 | 213.6 | $47^{\circ} 608$ | $45^{\circ} 101$ | 92•765 |
| $230 \cdot 0$ | 55.008 | $52 \cdot 509$ | 107.578 | $236 \cdot 5$ | $45^{\circ} 098$ | $47^{\circ} \mathrm{6II}$ | 92.759 |
| 251.9 | $5^{2 \cdot 509}$ | 55'010 | 107. 573 | $245^{\circ} 4$ | 47' 594 | 45'121 | 92:761 |

Bar. $30^{\circ} 35$. Ther. $56^{\circ} \circ$. Run +4.6 . Images 1-2. Steadiness 1-2. F.P. $9^{\circ} 5^{\circ}$.

Sirius.
$a$

1881, August 30. b

| h | m | r | r | R |
| :---: | :---: | :---: | :---: | :---: |
| 3 | $19 \cdot 1$ | $193 \cdot 774$ | $19 \mathrm{I} \cdot 275$ | $385^{\circ} \cdot 287$ |
| 3 | $28 \cdot 9$ | $19 \mathrm{P}^{\circ} \cdot 291$ | $193 \cdot 792$ | $385^{\circ} \cdot 305$ |
| 3 | $52 \cdot 8$ | $193 \cdot 815$ | $191 \cdot 329$ | $385^{\circ} \cdot 335$ |
| 4 | $0 \cdot 7$ | $191 \cdot 323$ | $193 \cdot 825$ | $385 \cdot 330$ |

$191.323 \quad 193 \cdot 825 \mid 385^{\circ} 330$ in
Bar. $30^{\circ} 33$. Ther. $54^{\circ} 5$. Run +2.4 . Images 1-2. Steadiness 2. F.P. $9^{\circ} 5^{\circ}$.
$\alpha_{2}$ Centauri. 1881, September 3.


$$
\text { Bar. } 30^{\circ} 24 \text {. Ther. } 44^{\circ} 5 \text {. Run }+5.6 \text {. Images 2. Steadiness 2. F.P. } 9.50^{\circ} .
$$

Sirius.
b

|  |  |  |  |
| :---: | :---: | :---: | :---: |
| 87 | $193 \cdot 806$ | 191.314 |  |
| 27.2 | 191.355 | $193 \cdot 841$ |  |
| 31.5 | 193 | 191.3 |  |

Bar. $30^{\circ}{ }^{\circ}$ 16. Ther. $45^{\circ}$ O. Run +3.4 . Images 1-2. Steadiness 2. F.P. $9 \cdot 50$.
$\zeta$ Tucanae. 1881, September 5.

| h m |  | r | R | h |  |  | r | R |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $2243{ }^{\circ} 1$ | $200^{\circ} 538$ | 203.011 | $403^{\circ} 702$ | 22 | $5^{2} 2$ | $197 * 889$ | 195.414 | 393.460 |
| $23 \quad 9{ }^{\circ} 1$ | $203{ }^{\circ} 025$ | $200^{\circ} 538$ | $403^{\circ} 718$ | 23 | $\mathrm{I}^{\circ} \mathrm{O}$ | $195^{\circ} 4^{19}$ | 1970 ${ }^{\circ} \mathrm{O}$ | 393.478 |
| $2316{ }^{\circ}$ | $200{ }^{\circ} 502$ | 203.040 | 403.697 |  | $25^{\circ} 1$ | 197* 902 | $195^{\circ} 408$ | 393.468 |
| $234^{6 \cdot} 2$ | $203{ }^{\circ} \mathrm{I} 5$ | $200^{\circ} 499$ | $403 \cdot 669$ | 23 | $34^{\circ} 8$ | 195.411 | $197 \cdot 883$ | 393.451 |



Bar. $30^{\circ} 16$. Ther. $45^{\circ} 5^{\circ}$. Run $+3{ }^{\circ}$ 2. Images 2. Steadiness 2. F.P. $9^{\circ} 5^{\circ}$.


Bar. $30^{\circ} 40$. Ther. $48^{\circ} 8$. Run $+4^{\circ} 9$. Images 1-2. Steadiness 2. F.P. $9^{\circ} 5^{\circ}$.


Bar. $30^{\circ} 39$. Ther. $43^{\circ} 3$. Run $+4^{\circ} 4$. Images 1 -2. Steadiness I-2. F.P. $9^{\circ} 50$.
Sirius.

| h m | $\mathbf{r}$ | r | R | h m |  | $\mathbf{r}$ | R |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 343.4 | 194.597 | 197.031 | 391-842 | 349.5 | 193.877 | 191.326 | $385{ }^{\circ} 397$ |
| 43.5 | 197.015 | 194.534 | 391*739 | $356 \cdot 7$ | 191.333 | $193 \cdot 848$ | $385 \cdot 368$ |
| $4 \quad 9.4$ | 194.573 | $197 \cdot 046$ | 391-803 | 415.5 | $193 \cdot 859$ | 191.328 | $385 \cdot 357$ |
| 429.5 | 197.047 | 194.564 | 391 776 | 422.6 | 191.363 | $193 \cdot 863$ | $3^{8} 5 \cdot 389$ |

Bar. $30^{\circ}{ }^{\circ} 38$. Ther. $53^{\circ} \circ$. Run $+2 \cdot 6$. Images 2-3. Steadiness 2-3. F.P. $9 \cdot 50$.

```
                    \epsilon Indi. 1881, September }8
a
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline & & & & & & & \\
\hline \(39^{\prime \prime}\) & 228.434 & \(23{ }^{\text {- }} 007\) & \(459 \cdot 584\) & 19 48** & 204.357 & \(201 * 838\) & \(406 \cdot 31\) \\
\hline 5•8 & \(230 \cdot 968\) & \(228 \cdot 475\) & \(459 \cdot 578\) & \(1958^{88^{\circ} \mathrm{I}}\) & 201.867 & 204.342 & 40 \\
\hline & 228.4 & \(230 \cdot 956\) & \(459.55^{2}\) & \(2021^{\circ} \mathrm{O}\) & 204.360 & 201*885 & 40 \\
\hline 4 & \(230 \cdot 97\) & 228 & 59 & 20 & 201*848 & 204 & \\
\hline
\end{tabular} Bar. \(30^{\text {in } 25}\). Ther. \(66^{\circ}{ }_{7}\). Run \(+5 \cdot 0\). Images 3. Steadiness 3. F.P. \(9 \cdot 50\).
```

$\zeta$ Tucanae. 1881, September 8.

| h m | r |  | R | h |  | r | $\mathbf{r}$ | R |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2119.6 | 203.016 | $200 \cdot 493$ | 403.644 |  | $27 \cdot 8$ | 195.440 | $197 \cdot 868$ | $39.3 \cdot 449$ |
| $2150{ }^{\circ} 2$ | $200 \cdot 516$ | 203.030 | $403 \cdot 687$ | 21 | $43^{\circ} 1$ | $197 \cdot 899$ | 195.389 | 393.433 |
| $2156 \cdot 7$ | 203.032 | $200 \cdot 474$ | $403 \cdot 648$ | 22 | $4^{1} 1$ | 195.402 | 197600 | 393.450 |
| 2223.3 | $200 \cdot 516$ | 203.010 | $403 \cdot 672$ | 22 | $14^{\circ} 5$ | 197*913 | 195.406 | $393 \cdot 468$ |

Bar. $30^{\text {in }} 24$. Ther. $66^{\circ}$ 5. Run $+4 \cdot 6$. Images 3. Steadiness 3. F.P. $9 \cdot 50$.
$\alpha_{2}$ Centauri.
$b$

| m |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| $1917{ }^{\circ} 7$ | 243*261 | $240 \cdot 743$ | 484.140 | 1926.4 |
| 19 44* | $240 \cdot 760$ | $243 \cdot 254$ | 484.164 | $1937{ }^{\circ}$ |
| $1952 \cdot 8$ | $243 \cdot 236$ | $240 \cdot 779$ | $484^{1} 17^{2}$ | 203.7 |
| $2025 \cdot 8$ | 240.766 | $243 \cdot 229$ | 484* 193 | $2015{ }^{\circ}$ |

1881, September 9.
$a$ Bar. $30^{\circ} 13_{3}$. Ther. $7^{\circ}{ }^{\circ}$ 2. Run $+4^{\circ}$. . Images 3. Steadiness 3. F.P. 9.50 .
$\alpha_{2}$ Centauri.
$a$

| h m | $r$ | r |  | h m | r | $r$ | R |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $1944{ }^{\circ} 3$ | 194.506 | 192.003 | 386. 642 | $1954{ }^{\circ} 2$ | 240* 784 | $243 \cdot 2{ }^{2}$ | 484* 199 |
| 2012.9 | 191.998 | 194.481 | 386.640 | $204^{\circ}$ | 243.270 | $240 \cdot 723$ | $484^{1} 166$ |
| 2024.2 | 194.446 | 191.985 | $386 \cdot 609$ | $2032 \cdot 1$ | 240*754 | $243{ }^{\circ} 224$ | $484^{-193}$ |
| 2055.3 | 191*956 | 194.430 | 386-626 | $2046 \cdot 6$ | $243{ }^{\circ} 210$ | 240'727 | $484 \cdot 184$ |

Bar. $30^{\circ} 16$. Ther. $55^{\circ} 3$. Run $+4^{\circ}$. . Images 3. Steadiness 2-3. F.P. $9^{\circ} 5^{\circ}$.

Canopus. $b$


Bar. $30^{\circ} 40$. Ther. $43^{\circ} 8$. Run $+3 \cdot 6$. Inages I-2. Steadiness 2. F.P. $9{ }^{\circ} 5^{\circ}$.

Sirius.
$b$

1881, September 13.
$a$

| m | r | r | R |
| :---: | :---: | :---: | :---: |
| $337 \cdot 8$ | 194. 553 | $197 \cdot 000$ | 391* 782 |
| $347 \cdot 9$ | 196.970 | 194*536 | 391•718 |
| $4 \quad 9 \cdot 4$ | 194.584 | 197.018 | $39^{1} \cdot 790$ |
| $418 \cdot 1$ | 197*039 | 194.566 | $391 \cdot 783$ |

Bar. $30^{\circ} 41$. Ther. $43^{\circ} \circ$. Run $+2^{\circ}$. Images 2. Steadiness 2. F.P. $9^{\circ} 5^{\circ}$.


Bar. $30^{\circ} 43$. Ther. $53^{\circ}$ 2. Run $+4^{\circ}$. . Images 2. Steadiness 2. F.P. $9 \cdot 50$.
$\zeta$ Tucanae.

| h | m | $r$ | $r$ | R |
| :---: | :---: | :---: | :---: | :---: |
| 21 | 41.6 | 197 '915 | 195.377 | 393.441 |
| 22 | $7 \cdot 8$ | 195.419 | 197.905 | 393.47 |
| 22 | $17{ }^{\circ}$ | 197.907 | 195.412 | 393.473 |
| 22 | $47^{\circ} 2$ | 195.40\% | $197 \cdot 913$ | 393.4 |

1881, September 14.

Bar. $30^{\circ} 43$. Ther. $5^{\circ} \cdot 8$. Run $+4^{\circ}$. . Images 2. Steadiness 2. F.P. $9^{\circ} 5^{\circ}$.


Sirius.

|  | r | r | R | h m | $\mathbf{r}$ | r | R |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $410 \cdot 6$ | 197.015 | 194.580 | 391•777 | $4{ }^{20} 4$ | 191.369 | 193.781 | $385 \cdot 313$ |
| 439.7 | 194.534 | 197.027 | 391•718 | $431 \cdot 3$ | 193.807 | 191.334 | 385.295 |
| $447^{\circ} 9$ | 197*059 | 194.597 | 391-807 | 454.9 | 191.357 | 193.796 | $385 \cdot 294$ |
| $511 \times 0$ | 194.599 | 197.028 | 391•765 | $54 \cdot 7$ | 193.825 | 191•368 | $385 \cdot 329$ |

[^8]| Tucanae. 1881, September 20 |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathrm{h} \quad \mathrm{m}$ | P | r | R | h m | P | r |  |
| 2210.1 | 202.996 | $200 \cdot 523$ | $403 \cdot 667$ | 2217.6 | 195.456 | 197.926 | 393.534 |
|  | $200 \cdot 542$ 203.013 | $203 \cdot 010$ <br> 200. <br> 14 | $403 \cdot 702$ $403 \cdot 705$ | 2224.9 22464 | 197.893 195.434 | 195.402 197.911 | 393.448 393.501 |
| Bar. $30^{\text {in }} 32$. |  |  |  |  |  |  |  |
| Canopus. 1881, September 21. |  |  |  |  |  |  |  |
| $\begin{array}{lr} \mathrm{h} & \mathrm{~m} \\ 2 & 47 \cdot 8 \\ 3 & 8.1 \\ 3 & 15.7 \\ 3 & 35.6 \end{array}$ | 52.312 | $\stackrel{r}{\mathrm{r}}{ }_{55} \cdot 044$ | 10\% ${ }^{\text {R }} 610$ | $\begin{array}{cr}\mathrm{h} & \mathrm{m} \\ 2 & 53\end{array}$ |  | $45^{\mathrm{r}}$. 060 | ${ }_{92}{ }^{\text {P }} 684$ |
|  |  |  |  |  | 47.580 |  |  |
|  | 55.025 | 52.506 | 107.582 | 31.3 | $45 \cdot 095$ | $47^{\circ} 600$ | 92.738 |
|  | 52.480 | $55 \cdot 006$ | ${ }^{107}{ }^{\circ} 535$ | $\begin{array}{ll}3 & 21.9 \\ 3 & 28.6\end{array}$ | 47.633 45.082 | $45^{\circ} \cdot 071$ 47.608 | $92 \cdot 743$ $92 \cdot 728$ |
|  | 55.034 | 52.512 | 107 590 | 328.6 | $45 \cdot 082$ | 47•608 |  |

Bar. $30^{\circ} 27$. Ther. $53^{\circ}$ 2. Run $+4^{\circ}$. . Images 3. Steadiness 2-3. F.P. $9{ }^{\circ}{ }_{50}$.

Sirius.

| h m | r | $r$ | R | h m | $r$ | r | ${ }^{\mathbf{R}}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $35^{2 \cdot 5}$ | 193.815 | 191.319 | $385 \cdot 326$ | 359.3 | 194.532 | 197.079 | 391.807 |
| $416 \cdot 6$ | $191 \cdot 325$ | $193 \cdot 833$ | $385 \cdot 328$ | $48 \cdot 7$ | 197.067 | 194*536 | 391*789 |
| 425.0 | ${ }^{193.851}$ | $191 \cdot 333$ | $385 \cdot 346$ | $432 \cdot 9$ | 194.543 | 197.069 | -391•776 |
| 453.7 | $191 \cdot 354$ | 193.880 | $385 \cdot 378$ | $442 \cdot 9$ | $197 \cdot 088$ | 194.589 | $391 \cdot 835$ |

$\dot{\alpha_{2}}$ Centauri. 1881, September 22.
$a$

| ${ }^{\text {m }}$ |  |  |  |  | r |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1918.2 | 194.560 | 191.982 | 386.661 | $1926 \cdot 2$ | 240 760 | $243 \cdot 283$ | $484 \cdot 188$ |
| 1942.4 | 192.014 | 194. 534 | $386 \cdot 680$ | 1933.9 | 243.285 | $240 \cdot 776$ | 484.210 |
| 1951.6 | 194.563 | 191*995 | $386 \cdot 697$ | 202.2 | 240.751 | $243 \cdot 282$ | 484.203 |
| $2020 \cdot 8$ | $191 \cdot 962$ | 194.517 | 386.650 | 20 11.6 | 243.293 | $240 \cdot 717$ | 484.191 | Bar. $30^{\circ} \cdot 22$. Ther. $58^{\circ}{ }_{5}$. Run $+4 \cdot 5$. Images 2-3. Steadiness 2.

$e$ Eridani.
b

| h | m |  |  | R |  |  | r |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 22 | $23^{\circ} 3$ | $267 \cdot 655$ | $270 \cdot 225$ | 538.275 | 2232.9 | $256 \cdot 793$ | 254.273 | 511.389 |
| 22 | $52 \cdot 3$ | $270 \cdot 295$ | $267 \cdot 760$ | $538 \cdot 358$ | 2242.5 | 254.258 | $256 \cdot 768$ | $511 \cdot 324$ |
| 22 | 58.6 | 267.757 | $270 \cdot 232$ | $538 \cdot 277$ | ${ }^{23} 6.5$ | $256 \cdot 806$ | $254 \cdot 270$ | $511 \cdot 324$ |
| 23 | $24^{\prime} 1$ | $270 \cdot 333$ | 267.775 | $53^{8} \cdot 35^{\circ}$ | 2314.4 | 254.250 | $256 \cdot 817$ | 511.302 |

Bar. $30^{\circ}{ }^{\circ} 23$. Ther. $60^{\circ}{ }_{3}$. Run +4.3 . Images $2-3$. Steadiness $2-3$. F.P. 9.50 .
$\epsilon$ Indi. 1881, September 23.

|  |  |  |  | h m |  | $\stackrel{\mathrm{r}}{ }$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $2047 \cdot 5$ | 230.994 | 228.479 | 459.602 | $2056 \cdot 0$ | 201.875 | 204.354 | $406 \cdot 343$ |
| 2117.5 | 228.450 | $230 \cdot 956$ | $459 \cdot 536$ | 219.5 | 204.390 | $201 \cdot 845$ | 406.349 |
| 2124.5 | $230 \cdot 982$ | $228.45{ }^{2}$ | $459 \cdot 564$ | ${ }^{21} 33.0$ | 201.846 | 204.376 | 406.337 |
| 2151.7 | 228.451 | $230 \cdot 999$ | $459 \cdot 582$ | $2144^{\circ}$ | 204*408 | 201.854 | 406.379 |

Bar. $30^{\circ} \mathrm{in} 29$. Ther. $59^{\circ}$. . Run $+3 \%$. Images $2-3$. Steadiness $2-3$. F.P. $9^{\circ} 5^{\circ}$.

