RESULT
OF

# ASTRONOMICAL OBSERVATIONS 

MADE AT
THE HONORABLE,

## THE EAST INDIA COMPANY'S OBSERVATORY <br> AT MADRAS

BY

## THOMAS GLANVILLE T ${ }^{\prime}$

ASTRONOMER TO THE HONORABLE COMPANX

## Vol. IV.

For the Years 1836 and 1837.


MDCCCXXXVIIT.

## PREFACE.

THe contents of the present volume differs so little from that found in the former volumes of the Madras Observations, as almost to render a preface unnecessary : to conform however to established customs, it is proper for me to remark, that the Observations on the meridian of which the results are here given, have been continued without interruption-principally by the native Assistants, and that those out of the meridian have been made exclusively by myself: In allowing the meridianal Observations to be made by the native assistants, I have been careful frequently to re-examine their bisections with the Mural Circle, and to compare the clock errors from their observations with the Transit Instrument with those determined from my own, when, in no case have I found that their bisections were less accurate than I could have made myself, and the difference between our estimations of time (" $p^{\prime \prime}$ ramial equation") has seldom amounted to two tenths of a second. The observations of the Sun (which have always proved unsati, factory-still continue to exhibit the same want of consistency, and my endeavour to discover the cause have-I regret to state not in the least degree proved successful: the observations of the Planet Mars and of Stars situated near to his path for the purposes of Parallax, have now been continued for three successive oppositions, and the necessary comparisons between these and corresponding observations which have been made at the Cape of Good Hope Observatory, have been instituted -without I fear having in the least advanced the object of enquiry: this result, as well as other observations of measuring angular distances with the Mural Circle, tends to shew-that although a single observation may be de$l^{\prime \prime}$ euled upon to $1^{\prime \prime}, 5$ or $2^{\prime \prime}$, still, the tenth or twentieth part of this amountwhich is the present object of enquiry,-can only be attained by an almost unlimited number of observations. The observation of Moon Culminating Stars and occultations has been continued, as has likewise the Eclipses of Jupiter's Satellites, but not having received the corresponding observations at Greenwich complete, I have delayed for the present to attempt any improvement of the supposed value of the Longitude, and since it would have interfered with the observation of the Star Catalogue to attempt reflection Observations; I have likewise allowed the question of Latitude to remain undisturbed. The reductions have for the most part been performed by myself, and when performed by an Assistant, have invariably undergone-either a recomputation, or a careful revision by myself before they were trusted. On comparing the places of the 2066 Stars which are here given, with Piazzi's

Catalogue; a result similar to that noticed in Vol. III. (as occurring between the Catalogue there given when compared with Piazzi) was here too apparent; in consequence of which, I have gone back to the catalogue given in Vol. II. and have likewise compared it with the places assigned by Piazzi; after combining the results from these three catalogues (containing about 7600 Stars) there still appears a tendency to exhibit a General Proper Motion of the fixed Stars, which can be explained, by supposing a motion of the Solar System towards the North Pole of the Ecliptic: whether the data from which this conclusion has been drawn shall appear sufficient or no, I would beg for the present to claim a little indidyence-- until a comparison of the table of refractions employed by Piazzi (not now at my command) with those at present in use, shall have been instituted-and a reexamination of Latitudes un-dertaken;-this done,-I sball be prepared either to announce this important and somewhat unexpected result, with more precision and certainty, or to acknowledge with humility that I have been in error-

T. G. TAYLOR,<br>H. C. Astronomer.

1 take this opportunity to acknowledge with very many thanks, the receipt of copies of the Comaissance des Temps and Nautical Almanac, as well as other very valuable works from learned Societies and individuals.

## OF THE TRANSIT INSTRUMENT.

## T

 HE focal length of the Transit Instrument is 61 Inches, with a clear aperture of 3 委 Inches; but for bright Stars and the Sun an aperture of 2 Inches only has generally been employed. As originally constructed by Dolload the pivuts were of bell metal, but during the first three years of its use these had worn so unequally as to render it necessary to re-turn them, when collars of steel were applied over the bell metal, so as to restore them to their original dimensions; this was accomplished in the years $1834-35$ by Mr. Barrow, the Ifonorable Company's Instrument maker at Calcutta, in a manner which rendered the Instrument as perfect as when it was first erected. Consulting Vol. III. it appears that in January and February 1834 the illuminating pivot was apparently less than the other pivot $\mathbf{1}^{\prime \prime}, 69$ and in December 1835 that it was less. 1,10Since this time-from several inversions of the axis-on the 5th October 1836 the illuminating pivot was apparcully less than the other pivot. . $2^{\prime \prime}, 06$ and on the 21st November 1837

The eye-piece is furnished with five vertical and one horizontal fixed wires, and one vertical moveable wire; the Equatorial intervals between the former were determined from the intervals occupied by several stars situated near the Pole to pass from wire to wire as follows:-

Seconds.
from lst wire to centre. . . . . . . . . . . . $+54,577$
2d.............................. $+26,961$
4th................................-27,470
5th................................ $-55,289$
rendering necessary the correction. ....... $\frac{-0,244}{\cos . \text { Decln. }}$ to reduce the mean
of the five wires to the centre wire.

## Madras Observations.

These numbers hold good up to the 30th October 1836, when the wires were broken in consequence of the shutters on the roof of the Observatory being blown open by the violence of the wind, whereby the instrument was exposed for some minutes to very heavy rain;*-having failed during this time to secure the shutter-the fastenings having given way and one only out of three hinges remaining entire, I was compelled to take the transit off its axis, and deposit it in the safest place I could find; the wind which was blowing from the North, had burst open the Northern door as well as the Southern one immediately opposite; hence there appeared to be no other choice than that of placing it upon the table which stood against the most secure part of the Northern wall of the Observatory; -here, supported by books and a green baize cover, I felt assured that nothing short of the building falling in, would have in the least degree endangered it; at one instant 1 thought of depositing it upon the floor, where it would be sheltered by the table, but streams of water which were flowing through the Observatory determined it otherwise; -at 5 o'clock in the afternoon having completed all that could be of service to secure the Instruments-I left the Observatory to the care of an assistant. At $\frac{1}{4}$ before 7 it blew a perfect hurricane,- -the Dome on the top of the Observatory was blown away, and the stoutest trees and hedges were laid low!at 7 o'clock the wind had much moderated, and at $\frac{1}{4}$ past 7-a lull-a dead calm ensued. I watched the appearance of the sky and fluctuations of the Barometer at this moment with feelings of intense anxiety and interest;-the clouds were passing one another in utter confusion, and although calm below, it was evident that at no great height above the Earth there was a severe conflict among the elements;-I had hardly time to make a note of these appearances and of the height of the Barometer, when the rain-which had ceased during the lull, again set in, accompanied by the sighs and moans of the again returning hurricane:-at a $\frac{1}{4}$ before 8 , the wind-which now blew from the South, had risen to a pitch more fearful than that before experienced; in short-no description can convey an adequate idea of its intense fury; -doors and windows, iron bars and bolts-were with one rude rush scattered and broken! At this moment the southern doors of the Observatory, situated opposite to the northern wall where the Transit Instrument had been deposited-was literally blown to pieces; whereby one of the pieces (about 8 feet by 6 Inches by 2 Inches) which had been blown across the room, had fallen edgewise upon the head of the micrometer attached to the Transit Instrument and very neatly cut it off, without at all disturbing the other parts of the telescope. Other

[^0]injuries had been sustained by the books having been disturbed, whereby the object end of the telescope had fallen upon a pile of books from a height of about 2 feet, whence two slight indentations had been sustained -one on each side of the tube, at 10 or 12 Inches above the object end of the telescope; and the tangentscrew of the setting circle had been hit: but it was evident that the axis had not in the slightest degree been injured; a circumstance of which
. I have since well assured myself from observation.-The first fact that struck my notice on examining the Instrument-was, that the focal length of the object glass had apparently altered; or rather that the telescope had become shorter ; for, in order to render the principal focus coincident with the wires, it was necessary to remove the object glass, 07 of an inch from the position it had hitherto occupied in the cell into which it was secured;-this remedied (which I was enabled to do by interposing three pieces of brass of this thickness between the bottom of the cell and the frame carrying the object glass) it only remained that the micrometer screw should be replaced-this was readily and very neatly accomplished by Mr. Barrow of Calcutta, and six weeks after the date of this calamity all was again in order :-in this interval the olservations were continued without the micrometer (as will be seen in the sequel,) without I apprehend in any material degree endangering their general incourasy.

Up to the date of these misfortunes the illuminating pivot had always reposed upon the eastern $Y$ or Pillar; but the damage sustained by the tangent screw above noticed, rendering its motion stiff and uncertain, I was induced to shift the position of the axis-so as to bring the other setting circle into use; accordingly from the 5th November to the present time the position of the Instrument has been " illuminating Pivot West."

On the 5 th November I put in a new set of Wires, when-from the mean of several Stars situated near to the Pole, the Equatoreal intervals were found to be-

> Seconds.
> from 1st wire to centre. . . . . . . . . . . . $+54,840$
> 2d................................ $+27,251$
> 4th ..............................-27,828
> 5th...................................-54,530
hence to reduce the mean of the five wires to the centre wire, for the fixed
Stars we must apply the correction. . . . . . . $-\frac{\stackrel{s}{0,053}}{\sin \cdot \mathrm{~N} \cdot \mathrm{P} . \mathrm{D} .}$

In volumes I. and II. the value of the micrometer screw had been determined to be $34^{\prime \prime}, 366$ for each revolution, whereas for that now in use (which I requested Mr. Barrow to make of nearly the same degree of fineness)-one revolution corresponds to $32^{\prime \prime}, 94$.

It now only remains for me to state another, though trifling circumstance with regard to the Transit Instrument-namely, that after above six years of constant use, the lacquer had completely disappeared from the eye end of the telescope, and existed in patches only on the other parts; -with a view to arrest the progress of oxidation, as well as to improve its now dingy appearance, -on the 22-25th February 1837, I applied two coats of oil paint over the entire surface, whereby its appearance as well as efficiency is again restored.

## ERROR OF LEVEL OF THE TRANSIT AXIS.

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The error of level of the Transit Axis has been determined as heretofore by the Spirit level, and the necessary correction for error of level applied to each observations; this is true at least for the observations made before the 30th October 1836, and for those made after the 18th January 1837:-for the observations made between these dates-having from time to time adjusted the axis to horizontality, no correction on this account is necessary. The Column ( $L+P$ ) is obtained from the mean of three readings of the level with the Cross level East, and the same number with Cross level West, viz. one at each extremity, and one in the middle of the pivots; the value of $\mathbf{P}$ or half of the apparent defect of the illuminating pivot which is given at page 1-being applied, leaves the values of $\mathbf{L}$ which have been employed in the reduction of the Observations. It must be noticed however that the correction P applies with a contrary effect after the 5th November 1836 to what it did before that date, in consequence of the illuminating or smaller pivot having been transferred from the Eastern to the Western Pier, as has already been stated at page 3.

Error of Level of the Transit Axis.


[^1]


## ERROR OF COLLIMATION OF THE TRANSIT INSTRUMENT.


Having found from experience that the determination of the error of Collimation by inversion of the axis was sometimes liable to uncertainty, (by reason of the great care which is necessary, but which cannot always be afforded, in placing the pivots on their $Y$ 's), I have in the present volume, as heretofore, had recourse to inversion for this purpose but very seldom, and then only have employed it as a check upon other methods. In the early part of 1836 the error of Collimation was determined by measuring with the micrometer

## Error of Collimation of the Transit Instrument.

screw, the horizontal angular distance between the North and South Meridian Marks, and comparing this result with the previously known true angular distance ; thus,-if $\mathbf{C}$ represent the collimation error, $\mathbf{N}^{1},-\mathbf{S}^{1}$ the observed azimuths of the centre wire as affected by $\mathbf{C}$, and $\mathrm{N},-\mathrm{S}$ the azimuths as not so affected, we have

$$
\begin{aligned}
\text { the reading of the North Mark } & =+\mathbb{N}^{1}=+N \pm C \\
\text { South } \quad \text { do. } & =-S^{1}=-S \pm C
\end{aligned}
$$

taking the sum, $N^{1}-S^{1}=N-S \pm 2 C$; in which $N-S$, the true angular distance between the marks being known, we immediately obtain the value of $\mathbf{C}$ :-for the value of $\mathrm{N}-\mathrm{S}(=\theta)$ there were several measures made in the early part of 1835 (see Vol. III p.8.) in which it came out $180^{\circ} 0^{\prime} 26^{\prime \prime}, 03$ and from 5 Inversions on the 13th January 1836 it came out $180^{\circ} 0^{\prime} 25^{\prime \prime}, 77$; the former result however is that which has been employed in the computations. For the observations after 20th March and up to 30th October 1836, the azimuth of the centre wire from the North Mark only has been observed, and in place of the other, an observation has been made on every second or third day with the "Reflecting Collimator." The observation with the "Reflecting Collimator" which has been explained already in Vol. III ;-consists in measuring the angular distance with the micrometer, between the direct image of the centre wire, and its image as reflected from a basin of quicksilver: to accomplish this, I drilled a small hole in the side of the telescope, at about 6 inches from the eye end, so that the light from a lamp after passing through it, might fall uninterruptedly upon the wires ;-I now introduced a silver spe_ culum into one of the eye pieces in front of the lens, so that by varying its inclination, the light from the lamp could be thrown perpendicularly upon the wires, whereby their image as reflected from a basin of quicksilver placed underneath the Transit, was nearly as well defined as the direct image; the speculum was suspended upon an axis passing through the sides of the eye piece, by which it could be adjusted to the proper angle, and was furnished with a small elliptical hole (about, 07 of an In. diameter) through which the wires were seen. In the employment of this method, it is indispensably necessary that the centre wire should describe a vertical circle, and that the moveable wire be parallel to it; this latter precaution however would not be necessary-could the bisection be made at the exact point of its intersection with the horizontal wire; but this not being accomplishable in practise, in consequence of the want of light at this part of the field, by reason of the shadow of the aperture through which the observation is made;-it becomes necessary when paral-
lelism cannot be obtained, to allow for its effect:-In the case of the Madras Transit ;-since the application of the steel pivots, the adjustment of the moveable wire for parallelism has proved insufficient; hence the readings of the Reflecting Collimator which now follow, are not those immediately read off from the instrument, but the readings as corrected for want of parallelism.

In the table which follows, these corrected readings of the Reflecting Collimator divided by 2 , or $\mathbf{C}+\mathrm{L}^{*}$ are given; -in which $\mathbf{C}$ (as noted above) represents the error of collimation, and $L$ the error of Level. The quantity $L+P$, is taken from the level observations at pages 5-7, save that for the days intermediate between those on which the level was observed, I have employed corresponding intermediate values. For the observations between the lst November 1836 and 18th January 1837-having been deprived of the means of measuring angular distances, by the loss of the micrometer, I now placed a small Mark upon the pier which had hitherto supported the old North Meridian Mark, and as nearly as possible in the direction of the meridian ; my object was with the level, to render the amount $\mathrm{L}=0$ by adjustment; and then, the reflecting collimator allowing me to adjust for any amount of Collimation C, the azimuth error would remain the only unknown: hence the obscreations made in the interval just stated do not require correction for error of Collimation. On the 18th January 1837 having applied the new micrometer, and for convenience sake produced a small collimation error-I recommenced the measurement of the errors of Collimation as they had previously been conducted before the Storm.

[^2]| 1836. | Observed <br> N. <br> N. | Azimuth | $\frac{\mathrm{N}+\mathrm{S}+\theta}{\left[\begin{array}{c} 2 \\ \text { or } \\ \mathrm{C} \end{array}\right.}$ | Remaris, \&c. | $\frac{\text { Ref. Col. }}{\substack{2 \\ \text { or } \\ C+L}}$ | L+P | $\begin{aligned} & \text { Diff or } \\ & \mathrm{C}-\mathrm{P} \end{aligned}$ | P |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | " | " | " |  | " | " | " | " |
| Jan. 1 | +38,35 | -44,24 | +10,07 |  |  |  |  |  |
| 2 | 38,15 | 44,41 | 9,89 |  |  |  |  |  |
| 3 | 38,18 | 44,68 | 9,77 |  | +14,65 | +3,52 | +11,13 | -1,36 |
| 4 | 38,15 | 44.51 | 9,84 |  | 14,45 | 3,49 | 10,96 | 1,12 |
| 5 | 38,18 | 44,75 | 9,73 |  |  |  |  |  |
| 6 | 38,08 | 44,61 | 9,75 |  |  |  |  |  |
| 7 | 38,18 | 44,41 | 9,90 |  | 14,42 | 2,82 | 11,60 | 1,70 |
| 8 | 38,15 | 44,58 | 9,80 |  |  |  |  |  |
| 9 | 38,25 | 44,5? | 9,85 |  |  |  |  |  |
| 10 | 38,12 | 44,58 | 9,78 | Mean $=9^{\prime \prime}, 84$ | 14,24 | 2,87 | 11,37 | 1,59 |
| 11 | 37,95 | 44,55 | 9,71 |  |  |  |  |  |
| 12 | 38,18 | 44,45 | 9,88 |  |  |  |  |  |
| 13 | 38,29 | 44,45 | 9,93 |  | $\left\{\begin{array}{l}14,61 \\ 14,82\end{array}\right.$ | 3,54 | 11,17 | 1,24 |
| 14 | 38,15 | 44,20 | 9,99 |  |  |  |  |  |
| 15 | 38,05 | 44,03 | 10,02 |  | 14,49 | 3,51 | 10,98 | 0,96 |
| 16 | 38,18 | 44,06 | 10,07 |  | 14,16 | 3,48 | 10,68 | 0,61 |
| 17 | 38,22 | 44,10 | 10,07 |  |  |  |  |  |
| 18 | 38,12 | 43,82 | 10,16 |  |  |  |  |  |
| 19 | 38,05 | 43,82 | 10,13 |  | 13,65 | 3,11 | 10,54 | 0,41 |
| 20 | 37,95 | 44,17 | 9,90 | Mean $=9$ ', 99 | 12,69 | 3,11 | 9,58 | +0,32 |
| 21 | 38,35 | 44,07 | 10,15 |  | 13,29 | 3,12 | 10,17 | -0,02 |
| 22 | 38,22 | 44,10 | 10,07 |  |  |  |  |  |
| 23 | 38,29 | 43,90 | 10,21 |  |  |  |  |  |
| 24 | 38,39 | 44,31 | 10,06 |  | 12,36 | 3,03 | 9,33 | +0,73 |
| 25 | 38,15 | 44,03 | 10,07 |  |  |  |  |  |
| 26 | 38,25 | 44,07 | 10,10 |  | 12,53 | 3.15 | 9,38 | +0.72 |
| 27 | 38,56 | 43,97 | 10,31 |  | 14,32 | 3,28 | 11,04 | -0,73 |
| 28 | 38,32 | 44,21 | 10,07 |  | 13,13 | 3,22 | 9,91 | +0,16 |
| 29 | 38,39 | 44,41 | 10,00 |  |  |  |  |  |
| 30 | 38,29 | 44,41 | 9,95 | Mean $=10^{\prime \prime}, 10$ | 12,70 | 2,88 | 9,82 | +0,13 |
| 31 | 38,22 | 44,51 | 9,87 |  | 12,87 | 2,88 | 9,99 | -0,12 |
| Feb. 1 | 38,25 | 44,24 | 10,02 |  | 12,78 | 2,60 | 10,18 | -0,16 |
| 2 | 38,15 | 44,27 | 9,96 |  |  |  |  |  |
| 3 | 38,32 | - | -10 |  | 13,29 | 2,66 | 10,63 | -0,56 |
| 4 | 38,36 | 44,00 | 10,19 |  | 13,47 | 2,75 | 10,72 | -0,53 |
| 5 | 38,12 | 44,17 | 9,99 |  | 12,77 | 2,84 | 9,93 | +0,06 |
| 6 | 38,36 | 44,24 | 10,07 |  |  |  |  |  |
| 7 | 38,43 | 44,07 | 10,19 |  | 13,29 | 2,95 | 10,34 | -015 |
| 8 | 38,33 | 44,14 | 10,11 |  | 13,47 | 3,06 | 10,41 | -030 |
| 9 | 38,18 | 44,31 | 9.95 10.09 |  |  |  |  |  |
| 10 | 38,33 | 44,17 | 10,09 | Mean $=10^{\prime \prime}, 05$ |  |  |  |  |
| 11 | 38,33 | 44,31 | 10,02 |  |  |  |  |  |
| 12 | 38,56 | 44,37 | 10,11 |  |  |  |  |  |
| 13 | 38,63 | 44,71 | 9,97 |  | 12,95 | 2,45 | 10,50 | 0,53 |
| 14 | 38,63 | 44,41 | 10,12 |  | 12,77 | 2,39 | 10,38 | 0,26 |
| 15 | 38,73 | 44,85 | 9,96 |  |  |  |  | 0,34 |
| 16 | 38,65 | 44,85 | 9,91 |  | 12,43 | 2,21 | 10,22 | 0,31 |
| 17 | 38,69 | 44,85 | 9,93 |  | 12,60 | 2,10 | 20,50 | -0,57 |
| 18 | 38,56 | 44,88 | 9,86 |  |  |  |  |  |
| 19 | 38,56 | 44,65 | 9,77 | \{ I took out the |  |  |  |  |
| 20 | 39,32 | 45,27 | 10,04 | \} object glass. | 11,40 | 1,60 | 9,80 | +0,24 |
| 21 | 39,76 | 45,19 | 10,30 | Mean $=9 \prime \prime, 90$ | 12,43 | 1,60 | 10,83 | $-0,53$ |

Error of Collimation. \&c,


The extreme difficulty which has hitherto attended the keeping in view of the South Meridian Mark, by reason of the rapid growth of the trees which intervene between it and the Observatory, has at length determincd me to give it up altogether; I do this with less reluctance than I otherwise should have done, from the consideration of its instability, and from the persuasion I feel of the Reflecting Collimator being well qualified to supersede the use of two Marks. If we now take the mean of the values in the last column we get $\mathbf{P}=-0^{\prime \prime}, 40$ whereas from a similar number of observations in 1836 , Vol. III. it came out- $0^{\prime \prime}, 77$, and from observations at various times with the spirit level (page 1), we obtained for the value of $\mathrm{P},-0^{\prime \prime}, 83$; hence the assumption of $\mathbf{P}$, to be- $0^{\prime \prime}, 70$ which has been done in the following computations, cannot be far from the truth.


[^3]

| 1836. | $\mathrm{L}+\mathrm{P}$ | Ref. Col. | $\begin{aligned} & \text { Diff. } \\ & \text { or } \end{aligned}$ | Remaris, \&c. |
| :---: | :---: | :---: | :---: | :---: |
|  |  | $\begin{gathered} 2 \\ \text { or } \\ \mathrm{C}+\mathrm{L} \end{gathered}$ |  |  |
| Sept. 21 | +1,93 | + 15,36 | $+13,43$ | $\begin{aligned} \text { Mean of } 14 & =+1^{12}, 86 \\ \therefore \mathrm{C} & =\frac{0,70}{+1} \frac{1,16}{} \end{aligned}$ |
|  | 1,65 |  |  |  |
| 26 | 2,52 | 15,01 | 12,49 |  |
| Oct. $\quad 19$ | 2,59 | 14,83 | 12,24 |  |
| $\begin{array}{ll}\text { Oct. } & 1 \\ & 2 \\ & 3 \\ & 6 \\ & 8 \\ & 10 \\ & 12 \\ & 1 \\ & 1 \\ 19 \\ & 2 \\ & 29 \\ 26 \\ & 29 \\ & 30\end{array}$ | 2,36 |  |  |  |
|  | 2,12 | 15,18 | 13,06 |  |
|  | 2,23 2,92 | 15,01 15,35 | 12,78 12,43 |  |
|  |  | - | -10 |  |
|  | 2,23 1,69 | 12,60 13,38 | 10,37 11,69 |  |
|  | 1,44 | 13,12 | 11,68 |  |
|  | 1,17 | 13,12 | 11,95 |  |
|  | 1,81 | 12,95 | 11,14 |  |
|  | 1,97 | 12,95 | 10,98 |  |
|  | 2,03 1,92 | 13,21 | 11,187 | Mean of $9=+1^{\prime \prime} 1,25$ |
|  | 3,73 | 14,66 | 10,93 | -0,70 |
|  |  |  |  | $\therefore \mathrm{C}=\mp-10,55$ |

A hurricane had shattered the S. E. door of the Observatory to pieces, and broken the micrometer screw of the Transit Instrument-
1836.

Nov. 5, Put in a new set of wires and adjusted the collimation of the centre wire by means of the reflecting collimator.
9, Examined the position of the axis of collimation by the ref. coll.-found correct.

| 12, | do. | do. | do. | do. |
| ---: | :--- | :--- | :--- | :--- |
| 17, | do. | do. | do. | do. |
| 22, | do. | do. | found the wire a little to the E. adjusted it. |  |
| Dec. 1, | do. | do. | found the wire a little to the E. adjusted it. |  |
| 6, | do. | do. | do. | found correct. |
| 9, | do. | do. | do. | do. |
| 13, | do. | do. | do. | do. |
| 21, | do. | do. | do. | do. |
| 24, | do. | do. | do. | do. |
| 1837 |  |  | do. | do. |
| Jany. 2, | do. | do. | found the wire a little to the E. adjusted it. |  |
| 9, | do. | do. | do. | found correct. |
| 14, | do. | do. | found the wire alittle to the E. adjusted it |  |

18, I purposely moved the wires about $10^{\prime \prime}$ to the East.



| 1837. | $\mathrm{L}+\mathrm{P}$ | Ref. Col. | $\begin{aligned} & \text { Diff. } \\ & \text { or } \\ & \mathrm{C}+\mathrm{P} \end{aligned}$ | Remarks, \&c. |
| :---: | :---: | :---: | :---: | :---: |
|  |  | $\begin{gathered} 2 \\ \text { or } \\ \mathrm{C}+\mathrm{L} \end{gathered}$ |  |  |
|  | " ${ }^{\prime \prime}$ | ${ }^{\prime \prime}$ | -1192 |  |
| Nov. $\begin{array}{rr}8 \\ & 11\end{array}$ | $+6,74$ 5,90 | $-5,18$ 5,34 | $-11,92$ 11,24 |  |
| 14 | 5,56 | 5,18 | 10,74 |  |
| 17 | 5,10 | 6,00 | 11,10 |  |
| 20 | 4,78 | 6,50 | 11,28 |  |
| 23 | 5,18 | 5,89 | 11,07 |  |
| 26 | 5,29 | 5,51 | 10,80 |  |
| 29 | 5,00 | 5,67 | 10,67 |  |
| Dec. 2 | 5,09 | 5,51 | 10,60 |  |
| 5 | 4,99 | 5,43 | 10,42 |  |
| 8 | 5,33 | 5,87 | 11,20 |  |
| 11 | 5,70 | 5,95 | 11,65 |  |
| 14 | 3,58 | 7,90 | 11,48 |  |
| 17 | 2,85 | 7,98 | 10,83 |  |
| 20 | 2,25 | 10,12 | 12,37 |  |
| 23 | 2,50 | 9,79 | 12,29 |  |
| 26 29 | 2,40 1,99 | 9,79 9,46 | 12,19 11,45 | $\begin{array}{cc}\text { Mean of } 18= & =11^{\prime \prime}, 29 \\ \mathbf{P} & =-0^{\prime \prime}, 70\end{array}$ |
|  | 1,99 | 9,46 | 11,45 | $\mathrm{C}=-10^{\prime \prime}, 59$ |

In the reduction of the observations, these mean values of C , together with the reduction to the centre wire (given at pages J-3), and the correction for Diurnal Aberration, have been applied to each observation; thus, for any day in December 1837, the correction in time $=-\frac{, 706+, 053+, 020}{\sin \mathrm{~N} \cdot \mathrm{P} \cdot \mathrm{D} \cdot}=\frac{0,779 s}{\sin \mathrm{~N} \cdot \mathrm{P} \cdot \mathrm{D}}$.

## ERROR OF AZIMUTH.

If the Transit Telescope be directed to the north horizon, the Uyviation of the centre wire from the meridian mark is represented by $\mathbf{N}+C$, (where $\mathbf{C}$ represents the error of collimation); and, if a represent the angular deviation of the meridian mark from the meridian, -

The deviation of the centre wire from the Meridian as exhibited by the North Mark will be $= \pm a \pm \mathrm{N} \pm \mathrm{C}$ similarly - - South Mark will be $= \pm a^{1} \pm \mathrm{S}_{\mp} \mathrm{C}$ and the mean result will be $a= \pm \frac{a \pm a^{1} \pm N \pm S}{2}$
In Volume III p. 20, the value of $a-a^{1}$ was found $93^{\prime \prime}, 52$, and, since we have found (page 5) the value of $a+a^{1}$ to be- $26^{\prime \prime}, 03$, we may state the North

Mark to be situated $33^{\prime \prime}, 74$ to the West of the Meridian, and the South Mark to be situated $59^{\prime \prime}, 77$ to the East of the Meridian.

The observations of 1836 furnish a few transits of Polaris with which we will now re-examine the above values-

POLARIS.

| 1835 | Observed Transit. |  |  | Correction for |  | Mean Right Ascension January 1, 1836. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Level. | $\begin{gathered} \text { Colli- } \\ \text { mation. } \end{gathered}$ |  |
| Dec. 24 | h. $\begin{array}{ccc}\text { m. } & \text { s. } \\ 1 & 2 & 2,87\end{array}$ | m. ${ }_{\text {m. }}$ | s. $+3,99$ | $\begin{gathered} \text { s. } \\ -2,47 \end{gathered}$ | $\begin{gathered} \text { s. } \\ +23,75 \end{gathered}$ | $\begin{array}{ccc}\text { h. m. s. } \\ \text { l } & 1 & 17,87\end{array}$ |
| Dec. 25 | 2,99 | 12,90 | 4,81 |  |  | 16,19 $a^{\mathbf{i}} \quad$ - |
| 26 | 7,27 | 15,15 | 5,61 |  |  | $19,01 \quad a^{\text {ii }} \quad$ |
| 27 | 7,17 | 15,98 | 6,38 |  |  | 18,85 $a^{\text {iii }}$ |
| 28 | 8,99 | 17,37 | 7,13 |  |  | $20,03 \quad a^{\text {iv }}$ |
| 29 | 9,71 | 18,10 | 7,82 |  |  | 20,71 $a^{\text {v }}$ |
| 30 | 8,75 | 19,10 | 8,50 |  |  | 19,43 $a^{\text {vi }}$ |
| $1836{ }^{31}$ | 6,82 | 20,80 | 9,20 |  |  | 16,50 $a^{\text {vif }}$ |
| $\left\lvert\, \begin{array}{cc}1836 \\ \text { Jan. } & 2\end{array}\right.$ | 8,53 | 21,83 | 10,64 | -2,31 | $+25,44$ | 21,47 $a^{\text {ix }}$ |
| Jan 3 | 8,08 | 22,82 | 11,40 |  |  | 19,79 $\boldsymbol{a}^{\mathbf{x}} \quad$ - - |
| 4 | 9,50 | 23,48 | 12,19 |  |  | 21,34 $a^{\text {xi }}$ |
| 6 | 4,33 | 23,23 | 13,91 |  |  | 18,14 $a^{\text {xiii }}$ |
| 7 | 3,83 | 22,20 | 14,80 |  |  | 19,56 $\quad a^{\text {xiv }}$ |
| 8 | 59,27 | 20,62 | 15,69 |  |  | 17,47 $a^{\text {xv }}$ |
| 10 | 56,67 | 18,08 | 17,39 |  |  | 19,11 $a^{\text {xvi }}$ |

where $a^{1}, a^{\prime \prime}, \& c$. represent the Azimuth errors in seconds of space.
POLARIS. S. P.

| 1835. | Observed Transit. |  |  | Correction for |  | Mean Right Ascension January 1, 1836. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Level. | $\left\lvert\, \begin{gathered}\text { Collim } \\ \text { mation. }\end{gathered}\right.$ |  |  |
| Dec. 25 |  | $\begin{array}{cc} \mathrm{m} . & \mathrm{s} . \\ -1, & 14,35 \end{array}$ | s $+5,21$ | $\begin{gathered} \mathrm{s} \\ +1,95 \end{gathered}$ | c. ${ }_{\text {s. }}$ | h. m. s. $130054,07-a^{\text {i }}$ | X 2 ,408 |
| 26 | $\cdots+\quad 22,95$ | 16,15 | 6,00 |  |  | 51,00 $a^{\text {is }}$ | $\times$ |
| 27 | 23,31 | 16,67 | 6,75 |  |  | 51,59 $a^{\text {iii }}$ |  |
| 23 | 21,48 | 17,73 | 7,47 |  |  | 49,42 $a^{\text {iv }}$ |  |
| 29 | 24,53 | 18,55 | 8,16 |  |  | 52,34 $a^{\text {v }}$ | - |
| $1836{ }^{30}$ | 27,82 | 19,90 | 8,85 |  |  | $54,97 \quad a^{\text {vi }}$ |  |
| Jan. 1) | 28,93 | 21,50 | 10,29 | +1,83 | -25,44 | 54,11 $a^{\text {viii }}$ |  |
| - 3 | 27,67 | 23,24 | 11,80 |  |  | 52,62 $a^{\text {x }}$ |  |
| 5 | 26,88 | 23,30 | 13,48 |  |  | $53,45 \quad a^{\text {xii }}$ |  |
| 6 | 29,35 | 22,71 | 14,36 |  |  | 57,39 $a^{\text {xiii }}$ | - |

We have found above, that any value $a=\frac{a \pm a^{\prime}}{2}+\frac{\mathrm{N} \pm \mathrm{S}}{2}$; in which, -substituting for $\frac{\mathrm{N}-\mathrm{S}}{2}$, the values found at page 10 kc . we determine.

employing these values of $a, a^{1} \& c$. with the above observations, we obtain the
MEAN A. R. OF POLARIS, JAN. 1, 1836.
From observations at the superior culmination.

## From observations at the inferior culmination.

h. m. s.
 from which we readily deduce $a-a^{1}=93^{\prime \prime}, 76$; or $a=33^{\prime \prime}, 87$ and $a^{1}=-$ $59^{\prime \prime}, 89$, agreeing very nearly with the hitherto supposed values. In the reduction of the Observations from January 1st to March 16th 1836, the Azimuth correction has consequently been computed from the formulæ $\frac{\mathrm{N}-\mathrm{S}-93^{\prime \prime}, 76}{2}$

For the remaining days of the month of March, and up to the end of October 1836, -in consequence of the difficulty of keeping the South Mark in view, (as has been already explained), the distance of the centre wire from the North Mark, or $a \pm \mathrm{N} \pm \mathrm{C}$ only, was observed; (in which, a has been assumed $33^{\prime \prime}, 87$ as just found, and the values of $C$ have already been given at page $118 c$ ). On the 3 d November 1836,-being deprived of the means of measuring the distance of the centre wire from the meridian mark, -as a temporary measure, I adjusted it to the eastern side of it, (as being more nearly in the meridian than its centre); finding however that the azimuth corrections was still inconveniently large, -on the 22 d November the Instrument was adjusted to a temporary circular disc, which I had caused to be affixed to the pier which had hitherto supported the old mark; I had intended to have placed this new mark "in the meridian", but from some mistake in the measurement, an alteration of only half the required amount was made;-to remedy this, on the Sth December

[^4]1836, I adjusted the instrument to another mark-(a parallelogram), which I had caused to be permamently affixed to the pier, at a still further distance from the old mark, towards the east; this being conveniently situated,-from the 8th December 1836 I have continued to adjust the centre wire when necessary to the mark, instead of measuring as hitherto its distance from it. Calling $a^{n}$, the azimuth from the meridian, of the side of the old mark, to which the instrument was adjusted from the 3d to the 22d November inclusive; $a^{\prime}$, the azimuth of the circular disc employed from 23d November 1836 to 17th January 1837, and $a$, the azimuth of that since employed we can,-from the observations of Polaris made about this time, compute their values.

## POLARIS.

| 1836 | Observed Transit. |  |  | Correction for |  | Mean Right Ascension January 1, 1837. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Level. | Collimation. |  |  |
| Nov. $\begin{array}{rr}7 \\ & 9 \\ & 10 \\ & 11\end{array}$ | h. m. s. | m. s. | S. |  |  | h. m. s. |  |
|  | 1031,00 | + 136,35 | -17,55 | ... | .... | $1149,80-a^{\prime \prime}$ | $\times 2,368$ |
|  | 0 39,00 | 127,99 | 16,92 |  | . . . | 50,07 - | - |
|  | 045,00 | 124,11 | 16,58 |  |  | 52,53 - |  |
|  | 0 47,00 | 1 21,57 | 16,23 |  |  | 52,34 - - |  |
|  | 0 49,00 | 1 19,65 | 15,87 |  | -••• | 52,78 - |  |
|  | 118,00 | 0 24,78 | 4,56 |  |  | 38,23-a' | $\times 2,370$ |
|  | 123,65 | O 19,50 | 3,93 |  |  | 39,22 | - |
|  | 131,67 | 0 16,60 | 3,29 |  | 2.. | 44,98 | - |
|  | 127,20 | 0 4,25 | 1,37 |  |  | 30,08-a | $\times 2,370$ |
|  | 123,00 | 0 3,23 | 0,72 |  |  | 25,61 -- |  |
|  | 125,00 | $0 \quad 2,24$ | -0,05 |  |  | 27,19 -- |  |
|  | 125,10 | 1 2,73 | $+3,42$ |  |  | 30,25 - |  |
|  | 1 21,00 | 1 6,42 | 4,12 |  | .. $\cdot$. | 31,54 - - |  |
|  | 1 16,00 | 110.12 | 4,82 |  |  | 30,94 - |  |
|  | 1 10,00 | 1 13,67 | 5,55 |  |  | 29,22 |  |
|  | 18,00 | ] 17,22 | 6,28 |  |  | 31,50- | - |
|  | 1 0,00 | 1 24,46 | 7,77 |  | .... | 32,23 - |  |
|  | 59 59 59,00 | 127,88 | 8,50 |  |  | 32,36 - |  |
|  | 5950,00 | 134,52 | 9,98 |  |  | 34,50 - |  |
| 1837  <br> Jan. 2 | 59 28,00 | 149,40 | 13,81 |  |  | 31,21 |  |
|  | 59 20,00 | 153,39 | 15,40 |  |  | 28,79 - |  |
|  | 59 19,00 | 154,12 | 16,21 |  |  | 29,33 |  |
| 4 | 59 15,00 | 155,88 | 17,01 |  |  | 27,89 - |  |
| 5 | 59 12,00 | 1 156,76 | 17,81 |  |  | 26,57 - |  |
| 6 | 1212,00 | - 1 2,50 | 18,59 | .... |  | 28,09 - |  |
| 8 | 2 14,00 | $1 \begin{array}{ll}1 & 1,40\end{array}$ | 19,40 |  |  | 32,00 |  |
| 9 | 2 8,50 | 1100,05 | 20,20 |  |  | 28,65 |  |
| 10 | 210,50 | 0 - 57,10 | 20,99 21,78 |  |  | 28,56 |  |
| 11 | 2 5,25 | $5 \quad 055,60$ | 22,57 |  |  | 32,18 |  |
| 12 | 2 2,75 | 5053,66 | 23,37 |  |  | 32,46 - | - |

POLARIS S. P.

| 1836 | Observed Transit. | $\begin{aligned} & \text { 西 } \\ & \text { 己 } \end{aligned}$ |  | Correction for |  | Mean Right Ascension January 1, 1837. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Level. | $\left\lvert\, \begin{gathered} \text { Colli- } \\ \text { mation. } \end{gathered}\right.$ |  |
|  | h. m. s. | m. s. | s. |  |  | h. m. s, |
| Dec. 20 | $13 \quad 0 \quad 55,75$ | +1 15,44 | +5,92 |  |  | $13171711-a \times 2,408$ |
| - 26 | 125930,00 | 136,00 | 10,37 | .... | . . . | 16,37- |
| Jan. 2 | 125914,00 | 153,75 | 15,81 |  |  | 23,56- |
| 3 | 5913,00 | 155,00 | 16,61 |  | .... | 24,61 - |
| 4 | $59 \quad 3,25$ | 156,32 | 17,41 | ... . | .... | 16,97- |
| 5 | $\begin{array}{llr}13 & 2 & 4,33\end{array}$ | -1 3,63 | 18,20 | .... | .... | 18,90- |
| 6 | 159,00 | 1 1,95 | 18,99 | .... | .... | 16,04 - |
| 7 | 152,17 | 1 1 0,62 | 19,80 |  | .... | 11,35- |
| 8 | 151,25 | $\bigcirc$ 59,32 | 20,59 |  | .... | 12,52- |
| 9 | 155,25 | 0 57,85 | 21,38 | .... | .... | 18,78- |
| 10 | 150,75 | 0 56,21 | 22,17 | .... | .... | 16,71 - |
| 11 | 150,50 | 054,63 | 22,97 | -••• | .... | 18,84 - |

Taking the mean, we have from
Mean A. R. Polaris January 1, 1837.

for the determination of $a^{\prime \prime}$ and $a^{\prime}$ we must now employ the already found mean plan for January $1,1837=1 \mathrm{~h} .1 \mathrm{~m} .22,15 \mathrm{~s}$.
when $a^{\prime \prime}=12^{\prime \prime}, 40 \mathrm{West}$
$a^{\prime}=7^{\prime \prime}, 87-$
As a confirmation of the value of $a, I$ have lately measured the angular distance between the old mark and the one now in use, when, from the mean of several measures -

The new mark appeared to be situated $31^{\prime \prime}, 29$ to the East of the old mark.
The old mark we have found to be $33^{\prime \prime}, 87 \quad$ West of the meridian. $\therefore$ The new mark is situated West of the meridian.
And for a confirmation of the situation of the mark which gave rise to the value $a^{\prime \prime}$,-this 1 find to be situated $21^{\prime \prime}, 97$ East of the old mark.

The old mark is situated $33^{\prime \prime}, 87$ West of the meridian.
$\therefore \quad a^{\prime \prime} \quad=\quad 11^{\prime \prime}, 90$ West of the meridian.
We will now proceed with the values of $N \& S$ given at page $11 \& c$. to compute the values of $(A$,$) the deviation in Azimuth-$

| 1836 | N-S |  | Remarks, \&c. | 1836 | N-S |  | Remaris, \&c. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | T" | " |  |  | '" | " |  |
| Jan. 1 | 122.59 | -5,58 |  | Feb. 4 | 122,36 | $-5.70$ |  |
| \| 2 | 22,56 | 5.60 |  | 5 | 22,29 | 5.73 |  |
| 3 | 22,86 | 5,45 |  | 6 | 22,60 | 5,58 |  |
| 4 | 22,66 | 5,55 |  | 7 | 22,50 | 5,63 |  |
| 5 | 22,93 | 5,41 |  | 8 | 22,47 | 5,64 |  |
| 6 | 22,69 | 5,53 |  | 9 | 22,49 | 5,63 |  |
| 7 | 22,59 | 5,58 |  | 10 | 22,50 | 5,63 | Mean of $10=-5^{\prime \prime}, 63$ |
| 8 | 22,73 | 5,51 |  | 11 | 22,64 | 5,56 |  |
| 9 | 22,83 | 5,47 |  | 12 | 22,93 | 5,41 |  |
| 10 | 22,70 | 5,53 | Mean of $10=-5^{\prime \prime}, 21$ | 13 | 23,34 | 5,21 |  |
| 11 | 22,50 | 5,63 |  | 14 | 23,04 | 5,36 |  |
| 12 | 22,63 | 5,56 |  | 15 | 23,58 | 5,0! |  |
| 13 | 22,74 | 5,51 |  | 16 | 23,50 | 5,13 |  |
| 14 | 22,35 | 5,70 |  | 17 | 23,54 | 5,11 |  |
| 15 | 22,08 | 5,84 |  | 18 | 23,44 | 5,16 |  |
| 16 | 22,24 | 5,76 |  | 19 | 23,21 | 5,27 | Mean of $9=-5^{\prime \prime}, 26$ |
| 17 | 22,32 | 5,72 |  | 20 | 24,59 | 4,59 | I took out the object |
| 18 | 21,94 | 5,91 |  | 21 | 24,95 | 4,40 | glass to clean it. |
| 19 | 21,87 | 5,94 |  | 23 | 25,30 | 4,23 |  |
| 20 | 22,12 | 5,82 | Mean of $10=-5^{\prime \prime}, 74$ | 24 | 24,32 | 4,72 |  |
| 21 | 22,42 | 5,67 |  | 25 | 24,62 | 4,57 |  |
| 22 | 22,32 | 5,72 |  | 26 | 24,38 | 4,69 |  |
| 23 | 22,19 | 5,78 |  | $\bigcirc$ | 24,46 | 4,65 |  |
| 24 | 22,70 | 5,53 |  | *28 | 24,28 | 4,74 |  |
| 25 | 22,18 | 5,79 |  | 29 | 24,06 | 4,85 |  |
| 26 | 22,32 | 5,72 |  | March 1 | 23,87 | 4,94 |  |
| 27 | 22.53 | 5.61 |  | 2 | 24,00 | 4,88 |  |
| 28 | 22,53 | 5,61 |  | 3 | 24,14 | 4,81 |  |
| 29 | 22,80 | 5,48 |  | 4 | 24,06 | 4,85 |  |
| 30 | 22,70 | 5,53 | Mean of $10=-5^{\prime \prime}, 64$ | 8 | 23,62 | 5,07 |  |
| 31 | 22,7,3 | 5,51 |  | 10 | 23,93 | 4,91 |  |
| Feb. 1 | 22,49 | 5,63 |  | 15 | 23,82 | 4,97 |  |
| 2 | 22,42 | 5,67 |  | 16 | 24,14 | 4,81 | Mean of $17=-4^{\prime \prime}, 75$ |

The South Mark being invisible (by reason of trees having grown in the way) the observation of the North Mark only will be attended to in future.

| 1836 | N | C | $\left\|\begin{array}{c} \mathrm{N}-\mathrm{C}-\mathrm{-} \\ 33^{\prime \prime}, 87 \\ =\mathrm{A} \end{array}\right\|$ | Remarks. | 1836 | N | C | $\stackrel{\substack{\mathrm{N}-\mathrm{C} \\ 33^{\prime}, 87 \\=\\ \mathrm{A}}}{ }$ | Remarks. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | " | " | " |  |  | " | " | " |  |
| Mar. 22 | +38,42 | + 8,62 | $-4,07$ |  | Mar. 30 | +38,32 | +8,62 | -4,17 |  |
| 23 | 38,12 | .. | 4,37 |  | 31 | 38,29 | -8, | . 4.20 |  |
| 24 | 38,39 | . | 4,10 |  | April 1 | 38,39 | - | 4,10 | Mean of $10=-4^{\prime \prime}, 20$ |
| 25 | 38,32 | . | 4,17 |  | - 2 | 38,39 | . . | 4,10 |  |
| 26 | 38,42 | . | 4,07 |  | 3 | 38.32 | . | 4,17 |  |
| 28 | 38,18 | . | - 4,31 |  | 4 | 38,18 | .. | 4,31 |  |
| 29 | 38,08 | . | 4,41 |  | 5 | 38,18 | . . | 4,31 |  |


| 1836 | N | C | $\left\lvert\, \begin{gathered} \mathrm{N}-\mathrm{C}-\mathrm{O} \\ 33^{\prime \prime}, 87 \\ =\mathrm{A} \end{gathered}\right.$ | Remaris. | 1836 | N | C | $\begin{gathered} \mathrm{N}-\mathrm{C} \\ 33^{\prime \prime}, 87 \\ =\mathrm{A} \end{gathered}$ | Remarks. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | " | " | " |  |  | " | " | " |  |
| April 6 | +38,25 | +8,62 | -4,24 |  | May 29 <br> 30 | +43,13 | $+12,51$ .. | $-3,25$ 3,07 | Mean of $11=-3^{\prime \prime}, 45$ |
|  | 38,15 3822 | 880 | 4,34 4,45 |  | 31 | 43,13 | 11,45 | 2,19 | Mean of $11=-3^{\prime \prime}, 45$ |
| 9 | 38,46 | .. | 4,01 |  | June 1 | 43,21 | 11,45 | 2,11 |  |
| 10 | 38,25 | . | 4,42 |  | 2 | 43,34 |  | 1,98 |  |
| 11 | 38,36 | . | 4,31 | Mean of $10=-4^{\prime \prime}, 27$ | 3 | 43.13 | . | 2,19 |  |
| 12 | 37,91 | . | 4,76 |  | 4 | 43,06 | .. | 2,26 |  |
| 13 | 3798 | . | 4,69 |  | 5 | 43,34 | . | 1,98 |  |
| 14 | 38,29 | . | 4,38 |  | 6 | 43,95 | . | 1,37 |  |
| 15 | 38,42 | . | 4,25 |  | 7 | 43,56 | . | 1,76 |  |
| 16 | 38,35 | . | 4,32 |  | 8 | 43,45 | . | 1,87 |  |
| 17 | 38.65 | . | 4,02 |  | 9 | 43,56 | . | 1,76 |  |
| 18 | 38,39 | . | 4,28 |  | 10 | 43,56 | . | 1,76 |  |
| 19 | 38,42 | - | 4,25 |  | 11 | 43,24 | . | 2,08 |  |
| 20 | 38,29 | $\cdots$ | 4,38 |  | 12 | 43,49 | . | 1,83 |  |
| 21 | 38,18 | - | 4,49 | Mean of $10=-4^{\prime \prime}, 38$ | 13 | 43,31 | . | 2,01 | Mean of $14=-1^{\prime \prime}, 94$ |
| 22 | 38,49 | .. | 4.18 |  | 14 | 43,13 | . . | 2,19 |  |
| 23 | 38,46 | 9,16 | 4,57 |  | 15 | 42,65 | - | 2,67 |  |
| 24 | 38.70 | , | 4,33 |  | 16 | 42,62 | . | 2,70 |  |
| 25 | 38,78 | . . | 4,25 |  | 17 | 42,83 | . | 2,49 |  |
| 26 | 38,81 | . | 4,22 |  | 18 | 42,96 | . | 2,36 |  |
| 27 | 38,87 | . | 4,16 |  | 19. | 42,89 | . | 2,43 |  |
| 28 | 38,66 | . | 4,37 |  | 20 | 43,13 | . | 2,19 |  |
| 29 | 38,52 | - | 4,51 |  | 21 | 42,99 | . | 2,33 |  |
| 30 | 38,66 | . | 4,37 | Mean of $10=-4^{\prime \prime}, 37$ | 22 | 43,28 | . | 2,04 |  |
| May 1 | 38,29 | - | 4,74 |  | 23 | 42,86 | . | 2,40 | Mean of $10=-2^{\prime \prime}, 39$ |
| 2 | 38,22 | $\cdots$ | 4,81 |  | 24 | 42,86 | . | 2,46 |  |
| 3 | 38,66 | . | 4,37 |  | 25 | 42.76 | . | 2,56 |  |
| 4 | 38,49 | .. | 4,54 |  | 26 | 42,96 | . | 2,36 |  |
| 5 | 38,42 | . | 4,61 |  | 27 | 42,96 | . | 2,36 |  |
| 6 | 38,35 | . | 4,68 |  | 28 | 42,99 | $\cdots$ | 2,33 |  |
| 7 | 38,35 | . | 4,68 |  | 29 | 4286 | 11,59 | 2,60 |  |
| 8 | 38,94 | . . | 4,09 |  | 30 | 42,89 | . | 2,57 |  |
| 9 | 38,84 | . | 4,19 |  | July 1 | 42,62 | . | 2,84 |  |
| 10 | 41,07 | 12,51 | 5,31 |  | 2 | 43,21 | * | 2,25 |  |
| 11 | 41,97 | .. | 4,41 | Mean of $10=-4^{\prime \prime}, 57$ | 3 | 43,13 | . | 2,33 | Mean of $10=-2^{\prime \prime}, 47$ |
| 12 | 41,68 | . | 4,70 |  | 4 | 42,89 | . | 2,57 |  |
| 13 | 42,00 | . | 4,38 |  | 5 | 43,06 | . | 2,40 |  |
| 14 | 42,24 | . | 4,14 |  | 6 | 43,24 | . | 2,22 |  |
| 15 | 41,79 | . | 4,59 |  | 7 | 43,17 | . | 2,29 |  |
| 16 | 41,61 | . | 4,77 |  | 8 | 43,14 | .. | 2,32 |  |
| 17 | 41,93 | . | 4,45 |  | 9 | 43,31 | . | 2,15 |  |
| 18 | 42,30 | . | 4,08 |  | 10 | 4:3,31 | . | 2,15 |  |
| 19 | 42,33 | $\cdots$ | 4,05 | Mean of $8=-4^{\prime \prime}, 39$ | 11 | 4,3,31 | . | 2,15 |  |
| 20 | 42,65 | . | 3,73 |  | 12 | 43,31 | . | 2,15 |  |
| 21 | 42,72 | . | 3,66 |  | 13 | 43,59 | . | 1,87 | Mean of $10=-2^{\prime \prime}, 23$ |
| 22 | 42,86 | . . | 3,52 |  | 14 | 43,41 | . | 2,05 |  |
| 23 | 42.86 | . | 3.52 |  | 15 | 43,66 | . | 1,80 |  |
| 24 | 43,96 | . | 3,42 |  | 16 | 43,73 | . | 1,73 |  |
| 2.5 | 42,89 | . | 3,49 |  | 17 | 43,83 | . | 1,63 |  |
| 26 | 42,93 | . | 3,45 |  | 18 | 43,91 | . | 1,55 |  |
| 27 | 42,96 | . | 3,52 |  | 19 | 43,76 | .. | 1,70 |  |
| 28 | 43.03 | $\cdots$ | 3,35 |  | 20 | 43,73 | . | 1,73 |  |


| 1836 | N | C | $\left\|\begin{array}{c} \mathrm{N}-\mathrm{C} \\ 33^{\prime \prime}, 87 \\ =\mathrm{A} \end{array}\right\|$ | Remarks. | 1836 | N | C | $\begin{gathered} \mathrm{N}-\mathrm{C}-87 \\ 33^{\prime}, 877 \\ =\mathrm{A} \end{gathered}$ | Remarks. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | " | " | " |  |  | " | " | " |  |
| July 21 | +43,66 | +11,59 | -1,80 |  | Sep. 9 | +43,21 | +12,16 | $-2,82$ |  |
| 22 | 43,54 |  | 1,92 | Mean of $9=-1^{\prime \prime}, 77$ | 10 | 43,31 | +12, | 2,72 |  |
| 23 | 43,54 | 10,40 | 0,73 |  | 11 | 43,13 | . | 2,90 |  |
| 24 | 43,38 | .. | 0,89 |  | 12 | 43,00 | . | 3,03 |  |
| 25 | 43,56 | . | 0,71 |  | 13 | 42,89 | . | 3,14 | Mean of $10=-2^{\prime \prime}, 75$ |
| 26 | 43,59 | $\cdots$ | 0,68 |  | 14 | 42,77 | . $\cdot$ | 3,26 |  |
| 27 | 43,63 |  | 0,64 |  | 15 | 43,28 | . | 2,75 |  |
| 28 | 43,59 |  | 0,68 |  | 16 | 43,03 | . | 3,00 |  |
| 30 | 43,87 | $\cdots$ | 0,40 |  | 17 | 43,17 | . | 2,86 |  |
| 31 | 43,69 | -• | 0,58 |  | 18 | 43,20 | . | 2,83 |  |
| Aug. 1 | 43,48 | . | 0,79 |  | 19 | 43,03 | . | 3,00 |  |
|  | 43,66 | . | 0,61 | Mean of $10=-0^{\prime \prime}, 67$ | 20 | 43,31 | . | 2,72 |  |
| $3$ | 43,63 | . | 0,64 |  | 21 | 43,03 | . | 3,00 |  |
| 4 | 43,31 | . | 0,96 |  | 22 | 43,38 | . | 2,65 |  |
| 5 | 43,34 | . | 0,93 |  | 23 | 43,31 | . | 2,72 | Mean of $10=-2^{\prime \prime}, 88$ |
| 6 | 43,52 | . | 0,75 |  | 24 | 43,34 | . | 2,59 |  |
| 7 | 43,34 | . | 0,93 |  | 25 | 43.37 | . | 2.66 |  |
| 8 | 43,17 | . | 1,10 |  | 26 | 43,31 | . | 2,72 |  |
| 9 | 43,69 | . | 0,58 |  | 27 | 43,03 | . | 3,00 |  |
| 10 | 43,69 | . | 0,58 |  | 28 | 43,06 | . | 2,97 |  |
| 11 | 43,34 | -• | 0,93 |  | Oct. 2 | 42,88 | -• | 3.15 |  |
| 12 | 43,41 | . | 0,86 | Mean of $10=-0^{\prime \prime}, 83$ | 3 | 43,39 | . | 2,64 |  |
| 13 | 44,01 | . . | 0,26 |  | 4 | 43,00 | . | 3,03 |  |
| 14 | 43,66 | -• | 0,61 |  | 5 | 43,38 | - | 2,65 |  |
| 15 | 43,52 | . | 0,75 |  | -6 | 42,96 | . | 3,07 |  |
| 16 | 4:3.69 | . | 0,58 |  | 7 | 43,13 | . | 2,90 |  |
| 17 | 43,80 | .. | 0.47 |  | 8 | 43,31 | . . | 2,72 |  |
| 18 | 43,83 | . | 0,44 |  | 9 | 43,62 | $\cdots$ | 2,41 | Mean of $13=-2^{\prime \prime}, 81$ |
| 19 | 43,90 | . . | 0,37 |  | 10 | 39,18 | 10,55 | 5,24 |  |
| 20 | 43,80 | .. | 0,47 |  | 11 | 39,28 | .. | 5,14 |  |
| 21 | 43,69 | . | 0.58 |  | 12 | 39,45 | .. | 4,97 |  |
| 22 | 43,59 | . | 0,68 | Mean of $10=-0^{\prime \prime}, 52$ | 13 | 39,55 | . | 4,87 |  |
| 23 | 43,90 | $\cdots$ | 0,37 |  | 14 | 39,52 | . | 4,90 |  |
| 24 | 43,63 | . | 0,64 |  | 1.5 | 39,76 | . | 466 |  |
| 25 | 43,63 | .. | 0,64 |  | 16 | 40,46 | . | *3,96 |  |
| 26 | 43,69 | $\cdots$ | 0,58 |  | 17 | 39,76 | -• | 4,66 |  |
| 27 | 45,30 | 12,16 | 0,73 | Mean of $5=-0^{\prime \prime}, 59$ | 18 | 39,93 | . | 4.49 |  |
| 28 | 44,34 | .. | 1,69 |  | 19 | 39,79 | -• | 4,63 |  |
| 29 | 44,07 | - | 1,96 |  | 20 | 39,52 | . | 490 |  |
| 30 | 44,14 | . | 1,89 |  | 21 | 39,93 | . | 4,49 |  |
| 31 | 44,07 | . | 1,96 |  | 22 | 39,86 | . | 456 |  |
| Sep. 1 | 44,08 | . | 1,95 |  | 23 | 39,79 | .- | 4,63 |  |
| 2 | 43,87 | . | 2,16 |  | 24 | 39.59 | . | 4,83 |  |
| $3$ | 43,90 | . | 2,13 | Mean of $7=-1^{\prime \prime}, 96$ | 25 | 39,67 | -. | 4,65 |  |
| 4 | 43,21 | . | 2,82 |  | 26 | 40,03 | - | 4,39 |  |
| 5 | 43,48 | . . | 2,55 |  | 27 | 40,18 | . | 4,24 |  |
| 6 | 43.55 | - | 2,48 |  | 28 | 40,36 | - 0 | 4,06 |  |
| 7 | 43,76 43,21 | ... | 2,27 2,82 |  | 29 | 39,66 | -c | 4,76 | Mean of $19=-4^{\prime \prime}, 68$ |
|  | 43,21 |  |  |  |  |  |  |  |  |

[^5]On the 3rd November 1836 the centre wire was brought to touch the edge of the North mark; hence, from this date up to the 2lst November 1836 the Instrumental error in Azimuth was North 12",40 West.
On the 22d November I adjusted the centre wire to bisect a mark which had been erected to the East of the above;-hence, as has already been shewn; -from this date up to the 7th December 1836 the Instrumental error in Azimuth was North 7",87 West.
On the 8th December the Instrument was adjusted to a perman ent mark, which I had caused to be erected nearly in the direction of the meridian, upon the old Northern Pier ; hence ; -
from the 8th December 1836 to 17th January 1837 the Instru- $\} \mathrm{N} 2^{\prime \prime}, 64 \mathrm{~W}$.
mental error in Azimuth was In the intervals just alluded to, the coincidence of the centre wire with the mark was examined every day at Sun rise and Sun set, and on two occasions -On January 6th, and 8th, a small correction of the bisection was made for a deviation to the East of the meridian.
Since the 18th January 1837, the coincidence of the centre wire with the mark has been examined every day at Sun rise and Sun set, and adjustment made when necessary; hence, if C represent the error of Collimation, the Azimuth error $A=C \pm 2^{\prime \prime}, 64$; thus-


## REDUCTIONS EMPLOYED.

The places of the known stars have been corrected for Aberration, Nutation, and Precession, from the values of $a, b, c, d, \& c$. given in the Royal Astronomical Society's Catalogue, in conjunction with those of A, B, C, D, furnished in the Nautical Almanac; save that a correction has been made when necessary to adapt these latter values to the instant of the Star's Transit.

The table of Refractions employed, is that constructed by Mr. Henry Atkinson, and printed in the 2d Volume of the Astronomical Society's Memoirs, using the "in door" thermometer:-The remaining corrections for the Sun or Planets, have been derived either from the Nautical Almanac, or from Mr. Baily's Astronomical Tables.

In the reduction of the Moon's Place, the ratio of the Polar and Equatoreal Axes of the Earth has been taken at 299: 300
from which we get the angle of the vertical $=5^{\prime} 0^{\prime \prime}$
Radius of the Earth $=, 999825$

## ERROR AND RATE OF THE TRANSIT CLOCK.

The error of the Transit Clock has been determined with reference to the Madras Results given in Vol. II; selecting those stars only which have been frequently observed-which are situated near to the Equinoctial, and which differ less than one tẻnth of a second from the Greenwich Catalogue.*

In general it has been my custom to divide the hours of observing into " watches" of three hours each, and to observe during each watch three of these

[^6]stars for the determination of the Clock Error ;-by this arrangement, any irregularity in the going of the Clock is rendered of little consequence, since the rate is trusted only for one and a half or two hours at most ; with regard to the Sun, and the Planets Mercury and Venus,-it frequently happens from clouds or haze that no star has been observed within 6 or 8 hours of their passage; in ${ }^{4}$ this case-when the rate has appeared irregular, I have cancelled the observation. In the comparison of the errors of the Clock on one night, with those of another, for the rate, as well as in their employment for the determination of the places of the unknown Stars, it has always been my custom to compare the results of each observer with his own observations only ; by which means, the direct influence of personal equation is avoided; from a recent examination however, I am happy to find, that this perplexing and unaccountable source of error, reaches to a very trifling amount in the observations composing the present volume.

In a former volume I mentioned having endeavored to exclude insects from the works of the clock, by making the case as nearly as practicable air tight; in this particular nowever I have since been compelled to relax a little, in consequence of the extremely faint beat of the clock being lost by the unavoidable noise of the observer at the circle, or by the least noise of natives or conveyances passing in the road; the result has been that on two occasions during the last two years, I have been able satinfactorily to account for the ill going of the clock by finding a spider's line attached to the pendulum; at other times -other causes apparently have operated; thus, on the 27th January 1836 the clock was cleaned, when from some cause not apparent, it continued to lose on its rate until the 8 th March, when it was regulated; after this it continued to lose further upon its rate until the lst May, when the thick state of the oil upon the escapement was the only apparent circumstance to account for the previous ill going; the oil I had applied was ordinary salad oil, but the temperature of from 95 to 105 Fahrenheit (which is usual for several hours during the day at this time of the year) fully accounts for its having become thick.

| 1836 | Daily Rate. | Remaris. | 1836 | Daily Rate. | Remaris. |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | s. |  |  | s. |  |
| Jan. 3 <br>  4 <br>   <br>   | $+1,01$ 0,68 |  | Feb. 25 | $-4,88$ 3,96 |  |
|  | -0,09 |  | 27 | 3,72 |  |
|  | 1,17 |  | 28 | 4,71 |  |
| 8 | 1,67 |  | 29 | 4,92 |  |
| 9 | 1,26 |  | Mar. ${ }^{1}$ | 5,18 |  |
| 10 | 1,23 2 |  | $\begin{array}{r}2 \\ -\quad 3 \\ \hline\end{array}$ | 4,99 |  |
| 13 | 4,80 |  | 3 5 | 4,81 5,44 |  |
| 14 | 3,03 |  | 6 | 5,48 |  |
| 15 | 4,27 |  | 7 | 5,46 |  |
| 16 | 5,00 |  | 8 |  | I regulated the Clock. |
| 17 | 5,85 6,02 |  | 9 10 | $+1,01$ +1 |  |
| 19 | 6,70 |  | 11 | $+1,01$ $+0,18$ |  |
| 20 | 6,41 |  | 12 | -0,31 |  |
| 21 | 6,75 |  | 13 | 0,85 |  |
| 22 | 6,60 |  | 14 | 3,70 |  |
| 23 | 6,88 |  | 15 | 5,53 |  |
| 24 | 7,20 |  | 16 | 5,61 |  |
| 25 | 8,31 |  | 17 | 2,69 |  |
| 26 | 7,18 |  | 18 | 2,33 |  |
| 27 |  | On cleaning the Clock I found | 19 | 3,09 |  |
| 28 29 | 1,90 2 | a spider's line attached to | 20 | 3,16 |  |
| 30 | 1,55 | the pendulum. | 21 | 2,32 2,83 |  |
| 31 | 0,65 |  | 23 | 2,35 |  |
| Feb. 1 | 2,42 |  | 25 | 3,48 |  |
|  |  | Wound up the Clock. | 26 | 4,02 |  |
| 3 | 2,41 |  | 27 | 4,23 |  |
| 4 | 2,41 |  | 28 | 4,18 |  |
| 5 | 2,19 |  | 29 | 4,38 |  |
| 6 | 3,20 |  | 30 | 4,59 |  |
| 7 | 1,72 |  | 31 | 4,77 |  |
| 8 | 1,10 |  | April 1 | 4,72 |  |
| 9 10 | 1,05 |  | 2 | 4,99 |  |
| 10 | 0,98 |  | 3 | 4,94 |  |
| 11 | 0,87 |  | 4 | 5.85 |  |
| 12 | 0,76 |  | 5 | 5,36 |  |
| 13 | 0,99 |  | 6 | 5,80 |  |
| 14 | 1,73 |  | 7 | 5,25 |  |
| 15 | 0,91 |  | 8 | 4,59 |  |
| 16 17 | 1,42 |  | 9 | 4,85 |  |
| 17 18 18 | 1,73 |  | 10 | 4,45 |  |
| 18 <br> 19 | 2,21 |  | 11 | 4,44 |  |
| 19 | 2,76 3.20 |  | 12 | 4,61 4.88 |  |
| 21 | 3,87 |  | 14 | 4.88 503 |  |
| 22 | 3,38 |  | 15 | 5.07 |  |
| 23 | 3,48 |  | 16 | 5,04 |  |
| 24 | 3,64 |  | 17 | 5,10 |  |


| 1836 | Daily Rate. | Remarks. | 1836 | Daily Rate. | Remaris. |
| :---: | :---: | :---: | :---: | :---: | :---: |
| April 18 | s. $-5,77$ |  | June 19 | s. |  |
| April 19 | 5,38 |  | June 20 | 4,25 |  |
| 20 | 4,77 |  | 28 | 4,95 |  |
| 21 |  |  | 30 | 4,73 |  |
| 22 | 4,57 |  | July 3 | 3,05 |  |
| 23 | 4,88 |  | 4 | 3,84 |  |
| 24 | 4,98 |  | 9 | 4,25 |  |
| 25 |  |  | 10 | 3,52 |  |
| 26 | 5,05 |  | 14 | 3,95 |  |
| 27 | 5,38 |  | 15 | 4,70 |  |
| 28 | 5,51 |  | 16 | 4,35 |  |
| 29 | 5,8:3 |  | 17 | 5,22 |  |
| $30$ | -5,04 | Oil thick-cleaned and regulated the clock. | 18 | 2,22 | Regulated the Clock. |
| May 1 | +2,51 |  | 19 | 2,25 |  |
| 12 | 2,76 |  | 22 | 2,47 |  |
| 3 | 2,33 |  | 26 | 2,90 |  |
| 4 | 2,33 |  | 27 | 1,63 |  |
| 5 | 3,13 |  | 28 | 0,90 | 7 |
| 6 | 2,86 |  | 30 | 0,92 |  |
| 8 | 2.86 |  | Aug. 2 | 0,08 |  |
| 9 | 3,40 |  | 4 | 0,03 |  |
| 11 | 5.75 |  | 9 | +0.96 | Continued cloudy weather. |
| 15 | 3,29 | (Wound up the clock, pui | 10 | 1,72 |  |
| 16 |  | $\{$ it back 3 minutes and re- | 11 | 1,45 |  |
| 18 | -5,75 | \ gulated it. | 14 | 1,65 |  |
| 19 | 4,17 |  | 16 | 2.13 | J |
| 20 | 4,02 |  | 17 | 2,75 |  |
| 21 | 4,27 |  | 19 | 2,21 |  |
| 22 | 4,70 |  | 21 | 2,59 |  |
| 23 | 4, 00 |  | 23 | 3,51 |  |
| 24 | 3,99 |  | 27 | 4.88 |  |
| 25 | 4,29 |  |  | 4,54 |  |
| 26 | 3,97 |  | Sep. 6 |  | Continued cloudy weather, I regulated the clock |
| 28 | 4,31 |  | 7 | -4,26 | \% I regulated the clock. |
| 29 | 4,40 |  | 8 | 3,22 |  |
| 30 | 4,33 |  | 9 | 3.64 |  |
| 31 | 4,36 |  | 10 | 2,40 |  |
| June 1 | 3,99 |  | 11 | 2,54 |  |
| 5 | 4.07 |  | 12 | 1.94 |  |
| 6 | 3,86 |  | 13 | 1,55 |  |
| 7 | 4,49 |  | 14 | 1.80 |  |
| 8 | 4,69 |  | 15 | 0,59 |  |
| 9 | 4,46 |  | 16 | 1,75 |  |
| 10 | 500 |  | 20 | 2,02 |  |
| 11 | 5,04 |  | 21 | 1,96 |  |
| 12 | 5,17 |  | 23 | 2,78 |  |
| 13 | 5,38 |  | 24 | 1,81 |  |
| 14 | 5,02 |  | 25 | 2,75 |  |
| 15 | 5,12 |  | 26 | 2,15 |  |
| 17 | 4.00 |  | 30 | 2.00 |  |
| 18 | 4,70 |  | Oct. 1 | 2,66 |  |


| 1836 | Daily Rate. | Remaris. | 1836 | Daily Rate. | Remarks. |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Oct. $\begin{array}{rr}2 \\ 3 \\ 6 \\ 7 \\ 7 \\ 8 \\ 9 \\ 10 \\ 11 \\ 12 \\ 13 \\ 14 \\ 15 \\ 16 \\ 17 \\ 18 \\ 19 \\ 2\end{array}$ | s.12 |  | Dec. 19 | s. |  |
|  | 3,88 |  | Dec. 20 | 3,43 |  |
|  | 2,53 |  | 21 | 3,60 |  |
|  | 1,70 |  | 23 | 3.66 |  |
|  | 1,62 |  | 24 | 3,28 |  |
|  | 2,12 |  | 26 | 3,43 |  |
|  | 1,69 |  | 31 | 2,96 |  |
|  | 2,16 |  | 1837 |  |  |
|  | 2,61 3,16 |  | Jan. $\begin{array}{r}1 \\ \\ \\ \\ \hline\end{array}$ | 1,72 1,59 |  |
|  | 3,33 |  |  | 1,42 |  |
|  | 2,91 |  |  | 1,22 | $\left\{\begin{array}{l}\text { Put clock backward three } \\ \text { minutes. }\end{array}\right.$ |
|  | 3,10 |  |  | 0,87 |  |
|  | 2,97 |  | 8 | 1,37 |  |
|  | 0,61 |  | 9 | 1,59 |  |
|  | 1,33 |  | 10 | 1,17 |  |
|  | 1,52 |  | 11 | 1,17 |  |
|  | 1,47 |  | 12 | 1,82 |  |
|  | 1,70 |  | 13 | 1,46 |  |
|  | 2,24 |  | 15 19 | 1,10 | Wound up the clock. |
|  | 2,65 |  | 19 | 3,44 2,00 |  |
|  | 2,80 | ( ${ }^{\text {a }}$ ( Mostly cloudy weather. It | 21 | 2,19 |  |
| Nov. 7 | +2,38 |  | 22 | 1,83 |  |
|  | 3,53 |  | 23 | 1,30 |  |
| 9 | 4,28 |  | 24 | 0,94 |  |
| 10 | 4,20 |  | 25 | 0,90 |  |
| 11 | 1,26 |  | 26 | 1,35 |  |
| 12 | 1,78 |  | 27 | 1,30 |  |
| 13 | 3,00 |  | 28 | 0,62 |  |
| 18 | 3,20 |  | 29 | 1,07 |  |
| 22 | 1,06 |  | 30 | 0,38 |  |
| 23 | 1,00 |  | - 31 | 1,20 |  |
| 24 | 0,92 |  | Feb. 2 | -0,31 |  |
| 25 26 | 0,52 |  | 3 | +0,38 |  |
| 26 <br> 27 | 0,38 |  | 4 <br> 5 | -0,19 $+0,10$ |  |
| 27 <br> 28 | 0,48 0,78 |  | 5 | $+0,10$ $-0,07$ |  |
| 29 | 3,00 |  | 7 | -0,09 |  |
| Dec. | 2,65 |  | 8 | 1,73 |  |
|  | 4,38 |  | 9 | 0,45 |  |
|  | 3,99 |  | 10 | 0,57 |  |
|  | 4,75 |  | 11 | 0,71 |  |
|  | 5,13 |  | 12 | 0,88 |  |
|  |  | \{ applied oil to the pallets. | 13 | -0,28 |  |
|  | 2,85 |  | 14 | +0,26 |  |
|  | 0,58 |  | 15 | 0,28 |  |
|  | 0,70 |  | 16 | 0,24 |  |
|  |  | Wound up the clock. | 17 | 0,53 |  |
|  | -3,64 |  | 18 | 0,38 |  |


| 1837 | Daily Rate. | Remaris. | 1837 | Dily <br> Rate. | Remaris. |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Feb. 19 | s. $+0,19$ |  | April 18 | -1,80 |  |
| 20 | 1,38 |  | April 18 | -1,76 |  |
| 21 26 | +0,22 |  | 20 | 1,41 |  |
| \| 26 | $-3,00$ | ¢ Continued cloudy weather. | 21 | 1,51 |  |
| 26 28 | 3,49 |  | 22 | 2,00 |  |
| Mar 28 | 3.74 |  | 23 | 1,97 |  |
| Mar. 1 | 4,78 |  | 24 | 2,35 |  |
| 2 | 5,00 |  | 25 | 2,20 |  |
| 4 | 5,00 |  | 26 | 2,31 |  |
| 5 | 4,18 |  | 27 | 2,25 |  |
| 6 | 4,41 |  | 28 | 2,36 |  |
| 7 8 | 4,73 |  | 29 | 3,00 |  |
| 8 | 3,81 |  | 30 | 1,68 |  |
| 9 | 3,96 |  | May 1 | 2,76 |  |
| 10 | 3,32 |  | 2 | 2,45 |  |
| 11 | 4,42 |  | 3 | 1,91 |  |
| 12 | 4,90 |  | 4 | 1,69 |  |
| 13 | 5,35 |  | 5 | 2,16 |  |
| 14 | 4,77 |  | 9 | 2,36 |  |
| 15 | 4,69 |  | 10 | 2.41 |  |
| 16 | 4,37 |  | 11 | 2,90 |  |
| 17 | 3,95 |  | 12 | 2,47 |  |
| 18 | 3,35 |  | 15 | 2,75 |  |
| 19 | 4,20 |  | 16 | 2,68 |  |
| 20 | 4,46 |  | 17 | 2,60 |  |
| 21 | 3,53 |  | 18 | 2.20 |  |
| 22 | 3,12 |  | 24 | 3,04 |  |
| 23 | 4,77 |  | 28 | 3,07 |  |
| 24. | 5,62 |  | 30 | 3,98 |  |
| 25 | 5,16 |  | 31 | 3,37 |  |
| 26 | 4,71 |  | June 6 | 2,49 |  |
| 27 | 3,63 |  | 7 | 1,98 |  |
| 28 | 4,51 |  | 8 | 2,18 |  |
| 29 | 6,44 |  | 9 | 2,80 |  |
| $30$ | 5,94 |  | 10 | 2,40 |  |
| 31 | 6,75 |  | 11 | 2,82 |  |
| April 1 | 7,30 |  | 13 | 3,28 |  |
| 2 | 6,44 |  | 14 | 3,15 | ) |
| $3$ |  | moved a fine thread which | 16 | 3,44 | Mostly cloudy weather, pe- |
| $4$ |  | had been attached to the | 20 | 2,95 | ( Mostly cloudy weather, pe- |
| $5$ |  | pendulum by some mis- | 26 | 3,45 | $\}$ soon. |
| 7 | -0,60 | chievous spider. | 29 | 3,80 | soon. |
| 8 | -0,85 |  | 30 | 3,20 |  |
| 9 | -1,73 |  | July 3 | 2,65 | ) |
| 11 | +0,26 |  | 8 | 2,50 |  |
| 12 | +0,67 |  | 9 | 2,46 |  |
| 13 | +0,26 |  | 10 | 2,97 |  |
| 14 | -2,79 |  | 11 | 2,73 |  |
| 15 | 2,22 |  | 13 | 3,29 |  |
| 16 | 1,25 |  | 14 | 3,55 |  |
| 17 | 1,50 |  | 15 | 4,36 |  |


| 1837 | Daily Rate. | Remarks. | 1837 | Daily Rate. | Remarks. |
| :---: | :---: | :---: | :---: | :---: | :---: |
| July 16 | s. |  | Oct. 12 | s. |  |
| faly 19 | -4,59 |  | 13 | 0,86 |  |
| 20 | 4,65 | \{ Continued cloudy weather. | 14 | 0,56 |  |
| Aug. 2 | 1,50 | $\{$ Continued cloudy weather. | 15 | 0,08 |  |
| 8 | 1.56 |  | 16 | 1,29 | \{The seconds hand tript in |
| 9 | 1,63 |  | 17 |  | ) winding. |
| 10 | 1,16 |  | 23 | 1,54 |  |
| 13 | 1,65 |  | Nov. 6 | 1,41 | \{ Continued cloudy weather. |
| 20 |  | \{ Continued cloudy weather. | Nov. 7 | 1,51 |  |
| 21 22 | 2,31 |  | 8 |  |  |
| 22 | 1,33 |  | 12 | 1,03 |  |
| 23 27 | 0,58 |  | 17 21 |  | $\{$ backwards in winding. |
| 27 | 2,34 |  | 21 | 1,71 |  |
| 28 | 1,43 |  | 24 26 | 340 |  |
| 29 | 0,65 |  | 26 | 3,85 |  |
| 30 | 0,44 |  | 27 | 2,90 |  |
| Sep. 14 | 2,75 |  | 28 | 2,27 |  |
| 15 | 2,60 |  | 29 | 2.56 |  |
| 16 | 2,09 |  | Dec. 15 | 2,09 |  |
| 17 | 1,77 |  | 16 | 2,39 |  |
| 18 | 1,40 |  | 17 | 2,20 |  |
| 19 | 1,78 |  | 18 | 2,54 |  |
| 20 | 1,76 |  | 19 | 2,79 |  |
| 21 | 1,78 |  | 20 | 2,57 |  |
| 22 | 1,71 |  | 21 | 2,30 |  |
| 23 | 1,88 |  | 24 | 4,08 |  |
| 24 | 1,38 |  | 25 | 2,85 |  |
| 25 | 1,87 |  | 26 | 2,57 |  |
| 26 | 1,01 |  | 27 | 2,91 |  |
| 27 | 1,51 |  | 28 | 2,55 |  |
| 28 | 0,96 |  | 29 | 3,19 |  |
| Oct. 10 | 1,22 |  |  |  |  |

## METEOROLOGICAL INSTRUMENTS EMPLOYED.

The Barometer employed at the commencement of 1836 and up to the end of October of that year, was a Standard (No. 6.) by Gilbert which-as has been explained in Vol. III., I had been allowed to select from several, which were supplied to the Surveyor General's Department at Calcutta;-the diameter of the tube was 0,22 inches and the zero correction- 0,006 inches; rendering necessary to the registered observations, the correction for temperature $+0,051-0,006$; or, where in the table of refractions allowance is made for
the temperature of the quicksilver,- the correction,+ 045 is simply necessa-ry.- The thermometers employed during this period were, a Standard by Troughton (which when in England I had carefully compared with the Royal Society's Standard) and one by Jones, which agreed to identity with it; the former being employed outside and the other inside the building. During the Storm on the 31st October neither of these Instruments escaped destruction, so that I had now no remedy left, but that of filling a tube ;-accordingly I availed myself of two unbroken glass tubes and cisterns, and the brass scales of the barometers hitherto employed, and set to work as follows; the quicksilver was purified by repeated washings in diluted nitric acid, and was then heated to a temperature little short of boiling water to drive off moisture: the tube was now heated-the hot mercury gradually poured in, and a small air bubble sent up in the usual way to collect stray bubbles:-after filling two tubes in this way with as much care as it was possible to bestow-finding that a difference of less than one hundredth of an inch existed between them, I concluded that with the exception of finding the specific gravity of the mercury; all that was necessary to ensure a good barometer, and accurate results, had been done; accordingly on the 11 th December 1836 I commenced to employ one of these barometers, making an allowance of $+0,051$ for capilliary action (corresponding to abore of 0,22 inches). In the interim between 1st November and this date, a barometer by Tagliabue was employed, whose correction then appeared to be 0,002 inches subtractive.

The Storm had passed away, and its effects had been forgotten in the busy mornings and evenings of the fine months of January and February, and, with the exception of an occasional glance at the two barometers and a feeling of pleasure at their coincidence-no further thought of them was given until the 10th of May: On this day to ublige a friend I had undertaken, after purifying the mercury in his barometer,--to boil it in the tube; (a precaution I had feared to undertake with my own, having no spare tubes): On comparing the barometer thus constructed with the two "Standards", to my utter astonishment, a correction 0,125 inches additive to both of mine, appeared necessary ; -at first 1 felt convinced that the error lay with the newly tumancted barometer, but after boiling the mercury in the tubes of the two hitherto supposed Standards, they both exhibited increased readings to the above amount-S ince this time I have frequently filled barometer tubes, and have found a coincidence between them and the now considered "Standards" which leaves me confiden $t$ of not being above 0,01 inches in error. To ascertain at what date this correc-
tion ought to commence, or if its progress had been gradual, I compared the meteorological observations of November 1836 with those of former years* when it was at once evident that the correction was due to all observations since the storm. Hence, in the observations of November 1836, and up to 10th May 1837 the correction,+ 125 is necessary for zero error, and,+ 051 for capilliary action, and for subsequent observations, the latter correction only should be employed.

The Thermometers employed since the Storm, are two by Bate, of an ordinary description, which at my request had been sent out to this country for rough purposes by the Honorable Court of Directors: I took the precaution on receiving them (which was a few days before the Storm) to note their difference (at $75^{\circ}$ ) from the Standard hitherto in use, when neither of them differed more than two tenths of a degree: with this testimony of their accuracy, there need be no fear of their errors at any point in the scale being of importance.

## OF THE MURAL CIRCLE.

This Instrument having been minutely described in Vol. I., it is only necessary here to state, that the focal length of the telescope is 49 inches, with a clear asserture of $3 \frac{3}{4}$ inches; and that the diameter of the circle is four feet:The divisions are beautifully cut on a slip of gold (let in upon the circumference of the wheel) to every 5 minutes, and the sub-division of these is effected by four Microscopes situated at $90^{\circ}$ apart, viz. two horizontally and two vertically -the readings of each microscope are registered to a tenth of a second, but the error of making a single bisection at either microscope, arising from false light principally, may in some cases amount to $1^{\prime \prime}, 5$ but generally, I think that the half of this may be stated to be the probable mean error of reading of each microscope.

[^7]The eye piece is supplied with five vertical and one horizontal fixed wires, and one horizontal moveable wire; -the power employed for astronomical observations is about 120, and for the observation of the collimation, about 70The stability of the Instrument is equal to any thing that could be desired, a fact, which is well attested, from the circumstance that during the last 4 years I have not had occasion to adjust it either for level or azimuth-and a late examination of the axis, enables me to speak with confidence of its being now after 7 years use, in as grod a condition as when it was first erected.

## OBSERVATIONS MADE WITH THE MURAL CIRCLE.

In the years 1836 and 1837 the Mural Circle has contiuued to be employed as heretofore in the measurement of North Polar Distance-taking the mean of the four microscopes at each observation. In the Computation of the Index Error, I have employed the Madras Catalogue published in Vol. 1L., giving always a preference to those stars which differed the least from the Greenwich Catalogue, and restricting the limit of observations for this purpose to within $20^{\circ}$ of the zenith; by this arrangement, the anomaly which has been shewn to exist in the Cambridge Mural Circle (depending probably upon flexure of the horizontal wire)-would here necessarily have but a very trifling effect upon the Index Error; to discover its amount when the telescope was directed to the horizon,-in the year 1835 I availed myself of a plan which has already been described in Vol. MII., thus-"I directed the Circle Telescope to the North horizon and opposite to it, (in the window sill of the observatory) placed a 46 -inch telescope by Dolland, with its object glass presented to that of the circle telescope, and its whole length disposed in a right line with it;-turning the circle through $180^{\circ}$ to the South horizon, I in a similar way disposed another telescope (Dolland's 5 feet): -into the focus of the 46 telescope I had fitted a pair of cross lines, and the 5 feet telescope was supplied with a double wire micro-meter-matters thus arranged, I took out the circle eye piece and slide, and unscrewed the object glass, leaving a clear aperture of two inches through the circle telescope, by which means, with the assistance of the micrometer wire,

I was unable to adjust the line of collimation of the 5 feet telescope to parallelism with that of the 46 -inch placed in the opposite window, this done I re, placed the eye piece, screwed in the object glass, and immediately measured the angular distance between the telescopes; to guard against movement of the telescopes, the observation was not considered complete, till the object glass of the circle telescope had again been removed, and the parallelism of the two. other telescopes again examined; but the telescopes having been very securely fixed, no movement whatever was detected during the time of making the observations (about three hours)".

The result of several measurements in this way shewed that the angular distance between the two marks was,-(reckoning from the South horizon in the direction through the $\left.N a d i r^{*}\right)=180^{\circ} 0^{\prime} 0^{\prime \prime}, 38$ exhibiting a negative flexure to the amount $0^{\prime \prime}, 19$. Whether this remained constant or no during the early part of 1836, I have now no means of ascertaining ; but on the 27 th August, some rain having leaked through the roof, broken the wires, and wetted the inside of the object glass; I availed myself of the necessity of taking out the object glass to repeat the above experiment. Having put in a new set of silk lines; -from the mean of 5 separate measurements; the angle between the South Telescope through the Nadir up to the North Telescope, was $179^{\circ} 59^{\prime} 58^{\prime \prime}$, 88 : exhibiting a positive flexure of $0^{\prime \prime}, 56$ when directed to the horizon :- Since this period no further observations to this end have been made, which has arisen from a desire of not interrupting the observations, and from a fear of accident in taking out the object glass; -enough however has been done, to shew, that the reduction of the observations by using a common Index Error, entails a very trifling amount of error upon the Madras Results-In addition to the Index Error computed from the observed places of known stars, the observations with the Ru fecting Collimator have continued to be made three or four times every day; viz. at $0,6,12$ and 18 hours; by this means a severe check has always been kept upon the Index Error by the stars, and a very accurate knowledge of the difference between the one method and the other determined, of which I have now some idea of availing myself, by giving up the observation of known stars altogether.

[^8]Index Error of the Mural Circle for 1836 and 1837. 37


38 Index Error of the Mural Circle for 1836 and 1837.


Index Error of the Mural Circle for 1836 and 1837.


40 Index Error of the Mural Circle for 1836 and 1837.


Index Error of the Mural Circle for 1836 and 1837. 41


42 Index Erron of the Mural Circle for 1836 and 1837.


Index Error of the Mural Circle for 1836 and 1837. 43


44 Index Error of the Mural Circle for 1836 and 1837.

| Date. |  | $\begin{gathered} \text { Index Error } \\ \text { by } \\ \text { Stars. } \end{gathered}$ | Remaris. |  | Index Error by Reflecting Collimator. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1836  <br> Dec. 26 <br>  27 <br> 28  <br> 29  <br> 30  <br> 31  | $\} 9$ | -0 42,87 |  | 5 2 3 3 3 2 5 |  | $\}^{-0,43}$ |
| 1837 <br> Jan. |  |  |  |  |  |  |
|  | 5 | 42,80 |  | 5 | 42,20 | -0,60 |
|  | \} 8 | 44,01 |  | 4 | 42,55 | \}-1,61 |
| 4 5 | ) 5 | 44,22 |  | 5 5 5 | 42,25 42,28 | ${ }^{-1,94}$ |
| 6 | 5 | 44,00 |  | 4 | 43,27 | -0,73 |
| 7 | 5 | 44,28 |  | 5 | 43,81 | -0,47 |
| 8 | 6 | 43,89 |  | 5 | 43,47 | -0,42 |
| 9 | 8 | 44,44 |  | 5 | 42,97 | -1,47 |
| 10 | 6 | 43,26 |  | 3 | 42,49 | -0,77 |
| 11 | 6 | 42,80 |  | 5 | 42,77 | -0,03 |
| 12 | 7 | 43,46 |  | 4 | 41,75 | -1,71 |
| 13 |  |  |  | 2 | 42,95 |  |
| 14 | \% | 43,36 |  | 2 | 41,88 | <-1,60 |
| 15 |  | 43,36 |  | 2 | 41,65 | -1,60 |
| 16 | ) |  |  | 3 | 40,57 |  |
| 17 | 6 | 44,07 |  | 3 | 40,37 | -3,70 |
| 18 | 5 | 43,57 |  | 4 | 41,37 | $-2,20$ |
| 19 | 6 | 43,62 |  | 4 | 40,37 | -3,25 |
| 20 | 5 | 43,51 |  | 5 | 41,06 | -2,45 |
| 21 | 4 | 43,93 |  | 2 | 41,49 | -2,44 |
| 22 | 6 | 44,07 |  | 3 | 41,14 | -2,93 |
| 23 | 6 | 44,02 |  | 3 | 41,07 | -2,95 |
| 24 | 7 | 43,79 |  | 3 | 42,72 | -1,07 |
| 25 | 6 | 42,75 |  | 4 | 42,26 | -0,49 |
| 26 | 7 | 43,81 |  | 3 | 42,59 | $-1,22$ |
| 27 | 7 | 43,93 |  | 3 | 43,22 | -0,71 |
| 28 | 5 | 43,58 |  | 4 | 42,96 | -0,62 |
| 29 | 6 | 44,39 |  | 4 | 43,02 | -1,37 |
| 30 | \} 8 | 43,96 |  | 3 2 2 | 43,14 | $\}-0,93$ |
| Feb. $\begin{array}{lr} \\ & 1 \\ & 2 \\ & 3 \\ & 4 \\ & 5 \\ & 6 \\ & 7 \\ & 8 \\ & 9 \\ & 10 \\ & 11 \\ & 12 \\ & 13 \\ & \end{array}$ | ${ }_{7}$ | 43,75 |  | 2 2 2 | 42,91 44,39 | $+0,64$ |
|  |  |  |  | 4 | 43,61 |  |
|  | 6 | 43,63 |  | 3 | 44,27 | +0,64 |
|  | 7 | 43,65 |  | 2 | 42.30 | $-1,35$ |
|  | 8 | 43,41 |  | 3 | 42.66 | -0,75 |
|  | 11 | 43,63 |  | 3 | 43.41 | -0,22 |
|  | 5 | 43,82 |  | 4 | 41,71 | -2,11 |
|  | 8 | 44,06 |  | 3 | 41,72 | -2,34 |
|  | 7 | 44,36 |  | 3 | 42.25 | -211 |
|  | 6 | 43,65 |  | 3 | 41,78 | -1,87 |
|  | 6 | 44,22 |  | 4 | 42,09 | $-2,13$ |
|  | 6 | 43,18 |  | 5 5 | 41.92 | $-1,26$ $-0,52$ |
|  | 6 | 43,33 |  | 5 | 42,81 | $-0,52$ |



46 Index Error of the Mural Circle for 1836 and 1837.

| Date. | $\begin{gathered} \text { Index Error } \\ \text { by } \\ \text { Stars. } \end{gathered}$ | Remaris. |  | Index Error by Reflecting Collimator. |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1837 | '" | Mean - 37",36 |  | " |  |
| April 6  <br>  7 7 | -0 38,75 |  | 4 4 4 | $\begin{array}{ll}-0 & 39,07 \\ & 38,30\end{array}$ | $\}-0,07$ |
| 8 |  |  | 2 | 37,15 |  |
| 9 ${ }^{1}$ ( | 37,58 |  | 2 | 37,48 | $\}+0,07$ |
| 10 |  |  | 4 | 38732 | \} 0 |
| 118 | 37,75 |  | 5 | 37,62 | -0,13 |
| 12  <br> 13 10 | 37,84 |  | 4 | 38,95 38,10 | $\}+0,69$ |
| 14 |  |  | 3 | 37,82 |  |
| $15\} 9$ | 37,58 |  | 2 | 37,76 | $\}+0,25$ |
| 16 |  |  | 2 | 37,90 |  |
| 17 - | - |  | 4 | 38,37 |  |
| 186 | 36,81 |  | 4 | 38,26 | +1,45 |
| 19.6 | 37,09 |  | 4 | 37,72 | +0,63 |
| 20.6 | 37,06 |  | 3 | 37,65 | +0,59 |
| $21 \quad 6$ | 38,19 |  | 3 | 38,12 | -0,07 |
| 225 | 38,88 |  | 5 | 37,35 | $-1,53$ |
| 23.8 | 38,07 |  | 5 | 37,69 | -0,38 |
| 24.39 | 38,04 |  | 5 | 38,43 37 | $\}+0,05$ |
| ${ }_{26}{ }^{25} 6$ | 37,01 |  | 5 | 38,01 | +1,00 |
| $\left.\begin{array}{l}27 \\ 28\end{array}\right\} 8$ | 38,73 |  | 4 3 3 | 37,53 36,97 | \}-1,48 |
|  |  |  | 3 | 36,97 |  |
| May ${ }^{2}$ |  |  | 3 | 37,64 |  |
|  |  |  | 2 | 38,50 |  |
|  | 38,54 |  | 4 | 37,73 | -0,81 |
|  | 39,99 |  |  | 38,07 37,33 | \} $-2,29$ |
|  |  |  |  | 37,78 | ) |
|  | 38,19 |  | 4 | 36,82 | $\}-0,89$ |
|  |  |  | 4 | 36,56 |  |
|  |  |  |  | 37,26 |  |
|  | 38,00 |  | 3 | 37,47 | >-0,50 |
|  |  |  |  | 37,76 | ¢ 0,18 |
|  | 37,63 | Mean - $38^{\prime \prime}, 47$ | 3 | 37,45 | -0,18 |
|  | 37,08 |  | 3 | 37,55 |  |
|  | 37,08 |  | 3 | 37,67 | $\}+0,53$ |
|  |  |  | 4 3 3 | 37,13 |  |
|  | 37,98 |  | 3 | 38,10 | \} -0,11 |
|  |  |  | 3 | 37,65 | $\}-0,11$ |
|  | 38,39 |  | 4 4 | 37,33 37,65 | $\}-0,90$ |
|  |  |  | 4 | 37,49 |  |
|  |  |  | 4 | 36,87 |  |
|  |  |  | . 4 | 37,81 |  |
|  |  |  | 4 | 38,23 |  |
|  |  |  | 4 | 37,78 |  |
|  | 37,03 |  | 4 | 4 38,12 |  |
|  |  |  | 12 | 38,28 | $\}+1,17$ |



48 Index Erior of the Mural Circle for 1836 and 1837.

| Date. |  | $\begin{gathered} \text { Index Error } \\ \text { by } \\ \text { Stars. } \end{gathered}$ | Remarks. |  | $\left\lvert\, \begin{gathered} \text { Index Error by } \\ \text { Reflecting } \\ \text { Collimator. } \end{gathered}\right.$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1837 |  | " |  |  | " |  |
| July 12 |  |  |  | 4 | -0 35,78 |  |
| 13 |  | -0 35,95 |  | 4 | 35,45 | -0,50 |
|  | \} 10 | 36,18 |  | 3 4 4 | 35,57 36,49 | $\}-0,15$ |
| 16 | 5 | 36,12 |  | 3 | 36,08 | -0,04 |
| 17 |  |  |  | 3 | 36,15 |  |
| 18 |  |  |  | 2 | 35,76 |  |
| 19 |  |  |  | 3 | 36,34 |  |
| 20 |  |  |  | 3 | 36.35 |  |
| 21 |  |  |  | 2 | 36,12 |  |
| 22 |  | 36,13 |  | 2 | 36,55 | +0,42 |
| 23 |  |  |  | 3 | 36,38 |  |
| 24 |  |  |  | 2 | 36,32 |  |
| 25 |  |  |  | 3 | 35,99 |  |
| 26 |  |  |  | 3 | 35.78 |  |
| 27 |  |  |  | 3 | 36,19 |  |
| 28 |  |  |  | 2 | 36,41 |  |
| 29 |  |  |  | 2 | 35,80 |  |
| 30 |  |  |  | 2 | 36,10 |  |
| 31 |  |  |  | 2 | 36,63 |  |
| Aug. $\quad 1$ |  |  |  | 2 | 35,66 |  |
| 2 |  |  |  | 2 | 36,33 |  |
| 3 |  |  |  | 2 | 36,62 | - 1,06 |
| 4 |  | 37,11 |  | 2 | 35,66 | -1,06 |
| 5 |  |  |  | 2 | 3,5,95 |  |
|  |  |  |  | 2 | 36,10 |  |
| 7 |  | 36,56 |  | 3 | 36,22 | \} -0,41 |
| 8 | ${ }^{5} 6$ |  |  | 4 | 3609 | \} $-0,41$ |
|  |  | 37,42 |  | 4 | 3.5,59 | -1,83 |
| 10 | \} 9 | 36,58 |  | 4 | 35.60 | \} $-1,11$ |
| 12 |  | 37,32 |  | 4 | 35,20 | -2,12 |
| 13 |  |  |  | 2 | 35,00 |  |
| 14 |  |  |  | 2 | 35.41 |  |
| 15 |  |  |  | 2 | 37,42 |  |
|  |  | 38,09 |  | 2 | 37.31 | -1,74 |
| 17 |  |  |  | 2 | 36,65 | $r^{-1,4}$ |
| 18 |  |  |  | 2 | 36,60 |  |
| 20 |  |  |  | 2 | 36,51 |  |
|  |  |  |  | 2 |  |  |
| 22 |  | 38,50 |  | 3 | 36,20 36,75 | , $-2,03$ |
| 23 |  |  |  | 2 | 36,27 |  |
| 24 |  |  |  | 2 | 35,70 |  |
| 25 |  | 36,52 |  | 2 | 36,06 | \}-0,10 |
| 26 |  | 36,52 |  | 2 | 36,30 | $\}-0,10$ |
| 27 |  |  |  | 3 | 37,61 |  |
| 28 | 6 | 37,71 |  | 3 | 37,10 | -0,61 |
| 29 | 6 | 38,04 |  | 4 | 36,46 | -1,58 |

Index Error of the Mural Circle for 1836 and 1837.

| Date. |  | Index Error by Stars. | Remarks. |  | Index Error by Reflecting Collimator. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1837 |  | '" |  |  | ' " 76 |  |
| Aug. 30 |  |  |  | 3 | -0 36.13 |  |
| 31 |  |  |  | 2 | 36,66 |  |
| Sep. $\quad 1$ |  |  |  | 2 | 36,71 |  |
| 2 |  |  |  | 2 | 35,13 |  |
| 3 | $\zeta 6$ | -0 38,45 |  | 2 | 35,52 | -2,37 |
| 4 |  |  |  | 2 | 36,21 |  |
| 5 |  |  |  | 2 | 36,02 |  |
| 6 |  |  |  | 2 | 36,27 |  |
| 7 |  |  |  | 2 | 36.05 | J |
| 8 |  |  |  | 2 | 36,07 |  |
| 9 |  |  |  | 2 | 37,10 |  |
| 10 |  |  |  | 2 | 37,80 |  |
| 11 | $)^{12}$ | 37,18 |  | 2 | 37,49 | + $+0,10$ |
| 12 | $)$ |  |  | 3 | 36.74 |  |
| 13 |  | 38,03 |  | 4 | 36,92 | -1.11 |
| 14 | 6 | 37,96 |  | 4 | 36,69 | -1,27 |
| 15 | 5 | 37,81 |  | 4 | 37,09 | -0,72 |
| 16 | 7 | 38,00 |  | 3 | 36,88 | -1,12 |
| 17 | 6 | 39,34 |  | 3 | 37,15 | -2,19 |
| 18 | 6 | 38,73 |  | 3 | 37,16 | -1,57 |
| 19 | 6 | 37,55 |  | 3 | 36,97 | -0,58 |
| 20 | 6 | 38,29 |  | 4 | 37,47 | -0,82 |
| 21 | 9 | 39,29 |  | 4 | 38,73 | -0,56 |
| 22 | 8 | 38,97 |  | 4 | 39,72. | +0,75 |
| 23 | 5 | 38,36 |  | 4 | 37,65 | -0,71 |
| 24 | 6 | 38,45 |  | 3 | 37,85 | -0,60 |
| 25 | ) 9 | 38,17 |  | 3 | 38,17 |  |
| 26 | ${ }_{1} 9$ | 38,17 |  | 3 | 37,79 | $\}-0,19$ |
| 27 | 3 7 |  |  | 3 | 38,45 | $\}+0,28$ |
| 28 | 17 | 37,74 |  | 3 | 37,60 | $\}+0,28$ |
| 29 |  |  |  | 2 | 37,69 |  |
| 30 |  |  |  | 2 | 37,62 |  |
| Oct. 1 |  |  | Continued cloudy weather. | 2 | 37,70 |  |
| Oct. $\quad 2$ |  |  |  | 2 | 37,91 |  |
| 3 |  |  |  | 2 | 37,76 |  |
| 4 |  |  |  | 2 | 37,56 |  |
| 5 |  |  |  | 2 | 37,49 |  |
| 6 |  |  |  | 2 | 3840 |  |
| 7 |  |  |  | 2 | 37,67 |  |
| 8 |  |  |  | 2 | 37,46 |  |
| 9 |  |  |  | 3 | 37,66 |  |
| 10 | $\} 10$ | 37,67 |  | 4 | 38,04 | $\}+0,18$ |
| 11 |  |  |  | 2 | 37,81 |  |
| 12 | 6 | 37,76 |  | 4 | 37,68 | -0,08 |
| 13 | 5 | 39,05 |  | 4 | 38,11 | -0,94 |
| 14 | $\} 8$ | 38,34 |  | 3 | 37,79 | ? $-0,40$ |
| 15 | $\}$ | 38,34 |  | 3 | 38,09 | , -0,40 |
| 16 | 6 | 38,42 |  | - 4 | 38,66 | +0,24 |
| 17 | \} 8 | 38,32 |  | \% 3 | 38,55 | $3+0,27$ |
| 18 |  | 38,32 |  | - 4 | 38,63 | $1+0,27$ |
| 19 |  |  |  | 2 | 38,66 |  |

## $g 0$ Index Error of the Mural Circle for 1836 and 1837.



Index Error of the Mural Circle for 1836 and 1837. 51

| Date. <br>  | $\begin{aligned} & \text { Index Error } \\ & \text { by } \\ & \text { Stars. } \end{aligned}$ | Remarks. $\mid$ | Index Error by Reflecting Collimator. | \% |
| :---: | :---: | :---: | :---: | :---: |
| 1837 | , " |  | , "' |  |
| Dec. 10 |  | 2 | -0 32,76 |  |
| 11 |  | 3 | 33,02 |  |
| 12 |  | 3 | 33,67 |  |
| 13 |  | 3 | 32,53 |  |
| 14 5 | -0 34,98 | 3 | 33,89 | -1,09 |
| $15\} 9$ | ,27 | 3 | 32,95 | \} -2,21 |
| 16 , 9 |  | 2 | 33,17 | $\}-2,21$ |
| $17\} 7$ |  | 4 | 33,02 | \}-2,17 |
| 18 \} 7 | 35,13 | 4 | 32,91 | $\}-2,17$ |
|  |  | 3 | 32,91 |  |
| $20\} 9$ | 34,55 | 4 | 3:3,03 | $\}-1,58$ |
| $21)$ |  | 2 | 33,72 |  |
| 22 , 7 | 34,37 | 2 | 32,80 | -0,96 |
| 23 |  | 4 | 33,74 |  |
| 24 |  | 1 | 33,55 |  |
| 25.5 | 33,54 | 3 | 33,09 | -0,45 |
| 26 | 34,97 | 3 | 33,71 | -1,26 |
| 27 \} 11 | 34,77 | 3 | 33,61 | \} $-1,19$ |
| 28 ) 11 | 34, | 4 | 33,56 | )-1,19 |
| 29 30 ${ }^{7}$ | 35,42 | 3 2 2 | 34,34 <br> 36,64 | $)^{-1,08}$ |
| $\left.\begin{array}{l}30 \\ 31\end{array}\right\}$ | 36,17 | 2 | 36,64 37,20 | $\}+0,75$ |

Taking the means of the column "difference", and putting $d \mathrm{~L}$ for the error of the Assumed Latitude, and $\mathbf{E}$ for the error of the four divisions employed, we get

| from 260 Observations in 1835 |  |  |  |
| ---: | :--- | ---: | :--- |
| 190 |  |  |  |
| 171 | 1836 |  |  |
| Mean | 1837 | $\mathrm{E}+d \mathrm{~L}$ | $=-0^{\prime \prime}, 06$ |
|  | $=-0,65$ |  |  |
|  |  | $=-0,55$ |  |
|  |  |  | $=-0,37$ |

The discordance here found between the result for 1835 as compared with that for 1836 and 1837 , is, as far as our present knowledge extends, chargeable alone to error of observation: it adds one ion great many other cases of daily occurrence, which shew, that notwithstanding the facility with which an accuracy of one or two seconds may be altained, (even by a single obseriation) still, how little control contin ued observation gives us over the fraction of a second.

## RESULT OF OBSERVATIONS MADE WITH THE TRANSIT INSTRUMENT AND MURAL CIRCLE.

It has hitherto been a constant source of regret to me, -that whilst the observations of the fixed Stars and Planets, have come out-in a manner creditable to the Madras Instruments and Observers-still, that the observations of the Sun have been discordant to a degree little calculated to confer credit upon either-It is not that the mean results have differed much at any time, from those determined at other observatories ; but the discordance found among individual results reaches to an amount (occasionally 5 or 6 seconds + or - ) which could hardly be credited: during the past two years this subject has occupied no small share of my attention, and the result has been I am sorry to say but little satisfactory. During the Autumn of 1835 and in 1836 and 1837, it had generally been my custom, to compute the Sun's N. P. D.-set the instrument, and read off the 4 Microscopes previously to opening the shutters for the meridian observation; the comparison of these readings with those made at the time of meridian passage, shews that no change is ever effected upon the relative position of the microscopes by the Sun shining upon the Instrument: to discover if the Index Error remained constant under these circumstances, - I made two or three observations with the Reflecting Collimator at a few minutes before Noon; and then, opening the shutter,-allowed the Sun to shine upon the Instrument for 5 minutes before the meridian passage, immediately after which, the Observation with the Reflecting Collimator was repcated; the result shewed, that no appreciable change had occurred from the action of the Sun's rays upon the lustrument for this time:-under these circumstances $\mathbb{I}$ am reluctantly compelled to proceed, and leave this matter still unexplainedIn the table which follows, the meridian observations of the Sun at the Transit have it will be observed, on many occasions been omitted, which has arisen in consequence of no known star having been observed during the day timewhen the uncertainty of the clock's rate would not permit its error to be interpolated from the evening observations.

The observed transit of the 1st and 2 d limb over the five wires, furnishes us with the value of the apparent semidiameter ; from which, the mean horizontal semidiameter $=\left(\frac{\text { Sun's } 2 \mathrm{LL}-1 \mathrm{~L} .}{2}\right) \times 15\left(1+\frac{a^{\prime}-a}{48}\right) \sin$ N. P. D. $\times$ dist. (Earth - Sun)
At the Circle it has been usual to observe either the North limb alternately with the South limb at consecutive transits, or to observe on the same daythe N. P. D. of the one limb at 30 seconds before the meridian passage, and that of the other at 30 seconds after it-whereby the mean vertical semidiameter of the Sun has been computed from the formulæ-
M. V. Semid. $=\frac{\text { N. P. D. Sun's South L. }- \text { N. P. D. Sun's North L. }+d r . \pm d \text { D. }-\mathbf{C}-\mathbf{T} \text {. }}{2} \times$ dist. (SunEarth.) where $a^{\prime}, \alpha$, represent the A. R. of the Sun at the noon following, and preceding the day of observation; $d r$, the difference of the refractions due to the N . and S . limbs; $d \mathrm{D}$, the change of Declination in $1^{m i}$ of time (the interval between the observations), C a correction due to a small inclination of the horizontal wire; which, up to the 19th June 1836 amounted to $1^{\prime \prime}, 46$ but has since been reduced to 0 ; and $T=2^{\prime \prime}, 42$ is the value of the diameter of the wire.

Comparison of the Observed A. R. and N. P. D. of the Sun, with the places interpolated from the Nautical Almauac, \&c.

| 1836 | Right Ascension |  | Error of Tables. | North Polar Distance |  | Error of Tables. | Mean Semidiameter. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | from Observation | from N. A. |  | from observation. | $\begin{aligned} & \text { from } \\ & \text { N. A. } \end{aligned}$ |  | Horizontal. | Vertical. |
|  | h. m. s. | $s$. | " | ${ }^{0} 113$ " | " | " | '" |  |
| Jan. $\begin{aligned} & 2 \\ & \\ & \\ & \\ & 3\end{aligned}$ | 184745,02 | 44,60 | -0,42 | $113 \quad 0 \quad 25,15$ | 28,60 | $+3,45$ |  |  |
| 3 | 52 9,79 | 9,30 | -0,49 | 112558,28 | 12,50 | + 4,22 | $16 \quad 2,01$ |  |
| 4 | 56 34,2] | 33,70 | $-0,51$ | 1124928,38 | 29,00 | + 0,022 | 0,27 |  |
| 6 | $19 \quad 5 \quad 21,47$ | 21,10 | -0,37 | 1123637,82 | 40,90 | + 3,08 | ],96 |  |
| 7 | 944,65 | 44,20 | -0,45 | 1122932,95 | 36,70 | + 3,75 | 1,87 |  |
| 8 | 14 7,04 | 6,90 | -0,14 | $\begin{array}{llll}112 & 22 & 5,58\end{array}$ | 5,70 | + 0,12 | 3,72 |  |
| 9 | 18 28,92 | 29,00 | + 0,08 | $\begin{array}{llll}112 & 14 & 5,82\end{array}$ | 8,40 | + 2.58 | 3,68 |  |
| 10 | 22 50,95 | 50,60 | -0,35 | 112543,26 | 44,80 | + 1,54 | 2,68 |  |
| 11 | 27 12,31 | 11,80 | -0,51 | 11115652,36 | 55,40 | +3,04 | $15 \quad 59,90$ |  |
| 13 | 35 52,80 | 52,30 | -0,50 | 1113758,00 | 59,70 | +1,70 | 59,80 |  |
| 14 | 40 11,93 | 11,80 | $-0,13$ | $\begin{array}{llll}111 & 27 & 50,49\end{array}$ | 53,90 | + 3,41 | 55,96 |  |
| 15 | 44 | 30,40 |  | $11117 \quad 21,46$ | 23,20 | +1,74 | 16 3,58 |  |
| 16 | 48 48,91 | 48,60 | -0,31 | 111628,03 | 27,90 | $-0,13$ | 2,32 |  |
| 17 | 53 6,12 | 5,90 | -0,22 | $\begin{array}{llll}110 & 55 & 7,89\end{array}$ | 8,30 | +0,41 | 15 59,66 |  |
| 18 | 57 22,85 | 22,70 | $-0.15$ | 11104385,71 | 24,80 | $-0,91$ | 58,27 |  |
| 19 | $20 \quad 1 \begin{array}{lll} \\ & 1 & 39,05\end{array}$ | 38,70 | $-0,35$ | $11031 \quad 16,97$ | 17,80 | $+083$ | 16 1,18 |  |
| 20 | 5 54,20 | 53,90 | -0,30 |  |  |  |  |  |
| 21 22 | 10 8,85 | 8,40 | -0,45 | $110 \quad 5 \quad 55,61$ | 54,00 | -1,61 | 1,67 |  |
| 22 | 14 22,30 | 22,10 | -0,20 | 10952 37,44 | 38,40 | + 0,96 | 0,47 |  |

54 Result of Observations in 1836 and 1837.


Result of Observations in 1836 and 1837.


| 1836 | Right Ascension |  | Error of Tables. | North Polar Distance |  | Error of Tables. | Mean Semidiameter. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | from observation. | $\begin{aligned} & \text { from } \\ & \text { N. A. } \end{aligned}$ |  | from observation. | $\begin{aligned} & \text { from } \\ & \text { N. A. } \end{aligned}$ |  | Horizontal. | Vertical. |
| May $\begin{array}{r}6 \\ 7 \\ 8 \\ 9 \\ 10 \\ 11 \\ 13 \\ 14 \\ 15 \\ 16 \\ 18 \\ 19 \\ 2 \\ 2 \\ 2 \\ 2 \\ 24\end{array}$ | h. m. | $s$. | " | ${ }^{0}$ |  | " | " | ' ${ }^{\prime \prime}$ ' |
|  | 25259,15 | 59,60 | + 0,45 | 732614,79 | 18,80 | +4,01 |  | 15 59,28 |
|  | 5651,77 | 51.70 | -0,07 | $\begin{array}{llll}73 & 9 & 33,19\end{array}$ | 37,80 | +4,61 | $16 \quad 2,64$ | 57,26 |
|  | 3044,32 | 44,20 | -0,12 | 725311,53 | 13,40 | +1,87 | 2,88 |  |
|  |  |  |  | 72371125 | 6,10 | +4,85 | 3,28 | 59,75 |
|  | 8 31,65 | 31,20 | -0,45 | 722113,83 | 16,00 | +2,17 | 2,21 |  |
|  | 22 25,48 | 25,40 | -0,08 | $\begin{array}{llll}72 & 5 & 41,78\end{array}$ | 43,60 | +1,82 |  |  |
|  |  |  |  | 713531,09 | 32,50 | +1,41 | 0,70 |  |
|  |  |  |  | 712055,31 | 54,60 | -0,71 | 0,86 |  |
|  | 28 8,42 | 8,60 | +0,18 |  |  |  | 0,52 |  |
|  | $32 \quad 6,23$ | 6,80 | -0,43 | 705231,89 | 35,30 | + 3,41 | 5,40 5,32 | $16 \quad 1,64$ |
|  | $40 \quad 1,97$ | 1,90 | -0,07 |  |  |  | 3,56 |  |
|  | $44 \quad 0,87$ | 0,90 | +0,03 | 701232,15 | 32,60 | +0,45 | 6,78 |  |
|  | $48 \quad 0,18$ | 0,40 | +0,22 | 6959 55,80 | 51,80 | -4,00 | 5,96 |  |
|  | $52 \quad 0,10$ | 0,30 | +0,20 | 6947 33,68 | 31,40 | -2,28 | 5,96 |  |
|  | $56 \quad 0,84$ | 0,90 | + 0,06 | 693533,21 | 31,80 | -1,41 | 3,74 | 1,26 |
|  | 4001,66 | 1,90 | +0,24 | 6923 51,81 | 53,20 | + 1,39 | 4,62 | 2,82 |
|  | $4 \quad 3,51$ | 3,80 | +0,29 | 6912 34,03 | 35,90 | + 1,87 | 5,76 | 0,10 |
|  | 8 8,52 | 5,40 | -0,12 | 691235,19 | 40,00 | + 4,81 | 5,58 | 2,54 |
|  | $12 \begin{array}{ll}12 & 8,12\end{array}$ | 7,80 | -0,32 | 6851 1,85 | 5,80 | + 3,95 | 1,18 |  |
|  | 2014,56 | 14,30 | -0,26 | 683058,41 | 3,10 | + 4,69 | 1,40 |  |
|  | $24 \quad 18,42$ | 18,10 | -0,32 |  |  |  | 2,82 |  |
|  | 28 2, 289 | 22,50 | -0,39 | $\begin{array}{lll}68 & 12 & 25,59\end{array}$ | 30,20 | $+4,61$ $+3,29$ | 2,45 2,70 | 0,56 |
| June | 36 36 3 | 27,60 | -0,27 | 67 67 65 55 23 23,61 | 27,30 | $+3,29$ $+3,61$ | 1,46 |  |
|  | 48 50,84 | 50,80 | -0,04 |  |  | +3,61 | 3,78 |  |
|  | 52 57,64 | 57,50 | -0,14 |  |  |  | 1,94 |  |
|  | 57 4,65 | 4,60 | -0,05 | 671931,42 | 34,90 | + 3,48 | 1,35 |  |
|  | 5111,92 | 11,90 | -0,02 | 6713 31,71 | 35,20 | + 3,49 | 1,46 |  |
|  | 5 19,69 | 19,70 | +0,01 | $\begin{array}{lll}67 & 7 & 53,48\end{array}$ | 59,20 | + 5,72 | 2,38 | 1,18 |
|  | 927,86 | 27,60 | -0,26 | 67 2 <br> 654,78  | 47,30 | + 1,52 | $15 \quad 59,40$ | 1558,12 |
|  | 13 36,23 | 36,00 | -0,23 | 66580,04 | 59,70 | -0,34 | 16 1,28 |  |
|  | 1744,68 | 44,60 | -0,08 | $\begin{array}{llll}66 & 53 & 35,48\end{array}$ | 36,30 | + 0,82 |  |  |
|  | 2154,05 | 53,40 | -0,65 | 664934,49 | 37,20 | +2,71 | 2,10 | $16 \quad 1,30$ |
|  | 26 3,19 | 2,50 | -0,69 | $6646 \quad 2,33$ | 2,60 | +0,27 | 2,82 |  |
|  | 34 21,04 | 20,90 | -0,14 | 6640 2,00 | 7,40 | +5,40 | 2,82 |  |
|  | 38 30,55 | 30,40 | -0,15 | 663745,86 | 46,80 | + 0,94 | 3,60 |  |
|  | 42 40,08 | 39,90 | -0,18 | 663548,77 | 50,90 | +2,13 | 2,76 | 1,32 |
|  | 46 49,66 | 49,40 | -0,26 | 663418,84 | 19,80 | +0,96 | 2,60 |  |
|  | 50 58,49 | 59,00 | +0,51 | $\begin{array}{llll}66 & 33 & 11,35\end{array}$ | 13,50 | +2,15 | 2,02 |  |
|  | 55 9,29 | 8,70 | -0,59 | 663232,33 | 32,20 | -0,13 | 2,28 |  |
|  |  |  |  | $\begin{array}{llll}66 & 32 & 12,88\end{array}$ | 15,70 | +2,82 | 0,38 | 3,45 |
|  |  |  |  | 6632 21,88 | 23,90 | +2,02 | 2,22 |  |
|  | 628 23,74 | 23,10 | -0,64 | 664153,58 | 54,00 | + 0,42 |  |  |
| July |  |  |  | 66529697 | 10,30 | + 0,33 | 1,98 |  |
|  | $\begin{array}{rr}44 & 56,82 \\ 46 & 4,49\end{array}$ | $\begin{array}{r} 56,40 \\ 4,10 \end{array}$ | $-0,42$ $-0,39$ | 665623,07 | 23,40 | +0,33 | 1,98 | 1,88 |
|  |  |  |  |  |  |  | 1,34 |  |
|  |  |  |  | $\begin{array}{lll}67 & 11 & 28,29\end{array}$ | 30,90 | +2,61 | 0,44 |  |
|  |  |  |  | $6717 \quad 21,20$ | 20,80 | -0,40 | 0,47 |  |


| 1836 | Right Ascension |  | Error of Tables. | North Polar Distance |  | Error of Tables. | Mean Semidiameter, |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | from observation. | $\begin{aligned} & \text { from } \\ & \text { N. A. } \end{aligned}$ |  | from observation. | $\begin{aligned} & \text { from } \\ & \text { N. A. } \end{aligned}$ |  | Horizontal. | Vertical. |
|  | h. m. s. | $s$. | " |  | 34,40 | +5,02 | 62 | , " |
| $\begin{array}{ll}\text { July } & 7 \\ & 9 \\ & 9\end{array}$ | 713 44,69 | 44,00 | -0,69 | $\begin{array}{llll}67 & 37 & 11,21\end{array}$ | 12,20 | +0,99 | 0,92 | 15 59,95 |
| 10 | 17 49,94 | 49,40 | -0,54 | 674433,17 | 36,00 | +2,83 | 15 59,88 | 58,30 |
| 11 | 17 4,04 |  |  | 6752 21,46 | 22,90 | +1,44 | 16 2,18 | $16 \quad 1,75$ |
| 12 |  |  |  | 68 0 27,90 | 32,50 | +4,60 | ,78 |  |
| 13 |  |  |  | $\begin{array}{llll}68 & 9 & 3,34\end{array}$ | 5,00 | +1,66 | 3,34 |  |
| 14 | $34 \quad 7,47$ | 6,80 | -0,67 | 681754,87 | 59,80 | +4,93 | 1,40 |  |
| 15 | 3810,26 | 10,00 | -0,26 | 682713,12 | 16,90 | +3,78 | 2,52 |  |
| 16 | $42 \quad 13,09$ | 12,70 | -0,39 | 683655,13 | 56,10 | +0,97 | 1,90 |  |
| 17 | 4615,22 | 14,80 | -0,42 | 684653,39 | 57,10 | +3,71 | 2,02 |  |
| 18 |  |  |  | 685715,01 | 19,60 | +4,59 |  |  |
| 19 | 54 17,89 | 17,40 | -0,49 | $\begin{array}{llll}69 & 8 & 2,44\end{array}$ | 3,70 | +1,26 | 0,70 |  |
| 20 | 58 18,25 | 17,80 | -0,45 | 691988 | 8,80 | +0,38 | 1,68 |  |
| 23 |  |  |  | 695430,55 | 28,40 | -2,15 | 1,26 0,72 | 1,06 |
| 26 | 822 8,02 | 8,20 | +0,18 | 703248,15 | 48,70 | +0,55 | 0,72 |  |
| 27 | 26 4,95 | 4,60 | -0,35 | 704618,08 | 14,40 | -3,68 | $\begin{array}{rr}15 & 57,72 \\ 16 \\ 1,86\end{array}$ |  |
| 28 | 30 0,50 | 0,20 | -0,30 | $\begin{array}{llll}71 & 0 & 0,38 \\ 71 & \end{array}$ |  | -1,28 | $\begin{array}{lr}16 & 1,86 \\ & -2,18\end{array}$ | 15 59,12 |
| 30 2 |  |  |  | $\begin{array}{lll} 71 & 28 & 23,94 \\ 72 & 13 & 22,47 \end{array}$ | $\begin{aligned} & 24,50 \\ & \mathbf{1 8}, 90 \end{aligned}$ | $+0,56$ $-3,57$ | 1,18 1,70 |  |
|  |  |  |  | 7213 22,47 |  | - | 1,64 |  |
| 9 |  |  |  | $\begin{array}{llll}74 & 8 & 4,46\end{array}$ | 3,10 | $-1,36$ | 1,30 | $16 \quad 0,88$ |
| 10 |  |  |  | $74 \quad 25$ 34,69 | 30,40 | -4,29 | 0,86 |  |
| 14 |  |  |  | 753752,73 | 47,30 | -5,43 |  |  |
| 15 |  |  |  | 7556 28,58 | 26,80 | -1,78 | 1,40 | 15 58,20 |
| 16 |  |  |  | 761519,51 | 19,70 | +0,19 | 2,40 |  |
| 17 | 946 32,10 | 32,00 | -0,10 | 763422,57 | 25,60 | +3,03 | 0,62 |  |
| 18 | 50 15,95 | 15,70 | -0,25 | 7653 43,25 | 44,30 | +1,05 | 1,92 | $16 \quad 0,75$ |
| 19 |  |  |  | 771318,33 | 15,30 | -3,03 | 2,64 |  |
| 21 | 10124,21 | 23,90 | -0,31 | 7812 56,01 |  |  | 3,68 2,42 |  |
| 23 | 847,00 | 46,80 | -0,20 | $78 \quad 3319,40$ | 17,20 | $\underline{-2,20}$ | 2,05 |  |
| 25 |  |  |  | 7914 25,41 | 24,10 | -1,31 | 1,80 |  |
| 27 | 23 27,74 | 27,60 | -0,14 | 79 56 17,95 | 11,70 | -6,25 | 2,30 |  |
| Sep. 7 | $11 \quad 322,55$ | 22,40 | -0,15 |  |  |  | 1,28 |  |
|  | ${ }^{6} 58,69$ | 58,60 | -0,09 |  |  |  | 2,25 |  |
| 9 | 10 34,77 | 34,80 | +0,03 | 844143,17 | 38,70 | -4,47 | 1,26 |  |
| 11 | 17 46,79 | 46,70 | -0,09 | $85 \quad 2714,99$ | 13,90 | -1,09 | 2,00 |  |
| 12 | 21 22,28 | 22,50 | +0,22 | 855011,29 | 8,90 | -2,39 | 1,62 | $15 \quad 59,72$ |
| 16 | 3544,70 | 44,60 | -0,10 | 87 <br> 87 <br> 87 <br> 22 <br> 31,57 | 29,00 | -2,57 | 1,64 | 16 <br> 162,62 <br> 0,84 |
| 17 |  |  |  | $\begin{aligned} & 87 \\ & 88 \\ & 88\end{aligned} 8541,96$ | 42,40 58,30 | $\begin{aligned} & +0,44 \\ & \hline \end{aligned}$ | 1,02 | $16 \quad 0,84$ |
| 18 | 46 30,92 | 30,90 | +0,08 | 88 8 55, |  |  | 1558,00 |  |
| 20 | 50 6,42 | 6,30 | -0,12 | 8855 36,69 | 36,80 | +0,11 | 59,72 | 1,66 |
| 21 | 53 42,03 | 41,80 | -0,23 | 8918 59,54 | 58,40 | -1,14 | $16 \quad 1,38$ |  |
| 22 | $57 \quad 17,44$ | 17,40 | -0,04 | 8942 24,65 | 21,60 | $-3,05$ | 0,98 | 3,02 |
| 23 | 12053,26 | 50,03 | -0,26 |  |  |  | 3,52 |  |
| 24 | 428,85 | 28,80 | -0,05 |  |  |  | 1558.60 |  |
| 25 | 8 4,59 | 4,60 | +0,01 | $\begin{array}{llll}90 & 52 & 32,54\end{array}$ | 35,20 | +2,66 | 16 58,20 |  |
| 26 | 1140,99 | 40,70 | -0,29 | $\begin{array}{llr}91 & 16 & 2,37 \\ 91 & 39 & 25,30\end{array}$ | 0,00 24,70 | $-2,37$ $-0,60$ | $\begin{array}{lr}16 & 0,32 \\ 15 & 57,96\end{array}$ |  |
| 26 28 |  |  |  | $\begin{array}{lrr}91 & 39 & 25,30 \\ 92 & 2 & 51,39\end{array}$ | 24,70 | -0,60 | [16 $\begin{array}{rr}1,98\end{array}$ |  |


| 1836 | Right Ascension |  | Error of Tables. | North Polar Distance |  | Error of Tables. | Mean Semidiameter. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | from observatiou. | $\begin{aligned} & \text { from } \\ & \text { N. A. } \end{aligned}$ |  | from observation. | from N. A. |  | Horizontal. | Vertical. |
|  | h. m. | s. | " | $0^{\circ}$ '" ${ }^{\prime \prime}$ | " | " | , " | , " |
| Sep. 29 | $12 \quad 2230,75$ | 30,40 | -0,35 | 922612,20 | 11,60 | -0,60 | $\begin{array}{ll}16 & 0,84\end{array}$ |  |
| 30 | 26 7,30 | 7,30 | 0,00 |  |  |  | 15 59,20 |  |
| Oct. 1 | 29 45,01 | 44,70 | -0,31 |  |  |  |  |  |
|  | 40 38,40 | 38,40 | 0,00 | $94 \quad 2240,39$ | 41,10 | +0,71 | $16 \quad 1630$ |  |
|  |  |  |  | 944551,21 | 51,40 | +0,19 | 3,16 |  |
| 6 | 47 56,08 | 56,10 | +0,02 | $\begin{array}{llll}95 & 9 & 0,74\end{array}$ | 58,10 | $-2,64$ | 1,84 |  |
| 9 | 58 55,83 | 55,60 | -0,23 | $\begin{array}{lllll}96 & 17 & 54,45\end{array}$ | 54,50 |  | 0,80 3,32 |  |
| 10 | $\begin{array}{ll}13 & 2 \\ 36,57\end{array}$ | 36,40 | -0,17 | 9640 45,03 | 43,80 | -1,23 | 2,92 |  |
| 11 | 6 17,78 | 17,60 | -0,18 | 97 3 23,18 | 27,80 | $+4,62$ | 0,70 |  |
| 12 | 9 59,67 | 59,30 | -0,37 | 9726 2,62 | 6,00 | +3,38 | 1,40 |  |
| 13 | 13 41,89 | 41,60 | -0,29 | 9748 36,53 | 38,00 | +1,47 | 2,16 |  |
| 14 | 17 23,97 | 24,30 | +0,33 | 981059,48 | 3,70 | +4,22 | 1,70 |  |
| 15 | 21 7,60 | 7,60 | 0,00 |  |  |  | 3,67 |  |
| 16 | 24 51,73 | 51,40 | -0,33 |  |  |  | 3,84 |  |
| 17 18 18 |  | 20,80 | 0,00 | 993933,70 | 32,40 |  | 2,92 |  |
| 19 | 36 6,33 | 6,40 | +0,07 | $100 \quad 1 \quad 19,10$ | 19,20 | 1,3 $+0,10$ | 4,72 |  |
| 20 | 39 52,70 | 52,60 | -0,10 | $\begin{array}{llll}100 & 23 & 0,87\end{array}$ | 57,10 | $+3,77$ $-3,06$ | 3,57 |  |
| 21 | 43 39,34 | 39,30 | -0,04 | $10044 \quad 25,38$ | 25,60 | +0,22 | 2,50 |  |
| 22 | 47 27,01 | 26,80 | -0,21 | 101544,16 | 44,30 | +0,14 | 1,92 |  |
| 23 | 51 15,15 | 14,90 | -0,25 |  |  |  | 15 58,50 |  |
| 24 |  |  |  | $10147 \quad 50,21$ | 51,40 | +1,19 | 16 0,58 |  |
| 25 | 58 53,74 | 53,20 | -0,54 | $\begin{array}{llll}102 & 8 & 38,39\end{array}$ | 39,10 | +0,71 | 2,82 | 15 59,88 |
| 26 | 141026,42 |  | -0,2 | 1022913,10 | 15,50 | +2,40 | 0,82 |  |
| Nov. 2 |  |  |  | 1044743,31 | 45,40 | +2,09 |  |  |
|  |  |  |  | 10543 38,11 | 40,10 | +1,99 |  |  |
| 6 | 45 47,41 | 47,90 | +0,49 | $\begin{array}{llll}106 & 1 & 46,61\end{array}$ | 47,80 | +1,19 | 4,10 |  |
| 7 | 49 48,28 | 47,80 | -0,48 | 10619 37,40 | 39,40 | +2,00 | 6,34 |  |
| 8 | 53 48,66 | 48,60 | -0,06 |  |  |  | 6,50 |  |
| 9 | 57 50,36 | 50,20 | -0,16 | 10654 34,34 | 32,90 | -1,44 | 4,77 | $\begin{array}{ll}16 & 1,64\end{array}$ |
| 10 | 151552,81 | 52,60 | -0,21 | 10711 34,52 | 34,00 | -0,52 | 3,94 | 0,96 |
| 11 | 556,57 | 56,00 | -0,57 |  |  |  | 4,66 |  |
| 12 | 10 0,52 | 0,20 | -0,32 | 1074439,18 | 42,20 | +3,02 | 4,45 |  |
| 13 |  |  |  | 108045,82 | 48,70 | + 2,88 | 3,40 |  |
| 22 | 5128,00 | 27,30 | -0,70 | 1101048,53 | 47,70 | $-0,83$ | 5,62 |  |
| 23 | 5540,60 | 40,40 | -0,20 | 11023 29,13 | 27,40 | $-1,73$ | 5,54 |  |
| 24 |  |  |  |  |  |  | 2,32 |  |
| 25 | $\begin{array}{llr}16 & 4 & 9,13 \\ & 8 & 24,66\end{array}$ | 9.10 24,50 | $-0,03$ $-0,16$ | $\begin{array}{lll}110 & 59 & 8,64\end{array}$ |  |  | $15 \quad 58,70$ |  |
| 27 | 1240,86 | 40,60 | -0,26 | $\begin{array}{rrrr}110 & 59 & 8,64 \\ 111 & 10 & 14,52\end{array}$ | 17,30 | $+1,26$ $+2,78$ | $\begin{array}{lr}16 & 3,48 \\ & 4,77\end{array}$ |  |
| 28 | 16 57,68 | 57,60 | -0,08 | $11121 \quad 1,82$ | 0,70 | $-1.12$ |  |  |
| 29 | 21 15,53 | 15,20 | -0,33 | 1113120,53 | 20,10 | -0,43 | 2,12 |  |
| Dec. 1 |  |  |  | 1115044,48 | 44,90 | +0,42 | 2,56 |  |
|  | 34 12,48 | 12,20 | -0,28 | 11115947,39 | 50,00 | +2,61 | 8,86 | 0,80 |
| 4 | 42 53,42 | 53,50 | +0,08 | 1121643,69 | 43,30 | $+0,39$ $-0,2$ | 4,00 |  |
| 5 | 4715,18 | 15,00 | -0,18 | 11122429,91 | 31,20 | +1,29 | 5,02 | 15 59,87 |
| 6 7 | 5137,10 55 | 37,10 | 0,00 | 1123151,23 | 52,90 | +1,67 | 4,76 |  |
| 7 | 55 59,75 | 59,70 | $-0,05$ | 1123849,79 | 48,10 | -1,69 | 2,43 |  |



| 1837 | Right Ascension |  | Error of Tables. | North Polar Distance |  | Error of Tables. | Mean Semidiameter. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | from observation. | from <br> N. A. |  | from observation. | from N. A. |  | Horizontal. | Vertical. |
|  | h. $m$. | $s$. |  | 0 ' " |  |  | '" | , " |
| Feb. 10 | $2135 \quad 8,67$ | 8,80 | + 0,13 | 104, 2251,27 | 55,80 | + 4,53 | $16 \quad 2,40$ |  |
| 11 | 39 5,92 | 5,70 | $-0,22$ | [ 16,34 | 18,00 | + 1,66 | 1,27 | 16 3,24 |
| 12 |  |  |  | 1034326,17 | 28,50 | + 2,33 |  | 15 59,50 |
| 13 | 46 57,52 | 57,19 | -0,33 | 23 19,59 | 24,60 | +5,01 | 2,02 | $16 \quad 2,55$ |
| 14 | 50 52,04 | 51,60 | -0,44 | 3 1,25 | 7,80 | +6,55 | 1,70 | 15 59,47 |
| 15 | 54 45,65 | 45,40 | -0,25 | 1024233,40 | 38,50 | + 5,10 | 1,70 | 16 3,02 |
| 16 | 58 39,21 | 38,50 | -0,71 | 2156,40 | 57,00 | + 0,60 | 1,44 | 15 59,15 |
| 17 | $22 \quad 231,79$ | 30,90 | -0,89 | 1 2,63 | 3,90 | + 1,27 | 2,90 | 161,15 |
| 18 | 6 23,08 | 22,20 | -0,88 | 1013958,03 | 59,50 | + 1,47 | 0,86 | 1,67 |
| 19 | 10 13,54 | 13,10 | -0,44 | 18 43,42 | 44,10 | + 0,68 | 2,58 | 4,00 |
| 20 | 14 3,94 | 3,30 | -0,64 | 1005714,04 | 18,00 | + 3,96 | 1.52 |  |
| 21 | 1753,19 | 52,80 | -0,39 | 3541,40 | 42,10 | +0,70 | 3,00 | 0,68 |
| 24 |  |  |  |  |  |  | 0,35 |  |
| 26 | 3651,43 | 51,10 |  | 984519,56 |  |  |  |  |
| 27 | 40 37,34 | 37,10 | $-0,34$ $-0,24$ | 22 50,37 | 54,70 | $+4,33$ | 1,40 | 0,92 |
| 28 | 44 22,94 | 22,70 | -0,24 | 0 15,85 | 18,40 | + 2,55 | 1,70 | 15 59,84 |
| Mar. 1 | 48 7,99 | 7,80 | $=0,19$ | 973733,63 | 35,10 | + 1,47 | 1555,37 | 16 0,81 |
|  | 52 52,19 | 52,30 | +0,11 | 1444,47 | 45,20 | +0,73 | 57,38 | 15 57,64 |
| 3 | 55 36,17 | 36,30 | +0,13 | 965151,38 | 48,90 | -2,48 | 59,08 | 16 3,67 |
| 4 | 59 19,70 | 19,80 | +0,10 | 28 46,86 | 46,90 | +0,04 | $16 \quad 0,99$ | 2,61 |
| 5 | $23 \quad 3 \quad 2,83$ | 2.80 | -0,03 | 539,77 | 39,40 | -0,37 | 1,20 |  |
| 6 | 645,61 | 45,40 | -0,21 | 9542 26,66 | 26,70 | +0,04 | 15 58,74 | 1,62 |
| 7 | 10 27,32 | 27,40 | +0,08 | 19 11,29 | 9,40 | - 1,87 | 16 1,90 | 15 57,75 |
| 8 | 14 9,22 | 9,20 | -0,02 | $9455 \quad 52,63$ | 47,90 | $-4.73$ | 0,04 | 16 1,50 |
| 9 | 17 50,52 | 50,60 | + 0,08 | 32 23,38 | 22,60 | -0,78 | 2,34 | 3,07 |
| 10 | 21 31,50 | 31,60 | + 0,10 | 855,18 | 53,90 | -1,28 | 1,80 | 4,78 |
| 11 | 25 12,64 | 12,40 | -0,24 | 934520,21 | 22,30 | +2,09 | 1,58 | 15 59,45 |
| 12 | 28 52,29 | 52,60 | +0,31 | 21 42,75 | 48,10 | +5,35 | 2,58 | 16 1,28 |
| 13 | 32 32,85 | 32,60 | $-0,25$ | $\begin{array}{lll}9258 & 9,92\end{array}$ | 11,70 | +1,78 | 2,47 | 1558.46 |
| 14 |  |  |  | 34 31,86 | 33,40 | +1,54 | 0,50 | 59,66 |
| 15 |  |  |  | 10 53,36 | 53,70 | + 0,34 | 3,37 | 59,74 |
| 16 |  |  |  | 914710,81 | 12,90 | + 2,09 | 2,05 | 161,47 |
| 17 | $47 \quad 9,35$ | 9,80 | $+0,45$ | 23 29,01 | 31,40 | +2,39 | 0,98 | 0,62 |
| 18 |  |  |  | 905947,86 | 49.60 | + 1,74 | 15 59,45 |  |
| 19 |  |  |  | 3614.59 | 7,80 | -6,79 | 16 1,48 | $15 \quad 59,62$ |
| 20 |  |  |  | 12 29,46 | 26,30 | $-3,16$ | 2,82 | 16 1,84 |
| 21 |  |  |  | 8948 45,32 | 45,50 | $+0,18$ | 1555,82 |  |
| 22 |  |  |  | $25 \quad 5.56$ | 6,00 | + 0,44 | 16 1,88 | 1,15 |
| 23 | $0 \quad 8$ 59,74 | 59,70 | -0,04 | 124,70 | 26,70 | + 2,00 | 1,40 | 0,37 |
| 24 | 12 37,77 | 37,70 | -0,07 | 883747,97 | 51,00 | + 3,03 | 15 59,34 | 15 59,86 |
| 25 | 14 15,17 | 15,60 | +0,43 | $14 \quad 12,12$ | 16,20 | +4,08 | 16 0,68 |  |
| 26 |  |  |  | 875044,10 | 43,80 | -0,30 | 1,44 |  |
| 27 | 23 31,73 | 31,40 | -0,33 | 27 13,12 | 14.00 | $+0,88$ | 0,87 | 16 1,30 |
| 28 | 27 8,95 | 9,30 | +0,35 | 3 45,31 | 47,30 | + 1,99 | 0,84 | 2,84 |
| 29 | 3046,71 | 47,30 | +0,59 | 8640 21,81 | 23,70 | + 1,89 | 0,48 | 1,32 |
| 30 | 34 25,55 | 25,40 | -0,15 | 17 4,74 | 4,00 | $-0,74$ | 1,25 | 15 58,95 |
| ${ }^{31}$ | 38 3,24 | 3,50 | +0,26 | 855347,78 | 48,20 | + 0,42 | 1,97 | 59,87 |
| April 1 | 41 41,90 | 41,60 | -0,30 | 30 33,72 | 36,80 | $+3,08$ |  |  |
| 2 | $45 \quad 19,99$ | 20,00 | +0,01 | 7 33,40 | 30,10 | -3,30 | 0,64 |  |
| 3 | 48 58,45 | 58,50 | $+0,05$ | 844434,53 | 28,50 | $-6,03:$ | 0,35 | $16 \quad 1,40$ |

Result of Observations in 1836 and 1837.


| 1837 | Right Ascension |  | Error of Tables. | North Polar Distance |  | Error of Tables. | Mean Semidiameter. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | from observation. | from N. A. |  | from <br> observ ation | $\begin{aligned} & \text { from } \\ & \text { N. A. } \end{aligned}$ |  | Horizontal. | Vertical. |
| June 2 | $h . m$. |  |  | 67 | " | +366 | ${ }^{\prime \prime}{ }^{\prime}$ | , " |
|  | 43938,21 | 38,30 | +0,09 | $\begin{array}{rr}67 & 49 \\ 41 \\ 41 \\ 42,13 \\ 48\end{array}$ | 21,90 41,90 | $+3,66$ $-0,23$ | $\begin{array}{ll}6 & 0,82 \\ \\ 1,02 \\ 1,31\end{array}$ |  |
|  |  |  |  | 3420,93 | 25,20 | +4,27 | 1,37 |  |
|  | 45157,48 | 57,70 | +0,22 | 27 30,29 | 32,20 | +1,91 | 1,06 | $15 \quad 58,87$ |
|  | - 56 4,75 | 4,80 | +0,05 | 20 59,23 | 2,70 | +3,47 | 2,22 |  |
|  | $5 \quad 012,30$ | 12,30 | 0,00 | 14 54,06 | 57,10 | +3,04 | 1.35 |  |
|  | 420,40 | 20,00 | -0,40 | 9 13,66 | 15,40 | +1,74 | 1,66 | 58,76 |
|  | 828.32 | 27.90 | -0,42 | 3 55,99 | 57,90 | +1,91 | 4,40 |  |
|  | 12 36,58 | 36,20 | -0,38 | 6659 5,40 | 4,60 | -0,80 | 1,66 |  |
|  | 1645,11 | 44,60 | -0,51 | 54 34,62 | 35,60 | +0,98 | 3.54 |  |
|  | 20 53,30 | 53,30 | 0,00 | 5033,05 | 31,10 | -1,95 | 2,82 |  |
|  | $25 \quad 2,12$ | 2,10 | -0,02 | 46 44,64 | 51,00 | +6,36 | 1,75 |  |
|  | 25 10,98 | 11,00 | +0,02 | 43 36,19 | 35,10 | -1,09 | 0,86 |  |
|  | 33 20,60 | 20,20 | -0,40 | 3043,80 | 44,40 | +0,60 | 0,57 |  |
|  | 37 29,79 | 29,40 | $-0,39$ | 3815,72 | 18,20 | +2,48 | 0,02 |  |
|  | 4138,61 | 38,70 | +0,09 | 3614.74 | 16,50 | +1,76 | 0,72 |  |
|  |  |  |  | 3433,70 | 39,60 | +5,90 | $15 \quad 59,84$ |  |
|  |  |  |  | 33 26,08 | 27,50 | +1,42 | $16 \quad 3,54$ |  |
|  | 6225,94 | 26,20 | +0,26 | 32 17,08 | 19,20 | +2,12 | 2,52 |  |
|  | 635,60 | 35,60 | 0,00 | 32 44,25 | 46,00 | +1,75 | 0,75 |  |
|  | 10 44,76 | 45.10 | +0,34 | 33 30,50 | 37,60 |  | 15 59,50 |  |
|  | 14 54,20 | 54.40 | +0,20 | 34 5,90 | 54,0 | ,98 | , |  |
|  | 23 12,43 | 12,90 | +0,47 | 3841,04 | 40,80 | +0,24 | $\begin{array}{ll}16 & 0,88\end{array}$ |  |
|  | 3130,61 | 30,80 | +0,19 | $44 \quad 2,47$ | 6,20 | +3,73 | 15 59,95 |  |
|  | 35 39,58 | 39,40 | -0,18 | 4724.98 | 25,70 | +0,72 | 57,82 |  |
| July |  |  |  | 5111,67 | 9,70 | -1,97 | 59,20 |  |
|  |  |  |  | 55 20,18 | 18,00 | -2,18 | -59,95 |  |
|  | 48 4,92 | 4,00 | -0,92 |  |  |  | $15 \quad 58,58$ |  |
|  |  |  |  | $\begin{array}{r}67 \\ 10 \\ \hline 10 \\ \hline 6,79\end{array}$ | 47,00 8,60 | $+0,60$ $+1,81$ | $\begin{array}{ll}16 & 0,12 \\ 16 & 0,70 \\ 15\end{array}$ |  |
|  |  |  |  | 15 52, 66 | 52,00 | -0,88 | 15 59,95 |  |
|  |  |  |  | $22 \quad 1,37$ | 0,10 | -1,27 | $16 \quad 0,92$ |  |
|  | 7839,58 | 39,00 | -0,58 | 28 23, ${ }^{\prime} 7$ | 32,90 |  | 0,86 |  |
|  | 1244,99 | 44,80 | -0,19 | 35 26,79 | 27,00 | +0,21 | 1,35 |  |
|  | 1650,15 | 50,30 | +0,15 | 4239.51 | 45,40 | +5,89 | 1,77 |  |
|  | 20 55,43 | 55,30 | -0,13 | 5028.30 | 26.80 | -1,50 | 1,30 |  |
|  | 24 59,84 | 69,80 | -0,04 | 58 25,29 | 30,90 | +5,61 | 2,4.5 |  |
|  | 28 4,62 | 3,90 | -0,72 | 68-6 52,95 | 57,80 | +4,85 |  |  |
|  | 33 8,11 | 7,50 | -0,61 | 1538,20 | 47,10 |  | 15 59,34 |  |
|  | 3711,58 | 10,70 | -0,88 | 2458,01 | 58,60 | +0,59 | $16 \quad 1,44$ |  |
|  | 41 13,36 | 13,30 | -0,06 | 3425,74 | 32,10 |  | 1,12 |  |
|  | 49 17,40 | 16,90 | -0,50 | 44 25,30 <br> 54 | 27,40 | +2,10 |  |  |
|  | 5318,52 | 18,00 | -0,52 | 69521,21 | 22,60 | +1,39 | $16 \quad 2,30$ |  |
|  | 5718,51 | 18,40 | -0,11 |  |  |  |  |  |
|  | 8 9 16,77 | 16,50 | -0,27 | 51 28,40 | 25,00 | $-3,40$ | 1,06 |  |
|  |  |  |  | $70 \quad 3 \quad 48,69$ | 47,90 | -0,79 | 0,08 |  |
|  |  |  |  | 16 24,97 | 29,90 | +4,93 |  |  |
|  | 29 3,04 | 2,30 | -0,74 | 42 <br> 56 <br> 29,46 | 51,80 | $+2,61$ $+3,04$ | 0,37 |  |

Result of Observations in 1836 and 1837.