Sirius.

|  |  | r | R |  |  |  | R |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 422.3 | 197.068 | 194. 546 | 391•784 | $428 \cdot 9$ | 191.394 | 193.865 | $385^{\circ} 416$ |
| $44^{\circ} \cdot 3$ | 194.615 | $197 \cdot 076$ | $391 \cdot 843$ | $439^{\circ} \mathrm{I}$ | $193 \cdot 846$ | 191.378 | $385 \cdot 374$ |
| $453^{\circ}$ 1 | 197.048 | 194.585 | 391.781 | $5 \quad 2 \cdot 3$ | 191.419 | 193.87I | $385 \cdot 428$ |
| $520^{1} 1$ | 194.661 | 197*107 | 391-802 | $511 \cdot 3$ | 193.786 | 191*433 | $385 \cdot 35^{2}$ |

Bar. $30^{\text {in }}$ 10. Ther. $5^{\circ}{ }^{\circ}{ }^{\circ}$. Run $+2 \cdot 4$. Images 1-2. Steadiness 2. F.P. $9 \cdot 50$.
$\zeta$ Tucanae.
$a$

1881, September 25. b

| h | m | r | $r$ | R | h | m | r | $\mathbf{r}$ | R |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 21 | $8 \cdot 5$ | 195.475 | 197.939 | 393.553 |  | 15.4 | 203.021 | 200. 544 | 403.700 |
| 21 | 34.6 | 197*913 | 195.458 | 393.515 |  | $26^{\circ}$ | 200. 571 | 203.059 | $403 \cdot 767$ |
| 21 | 41•7 | 195*458 | 197.951 | 393. 555 | 21 | $48 \cdot 1$ | 203.053 | $200 \cdot 540$ | 403.735 |
| 22 | 4.7 | 197.905 | 195.443 | 393*497 | 21 | $56 \cdot 5$ | 200. 561 | 203•008 | 403.713 |

Bar. $29^{\circ}{ }^{\circ} 90$. Ther. $55^{\circ} 8$. Run $+4^{\prime}$ 1. Images 1-2. Steadiness 2. F.P. $9 \cdot 50$.
$e$ Eridani.

| h m |  |  | ${ }^{\text {R }}$ |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $2247 \cdot 8$ | 254.293 | $256 \cdot 815$ | 511.394 | 2256.5 | $270 \cdot 282$ | $267 \cdot 831$ | $538 \cdot 406$ |
| ${ }^{2} 314.7$ | $256 \cdot 800$ | 254.296 | $511 \cdot 330$ | 236 | 267.816 | $270 \cdot 304$ | $538 \cdot 393$ |
| 2322.1 | 254.303 | $256 \cdot 827$ | 511.355 | 2330.9 | $270 \cdot 334$ | $267 \cdot 814$ | $538 \cdot 380$ |
| 2350.3 | 256-821 | 254.335 | $511 \cdot 347$ | 23 40.0 | $267 \cdot 821$ | $270 \cdot 328$ | $538 \cdot 36$ |

Bar. $29^{\circ}{ }^{\circ} 9^{1}$. Ther. $54^{\circ} 5^{\circ}$. Run $+4^{\circ}$. . Images 1-2. Steadiness 2-3. F.P. $9^{\circ} 5^{2}$.

$$
\alpha_{2} \text { Centauri. }
$$

$b$

|  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2020 | 240. 724 | $243 \cdot 247$ | $484 \cdot 166$ | 2027.2 | 194.455 | 192.098 | 336 |
| 2043.4 | $243 \cdot 212$ | 240.714 | $484 \cdot 167$ | 2035.4 | 191.997 | 194*481 | $386 \cdot 676$ |
| $20.50 \cdot 1$ | 240 | 24.326 | 484.208 | $205^{8 \cdot 1}$ | 194*492 | 191.970 | $386 \cdot 712$ |
| 21171 | $243 \cdot 1$ | $240^{\circ}$ | $484 \cdot 164$ | $21{ }^{7}$ | 191.970 | 194*428 | $386 \cdot 677$ |

Bar. $30^{\circ} 16$. Ther. $5^{\circ} \cdot{ }^{\circ}$. Run $+5 \%$. Images 1-2. Steadiness 2-3. F.P. $9 \cdot 52$.
Bar. $30^{\circ}{ }^{\text {in }} 16$. Ther. $5^{\circ} \cdot 3$. Run $+5 \%$. Images $1-2$. Steadiness 2-3. F.P. $9 \cdot 5^{2}$.


Bar. $30^{\text {in }} 17$. Ther. $50^{\circ}$. . Run +5.4 . Images 1-2. Steadiness 1-2. F.P. $9 \cdot 50$.

Canopus.

|  | r |  | ${ }^{\text {R }}$ |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $18 \cdot 0$ | 47•590 | $45 \cdot 089$ | 92.718 | 323.5 | 52.542 | 55.052 | 107.642 |
| 3 37* 0 | $45 \cdot 103$ | $47 \cdot 589$ | $92 \cdot 729$ | 329.5 | $55^{\circ} \mathrm{O} 1$ | 52.522 | 107•598 |
| $344{ }^{\circ} \mathrm{O}$ | $47 \cdot 566$ | $45 \cdot 106$ | 92.708 | 349.5 | $52 \cdot 524$ | 55.008 | 107. 574 |
| 5\% | $45^{1} 123$ | $47 \cdot 605$ | $92 \cdot 761$ | $356 \cdot 5$ | $55 \cdot 023$ | 52.529 | 107•593 |

Bar. $30 \cdot 3$ in. Ther. $56^{\circ} \circ$. Run $+5 \cdot 6$. Images $2-3$. Steadiness 2-3. F.P. $9 \cdot 50$.

Sirius.
$b$

|  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $424 \cdot 9$ | 191.379 | 193.859 | $385 \cdot 398$ | $431 \cdot 6$ | 197.072 | 194.571 | 391-806 |
| 448.9 | 193.843 | $191 \cdot 366$ | $385 \cdot 353$ | 441.7 | 194.594 | 197.051 | $391 \cdot 801$ |
| 456.6 | 191.365 | 193.847 | 385.351 | $53 \cdot 5$ | 197.048 | 194.506 | $39^{1} \cdot 757$ |
| $521 \cdot 2$ | 193.870 | 191*364 | $385 \cdot 364$ | 513.3 | 194*595 | $197 \cdot 074$ | 39r-805 |

Bar. $30^{\circ}{ }^{\circ} 3$. Ther. $55^{\circ} 3$. Run $+2 \cdot 8$. Images 2. Steadiness 2. F.P. 9.50 .


Bar. $30^{\circ} \cdot 20$. Ther. $60^{\circ} \cdot{ }^{\circ}$. Run +3.5 . Images 2-3. Steadiness 2-3. F.P. $9 \cdot 50$.


Canopus.
$a$

1881, October 4.
b

|  | m | r |  | R | h |  | r |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | $47^{\circ} 2$ | 52.533 | $54 \cdot 987$ | 107. 593 | I | 53.9 | $47 \cdot 560$ | $45^{\cdot} \cdot 067$ | 92.689 |
| 2 | 10:3 | 54.981 | 52.531 | 107.577 | 2 | 2.1 | $45^{\circ} 103$ | 47. 552 | 92•714 |
| 2 | $16 \cdot 2$ | $52 \cdot 507$ | $55^{\circ} 018$ | $107 \cdot 588$ | 2 | $24^{\circ} 8$ | $47 \cdot 554$ | $45^{\circ} 109$ | 92.716 |
| 2 | $40^{\circ} 3$ | $55^{\circ} 002$ | 52.526 | $107 \cdot 578$ | 2 | 33.5 | $45^{\circ} 100$ | 47. 599 | 92.748 |

Bar. $30^{\circ} \circ$. Ther. $57^{\circ}$. . Run $+4^{\circ} \%$. Images 2. Steadiness 2-3.

|  |  | $\alpha_{2}$ Centauri. |  |  |  | 1881, October 6. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |
| $\mathrm{h} \quad \mathrm{m}$ | r | r | B | h m | r | r |  |
| 19 51.7 | 192.000 | 194.490 | 386.629 | $1959{ }^{\circ}$ | $243 \cdot 230$ | $240 \cdot 750$ | $484^{1} 147$ |
| $2016 \cdot 2$ | 194*48 I | 192.011 | $386 \cdot 657$ | $208 \cdot 9$ | 240.750 | 243.225 | $484^{1} 5^{2}$ |
| 2022.2 | 192.015 | 194.466 | $386 \cdot 654$ | $2030 \cdot 0$ | $243 \cdot 220$ | $240 \cdot 745$ | 484* 175 |
| $2046 \cdot 7$ | 194.447 | 191.944 | 386.6ro | $2038 \cdot 1$ | 240.702 | $243 \cdot 293$ | 484-121 |
| Bar. | in ${ }^{\circ} \cdot 07$. | her. $56^{\circ}$ ○ | Run | 3. | ages 1-2. | Steadi | ess 2. |

$\epsilon$ Indi.
$b$

| h m | r | $r$ | R | h m | r | $r$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $2311 \cdot 7$ | 204.349 | 201•919 | $406 \cdot 409$ | 23 20.7 | 228.466 | $230 \cdot 961$ | 459*583 |
| 23 48.7 | 201.878 | 204.342 | 406-373 | $2332^{\circ} 2$ | $230 \cdot 985$ | 228.476 | $459 \cdot 622$ |
| $23.56 \cdot 6$ | 204.351 | $201 \cdot 891$ | $406 \cdot 399$ | - 4.8 | 228.475 | $230 \cdot 955$ | $459 \cdot 605$ |
| - 25.4 | 201•845 | 204*364 | $406 \cdot 378$ | - 17.8 | $230 \cdot 936$ | 228.479 | $459 \cdot 596$ |

in ${ }^{\circ} \cdot \circ$ Ther. $54^{\circ}$. Run $+4^{\circ}$. Images 2. Steadiness 2. F.P. $9^{\circ} 5^{\circ}$.


Bar. $30^{\circ} 10$. Ther. $55^{\circ}$ O. Run +4.6 . F.P. 9.50 .

Sirius.
$a$

| h | m | r | r | R |
| :--- | :---: | :---: | :---: | :---: |
| 2 | $47 \cdot 8$ | $194 \cdot 539$ | $196 \cdot 993$ | $391 \cdot 87 \mathrm{I}$ |
| 3 | $15 \cdot 3$ | $197 \cdot 006$ | $194 \cdot 550$ | $391 \cdot 819$ |
| 3 | $23^{\circ} \cdot 2$ | $194 \cdot 547$ | $197 \cdot 039$ | $391 \cdot 832$ |
| 3 | $5^{2} \cdot 7$ | $197 \cdot 101$ | $194 \cdot 584$ | $391 \cdot 886$ |

1881, October 8.
b

| h | m | r | r | R |
| :---: | :---: | :---: | :---: | :---: |
| 2 | $57^{\circ} \cdot 2$ | $193^{\circ} \cdot 797$ | $191^{\circ} \cdot 286$ | $3^{8} 5^{\circ} \cdot 368$ |
| 3 | $8^{\circ} \cdot 2$ | $191 \cdot 285$ | $193 \cdot 782$ | $35^{\circ} 5^{\circ} \cdot 325$ |
| 3 | $32 \cdot 9$ | $193 \cdot 847$ | $191 \cdot 332$ | $385^{\circ} \cdot 393$ |
| 3 | $43^{\circ} 4$ | $191 \cdot 340$ | $193 \cdot 846$ | $35^{\circ} \cdot 386$ |

 Images 1-2. Steadiness 2.


Bar. $30^{\circ}{ }^{\text {in }} 3$. Ther. $50^{\circ}$. . Run $+2 \cdot 8$. Images 1-2. Steadiness 2-3. F.P. 9.50 .


Bar. $30^{\circ} 3^{2}$. Ther. $50^{\circ}$. . Run +5 .9. Images 1-2. Steadiness 2. F.P. $9^{\circ} 5^{\circ}$.

| $a{ }^{\text {a }}$ |  |  |  | 1881, October 12. <br> b |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| m | $\stackrel{r}{r}$ |  | R | h m |  |  |  |
| $1{ }^{1} 5.8$ | $230 \cdot 919$ | $228.45^{2}$ | 459.579 | 113.1 | 201.876 | 204.320 | $406 \cdot 393$ |
| ${ }_{1} 32 \cdot 7$ | 228.488 | $230 \cdot 95{ }^{\circ}$ | 459.664 | 121.6 | 204.310 | 201.857 | $406 \cdot 369$ |
| $1{ }^{1} 41.1$ | $230 \cdot 922$ | 228.469 | 459.622 | $1{ }^{1} 48.7$ | $201 \cdot 841$ | 204.290 | $406 \cdot 351$ |
| 7.4 | 228.468 | $230 \cdot 912$ | $459 \cdot 629$ | 159.8 | 204.323 | $201 \cdot 826$ | $406 \cdot 376$ |

Bar. $30^{\circ}$ in . Ther. $57^{\circ} \cdot 5$. Run $+3 \circ \%$. Images 2-3. Steadiness 2-3. F.P. $9 \cdot 50$.

Sirius.
$b$

| h. m |  |  | R |
| :---: | :---: | :---: | :---: |
| $233^{1} 1$ | 193.741 | 191.300 | 385.402 |
| ${ }^{2} 59.5$ | 191.337 | 193.775 | 385.391 |
| $36 \cdot 8$ |  | 191.313 | $385 \cdot 337$ |
| $334{ }^{\circ}$ | 191*360 | $193 \cdot 798$ | $385 \cdot 369$ |

$b$

|  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 20 51•0 | 243•195 | 240. 774 | 484.226 | $2058 \cdot 1$ | 192-016 | 194.435 | $386 \cdot 697$ |
| 2117.3 | $240 \cdot 695$ | 243.133 | $48^{8 \cdot 179}$ | 218.4 | 194.381 | 191*992 | $386 \cdot 651$ |
| 2123.2 | 243. 126 | $240 \cdot 702$ | 484.206 | 2129.7 | 191.960 | 194.346 | $386 \cdot 666$ |
| $2146 \cdot 1$ | 240'64 ${ }^{1}$ | $243 \cdot 03{ }^{2}$ | 484*191 | 2138.2 | $194.35^{\circ}$ | 191*969 | $386 \cdot 718$ |

[^9]| $b$ |  | $\varepsilon$ Indi. |  |  | 1881, October 19. |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |
|  |  | $\mathbf{r}$ |  | h m | r | r | R |
| - $58 \cdot 2$ | 201.891 | 204.307 | $406 \cdot 384$ | $17^{\circ} 2$ | $230 \cdot 914$ | $228{ }^{*} 45^{2}$ | 459'574 |
| $124^{\circ} 0$ | 204.286 | 201.830 | 406.319 | $1{ }^{1} 16^{\circ} 3$ | 228.488 | $230^{\circ} 926$ | $459{ }^{\circ} 628$ |
| $13{ }^{1} 3$ | $201 \cdot 882$ | 204.311 | $406 \cdot 400$ | $138^{\circ} 0$ | $230^{\circ} 895$ | $228 \cdot 464$ | $459{ }^{\circ} 586$ |
| 1 $55^{\circ} \mathrm{O}$ | 204*278 | 201•847 | $406 \cdot 347$ | 1 $47^{\circ} 3$ | ${ }^{228}{ }^{\circ} 493$ | $230 \cdot 876$ | $459{ }^{\circ} 602$ |
| Bar. $30^{\text {in }}$ | Ther. | - . Ru | $+4^{\circ} 0$ | es 2-3. | Steadine | 2-3. | P. $9^{\circ} 50$ |

Sirius.
$a$
 19
1881, October 19. b Bar. $30^{\circ} 22$. Ther. $60^{\circ} 0$.
. Run
I•8. -

## Sirius. 1881, October 30.



$\epsilon$ Indi.
b

| h m | r | - $\mathbf{r}$ | R | h m | r | r | R |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $131^{\circ}$ | 204*288 | $201 \cdot 823$ | $406 \cdot 323$ | $13^{8 \cdot} 4$ | $228 \cdot 403$ | $230 \cdot 887$ | $459^{\circ} 5^{23}$ |
| $157^{\circ} 2$ | 201•827 | 204*296 | $406 \cdot 352$ | $14^{\circ} 9$ | $230 \cdot 884$ | $228 \cdot 427$ | $459^{*} 549$ |
| 23.9 | 204.295 | 201•799 | 406.328 | 2 11.9 | $228 \cdot 404$ | $230 \cdot 839$ | 459.500 |
| $227^{\circ} 7$ | 201.805 | $204 \cdot 260$ | $406 \cdot 316$ | $220 \cdot 6$ | $230 \cdot 886$ | $228 \cdot 401$ | $459{ }^{\circ} 5{ }^{\text {I }}$ |

Bar. $30^{\circ} 35$. Ther. $50^{\circ}$ 5. Run +3.5 . Images 2. Steadiness 2-3. F.P. $9^{\circ} 5^{\circ}$.
Bar. $30^{\circ} 35$. Ther. $50^{\circ}$ 5. Run +3.5 . Images 2. Steadiness 2-3. F.P. $9^{\circ} 5^{\circ}$.
$\varepsilon$ Indi.

\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline \multicolumn{4}{|l|}{} \& \multicolumn{4}{|l|}{} <br>
\hline \& \& \& ${ }_{459}{ }^{\mathrm{R}}{ }^{5} 53$ \& ${ }_{23}^{\mathrm{h}} \mathrm{SI}^{\mathrm{m}}{ }^{\circ} \mathrm{O}$ \& 204*358 \& ${ }_{201}^{\text {r }} 877$ \& ${ }_{406}{ }^{\text {R }} 388$ <br>
\hline 23

0 $5^{\circ}{ }^{\circ} 5$ \& 228.456
230 \& $230 \cdot 932$
228.447 \& 459.553 \& 23
23
23
51
$59^{\circ}$

0 \& 204.358
201.879 \& $201 \cdot 877$
204 \& ${ }_{406}{ }^{\circ}{ }^{3} 386$ <br>
\hline $15^{\circ} \mathrm{I}$ \& 228.437 \& $230^{\circ} 945$ \& $459{ }^{\circ} 561$ \& $\bigcirc{ }^{-23}{ }^{2}$ \& $204{ }^{327}$ \& 201*865 \& $406 \cdot 360$ <br>
\hline - 41.6 \& $230^{\circ} 907$ \& 228.432 \& $459^{\circ} 53^{\text {1 }}$ \& - $33^{\circ} \circ$ \& 201-875 \& $204 \cdot 346$ \& $406 \cdot 393$ <br>
\hline
\end{tabular}




Bar. $30^{\text {in }} 0$. Ther. $60{ }^{\circ}$. Run +3.2 . Images 2. Steadiness 2-3. F.P. $9 \cdot 50$.


Bar. $30^{\circ} 00$. Ther. $55^{\circ} 3$. Run $+3 \%$. Images 3. Steadiness 3. F.P. $9 \cdot{ }^{\circ} 0$.

Sirius.
b

| h m |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $32 \cdot 0$ | 191.301 | 193.739 | $385^{\circ} \cdot 313$ | 39.4 | 196.997 | 194.550 | $391 \cdot 823$ |
| 326.1 | 193.771 | 191. 333 | 38.5328 | 318.6 | 194.558 | 196.996 | 391•808 |
| $333^{\circ} 5$ | 191.353 | $193{ }^{\circ} 785$ | $385^{\circ} 351$ | $3400^{\circ}$ | $197{ }^{\circ} 038$ | 194.566 | $391 \cdot 820$ |
| 356 | $193 \cdot 788$ | 191.340 | $38 \cdot{ }^{\circ} 3^{12}$ | $348{ }^{\circ} 4$ | $194{ }^{\circ} 577$ | $197^{\circ} 003$ | $391{ }^{\circ} 7^{8}$ |

Bar. $29^{\text {in }} 96$. Ther. $54^{\circ} 8$. Run $+2 \cdot 8$. Images $2-3$. Steadiness 2-3.
$\alpha_{2}$ Centauri. 1881, November 13.

| ${ }_{4}{ }^{\text {m }} 8$ | $194 \cdot 412$ |  | . 627 | ${ }_{6}$ | $240 \cdot 569$ |  | 484.071 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 721.1 | 192-012 | 19 | $386 \cdot 698$ | ${ }_{7} 75 \cdot 6$ | $243 \cdot 067$ | $240 \cdot 661$ | $484 \cdot 121$ |
| $730 \cdot 9$ | $194 \cdot 487$ | 192.040 | $386 \cdot$ 701 | 739.7 | $240 \cdot 690$ | $243 \cdot 147$ | 484.090 |
| $755 \cdot 7$ | $192 \cdot 025$ | 194*495 | $386 \cdot 658$ | $748 \cdot 5$ | 243. 188 | $240 \cdot 666$ | $484 \cdot 082$ |

Bar. $30^{\circ} 15$. Ther. $47^{\circ} 9$. Run +3.2 . Images 3 . Steadiness 3 .

## Sirius.

$a$

| h | m |  |  | R |  |  | $\mathbf{r}$ | r |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2 | $17^{\circ} 0$ | ${ }_{196}{ }^{8} 88$ | 194.387 | 391•730 |  | $25^{\circ} \mathrm{O}$ | 191.237 | 193.734 | $385 \cdot 368$ |
| 2 | $40^{\circ} 1$ | 194.419 | 196.941 | 391•726 | 2 | $32 \cdot 3$ | 193.724 | 191.272 | $385 \cdot 361$ |
| 2 | $48^{\circ}$ | 196.900 | 194*429 | 391.666 | 2 | $56 \cdot 7$ | 191.325 | $193 \cdot 763$ | $385 \cdot 375$ |
| 3 | 14.8 | 194.488 | $197 \cdot 005$ | 391•757 | 3 | $4 \cdot 8$ | 193.792 | 191•277 | ${ }^{8} 8 \cdot 336$ |

Bar. $30^{\text {in }} \circ 0$. Ther. $53^{\circ}{ }^{\circ}$. Run $+2 \cdot$. Images 3. Steadiness 3. F.P. $9 \cdot 50$.


Bar. $30 \cdot 26$. Ther. $51 \circ$. Run +3.8 . Images 2. Steadiness 2-3. F.P. $9 \cdot 50$.
$\epsilon$ Indi.
$a$

| h m |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 46•3 | $230 \cdot 894$ | 228.414 | 459.507 | - 53.9 | $201 \cdot 858$ | -333 | 8 |
| $9 \cdot 7$ | 228.418 | $230 \cdot 909$ | 459.539 | $2 \cdot 5$ | 204.309 | $201 \cdot 888$ | ${ }_{406} 389$ |
| 116.6 | $230 \cdot 899$ | 228.409 | 459.525 | 23.5 | $201 \cdot 841$ | 204.326 | $406 \cdot 372$ |
| 140.5 | 228.423 | 230 | $459 \cdot 53$ | 33.9 | 204 | $201 \cdot 8$ | 40 |

Bar. $30^{\circ} \cdot 25$. Ther. $5^{\circ}{ }^{\circ}{ }_{5}$. Run +4.1 . Images 2. Steadiness 2. F.P. $9 \cdot 50$.
$a_{2}$ Centauri.
$b$

| h | m | r | r | r | r |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 6 | $54 \cdot 9$ | $240 \cdot 551$ | $243 \cdot 048$ | $484 \cdot 077$ | h | m |
| 7 | $25 \cdot 6$ | $643 \cdot 136$ |  |  |  |  |
| 7 | $240 \cdot 658$ | $484 \cdot 095$ | 7 | $15 \cdot 7$ |  |  |
| 7 | $33 \cdot 3$ | $240 \cdot 667$ | $243 \cdot 164$ | $484 \cdot 104$ | 7 | $43 \cdot 3$ |
| 8 | 3.5 | $243 \cdot 174$ | $240 \cdot 742$ | $484 \cdot 112$ | 7 | $55 \cdot 0$ |

1881, November 18.
b

Sirius.
$b$


Bar. $30^{\circ} \circ$ In. Ther. $57^{\circ} \circ$. Run +3.7 . Images 2. Steadiness 2. F.P. $9^{\circ} 5^{\circ}$.
$\epsilon$ Indi. 1881, November 24.

| h m |  | r |  | h m |  | ${ }^{\mathbf{r}}$ | R |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $23^{6 \cdot 1}$ | 201.821 | 204*314 | $406 \cdot 386$ | $243^{\circ} 2$ | $230 \cdot 867$ | $228 \cdot 404$ | $459 \cdot 546$ |
| $259 \cdot 8$ | 204.235 | $201 \cdot 841$ | $406 \cdot 346$ | 251.5 | 228.395 | $230 \cdot 840$ | $459 \cdot 518$ |
| $38 \cdot 1$ | $201 \cdot 837$ | 204.282 | 406.395 | $316 \cdot 1$ | $230 \cdot 842$ | 228.405 | 459. 549 |
| $337 * 3$ | 204*269 | 201 789 | $406 \cdot 358$ | $328 \cdot 3$ | 228.415 | $230 \cdot 896$ | 459.622 |

Bar. $30^{\circ} 18$. Ther. $57^{\circ} 9$. Run +3.5 . Images 3. Steadiness 3. F.P. 9.50 .

Sirius.

|  | $a$ |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| $\mathbf{h}$ | m | r | r |  |
| 4 | $3 \cdot 6$ | $194 \cdot 596$ | $197 \cdot 093$ | $391 \cdot 875$ |
| 4 | $28 \cdot 5$ | $197 \cdot 073$ | $194 \cdot 594$ | $391 \cdot 830$ |
| 4 | $36 \cdot 5$ | $194 \cdot 603$ | $197 \cdot 037$ | $391 \cdot 796$ |
| 4 | $58 \cdot 7$ | $197 \cdot 067$ | 194.590 | $391 \cdot 799$ |

1881, November 25. b

Bar. $29^{\circ} 98$. Ther. $5^{\circ} \cdot 8$. Run $+2 \cdot 0$. Images 1-2. Steadiness 1-2. F.P. $9 \cdot 50$.

|  |  |  |  |
| :---: | :---: | :---: | :---: |
| $10 \cdot 9$ | 193.811 | 191.328 | $385 \cdot 308$ |
| $42 \mathrm{I} \cdot 3$ | 191.323 | 193.844 | 385.327 |
| $43^{\circ}$ | 193.815 | 191.326 | $385 \cdot 285$ |
| 451 | 191.351 | 193.824 | 385 |

## $\alpha_{2}$ Centauri. 1881, November 25.

$a$

|  | r | $r$ |  | h m | r |  | ${ }^{\text {R }}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $7{ }^{7} \cdot{ }^{-8}$ | 192.001 | 194.520 | $386 \cdot 673$ | $747 \cdot 8$ | $243 \cdot 151$ | $240 \cdot 653$ | 484.027 |
| $4 \cdot 2$ | 194.500 | 192.006 | $386 \cdot 632$ | $755^{\circ} 9$ | $240 \cdot 666$ | 243. 174 | 484.044 |
| 12.0 | $192 \cdot 024$ | 194.503 | 386.647 | 819.4 | $243 \cdot 161$ | $240 \cdot 690$ | 484.019 |
| 834.6 | 194.512 | 192.014 | $386 \cdot 637$ | $826 \cdot 9$ | $240 \cdot 691$ | 243.194 | $484 \cdot 045$ | Bur. $29^{\circ} 93$. Ther. $5^{\circ} 9^{\circ} 5$. Run $+2 \cdot 5$. Images $2-3$. Steadiness 3. F.P. $9^{\circ} 5^{\circ}$.

$$
a_{2} \text { Centauri. } \quad 1881, \text { November } 28 .
$$

b $a$

|  |  |  |  | $\mathrm{h}-\mathrm{m}$ |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 40 | $243 \cdot 166$ | 240.719 | $484 \cdot 136$ | $748 \cdot 9$ | $192 \cdot 056$ | 194 | 8 |
| $6 \cdot 6$ | $240 \cdot 729$ | 243.270 | $484 \cdot 189$ | $757 \cdot 1$ | 194.531 | 192.06 | $386 \cdot 731$ |
| 81 | 243.213 | 240.706 | 484.099 | 8 21.2 | $192 \cdot 058$ | 194.57 | 386 |
|  | $240 \cdot 783$ | 243 | 484.204 | 829 | 194 |  | 38 | Bar. $30 \cdot 04$ in Ther. $47 \times 7$. Run +4.5 . Images 1-2. Steadiness 2-3. F.P. $9 \cdot 50$.

## Sirius.

1881, December 1.

|  | r | r | R |  |  | r | $\mathbf{r}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $37 \cdot 6$ | 193.776 | 191.269 | $385 \cdot 307$ | 3 | $14^{\circ} 6$ | 194.587 | 197.036 | $391 \cdot 889$ |
| $326 \cdot 6$ | 191.323 | 193.796 | $385 \cdot 344$ | 3 | $20^{\prime} 1$ | 197.077 | 194.582 | 391.915 |
| $333 \cdot 0$ | 193.790 | 191.332 | $385 \cdot 338$ | 3 | $39 \cdot 6$ | 194.615 | $197 \cdot 092$ | $391 \cdot 928$ |
| $355{ }^{\circ} 4$ | 191•339 | 193.815 | $385 \cdot 341$ | 3 | $47^{\circ} 6$ | $197 \cdot 024$ | 194.667 | 391*900 | Bar. $30^{\circ}{ }^{\text {in }} \mathbf{2 5}$. Ther. $53^{\circ} 5^{\circ}$. Run $+2 \cdot 4$. Images 1-2. Steadiness 2. F.P. $9^{\cdot} 50$.

$e$ Eridani.

| h m | - | $\stackrel{r}{\text { r }}$ | ${ }^{\mathbf{R}}$ |
| :---: | :---: | :---: | :---: |
| $526^{\circ}$ | $256 \cdot 857$ | 254.353 | 511:380 |
| $55^{\circ} 9$ | 254.378 | $256 \cdot 853$ | 511*406 |
| 559.8 | 256.870 | 254.367 | 511.414 |
| $623^{\circ} 0$ | $254{ }^{\circ} 387$ | 256.821 | 511*389 |

1881, December 1.
$b$

| m |  | r | R |
| :---: | :---: | :---: | :---: |
| $533^{\circ} 9$ | $267^{\circ} 842$ | $270^{\circ} 311$ | $53^{\circ}{ }^{\circ} 327$ |
| $541^{\cdot} 8$ | $270^{\circ} 327$ | $267^{\circ} 832$ | $538^{\circ} 335$ |
| $7^{\circ} 6$ | $267 * 845$ | $270^{\circ} 334$ | $538^{\circ} 359$ |
| $615 \%$ | $270 \cdot 301$ | $267{ }^{\circ} 861$ | $538{ }^{\circ} 345$ |

$538^{R} 327$
$538^{\circ} 335$
$538^{\circ} 359$
$538^{\circ} 345$

Bar. $30^{\text {in }} 25$. Ther. $55^{\circ} \circ$. Run $+4^{\circ}$. . Images 1-2. Steadiness 2. F.P. $9 \cdot 50$.


Bar. $29^{\circ} 97$. Ther. $60^{\circ}$. . Run +4.3 . Images 2. Steadiness 2. F.P. $9 \cdot 50$.


|  |  |  | $\alpha_{2}$ Centauri. |  | 1881, December 9. |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| m |  |  | ${ }^{\text {R }}$ |  |  |  |  |
| $7 \quad 9.2$ | 243.118 | $240 \cdot 646$ | $484 \cdot 137$ | 716.8 | $192 \cdot 060$ | 194.486 | $386 \cdot 746$ |
| $732 \cdot 1$ | $24^{\circ} \cdot 741$ | $243 \cdot 144$ | $484 \cdot 156$ | 723.9 | 194.447 | 192.064 | $386 \cdot 694$ |
| ${ }_{8} 40.6$ | 243.142 | $240 \cdot 760$ | $488^{-146}$ | 750.2 | $192 \cdot 082$ | 194.454 | ${ }^{386 \cdot 676}$ |
| 86.5 | $240 \cdot 763$ | $243 \cdot 209$ | $484 \cdot 158$ | 259.4 | 194.499 | 192.059 | $386 \cdot 689$ |

Bar. $30^{\circ} 07$. Ther. $60^{\circ} \circ$. Run +3.3 . Images 2. Steadiness 2-3. F.P. $9^{\circ} 5^{\circ}$.


Bar. $30^{\circ} \circ 5$. Ther. $61^{\circ} 3$. Run $+2 \cdot 6$. Images 2-3. Steadiness 2-3. F.P. $9^{\circ} 5^{\circ}$.


Sirius.

|  |  |  |  |  |  | r | 1 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $258 \cdot 0$ | 194.616 | $196^{\circ} 975$ | $391 \cdot 893$ | $34^{*} 2$ | $193^{\circ} 734$ | 191.335 | $385 \cdot 335$ |
| $318 \cdot 7$ | 196.990 | $194^{\circ} 613$ | 391•854 | $313^{\circ}$ | 191.341 | 193*773 | $385 \cdot 359$ |
| $324 \cdot 8$ | $194^{\circ} 621$ | 197.076 | $391 \cdot 936$ | $33^{2} 5$ | $193 \cdot 747$ | 191.350 | $385 \cdot 308$ |
| $34^{\prime \prime} 9$ | $197^{\circ} 030$ | 194.645 | $391 \cdot 878$ | $340 \cdot 7$ | $191 \cdot 369$ | $193 \cdot 765$ | $3^{8} 5 \cdot 333$ |

$\zeta$ Tucanae. 1881, December 13. b

| h m |  |  | R | h | r | $r$ | 1 R |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $43^{1} 0$ | $202 \cdot 982$ | 200. 573 | $403 \cdot 667$ | $418 \cdot 8$ | 195.519 | 197.928 | 393.556 |
| $431 \cdot 3$ | $200 \cdot 684$ | 203.019 | $403 \cdot 814$ | $425^{\circ} 3$ | 197.909 | 195.529 | 393.547 |
| $438 \cdot 0$ | $202 \cdot 955$ | $200 \cdot 608$ | $403 \cdot 674$ | $445^{\circ}$ | $195.49^{6}$ | $197 \cdot 862$ | 393.467 |
| $457^{\circ}$ | $200 \cdot 622$ | 203.022 | $403 \cdot 756$ | 451.4 | 197.908 | 195. 502 | $39.3{ }^{\circ} \mathbf{5}^{\mathbf{5}}$ |

Bar. $29^{\circ} 99$. Ther. $6 \mathrm{r}^{\circ} \circ$. Ran $+3 \cdot 1$. Images $2-3$. Steadiness 3. F.P. $9^{\circ} 5^{\circ}$.

$e$ Eridani. 1881, December 16.
 Bar. $29^{\circ} 90$. Ther. $61^{\circ} \cdot{ }_{5}$. Run +4.3 . Images 2-3. Steadiness 2-3. F.P. $9^{\circ} 5^{\circ}$.


Bar. $30^{\circ} \cdot 24$. Ther. $60^{\circ} 0$. Run $+3 . \%$. Images 2. Steadiness 2-3. F.P. 9.50 .

Sirius. b

|  |  |  |  |
| :---: | :---: | :---: | :---: |
| 57 | 193.7 | 191.393 | $38 \cdot{ }^{\prime} 34$ |
| 420.1 | $191 \cdot 4$ | 193.763 | 38 |
| 27 | 193.788 | 191419 |  |
| 50 | 191*3 | 193* ${ }^{\text {\% }}$ | 385 |

1881, December 18. a

| ${ }^{\mathrm{h}} \mathrm{m}^{\text {m }}$ |  |  |  |
| :---: | :---: | :---: | :---: |
|  | 194.628 197.010 |  |  |
| $434^{\text {¹ }}$ | 194.676 | $197 \cdot 019$ | ${ }_{391} \cdot 85^{6}$ |
| $443 \cdot 1$ | $197 \cdot 079$ | $194 \cdot 676$ | 391-909 |

Bar. $30^{\circ}$ 22. Ther. $5^{\circ} 0^{\circ}$. Run $+2 \cdot 3$. Images 2-3. Steadiness 2-3. F.P. $9^{\circ} 5^{\circ}$.
$e$ Eridani.
b
$\epsilon$ Indi.
$b$

1881, December 20. $a$

|  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $236 \cdot 5$ | 204.232 | 201-902 | $406 \cdot 383$ | $24 \% \cdot 8$ | $228 \cdot 486$ | $230 \cdot 801$ | 459 |
| 3.3 | $201 \cdot 874$ | 204. 253 | $406 \cdot 396$ | 254.5 | $230 \cdot 802$ | 228.447 | 45 |
| 12 |  | $201 \cdot 892$ | $406 \cdot 405$ | $321 \cdot 1$ | 228.440 | $230 \cdot 818$ | 459 |
| 344 | $201 \cdot 89$ | 204.20 | $406 \cdot 39$ |  | $230 \cdot 79$ | 228.45 |  | Bar. $30^{\circ} \circ$ 2. Ther. $62^{\circ} \circ$. Run $+2 \cdot 0$. Inages 2-3. Steadiness 3. F.P. $90^{\circ} 5^{\circ}$.


|  |  |  | $e$ Eridani. |  |  | 1881, December 21. |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | R |  |  |  |  |  |
| $5.37^{2}$ | 254.419 | $256 \cdot 842$ | 511.430 |  | $44^{\circ} 6$ | 270. 297 | 267.910 | $538^{\cdot} 3^{80}$ |
| ${ }_{6} 4^{\circ} 2$ | $256 \cdot 933$ | $254 \cdot 296$ | 511.404 |  | $5^{2 \cdot} 3$ | $267 \cdot 886$ | $270 \cdot 293$ | $538 \cdot 354$ |
| 611.1 | 254.331 | $256 \cdot 913$ | $511 \cdot 420$ |  | $18 \cdot 3$ | $270 \cdot 385$ | $267 \cdot 775$ | $538 \cdot 339$ |
| $6+1 \cdot 0$ | 256.908 | $254 \cdot 322$ | 511414 | 6 | $30 \cdot 2$ | 26\% % | $270 \cdot 410$ | $538 \cdot 367$ |

Bar. $30^{\circ}$ in 10 . Ther. $61^{\circ} \circ$. Run +3.9 . Inages 2. Steadiness 3. F.P. $9 \cdot 50$.
$\alpha_{2}$ Centauri.

| h m | $\mathbf{r}$ | r | ${ }^{\text {R }}$ |
| :---: | :---: | :---: | :---: |
| $9 \cdot 2 \cdot 6$ | 194.482 | 192.032 | $386 \cdot 621$ |
| 923.4 | 192.021 | 194.529 | $386 \cdot 659$ |
| 929.7 | 194.539 | 191•997 | $385 \cdot 646$ |
| 953.9 | 192.027 | 194.475 | $386 \cdot 615$ |

1881, December 23. b

Bar. in
Bar. $30^{\circ} \circ 9$. Ther. $53^{\circ} 5$. Run +3.8 . Images 1. Steadiness 2. F.P. $9 \cdot 50$.

| $a \sim$ |  |  |  | 1881, December 24. b |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |
| 412.0 | 197.06! | 194.611 | $391 \cdot 848$ | $418 \cdot 9$ | 191.319 | $193 \cdot 816$ | $385^{\cdot 29}$ |
| 435.4 | 194.604 | $197 \cdot 119$ | $391 \cdot 882$ | $426 \cdot 6$ | 193.820 | $191 \cdot 348$ | $385^{\cdot} 3^{22}$ |
| $442 \cdot 8$ | 197.087 | 194.617 | 391.857 | $449^{\circ} 5$ | 191.368 | $193 \cdot 807$ | $385^{\circ} 3^{16}$ |
| 5777 | 194.629 | 197.089 | $391 \cdot 855$ | $459{ }^{\circ}$ | $193.83{ }^{2}$ | 191•329 | $385^{\cdot 297}$ |

Bar. $30^{\circ}$ in 06 . Ther. $60^{\circ} 8$. Run $+4 \cdot 0$. Images $2-3$. Steadiness 3. F.P. $9 \cdot 50$.

| $b$ |  |  | $a_{2}$ Centauri. |  | 1881, December 25. |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| h |  |  |  |  |  |  |  |
| 717.2 | $240 \cdot 642$ | $243 \cdot 147$ | $484 \cdot 122$ | $725^{\circ} \mathrm{O}$ | 194.470 | 192.002 | $386 \cdot 653$ |
| $74^{\circ}{ }^{\circ}$ | $243 \cdot 167$ | $240 \cdot 688$ | $484 \cdot 099$ | $73^{2 \cdot} 7$ | $192 \cdot 026$ | 194.48 | $386 \cdot 676$ |
| $75^{\circ}{ }^{\circ}$ | 240.714 | $243 \cdot 153$ | 484.086 | 759.1 | 194.492 | 192.001 |  |
| $815 \cdot 8$ | 243.220 | $240 \cdot 707$ | $484 \cdot 101$ | $87 \cdot 0$ | 192.014 | 194.473 | 386.612 |

Bar. $30^{\text {in }} 07$. Ther. $59^{\circ}$. . Run $+2 \cdot 6$. Images 2. Steadiness 2. F.P. $9 \cdot 50$.