| 1837 | Right Ascension |  | Error of Tables. | North Polar Distance |  | Error of Tables. | Mean Semidiameter. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | from observation. | $\begin{aligned} & \text { from } \\ & \text { N. A. } \end{aligned}$ |  | from observation. | $\begin{gathered} \text { from } \\ \text { N. A. } \end{gathered}$ |  | Horizontal. | Vertical. |
|  | h. m. s. | $s$. | $s$ | 0' " | " | \% |  |  |
| July 29 |  |  |  | $71 \begin{array}{lll}71 & 10 & 34,87\end{array}$ | 32,60 | -2,27 | $\begin{array}{ll}16 & 1,62\end{array}$ |  |
| 30 <br> 31 <br> 31 |  |  |  | 2447,94 3926.92 | 50,60 26,10 | $+2,66$ $-0,82$ | $\begin{array}{ll}16 & 2,14 \\ & 2,27\end{array}$ |  |
| Aug. 2 | 4834,21 | 33,70 | $-0,51$ | $72 \quad 930,94$ | 33,10 | +2,16 | $15 \quad 59,56$ |  |
|  |  |  |  |  |  |  | $15 \quad 59.07$ |  |
|  |  |  |  | 5653,21 | 54,00 | +0,79 | $16 \quad 0,70$ |  |
| 7 | $\begin{array}{llll}9 & 7 & 49,62\end{array}$ | 49,40 | -0,22 | 732950,51 | 51,20 | +0,69 | 0,82 |  |
| 9 | 15 27,73 | 27,50 | -0,23 | $74 \quad 353,13$ | 52,10 | -1,03 | 1,50 |  |
| 10 | 19 16,00 | 15,70 | -0,30 | $\begin{array}{lll}21 & 13.34\end{array}$ | 16,60 | +3,26 | 1,24 |  |
| 11 | $23 \quad 3,65$ | 3,30 | -0.35 | 3855,51 | 54,10 | -1,41 | 0,95 |  |
| 12 | 26 30 | 50,20 | -0,47 | 56 <br> 75 <br> 15 <br> 50,33 | 47,30 | -3,03 | $16 \quad 1,06$ 0,20 |  |
| 13 20 | 30 36,80 | 36,70 | -0,10 | $\begin{array}{lll}75 & 15 & 1,03 \\ 77 & 28 & 1,20\end{array}$ | 5490 4,80 | + 3,60 | $\begin{array}{rr}16 & 0,20 \\ 15 & 58,74\end{array}$ |  |
| 21 | $10 \quad 029,38$ | 28,90 | -0,48 |  |  |  |  |  |
| 22 | $4 \quad 10,69$ | 10,80 | +0,11 | $78 \quad 7 \begin{array}{lll}784,37\end{array}$ | 59,80 | +5,43 | 16 0,64 |  |
| 23 | 7 52,48 | 52,20 | -0,28 | $28 \quad 9,16$ | 13,50 | + 4,34 | $\begin{array}{lr}16 & 0,24\end{array}$ |  |
| 24 | 11 33,31 | 33,20 | -0,11 | 48 38,59 | 40,30 | +1,71 | 1559,84 |  |
| 25 |  |  |  | $79 \quad 913,15$ | 16,90 | +3,75 | 1559,12 |  |
| 28 | 261 13,48 | 13,40 | -0,08 |  |  |  | 16 0,64 |  |
| 29 | 2952,51 | 52,50 | $-0,01$ | 33 22,19 | 24,80 | + 2,61 | 1,44 |  |
| 31 |  |  |  | 81 <br> 16450.96 | 24,90 | - ${ }^{4,96}$ | $16 \quad 0,55$ |  |
| Sep. ${ }^{1}$ |  |  |  | $38 \quad 7,20$ | 7,70 | + 0,50 | 15 59,92 |  |
|  |  |  |  | ¢2 59 56,01 | 57,60 | + 1,59 |  |  |
| 4 5 |  |  |  | $\begin{array}{rrrr}82 & 44 & 0,57 \\ 83 & 6 & 11,36\end{array}$ | 2,00 15,00 | $+1,43$ $+3,64$ | $\begin{array}{ll}16 & 1,10 \\ 16 & 2,98\end{array}$ |  |
| 6 |  |  |  | -284206 | 35,70 | + 3,64 | 15 58,65 |  |
| 7 |  |  |  | $50 \quad 57,29$ | 0,80 | + 3,51 | 161.80 |  |
| 8 |  |  |  | 8413 32,39 | 33,00 | + 0,61 | $15 \quad 59,64$ |  |
| 9 | 11943,18 | 42,70 | -0,48 | 36 11,18 | 11,90 | + 0,72 | $15 \quad 59,70$ |  |
| 10 |  |  |  | 58 57,69 | 53,90 | -3,79 | $\begin{array}{lr}16 & 2,20 \\ 15 & 59\end{array}$ |  |
| 11 | 112030,11 | 30,00 | -0,11 | 852144,47 44 40,46 | 42,00 35,80 | - $2,4,66$ |  |  |
| 13 | $24 \quad 5,72$ | 5,50 | -0,22 | 86732,11 | 32,10 | -0,01 | 0,60 |  |
| 14 | 2741,20 | 40,90 | $-0,30$ | 30 36,22 | 33,40 | $-2,82$ | 1,17 |  |
| 15 | 31 16,69 | 16,40 | -0,29 | $53.37,86$ | 38.40 | + 0,54 | 0,52 |  |
| 16 | 34 51,78 | 51,70 | -0,08 | 871648.83 | 47,00 | -1,83 | 0,37 |  |
| 17 | 38 27,60 | 27,00 | -0,60 | 39 55,75 | 58,70 | +2,95 | 1,1.5 |  |
| 18 | $42 \quad 2,70$ | 2,40 | -0,30 | 88311,53 | 1330 | +1.77 | 0,66 |  |
| 19 | 45 37,76 | 37,80 | +0,04 | 26 31,04 | 31,60 | + 0,56 | 1,37 |  |
| 20 | $49 \quad 13.46$ | 13,20 | -0,26 | 49 51,21 | 50,20 | - 1,01 | 0,20 |  |
| 21 | $\begin{array}{lll}52 & 48,59 \\ 56 & 24\end{array}$ | 48,70 | +0,11 | 891314,71 | 12.60 | -2,11 | 0,22 |  |
| 22 23 | $12 \begin{array}{rrr}56 & 24,38 \\ 0 & 0,02\end{array}$ | 24,20 0.00 | -0,18 | $\begin{array}{rrr}36 & 39,94 \\ 90 & 0 & 2,65\end{array}$ | 34,70 59,10 | -5,24 $-3,55$ | $\begin{array}{rr}16 & 0,77 \\ 15 & 59,77\end{array}$ |  |
| 24 | 3 35,65 | 35,90 | +0,25 | 23 29,99 | 24.30 | -5.69 | $16 \quad 1,44$ |  |
| 25 | 712,08 | 11,80 | -0,28 | 46 51. 60 | 50,30 | - 1,30 | $16 \quad 0,55$ |  |
| 26 | 121048,25 | 48,10 | -0.15 | $9110 \quad 17,76$ | 16,20 | -1,56 | $15 \quad 59.97$ |  |
| 27 28 | 121424,73 | 24,50 | -0,23 | 3341.44 | 42,20 | + 0,76 | 16 1,06 |  |
|  <br> Oct. | 18 1,04 | 1,00 | -0,04 | 5711,49 944021,17 | $\begin{array}{r}7,70 \\ 19,50 \\ \hline\end{array}$ | - 3,79 $-1,67$ | 0.22 |  |
| 6 |  |  |  | 95 95 | 27,10 | - 4,27 | 0,48 |  |

64 Result of Observations in 1836 and 1837.


In conformity with the plan followed in former volumes, I have here computed the value of the Mean Semidiameter of the Sun, from the observed transits-not that I have ever for a moment expected to obtain a very accurate determination by this means, - but rather from a desire of tracing the changes, if any, which might result in the method of estimating time from continued practice : the result has been simply this,-that the observer who at first observed a larger diameter than myself, has, after two or three years practice in observing, continued to observe the same larger diameter; and another Assistant who appeared to note the Diameter in defect, has continued to do so: Among the circle observations too, there appears to be the same cause in operation,-each observer either sees the Sun under a different angle, or forms a different judgment with regard to his being in contact with the wire; the results altogether are as follows-


Sclecting from the above observations those made near to the Solstices, we will proceed to compute the value of the Obliquity of the Ecliptic-

Observalions of the Sun made near to the Summer Solstices of 1836 and 1837 applied to the determination of the Obliquity of the Ecliptic.

| 1836 |  | N. P. D. | Reduction. | $\odot_{\text {Lat. }}$ | Solsticial <br> N. P. D. | Correction for |  | Mean Solsticial N. P. D. Reduced to Jan.l. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  | Dr | $\left\|\begin{array}{l}\odot \\ \text { r Nut. } \\ +\frac{t .0 \prime \prime}{}+46 \\ 365\end{array}\right\|$ |  |
| May |  | 0 '" | 0 ' ${ }^{\prime}$ | " | 0 | " | " | 0 " " |
|  | 21 | $6947 \quad 33,68$ | 31516,70 | +0,93 | $6632 \quad 17,91$ | +6,05 | -0,51 | $6632 \quad 23,45$ |
|  | 22 | 693533,21 | $3 \quad 316,46$ | 0,95 | 17,70 | ,06 | ,52 | 23,24 |
|  | 23 | $69 \quad 23 \quad 51,81$ | 25138,46 | 0,93 | 13,28 | ,06 | ,53 | 18,81 |
|  | 24 | 691234,03 | 240 20,18 | 0,89 | 14,74 | , 07 | ,53 | 20,28 |
| June | 25 | 69135,19 | 229 24,62 | 0,81 | 11,38 | ,08 | ,54 | 16,92 |
|  | 26 | $68 \quad 5111,85$ | 218 49,76 | 0,72 | 12,81 | ,09 | ,55 | 18,35 |
|  | 28 | $68 \quad 30 \quad 58,41$ | 15847,03 | 0,48 | 11,86 | ,09 | , 57 | 17,38 |
|  | 30 | $6812 \quad 25,59$ | 14013,33 | 0,21 | 12,47 | ,10 | ,58 | 17,99 |
|  | 31 | 68 3 44,01 | 13130,50 | 0,09 | 13,60 | ,11 | ,60 | 19,11 |
|  | 1 | $\begin{array}{llll}67 & 55 & 23,69\end{array}$ | 123 9,60 | -0,02 | 14,07 | ,12 | ,61 | 19,58 |
|  | 6 | $\begin{array}{lllll}67 & 19 & 31,42\end{array}$ | 04718,15 | 0,19 | 13,08 | ,17 | ,67 | 18,58 |
|  | 7 | $\begin{array}{llll}67 & 13 & 31,71\end{array}$ | 04118,70 | 0,13 | 12,88 | ,18 | ,68 | 18,38 |
|  | 8 | 67 7653,48 | 03542,88 | 0,04 | 10,56 | ,19 | ,69 | 16,06 |
|  | 9 | $\begin{array}{llll}67 & 2 & 45,78\end{array}$ | 03031,00 | +0,05 | 14,83 | ,20 | , 71 | 20,32 |
|  | 10 | $\begin{array}{rrr}66 & 58 & 0,04\end{array}$ | 02543,39 | 0,18 | 16,83 | ,20 | ,71 | 22,32 |
|  | 11 | $\begin{array}{lllll}66 & 53 & 35,48\end{array}$ | 02120,24 | 0,30 | 15,54 | ,2t | ,72 | 21,03 |


| 1836 | N. P. D. | Reduction. | $\begin{aligned} & \text { 〇's } \\ & \text { Lat. } \end{aligned}$ | Solsticial <br> N. P. D. | Correction for |  | Mean Solsticial N. P. D. Reduced to Jan. I |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | $\begin{gathered} \text { Dr } \\ \text { Nut. } \end{gathered}$ | $\left\|\begin{array}{l} \odot \mathrm{r} \text { Nut. } \\ +\frac{t \cdot 0^{\prime \prime}, 46}{365} \end{array}\right\|$ |  |
| June 12 | 0 ' " | 0 ' " | " | 0 , " | " |  | 0 " |
|  | 664934,49 | 01720,82 | +0,43 | 663214,10 | +6,22 | -0,72 | 66 32 19,60 |
| 131515161718192028 | 6646 2,33 | 01346,15 | ,56 | 15,74 | , 23 | ,73 | 21,24 |
|  | $6640 \quad 2,00$ | 0751,77 | ,78 | 11,01 | ,24 | ,74 | 16,51 |
|  | $\begin{array}{lllll}66 & 37 & 45,86\end{array}$ | $0 \begin{array}{llll}0 & 51,20\end{array}$ | ,85 | 15,51 | ,25 | ,74 | 21,02 |
|  | $\begin{array}{lllllllllll}66 & 35 & 48,77\end{array}$ | $0 \quad 335,42$ | ,89 | 14,24 | ,26 | ,75 | 19,75 |
|  | 66 3418,84 | $0{ }_{0} 024,43$ | ,92 | 15,33 | ,26 | ,75 | 20,84 |
|  | $\begin{array}{llll}66 & 33 & 11,35\end{array}$ | $\begin{array}{llll}0 & 0 & 58,40\end{array}$ | ,91 | 13,86 | ,27 | ,75 | 19,38 |
|  | $66 \quad 32 \quad 32,33$ | 00016,83 | ,87 | 16,37 | ,27 | ,75 | 21,89 |
|  | 664153,58 | $\begin{array}{llll}0 & 9 & 38,20\end{array}$ | - ,04 | 15,34 | ,31 | ,76 | 20,92 |
|  | $\begin{array}{lllll}66 & 56 & 23,07\end{array}$ | $\begin{array}{lll}0 & 24 & 8,50\end{array}$ | , ,27 | 14,30 | ,33 | ,74 | 19,89 |
|  | 673711,21 | 1 1 4 57,63 | + , 34 | 13,92 | ,36 | ,68 | 19,60 |
| 10 | 674433,17 | 11221,32 | ,47 | 12,32 | ,36 | ,67 | 18,01 |
| 14 | 6817 54,87 | 14546,15 | ,82 | 9,54 | ,38 | ,65 | 15,27 |
| 15 | $68 \quad 27 \quad 13,12$ | $\begin{array}{lll}1 & 55 & 2,56\end{array}$ | ,85 | 11,41 | ,38 | ,64 | 17,15 |
| 16 | 683655,13 | $2 \begin{array}{llll}2 & 42,26\end{array}$ | ,84 | 13,71 | ,39 | ,61 | 19,49 |
| 17 | 684653,39 | 21442,40 | ,80 | 11,79 | ,39 | ,60 | 17,58 |
| 19 | $\begin{array}{lll}69 & 8 & 2,44\end{array}$ | 23548,40 | ,65 | 14,69 | ,41 | ,58 | '20,52 |
| 1837 | $6919 \quad 8,42$ | 24654,97 | ,54 | 13,99 | ,42 | ,57 | 19,84 |
|  |  |  |  |  |  |  |  |
| May 242531 | $\begin{array}{ccc}69 & 15 & 19,85 \\ 69 & 4 & 18,85\end{array}$ | $\begin{array}{lll}2 & 43 & 4,29 \\ 2 & 32 & 2,59\end{array}$ | $-0,30$ <br> $-0,29$ | 63 315,26 <br> 15,97  | $+7,97$ 7,97 |  | $6632 \quad 22,70$ 23,40 |
|  | $68 \quad 545,45$ | 133 36,11 | +0,27 | 9,61 | 8,01 | ,60 | 17,02 |
| June | 6749 18,24 | $117.8,00$ | ,53 | 10,77 | ,02 | ,62 | 18,17 |
|  | $\begin{array}{llll}67 & 27 & 30,29\end{array}$ | 05518,53 | , 82 | 12,58 | ,03 | ,66 | 19,95 |
|  | $6720 \quad 59,23$ | 04848,88 | ,86 | 11,21 | ,03 | ,67 | 18,57 |
|  | 6714 54,06 | 42 43,15 | ,89 | 11,80 | ,03 | ,68 | 19,15 |
|  | $\begin{array}{llll}67 & 9 & 13,66\end{array}$ | $\begin{array}{ll}37 & 1,03\end{array}$ | ,87 | 13,50 | ,04 | ,69 | 20,85 |
|  | $\begin{array}{llll}67 & 3 & 55,99\end{array}$ | 3143,60 | , 83 | 13,22 | ,04 | ,71 | 20,55 |
|  | $\begin{array}{lllll}66 & 59 & 5,40\end{array}$ | 26 50,27 | ,77 | 15,90 | ,04 | ,71 | 23,23 |
|  | 665434,62 | 22 21,10 | ,67 | 14,19 | ,04 | ,72 | 21,51 |
|  | 665033,05 | 18 16,87 | ,56 | 16,74 | ,05 | ,72 | 24,07 |
|  | $\begin{array}{llll}66 & 46 & 44,64\end{array}$ | 1436,63 | ,43 | 8,44 | ,05 | ,73 | 15,76 |
|  | $\begin{array}{llll}66 & 43 & 36,19\end{array}$ | $\begin{array}{r}11 \\ \hline 181,00 \\ \hline\end{array}$ | , 30 | 15,49 | ,05 | ,73 | 22,81 |
|  | $\begin{array}{llll}66 & 40 & 43,80 \\ 66 & 38 & 15,72\end{array}$ | $\begin{array}{lll}0 & 8 & 29,56 \\ & 6 & 3,15\end{array}$ | $+0,17$ $+0,06$ | 14,41 | ,05 | ,74 | 21,72 |
|  | $\begin{array}{llll}66 & 38 & 15,72\end{array}$ | 6 3,15 | +0,06 | 12,63 | ,06 | ,74 | 19,95 |
|  |  | $4 \quad 1,67$ | -0,05 | 14,02 | ,06 | ,75 | 21,33 |
|  | $\begin{array}{llll}66 & 32 & 17,08 \\ 66 & 32 & 44,25\end{array}$ | ${ }_{0}^{0} \begin{array}{r}4,25\end{array}$ | ,22 | 12,61 | , 10 | ,76 | 19,95 |
|  | $\begin{array}{llll}66 & 32 & 44,25 \\ 66 & 33 & 30,50\end{array}$ | 1 <br> 1 <br> 22 <br> 22,80 | ,167 | 12,93 7,63 | ,10 | ,76 | 20,27 14,97 |
|  | 663455,90 | 239,25 | +0,03 | 16,68 | ,10 | ,76 | 14,97 24,02 |
|  | 663631,31 | 4 20,67 | ,15 | 10,79 | ,11 | ,76 | 18,14 |
|  | 663841,04 | 6 26,92 | ,29 | 14,41 | ,11 | ,76 | 21,76 |
|  | $\begin{array}{llll}66 & 44 & 2,47\end{array}$ | 11 51,98 | ,55 | 11,04 | ,12 | ,75 | 18,41 |
|  | 664724,98 | 1511,82 | ,66 | 13,82 | ,12 | ,75 | 21,19 |
| July | 672823,87 | 5619,00 | ,72 | 5,59 | ,14 | ,69 | 13,04 |
|  | $6735 \quad 26,79$ | 1319,28 | ,61 | 8,12 | ,14 | ,68 | 15,58 |
|  | 674239,51 | 1031,00 | ,49 | 9,00 | , 14 | ,67 | 16,47 |
|  | $6750 \quad 28,30$ | 1812,75 | ,35 | 15,90 | ,14 | ,66 | 23,38 |
|  | $6758 \quad 25,29$ | 26 16,57 | ,22 | 8,94 | ,15 | ,66 | 16,43 |
|  | $\begin{array}{lll}68 & 6 & 52,95\end{array}$ | $34.46,32$ | ,10 | 6,73 | ,15 | ,65 | 13,23 |
|  | 681538,20 | - 43 33,68 | -,01 | 4,51 | ,16 | ,64 | 12,03 |


| 1837 | N. P. D. | Reduction. | $\odot ’$Lat. | Solsticial <br> N. P. D. | Correction for |  | Mean <br> Solsticial <br> N. P. D. <br> Reduced to <br> Jan. 1. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | $\underset{\text { Nut. }}{\text { Di }}$ | $\left\lvert\, \begin{gathered}\odot \\ + \text { r Nut. } \\ + \text { t. } 0^{\prime \prime}, 46 \\ 365\end{gathered}\right.$ |  |
| July $\begin{array}{r}1 \\ 1 \\ 1 \\ 1 \\ 2\end{array}$ | T" | 0 " " | " | $\bigcirc$ | " | " | 0, " |
|  | 68 24 58,01 | 15246,14 | -0,10 | 663211,77 | +8,16 | -0,62 | 6632 19,31 |
|  | 68 $34 \begin{array}{lll}65,74\end{array}$ | $22^{2} 17,60$ | ,17 | 7,97 | , 17 | ,61 | 15,53 |
|  | $1 \begin{array}{llll}68 & 54 & 35,59\end{array}$ | 2230,90 | ,22 | 4,47 | , 17 | ,59 | 12,05 |
|  | ${ }_{69}^{69} 5$ | 33 9,63 | , 20 | 11,38 | ,18 | ,58 | 18,98 |
|  | 695128,40 | 31911,47 | + ,13 | 17,06 | ,21 | ,54 | 24,73 |

Observations of the Sun made near to the Winter Solstices of 1836 and 1837 applied to the dicicriminalis" of the Obliquity of the Ecliptic.

| 1836 |  | N. P. D. | Reduction. | $\odot ' s$ Lat. | Solsticial <br> N. P. D. | Correc | ction for | Mean <br> Solsticial <br> N. P. D. <br> Reduced to Jan. 1. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  | $\underset{\text { Nut. }}{\text { r. }}$ | $\left\lvert\, \begin{gathered} \odot \\ +\frac{t \cdot 0^{\prime \prime}, 46}{365} \end{gathered}\right.$ |  |  |
| Jan. |  | 0 " | 0 \% " | " | " | " | " | 0 ' | " |
|  | 2 | 113025,15 | +0 2714,78 | +0,07 | 1132740,00 | -5,08 | +0,49 | 11327 | 35,41 |
|  | 3 | 11255888 | 03230,79 | +0,18 | 39,25 | ,09 | ,48 |  | 33,84 |
|  | 4 | 1124928,38 | 03814,19 | $+0,29$ | 42,86 | ,10 | ,47 |  | 38,23 |
|  | 6 | $\begin{array}{llll}112 & 36 & 37,82\end{array}$ | 041 1,94 | +0,42 | 40,18 | ,11 | ,45 |  | 36,52 |
|  | 7 | 1122932,95 | 058 6,45 | +0,44 | 39,84 | ,12 | ,44 |  | 35,16 |
|  | 8 | $\begin{array}{lll}112 & 22 & 5,58\end{array}$ | 1537,05 | +0.44 | 43,07 | ,13 | ,43 |  | 38,37 |
|  | 9 | $\begin{array}{llll}112 & 14 & 5,82\end{array}$ | 11333,98 | $+0,40$ | 40,20 | ,13 | ,43 |  | 35,50 |
|  | 10 | 112543,26 | 12158,35 | +0,33 | 41,94 | ,14 | ,42 |  | 37,22 |
|  | 11 | $1 \begin{array}{llll}111 & 56 & 52,36\end{array}$ | 13048,50 | +0,23 | 41,09 | ,15 | ,41 |  | 36,25 |
|  | 13 | $1 \begin{array}{llll}111 & 37 & 58,00\end{array}$ | 14944,63 | 0,00 | 42,63 | ,16 | ,39 |  | 37,86 |
|  | 14 | $\begin{array}{llll}111 & 27 & 50,49\end{array}$ | 15950,06 | -0,12 | 40,41 | ,17 | ,38 |  | 35,62 |
|  | 16 | 11116828,03 | 221 16,79 | -0,37 | 44,45 | ,18 | ,37 |  | 39,64 |
|  | 17 | 110 55 7,89 | 23235,98 | -0,47 | 43,40 | ,19 | ,34 |  | 38,55 |
|  | 18 | $\begin{array}{llll}110 & 43 & 25,71\end{array}$ | 24419,65 | -0,55 | 44,81 | ,10 | ,33 |  | 39,94 |
|  | 19 | $1 \begin{array}{llll}110 & 31 & 16,97\end{array}$ | 25627,53 | -0,62 | 42,88 | ,21 | , 31 |  | 37,98 |
|  | 21 | $\begin{array}{llll}110 & 5 & 55,61\end{array}$ | 32151,55 | -0,65 | 46,51 | ,23 | ,27 |  | 41,55 |
| Nov. | 22 | $\begin{array}{llll}110 & 10 & 48,53\end{array}$ | 31654,52 | -0,19 | 42,86 | $-7,11$ | +0,68 |  | 36,43 |
|  | 23 | $1 \begin{array}{llll}110 & 23 & 29,13\end{array}$ | $\begin{array}{llll}3 & 4 & 15,40\end{array}$ | -0,06 | 44,47 | ,1] | ,70 |  | 38,06 |
|  | 26 | $\begin{array}{rrrr}110 & 59 & 8,64\end{array}$ | 22833,48 | $+0,23$ | 42,35 | ,13 | ,75 |  | 35,97 |
|  | 27 | 1111014,52 | 217 26,00 | +0,30 | 40,82 | ,14 | ,77 |  | 34,45 |
|  | 28 | 1111211,82 | 2642,67 | +0,32 | 44,81 | ,14 | ,79 |  | 38,46 |
|  | 29 | 11113120,53 | 15622,90 | +0,33 | 43,76 | ,15 | ,80 |  | 37,41 |
| Dec. | 2 | 11115947,39 | 12753,61 | +0,15 | 41,15 | ,17 | ,84 |  | 34,82 |
|  | 4 | $\begin{array}{lllll}112 & 16 & 43,69\end{array}$ | 1111,18 | -0,08 | 44,79 | ,18 | ,87 |  | 38,48 |
|  | 5 | $\begin{array}{llll}112 & 24 & 29,91\end{array}$ | $1 \begin{array}{llll}1 & 3 & 13,00\end{array}$ | -0,22 | 42,69 | ,18 | ,88 |  | 36,39 |
|  | 6 | 1123151,23 | 05551,70 | $-0,35$ | 42,58 | ,19 | ,89 |  | 36,28 |
|  | 7 | $\begin{array}{llll}112 & 38 & 49,79\end{array}$ | 04856,56 | -0,48 | 45,87 | ,19 | ,90 |  | 39,58 |
|  | 11 | $\begin{array}{lll}113 & 1 & 57,36\end{array}$ | 02544,77 | -0,81 | 41,32 | ,21 | ,94 |  | 35,05 |
|  | 12 | $\begin{array}{lll}113 & 6 & 38,05\end{array}$ | 0214,98 | -0,83 | 42,20 | , 21 | ,95 |  | 35,94 |
|  | 17 | $\begin{array}{llll}113 & 22 & 57,07\end{array}$ | 0 ¢ 4 43,08 | - $-0,49$ | 39,66 | - ,24 | ,98 |  | 33,40 |
|  | 19 | $\begin{array}{llll}113 & 26 & 16,19\end{array}$ | $0 \begin{array}{llll}0 & 1 & 26,56\end{array}$ | 6-0,23 | 42,52 | , 25 | ,99 |  | 36,26 |
|  | 23 | $\begin{array}{llll}113 & 27 & 10,92\end{array}$ | $0 \quad 0 \quad 32,96$ | +0,22 | 44,10 | , 27 | ,99 |  | 38,82 |
|  | 24 | $\begin{array}{rrr}113 & 26 & 13,43 \\ 113 & 6 & 20,17\end{array}$ | $\begin{array}{lrrr}0 & 1 & 30,33 \\ 0 & 21 & 20,46\end{array}$ | +0,28 | 44,04 | 4 | , 99 |  | 38,76 |
|  | 31 | $113 \quad 6 \quad 20,17$ | 02120,46 | 6-0,06 | 40,57 | \| ,30 | 1,97 |  | 34,24 |


| 1837 | N. P. D. | Reduction. | $\stackrel{\odot}{\text { ¢ }}$ L | Solsticial <br> N. P. D. | $\left\lvert\, \frac{\text { Correct }}{\left\|\begin{array}{c} \text { Dr } \\ \text { Nut. } \end{array}\right\| t}\right.$ | $\left\|\begin{array}{l} \text { ction for } \\ +\frac{t \cdot 0^{\prime \prime}, 46}{365} \end{array}\right\|$ | Mean <br> Solsticial <br> N. P. D. Reduced to Jan. 1. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Jan. $\begin{array}{rr} & 3 \\ & 5 \\ & 6 \\ & 7 \\ & 8 \\ & 9 \\ & 10 \\ & 1 \\ & 12 \\ & 19 \\ & 20\end{array}$ | 0 " " | 0 " | " | 0 | " | " | 0 , | " |
|  | 1125055,34 | 03649,08 | -0,43 | 1132743,99 | -7,32 | +0,49 | 11327 | 37,16 |
|  | $11238 \quad 19,13$ | 49 25,07 | ,65 | 43,55 | ,33 | ,46 |  | 36,68 |
|  | 1123122,36 | 56 23,83 | ,73 | 45,46 | ,34 | ,45 |  | 38,57 |
|  | 112241,01 | 1347,85 | ,79 | 48,07 | ,34 | ,44 |  | 41,17 |
|  | $11216 \quad 8,08$ | 11 40,08 | ,82 | 47,34 | ,35 | ,43 |  | 40,42 |
|  | 112745,93 | 1957,60 | ,81 | 42,72 | ,36 | ,43 |  | 35,79 |
|  | $11159 \quad 3,92$ | 28 41,81 | ,78 | 44,95 | ,37 | ,42 |  | 38,00 |
|  | 1114955.77 | 3750,82 | ,72 | 45,87 | ,38 | ,41 |  | 38,90 |
|  | 1114020,05 | 47 26,00 | -0,63 | 45,42 | ,38 | ,40 |  | 38,44 |
|  | 1102151,43 | 3558,15 | +0,21 | 49,79 | ,40 | ,31 |  | 42,70 |
|  | $\begin{array}{llr}110 & 9 & 2,85\end{array}$ | 1844,05 | +0,29 | 47,19 | ,41 | ,30 |  | 40,08 |
| Dec. | $111325 \quad 59,57$ | +0 144,67 | -0,04 | 44,20 | -8,65 | +0,99 |  | 36,54 |
|  | 113274,85 | 0 41,78 | ,16 | 46,47 | ,65 | ,99 |  | 38,81 |
|  | 1132735,43 | 0 7,33 | ,30 | 42,46 | ,66 | ,99 |  | 34,79 |
|  | 1132632,87 | 1 13,77 | ,68 | 45,96 | ,68 | ,99 |  | 38,27 |
|  | 23 26,43 | 4 19,79 | ,85 | 45,37 | ,69 | ,98 |  | 37,66 |
|  | 21 9,34 | 634,94 | ,90 | 43,38 | ,69 | ,98 |  | 35,67 |
|  | $1.515,39$ | 12 30,70 | ,92 | 45,17 | ,71 | , ,98 |  | 37,44 |

Taking the means, which it will be observed are the mean values for the commencement of the respective years, and employing the annual variation, ( $-0^{\prime \prime}, 46$ ) we have determined altogether as follows-


Observations of the Sun made near to the Vernal Equinores of 1836 and 1837 applied to the detcrinimation of the crror of the assumed Equinoctial Point.

| 1836 | Observed <br> N. P. D. | Cor. | N. P. D. corrected for $\odot$ 's Latitude. | Computed A. R. | Observed A. R. | Error of Eq. Point. | Remaris. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 0 , " | " |  | $h m$. | $m$ s. " | " |  |
| Feb. 12 | $103 \quad 58 \quad 37,19$ | -0,18 | 1035837,01 | $2140 \quad 1,85$ | $40 \quad 1,54$ | -0,31 |  |
|  | 1033841,35 | 0,28 | 1033841,07 | 43 58,25 | 43 57,52 | -0,73 |  |
|  | $10318 \quad 37.35$ | 0,36 | 1031836,99 | 47 52,83 | 47 52,40 | -0,43 |  |
|  | 1025814,93 | 0,42 | 1025814,51 | 51 47,71 | 5147,18 | -0,53 |  |
|  | 1023742,53 | 0.45 | 1023742,08 | 5541,53 | 5541,20 | $-0,33$ |  |
|  | 1021658,93 | 0,46 | 102 $16 \begin{array}{ll}168.47\end{array}$ | 59 34,10 | 5934.09 | -0,01 |  |
|  | $\begin{array}{lll}101 & 56 & 0,78\end{array}$ | 0.44 | $\begin{array}{llr}101 & 56 & 0,34\end{array}$ | $\begin{array}{lll}22 \quad 3 & 26.65\end{array}$ | 3 26,24 | $-0,41$ |  |
|  | 1013455,24 | 0.39 | $101345+, 85$ | 7 17,76 | 71763 | $-0.13$ |  |
|  | $1 \begin{array}{lllll}101 & 13 & 37.89\end{array}$ | 0,31 | 1011337,58 | 118,35 | 11 8,67 | +0,32 |  |
|  | 100525.56 | -0,21 | 100525,35 | 14 59,08 | 14 58,47 | -0,61 |  |
|  | 994639,58 | +0,16 | 9946 39,74 | 2625.58 | $26 \quad 25,28$ | -0,30 |  |
|  | 992434,42 | 027 | 992434,69 | 30 12,85 | $30 \quad 12,42$ | -0,43 |  |
|  | $\begin{array}{llll}99 & 2 & 16,49\end{array}$ | 0,39 | $\begin{array}{ll}99 & 216,88\end{array}$ | $34 \quad 0,28$ | 3359,81 | -0,47 |  |
|  | 983958,42 | 0,50 | $\begin{array}{llll}98 & 39 & 58,92\end{array}$ | 3745,80 | 37 46,16 | +0,36 |  |
|  | 981725.31 | 0,57 | $\begin{array}{llll}98 & 17 & 25,88\end{array}$ | 4132,00 | 4132,06 | +0,06 |  |
|  | 9754 48,64 | 0,63 | 975449,27 | 45 17,06 | $45 \quad 17,22$ | +0,16 |  |
| Mar. $\begin{gathered}1 \\ 2 \\ 3 \\ 4 \\ 4 \\ 5 \\ \\ 7 \\ 7 \\ 8 \\ 9 \\ 1 \\ 1 \\ 1 \\ 12 \\ 13 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 2\end{gathered}$ | 97323840 | 0,65 | 9732405 | $49 \quad 1.88$ | $49 \quad 2,15$ | +0.27 |  |
|  | $\begin{array}{lll}97 & 9 & 12,18\end{array}$ | 0,66 | $\begin{array}{llll}97 & 9 & 12,84\end{array}$ | 5246,11 | 5246,02 | -0,09 |  |
|  | 964616,18 | 0,64 | 964616,82 | 5ti 2965 | 56 29,69 | +0,04 |  |
|  | 962310,62 | 0,59 | 962311.21 | $23 \quad 0 \begin{array}{lll}23 & 13,36\end{array}$ | 0 13,01 | -035 |  |
|  | $\begin{array}{lll}99 & 0 & 5,74\end{array}$ | 0,50 | $\begin{array}{lll}96 & 0 & 6.24\end{array}$ | 35567 | 3 55,67 | 0,00 |  |
|  | 953655,59 | 0,40 | 953655,99 | 7 37,54 | 7 37,50 | +0,06 |  |
|  | 951340,00 | 0,31 | 9513 40,31 | 11 19,27 | 11 20,16 | +0,89 |  |
|  | 945015,41 | 0,18 | $9450 \quad 15,59$ | $15 \quad 1,33$ | $\begin{array}{ll}15 & 1,91\end{array}$ | +0,58 |  |
|  | 942652,79 | +0,06 | 942652,86 | 1842,11 | 1842,62 | +0,51 |  |
|  | $\begin{array}{llll}94 & 3 & 21,03\end{array}$ | -0,05 | $943 \begin{array}{lll}90,98\end{array}$ | 22 23,45 | 22.23 .56 | +0,11 |  |
|  | 933949,34 | 0,16 | 933949,18 | $26 \quad 3,89$ | $\begin{array}{ll}26 & 3,86\end{array}$ | -0,03 |  |
|  | 931612,32 | 0,23 | 931612,09 | 29 44,59 | 2944.36 | -0,23 |  |
|  | 925238,95 | 0,30 | 9225238,65 | 33 24,00 | 3324.33 | +0,33 |  |
|  | 9228 57,96 | 0,33 | 922857,63 | 3740,03 | $37 \quad 4,56$ | +0,53 |  |
|  | 914135.63 | 0,33 | -91 41 35,30 | $44 \quad 22,58$ | 44 22,73 | +0,15 |  |
|  | 911753,09 | 0,28 | $\begin{array}{llll}91 & 17 & 52,81\end{array}$ | 48 1,81 | $48 \quad 1,66$ | -0,15 |  |
|  | 905412,09 | 0,22 | $90.5411,87$ | 5140,37 | 51 40,74 | +0,37 |  |
|  | 9030 31,33 | -0,13 | $9030 \quad 31.20$ | 55 18,71 | $55 \quad 19,27$ | +0,56 |  |
|  | $\begin{array}{lll}90 & 6 \\ 46,88\end{array}$ | +0,03 | $\begin{array}{lll}90 & 646,91\end{array}$ | $58 \quad 57,50$ | 58 57,11 | -0,39 |  |
|  | 8919 26,96 | 0,23 | 8919 27,19 | $\begin{array}{llll}0 & 6 & 13,74\end{array}$ | 6 14,33 | +0,59 |  |
|  | 885545,58 | 036 | 885545,94 | 9 52,22 | 952.53 | +0,31 |  |
|  | $\begin{array}{llll}88 & 32 & 726\end{array}$ | 0,47 | $8832 \quad 7,73$ | 13 30,47 | 13 30,13 | -0,34 |  |
|  | $88 \quad 831.58$ | 0,57 | 88832,15 | 17 8,59 | 1788.63 | +0,04 |  |
|  | 874459.28 | 0.66 | 8744 59,94 | 2046,50 | 20 46,20 | $-0.30$ |  |
|  | $\begin{array}{llll}86 & 58 & 5,42\end{array}$ | 0.76 | 86586,18 | 28 2,10 | $28 \quad 2,61$ | +0.51 |  |
|  | $\begin{array}{llllllllll}86 & 34 & 41,78 \\ 86 & 11 & 24,35\end{array}$ | 0,76 | 863442,54 | 3140,22 | 3140,04 | $-0,18$ |  |
|  | 8611124,35 | 0,74 | 861125,09 | 3518,06 | 3518,07 | +0.01 |  |
|  | 854814,09 | 0.70 | 854814,79 | 38 55,50 | 3856,02 | +0,52 |  |
| April | $\begin{array}{llll}85 & 25 & 2,72\end{array}$ | 062 | $85 \quad 25 \quad 3,34$ | 42 33,93 | 4234,32 | +0,39 |  |
|  | $\begin{array}{llll}85 & 1 & 56.19\end{array}$ | 0,53 | 85156,72 | 46 12,50 | $46 \quad 12,53$ | +0,03 |  |
|  | 84391,80 | 0,42 | 8439 2,24 | 4950.08 | 4950,93 | +0,85 |  |
|  | 835313,11 | +0,19 | 835313,30 | 57 8,48 | 577.57 | -0,91 |  |
|  | $\begin{array}{lllll}83 & 30 & 30,82\end{array}$ | +0,07 | 833030,89 | 1047,51 | 047,01 | -0,50 |  |
|  | $83 \quad 7 \quad 57,50$ | -0,04 | $83 \quad 757,46$ | 4 26,38 | 4 25,77 | -0,61 |  |


| 1836 | Observed <br> N. P. D. | Cor. | N. P. D. corrected for $\odot$ 's Latitude. | Computed A. R . | Observed <br> A. R. | Error of Eq. Point. | Remarks. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 0 " " | " |  | h. m. s. | 8. 5 " | " |  |
| April 8 | 824587,54 | -0,13 | 8245 27,41 | $1 \begin{array}{lll}1 & 8 & 6,03\end{array}$ | $8 \quad 5,59$ | -0,44 |  |
|  | $82 \quad 23$ 8,94 | 0,19 | $\begin{array}{lll}82 & 23 & 8,75\end{array}$ | 1145,27 | 1145,03 | -0,24 |  |
| 10 | 82055,77 | 0,24 | 82055,53 | 15 25,13 | 15 154,87 | $-0,26$ |  |
| 11 | 813851,77 | 0,26 | 813851,51 | 19 5,07 | $19 \quad 5,31$ | +0,24 |  |
| 12 | 811655,56 | 0,25 | 811655,31 | 22 45,40 | $\begin{array}{ll}22 & 45,55\end{array}$ | +0,15 |  |
| 13 | $8055 \quad 9,64$ | 0,21 | 8055 9,43 | $26 \quad 26,41$ | $26 \quad 26,35$ | -0,06 |  |
| 15 | 8012 2,37 | -0,06 | $8012 \quad 2,31$ | 33 47,83 | 3349,10 | +*1,27 | obsd. by V. |
| 16 | 795041,31 | +0,04 | 795041,35 | $\begin{array}{ll}37 & 29,73 \\ 41 & 12\end{array}$ | $\begin{array}{lll}37 & 30,48 \\ 41 & 13 & 38\end{array}$ | $+0,75$ | ${ }^{\text {A }}$ B. |
| 188 | $\begin{array}{rrrr}79 & 8 & 24,31 \\ 78 & 47 & 32,44\end{array}$ | 0,28 0,40 | $\begin{array}{rrrr}79 & 8 & 24,59 \\ 78 & 47 & 32,84\end{array}$ | 44 $4.859,60$ 39,00 | $\begin{array}{ll}44 & 55,39 \\ 48 & 38,52\end{array}$ | $-0,21$ $-0,48$ |  |
| 1837 |  |  |  |  |  |  |  |
| Feb. 13 | 1032319,59 | +0,06 | 10323 19,65 | 214658,27 | 46 57,52 | -0,75 |  |
|  | $103{ }^{10} 31,25$ | 0,17 | 103 3 101,42 | 50 53,07 | $50 \quad 52,04$ | -1,03 |  |
| 15 | 1024233,40 | 0,27 | 1024233,67 | 54 46,58 | 54 45,65 | -0,93 |  |
| 16 | 1022156,40 | 0,34 | 1022156,74 | 58 38,66 | $\begin{array}{lll}58 & 39,21 \\ 2 & 31\end{array}$ | +0,55 |  |
| 17 | $\begin{array}{lll}102 & 1 & 2,63\end{array}$ | 0,39 | $102 \begin{array}{lll}13 & 1 & 3,02\end{array}$ | $\begin{array}{lll}22 & 2 & 31,12\end{array}$ | 231,89 | +0,77 |  |
| 18 | $101 \begin{array}{lll}101 & 39 & 58,03\end{array}$ | 0,41 | $101 \begin{array}{lll}109 & 38,44\end{array}$ | 6 22,74 | 6 23,08 | +0,34 |  |
| 19 | 1011843,42 | 0,40 | 1011843,82 | 10 13,45 | 10 13,54 | +0,09 |  |
| 20 | 10057 14,04 | 0,38 | 1005714,42 | 14 4,12 | $14 \quad 3,94$ | -0,18 |  |
| 21 | 1003541,40 | 0,32 | 1003541,72 | 17 53,19 | 17 53,19 | 0,00 |  |
| 26 | $9845 \quad 19,55$ | -0,20 | 984519,36 | 3652,06 | 3651,43 | -0,63 |  |
| 27 | 982250,37 | 0,31 | 982250,06 | 36 38,07 | 40 37,34 | -0,73 |  |
| 28 | $\begin{array}{llll}98 & 0 & 15,85\end{array}$ | 0,41 | $98 \quad 0 \quad 15,44$ | 44 23,20 | $44 \quad 22,94$ | -0,26 |  |
| Mar. 1 | 9737 33,63 | 0,50 | 9737 33,13 | 48 7,92 | $48 \quad 7,99$ | +0,07 |  |
|  | 971444,47 | 0,56 | 971443,91 | 5252,19 | $52 \quad 52,19$ | 0,00 |  |
| , | 965151,38 | 0,59 | 965150,79 | 55 35,60 | 55 36,17 | +0,57 |  |
| 4 | 962846,86 | 0,59 | 962846,27 | 59 19,33 | 59 19,70 | +0,37 |  |
| 5 | $\begin{array}{llll}96 & 5 & 39,77\end{array}$ | 0,57 | $96 \quad 539,20$ | $\begin{array}{llll}23 & 3 & 2,40\end{array}$ | 3 2,83 | +0,43 |  |
| 6 | 9542 26,66 | 0,51 | 954226,15 | 645,06 | ${ }_{6} 45,61$ | +0,55 |  |
| 7 | 951911,27 | 0,45 | 9519 10,82 | 10 26,93 | 10 27,32 | +0,39 |  |
| 8 | $94 \quad 55 \quad 52,63$ | 0,36 | 945552,27 | $14.8,20$ | $14 \quad 9,22$ | +1,02 |  |
| 9 | $9432 \quad 23,38$ | 0,24 | $94 \cdot 32$ 23,14 | 1750,26 | 1750,52 | +0,26 |  |
| 10 | $94 \quad 8$ 55,18 | 0,12 | 9485506 | 21 31,20. | 21 31,50 | +0,30 |  |
| 11 | 934520,21 | +0,0,1 | $\begin{array}{llll}93 & 45 & 20,22\end{array}$ | $25 \quad 12,39$ | $25 \quad 12,64$ | +0,25 |  |
| 12 | 932142,75 | 0,13 | 932142,88 | 25 53,18 | 28 52,29 | -0,89 |  |
| 13 | $\begin{array}{llll}92 & 58 & 9,92\end{array}$ | 0,24 | $\begin{array}{llll}92 & 58 & 10,16\end{array}$ | 32 32,62 | 3232,85 | +0,23 |  |
| 17 | 9123 29,01 | 0,51 | 912329,52 | 47 10,01 | $\begin{array}{lll}47 & 9,35\end{array}$ | -0,66 |  |
| 23 | 89124,70 | 0,16 | 89 1-24,86 | $\begin{array}{llll}0 & 9 & 0,11\end{array}$ | 8 59,74 | -0,37 |  |
| 24 | 883747,97 | 0,05 | 883748,02 | 1238,05 | 1237,77 | -0,28 |  |
| 25 | $\begin{array}{llll}88 & 14 & 12,12\end{array}$ | $-0,07$ | 881412,05 | 14 16,14 | $\begin{array}{llll}14 & 15,17\end{array}$ | -0,97 |  |
| 27 | 872713,12 | 0,28 | 872712,34 | 23 31,51 | 23 31,73 | +0,22 |  |
| 28 | $87 \quad 3$ 45,31 | 0,38 | 873 44,93 | 27 9,51 | 27 8,95 | -0,56 |  |
| 29 | 8640 21,81 | 0,43 | 8640 21,38 | 3047,47 | 3046,71 | -0.76 |  |
| 30 | $\begin{array}{llll}86 & 17 & 4,74\end{array}$ | 0,49 | 86174,25 | 34 25,14 | 34 25,55 | +0,41 |  |
| 31 | 8553 47,78 | 0,49 | 8553 47,29 | 38 3,35 | $38 \quad 3,24$ | -0,11 |  |
| April 1 | 853033,72 | 0,47 | 853033,25 | 41 42,01 | 41 41,90 | -0,11 |  |
| 2 | $85 \quad 733,40$ | 0,42 | $85 \quad 7 \quad 32,98$ | $45 \quad 19,34$ | $45 \quad 19,99$ | +0,65 |  |
| 3 | 844434,53 | 0,35 | 8444 34,18 | 4857,38 | $\begin{array}{rrr}48 & 58,45 \\ 3\end{array}$ | +1,07 |  |
| 7 | 8313 21,02 | +0,10 | 8313 21,12 | $1 \begin{array}{lll}1 & 3 & 33,87 \\ & 7 & 13\end{array}$ | 3 38,78 <br> 7  | -0,09 |  |
| 8 9 | $82504.9,49$ | 0,22 | $\begin{array}{llll}82 & 50 & 49,71 \\ 82 & 28 & 26,64\end{array}$ | $\begin{array}{r}7 \\ 10 \\ 10 \\ 52,38 \\ \hline\end{array}$ | $\begin{array}{r}7 \\ 7 \\ 10 \\ 10,42 \\ \hline\end{array}$ | $+0,02$ $+0,03$ |  |

[^9]| 1837 | Observed <br> N. P. D. | Cor. | N. P. D. corrected for ©'s Latitude. | Computed A. R. | Observed A. R. | Error of Eq. Point. | Kemaris. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| April 11 | 0 | " |  | h. m. s. | m. s." | " |  |
|  | 81445,52 | +0,52 | 81446,04 | 11812,58 | 18 12,83 | +0,25 |  |
|  | 81226,05 | 0,60 | 81226,65 | 21 53,01 | 21 52,92 | -0,09 |  |
|  | 810176,62 | 0,62 | 81018,24 | 25 33,35 | 25 33,83 | +0,48 |  |
|  | 803838,25 | 0,63 | 803838888 | 29 15,97 | 29 15,06 | -0,91 |  |
|  | $\begin{array}{llll}80 & 17 & 4,54\end{array}$ | 0,61 | $8017 \quad 5,15$ | 32 55,59 | 32 55,94 | +0,35 |  |
|  | $\begin{array}{llll}79 & 34 & 33,32\end{array}$ | 0,50 | 793433,82 | 40 18,61 | 40 19,31 | +0,70 |  |
|  | 7913 25,28 | 0,40 | 7913 25,68 | 44 2,07 | 44 2,02 | -0,05 |  |

Observations of the Sun made near to the Autumnal Equinoves of 1836 and 1837 applied to the determination of the error of the Equinoctial Point.

| 1836 | Observed <br> N. P. D. | Cor. | N. P. D. corrected for ©'s Latitude. | Computed A. R. | Observed A. R. | Error of Eq. Point. | Remarins. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 0 \% " | " |  | h. ${ }^{\text {m }}$. | 10 |  |  |
| Sep. 9 | 844143.17 | $+0,53$ | 844143,70 | 111035,56 | 10 34,77 | -0,79 |  |
| 11 | 852714,99 | 0,40 | 852715,39 | 1746.81 | 17 46,79 | -0,02 |  |
| 12 | $\checkmark 55011,29$ | 0,31 | 855011,60 | 21 22,82 | 21 22,28 | -0,54 |  |
| 16 | 872231,57 | -0,18 | 8722 31,39 | 35 45,01 | 35 44,70 | $-0,31$ |  |
| 20 | $88.5536,69$ | $-0,53$ | $88 \quad 55$ 36,16 | 50 6,27 | 50 6,42 | +0,15 |  |
| 21 | 89.1854 .54 | 0,56 | 891858,98 | 53 41,93 | 5342,03 | +0,10 |  |
| 22 | 8942 24,65 | 0,57 | 4942 24,08 | 57 17,81 | 57 17,44 | -0,37 |  |
| 25 | 905232,54 | 0,41 | 905232,13 | $12 \quad 8 \quad 4,39$ | 8 4,59 | +0,20 |  |
| 26 | $\begin{array}{llll}91 & 16 & 2,37\end{array}$ | 0,32 | 9116 2,05 | 1141,13 | 1140,99 | -0,14 |  |
| 29 | 922612,20 | +0,04 | 922612,24 | 22 30,37 | 2230,75 | +0,38 |  |
| Oct. 4 | $\begin{array}{lllll}94 & 22 & 40,39\end{array}$ | 0,43 | 942240,82 | 4038,39 | 40 38,40 | +0,01 |  |
| 6 | $\begin{array}{llll}95 & 9 & 0,74\end{array}$ | 0,43 | $\begin{array}{lll}95 & 9 & 1,17\end{array}$ | 4756,48 | 47 56,08 | -0,40 |  |
| 8 | 955502,65 | 0,31 | $\begin{array}{llll}95 & 55 & 2,99\end{array}$ | 55 15,79 | 5515,20 | $-0.59$ |  |
| 9 | 961754,45 | 0,22 | ! $4617 \quad 54,67$ | 58 55,67 | 58 55,83 | +0,16 |  |
| 10 | 964045,03 | 0,11 | 964045,14 | $13 \quad 236,62$ | 236,57 | -0,05 |  |
| 11 | 9732318 | -0,01 | $97 \quad 323,17$ | 616,89 | 6 17,78 | +0,89 |  |
| 12 | 9726 2,62 | 0,14 | 9726 2,48 | 958,79 | 9 59,67 | +0,88 |  |
| 13 | 974836,53 | 0,27 | 974836,26 | 13 41,29 | 13 41,89 | +0,60 |  |
| 14 | 981059.48 | 0,38 | 981059,10 | 17 23,59 | 17 23,97 | +0,38 |  |
| $1 \%$ | 993933,70 | 0,66 | 993933,04 | 32 20,94 | 32 20,80 | -0,14 |  |
| 19 | $100 \quad 119,10$ | 0,67 | 100118,43 | 36 6,31 | 36 6,33 | +0,02 |  |
| 20 | $10023 \quad 0,87$ | 0,65 | $10023 \quad 0,22$ | 3953,11 | 39 52,70 | -0,41 |  |
| 21 | 100. 4425,38 | 0,6) | 1004424,78 | 43 39,20 | 43 39,34 | +0,14 |  |
| 22 | 101544,16 | 0,52 | 101543,64 | 47 26,63 | 47 27,01 | +0,38 |  |
| 25 | 102838,39 | 0,21 | $102838,1 \%$ | 58 52,98 | 58 53,74 | +0,76 |  |
| 1837 Sep. | 843611,18 | -0,30 | 843610,89 | 11942,80 | 9 43,18 | +0,38 |  |
| Sce. 12 | 854440,46 | -0,29 | 854440,17 | 2030,93 | 2030,11 | $-0,82$ |  |
| 13 | ¢6 73 32,11 | 0,24 | $\checkmark 66731,87$ | $24 \quad 5,57$ | $24 \quad 5,72$ | +0,15 |  |
| 14 | ¢6 30 36,22 | 0.16 | 863036,06 | 27 41,45 | 27 41,20 | -0,25 |  |
| 15 | 865337,86 | 0,06 | 8653 37,80 | 31 16,29 | $31.16,69$ | +0,40 |  |
| 16 | 871648,83 | +0,05 | 871648488 | 34 51,99 | 34 <br> 38 <br> 38 <br> 1,78 | -0,21 |  |
| 17 | 873955,75 | 0,17 | 873955,92 | 38 26,56 | 38 27,0 | +1,04 |  |
| 19 | 88 3 11,53 | 0,2× | 88 \% 311,81 | $42 \quad 2,07$ | 42 2, 45 | $+0,03$ $-0,02$ |  |
| 19 | 882631,04 | 0.39 | $88263], 43$ | 45 37,78 | 4537,76 49 | $-0,02$ $+0,16$ |  |
| 20 | 884951,21 | 0,50 | : 84951,71 | 49 13,30 | 49 13,46 | +0,16 |  |


| 1837 | Observed N. P. D. | Cor. | N. P. D. corrected for O's Latitude. | Computed A. R. | Observed A. R. | Error. of Eq. Puint | Remarks. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Sep. |  | " |  | h. m. | $m . s$ |  |  |
|  | ${ }_{49}{ }_{8} 131314.71$ | $+0.57$ | 891315,28 | 115249,11 | $524^{4}, 59$ | -0,52 |  |
|  | ¢9 3639.94 | 0,63 | 893640,57 | 56 25,10 | 56 24,38 | -0,72 |  |
|  | 90 0. 2,65 | 0,66 | $\begin{array}{lll}90 & 0 & 3,31\end{array}$ | 12000 | ${ }^{0} 00,02$ | -1,67 |  |
|  | $\begin{array}{lllll}90 & 23 & 29,99\end{array}$ | 0,66 | 9323 30,65 | 3 36,68 | 3 35,65 | -1,03 |  |
|  | $934651.6)$ | 0,64 | 90465224 | 712,22 | 712,18 | +0,06 |  |
|  | 911017,76 | 0,59 | 91 91 10 1018.35 | 1048.24 | 104825 | +0,01 |  |
|  | 91 | 0.51 | 91 <br> 91 <br> 91 <br> 1 <br> 54 <br> 1191 <br> 1195 | 14 24,23 | 1424.73 | +0,45 |  |
| Oct. | 96518 | -0,39 | 963517.78 | 1314367 | $1{ }^{1} 104$ | -1,05 |  |
|  | 972041,73 | 0,22 | 972041.51 | 96.19 | 9 6,76 | +0,57 |  |
|  | 97435 5,97 | 0,11 |  | 1246,76 | 12 47,81 | +1,05 |  |
|  | 98 5 <br> 84,99  | 0,00 | 98 | 162971 | 1637,42 | +0,71 |  |
|  | 9850 4,12 | +0.23 | 9850 4,35 | $2355 . \times 6$ | 2356.83 | +0.97 |  |

Taking the means and refering to former Vols. we have determined altogether as follows-

Error of the assumed Equinoctial Point.
Observations in Spring. Observativns in Autumn.

| 19 observations in 1831 | s $+0,055$ | m 17 observations in 1931 | $0,2$ |
| :---: | :---: | :---: | :---: |
| 50 - 1832 | - ,140 | -48 | ,399 |
| 48 - 1833 |  | 29 - - 18.33 | ,325 |
| 56 ——— 1835 | + ,392 | 29 - 1835 | ,376 |
| $1>36$ | + ,003 | 25 -—— 1836 | ,052 |
| 1837 | - ,001 | 837 | ,050 |

In Vol. III, I had proposed to reject the result derived from the Spring Observations of 1835 ; but the results from the Autumnal Observations of 1836 and 1837, when compared with former results, exhibiting a similarly large discordance, it would appear preferable to retain it ; accordingly we have

Error of the assumed Equinoctial Point.
From the Observations in Spring $+0,043$

-     -         - Autumn $+0,245$
$\therefore$ Mean Error or the Assumed Equinoctial Point $+0,144$
The results here obtained from the Observations at the Vernal and Autumnal Equinoxes, as well as those arrived at for the Obliquity, at page 68, exhibit a discordance, such as would be explained by attributing an error to the assumed place of the pole (the Latitude in fact); to understand this matter clearly, it is necessary to recollect, that every measure of North Polar Distance which is contained in this and the previous volumes of the Madras Results, has been derived from the Greenwich Catalogue of 720 Stars for 1825 ; which catalogue reckoned the N. P. D. from a point (supposed to be the pole) situated at an altitude of $51^{\circ} 28^{\prime} 38^{\prime \prime}, 5$ above the north horizon of the Greenwich Royal Ob-
servatory; hence, the error (if any) of this assumption, necessarily affects by its whole amount, the N. P. D. of every Star of the above catalogue, and consequently each and every measure of N. P. D. which has been made at Madras: thus, to render the Solsticial Observations at Madras accordant, we must diminish the Latitude of Greenwich $1^{\prime \prime}, 65$; and to reconcile the Observations at the Equinoxes, we must diminish the Latitude $0^{\prime \prime}, 66$,-rendering it exceedingly probable, that the Latitude of Greenwich as above stated, must be diminished by about one second.*

The presumed Latitude of Greenwich....................... $51^{\circ} 28^{\prime} 37^{\prime \prime}, 5$
In vol. I. Difference of Latitude of Madras and Greenwich. $3824 \quad 29,3$

$$
\text { Latitude of Madras } \ldots \longdiv { 1 3 \quad 4 \quad 8 , 2 }
$$

## OBSERVATION OF SPOTS UPON THE SUN'S DISC.

The following observations of the various spots which have from time to time passed over the Sun's disc-have been made at the time of Transit with the Meridianal Instruments, so as not to prevent the ordinary observation of the Limb; at the Transit, one or two wires have mostly been taken; and at the Mural Circle, only two Microscopes could be read off; they are however on the whole, I apprehend-little inferior to the other observations.

Apparent Right Ascension and Declination of Spots observed upon the Sun's Disc, together with their Geocentric and Melioccntric Places.

| Madras M. T. | Apparent A. R. | Apparent Deen. | Geocentric |  | Heliocentric |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Longitude. | Latitude. | Longitude. | Latitude. |
| 1835 D. h. m. | h. m. | - ${ }^{\prime \prime}$ | - ' " |  | ${ }^{0} 1{ }^{\prime \prime}$ | ${ }^{\circ}{ }^{\prime \prime \prime}$ |
| Dec. 2323 59,5 | (1) 188888 | $\begin{array}{llll}-23 & 22 & 8,5\end{array}$ | $271 \begin{array}{lll}52 & 3,2\end{array}$ | +4 46,6 | 761731 | +17 513 |
| $\begin{array}{lll}25 & 0 & 0,0\end{array}$ | (1) 1219,41 | 232032.8 | 2724942,6 | +5 21,1 | $\begin{array}{lllll}90 & 41 & 25\end{array}$ | $\begin{array}{llll}18 & 55 & 3 \\ 21\end{array}$ |
| $\begin{array}{llll}26 & 0 & 0,5\end{array}$ | (1) 1629,93 | 231839,0 | 27347 15,0 | +5 49,2 | 1052840 | $\begin{array}{llll}21 & 0 & 53\end{array}$ |
| $27 \quad 0 \quad 1,0$ | (1) 2041,78 | $\begin{array}{llll}23 & 16 & 18,5\end{array}$ | $27445 \quad 7,7$ | +6 16,7 | 1192738 | $\begin{array}{lllll}22 & 45 & 25\end{array}$ |
| 2900 | (1) $29 \quad 10,78$ | $\begin{array}{llll}23 & 10 & 50,9\end{array}$ | 2764211,3 | +6 640,8 | 1491633 |  |
| $\begin{array}{lll}30 & 0 & 2,5\end{array}$ | (1) 3328,37 | $23 \quad 734,2$ | 2774129,3 | +6 44,3 | $163 \quad 5217$ | 243211 |
| $\begin{array}{llll}1836 \\ \text { Jan. } & 4 & 0 & 4,9\end{array}$ | 1855 39,23 | 224152,0 | 28249 1,5 | -8 48,0 | 15788 | $-253728$ |
| 8 0 6,7 | (5) $1913 \quad 31,72$ | $22.2843,1$ | 287114,2 | -6 6,9 | 142220 | -22 845 |
| 20011,1 | 20 512,24 | 201320,5 | 2991037,1 | +7 20,6 | 1752323 | +265618 |
| 21 011,4 | 916,36 | $20 \quad 0$ 14,7 | $300 \quad 9$ 24,2 | +8 7,2 | 1705833 | +30 510 |
| 23012,0 | (1) $18 \quad 10,58$ | 193355,3 | 3021747,2 | +6 14,3 | $140 \quad 354$ | +22 3837 |

* In Vol. II. page 84, I had arrived at very nearly the same result,-a result which has lately been completely vea rified by the observations at Greenwich.

74 Observation of Spots upon the Sun's Disc.


The numbers (1), (2), \&c. are supplied-to shew when the same spot has been re-observed: If we compare the cases in which the same spot has been re-observed after a complete revolution, we determine approximately.
from No. 1, that the Sun rotates on his axis at the rate of $14^{0} 2^{\prime}$ in 24 hours.


The observation on the 30th April, shews that the position of the spot had shifted 6 or 7 degrees (apparently $1^{\prime} 50^{\prime \prime}$ ), or that another spot had sprung up in its neighbourhood; and the observation of No. 1 on the 29th December and 23rd January, shews a variation of 2 degrees in the Heliocentric Latitude :* the observation of No. 9, which-embracing 7 revolutions, should be a good one,seems to confirm 1 and 2 in giving a rate of rotation of $14^{\circ} 4^{\prime}$ a day; or it would appear, that the Sun makes one complete sidereal revolution on his axis in 25 days 14 hours. With regard to the position of the Solar Axis, the above observations are sufficient only to furnish a rude approximation: it would appear that the inclination of the Solar Axis to the Pole of the Ecliptic is between 6 and 7 degrees; and that the Heliocentric Longitude of the intersection of the Solar Equator with the Plane of the Ecliptic is about $95^{\circ}$.

Observed Right Ascension and North Polar Distance of Mercury, compared with the places interpolated from the Nautical Almanac.

| 1836 | Madras Mean Time of Observation. | A. R. from Observation. | A. R. from N. A. | Error of N. A. | N. P. D. from Observation. | N. P. D. from N. A. | Error of N. A. | Remaris. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| - | h. m. s. | h. m. s. |  | " | 0 , " |  | " | faint |
| $\begin{array}{cc}\text { Jan. } & 16 \\ 19 \\ 21 \\ 22 \\ 23 \\ 26 \\ 26 \\ 27 \\ 29 \\ & \end{array}$ | 03820,1 | $2017 \quad 25,55$ | 24,95 | -0,60 |  |  | - |  |
|  | 04745,85352,85651,2 | $20 \quad 3842,64$ | 42,34 | -0,30 | 11103315,93 | 33 8,44 | -7,49 |  |
|  |  | $\begin{array}{r}20 \quad 52 \\ 59 \\ 59 \\ \hline 38,47 \\ \hline\end{array}$ | $\begin{array}{r} 43,11 \\ 38,92 \end{array}$ | -0,36 | 1093326,60 | 33 17,43 | -9,17 |  |
|  |  |  |  | +0,16 | 1095858,46 | 1 3,30 | +4,84 |  |
|  | 59 46,1 | 21630,87 | 30,92 | +0,05 | 10827 22,78 | 27 23,91 | +1,13 |  |
|  | 180,9 | 26 36,64 | 36,68 | +0,04 | 1063829,92 | 38 29,62 | -0,30 |  |
|  | 1033,1 | 21336,08 | 5,68 | -0,40 | $105 \quad 59 \quad 53,09$ | 59 50,46 | -2,63 |  |
|  | 15 12,3 | 45 37,90 | 37,54 | -0,36 | 1043948,95 | 39 48,64 | -0,31 |  |
| Feb. | 22 2,0 | 22815,89 | 15,45 | -0,44 | 1015347,26 | 53 46,75 | -0,51 |  |
|  | 23 3,4 | 13 14,11 | 13,80 | -0,31 | 1011234,70 | 12 31,82 | -2,88 |  |
|  | 23 44,1 | 17 51,54 | 51,41 | -0,13 | 100323,79 | $32 \quad 0,13$ | -3,66 |  |
|  | 24 2,1 | 22 6,29 | 5,77 | -0,52 | 995241,58 | 52 33,93 | -7,65 |  |
|  | 23 54,0 | 25 54,92 | 54,59 | -0,33 | 991439,06 | 14 38,77 | -0,29 |  |
|  | 22 12,1 | $32 \quad 5,70$ | 5,23 | -0,47 | $\begin{array}{llll}98 & 4 & 53,09\end{array}$ | 454,61 | +1,52 |  |
|  | 20 33,2 | 34. 23,30 | 22,46 | -0,84 | 973359,29 | 33 59,28 | -0,01 |  |
|  | 18 18,9 | 36 5,58 | 4,97 | $-0,61$$+0,07$ | $\begin{array}{llll}97 & 6 & 16,34\end{array}$ | 616.00 | -0,34 |  |
| April | $\begin{array}{llll}23 & 0 & 51,3\end{array}$ | 03033,76 | 33,83 |  | 891043,41 | $10.51,63$ | +8,22 |  |
|  | $23 \quad 3 \quad 20,0$ | 03659,40 | 59,05 | -0,35 | - | - | - |  |
|  | 14 14,9 | 1342,17 | 41,89 | -0,28 | $\begin{array}{llll}85 & 14 & 16,18\end{array}$ | $14.22,09$ | +5,91 |  |
|  | 2652,9 | 328,57 | 8,65 | $\begin{aligned} & +0,08 \\ & +0,15 \end{aligned}$ | 815203,19 | 52 4,70 | +1,51 |  |
|  | 34 4,8 | 47 4,50 | 4,65 |  | 80817,06 | 813,18 | $-3,88$ |  |
|  | $\begin{array}{r}37 \\ \hline\end{array}$ | 65443,84 | 43,83 | $\begin{aligned} & +0,15 \\ & -0,01 \end{aligned}$ | 6453 275 | 53 I, 61 | -1,14 |  |
| May 31 | 13853,7 | 61420,44 | 20,31 | -0,13 | $6453 \quad 2,75$ | 53 1,61 | -1,14 |  |

* In case these spots are not situated upon the illuminated surface of the Sum, some part of the discrepancy here found may be explained; but the observation of the Solar spots, are, by reason of their vavied figure-so subject to inaccuracy, that nothing conclusive with regard to their situation or movements, can be expected from the above few observations.

| 1836 |  | $\begin{gathered} \text { Madras Mean } \\ \text { Time of } \\ \text { Observation. } \end{gathered}$ | A. R. from Observation. | A. R. from N. A. | Error of N. A. | N. P. D. from Observation. | $\begin{gathered} \text { N. P. D. } \\ \text { from } \\ \text { N. A. } \end{gathered}$ | Error of N. A. | Remarxs. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | h. m. s. | $h . m$. s. | " | " | 0 " | 0 " | " |  |
| July 1 |  | $\begin{array}{llll}22 & 39 & 39,7\end{array}$ | 63145,13 | 45,09 | -0,04 | $6847 \quad 2,94$ | $47 \quad 7,34$ | +4,40 |  |
| Oct. | 6 | 1.12 29,4 | 141230,79 | 30,65 | -0,14 |  |  |  |  |
| Nov. 2 | 22 | 225634,1 | $15 \quad 5 \quad 28,70$ | 28,36 | -0,34 | $\begin{array}{llll}106 & 19 & 48,47\end{array}$ | 19 53,30 | +4,83 |  |
|  | 25 | $23 \quad 316,4$ | 15240,09 | 59,94 | -0,15 | 1075351,48 | 53 55,13 | +3,65 |  |
| Dec. 1837 |  | 25 30,1 | 21 46,49 | 46,01 | -0,48 | 1115212,85 | 52 13,01 | +0,16 |  |
| Jan. | 3 | 05257,2 | 1943 49,04 | 48,91 | -0,13 | 1132846,37 | 28 48,98 | +2,61 |  |
|  | 7 | 1449,2 | 201129,49 | 29,35 | -0,14 | 112331,31 | 3 30,45 | -0,86 |  |
|  | 8 | 736,8 | 1814,01 | 14,22 | +0,21 | 11113824,05 | 38 26,14 | +2,09 |  |
|  | 9 | 10 18,5 | 24 52,57 | 52,29 | -0,28 | 1111155,61 | 1156,14 | +0,53 |  |
|  | 10 | 12 53,0 | 3124,32 | 23,99 | -0,33 | $11044 \begin{array}{lll}110\end{array}$ | 44 5,02 | +0,11 |  |
|  | 24 | 2129,0 | 213513,50 | 12,82 | -0,68 | 1032522,54 | 25 20,50 | -2,04 |  |
| Feb. 1 |  | 22 37-21,1 | $\begin{array}{rrrr}20 & 37 & 5,09 \\ & 38 & 47 & 81\end{array}$ | 4,27 47 | -0,82 | 107114,05 | 11811 | $\underline{+4,06}$ | ) invisible to the Circle |
| Mar. |  | $\begin{array}{lr}35 & 6,7 \\ 28 & 11,6\end{array}$ |  | 47,24 29,78 | $-0,57$ $-0,25$ | $\begin{array}{lll}107 & 1 & 14,05 \\ 106 & 52 & 16,56\end{array}$ | $\begin{array}{rr}1 & 18.11 \\ 52 & 18,07\end{array}$ | $+4,06$ $+1,51$ | ) the Circle observer. |
|  |  | 3016,7 | 2512,03 | 11,12 | -0,91 | $\begin{array}{lll}106 & 9 & 41,18\end{array}$ | 9 48,84 | +7,66 |  |
|  | 6 | 31 6,9 | 29 59,02 | 58,73 | -0,29 | 1055534,62 | 55 38,74 | +4,12 |  |
|  | 7 | 32 5,5 | 34 53,34 | 53,08 | -0,26 | $10540 \quad 1,87$ | $40 \quad 519$ | +3,32 |  |
|  | 8 | 33 8,8 | 3954,01 | 53,62 | -0,39 | $105 \quad 23 \quad 5,94$ | 23 8,58 | +2,64 |  |
|  | 9 | 34 19,0 | $45 \quad 0,38$ | 0,10 | -0,28 | 105447,76 | 449.95 | +2,19 |  |
|  | 10 | 3533,3 | 50 12,39 | 11,70 | -0,69 | $10445 \quad 7,91$ | $45 \quad 10,10$ | +2,19 |  |
|  | 13 | 39 47,2 | 22616,13 | 15,80 | -0,33 | $103 \quad 38 \quad 0,91$ | $38 \quad 8,71$ | + 7 , 80 |  |
|  | 16 | 4439,2 | 22 58,39 | 58,36 | -0,03 | $\begin{array}{llll}102 & 19 & 16,47\end{array}$ | 19 19,42 | +2,95 |  |
|  | 22 | 56 0,1* | 57 59,51 | 59,29 | -0,22 | $\begin{array}{llll}99 & 7 & 21,77\end{array}$ | 7 26,26 | $+4,49$ |  |
|  | 23 | 58 3,8 | $\begin{array}{lll}23 & 4 & \text { J,64 }\end{array}$ | 1,29 | -0,35 | 983059,89 | 318,69 | +8,80 |  |
|  | 24 | $23 \quad 0 \quad 12,5$ | $10 \quad 6,59$ | 6,65 | +0,06 |  | , | - |  |
|  | 26 | 4 41,6 | - 22 28,21 | 27,66 | -0,55 | $9635 \quad 3,11$ | 356,14 | $+3,03$ |  |
|  | 27 | $\begin{array}{ll}6 & 57,3 \\ 9 & 19\end{array}$ | - 28 42,92 | 43,39 | +0,47 | $\begin{array}{llll}95 & 54 & 2,12\end{array}$ | 54 4,68 | +2,56 |  |
|  | 28 | ${ }^{9} 19,9$ | $35 \quad 2,34$ | 2,50 | +0,16 | 951156,44 | 11 54,40 | -2,04 |  |
|  | 29 | 1147,6 | 41 25,93 | 25,69 | -0,34 | 942840,79 | 28 36,44 | -4,35 |  |
|  | 30 | 1416,6 | 47 52,60 | 52,58 | -0,02 | $9344 \begin{array}{lll}7,86\end{array}$ | 44 11,98 | +4,12 |  |
| April | 19 | 01643,8 | $2 \quad 5 \quad 24,23$ | 24,26 | +0,03 |  | - | - |  |
|  | 20 | 2046,6 | 13 24,54 | 24,32 | -0,22 | $\begin{array}{llr}76 & 19 & 5,37 \\ 75 & 26 & 59\end{array}$ | 19 5,60 | +0,23 |  |
|  | 25 | 24 <br> 41 <br> 41 <br> 1,2 <br> 1 | $\begin{array}{ll}21 & 26,19 \\ 53 & 30,57\end{array}$ | 26,18 30,67 | $-0,01$ $+0,10$ | $\begin{array}{llll}75 & 26 & 59,47 \\ 72 & 12 & 54,94\end{array}$ | $\begin{array}{ll}26 & 55,29 \\ 12 & 53,15\end{array}$ | -4,18 |  |
|  | 26 | 43 3,8 | 3125,05 | 24,71 | -0,34 | $\begin{array}{llll}71 & 29 & 1,52\end{array}$ | [r $\begin{array}{cr}12 & 53,15 \\ 29 & 3,08\end{array}$ | $-1,79$ $+1,56$ |  |
|  | 30 | 5151,0 | 32 1,78 | 2,11 | +0,33 | 685613,28 | 56 11,70 | $+1,56$ $-1,58$ |  |
| May | 2 | $1 \begin{array}{lll}1 & 6 & 23,8 \\ & 9 & 22,5\end{array}$ | 46 27,64 | 27,70 | +0,06 | 675434,49 | 54 32,82 | -1,67 |  |
|  | 3 | 922,5 2455,9 | 53 43,70 4 | 23,84 | +0,14 | 672734,07 | 27 30,03 | -4,04 |  |
|  | 11 | 24 55,9 | 44032,16 | 32,38 | $+0,22$ | $\begin{array}{llll}65 & 7 & 46,01\end{array}$ | 17 44,34 | -1,67 |  |
| July | 12 | 2541,1 | $\begin{array}{ll}4 & 45 \\ 5 & 13,94\end{array}$ | 15,03 | +0,09 | 651129,12 | 112654 | $-2,58$ |  |
|  | 11 | $\begin{array}{llll}22 & 50 & 26,4\end{array}$ | $\begin{array}{rrr}55 & 54,24 \\ 10 & 3,54\end{array}$ | 54,86 4,12 | $+0,62$ $+0,58$ | 671910,45 |  |  |  |
|  | 18 | $\begin{array}{llll}23 & 20 & 7,0\end{array}$ | $7 \quad 725,62$ | 25,38 | $-0,24$ | $6649 \quad 6,65$ | $49 \quad 7,74$ | $+1,32$ $+1,09$ |  |
|  | 19 | 23250,3 | 71619,23 | 19,72 | $+_{0,49}$ |  |  | +1,09 |  |
| Aug. |  | 04638,3 | $949 \quad 5,48$ | 6,04 | +0,56 |  |  |  | $\}$ the Circle |
|  | 9 | \| 05531,4 | $10 \quad 3 \quad 22,51$ | 22,81 | +0,30 | $76 \quad 27 \quad 28,78$ | 2732,40 | $+3,62$ |  |
|  |  | 3112833,4 | 115354,96 | 54,87 | -0,09 | 90638,28 | 634,25 | +4,03 |  |
|  |  | 1 283780 | 12573,46 | 3,34 | -0,12 | --- |  | - |  |
|  | 21 | 15 , 2 <br> 12 3,8 | $\begin{array}{llrr}13 & 11 & 7,39\end{array}$ | 7,04 | -0,35 | 1013015,89 | 30 18,03 | +2,14 |  |
|  | 22 | 839,8 | 11 12 39,71 | 59,52 31,26 | -0,29 | 1013919,31 | 39 21,41 | +2,10 |  |
|  | 23 | \| | 12 41,05 | 31,26 40,16 | -0,45 $-0,89$ | $\begin{array}{rrr}101 & 45 & 19,56 \\ 101 & 48 & 6,56\end{array}$ | $45 \quad 22,98$ | $+3,42$ $+1,42$ |  |