Sirius.

| h m |  |  | R |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 359.5 | 193.787 | 191.341 | $385 \cdot 304$ | $4 \quad 3.9$ | 194.608 | 197.080 | 391.870 |
| 416.9 | 191*342 | 19.3 -814 | $385 \cdot 316$ | $411 \cdot 6$ | 197.094 | 194*611 | 391.879 |
| 422.4 4 | $193 \cdot 796$ | 191.328 | $385 \cdot 279$ | 427.6 | 194.630 | 197.097 | $39 \mathrm{r} \cdot 887$ |
| 438.8 | $191 \cdot 332$ | 193.826 | $3^{8} 5 \cdot 302$ | 433.4 | $197 \cdot 083$ | 194.650 | $391 \cdot 889$ |

Bar. $30 \cdot 04$. Ther. 69.5 . Run $+2 \cdot 4$. Images 2. Steadiness 2. F.P. 9.42 .

1882, January 17. $b$

| m | $r$ | r | ${ }^{\mathbf{R}}$ |
| :---: | :---: | :---: | :---: |
| 753.7 | 194.473 | 191.973 | 386. ${ }^{881}$ |
| 813.2 | 192.001 | 194.510 | $386 \cdot 629$ |
| 819.8 | 194.499 | 191.989 | $386 \cdot 602$ |
| $845 \cdot 9$ | 192.017 | 194.512 | $386 \cdot 636$ |


| h | m | r | r | R |
| :---: | :---: | :---: | :---: | :---: |
| 8 | $\mathrm{I}^{\circ} \cdot 0$ | $240^{\circ} \cdot 712$ | $243^{\prime} \cdot 190$ | $484^{\circ} \cdot 095$ |
| 8 | $7 \cdot 6$ | $243^{\cdot 195}$ | $240 \cdot 680$ | $484^{\circ} \cdot 05$ |
| 8 | $28 \cdot 1$ | $240^{\circ} \cdot 747$ | $243 \cdot 234$ | $484^{\circ} \cdot 138$ |
| 8 | $35^{\circ} \cdot 6$ | $243 \cdot 186$ | $240 \cdot 716$ | $484^{\circ} \cdot 053$ |

Bar. $30^{\circ} 05$. Ther. $67^{\circ} \circ$. Run $+3 \cdot 2$. Images 2-3. Steadiness 2-3. F.P. $9 \cdot 50$.

$e$ Eridani. b

|  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 19. | $270 \cdot 318$ | $267 \cdot 833$ | $538 \cdot 33^{1}$ | $6_{6} 2.9$ | 254.37 | $256 \cdot 844$ | $511 \cdot 39$ |
| 39 | 267.835 | $270 \cdot 299$ | $538 \cdot 318$ | ${ }_{6}^{6} 33 \cdot 1$ | $256 \cdot 8$ | 254.370 | 511-394 |
| 646 | $270 \cdot 325$ | $267 \cdot 828$ | $538 \cdot 33$ | 653.7 | $254 \cdot 369$ | $256 \cdot 842$ | 511.398 |
| $9 \cdot 8$ | 26-849 | 270 | $538 \cdot 2$ | 1 | $256 \cdot 822$ | $254 \cdot 385$ | 511 |

$\epsilon$ Indi.
$a$

| h m |  |  | R |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $351 \cdot 3$ | $230 \cdot 785$ | 228.344 | 459.454 | $357 \cdot 7$ | 201.828 | 204*289 | 406.427 |
| $413^{\circ} \mathrm{O}$ | $228 \cdot 39^{2}$ | $230 \cdot 795$ | 459.528 | $45 \cdot 8$ | 204.285 | 201•798 | 406-399 |
| $420 \cdot 6$ | $230 \cdot 782$ | $228 \cdot 382$ | 459.511 | 428.0 | 201.801 | 204.260 | 406.391 |
| $445^{\circ}$ | 228-335 | $230 \cdot 809$ | 459.507 | $36 \cdot 1$ | 204.248 | 201-809 | 406.391 |

1882, Jauuary 20.
b

Bar. $30^{\circ} 05$. Ther. $63^{\circ} \cdot 0$. Run $+4^{\circ}$. Images 2-3. Steadiness 3. F.P. $9 \cdot 50$.

| $a^{1}$ |  |  | $\alpha_{2}$ Centauri. |  | 1882, January 20. |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |
| 10 34.5 | 108.670 | 108.678 | 217.472 | 1048.9 | $114 \cdot 133$ | 114.140 | $228 \cdot 391$ |
| 1041.9 | 108.716 | 108.729 | $217 \cdot 564$ | $10.55^{\circ} 2$ | 114.129 | $114 \cdot 143$ | $228 \cdot 387$ |
| $1119{ }^{\circ}$ | 108. 708 | $108 \cdot 740$ | $217 \cdot 548$ | 113.5 | 114.140 | 114.150 | 228.401 |
| 1126.7 | 108.721 | 108.747 | 217. 565 | $1110 \cdot 2$ | 114.169 | 114.157 | 228.434 |

[^10]

Bar. $30^{\circ} \circ 3$. Ther. $65^{\circ}$. Run $+3 \cdot 3$. Images 2. Steadiness 2. F.P. $9^{\circ} 50$.

| $a$ |  |  |  | 1882, January 21. <br> b |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| h m |  |  |  | h m | $r$ | r | R |
| $7 \quad 16 \cdot 3$ | $191 \cdot 963$ | 194.465 | 386.627 | 723.3 | $243 \cdot 147$ | $240 \cdot 664$ | 484.112 |
| $739^{\circ} 2$ | 194.428 | $19^{2} .041$ | 386.622 | $731 \cdot 4$ | $240 \cdot 688$ | $243 \cdot 117$ | 484.075 |
| 745.5 | $192 \cdot 028$ | 194.451 | $386 \cdot 623$ | ${ }_{7}^{7} 52 \cdot 5$ | $243 \cdot 149$ | $240 \cdot 709$ | 484.068 |
| $89^{\circ}$ | 194.503 | 192.008 | $386 \cdot 633$ | $8 \quad 1.3$ | 240. 718 | $243 \cdot 169$ | 484*0ヶ9 |
| Bar | $\text { in } 0_{0 \cdot 03 .}$ | her. $65^{\circ}$ | Run | 7. | mages 2. | Steadi | 2-3. |


|  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $8 \quad 8 \cdot 9$ | 112.833 | 115.274 | $228 \cdot 358$ | 816.1 | 109. 855 | 107.429 | $217 \% 533$ |
| $832 \cdot 8$ | 115.306 | 112.875 | 228-406 | 825.5 | $107 \cdot 387$ | 109.915 | 217.538 |
| $839^{\circ}$ | 112.872 | 115.321 | $228 \cdot{ }^{11}$ | 845.5 | 109.884 | $107 \cdot 429$ | 217.526 |
| 9 1.1 | 115.290 | $112 \cdot 870$ | $228 \cdot 356$ | 854.4 | $107 \cdot 443$ | 109.905 | 217.552 |

[^11]

Bar. $29^{\circ} 98$. Ther. $65^{\circ} \circ$. Run $+2 \cdot 4^{\circ}$. Images 2-3. Steadiness 3. F.P. $9^{\circ} 5^{\circ}$.

|  | $a^{l}$ |  | $\alpha_{2}$ | $b^{1}$ |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| h | $r$ | r |  |  | $r$ | r |  |
| 1019.6 | 107.515 | $109.95{ }^{2}$ | 217.600 | $1026 \cdot 4$ | 115.321 | 112.915 | 228*368 |
| 1040.1 | 109.933 | 107.510 | 217.564 | $1034 \cdot 1$ | 112.944 | 115.355 | $228 \cdot 427$ |
| $1047 \cdot 1$ | 107.515 | 109.923 | 217.554 | $1054{ }^{\circ}$ | 115.341 | 112.954 | 228.411 |
| $11.10 \cdot 8$ | 109.944 | $107 \cdot 523$ | 217.572 | $11 \quad 2.5$ | $112.95^{8}$ | 115.346 | $228 \cdot 416$ |
| Bar. | $9^{\circ} 92 . \mathrm{Tl}$ | r. $60^{\circ} 0$ | un +2 | Images | Steadin | Ss 2. F. | $9^{\circ}$ |



|  |  |  | $\alpha_{2}$ Centauri. |  | 1882, February 3. |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| h m |  |  |  |  |  |  |  |
| 1029.2 | 114.138 | 114.134 | 228.403 | $10.50 \cdot 3$ | 108.734 | 108.723 | 217.573 |
| 1039.3 | 114.133 | 114.106 | $228 \cdot 365$ | 1059.0 | 108.727 | 108.728 | 217. 566 |
| $1125^{\circ} \mathrm{O}$ | 114.145 | 114.146 |  | 118.3 | $108.73{ }^{\circ}$ | 108.729 | 217.569 |
| ${ }^{11} 32.5$ | 114.155 | $114 \cdot 148$ | 228.399 | 1116.0 | 108.734 | 108•739 | ${ }^{217} \cdot 580$ |

Bar. $29^{\circ} 81$. Ther. $55^{\circ}{ }^{\circ}$. Run $+0 \cdot 6$. Images 2. Steadiness 2.


| $b^{1}$ |  |  | $\alpha_{2}$ Centauri. |  | 1882, February 6. <br> $a^{1}$ |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| h m |  |  |  |  |  |  |  |
| $828 \cdot 9$ | 112.909 | 115.361 | 228.502 | 8.35 .5 | $109 \cdot 898$ | 107.438 | $217 \cdot 564$ |
| $85^{1} \cdot 3$ | 115.273 | $112 \cdot 892$ | 228.373 | 844.3 | 107.446 | $109 \cdot 874$ | ${ }^{217} \cdot 538$ |
| 858.4 | 112.917 | 115.287 | 228.406 | 96.5 | 109.854 | 107.482 | 217.531 |
| 9.245 | $115{ }^{\circ} 293$ | 112.882 | $228 \cdot 353$ | 916.2 | 107.509 | 109.886 | ${ }^{21} 7 \cdot 5^{80}$ |

Sirius.
b

|  |  |  |  | h m |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 937.3 | 191.399 | 193.840 | $385 \cdot 373$ | 944.3 | 197.086 | 194.652 | $391 \cdot 874$ |
| 10.3 | 193.801 | 191.338 | $385 \cdot 287$ | 9.54.3 | 194.636 | 197069 | 391.848 |
| 108.3 | 191.334 | $193 \cdot 789$ | $3{ }^{38} \cdot 275$ | 1014.4 | $197 \cdot 122$ | 194.661 | $391 \cdot 986$ |
| $10.28 \cdot 1$ | 193:776 | 191:313 | $385 \cdot 25^{8}$ | $10.21 \cdot 1$ | 194*671 | $197 \cdot 118$ | 391•948 |
| Bar. | in 0. | $58^{\circ}{ }_{5}$ | un +1 | Images 3 | tea | 3. F.P |  |


| $\begin{array}{ccc} \\ a^{1} & a_{2} \text { Centauri. } & \text { 1882, February } 8 .\end{array}$ |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| h mi |  |  |  | h m |  |  |  |
| $1216 \cdot 0$ | 107. 543 | 109.969 | 217. 592 | 1222.0 | 115.366 | 112.963 | 228.410 |
| $1236 \cdot 5$ | 109.972 | 107. 543 | 219.590 | 1229.4 | 112.980 | 115.377 | 228.436 |
| 1243.5 | 107.545 | $100^{-981}$ | 217.600 | $1250{ }^{12}$ | 115.400 | 112.960 | ${ }^{228} 8^{\circ} \cdot 435$ |
| $13 \quad 704$ | 109.991 | 107. 557 | 217.617 | 13003 | 112.947 | 115.395 | 228.415 |

Bar. $30^{\circ} \cdot 2$. Ther. $46^{\circ} \circ$. Run +0.2 . Images 2. Steadiness 2. F.P. $9 .{ }_{5}$.


| $a^{1}$ |  |  | $\alpha_{2}$ Centauri. |  | 1882, February 11. |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| h m |  | ${ }^{\mathbf{r}}$ |  | h |  |  |  |
| $1035^{\circ} 3$ | 109.943 | 107. 553 | $217 \cdot 618$ | 1042.2 | 112.933 | 115*332 | 228.386 |
| 10 $58 \cdot 8$ | $107 \cdot 505$ | 109.895 | $217 \cdot 509$ | $10{ }^{1} \mathrm{I} \cdot 8$ | 115.325 | 112.930 | $228 \cdot 370$ |
| $115^{\circ} \mathrm{F}$ | 109.946 | 107.490 | 217.542 | 1113.4 | 112.960 | 115.367 | $228 \cdot 43^{2}$ |
| 1131.2 | 107. 545 | 109.958 | 217.598 | 1121.5 | 115.319 | 112.923 | $228 \cdot 343$ |

Bar. $29^{\circ} 99$. Ther. $70^{\circ} \circ$. Run $+2 \cdot$. Images $2-3$. Steadiness $2-3$. F.P. 9.50 .

| $b^{1}$ |  |  |  | $\alpha_{2}$ Centauri. |  | 1882, February 12. |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| h |  |  |  |  |  |  |  |  |
|  | 18.1 | 112.907 | 115.313 | 228.356 | $1025^{\circ} 3$ | 109.884 | 107.521 | 217.534 |
|  | $42^{\circ} \mathrm{O}$ | 115.254 | 112.960 | $228 \cdot 337$ | 1034.2 | 107. 544 | 109.954 | 217.622 |
|  | $50^{\circ} 5$ | 112.941 | 115.312 | 228.370 | 1057.7 | $100^{\circ} 957$ | $107 \cdot 525$ | $217 \cdot 592$ |
| 11 | 19.4 | 115.342 | 112.943 | $228 \cdot 389$ | $11{ }^{\text {9*7 }}$ | $107 \cdot 497$ | 109.935 | 217.537 |
|  | Bar. |  | $66^{\circ}$. | un $+2 \cdot n$ | mage | Steadin | 3. |  |



| $a_{2}$ Centauri. 1882, Feb |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | m |  | r |  |
| $7{ }^{7} 50 \cdot 4$ | 192.009 | 194.453 | $386 \cdot 600$ | $757 \cdot 1$ | $243 \cdot 140$ | $240 \cdot 713$ | $484 \cdot 053$ |
| 811.0 | 194.470 192.029 | 191.991 194.460 | $386 \cdot 580$ $386 \cdot 605$ |  | $240 \cdot 727$ $243 \cdot 165$ | $243 \cdot 160$ $240 \cdot 751$ | $484 \cdot 076$ $484 \cdot 075$ |
| $844^{1}$ | 194.454 | $192 \cdot 065$ | $386 \cdot 627$ | $836 \cdot 7$ | $240 \cdot 762$ | $243 \cdot 169$ | 484.080 |
| Bar. $29^{\text {in }} 99$. Ther. $67^{\circ} \mathrm{O}$. Run $+4^{\circ}$ O. Images 1-2. Steadiness $2-3$. F.P. $9 \cdot 5$ |  |  |  |  |  |  |  |


| $b^{1}$ |  |  | $\alpha_{2}$ Centauri. |  | 1882, February 16. |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| h |  |  |  | h m |  |  |  |
| $1147^{\circ} \mathrm{O}$ | 114.157 | 114.166 | 228.417 | $1154^{\circ} 1$ | $108 \cdot 748$ | 108.724 | . 560 |
| 1213.0 | 114.156 | 114.149 | 228.391 | 1270 | 108.742 | 108.784 | 217.609 |
| 1219.2 | 114.159 | 114.171 | 228.413 | 1226.2 | 108.760 | $108 \cdot 749$ | $217 \cdot 587$ |
| 1236.5 | 114.218 | 114*159 | 228.456 | 1242.6 | 108.770 | 108.748 | 217.592 |

Bar. $30^{\circ}{ }^{\circ} 2 \mathrm{I}$. Ther. $59^{\circ} \circ$. Run +2.3 . Images 1. Steadiness I. F.P. $9.5^{\circ}$.

| $a^{1}$ |  |  | $\alpha_{2}$ Centauri. |  | 1882, February 17. |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |
| $816 \cdot 1$ | $109 \cdot 895$ | 107.467 | $217 \cdot 614$ | 823.6 | 112.893 | 115.285 | 228.41 |
| 838.4 | 107.463 | 109.883 | 217.571 | $831 \cdot 7$ | 115.304 | 112.859 | 228.39 |
| $845 \cdot 8$ | 109.877 | 107.464 | 217.557 | 854.5 | 112.886 | 115.260 112.865 | $228 \cdot 35$ |
| 913.7 | 107*464 | 109.903 | 217.554 |  | 115.293 | 112.865 | 228.3 |

Bar. $30^{\circ}$ in 10 Ther. $64^{\circ} \circ$. Run $+2 \cdot 5$. Images 3. Steadiness 3. F.P. $9 \cdot 50$.

| $a \quad \mathrm{~S}$ |  |  |  | . 1882, February 17. |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| h m |  |  |  | h m | $\mathbf{r}$ |  |  |
| 945.8 | 197.054 | 194.660 | $39 \times 849$ | 953.3 | 191.405 | 193.844 | $385^{\prime} 39^{2}$ |
| ${ }_{10} 10.9$ | 194*686 | 197•105 | $31^{1.940}$ | $10 \quad 0.3$ | 193.787 | 191.355 | 385.288 |
| $1021 \cdot 3$ | 197.053 | 194.677 | $391 \cdot 888$ | 1031.4 | 191.370 | $193 \cdot 733$ | $385 \cdot 273$ |
| 10473 | 194.690 | $197 \cdot 089$ | 391•961 | 1039.9 | 193.813 | 191*334 | $38{ }^{\circ} \cdot 327$ |


$\alpha_{2}$ Centauri. 1882, February 18.

| h | m |  | ${ }^{\mathbf{r}}$ |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $28 \cdot 5$ | 114.088 | 114.090 | $228.35{ }^{2}$ | $940 \cdot 6$ | 108.670 | 108.738 | 217.571 |
| 9 | $34^{\circ} 2$ | 114.117 | 114.094 | 228.380 | 947.9 | 108.703 | 108.727 | 257*587 |
| 10 | 11.2 | 114.151 | 114.134 | 228.426 | $956 \cdot$ | 108.686 | 108.659 | 217.495 |
| 10 | 19.5 | 114*119 | 114.123 | $228 \cdot 378$ | 103.4 | 108.686 | 108.693 | 217. $5^{24}$ |

Bar. $30^{\circ} \cdot 08$. Ther. $65^{\circ}$ o. Run +1 1. . Images 3. Steadiness 3. F.P. $9 \cdot 5^{\circ}$.

Sirius. 1882, February 19.
$b \quad a$

| m | $r$ | $r$ | R | h m | $r$ |  | R |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 922.6 | 193.797 | 193.778 | 385. 299 | $927 \cdot 8$ | 194*713 | 194.713 | 391•953 |
| $941 \cdot 6$ | 191.398 | 191.366 | $385 \cdot 296$ | $934 \cdot 5$ | 197-096 | 197.143 | $391 \cdot 9^{68}$ |
| 951.6 | 191.413 | 191.386 | $385 \cdot 336$ | $958 \cdot 7$ | 197-113 | 197110 | 391-962 |
| 1013.6 | 193.805 | 193.780 | $385 \cdot 336$ | 10 5.4 | 194*700 | 194.664 | 391-906 |

Bar. $29^{\text {in }}$ 86. Ther. $71^{\circ}{ }^{\circ} 5$. Run $+1 \cdot 2$. Images $2-3$. Steadiness 2-3. F.P. $9 \cdot 50$.


Sirius.


Bar. $30^{\circ} 13$. Ther. $63^{\circ}{ }^{\circ}$. Run +0.4 . Images 3. Steadiness 3. F.P. $9 \cdot 5^{\circ}$.



$\zeta$ Tucanae. 1882, March 5.

| $632 \cdot 9$ | 197.867 | 195.448 | $393 \cdot 497$ | ${ }_{6}^{\text {h }}{ }_{41} \cdot{ }^{\text {m }}$ I | $200 \cdot 505$ | $202 \cdot{ }^{\text {r }}{ }^{2} 8$ | $403 \cdot 624$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $54 \cdot 3$ | 195.400 | 197.820 | $393 \cdot 444$ | $647^{\circ} \mathrm{O}$ | 202.918 | $200 \cdot 508$ | $403 \cdot 629$ |
| 72.3 | 197.820 | 195.382 | 393.445 | 710.2 | $200 \cdot 474$ | $202 \cdot 866$ | $403 \cdot 599$ |
| $26 \cdot 8$ | 195. 395 | 197 | 393.473 | 719.3 | $202 \cdot 8$ | 200 | 403 | Bar. $30^{\mathrm{in}}{ }^{15}$. Ther. $66^{\circ}$ O. Run $+2 \cdot 8$. Images 2. Steadiness $2-3$. F.P. $9 \cdot 50$.


| h m | $\mathbf{r}$ | $r$ |  | h m | $\mathbf{r}$ | r |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1117.7 | $240 \cdot 725$ | $243 \cdot 196$ | 484*0クロ | 11 22.3 | $194 * 488$ | 192.012 | $386 \cdot 627$ |
| $1136 \cdot 6$ | 243.178 | $240 \cdot 724$ | $484 \cdot 063$ | 11300 | 192.014 | 194.458 | $386 \cdot 601$ |
| II $4^{\circ} \mathrm{O}$ | $240 \cdot 735$ | $243 \cdot 148$ | 484.035 | $1149 \cdot 8$ | 194.459 | 191.996 | $386 \cdot 586$ |
| $12 \quad 3.5$ | $243 \cdot 176$ | $240 \cdot 727$ | $484 \cdot 05^{8}$ | $1157{ }^{\circ}$ | 192.013 | 194*456 | $386 \cdot 601$ |

Bar. $30^{\circ} \times{ }^{5}$. Ther. $65^{\circ}$. . Run $+3 \%$. Images 1-2. Steadiness 1. F.P. $9 \cdot 50$.


Bar. $30^{\circ} 14$. Ther. $59^{\circ} \circ$. Run $+2 \cdot 9$. Images $2-3$. Steadiness $2-3$. F.P. $9 \cdot 50$.

## Sirius.




Bar. $30^{\circ} 33$. Ther. $5^{\circ}{ }^{\circ}$. . Run +3.6 . Images 2. Steadiness 2. F.P. $9 \cdot 50$.
 Bar. $30^{\circ} \cdot 33$. Ther. $57^{\circ}$ O. Run $+1 \cdot \%$ Images 2-3. Steadiness 2-3.

## $e$ Eridani.



$e$ Eridani.
b

|  |  |  |  |
| :---: | :---: | :---: | :---: |
| 725.6 | $267 \cdot 837$ | $270 \cdot 289$ | $53^{8 \cdot 317}$ |
| $75^{\prime \cdot 1}$ | $270 \cdot 279$ | $267 \cdot 811$ | $53^{8 \cdot 284}$ |
| 80.6 | $267 \cdot 816$ | $270 \cdot 19^{\circ}$ | $538 \cdot 201$ |
| 822.7 | $270 \cdot 286$ | 26\% $\cdot 821$ | $538 \cdot 304$ |

1882, March 11. $a$

| h | m | r | r | R |
| :---: | :---: | :---: | :---: | :---: |
| 7 | $32 \cdot 8$ | $256 \cdot 859$ | $254 \cdot 396$ | $511 \cdot 449$ |
| 7 | $44 \cdot 3$ | $254 \cdot 45$ | $256 \cdot 862$ | $511 \cdot 503$ |
| 8 | $7 \cdot 2$ | $256 \cdot 848$ | $254 \cdot 415$ | $51 \cdot 463$ |
| 8 | $15 \cdot 3$ | $254 \cdot 375$ | $256 \cdot 877$ | $511 \cdot 45^{2}$ |

Bar. $29^{\circ} 97$. Ther. $63^{\circ} \circ$. Run $+2 \cdot 2$. Images 2-3. Steadiness 3-4. F.P. $9 \cdot 5^{\circ}$.

Sirius. b

| m | $r$ |  | R |
| :---: | :---: | :---: | :---: |
| $920 \cdot 5$ | 191.369 | 193.802 | $385 \cdot 299$ |
| $94^{\circ}{ }^{\circ}$ | 19.3 817 | 191.334 | $3^{88} \cdot{ }^{\circ} 87$ |
| $950 \cdot 5$ | 191.372 | $193 \cdot 833$ | $385 \cdot 345$ |
| $1016 \cdot 1$ | 193.820 | 191.353 | $385 \cdot 331$ |

1882, March 13.
$a$

|  | m | $r$ |  | R |
| :---: | :---: | :---: | :---: | :---: |
| 9 | $27 \cdot 8$ | $197 \cdot 115$ | 194.665 | 391.909 |
| 9 | $34^{\circ} 8$ | 194.648 | 1971 120 | $39^{1 \cdot 900}$ |
| 9 | $57 \cdot 6$ | 197.172 | 194.649 | 391.965 |
| 10 | $7 \cdot 6$ | 194.677 | $197^{104}$ | $39^{\circ} 93^{\circ}$ |

Bar. $30^{\circ} 15$. Ther. $61^{\circ}$ O. Run $+2 \cdot 0$. Images 2. Steadiness 2. F.P. $9 \cdot 50$.
$\zeta$ Tucanae.
b


1882, March 14.
a

Sirius.
a


1882, March 14. b

II $21 \cdot 3$ Bar. $30^{\text {in }} 12$. Ther. $61^{\circ}{ }_{5}$. Run $+2 \cdot 5$. Images 2-3. Steadiness 3. F.P. $9 \cdot{ }_{5}$.

Bar. $30^{\text {in }} 13$. Ther. $5^{\circ} \cdot{ }^{\circ}$. Run $+2 \cdot 0$. Images 2. Steadiness 2.

## Sirius.

b

| m | $r$ |  | R | h |  | $r$ |  | $\boldsymbol{R}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $842 \cdot 9$ | 191.347 | $193 \cdot 814$ | $385 \cdot 277$ | 8 | $49^{\circ} \circ$ | 197.141 | 194.668 | $391 \cdot{ }^{27}$ |
| $95^{\circ} \mathrm{I}$ | 193.806 | 191.348 | $385 \cdot 275$ | 8 | $58 \cdot 4$ | 194.678 | $197 \cdot 107$ | 391.904 |
| $910 \cdot 8$ | 191.361 | $193 \cdot 809$ | $385 \cdot 293$ | 9 | $16 \cdot 4$ | 197118 | 194.660 | 391.902 |
| $930 \cdot 6$ | 193.830 | 191*343 | $385 \cdot 303$ | 9 | 22.7 | 194*666 | 197'126 | $391 \cdot 918$ |

## Sirius.

$a$


Bar. $30^{\circ} 08$. Ther. $60^{\circ} 0$. Run +2.9 . Images 1-2. Steadiness 2. F.P. $9 \cdot 50$.

$\zeta$ Tucanae.
$a$

| ${ }_{7} 8.8$ | $195 \cdot 465$ |  |  | $\mathrm{h} \quad \mathrm{m}$ |
| :---: | :---: | :---: | :---: | :---: |
| 729.6 | 197.793 | $195 \cdot 372$ | 393.493 |  |
| $736 \cdot 9$ | 195*379 | $197 \cdot 755$ | $393 \cdot 49 \mathrm{r}$ | 744.4 |
| 0.7 | $197 \cdot 742$ | 195.285 | 393.498 | $75^{\circ}$ - |

1882, March 20. b

Bar. $30^{\circ}$ 14. Ther. $64^{\circ}$ 3. Run $+1 \cdot 2$. Images 2. Steadiness $2-3$. F.P. $9{ }^{\circ} 5^{\circ}$.


Sirius.

|  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| $7 \cdot$ | 193.769 | 191-367 | $385 \cdot 286$ | 10 |
| $33^{\circ} 7$ | $191 \cdot 373$ | 193:738 | $385 \cdot 284$ | 10. 24.6 |
| $1042 \cdot 2$ | 193.743 | $191 \cdot 332$ | 385.256 | 1053. |
| 11.12 .9 | 191 | 193 | 385 |  |

1882, March 20. $a$

Bar. $30 \cdot{ }^{14}$. Ther. $63{ }^{\circ}$. Run +0.9 . Images 3. Steadiness 3. F.P. 9.50 .


Canopus.

|  |  |  | ${ }^{1}$ |
| :---: | :---: | :---: | :---: |
| $1036 \%$ | $45 \cdot 185$ | $47 \cdot 566$ | $92 \cdot 807$ |
| 114.4 | $47 \cdot 555$ | $45 \cdot 183$ | $9^{2} \cdot 8.802$ |
| 11 $11 \cdot 6$ | $45 \cdot 128$ | $47 \cdot 539$ | $92 \cdot 733$ |
| 1136.3 | $47 \cdot 578$ | $45 \cdot 185$ | $92 \cdot 839$ |

1882, March 23.
a

| h m |  |  |  |
| :---: | :---: | :---: | :---: |
| 10 $44 \cdot 8$ | 54.960 | 52.560 | $107 \times 590$ |
| $1057 \cdot 1$ | 52.575 | 54.927 | 107. 578 |
| 1119.8 | $54 \cdot 938$ | 52.560 | 107. 585 |
| 1129.2 | 52.556 | 54.943 | $107 \cdot 592$ |

Bar. $30^{\circ} 00$. Ther. $64^{\circ} \cdot 5$. Run $+3 \cdot 3$. Images 2-3. Steadiness 3. F.P. 9.50 .


Bar. $29^{\circ} 98$. Ther. $63^{\circ}$. $\quad$ Run $+3^{\circ} 3$. Images 2. Steadiness 2.


Bar. $29^{\circ} 87$. Ther. $59^{\circ}$. . Run $+4^{\circ}$. . Images 2. Steadiness 2-3. F.P. $9^{\circ} 5^{\circ}$.

| $\alpha_{2}$ Centauri. <br> 1882, March 24. <br> $b$ <br> $a$ |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |
| $\mathrm{h} \quad \mathrm{m}$ |  |  |  |  |  |  |  |
| 1118.4 | $243 \cdot 169$ | 240* 786 | 484*103 | 11 26.1 | $192 \cdot 067$ | 194.467 | $386 \cdot 662$ |
| II $40 \cdot 8$ | 240.771 | 243.183 | 484.106 | $1132 \cdot 5$ | 194.448 | 192.028 | $386 \cdot 605$ |
| $1150{ }^{\circ} 1$ | 243.188 | $240 \cdot 751$ | $484 \cdot 092$ | $1159 \cdot 6$ | 192.050 | 194.461 | $386 \cdot 643$ |
| $12.18 \cdot 3$ | $240 \cdot 788$ | $243 \cdot 184$ | $484 \cdot 129$ | $1210 \cdot 2$ | 194.436 | 192.020 | $386 \cdot 589$ |

Bar. $29^{\circ} 87$. Ther. $59^{\circ} \circ$. Run $+2 \cdot 7$. Images $\mathbf{1 - 2 .} \quad$ Steadiness 2.

in
Bar. $30^{\circ} 06 . \quad$ Ther. $64^{\circ} \circ$. Run +1.7 F.P. $9 \cdot 50 . ~$

Canopus.
$a$

| h m |  |  | R |  |
| :---: | :---: | :---: | :---: | :---: |
| 114 | 52.630 | $54 \cdot 887$ | 107.596 | 11590 |
| $1121 \cdot 2$ | $54 \cdot 889$ | $52 \cdot 590$ | $107 \cdot 568$ | $11 \begin{array}{ll}11 & 15\end{array}$ |
| $125{ }^{\circ} 9$ | $52 \cdot 600$ | $54 \cdot 885$ | 107.576 | 1131 |

Bar. $30 \cdot \circ$ in . Ther. $62{ }^{\circ}{ }_{5}$. Run $+2 \cdot$. Images 2. Steadiness 2. F.P. $9 \cdot 50$.



#### Abstract

Bar. $30^{\circ} 14$. Ther. $62^{\circ}$. . Run +2.3 Images 2-3. Steadiness 2-3.




Bar. $30^{\circ}{ }^{10}$. Ther. $62 \circ$. ${ }^{\circ}$. Run +2.7 . Images 2-3. Steadiness 2-3.


Bar. $30^{\circ} \circ 1$. Ther. $53^{\circ}$ O. Run $+2 \cdot 8$. Images 1-2. Steadiness 2. F.P. $9 \cdot 55$.


Bar. $30^{\circ}$ o1. Ther. $51^{\circ}{ }^{\circ}$. Run +2.5 . Images 1-2. Steadiness 2. F.P. 9.55 .

| b |  |  | $\alpha_{2}$ Centauri. |  | 1882, April 11. |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |
| h m |  |  |  |  |  |  |  | r |  |
| 11.2 .7 | $243 \cdot 111$ | $240 \cdot 811$ | 484.069 | 119.8 | 192.108 | 194*399 | $386 \cdot 633$ |
| 1124.1 | $240 \cdot 829$ | $243 \cdot 143$ | $484 \cdot 123$ | 1118.2 | 194.403 | 192.100 | $386 \cdot 631$ |
| 1130.4 | $243 \cdot 13^{1}$ | $240 \cdot 848$ | 484*131 |  |  |  |  |

## $a_{2}$ Centauri.

 Bar. $30 \cdot 0$. Ther. $62{ }^{\circ}{ }_{5}$. Run $+2 \cdot 0$. Images 2. Steadiness 2-3. F.P. $9 \cdot 50$.


Bar. $30 \cdot 26$. Ther. $60^{\circ} 0$. Run $+2 \cdot 2$. Images 2. Steadiness 2-3. F.P. $9 \cdot 50$.


1882, April 12.
$b$

| r | R |
| :---: | :---: |
| $243 \cdot 114$ | $484^{\circ} \cdot 087$ |
| $240 \cdot 804$ | $484 \cdot \circ$ |
| $243 \cdot 120$ | $484 \cdot \circ$ |
| $240 \cdot 833$ | $484 \cdot 115$ |

1882, April 17.
$\boldsymbol{a}$
459.344
$459 \cdot 357$
$459.35^{8}$
$459 \cdot 355$

| $a$ |  |  |  | - 1882, April 18. |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | ¢ Indi. | $b$ |  |  |
| h m |  |  |  |  |  |  |  |
| $1745{ }^{\circ} 7$ | 228.417 | $230 \cdot 746$ | 459.412 | 17 52.6 | 204.219 | $201 \cdot 953$ | $406 \cdot 372$ |
| $18 \quad 8.7$ 1815.2 | $230 \cdot 718$ 228.466 | 228.429 230.753 | 459.360 | 1759.3 18 18 23 | $201 \cdot 964$ | 204.292 | $406 \cdot 448$ $406 \cdot 398$ |
| 18 38.0 | ${ }_{2} 3^{22}{ }^{\circ} 759$ | $230 \cdot 753$ 28.453 | 459 459 | $\begin{array}{ll}18 \\ 18 & 3.302\end{array}$ | $20+1257$ 201.990 | 201.972 $204 \cdot 273$ | ${ }_{406}{ }^{406}{ }^{428}$ |
| Bar. | - 0. | her. $61 \times 0$. | Run + | 4. Im | es 2-3 | Stea | 2 |

$\zeta$ Tucanae.

| h m |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| $1851 \cdot 3$ | 195.549 | $197 \cdot 842$ | 393.501 | 1859.9 |
| 1916.7 | 197.830 | 195.518 | 393.460 | $198 \cdot 7$ |
| 19 24.1 | 195.559 | $197 \cdot 85^{2}$ | 393. 525 | 19 31.3 |
| $1947 \times 4$ | ${ }_{197} 8^{8} 3^{2}$ | 195.552 | 393.503 | $1941{ }^{1} 3$ |

1882, April 18. $b$

| 26 8 | ${ }^{\text {r }}$ | ${ }^{\text {R }}$ |
| :---: | :---: | :---: |
| 202.869 | $200 \cdot 582$ | 403.564 |
| 200. 589 | $202 \cdot 894$ | 403'596 |
| $202 \cdot 885$ | $200 \cdot 604$ | 403.604 |
| 200-584 | $202 \cdot 857$ | $403 \cdot 55^{8}$ |

Bar. $30 \cdot 08$. Ther. $57{ }^{\circ} 5$. Run $+1 \cdot 3$. Images 2-3. Steadiness 2-3.



Bar. $30^{\circ} 17$. Ther. $53^{\circ} \circ$. Run +2.4 . Images 1-2. Steadiness 2. F.P. $9^{\circ} 50$.
$\alpha_{2}$ Centauri.
b

| 1 m |  | r |  | $\mathrm{h} \quad \mathrm{m}$ | r |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1129.3 | $240 \cdot 81$ | 243.119 | $4^{88} 4^{\circ} 083$ | 1139.4 | 194.388 | 192.086 | $386 \cdot 606$ |
| 1159.8 | $243 \cdot 096$ | 240*817 | $484^{\circ} 071$ | 1149.9 | 192.096 | 19+*399 | $386 \cdot 628$ |
| 1211.8 | $240 \cdot 807$ | $243 \cdot 109$ | $4^{88} 4^{\circ} 075$ | $1226 \cdot 8$ | $19+408$ | 192.097 | $386 \cdot 642$ |
| $125^{2 \cdot 7}$ | $243 \cdot 088$ | $240 \cdot 825$ | $4^{84} \cdot 076$ | $1240 \cdot 3$ | 192.097 | 194*399 | $386 \cdot 633$ |

Bar. $30^{\text {in }} 18$. Ther. $57^{\circ}$. Run $+1 \cdot 2$. Images 2-3. Steadiness 3. F.P. $9 \cdot 50$.



$\zeta$ Tucanae.
b



Bar. $30^{\text {in }} 2 \mathrm{I}$. Ther. $50^{\circ} \cdot 5$. Run +3.3 . Images 2. Steadiness 2-3.
$\alpha_{2}$ Centauri.
$b$

| $\mathbf{h}$ | m | r | r | R | h | m | $\mathbf{r}$ | $\mathbf{r}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 16 | $33^{\circ} \cdot 6$ | $243 \cdot 134$ | $240 \cdot 797$ | $484 \cdot 083$ | 16 | $42 \cdot 6$ | $192 \cdot 112$ | $194 \cdot 443$ | $386 \cdot 673$ |
| 16 | $59 \cdot 7$ | $240 \cdot 828$ | $243 \cdot 137$ | $484 \cdot 112$ | 16 | $51 \cdot 8$ | $194 \cdot 418$ | $192 \cdot 099$ | $386 \cdot 634$ |
| 17 | $10 \cdot 7$ | $243 \cdot 138$ | $240 \cdot 825$ | $484 \cdot 109$ | 17 | $22 \cdot 6$ | $192 \cdot 108$ | $194 \cdot 434$ | $386 \cdot 655$ |
| 17 | $40 \cdot 4$ | $240 \cdot 817$ | $243 \cdot 159$ | $484 \cdot 119$ | 17 | $31 \cdot 1$ | $194 \cdot 442$ | $192 \cdot 118$ | $386 \cdot 672$ | in

Bar. $30^{\mathrm{in}} \cdot 02$. Ther. $49^{\circ}{ }^{\circ}$. Run +3.7 . Images 2. Steadiness 2-3. F.P. $9 \cdot 50$.
$a_{2}$ Centauri.
$a$


Bar. $30^{\circ} \cdot 18$. Ther. $55^{\circ} \circ$. Run $+3 \cdot 0$. Images 2. Steadiness 2. F.P. $9 \cdot 50$.
$a_{2}$ Centauri.
b

|  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1118.4 | $243 \cdot 109$ | $240 \cdot 796$ | $484^{\circ} \cdot 5$ |  |  | 192.095 | 194.440 | $386 \cdot 667$ |
| 1143.8 | $240 \cdot 816$ | $243 \cdot 132$ | 484•105 | 11 | $35^{\prime 1}$ | 194.408 | $192 \cdot 098$ | $386 \cdot 640$ |
|  | $243 \cdot 113$ | $240 \cdot 788$ | 484*069 | 11 | $58 \cdot 7$ | 192-108 | 194*432 |  |
| 1222 | 240'794 | $243 \cdot 138$ | 484.095 | 12 |  | 194.44 | $192 \cdot 1$ |  |

Bar. $30^{\mathrm{in}} \mathrm{m}_{6}$. Ther. $54^{\circ} \cdot 8$. Run $+2 \cdot 7$. Images 2-3. Steadiness 2-3. F.P. $9 \cdot 50$.