Observed Right Ascension and North Pilar Distance of Venus, compared with the places interpulutud firom the Nautical Almanac.

| 1836 | Madras Mean Time of Observation. | A. R. from Observation. | A. R. fiom N A | $\begin{gathered} \text { Error } \\ \text { of } \\ \text { N. A. } \end{gathered}$ | $\underset{\text { N. P. D. }}{\substack{\text { from } \\ \text { Otion. }}}$ | $\left\|\begin{array}{c} \text { N.P.D. } \\ \text { from } \\ \text { N. A. } \end{array}\right\|$ | Error of N. A. | Remarks. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{array}{ll}\text { Jan. } & \\ & \\ \\ 18 \\ 10 \\ 19 \\ 20 \\ 21 \\ 22 \\ & 23 \\ & \end{array}$ | h. m s. | h. mb. s. | " | " | 0 , " | " | " |  |
|  | 14036.9 | $2032 \quad 33,75$ | 33,38 | $-0.37$ | $11029 \quad 18,27$ | 14,20 | -4,07 |  |
|  | 4412,6 | $47 \quad 59,41$ | 59,49 | +0,08 | 1093317,28 | 12,44 | -4,84 |  |
|  | 45 22,0 | 53 5,58 | 5,48 | -0,10 | $10913 \quad 27,65$ | 24,00 | $-3,65$ |  |
|  | 53 47,2 | 2133509 | 4,89 | -0,20 | 1061623,19 | 21,53 | -1,66 |  |
|  | 5634,6 | 4742,64 | 42.47 | -0,17 | $105 \quad 225,68$ | 17,75 | -7,93 |  |
|  | 57276 | 52 32,27 | 32,39 | +0,12 | 1043651,04 | 47,18 | -3,86 |  |
|  | 58 20,0 | 57 21,48 | 21.01 | -0,47 | 1041051,89 | 53,26 | +1,37 |  |
|  | $59 \quad 9,9$ | $\begin{array}{lll}22 & 2 & 7,82\end{array}$ | 8,38 | +0,56 | 1034434,62 | 36,51 | +1,89 |  |
|  | 59 59,7 | 6 54,39 | 54,51 | +0,12 | 1031759,75 | 58,10 | -1,65 |  |
| 25262829 | $\begin{array}{rrr}2 & 1 & 35,1 \\ & 2 & 20,9 \\ & 3 & 49,4\end{array}$ | 16 23,00 | 23.06 | +0.06 | 10223 40,78 | 39,50 | -1,28 |  |
|  |  | 21 5,49 | 5,60 | +0,11 | 101562,01 | 0,70 | -1,31 |  |
|  |  | 3027,20 | 26,86 | -0,34 | 1005949,49 | 48,04 | -1,45 |  |
|  | 431,5 | 35 6,25 | 5,86 | -0,39 | 10031 19,69 | 16,03 | -3,66 |  |
| Feb. $\begin{array}{ll} & 2 \\ & 3 \\ & 4 \\ & 5 \\ & 6 \\ & 8\end{array}$ | 710,3 | 53 32,57 | 32,39 | -0,18 | 983433,01 | 34,73 | +1,72 |  |
|  | 748,2 | 58 6,26 | 6,60 | +0,34 | 98448,52 | 49,90 | +1,38 |  |
|  | 8 25,0 | $23 \quad 239,89$ | 39,78 | -0,11 | 973451,72 | 52,91 | +1,19 |  |
|  | 9 0,5 | 7 12,25 | 12,16 | -0,09 | $\begin{array}{lll}97 & 4 & 45,74\end{array}$ | 44,13 | -1,61 |  |
|  | 935,5 | 11 43,88 | 43,72 | -0,16 | 963426,82 | 24,72 | -2,10 |  |
|  | 10 43,1 | 20 24,61 | 24,63 | +0,02 | 953321,26 | 10,75 | --4,51 |  |
| 9 | 1115,9 | 2514,25 | 14,03 | -0,22 | $95 \quad 2 \quad 37,72$ | 30,44 | -7,28 |  |
| July 31 | $23 \quad 20 \quad 5,7$ | 759 34,83 | 35,17 | +0,34 |  |  | $\square$ |  |
| Sep. | 21527,8 | 22 15,69 | 15,65 | -0.04 | 7448 24,60 | 13,06 | --11.54 |  |
|  | 236,4 | 3114,47 | 14.83 | +0,36 | 7456 36,90 | 26,73 | --10,17 |  |
|  | 2057 33,9 | 85744,39 | 44,21 | -0,1\% | $75 \quad 38444,87$ | 36,74 | $-8,13$ |  |
| Oct. 3 | 2054 50,7 | 94616,22 | 16,16 | -0,06 | $77 \quad 5244,79$ | 42,15 | -2,64 |  |
| Nov. 25 | 21940,0 | $1330 \quad 5,47$ | 5,03 | -0,44 | 9713 36,36 | 35,56 | -0,80 |  |
| Dec. $\begin{array}{rr}1 \\ & 5 \\ 6 \\ 19\end{array}$ | 13. 12,8 | 57 17,26 | 16,68 | -0,58 | 994453,99 | 52,74 | -1,25 |  |
|  | 15.51,8 | 141544,12 | 43,60 | -0,55 | 1012249,65 | 50,25 | +0,60 |  |
|  | 1633,7 | 20:23;38 | 28;87 | $\sim 0,51$ | 1014648,75 | 50,21 | +1,46 |  |
|  | 2729,1 | 152236,33 | 35;96 | $-0.37$ | 10633 37,93 | 38,03 | +0,10 |  |
| 1837 |  |  |  |  |  |  |  |  |
| $\begin{array}{lr}\text { Jan. } & 2 \\ & 19\end{array}$ | $2143 \quad 0,4$ | $1633 \quad 20,37$ | 19,96 | -0,41 | 1110 27, 13,29 | 13,19 | -0,10 |  |
|  | 22559,5 | 18325,93 | 25,13 | -0,80 | 1124124,05 | 30,49 | +6.44 |  |
| Feb. | 27 24,0 | $1924 \quad 2,33$ | 1,82 | -0,51 | 1115944 | 47,71 | +3,63 |  |
|  | $30 \quad 9,4$ | 34 41,47 | 40,89 | -0,58 | 1114236,87 | 43,17 | +6,30 |  |
|  | 3142.4 | 39 59,78 | 59,48 | $-0,30$ | $\begin{array}{llll}111 & 33 & 5,82\end{array}$ | 11,83 | +6,01 |  |
|  | 3251,8 | $45 \quad 17,64$ | 17,01 | -0,63 | 1112255,20 | 61,78 | +6,58 |  |
|  | 223413.1 | $1950 \quad 34,46$ | 34,30 | -0,16 | $111 \quad 12 \quad 6,97$ | 13,17 | +6,20 |  |
|  | $35 \quad 32,3$ | $55 \quad 50,99$ | 50,52 | -0,47 | 111042,45 | 46.77 | +4,32 |  |
|  | 3651,7 | $\begin{array}{llll}20 & 1 & 6,34\end{array}$ | 5,91 | -0,43 | 1104842,37 | 42,56 | +0,19 |  |
|  | 4533.9 | 37 28,03 | 27,18 | -0,85 | 109720,18 | 25,18 | +5,00 |  |
|  | 47 56,0 | 47 41,74 | 41,29 | -0,45 | 1083314,10 | 20,44 | +6,34 |  |
|  | $\begin{array}{lr}49 & 3.5\end{array}$ | 5246.87 | 46,38 | -0,49 | $10815 \quad 24,82$ | 30,94 | +6,12 |  |
|  | 55 32,7 | 212255,79 | 55,74 | -0,05 | 1061743,98 | 49,02 | +5,04 |  |
| Mar. | 5830,1 | 37 45,51 | 45,35 | -0,16 | 1051237,33 | 38,12 | +0,79 |  |
|  | 23216,2 | 57 16,83 | 16,26 | -0,57 | 1033946,00 | 52,31 | +6,31 |  |
|  | $4 \quad 2,5$ | 22655,58 | 55,36 | $-0,22$ | 102514,85 | 12,00 | +7,15 |  |
|  | 455,1 | 1143,45 | 43,33 | -0,12 | 1022616,34 | 20,00 | +3,66 |  |
|  | b 44, 2 | 16 30,73 | 30,37 | -0,36 | 1021507 | 7,88 | +2,81 |  |
|  | 632,7 | 21 16,90 | 16,37 | $-0,53$ | 1013531,35 | 36,21 | +4,86 |  |



| 1837. | Madras Mean Time of Observation. | A. R. from Observation | $\begin{aligned} & \text { A. R. } \\ & \text { from } \\ & \text { N. A. } \end{aligned}$ | $\begin{aligned} & \text { Error } \\ & \text { of. } \end{aligned}$ | N. P. D. from Observation. | $\begin{array}{\|c} \mathrm{N} \text { P. D. } \\ \text { froma } \\ \mathrm{N} . \end{array}$ | $\begin{aligned} & \text { Error } \\ & \text { of } \end{aligned}$ | Remaris. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | h.ms. | h. m. s. | " | " | ' 11 | " | " |  |
| Sep. 13 | 15129,6 | 1319 59,89 | 59,53 | -0,36 | 981051,32 | 56,26 | +4,94 |  |
|  | 52 1,6 | 24 28,49 | 28,00 | -0,49 | 984038,49 | 46,27 | +7,78 |  |
| 20 | $55.56,0$ | 5132,75 | 32,14 | -0,61 | 1013530,98 | 3.5,58 | +4,60 |  |
| 21 | $\begin{array}{ll}56 & 2,6\end{array}$ | 56 5,77 | 5,39 | -0,38 | $102 \begin{array}{lll}102 & 3 & 53,62\end{array}$ | 55,49 | +1,87 |  |
| 22 | 5640,2 | 0 40,08 | 39,48 | -0,50 | 1023154,74 | 59,69 | +4,95 |  |
| 23 | 57 18,5 | 515.01 | 14,44 | -0,57 | 1025940,23 | 47,34 | +7,11 |  |

Observel Right Ascension and North Polar Distance of Mars, compared with the places interpolated from the Nautical Almanac.

| 1836 | Madras Mear Time of Observation. | A. R. from Observation | A. R. from N. A. | $\begin{aligned} & \text { Error } \\ & \text { of } \\ & \text { N. A. } \end{aligned}$ | N. P.D. from Observation. | $\begin{array}{\|c} \text { N. P.D. } \\ \text { from } \\ \text { N. A. } \end{array}$ | $\begin{aligned} & \text { Error } \\ & \text { of } \\ & \mathrm{N} . \mathrm{A} . \end{aligned}$ | Remarks. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | h.m. s. | h. m. $s$. |  | " | ${ }^{\circ}$ | ${ }^{\prime \prime}$ |  |  |
| July 18 | $2040 \quad 19,2$ | 428 9,90 | 9,52 | -0,38 | 682840,56 | 41.29 | + 0,73 |  |
| 19 | 39 19,2 | 31 4,83 | 4,54 | -0,29 | $68 \quad 2127,46$ | 26,03 | - 1,43 |  |
| Aug. 26 | 195822,0 | 61950,07 | 49.99 | $-0,08$ |  |  | - |  |
| Sep. ${ }^{9}$ | $1941 \quad 7,5$ | 65744,13 | 43,59 | -0,54 | 663951,28 | 45,95 | - 5,33 |  |
| $\begin{aligned} & 11 \\ & 12 \end{aligned}$ | 38 30,3 <br> 37 11,4 | $\begin{array}{llll}7 & 2 & 59,07 \\ 7 & 5 & 36,35\end{array}$ | 59,28 | $+0,21$ $+0,05$ | 66 45  <br> 66 48 16,85 | 15,46 11,23 | $\begin{array}{r}\text { - } 1,39 \\ -688 \\ \hline\end{array}$ |  |
| 13 | 3549,6 | 7812,34 | 12,64 | +0,30 | 665121,35 | 16,36 | $-6,88$ $-4,99$ |  |
| Oct. 13 | $1850 \quad 10,4$ | 82040,78 | 41,05 | +0,27 | 691452,77 | 51,19 | -8,58 |  |
| $\begin{array}{r} 14 \\ 1837^{2} \end{array}$ | 184826,1 | $22 \quad 52,91$ | 53,46 | +0,55 |  |  |  |  |
| Jan. 26 | 131643,4 | 94018,18 | 18,00 | -0,18 | 711939,84 | 27,37 | -12,47 |  |
| 27 | 1311122,4 | 3853,01 | 52,48 | -0,53 | 1132,84 | 21,41 | -11,43 |  |
| 28 | $\begin{array}{llll}13 & 5 & 58,4\end{array}$ | 37 25,45 | 25,10 | -0,35 | 323,76 | 14,12 | - 9,64 |  |
| 29 | 13 [134,3 | 3556,24 | 55.99 | -0,25 | 705518,18 | 6,21 | -11,97 |  |
| 31 | 124940,2 | 32 53,67 | 53,27 | -0,40 | 39 11,00 | 58,35 | -12,65 |  |
| Fcb. | 123842,2 | 29 46,4:3 | 45,64 | -0,79 | 23 19,06 | 4.87 | -14,19 |  |
| 3 | 3310,5 | 2810,84 | 10,45 | -0,39 | 1531,87 | 16,21 | -15,66 |  |
| 4 | 2738.4 | 26 35,03 | 34,59 | -0,44 | 7 49,57 | 34.20 | -15,37 |  |
| 5 | 22 6,5 | 24 58,66 | 58,26 | -0,40 | 016,20 | 0,04 | -16,16 |  |
| 6 | 1634,7 | 23 22,17 | 21,61 | -0,56 | $6952 \quad 50,49$ | 34,66 | -15,83 |  |
| 7 | 11 0,9 | 2145,46 | 44,89 | -0,57 | 45 32,92 | 18.51 | -14,41 |  |
| 8 | 520,5 | 208.44 | 8,20 | -0.24 | 38 26,93 | 14,16 | -12,77 |  |
| 9 | 115958,1 | 918 32,49 | 31.74 | -0,75 | 693132,82 | 20,48 | -12,34 |  |
| 10 | 5427,3 | 1656.68 | 56,10 | -0,58 | 2550,37 | 38,95 | -11,42 |  |
| 11 | 4855,6 | 15 21,48 | 21,09 | -0,39 | 18 20,70 | 11,67 | -9,03 |  |
| 12 | 4319,6 | 13 47,21 | 46,71 | -0,50 | 124.45 | 55,18 | -9,27 |  |
| 13 | 3725.8 | 12 13,99 | 13,53 | -0,46 | 7 1,36 | 53,89 | - 7.47 |  |
| 14 | 32 29,6 | 10 41,96 | 41,27 | -0,69 | 0 13,57 | 7,57 | -6,00 |  |
| 15 | $27 \quad 3,7$ | 911,37 | 10,87 | -0,50 | 685442,75 | 35,07 | -7,68 |  |
| 17 | 16 14,4 | 614,73 | 14,40 | -0,33 | 44 23,73 | 18,02 | - 5,71 |  |
| 18 | 10 53,8 | 4 49,42 | 48,85 | -0,57 | 39 37,07 | 32,66 | - 4,41 |  |
| 19 | 634,7 | 3 25,69 | 25,21 | -0,48 | 3588,82 | 2,22 | -6,60 |  |
| 26 | 1029 25,9 | 84446,47 | 45,70 | -0,77 | 1124.99 | 17.89 | -7,10 |  |
| 27 | 24 25,6 | 53 42,33 | 42,05 | -0,28 | $\begin{array}{ll}9 & 5,45 \\ 7 & 2,50\end{array}$ | 59,41 | -6.04 |  |
| 28 | 19 29,8 | 52 42,18 | 41,32 | $-0,86$ | $7 \quad 2,50$ | 57,11 | - 5,39 |  |
| Mar. 1 | 1436,1 | 5134,21 | 43,60 | $-0,61$ | 5 14,93 |  | - 4,38 |  |
| 4 <br> 5 | 959 14,5 | $\begin{array}{ll}49 & 9,21\end{array}$ | 8,45 | -0,76 | 128,08 0 43,10 | 24,94 40,23 | $\begin{aligned} & -3,14 \\ & -2,87 \end{aligned}$ |  |


| 1837. | $\begin{aligned} & \text { Madras Mean } \\ & \text { Time of } \\ & \text { Observation. } \end{aligned}$ | A. R. from Observation. | A. R. from N. A | Error of N. A. | N. P. D. from Observation. | $\left\|\begin{array}{c} \text { N.P. D. } \\ \text { from } \\ \text { N. A. } \end{array}\right\|$ | $\begin{aligned} & \text { Error } \\ & \text { of } \\ & \text { N. } A . \end{aligned}$ | Rgmarks. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $h \mathrm{~m} . \mathrm{s}$. | h. m. s. | " |  | 0 |  |  |  |
| Mar. 6 | 95054,5 | 84741,62 | 40,96 | -0,66 | $68 \quad 0012,89$ | 10,29 | -2,60 |  |
|  | 4620,1 | $47 \quad 2,73$ | 2,06 | -0,67 | 675956,98 | 54,75 | -2,23 |  |
| 8 | 41 48,7 | $46 \quad 27,11$ | 26,44 | -0.67 | 675955,96 | 53,67 | --2,29 |  |
| 9 | 37 20,4 | 45 54,54 | 54.05 | -0,49 | 68 0 8,36 | 667 | -1,69 |  |
| 10 | 32 55,6 | 45 25,53 | 24,91 | -0,62 | 035,87 | 33,71 | -2,16 |  |
| 11 | 28 33,5 | 44 59,53 | 59,03 | -0,50 | 1 15,99 | 14.51 | -1,48 |  |
| 12 | 24 15,6 | 44 36,94 | 36,41 | -0,53 | 211,06 | 8,74 | -2,32 |  |
| 13 | 19 59,8 | 4417,53 | 17,00 | -0,53 | 3 18,38 | 15,71 | -2,67 |  |
| 16 | 7 33,6 | 43 38,65 | 37,90 | -0,75 | 753,22 | 53,06 | -0,16 |  |
| 17 | 3 30,7 | 43 31,69 | 31,13 | -0,56 | 950,11 | 48,55 | -1,56 |  |
| 18 | 85931,2 | 43 28,16 | 27,45 | -0,71 | 1158,38 | 56,08 | -2,30 |  |

Apparent Right Ascension and North Polar Distance of Vesta, compared with the places interpolated from the Nautical Almanac.


| 1836 | Vadras Mean Time of Observation | A. R. from Observation. | A. R. from N. A. | Error of N. A. | $\begin{gathered} \text { N. P. D. } \\ \text { from } \\ \text { Observation. } \end{gathered}$ | N. P. D. from N. A. | Error of N. A, | Remarks. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | h. m. s. | h. m. s. |  | " | 0 , " | " | " |  |
| April 23 | 93059,0 | 113750,11 |  |  | 752145,89 |  |  |  |
|  | 18 19,7 |  |  |  | $\begin{array}{llllllllllll}75 & 27 & 19,66\end{array}$ |  |  |  |
| 27 | 14 6,5 | 3645,21 | 边 |  | $\begin{array}{lllllll}75 & 29 & 37,78\end{array}$ |  |  |  |
| ${ }^{28}$ | 959,1 | 36 33,34 |  |  | $\begin{array}{lllll}75 & 32 & 10,81\end{array}$ |  |  |  |
| 1837 |  |  |  |  |  |  |  |  |
| Aug. 27 | 125156,7 | 23151514,52 | 16,13 | +1,61 | 106337,22 | 20,34 | -16,88 |  |
|  | $47 \quad 9,6$ | 1422,13 | 24,39 | 2,26 | 1061142,15 | 26.14 | 16,01 |  |
| 29 | 1142 21,5 | 1330,21 | 32,04 | 1,83 | 1061944,08 | 26,87 | 17,21 |  |
| Sep. 13 | 112941,5 | 225956,73 | 58,60 | 1,87 | 108335,34 | 23,72 | 11,62 |  |
| 14 | $25 \quad 3,3$ | $\begin{array}{ll}59 & 4,39\end{array}$ | 6,02 | 1,63 | $\begin{array}{llll}108 & 9 & 5,66\end{array}$ | 53,03 | 12,63 |  |
| 21 | $10 \quad 5145,4$ | 53 16,73 | 18,77 | 2,04 | $10841 \quad 15,29$ | 4,36 | 10,93 |  |
| 22 | 47 4, 0 | 5231,02 | 32,88 | 1,86 | 1084455,29 | 44,56 | 10,73 |  |
| 23 | 42 23,6 | 5146,33 | 48,09 | 1,76 | 10848 20,64 | 10,45 | 10,19 |  |
| 2.4 | 37 44,3 | 51 2,68 | 4,51 | 1,83 | 1085131,48 | 21,98 | 10,00 |  |
| 27 | 24.12,6 | 48 59,38 | 1,00 | 1,62 | 1085940,51 | 29,75 | 10,76 |  |

Apparent Right Ascension and North Polar Distance of Juno, compared with the places interpolated from the Nautical Almanac.


Apparent Right Ascension and North Polar Distance of Pallas, compared with the places interpolated from the Nautical Almanac.

| 1836 | Madras Mean <br> Time of Observation. | A. R. from Observation. | A. R. from N. A. | $\begin{aligned} & \text { Error } \\ & \text { of } \\ & \text { N. A. } \end{aligned}$ | N. P. D. from Observation. | N. P. D from N. A. | Error of N. A. | Remarks. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | h. m. s. | h. mb s. | , | 1770 |  | 3,04 | "' |  |
| Aug. 17 | 1111355 | $2058 \quad 27,79$ | 29,49 | +1,70 | $\begin{array}{lll}78 & 46 & 25,87 \\ 83 & 22 & 58,84\end{array}$ | 3,04 30,85 | $\begin{array}{r}-22,83 \\ \hline 27,99\end{array}$ | thick haze faint |
| Sep. 10 | 92453,9 | 204346,11 | 47,46 | 1,35 | 832258,84 | 30,85 | 27,99 | faint |
| 1837 |  |  |  |  |  | 25,58 | -20,91 |  |
| Oct. $\begin{array}{r}13 \\ 16\end{array}$ | $\begin{array}{rrr}12 & 48 & 29,5 \\ & 35 & 32,4\end{array}$ | $\begin{array}{rrr}218 & 4,00 \\ 15 & 54,80\end{array}$ | 7,73 58,13 | $+3,73$ 3,33 | $\begin{array}{lll}108 & 25 & 46,49 \\ 109 & 14 & 5740\end{array}$ | 42,43 | 14,97 |  |
| 23 | $\begin{array}{r}35 \\ 2\end{array} 36,4$ | 10 29,23 | 32,96 | 3,73 | 111057,31 | 44,09 | 13,22 |  |
| 25 | $\begin{array}{llll}11 & 53 & 7,6\end{array}$ | 852,42 | 56,21 | 3,79 | 1112832,49 | 19,07 | 13,42 |  |

Apparent Right Ascension and North Polar Distance of Ceres, compared with the places interpolated from the Nautical Almanac.

| 1836 | Madras Mean Time of Observation. | A. R. from Observation. | A. R. from N. A. | $\begin{aligned} & \text { Error } \\ & \text { of } \\ & \text { N. A. } \end{aligned}$ | N. P. D. from Observation. | N. P. D <br> from <br> N. A. | Error of N. A. | Remaris. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{array}{crcc}\text { h. } & m . & s . \\ 12 & 1 & 0,3\end{array}$ | $\begin{array}{ccc}\text { h. } & \text { m, } & s . \\ 23 & 28 & 10,79\end{array}$ | 10,70 | -0,09 | $\begin{array}{ccc}  & \prime \prime \\ \hline 0 & \prime \prime \\ 110 & 44 & 57,12 \end{array}$ | 48,64 | 8,48 |  |
| $\begin{array}{ll}\text { Sep. } & 12 \\ \text { Oct. } & 1\end{array}$ | $\begin{array}{rrrr}12 & 1 & 0,3 \\ 10 & 31 & 16,5\end{array}$ | $\begin{array}{rrr}23 & 28 & 10,9 \\ 13 & 7,18\end{array}$ | r-7,04 | -0,14 | 1114216,52 | 10,08 | 6,44 |  |
| 3 | 223,4 | $1]$ 45,90 | 45,67 | -0,23 | $\begin{array}{ll}44 & 4,82\end{array}$ | 1,21 | 3,61 |  |
| 6 | 821,6 | 9 50,94 | 51,04 | +0,10 | 45 20,87 | 15.63 | 5,24 |  |
| 7 | 3 49,8 | 914.92 | 14,95 | +0.03 | 45 24,46 | 16,01 | 8,45 |  |
| 8 | 959 18,8 | 840,05 | 39,89 | -0,16 | 4510,90 | 4,27 | 6,63 |  |
| 1837 Dec. 17 | 111440,6 | 4 59,17,27 | 18,35 | +1,08 | 673736.77 | 28,96 | -7,81 |  |
|  | 845,8 | 57 17,05 | 17,87 | +0,82 | 35 36,44 | 58,38 | +21,94 | Probably a sta |

Apparent Right Ascension and North Polar Distance of Jupiter, compared with the places interpolated from the Nautical Almanac.

| 1836 | Madras Mean Time of Observation. | A. R. from Observation. | A. R. from N. A. | Error of N. A. | N. P. D. from Observation. | N. P. D. from N. A |  | Remaims. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Jan. $\begin{array}{r}2 \\ . \\ \hline\end{array}$ | h. -m. s. | h. m. s. | " | " | $0{ }^{0}{ }^{\prime}$ | " | " |  |
|  | $\begin{array}{lll}12 & 2 & 22,3\end{array}$ | 64657,33 | 57,62 | +0,29 | 665453,56 | 56,42 | +3,06 |  |
|  | 1143 9,0 | 44 37,85 | 38,19 | +0,34 | 5150,89 | 49,94 | -0,95 |  |
|  | 38 38,4 | $44 \quad 3,14$ | 3,55 | +0,41 | 51 3,99 | 4,82 | +0,83 |  |
|  | 34 8,3 | 43 28,57 | 29,04 | +0,47 | 50 20,34 | 20,40 | +0,06 |  |
|  | $29^{\circ} 38,4$ | 42 54,34 | 54,70 | +0,36 | 49 35,37 | 36,77 | +1,40 |  |
|  | 20 37,9 | 41 46,14 | 46,60 | +0,46 | 48 9,87 | 11,62 | +1,75 |  |
|  | 1139,4 | 40 39,09 | 39,48 | +0,39 | 46 47,54 | 48,81 | +1,27 |  |
|  | $\begin{array}{ll}7 & 9,7\end{array}$ | 40 6,08 | 6,34 | +0,26 | 46 8,92 | 8,69 | $-0,23$ |  |
|  | 105812,8 | 39 0,08 | 0.72 | +0,64 | 44 50,35 | 51.05 | +0,70 |  |
|  | 44 50,6 | 37 25,43 | 25,98 | +0,55 | 43 3,52 | 0,41 | $-3,11$ |  |
|  | 40 24,0 | 3654,52 | 55,15 | +0,60 | 42 27,22 | 25,10 | $-2,12$ |  |
|  | 22 41,9 | 34 |  |  | 40 12,65 | 12,45 | -0,20 |  |
|  | 9526,8 | 3151,27 | 51,39 | +0.12 | 3651,96 | 52,39 | +0,43 |  |
| Feb. | 47 46,8 | 3127,27 | 27,50 | +0,23 | $36 \quad 27,52$ | 27.05 | -0,47 |  |
|  | 43 27,4 | 31 3,90 | 4,24 | +0,34 | $36 \quad 0.43$ | 2,54 | +2,11 |  |
|  | 39 9,4 | 3041,60 | 41,67 | +0,07 | $35 \quad 38,71$ | 38,82 | +0,11 |  |
|  | 3451,7 | 3019,84 | 19,82 | -0,02 | 3514,70 | 15,81 | +1,11 |  |
|  | 3034,5 | 29 58,75 | 58,68 | -0,07 | 34 53, 3; | 53,40 | +0,07 |  |
|  | $22 \quad 3,6$ | $\begin{array}{ll}29 & 18,81\end{array}$ | 18,64 | -0,17 | 3411,73 | 11,47 | -0,26 |  |
|  | 1748,5 | $\begin{array}{rrr}29 & 0,09\end{array}$ | 59.74 | -0,35 | 3351,93 | 51,56 | -0,37 |  |
|  | 920,9 | 28 24,60 | 24.29 | $-0,31$ | 3314,51 | 13,83 | -0,68 |  |
|  | $\begin{array}{r}5 \\ 8 \\ \hline 86\end{array}$ | 28 8,03 | 7,74 | -0,29 | 32 55,86 | 56,02 | +0,16 |  |
|  | 85646,3 | 27 37,10 | 36,97 | -0,13 | 32 23,25 | 22,58 | -0,67 |  |
|  | 52 36,9 | 27 23,24 | 22,86 | -0,38 | 32 6,65 | 6,91 | +0,26 |  |
|  | 4827,2 | $\begin{array}{ll}27 & 9,76\end{array}$ | 9,57 | -0,19 | 31 53,05 | 51,84 | -1,21 |  |
|  | ( 4419,0 | 26 57,69 | 57,12 | -0.57 | 31 - | 37,47 | $\underline{-1}$ |  |
|  | 40 11,5 | 26 45,92 | 45,52 | -0,40 | 31 25,73 | 23,61 | $-2,12$ |  |
|  | \| 36 5,0 | 26 35,06 | 34,76 | -0,30 | 3113,23 | 10,54 | -2,69 |  |
|  | 12350,5 | 26 8,13 | 7,61 | -0,52 | 29 37,60 | 35,13 | -2,47 |  |
|  | 1544,9 | 25 54,10 | 53,81 | -0,29 | 3013,28 | 14,53 | +1,25 |  |

Apparent Right Ascension and North Polar Distance of Jupiter continued.

| 1836 | Madras Mean Time of Observation. | A. R. from Observation. | A. R. from N. A. | Error of N. A. | N. P. D. from Observation. | $\begin{array}{\|c\|} \hline \text { N. P. D } \\ \text { from } \\ \text { N. A. } \end{array}$ | Error of N. A. | Remarks. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | h. m. s. | h. m. s. | " | " | " | " | " |  |
| Fub. 26 | 8 3 42,6 | 625 39,63 | 39,62 | -0,01 | 662949,59 | 49,03 | -0,56 |  |
| 27 | $\begin{array}{lllll}7 & 59 & 43,6\end{array}$ | 25 36,69 | 35,82 | -0,87 | 29 40,27 | 40,62 | +0,35 |  |
| Mar. 14 | 65755,1 | 26 43,43 | 43,41 | -0,02 | 2855,84 | 57,65 | +1,81 |  |
|  | 46 43,8 | 27 19,37 | 19,43 | +0,06 | 29 7,25 | 6,15 | $-1,10$ |  |
| 18 | 43 1,2 | 27 32,89 | 32,87 | -0,02 | 2988 | 10,16 | +1,91 |  |
| 19 | 39 20,2 | 27 47,77 | 46,90 | -0,87 |  | 14,88 | - |  |
| June 15 | 15053,8 | 2530,81 | 30,55 | -0,26 | 674057,52 | 54,34 | -3,18 |  |
| Sep. 9 | 21271,2 | 43 54,63 | 54,35 | -0,28 | 712244,39 | 42,30 | -2,09 |  |
| 12 | 211734,2 | 46 15,62 | 15,83 | +0,21 | 32 25,11 | 21,51 | -3,60 |  |
| 20 | 20528,8 | 52 19,45 | 18,91 | -0,54 | 5514,36 | 13,0'7 | -1,29 |  |
| Oct. 2 | $20 \quad 1317,3$ | 9039,90 | 39,82 | -0,08 | $72 \quad 27 \quad 37,17$ | 38,85 | +1,68 |  |
| 3 | 2010 | 1 18,98 | 18,92 | -0,06 | 3013,32 | 10,76 | $-2,56$ |  |
| 6 | $20 \quad 0 \quad 7,5$ | 313,54 | 13,25 | -0,29 | 37 48,45 | 49,23 | +0,78 |  |
| 12 | $1940 \quad 4,2$ | 6 49,94 | 49,89 | -0,05 | 52 14,50 | 15,62 | +1,12 |  |
| 13 | 3646,0 | 7 24,98 | 24,25 | -0,73 | 54 35,48 | 35,05 | -0,43 |  |
| 14 | 33 24,3 | 7 58,53 | 58,16 | -0,37 | 56 50,97 | 50,71 | -0,26 |  |
| 19 | 1621,1 | 1040,39 | 39,81 | -0,58 | $\begin{array}{lll}73 & 7 & 46,61\end{array}$ | 44,83 | -1,78 |  |
| Jdu. 26 | 124319,7 | 9649,00 | 48,29 | -0,71 | 722915,51 | 14,28 | -1,23 |  |
| 27 | 3852,4 | 617,72 | 16,93 | 0,79 | 2651,27 | 50,01 | 1,26 |  |
| 28 | 34 24,4 | 546,19 | 45,41 | 0,78 | 24 25,75 | 25,70 | 0,05 |  |
| 29 | 29 57,4 | 514,30 | 13,76 | 0,54 | 22 1,82 | 1,49 | 0,33 |  |
| 31 | 21 1,9 | 410,71 | 10,16 | 0,55 | 17 15,35 | 13,57 | 1,78 |  |
| Feb. 2 | 12 7,1 | 3 6,95 | 6,31 | 0,64 | 12 32,37 | 27,37 | 5,00 |  |
|  | 738,2 | 235,13 | 34,41 | 0,72 | 10 8,34 | 5,06 | 3,28 |  |
| 4 | 3 10,6 | 2 3,31 | 2,53 | 0,78 | 746,85 | 43,75 | 3,10 |  |
| 5 | 115842,8 | 131,10 | 30,68 | 0,42 | 5 24,68 | 22,99 | 1,69 |  |
| 6 | 5416,4 | 0 59,56 | 58,90 | 0,66 | 3 6,13 | 3,13 | 3,00 |  |
| 7 | 49 46,8 | 0.27,79 | 27,21 | 0,58 | 044,61 | 44,27 | 0,34 |  |
| 8 | $45 \quad 21,5$ | 85956,18 | 55,64 | 0,54 | 715828,37 | 26,51 | 1,86 |  |
| 9 | $40 \quad 53,7$ | 59 24,85 | 24,20 | 0,65 | 56 9,43 | 10,05 | +0,62 |  |
| 10 | 36 27,1 | $58 \quad 53,50$ | 52,93 | 0,57 | 53 55,91 | 54,79 | -1,12 |  |
| 11 | 3159,2 | 58 22,30 | 21,81 | 0,49 | 51 44,00 | 40.93 | 3,07 |  |
| 12 | 26 26,3 | 57 51,39 | 50,97 | 0,42 | 49 28,67 | 28,57 | 0,10 |  |
| 13 | 23 6,8 | 57 21,05 | 20,33 | 0,72 | 47 18,95 | 17,80 | 1,15 |  |
| 14 | 18 39,5 | 5650,52 | 49,80 | 0,72 | 45 9,30 | 8,05 | 1,25 |  |
| 15 | 1414,9 | 56 20,46 | 19,72 | 0,74 | 43 3,05 | 1,60 | 1,45 |  |
| 17 | $\begin{aligned} & 5 \\ & 0\end{aligned} 22,3$ | 55 21,05 | 20.49 | 0,56 | 3853,68 | 52,60 | 1,08 |  |
| 18 | 0 58,4 | 54 52,10 | 51,38 | 0,72 | 3653,07 | 51,05 | 2,02 |  |
| 19 | 1056 | 55 23,22 | 22,63 | 0,59 | 3452,83 | 51,59 | 1,24 |  |
| 20 | 52 9,7 | 55 54,95 | 54,26 | 0,69 | 3252,66 | 54,14 | +1,48 |  |
| 21 | $47 \quad 45,5$ | 53 26,69 | 26,29 | 0,40 | 31 2,09 | 58,73 | -3,36 |  |
| 26 | $24.53,7$ | 5013,59 | 13,04 | 0,55 | 21 57,26 | 56,45 | -0,81 |  |
| 27 | 2032,3 | 49 48,41 | 47,84 | 0,57 | 20 16,65 | 15,34 | -1,31 |  |

Apparent Right Ascension and North Polar Distance of Saturn, compared with the places interpolated from the Nautical Almanac.

| 1836 | Madras Mean Time of Observation. | A. R. from Observation. | A. R. from N. A. | Error of N. A. | $\begin{gathered} \text { N. P. D. } \\ \text { Observation. } \end{gathered}$ | N. P. D from N. A. | Error of N. A. | Remaris. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | h. m. s. | h. m. s. | " | " | 0' " | " | " |  |
| April 13 | 123721,5 | 14521,56 | 21,60 | +0,04 | 994837,10 | 53,39 | +16,29 |  |
| 14 | 33 8,6 | 54,47 | 4,56 | +0,09 | 47 3,42 | 19,93 | 16,51 |  |
|  | 28 55,0 | 4 47,23 | 47,45 | +0,22 | 45 28,80 | 46,37 | 17,57 |  |
| 16 | 24 43,4 | 430,29 | 30,11 | -0,18 | 43 54,80 | 12,45 | 17,65 |  |
| 17 | 20 29,0 | 4 12,89 | 13,03 | +0,14 | 42 21,36 | 39,05 | 17,69 |  |
| 19 | 12 3,0 | 3 38,20 | 38,43 | +0,23 | 39 13,78 | 31,83 | 18,05 |  |
| 20 | 749,7 | 3 20,97 | 21,09 | +0,12 | 37 41,46 | 58,67 | 17,21 |  |
| 22 | 115923,4 | 246,34 | 46,36 | +0,02 | 35 33,45 | 52,55 | 19,10 |  |
| 23 | $55 \quad 9,8$ | 2 28,86 | 28,99 | +0,13 | 33 2,50 | 19,89 | 17,39 |  |
| 24 | 50 57,2 | 2 11,59 | 11,64 | +0,05 | 31 27,80 | 47,63 | 19,83 |  |
| 26 | 42 32,7 | 136,90 | 36,99 | +0,09 | 28 25,63 | 44,31 | 18,68 |  |
| 28 | 34 4,4 | 1 2,32 | 2,47 | +0,15 | 25 23,37 | 42,69 | 19,32 |  |
| 29 | 29 50,6 | 045,15 | 45,28 | +0,13 | 23 51,92 | 12,65 | 20,73 |  |
| May 1 | 21 25,3 | 0 10,91 | 11,14 | +0,23 | 20 54,84 | 14,61 | 19,77 |  |
|  | 847,2 | 1359 20,85 | 20,59 | -0,26 | 16 31,82 | 53,49 | 21,67 |  |
| 5 | 435,2 | 59 4,03 | 3,94 | -0,09 | 15 6,10 | 28,12 | 22,02 |  |
| 7 | 105610,3 | 58 31,13 | 31,80 | +0,67 | 12 18,97 | 39,91 | 20,94 | haze. |
| 8 | 52 1,0 | 58 14,95 | 14,71 | --0,24 | 10 59,32 | 17,28 | 17,96 |  |
| 9 | 47 44,9 | 57 58,60 | 58,56 | -0,04 | 934,70 | 55,35 | 20,65 |  |
| 11 | 39 22,5 | 57 26,68 | 26,71 | +0,03 | 6 55,93 | 15,19 | 19,26 |  |
| 15 | 22 38,2 | 56 25,19 | 24,98 | -0,21 | 146,42 | 8,87 | 22,45 |  |
| 18 | 10 5,2 | 5540,63 | 40,72 | +0,09 | $\begin{array}{llll}98 & 58 & 12,24\end{array}$ | 32,98 | 20,74 |  |
| 19 | 555,1 | 55 26,35 | 26,39 | +0,04 | $57 \quad 3,42$ | 23,85 | 20,43 |  |
| 23 | 949 17,0 | 54 31,37 | 31,38 | +0,01 | 52 40,93 | 2,13 | 21,20 |  |
| 28 | 28 34,1 | 53 28,28 | 28,32 | +0,04 | 37 47,90 | 11,61 | 23,71 |  |
| June 10 | 83517,1 | 51 17,72 | 17,90 | +0,18 | 38 40,47 | 4,31 | 23,84 |  |
| 11 | 31 13,9 | 51 10,34 | 10,07 | -0,27 | 38 10,83 | 35,73 | 24,90 |  |
| 12 | 27 9,8 | $51 \quad 2,68$ | 2,58 | -0,10 | 3745,21 | 9,15 | 23,94 |  |
| 13 | 23 6,8 | 50 55,73 | 55,43 | -0,30 | 37 22,83 | 44,57 | 21,74 |  |
| 14 | 19 4,4 | 50 48,89 | 48,63 | -0,26 | 36 58,22 | 22,09 | 23,87 |  |
| 17 | $6 \quad 2,2$ | 50 30,38 | 30,30 | -0,08 | 36 4,61 | 27,24 | 22,63 |  |
| 20 | ${ }^{7} 5241,2$ | 50 15,29 | 15,16 | -0,13 | 35 28,40 | 50,48 | 22,08 |  |
| 28 | 23 3,8 | 49 51,06 | 50,80 | -0,26 | 35 24,73 | 47,10 | 22,37 |  |
| - 30 | 15 9,5 | 49 48,69 | 48,13 | -0,46 | 3544,33 | 7,74 | 23,41 |  |
| July 2 | 716,5 | 49 47,61 | 47,41 | -0,20 |  | - | -. |  |
| $1837{ }^{4}$ | 65925,3 | 49 48,16 | 47,87 | -0,29 |  | - | $\cdots$ |  |
| Mar. 2 | 1619 23,2 | $\begin{array}{lll}15 & 1 & 27,46\end{array}$ | 27,17 | -0,29 | 1043548,49 | 6,56 | 18,07 |  |
| 8 | 155526,9 | 1 7,60 | 6,15 | -0,45 | 33 3,73 | 19,72 | 15,99 |  |
| May 1 | 121135,7 | 144932,50 | 31,85 | -0,65 | 1033615,28 | 39,22 | 23,94 |  |
| 2 | 722,1 | 49 14,13 | 14,15 | +0,02 | 3455,87 | 20,41 | 24,54 |  |
| 3 | 388 | 47 56,67 | 56,42 | -0.25 | 33 36,82 | 59,80 | 22,98 |  |
| 4 | 115854,6 | 48 39,01 | 38,68 | -0,33 | 32 17,72 | 41,39 | 23,67 |  |
| 11 | 2919,9 | 4635,43 | 34,94 | -0,49 | 23 19,44 | 42,22 | 22,78 |  |
| 12 | 25 6,6 | 46 17,91 | 17,42 | -0,49 | $22 \quad 4,95$ | 26,81 | 21,86 |  |
| 14 | 16 40,0 | 45 43,12 | 42,14 | -0,98 |  | - |  |  |
| 15 | 12277 | 45 25,98 | 25,38 | -0,60 | - | - | - |  |
| 30 | $\begin{array}{lll}10 & 9 & 26,3\end{array}$ | 41 23,17 | 22,23 | -0,94 | 138,44 | 58,32 | 19,88 |  |
| July 11 | 71813,1 | 3517,05 | 16,77 | -0,28 | 1024243,60 | 3,22 | 19,62 |  |
| Aug. 81 | 52953,4 | 37 3,82 | 3,12 | -0,70 | 1025855,10 | 15,56 | 20,46 |  |

Apparent: Right Ascension and North Polar Distance of Georgian, compared with the interpolated place from the Nautical Almanac.

| 1836 | Madras Mean Time of Observation. | A. R. from Observation. | A. R. from N. A. | Error of N. A. | $\begin{gathered} \text { N. P. D. } \\ \text { from } \\ \text { Observation. } \end{gathered}$ | $\left\|\begin{array}{c} \text { N.P. D } \\ \text { from } \\ \text { N. A. } \end{array}\right\|$ | Error of N. A. | Remarks. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | h. m. s. | h. m. s | " | " | , | " | " |  |
| Sep. 16 | 1033 18,2 | $\begin{array}{llll}22 & 16 & 0,62\end{array}$ | 4,23 | +3,61 | 1013729,65 | 21,93 | -7,72 |  |
| 23 | 4 51,0 | $15 \quad 5,11$ | 8,76 | 3,65 | 42 34,57 | 26,20 | 8,37 |  |
| Oct. 1 | 932 26,9 | 14 7,93 | 11,49 | 3,56 | 47 43,17 | 36,12 | 7,05 |  |
|  | 24 22,0 | 13 54,96 | 57,39 | 2,43 | 4853,13 | 46,28 | 6,85 |  |
| 6 | 1215,6 | 13 35,99 | 39,73 | 3,74 | 5032,85 | 25,72 | 7,13 |  |
| 7 | 814,2 | 13 30,22 | 33,79 | 3,57 | 51 2,40 | 57,20 | 5,20 |  |
| 8 | 411,3 | 13 24,49 | 28,03 | $\because, 54$ | 51 33,63 | 27,78 | 5,85 |  |
| 10 | 856 9,4 | 1313,40 | 16,83 | 3,43 | 52 35,21 | 26,44 | 8,77 |  |
| 11 | 52 7,9 | $13 \quad 7,90$ | 11,48 | 3,58 | 53 3,26 | 54,52 | 8,74 |  |
| 12 | 48 6,4 | 13 2,60 | 6,30 | 3,70 | 53 29,29 | 21,70 | 7,59 |  |
| 13 | 44 6,2 | 1257,72 | - 1,26 | 3,54 | 53 55,54 | 47,88 | 7,66 |  |
| 14 | $40 \quad 5,3$ | 1252,90 | 56,39 | 3,49 | 54 21,03 | 13,06 | 7,97 |  |
| 15 | 36 4,8 | 1248,43 | 51,68 | 3,25 | 54 44,75 | 37,37 | 7,38 |  |
| 1837 Aug. 28 | 121120,8 | 223428,67 | 32,89 | $+4,22$ | 995142,94 | 27,19 | -15,75 |  |
| Aug. 28 | 121120,8 318,0 | $\begin{array}{llll}22 & 34 & 19,78\end{array}$ | 23,92 | $+4,22$ 4,14 | $\begin{array}{r}99 \\ 52 \\ \hline 17,60\end{array}$ | 20,30 | $-15,3$ 17.30 |  |
| Sep. 13 | $\begin{array}{lll}11 & 2 & 5,5\end{array}$ | 32 6,16 | 10,41 | 4,25 | 100536,65 | 21,10 | 15,55 |  |
| 14 | $1058 \quad 1,0$ | 3157,58 | 1,81 | 4,23 | 6 26,69 | 10,88 | 15,81 |  |
| 21 | 29 31,7 | 3059,38 | 3,33 | 3,95 | 12 3,89 | 47,80 | 16,09 |  |
| 22 | 25 27,9 | 3051,50 | 55,27 | 3,77 | 12 49,62 | 33,96 | 15,66 |  |
| 23 | 21 24,0 | 30) 43,32 | 47,29 | 3,97 | 1338,22 | 19,62 | 18,60 |  |
| 24 | 1720.3 | 30 35,38 | 39,30 | 3,92 | 14 20,42 | 4,78 | 15,64 |  |
| 27 | 5 9,0 | $30 \quad 12,10$ | 16,14 | 4,04 | 16 33,32 | 16,26 | 17,06 |  |

Conaparison of the Observed Right Ascension and North Polar Distance of the Moon, with the interpolated place from the Nautical Almanac.

| 1836 | Madras <br> Mean Tine. |  | Observed <br> A. R. of D's Centre. | A. R. from N. A. | Firor of Tables. | $\dot{\sim}$ | Observed N. P. D. of D's Centre. | N. P.D. from N. A. | $\begin{gathered} \text { Error } \\ \text { of } \\ \text { Tables. } \end{gathered}$ | Remarks. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Jan. $\begin{array}{rr} \\ & \\ 2 \\ 2 \\ 2 \\ 2 \\ 2 \\ & 3\end{array}$ | h. m. s. |  | h. m. s. | $s$. | s. |  |  | " |  | Fl. Clds. |
|  | $\begin{array}{llll}11 & 0 & 18,4\end{array}$ | 1 | $546 \quad 59,37$ | 58,73 | -0,64 | N. | $64 \quad 646,9$ | 48,9 | + 2,0 |  |
|  | 115131,4 | 1 | 64218,46 | 18,03 | -, 43 | N. | $\begin{array}{lllll}65 & 30 & 40,8\end{array}$ | 43,2 | 2,4 |  |
|  | 55146,9 | 1 | 2714,75 | 14,92 | +, 17 | S. | 79 8- |  | - |  |
|  | 63429,8 | 1 | 2550,18 | 0,48 | +, ,30 | N. | 7435 |  |  |  |
|  | 71844,8 | 1 | 343 21,2] | 21,09 | - , 12 | S. | $6955-$ |  | - |  |
|  | $8 \quad 511,4$ |  | 433 52,99 | 52,66 | - ,33 | S. | 664821,4 | 18,6 | - 2,8 |  |
|  | 103637,1 | I | 71735,39 | 34,73 | -, 66 | N. | 634722,0 | 22,0 | 0,0 |  |
| Feb. | 112826,5 | 1 | 813 29,73 | 29,17 | - ,56 | N. | $65 \quad 2719,2$ | 14,6 | - 4,6 |  |
|  | 122017,1 | Cent. | $\begin{array}{llll}9 & 8 & 19,24\end{array}$ | 18,91 | -, 33 | N. | $\begin{array}{llll}68 & 25 & 32,4\end{array}$ | 35,2 | + 2,8 |  |
|  | 73611,8 | 1 | 55910,51 | 10,45 | -,06 | S. | $\begin{array}{llll}63 & 32 & 29,2\end{array}$ | 35,9 | + 6,6 |  |
|  | 82734,0 | 1 | 65438,38 | 38,51 | +, 13 | N. | $\begin{array}{llll}63 & 19 & 7,6\end{array}$ | 7,5 | - 0,1 |  |
|  | 91924,1 | 1 | 75033,56 | 32,95 | -, 61 | N. | 642745,0 | 43,0 | - 2,0 |  |
|  | 101040,3 | 1 | 84554,09 | 53,31 | -, 78 | N. | $\begin{array}{llll}66 & 57 & 28,7\end{array}$ | 28,3 | - 0,4 |  |
| Mar. | 11038,8 | 1 | 93956,50 | 55,57 | -,93 | N. | $\begin{array}{llll}70 & 42 & 3,9\end{array}$ | 57,9 | -6,0 |  |
|  | $\begin{array}{llll}11 & 49 & 4,4\end{array}$ | 1 | $10 \quad 32 \quad 25,39$ | 24,61 | -, 78 | N. | $\begin{array}{lllll}75 & 30 & 19,9\end{array}$ | 14,9 | - 5,0 |  |
|  | 123822,4 | 2 | 1112340,54 | 39,90 | -, 64 | N. | 81828,2 | 27,1 | - 1,1 |  |
|  | 61810,5 | 1 | 63120,65 | 20,19 | -, 46 | N. | 6316,8 | 2,6 | $-4,2$ |  |

Comparison of the Observed Right Ascension and North. Polar Distance of the Mom contimucd.

| 1836 | Madras Mean Time. | 准淢 | Observed <br> A. R. of D's Centre. | A. R from N. A. | Error of Tables. |  | Ob.erved N. P. D of D's Centre. | $\begin{gathered} \text { N. P. D. } \\ \text { from } \\ \text { N. A. } \end{gathered}$ |  | Remarks. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | h. m. s. |  | h. m. s. | 45.74 | +0,18 |  | 0 $\prime \prime$  <br> 63 35  <br> 18,7   | 36,2 | $-2,5$ |  |
| Mar. 26 | $\begin{array}{llll}7 & 9 & 30,7\end{array}$ | 1 | $\begin{array}{llll}7 & 26 & 45,56\end{array}$ | 45,74 53,11 | $+0,18$ $+\quad, 27$ | $\stackrel{N}{\mathrm{~N}} \mathrm{~N}$. | $\begin{array}{llll}63 & 35 & 38,7 \\ 65 & 31 & 14,3\end{array}$ | 36,2 7,6 | - 0,7 |  |
|  | $8 \quad 0 \quad 33,2$ | 1 | 8 21 52,84 <br> 9 15 59 | 53,11 59,53 | $+0,27$ $+\quad, 35$ | $\stackrel{N}{\mathrm{~N} .}$ | $\begin{array}{llll}65 & 31 & 14,3 \\ 68 & 43 & 42,1\end{array}$ |  |  |  |
| 28 | 85035.2 | 1 | 915 59,88 | 59,53 | -, 35 | N. | 6843 42,1 | 38,0 | - 4, |  |
| 29 | 93920,5 | 1 | 108847,36 | 46,42 | -,94 | N. | $\begin{array}{llll}73 & 5 & 16,0\end{array}$ | , 2 |  |  |
| 30 | 102653,2 | 1 | 11023,89 | 23,25 | -,64 | N. | 782441,8 | 40,0 | - 1,8 |  |
| 31 | $11 \begin{array}{lll}13 & 49,9\end{array}$ | 1 | 115124,81 | 24,29 | - ,52 | N. | 842746,8 | 43,0 | - 3,8 |  |
| April 1 | $12 \begin{array}{lll}12 & 2 & 9,2\end{array}$ | Cent. | 124244,91 | 44,54 | -, 37 | N. | $\begin{array}{lllll}90 & 57 & 27,2\end{array}$ | 24,7 | - 2.5 |  |
| - 24 | 64135,1 | 1 | $4.531,31$ | 1,10 | -, 21 | N. | $\begin{array}{llll}67 & 4 & 24,8\end{array}$ | 22,6 | - 2,2 |  |
| 26 | 81652,9 | 1 | $\begin{array}{llll}10 & 36 & 29,49\end{array}$ | 29,28 | -, 21 | N. | 7543 26,6 | 22,6 | - 4,0 |  |
| 27 | 9311,1 | 1 | 112651,58 | 50,96 | -,62 | N. | 8123 26,6 | 25,2 | - 1,4 |  |
| 28 | 94936,8 | 1 | 1217 21,58 | 21,16 | - ,42 | N. | $8740 \quad 2,2$ | 1,1 | - 1,1 |  |
| 29 | $\begin{array}{llll}10 & 37 & 18,4\end{array}$ | 1 | $\begin{array}{llll}13 & 9 & 6,85\end{array}$ | 6,59 | -, 26 | N. | $\begin{array}{llll}94 & 16 & 18,0\end{array}$ | 17,1 | $-0,9$ |  |
| 30 | 112725,0 | 1 | $14 \quad 3 \quad 21,86$ | 21,87 | + ,01 | N. | 1005931,1 | 35,1 | + 4,0 |  |
| May 26 | 82539,3 | 1 | 1243 33,97 | 33,86 | -, 11 | N. | 91 1 44,2 | 43,7 | -0,5 |  |
| 28 | $\begin{array}{llll}10 & 4 & 37,5\end{array}$ | 1 | 143045,25 | 44,96 | - ,29 | N. | 1035298 | 11,7 | + 2.1 |  |
| July 26 | $\begin{array}{llll}10 & 35 & 18,7\end{array}$ | 1 | 185415,57 | 15,50 | - ,07 | S. | $\begin{array}{lll}117 & 1 & 26,9\end{array}$ | 31,1 | + 4,2 |  |
| Aug. 21 | 71525,1 | 1 | $17 \quad 1617,22$ | 17,21 | -,01 | N. | $116 \quad 325,6$ | 22,9 | - 2,7 |  |
| Sep. 18 | $610 \quad 7,3$ | 1 | 18111,79 | 11,70 | -,09 | N. | 1171836,3 | 35,2 | - 1,1 |  |
| 19 | 71246,9 | 1 | $\begin{array}{llll}19 & 7 & 58,78\end{array}$ | 58,87 | + ,09 | S. | $11710 \quad 9,6$ | 9,6 | 0,0 |  |
| 20 | 81424,9 | 1 | 201342,79 | 42,76 | -,03 | S. | 115437,2 | 29,0 | -8,2 |  |
| 22 | $\begin{array}{llll}10 & 7 & 26,7\end{array}$ | 1 | 2214 51,33 | 51,80 | + ,47 | S. | 106714,0 | 3,7 | $-10,3$ |  |
| 23 | 1058 6,6 | 1 | $23 \quad 934,23$ | 34,64 | + ,41 | S. | 100647,9 | 36,2 | -11,7 |  |
| Oct. 17 | $\begin{array}{llll}5 & 8 & 37,8\end{array}$ | 1 | $19 \quad 54 \quad 1,84$ | 1,91 | + ,07 | S. | $116 \quad 234,1$ | 34,1 | 0,0 |  |
| 18 | $7 \quad 717,0$ | 1 | 205646,03 | 46,20 | $+, 17$ | S. | 1124550,6 | 524 | + 1,8 |  |
| 19 | $8 \quad 149,3$ | 1 | 2155 20,36 | 20,64 | + ,28 | S . | 10862,5 | 57,2 | - 5.3 |  |
| 20 | 852 20,8 | 1 | 2249 54,74 | 54,68 | -,06 | S. | 1022812,3 | 6,8 | - 5,5 |  |
| 21 | 93944,0 | 1 | 234120,27 | 20,47 | + , 20 | S. | $\begin{array}{llll}96 & 16 & 32,0\end{array}$ | 25,6 | - 6,4 |  |
| 22 | $102.57,1$ | 1 | 03046,95 | 46,97 | + ,02 | S | 895231,4 | 19,4 | -12,0 |  |
| Nov. 17 | 73748,6 | 1 | 2325 32,91 | 33,0:3 | + ,12 | S. | $\begin{array}{llll}98 & 15 & 1,9\end{array}$ | 0,5 | $-1,4$ |  |
| 18 | 32254,1 | 1 | 01440,50 | 40,53 | + ,03 | S. | 915854,9 | 51,1 | - 3,8 |  |
| 22 | 112141,3 | 1 | 329 45,94 | 45,68 | -, 26 | N. | 69412,5 | 13,9 | +11,4 |  |
| 23 | $12 \quad 12 \quad 28,7$ | 2 | 42228,07 | 27,28 | - ,79 | N. | 66 l 25,7 | 24,5 | $-1,2$ |  |
| Dec. 16 | $7 \quad 5 \quad 57,4$ | 1 | 047 54,87 | 54,56 | -, 31 | S. | $8730 \quad 7,8$ | 4,0 | - 3,6 |  |
| 17 | 74925.3 | 1 | 13525,93 | 26,02 | + ,09 | S. | 812823,6 | 18,5 | - 5,1 |  |
| 18 | 83318,6 | 1 | 22325,05 | 24,90 | -,15 | S. | 755531,6 | 27,6 | - - 4, 0 |  |
| 19 | $\begin{array}{lllll}9 & 18 & 38,8\end{array}$ | 1 | 31248,90 | 48,78 | -,12 | S. | 71420,5 | 14,1 | $\cdots 6,4$ |  |
| 20 | $\begin{array}{llll}10 & 5 & 58,7\end{array}$ | 1 | $\begin{array}{llll}4 & 4 & 13,34\end{array}$ | 12,76 | -,58 | S. | $\begin{array}{llll}67 & 7 & 29,7\end{array}$ | 25,5 | - 4,2 |  |
| 1837 | $1055 \quad 20,5$ | 1 | 4. 5742,05 | 41,47 | - ,58 | N. | 641712,1 | 11,1 | - 1,0 | . |
| Jan. 17 | 85151,2 |  | $\begin{array}{llll}4 & 40 & 18,98\end{array}$ | 19,22 | + ,24 | S. | $6452-$ | - |  | of l M |
| 18 | 942 6,0 | 1 | 53442,28 | 41,53 | -, 75 | N. | $\begin{array}{lll}63 & 0 & 4,6\end{array}$ | 4,4 | - 0,2 | at Tram- |
| 19 | $1 \begin{array}{llll}10 & 33 & 19,6\end{array}$ | , | 62958,78 | 58,09 | - ,69 | N. | 622430,5 | 31,6 | + 1,1 | (sit. |
| 20 | 1124 16,6 | 1 | $\begin{array}{lll}7 & 25 & 0,20\end{array}$ | 59,46 | - ,74 | N. | 6311 1,3 | 1,3 | 0,0 |  |
| 21 | 121458,5 | Cent. | 81840,27 | 39.59 | -, 68 | N. | 651543,5 | 42,4 | - 1,1 |  |
| Feb. 12 | 55829,5 | 1 | $\begin{array}{lll}3 & 29 & 5,36\end{array}$ | 5,05 | -,31 | S. | 691313,9 | 12,0 | - 1,9 |  |
| 13 | $\begin{array}{lllllllllllllll}6 & 47 & 16,4\end{array}$ | 1 | $\begin{array}{llll}4 & 21 & 51,26\end{array}$ | 51,18 | -,08 | S. | $\begin{array}{llll}65 & 38 & 27,8\end{array}$ | 276 | - 0,2 |  |
| 14 | $\begin{array}{llll}7 & 37 & 27,3\end{array}$ | 1 | $\begin{array}{rrrr}5 & 16 & 7,48\end{array}$ | 7,47 | -, 01 | S. | 63171721,4 | $25^{\prime} 6$ | + 4,2 |  |
| 15 | 82835,5 | 1 | 611 20,74 | 20,70 | - ,04 | N. | 621632,0 | 31,3 | $+0,2$ $-0,7$ |  |

Compurnison of the Obser reed Right Ascension and North Polar Distance of the Moon continued.


Comparison of the Observed Right Ascension and North Polar Distance of ithe Moon continued.

| 1837 | Madras Mean Time. | 藘 | Observed <br> A. R. of D's Centre. | $\begin{aligned} & \text { A. R. } \\ & \text { from } \\ & \text { N. A. } \end{aligned}$ | $\begin{aligned} & \text { Error } \\ & \text { of } \\ & \text { Tables } \end{aligned}$ |  | Observed N. P. D. of D's Centre. | $\begin{aligned} & \text { N.P D. } \\ & \text { from } \\ & \text { N. A. } \end{aligned}$ | $\begin{gathered} \text { Error } \\ \text { of } \\ \text { Tables. } \end{gathered}$ | Remaris. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | h.m. s. |  | h. m. s. | ${ }^{\text {s. }}$ | $s$. |  | 0 | " | " |  |
| Sep. 19 | 162441,1 | 2 | 4186,05 | 5,76 | -0,29 | N. | 645351 | 56,2 | -8,9 |  |
|  | 171817,3 | 2 | 51547,13 | 46,89 | -0,24 | N. | $62 \quad 2937,8$ | 35,7 | $-2,1$ |  |
| Oct. 9 | 81017,9 | 1 | 2123 30,59 | 30,90 | +0,31 | S. | 1102237,4 | 34,4 | $-3.0$ |  |
| 10 | 9 4 50,6 | 1 | $22 \quad 22$ 6,68 | 6,25 | -0,43 | S. | 10434 14,6 | 3,7 | -10,9 |  |
| 12 | $1046 \quad 17,3$ | , | 01141,71 | 41,41 | -0,30 | S. | 904242,6 | 36,0 | -6,6 |  |
| 13 | 113526,4 | 1 | 1454,41 | 54,50 | +0,09 | S. | 833517,4 | 10,1 | - 7,3 |  |
| Nov. 6 | 65841,0 | 1 | $\begin{array}{llll}22 & 2 & 3,49\end{array}$ | 3,23 | $-0,26$ | S. | 10640 57, 1 | 53,6 | -3,5 |  |
|  | 74934,2 | 1 | 225659,54 | 59,40 | -0,14 | S. | 1002636,5 | 37,3 | + 0,8 |  |
| Dec. 16 | 155422,6 | 2 | 934 45,03 | 44,25 | -0,78 | S. | 705654.3 | 55,3 | + 1,0 |  |

On looking over the observations of the last seven years; there have I find been a few observations of the Transit of both limbs of the Moon over the Meridian, which, in the former volumes of the Madras Results I had omitted ; they are as follows.

| Date. |  | Madras <br> Mean Tine. | $\left\lvert\, \begin{gathered} \text { Sidereal } \\ \text { Tume of } \\ \text { C's Diam. } \\ \text { passiug. } \end{gathered}\right.$ |
| :---: | :---: | :---: | :---: |
| 1831 |  | h. m | $m$. |
| February | 26 | 121748,7 | 27,48 |
| April | 26 | 115347,9 | 3,06 |
| May | 26 | 12534,1 | 7,80 |
| September <br> 1833 |  | 115130,6 | 12,48 |
| May | 3 | 114932,2 | 14,26 |
| $\text { July }_{1834}$ | 1 | 115039,6 | 15,70 |
| February 1835 | 23 | 121527,8 | 23,48 |
| March | 14 | 12911,4 | 18,16 |
| April | 13 | $12 \quad 3047,8$ | 20,02 |
| May | 12 | $\begin{array}{lll}12 & 6 & 2,7\end{array}$ | 26,62 |
| June | 10 | 114629,1 | 31,68 |
| February | 2 | 122017,1 | 15,68 |
| April | 1 | $12 \quad 29,2$ | 13,16 |
| 1837 |  |  |  |
| January | 21 | 121445,5 | 14,70 |
| March | 21 | 115011,2 | 5,32 |
| April | 20 | 115458,4 | 12,08 |

In addition to the above,-observation of the Moon, and of several Stars culminating near to her (Moon culminating Stars), have been made, as follows.

Moon Culminating Stars.


| 1836 | Names. |  | Observed Transit. | 1836 | Names |  | Observed <br> Transit. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| April 28 |  |  | h. m. s. |  |  |  |  |
|  | $\eta$ Virginis |  | 121332,73 | Oct. 20 | - Aquarii |  | $\begin{array}{lll} 22 & 44 \\ 22 & 43,27 \\ 22 \end{array}$ |
|  | Moon | 1 st Limb | $\begin{array}{llllll}12 & 18 & 18,26\end{array}$ |  | Moon | 1st Limb | 22 47 <br> 23 38 |
|  | $\delta$ Virginis |  | 1249 22,75 |  | $n$ Piscium |  | $\begin{array}{rrrr}23 & 38 & 17,48 \\ 23 & 9 & 11 & 17\end{array}$ |
|  | $\theta$ - |  | $13 \quad 3$ 30,02 | 21 | $\psi^{3}$ Aquarii |  | $\begin{array}{rrrr}23 & 9 & 11,17\end{array}$ |
| 29 | - |  | 124928,55 |  | Moon | 1st Limb | 233859,61 |
|  | $\bar{\theta}$ |  | 13335,85 | 22 | $t$ Piscium |  | 01544,06 |
|  | Moon | 1 st Limb | $1310 \quad 8,52$ |  | Moon | 1st Limb | 02825,60 |
|  | $k$ Virginis |  | 146617,56 |  | e Piscium |  | 058 39,88 |
|  | - |  | $\begin{array}{lll}14 & 9 & 33,62\end{array}$ | Nov. 17 | $\phi$ Aquarii |  | $\begin{array}{ll}23 & 4 \\ 46,89\end{array}$ |
| 30 | Moon | 1 st Limb | 14427,03 |  | $\psi^{3}$ |  | $\begin{array}{lll}23 & 9 & 22,71\end{array}$ |
|  | ${ }^{\text {c Virginis }}$ |  | $14 \quad 938,84$ |  | Moon | 1st Limb | 232324,05 |
|  | $\alpha^{2}$ Libræ |  | $1444 \quad 2,77$ |  | $t$ Piscium |  | 015 57,44 |
|  | $\xi^{2}$ |  | $\begin{array}{llll}14 & 50 & 6,46\end{array}$ | 18 | Moon | 1 st Limb | 01236,69 |
| May 20 | $\gamma^{1}$ Virginis |  | 123250,72 |  | $m$ Ceti |  | 043 39,31 |
|  | Moon | 1 st Limb | 124158,73 |  | $\varepsilon$ Piscium |  | 0 5 0 |
|  | $k$ Virginis |  | $14 \quad 3 \quad 30,03$ | 22 | Moon | 1st Limb | 02745,62 |
|  | $\lambda$ - |  | $14 \quad 935,47$ |  | $\mathrm{A}^{1}$ Tauri |  | $354 \quad 8,14$ |
|  | Moon | 1st Limb | 142856,56 |  | $\omega^{2}-$ |  | $4 \quad 647,09$ |
|  | $\iota^{1}$ Libræ |  | $\begin{array}{llll}15 & 2 & 13,83\end{array}$ | 23 | $\mathrm{A}^{1}$ Tauri |  | 354 9,23 |
|  | $\gamma^{1}-$ |  | $\begin{array}{lll}15 & 25 & 42,39\end{array}$ |  | $\omega^{2}$ |  | 4648,21 |
| July 26 | $\lambda$ Sumilatii |  | $\begin{array}{llll}18 & 17 & 10,77\end{array}$ |  | Moon | 2nd Limb | 423 38,42 |
|  | $\sigma$ - |  | 184425,29 | Dec. 16 | $m$ Ceti |  | 04342,30 |
|  | Moon | 1st Limb | 185217,82 |  | Moon | 1st Limb | 04554,53 |
|  | 59 Sagittarii |  | 1946 12,30 | 17 | $\mu$ Piscium |  | 12035,09 |
|  | $c$ - |  | 195153,71 |  | $\boldsymbol{\gamma}$ M- |  | 13153,72 |
| Aug. 21 | $\theta$ Ophiuchi |  | $\begin{array}{llll}17 & 11 & 38,30\end{array}$ |  | ${ }_{\text {y }}$ Moon | 1st Limb | $\begin{array}{llll}1 & 33 & 20,55\end{array}$ |
|  | Moon | 1st Limb | $\begin{array}{llll}17 & 14 & 44,29\end{array}$ |  | $\xi^{\xi^{1}}$ Ceti |  | $\begin{array}{lrr}2 & 3 & 18,59 \\ 2 & 18 & 26,47\end{array}$ |
| $\begin{array}{ll}\text { Sep. } & 18 \\ & 1 \\ & \\ 20 \\ 20\end{array}$ | $\gamma^{2}$ |  | $\begin{array}{lll}18 & 17 & 33,19 \\ 17 & 55 & 20,02\end{array}$ | 18 | $\xi^{1}$ - |  | $\begin{array}{rrrr}2 & 18 & 26,47 \\ 2 & 3 & 14,95\end{array}$ |
|  | Moon | 1st Limb | $\begin{array}{lll}17 & 59 & 0,75\end{array}$ |  | $\xi^{2}$ - |  | 21822,81 |
|  | $\sigma$ Sagittarii |  | $1845 \quad 8,33$ |  | Moon | 1st Limb | 22115,27 |
|  | $\zeta$ ¢ |  | 185213,07 |  | $\varepsilon$ Arietis |  | 24847,25 |
|  | Moon | 1st Limb | $\begin{array}{ll}19 & 6 \\ 46,20\end{array}$ | 19 | $\delta$ - |  | $\begin{array}{llll}3 & 1 & 8,78\end{array}$ |
|  | Moon | 1st Limb | 2012 29,35 |  | Moon | 1st Limb | 310 34,98 |
|  | - Aquarii |  | 215731,05 | 20 | A $^{1}$ Tauri |  | 35350,16 |
|  | $\theta$ - |  | $\begin{array}{llrl}22 & 8 & 6,97\end{array}$ |  | Moon | 1st Limb | 3154,25 |
|  | Moon | 1st Limb | $\begin{array}{llll}22 & 13 & 38,00\end{array}$ |  | $\omega^{2}$ Tauri |  | $4 \quad 6 \quad 29,17$ |
|  | $\delta$ Aquarii |  | $23 \quad 45 \quad 50,72$ | 21 | $\tau$ - |  | 43110,42 |
|  | $\phi$ - |  | $\begin{array}{llll}23 & 5 & 43,78 \\ 23 & 8\end{array}$ |  | Moon | 1st Limb | $455 \quad 17,94$ |
|  | Moon | 1st Limb | $\begin{array}{llll}23 & 8 & 20,36\end{array}$ | 1837 |  |  |  |
| Oct. | $h^{2}$ Sagittarii |  | $\begin{array}{llll}19 & 25 & 31,58 \\ 19 & 51\end{array}$ | Jan. 17 | Moon | 1st Limb | 44024,70 |
|  | $c$ - |  | 195122,53 | 18 | $\beta$ Tauri |  | $517 \quad 1,95$ |
|  | Moon | 1st Limb | 195136,35 |  | $\zeta$ - |  | 52856,52 |
|  | $\psi$ Capricorni |  | 203511,38 |  | Moon | 1 st Limb | 53437,42 |
|  | $\eta$ - |  | 205452,59 | 19 | \% Aurigæ |  | $6 \quad 5 \quad 58,19$ |
|  | $\psi$ |  | 203511,16 |  | $\mu$ Geminor. |  | 614 4,46 |
|  | Moon | 1st Limb | 2054 22,65 |  | Moon | 1st Limb | 62950,14 |
|  | \% Capricorni |  | 213647,84 |  | $\delta$ Geminor. |  | 711 21,60 |
|  | $\gamma$ - |  | 2129 47,86 |  | $a^{2}$ - |  | 72510,10 |
|  | $\delta$ - |  | 213647,08 | 20 | $\delta$ - |  | 711 18,54 |
|  | Moon | 1st Limb |  |  | Moon | 1st Limb | 72448,93 |
|  | $\tau^{2}$ Aquarii |  | 223942,49 |  | 6 Cancri |  | 75425,57 |
|  | ¢ - |  | 2244 44,72 | 21 | Moon | Cent. | 819 32,79 |
|  | $\tau^{3}$ |  | 223940,93 |  | $\rho^{4}$ Cancri |  | 84646,70 |
|  |  |  |  |  | \% - |  | $9 \quad 052,11$ |

Moon Culminatryg Stars.



Eclipses and Occultations.


## Observation of the Eclipses of Jupiter's Satellites in the Years 1836 and 1837.

| 1836 | Satellite. | Im. or Em. | Telescope. | Power. | Madras Mean Time. | Remaris. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Jan. 27 | II | Emersion. | 5 fect. | 110 | h. m. $s$. <br> 8 10 54,3 |  |
| Feb. 1 | I | Emersion. | 5 feet. | 150 | 75628,3 |  |
| 3 | II | Emersion. | 5 fect. | 110 | $1047 \quad 15,9$ |  |
| 15 | 1 | Emersion. | 42 inches. | 75 | 114649,6 |  |
| 27 | III | Immersion. | 5 feet. | 110 | 63520,4 |  |
| 27 | III | Emersion. | 5 feet. | 110 | 94827,2 |  |
| 28 | 15 | Emersion. | 42 inches. | 75 | 8022,6 |  |
| Mar. 2 | I | Emersion. | 5 feet. | 110 | $10 \quad 527,8$ |  |
| 5 | III | Immersion. | 5 feet. | 110 | 103257,9 |  |
| 6 | II | Emersion. | 5 feet. | 110 | $\begin{array}{lllll}10 & 33 & 14,3\end{array}$ |  |
| 9 | I | Emersion. | 5 feet. | 110 | 12059,1 |  |
| 18 | I | Emersion. | 5 feet. | 150 | 82515,6 |  |
| 25 | I | Emersion. | 5 feet. | 110 | 102041,6 | Moon near the Planet. |
| 29 | IV | Emersion. | 5 feet. | 150 | 83935,8 |  |
| 31 | II | Emersion. | 5 feet. | 150 | 74119,2 |  |
| April 10 | I | Emersion. | 5 feet. | 110 | 84040,3 |  |
| $\cdots 10$ | III | Emersion. | 5 feet. | 110 | 95328,6 |  |
| 17 | III | Immersion. | 5 feet. | 110 | 103349,7 | Planet low. Clear-observation satisfactory. |

Eclipses and Occultations.

| 1836 | Satellite. | Im. or Em. | Telescope. | Power. | Madras Mean Time. | Remaris. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 17 | I | Emersion. | 5 feet. | 110 | $\begin{array}{ccc} \hline h . & m . & s . \\ 10 & 36 & 54,2 \end{array}$ | Planet low. Clear observation satisfactory. |
| May 19 | I | Emersion. | 42 inches. | 75 | $\begin{array}{llll}7 & 17 & 1,7\end{array}$ |  |
| Oct. 12 | II | Immersion. | 5 feet. | 480 | $1549 \quad 2,9$ |  |
| 13 | III | Immersion. | 42 inches. | 75 | $\begin{array}{llll}14 & 13 & 5,6\end{array}$ |  |
| Nov. 6 | II | Immersion. | 42 inches. | 75 | 124910,1 |  |
| 25 | III | Immersion. | 5 feet. | 110 | $\begin{array}{llll}14 & 1 & 23,6\end{array}$ |  |
| Nov. 25 | III | Emersion. | 5 feet. | 110 | $\begin{array}{llll}17 & 32 & 11,7\end{array}$ |  |
| Dec. 1 | I | Immersion. | 5 feet. | 110 | 154730,0 |  |
| 5 | IV | Emersion. | 5 feet. | 110 | $\begin{array}{llll}16 & 8 & 20,6\end{array}$ |  |
| 10 | I | 1 mmersion . | 5 feet. | 110 | 128840,6 |  |
| 17 | 1 | Immersion. | 5 feet. | 110 | 14239,6 |  |
| 26 | I | Immersion. | 5 feet. | 110 | 102413,6 |  |
| 1837 |  |  |  |  |  |  |
| Jan. 9 | I | Immersion. | 5 feet. | 110 | $\begin{array}{llll}14 & 9 & 37,3\end{array}$ |  |
| 11 | I | Immersion. | 5 feet. | 60 | 838778 | Unsatisfactory; planet near the horizon. |
| Feb. 10 | I | Emersion. | 5 feet. | 110 | 125720,5 |  |
| 10 | II | Emersion. | 5 feet. | 110 | 144940,0 | Dew rapidly deposited on the O.G. |
| 12 | I | Emersion. | 5 feet. | 110 | 72550,4 | good observation. |
| 12 | III | Emersion. | 5 feet. | 110 | 131343,5 | good observation. |
| 17 | I | Emersion. | 5 feet. | 110 | 14516,9 | very good obs. |
| 19 | I | Emersion. | 42 inches. | 75 | 91935,3 | The proximity of the Moon unfavorable. |
| 21 | 11 | Emersion. | 5 feet. | 110 | 64431,3 | very good obs. |
| 26 | I | Emersion. | 5 feet. | 110 | 11142 | good observation. |
| 27 | IV | Emersion. | 5 feet. | 110 | $10 \quad 13 \quad 58,6$ |  |
| Mar. 7 | I | Emersion. | 5 feet. | 110 | 73653,9 | $\}$ rood observations. |
|  | I | Emersion. | 42 inches. | . 70 | 73654,9 | ¢ good observations. |
| 7 | II | Emersion. | 5 feet. | 110 | 115836,2 | 3 rood observations. |
| 7 | II | Emersion. | 42 inches. | . 70 | 115841,2 | $\}$ good observations. |
| 7 | I | Emersion. | 5 feet. | 70 | 93124,3 | ? rood observations. |
| 7 | I | Emersion, | 42 inches. | . 110 | 93131,3 | g good observations. |
| 14 | II | Emersion. | 42 inches. | . 110 | 143548,1 | good observation. |
| 20 | III | Emersion. | 5 feet. | 110 | $\begin{array}{lllll}9 & 8 & 18,6\end{array}$ |  |
| 21 | I | Emersion. | 5 feet. | 110 | 112548,7 |  |
| 25 | II | Emersion. | 5 feet. | 60 | 63254,2 | good observation. |
| '27 | III | Emersion. | 5 feet. | 60 | 13526,4 | haze. |
| 28 | I | Emersion. | 5 feet. | 60 | 132021,1 | haze,-planet low. |
| April 1 | 1 II | Emersion. | 5 feet. | 60 | 9853,2 | very good obs. |
| 6 | 6 | Emersion. | 5 feet. | 60 | 94331,4 |  |
| 18 | 8 IV | Immersion, | . 5 feet. |  | 113654,2 |  |
| 22 | 2 I | Emersion. | 5 feet. | 60 | $8 \quad 239,4$ |  |
| 29 | I I | Emersion. | 5 feet. | 140 | $958 \quad 5,3$ | very good obs. |


| 1837 | Satellite. | Im. or Em. | Telescope. | Power. | Madras Mean Time. | Remarks. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| May 2 | III | Emersion. | 5 feet. | 110 | $\begin{array}{ccc}  \\ \hline & \text { m. } & s . \\ \hline \end{array}$ |  |
| - 3 | II | Emersion. | 5 feet | 110 | 15430,2 |  |
| 5 | IV | Emersion. | 5 feet. | 110 | 102245,2 |  |
| 9 | III | Immersion. | 5 feet. | 110 | 93117,1 |  |
| 15 | I | Emersion. | 5 feet. | 110 | 815 59,4 |  |
| Dec. 16 | II | Immersion. | 5 feet. | 60 | $16 \quad 24 \quad 5,3$ |  |
| 17 | III | Immersion. | 5 feet. | 110 | 124722,4 |  |
| 17 | III | Emersion. | 5 feet. | 110 | $\begin{array}{llll}16 & 12 & 8,2\end{array}$ |  |
| 29 | 1 | Immersion. | 5 feet. | 110 | $13 \quad 25 \quad 8,3$ |  |

Occultation of Stars by the Moon.

## 1836

March 23 Immersion of Tauri behind the Moon's dark limb, observed

Oct. 13 Immersion of $\delta$ Scorpii behind the Moon's dark limb, observed with 5 feet Achromatic power 110................. at
15 Immersion of a star in Sugillarius behind the Moon's dark limb, observed with 42 iuch, power 75................ at

> Madras
> Mean Time.
h. m. s, $8 \quad 632,7$

63241,3
S37 limb, observed with 42 iuch, power 75 . at
Jan. 4 Immersion of A OpRiuchi behind the Moon's culightenod limb, observed with 5 feet Achromatic power 110........... at $17 \quad 42$ 39,5
March 9 Immersion of o Piscium behind the Moon's dark limb, observed with 5 feet Achromatic power wheel............ at 65934,3

* 10 Immersion of a small star behind the Moon's dark limb, observed with 5 feet Achromatic power ............... at

7637,0
+11 Immersion of a small star behind the Moon's dark limb, observed with 5 feet Achromatic power $60 . \ldots . . .$.

84815,5
April 12 Immersion of $v$ Geminorum behind the Moon's dark limb, observed with 5 feet Achromatic power 110...:........ at 1010 19,7

## Lunar Eclipses.

Observation of the Eclipse of the Moon on the 24th October 1836. Madras Mean Time. h. $m$, $s$.
 End of the Ecipse............................................. 7 . 7 25,7

[^10]The state of the air was unfavorable for accurate observations, in consequence of which, these times are little to be depended upon. Observed with 5 feet Achromatic power 60.

# Observation of the Eclipse of the Moon on the 20th April 1837. Madras 

 Mean Time.h. m. s.

Beginning of the Eclipse. . . . . . . . . . . . . . . . . . . . . . . . . . . . 1110 50,6
Touches Grimaldus.......................................... . . 12 30,3
Covers do. ............................................ 13 53,1
Covers Gallilius.......................................... 17 36,5
Covers Aristarchus. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 28 3,8
Touches Tycho. .. ........................................ 34 51,7
Covers do. ........................................... 35 46,5
Touches Plato.............................................. . . 48 56,3
Covers do. ............................................. 50 16,1
No. 28 disappeared. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 52 53,7
Censorinus do. ......................................... 57 17,0
Proclus do. ............................................ 12 . 5 53,6
Touches Mare Christium. . . . . . . . .......................... . . 6 45,5
Covers do. do. .................................... 10 1,0
Totally Eclipsed............................................. . 11 46,6
End of total darkness........................................ 1449 26,7
Covers Grimaldus.......................................... . 55 13,7
Leaves do. ............................................... 56 17,5
Leaves Aristarchus.......................................... 15 24,5
Tycho covered......... ...................................... . . 18 9,9
Leaves Tycho................................................ . . . 19 7,7
End of the Eclipse. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 50 46,8
The Earth's shadow was exceedingly well defined, and the air particularly clear : the times of beginning and end as well as those of contact with the various spots, are I believe, as accurate as observations of this nature will permit; but the times of "Totally Eclipsed," and "End of total darkness,"-from the rapidity with which the last thread of light was dissolved and formed, are by far the most accurate portion of the observations; these cannot I think be more than two seconds in error-

Observed with the 5 feet Achromatic with a power of 60 .

## Observation of the Eclipse of the Moon on the 13th October 1837.

Observed North Polar Distance of the Planet Mars and of Stars situated near to his path at the opposition of 1837 .

| 1837 | Names. | Bar. | $\square$ |  | Observed <br> N. P. D. | Remarks. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Jan. 26 |  | $\begin{aligned} & \text { Inches. } \\ & 30,050 \end{aligned}$ | ${ }_{71,2}^{0}$ | 66,7 |  |  |
| 27 |  | 30,066 30,050 | 71,0 71,0 | 67,0 76,0 | 71 8 48,5 <br> 712 120,8  <br> 72 27 30,3 <br> 1   |  |
| 28 |  | 30,096 30,064 | 74,0 72,4 | 71,7 69,0 | 71 0 37,0 <br> 72 27 31,7 <br> 71 4 11,9 <br> 70   |  |
| 29 |  | 30,128 | 75,2 | 73,7 | 70 53 16,0 <br> 70 56 6,4 <br> 72 27 30,3 |  |
| 31 |  | 30,110 30,094 | 74,8 74,8 | 71,0 69,8 | 70 39 59,4 <br> 70 35 1,3 <br> 72 27 31,7 <br> 70   |  |
| $\overline{\text { Feb. } 2}$ |  Centrum $k$ 12 38,6 <br>  Leonis    | 30,100 30,090 | 73,5 72,0 | 68,6 68,0 | 70 15 19,2 <br> 70 24 7,7 <br> 72 27 31,7 |  |
| 3 |  | 30,144 30,126 30,124 | 75,6 <br> 74,7 <br> 74,5 | 70,6 70,0 69,7 | 70 15 17,9 <br> 70 16 20,6 <br> 72 27 32,0 <br> 70 108  |  |
| 4 |  | 30,114 30,102 | 75,0 74,0 | 73,0 72,3 | $\begin{array}{cccc}70 & 1 & 16,7 \\ 70 & 8 & 38,4 \\ 7 & 5 & \end{array}$ |  |
| 5 |  | 30,032 30,010 | 74,2 74,0 | 70,6 69,7 | $\begin{array}{cccc}71 & 15 & 52,5 \\ 69 & 50 & 37,2 \\ 70 & 1 & 5,1 \\ 71 & \end{array}$ |  |
| 6 | O Cancri <br> $*$ <br> \% Centrum | 30,024 30,020 | 74,2 <br> 74,0 <br> 73,8 <br> 78. | 71,7 70,0 | 71 15 52,4 <br> 69 50 36,6 <br> 69 53 39,5 |  |
| 7 |  | ${ }_{3}^{30,072} 3$ | $\begin{aligned} & 76,0 \\ & 75,8 \end{aligned}$ | 74,3 73,7 | 71 15 52,6 <br> 69 46 22,1 <br> 69 41 18,0 |  |
| 8 |  | $\begin{aligned} & 30,116 \\ & 30,084 \end{aligned}$ | $\begin{aligned} & 76,0 \\ & 76,0 \end{aligned}$ | 74,3 73,7 | $\begin{array}{llll}71 & 15 & 53,1 \\ 69 & 31 & 36,9 \\ 69 & 39 & 16,2\end{array}$ |  |
|  |  | 30,094 <br> 30,078 | 75,3 75,0 | 72,0 72,0 | 71 15 52,7 <br> 69 31 36,1 <br> 69 32 22,2 |  |
| 10 |  | $\left\lvert\, \begin{aligned} & 30,092 \\ & 30,080 \\ & 30,070 \end{aligned}\right.$ | $\begin{aligned} & 77,2 \\ & 76,9 \\ & 76,5 \end{aligned}$ | 75.5 75,2 74,0 | 71 15 51,3 <br> 69 25 39,8 <br> 69 17 24,8 <br> 71   |  |
| 1 | $\substack{\delta \\ \text { ioncri } \\ \text { O }}$ Centrum  1149,0 | $\left\lvert\, \begin{aligned} & 30,012 \\ & 29,994\end{aligned}\right.$ | 77,5 ${ }^{77} \mid$ | 74,6 74,0 | 71 15 51,2 <br> 69 19 10,2 <br> 69 17 24,6 <br> 115 51,2  |  |
|  | \% Cancri 1 | 129,944 | 78,0 1 | 76,6 | 7115 51,2 |  |

Observed North Polar Distance, of Mars, \&c. continued.


Observed North Polar Distance, of Mars, \&c. continued.

| 1837 | Names. | Mulras Me.an Time. | Bar. | $\begin{gathered} \begin{array}{r} \mathrm{Th} \\ \mathrm{mom} \end{array} \\ \hline \text { in } \end{gathered}$ | ter. out | Ohserved N. P. D. | Remaris. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Mar. 7 | ${ }_{*}^{*}$ Centrum | $\begin{array}{rl}\text { h. } & \text { m. } \\ 9 & 46,4\end{array}$ | Iuches. | $\bigcirc$ |  | $\begin{array}{ccc}0 & \prime & \prime \prime \\ 68 & 0 & 44 \\ 68 & 2 & 19,3\end{array}$ | - |
| 8 | $\gamma$ $\gamma_{\gamma}^{\gamma}$ Cancri * Centrum | 941,9 | 30,106 | 79,9 | 78,0 | $\begin{array}{rrr}67 & 57 & 42,6 \\ 68 & 0 & 43,3 \\ 68 & 2 & 20,0\end{array}$ |  |
| 9 | $\begin{array}{ll}\gamma & \text { Cancri } \\ \delta^{*} \text { Centrum } \\ *\end{array}$ | 937,4 | 30,124 | 79,9 | 77,7 | $\begin{array}{rrr}67 & 57 & 43,5 \\ 68 & 0 & 5,5,7 \\ 68 & 2 & 20,4\end{array}$ |  |
| 10 | $\begin{array}{ll}\gamma & \text { Cancri } \\ \delta \\ \delta & \text { Centrum }\end{array}$ | 933,0 | 30,072 | 79,7 | 78,5 | 67 57 41,7 <br> 68 1 23,2 <br> 68 2 20,2 |  |
| 11 | $\gamma$ Cancri <br> $\phi$ Centrum  | 928,7 | 30,024 | 80,3 | 80,2 | $\begin{array}{rrr}67 & 57 & 42,6 \\ 68 & 2 & 3,3\end{array}$ |  |
| 12 | $\begin{array}{ll}\gamma & \text { Cancri } \\ \text { \% } & \text { Centrum }\end{array}$ | 924,4 | 30,076 | 80,2 | 79,7 | $\begin{array}{rrr}67 & 57 & 41,4 \\ 68 & 2 & 58,4\end{array}$ |  |
| 13 | $\gamma$ Cancri O Centrnm | 920,2 | 30,076 | 81,0 | 79,0 | 67 57 43,1 <br> 68 4 5,7 <br> 68 2 18,9 |  |
| 14 | $\gamma$ | 916,0 | 29,990 29,986 | 81,8 80,5 | 80,0 79,8 | 67 57 42,2 <br> 68 5 24,5 <br> 68 2 23,4 |  |
| 15 | $\gamma-$ Cancri $\delta^{\gamma}$ Centrum | 9 10,7 | 29,960 29,958 | 80,6 | 79,5 79,0 | 67 57 42,4 <br> 68 6 57,8 <br> 68 13 2,9 |  |
| 16 | $\begin{array}{ll}\gamma & \text { Cancri } \\ \text { or } \\ \text { O }\end{array}$ | 9 7,6 | 30,000 | 80,5 | 79,6 | 67 57 43,3 <br> 68 8 40,5 <br> 68 13 4,1 |  |
| 17 | ${ }_{*}^{*}$ Centrum | 93,5 | 30,044 | 80,4 | 80,0 | 68 10 37,4 <br> 68 13 3,3 |  |
| 18 | $\gamma$ | 859,4 | 30,054 | 80,7 | 78,2 | 67 57 42,6 <br> 68 12 45,7 <br> 68 13 2,8 |  |
| 19 | $\gamma$ Cancri ${ }_{\text {o }}$ Ce ntrum $*$ | 855,5 | 29,998 30,010 | 82,3 | 81,8 81,2 | 67 57 42,3 <br> 68 15 1,2 <br> 68 13 4,2 |  |
| 20 | C Centrum | 851,6 | 29,990 | 82,0 | 80,0 | $68 \quad 17 \quad 34,1$ |  |

The above observations have been given here-out of their proper place,to enable me (without loss of time) to avail myself of the corresponding observations made at the Cape of Good Hope Observatory, with which, through the kindness of the Astronomer Royal I have just been favoured : thus, putting $p^{\prime}, p^{\prime \prime}, \& c$. to represent the equatoreal horizontal parallax of the Planet Mars; and computing the values of $d r$, (the difference of refraction between the. Planet and Star) and of $\Delta \delta$, the change of Declination in the interval oc: cupied by the Planet in passing from one meridian to the other, we get

Observed North Polar Distance of Mars, \&c.


Resolving the above equations, and employing the log. distance of the Planet from the Earth-furnished in the Nautical Almanac-for the moment intermediate between the transit of the Planet over the two Observatories; we get $\pi$, the Equatoreal Horizontal Parallax of the Sun.


| Mean $=$ | $9^{\prime \prime}, 486$ |
| :---: | :---: |
| Whereas from a similar series of observations at the | 9,912 |
| opposition of 1832-33 we obtained for $\pi$ |  |
| Do. Du. 1834-35 | 8,595 |
| Giving to each series the same weight, we obtain the mean Equatoreal Hor. Pa. of the Sun, or $\pi=$ | 9,331 |

## OBSERVATIONS OF THE FIXED STARS.

The observations of the Fixed Stars in $1836 \& 1837$ have been principally confined to a Catalogue of 2070 Stars, which, with those given in Vols. II. \& III. completes the re-observation of Piazzi's Catalogue. It was my intention in 1836 to have made four observations of each Star at each Instrumenttwo in the first year, and two in the second, whereby any error in the observation or reduction would readily be detected; -this plon has for the most part been accomplished,-the principal deviation therefrom being in the hours XX \& XXI, where, having to encounter a large number of Stars (from 140150 in each hour) and that too at a time of the year little favorable to Observation, -I have been unable to make more than two or three, and in some cases only one observation of each Star; but, taking into account the accuracy to which each single observation may lay claim, I have thought it proper, rather to give this single observation, than to omit the Star from the Catalogue. The Magnitudes are from the mean of all the observations at both instruments, save that in the case where half a magnitude had to be decided between the two instruments, I have given it in favor of the Transit, as being derived from the better instrument of the two, and from the most skilful observers. The Corrections which have been employed, are those resulting from the values of $a, b, c, d$, of the Catalogue in conjunction with the values of $\mathbf{A}, \mathrm{B}, \mathrm{C}, \mathrm{D}$, given in the Nautical Almanac;-these values of $a, b, c, \& c$. have been computed for the year 1840, by applying to the A. R. and Declination given in Piazzi's Catalogue-the amount of 40 times the annual precession there given, whereby the places for 1840 , are for this purpose obtained to a sufficient degree of accuracy. The formulæ employed (which has been explained at full length by Mr. Bailly in the appendix to the second volume of the Memoirs of the Royal Astronomical Society), is as follows

$$
\begin{aligned}
& a=+\operatorname{Cos} \alpha \cdot \sec \delta \\
& b=+\sin \alpha \cdot \sec \delta \\
& c=+46^{\prime \prime} 024+20^{\prime \prime}, 042 \sin \alpha \cdot \tan \delta \\
& a=+\cos \alpha \cdot \tan \delta \\
& a^{\prime}=+\tan \omega \cdot \cos \delta-\sin \alpha \cdot \sin \delta \\
& b^{\prime}=+\cos \alpha \cdot \sin \delta \\
& c^{\prime}=+20^{\prime \prime}, 042 \cos \alpha . \\
& d^{\prime}=-\sin \alpha .
\end{aligned}
$$

and the values of A, B, C, D from the Nautical Almanac are computed from the formulæ

$$
\begin{aligned}
& A=-18^{\prime \prime}, 6768 \cos . \odot \\
& B=-20^{\prime \prime}, 3600 \sin . \odot \\
& C=t-0,02495 \sin .2 \odot-0,34362 \sin . \Omega+0,00413 \sin .2 \Omega-0,004 \sin .2 \mathbb{} \quad \\
& D=-0^{\prime \prime}, 54470 \cos .2 \odot-9^{\prime \prime}, 25000 \cos . \Omega+0^{\prime \prime}, 09030 \cos .2 \Omega-0^{\prime \prime}, 090 \cos .2 \mathbb{Q}
\end{aligned}
$$

from which we deduce
Apparent A. R. in arc. $=a+\mathrm{A} a+\mathrm{B} b+\mathrm{C} c+\mathrm{D} d$.
Apparent Declination $=\delta+\mathrm{A} a^{\prime}+\mathrm{B} b^{\prime}+\mathrm{C} c^{\prime}+\mathrm{D} d^{\prime}$.
where $t$ denotes the time from the beginning of the year, a represents the A. R. of the Star, $\delta$ its Declination, and $\omega$ the Obliquity of the ecliptic. To guard against mistakes, the computations of these values as well as the places for 1840 -have all been performed in duplicate, thus; -when the first computation had once been completed, the resulting values properly arranged -were neatly registered in a book which it was intended should be eventually employed in the ulterior computations, and the said book together with the details of the computation carefully locked up;-the computation was now again gone over anew, the results carefully compared with those registered in the fair book, and the discrepancies set right by a re-examination of each of the original computations; when the error, if occurring in the first computation, was rectified by neatly erasing the erroneous figures in the fair book: in the examination of the press, the proof sheet has always been compared with this original document, by which means, errors (with the exception of those given in the errata) have I hope been completely avoided.

## A

## SUBSIDIARY CATALOGUE (No. 2.)

OF

THE FIXED STARS

REDUCED TO JANUARY 1, 1836.

Together with the values of $a, b, c, d, \& c$.
computed for the year 1840.
$\& c$.


| No. | No. Obs. | Declination Jan. 1, 1836. | Annual <br> Precession. | Logarithms of |  |  |  |  | Annual P. M. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | $a^{\prime}$ | ${ }^{\prime}$ | ${ }^{\prime}$ | $d^{\prime}$ |  | A. R. | Decn. |
|  | 4 | $\begin{array}{cc} 0 \prime \prime \prime \\ +2744 & 25,21 \end{array}$ | +20,042 |  |  |  |  |  |  |  |
| 2 | 4 | $\begin{array}{r} +274425,21 \\ -124152,32 \end{array}$ | $+20,042$ 20,042 | $+9,5798$ $+9,6284$ | $+9,6682$ <br> $-9,3415$ | $+1,3019$ , 3019 | -7,0822 | 2 3 4 | ,+ 015 ,+ 017 | -, 12 |
| 3 | 3 | - 41359,77 | 20,041 | +9,6375 | -8,8664 | ,3019 | 8,1072 | 4 | +,007 | +,01 |
| 4 | 4 | $\begin{array}{lll}-36 & 3 & 4,44\end{array}$ | 20,041 | +9,5563 | -9,7695 | ,3019 | 8,1961 | 7 | + +020 | + , 15 |
| 5 | 4 | +27 4153,98 | 20,041 | +9,5763 | +9,6675 | ,3019 | 8,2119 | 8 | +,012 | -,13 |
| 6 | 4 | -6 913,33 | 20,038 | +9;6345 | -9,0286 | +1,3019 | -8,3387 | 10 | +,004 | -,03 |
| 7 | 3 | -3844 3 3,78 | 20,038 | +9,5478 | -9,7961 | ,3019 | ,3502 | 11 | +,010 | +,11 |
| 8 | 2 | +40 74.84 | 20,036 | +9,4983 | +9,8091 | ,3018 | ,4322 | 13 | +,010 | -,14 |
| 9 | 3 | +75423,98 | 20,035 | +9,6294 | +9,1388 | ,3019 | ,4680 | 17 | +,008 | -, ,06 |
| 10 | 3 | +30 3725,13 | 20,035 | +9,5539 | +9,7072 | ,3018 | ,4723 | 18 | +,020 | -,08 |
| 11 | 3 | +26 2222,46 | 20,035 | +9,5752 | +9,6478 | +1,3018 | -8,4765 | 19 | + , 011 | ,00 |
| 12 | 3 | -7 $\begin{array}{r}251,22 \\ \hline\end{array}$ | 20,034 | +9,6385 | -9,0877 | ,3018 | ,4890 | 21 | +,016 | +,01 |
| 13 | 3 | + 71218,30 | 20,032 | +9,6307 | +9,0988 | ,3017 | ,5355 | 22 | +,007 | ,00 |
| 14 | 3 | -32 2125,50 | 20,031 | +9,5866 | -9,7279 | ,3017 | ,5464 | 23 | +,018 | - ,03 |
| 15 | 3 | +60 3718,21 | 20,030 | +9,2577 | +9,9400 | ,3017 | ,5640 | 25 | +,019 | + , 02 |
| 16 | 3 | + 05618,68 | 20,030 | +9,6365 | +8,2268 | +1,3017 | $-8,5674$ | 26 | +,014 | +,01 |
| 17 | 4 | $-12575,65$ | 20,0:38 | +9,6355 | -9,3496 | ,3016 | ,5907 | 29 | +,016 | + ,07 |
| 18 | 4 | -19 5749.75 | 20,026 | +9,6253 | -9,53,233 | ,3016 | ,6128 | 31 | +,001 | -,09 |
| 19 | 4 | -246 26,43 | 20,026 | +9,6385 | -8,6807 | ,3016 | ,6219 | 34 | +,005 | -,05 |
| 20 | 3 | -2 2531,96 | 20,024 | +9,6385 | -8,7037 | ,3015 | ,6454 | 36 | +,011 | +,02 |
| 21 | 3 | +30 3620,98 | 20,024 | +9,5441 | +9,7067 | +1,3015 | -8,6539 | 38 | +,016 | +,03 |
| 22 | 2 | -11 51333,80 | 20,022 | +9,6385 | -9,3114 | ,3015 | ,6677 | 39 | +,017 | + ,04 |
| 23 | 2 | -44 8 89,42 | 20,022 | $+9,5378$ | $\underline{-9,8422}$ | ,3015 | ,6701 | 40 | +,004 | -,02 |
| 24 | 5 | +253234,73 | 20,020 | +9,5682 | +9,6345 | ,3015 | ,6837 | 41 | +,011 | +,18 |
| 25 | 5 | -13 5821,54 | 20,015 | - $-9,6375$ | -9,3815 | ,3014 | ,7212 | 44 | +,007 | -,01 |
| 26 | 4 | +371630,25 | 20,010 | +9,4914 | +9,7817 | +1,3012 | -8,7601 | 47 | +,014 | -,01 |
| 27 | 3 | -36 42 27,21 | 20,010 | +9,5832 | -9,7755 | ,3012 | ,7623 | 48 | -,001 |  |
| 28 | 3 | $\begin{array}{lll}-17 & 7 & 3,92\end{array}$ | 20,009 | +9,6355 | -9,4677 | ,3012 | ,76888 | 4.9 | +,014 | - ,03 |
| 29 | 3 | -23 54 45,33 | 20,007 | +9,6243 | -9,6065 | ,3012 | ,7794 | 51 | +,008 | -,10 |
| 30 | 3 | +61 1955,73 | 20,005 | +9,1875 | +9,9424 | ,3011 | ,7898 | 52 | +,032 | + , 10 |
| 31 | 1 | +61 2414,33 | 20,003 | +9,1818 | +9,9427 | + 1,3011 | -8,8019 | 54 | +,015 | ,00 |
| 32 |  | -1651 14,31 | 20,001 | +9,6:375 | -9,4609 |  | ,8137 | 56 | +,009 | + ,01 |
| 33 | 4 | -31 5645,67 | 19,998 | +9,6053 | -9,7222 | ,3010 | ,8213 | 57 | ,000 | -, 04 |
| 34 | 4 | +30 2747,36 | 19,993 | +9,5289 | +9,6985 | ,3009 | ,8507 | 59 | +,011 | -,08 |
| 35 | 4 | $\begin{array}{lll}-12 & 37 & 8,62\end{array}$ | 19,990 | +9,6434 | $-9,3376$ | ,3008 | ,8630 | 62 | +,003 | +,06 |
| 36 | 4 | -16 5615,66 | 19,990 | +9,6395 | $-9,4627$ | +1,3008 | $-8,8647$ | 63 | +,022 | - , 06 |
| 37 | 4 | -9 1536,46 | 19,983 | +9,6444 | -9,2040 | ,3007 | ,8842 | 67 | +,012 | + ,01 |
| 38 | 4 | +19 14143,97 | 19,983 | +9,5843 | +9,5172 | ,3007 | ,8882 | 66 | + +014 | -, 09 |
| 39 | 4 | +24 8 8,01 | 19,976 | +9,5599 | +9,6104 | ,3005 | ,9119 | 71 | +,006 | -, 04 |
| 40 | 3 | - 55442,26 | 19,975 | +9,6434 | -9,0093 | ,3005 | ,9165 | 72 | +,009 | -, ,11 |
| 41 | 4 | + 15422,70 | 19,973 | +9,6345 | +8,5266 | +1,3004 | -8,9211 | 73 | +,006 | -, 04 |
| 42 | 3 | -12 33 57,32 | 19,967 | +9,6464 | $-9,3354$ | ,3003 | ,9374 | 78 | +,006 | ,00 |
| 43 | 4 | + $+355932,66$ | 19,964 | +9,4757 | +9,7677 | ,3002 | ,9503 | 80 | +,005 | +,04 |
| 44 | 4 | -12 30 22,15 | 19,958 | +9,6474 | -9,3329 | ,3001 | ,96:28 | 82 | +,016 | + , ,06 |
| 45 | 4 | - 42239,17 | 19,956 | +9,6434 | -8,878I | ,3001 | ,9682 | 83 | +,006 | -,07 |



| No. | No. Obs. | Declination <br> Jan. 1, 1836. | Annual <br> Precession. | Logarithms of |  |  |  | $\begin{gathered} \text { B } \\ \text { B } \\ \text { ※ } \\ \text { ※ } \end{gathered}$ | Annual P. M. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | $a^{\prime}$ | $6^{\circ}$ | $c^{\prime}$ | $d^{\prime}$ |  | A. R. | Decn. |
|  |  | -41 34 20,66 | +19055 |  |  |  |  |  | $s$. ,+ 009 |  |
| 46 | 3 | -41 3420,66 | +19,955 | +9,5877 | -9,8198 | +1,3001 | -8,9723 | 84 | +,009 | $+, 04$ |
| 47 | 4 | + 75352,85 | 19,955 | - + -9,6201 | +9,1,571 | ,3000 | ,9736 | $85$ | +,015 | - ,09 |
| 48 | 2 | +43 223,45 | 19,952 | +9,3979 | +9,8321 | ,2998 | ,9945 | 93 | +,001 | - ,01 |
| 49 | 3 | -4150 49,72 | 19,952 | +9,5899 | -9,8220 | ,2998 | ,9945 | 94 | +,006 | - , ,10 |
| 50 | 3 | -10 59 27,68 | 19,943 | +9,6484 | --9,2771 | ,2998 | ,9983 | 96 | $+, 015$ | - ,02 |
| 51 | 2 | +15 654,09 | 19,940 | +9,5933 | +9,4145 | +1,2997 | -9,0070 | 97 | +,006 | - ,22 |
| 52 | 3 | + 35625,89 | 19,936 | +9,6294 | +8,8376 | ,2996 | ,0119 | 98 | ,000 | -, 02 |
| 53 | 3 | -19 7 7 36,65 | 19,935 | +9,6474 | -9,5124 | ,2995 | ,0204 | 100 | +,010 | + ,01 |
| 54 | 2 | +2722 27,75 | 19,930 | +9,5263 | +9,6605 | ,2995 | ,0264 | 103 |  | + ,02 |
| 55 | 1 | +5938 29,27 | 19,928 | +9,1038 | +9,9335 | ,2995 | ,0299 | 104 | +,0011 | -,16 |
| 56 | 3 | -4.4516,82 | 19,924 | +9,6444 | -8,9139 | +1,2994 | --9,0380 | 106 | +,016 | - ,14 |
| 57 | 3 | $-13047,72$ | 19,922 | +9,6405 | -8,4104 | ,2993 | ,0415 | 107 | +,013 | -, 02 |
| 58 | 2 | + 4229,76 | 19,920 | +9,6284 | +8,8481 | ,2993 | ,0437 | 108 | +,002 | + ,07 |
| 59 | 2 | +605736,55 | 19,912 | +9,0414 | +9,9389 | ,2991 | ,0583 | 112 | +,004 | + ,06 |
| 60 | 3 | +53 17 53,82 | 19,909 | +9,2201 | +9,9012 | ,2990 | ,0637 | 114 | +,018 | -, 02 |
| 61 | 3 | +24 12 2,07 | 19,905 | +9,5416 | +9,6099 | +1,2989 | -9,0702 | 116 | +,016 | -, 14 |
| 62 | 2 | +1056 30,52 | 19,902 | +9,6053 | +9,2762 | ,2989 | ,0734 | 119 | , ,000 | -,10 |
| 63 | 2 | +23 7 17,18 | 19,897 | +9,5465 | +9,5914 | ,2988 | ,0818 | 121 | +,019 | ,00 |
| 64 | 3 | - 41813,79 | 19,885 | +9,6454 | -8,8698 | ,2985 | ,0981 | 129 | +,010 | -, 04 |
| 65 | 3 | +34 2942,83 | 19,885 | +9,4564 | +9,7499 | ,2985 | ,0981 | 128 | $+, 010$ | -,03 |
| 66 | 3 | -654 4,71 | 19,874 | +9,6503 | - 9,0749 | +1,2983 | -9,1128 | 132 | +,011 | -, 01 |
| 67 | 3 | + 7050,19 | 19,864 | +9,6180 | +9,0840 | ,2981 | ,1252 | 135 | +,007 | - ,01 |
| 68 | 3 | + 213 4,23 | 19,862 | +9,6325 | +8,5868 | ,2980 | ,1271 | 137 | +,059 | + ,22 |
| 69 | 3 | +103749,08 | 19,856 | +9,6031 | +9,2626 | ,2979 | ,1345 | 140 | +,018 | - ,08 |
| 70 | 3 | $-12 \quad 252,18$ | 19,852 | +9,6561 | -9,3143 | ,2978 | ,1390 | 142 | $+, 013$ | - ,16 |
| 71 | 3 | +20 7 7,31 | 1, 7,841 | +9,553,9 | $+9,5327$ | +1,2976 | -9,1516 | 145 | -,006 | - ,10 |
| 72 | 3 | +12 3 44,55 | 19,834 | +9,5955 | +9,3163 | ,2974 | ,1603 | 149 | +,013 | - ,09 |
| 73 | 3 | +1914 19,66 | 19,833 | +9,5587 | +9,5139 | ,2974 | ,1603 | 150 | +,018 | - ,07 |
| 74 | 3 | -21 12 2,56 | 19,829 | +9,6609 | -9,5533 | ,2973 | ,1637 | 151 | +,010 | + ,04 |
| 75 | 3 | -44 1129,35 | 19,819 | +9,6191 | $-9,8369$ | ,2971 | ,1739 | 153 | +,007 | -, 20 |
| 76 | 4 | $-1254 \begin{array}{ll}4,00\end{array}$ | 19,800 | +9,6609 | $-9,3429$ | $+1,2967$ | -9,1911 | 161 | -,007 | -, 15 |
| 77 | 4 | - 03837,26 | 19,784 | +9,6395 | -8,0263 | ,2963 | ,2053 | 167 | +,027 | -, 16 |
| 78 | 2 | $-13 \quad 226,12$ | 19,783 | +9,6618 | -9,3469 | ,2963 | ,2061 | 169 | +,016 | +, ,14 |
| 79 | 1 | +54 24 25,45 | 19,781 | +9,0828 | +9,9046 | ,2962 | ,2077 | 168 | +,023 | - ,02 |
| 80 | 3 | +25 1628,19 | 19,779 | +9,509,2 | +9,6250 | ,2962 | ,2092 | 170 | +,018 | -,09 |
| 81 | 4 | -43 3412,61 | 19,778 | +9,6304 | -9,8324 | +1,2962 | -9,2107 | 173 | -,001 | - ,08 |
| 82 | 3 | -171920,44 | 19,773 | +9,6656 | -9,4670 | ,2961 | ,2138 | 174 | +,017 | -,02 |
| 83 | 3 | +30 248,14 | 19,771 | +9,4683 | +9,6939 | ,2960 | ,2153 | 175 | +,015 | -,18 |
| 84 | 3 | $\begin{array}{lrr}+30 & 3 & 13,96 \\ +25 & 3 & 37,00\end{array}$ | 19,770 | $+9,4669$ $+9,5038$ | +9,6941 | ,2960 | ,2161 | 176 | +,020 | - , 18 |
| 85 | 4 | +25 2337,00 | 19,751 | +9,5038 | +9,6263 | ,2956 | ,2310 | 184 | +,022 | -, 12 |
| 86 | 3 | -6 $53.17,20$ | 19,742 | +9,6551 | -9,0710 | +1,2954 | -9,2375 | 188 | +,003 | +,01 |
| 87 | 4 | +1725 8,32 | 19,733 | +9,5587 | +9,4702 | ,2952 | ,2439 | 191 | -,004 | + ,08 |
| 88 | 3 | + 7335,88 | 19,719 | +9,6117 | +9,0839 | ,2949 | ,2531 | 197 | +,016 | -, 01 |
| 86 | 3 | -1427 7,79 | 19,717 | +9,6674 | -9,3895 | ,2948 | ,2544 | 198 | +,019 | -, 09 |
| 90 | 4 | - 844 39,36 | 19,713 | +9,6590 | -9,1733 | ,2947 | ,2572 | 200 | +,009 | - ,02 |


| No. | Star's name and Mag. |  |  | $\left\lvert\, \begin{gathered} \text { No. } \\ \mathrm{Obs} . \end{gathered}\right.$ | $\begin{gathered} \text { Right } \\ \text { Ascension } \\ \text { Jan. 1, } 1836 . \end{gathered}$ | Annual <br> Precession. | Logarithms of |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | $a \quad$ |  |  | $b \quad$ |  | $d$ |
| 91 |  | Piscium | 8 |  | 3 | $$ | +3,139 | +8,8339 | +8,1040 | +0,4968 | +8,2773 |
| 92 |  | Phœnicis | 7.8 | 2 | - 42 22,07 | 2,827 | ,9614 | ,2357 | ,4513 | -8,8052 |
| 93 |  | Piscium | 8 | 3 | 42 25,47 | 3,099 | ,8198 | ,0940 | ,4512 | +7,9168 |
| 94 |  |  | 7.8 | 4 | 4234,95 | 3,094 | ,8187 | ,0950 | ,4905 | +7,8403 |
| 95 |  |  | 7.8 | 3 | 43 0,31 | 3,121 | ,8256 | ,1061 | ,4943 | +8,1405 |
| 96 |  | Piscium | 8 | 4 | 44 48,76 | 3,154 | +8,8378 | +8,1365 | +0,4989 | +8,3532 |
| 97 |  |  | 8.9 | 3 | 44 51,99 | 3,151 | ,8361 | ,1354 | ,4984 | +8,3151 |
| 98 |  |  | 8.9 | 3 | 4453,40 | 3,083 | ,8161 | ,1155 | ,4890 | + 7,5652 |
| 99 |  |  | 8.9 | 3 | $45 \quad 29,76$ | 3,091 | ,8168 | ,1221 | ,4901 | +7,7528 |
| 100 |  | Ceti | 8 |  | 4530,06 | 2,998 | ,8299 | ,1351 | ,4768 | -8,2372 |
| 101 |  | Andromedæ | 8 | 3 | 4623,00 | 3,180 | +8,8494 | +8,1637 | +0,5024 | +8,4332 |
| 102 |  | Cassiopeæ | 7.8 | 4 | 47 53,12 | 3,417 | 9,0188 | ,3475 | ,5336 | +8,9116 |
| 103 |  | Pisclum | 8 | 4 | 47 55,89 | 3,201 | 8,8586 | ,1874 | ,5053 | +8,4921 |
| 104 |  | Cassiopeæ | 7.8 | 3 | 48 27,89 | 3,419 | 9,0177 | ,3513 | ,5339 | +8,9098 |
| 105 |  | Andromedæ | 7.8 | 2 | 48 45,72 | 3,175 | 8,8426 | ,1793 | ,5017 | +8,3893 |
| 106 |  | Piscium | 8.9 | 3 | 48 49,56 | 3,070 | +8,8139 | +8,1506 | +0,4871 | +6,7548 |
| 107 |  | Andromedæ | 7 | 2 | 49 16,21 | 3,254 | ,8905 | ,2315 | ,5124 | +8,6276 |
| 108 |  | Piscium | 8 | 3 | 49 18,79 | 3,125 | ,8220 | ,1636 | ,4948 | +8,1097 |
| 109 |  |  | 8 | 4 | 4935,60 | 3,176 | ,8421 | ,1860 | ,5019 | +8,3871 |
| 110 |  |  | 8 | 4 | 49 53,60 | 3,126 | ,8219 | ,1688 | ,4950 | +8,1127 |
| 111 |  | Messoris | 8.9 | 3 | 50 44,93 | 3,531 | +9,0828 | +8,4375 | +0,5479 | +9,0089 |
| 112 |  | Piscium | 8 | 3 | 50 59,65 | 3,068 | 8,8129 | ,1705 | ,4869 | -5,9756 |
| 113 |  |  | 7 | 2 | 5143,88 | 3,179 | 8,8407 | ,2035 | ,5021 | $1+8,3827$ |
| 114 |  |  | 8 | 3 | 52 39,98 | 3,124 | 8,8193 | ,1901 | ,4947 | +8,0724 |
| 115 |  |  | 8 | 3 | 52 41,21 | 3,106 | 8,8156 | ,1870 | ,4922 | +7,9117 |
| 116 |  | Piscium | 8 | 2 | 52 46,92 | 3,128 | +8,8203 | +8,1922 | +0,4953 | +8,1029 |
| 117 |  |  | 8 | 4 | 55 17,01 | 3,101 | 8,8133 | ,2063 | ,4915 | +7,8253 |
| 118 |  |  | 8.9 | 3 | 5518,53 | 3,103 | 8,8131 | ,2141 | ,4918 | +7,8453 |
| 119 |  | Cassiopeæ | 7 | , | 5639,72 | 3,710 | 9,1521 | ,5558 | ,5694 | +9,1017 |
| 120 | 74 | Piscium seq. | 6.7 | 2 | 56 54,90 | 3,192 | 8,8390 | ,2448 | ,5041 | +8,3853 |
| 121 |  | Piscium se | 8 | 3 | 5722,75 | 3,091 | $+8,8111$ | +8,2207 | +0,4901 | $+7,6601$ |
| 122 |  |  | 8 | 3 | 57 27,74 | 3,200 | , 8419 | ,2519 | ,5051 | +8,4095 |
| 123 |  | Ceti | 8.9 |  | 5813,80 | 3,005 | ,8171 | ,2329 | ,4778 | -8,0825 |
| 124 |  | Piscium | 7.8 | 3 | 58 21,96 | 3,186 | ,8546 | ,2520 | ,5032 | +8,3535 |
| 125 |  | Ceti | 8 | 3 | 59 48,01 | 3,123 | ,8143 | ,2423 | ,4946 | +8,0110 |
| 126 |  | Pbænicis | 7.8 | 2 | 0 17,67 | 2,751 | +8,9398 | +8,3714 | +0,4395 | -8,7681 |
| 127 |  | Piscium | 8 | 4 | 0 32,65 | 3,210 | 8,8415 | ,2750 | ,5065 | +8,4160 |
| 128 |  |  | 7.8 | 3 | 0 35,25 | 3,207 | 8,8404 | ,2745 | ,5061 | +8,4086 |
| 129 |  | Cassiopeæ | 8 | 3 | 2 4,28 | 3,809 | 9,1681 | ,6136 | ,5808 | +9,1223 |
| 130 |  | Piscium | 7.8 | 3 | 219,24 | 3,123 | 8,8126 | ,2595 | ,4946 | +7,9923 |
| 131 |  | Piscium | 8 | 3 | 250,60 | 3,215 | +8,8397 | +8,2905 | +0,5072 | +8,4107 |
| 132 |  |  | 8 | 3 | 3 58,63 | 3,274 | ,8657 | ,3247 | , 5151 | +8,5543 |
| 133 |  | App. Sculp. | 8 | 3 | $\begin{array}{ll}5 & 9,51\end{array}$ | 2,795 | ,8983 | ,3653 | ,4464 | -8,6681 |
| 134 |  | Piscium | 7.8 | 3 | 5 511,68 | 3,112 | ,8090 | ,2764 | ,4930 | +7,8770 |
| 135 |  |  | 8 | 3 | 538,53 | 3,193 | ,8283 | ,2989 | ,5042 | +8,3252 |


| No. | No. Obs. | Declination Jan. 1, 1836. | Annual <br> Precession. | Logarithms of |  |  |  | $\begin{aligned} & \dot{\circ} \\ & \text { 药 } \\ & \text { 荡 } \end{aligned}$ | Annual P. M. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | $b^{\prime}$ |  | $d^{\prime}$ |  | A. R. | Decn. |
| 91 | 4 | +16 $5 \quad 53,93$ | +19,704 | +9,5635 | +9,4360 | +1,2946 | -9,2627 | 202 | +,008 |  |
| 92 | 2 | -44 $17 \begin{aligned} & \text { 24,07 }\end{aligned}$ | +19,04 | +9,6434 | $\underline{+9,8363}$ | +1,2944 | --, 2667 | 205 | +,006 |  |
| 93 |  | + 7913,47 | 19,697 | +9,6107 | +9,089.5 | ,2944 | ,2667 | 204 | +,010 | -, 01 |
| 94 | 4 | + 6019,43 | 19,695 | +9,6159 | +9,0140 | ,2943 | ,2687 | 206 | -,001 | -,02 |
| 95 | 3 | +11 53 33,44 | 19,688 | +9,5866 | +9,3071 | ,2942 | ,2727 | 208 | +,016 | + ,03 |
| 96 | 4 | +18 129,66 | 19,658 | +9,5453 | +9,4869 | +1,2935 | -9,2902 | 214 | +,005 | + , 03 |
| 97 | 4 | +1730 8,69 | 19,657 | +9,5502 | +9,4705 | ,2935 | ,2909 | 215 | +,003 | -, 01 |
| 98 | 3 | + 31143,38 | 19,657 | +9,6253 | +8,7406 | ,2935 | ,2909 | 216 | +,015 | - ,11 |
| 99 | 4 | + 45455,71 | 19,647 | +9,6180 | +8,9273 | ,2933 | ,2965 | 218 | +,007 | - ,19 |
| 100 | 3 | -14 48 48,49 | 19,647 | +9,6730 | $-9,3986$ | ,2933 | ,2965 | 219 | +,014 | - ,12 |
| 101 | 2 | +22 3125,79 | 19,631 | +9,5105 | +9,5747 | +1,2929 | -9,3052 | 224 | +,028 | + ,06 |
| 102 | 1 | +5121 4,28 | 19,603 | +9,0334 | +9,8831 | ,2923 | ,3191 | 233 | +,012 | + ,03 |
| 103 | 3 | +25 2659,64 | 19,603 | +9,4800 | +9,6238 | ,2923 | ,3191 | 236 | +,013 | -, 06 |
| 104 | 3 | +51 1456,75 | 19,593 | +9,0334 | +9,8823 | ,2921 | ,3238 | 237 | +,021 | + ,04 |
| 105 | 3 | +2035 55,94 | 19,587 | +9,5198 | +9,5367 | ,2920 | ,3267 | 239 | +,026 | -, 10 |
| 106 | 2 | + 02828,19 | 19,587 | +9,6355 | +7,9308 | +1,2920 | $-9,3267$ | 240 | +,001 | - ,21 |
| 107 | 2 | +33 $\quad 3 \begin{aligned} & \text { 53,69 }\end{aligned}$ | 19,578 | +9,3927 | +9,7269 | ,2918 | ,3307 | 242 | +,008 | -, 17 |
| 108 | 2 | +11 912,34 | 19,577 | +9,5843 | +9,2775 | ,2917 | ,3313 | 244 | +,004 | -, 02 |
| 109 | 4 | +20 3059,30 | 19,572 | $+9,5185$ | +9,5347 | ,2916 | ,3336 | 245 | +,008 | -, 04 |
| 110 | 2 | +11 1428,09 | 19,566 | +9,5843 | +9,2804 | ,2915 | ,3365 | 247 | -,003 | -,03 |
| 111 | 2 | $+572840,80$ | 19,549 | +8,6721 | +9,9152 | $+1,2911$ | -9,3438 | 248 | +,022 | +,03 |
| 112 |  | - 0615,81 | 19,542 | +9,6375 | $-7,1517$ | ,2910 | ,3466 | 251 | +,005 | -, 32 |
| 113 | 2 | +20 2146,77 | 19,531 | +9,5172 | +9,5307 | ,2907 | ,3515 | 253 | +,010 | - ,06 |
| 114 | 3 | +10 1744,36 | 19,512 | +9,5866 | +9,2414 | ,2903 | ,3591 | 255 | +,012 | -, 15 |
| 115 | 3 | + 7 9 0,42 | 19,511 | +9,6042 | +9,0844 | ,2903 | ,3597 | 256 | +,004 | -,07 |
| 116 | 3 | +11 1138,48 | 19,510 | +9,5821 | +9,2708 | +1,2902 | -9,3602 | 257 | +,011 | + ,02 |
| 117 | 4 | + 5 52 59,12 | 19,458 | +9,6096 | +8,9991 | ,2891 | ,3801 | 269 | +,007 | -,03 |
| 118 | 4 | +610 11,51 | 19,436 | +9,6074 | +9,0189 | ,2886 | ,3877 | 271 | +,021 | -, 04 |
| 119 | 2 | +62 5332,75 | 19,430 | -8,3222 | +9,9360 | ,2885 | ,3902 | 272 | +,014 | -, 05 |
| 120 | 2 | +20 358,29 | 19,424 | +9,5038 | +9,5327 | ,2883 | ,3922 | 276 | +,005 | -,06 |
| 121 | 3 | + 423 3,91 | 19,414 | +9,6180 | $+8,8351$ | +1,2881 | -9,3957 | 281 | -,003 | -, 12 |
| 122 | 4 | +214017,07 | 19,412 | +9,4928 | +9,5537 | ,2881 | ,3961 | 282 | +,019 | + ,07 |
| 123 |  | -1038 | 19,396 | +9,6749 | -9,2511 | ,2877 | ,4015 | 288 |  |  |
| 124 | 4 | +19 1617,29 | 19,392 | +9,5145 | +9,5045 | ,2876 | ,4030 | 289 | +,905 | - ,08 |
| 125 | 3 | + 9148,53 | 19,360 | +9,5888 | +9,1817 | ,2869 | ,4130 | 297 | +,011 | -,08 |
| 126 | 4 | -42 2157,64 | 19,350 | +9,6964 | $-9,8130$ | +1,2867 | -9,4163 | 303 | -,005 | -, 15 |
| 127 | 3 | +22 1 52,60 | 19,344 | +9,4829 | +9,5591 | ,2865 | ,4181 | 302 | +,005 | + , 11 |
| 128 | 2 | +21428,32 | 19,342 | +9,4857 | +9,5527 | ,2865 | ,4186 |  | +,024 | -,04 |
| 129 | 3 | +64 8 6,49 | 19,306 | -8,7243 | +9,9379 | ,2857 | ,4292 | 312 | +,011 | - ,05 |
| 130 | 3 | + 84042,65 | 19,302 | +9,5888 | +9,1634 | ,2856 | ,4305 | 4 | +,010 | + ,24 |
| 131 | 4 | +215059,81 | 19,289 | +9,4800 | +9,5544 | +1,2853 | -9,4341 | 7 | +,006 | + , ,03 |
| 132 | 3 | +29 1132,53 | 19,262 | +9,3874 | +9,6712 | ,2847 | ,4417 | 11 | +,014 | -,12 |
| 133 | 3 | -36 4 38,72 | 19,234 | +9,7126 | -9,7518 | ,2841 | ,4490 | 18 | +,019 | -, 06 |
| 134 | 2 | + 64235,10 | 19,232 | +9,5999 | +9,0501 | ,2840 |  | 17 |  | + ,04 |
| 135 | 3 | +18 15 24,86 | 19,222 | +9,5092 | +9,4787 | ,2838 | ,4525 | 21 | +,017 | $+. .03$ |



| No. | $\begin{gathered} \text { No. } \\ \text { Obs. } \end{gathered}$ | Declination Jan. 1, 1836. | Annual <br> Precession. | Logarithms of |  |  |  |  | Annual P. M. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | $a^{\prime}$ | ${ }^{\prime}$ | $c^{\prime}$ | $d^{\prime}$ |  | A. R. | Decn. |
| 136 | 3 | $-84735,27$ | +19,210 | +9,6739 | -9,1646 | +1,2835 | -9,4555 | 22 | s. ,+ 021 +0. | $\begin{aligned} & ", 33 \\ & +, 3 \end{aligned}$ |
| 137 | 3 | + 6513,03 | +19,187 | +9,6021 | -9,0074 $+9,08$ | +1,28:30 | -9,4650 | 28 | +,0015 | + |
| 138 | 3 | +5645 52,91 | 19,180 | -7,6990 | +9,9034 | ,2828 | ,4630 | 27 | -,010 | +, ,07 |
| 139 | 4 | + 34753,16 | 19,142 | +9,6159 | +8,8051 | ,2×20 | ,4721 | 34 | +,016 | -, 05 |
| 140 | 2 | +57 20 37,10 | 19,119 | -8,2787 | +9,9048 | ,2815 | ,4773 | 35 | +,006 | + ,02 |
| 141 | 3 | +63 4833,40 | 19,103 | -8,9031 | +9,9322 | +1,2811 | -9,4805 | 39 | +,077 | -,01 |
| 142 | 4 | + 34719,45 | 19,100 | +9,6159 | +8,8004 | ,2810 | ,4817 | 42 | +,011 | -,07 |
| 143 | 4 | + 63356,93 | 19,100 | +9,5977 | +9,0384 | ,2810 | ,4817 | 43 | +,019 | +,02 |
| 144 | 4 | + 63737,19 | 19,084 | +9,5977 | +9,0424 | ,2807 | ,485:3 | 45 | +,022 | ,00 |
| 145 | 4 | + 51748,94 | 19,076 | +9,6064 | +8,9454 | ,2805 | ,4869 | 46 | +,013 | -,07 |
| 146 | 4 | +46 2515,83 | 19,050 | +8,8633 | $+9,8380$ | +1,2799 | -9,4927 | 49 | +,020 | + , 11 |
| 147 | 4 | + 423 30,12 | 19,004 | +9,6117 | +8,8634 | ,2788 | , 5022 | 54 | +,007 | -,11 |
| 148 | 4 | +42 17 2,66 | 18,980 | +9,0212 | +9,8045 | ,2783 | ,5071 | 61 | +,006 | +,03 |
| 149 | 4 | -44 27 49,99 | 18,970 | +9,7292 | -9,8214 | ,2781 | ,5089 | 65 | +,024 | + 02 |
| 150 | 4 | + 4274,63 | 18,964 | +9,6107 | +8,8674 | ,2779 | ,5101 | 64 | +,013 | -,07 |
| 151 | 4 | +33 43 39,18 | 18,923 | +9,2504 | +9,7197 | $+1,2770$ | -9,5181 | 70 | +,038 | -, 12 |
| 152 | 3 | -45 23 6,12 | 18,901 | +9,7340 | -9,8266 | ,2765 | ,5221 | 78 | ,000 | -, 04 |
| 153 | 4 | +50 57 17,48 | 18,897 | +8,1461 | +9,8647 | ,2764 | ,5228 | 71 | +,005 |  |
| 154 | 3 | + 7625,19 | 18,833 | +9,5899 | +9,0670 | ,2749 | ,5344 | 87 | +,009 | + ,02 |
| 155 | 5 | +24 2525,33 | 18,816 | +9,4031 | +9,5895 | ,2745 | ,5372 | 90 | +,013 | -,02 |
| 156 | 4 | +69 10 15,07 | 18,812 | -9,2253 | +9,9432 | +1,2744 | -9,5378 | 86 | +,025 | -, 02 |
| 157 | 3 | +31 20 20,36 | 18,793 | +9,2787 | +9,6884 | ,2740 | ,5413 | 93 | +,012 | + |
| 158 |  | +3623 38,96 | 18,678 | +9,1271 | +9,7429 | ,2713 | ,5595 | 104 | +,007 | + ,07 |
| 159 | 8 | +1143 1,83 | 18,638 | +9,5428 | +9,2766 | ,2703 | ,5660 | 112 | $+, 012$ | -,04 |
| 160 | 4 | + 72557,36 | 18,633 | +9,58:21 | +9,0811 | ,2703 | ,5663 | 114 | +,005 | -,04 |
| 161 | 4 | +472829,98 | 18,615 | +8,3010 | +9,8355 | +1,2698 | -9,5692 | 115 | +,013 | -, 03 |
| 162 | 4 | +473422,85 | 18,587 | +8,2304 | +9,8355 | ,2692 | ,5733 | 121 | +,029 | +,05 |
| 163 | 4 | +111425,10 | 18,547 | +9,5465 | $+9,2572$ | ,2683 | ,5788 | 128 | +,027 | + , 02 |
| 164 | 4 | $+255116,96$ <br> +15472761 | 18,531 18,497 | $+9,7459$ $+9,4955$ | $+9,6052$ $+9,4006$ | ,2679 | , 5810 | 134 | ,+ 028 ,+ 006 | - ,02 |
| 165 | 4 | +154727,61 | 18,497 | +9,4955 | +9,4006 | ,2671 | ,5856 | 135 | +,006 | -,06 |
| 166 | 2 | +59 4253,84 | 18,455 | $-9,0719$ | +9,9005 | +1,2661 | -9,5913 | 139 | +,031 | - ,09 |
| 167 | 3 | +24 54 49,94 | 18,434 | +9,3598 | +9,5886 | ,2657 | ,5937 | 145 | +,011 | -,09 |
| 168 | 3 | -38 1820,43 | 18,427 | +9,7672 | -9,7550 | ,2655 | ,5948 | 147 | +,008 | + , ,17 |
| 169 | 4 | + 81425,08 | 18,417 | +9,5705 | $+9,1209$ +9898 | ,2652 | ,5963 | 149 | ,+ 006 ,+ 032 | $\begin{array}{r}\text { + } \\ +, 01 \\ \hline, 05\end{array}$ |
| 170 | 3 | $+593620,65$ | 18,411 | -9,0864 | +9,8989 | ,2651 | ,5969 | 46 | +,032 | -,05 |
| 171 | 2 | -22 33 3,45 | 18,395 | $\underline{+9,7427}$ | -9,5462 | +1,2647 | -9,5989 | 153 | +,,019 | -,08 |
| 172 | 2 | +49 46 56,58 | 18,388 | -8,3802 | +9,8455 | ,2645 | ,5998 | 152 | +,027 | -, 20 |
| 173 | 5 | +19 1449,21 | 18,305 | +9,4425 | +9,4744 | ,2626 | ,61999 | 161 | +,006 | -, 01 |
| 174 | 3 | +81 8131,49 | 18,291 | -9,5276 | $+9,9551$ $+9,1945$ | ,2622 | ,6116 | 155 | +,137 | + 116 |
| 175 | 4 | $\begin{array}{lll}+10 & 1 & 14,93\end{array}$ | 18,214 | +9,5490 | +9,1995 | ,2604 | ,6205 | 169 | +,009 | -, 15 |
| 176 | 3 | +31 5124,39 | 18,183 | +9,1673 | +9,6803 | +1,2597 | -9,6240 | 171 | -,010 | +,36 |
| 177 | 4 | +1612 1,83, | 18,178 | +9,4757 | +9,4036 | ,2595 | ,6246 | 174 | +,001 | + 08 |
| 178 | 4 | +54 2353,76 | 18,163 | -8,9590 | +9,8674 | ,2592 | ,626:2 | $173$ | +,020 | -, 116 |
| 179 180 | 4 4 | $\begin{array}{llr}-27 & 4 & 22,80 \\ -11 & 31 & 2,54\end{array}$ | $1 \times 118$ 18,108 | $+9,7634$ $+9,7076$ | - 9,6139 $-9,2556$ | ,2581 <br> 2579 |  |  | +,00; | $1 \pm$ |
|  | 4 | -11 312,54 |  | +9,7076 | -9,2556 |  |  |  |  |  |



| No. | No. Obs. | Declination <br> Jan. 1, 1836. | Annual <br> Precession. | Logarithms of |  |  |  |  | Annual P. M. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | 8 | $c^{\prime}$ | $d^{\prime}$ |  | A. R. | Decn. |
|  |  | + |  |  |  |  |  |  |  | " |
| 181 | 4 | $+31851,23$ | +18,040 | +9,6107 | +8,7187 | +1,2562 | -9,6395 | 189 | +,005 | ,00 |
| 182 | 4 | + 959444,00 | 18,033 | +9,5453 | +9,1944 | ,2560 | ,6403 | 191 | +,011 | - ,22 |
| 183 | 2 | +182932,36 | 17,987 | +9,4330 | +9,4548 | ,2549 | ,6447 | 196 | +,007 | + ,15 |
| 184 | 4 | +75 852,66 | 17,945 | -9,5051 | +9,9373 | ,2539 | ,6488 | 195 | +,037 | -, 07 |
| 185 | 4 | +46 1730,49 | 17,859 | -8,4472 | $+9,8091$ | ,2518 | ,6570 | 207 | +,005 | +,09 |
| 186 | 4 | + 6715,70 | 17,706 | +9,5821 | +8,9761 | $+1,2481$ | -9,6709 | 227 | +,008 | +,05 |
| 187 | 4 | + 33527,02 | 17,695 | +9,6053 | +8,7458 | ,2478 | ,6718 | 228 | ,000 | + ,03 |
| 188 | 4 | +63 3533,51 | 17,647 | -9,3655 | +9,8969 | ,2467 | ,6759 | 230 | +,009 | + ,06 |
| 189 | 4 | + 7418,39 | 17,639 | +9,5705 | +9,0365 | ,2465 | ,6766 | 234 | +,,021 | -, 08 |
| 190 | 2 | +4132 26,99 | 17,612 | +7,9031 | +9,7657 | ,2458 | ,6789 | 237 | +,017 | -, 08 |
| 191 | 3 | $\begin{array}{lll}+25 & 7 & 40,17\end{array}$ | 17,562 | +9,2742 | $+9,5710$ | +1,2446 | -9,6830 | 245 | +,014 | - ,17 |
| 192 | 4 | - 5725,14 | 17,556 | +9,6767 | -8,8914 | ,2445 | ,6835 | 246 | +,018 | -, 07 |
| 193 | 4 | + 8340,93 | 17,396 | +9,5563 | +9,0865 | ,2404 | ,6961 | 258 | +,014 | ,00 |
| 194 | 4 | +53 3256,16 | 17,387 | $-9,1523$ | +9,8438 | ,2402 | ,6968 | 255 | +,035 | -, 14 |
| 195 | 5 | + 846,01 | 17,367 | +9,5563 | +9,0858 | ,2397 | ,6983 | 261 | +,011 | -, 10 |
| 196 | 4 | -3 635,54 | 17,311 | +9,6628 | -8,6694 | +1,2383 | -9,7024 | 265 | +,001 | -, 02 |
| 197 | 4 | +20 $36 \quad 2,97$ | 17,252 | +9,3560 | +9,4815 | ,2368 | ,7067 | 1 | +,031 | + ,02 |
| 198 | 4 | +19 252,21 | 17,177 | +9,3838 | +9,4471 | ,2350 | ,7120 | 12 | +,007 | - ,08 |
| 199 | 4 | - 3955,97 | 17,154 | +9,6637 | -8,6723 | ,2343 | ,7137 | 17 | +,028 | - ,08 |
| 200 | 4 | $+33049,38$ | 17,147 | +9,6031 | +8,7220 | ,2342 | ,7141 | 19 | +,009 | -,02 |
| 201 | 2 | +56 1542,10 | 17,108 | -9,2833 | $+9,8512$ | +1,2332 | -9,7168 | 21 | +,013 | + ,03 |
| 202 | 3 | -3 48 4,41 | 17,108 | +9,6693 | $-8,7507$ | ,2332 | ,7168 | 26 | +,013 | + ,05 |
| 203 | 4 | +56 $17 \quad 17,27$ | 17,102 | -9,2856 | +9,8511 | ,2330 | ,7173 | 22 | $+, 014$ | + , ,11 |
| 204 | 4 | $\begin{array}{lll}+ \\ +48 & 6 & 40,02\end{array}$ | 17,084 | -8,9956 | +9,8026 | ,2326 | ,7185 | 25 | +,017 | -,01 |
| 205 | 2 | +5715 19,79 | 17,078 | -9,3117 | $+9,8553$ | ,2324 | ,7189 | 24 | +,002 | + ,03 |
| 206 | 4 | + 05431,15 | 17,074 | +9,6284 | +8,1422 | +1,2323 | -9,7193 | 31 | +,014 | -, 05 |
| 207 | 3 | +5622 23,96 | 17,005 | -9,3032 | +9,8491 | ,2305 | ,7238 | 35 | +,002 | + , 10 |
| 208 | 3 | $+27592,02$ | 16,992 | +9,1271 | +9,5999 | ,2302 | ,7246 | 38 | +,028 | + , 29 |
| 209 | 4 | +2759 2,42 | 16,994 | +9,1271 | +9,5999 | ,2302 | ,7246 | 39 | +,019 | - ,09 |
| 210 | 3 | + 12826,94 | 16,988 | +9,6232 | +8,3461 | ,2301 | ,7248 | 40 | +,009 | + ,07 |
| 211 | 2 | $-3406,08$ | 16,964 | +9,6693 | -8,7314 | +1,2295 | -9,7264 | 44 | +,009 | + ,03 |
| 212 | 4 | + 43541,79 | 16,954 | +9,5911 | +8,8330 | ,2293 | ,7270 | 45 | +,019 | - , 12 |
| 213 | 3 | -41 50 7,81 | 16,954 | +9,8319 | -9,7512 | ,2292 | ,7272 | 50 | -,009 | + ,03 |
| 214 | 2 | -72031,50 | 16,951 | +9,6972 | $-9,0322$ | ,2292 | ,727\% | 48 | -,004 | + ,03 |
| 215 | 6 | $-34328,35$ | 16,842 | +9,6702 | -8,7341 | ,2263 | ,7343 | 57 |  | -,17 |
| 216 | 4 | +40 4338,09 | 16,765 | -8,4624 | +9,7372 | +1,2244 | -9,7388 | 62 | +,040 | -, 01 |
| 217 | 4 | + 65954,75 | 16,758 | +9,5611 | +9,0092 | ,2242 | ,7392 | 63 | +,002 | + ,07 |
| 218 | 4 | - 34247,68 | 16,732 | +9,6712 | -8,7314 | ,2236 | ,7407 | 67 | +,001 | + ,07 |
| 219 | 4 | - 16614,24 | 16,734 | +9,6474 | $-8,1983$ | ,2237 | ,7405 | 66 | +,008 | -, 14 |
| 220 | 4 | + 01255,87 | 16,732 | +9,6355 | +7,5315 | ,2236 | ,7407 | 68 | +,007 | -, 13 |
| 221 | 4 | +29 8 8,31 | 16,610 | +9,0253 | +9,6062 | +1,2204 | -9,7479 | 74 | +,014 | -,05 |
| 222 | 4 | - 0632,94 | 16,571 | +9,6385 | -7,0801 | ,2193 | ,7502 | 81 | +,016 | -, 21 |
| 223 | 4 | +5148 26,73 | 16,561 | -9,2430 | +9,8127 | ,2191 | ,7507 | 78 | +,010 | + ,04 |
| 224 | 4 | + 94535,10 | 16,561 | $+9,5211$ | +9,1474 | ,2191 | ,7507 | 82 | +,016 | -,17 |
| 225 | 4 | + 95415,81 | 16,537 | +9,5185 | +9,1533 | ,2185 | ,7520 | 83 | +,008 | -,34 |