## $\alpha_{2}$ Centauri.

$a$


[^12]\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline \multicolumn{8}{|l|}{$b^{2}$ a Centauri. $a_{2} a^{\text {1882, May } 22 .}$} <br>
\hline $\mathrm{h} \quad \mathrm{m}$ \& . 8 \& ${ }^{\text {r }}$ \& R \& \& ${ }^{\text {r }}$ \& \& <br>
\hline 174709 \& 240'819 \& 24.1111 \& 484.073 \& $175^{6} 7$ \& 194.423 \& $192 \cdot 088$ \& $386 \cdot 622$ <br>
\hline 1814.8 \& $243 \cdot 143$ \& $240 \cdot 786$ \& 484.069 \& $185 \%$ \& 192-107 \& 194.442 \& 386.660 <br>
\hline 1821.7
1848 \& $240 \cdot 818$
243 \& $243 \cdot 162$
$240 \cdot 818$ \& $484 \cdot 119$
$484 \cdot 073$ \& $1828 \cdot 9$
1842 \& 194.474
192.109 \& 192.091
194.436 \& $386 \cdot 676$
$386 \cdot 657$ <br>
\hline \multicolumn{8}{|l|}{Bar. $30^{\circ} \cdot 28$. Ther. $46^{\circ} \mathrm{O}$. Run +2.9. Images 2. Steadiness $2-3 . \quad$ F.P. $9^{\circ}{ }^{\prime} 5^{\circ}$.} <br>
\hline \multicolumn{8}{|l|}{\multirow[t]{2}{*}{$b \quad \alpha_{2}$ Centauri. $a^{\text {1882, May } 24 .}$}} <br>
\hline \& \& \& \& \& \& \& <br>
\hline \multicolumn{8}{|l|}{} <br>
\hline $\begin{array}{r}9 \\ 10 \\ 10 \\ \hline 10.5 \\ \hline 8.5 \\ \hline\end{array}$ \& 243.113 \& $240^{\circ} 807$ \& $484^{\circ} \cdot 057$ \& $10{ }^{1} 0$ \& $192^{*} 112$ \& 194.418 \& ${ }^{386}{ }^{\circ} 646$ <br>
\hline 10
10
10
24.8 \& 240
24309

24 \& \begin{tabular}{l}
$243 \cdot 156$ <br>
240 <br>
\hline 94

 \& $4^{484^{\circ}} 106$ \& 

10 \& $11^{\circ}$ <br>
10 \& 31 <br>
\hline 109
\end{tabular} \& ${ }_{194.428}^{1924}$ \& $192 \cdot 108$

$194 \cdot 427$ \& ${ }_{386 \cdot 652}{ }^{386 \cdot 64}$ <br>
\hline 10 $54^{\circ} 9$ \& $240 \cdot 814$ \& ${ }^{2} 43^{-1} 127$ \& 484.088 \& 10 44.3 \& 192.418
194 \& 194.427
192.099 \& ${ }_{386}{ }^{386} 6{ }^{\text {a }}$ <br>
\hline \multicolumn{8}{|l|}{Bar. $30^{\circ} 43$. Ther. $57^{\circ}{ }^{\circ}$. Run + $\mathbf{I}^{\circ} 9$. Images 2. Steadiness $2-3 . \quad$ F.P. $9{ }^{\circ} 5^{\circ}$.} <br>
\hline
\end{tabular}



| $a \quad \alpha_{2} \mathrm{C}$ |  |  |  | uri. |  | 1882, May 25. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| h m | r | r |  | h m | r | r | R |
| $19{ }^{17} 1$ | 192.026 | 194. 516 | $386 \cdot 664$ | 1923.6 | 243.219 | 240 708 | 484.074 |
| $1939 \cdot 8$ | 194.498 | 191.993 | $386 \cdot 623$ | $193 \mathrm{I} \cdot 6$ | $240 \cdot 684$ | $243 \cdot 212$ | $484 \cdot 046$ |
| $194^{6 \cdot 1}$ | 192.029 | 194.512 | $386 \cdot 680$ | 1955.9 | $243 \cdot 208$ | $-240 \cdot 696$ | 484.073 |
| 2013.2 | 194.487 | $19^{\circ} \cdot 008$ | $386 \cdot 660$ | 204.1 | $240 \cdot 722$ | 243'188 | $484 \cdot 086$ |
| Bar. | in $0^{\circ} 3^{8}$ | Ther. $50^{\circ}$ | Run | $3 \cdot 8$ | mages 2. | Steadin | Ss 2. |

$\alpha_{2}$ Centauri.
b

| h m | r | r | R | $\mathrm{h} \quad \mathrm{m}$ | r | $\mathbf{r}$ | ${ }^{\text {R }}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $174{ }^{\circ} 1$ | 243.201 | 240*714 | $484 \cdot 063$ | 17 11.0 | 192.035 | 194.513 | 386.662 |
| $1728 \cdot 7$ | 240.752 | 243* 197 | 484.092 | $1719{ }^{\circ}$ | 194.494 | $19^{2} \cdot 038$ | 386.645 |
| $18 \quad 0.8$ | 243. 198 | 240. 747 | 484.084 | 1811.4 | $192 \cdot 056$ | $194 \cdot 488$ | $386 \cdot 654$ |
| 1831.9 | $240 \cdot 758$ | $243 \cdot 208$ | $484 \cdot 103$ | 1822.3 | 194*524 | 192.044 | $386 \cdot 678$ |

Bar. $30^{\circ} \cdot 08$. Ther. $49^{\circ} \circ$. Run $+1 \cdot$
Images 2. Steadiness 2. F.P. 9.50.
$c$ Eridani.


1882, June 25. b

| h | ml | r | r | r |
| :---: | :---: | :---: | :---: | :---: |
| 0 | $14 \cdot 9$ | $267 \cdot 823$ | $270 \cdot 319$ | $538 \cdot 334$ |
| 0 | $25 \cdot 7$ | $270 \cdot 318$ | $267 \cdot 838$ | $538 \cdot 340$ |
| 0 | $50 \cdot 8$ | $267 \cdot 853$ | $270 \cdot 299$ | $538 \cdot 323$ |
| 0 | $59 \cdot 2$ | $270 \cdot 372$ | $267 \cdot 86 \mathrm{r}$ | $538 \cdot 401$ | Bar. $30^{\circ} \cdot 39$ 10

$e$ Eridani.
b

| h m |  | r | 1 | h |  |  | r | 18 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2313.9 | $267 \cdot 801$ | $270 \cdot 234$ | 538.301 |  | 20. 7 | $256 \cdot 890$ | 254.437 | 511.599 |
| 23 41•1 | $270 \cdot 295$ | 267•796 | $538 \cdot 315$ | 23 | $33^{\circ} 6$ | 254.450 | $256 \cdot 913$ | $5^{111} 578$ |
| 2349.6 | $267 \cdot 803$ | $270 \cdot 263$ | $538 \cdot 280$ | 23 | $57 \cdot 6$ | 256.961 | $254 * 453$ | $511 \cdot 604$ |
| - $17 \times 9$ | $270 \cdot 292$ | $267 \cdot 822$ | $538 \cdot 303$ | - | 9.6 | 254.482 | $256 \cdot 913$ | 511.576 |

Bar. $30 \cdot{ }^{\text {in }} 18$. Ther. $45^{\circ}$.5. Run +3.6 . Images 1-2. Steadiness 2. F.P. $9 \cdot 50$.
$e$ Eridani.
$a$

1882, July 1. b

| h m | r | r | R | h m | r | r | R |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 23 20.5 | $256 \cdot 834$ | 254.391 | 511.459 | $2329{ }^{\circ} 1$ | $267 \cdot 742$ | $270^{\circ} 177$ | $53^{8 \cdot 161}$ |
| $2347 \cdot 3$ | 254*393 | $25^{6 \cdot 837}$ | $511 \cdot 431$ | $233^{8 \cdot 8}$ | $270 \cdot 162$ | $267^{\circ} 704$ | $538^{\circ} 094$ |
| 2354.7 | $256 \cdot 844$ | $254 \cdot 39^{8}$ | $511 \cdot 4.3$ | - $3^{\circ} 3$ | $267^{\circ} 728$ | $270^{\circ} 208$ | $53^{8} 133^{8}$ |
| - 25.4 | $254 \cdot 413$ | $256 \cdot 854$ | $511 \cdot 4.39$ | - 15.6 | $267^{\circ} 737$ | $270 \cdot 173$ | $5.38^{\circ} 102$ | in

Bar. $30^{\circ}{ }^{\text {in }}$ 15. Ther. $42^{\circ} \cdot 8$. Run $+2 \cdot 2$. Images 2. Steadiness 2-3. F.P. $9 \cdot 50$.
$e$ Eridani.
b

1882, July 7.
$a$

| m |  |  | R |
| :---: | :---: | :---: | :---: |
| 2352.8 | $254 * 406$ | $256 \cdot 845$ | $511 \cdot 442$ |
| -6.0 | 256.849 | $254 \cdot 386$ | $511 \cdot 415$ |
| - 38.9 | 254.413 | $256 \cdot 856$ | 511.430 |
| - $45 \cdot 3$ | 256 | 254.410 | $511 \cdot 41$ |

Bar. $30^{\circ} 15$. Ther. $55^{\circ} \circ$. Run $+1^{\circ} 5$. Images $2-3$. Steadiness 2. F.P. $9 \cdot 50$.


| $a^{1}$ |  |  | $\alpha_{2}$ Centauri. |  | 1882, August 1. |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |
| h m |  |  |  | h m |  |  |  |
| $1811 \cdot 1$ | 110.076 | 107. 592 | $217 \times 781$ | 1817.5 | $112 \cdot 815$ | 115.298 | $228 \cdot 239$ |
| $183^{1 \cdot 5}$ | $107 \cdot 603$ | 110.038 | $21^{\circ} 766$ | $18 \quad 24.4$ | 115.289 | $112 \cdot 801$ | 228.220 |
| $1837 \cdot 5$ | $110 \cdot 042$ | 107.604 | $217 \cdot 774$ | $1846 \cdot 0$ | 112.886 | 115.290 112.800 | $228 \cdot 320$ 228.200 |
| 193.0 | 107. 596 | 110.058 | 217.800 | $1855^{\circ} 6$ | $\mathrm{II}_{5} \cdot 248$ | 112.800 | $228 \cdot 200$ |


$\alpha_{2}$ Centauri.

| $a^{1}$ |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| h | m | r | r |  |
| 19 | $17 \cdot 0$ | $107 \cdot 585$ | $110 \cdot 060$ | $217 \cdot 802$ |
| 19 | $23 \cdot 8$. | $10 \cdot 031$ | $10 \cdot 598$ | $217 \cdot 72$ |
| 20 | $1 \cdot 7$ | $107 \cdot 534$ | $110 \cdot 027$ | $217 \cdot 762$ |
| 20 | $10 \cdot 4$ | $110 \cdot 026$ | $107 \cdot 554$ | $217 \cdot 789$ |

in
Bar. $30^{\circ} \cdot 33$. Ther. $56^{\circ}{ }^{\circ}$. Run $+1 \cdot 2$. Images 2-3. Steadiness 3. F.P. 9.50 .

| $b^{1}$ |  |  | $a_{2}$ Centauri. |  | 1882, August 6. |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | h m | $r$ |  |  |
| $1944^{\circ} 3$ | 112.760 | 115.218 | $228 \cdot 182$ | 19 50.6 | 110.073 | 107. 548 | 217.814 |
| $208 \cdot 7$ | 115.239 | 112.707 | $228 \cdot 180$ | $20 \quad 1 \cdot 9$ | 107. 508 | 110.053 | 217. ${ }^{66}$ |
| 2017 | 112.752 | 115.241 | 228.239 | 2025.4 | 110.071 | 107. 527 | $217 \cdot 831$ |
| $2042 \cdot 7$ | 115.263 | 112.749 | $228 \cdot 300$ | 2034.5 | 107.542 | 110.049 | $217 \cdot 836$ |

Bar. $30^{\circ}$ 28. Ther. $44^{\circ}$ 5. Run +4.3 . Images 2-3. Steadiness 2. F.P. $9 \cdot 38$.


$\alpha_{2}$ Centauri.
1882, August 11.
$a^{1}$
$b^{1}$

|  |  |  |  | h m |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 196.5 | 115.206 | 112.849 | 228.217 | 1919.5 | 110.028 | 107•622 | 217.81 |
| 1911.7 | 112.878 | 115.201 | 228.246 | 1924.6 | 107.639 | 109.991 | 217.805 |
| 1944.6 | 115.180 | 112.802 | $228 \cdot 183$ | 1933.2 | 109.984 | 107. 582 | 217.739 |
| 19 50\% | 112.810 | $115 \cdot 195$ | 228.213 | 1938.2 | $107 \cdot 586$ | $110 \cdot 006$ | 217.76 |

Bar. $30 \cdot 2$. Ther. $51 \circ^{\circ}$ O. Run $+3 \%$ Images 2. Steadiness 2.

| $a^{1}$ |  |  | $\alpha_{2}$ Centauri. |  | 1882, August 12. |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |
|  |  |  | R | h m |  |  |  |
| 19 24* | 107.627 | 110.006 | 217.797 | 1934.5 | 112.830 | 115.200 | 228.219 |
| $1928 \cdot 7$ | 110.009 | 107.642 | 217.819 | 1938.4 | 115.185 | 112.829 | $228 \cdot 207$ |
| $1956 \cdot 3$ | 107.591 | 109.971 | 217.757 | $1946 \cdot 3$ | 112.806 | 115.207 | 228.216 |
| 20 1•0 | $110 \cdot 011$ | 107.626 | 217.838 | $1950 \cdot 8$ | 115.213 | 112.812 | $228 \cdot 234$ |

Bar. $30 \cdot 11$. Ther. $50 \circ$. $\quad$ Run +2.9 Images 1 . Steadiness 1 .


Canopus.

| h ${ }_{\text {m }} \mathrm{m}$ | 54.058 | 52.487 |  | $\begin{array}{cc}\mathrm{h} & \mathrm{m} \\ 0 & \\ 0\end{array}$ | $47 \cdot 524$ | -050 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| -18.7 | 54.958 | 52.487 | 107. 576 | - 29.0 | 47-524 | 45.050 | 92.695 |
| - 23.8 | 52.479 | 54.931 | 107.537 | - $36 \cdot 9$ | $45 \cdot 112$ | $47 \cdot 55^{\circ}$ | 92.775 |
| - $55^{\circ} 7$ | 54.971 | 52.534 | 107.609 | $\bigcirc 4^{\circ} 7$ | $47 \cdot 536$ | $45 \cdot 103$ | 92.748 |
| 10.9 | 52.525 | 54.969 | 107•594 | $\bigcirc 47 \times 4$ | $45^{\circ} \circ \frac{8}{4}$ | $47 \cdot 542$ | 92.720 |

Sirius.
$a$


| $\checkmark$ S |  |  |  |  | 1882, September 3. |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $r$ |  |  |  |  |  |  |
| 344.1 | 192.540 | 192.510 | $385^{\cdot 249}$ | 354.6 | 195.873 | 195.851 | 391*923 |
| 349.0 | 192.546 | 192.561 | $385 \cdot 300$ | 358.5 | 195.841 | 195.807 | 391.842 |
| 417.8 | 192.569 | 192.539 | $385^{\circ} 273$ | 4.5 .6 | 195.862 | 195.846 | 391-894 |
| 423.4 | $192^{\circ} 570$ | 192.569 | $385 \cdot 299$ | 412.0 | 195.847 | 195.830 | $391 \cdot 855$ |

Sirius.
$a$

|  |  |  |  | h ${ }^{\text {m }}$ |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $17^{1} \cdot 0$ | 197.020 | 194.604 | $391 \cdot 881$ | $\begin{array}{ll}3 & 28.5 \\ 3 & 3.5\end{array}$ | 193.797 | 191.296 | $385 \cdot 312$ |
| $\begin{array}{ll}3 & 22.2 \\ 3 & 5 \\ 3 & 5.8\end{array}$ | 194.561 | 197.095 | 391.903 | $332 \cdot 5$ | 191.260 | 193.762 | $385 \cdot 236$ |
| 355 | $197 \cdot 093$ | 194.638 | 391*926 | $340^{\circ} 7$ | 193.772 | 191.308 | 385.28 |
| $359 \times 9$ | 194.621 | 197.071 | 391•883 | $348 \cdot 0$ | 191-294 | 193.806 | $385 \cdot 29$ |




Sirius.
$b$
1882, September 25.

Bar. $30^{\circ} 08$. Ther. $5^{1} \circ{ }^{\circ}$. Run +4.8 . Images 2. Steadiness 1-2. F.P. $9{ }^{\circ} 5^{\circ}$.

Sirius.

| $a$ |  |  |  | $b$ |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| h m |  | r | R | h m | $\mathbf{r}$ | $\mathbf{r}$ | R |
| 415.5 | 194.651 | 197.060 | 391•888 | $426 \cdot 2$ | 191•383 | 193.793 | $3^{88} 5^{\circ} 335$ |
| $420 \cdot 6$ | 197.113 | 194.644 | 391.930 | $430 \cdot 3$ | 193.768 | 191.383 | $385 \cdot 306$ |
| 452.2 | 194.638 | 197.086 | $391 \cdot 873$ | 443 I | 191*333 | 193.797 | $385 \cdot 278$ |
| $45^{6 \cdot 2}$ | 197.038 | 194.616 | $391 \cdot 800$ | $447 \cdot 8$ | 193.803 | 191•334 | $385 \cdot 282$ | Bar. $30^{\circ}{ }^{\circ} 5^{6}$. Ther. $50^{\circ} 0$. Run +3.8 . Images $2-3$. Steadiness 2. F.P. $9^{\circ} 5^{\circ}$.

Sirius.
b


Sirius.
$a$

| h | m | r | r | R |
| :---: | :---: | :---: | :---: | :---: |
| 3 | $41^{\circ} \cdot 7$ | $194^{\circ} \cdot 537$ | $197^{\circ} \cdot 065$ | $391 \cdot 819$ |
| 3 | $46^{\circ} \cdot 4$ | $197^{\circ} \cdot 048$ | $194^{\circ} \cdot 604$ | $391 \cdot 862$ |
| 4 | $15^{\circ} \cdot 2$ | $194^{\circ} \cdot 628$ | $197^{\circ} \cdot 066$ | $391 \cdot 871$ |
| 4 | $19^{\circ} \cdot 4$ | $197^{\circ} \cdot 057$ | $194^{\circ} 6.32$ | $391 \cdot 862$ |

1882, September 30.
b

| h | m | r | r | R |
| :---: | :---: | :---: | :---: | :---: |
| 3 | $52 \cdot 1$ | $191 \cdot 310$ | $193 \cdot 785$ | $385 \cdot 285$ |
| 3 | $56 \cdot 0$ | $193 \cdot 764$ | $191 \cdot 293$ | $385 \cdot 243$ |
| 4 | $2 \cdot 6$ | $191 \cdot 325$ | $193 \cdot 778$ | $385 \cdot 282$ |
| 4 | $8 \cdot 0$ | $193 \cdot 770$ | $191 \cdot 311$ | $385 \cdot 256$ |

Bar. $30^{\circ} 44$. Ther. $49^{\circ} 5^{\circ}$. Run +3.7 . Images $1-2$. Steadiness 1-2. F.P. $9^{\circ} 5^{\circ}$.