| No． | $\begin{aligned} & \text { No. } \\ & \text { Obs. } \end{aligned}$ | Declination Jan．1， 1836. | Annual <br> Preces－ sion． | Logarithms of |  |  |  | $\begin{aligned} & \dot{\Delta} \\ & \text { 艺 } \\ & \text { 感 } \\ & \hline \end{aligned}$ | Annual P．M． |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | ${ }^{\prime}$ |  |  | $d^{\prime}$ |  | A．R． | Deen． |
|  |  | ${ }^{\circ}{ }^{\prime}{ }^{\prime \prime}{ }^{\prime \prime}$ |  |  |  |  |  |  |  | 2 |
| 227 | 4 | $\begin{array}{r}+29 \\ +28 \\ +28 \\ \hline\end{array}$ | $+16,477$ 16,452 | 9，0086 9,0128 | ＋9，6026 | ＋1，2169 | ，75 | 89 92 |  | －0，04 |
| 228 | 4 | ＋33 56533,69 | 16，295 | 8，5401 | 9，6572 | ，21：20 | ，7652 | 103 | ＋，008 |  |
| 22 | 3 | ＋61347，29 | 16，188 | 9，5647 | 8，944 | ，2092 | ，7706 | 111 | ＋，030 | ＋，，11 |
| 230 | 4 | ＋34 0 13，33 | 16，140 | 8，4314 | 9，6527 | ，2070 | ，7747 | 117 | ＋，035 |  |
| 231 | 4 | ＋49 45 22，00 | 16，039 | －－9 | ＋9，7861 | 1，2052 | 9，7779 | 119 | 007 | ，17 |
| 234 | 4 | － 410 43，13 | 15，0，32 | ＋9，6785 | －8，7644 | ，2051 | ，7781 | 127 | ， 16 | ，04 |
| 233 | 4. | ＋1133 12，77 | 15，948 | ＋9，4829 | ＋9，2028 | ，2027 | ，7823 | $1: 3$ | ，024 | ＋，04 |
| 234 | 2 | ＋4850 51，86 | 15，926 | －9，2355 | ＋9，7770 | ，2021 | ，7833 | 133 | ，024 | ＋，02 |
| 235 | 4 | －12 2734,61 | 15，819 | ＋9，7451 | －9，2302 | ，1991 | ，7884 | 1.45 | ，013 |  |
| 236 | 4 | ＋ 52149,08 | 15，754 | ＋9，5729 | ＋8，8677 | 1，1974 | 9，7911 | 151 | ＋，002 | ，06 |
| 2：37 | 5 | ＋284547，06 | 15，625 | ＋8，8921 | 9，5744 | ，1938 | ，7968 | 160 | ，007 |  |
| 238 | 2 | ＋272，94 | 15，602 | ＋4，6138 | 8，4621 | ，1932 | ，7978 | 163 | ，00 | ，05 |
| 2：39 | 4 | ＋ 45730,15 | 15，569 | ＋9，5775 | 8，8291 | ，1923 | ，7992 | 165 | ，016 | $\ldots$ |
| 240 | 4 | ＋50 5130,43 | 15，525 | －9，3365 | 9，7787 | ，1909 | ，8013 | 169 | ，004 | ＋，04 |
| 241 | 2 | ＋ 410001 | 15，525 | ＋9，5899 | ＋8，7362 | 1，1910 | －9，8010 | 171 | ＋，016 | －， 04 |
| 242 | 2 | ＋4829 35，28 | 15，470 | －9，2765 | 9，7621 | ，1895 | ，8034 | 172 | ，013 |  |
| 243 |  | ＋． 45355,45 | 15，4．1 | ＋9，5775 | 8，8207 | ，1897 | ，8030 | 174 | ，023 |  |
| 244 | 3 | ＋1134 9，04 | 15，459 | ＋9，4728 | 9，1904 | ，1891 | ，8040 | 177 | ，019 | ＋，01 |
| 245 | 4 | ＋51 3550,55 | 15，341 | －9，3674 | 9，7796 | ，1873 | ，8066 | 180 | ，006 |  |
| 245 | 4 | －38 216,63 | 15，320 | ＋9，8686 | $-9,6728$ | 1，1853 | 9，8094 | 187 | ＋，025 | ，01 |
| 247 | 5 | ＋51316，60 | 15，309 | －9，3711 | ＋，7767 | ，1849 | ，8099 | 184 | ，021 |  |
| 248 | 4 | －33 3 46，08 | 15，207 | ＋9，8567 | －， 6164 | ，1820 | ，8139 | 196 | ，007 | ，24 |
| 24.9 | 4 | －31 29 54，32 | 15，20：3 | $+9,8513$ | －，, 5976 | ，1819 | ，8140 | 197 | ，004 | ＋，04 |
| 250 | 5 | －93123，11 | 15，030 | $+9,7300$ | －，0926 | ，1770 | ，8205 | 209 | ，004 | －， 07 |
| 2.51 | 6 | ＋60 3731,65 | 14，947 | －9，5658 | ＋9，8128 | ＋1，1745 | 9，8237 | 211 | ＋，012 | ＋，09 |
| 25. | 2 | ＋514140，02 | 14，805 | －9，4150 | ＋，7633 | ，1704 | ，8287 | $22 \cdot 3$ | －，006 | ＋，10 |
| 253 | 4 | ＋3728 25，27 | 14，772 | －8，8261 | ＋， 6520 | ，1695 | ，8298 | 223 | －，006 | －，05 |
| 254 | 4 | ＋35 2738,65 | 14，702 | －8，6232 | ＋，6292 | ，1674 | ， 83323 | 227 | ＋，002 |  |
| 255 | 4 | －40 57 F2，78 | 14，647 | ＋9，8893 | －，6803 | ，1657 | ，8342 | 239 | －， 007 | ＋，04 |
| 256 | 4 | －33 9 47，02 | 14，595 | ＋9，8681 | $-0,6001$ | ＋1，1642 | －9，8359 | 243 |  |  |
| 257 | 4 | ＋19 13 37，17 | 1．4，157 | ＋9，4：377 | ＋，1751 | ，1509 | ，8500 | 263 | ＋，013 | －，08 |
| 258 | 4 | ＋163756，72 | 14，132 | ＋9，3234 | ＋ | ， 1502 | ，8507 | 266 | ，010 | －， 02 |
| 259 | 3 | +47 + + | 1．4，032 | －9，3074 | $+\quad, 7126$ $+\quad, 7131$ | ，1470 | ，8539 | 268 | ，000 | 二， 14 |
| 260 | 4 | $+473315,82$ | 14，032 | －9，3642 | ＋，7131 | ，1470 | ，8539 | 269 | , 008 $+\quad, 001$ | －， 02 $-\quad 07$ |
| 261 | 2 | ＋65 226,76 | 13，948 | $-9,6702$ <br> $+9 \times 669$ | $\begin{array}{r}+9,8001 \\ -\quad 5354 \\ \hline, 539\end{array}$ | 1,1445 +1415 | $-9,8562$ | 10 |  | 二 |
| 262 | 4 |  | 13,452 13,822 | $+9,8669$ $+8,1461$ | － | ，1415 | $\begin{aligned} & 8590 \\ & \hline, 8598 \end{aligned}$ | 10 | 二，001 | 二， 10 |
| 263 | 4 | $+295623,31$ +165752.28 +18285 | 13 | $+8,1461$ $+9,3032$ | ＋ $+\quad, 369$ $+\quad, 2989$ | ，1353 | ，8645 | 21 | ＋，015 | ＋，06 |
| 264 | 4 |  | 13,657 13,498 | $+9,3032$ $+9,2480$ | $+\quad, 2989$ $+\quad, 3298$ | ，1353 | ，8688 | 33 | ，012 | ＋ |
| 265 | 6 | ＋18 2832,25 | 13，498 | $+9,2480$ $+9,1643$ | ,+ 3298 $+9,3633$ |  |  |  |  |  |
| 266 |  | $\begin{array}{r}+2022 \\ +49 \\ +48 \\ \hline\end{array}$ | $\begin{aligned} & 13,278 \\ & 13,132 \end{aligned}$ | $\begin{array}{r} +9,1643 \\ { }_{-9,4579} \end{array}$ | $\begin{array}{r} +9,3633 \\ \mathbf{6} 5445 \end{array}$ | $\begin{array}{r} +1,1231 \\ , 1183 \end{array}$ | $\begin{array}{r} -9,8747 \\ \hline 8782 \end{array}$ | 52 | $\begin{array}{r} +, 000 \\ -, 002 \end{array}$ | － |
| 267 268 268 | 2 1 1 |  | 13,132 <br> 13,101 | $-9,4579$ $-9,4456$ | $\begin{aligned} & , 6945 \\ & , 6898 \end{aligned}$ | ，1173 | ，8790 | 5 | ＋，008 | －，09 |
| 269 | 4 | ＋54 4757,10 | 13，017 | －9，5694 | ，7249 | ，1145 | ，8810 | － 58 | ＋，023 |  |
| 270 | 2 | ＋－47 2413,98 | 12，977 | －－9，4265 | ，6783 | ，1132 | ，8820 | 61 | ＋，023 | ，10 |



| No. | No.Obs. | Declination Jan. J, 1836. | Annual <br> Precession. | Logarithms of |  |  |  |  | Annual P. M. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | $a^{\prime}$ | $b^{\prime}$ |  | $d^{\prime}$ |  | A. R. | Decn. |
|  |  |  |  |  |  |  |  |  | $\stackrel{\text { s. }}{ }$ |  |
| 317 | 4 | -10 3613,10 | $+9,651$ 9,625 | $+9,732$ $+9,4232$ | -8,7836 $+8,9468$ | +0,9846 | -9,9427 | 15 | ,+ 024 ,+ 010 | $\begin{array}{r}+0,06 \\ -, 10 \\ \hline\end{array}$ |
| 318 | 4 | + 54710,52 | 9,492 | +9,5353 | +8,6799 | ,9774 | ,9448 | 24 | -,001 | - , 29 |
| 319 | 5 | + 64451,33 | 9,430 | +9,5145 | +8,7440 | ,9748 | ,9456 | 28 | +,009 | -, 07 |
| 320 | 3 | +50 2731,31 | 9,068 | -9,6149 | +9,5428 | ,9575 | ,9503 | 44 | +,018 | +,17 |
| 321 | 4 | - 019 25,37 | 9,048 | +9,6425 | -7,3973 | +0,9568 | -9,9505 | 52 | +,014 | -,02 |
| 322 | 2 | -44 40 3,36 | 8,928 | +9,9722 | -9,4956 | ,9507 | ,9520 | 65 | +,022 | -, 38 |
| 323 | 4 | +21532,03 | 8,723 | +8,9085 | +9,1953 | ,9407 | ,9544 | 76 | +,018 | + ,04 |
| 324 | 4 | +80 124,43 | 8,608 | -9,9117 | +9,6265 | ,9349 | ,9557 | 59 | +,022 | -, 08 |
| 325 | 4 | +21 1456,21 | 8,587 | +8,8808 | +9,1914 | ,9338 | ,9560 | 82 | +,019 | + ,09 |
| 326 | 3 | +15 5546,11 | 8,534 | +9,2253 | +9,0682 | +0,9311 | -9,9566 | 86 | +,009 | + , 07 |
| 327 | 4 | +80 19 15,02 | 8,375 | -9,9154 | +9,6148 | ,9230 | ,9583 | 77 | $+0,032$ | -, 11 |
| 328 |  | +1419 | 8,301 | +9,2878 | +9,0113 | ,9191 | ,9591 | 106 | +,010 |  |
| 329 | 4 | +42 4357,80 | 8,248 | -9,4757 | +9,4461 | ,9163 | ,9597 | 107 | -,008 | -, 0:3 |
| 330 | 4 | +19 3728,03 | 7,965 | +9,0043 | +9,1256 | ,9012 | ,9627 | 119 | +,011 | -, 07 |
| 331 | 3 | + 94934,73 | 7,928 | +9,4330 | +8,8311 | +0,8999 | -9,9630 | 127 | +,006 | --, 16 |
| 332 | 4 | - 8386 6,83 | 7,858 | 9,7536 | -8,7698 | ,8953 | ,9638 | 131 | +,001 | +,02 |
| - 33 | , | - 84547,06 | 7,713 | 9,7551 | -8,7683 | ,8872 | ,9652 | 141 | +,005 | + , 18 |
| 334 | 4 | - 25849,90 | 7,697 | 9,6821 | -8,2983 | ,8863 | ,9653 | 142 | +,006 | + ,07 |
| 335 | 4 | -31 3111,00 | 7,616 | 9,9289 | -9,2920 | ,8817 | ,9661 | 151 | -,010 | -,04 |
| 336 |  | -833 | 7,579 | +9,7536 | -8,7498 | +0,8796 | -9,9665 | 152 | -,004 |  |
| 337 | 2 | -12 27 10,10 | 7,557 | 9,7945 | -8,9094 | ,8783 | ,9667 | 154 | +,012 | +,02 |
| 338 | 3 | -31 44 31,85 | 7,541 | 9,9325 | -9,2964 | ,8774 | ,9669 | 156 | +,008 | + ,04 |
| 339 | 2 | +22 3715,56 | 7,460 | 8,6335 | +9,1560 | ,8727 | ,9676 | 158 | --,001 | -,08 |
| 340 | 4 | -23 29333,58 | 7,215 | 9,8865 | -9,1567 | ,8583 | ,9699 | 171 | +,014 | + ,06 |
| 341 | 3 | - 9629,35 | 7,188 | +9,7604 | -8,7537 | +0,8566 | -9,9701 | 173 | -, ,010 | + ,04 |
| 342 | 2 | - 32841,50 | 7,172 | 9,6893 | -8,33.52 | ,8556 | ,9702 | 174 | +,023 | + ,03 |
| 343 | 4 | +18 2937,46 | 7,123 | 9,0607 | +9,0522 | ,8527 | ,9707 | 177 | +,002 | -,01 |
| 344 | 4 | -28 15 22,07 | 7,014 | 9,9164 | --9,2191 | ,8460 | ,9716 | 188 | +,014 | + ,08 |
| 345 | 4 | -21 3519,32 | 7,003 | 9,8745 | -9,1090 | ,8453 | ,9717 | 186 | +,016 | + ,03 |
| 346 | 3 | +66 -9 1,11 | 6,976 | -9,8338 | +9,5028 | +0,8436 | -9,9720 | 180 | -,037 | ,00 |
| 347 | 3 | +15 3545,34 | 6,828 | +9,2175 | +8,9624 | ,8343 | ,9732 | 194 | +,026 | -, 01 |
| 34 | 4 | +6730 1,61 | 6,746 | -9,8476 | +9,4927 | ,8290 | ,9739 | 193 | -,009 | + ,06 |
| 349 | , | + 63936,84 | 6,718 | $+9,5079$ | $+8,5901$ | ,8272 | ,9741. | 205 | +,012 | + ,09 |
| 350 | 3 | -35 22 46,52 | 6,580 | +9,9542 | $-9,2788$ | ,8183 | ,9752 | 220 | +,019 | + ,03 |
| 351 | 3 | - 53932,89 | 6,542 | +9,7202 | $-8,5070$ | $+0,8157$ | -9,9755 | 219 | +,023 | -, 01 |
| 352 | 3 | -35 2312,90 | 6,520 | +9,9547 | --9,2748 | ,8142 | ,9757 | 223 | +,030 | + ,01 |
| 353 | 2 | +7350 27,53 | 6,324 | -9,8976 | +9,4817 | ,8010 | ,9772 | 218 | -,030 | -,03 |
| 354 | 4 | - 32952,83 | 6,321 | +9,6911 | $-8,2845$ | ,8008 | ,9772 | 238 | +,017 | + ,08 |
| 355 | 4 | +65 1838,30 | 6,293 | -9,8338 | +9,4554 | ,7989 | ,9775 | 225 | -,006 | -,06 |
| 356 | 4 | - 53523,97 | 6,177 | +9,7202 | -8,4769 | +0,7908 | -9,9783 | 248 | +,012 | -,08 |
| 357 | 2 | + 3116,02 | 6,144 | +9,5821 | +8,2101 | ,7884 | ,9786 | 249 | +,020 | + ,03 |
| 358 | 4 | +60 1015,31 | 6,100 | -9,7853 | +9,4216 | ,7853 | ,9789 | 242 | -,013 +015 | 20 |
| 359 360 | 4 1 | $+112458,22$ $+\quad 141729,19$ | 6,044 6,038 | $+9,6128$ $+9,2672$ | $+7,8724$ $+8,8716$ | , 7813 , 7809 | ,9793 | 258 | ,+ 015 ,+ 014 |  |
|  |  |  |  |  |  |  |  |  |  |  |



| No. | No.Obs. | Declination Jan. 1, 1836. | Annual <br> Precession. | Logarithms of |  |  |  |  | Annual P. M. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | $6^{\prime}$ | $c^{\prime}$ | $d^{\prime}$ |  | A. R. | Decn. |
|  |  |  |  |  |  |  |  |  |  |  |
| 362 | ${ }_{2}^{4 .}$ | $\begin{array}{r}+10810,37 \\ +\quad 92648,70 \\ \hline\end{array}$ | $+5,927$ 5,899 | $+9,4133$ 9,4330 | $+8,7169$ $+8,6842$ | $\begin{array}{r}+0,7728 \\ \hline, 7708\end{array}$ | ,9803 | 265 | ,022 | , 12 |
| 363 | 4 | -18 3 44,48 | 5,888 | 9,8506 | -8,9591 | ,7700 | ,9804 | 268 | +,,011 | + , ,05 |
| 364 | 4 | + 048 9,45 | 5,721 | 9,6232 | +7,6094 | ,7574 | ,9815 | 277 | +,021 | + ,09 |
| 365 | 4 | + 12151,71 | 5,715 | 9,6138 | +7,8378 | ,7570 | ,9816 | 279 | -,001 | - ,20 |
| 366 | 4 | -20 1746,51 | 5,653 | +9,8692 | -8,9902 | +0,7523 | -9,9820 | 285 | +,012 | - , 04 |
| 367 | 4 | + 61143,28 | 5,340 | +9,5145 | +8,4589 | ,7275 | ,9840 | 299 | +,0:34 | -, 01 |
| 368 | 4 | - 52326,16 | 5,272 | +9,7177 | -8,3923 | ,7220 | ,9844 | 306 | +,023 | -,16 |
| 369 | 4 | +464341,56 | 5,200 | -9,6085 | +9,2766 | ,7164 | ,9848 | 301 | +,013 | + ,17 |
| 370 | 3 | - 4352,09 | 5,001 | +9,7007 | -8,2479 | ,6991 | ,9860 | 2 | +,007 | ,00 |
| 371 | 4 | -11 5130,74 | 4,928 | +9,7952 | -8,7032 | +0,6927 | -9,9865 | 4 | +,025 | -, 01 |
| 372 | 4 | +78 749,21 | 4,866 | -9,9345 | +9,3758 | ,6872 | ,9868 | 311 | +,(1).9 | +,05 |
| 373 | 4 | +7748 24,75 | 4,776 | -9,9330 | +9,3671 | ,6790 | ,9873 | 317 | +,010 | - ,02 |
| 374 | 4 | -815 54,98 | 4,741 | +9,7543 | --8,5308 | ,6759 | ,4875 | 12 | +,030 | +,03 |
| 375 | 4 | - 82046,09 | 4,690 | +9,7559 | $-8,5304$ | ,6712 | ,9878 | 15 | +,012 | +,04 |
| 376 | 4 | +1815 0,00 | 4,565 | +9,0294 | +8,8533 | +0,6595 | -9,9884 | 20 | +,017 | +,10 |
| 377 | 4 | - 65951,23 | 4,560 | 9,7396 | $-9,4418$ | ,6589 | ,9885 | 24 | +,002 | + ,08 |
| 378 | 4 | +195653,04 | 4,503 | 8,8751 | +8,8849 | ,6535 | ,9887 | 25 | +,,006 | -, 14 |
| 379 | 4 | -36 lll 3 l,76 | 4,497 | 9,9657 | $-9,1202$ | ,6530 | ,9888 | 30 | +,006 | -, ,04 |
| 380 | 4 | -27 9 21,86 | 4,492 | 9,9196 | -9,0097 | ,6524 | ,9888 | 29 | +,007 | +,10 |
| 381 | 2 | +33 4814,12 | 4,435 | -9,2601 | +9,0904 | +0,6469 | -9,9891 | 27 | +,002 | -,01 |
| 322 | 4 | -7 7 21,38 | 4,406 | +9,7419 | -8,4352 | ,6441 | ,9892 | 33 | +,007 | -,08 |
| 383 | 5 | +13 2313,12 | 4,350 | +9,2923 | +8,7015 | ,6384 | ,9895 | 38 | -,007 | -,02 |
| 384 | 6 | +1322 23,49 | 4,247 | +9,2923 | +8,6901 | ,6281 | ,9900 | 46 | +,008 | -,08 |
| 385 | 3 | + 22033,34 | 4,213 | +9,5955 | +7,9354 | ,6246 | ,9902 | 49 | +,015 | -,07 |
| 386 |  | +281814,44 | 4,087 | $-8,9138$ | +8,9853 | +0,6114 | -9,9908 | 53 | +,015 | +,04 |
| 387 | 3 | +571842,32 | 4,065 | -9,7708 | +9,2322 | ,6090 | ,9909 | 50 | +,006 | + ,06 |
| 388 | 4 | + 1739,25 | 3,928 | +9,6180 | +7,5883 | ,5941 | ,9915 | 67 | +,018 | + ,07 |
| 389 | 4 | + 32138,10 | 3,813 | +9,5740 | +8,0481 | ,5813 | ,9920 | 73 | +,007 | +,08 |
| 390 | 4 | - 23914,63 | 3,773 | +9,6794 | -7,9397 | ,5767 | ,9922 | 82 | -,050 | ,00 |
| 391 | 4 | +1150,81 | 3,756 | +9,6191 | +7,5288 | +0,5747 | -9,9922 | 83 | +,013 | 00 |
| 392 | 4 | + 1468855 | 3,744 | 9,6053 | +7,7644 | ,5734 | ,9923 | 84 | -,001 | -,03 |
| 39 | 4 | +15 5335,53 | 3,624 | 9,1703 | +8,6949 | ,5592 | ,,9928 | 89 | +,012 | + |
| 394 | 3 | -13 16 48,16 | 3,624 | 9,8116 | -8,6180 | ,5592 | ,9928 | 93 | +,009 | -,06 |
| 395 | 3 | $\begin{array}{llll}-13 & 3 & 13,86\end{array}$ | 3,590 | 9,8096 | -8,6068 | ,5550 | ,9929 | 96 | $+, 007$ | + ,28 |
| 396 | 4 | +2017 59,52 | 3,526 | +8,8129 | +8,7859 | +0,5473 | -9,9932 | 100 | +,012 | -, 17 |
| 397 |  | - 82812,90 | 3,475 | 9,7589 | -8,4061 | ,5409 | ,9934 | 104 | +,006 | +,06 |
| 398 | 4 | +22 2414,29 | 3,429 | 8,4150 | +8,8142 | ,5351 | ,9935 | 105 | +,006 | +,06 |
| 399 | 3 | - 83057,11 | 3,394 | 9,7597 | -8,3993 | ,5307 | ,99337 | 109 | +,018 | + ,09 |
| 400 | 4 | - 11929,84 | 3,354 | 9,6599 | -7,5849 | ,5256 | ,9938 | 110 | +,020 | -,17 |
| 401 | 4 | - 05613,40 | 3,348 | +9,6532 | -7,4269 | $+0,5248$ | -9,9938 | 111 | +, 010 | -, 07 |
| 402 | 4 | +26 5113,49 | 3,268 | -8,7634 | +8,8671 | ,5143 | ,99:88 | 115 | +,011 | +.,08 |
| 403 | 4 | + 31316,87 | 3,251 | +9,5775 | +7,9590 | ,5120 | ,9942 | 121 | +, 004 | -,05 |
| 404 | 3 | +541831,16 | 3,181 | $-9,7551$ | +9,1157 | ,5026 | ,9945 | 117 | -,035 | -.,05 |
| 405 | 4 | +26 5127,37 | 3,049 | -8,7781 | +8,8372 | ,4842 | ,9949 | 131 | +,013 | ,00 |



| No. | $\begin{gathered} \mathrm{No.} \\ \mathrm{Obs} . \end{gathered}$ | Declination Jan. 1, 1836. | Annual <br> Precession. | Logarithms of |  |  |  |  | Annual P. M. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  | $c^{\prime}$ | $d^{\prime}$ |  | A. R. | Decn. |
| 40 | 4 | +6130 20,19 | +2,795 | -9,8215 | +9,0884 | +0,4464 | -9,9957 | 143 | -,023 | 11 |
| 407 | 4 | +53 2414,80 | 2,755 | -9,7292 | +9,0428 | -4401 | -,9959 | 146 | +,011 | ,51 |
| 408 | 3 | +3247 54,55 | 2,576 | -9,2355 | +8,8307 | ,4109 | ,9964. | 168 | +,016 | -,,08 |
| 409 | 4 | + 4 - 217,88 | 2,570 | +9,5599 | +7,9569 | ,4099 | ,9964 | 170 | +,017 | - ,08 |
| 410 | 2 | -2420,19 | 2,553 | +9,6803 | -7,7754 | ,4070 | ,9964 | 173 | +,005 | + ,04 |
| 41 | 4 | - 24140,42 | 2,553 | +9,6803 | -7,7754 | +0,4070 | -9,9964 | 174 | -,001 | + ,07 |
| 412 | 2 | - 51740,06 | 2,518 | 9,7185 | -8,0632 | ,4010 | ,9965 | 175 | +,010 | - ,05 |
| 413 | 4 | -28 43 35,82 | 2,495 | 9,9335 | $-8,7767$ | ,3970 | ,9966 | 181 | +,008 | + ,08 |
| 414 | 4 | -28 $56 \quad 7,35$ | 2,414 | 9,9345 | -8,7654 | ,3827 | ,9968 | 190 | -,007 | + ,07 |
| 415 | 3 | +1836 <br> 18 | 2,356 | 8,9731 | +8,5743 | ,3721 | ,9970 | 187 | -,003 | + ,08 |
| 416 | 2 | +185359,16 | 2,350 | +8,9494 | +8,5799 | +0,3711 | -9,9970 | 189 | +,013 | -, ,15 |
| 417 | 4 | -29 48 38,62 | 2,350 | +9,9400 | -8,7657 | ,3711 | ,9970 | 193 | +,,026 | -, 28 |
| 418 | 4 | +184511,58 | 2,194 | +8,9638 | +8,5463 | ,3412 | ,9974 | 198 | +,013 | + ,03 |
| 419 | 2 | +53 54 43,76 | 2,094 | -9,73.96 | +8,9270 | ,3212 | ,9976 | 199 | +,012 | + |
| 420 | 4 | +15 39 11,26 | 1,886 | +9,1732 | +8,4046 | ,2756 | ,9981 | 218 | +,010 | -,07 |
| 42 | 4 | +3143 33,14 | 1,788 | -9,1903 | +8,6712 | +0,2523 | -9,9983 | 225 | +,003 | +,05 |
| 422 | 4 | +135143,21 | 1,717 | +9,2601 | 8,3126 | ;2350 | ,9984 | 232 | +,019 | - ,03 |
| 423 | 4 | +192811,32 | 1,538 | +8,8808 | 8,4080 | ,1869 | ,9987 | 245 | +,009 | - ,01 |
| 424 | 4 | +6949,69 | 1,410 | +9,5105 | 7,8783 | ,1491 | ,9989 | 255 | +,025 | + ,06 |
| 425 | 4 | +1350 52,22 | 1,346 | +9,2601 | 8,2066 | ,1290 | ,9990 | 258 | +,011 | ,00 |
| 426 | 2 | -20 5310,16 | 1,328 | +9,8808 | -8,3730 | +0,1233 | -9,9990 | 263 | +,019 | - ,27 |
| 427 | 4 | +61244,78 | 1,323 | +9,5092 | +7,8552 | ,1214 | ,9990 | 260 | +,010 | -, 04 |
| 428 | 3 | -35 5711,72 | 1,195 | +9,9717 | -8,5437 | ,0772 | ,9992 | 270 | +,010 | -, 11 |
| 429 |  | +2732 18,61 | 0,955 | -8,8865 | +8,3433 | 9,9804 | ,9995 | 279 | +,004 | +,04 |
| 430 | 4 | +14959,26 | 0,880 | +9,6042 | +7,1476 | ,9445 | ,9996 | 282 | +,024 | + ,01 |
| 431 | 4 | +114433,16 | 0,838 | +9,3463 | +7,9302 | +9,9239 | -9,9996 | 284 | +,009 | + ,07 |
| 43 | 4 | +173932,32 | 0,559 | +9,0414 | 7,9281 | ,7479 | ,9998 | 300 | +,015 | + |
| 433 | 2 | +2734 6,12 | 0,5:30 | -8,8921 | 8,0833 | ,7247 | ,9998 | 303 | +,012 | + ,09 |
| 434 | 4 | + 74129,39 | 0,530 | +9,4713 | 7,5498 | ,7247 | ,9998 | 305 | +,015 | -,11 |
| 435 | 4 | +15 $27 \begin{aligned} & 3,97\end{aligned}$ | 0,350 | +9,1818 | 7,6674 | ,5438 | ,9999 | 317 | +,001 | - ,04 |
| 436 | 4 | +263155,48 | 0,315 | -8,7708 | $+7,8461$ | +9,4981 | -9,9999 | 319 | +,013 | + ,08 |
| 437 | 4 | + 52518,79 | 0,305 | +9,5276 | ,1643 | 9,4499 | 9,9999 | 321 | -,003 | -,06 |
| 438 | 4 | +38 5 24,38 | 0,30:3 | -9,4409 | ,9700 | 9,4817 | 9,9999 | 318 | +,006 | - ,04 |
| 439 | 4 | $+12299,58$ | 0,257 | +9,3181 | ,4425 | 9,4091 | 0,0000 | 324 | +,013 | + ,02 |
| 440 | 4 | +69 3032,98 | 0,058 | -9,8949 | ,4354 | 8,7657 | 0,0000 | 326 | ,(100 | -, 06 |
| 441 | 2 | +48 4414,55 | +0,058 | -9,6684 | +7,3398 | +8,7657 | -0,0000 | 333 | +,026 | ,00 |
| 442 |  | -23 4 | -0,017 | +9,8982 | +6,5342 | -8,2428 | 0,0000 | 345 |  |  |
| 44 | 4 | +59 15 2,26 | 0,163 | -9,8041 | -7,8451 | -9,2128 | 0,0000 | 343 | +,012 | -,06 |
| 444 | 4 | $\begin{array}{llll}-37 & 1 & 4,47\end{array}$ | 0,158 | +9,9768 | +7,6747 | -9,1970 | 0,0000 | 4 | +,006 | + ,09 |
| 445 | 4 | +46 2555,93 | 0,268 | -9,6284 | -7,9865 | $-9,4284$ | 0,0000 | 1 | -,001 | + 19 |
| 446 | 5 | +24 126,03 | 0,379 | -8,0414 | -7,8865 | -9,5786 | -9,9999 | 13 | , 022 |  |
| 447 | 4 | +23 5928,10 | 0,38:3 | -8,0414 | -7,89:5 | , $5 \times 52$ | ,9999 | 14 | ,0 | - ,09 |
| 448 | 4 | +59 3626,39 | 0,420 | -9;80 2 | -8,2569 | ,62.30 | ,9999 | 10 | +,008 | -, 12 |
| 449 | 4 | +16 433,38 | 0,483 | +9,1461 | $-7,8253$ | ,6847 | ,9999 | 24 | ,000 | +,14 |
| 450 | 2 | -6 9 40,27 | 0,699 | +9,7308 | + ,5739 | ,8448 | ,9997 | 44 | +,013 | -,01 |



| No. | $\text { No. }\left\|\begin{array}{c} \text { No. } \end{array}\right\|$ | Declination <br> Jan. 1, 1836. | Annual Precession. | Logarithms of |  |  |  | $\begin{aligned} & \dot{0} \\ & \dot{\sim} \\ & \underset{\sim}{N} \\ & \text { N } \end{aligned}$ | Annual P. M. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | $a^{\prime}$ | 6 | $c^{\prime}$ | $d^{\prime}$ |  | A. R. | Decn. |
| 451 |  | $-1240$ | -0,734 | +9,8082 | +7,9056 | -9,8660 | -9,9997 | 46 | $s$. ,+ 016 |  |
| 452 | 8 | -12 4122,93 | 0,746 | +9,8082 | +7,9130 | ,8728 | ,9997 | 48 |  | +,02 |
| 453 | 1 | -68811,50 | 0,752 | +9,7308 | +7,6029 | ,8762 | ,9997 | 47 | +,010 | + ,05 |
| 454 | 4 | $+523451,48$ | 0,764 | -9,7243 | -8,4808 | ,882 ${ }^{\text {¢ }}$ | ,9497 | 39 | +,014 | - ,07 |
| 465 | 4 | -2238 55,92 | 0,903 | +9,8949 | +8,2395 | ,9559 | ,9996 | 59 | +,027 | - ,19 |
| 456 | 3 | +63 4244,18 | 0,921 | -9,8414 | -8,6148 | -9,9642 | -9,9995 | 50 | +,027 | - ,05 |
| 457 | 4 | +12 2113,74 | 0,923 | +9,3222 | -7,9979 | 9,9697 | ,4995 | 58 | +,016 | +,03 |
| 458 | 4 | -1329 27,96 | 1,()72 | +9,8162 | +8,0965 | 0,0303 | ,9994 | 72 | +,005 | + ,03 |
| 459 | 2 | +5829 47,27 | 1,113 | -9,7952 | -8,6753 | ,0465 | ,9993 | 61 | +,,013 | -, ,02 |
| 460 | 4 | - 15727,66 | 1,218 | +9,6702 | +7,3154 | ,0×56 | ,9992 | 76 | +,026 | -, 08 |
| 461 | 2 | + 350 5,75 | 1,264 | +9,5635 | -7,6250 | -0,1019 | -9,9991 | 77 | +,010 | - ,07 |
| 462 | 3 | + 442 8,60 | 1,340 | 9,545:3 | --7,7371 | ,1271 | ,,9990 | 85 | -,004 | -,30 |
| 463 | 1 | +141035,19 | 1,450 | 9,2480 | -8,2488 | ,1615 | ,9989 | 94 | +,012 | -, 07 |
| 464 | 3 | -33 4728,72 | 1,462 | 9,9614 | +8,6081 | ,1650 | ,9988 | 97 | +,014 | +,07 |
| 465 |  | +2052 | 1,590 | 8,6990 | -8,4514 | ,2014 | ,9986 | 99 | +,013 |  |
| 466 | 3 | +102444,93 | 1,613 | +9,3927 | -8,1629 | -0,2077 | -9,9986 | 102 | +,019 | - , 18 |
| 467 | 4 | + 03139,12 | 1,619 | +9,6284 | -6,8762 | ,2093 | ,9986 | 105 | +,026 | -, 12 |
| 468 | 2 | -36 37 5,38 | 1,619 | +9,9745 | +8,6829 | ,2093 | ,9986 | 112 | -,001 | - ,06 |
| 469 | 4 | + 591825,64 | 1,776 | -9,8028 | -8,8819 | ,2494 | ,9983 | 106 | +,001 | -,18 |
| 470 | 4 | +20 3126,62 | 1,851 | +8,7559 | -8,5102 | ,2675 | ,9981 | 120 | $+, 023$ | $+, 15$ |
| 471 | 4 | $\begin{array}{lll}-32 & 4 & 1,82\end{array}$ | 1,845 | +9,9528 | +8,6892 | -0,2661 | -9,9981 | 127 | +,015 | -, 08 |
| 472 | 2 | +15 5739,02 | 1,950 | ,1584 | - ,4271 | ,2\%00 | ,9979 | 129 | +,005 | -, 06 |
| 473 | 4 | +10 2 42,67 | 1,950 | ,40:31 | -, 2999 | ,2910 | ,9979 | 131 | +,014 | -, 12 |
| 474 | 3 | +175315,62 | 2,008 | ,0294 | - , $4 \times 81$ | ,3028 | ,9978 | 134 | ,000 | +,04 |
| 475 | 3 | + 72124,09 | 2,194 | ,4814 | -, 1462 | ,3412 | ,9974 | 149 | $+, 016$ | +,06 |
| 476 | 4 | +313610,58 | 2,234 | -9,1818 | -8,7665 | -0,3491 | -9,9973 | 150 | +,013 | +,02 |
| 477 | 4 | +1653 6,42 | 2;240 | +9,1004 | -,.5113 | ,3502 | ,9973 | 153 | $+, 005$ | + ,07 |
| 478 | 4 | -16 3417,01 | 2,321 | +9,1238 | -, 5188 | ,3657 | ,9971 | 157 | +,0171 | + ,03 |
| 479 | 4 | $+24353,10$ | 2,483 | -8,2553 | -,7121 | ,3950 | ,9966 | 168 | +,009 | -,06 |
| 480 | 2 | -1831 44,89 | 2,558 | +9,8609 | + ,6082 | ,4080 | ,9964 | 178 | $+, 009$ | + ,09 |
| 481 | 3 | -31 45 16,99 | 2,657 | +9,9499 | $+8,8437$ | -0,4243 | -9,9961 | 187 | $+, 019$ | - ,13 |
| 482 | 4 | $\begin{array}{llll}-32 & 5 & 16,63\end{array}$ | 2,703 | + ,9557 | +8,8551 | ,4318 | ,9960 | 191 | +,035 | -, 03 |
| 483 | 3 | +59 3551,24 | 2,795 | -, 8021 | -9,0802 | ,4464 | ,9957 | 184 | -,005 | -, 10 |
| 484 | 4 | -18 238,86 | 2,795 | + ,8573 | +8,6356 | ,4464 | ,9957 | 196 | +,014 | +,14 |
| 485 | 3 | + 41735,13 | 2,858 | + ,5551 | -8,0275 | ,4562 | ,9955 | 200 | +,016 | -,13 |
| 486 | 4 | +5312 16,50 | 3,205 | -9,7243 | $-9,1073$ | -0,5058 | -9,9944 | 215 | +,018 | -, 03 |
| 487 | 4 | + 23949,87 | 3,262 | + ,5877 | -7,8792 | , 5135 | , 9942 | 221 | +,015 | - ,17 |
| 488 | 4 | $-16341,68$ | 3,268 | + ,8432 | +8,6673 | ,5143 | ,9941 | 225 | +,011 | - ,05 |
| 489 | 3 | +462137,52 | 3,320 | -, 6180 | -9,0787 | ,5211 | ,9940 | 220 | +,017 | -, ,03 |
| 490 | 3 | -20 3625,96 | 3,400 | + ,8768. | +8,7759 | ,5315 | ,99:37 | 233 | $+, 023$ | + ,01 |
| 491 | 4 | -20 26 19,65 | 3,412 | +9,8756 | +8,7739 | -0,5329 | -9,9936 | 235 | $+, 014$ | -,10 |
| 492 | 2 | -20)35 6,50 | 3,417 | + ,8762 | +8,7777 | ,5337 | ,9936 | 236 | +,0:29 | - ,02 |
| 493 | 5 | -20 55 43,69 | 3,498 | + ,8791 | +8,7948 | ,5438 | ,9933 | 24. | +,027 | - ,04 |
| 494 | 3 | -14 12 39,49 | 3,612 | + ,8215 | +8,6460 | ,5578 | ,9928 | 249 | +,016 | ,00 |
| 495 | 3 | +39 320,68 | 3,653 | -, 4518 | -9,0601 | ,5626 | ,99:27 | 244 | +,013 | -,13 |





| No. | No.Obs. | Declination Jan. 1, 1836. | Annual <br> Precession. | Logarithms of |  |  |  | $\left\lvert\, \begin{gathered} \circ \\ \text { 足 } \\ \text { 俞 } \end{gathered}\right.$ | Annual P. M. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  | $c^{\prime}$ | $d^{\prime}$ |  | A. R. | Decn. |
| 541 | 4 | + 33738,16 | 7,390 | +9,5729 | -8,3685 | -0,8686 | -9,9683 | 143 | ¢. <br> ,+ 018 | 02 |
| 542 | 4 | -28 12 57,90 | 7,470 | +9,9143 | +9,2461 | ,8733 | ,9675 | 148 | +,013 |  |
| 543 | 4 | + 61311,63 | 7,514 | +9,5198 | -8,6085 | ,8759 | ,9671 | 150 | +,001 | + , 14 |
| 544 | 4 | + 545 55,05 | 7,579 | +9,5302 | -8,5797 | ,8796 | ,9665 | 158 | +,013 | + , 02 |
| 545 | 2 | -23 1122,97 | 7,660 | +9,8831 | +9,1743 | ,8808 | ,9663 | 165 | +,003 | + ,05 |
| 546 | 1 | +65 3213,62 | 7,724 | -9,8195 | -9,5450 | $-0,8878$ | -9,9651 | 159 | -,018 | +,15 |
| 547 | 7 | +65 32 21,66 | 7,724 | -9,8195 | $-9,5450$ | ,8878 | ,9651 | 160 | -,013 | +, 08 |
| 548 | 3 | -26 26 6, 4,51 | 7,853 | +9,9025 | +9,2416 | , 8950 | ,9638 | 177 |  | +,12 |
| 549 | 2 | + 4274,75 | 7,863 | +9,5575 | -8,4818 | ,8956 | ,9637 | 174 | +,007 | +,10 |
| 550 | 4 | +24 3735,06 | 8,024 | +8,1139 | -9,2221 | ,9044 | ,9621 | 182 | +,001 | -,07 |
| 551 | 4 | + 03416,72 | 8,062 | +9,6284 | -7,6000 | -0,9064 | -9,9617 | 189 | +,010 | -,03 |
| 552 | 4 | - 51714,34 | 8,296 | ,7126 | +8,5824 | ,9188 | ,9592 | 202 | +,011 | -, 11 |
| 553 |  | -35 49 47,52 | 8,307 | ,9469 | +9,3849 | ,9194 | ,9591 | 206 | +,017 | -, 04 |
| 554 | 4 | -14 1733,84 | 8,317 | ,8102 | +9,0107 | ,9200 | ,9590 | 204 | +,019 | -,12 |
| 555 |  | -14 1750,11 | 8,322 | ,8102 | +9,0110 | ,9202 | ,9589 | 205 | +,007 | -, 15 |
| 55 | 4 | +79 5433,10 | 8,418 | -9,9124 | -9,6164 | -0,9252 | -9,9579 | 187 | -,017 | -, 16 |
| 557 | 2 | -37 19 52,61 | 8,375 | + ,9523 | +9,4038 | ,9230 | ,9583 | 209 | +,046 | +,01 |
| 558 |  | -37 32 | 8,508 | + ,9523 | +9,4126 | ,9298 | ,9569 | 218 | +,013 |  |
| 559 | 4 | +33 3824,41 | 8,529 | -,1492 | -9,3723 | ,9309 | ,9566 | 215 | + + +,008 | +,01 |
| 560 | 2 | - 84628,91 | 8,665 | + ,7536 | $+8,8197$ | ,9378 | ,9551 | 228 | +,018 | ,00 |
| 561 | 4 | - 311 15,83 | 8,671 | +9,6839 | +8,3829 | -0,9381 | -9,9550 | 227 | +,009 | +,03 |
| 562 | 4 | -17 5630,56 | 8,833 | + ,8395 | +9,1330 | ,9461 | ,9531 | 241 | +,017 | + , 15 |
| 563 | 4 | +32 4225,37 | 8,844 | - ,0792 | $-9,3773$ | ,9466 | ,9530 | 238 | -,013 | -, 10 |
| 564 | , | - 5030887 | 8,8.54 | + ,7076 | +8,5869 | ,9472 | ,9528 | 242 | +,105 | -,17 |
| 565 | 3 | +65 1040,78 | 8,901 | - ,8000 | -9,6053 | ,9495 | ,9523 | 236 | +,022 | -, 19 |
| 566 | 5 | - 22220,04 | 8,980 | +9,6730 | +8,2702 | -0,9533 | -9,9513 | 247 | +,005 | ,00 |
| 567 | 4 | + 9425,41 | 9,146 | + ,4609 | $-8,8568$ | ,9612 | ,9493 | 258 | +,006 | -,05 |
| 568 | 3 | -22 3416,13 | 9,229 | + ,8704 | +9,2475 | ,9652 | ,9483 | 264 | +,029 | +,05 |
| 569 | 4 | +54 34 26,35 | 9,276 | -,6730 | $-9,5764$ | ,9673 | ,9477 | 260 | +,007 | -, 11 |
| 570 | 4 | - 31159,49 | 9,291 | + , 6830 | +8,4129 | ,9681 | ,9475 | 268 | +,014 | +,08 |
| 571 | 4 | +20 15 32,10 | 9,368 | +9,0043 | -9,2089 | -0,9717 | -9,9465 | 272 | +,003 | -, 08 |
| 572 | 4 | +20 11 4,42 | 9,471 | ,0128 | -9,2123 | ,9764 | ,9451 | 280 | +,013 | -,15 |
| 573 | 4 | -22 5422,60 | 9,502 | ,8710 | +9,2662 | ,9778 | ,9447 | 287 | +,025 | +, 04 |
| 574 | 4 | +15 2355,59 | 9,538 | ,2648 | -9,1016 | ,9795 | ,9442 | 286 | +,009 | -,05 |
| 575 | 4 | - 327 7,98 | 9,925 | ,6803 | +8,4123 | ,9907 | ,9408 | 300 | +,014 | +,18 |
| 576 | 4 | +35 5621,18 | 10,003 | -9,1987 | $-9,4666$ | -1,0001 | -9,9378 | 308 | +,022 | - ,27 |
| 577 | 4 | +105858,13 | 10,042 | + ,4166 | -8,9791 | ,(018 | ,9372 | 313 | +,019 | -,01 |
| 578 | 1 | + 05557,61 | 10,067 | + ,6232 | --7,9128 | ,0029 | ,9369 | 315 | +,004 | + |
| 579 | 4 | + 93839,70 | 10,142 | + , 4533 | $-8,9278$ | ,0061 | ,9358 | 322 | +,004 | -,06 |
| 580 | 1 | -61557,88 | 10,193 | + ,7202 | +8,7455 | ,0083 | ,9350 | 2 | +,026 | -,04 |
| 581 | 1 | +18 756,40 | 10,247 | +9,1614 | -9,2017 | -1,0106 | -9,9342 | 6 | +,016 | -, 37 |
| 582 | 4 | -18 2929,07 | 10,313 | + ,8351 | + ,2129 | ,0134 | ,9333 | 12 | +,019 | +,03 |
| 583 | 4 | +112019,62 | 10,382 | + , 4099 | -, 0077 | ,0163 | ,93321 | 13 | +,010 | -, 01 |
| 584 | 4 | +54 3826,97 | 10,46. | -, 6484 | -, 6291 | ,0196 | ,9309 | 15 | +,014 | -, 15 |
| 585 | 4 | +18 4 3,63 | 10,512 | + ,17i2 | -,2113 | ,0217 | ,9,301 | 20 | +,012 | -,05 |


| No. | Star's name and Mag. |  |  | $\begin{gathered} \text { No. } \\ \text { Obs. } \end{gathered}$ | Right Ascension Jan. 1, 1836. | Annual <br> Precession. | Logarithms of |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | $a$ |  |  | $b$ | $c$ | $d$ |
| 586 |  | Navis | 7 |  | 3 | $$ | $\begin{gathered} s . \\ +1,884 \end{gathered}$ | -8,7044 | +8,9131 | +0,2751 | +8,5626 |
| 587 |  | Cancri | 8 | 3 | 7 7 7 , 41 | 3,266 | -8,5532 | -,7594 | -,5140 | -7,7886 |
| 588 |  |  | 8 | 3 | 7 23,87 | 3,660 | ,5992 | ,8051 | ,5635 | -8,2642 |
| 589 |  | Lyncis | 8 | 3 | 7 36,56 | 4,610 | ,7754 | ,9799 | ,6637 | -8,6816 |
| 590 |  | Cancri | 8 | 1 | 846,54 | 3,260 | ,5573 | ,7573 | ,5132 | -7,7824 |
| 591 |  | Cancri | 8 | 3 | 9 29,98 | 3,259 | -8,5595. | +8,7564 | +0,5131 | -7,7839 |
| 592 |  | Navis | 8 | 4 | 9 52,24 | 2,750 | ,5710 | ,7645 | ,4393 | +8,0056 |
| 593 |  | Cancri | 8 | 3 | 13 25,12 | 3,288 | ,5729 | ,7538 | ,5169 | -7,8600 |
| 594 |  |  | 8.9 | 4 | 14 2,26 | 3,443 | ,5900 | ,7681 | ,5369 | -8,0948 |
| 595 |  |  | 9 | 5 | 1641,15 | 3,670 | ,6305 | ,7977 | ,5647 | -8,3101 |
| 596 |  | Cancri | 7.8 | 3 | 1654,11 | 3,584 | -8,6176 | +8,7840 | +0,5544 | -8,2446 |
| 597 |  |  | 7.8 | 3 | 17 55,64 | 3,226 | ,5818 | ,7442 | , 5087 | -7,7343 |
| 598 |  | Navis | 6 | 3 | 18 2,19 | 2,589 | ,6153 | ,7773 | ,4131 | +8,2166 |
| 599 |  | Monocer. | 8 | 3 | 20 12,50 | 3,031 | ,5840 | ,7369 | ,4816 | +7,1232 |
| 600 |  |  | 8 | 2 | 24 1,70 | 2,697 | ,6179 | ,7558 | ,4309 | $+8,1298$ |
| 601 |  | Monocer. | 8.9 | 3 | 2424,09 | 3,019 | -8,5951 | $+8,7315$ | +0,4799 | +7,2574 |
| 602 |  |  | 8.9 | 4 | 25 16,31 | 3,023 | ,5973 | ,7302 | ,4804 | +7,2253 |
| 603 |  | Hydræ | 7.8 | 4 | 26 52,13 | 3,129 | ,6017 | ,7283 | ,4954 | -7,3597 |
| 604 |  | Cancri | ${ }^{8}$ | 3 | 29 40,79 | 3,459 | ,6357 | ,7513 | ,5389 | -8,1746 |
| 605 | 3 | Leo. Min. | 7.8 | 5 | 29 41,71 | 3,764 | ,6860 | ,8013 | ,5756 | $-8,4254$ |
| 606 |  | Cancri | 8 | 1 | 29 43,74 | 3,457 | -8,6356 | +8,7509 | $+0,5387$ | -8,1728 |
| 607 |  | Pixid. Naut. | '7,8 | 2 | 3084,50 | 2,555 | ,6547 | ,7689 | , 4074 | + ,2945 |
| 608 | 4 | Leo. Min. | 7 | 2 | $30 \quad 7,39$ | 3,742 | ,6831 | ,7969 | ,5731 | -, 4134 |
| 609 |  | Cancri | 8 | 3 | 3015,99 | 3,466 | ,6383 | ,7515 | ,5398 | - , ,1853 |
| 610 |  |  | 8 | 2 | 30 53,26 | 3,445 | ,6384 | ,7490 | ,5372 | -, ,1742 |
| 611 |  | Cancri | 8 | 4 | 31 47,06 | 3,473 | -8,6432 | +8,7504 | $+0,5407$ | $-8,1986$ |
| 612 |  | Monocer. | 9 | 2 | 3533,42 | 2,948 | ,6251 | ,7177 | ,4695 | +7,6877 |
| 613 |  | Cancri | 8 | 3 | 36 8,89 | 3,433 | ,6491 | ,7392 | ,5357 | --8,1704 |
| 614 | 10 | Hydræ | 7 | 3 | 36 19,90 | 3,182 | ,6266 | ,7162 | ,5027 | -7,1647 |
| 615 |  | Lyncis | 9.10 | 5 | 36 33,36 | 4,468 | ,8506 | ,9389 | ,6501 | $-8,7559$ |
| 616 |  | Hydræ pre. | 8 | 4 | $\begin{array}{ll}37 & 3,46\end{array}$ | 3,032 | -8,6260 | +8,7127 | +0,4817 | +7,1724 |
| 617 |  | $\underline{\text { yeq. }}$ | 7.8 | 3 | 37 3,80 | 3,032 | ,6260 | ,7127 | ,4817 | $+7,1724$ |
| 618 |  | Cancri | 8.9 | 2 | 37 29,13 | 3,272 | ,6350 | ,7202 | ,5148 | -7,9227 |
| 619 620 |  | Navis | 9 8 | 3 | $\begin{array}{ll}38 & 53,33 \\ 39 & 43\end{array}$ | 2,142 | ,7589 | ,8389 | ,3308 | +8,5847 |
| 620 |  | Cancri | 8 | 3 | 39 43,76 | 3,308 | ,6434 | ,7199 | ,5196 | -8,0015 |
| 621 |  | Lyncis | 8 | 4 | 40 39,64 | 4,207 | -8,8100 | +8,8826 | +0,6240 | -8,6822 |
| 622 |  | Cancri | 9 | 3 | 41 39,57 | 3,410 | ,6595 | ,7285 | - ,5327 | -,1636 |
| 623 |  | Navis | 7 | 3 | 4214,54 | 2,159 | ,7652 | ,8324 | ,3342 | + ,5914 |
| 624 |  | Pixid. Naut. | 7 | 4 | 43 10,21 | 2,511 | ,6970 | ,7604 | ,3998 | + ,3808 |
| 625 |  |  | 6.7 | 4 | 4311,98 | 2,432 | ,7118. | ,7752 | ,3860 | + ,4383 |
| 626 | 3 H | Navis | 7.8 | 4 | 43 32,97 | 2,229 | -8,7542 | +8,8163 | +0,3481 | +8,5598 |
| 627 |  | Cancrí | 8 | 3 | 44 31,91 | 3,445 | ,6710 | ,7291 | , 5372 | -8,2167 |
| 628 |  |  | 7.8 | 8 | 44 35,04 | 3,397 | ,6647 | ,7225 | ,5311 | -8,1582 |
| 629 |  |  | 9 | 4 | 44 37,73 | -3,337 | ,6578 | ,7153 | ,5234 | -8,0713 |
| 630 |  | Hydræ pre. | 8 | 4 | $45 \quad 9,93$ | 3,227 | ,6491 | ,7049 | ,5088 | $-7,8443$ |


| No. | No. Obs. | Declination Jan. 1, 1836. | Annual <br> Precession. | Logarithms of |  |  |  | $\begin{aligned} & \text { 足 } \\ & \text { N } \\ & \text { N } \\ & \text { H } \end{aligned}$ | Annual P. M. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | $a^{\prime}$ | $b^{\prime}$ | $c^{\prime}$ | $d^{\prime}$ |  | A. R. | Decn. |
|  |  | - ' " |  |  |  |  |  |  | $s$. | " |
| 586 | 3 | $\begin{array}{llll}-46 & 9 & 18,92\end{array}$ | -10,542 | +9,9605 | $+9,5791$ | -1,0229 | -9,9297 | 29 | +,016 | $+0,03$ |
| 587 | 4 | + 95410,25 | 10,587 | +9,4487 | -8,9581 | ,0247 | ,9290 | 26 | +,007 | - ,20 |
| 588 | 4 | +2732 56,11 | 10,592 | -7,9031 | -9,3881 | ,0249 | ,9289 | 24 | +,010 | -, 01 |
| 589 | 3 | +53 42 4,49 | 10,617 | -9,6294 | -9,6302 | ,0260 | ,9285 | 23 | +,,004 | -,03 |
| 590 | 4 | $+9400,61$ | 10,696 | +9,4564 | -8,9523 | ,0292 | ,9272 | 34 | $+, 010$ | -, 10 |
| 591 | 4 | $+93914,55$ | 10,742 | +9,4579 | -8,9538 | -1,0314 | -9,9263 | 36 | $+, 007$ | -, 14 |
| 592 | 1 | -15 46 56,30 | 10,774 | +9,8109 | +9,1650 | ,0324 | ,9259 | 39 | +,024 | -, 08 |
| 593 | 2 | +111047,32 | 11,033 | +9,4216 | -9,0278 | ,0427 | ,9216 | 48 | +,016 | +,04 |
| 594 | 3 | +1839 24,39 | 11,082 | +9,1614 | -9,2471 | ,0446 | ,9208 | 51 | +,023 | + ,02 |
| 595 | 4 | +283532,12 | 11,276 | -8,1761 | $-9,4300$ | ,0521 | ,9174 | 61 | +,003 | +,01 |
| 596 | 3 | $\begin{array}{lll}+25 & 4 & 0,19\end{array}$ | 11,290 | +8,6335 | -9,3778 | -1,0527 | -9,9171 | 66 | -,003 | - ,25 |
| 597 | 4 | + 81055,46 | 11,362 | 9,4955 | -8,9059 | ,0555 | , 9158 | 70 | $+, 010$ | - ,06 |
| 598 | 3 | -2331 3,76 | 11,368 | 9,8615 | +9,3550 | ,0556 | ,9157 | 74 | +,005 | -, 02 |
| 599 | 3 | - 15842,74 | 11,530 | 9,6646 | +8,2990 | ,0618 | ,9127 | 81 | $-, 001$ | ,+ 02 $+\quad 07$ |
| 600 | 4 | -18 57 21,63 | 11,796 | 9,8280 | +9,2816 | ,0717 | ,9077 | 94 | $+, 001$ | + ,07 |
| 601 | 4 | - 23738,78 | 11,823 | +9,6721 | +8,4330 | -1,0727 | -9,9071 | 97 | $+, 018$ | -, 06 |
| 602 | 4 | - 22518,28 | 11,884 | +9,6702 | +8,4010 | ,0750 | ,9059 | 100 | +,011 | -,02 |
| 603 | 4 | + 318 9,78 | 11,997 | +9,5877 | $-8,5351$ | ,0791 | ,9037 | 107 | +,004 | -, 04 |
| 604 | 2 | +201447,66 | 12,192 | +9,1238 | $-9,3230$ | ,0861 | ,8997 | 118 | +,021 | -, 10 |
| 605 | 4 | +33 17 59,65 | 12,197 | -8,8573 | --9,5237 | ,0862 | ;8996 | 117 | +,009 | -,04 |
| 606 |  | $+209$ | 12,197 | +9,1271 | -9,3214 | -1,0862 | -9,8996 | 119 | +,015 |  |
| 607 | 3 | -25 50 52,38 | 12,216 | +9,8669 | + 4247 | ,0869 | ,8992 | 125 | +,006 | -, 03 |
| 608 | 4 | +3230 59,00 | 12,225 | -8,7781 | - ,5155 | ,0872 | ,8990 | 120 | +,005 | + ,05 |
| 609 | 4 | +203932,10 | 12,234 | +9,1038 | - , 3326 | ,0876 | , 89888 | 121 | ,+ 015 $+\quad 019$ |  |
| 610 | 2 | +20 6 19,29 | 12,280 | $+9,1367$ | - , 3230 | ,0892 | ,8978 | 128 | +,019 | -, 14 |
| 611 | 4 | +21 3 15,01 | 12,340 | +9,0864 | -9,3446 | -1,0913 | -9,8965 | 135 |  | + ,08 |
| 612 | 1 | -638 0,48 | 12,597 | 9,7168 | +9,8609 | ,1002 | , 8909 | 151 | +,004 | -, 05 |
| 613 | 4 | +1924 24,55 | 12,613 | 9,1790 | -9,3212 | ,1018 | ,8899 | 156 | -,009 |  |
| 614 | 3 | + 61614,69 | 12,650 | 9,5366 $-9,5623$ | $-8,8382$ $-9,7062$ | ,1021 | ,88897 | 157 153 |  | + ,04 |
| 615 | 4 | +533128,64 | 12,641 | -9,5623 | -9,7062 | ,1029 | ,8892 | 153 | ,000 | -, 06 |
| 616 | 3 | $-2034,83$ | 12,700 | +9,6637 | +8,3482 | -1,1038 | -9,8885 | 159 | +,001 | , 00 ,- 04 |
| 617 | 4 | -2 2034,21 | 12,700 | ,6637 | +8,3482 | ,1038 | ,8885 | 160 | +,004 | -, 04 |
| 618 | 4 | $+111115,93$ | 12,727 | ,4407 | -9,0904 | , 1047 | ,8879 | 161 | ,+ 001 +024 | -, 03 |
| 619 | 3 | -42 144,45 | 12,817 | ,9227 | $+9,6316$ $-9,1660$ | , 1078 | ,8858 | 169 | ,+ 021 ,+ 024 | - 04 $+\quad, 02$ |
| 620 | 2 | $+131146,41$ | 12,879 | ,3944 | -9,1660 | ,1099 | ,8814 | 171 | +,024 | + ,02 |
| 621 | 4 | +4810 46,31 | 12,946 | -9,4472 | -9,6824 | -1,1121 | -9,8828 | 174 | ,+ 007 +021 | -, 23 $+\quad 06$ |
| 622 | 2 | +183824,29 | 13,008 | +9,2253 | -, 3164 | - ,1142 | $8813$ | 181 | +,021 | ,+ 06 $+\quad 05$ |
| 623 | 2 | -41 5137,70 | 13,039 | 9,9191 | + ,6377 | , 1152 | ,8805 | 187 | ,+ 023 +023 +0 | $+\quad, 05$ $+\quad, 12$ |
| 624 | - 2 | -28 5118,50 | 13,106 | 9,8722 | $+\quad, 4992$ $+\quad 5419$ | - ,1174 | ,8789 | 188 |  | + ,02 |
| 625 | 4 | $-32 \quad 10 \quad 16,96$ | 13,106 | 9,8865 | + ,5419 | , ,1174 | ,8789 | 190 | +,003 | -,02 |
| 626 | - 2 | -39 42 50,62 | 13,128 | +9,9122 | +9,6219 | -1,1182 | -9,8783 | 194 | ,+ 009 ,- 004 | -, 07 |
| 627 | - 4 | +20 3456,12 | 13,198 | ,1523 | - , 3642 | 11205 <br> 1206 | - $\quad 8766$ | 195 | -,004 | -,01 |
| 628 | 5 | +18 938,43 | - 13,203 | ,2504 | - , 3121 | 1 | ,8763 | 197 | ,+ 093 + | -, ,13 |
| 629 630 | - 4 | 15 +15 +9 | 13,207 13,237 | ,3502 | - , ,0150 | - ,1218 | - $\begin{array}{r}\text {,8763 } \\ \hline 8756\end{array}$ | 190 | ,+ 023 ,+ 021 | -,+ 03 |
| 630 | - 4 | + 9211,99 | 13,237 | ,4928 | - , 0150 | -1218 | , ,850 |  | +,021 | $1+$ + ${ }^{+}$ |



| No. | $\begin{aligned} & \text { No. } \\ & \text { Obs. } \end{aligned}$ | Declination Jan. 1, 1836. | Aunual <br> Precession. | Joymithms of |  |  |  |  | Annual P. M. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | $a^{\prime}$ | $b$ | $c$ | $d^{\prime}$ |  | A. R. | Decn. |
| 631 | 3 | + 924,75 | -13,237 | +9,4928 | -9,0150 | ,1218 | -9,8756 | 201 | ,007 |  |
| 6332 | 4 | + 72049,85 | -13,390 | +9,4202 | +8,93:8 | -126× | --9,8716 | 215 | ,+ 019 ,+ 019 |  |
| 633 | 3 | +18 621,48 | 13,394 | ,2553 | $-9,3173$ | ,1269 | \%8715 | 213 |  | + ,02 |
| 63 | 4 | - 15449,83 | 13,601 | ,6609 | +8,3.578 | ,1355 | ,8644 | 228 | +,008 | + ,02 |
| 635 | 4 | - 15515,68 | 13,746 | ,6609 | +8,3605 | ,1382 | ,8620 | 235 | -,005 | + ,01 |
| 636 | 4 | + 61731,68 | 13,759 | +9,5453 | -8,8758 | -1,1386 | -9,8616 | 236 | +,021 | + ,04 |
| 637 | 4 | - 05014,09 | 13,768 | 96484 | +8,0082 | ,1388 | ,8614 | 237 | +,018 | -,14 |
| 638 | 4 | - 74352,24 | 13,803 | 9,7226 | +8,9679 | ,1400 | ,8603 | 238 | +,012 | -,06 |
| 639 | 4 | +14 4933,88 | 13,82\% | $\stackrel{9,3692}{8,5441}$ | -9,246.5 | , 14140 | ,8597 | 240 | +,045 | 二,17 |
| 640 | 4 | +28 3232,57 | 13,834 | 8,5441 | -9,5184 | ,1410 | ,8595 | 239 | +,010 | -,03 |
| 641 | 1 | +39 5 27,58 | 13,902 | -9,0682 | -9,6408 | -1,1431 | -9,8575 | 243 | -,020 | + ,11 |
| 642 | 3 | -13 47 30,70 | 13,928 | +9,7723 | +9,2189 | ,1439 | , 8568 | 246 | +,010 | + ,16 |
| 64 | 4 | +1522 1,20 | 14,128 | 9,3617 | -9,2709 | ,1501 | ,8.509 | 257 | +,039 | -,13 |
| 64 | 4 | - 149 4,83 | 14,169 | 9,6:90 | +8,3504 | ,1513 | ,8496 | 260 | +,010 | +,03 |
| 645 | 4 | -42 5035,69 | 14,223 | 9,9015 | +9,6836 | ,1530 | ,8480 | 266 | ,000 | + ,11 |
| 64 | 3 | -25 10 47,03 | 14,275 | +9,8401 | +9,4815 | -1,1546 | -9,8463 | 268 | +,001 | -,12 |
| 647 | 4 | -25 8 29,02 | 14,341 | ,8388 | +9,4830 | ,1,66 | ,8442 | 5 | +,018 | -,11 |
| 618 | 4 | - 61540,45 | 14,450 | ,7050 | +8,8960 | ,1.599 | ,8407 | 10 | +,020 | -, 07 |
| 649 | 4 | -19 4 4 50,14 | 14,458 | ,8035 | +9,3726 | , 1601 | ,8405 | 13 | +,011 | +,016 |
| 650 | 3 | + 42941,06 | 14,479 | ,5786 | -8,7518 | ,1607 | ,8398 | 15 | +,019 | -,09 |
| 651 | 3 | +25 4113,17 | 14,487 | +8,9638 | -9,4956 | -1,1610 | -9,8395 | 12 | +,015 | -, 01 |
| 652 | 4 | -14 4456,82 | 14,502 | 9,7752 | +9,26:3 | ,1614 | , 8390 | 16 | +,009 | -,01 |
| 653 | 4 | $\begin{array}{llll}-14 & 1 & 9,97\end{array}$ | 14,567 | 9,7686 | $+9,2456$ | ,1634 | ,8369 | 21 | +,007 | + ,05 |
| 654 | 4 | - 35147,95 | 14,583 | 9,6803 | +8,6889 | ,1638 | ,8363 | 22 | +,014 | -,02 |
| 655 | 4 | --37 56 28,71 | 14,607 | 9,8825 | +9,6514 | ,1646 | ,8355 | 26 | +,014 | + ,02 |
| 65 | 4 | +19 2920,79 | 14,627 | +9,2577 | -9,3863 | -1,1651 | -9,8349 | 25 | +,001 | -,02 |
| 657 | 4 | - 83 47,16 | 14,643 | 9,7210 | +9,0108 | ,1656 | ,8343 | 27 | -,001 | + ,07 |
| 658 | 1 | -36 <br> -36 <br> 13 | 14,747 | 9,8774 | $+9,6457$ $+9,479$ | ,1687 | ,8308 | 44 | +,015 | +,00 |
| 6.59 | 4 | $-135329,41$ | 14,750 | 9,7664 | +9,2479 | ,1688 | ,8306 | 39 | +,016 | + ,04 |
| 660 | 4 | +27 $51 \begin{array}{ll}\text { 9,29 }\end{array}$ | 14,817 | 8,8388 | - 9,5382 | ,1707 | ,8283 | 45 | -,011 | -,02 |
| 661 | 4 | + 55419,27 | 14,860 | +9,5599 | -8,8808 | -1,1720 | -9,8268 | 49 | +,012 | -, 01 |
| ${ }^{6} 62$ | 4 | -15 8141,30 | 14,897 | ,7738 | +9,2887 | , 1730 | ,8255 | 52 | +,017 | + , 17 |
| 663 | 4 | + 05223,41 | 14,918 |  | 8,0515 $+9,0623$ | ,1737 | ,8247 | 54 | +,015 | ,00 |
| 664 | 4 | $\begin{array}{r}+85.5 \\ \hline+134837 \\ \hline\end{array}$ | 14,927 14,927 | ,7251 | $+9,0623$ $-9,2494$ | ,1739 | ,8244 | 56 | +,013 | +,03 |
| 665 | 4 | +13 4824,11 | 14,927 | ,4183 | -9,2494 | ,1739 | ,8244 | 55 | +,018 | -, 06 |
| 666 | 2 | -14 51519,84 | 14,973 | +9,7716 | +9,2840 | -1,1753 | -9,8227 | 59 | +,022 | - ,26 |
| 667 |  | + 412 | 15,006 | +,5855 | $-8,7407$ | , 1780 | ,8193 | 64 | +,010 |  |
| 668 | 4 | - 43946,03 | 15,123 | + ,6866 | +8,7881 | ,1796 | ,8171 | 71 | -,006 | -, 04 |
| 669 | 4 | +482835,68 | 15,142 |  | -9,7523 |  | ,8164 | 70 | -,002 | -,02 |
| 670 | 4 | + 45913,07 | .15,182 | +,5740 | -8,8168 | ,1814 | ,8147 | 76 | +,004 | -,08 |
| 671 | 4 | - 5423 3,73 | 15,213 | +9,6964 | +8,8773 | -1,1823 | -9,8136 | 80 | +,009 | - ,09 |
| 672 | 4 | +1724 17,03 | 15,226 | + , 3424 | -9,3559 | ,1826 | ,8131 | 79 | +,017 | + ,08 |
| 673 | 4 | +63 4622,45 | 15,287 | -,5888 | -9,8352 | ,1843 | ,8108 | 82 | +,055 | -,01 |
| 674 | 2 | - $22^{15,93}$ | 15,413 | +,6599 | +8,4395 | ,1879 | ,8056 | 95 | +,021 | -,05 |
| 675 | 3 | - 45652,16 | 15,518 | +,6875 | +8,8248 | ,1908 | ,8014 | 102 | +,012 | -, 16 |


together with their annual precessions and proper motions, $\& c$.