## Sirius.

b

1882, October 1.

| h m |  |  |  | m |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $342 \cdot 5$ | 193.784 | 191.255 | $385^{-240}$ | $357 \cdot 8$ | $197 \cdot 064$ | 194.569 | $391 \cdot 827$ |
| $347 \times 3$ | 191.295 | 193*796 | $385 \cdot 285$ | $46 \cdot 2$ | 194.600 | 197.041 | $391 \cdot 825$ |
| 43103 | 191-273 | 193.774 | 385.201 | 424.3 | $197 \cdot 047$ | 194.631 | $391 \cdot 846$ |

Bar. $30^{\circ}{ }^{\text {in }}{ }^{2}$. Ther. $51^{\circ} \circ$. Run +4.5 . Images 2-3. Steadiness $2-3$. F.P. 9.50 .

## Sirius.

$a$

|  |  | $\mathbf{r}$ | R |  |
| :---: | :---: | :---: | :---: | :---: |
| $4 \quad 10 \cdot 5$ | 194.644 | 197.081 | 391•904 | 421.5 |
| 415.3 | 197.079 | 194.643 | 391-896 | $427 \cdot 6$ |
| $447{ }^{\circ}$ | 194.651 | $197 \cdot 086$ | $391 \cdot 886$ | $437 \cdot 7$ |
|  | 19 |  |  |  |

1882, October 2. b

| -358 | 193.798 | $385 \cdot 316$ |
| :---: | :---: | :---: |
| 193.801 | $19 \mathrm{I} \cdot 35^{2}$ | $385 \cdot 308$ |
| 191.344 | 193.775 | 385.268 |
| $193 \cdot 812$ | 191-335 | 385 |

Bar. $30^{\circ}$ in. Ther. $52^{\circ}$. . Run +2.9 . Images I-2. Steadiness 2. F.P. $9 \cdot{ }^{\circ} 5$.

Canopus.
$a$


Bar. $30^{\circ} 47$. Ther. $48^{\circ} 5^{\circ}$. Run $+5 \cdot 3$. Images 2. Steadiness 2-3. F.P. 9.50.

Canopus.
$b$


Bar. $30^{\circ}{ }^{\circ}$ 6. Ther. $57^{\circ}$. . Run +5.5 . Images 2-3. Steadiness 2. F.P. 9.50 .

Canopus. 1882, November 10.
$a \quad b$

| h m | r | r | R | h m | r | r | R |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $1{ }^{\text {I }} 48 \cdot 5$ | 54.975 | 52.567 | $107 \cdot 615$ | $2 \quad 5.4$ | 47. 575 | $45^{\prime} 130$ | $9^{2 \cdot} 763$ |
| 158.0 | $52 \cdot 507$ | $54 \cdot 923$ | 107.500 | 210.2 | $45^{\cdot 162}$ | 47.571 | 92.790 |
| 232.4 | $55 \cdot 010$ | 52.545 | 107.613 | 218.4 | $47 \cdot 522$ | $45^{\prime} 119$ | 92.695 |
| 235.6 | 52.562 | 54.963 | $107 \cdot 583$ | 225.4 | $45 \cdot 145$ | $47 \cdot 588$ | 92:784 |

Bar. $30^{\circ}{ }^{1} 7$. Ther. $5^{\circ} \circ$. Run +5.4 . Images 2. Steadiness 2. F.P. $9.5^{\circ}$.

Sirius.
1883, January 28.
$a$

| h | m | r | r | R |
| :---: | :---: | :---: | :---: | :---: |
| 4 | $16 \cdot 4$ | $197 \cdot 135$ | $194 \cdot 660$ | $39 \mathrm{I} \cdot 960$ |
| 4 | $37 \cdot 4$ | $194 \cdot 706$ | $197 \cdot 152$ | $392 \cdot 008$ |
| 4 | $4 \mathrm{I} \cdot 9$ | $197 \cdot 12 \mathrm{I}$ | $194 \cdot 716$ | $39 \mathrm{I} \cdot 983$ |
| 5 | $2 \cdot 9$ | $194 \cdot 719$ | $197 \cdot 13 \mathrm{I}$ | $391 \cdot 98$ |

Bar. $29^{\circ} 97$. Ther. $7^{\circ}{ }^{\circ}$. . Run $+4 \cdot 3$. Images $2-3$. Steadiness 2-3. F.P. $9^{\circ} 5^{\circ}$.

Sirius.
1883, January 29.
$b$


Sirius. 1883, January 30.
$a$

|  | r | r | R | h m | r | r |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $438 \cdot 7$ | 197.118 | 194.771 | $39^{2.038}$ | $444^{\circ} 2$ | 191.376 | ${ }^{193} \cdot 745$ | $385 \cdot 260$ |
| $45^{8 \cdot} 5$ | 194.711 | 197*125 | $391 \times 973$ | $45^{1} \cdot 5$ | 193*726 | 191.381 | $385 \cdot 242$ |

in
Bar. $29^{\circ} 87$. Ther. $70^{\circ}$. . Run $+5 \cdot 2$. Images $2-3$. Steadiness $2-3$. F.P. $9^{\circ} 5^{\circ}$.

Sirius. 1883, February 2.

| $b$ |  |  |  | $a$ |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| h m | ${ }^{\mathbf{r}}$ | r | R | h m | r | r | R |
| 419.4 | 191.388 | 193.762 | $385 \cdot 306$ | 426.4 | 197.094 | 194*705 | 391*959 |
| $442 \cdot 4$ | $193 \cdot 767$ | 191*371 | $385 \cdot 280$ | 433.4 | $194{ }^{1722}$ | $197{ }^{1} 134$ | $39^{2.010}$ |

Bar. $30^{\text {in }}{ }^{\circ}$. Ther. $65^{\circ}$ ㅇ. Run +3.9 . Images 1-2. Steadiness 2. F.P. 9.50 .


Sirius.
$b$
1883, February 4.

$$
a
$$

## Sirius.

$b \quad a$


Sirius.
1883, February 7.

| $a$ |  |  |  | $b$ |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| h m | r | $r$ | R | h m | r | $\mathbf{r}$ | R |
| $444 \cdot 6$ | 194*752 | 197*088 | $391 \cdot 987$ | $449^{\circ} 9$ | 193.765 | 191*421 | $385 \cdot 324$ |
| $5 \quad 1.4$ | 197'125 | 194*738 | $39^{2.001}$ | $455 \% 4$ | 191.388 | 193.777 | $385 \cdot 299$ |

## Sirius.

1883, March 5.

| $a$ |  |  |  | $b$ |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| h m | r | r | R | h m | r | r | R |
| $926 \cdot 8$ | $197{ }^{1} 154$ | 194*772 | 392.051 | $933 * 3$ | 191.378 | 193•768 | 385.274 |
| $948 \cdot 1$ | 194.759 | 197•124 | 392-016 | $940 \cdot 7$ | 193.815 | 191.401 | $385 \cdot 348$ |
| $956 \cdot 3$ | 197* 129 | 194.700 | 391.967 | $10 \quad 2 \cdot 6$ | 191.358 | $193 \cdot 742$ | $385 \cdot 244$ |
| 1023.0 | 194*741 | 197*120 | $39^{2 \cdot 015}$ | $1012 \cdot 5$ | 193.756 | 191.324 | $385 \cdot 231$ | Bar. $30^{\text {in }}$ i3. Ther. $67^{\circ} \circ$. Run +4.8 . Images $2-3$. Steadiness $2-3$. F.P. $9 \cdot 50$.

Sirius.


Bar. $30^{\circ} 18$. Ther. $61^{\circ}$ ㅇ. Run $+4^{\circ} 6$. Images 3 . Steadiness 3. F.P. $9^{\circ} 5^{\circ}$.

Sirius.
b

|  |  |  |  | $\boldsymbol{a}$ |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |
| 10.1 .9 | 191-321 | 193*795 | $385 \cdot 260$ | $107^{\prime} 1$ | $197 \cdot 182$ | 194.718 | 392.044 |
| $1020 \cdot 0$ | 193.746 | 191*375 | $385 \cdot 278$ | 1013.6 | 194.718 | 197-133 | 392.000 |
| 1029.7 | 191.357 | 193.720 | $385 \cdot 242$ | $1035^{\circ} \mathrm{O}$ | 197-126 | 194.730 | $392 \cdot 021$ |
| 1050.0 | 193*737 | 191*346 | $385 \cdot 271$ | 1041.5 | 194*709 | 197153 | $39^{-03}$ |

Bar. $30^{\text {in }}$ O1. Ther. $63^{\circ}$. . Run $+5^{\circ} 3$. Images 3. Steadiness 3. F.P. $9^{\circ} 5^{\circ}$.


Bar. $30^{\circ} 0 \%$. Ther. $67^{\circ} 0$. Run $+4^{\prime}$ r. Images 1-2. Steadiness 2-3. F.P. 9. $5^{\circ}$.

Sirius.

| h m | r | r | R |  |
| :---: | :---: | :---: | :---: | :---: |
| 109.0 | 197.142 | 194.713 | 392.002 | $10 \quad 18 \cdot 5$ |
| 1013.6 | 194.740 | $197{ }^{1} 5^{8}$ | 392.048 | 1022.1 |
| $1041 \cdot 5$ | 194.701 | $197 \cdot 172$ | 392•046 | 1028.0 |
| 1044.2 | $197^{1112}$ | 194.693 | 391•982 | $1034^{\circ} 0$ |

1883, March 14. b

Bar. $30^{\mathrm{in}} \mathbf{2 3}$. Ther. $62^{\circ} \cdot 0$. Run $+4 \cdot 2$. Images 2-3. Steadiness 2-3. F.P. $9 \cdot 50$.

Sirius.
b

| $\mathrm{h} \quad \mathrm{m}$ | $r$ | $\mathbf{r}$ |  | h m | r | r | R |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 10 1.7 | 191.373 | 193* 772 | $385 \cdot 285$ | $1012 \cdot 8$ | 197*117 | 194.729 | 391.991 |
| 107.4 | 193.732 | 191*333 | $385 \cdot 210$ | 1018.2 | 194.726 | 197*101 | 391*976 |
| Io $35^{\circ} 8$ | $193{ }^{\circ} 743$ | 191*345 | $385 \cdot 255$ | 1024.4 | $194{ }^{\circ} 764$ | 197* 57 | 392.075 |
| $1041 \cdot 2$ | 191-293 | 193*758 | $385 \cdot 225$ | $1030 \cdot 5$ | 197*152 | 194*73 | 392.023 |

$\frac{\text { Bar. } 30^{\circ} \cdot 00 \text {. Ther. } 73^{\circ} \circ \text {. Run }+4^{\circ} \text {.. Ima }}{\text { Sirius. }}$

## $b$

| h | $r$ |  | R |  |  | $r$ |  | R |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $9 \quad 6 \cdot 4$ | 191.380 | 193.763 | 385 ${ }^{2} \mathbf{2 6 3}$ |  | 15.9 | 197.122 | 194.813 | $392 \cdot 057$ |
| $910 \cdot 3$ | 193.753 | 191.342 | $385 \cdot 216$ |  | 22.4 | 194.718 | $197 \cdot 133$ | 391.975 |
| 945.9 | 193.802 | 191*346 | $385 \cdot 282$ | 9 | $30^{\circ} 2$ | 194.757 | $197 \cdot 093$ | 391*976 |
| 954.4 | 191•389 | 193.746 | 385'273 | 9 | $37^{\circ} 9$ | 197-124 | 194*720 | 391.973 | in in

$30 \cdot 10$
Bar. $30^{\circ}$ io. Ther. $67^{\circ} \circ$. Run +3.5 . Images 3. Steadiness 2-3. F.P. $9 \cdot 50$.

## Canopus.

$a$

| $1{ }^{1}$ | r |  | R |  |  |  | R |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $1128{ }^{\circ}$ | 54.949 | 52.498 | 107. 540 | $1138^{\circ}$ | $47^{\circ} 567$ | $45^{\circ} 128$ | 92•773 |
| $132 \cdot 0$ | $52^{\circ} 542$ | 54.968 | 107.606 | II $44^{\circ} 0$ | $45^{\circ} 118$ | $47^{\circ} 5^{13}$ | $9^{2} .712$ |
| $12 \quad 3.5$ | 54.933 | $52^{\circ} 509$ | 107•563 | II $51^{\circ}{ }^{\circ}$ | $47^{\circ} 5.8$ | $45^{\circ} \mathrm{I} 34$ | $9^{\circ} 75^{6}$ |
| $210^{\circ}$ | $52^{\circ} 536$ | $54^{\circ} 916$ | $107 * 578$ | II $56^{\circ} \mathrm{I}$ | 45 | $47^{\circ} 569$ | $92^{\circ} 78$ |

1883, March 24. b

Bar. $30^{\circ} 13$. Ther. $61^{\circ}$ O. Run $+5^{\circ}$. . Images $2-3$. Steadiness $2-3$. F.P. $9^{\circ} 50$.

Sirius.
b

| h | m | r | r | R |
| :---: | :---: | :---: | :---: | :---: |
| 9 | $54^{\circ} \mathrm{O}$ | 191•347 | $193 \cdot 783$ | $385^{\circ} 246$ |
| 9 | $58 \cdot 0$ | 193.758 | 191.332 | $385^{\circ} 207$ |
| 10 | $27 \cdot 3$ | 191*360 | 193.770 | $385 \cdot 2{ }^{6}$ |
| 10 | $35^{\circ} 0$ | $193 \cdot 742$ | 191•323 | 385'195 |

Bar. $30^{\circ}$ ro. Ther. $65^{\circ}$ ㅇ. Run $+3 \cdot 8$. Images 2-3. Steadiness 2. F.P. $9^{\circ} 5^{\circ}$.


Sirius.


1883, March 28.
a

| h m | $\mathbf{r}$ | $r$ | R |
| :---: | :---: | :---: | :---: |
| $105^{\circ} 5$ | $197^{\circ} 155$ | $194^{\circ} 727$ | $392{ }^{\circ} 027$ |
| $1011{ }^{\circ} 5$ | $194^{\circ} 723$ | $197^{\circ} 160$ | 392.031 |
| $1027^{\circ} 7$ | $197^{\circ} 146$ | $194^{\circ} 759$ | . $392 \cdot 066$ |
| 10 $35^{\circ} 5$ | $194^{\circ} 769$ | $197^{\circ} 089$ | $392^{\circ} 026$ |

1883, March 25.
$a$

| m | $\mathbf{r}$ | $r$ | R |
| :---: | :---: | :---: | :---: |
| $10 \quad 3.9$ | 197* 173 | 194.711 | 392.026 |
| 1076 | 194*732 | 197 113 | 391.989 |
| 1013.7 | $197^{\circ} 130$ | 194*750 | $392 \cdot 028$ |
| 1020.6 | 194*757 | $197 \cdot 105$ | $39^{2 \cdot 016}$ |




Bar. $30^{\circ} 15$. Ther. $50^{\circ} \circ$. Ruu +3.4 . Images 1-2. Steadiness 1-2. F.P. $9^{\circ} 50$.


| $b^{1}$ |  |  |  | 1883, April 7. |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| h m |  | r | R | h m | r | r |  |
| $1723 \cdot 1$ | $107 \cdot 686$ | $110 \cdot 076$ | $217 \cdot 852$ | $172^{\prime} 7^{\circ} 5$ | 115.218 | 112.809 | 228.124 |
| $1741 \cdot 6$ | 110.061 | $107 \cdot 707$ | 217.866 | 1735.3 | $112 \cdot 797$ | 115.230 | $228 \cdot 127$ |
| $1752 \cdot 8$ | 107.704 | 110.103 | 217.910 | $1756 \cdot 9$ | $115 \cdot 191$ | 112.779 | 228.081 |
| 18 II•O | 110-079 | 107.679 | 217-871 | 186.0 | 112.798 | $115 \cdot 18.3$ | 228.099 |

Bar. $30^{\circ} 04$. Ther. $5^{\circ} \cdot{ }^{\circ}$. Run $+5 \cdot 1$. Images 2. Steadiness 2. F.P. 9.50.
$\alpha_{2}$ Centauri.

| $a^{1}$ |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| h m | r | r | ${ }^{\text {R }}$ |  |
| 1112.4 | 112.809 | $115 \cdot 184$ | 228.100 | $1118 \cdot 2$ |
| 1131.6 | $115 \cdot 198$ | $112 \cdot 823$ | 228.119 | $1155^{\circ} 3$ |
| $1137^{\circ} 1$ | $112 \cdot 834$ | 115.179 | 228.109 | II $44^{\circ} 2$ |
| $1156 \cdot 5$ | 115.202 | 112.810 | 228-101 | II $49^{\circ} 3$ |

1883, April 8.
$b^{1}$

| $\mathbf{r}$ | r | $\mathbf{R}$ |
| :---: | :---: | :---: |
| $110^{\circ} 093$ | $107^{\circ} 688$ | $217^{\circ} 882$ |
| $107^{\circ} 699$ | $110^{\circ} 057$ | $217^{\circ} 854$ |
| $110^{\circ} 128$ | $107^{\circ} 694$ | $217^{\circ} 913$ |
| $107^{\circ} 682$ | $110^{\circ} 071$ | $217^{\circ} 841$ |

Bar. $30^{\circ} 03$. Ther. $62^{\circ}$ O. Run $+4^{\circ}$ 5. Images 1-2. Steadiness 1-2. F.P. $9^{\circ} 5^{\circ}$.
$\alpha_{2}$ Centauri.
$b^{1}$

| h m |  | r |  | h |  | $r$ | $r$ | R |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1134.5 | 107.684 | 110.097 | $217 \cdot 878$ |  | $40 \cdot 8$ | 115.171 | $112 \cdot 782$ | $228 \cdot 05$ |
| 1152.6 | 110.079 | 107•703 | 217.871 |  | $46 \cdot 1$ | $112 \cdot 814$ | 1151138 | 228.04 |
| $1157{ }^{\circ}$ | $107 \cdot 713$ | $110 \cdot 104$ | 217.905 |  |  | 11 | 112.85 | 228 |

1883, April 9. $a^{1}$

$\alpha_{2}$ Centauri.