| Nu. | No. Ubs. |  | $\begin{gathered} \text { Acrim. } \\ \text { Powces. } \\ \text { sion. } \end{gathered}$ | Logarithms of |  |  |  |  | Annual P. M. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | $a$ | $6^{\prime}$ | $c^{\prime}$ | $d^{\prime}$ |  | A. R. | Decn. |
|  |  |  | ${ }^{\prime \prime}$ |  |  |  |  |  |  |  |
| 676 | 5 | +29 52300 | $-15.573$ | +8,8751 | -9,5871 | -1,1924 | -9,7990 | 109 | -,004 | -, 01 |
| 677 | 3 | +2 3512,75 | 15,599 | 9,6185 | 8,5422 | ,1931 | ,7979 | 114 | +,014 | ,00 |
| 678 | 4 | + 85446,76 | 15,6:8 | 9,5224 | 9,0834 | ,1958 | ,7937 | 119 | +,007 | - ,02 |
| 679 | 4 | +3153 34,92 | 15,751 | 8,6128 | 9,6181 | ,1973 | ,7913 | 124 | +,002 | -, 02 |
| 680 | 4 | +3053 13,85 | 15,866 | 8,7634 | 9,6088 | ,2005 | ,7860 | 131 | +,027 | -,01 |
| 681 | 4 | + 22541,39 | 15,872 | +9,6107 | -8,5236 | -1,2007 | -9,7858 | 134 | +,007 | + ,04 |
| 682 | 3 | + 23422,10 | 15,905 | 9,6096 | 8,5507 | ,2015 | ,7843 | 138 | -,007 | + ,05 |
| 683 | 4 | +32 111,30 | 16,0]7 | 8,6902 | 9,6268 | ,2046 | ,7790 | 145 | +,005 | + , 11 |
| 684 | 4 | +3051 19,04 | 16,078 | 8,8261 | 9,6140 | ,2062 | ,7761 | 155 | -,001 | + ,05 |
| 685 | 4 | + 32226,35 | 16,171 | 9,6010 | 8,6734 | ,2087 | ,7715 | 161 | +,004 | + ,08 |
| 686 | 4 | +21 1430,95 | 16,280 | +9,2856 | -9,4686 | -1,2117 | -9,7659 | 165 | +,018 | + ,06 |
| 687 | 3 | -2200,8,89 | 16,280 | , 7924 | +9,4836 | ,2117 | ,7659 | 167 | $-, 018$ | -, 01 |
| 688 | 3 | -26 5242,35 | 16,298 | ,8129 | +9,5657 | ,2121 | ,7650 | 170 | +,015 | ,00 |
| 689 | 4 | + 23327,34 | 16,324 | ,6117 | -8,5534 | ,2128 | ,7636 | 171 | +,004 | -,03 |
| 690 | 4 | $+22822,01$ | 16,335 | ,6117 | -8,5420 | ,2131 | ,7631 | 172 | $+, 015$ | -,01 |
| 691 | 4 | - 63334,95 | 16,449 | +9,6964 | +8,9735 | -1,2161 | -9,7570 | 180 | +,021 | + ,02 |
| 692 | 4 | +25 $19 \quad 12,21$ | 16,472 | ,1732 | -9,5456 | ,2167 | ,7557 | 183 | +,010 | -,02 |
| 693 | 4 | +1152 13,26 | 16,485 | ,4885 | -9,2276 | ,2171 | ,7550 | 184 | +,010 | - ,09 |
| 694 | 4 | $-1521,14$ | 16,578 | ,6474 | +8,2008 | ,2195 | ,7498 | 192 | +,003 | - ,05 |
| 695 | 4 | $-982,62$ | 16,688 | ,7126 | 9,1219 | ,2224 | ,7434 | 203 | +,018 | + ,02 |
| 696 |  | + 543 | 16,698 | +9,5763 | -8,9177 | -1,2227 | -9,7428 | 204 | +,008 |  |
| 6.97 | 4 | + 75634,24 | 16,736 | ,5450 | -9,0598 | ,2237 | ,7405 | 206 | +,017 | - ,14 |
| 69.8 | 4 | $-101545,08$ | 16,781 | ,7202 | +9,1745 | ,2248 | ,7378 | 210 | +,025 | -,07 |
| 699 | 4 | + 8278,53 | 16,784 | , 5428 | $-9,0892$ | ,2249 | ,7377 | 208 | ,+ 013 ,+ 017 | , 00 $-\quad 18$ |
| 700 | 4 | $+301844,70$ | 16,870 | ,0128 | -9,6280 | ,2271 | ,7324 | 214 | +,017 | -, 18 |
| 701 | 3 | - 1950,84 | 16,885 | +9,6474 | +8,2405 | -1,2275 | -9,7314 | 219 | +,008 | + ,03 |
| 702 | 4 | - 110 4,47 | 16,889 | ,6474 | +8,2406 | ,2276 | ,7312 | 220 | $+, 010$ | -,01 |
| 703 | 4 | + 53523,42 | 16,926 | ,5798 | $-8,9134$ | ,2286 | ,7288 | 222 | +,011 | - ,05 |
| 704 | 4 | - 224 17,09 | 17,041 | ,6590 | +8,5545 | ,2315 | ,7214 | 228 | ,+ 012 ,+ 004 | -, 01 $+\quad, 07$ |
| 705 | 4 | -12 3031,08 | 17,126 | ,7300 | +9,2682 | ,2337 | ,7150 | 232 | +,004 | + ,07 |
| 706 | 4 | $+104120,69$ | 17,119 | +9,5185 | -9,1994 | -1,2340 | -9,7148 | 234 | +, 010 |  |
| 707 | 4 | + 44532,89 | 17,150 | + ,5899 | 8,850t | ,2343 | $, 7139$ | 235 | +,012 | -, 14 |
| 708 | 4 | +5627 9,11 | 17,183 | - , 2765 | 9,85:39 | ,2351 | ,7116 | 236 | +,004 | +,02 |
| 709 | 4 | $\begin{array}{r}\text { a } \\ +\quad 41620,90 \\ \hline\end{array}$ | -17,278 | + $+\quad, 5966$ $+\quad 4483$ | 8,8054 9,2868 | ,2375 | ,7048 | 243 4 | ,+ 001 ,+ 017 | -, 18 |
| 710 | 4 | $+125030,71$ | 17,488 | + , $498: 3$ | 9,2868 |  |  |  |  |  |
| 711 | 2 | +694444,48 | 17,770 | --9,4533 | -9,9199 | -1,2497 | -9,6051 | 30 | +,007 | -, 10 |
| 712 | 4 | +6.942543 +13 | 17,770 | + , 4983 | -,3133 | , 2497 | ,6651 | 34 | +,010 | -, 10 |
| 713 | 4 | +85 1344,30 | 17,824 | - , 6228 | - ,9475 | ,2510 | ,6602 | 14 | -,016 | -, 02 |
| 714 | 3 | +2113 31,79 | 17,821 | + + ,+ 3802 | - , 5072 | - ,2509 | ,6605 | 37 43 | ,+ 007 ,+ 011 | + $+\quad 07$ $+\quad, 08$ |
| 715 | 3 | -28 822,75 | 17,851 | + ,7767 | + ,6237 |  |  | 43 |  | + ,08 |
| 716 | 4 | +1820 25,21 | 1 17,328 | +9,4330 | -9,4488 | -1,2535 | -9,6505 | 50 | +,011 | -, 10 |
| 717 | 3 | +18 28 25, 36 | 17,977 | , 7730 | +9,6349 | , ,5477 | ,6457 | 56 | +,012 | + , 16 |
| 718 | 4 | -174846,15 | 518,056 | ,7372 | +9,4407 | 7 ,2566 | , ,6377 | 68 | +,038 | - , 07 |
| 719 | 4 | -15245,52 | 2 18,158 | ,6513 | +8,4776 | -2612 | -,6169 | 92 | + + +,028 | - |
| 720 | 4 | -32 3413,81 | 1 18,246 | ,7701 | +9,6904 | , 2612 |  |  | +,028 | $1+, 04$ |


| No. | Star's name and Mag. |  |  | $\begin{gathered} \text { No. } \\ \text { Obs. } \end{gathered}$ | Right Ascension Jan. I, 1836. |  |  | Annual Precession. | Logarithms of |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | $a$ |  |  |  | $b$ | $c$ | $d$ |
| 721 |  | Ursæ Maj. | 8 |  | 4 |  | $m .$ <br> 22 |  | $\begin{gathered} s . \\ 28,51 \end{gathered}$ | $\begin{gathered} s . \\ +3,837 \end{gathered}$ | -9,0187 | +8,6737 | +0,5840 | -8,9290 |
| 722 |  | Usæ Maj. | 8 | 4 |  |  | 42,44 | 3,715 | 8,9765 | +,6254 | -,5701 | -8,8608 |
| 723 |  | Hydræ | 8 | 3 |  | 24 | 3x,07 | 2,842 | ,8206 | ,4648 | ,4536 | +8,4087 |
| 724 | 52 | Navis | 6.7 | 4 |  | 24 | 58,27 | 2,545 | ,9304 | ,5731 | ,4057 | +8,7740 |
| 725 |  | Antl. Pneum. | 8 | 4 |  | 25 | 22,19 | 2,726 | ,8601 | ,5008 | ,4355 | $+8,5909$ |
| 726 |  | Antl. Pneum. | 8 | 4 |  |  | 11,54 | 2,727 | -8,8635 | +8,4945 | +0,4357 | +8,5989 |
| 727 |  |  | 8.9 | 4 |  |  | 1,27 | 2,807 | ,8383 | ,4598 | ,4482 | +8,4926 |
| 728 |  | Hydræ | 8 | 4 |  |  | 9,65 | 2,916 | ,8093 | ,4194 | ,4648 | +8,2686 |
| 729 |  | Leonis | 9 | 4 |  |  | 53,66 | 3,197 | ,8066 | ,4071 | ,5047 | -8,2143 |
| 730 |  | Sextantis | 8 | 4 |  |  | 39,35 | 3,115 | ,7952 | ,3858 | ,4935 | -7,7768 |
| 731 |  | Leo. Min. | 8 | 4 |  | 36 | 45,98 | 3,358 | -8,8638 | +8,4427 | +0,5261 | $-8,5815$ |
| 732 |  | Antl. Pneum. | 8 | 4 |  |  | 22,57 | 2,809 | ,8527 | ,4281 | ,4485 | +8,5362 |
| 733 |  | Hydræ | 8 | 4 |  |  | 55,05 | 2,945 | ,8112 | ,3776 | ,4691 | $+8,2213$ |
| 734 |  | Sextantis | 8 | 4 |  |  | 0,86 | 3,004 | ,8028 | ,3507 | ,4777 | +7,9544 |
| 735 |  | Hyd. \& Crat. | 7 | 4 |  | 42 | 44,02 | 3,006 | ,8032 | ,3467 | ,4780 | +7,9485 |
| 736 |  | Sextantis | 8 | 4 |  |  | 25,43 | 3,006 | -8,8036 | $+8,3430$ | $+0,4780$ | +7,9480 |
| 737 |  | Leonis | 8.9 | 4 |  |  | 37,76 | 3,132 | , 8040 | ,3422 | ,4958 | -7,9643 |
| 738 |  | Ursa Maj. | 7 | 4 |  | 46 | 51,47 | 3,456 | ,9365 | ,4542 | ,5386 | $-8,7692$ |
| 739 |  | Leonis | 8.9 | 4 |  |  | 24,28 | 3,130 | ,8067 | ,3210 | ,4955 | -7,9781 |
| 740 |  |  | 8 | 4 |  | 49 | 53,12 | 3,233 | ,8373 | ,3356 | ,5096 | $-8,4177$ |
| 741 |  | Leonis | 8 | 4 |  |  | 58,84 | 3,143 | -8,8118 | +8,3025 | +0,4973 | -8,0838 |
| 742 |  |  | 8.9 | 4 |  |  | 45,63 | 3,178 | ,82:20 | ,3005 | ,5021 | 8,2592 |
| 743 |  |  | 7.8 | 4 |  |  | 59,95 | 3,135 | ,8124 | ,2827 | ,4962 | 8,0535 |
| 744 |  |  | 8 | 4 |  |  | 9,28 | 3,073 | ,8059 | ,2751 | ,4876 | 6,9323 |
| 745 |  | Ursæ Maj. | 8 | 4 |  |  | 35,79 | 3,368 | ,9169 | ,3753 | ,5274 | 8,7169 |
| 746 |  | Leonis | 8 | 3 |  |  | 37,52 | 3,073 | -8,8067 | +8,2656 | +0,4876 | -6,9694 |
| 747 |  |  | 7.8 | 4 |  |  | 56,46 | 3,156 | ,8190 | ,2756 | ,4991 | 8,1883 |
| 748 |  |  | 8 | 1 |  |  | 4,71 | 3,118 | ,81.20 | ,2560 | ,4939 | 7,9555 |
| 749 |  |  | 7.8 | 84 |  |  | 39,39 | 3,137 | ,8164 | ,2530 | ,4965 | 8,1003 |
| 750 |  | Ursæ Maj. | 7.8 | 3 |  | 59 | 22,59 | 3,565 | 9,0502 | ,4813 | ,5523 | 8,9637 |
| 751 |  | Leonis | 7 | 4 |  |  | 54,63 | 3,062 | -8,8090 | +8,2360 | +0,4860 | +7,0651 |
| 752 |  |  | 7 | 4 | 11 | 0 | 0,69 | 3,181 | ,8:309 | ,2575 | ,50:2 | -8,3229 |
| 753 |  | Leo. Min. | 7 | 4 |  |  | 14,05 | 3,323 | ,9126 | ,3137 | ,5215 | -8,6997 |
| 754 |  | Leonis | 8.9 | 95 |  |  | 55,92 | 3,077 | ,8120 | ,1912 | ,4481 | -7,3010 |
| 755 |  |  | 8 | 3 |  | 6 | 7,77 | 3,143 | ,8241 | ,2016 | ,4973 | -8,1922 |
| 756 |  | Ursæ Maj. | 7.8 | 83 |  |  | 4,70 | 3,300 | -8,9052 | +8,2911 | +0,5185 | -8,6777 |
| 757 |  | Leonis. | 7 | 4 |  |  | 47,63 | 3,134 | ,8245 | ,1703 | ,4961 | $-8,1716$ |
| 758 |  | Crateris | 8 | 3 |  |  | 26,23 | 3,037 | ,8162 | ,1559 | ,4824 | +7,8378 |
| 759 |  |  | 8 | 4 |  |  | 26,02 | 3,038 | ,8166 | ,1472 | ,4826 | +7,8382 |
| 760 |  | Leonis | 8 | 4 |  | 13 | 2,57 | 3,091 | ,8163 | ,1325 | , 4901 | -7,7404 |
| 761 |  | Leonis | 7.8 | 8.4 |  |  | 37,21 | 3,091 | -8,8171 | +8,1177 | +0,4901 | $1-7,7588$ |
| 762 |  | Hydræ | 8 | 3 |  |  | 53,75 | 2,883 | 8,9041 | ,2021 | ,4598 | +8,6666 |
| 763 |  | Ursæ Maj, | 7 | 4 |  |  | 26,96 | 3,369 | 9,0030 | ,2951 | ,5275 | -8,8840 |
| 764 |  | Hydræ | 7 | 4 |  |  | 51,61 | 2,888 | 8,9036 | ,1923 | ,4606 | +8,6646 |
| 765 |  | Leonis | 8 | 2 |  |  | 14,70 | 3,096 | 8,8193 | ,0935 | ,4908 | -7,8819 |


| No. | No. Obs. | Declination <br> Jan. 1, 1836. | Annual <br> Precession. | Logarithms of |  |  |  | $$ | Annual P. M. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | $a^{\prime}$ | $b^{\prime}$ | $c^{\prime}$ | $d^{\prime}$ |  | A. R. | Decn. |
|  |  | - , 11 | " |  |  |  |  |  |  |  |
| 721 | 4 | +54 25 35,81 | -18,265 | -8,9445 | -9,8699 - | -1,2616 | -9,6147 | 88 | +,011 | -,10 |
| 722 | 5 | +50 1 14,71 | 18,309 | -8,5185 | -9,8449 | ,2626 | ,6096 | 96 | +,027 | -, 07 |
| 723 | 3 | -22 4532,96 | 18,341 | +9,7451 | +9,5494 | ,2634 | ,6056 | 103 | +,007 | + ,04 |
| 724 | 4 | -4413 29,33 | 18,350 | 7723 | +9,8053 | ,2636 | ,6045 | 107 | -,004 | -, 10 |
| 725 | 3 | $-323133,32$ | 18,365 | 7642 | +9,6928 | ,2640 | ,6027 | 108 | +,022 | + ,06 |
| 726 | 4 | -32 55 8,09 | 18,429 | +9,7619 | +9,6989 | 1,2655 | -9,5945 | 115 | +,020 | +,08 |
| 727 | 4 | -26 48 29,59 | 18,490 | ,7490 | +9,6193 | ,2669 | ,5865 | 120 | +,019 | ,00 |
| 728 | 4 | -16 43 31,34 | 18,561 | ,7202 | +9,4259 | ,2686 | ,5767 | 130 | +,016 | -,01 |
| 729 | 4 | +14 4954,01 | 18,619 | ,5119 | -9,3758 | ,2699 | ,5685 | 132 | +,020 | -,16 |
| 730 | 4 | + 53125,16 | 18,675 | ,5988 | -8,9509 | ,2713 | ,5599 | 140 | +,026 | -, 18 |
| 731 | 2 | +31 2919,37 | 18,741 | +9,2672 | -9,6885 | -1,2728 | -9,5497 | 146 | +,020 | -,01 |
| 732 | 4 | -28 4924,41 | 18,760 | ,7404 | +9,6548 | ,2732 | ,5467 | 151 | +,017 | + ,08 |
| 733 | 4 | $-145214,19$ | 18,807 | ,7059 | +9,3825 | ,2743 | ,5389 | 156 | +,020 | - ,22 |
| 734 | 3 | - 8725,46 | 18,900 | ,6785 | $+9,1260$ | ,2764 | ,5224 | 168 | ,+ 029 ,+ 011 | - ,07 |
| 735 | 4 | $-81$ | 18,921 | ,6776 | +9,1203 | ,2769 | ,5185 | 174 | +,011 |  |
| 736 | 4 | - 759 49,14 | 18,940 | +9,6776 | +9,1199 | -1,2774 | -9,5148 | 178 | +,021 | +,01 |
| 737 | 3 | + 81952,53 | 18,946 | , 5821 | -9,1358 | ,2775 | ,5137 | 179 | +,013 | -, 15 |
| 738 | 4 | +4253 6,50 | 19,038 | ,0212 | -9,8103 | ,2796 | ,4954 | 191 | +,009 | -, 08 |
| 739 | 3 | + 83310,80 | 19,051 | , 5832 | $-9,1493$ | ,2799 | ,4923 | 195 | ,+ 017 ,+ 030 | - ${ }^{11}$ |
| 740 | 4 | +22 238,43 | 19,118 | ,4579 | -9,5598 | ,2814 | ,4 |  |  |  |
| 741 | 4 | +10 4829,25 | 19,147 | +9,5694 | $-9,2522$ | -1,2821 | -9,4709 | 204 | ,+ 008 ,+ 008 | $\begin{aligned} & -, 06 \\ & -.29 \end{aligned}$ |
| 742 | 5 | +15 5414,61 | 19,192 | ,5289 | 9,4184 | ,2831 | , 4597 , 4521 | 213 | ,+ 008 ,+ 008 | $-, 29$ |
| 743 | 4 | +10 38836 | 19,223 | , 5773 | 9,2229 8,1084 | ,2838 | , 4521 | 220 | ,+ 008 ,+ 017 | - , ,09 |
| 744 | 4 | + 0479,28 | 19,226 | ,6335 , 2122 | 8,1084 9,7827 | ,2839 | ,4512 | 221 | +,017 | -, 01 |
| 745 | 3 | +39 743,06 | 19,262 | ,2122 | 9,7827 | ,2847 | ,4412 | 228 | -,001 | -, 01 |
| 746 | 4 | + 0516,15 | 19,261 | +9,6335 | -8,1454 | -1,2847 | -9,4417 | 230 | ,+ 011 ,+ 002 | - ,08 |
| 747 | 4 | +13 3259,92 | 19,270 | ,5539 | 9,3521 | $\xrightarrow{2 \times 49}$ | ,4394 | 231 | ,+ 002 ,+ 008 |  |
| 748 | 3 | + 8119,14 | 19,311 | ,5944 | 9,1274 9,2682 | ,2858 | ,4278 | 244 | ,+ 008 ,+ 016 | + ,03 |
| 749 | 4 | +11 5 5 54,38 | 19,334 19,352 | 8,5740 | 9,2682 9,8982 | ,2863 | , 4158 | 246 | $\mid+, 009$ | -, ,28 |
| 750 | 4 | +55 212,87 | 19,352 | 8,5563 | 9,8982 | ,2867 | ,4158 | 246 | +,000 | -, 28 |
| 751 | 4 | - 1059,40 | 19,363 | $+9,6425$ | +8,2411 | -1,2870 | -9,4120 | 250 | +,031 | -,06 |
| 752 | 4 | +18 5 41,90 | 19,364 | , 5224 | -9,4770 | ,2870 | , 4116 | 251 | 1 + +,011 | - , 11 |
| 753 | 5 | +374653,61 | 1 1:1,437 | ,2856 | -9,7737 | ,2886 | ,3877 <br> 3671 | 5 | $5{ }^{5}$ | -, 17 ,+ 01 |
| 754 | 4 | + 14647,94 | 4 19,492 | ,6304 | $-8,4768$ $-9,3562$ | ,2899 | -3,3655 | 17 | $7{ }^{+}$ | -, ,08 |
| 755 | 1 | +13 3050,84 | 4 19,497 | ,5658 | -9,3562 | ,2899 | , 365 |  | $\left.\right\|^{+}+016$ | , 08 $-\quad 05$ |
| 756 | 64 | +36 2018,46 | 19,476 | - $-9,0202$ | --9,7600 | -1,2895 | $5-9,3734$ | 26 | \| $\left\lvert\, \begin{aligned} & +, 016 \\ & +, 015\end{aligned}\right.$ | -, 05 |
| 757 | 7 | +1252 52,38 | 8 19,569 | ,5740 | -9,3367 | ,2915 | 5 $\quad 33353$ | 31 35 | $1 \begin{aligned} & +, 015 \\ & +, 004\end{aligned}$ | -, ,12 |
| 758 | 8 | -6049,89 | 9 19,581 | ,6571 | $1 \begin{aligned} & +9,0115 \\ & +9,0119\end{aligned}$ | , 29.18 | 2 , 3208 | 39 |  ,+ 003 | -, ,08 |
| 759 | 96 | - 600 9,30 | 0 19,599 | ,6571 | $+9,0119$ <br> 8,9150 | ,2922 , 2928 | 8 , ,3070 | 45 | $5+$ +,006 | -,,08 |
| 760 | 4 | + $450 \quad 1,70$ | 0 19,627 | ,6180 | -8,9150 |  | 5 ,3070 |  | $7+012$ | - 18 |
| 761 |  | + 52 1,65 | 5 19,655 | +9,6180 | 1-8,9332 | -1,2935 | $5-9,2921$ |  | 1 <br> 1 | -, 18 |
| 762 | $2{ }^{4}$ | + 552039,58 | 8 19,6(5) | ,6693 | ; +9,7541 | $1{ }^{2} 2937$ | 8 2 ,2896 |  | 2 -,001 | 1 -, 1 |
| 763 | 34 | +493016,92 | 2 19,670 | ,13:35 | $5{ }^{5} \mathbf{- 9 , 8 7 2 7}$ | , 2938 | 9 , 28806 |  | 7 + , ,015 | - , 18 |
| 764 | 4 4 | -35 1126,11 | 1 19,675 | ,6674 | 4 $+9,7529$ $-9,0551$ | 1 , 2934 | $4{ }^{4}$, 2667 |  | $66+$ +,014 | $4-11$ |
| 765 | 53 | + $+63857,84$ | 19,698 | ,6128 | 8 -9,0551 | - ,2944 | , ,260 |  |  |  |


| No. | Star's name and Mag. |  |  | No. Obs. | Right Ascension Jan. 1, 1836. |  |  | Annual Precession. | Logarithms of |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | $a$ |  |  |  | $b$ | $c$ | $d$ |
| 766 |  | Leonis | 8 |  | 4 | $1 \begin{gathered} h . \\ 11 \end{gathered}$ | 2. |  | $\begin{gathered} s . \\ 30,50 \end{gathered}$ | $\begin{gathered} s . \\ +3,046 \end{gathered}$ | -8,8240 | +8,0345 | +0,4837 | +7,8275 |
| 767 | 17 | Hydræ | 6.7 | 4 |  |  | 9,19 | 2,956 | ,8742 | 8,069 | ,4707 | 8,5513 |
| 768 |  |  | 8 | 4 |  |  | 22,98 | 2,948 | ,8815 | 8,0754 | ,4695 | 8,5816 |
| 769 |  | Crateris | 8 | 4 |  |  | 17,51 | 3,048 | ,8211 | 8,0016 | ,4840 | 7,8143 |
| 770 |  |  | 7.8 | 3 |  |  | 1,26 | 3,052 | ,8206 | 7,9925 | ,4846 | 7,7295 |
| 771 |  | Hydræ | 9 | 4 |  |  | 43,54 | 2,943 | -8,9006 | +8,0493 | +0,4688 | +8,6470 |
| 772 |  |  | 7 | 4 |  |  | 13,97 | 2,957 | ,8953 | 8,0088 | ,4708 | +8,628 1 |
| 773 |  | Ursæ Maj. | 7.8 | 3 |  |  | 2,69 | 3,206 | ,9508 | 8,0196 | ,5060 | $-8,7774$ |
| 774 |  | Crateris | 8 | 4 |  |  | 34,42 | 3,007 | ,8532 | 7,9132 | ,4781 | +8,4224 |
| 775 |  | Hydræ | 7.8 | 4 |  |  | 37,61 | 2,974 | ,8908 | 7,9508 | ,4733 | +8,6101 |
| 776 |  | Leonis | 9 | 2 |  |  | 22,07 | 3,103 | -8,8389 | +7,8104 | +0,4918 | -8,2762 |
| 777 |  | Ursæ Maj, | 8 | 4 |  |  | 59,71 | 3,171 | ,9697 | ,8608 | ,5012 | -8,8158 |
| 778 |  | Leonis | 8 | 4 |  |  | 3,06 | 3,096 | ,8417 | ,6790 | ,4908 | $-8,3014$ |
| 779 |  | Virginis | 8 | 4 |  |  | 4,42 | 3,067 | ,8236 | ,6323 | ,4867 | +7,5424. |
| 780 |  | Leonis | 8 | 4 |  | 45 | 25,57 | 3,090 | ,8379 | ,6367 | ,4900 | -8,2486 |
| 781 |  | Virginis | 7 | 4 |  |  | 39,99 | 3,076 | $-8,8253$ | $+7,6159$ | +0,4880 | -7,8273 |
| 782 |  |  | 7 | 4 |  |  | 26,91 | 3,068 | ,8232 | ,5884 | ,4869 | +6,8054 |
| 783 | 65 | Ursæ Maj. | 7.8 | 4 |  |  | 32,47 | 3,151 | ,9924 | ,7533 | ,4984 | -8,8591 |
| 784 |  | Leonis | 9.10 | 4 |  |  | 56,64 | 3,089 | ,8404 | ,5901 | ,4898 | -8,2807 |
| 785 |  | Virginis | 8 | 4 |  |  | 0,72 | 3,070 | ,8235 | ,5710 | ,4871 | -7,3627 |
| 786 |  | Leonis | 7.8 | 3 |  |  | 46,35 | 3,089 | $-8,8418$ | +7,5636 | $+0,4898$ | -8,2981 |
| 787 |  | Virginis | 7.8 | 4 |  |  | 29,00 | 3,081 | ,8321 | ,5266 | ,4887 | 8,1286 |
| 788 |  | Leonis | 9.10 | 3 |  |  | 15,27 | 3,087 | ,8436 | ,5090 | ,4895 | 8,3173 |
| 789 |  | Virginis | 7 | 3 |  |  | 21,10 | 3,076 | ,8276 | ,4875 | ,4880 | 7,9639 |
| 790 |  |  | 8.9 | 3 |  | 50 | 6,27 | 3,073 | ,8253 | ,4507 | ,4876 | 7,7854 |
| 791 |  | Ursæ Ma | 8.9 | 4 |  |  | 11,19 | 3,146 | $-9,1280$ | +7,6488 | +0,4978 | -9,0666 |
| 792 |  | Virginis | 8 | 3 |  |  | 4,32 | 3,073 | 8,8274 | 7,2955 | , 4876 | -7,9372 |
| 793 |  | Corvi | 8 | 4 |  |  | 53,4, | 3,060 | ,8513 | 7,0859 | ,4857 | +8,3884 |
| 794 |  | Leonis | 8 | 4 |  |  | 2,46 | 3,073 | ,8461 | 6,9227 | ,4876 | -8,3404 |
| 795 |  | Hydræ | 7.8 | 3 |  | 59 | 53,89 | 3,068 | ,9042 | -5,6690 | ,4869 | +8,6493 |
| 796 |  | Ursæ Maj. | 8.9 | 4 | 12 |  | 6,96 | 3,070 | -9,0146 | -6,1773 | +0,4871 | -8,8980 |
| 797 |  | Corvi | 7.8 | 4 |  |  | 10,24 | 3,080 | 8,8529 | 7,2252 | +,4885 | +8,4023 |
| 798 |  | Virginis | 7 | 3 |  |  | 51,62 | 3,071 | ,8253 | ,2482 | ,4873 | +7,7509 |
| 799 |  |  | 9.10 | 4 |  |  | 21,07 | 3,059 | ,8329 | ,3498 | ,4856 | -8,1417 |
| 800 |  |  | 8 | 4 |  |  | 17,04 | 3,053 | ,8393 | ,4555 | ,4847 | -8,2616 |
| 801 |  | 1 Virginis | 7 | 5 |  |  | 44,74 | 3,071 | $-8,8241$ | -7,4613 | +0,4873 | +7,5525 |
| 802 |  | Comæ Ber. | 8 | 4 |  |  | 45,08 | 3,048 | , 8487 | ,4859 | , 4840 | -8,3686 |
| 803 |  |  | 9 | 4 |  |  | 40,88 | 3,041 | ,8427 | ,6553 | ,4830 | -8,3119 |
| 804 |  | Virginis | 7.8 | 4 |  |  | 10,39 | 3,060 | ,8246 | ,6800 | ,4857 | -7,7833 |
| 805 |  |  | 8 | 3 |  |  | 18,02 | 3,058 | ,8251 | ,6840 | ,4854 | -7,8395 |
| 806 |  | Virginis | 7.8 | 3 |  |  | 33,04 | 3,059 | -8,8243 | -7,7138 | +0,4856 | -7,7718 |
| 807 |  | Centauri | 8 | 3 |  |  | 44,63 | 3,157 | ,8935 | , 81115 | -,4965 | +8,6162 |
| 808 |  | Virginis | 9 | 4 |  |  | 17,83 | 3,057 | ,8242 | ,7544 | ,4853 | -7,7897 |
| 809 |  |  | 8 | 4 |  |  | 22,85 | 3,071 | ,8225 | ,7541 | ,4873 | +7,2355 |
| 810 |  |  | 8.9 | 4 |  |  | 53,94 | 3,033 | ,8405 | ,7853 | ,4819 | -8,2938 |


| No. | $\begin{gathered} \text { No. } \\ \text { Obs. } \end{gathered}$ | Declination Jan. 1, 1836. | Annual <br> Precession. | Logarithms of |  |  |  |  | Annual P. M. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | $a^{\prime}$ | ${ }^{\prime}$ | $c^{\prime}$ | $d^{\prime}$ |  | A. R. | Decn. |
| 766 | 4 | - 54855,68 | -19,779 | +9,651:3 | $+9,0013$ | -1,2962 | -9,2092 | 91 | $\stackrel{s}{\text { ¢ }}$ |  |
| 767 | 4 | -28 2151,31 | 19,801 | +,6590 | +9,6717 | -1,2967 | -0,2003 | 95 | +,002 |  |
| 768 | 4 | -30 4 4 6,57 | 19,802 | ,6551 | ,6948 | ,2967 | ,1887 | 97 | +,013 | -,19 |
| 769 | 4 | - 53756,65 | 19,817 | ,6503 | 8,9883 | ,2970 | ,1756 | 104 | +,,008 | -, ,17 |
| 770 | 3 | - 43722.27 | 19,826 | ,6484 | ,9041 | ,2972 | ,1672 | 108 | +,,011 | -,11 |
| 771 | 4 | -33 5247,08 | 19,847 | +9,6415 | +9,7422 | -1,2977 | -9,1444 | 112 | +,023 | ,00 |
| 772 | 4 | -32 41 51,28 | 19,877 | ,6385 | + ,7291 | ,2983 | ,1099 | 127 | +,012 | --,08 |
| 773 | 4 | +42 853,89 | 19,907 | ,3874 | -, 8237 | ,2990 | ,0659 | 137 | +,051 | -,07 |
| 774 | 4 | -214437,22 | 19,913 | ,6484 | + | ,2991 | ,0572 | 142 | ,+ 005 + +015 | -,06 |
| 775 |  | -3134 | 19,913 | ,6335 | + ,7165 | ,2991 | ,0572 | 143 | +,015 |  |
| 776 | 4 | +15 5445,01 | 19,957 | +9,5933 | -9,4353 | -1,3001 | -8,9696 | 155 | -,003 | ,00 |
| 777 | 4 | +44 3415,58 | 19,989 | ,4065 | -9,8447 | ,3007 | ,8898 | 165 | +,026 | -, 10 |
| 778 | 4 | +164550,49 | 19,496 | ,5977 | $-9,4587$ | ,3009 | ,83363 | 169 | +,012 | -, 07 |
| 779 | 4 | -2 5815,36 | 20,002 | ,6365 | +8,7179 | ,3011 | ,8078 | 173 | +,009 | -, 04 |
| 780 | 4 | +14 5628,42 | 20,004 | ,6064 | -9,4098 | ,3011 | ,7979 | 177 | +,007 | --,17 |
| 78 | 3 | + 54726,33 | 20,005 | $+0,6345$ | $-9,0012$ | -1,3011 | -8,7898 | 180 | +,018 | -,09 |
| 784 | 4 | - $0313.3,81$ | 20,009 | ,6385 | +7,9815 | ,3012 | ,7645 | 182 | +,015 | -, 47 |
| 783 | 1 | +4723 22,41 | 20,010 | ,4014 | -9,8660 | ,3012 | ,7601 | 183 | +,016 | ,00 |
| 784 | 3 | +16 16 12,63 | 20,011 | ,6042 | -9,4:396 | ,3013 | ,7490 | 186 | +,022 | -.,07 |
| 785 | 3 | + 2039,83 | 20,012 | ,6375 | -8,5385 | ,3013 | ,7468 | 187 | +,018 | -,04 |
| 786 | 3 | +16 3938,71 | 20,015 | +9,6031 | -9,4557 | -1,3014 | $-8,7212$ | 194 | +,021 | -,06 |
| 787 | 4 | +119630,09 | 20,019 | ,6191 | ,2960 | ,3014 | ,6940 | 197 | +,006 | -,02 |
| 788 | 4 | +1720 39,71 | 20,02] | ,6021 | ,4732 | ,3015 | ,6650) | 198 | +,025 | -, ,01 |
| 789 | 4 | + 75323,50 | 20,022 | ,6274 | ,1358 | ,3016 | ,6595 | 201 | +, 021 | -,14 |
| 790 | 4 | $+51517,53$ | 20,026 | ,6314 | 8,9597 | ,3017 | ,6250 | 205 | +,002 | -,23 |
| 791 | 4 | +60 15 53,62 | 20,032 | +9,2095 | $-9,9384$ | -1,3019 | -8,5205 | 210 | $+, 018$ | - , 12 |
| 79.2 | 4 | + 725 9,72 | 20,036 | ,6294 | -,1097 | ,3019 | ,4680 | 215 | +,016 | -, 01 |
| 793 | 4 | -20 7 33,691 | 20,040 | ,6159 | +,5371 | ,3019 | ,2344 | 225 | $+0,005$ | --, ,19 |
| 791 | 4 | +1812 16,98 | 20,041 | ,6107 | -, 4942 | ,3019 | ,0765 | 22.4 | +,006 | -, 11 |
| 795 | 4 | -33 45 38,73 | 20,043 | ,5575 | +,7451 | ,3020 | $+6,7648$ | 240 | -,006 | + , 13 |
| 796 | 4 | +49 52 48,87 | 20,043 | +0, 44.56 | -9,8834 | -1,3020 | +7,1627 | 242 |  |  |
| 797 | 4 | -20 45 21,41 | 20, (1)38 | , 59.99 | +9,5402 | ,3018 | 8,372: | 14 | +,023 | -,111 |
| 798 | 4 | - 44836,73 | 20,037 | ,6345 | +8,42:55 | ,3018 | ,4:227 | 17 | -,004 | -,01 |
| 799 | 4 | +114649,73 | 20,035 | ,6355 | - 0,30886 | ,3017 | ,5167 | 23 | +,009 | + $0.0 \pm$ |
| 800 | 4 | +15 $21 \quad 19,08$ | 20,027 | ,6325 | $-3,4219$ | ,3016 | , 1159 | 30 | -1,003 | -. 10 |
| 801 | 4 | - 3 2 233,22 | 20,025 | +9,6355 | +8,7279 | -1,3016 | +-8,6368 | 32 | + +,007 | + ,05 |
| 8002 | 3 | +1920 49,26 | 20,0:25 | , 0263 | -9,5195 | ,3016 | ,6368 | 34 | +,011 | -, 08 |
| 803 | 4 | +17919,59 | 20,001 | ,6375 | 9,4683 | ,3011 | ,8117 | 6.2 | +,014 | -, 07 |
| 804 | 4 | + 51426,64 | 19,994 | ,6425 | 8,9575 | ,3008 | , 8513 | 72 | +,014 | -, 22 |
| 805 | 3 | + 55726,29 | 19,991 | ,6125 | 9,0133 | ,3008 | ,8078 | 73 | -,013 | -,31 |
| 806 | 4 | + 5627,82 | 19,983 | +0,6425 | -8,9461 | $-1,3007$ | $+8,8882$ | 77 | +, 004 | -, 20 |
| 807 | 2 | -3152 4,46 | 19,975 | ,5366 | +9,7213 | ,3005 | ,9165 | 82 | -,005 | ,00 |
| 808 |  | + 519 | 19,971 | ,6434 | -8,9639 | ,3004 | ,9285 | 86 | +,015 |  |
| 809 | 1 | -128 9,48 | 19,971 | ,6365 | +8,4115 | ,3004 | ,9301 | 89 | +,002 | --,25 |
| 810 | 4 | +163136,39 | 19,966 | ,6444 | -9,4517 | ,3003 | ,9432 | 94 | +,010 | + ,04 |



| No. | $\begin{gathered} \text { No. } \\ \text { Obs. } \end{gathered}$ | Declination Jan. 1, 1836. | Annual <br> Precession. | Logarithms of |  |  |  |  | Annual P. M. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | $a^{\prime}$ | $b$ | $c^{\prime}$ | $d^{\prime}$ |  | A. R. | Decn. |
|  |  |  |  |  |  |  |  |  |  |  |
| 811 | 2 | +26 4832,74 | -19,961 | $+9,6314$ | -9,6520 | -1,3002 | +8,9559 | 96 | +,014 | +0,04 |
| 81.2 | 3 | -22 47 16,84 | 19,952 | ,5599 | + ,5866 | ,3000 | 8,9803 | 105 | +,015 | -,03 |
| 813 | 2 | +111047,04 | 19,942 | ,6484 | - ,2841 | ,2997 | 9,0107 | 113 | -,007 | ,00 |
| 814 | 3 | +13 2 4,43 | 19,937 | ,6484 | - , 3503 | ,2997 | ,0120 | 114 | +,021 | -, ,76 |
| 815 | 3 | $-223613,20$ | 19,920 | ,5539 | + ,5826 | ,2993 | ,0437 | 117 | +,024 | - ,07 |
| 816 |  | +34 1723,50 | 19,915 | +9,6263 | -9,7477 | -1.,2992 | +9,0527 | 124 | -,003 | -, 16 |
| 817 | 4 | +19 1650,58 | 19,904 | ,6522 | - ,51.54 | ,2989 | ,0712 | 132 | +,012 | - ,13 |
| 818 | 4 | -15 28 52,02 | 19,892 | ,5866 | + ,4236 | ,2987 | ,0890 | 134 | +,019 | - ,12 |
| 819 | 4 | +15 9 21,27 | 19,883 | ,6551 | - ,4133 | ,2985 | ,1011 | 138 | -,011 | - ,10 |
| 820 | 4 | -7739,86 | 19,859 | ,6170 | + ,0910 | ,2979 | ,1317 | 147 | +,011 | -, ,16 |
| 821 |  | +1337 3,80 | 19,843 | +9,6580 | -9,3669 | -1.2976 | +9,1498 | 154 |  | - ,09 |
| 822 | 4 | +464642,58 | 19,810 | ,6096 | -9,8573 | ,2970 | ,1781 | 164 | +,006 | + ,08 |
| 823 | 4 | $+291542,54$ | 19,814 | ,6561 | -9,6837 | ,2969 | ,1797 | 165 | +,011 | - ,19 |
| 824 | 3 | + 33114,43 | 19,805 | ,6454 | -8,7805 | ,2968 | ,1871 | 167 | +,013 | -, 03 |
| 8.5 | 4 | - 15633,09 | 19,796 | ,6325 | +8,5301 | ,2966 | ,1943 | 170 | +,008 | -,03 |
| 826 | 4 | + 04330,95 | 19,764 | +9,6375 | -6,9347 | -1,2959 | +9,2214 | 174 | +,024 | - ,15 |
| 827 | 4 | + 0143,20 | 19,762 | ,6375 | 7,5715 | ,2958 | ,2229 | 176 | +,014 | -,16 |
| 828 | 6 | +20 3 35,53 | 19,675 | ,6748 | 9,5267 | ,2939 | ,2806 | $20]$ | $+, 036$ | -, ,17 |
| 829 | 4 | +21 352,04 | 19,674 | ,6758 | 9,5469 | ,2939 | ,2819 | 203 | +,027 | - ,17 |
| 830 | 4 | $+47407,59$ | 19,658 | ,6464 | 9,8602 | ,2935 | ,2902 | 209 | $+, 012$ | - ,09 |
| 831 | 3 | -643 3,66 | 10,37 | +9,6107 | +9,0602 | -1,2931 | +9,3015 | 216 | +,016 | -, 16 |
| 832 | 4 | +1223 15,47 | 19,615 | ,6702 | - ,3219 | ,2926 | ,3131 | 221 | +,022 | + ,04 |
| 883 | 4 | +13 3533,81 | 19,615 | ,6721 | - , 3609 | ,2926 | ,3131 | 222 | $+, 026$ | -, ,11 |
| 8.34 | 4 | -21 1653,56 | 19,594 | ,5159 | $+, 5503$ | ,2921 | ,3238 | 225 | +,019 | -, 03 |
| 835 | 4 | -32 30 6,00 | 19,566 | ,3979 | + ,7201 | ,2915 | ,3365 | 233 | $+, 011$ | - ,07 |
| 886 | 4 | + 22420,68 | 19,504 | +9,6464 | -8,6071 | -1,2901 | +9,3629 | 246 | +,023 | - ,06 |
| 837 | 4 | $-332 \pm 24,98$ | 19,486 | , 3674 | +9,7288 | ,2897 | ,3698 | 247 | +,015 | +,08 |
| 838 | 3 | +24 517,63 | 19,464 | ,6937 | -9,5974 | ,2892 | ,3781 | 252 | +,011 | - ,02 |
| 839 | 4 | +6 616,78 | 19,447 | ,6609 | -9,0097 | ,2889 | ,3837 | 256 | +,004 | -, 01 |
| 840 | 4 | +12 653,33 | 19,447 | ,6758 | $-9,3083$ | ,2889 | ,3837 | 257 | +,014 | + ,02 |
| 841 | 4 | + 11057,11 | 19,435 | $+9,6429$ | -8,2892 | -1,2886 | +9,3882 | 258 | $+, 007$ | -, 01 |
| 8 | 4 | -716 2,87 | 19,425 | ,6021 | +9,0894 | ,2884 | ,3917 | 259 | +,027 | - ,13 |
| 84:3 | 4 | $+5450 \quad 2,47$ | 19,417 | ,6561 | -9,8986 | ,2882 | ,3947 | 261. | $+, 005$ | - ,23 |
| 844 | 5 | -1 45824,36 | 19,412 | ,6571 | $-8,9220$ | ,2881 | ,3961 | 260 | +,025 | - , 02 |
| 845 | 4 | + 44935,18 | 19,402 | ,657] | -8,9100 | ,2878 | ,3996 | 265 | $+, 024$ | - ,26 |
| 846 | 3 | -33 $14 \begin{array}{lll}14 & 14,89\end{array}$ | 19,402 | +9,3522 | +9,7249 | -1,2878 | +9,3996 | 263 | $+, 002$ | - ,03 |
| 847 | 4 | - 51211,55 | 19,386 | , 6117 | $+8,9442$ | ,2875 | ,4049 | 271 | +,005 | -,13 |
| 848 | 4 | +5754 14,08 | 19,367 | ,6522 | -9,9129 | ,2870 | ,4111 | 275 | +,023 | -, 09 |
| 849 | 3 | -12 33 45,96 | 19,348 | , 5647 | +9,3228 | ,2866 | ,4167 | 277 | +,002 | +,,14 |
| 850 | 4 | +182139,37 | 19,324 | ,6955 | -9,4822 | ,2861 | ,4242 | 282 | +,025 | - ,07 |
| 851 | 4 | +271541,00 | 19,272 | +9,7093 | -9,6437 | -1,2849 | +9,4390 | 10 | +,016 | - ,05 |
| 852 | 4. | -12 3545,06 | 19,244 | ,5599 | + ,3216 | ,2843 | ,4465 | 19 | +,001. | - ,06 |
| 853 | 4 | +524615,28 | 19,218 | ,6893 | - ,8826 | ,2837 | ,4533 | 24 | +,003 | + ,02 |
| 854 | 5 | $\begin{array}{rrr}10 & 29 & 6,51 \\ -10 & 28 & 42,61\end{array}$ | 19,203 | ,5729 | + , 2520 | ,2834 | ,4572 | 25 | -,002 | -,, 36 |
| 855 | 3 | -10 2842,61 | 19,203 | ,5729 | + ,2420 | ,2834 | ,4572 | 26 | +,008 | - ,17 |



| No. | No. Obs. | Declination <br> Jan. 1, 1836. | Annual <br> Precession. | Logarithms of |  |  |  | $\begin{aligned} & \dot{8} \\ & \text { N. } \\ & \text { N } \end{aligned}$ | Annual P. M. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | $a^{\prime}$ | $b$ | $c^{\prime}$ | $d^{\prime}$ |  | A. R. | Decn. |
|  |  |  |  |  |  |  |  |  |  |  |
| 855 | 3 | - 711117,12 | --19,188 | +9,5955 | +9,0791 | -1,2830 | +9,4609 | 28 | +,016 | -0,06 |
| 857 | 3 | - 6358,53 | 19,154 | , $60: 31$ | + ,0055 | ,2823 | ,4692 | 34 | +,011 | - , 10 |
| 858 | 3 | -121724,79 | 19,154 | ,5587 | + , ,3093 | ,-823 | ,4692 | 33 | +,018 | - , 09 |
| 859 | 4 | +60 943,19 | 19,154 | ,6730 | - ,9185 | ,2823 | ,46,92 | 39 | -,035 | -, 11 |
| 860 | 4 | +143744,15 | 19,123 | ,6946 | -,3816 | ,2815 | ,4765 | 43 | ;000 | -,14 |
| 861 | 4 | - 524 2,01 | 19,109 | +9,6064 | +8,9542 | -1,2812 | +9,4797 | 46 | +,012 | -, 15 |
| 862 | 4 | -1146 56,62 | 19,102 | ,5599 | 9,2×98 | ,2811 | ,4813 | 47 | +,007 | -, 04 |
| 863 | 4 | -10 $17 \begin{aligned} & \text { 2,72 }\end{aligned}$ | 19,087 | ,5717 | 9,23.11 | ,2807 | ,4845 | 49 | +,011 | -, 10 |
| 864 | 4 | -1137 8,05 | 19,084 | ,5599 | 9,2>3:3 | ,2807 | ,485.3 | b) | +,006 | -, 06 |
| 865 | 4 | - 98817,32 | 19,039 | ,578.6 | 9,1799 | ,2796 | ,4950 | 58 | -,006 | + ,06 |
| 866 | 4 | -183733,81 | 19,038 | +9,4928 | +9,4825 | -1,2796 | 9,4954 | 59 | ,000 | + , 04 |
| 867 | 4 | -10 53 4,85 | 19,0:31 | ,5647 | +9,2542 | ,2745 | ,4905 | 60 | +,012 | -, ,11 |
| $\varepsilon 68$ | 2 | $+183740,09$ | 19,008 | ,7093 | -9,4811 | ,2789 | ,5015 | 63 | +,026 | + ,04 |
| 869 | 4 | -17 10 7,06 | 19,(0)2 | ,5065 | +9,4473 | ,2788 | ,5026 | 64 | -,004 | -, 11 |
| 870 | 4 | $-52010,88$ | 19,002 | ,6042 | +8,9464 | ,2788 | ,5026 | 67 | +,005 | -,32 |
| 871 | 3 | $+554649,21$ | 18,909 | +9,7143 | -9,8921 | -1,2767 | +9,5206 | 79 | +, ,050 | - ;04 |
| 872 | 4 | $-5435,93$ | 18,876 | ,6053 | +8,9228 | ,2759 | ,5267 | 81 | +,005 | - , 12 |
| 873 | 3 | -21 32 41,40 | 18,849 | ,44.56 | +9,5:387 | ,2753 | ,5316 | 86 | +,012 | -,01 |
| 874 | 4 | -242135,38 | 1 $\times, 844$ | ,4065 | +9,5890 | ,2752 | ,5323 | 87 | +,018 | -, 02 |
| 875 | 3 | + 0147,22 | 18,8\%3 | ,6375 | $-6,4367$ | ,2749 | ,5344 | 89 | +,018 | -, 52 |
| 876 | 4 | - 85328,87 | 18,83.3 | +9,5752 | +9,1633 | -1,2749 | +9,53.34 | 88 | +,019 | -,01 |
| 877 | 4 | +1633 38,08 | 18,817 | ,7109 | -9,4268 | ,2745 | ,5372 | 92 | +,010 | -,02 |
| 878 | 4 | -19 2744,01 | 18,794 | ,4669 | +9,4952 | ,2740 | ,5409 | 97 | -,010 | -, 05 |
| 879 | 4 | +73 14 41,12 | 18,772 | ,6628 | - 9,9526 | ,2735 | ,5447 | 109 | +,004 | -,02 |
| 880 | 5 | - 85031,29 | 18,760 | ,5740 | +9,1592 | ,2732 | , 5467 | 103 | +,007 | +,06 |
| 881 | 3 | - 12533,10 | 18,760 | +9,6284 | +8,3745 | -1,2732 | $+9,5467$ | 104 |  | - , 11 |
| 882 | 4 | -124 50,70 | 18,745 | ,6284 | +8,3691 | ,2729 | ,5490 | 108 | +,,013 | -, 10 |
| 883 | 4 | +60 4642,95 | 18,745 | ,7168 | $-9,9117$ | ,2729 | ,5490 | 113 | -,008 | + ,03 |
| 884 | 4 | $-2516 \quad 4,91$ | 18,743 | ,3830 | $+9,6014$ | ,27.28 | ,5494 | 107 | +,009 | - ,11 |
| 885 | 4 | +94919,53 | 18,712 | ,6893 | $-9,2001$ | ,2721 | ,5543 | 116 | +,009 | -,09 |
| 886 | 4 | +79 29 28,79 | 18,660 | +9,6415 | $-9,9615$ | -1,2709 | +9,5625 | 133 | -,027 | ,00 |
| 887 | 3 | - 4519,18 | 18,612 | , 6045 | +9,8239 | ,2698 | ,56i!5 | 129 | +,024 | +,06 |
| 888 | 5 | - 85630,72 | 18,601 | ,5604 | +9,1003 | ,2695 | ,5711 | 132 | +,016 | $+, 13$ |
| 889 | 4 | --15 3624,80 | -18,505 | ,5011 | + $0,3,973$ | ,2688 | ,5758 | 139 | +,004 | -,16 |
| 890 | 4 | - 54852,72 | 18,540 | ${ }_{5} 5944$ | $+8,9732$ | ,2681 | ,5795 | 144 | +,018 | -, 13 |
| 891 | 4 | - 04411,48 | 18,526 | +9,6325 | +8,0923 | -1,2678 | +9,5816 | 147 | +,012 | - ,28 |
| 892 | 5 | -2 $22 \begin{array}{ll}1,10\end{array}$ | 18,511 | ,6180 | +8,6695 | ,2674 | ,5837 | 148 | +, ,006 | $+, 12$ |
| 8.93 | 3 | + 2533,35 | 18,5', 4 | , 6513 | --8,5223 | ,2673 | ,5847 | 149 | +,006 | + ,02 |
| 894 | 4 | + 62420,60 | 18,486 | ,6758 | -9,0109 | ,2668 | ,5871 | 153 | +,020 | + , () 1 |
| 895 | 4 | $+205046,14$ | 18,414 | ,7372 | -9,5142 | ,2651 | ,5966 | 161 | +, (0) | +,05 |
| 896 | 4 | -10 28 19,01 | 18,365 | +9,5490 | +9,2219 | -1,2640 | +9,6027 | 166 | +,001 | - , 13 |
| 897 | 2 | +29 159,20 | 18,341 | , 7597 | $-9,6473$ | , 26335 | ,6053 | 172 | +, ,010 | -, 12 |
| 898 | 4 | - 32637,87 | 18,3:39 | ,6117 | +8,7429 | ,2636 | ,6059 | 171 | +,003 | - , 52 |
| 899 | 4 | + 8745,59 | 18,337 | ,6875 | $-9,1111$ | - ,2633 | ,6062 | 17.3 | +,026 | , ,00 |
| 900 | 4 | +65 397,64 | 18,292 | ,7419 | -9,9198 | - ,2622 | ,6116 | 184 | 4 ,000 | -, 26 |


together with their annual precessions and proper motions, \&e.



| No. | Nos. | Declination Jan. 1, 1836. | Annual <br> Precession. | Logarithms of |  |  |  |  | Annual P. M. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | $a$ |  |  | $d^{\prime}$ |  | A. R. | Decn. |
|  |  |  |  |  |  |  |  |  |  |  |
| 946 947 | 4 4 4 | +54 1611,78 $-26613,34$ | -16,587 | +9,8513 | $-9,8272$ $+9,5604$ | -1,2198 | +9,7492 | 79 | +,018 | -0,10 |
| 94 | 4 | - 020 35,75 | 16,498 | ,6345 | $+9,564$ $+7,7014$ | ,2174 | ,7542 | 781 | ,+ 009 ,+ 033 | +,90 |
| 949 | 4 | + 62512,65 | 16,395 | ,6964 | -8,9610 | ,2147 | ,7598 | 93 | +,006 | + , 02 |
| 950 | 4 | + 9516,02 | 16,304 | ,7168 | -9,1086 | ,2129 | ,7647 | 99 | +,016 | -, 04 |
| 95 | 4 | -2 2227,68 | 16,297 | +9,6117 | $+8,5291$ | -],2121 | +9,7650 | 100 | +,012 | +,08 |
| 952 | 4 | -45 4410,94 | 16,181 | --,0792 | +9,7621 | ,2090 | ,7709 | 106 | +,006 | + ,02 |
| 953 | 4 | -6 61232,27 | 16,171 | + ,5670 | +8,9413 | ,2087 | ,7709 | 108 | +,012 | -,12 |
| 954 | 4 | - 6839,31 | 16,153 | ,5659 | +8,9362 | ,2083 | ,7723 | 111 | +,010 | -, 13 |
| 955 | 4 | + 41119,50 | 16,032 | ,6776 | -8,7644 | ,2050 | ,7783 | 120 | +,020 | -, 13 |
| 956 | 4 | - 85326,38 | 16,021 | +9,5276 | +9,0930 | -1,2047 | +9,7788 | 121 | +,004 | - ,04 |
| $9: 5$ | , | - 3 3 35,46 | 16,017 | ,6031 | $+8,6333$ | ,2046 | ,7790 | 122 | +,006 | +,07 |
| 958 | 4 | -22 26 50,27 | 15,962 | ,2279 | $+9,4836$ | ,2031 | ,7816 | 129 | -,050 | + , 02 |
| 959 | 5 | - 5425,72 | 15,869 | ,5775 | +8,8460 | ,2006 | ,7859 | 139 | +,014 | -,16 |
| 960 | 4 | -10 59 50,33 | 15,869 | ,4928 | +9,1753 | ,2006 | ,7859 | 138 | +,029 | -, 08 |
| 961 | 4 | -545 2,02 | 15,766 | +9,5682 | $+8,8978$ | -1,1977 | +9,7906 | 144 | +,009 | -, 08 |
| 962 | 4 | -113143,93 | 15,722 | ,4786 | +9,1954 | ,1965 | ,7925 | 146 | +,029 | -,03 |
| 96 | 4 | -11 26 53,08 | 15,704 | ,4800 | +9,1925 | ,1960 | ,7933 | 151 | -,005 | -,,04 |
| 96 | 3 | -24 2418,40 | 15,690 | ,1399 | +9,5100 | ,1956 | ,7940 | 153 | +,003 | -, 07 |
| 965 | 4 | - 54121,51 | 15,580 | ,5670 | +8,8889 | ,1926 | ,7987 | 162 | +,020 | -,02 |
| 966 | 4 | +15 4929,94 | 15,437 | +9,7716 | $-9,3220$ | $-1,1885$ | +9,8047 | 178 | +,018 | -, 03 |
| 96 | 3 | -12 25 47,93 | 15,350 | 9,4564 | +9,2178 | ,1861 | ,8082 | 181 | +,002 | -, 02 |
| 968 |  | -32 56 50,24 | 15,180 | 7,9031 | +9,6150 | ,1813 | ,8149 | 192 | ,000 | -,02 |
| 909 | 3 | -15 4310,02 | 15,142 | 9,3801 | +9,3114 | ,1802 | ,8164 | 195 | +,005 | - ,09 |
| 970 | , | + 01454,15 | 15,034 | 9,6395 | -7,4850 | ,1771 | ,8204 | 205 | +,001 | -, 18 |
| 971 | 4 | -24 5638,94 | 15,007 | +9,0569 | +9,4995 | $-1,1763$ | +9,8214 | 208 | +,019 | - , 17 |
| 9 | 4 | -16 $42 \begin{aligned} & 1,05\end{aligned}$ | 14,828 | ,3483 | +9,3276 | ,1711 | ,8279 | 223 | -,004 | -, ,07 |
| 97 | 4 | - 419 24,08 | 14,746 | ,5809 | +8,7450 | ,1687 | ,8308 | 229 | -,003 | -,16 |
| 974 | 5 | +10 9 92,83 | 14,737 | ,7380 | $-9,1124$ | ,1683 | ,8312 | 230 | +,003 | -, 18 |
| 975 | 5 | -16 5850,76 | 14,531 | ,3304 | +9,3258 | ,1623 | ,8381 | 246 | +,013 | -, 09 |
| 976 | 4 | -15 56 32,60 | 14,503 | $+9,3747$ | +9,2985 | -1,1614 | +9,8390 | 252 | +,016 | - ,03 |
| 977 | 4 | - 65522,24 | 14,474 | ,5403 | +8,9404 | ,1606 | ,8399 | 254 | +,019 | -,02 |
| 978 | 4 | -14 $21 \begin{array}{ll}\text { 1 } & 4,80\end{array}$ | 14,426 | ,3944 | +9,2522 | ,1591 | ,8415 | 256 | +,007 | -, ,07 |
| 979 | 4 | - 01541,64 | 14,406 | ,6345 | +7,5244 | ,1585 | ,8422 | 257 | ,000 | -,27 |
| 980 | 4 | +26 418 8,13 | 14,365 | ,8457 | -9,5074 | ,1573 | ,8435 | 264 | +,006 | + ,02 |
| 981 | 4 | + 33850,26 | 14,272 | +9,6785 | -8,6544 | -1,1545 | +9,8464 | 271 | +,016 | -, 10 |
| 982 |  | - 81723,00 | 14,259 | , 5172 | +9,0115 | ,1541 | ,8468 | 272 | +,004 | +,01 |
| 983 | 3 | -11 2446,25 | 14,210 | ,4563 | +9,1471 | ,1526 | ,8483 | 276 | -,001 | -, 05 |
| 98 | 3 | +71 1530,31 | 14,217 | ,9063 | $-9,8271$ | ,1528 | ,8481 | 285 | ,000 | +,17 |
| 98 | 4 | + 03441,14 | 14,185 | ,6444 | -7,8451 | ,1518 | ,8491 | 278 | +,007 | -,07 |
| 986 | 4 | -21 26 52,09 | 14,057 | +9,1553 | +9,4093 | -1,1479 | +9,8530 | 289 | ,000 | -, 05 |
| 98 | 3 | -12 25 37,35 | 14,019 | 9,4314 | +9,1784 | ,1467 | +,8541 | 1 | +,013 | +,,01 |
| 988 |  | + 32714,30 | 14,021 | 9,6785 | -8,6201 | ,1448 | ,8559 |  | +,009 | -,01 |
| 989 990 | 4 | $-24419,25$ +5817 | 13,912 | 8,9685 | +9,4625 | ,1435 | ,8572 | 5 | -,019 | -,19 |
| 990 | 4 | +58 17 10,92 | 13,910 | 9,9248 | -9,7710 | ,1433 | ,8573 | 12 | +,009 | -, 01 |



| No. | $\begin{aligned} & \mathrm{N}_{\mathrm{o}} . \\ & \mathrm{Obs} \end{aligned}$ | Declination Jan. 1, 1836. | Annual <br> Precession. | Logarithms of |  |  |  |  | Annual P. M. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | $a^{\prime}$ |  |  | $d^{\prime}$ |  | A. R. | Decn. |
|  |  |  |  |  |  |  |  |  |  |  |
| 991 | 4 | -23 45 24,70 | -13,890 | +9,0253 | +9,4463 | -1,1427 | +9,8579 | 8 | +,007 | +0,01 |
| 99 | 1 | -17 49 10,56 | 113,834 | +9,2810 | +9,3251 | ,1410 | ,8595 | 5 | +,005 | -,10 |
| 993 | 4 | - 24449,85 | 13,788 | +9,6010 | +8,5212 | ,1395 | ,8608 | 17 | +,009 | -, 04 |
| 994 | 4 | - 02245,78 | 13,575 | +9,6325 | +7,6747 | ,1327 | ,8667 | 28 | +,010 | -,13 |
| 995 | 4 | -44 20 14,88 | 13,493 | -9,3139 | +9,7727 | ,1301 | ,8689 | 30 | -,012 | -,06 |
| 996 | 4 | $\begin{array}{llll}-10 & 26 & 3,79\end{array}$ | 13,424 | +9,4654 | +9,0845 | -1,1279 | +9,8707 | 38 | +,016 | -, 17 |
| 997 | 4 | -14 4632,71 | 13,422 | 9,3617 | +9,2328 | ,1275 | ,8711 | 40 | +,001 | -,17 |
| 998 | 5 | - 6059,15 | 13,373 | 9,5478 | +8,8459 | ,1262 | ,8721 | 43 | +,009 | -, 05 |
| 999 | 4 | +30 9555,75 | 13,350 | 9,8751 | $-9,5245$ | ,1255 | ,8727 | 46 | -,006 | -, 15 |
| 1000 | 4 | - 61346,43 | 13,347 | 9,5453 | +8,8591 | ,1254 | ,8728 | 45 | +,017 | -,06 |
| 1001 | 4 | +30 20 18,76 | 13,3 | +9,8768 | $-9,5251$ | -1,1239 | +9,8739 | 51 | +,003 | - ,13 |
| 1002 | 3 | -10 3 36,68 | 13,290 | 9,4713 | +9,0641 | ,1235 | ,8742 | 48 | +,002 | -,32 |
| 1003 | 3 | + 0226,75 | 13,141 | 9,6375 | -6,5814 | ,1186 | ,8780 | 60 | +,020 | -, 20 |
| 1004 | 4 | + 92929,16 | 13,136 | 9,7419 | $-9,0333$ | ,1185 | ,8781 | 62 | +,006 | -, 11 |
| 1005 | 4 | - 84726,90 | 13,123 | 9,4955 | +9,0007 | ,1180 | ,8784 | 61 | +,011 | -,08 |
| 10 | 4 | + 94028,71 | 13,114 | +9,7443 | -9,0409 | -1,1177 | +9,8786 | 66 | +,011 | -, 16 |
| 10 | 3 | +54 31 2,10 | 13,110 | 9,9385 | $-9,7263$ | ,1176 | ,8788 | 68 | +,028 | -, 11 |
| 10 | 3 | -20 47 52,83 | 13,092 | 9,1367 | +9,3657 | , 1170 | ,8792 | 65 | +,012 | -,04 |
| 1009 | 2 | +37 $5532 \cdot 2,23$ | 12,986 | 9,9085 | -9,6000 | ,1135 | ,8818 | 74 | -,008 | +,01 |
| 1010 | 3 | - 51422,18 | 12,973 | 9,5575 | +8,7725 | ,1130 | ,8821 | 70 | +,005 | -,18 |
| 1011 | 4 | -20 31759,37 | 12,950 | +9,1367 | +9,3577 | -1,1123 | +9,8826 | 71 | -,027 | -,01 |
| 1012 | 4 | -10 5924,13 | 12,919 | 9,4487 | +9,0853 | ,1112 | ,8834 | 77 | +,009 | -,08 |
| 1013 | 4 | - 52544,66 | 12,922 | 9,5563 | +8,7860 | ,1103 | ,8840 | 79 | +,008 | - , ,11 |
| 1014 |  | +34 5434,75 | 12,885 | 9,8998 | -9,5656 | ,1100 | ,8842 | 81 | +,014 | -,14 |
| 1015 | 4 | + 21939,54 | 12,785 | 9,6674 | $-8,4113$ | ,1067 | ,8866 | 85 | $+, 033$ | -,10 |
| 10 | 4 | $\begin{array}{llll}-18 & 16 & 2,13\end{array}$ | 12,754 | +9,2304 | +9,3002 | -1,1056 | +9,8873 | 87 | -,017 | + ,01 |
| 1017 | 4 | -15 16 45,43 | 12,744 | 9,3324 | +9,2247 | ,1053 | ,8875 | 88 | +,007 | -, 13 |
| 1018 | 4 | -27 <br> -186 <br> 1,52 | 12,717 | 8,4314 | +9,4685 | ,1044 | ,8881 | 90 | +,017 | -,06 |
| 1019 |  | -18 50 20,13 | 12,654 | 9,2041 | $+9,3096$ | ,1(02) | ,8896 | 94 | +-,017 | -, ,01 |
| 1020 | 4 | -933 1,32 | 12,587 | 9,4742 | +9,0185 | ,0999 | ,8911 | 101 | +,015 | -,14 |
| 1021 | 4 | + 35256,77 | 12,527 | +9,6866 | -8,6248 | -1,0979 | +9,8924 | 107 | +,013 | -, 10 |
| 1022 | , | -13 3317,40 | 12,253 | +9,3729 | +9,1565 | ,0882 | ,8984 | 127 | +,010 | +, 05 |
| 1023 |  | -44 4 | 12,211 | -9,3802 | +9,6272 | ,0867 | ,8993 | 129 |  |  |
| 1024 | 5 | +17 4 33,86 | 12,188 | +9,8116 | $-9,2515$ | ,0859 | ,8997 | 137 | +,005 | ,00 |
| 1025 | 5 | -13 3049,22 | 12,141 | +9,3711 | +9,1515 | ,0843 | ,9007 | 139 | ,000 | +,02 |
| 1026 | 4 | $\begin{array}{lll}-13 & 26 & 4,22\end{array}$ | 12,039 | +9,3729 | +9,1452 | -1,0806 | +9,9028 | 144 | +,015 | +,02 |
| 1027 | 3 | -24 5310,55 | 11,950 | 8,7404 | +9,3997 | ,0774 | ,9046 | 149 | +,009 | -, 11 |
| 10 | 4 | + 25754,27 | 11,800 | 9,6767 | -8,4814 | ,0719 | ,9076 | 159 | +,005 | -, 12 |
| 1029 | 4 | +6619 33,38 | 11,719 | 9,9624 | -9,7287 | ,0689 | ,9091 | 168 | +,022 | + ,03 |
| 1030 | 4 | +16 2324,63 | 11,568 | 9,8082 | $-9,2025$ | ,0632 | ,9120 | 171 | +,011 | -,05 |
| 1031 | 3 | +14 37 30,26 | 1,511 | +9,7973 | -9,1616 | -1,0611 | +9,9131 | 173 | +,005 | - , 11 |
| 1032 | 3 | $-332834,12$ | 11,009 | -8,9956 | +9,4815 | ,0417 | ,9220 | 205 |  | + ,01 |
| 1033 | 4 | +9 418,86 | 10,985 | +9,7490 | -8,9363 | ,0408 | ,9224 | 209 | +,023 | + ,02 |
| 1034 | 4 | +17 3943,95 | 10,769 | +9,8254 | -9,2107 | ,0322 | ,9260 | 223 | +,001 |  |
| 1035 | 4 | -34 59 14,18 | 10,487 | -9,1271 | +9,4773 | ,0207 | ,9305 | 236 | ,000 | -,22 |



| No. | No.Obs. | Declination <br> Jan. 1, 1836. | Annual <br> Precession. | Logarithms of |  |  |  |  | Annual P. M. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | $b^{\prime}$ |  | $d^{\prime}$ |  | A. R. | Decn. |
|  | 5 | -8 |  |  |  |  |  |  |  |  |
| 10 | 2 | -8 8120,00 | -10,427 | +9,4928 | $+8,8663$ $+8,8616$ | -1,0200 | +9,99315 | 24.3 | + +011 | 00 |
| 10 | 4 | -20 26 36,12 | 10,357 | +9,(1334 | +9,2566 | ,015:3 | ,9325 | 244 | +,011 | -, 21 |
| 1039 | 4 | -18 4 4 53,22 | 10,337 | +9,1673 | +9,2048 | ,0144 | ,9328 | 249 | +,001 | +,01 |
| 1040 | 4 | +545855,53 | 10,288 | +9,9782 | -9,6:36 | ,0123 | ,9356 | 262 | +,002 | -,12 |
| 1041 | 1 | $\begin{array}{lll}-27 & 16 & 4,24\end{array}$ | 10,237 | -7,9031 | +9,3695 | -1,0102 | +9,9343 | 257 | +,004 | -, 02 |
| 1042 | 2 | - 883923,51 | 10,182 | -9,2988 | +9,5016 | ,0779 | ,9352 | 260 | +,011 | + ,09 |
| 1043 | 3 | + 5 51 37,02 | 10,137 | +9,7152 | -8,7122 | ,0059 | ,9,358 | 269 | +,008 | -, 07 |
| 1044 | 4 | -18 33 6,01 | 10,036 | +9,1503 | +9,2026 | ,0016 | ,9373 | 273 | +,009 | +,02 |
| 1045 | 3 | $\begin{array}{llll}-19 & 0 & 51,87\end{array}$ | 10,017 | +9,1072 | +92121 | ,0007 | ,9376 | 275 | +,015 | + ,16 |
| 1046 | 4 | + 55046,53 | 9,966 | +9,7160 | $-8,7036$ | -0,9985 | +9,9383 | 281 | +,017 | -,06 |
| 1047 | 3 | +17 29553,33 | 9,961 | +9,8280 | -9,1741 | ,99883 | ,9384 | 285 | +,001 | -,03 |
| 1048 | 4 | -27 42 9,40 | 9,794 | -8,3424 | +9,3565 | ,9909 | ,940¢ | 5 | +,005 | +, 03 |
| 1049 | 3 | -19 4 418,61 | 9,758 | +9,0934 | +9,2018 | ,9893 | ,9412 |  | +,004 | -, 01 |
| 1050 | 5 | +182128,23 | 9,717 | +9,8370 | -9,1836 | ,9875 | ,9418 | 11 | -,003 | + ,05 |
| 1051 | 4 | -21 5727,85 | 9,610 | +8,8692 | +9,2537 | -0,9827 | +9,9433 | 17 | +,001 | -,12 |
| 1052 | 5 | +627 46,91 | 9,605 | +9,7243 | -8,7310 | ,9825 | ,9433 | 20 | +,013 | +,01 |
| 1 | 4 | + 61929,10 | 9,538 | +9,7235 | -8,7190 | ,9795 | ,9442 | 24 | +,018 | + ,03 |
| 1054 | 3 | -30 29 47,94 | 9,301 | -8,8808 | +9,3623 | ,968.) | ,9473 | 35 | ,000 | -, 04 |
| 1055 | 4 | -39 1-124,20 | 9,276 | -9,3463 | +9,4645 | ,9673 | ,9477 | 37 | $+, 005$ | -,07 |
| 56 | 4 | +19 15 20,32 | 9,265 | +9,8463 | -9,1830 | -0,9669 | +9,9478 | 43 | +,017 | -, 07 |
| 1057 | 4 | -19 39 10,32 | 9,198 | +9,0414 | +9,1888 | ,9637 | ,9486 | 45 | ,000 | -,10 |
| 1058 | 4 | -19 4255,50 | 9,167 | +9,0334 | +9,1883 | ,9622 | ,9490 | 48 | ,000 | -, 08 |
| 10.99 | 3 | -19 42 43,27 | 9,167 | +9,0334 | $+9,1883$ | ,9622 | ,9490 | 49 | -,003 | -, 11 |
| 1060 | 5 | $\begin{array}{llll}+17 & 1 & 16,14\end{array}$ | 9,141 | +9,8299 | -9,1254 | ,9610 | ,9494 | 53 | -,007 | + ,06 |
| 1061 | 4 | + 55631,76 | 9,136 | +9,7193 | -8,6732 | -0,9607 | +9,9494 | 52 | +,012 | -, 0,5 |
| 1062 | 4 | +1:2 2018,86 | 9,026 | +9,7882 | -8,9831 | ,9555 | ,9510 | 57 | +,008 | -,07 |
| 106 | 5 | -38 483 3,00 | 9,006 | -9,3483 | +9,4497 | ,9545 | ,9510 | 55 | +,017 | -,06 |
| 1064 | 4 | + 3167,13 | 8,927 | +9,6348 | -8,4045 | . 95117 | ,9520 | 62 | +,,003 | -, 05 |
| 1065 | 4 | + 32838,75 | 8,917 | +9,6875 | -8,4298 | ,9502 | ,9521 | 63 | +,017 | -,15 |
| 1066 | 4 | +13 515 5,82 | 8,907 | +9,8028 | $-9,0263$ | -0,9597 | +9,9522 | 65 | +,008 | -,09 |
| 1067 | 4 | -29 0052,38 | 8,813 | -8,7482 | +9,3289 | ,9451 | ,9533 | 67 | +,001 | + ,04 |
| 10 | 2 | -23 4 | 8,802 | + 8,6628 | +9,2360 | ,9446 | ,95.35 | 68 | +,004 | -,02 |
| 1069 | 4 | -26 $11 \begin{array}{ll}\text { 2,40 }\end{array}$ | 8,786 | -7,9031 | +9,2868 | ,9438 | ,95:37 | 70 | +,013 | -,04 |
| 1070 |  | -941 | 8,718 | +9,4409 | +8,8658 | ,9404 | ,9544 | 76 |  |  |
| 1071 | 4 | + 31442,67 | 8,508 | +9,6848 | -8,3791 | -0,9298 | +9,9569 | 85 | +,008 | -, 03 |
| 1072 | 4 | -24 46 45,40 | 8,449 | +8,1461 | +9,2475 | ,9268 | ,9575 | 87 | +,015 | -,16 |
| 1073 | 4 | -35 11115,49 | 8,206 | -9,2355 | +9,3730 | ,9141 | ,9602 | 99 | -,007 | + , 01 |
| 1074 | 4 | + 22635,23 | 8,088 | +9,6739 | -8,2338 | ,,9079 | ,9614 | 109 | +,010 | -,13 |
| 1075 | 4 | +22 510,37 | 7,831 | +9,8739 | -9,1667 | ,9938 | ,9640 | 4 | +,005 | + ,23 |
| 1076 | 3 | - 55714,05 | 7,810 | +9,5263 | +8,6075 | -0,8926 | +9,9642 | 122 | -,002 | - ,12 |
| 1077 | 4 | +174843,32 | 7,747 | +9,8426 | -9,0725 | ,8891 | ,9648 | 130 | +,004 | -,08 |
| 1078 | 4 | - 710 53, 89 | 7,595 | +9,4983 | +8,6766 | ,8805 | ,9663 | 138 | +,010 | -,01 |
| 1079 | 4 | +2722 43,24 | 7,562 | +9,90〕6 | -9,2391 | ,8786 |  | 141 | +,012 | -, 03 |
| 1080 | 3 | +1322 8,70 | 7,519 | +9,8035 | -8,9376 | ,8762 | ,9671 | 4 | +,014 | + ,04 |


| No. | Star's name and Mag. |  |  | No. Obs. | Right Ascension Jan. 1, 1836. |  |  | Annual <br> Precession. | Logarithms of |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | $a$ |  |  |  | $b$ | c | $d$ |
| 1081 |  | Serpentis | 8.9 |  | 3 |  |  |  | 34,98 | +3,122 | -8,3944 | -8,7920 | +0,4944 | +7,0370 |
| 1082 |  | Herculis | 7.8 | 4 |  |  | 20,31 | 2,634 | , 4107 | ,8179 | ,4:06 | -7,9284 |
| 1083 |  | Ophiuchi | 8.9 | 4 |  | 35 | 45,37 | 2,974 | ,3798 | ,7952 | ,473:3 | -7,2581 |
| 1084 |  | Scorpii | 8 | 4 |  |  | 55,62 | 3,892 | ,4510 | ,8733 | ,5902 | $+8,1917$ |
| 1085 |  | Nebules | 7 | 4 |  |  | 13,77 | 2,132 | ,4682 | ,8916 | ,3288 | -8,2458 |
| 1086 |  | Scorpii |  |  |  | 39 |  | 4,180 | -8,4856 | -8,9225 | +0,6212 | $+8,3073$ |
| 1087 |  |  | 9 | 3 |  | 41 | 18,67 | 4,182 | ,4754 | ,9235 | ,6214 | +8,2967 |
| 1088 |  | Herculis | 7.8 | 2 |  |  | 22,66 | 2,811 | ,3493 | ,8033 | ,4595 | -7,5164 |
| 1089 |  | Scorpii | 8 | 4 |  |  | 28,25 | 4,193 | ,4705 | ,9257 | ,6225 | $+8,2936$ |
| 1090 |  |  |  |  |  | 42 |  | 4,187 | ,4675 | ,9249 | ,6219 | +8,2892 |
| 1091 |  | Draconis | 9 | 3 |  |  | 55,40 | 0,974 | -8,6293 | -9,0852 | +9,9886 | -8,5621 |
| 1092 |  | Scorpii | 7.8 | 2 |  |  | 31,88 | 4,198 | ,465:3 | 8,9271 | 9,6230 | $+8,2 \times 93$ |
| 1093 |  |  | 7.8 | 3 |  |  | 45,45 | 3,895 | ,4139 | 8,8770 | 0,590.5 | +8,1524 |
| 11094 |  | Draconis | 7.8 | 3 |  |  | 4,42 | 1,214 | ,5792 | 9,049: | 0,0842 | $-8,4961$ |
| 1095 |  | Scorpii | 7 | 3 |  |  | 12,22 | 4,153 | ,4479 | 8,9200 | 0,6184 | +8,2612 |
| 1096 |  | Scorpii | 7.8 | 2 |  |  | 15,90 | 3,898 | -8,4057 | -8,8782 | +0,5908 | $+8,1447$ |
| 1097 |  | Serpentis | 7.8 | 3 |  |  | 48,60 | 3,154 | ,3264 | 8,8019 | ,4989 | $+7,1590$ |
| 1098 |  | Ophiuchi | 8 | 4 |  |  | 2,84 | 3,198 | ,3204 | 8,8039 | ,5049 | +7,3287 |
| 1099 |  | Draconis | 8 | 4 |  |  | 16,96 | 1,497 | ,5194 | 9,0033 | ,1752 | -8,4102 |
| 1100 |  | Scorpii | 8 | 1 |  |  | 47,58 | 4,039 | ,4136 | 8,9019 | ,6063 | +8,1968 |
| 1101 |  | Ophiuchi | 7.8 | 3 |  |  | 22,3.5 | 3,700 | $-8,3187$ | -8,8174 | +0,5315 | $+7,7207$ |
| 1102 |  |  | 9 | 3 |  |  | 35,71 | 3,422 | ,3194 | 8,8194 | 0,5343 | +7,7477 |
| 1103 |  |  | 9 | 3 |  |  | 42,20 | 3,482 | ,3181 | 8,8256 | 0,5418 | +7,8073 |
| 1104 |  | Draconis | 8 | 2 |  |  | 44,56 | 0,273 | ,6793 | 9,1855 | 9,4362 | -8,6382 |
| 11105 |  | Scorpii | 9 | 3 |  |  | 51,30 | 3,867 | ,3607 | 8,8762 | 0,5874 | +8,0851 |
| 1106 |  | Ophiuchi | 7.8 | 3 |  |  | 4,95 | 2,816 | -8,2.965 | -8,8130 | +0,4496 | -7,5835 |
| 1107 |  | Herculis | 9 | 3 |  |  | 57,73 | 1,623 | ,4533 | ,9821 | ,21:30 | -8,3259 |
| 1108 |  | Scorpii | 9 | 5 |  |  | 59,19 | 3,466 | ,28:94 | ,8263 | ,5398 | +7,7616 |
| 1109 |  | Herculis | 7 | 4 |  |  | 45,21 | 2,602 | ,2848 | ,8340 | ,4153 | -7,8171 |
| 11110 |  | Ophiuchi | 8 | 4 |  |  | 12,03 | 3,346 | ,2648 | ,8174 | ,5245 | +7,5897 |
| 1111 |  | Ophiuchi | 9 | 1 |  |  | 33,91 | 3,471 | -8,2585 | -8,8290 | +0,5404 | +7,7330 |
| 1112 |  | Herculis | 8 | 4 | 17 |  | 13,12 | 2,399 | ,2784 | ,8610 | ,3800 | $-7,9406$ |
| 11113 |  |  | 9 | 4 |  |  | 26,47 | 3,713 | ,2731 | ,8579 | ,5697 | +7,9226 |
| 1114 |  | Ophiuchi | 8 | 6 |  |  | 59,44 | 3,723 | ,2700 | ,8595 | ,5709 | +7,9246 |
| 1115 |  |  | 9 | 1 |  |  | 24,30 | 3,722 | ,2670 | ,8596 | ,5708 | +7,9213 |
| 11116 |  | Ophiuchi | 8 | 4 |  |  | 51,22 | 2,883 | -8,2119 | -8,8152 | +0,4598 | -7,3608 |
| $\mid 1117$ |  | Herculis | 7 | 3 |  |  | 16,12 | 2,479 | ,2453 | ,8517 | ,3943 | -7,8619 |
| 11118 |  |  | 8 | 4 |  |  | 29,85 | 2,478 | ,2433 | ,8519 | ,3941 | -7,8602 |
| 1119 1120 |  | Scorpii | 8 | 3 |  |  | 4,54 | 3,929 | ,2765 | ,8906 | ,5943 | +8,0188 |
| 1120 |  | Ophiuchi | 9 | 3 |  | 5 | 5,29 | 3,752 | ,2505 | ,8646 | ,5743 | +7,9190 |
| 1121 |  | Herculis | 9 | 4 |  |  | 45,94 | 2,732 | -8,1981 | -8,8269 | +0,4365 | $-7,5963$ |
| 11122 |  |  | 8 | 3 |  |  | 52,36 | 2,726 | ,1981 | ,8267 | ,4355 | -7,6035 |
| 1123 | 39 | Ophiuchi | 7 | 4 |  |  | 1,17 | 3,651 | ,2134 | ,8524 | ,5624 | +7,8244 |
| $1 \begin{aligned} & 1124 \\ & 1125\end{aligned}$ |  | Herculis Ophiuchi | 7 8 | 6 |  |  | 52,21 | 2,490 | ,2067 | ,8521 | ,3962 | -7,8146 |
| 1125 |  | Ophiuchi | 8 | 6 |  |  | 17,87 | 3,128 | ,1551 | ,8142 | ,4953 | +6,8173 |


| No. | $\left\lvert\, \begin{gathered} \text { No. } \\ \text { Obs. } \end{gathered}\right.$ | Declination <br> Jan. 1, 1836. | Annual <br> Precession. | Logarithms of |  |  |  |  | Annual P. M. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | $b^{\prime}$ |  | $d^{\prime}$ |  | A. R. | Decn. |
| 10 | 4 | - 23041,61 | 7,449 | +9,5944 | +8,2127 | -0,8721 | +9,9677 | 148 | ${ }^{\text {s, }} 00$ |  |
| 1082 | 4 | +19 1426,44 | - 7, 3018 | $+9,5855$ $+9,855$ | -9,0796 | ,8638 | ,9690 | 160 | +,021 |  |
| 1083 | 3 | + 41956,92 | 7,18ல | +9,7016 | -8,4329 | ,8566 | ,9701 | 116 | +,017 | -,09 |
| 1084 |  | -33 23 33,20 | 7,090 | -9,1847 | +9,2894 | ,8507 | ,9710 | 167 | +,012 | +,05 |
| 1085 | 4 | +36 49 16,87 | 7,074 | +9,9581 | -9,3253 | ,8496 | ,9711 | 172 | +,007 | -,03 |
| 1086 |  | -4132 | 6,883 | -9,4742 | +9,3575 | -0,8377 | +9,9727 | 179 |  |  |
| 1087 | 4 | -41 2955,99 | 6,729 | -9,4757 | +9,3472 | ,8279 | ,9740 | 192 | -,002 | -, 01 |
| 1088 | 4 | + 82734,70 | 6,647 | +9,75:36 | -8,6878 | ,8226 | ,9747 | 208 | +,010 | -,05 |
| 1089 | 4 | -41 42 43,12 | 6,630 | -9,4829 | +9,3427 | ,8215 | ,9748 | 199 | -,003 | ,00 |
| 1090 |  | -4132 | 6,603 | -9,4786 | +9,3394 | ,8197 | ,9750 | 204 |  |  |
| 1091 | 4 | +58 $57 \quad 5,71$ | 6,608 | +0,0137 | $-9,4509$ | -0,8201 | +9,9750 | 217 | +,015 | -, 02 |
| 1092 | 3 | -41 48 47,29 | 6,542 | --9,4871 | +9,3377 | ,8157 | ,9755 | 209 | -, 012 | -,09 |
| 1093 | 4 | -33 11 43,42 | 6,5*5 | -9,1903 | +9,2511 | ,8146 | ,9757 | 211 | $+, 020$ | -,03 |
| 1094 | 3 | +554038,45 | 6,432 | +0,0116 | --9,4233 | ,8083 | ,9764 | 22 | +,027 | -,19 |
| 1095 | 4 | -40 3388,14 | 6,404 | - y,4564 | +9,3178 | ,8064 | ,9766 | 218 | +,008 | -,15 |
| 1096 | 4 | -33 $14 \begin{array}{ll}\text {-3,18 }\end{array}$ | 6,399 | -9,1931 | +9,2431 | -0,8061 | +9,9767 | 222 | +,002 | + ,11 |
| 1097 | 4 | - 35322,43 | 6,360 | +9,5670 | +8,3341 | ,8034 | ,9769 | 226 | +,011 | + ,04 |
| 1098 | 4 | - $551 \quad 7,84$ | 6,255 | +9,5250 | +8,502.5 | ,7962 | ,9777 | 235 | +,019 | -,08 |
| 1099 | 4 | +51 256,18 | 6,249 | +0,0047 | $-9,3847$ | ,7958 | ,9778 | 241 | +,004 | + ,05 |
| 1100 | 4 | -37 2121,89 | 6,194 | -9,3655 | +9,2731 | ,7919 | ,9782 | 2.37 | +,024 | -,05 |
| 1101 | 4 | -14 3633,92 | 6,060 | +9,2528 | $+8,8825$ | -0,7825 | +0,9792 | 244 | +,001 | - ,09 |
| 1102 | 4 | -15 33 5,52 | 6;044 | +9,2095 | +8,9073 | ,7813 | ,9793 | 245 | +,014 | - ,23 |
| 1103 | 2 | -17 57333,14 | 5,949 | +9,0719 | +8,9617 | ,7745 | ,9800 | 254 | +,006 | + , 01 |
| 1104 | 4 | +65 28 19,22 | 5,966 | +0,0204 | -9,4326 | ,7757 | ,9798 | 264 | +,032 | - ,23 |
| 1105 | 4 | -32 0 3 33,00 | 5,849 | -9,1430 | +9,1895 | ,7671 | ,9807 | 259 | +,001 | -,05 |
| 1106 | 4 | +11 104,50 | 5,838 | +9,7860 | -8,7513 | -0,7662 | +9,9807 | 262 | +,014 | + ,02 |
| 1107 | 4 | +481454,50 | 5,687 | +0,0017 | -9,3256 | ,7549 | ,9818 | 275 | +,005 | + ,06 |
| 1108 | 4 | -1714 57,56 | 5,592 | +9,1106 | +8,9177 | ,7476 | ,982 | 274 | +,015 | - ,09 |
| 1109 | 4 | +195528,11 | 5,446 | +9,8669 | -8,9664 | ,7361 | ,9833 | 287 | +,005 | -,15 |
| 1110 | 4 | -12 $10 \begin{array}{lll}58,38\end{array}$ | 5,407 | +9,3444 | +8,7559 | ,7329 | ,9836 | 288 | +,005 | -,09 |
| 1111 | 3 | -17 20 55,50 | 5,204 | +9,1004 | +8,8889 | -0,7164 | +9,9848 | 300 | +,012 | 00 |
| 1112 | 4 | +272123,32 | 5,069 | +9,9185 | -9,0652 | ,7049 | ,9856 | 312 | +,016 | + ,05 |
| 1113 | 4 | -26 29222,80 | 5,047 | -8,6434 | +9,0506 | ,7030 | ,9858 | 308 | +,010 | - ,06 |
| 1114 | 8 | -26 4944,02 | 4,996 | -8,69:50 | +9,0512 | ,6986 | ,9861 | 311 | +,001 | - ,09 |
| 1115 | 1 | -26 48 41,14 | 4,962 | -8,6990 | +9,0480 | ,6957 | ,9863 | 1 | -,007 | - ,02 |
| 1116 | 4 | + 862,67 | 4,849 | +9,7536 | -8,5326 | -0,6856 | +9,9869 | 8 | +,022 | -,07 |
| 1117 | 4 | +24 26 35,47 | 4,815 | +9,9009 | -8,9972 | ,6826 | ,9871 | 11 | +,026 | -,06 |
| 1118 | 3 | +24 2723,15 | 4,792 | +9,9015 | -8,99.55 | ,6805 | ,9872 | 15 | +,020 | -, 11 |
| 1119 | 4 | -33 32 23,80 | 4,736 | -9,2430 | +9,1159 | ,6754 | ,9875 | 10 | +,011 | + , 07 |
| 1120 | 4 | -27 4616,45 | 4,736 | -8,8388 | +9,0419 | ,6754 | ,9875 | 12 | +,012 | -,09 |
| 1121 | 4 | +1429 44,79 | 4,594 | +9,8215 | -8,7583 | -0,6622 | +9,9883 | 25 | -,001 | -, 42 |
| 1122 | 4 | +144448,46 | 4,588 | +9,8248 | -8,7651 | ,6616 | ,9883 | 26 | +,020 | -,16 |
| 1123 | 2 | -24 549,65 | 4,590 | -7,3010 | +8,9609 | ,6519 | ,9888 | 31 | +,005 | -, 05 |
| 1124 | 5 | +23 5552,28 | 4,424 | +9,8987 | --8,9517 | ,6458 | ,9892 | 37 | ,000 | -,01 |
| 1125 | 4 | -23737,48 | 4,293 | +9,5888 | +7,9930 | ,6327 | ,9898 | 45 | -,001 | -,08 |


together with their annual precessions and proper motions, \&-c.