Bar. $30^{\mathrm{in}} 24$. Ther. $5^{2} \circ$. Run +4.8 . Images 1-2. Steadiness 1-2. F.P. 9.50 .
$\alpha_{2}$ Centauri.

| $a^{1}$ |  |  |  | $b^{1}$ |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| h m | r |  |  | h m | r |  |  |
| $1745^{\circ} 9$ | 115.202 | 112.807 | $228 \cdot 113$ | 1751.7 | 107.705 | 110.064 | 217.870 |
| 186 | 112.807 | 115.157 | 228.080 | 1759.0 | $110 \cdot 113$ | 107.694 | 217.912 |
| 1813.3 | $115 \cdot 165$ | $112 \cdot 788$ | 228.073 | 1822.5 | $107 \cdot 656$ | 110.096 | 217.869 |
| 1834.9 | 112.792 | 115.213 | 228•139 | 1828.9 | $110 \cdot 077$ | 107.667 | 217.865 |

Bar. $29^{\circ}{ }^{\circ} 90^{\circ}$. Ther. $57^{\circ}{ }^{\circ}$. Run $+4^{\circ} 4$. Images 2. Steadiness 2-3. F.P. $9 \cdot 5^{\circ}$.
$\alpha_{2}$ Centauri.
$b^{1}$

| h m | $r$ | r | R |  |  |  | r | R |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1711.5 | $110 \cdot 113$ | 107.713 | 217.910 |  | 17.9 | 112.838 | $115 \cdot 198$ | 228.127 |
| $1730 \cdot 0$ | 107.705 | 110.092 | $217 \cdot 889$ |  | $25^{\circ} 5$ | 115.145 | $112 \cdot 811$ | $228 \cdot 0.01$ |
| $1736 \cdot 2$ | $110 \cdot 098$ | 107.670 | $217 \cdot 862$ |  | $43^{\cdot 6}$ | $112 \cdot 822$ | $115 \cdot 164$ | $228 \cdot 089$ |
| $18 \quad 5 \cdot 2$ | $107 \cdot 709$ | 110.060 | 217*877 | 17 | $56 \cdot 5$ | 115170 | $112 \cdot 826$ | 228.105 |

Bar. $30^{\circ} \cdot 2 \mathrm{f}$. Ther. $59^{\circ}{ }^{\circ}$. Run +2.5 . Images 3. Steadiness 3. F.P. 9.50 .


[^13]| $a^{1}$ |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| h m |  | r |  | h m | r |  |  |
| $1725^{\circ} 2$ | 112.824 | 115.272 | 228* 190 | $1729{ }^{\circ} 7$ | $110^{\circ} 116$ | $107 \cdot 683$ | $217^{\circ} 890$ |
| $1741^{\circ} 4$ | 115.229 | $112 \cdot 850$ | 228.181 | $1736^{\circ}$ 。 | 107.708 | $110^{\circ} 125$ | $217^{\circ} 926$ |
| $1749^{\circ} \circ$ | 112.830 | $115{ }^{\circ} 22$ | 228. 155 | $1755{ }^{\circ} 5$ | $110^{\circ} 105$ | $107^{\circ} 693$ | $217^{\circ} 901$ |
| $187^{\circ} 5$ | $115{ }_{5} 198$ | $112 \cdot 850$ | $228 \cdot 165$ | 18 1.7 | $107 \cdot 672$ | 110. 108 | $217^{\circ} 886$ |

Bar. $30^{\circ} \circ$. Ther. $60^{\circ}$. . Run $+2 \cdot 4$. Images 2-3. Steadiness 2-3. F.P. $9 \cdot 5^{\circ}$.


> | in |
| :---: |
| Bar. $29^{\circ} 77$. |
| $0^{\circ} 5$. |
| Ther. Run $+3.0 . ~ I m a g e s ~ 2 . ~ S t e a d i n e s s ~ 2 . ~ F . P . ~$ |
| 9 | $5^{\circ}$

$a_{2}$ Centauri.

| $b^{1}$ |  |  |  | $a^{1}$ |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| h m | $\mathbf{r}$ | r | R | h m |  | r | R |
| 1119.5 | $110 \cdot 105$ | 107•709 | $217 \cdot 916$ | 11 26.3 | $112 \cdot 783$ | 115.210 | 228•096 |
| II $37 \cdot 3$ | 107.704 | 110.120 | 217.918 | $1131 \cdot 7$ | 115.203 | $112 \cdot 796$ | 228-099 |
| II $46 \cdot 5$ | 110.130 | 107•718 | 217.939 | II $52 \cdot 6$ | $112 \cdot 812$ | 115.215 | $228 \cdot 118$ |
| 126.2 | 107.713 | 110.098 | 217.896 | 1158 | $115 \cdot 182$ | $112 \cdot 811$ | 228.083 | in

Bar. $29^{\circ} \cdot 92$. Ther. $57^{\circ}$ ㅇ. Kun $+3 \cdot 4$. Images $\mathbf{I}-2$. Steadiness 2. F.P. $9 \cdot 5^{\circ}$.


Bar. $29^{\circ} 89$. Ther. $56^{\circ} \cdot$. . Run +3.7 . Images 2. Steadiness 2. F.P. 9.50 .
$a_{2}$ Centauri.

| $a^{1}$ |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| h m | r | r | R | h m |
| 1013.4 | 112.770 | 115.158 | 228.070 | 10 19*0 |
| 10 35.5 | 115'158 | $112 \cdot 784$ | 228.070 | $1028 \cdot 3$ |
| $1043 \cdot 7$ | 112.796 | 115'181 | 228.099 | $1050 \cdot 8$ |

1883, April 25. $b^{1}$

| $r$ | $\mathbf{r}$ | $\mathbf{R}$ |
| :---: | :---: | :---: |
| $110 \cdot 075$ | $107 \cdot 663$ | $217 \cdot 871$ |
| $107 \cdot 661$ | $110 \cdot 120$ | $217 \cdot 910$ |
| $110 \cdot 085$ | $107 \cdot 673$ | $217 \cdot 874$ | Bar. $3^{\text {in }} 0$. Ther. $59^{\circ}$. 0 . Run +4.3 . Images I-2. Steadiness 2-3. F.P. 9. $5^{\circ}$.

$\alpha_{2}$ Centauri.
$b^{1}$

|  | $r$ |  | R |  |  | r |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1013.2 | 107.702 | 110.094 | 217.9.36 | $1017 \cdot 6$ | 115.189 | 112.774 | 228-102 |
| $1028 \cdot 0$ | 110.09.3 | 107.686 | 217.909 | 1023.8 | 112.802 | 115.177 | $228 \cdot 115$ |
| $1039^{\circ} 2$ | 107.688 | 110.111 | 217.921 | $1044 \%$ | 115.171 | $112 \cdot 783$ | $228 \cdot 077$ |
|  |  |  |  |  | 112.808 |  | 228.11 |

Bar. $30^{\circ} 20$. Ther. $57^{\circ} 5^{\circ}$. Run $+2 \cdot 5$. Images 2. Steadiness 2. F.P. $9 \cdot 50$.

Canopus.


Bar. $30^{\text {in }} 14$. Ther. $55^{\circ}$ ㅇ. Run $+5 \%$. Images $2-3$. Steadiness 2-3. F.P. $9 \cdot 50$.

Canopus.

| h m | $\mathbf{r}$ | r | R | h m | r | r | R |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $1120{ }^{\circ}$ | 54.919 | 52.603 | 107.610 | $1130^{\circ} 2$ | $47 \cdot 524$ | $45^{1} 174$ | $9^{2 \cdot 772}$ |
| II $24^{\cdot 8}$ | $52 \cdot 561$ | $54 \cdot 948$ | 107.600 | $1134^{\circ} 2$ | $45^{\circ} 15^{1}$ | $47 \cdot 563$ | 92.791 |
| 1156.4 | $54 \cdot 891$ | $52 \cdot 562$ | 107.568 | $1144^{\circ} 5$ | $47 \cdot 5.30$ | $45^{1} 147$ | 92.758 |
| 121.9 | $52 \cdot 595$ | 54.939 | 107.654 | $1149^{\circ} 5$ | $45^{1} 160$ | $4 \% 521$ | 92.764 |


|  Canopus. $a^{1883,}$ |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |
| h m | r | $r$ | R | h m |  |  |  |
| $10{ }^{9}{ }^{\circ} \mathrm{O}$ | $45 \cdot 219$ | $47 \cdot 5{ }^{22}$ | $92 \cdot 791$ | 1019.0 | 52.573 | $54 \cdot 961$ | 107. 595 |
| 1013.6 | $47 \cdot 561$ | 45.194 | 92.806 | ${ }^{10} 25.8$ | $54 \cdot 974$ | $52 \cdot 577$ | 107.615 |
| 1049.5 | $45 \cdot 169$ | 47.571 | 92.800 | 1035.2 | $52 \cdot 587$ | 54.943 | 107. 597 |
| 1055.5 | 47•519 | $45 \cdot 176$ | $92.75{ }^{8}$ | 1042.5 | $54 * 941$ | 52.583 | 107. 594 |
| Bar. $30^{\text {in }} 00$. Ther. $60 \%$. Run +4.9 . Images 2. Steadiness 2. F.P. 9.50. |  |  |  |  |  |  |  |

## ERRATA AND ADDENDA.

Heliometer Observations for Stellar Parallax.

| Page. | No. | Column. | For | Read |
| :---: | :---: | :---: | :---: | :---: |
| 3 | 1 | 4 | 298.091 | 298.177 |
| 4 | 1 | 1 | 18.8.9 | 18.18.9 |
| 5 | 2 | 3 | $35 \cdot 695$ | $35 \cdot 696$ |
| 6 | 1 | Ther. | 39.8 | $42 \cdot 5$ |
| 8 | 1 | " | $48 \cdot 1$ | $48^{\prime}$ |
| " | 2 | 8 | 467.206 | $467 \cdot 256$ |
| 9 | 1 | Date | Augast 20. | August 30. |
| ; | 2 | 2 | $35 \cdot 698$ | $35 \cdot 696$ |
| 11 | 1 | Ther. | 55.3 | $53 \cdot 3$ |
| 13 | 5 | Run | 4.9 | $3 \cdot 9$ |
| 14 | 3 | 5 | $19 \cdot 55 \cdot 6$ | 19.45 .6 |
| 17 | 4 | 5 | 0.52.5 | 0.53 .5 |
| 18 | 2 | 3 | $137 \cdot 707$ | 139.707 |
| 20 | 2 | 2 | $81 \cdot 596$ | $81 \cdot 597$ |
| " | 3 | Date | November 24. | November 25. |
| " | 5 | $\varepsilon$ | 282.092 | 282.093 |
| 21 | 1 | Images | 2 | 2-3 |
| 23 | 4 | 8 | $282 \cdot 059$ | $282 \cdot 057$ |
| " | " | Steadiness | 2 | 2-3. |
| 24 | 2 | 2 | 117.797 | 117.707 |
| " | " | 5 | 8. $54 \cdot 2$ | 8.54.3 |
| , | 5 | 3 | 139.774 | 139.772 |
| 25 | 2 | 7 | 139.787 | 139.789 |
| " | 3 | 8 | $487 \cdot 324$ | $487 \cdot 322$ |
| 26 | 3 | 5 | 4.22.2 | $4.42 \cdot 2$ |
| 27 | 1 | Stars | $\alpha, \beta$. | $\alpha^{1}, \beta^{1}$. |
| " | " | 3 | $232 \cdot 170$ | 232.190 |
| " | 5 | Star | a Centauri. | $a_{2}$ Centauri. |
| " | " | Stars | $\beta, \alpha$. | $\beta^{1}, \alpha^{1}$. |
| ", | " | 6 | 234.639 | 234.689 |
| 29 | 3 | 5 | 13.12.3 | 13.21.3 |
| 30 | 1 | Run | $6 \cdot 1$ | 3.6 |
| 31 | 2 | 5 | 10.273 | 10) $23.3 \cdot 7$ |


| Page. | No. | Columu. | For | Read |
| :---: | :---: | :---: | :---: | :---: |
| 31 | 2 | (6 | $232 \cdot 262$ | 232252 |
| " | 5 | 3 | 213.904 | 213.404 |
| 33 | 1 | 3 | 213.386 | 213.381 |
| 34 | 4 | Steadiness | 2 | 3 |
| 36 | 5 | Ther. | 64.0 | $63 \cdot 5$ |
| 37 | 1 | " | $61 \cdot 5$ | $62 \cdot 3$ |
| 39 | 5 | 7 | 144.273 | 144.276 |
| 43 | 1 | Ther. | 59.5 | $60^{\circ} 0$ |
| 44 | 4 | Images | 1-2 | 2 |
| 45 | 5 | Ther. | $57 \cdot 5$ | 58.0 |
| 46 | 1 | Steadiness | 2-3 | 3 |
| 47 | 3 | Ther. | $4^{8 \cdot 0}$ | 493 |
| 48 | 5 | " | $4 \cdot 6 \cdot 5$ | $45 \cdot 3$ |
| 49 | 3 | 6 | 150.078 | 150.079 |
| 50 | 1 | Ther. | 53.5 | $54 \cdot 8$ |
| 51 | 4 | Steadiness | 2-3 | 3 |
| " | 5 | 1-5 | 18.52.3 | 18.52.2 |
| 54 | 1 | Steadiness | 2 | 3 |
| 59 | 1 | Run | $2 \cdot 5$ | $2 \cdot 8$ |
| " | 5 | Steadiness | 2 | 3 |
| 61 | 1 | Ther. | 53.0 | $52 \cdot 5$ |
| 73 | 3 | 23 | 144.358 | 144.356 |
| " | 5 | (4)7 | 211.107 | 211.139 |
| 75 | 1 | 2 | $117 \cdot 626$ | 147.626 |
| 76 | 2 | 5 | 18.25.9 | 18.25-8 |
| 80 | 2 | Innages | 2-3 | 3 |
| , | " | Steadiness | 2-3 | 3 |
| 85 | 5 | 3 | 171.929 | 171.926 |
| 91 | 4 | 2 | 194.140 | 194.190 |
| " | " | Ther. | $71 \cdot 7$ | $70 \cdot 7$ |
| 92 | 3 | " | 588 | $58 \cdot 0$ |
| 93 | 5 | " | $63 \cdot 1$ | $53 \cdot 1$ |
| 94 | 1 | Images | 3 | 3-4 |
| 98 | 1 | 7 | 193.706 | 193.766 |
| " | 3 | Steadiress | 3 | 3-4 |
| 99 | 2 | Ther. | $54 \cdot 0$ | $57 \cdot 0$ |
| 103 | 2 | 1 | 12.2 .7 | 11.2.7 |
|  | 5 | Images | 3 | 3-4 |
| 104 | 1 | " | 3 | 3-4 |
| 105 | 1 | 5 | 18.2 .4 | 18.12.4 |



Data to be inserted in Heliometer Observations.

| Page. | No. | Bar. | Ther. | Run. | Page. | No. | Bar. | Ther. | Run. |
| ---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | in. | 0 |  |  |  |  |  |  |
| 9 | 2 | 30.34 | 55.0 | +2.3 | 27 | 3 | 30.09 | 61.5 | +3.9 |
| 10 | 5 | 30.42 | 55.0 | +6.2 | 27 | 5 | - | - | +2.7 |
| 12 | 5 | - | - | +3.3 | 28 | 1 | - | - | +3.9 |
| 14 | 5 | 30.07 | 53.2 | +3.9 | 30 | 1 | - | - | +3.6 |
| 15 | 1 | 30.10 | 50.0 | +4.5 | 31 | 5 | - | - | +4.7 |
| 21 | 3 | 30.14 | 55.0 | +2.6 |  |  |  |  |  |


| Page. | No. | Images. | Steadiness. | Page. | No. | Images. | Steadiness. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 6 | 1 | 3 | 3 | 11 | 5 | 1 | 2 |
|  | 3 | 3 | 3-4 | 12 | 1 | 3 | 3 |
|  | 5 | 2 | 2 |  | 2 | 3 | 3 |
|  | 1 | 1-2 | 2-3 |  | 3 | 2 | 3-4 |
|  | 2 | 1-2 | 1-2 |  | 4 | 1-2 | 2 |
|  | 4 | 2 | 2-3 |  | 5 | 1 | 1-2 |
|  | 5 | 1-2 | 1-2 | 13 | 1 | 2-3 | 3 |
| 8 | -8 1 | 1-2 | 1-2 |  | 2 | 3-4 | 4 |
|  | 2 | 2 | 3 |  | 3 | 3 | 3 |
|  | 3 | 2-3 | 3-4 |  | 4 | 2-3 | 2-3 |
|  | 4 | 4 | 3-4 |  | 5 | 1-2 | 2-3 |
|  |  | 2 | 1-2 | 14 | 1 | 2 | 2-3 |
| 8 |  | 2 | 3-4 |  | 2 | 3-4 | 3 |
|  | 2 | 2 | 2 |  | 3 | 1-2 | 2-3 |
|  | 3 | 3-4 | 3-4 |  | 4 | 1-2 | 1-2 |
|  | 4 | 2-3 | 2-3 |  | 5 | 1-2 | 3-4 |
|  | 5 | 1-2 | 1-2 | 15 | 1 | 1-2 | 1-2 |
| 9 | 21 | 2 | 2 |  | 2 | 1--2 | 2 |
|  | $\because 3$ | 2-3 | 2 |  | 3 | 2 | 2-3 |
|  | 4 | 1 | 2 | - | 4 | 1 | 1 |
|  | 5 | 1 | 2 |  | 5 | 3 | 3 |
| 10 | 1 | 2 | 3 | 16 | 2 | 2-3 | 2-3 |
|  | 2 | 1-2 | 2-3 |  | 3 | 1-2 | 1-2 |
|  |  | 3-4 | 3 |  | 4 | 1-2 | 1-2 |
|  | 4 | 3 | 3 | 17 | 1 | 2 | 3-4 |
|  | - 5 | 3 | 3 | 18 | 2 | 2-3 | 2-3 |
| 11 | 1 | 2 | 2 |  | 5 | 2 | 2 |
|  | 2 | 4 | 4 | 19 | 1 | 2 | 2-3 |
|  | 3 | 2 | 2 |  | 2 | 2-3 | 2-3 |
|  | 4 | 2 | 3 |  | 3 | 2 | 2 |



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[^0]:    * Dun Echt publications, vol. ii.
    $\dagger$ Memoirs of the R.A.S., vol. xlvi., pp. 1-172.

[^1]:    * These observations I supplied soon after my arrival at the Cape, and they are incorporated in his Dissertation "Ueber die Parallaxe von a Centauri." Karlsruhe, 1880.

[^2]:    * No. 2 has been selected because there is a misprint in No. 1, vide list of errata.

[^3]:    * The corrections for screw-error result from a very thorough investigation of the screw made independently by Gill and Elkin, the two results being in close agreement :-

    $$
    \begin{aligned}
    & \mathbf{r} \\
    & 0.00021 \cos u-0.00165 \sin u-0.00017 \\
    & r
    \end{aligned}
    $$

[^4]:    Bar. $30^{\circ} 14$
    Ther. $62^{\circ} \cdot 3$

[^5]:    Bar. $30^{\circ} 14$. Ther. $57^{\circ} 5$. $\quad \operatorname{Run}+1 \cdot 4$. Images 1-2. Steadiness 1-2.

[^6]:    Bar. $30^{\circ} 13$. Ther. $53^{\circ}$. $\quad$ Run $+.5^{\circ} \%$ Images 2. $\quad$ Steadiness 2.

[^7]:    Bar. $30^{\circ} \cdot 24$. Ther. $56^{\circ} 8$. Run $+4^{\circ} 3$. Images 3. Steadiness 3. F.P. $9.5^{\circ}$.

[^8]:    Bar. $30^{\circ} \cdot 32$. Ther. $55^{\circ} \%$. Run $+3 \cdot 6$. Images 2. Steadiness 2. F.P. $9 \cdot 50$.

[^9]:    Bar. $30^{\text {in }}$ 20. Ther. $58^{\circ}{ }^{\circ}$. . Run +4.6 . Images $2-3$. Steadiness 2-3. F.P. $9 \cdot{ }_{5}$.

[^10]:    Bar. $30 \cdot 00$. Ther. $61{ }^{\circ}{ }^{\circ}$. . Run $+0 \%$. Images 2-3. Steadiness 2-3. F.P. $9 * 50$.

[^11]:    Bar. $3^{\text {in }} 02$. Ther. $69^{\circ} 5^{\circ}$. Run +2.9 . Images 3. Steadiness 3. F.P. 9. $5^{\circ}$.

[^12]:    

[^13]:    Bar. $30^{\text {in }} \circ 5$. Ther. $60^{\circ} \cdot 0$. Run $+4 \cdot 8$. Images 2. Steadiness $2-3$. F.P. $9 \cdot 50$.