| No. | No. Obs. | Declination Jan. 1, 1836. | Annual <br> Precession. | Logarithms of |  |  |  | $\begin{aligned} & \dot{8} \\ & \text { 新 } \\ & \text { 菏 } \end{aligned}$ | Annual P. M. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | $b^{\prime}$ | $c^{\prime}$ | $d^{\prime}$ |  | A. R. | Decn. |
| 1126 | 4 | -26 2222,63 | -4,287 | -8,6532 | +8,9779 | -0,6321 | +9,9898 | 41 | s. ,+ 004 + |  |
| 1127 | 3 | -2 23411,87 | -4,253 | -8,5911 | + $+7,9778$ | -0,6321 | +9,9900 | 46 | +,002 | + |
| 1128 | 3 | -26 19 37,42 | 4,207 | -8,6532 | +8,9690 | ,6240 | ,9902 | 48 | +,005 | - ,02 |
| 1129 | 4 | -12 5435,42 | 4,167 | +9,3117 | +8,6672 | ,6198 | ,9904 | 55 | +,001 | -, 11 |
| 1130 | 2 | $-232411,33$ | 4,144 | +8,0000 | +8,9144 | ,6175 | ,9906 | 57 | +,002 | -,06 |
| 1131 | 4 | +49 52 6,08 | 4,104 | +0,0124 | -9,1947 | -0,6133 | +9,9907 | 69 | +,026 | - ,21 |
| 1132 | 2 | +56 1538,42 | 4,0.99 | +0,0232 | -9,2305 | ,6126 | ,9907 | 72 | +,014 | - , ,04 |
| 1133 | 2 | + 93531,69 | 4,076 | +9,7716 | $-8,5296$ | ,6102 | ,9908 | 66 | +,026 | -,20 |
| 1134 | 2 | -24 55 57,66 | 4,053 | $-8,2787$ | +8,9307 | ,6078 | ,9909 | 62 | +,033 | -, 16 |
| 1135 | 4 | +25 4233,81 | 4,025 | +9,9117 | -8,9399 | ,6047 | ,9911 | 71 | +,017 | -,07 |
| 1136 | 3 | -19 $17 \begin{array}{ll}\text { 17,17 }\end{array}$ | 4,007 | +8,9395 | +8,8197 | -0,6029 | +9,9911 | 67 | +,013 | -, 06 |
| 1137 | 3 | +9546,56 | 3,973 | +9,7745 | -8,5325 | ,5991 | ,9913 | 74 | +,018 | -, 18 |
| 1138 | 2 | -23 40 49,47 | 3,967 | +7,4771 | +8,9004 | ,5985 | ,9913 | 70 | +,008 | -, 01 |
| 1139 | 4 | -91147,54 | 3,893 | +9,4330 | +8,4921 | ,5903 | ,9916 | 79 | +,006 | -, 09 |
| 1140 | 4 | -27 2632,16 | 3,819 | -8,8261 | +8,9436 | ,5819 | ,9920 | 82 | +,026 | + ,02 |
| 1141 | 4 | +13 3330,21 | 3,802 | +9,8142 | $-8,6477$ | -0,5800 | +9,9920 | 85 | +,014 | -,14 |
| 1142 | 3 | + 903 39,74 | 3,796 | +9,7657 | $-8,4717$ | ,5793 | ,9921 | 84 | +,009 | -, 10 |
| 1143 | 2 | +22 434,79 | 3,733 | +9,8870 | -8,8449 | ,5720 | ,9923 | 92 | +,006 | +,06 |
| 1144 | 3 | -21 15 42,73 | 3,727 | +8,6812 | +8,8290 | ,5714 | ,9924 | 89 | +,031 | -, 05 |
| 1145 | 2 | +56 $\quad 5 \quad 56,86$ | 3,727 | +0,0241 | $-9,1885$ | ,5714 | ,9924 | 101 | +,008 | + ,04 |
| 1146 | 3 | +15 42 3,62 | 3,635 | +9,8351 | -8,6909 | -0,5605 | +9,9927 | 102 | +,013 | -,09 |
| 1147 | 3 | +1632 1,72 | 3,607 | +9,8426 | -8,7093 | ,5571 | ,9929 | 104 |  | + ,04 |
| 1148 | 4 | - 92126,00 | 3,509 | +9,4281 | $+8,4548$ | ,5452 | ,9932 | 107 | +,006 | -,07 |
| 1149 | 3 | + 83513,65 | 3,475 | +9,7604 | -8,4129 | ,5409 | ,9934 | 108 | +,021 | -,23 |
| 1150 | 2 | $+53301,26$ | 3,469 | +0,0212 | -9,1434 | ,5402 | ,9934 | 116 | +,014 | -,18 |
| 1151 | 4 | +953 36,97 | 3,452 | +9,7752 | -8,4707 | -0,5380 | +9,9935 | 111 | +,017 | - ,08 |
| 1152 | 4 | -15 29 57,26 | 3,372 | +9,1903 | +8,6527 | ,5278 | ,9938 | 114 | +,010 | -, 18 |
| 1153 |  | + 3834,61 | 3,348 | +9,6875 | $-7,9605$ | ,5248 | ,9938 | 119 | - +,004 | - , 27 |
| 1154 | 2 | - 95738,98 | 3,337 | +9,4082 | +8,4596 | ,5233 | ,9939 | 118 | +,011 | - ,28 |
| 1155 | 3 | +53 1626,95 | 3,337 | +0,0212 | -9,1252 | ,5233 | ,9939 | 124 | +,015 | + ,03 |
| 1156 | 3 | +22 1628,74 | 3,268 | +9,8899 | -8,7911 | -0,5143 | +9,9941 | 123 | +,013 | -, 10 |
| 1157 | 3 | - 24136,72 | 3,251 | +9,5877 | +7,8431 | ,5120 | ,9942 | 122 | +,006 |  |
| 1158 | 3 | - 22412,76 | 3,210 | +9,5944 | +7,8265 |  | ,9944 | 126 | -,010 | -,17 |
| 1159 | 2 | +173845,84 | 3,176 | +9,8531 | -8,6816 | ,5018 | ,9945 | $1: 33$ | +,006 | -, 09 |
| 1160 | 3 | -14 3955,04 | 3,164 | +9,2304 | +8,6017 | ,5003 | ,9945 | 129 | +,024 | -,17 |
| 1161 | 2 | + 01010,02 | 3,153 | +9,6345 | -6,6604 | -0,4987 | +9,9946 | 132 | +,013 | -, 17 |
| 1162 | 2 | -22 5417,03 | 3,107 | +8,2041 | +8,7804 | ,4923 | ,9947 | 134 | +,006 | -,07 |
| 1163 |  | $+3117 \quad 9,22$ | 3,061 | +9,9464 | -8,8992 | ,4858 | ,9949 | 143 | +,017 | +,02 |
| 1164 | 3 | +2815 54,70 | 3,061 | +9,9299 | -8,8592 | ,4858 | ,9949 | 141 | +,017 | -,02 |
| 1165 | 4 | -24 3028,07 | 2,980 | -8,2304 | +8,7902 | ;4742 | ,9951 | 142 | -,008 | -,05 |
| 1166 | 3 | + 94126,49 | 2,876 | +9,7738 | -8,3827 | -0,4588 | +9,9955 | 149 | +,010 | - , 22 |
| 1167 | 4 | -18 5241,28 | 2, $\times 18$ | +8,9590 | +8,6581 | ,4500 | ,9957 | 1.2 | $+, 116$ | -, 05 |
| 1168 |  | +12 931,07 | 2,755 | $+9,80 \cup 7$ | -8,4613 | ,4401 | ,9958 | 158 | +, 016 | + ,05 |
| 1169 | 4 | +21 623,03 | 2,691 | +9,8814 | -8,6843 | ,4300 | ,9460 | $16 \%$ | +,018 | -,01 |
| 1170 | 4 | +114546,71 | 2,651 | +9,7973 | -8,4303 | ,4234 | ,9962 | 165 | +,005 | + ,03 |


| No. | Star's name and Mag. |  |  | No. Obs. | $\begin{gathered} \text { Right } \\ \text { Ascension } \\ \text { Jan. } 1,1836 . \end{gathered}$ | Annual <br> Precession. | Logarithms of |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | a |  |  | $b$ | c | d |
| 1171 |  | Ophiuchi |  |  | 3 | $\begin{array}{ccc} \hline h_{i} & m_{i} & s_{0} \\ 17 & 30 & 10,9 \end{array}$ | $\left\lvert\, \begin{gathered} s . \\ +2,792 \end{gathered}\right.$ | -7,9431 | -8,8295 | +0,4459 | -7,2531 |
| 1172 |  | Ophinchi | 8.9 | 2 | 170 21,27 | 3,329 | -,9392 | ,8286 | -,5223 | +7,2262 |
| 1173 |  | Herculis | 8 | 2 | 30 27, 80 | 2,568 | ,9598 | ,8492 | ,4096 | -7,5069 |
| 1174 |  | Ophiuchi | 9 | 2 | 3050,25 | 3,651 | ,9624 | ,8589 | ,5624 | +7,5674 |
| 1175 |  |  | 7.8 | 1 | 30 52,00 | 3,019 | ,9243 | ,8207 | ,4799 | -6,4917 |
| 1176 |  | Ophiuchi | 7 | 4 | 3126,25 | 2,752 | -7,9279 | $-8,8326$ | +0,4396 | -7,2935 |
| 1177 |  | Ophiadi | 8 | 3 | 32 7,96 | 2,753 | ,9165 | ,8327 | ,4398 | -7,2805 |
| 1178 |  |  | 7.8 | 3 | 32 36,85 | 3,097 | ,8974 | ,8209 | ,4909 | +6,2587 |
| 1179 |  | Herculis | 7.8 | 2 | 3256,46 | 2,463 | ,9340 | ,8619 | ,3915 | -7,5520 |
| 1180 |  | Ophiuchi | 8 | 3 | 34 35,20 | 2,845 | ,8714 | ,8273 | ,4541 | -7,0905 |
| 1181 |  | Ophiuchi | 8 | 3 | 3449,89 | 3,603 | -7,8923 | -8,8540 | +0,5567 | +7,4646 |
| 1182 |  |  | 7.8 | 2 | 34 56,44 | 3,231 | ,8617 | ,8246 | ,5093 | +6,9476 |
| 1183 |  |  | 7 | 2 | 3459,31 | 2,654 | ,8786 | ,8415 | ,4239 | -7,3523 |
| 1184 |  | Herculis | 7 | 2 | 35 32,29 | 2,370 | ,9021 | ,8744 | ,3747 | -7,5699 |
| 1185 |  |  | 6 | 2 | 3545,14 | 2,458 | ,8858 | ,8630 | ,3906 | -7,5060 |
| 1186 |  | Draconis | 8 | 3 | 36 | -0,376 | -8,2844 | -9,2652 | $-9,5752$ | -8,2543 |
| 1187 |  | Ophiuchi | 8 |  | 3614,24 | +2,933 | 7,8381 | 8,8238 | +0,4673 | -6,8427 |
| 1188 | 61 | - | seq. 7.8 | 4 | 3621,34 | 3,007 | 7,8339 | 8,8221 | ,4781 | -6,4988 |
| 1189 |  |  | 7.8 | 4 | 3648,22 | 2,740 | 7,8376 | 8,8346 | ,4377 | -7,2172 |
| 1190 |  | Draconis | 8 | 2 | 36 53,67 | 1,277 | -8,0495 | 9,0465 | ,1062 | -7,9542 |
| 1191 |  | Ophiuchi | 8.9 | 3 | 37 31,91 | 2,933 | -7,8129 | -8,8241 | +0,4673 | -6,8162 |
| 1192 |  |  | 7.8 | 1 | 38 8,84 | 2,935 | ,8010 | ,8241 | ,4676 | -6,7993 |
| 1193 |  |  | 8.9 | 2 | 3844,51 | 2,936 | ,7888 | ,8242 | ,4678 | -6,7820 |
| 1194 |  |  | 8 | 2 | 390046 | 2,934 | ,7834 | ,8243 | ,4675 | -6,7842 |
| 1195 |  | Telescopii | 7 | 3 | 40 0,91 | 4,214 | ,8787 | ,9426 | ,6247 | +7,6932 |
| 1196 |  | Sagittarii | 7 | 3 | 41 26,17 | 3,979 | -7,8081 | -8,9057 | +0,5998 | +7,5596 |
| 1197 |  | Sagitar | 8 | 5 | 42 1,99 | 3,545 | ,7383 | , 8488 | , 5496 | +7,2664 |
| 1198 |  | Tauri Pon. | 8 | 3 | 42 38,43 | 2,897 | ,7024 | ,8262 | ,4619 | -6,8064 |
| 1199 |  | Herculis | 7 | 4 | $4.238,54$ | 1,949 | ,8165 | ,9386 | ,2898 | -7,6248 |
| 1200 |  |  | 8 |  |  | 3,992 | ,7757 | ,9080 | ,6012 | +7,5315 |
| 1201 |  | Ophiuchi | 9 | 2 | 43 43,35 | 3,522 | -7,6932 | $-8,8467$ | $+0,5468$ | +7,2021 |
| 1202 |  |  | 8 | 3 | 44 3,96 | 3,549 | 7,6868 | 8,8495 | + ,5501 | +7,2177 |
| 1203 | $\psi^{1}$ | Draconis | seq. 7 | 3 | 44 53,95 | -1,093 | 8,1588 | 9,3385 | -,0386 | -8,1376 |
| 1204 |  | Ophiuchi | 8 | 3 | $45 \quad 3,53$ | +3,632 | 7,6675 | 8,8588 | + ,5601 | +7,2585 |
| 1205 |  |  | 7 | 3 | 4533,73 | 3,104 | 7,6159 | 8,8232 | + , 4919 | +6,0527 |
| 1206 |  | Serpentis | 7.8 | 4 | 45 46,82 | 3,342 | -7,6185 | -8,8320 | +0,5240 | +6,9219 |
| 1207 |  | Telescopii | 7 | 3 | 46 9,03 | 4,256 | ,7238 | 8,9499 | ,6290 | + 7,5466 |
| 1204 |  | Herculis | 7.8 |  | 46 | 1,564 | ,7687 | 9,0013 | ,1942 | -7,6427 |
| 1209 |  | Serpentis | 8 | 3 | 47 22,99 | 3,440 | ,5733 | 8,8397 | ,5366 | +7,0043 |
| 1210 |  | Ophiuchi | 8 | 2 | 47 47,23 | 3,525 | ,5668 | 8,8474 | ,5472 | +7,0772 |
| 1211 |  | Tauri Pon. | 7 |  | 47 57,07 | 2,947 | -7,5396 | $-8,8251$ |  | -6,4955 |
| 1212 |  |  | 7 | 2 | 48 46,98 | 2,951 | ,5092 | ,8251 | , ,4700 | -6,4510 |
| 1213 |  | Ophiuchi | 7.8 | 1 | 49 11,74 | 3,472 | ,5079 | ,8425 | ,5406 | +6,9697 |
| 1214 |  | Herculis | 7 | 2 | 49 13,11 | 2,625 | ,5115 | ,8461 | ,4191 | -7,0096 |
| 1215 |  |  | 8 | 4 | 49 59,09 | 1,705 | ,6157 | ,9785 | ,2317 | -7,4695 |


| No. | No. Obs. | Declination Jan. 1, 1836. | Annual <br> Precession. | Logarithms of |  |  |  |  | Annual P. M. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | $a^{\prime}$ | $b^{\prime}$ | $c^{\prime}$ | $d^{\prime}$ |  | A. R. | Decn. |
|  |  | ○ ' "' |  |  |  |  |  |  | $s$. |  |
| 1171 | 4 | +11 4733,18 | $-2,581$ | +9,7973 | $-8,4200$ | -0,4119 | +9,9964 | 171 | +,004 | -, 02 |
| 1172 | 3 | -11 10 1,20 | 2,564 | +9,3692 | +8,3940 | ,4089 | ,9964 | 170 | +,014 | -, 11 |
| 1173 | 2 | +20 42 3,71 | 2,564 | +9,8785 | -8,6550 | ,4089 | ,9964 | 175 | +,013 | -,01 |
| 1174 | 3 | -23 44 20,86 | 2,524 | -7,4771 | +8,7051 | ,4020 | ,9965 | 173 | +-,012 | - ,01 |
| 1175 | 3 | + 2744,61 | 2,524 | +9,6730 | -7,6675 | ,4020 | ,9965 | 177 | +,048 | + ,02 |
| 1176 | 3 | +132534,89 | 2,477 | +9,8142 | -8,4576 | -0,3940 | +9,9966 | 183 | +,013 | + ,01 |
| 1177 | 2 | +1322 52,34 | 2,414 | +9,8136 | -8,4450 | ,3827 | ,9968 | 185 | +,010 | ,00 |
| 1178 | 4 | - 11816,59 | 2,373 | +9,6075 | +7,4347 | ,3753 | ,9969 | 187 | +,016 | -, ,06 |
| 1179 | 3 | +24 3033,58 | 2,350 | +9,9069 | -8,6871 | ,3711 | ,9970 | 191 | +,014 | - ,06 |
| 1180 | 3 | + 9322,27 | 2,205 | +9,7730 | -8,2606 | ,3434 | ,9973 | 199 | +,011 | - ,14 |
| 1181 | 4 | -21 5630,42 | 2,176 | +8,5051 | +8,6081 | -0,3377 | +9,9974 | 197 | -,006 | - ,07 |
| 1182 | 4 | -659 48,99 | 2,170 | +9,4914 | +8,1205 | ,3365 | ,9974 | 202 | +,014 | - ,06 |
| 1183 | 2 | +171853,66 | 2,170 | +9,8513 | -8,5083 | ,3365 | ,9974 | 205 | +,011 | + ,02 |
| 1184 | 2 | +274339,23 | 2,124 | +9,9279 | -8,6930 | ,3272 | ,9975 | 212 | +,019 | - ,06 |
| 1185 | 3 | +2439 4,61 | 2,101 | +9,9079 | -8,6406 | ,3224 | ,9976 | 213 | $+, 002$ | -,19 |
| 1186 | 1 | +6854 10,36 | 2,083 | +0,0350 | -8,9867 | -0,3188 | +9,9976 | 232 |  | + ,11 |
| 1187 |  | + 54736,33 | 2,060 | +9,7269 | -8,0165 | ,3139 | ,9977 | 214 | +,021 | -, 08 |
| 1188 | 3 | + 23921,59 | 2,049 | +9,6803 | -7,6745 | ,3115 | ,9977 | 216 | -,001 | -, 11 |
| 1189 | 3 | +13 51 38,13 | 2,008 | +9,8189 | -8,3804 | ,3028 | ,9978 | 219 | +,007 | + ,02 |
| 1190 | 3 | +53 2511,67 | 2,008 | +0,0245 | -8,9055 | ,3028 | ,9978 | 224 | -,035 | -, 14 |
| 1191 | 2 | $+54722,99$ | 1,944 | +9,7259 | -7,9901 | -0,2887 | +9,9979 | 222 | +,016 | -, 05 |
| 1192 | 3 | + 54345,24 | 1,892 | +9,7251 | -7,9733 | ,2769 | ,9980 | 230 | $+, 005$ | -,19 |
| 1193 | 3 | + 53800,80 | 1,840 | +9,7243 | -7,9560 | ,2648 | ,998 | 234 | +,017 | - ,12 |
| 1194 | 3 | + 54534,93 | 1,816 | +9,7259 | $-7,9581$ | ,2592 | ,9982 | 235 | $+, 012$ | - ,10 |
| 1195 | 3 | -40 4249,14 | 1,724 | -9,5065 | +8,7489 | ,2364 | ,9984 | 236 | +,009 | -,17 |
| 1196 | 4 | -34 2149,06 | ],596 | -9,3096 | +8,6525 | -0,2030 | +9,9986 | 248 | -,016 | -,03 |
| 1197 | 5 | -19 4318,59 | 1,549 | +8,8573 | +8,4163 | ,1901 | ,4987 | 251 | +,015 | -, 16 |
| 11.98 | 4 | + 7177,20 | 1,503 | +9,7459 | -7,9789 | ,1769 | ,9988 | 260 | -,003 | --,05 |
| 1199 | 2 | +40 1 55,72 | 1,509 | +9,9881 | -8,6850 | ,1786 | ,9988 | 262 | +,008 | -,02 |
| 1200 |  | -34 44 | 1,474 | -9,3243 | +-8,6223 | ,1684 | ,9988 | 256 |  |  |
| 1201 | 3 | -18 49 45,28 | 1,404 | +8,9494 | +8,3543 | -0,1473 | +9,9989 | 263 | +,026 | + ,09 |
| 1202 | 4 | -19 5034,56 | 1,375 | +8,8388 | +8,3672 | ,1383 | ,9990 | 264 | +,002 | -,07 |
| 1203 | 2 | +72 14 9,93 | 1,323 | +0,0342 | -8,7982 | ,1214 | ,9990 | 287 | - -, 013 | -, 27 |
| 1204 | 4 | -22 5623,95 | 1,287 | +8,0414 | +8,3988 | ,1098 | ,9991 | 268 | +,004 | + ,04 |
| 1205 | 3 | - 13437,23 | 1,241 | +9,6096 | +7,2286 | ,0938 | ,9992 | 274 | ,000 | -,02 |
| 1206 | 3 | -11 3541,88 | 1,224 | +9,3502 | $+8,0890$ | -0,0876 | +9,9992 | 276 | +,013 | - ,04 |
| 1207 | 4 | -41 40 57,42 | 1,189 | -9,5315 | $+8,5959$ | ,0751 | ,9992 | 272 | +,006 | -,03 |
| 1208 | 1 | +48 26 31,26 | 1,171 | +0,0149 | -8,6407 | ,0686 | ,9492 | 288 |  | - ,04 |
| 1209 | 2 | -15 39 6,88 | ],084 | +9,173\% | +8,1640 | ,0350 | ,9994 | 284 | +,002 | -, 04 |
| 1210 | 2 | -18 $54.23,82$ | 1,049 | +8,9445 | +8,2292 | ,0208 | ,9994 | 290 | +,018 | - ,06 |
| 1211 | 3 | + 51134,62 | 1,037 | +9,7177 | -7,6698 | -0,0159 | +9,9994 | 292 | +,005 | - , 10 |
| 1212 | 3 | + 5042,00 | 0,967 | +9,7152 | -7,6254 | 9,9856 | ,9995 | 296 | +,010 | - ,06 |
| 121.3 | 4 | -16 49 55,31 | 0,927 | +9,1004 | +8,1268 | 9,9669 | ,9995 | 297 | +,006 | -,03 |
| 1214 | 3 | +1821 22,72 | 0,927 | +9,8609 | -8,1630 | 9,9669 | ,9995 | 300 | +,015 | - ,04 |
| 1215 | 3 | +4534 59,96 | 0,868 | +0,0077 | -8,4906 | 9,9387 | ,9996 | 306 | +,024 | + ,03 |



| No. | No.Obs. | Declination$\text { Jan. 1, } 1836 .$ | Annual <br> Precession. | Logarithms of |  |  |  | $\begin{aligned} & \dot{8} \\ & \text { Z } \\ & \text { 感 } \end{aligned}$ | Annual P. M. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | $a^{\prime}$ | $b^{\prime}$ | $c^{\prime}$ | $d^{\prime}$ |  | A. R. | Decn. |
| 1216 | 4 | $\begin{array}{llll}-5 & 1 & 37,57\end{array}$ | 0,823 | +9,5366 | +7,5560 | -9,9148 | +9,9996 | 305 | s. ,+ 012 |  |
| 1217 | 2 | +60 25 39,26 | 0,827 | +0,0346 | -8,5553 | -9,9179 | +9,9996 | 315 | +,004 | ,09 |
| 1218 | 2 | -18 3 28,05 | 0,728 | +9,0128 | +8,0521 | ,8625 | ,9997 | 308 | -,007 | ,00 |
| 1219 | 3 | -24 14 43,66 | 0,624 | -8,1461 | +8,1066 | ,7950 | ,9998 | 319 | -,017 | -,01 |
| 1220 | 3 | -34 2 51,10 | 0,566 | -9,3010 | +8,1986 | ,7524 | ,9998 | 325 | +,019 | ,00 |
| 12.21 | 2 | +14 7 77,19 | 0,543 | +9,8228 | -7,8199 | -9,7341 | +9,9998 | 336 | +,014 | -, 12 |
| 1222 | 3 | -23 7 7 53,96 | 0,530 | +7,7781 | +8,0170 | ,7247 | ,9998 | 330 |  | ,00 |
| 1223 | 2 | + 42251,34 | 0,496 | +9,7067 | $-7,2765$ | ,6951 | ,9999 | 340 | +,012 | -, 29 |
| 1224 | 3 | -19 27 21,19 | 0,476 | +8,8808 | +7,9003 | ,6795 | ,9999 | 338 | +,002 | -,16 |
| 1225 | 4 | +22 4653,72 | 0,462 | +9,8960 | -7,9493 | ,6633 | ,9999 | 345 | +,016 | -, 02 |
| 1226 | 3 | +15 0 0 13,35 | 0,367 | +9,8312 | -7,6765 | -9,5650 | +9,9999 | 350 | +,019 | - ,22 |
| 1227 | 3 | -43 23 49,66 | 0,343 | -9,5705 | +8,0716 | ,5365 | ,9999 | 346 | +,003 | + , ,07 |
| 1228 | 3 | -28 $22 \begin{array}{ll}5,17\end{array}$ | 0,291 | -8,9685 | +7,8397 | ,4646 | ,9999 | 351 | +,016 | + ,04 |
| 1229 | 3 | -31 0046,67 | 0,199 | -9,1553 | +7,7072 | ,2972 | 0,0000 | 355 | +,019 | -,09 |
| 1230 | 4 | -21 $52 \begin{array}{ll}18,10\end{array}$ | 0,169 | +8,4914 | +7,4972 | ,2281 | ,0000 | 360 | +,021 | -,03 |
| 1231 | 3 | +13 2834,18 | 0,140 | +9,8162 | -7,2116 | -9,1459 | +0,0000 | 363 | -,020 | -, 06 |
| 1232 | 3 | -21 2750,07 | 0,082 | +8,5798 | +7,1733 | 8,9118 | ,0000 | 364 | +,006 | -, 01 |
| 1233 | 3 | $\begin{array}{llll}-26 & 7 & 3,63\end{array}$ | 0,058 | -8,6990 | +7,1074 | 8,7657 | ,0000 | 365 | ,000 | -,27 |
| 1234 | 3 | + 64131,00 | 0,046 | +9,7388 | -6,4338 | 8,6688 | ,0000 | 371 | -,001 | -, 07 |
| 1235 | 2 | + 92845,97 | 0,006 | +9,7730 | $-5,6806$ | 7,7657 | ,0000 | 376 | +,012 | - ,22 |
| 1236 | , | -23 4730,02 | +0,029 | -7,7781 | -6,7686 | +8,4647 | +0,0000 | 375 | +,016 | + , 10 |
| 1237 | 3 | -25 4713 13,77 | 0,099 | -8,6434 | -7,3326 | 8,9961 | ,0000 | 383 | +,014 | - ,09 |
| 1238. | 3 | +26 443,26 | 0,122 | +9,9191 | +7,4291 | 9,0879 | ,0000 | 389 | +,017 | + ,07 |
| 1239 | 2 | +25 920,63 | 0,140 | +9,9127 | +7,4723 | 9,1459 | ,0000 | 391 | +,014 | - ,17 |
| 1240 | 4 | +115648,48 | 0,192 | +9,8007 | +7,2983 | 9,2842 | ,0000 | 3 | +,001 | -, 20 |
| 1241 | , | +30 2617,31 | 0,268 | +9,9445 | +7,8311 | +9,4284 | $+0,0000$ | , | +,016 | -, 05 |
| 1242 | 3 | +34 3136,86 | 0,408 | +9,9652 | +8,0621 | ,6108 | 9,9999 | 13 | +,010 | - ,09 |
| 1243 |  | - $33 \quad 7 \begin{aligned} & \text { 13,72 }\end{aligned}$ | 0,449 | -9,2624 | -8,0878 | ,6521 | 0,0000 |  | +,012 | -, 06 |
| 1244 | 4 | -24 214,72 | 0,466 | -8,0414 | -7,9766 | ,6687 | ,0000 | 12 | -,001 | -,01 |
| 1245 |  | + 9241,78 | 0,558 | +9,7716 | +7,6590 | ,7479 | 9,9998 | 19 | +,004 | -,19 |
| 1246 | 5 | $-371634,15$ | 0,677 | $-9,4150$ | -8,3104 | +9,8301 | +9,9997 | 22 | -,002 | -, $\mathbf{1 1}$ |
| 1247 | 4 | $\begin{array}{lll}+12 & 1 & 0,99\end{array}$ | 0,833 | +9,8007 | +7,9374 | ,9209 | ,9996 | 30 | +,009 | + , 10 |
| 1248 | 3 | -16 4249,25 | 0,857 | +9,1106 | $-8,0898$ | ,9329 | ,9996 | 29 | +,007 | - ,08 |
| 1249 | 4 | -39 4 455,46 | 0,886 | -9,4669 | $-8,4451$ | ,9474 | ,9996 | 28 | +,005 | -,08 |
| 1250 | 4 | +11 4922,11 | 0,909 | +9,7993 | +7,9686 | ,9587 | ,9995 | 35 | +,023 | -, 08 |
| 1251 | 3 | -16 2630,25 | 1,049 | +9,1271 | -8,1704 | +0,0208 | +9,9994 | 38 | +,011 | -, 18 |
| 1252 | 4 | -16 26 23,89 | 1,055 | +9,1271 | -8,1728 | ,0232 | ,9994 | 40 | +,001 | -,07 |
| 1253 | 4 | -26 29 5,63 | 1,084 | -8,7559 | -8,3823 | ,0350 | ,9994 | 41 | +,012 | -,08 |
| 1254 | 4 | -34 2428,51 | 1,177 | -9,3139 | -8,5208 | ,0708 | ,9992 | 44 | +,004 | -, 11 |
| 1255 | 3 | +6835 1,40 | 1,305 | +0,0362 | +9,7688 | ,1019 | ,9991 | 61 | -,054 | + ,08 |
| 1256 | 4 | - 11326,48 | 1,358 | +9,6159 | -7,1578 | $+0,1327$ | +9,9990 | 59 | +,012 | -, 09 |
| 1257 |  | + 45957,85 | 1,508 | +9,7152 | +7,8169 | ,1786 | ,9988 | 65 | +,013 | -,15 |
| 1258 | 4 | -25 815,68 | 1,666 | $-8,4771$ | -8,5477 | ,2216 | ,9:185 | 68 | -,002 | -, 20 |
| 1259 | 3 | -33 3841,69 | 1,695 | -9,2810 | -8,6707 | ,2291 | ,9984 | 69 | +,028 | -,13 |
| 1260 | 4 | -33 3532,02 | 1,700 | -9,2787 | -8,6716 | ,2305 | ,9984 | 71 | +,015 | -,01 |

lviii Mean Right Ascension and Declination of 2050 Stars


| No. | $\left\lvert\, \begin{gathered} \text { No. } \\ \text { Obs. } \end{gathered}\right.$ | Declination Jan. 1, 1836. | Annual <br> Precession. | Logarithms of |  |  |  | $\begin{aligned} & \dot{\sim} \\ & \text { 烒 } \\ & \text { 总 } \end{aligned}$ | Annual P. M. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | $a^{\prime}$ | $b^{\prime}$ | $c^{\prime}$ | $d^{\prime}$ |  | A. R. | Decn. |
| 1261 |  |  |  |  |  |  |  | 7 | ,008 |  |
| 1262 | 3 | +26 $22 \begin{array}{ll}12,50\end{array}$ | + 1,753 | $+9,6395$ $+9,9196$ | $+6,2418$ $+8,5892$ | +0,2350 | +9,9984 | 83 | + +,010 |  |
| 1263 | 5 | +26 2126,11 | 1,770 | +9,9196 | +8,5935 | ,2480 | ,'9983 | 84 | +,012 | +,08 |
| 1264 | 4 | -24 9 47,71 | 1,799 | -8,0414 | -8,5:507 | ,2551 | ,9983 | 81 | +,008 | + ,07 |
| 1265 | 5 | $\begin{array}{lll}-33 & 2 & 42,87\end{array}$ | 1,909 | --9,2528 | -8,7154 | ,2809 | ,9980 | 87 | +,007 | -, 01 |
| 1266 | 2 | -38 49 42,20 | 1,950 | ,45 | -8,7852 | +0,2900 | 9,9979 | 90 | +,002 | , 04 |
| 1267 | 2 | -33 4 48,88 | 2,060 | -9,2528 | -8,7488 | ,3139 | ,9977 | 97 | +,002 | -, 09 |
| 1268 | 4 | -20 5741,65 | 2,251 | +8,6902 | $-8,6042$ | , 3525 | ,9972 | 110 | +,029 | -,12 |
| 1269 | 4 | -176 623,00 | 2,310 | +9,0899 | $-8,5200$ | ,3536 | ,9972 | 111 | +,013 | -,16 |
| 1270 | 4 | -29 2] 50,11 | 2,356 | -9,0374 | -8,7607 | ,3721 | ,9970 | 117 | +,009 | -,09 |
| 71 | , | -29 361 1,76 | 2,362 | -8,1139 | --8,7649 | +0,3732 | +9,9970 | 118 | -,006 | -, 05 |
| 1272 | 3 | +38 44 43,21 | 2,385 | +9,9818 | +8,8720 | ,3774 | ,9969 | 126 | +,028 | -, 10 |
| 1273 | 4 | -33 36 33,93 | 2,443 | -9,2742 | -8,8291 | ,3879 | ,9967 | 122 | +,008 | -, 02 |
| 1274 | 4 | -72753,69 | 2,530 | +9,4786 | $-8,2148$ | ,4030 | ,9965 | 130 | -,018 | -,03 |
| 1275 |  | +1117 | 2,587 | +9,7924 | +8,4024 | ,4128 | ,9963 | 133 | +,007 |  |
| 1276 | 4 | +11 1324,10 | 2,599 | +9,7917 | +8,4018 | +0,4148 | +9,9963 | 134 | +,017 | + ,01 |
| 1277 | 3 | -30 40 10,67 | 2,680 | -9,1206 | -8,8337 | ,4218 | ,9961 | 136 | +,001 | -, 22 |
| 1278 |  | -2 5 20,71 | 2,697 | +9,5999 | -7,6929 | ,4309 | ,9960 | 138 | +,020 | -, 08 |
| 1279 | 3 | -14 39 0,39 | 2,772 | +9,2304 | -8,5438 | ,4428 | ,9958 | 140 | +,012 | -,15 |
| 1280 | 4 | - 72912,86 | 2,934 | +9,4786 | -8,2802 | ,4674 | ,9953 | 152 | +,017 | -,02 |
| 12 | 4 | -39 53 56,18 | 2,951 | -9,4786 | -8,9749 | +0,4700 | 9,9952 | 148 | -,023 | -, 42 |
| 12 | 3 | +12 514,69 | 2,968 | +9,8000 | +8,4920 | ,4725 | ,9952 | 154 | +,009 | + ,05 |
| 1283 | 3 | $\begin{aligned} & +12\end{aligned} 619,59$ | 2,997 | +9,8007 | +8,4968 | ,4767 | ,9951 | 156 | +,013 | , 03 |
| 1284 | 4 | +65 2028,96 | 3,112 | +0,03:6 | +9,1496 | ,4931 | ,9947 | 173 | +,009 | -,08 |
| 1285 | 4 | + 8284,57 | 3,149 | +9,7589 | +8 | ,4982 | ,9946 | 163 | +,,011 |  |
| 1286 | 2 | +62 2243,68 | 3,135 | +0,0318 | +9,1418 | +0,4963 | +9,9946 | 174 | +,054 | + ,04 |
| 128 | 4 | - 323 36,30 | 3,227 | +9,5740 | -7,9779 | ,5089 | ,9943 | 168 | +,002 | -, 06 |
| 12 | 3 | -625 0,97 | 3,256 | +9,5065 | -8,2590 | ,5127 | ,9942 | 171 | +,019 | -, 14 |
| 1289 | 4 | +63 3822,03 | 3,325 | +0,0318 | +9,1721 | ,5218 | ,9939 | 190 | -,012 | -, 04 |
| 1290 | 4 | +3822 6,93 | 3,371 | +9,9786 | +9,0187 | ,5278 | ,9938 | 182 | -,009 | -, 05 |
| 1 | 4 | -20 19 41,13 | 3,417 | +8,8129 | $-8,7726$ | +0,5337 | +9,9936 | 180 | +,018 | -, 14 |
| 1292 | 3 | +34 5024,69 | 3,423 | +9,9633 | +8,9892 | ,5344 | ,9936 | 188 | -,006 | -,06 |
| 1293 |  | +55 53 | 3,480 | +0,0245 | +9,1576 | ,5416 | ,9933 | 198 | +,047 |  |
| 1294 | 3 | -26 5658,53 | 3,538 | -8,7708 | -8,9031 | ,5487 | ,9931 | 191 | +,010 |  |
| 1295 | 3 | -22 26 48,43 | 3,567 | +8,3979 | -8,8322 | ,5522 | ,9930 | 194 | ,000 | -,01 |
| 1296 | 2 | - $6 \quad 529,16$ | 3,578 | +9,5132 | $-8,2781$ | +0,5536 | +9,9930 | 197 | +,012 |  |
| 1297 | 2 | +2828 4,28 | 3,601 | +9,9294 | +8,9326 | ,5564 | ,9929 | 200 | +,003 | - ,06 |
| 1298 | 3 | - 95732,51 | 3,658 | +9,4099 | $-8,4995$ | ,5633 | ,9926 | 201 | +,005 | -, 15 |
| 1299 | 3 | -6 6749,03 | 3,698 | +9,5065 | $-8,3166$ | ,5680 | ,9925 | 204 | +,010 | -, 02 |
| 1300 | 2 | +72 4749,95 | 3,675 | +0,0282 | +9,2435 | ,5653 | ,9926 | 221 | +,001 | -, 01 |
| 1301 | 2 | +32 3555,53 | 3,707 | +9,9518 | +8,9974 | +0,5690 | +9,9925 | 207 | +,005 | -, 08 |
| 1302 | 2 | +6146 1,66 | 3,710 | +0,0298 | +9,2124 | ,56994 | ,9924 | 212 | -,009 | + , 10 |
| 1303 | 2 | +23 4251,03 | 3,727 | +9,8987 | +8,8739 | ,5714 | ,9924 | 209 | +,017 | - ,08 |
| 1304 | 3 | -19 1833,29 | 3,779 | +8,9294 | -8,7946 | ,5773 | ,9921 | 208 | +,019 | - ,05 |
| 1305 | 2 | +33 956,67 | 3,842 | +9,9542 | +9,0206 | ,5845 | ,9919 | 216 | +,015 | -, 05 |

1x Mean Right .1sremsion and Declination of 2050 Stars


| No. | No. Obs | Declination Jan. 1, 1836. | Annual <br> Precession. | Logarithms of |  |  |  |  | Annual P. M. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | $a^{\prime}$ |  | $c^{\prime}$ | $d^{\prime}$ |  | A. R. | Deen. |
| 1306 | 5 | -29 24 41,86 | +3,933 | 9,0128 | -8,9838 | +0,5947 | +9,9915 |  |  |  |
| 1307 | 3 | + 433047,62 | 4,116 | +9,9952 | +9,1504 | 145 |  |  |  |  |
| 1.308 | 4 | +20 926 26, 11 | 4,127 | +9,8716 | +8,8512 | 157 | 06 | 4 |  |  |
| 1309 | 6 | +43 30 55,04 | 4,173 | +9,9948 | +9,1564 | ,6204 | ,9904 | 244 | 14 | -,11 |
| 1310 | 4 | + 21555,68 | 4,196 | +9,674,9 | +7,9180 | ,6228 | ,9903 | 241 | +,020 | 二,,10 |
| 1311 | 3 | +59 1150,16 | 4,236 | +0,0261 | +9,2589 | +0,6269 | +9,9901 | 248 | -,002 | - ,09 |
| 1312 | 4 | -28 15 56,44 | 4,332 | -8,9031 | -9,0102 | ,6367 | -,9896 | 246 | +,018 | +,06 |
| 1313 | 4 | -3 309,37 | 4,446 | +9,5821 | -8,0720 | ,6480 | ,9890 | 251 | +,010 | -,01 |
| 1314 | 2 | $-23270,43$ | 4,486 | +8,0000 | $-8,9497$ | ,6519 | ,9888 | 253 | +,017 | +,,02 |
| 1315 | 4 | +145435,95 | 4,503 | +9,8261 | +8,7622 | ,6535 | ,9887 | 259 | +,021 | - ,22 |
| 1316 | 4 | +144122,49 | 4,565 | +9,8241 | $+8,7615$ | +0,6595 | +9,9884 | 263 | +,013 | - ,20 |
| 13 | 5 | - 05611,29 | 4,719 | +9,6212 | -7,5837 | ,6738 | ,9876 | 274 | +,007 | - ,20 |
| 1318 1319 | 3 | [rrrer0 56 31,08 <br> -25 3 7,61 | 4,724 | +9,6212 | -7,5919 | , 67483 | ,9876 | 275 | +,006 | -,10 |
| 1320 | 4 |  | 4,764 | -8,2553 | -9,0025 | ,6780 | ,9874 | 277 | +,003 | -, 17 |
|  |  |  |  |  |  |  |  |  |  |  |
| 1322 | 4 | $\begin{array}{r}1 \\ +988 \\ \hline\end{array}$ |  | +9, | -7,6307 | +0,6836 | +9,987 | 284 | +,010 | - , 12 |
| 1323 | 3 | -27 31 37,53 | 4,877 | +8 | + | ,68 | ,986 | 28 | +,010 | 10 |
| 1324 | 3 | +37 3439,83 | 4,900 | -8,9708 | - 8,0508 $+9,1735$ | ,6882 | ,9867 | 286 | +,010 | - , 09 |
| $13 \div 5$ | 4 | + 9241,60 | 4,979 | +9,7679 | +8,6082 | ,6971 | ,9862 | 297 | ,+ 007 ,+ 018 | - ,09 |
| 26 | 3 | + 93137,60 | 5,030 | +9,7694 | +8,6187 | +0,7015 | +9,9859 | 304 | -,001 | -, 16 |
| 1327 | 3 | +302926,68 | 5,086 | +9,9370 | +9,1099 | ,7064 | ,9855 | 309 | +,008 | -, ,11 |
| 1328 | 3 | +375148,97 | 5,192 | +9,9717 | +9,1929 | ,7069 | ,9855 | 311 | +,040 | -,12 |
| 1329 | 2 | +38 2951,92 | 5,137 | +9,9740 | +9,2029 | ,7107 | ,9852 | 317 | +,005 | -, 11 |
| 1330 | 2 | + 55447,96 |  | +9,7259 | +8,4233 | ,7121 | ,98.51 | 314 | +,012 | , 00 |
| 1331 | 2 | -535 2,78 | 5,161 | +9,5289 | -8,3992 | +0,7131 | +0,9851 | 313 |  |  |
| 13:32 | 2 | $-27 \quad 220,78$ | 5,171 | -8,7708 | -9,0740 | ,7135 | ,9850 | 310 | +,011 | +,02 |
| 13 | 3 | +483719,14 | 5,171 | +0,0052 | +9,2869 | ,71135 | ,9850 | 319 | +,004 | - ,01 |
| 11334 | 4 | +20 1053,02 | 5,227 | +9,8692 | +8,9541 | ,7182 | ,9847 | 320 | +,024 | -,25 |
| 1 | 2 | +62 2745,16 | 5,266 | +0,0241 | $+9,3673$ | ,7215 | 0845 | 6 | +,008 | +,06 |
| 1336 | 2 | + 9642,21 | 5,283 | +9,7642 | +8,6208 | +0,7229 | +9,9844 | 322 | -,001 | -,06 |
| 1337 | 4 | -20 3630,10 | 5,345 | +8,8261 | -8,9723 | ,7280 | -,9840 | 324 | +,012 | -, ,11 |
| 15 | 4 | +38 5349,52 | 5,424 | +9,9740 | +9,2303 | ,7343 | ,9835 | 11 | -,008 | - ,05 |
| 1339 1340 | 3 |  | 5,440 5,458 | $+9,9694$ $+9,9345$ | $+9,2196$ $+9,1373$ | ,7356 | ,9834 | 13 | -,019 | -, 18 |
| 1340 | 3 | +30 18 18,4, | 5,458 | +9,9345 | +9,1373 | ,7370 | ,9833 | 14 | +,006 | -, 13 |
| 1341 | 4 | + 74750,14 | 5,457 | +9,7497 | +8,5676 | +0,7370 | +9,9833 | 9 | +,015 |  |
| 1342 | 4 | -20 4124,23 | 5,497 | +8,8195 | -8,9861 | ,7401. | ,9830 | 10 | -,004 | - , 11 |
| 1343 | 4 | -22 5004.56 | 5,525 | + 8,4150 | -9,0292 | ,7423 | ,9828 | 12 | +,007 | + ,02 |
| 134 | 4 | -18 1022,11 | 5,609 | +9,0531 | -8,9407 | ,7489 | ,9823 | 18 | +,006 | + ,02 |
| 1345 | 4 | + 262813,44 | 5,609 | +9,9117 | +9,0959 | ,7489 | ,9823 | 23 | +,009 | - ,02 |
| 1346 | 4 | +293717,05 | 5,631 | +9,9299 | +9,1427 | +0,7506 | -9,9821 | 26 |  | -,12 |
| 1347 | 4 | -20 3 50,20 | 5,693 | +8,8976 | -8,9888 | ,7553 | ,9817 | 25 | +,013 | -, 24 |
| 1348 1349 | 3 | $\begin{array}{r}\text { r } \\ +729 \\ -15988 \\ \hline\end{array}$ | 5,731 5,743 | $+9,7443$ +92279 | $+8,5720$ $+8,8730$ | ,7583 | ,9815 | 29 | +,008 |  |
| 1350 | 3 | + 9227,59 | 5,788 | +9,7634 | -8,8,6572 | ,7625 | ,9811 | 31 | ,+ 001 ,+ 027 | - , 09 |

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| No. | Star's name and Mag. |  | No. Obs | $\begin{gathered} \text { Right } \\ \text { Ascension } \\ \text { Jan. 1, } 1836 . \end{gathered}$ | Annual <br> Precession. | Logarithms of |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | - |  |  | $\checkmark$ | c | $d$ |
| 1351 | Sagittarii | 8.9 |  | 3 | $\begin{array}{\|ccc\|} \hline h \cdot & m_{0} & s . \\ 19 & 7 & 30,31 \end{array} .$ | $\left\|\begin{array}{c} s . \\ +s, 568 \end{array}\right\|$ | $+8,3191$ | -8,8355 | +0,5524 | -7,8802 |
| $\left\lvert\, \begin{aligned} & 1301 \\ & 1352 \end{aligned}\right.$ | Antinoi | 9 | 2 | 742,02 | 3,134 | , 2896 | -8,8051 | -,4961 | $-6,9986$ |
| 1353 |  | 7 | 3 | 7 45,86 | 3,322 | ,2982 | ,8129 | ,5214 | -7,5885 |
| 1354 | Aquilæ | 9.10 | 2 | 816,54 | 2,864 | ,2982 | ,8097 | ,4570 | +7,4949 |
| 1355 | Aquil | 7.8 | 3 | 8 34,36 | 2,927 | ,2970 | ,8067 | ,4664 | +7,3385 |
| 1356 | Antinoi | 8 | 2 | 8 48,74 | 3,064 | +8,2960 | -8,8039 | +0,4863 | +5,8737 |
| 1357 | Sagittarii | 7.8 |  | 8 54,89 | 3,506 | ,3210 | ,8280 | ,5448 | -7,8325 |
| 1358 | Antinoi | 8 | 2 | 9 9,07 | 3,333 | ,3072 | ,8129 | ,5228 | -7,6154 |
| 1359 | Aquilæ | 10 | 1 | 9 13,43 | 2,864 | ,3039 | ,8091 | ,4570 | +7,5014 |
| 1360 | Sagittarii | 7.8 | , | 935,87 | 4,101 | ,4109 | ,9131 | ,6129 | -8,2101 |
| 1361 | Antinoi | 8 | 3 | 9 54,64 | 3,321 | $+8,3112$ | -8,8116 | +0,5213 | -7,6009 |
| 1362 | Aquilæ | 7 | 3 | 10 17,07 | 2,960 | ,3064 | ,8046 | ,4713 | +7,2335 |
| 1363 | Sagittarii | 7.8 | 3 | 1043,41 | 3,648 | ,3490 | ,8437 | ,5620 | -7,9667 |
| 1364 | Lyre | 7.8 | 3 | 12 2,20 | 2,344 | ,3761 | ,8630 | ,3700 | $+8,0706$ |
| 1365 | Aquilæ | 7.8 | 3 | 12 12,85 | 2,969 | ,3175 | ,8032 | ,4726 | +7,2106 |
| 1366 | Aquilæ | 8 | 3 | 12 25,03 | 3,009 | +8,3178 | -8,8022 | +0,4784 | +6,9828 |
| 1367 |  | 8.9 | 3 | 1236,28 | 2,927 | , 3212 | ,8043 | ,4664 | +7,3650 |
| 1368 | Antinoi | 7.8 | 2 | 1238,13 | 3,101 | ,3190 | ,8017 | ,4915 | -6,7272 |
| 1369 | Sagittarii | 8 | 2 | 13 0,34 | 3,51.3 | ,3464 | ,8265 | ,5457 | -7,8659 |
| 1370 | Antinoi | 1.10 | 2 | 13 25,30 | 3,209 | ,3258 | ,8038 | ,5064 | -7,3684 |
| 1371 | Draconis | 7.8 | 2 | 13 47,56 | 0,352 | +8,6980 | -9,1748 | +9,5465 | +8,6553 |
| 1372 | Anseris | 8 | 3 | 13 134,27 | 2,559 | ,3583 | 8,8333 | 0,4081 | +7,9302 |
| 1373 | Antivoi | 8 | 2 | 13 57,78 | 3,066 | ,3261 | 8,8008 | 0,4866 | +5,4888 |
| 1374 |  | 7 | 3 | 14 6,61 | 3,314 | ,3353 | 8,8087 | 0,5203 | -7,6159 |
| 1375 | Draconis | 9 | 1 | 14 32,10 | 0,573 | ,6732 | 9,1449 | 9,7581 | +8,6235 |
| 1376 | Sagittarii | 8 | 2 | 14 <br> 14 <br> 54,67 | 3,509 | +8,3567 | -3,8251 | $\begin{array}{r}+0,5452 \\ \hline 4598\end{array}$ | $-7,8744$ <br> -74961 |
| 1377 | Aquilæ | 8 | 2 | $\begin{array}{ll}14 & 59,66 \\ 15 & 25,15\end{array}$ | 2,883 | $\begin{array}{r}\text {,3367 } \\ \\ \hline 3405\end{array}$ | , 8047 <br> 8060 | ,4598 <br> 5163 | $+7,4961$ $-7,5641$ |
| 1378 | $\stackrel{\text { Antinui }}{\text { Sagitarii }}$ | 8 <br> 7 <br> 8 | 3 | $\begin{array}{cc}15 & 25,15 \\ 16 & 5,62 \\ 16\end{array}$ | 3,283 3,402 3,03 | , 3405 | ,8060 <br> .8141 <br> , 818 | , 5163 | -7,5641 |
| 1380 | Aquile | 8 | 2 | 16 35,76 | 3,034 | ,3411 | ,7992 | ,4820 | +6,7638 |
| 1381 | Antinoi | 8.9 | 3 | 16 49,29 | 3,157 | +8,3431 | $-8,8000$ | +0,4:993 | -7,1921 |
| 1382 |  | 8 | 3 | 17 6,15 | 3,121 | ,3442 | ,7991 | ,4943 | -6,9631 |
| 1383 | Anseris |  | 3 | 17 33,99 | 2,618 | ,3720 | ,8244 | ,4180 | + 7,8983 |
| 1384 | Cygni | 7 | 2 | 18 12,65 | 2,148 | ,4420 | ,8909 | ,3320 | +8,2128 |
| 1385 | Aquilæ | 8.9 | , | 18 51,30 | 3,119 | ,3534 | ,7979 | ,4940 | -6,9632 |
| 1386 | Cygni | 7.8 | 2 | 19 9,43 | 2,489 | +8,3963 | $-8,8392$ | +0,3960 | +8,0182 |
| 1387 | Anseris | 7 | 2 | 19 18,18 | 2,621 | ,3810 | ,8231 | ,4185 | +7,9063 |
| 1388 | Sagittarii | 8 | 2 | 1959,08 | 3,566 | ,3911 | ,8285 | ,5522 | -7,9581 |
| 1389 | Cygni | 7.8 | 3 | 20 3,56 | 2,161 | ,4503 | ,8881 | ,3346 | +8,2181 |
| 1390 | Aquilæ | 6.7 | 3 | $20 \quad 6,83$ | 3,010 | ,3601 | ,7971 | ,4786 | +7,0196 |
| 1391 | Cygni | 7.8 | 3 | 20 14,44 | 1,576 | $+8,5510$ | -8,9880 | +0,1976 | +8,4348 |
| 1392 |  | 8 |  | 2147,00 | 2,152 | ,4610 | 8,8887 | , 3328 | +8,2323 |
| 1393 |  | 8 | 3 | 22 29,48 | 2,414 | ,4241 | 8,8475 | ,3827 | +8,0899 |
| 1394 | Draconis | 7 | , | 22 48,47 | 1,091 | ,6448 | 9,0670 | ,0378 | +8,5718 |
| 1395 | Cygni | 8 |  | 23 | 1,587 | ,5612 | 8,9854 | ,2006 | +8,4473 |

together with their annual precessions and proper motions, \&c.

| No. | No. Obs. | Declination <br> Jan. 1, 1836. | Annual <br> Precession. | Logarithms of |  |  |  | $\begin{aligned} & \text { O } \\ & \text { N } \\ & \text { N } \\ & \text { N } \end{aligned}$ | Annual P. M. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | $a^{\prime}$ | 0 | ${ }^{\prime}$ | $d^{\prime}$ |  | A. R. | Decn. |
|  |  | - ' ${ }^{\prime \prime}$ | + |  |  |  |  |  | $s$. |  |
| 1351 | 3 | -21 2119,05 | +5,838 | +8,7482 | $-9,0255$ | +0,7662 | $+9,9807$ | 32 | +,012 | -, 04 |
| 1.352 | 3 | -2 26 49,60 | 5,849 | +9,5843 | -8,1742 | ,7671 | ,9807 | 34 | +,017 | +,01 |
| 1353 | 3 | -11 15 20,23 | 5,860 | +9,3802 | -8,7598 | ,7679 | ,9806 | 33 | +,027 | -,05 |
| 1354 | 3 | + 9240,16 | 5,899 | +9,7627 | +8,6655 | ,7708 | ,9803 | 40 | -1,008 | - ,07 |
| 1355 | 2 | + 61848,07 | 5,921 | +9,7292 | +8,5119 | ,7724 | ,9802 | 44 | +,014 | -,03 |
| 1356 | 2 | + 01240,90 | 5,944 | +9,6415 | +7,0498 | +0,7741 | +9,9800 | 46 | +,003 | - ,17 |
| 1357 | 3 | -18 59 7,35 | 5,955 | +9,0000 | -8,9844 | ,7749 | ,9799 | 43 | +,022 | - ,01 |
| 1358 | 2 | -1144 5,51 | 5,972 | +9,3636 | -8,7824 | ,7761 | ,9798 | 47 | +,001 | - ,05 |
| 1350 |  | + 931 | 5,977 | +9,7627 | +8,6720 | ,7765 | ,9798 | 49 | $+, 018$ |  |
| 1360 | 2 | -39 2 22,0 | 6,016 | -9,4216 | -9,2765 | ,7793 | ,9795 | 48 | +,001 | - ,11 |
| 1361 | 3 | $-111315,50$ | 6,038 | +9,3820 | -8,7679 | +0,7809 | +9,9793 | 53 | +,015 | -, 01 |
| 1362 | 3 | + 45017,52 | 6,066 | +9,7101 | +8,4080 | ,7829 | ,9791 | 58 | +,019 | --,17 |
| 1363 | 3 | -24 30 4,94 | 6,111 | +5,8451 | -9,1018 | ,7861 | ,9788 | 59 | +,030 | - ,26 |
| 1364 | 2 | +29 3941,07 | 6,211 | +9,9289 | +9,1857 | ,7931 | ,9781 | 78 | -,002 | -,16 |
| 1365 | 3 | + 429 0,23 | 6,227 | +9,7050 | $+8,3853$ | ,7943 | ,9780 | 75 | +,013 | - ,28 |
| 1366 | 3 | + 23817,51 | 6,244 | +9,680 | +8,1584 | +0,7954 | +9,9778 | 76 | +,007 | -,07 |
| 1367 | 3 | + 62050,84 | 6,260 | +9,7292 | +8,5384 | ,7966 | , 0777 | 80 | -,003 | - ,08 |
| 1368 | 3 | - 12836,12 | 6,266 | +9,6128 | -7,9032 | ,7970 | ,9777 | 79 | +,017 | - ,09 |
| 1369 | 3 | -19 1936,08 | 6,299 | +8,9777 | -9,0168 | ,7993 | ,9774 | 82 | +,020 | + ,04 |
| 1370 | 2 | -621 4,95 | 6,326 | +9,5132 | -8,5418 | ,8012 | ,9772 | 83 | $+, 006$ | -,26 |
| 1371 | 2 | +645848 | 6,343 | +0,0183 | +9,4575 | +0,8023 | +9,9771 | 98 | +,015 | - ,07 |
| 1372 |  | +2153 | 6,365 | +9,8791 | +-9,0735 | ,8038 | ,9769 | 88 | +,014 |  |
| 1373 | 2 | + 0428,05 | 6,373 | +9,6385 | +6,6649 | ,8043 | ,9769 | 87 | +,012 | - ,09 |
| 1374 | 3 | -11 0 38,73 | 6,388 | +9,3892 | -8,7840 | ,8053 | ,9767 | 86 | +,013 | -,10 |
| 1375 | 3 | +63 5 52,99 | 6,409 | +0,0174 | $+9,4551$ | ,8068 | ,9766 | 101 | $+, 019$ | -,01 |
| 1376 | 3 | -19 1418,20 | 6,454 | +8,9912 | -9,0256 | +0,8098 | +9,9762 | 92 | +,002 | -, 01 |
| 1377 | 2 | + 81756,74 | 6,459 | +9,7528 | +8,6676 | ,8102 | ,9762 | 95 | +,004 | $-, 10$ |
| 1378 | 1 | -93858,28 | 6,492 | +9,4314 | -8,7340 | ,8124 | ,9759 | 97 | +,018 | -, 24 |
| 1379 | 3 | -14 5029,21 | 6,553 | +9,2480 | -8,9227 | ,8164 | ,9754 | 100 | +,013 | $-, 13$ |
| 1380 | 2 | + 13114,14 | 6,591 | +9,6618 | $+7,9397$ | ,8190 | ,9751 | 106 | +,,014 | + ,06 |
| 1381 |  | - 4253,95 | , 008 | +9,5647 | -8,3671 | +0,8201 | +9,9750 | 109 | -,011 | -, 16 |
| 1382 | 5 | -2 22 44,66 | 6,636 | +9,5966 | $-8,1388$ | ,8219 | ,9748 | 111 | +,014 | -,11 |
| 1383 | 3 | +193718,66 | 6,669 | +9,8609 | +9,0484 | ,8240 | ,9745 | 116 | +,014 | - ,03 |
| 1384 | 4 | +36 756,60 | 6,718 | +0,9571 | +9,2960 | ,8272 | ,9741 | 121 | -,001 | + ,08 |
| 1385 | 3 | - 22039,06 | 6,778 | +9,5977 | -8,1389 | ,8311 | ,9736 | 122 | +,013 | -,09 |
| 1386 | 3 | +24 4349,73 | 6,800 | +9,8965 | +9,1524 | +0,8325 | +9,9734 | 127 | +,007 |  |
| 1387 | 1 | +1934 11,94 | 6,811 | +9,8603 | +9,0565 | , 8332 | ,9733 | 128 | +,002 | -, 24 |
| 1388 | 2 | -21 40 4,21 | 6,877 | +8,7559 | -9,1024 | ,8374 | ,9728 | 130 | +,005 | -, 0.1 |
| 1389 | 3 | +35 51 45,21 | 6,872 | +9,9552 | +9,3029 | ,8371 | ,9728 | 134 | +,019 | -, 10 |
| 1390 | 2 | + 236 9,55 | 6,882 | $+9,6785$ | +8,1952 | ,8377 | ,9727 | 133 | +,003 | -, 09 |
| 1391 | 3 | +49 55 10,35 | 6,882 | +9,9992 | +9,4196 | +0,8377 | $+9,9727$ | 140 | +,012 | --- ,26 |
| 1392 | 4 | +361158,72 | 7,014 | +9,9557 | +9,3153 | , 8460 | , ,9716 | 149 | ,000 | ,00 |
| 1393 | 3 | +273540,94 | 7,074 | +9,9133 | +9,2135 | ,8497 | ,9711 | 153 | +,007 | - ,08 |
| 1394 | 4 | +574155,92 | 7,090 | +0,0099 | +9,4757 | ,8507 | ,9710 | 156 | +,004 | - ,03 |
| 1395 | 2 | +494840,10 | 7,063 | +9,9978 | +9,4301 | ,8490 | ,9712 | 154 |  | -, 10 |


together with their annual precessions and proper motions，\＆c．
lxv

| No． | $\begin{aligned} & \text { No. } \\ & \text { Obs. } \end{aligned}$ | Declination Jan．1， 1836. | Annual <br> Preces－ sion． | Logarithms of |  |  |  |  | Annual P．M． |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | $a^{\prime}$ | $b^{\prime}$ | $c^{\prime}$ | $d^{\prime}$ |  | A．R． | Decn． |
| 1396 | 4 | －18 5733,53 | ＋7，205 | ＋9，0334 | －9，0672 | ＋0，8576 | ＋9，9700 | 155 | c．${ }_{\text {s．}}^{\text {＋}}$ |  |
| 1397 | 4 | ＋273732，23 | 7，205 | ＋9，9127 | ＋9，2220 | ，8576 | ，9700 | 162 | ＋，012 |  |
| 1398 | 4 | ＋53 380,16 | 7，243 | ＋0，0030 | ＋9，4638 | ，8599 | ，9696 | 167 | ＋，022 | －，02 |
| 1399 | 3 | ＋35 5316,07 | 7，264 | ＋9，9533 | ＋9，3274 | ，8612 | ，9694 | 164 | ＋，010 | ＋，02 |
| 1400 | 3 | ＋275518，17 | 7，319 | ＋9，9133 | ＋9，2331 | ，8644 | ，9689 | 169 | ＋，009 | －，02 |
| 1401 | 3 | ＋20 3923,98 | 7，351 | ＋9，8645 | ＋9，1121 | ＋0，8664 | ＋9，9686 | 172 | ＋，005 | －，08 |
| 1402 | 3 | －10 4310,79 | 7，427 | ＋9，4048 | －8，8383 | ，8708 | ，9679 | 177 | ＋，012 | －，01 |
| 1403 | 3 | ＋ 35732,84 | 7，433 | ＋9，6964 | ＋8，4091 | ，8711 | ，9679 | 178 | ＋，011 | －，15 |
| 1404 | 2 | ＋554725，36 | 7，449 | ＋0，0052 | ＋9，4877 | ，8721 | ，9677 | 189 | ＋，013 | －， 01 |
| 1405 | 1 | ＋551427，35 | 7，460 | ＋0，0043 | ＋9，4854 | ，8727． | ，9676 | 190 |  | －，24 |
| 1406 | 2 | － 01454,50 | 7，492 | ＋9，6345 | －7，1825 | ＋0，8746 | ＋9，9673 | 182 | ＋，019 | －－39 |
| 1407 | 2 | － 0 6 66,83 | 7，492 | ＋9，6345 | －6，8145 | ，8746 | ，9673 | 183 | ＋，011 | －，18 |
| 1408 | 3 | －3－ | 7，498 | ＋9，5832 | －8，3129 | ，8749 | ，9673 | 181 | ＋，016 | － 12 |
| 1409 | 2 | －104720，89 | 7,508 7,590 | $+9,4031$ $+9,7380$ | －8，8456 $+8,6763$ | ，8755 | ，9672 | 185 | －， 010 | ＋ |
| 1410 | 2 | ＋ 71131,52 | 7，590 | $+9,7380$ | ＋8，6763 | ，8802 | ，9664 | 195 | ＋，006 | ＋，03 |
| 1411 | 4 | － 051 9，96 | 7，595 | ＋9，6243 | $-7,7498$ | ＋0，8805 | ＋9，9663 | 194 | ＋，005 | －，04 |
| 1412 | 3 | － 02932,64 | 7，616 | ＋9，6304 | －7，5059 | ，8817 | ，9661 | 198 | ＋，003 | －，08 |
| 1413 | 3 | － 05111,69 | 7，665 | ＋9，6232 | －7，7538 | ，8845 | ，9657 | 200 | ＋，015 | 二， 04 |
| 1414 | 3 | － 0 1 17，05 | 7,681 7,686 | $+9,6375$ $+9,9464$ | $-6,0472$ $+9,3407$ | ，8854 | ，9655 | 202 | ,+ 015 ,+ 008 | 二，16 |
| 1415 | 1 | ＋34516，91 | 7，686 | ＋9，9464 | $+9,3407$ | ，8857 | ，9655 | 207 | ＋，008 | －，12 |
| 1416 | 2 | ＋50 5316,12 | 7，681 | ＋9，9961 | ＋9，4732 | ＋0，8854 | ＋9，9655 | 211 | ＋，017 | －，14 |
| 1417 | 2 | －20 550,42 | 7，730 | ＋8，8808 | －9，1389 | ，8881 | ，9650 | 205 | ＋，007 | －， 15 |
| 1418 | 2 | －23 4157,00 | 7，730 | ＋8，4150 | －9，1903 | ， 88881 | ，9650 | 204 | ＋，003 | ＋，02 |
| 1419 |  | 63 +61451 | 7,735 7,740 | $+9,7234$ $+9,7372$ | $+8,6105$ $+8,6878$ | ，8884 | ，9650 | 209 |  |  |
| 1420 | 1 | ＋ 71456,41 | 7，740 | ＋9，7372 | ＋8，6878 | ，8887 | ，9649 | 209 | ＋，008 | －，01 |
| 1421 | 2 | ＋1159 31，18 | 7，751 | ＋9，7896 | ＋8，9053 | ＋0，8894 | ＋9，9648 | 212 | ＋，020 | －，05 |
| 1422 | 1 | － 1509 9，34 | 7，756 | ＋ 9 9，6074 | －8，0927 | ，8897 | ，9648 | 210 | ＋，014 | －， 10 |
| 1423 | 2 | － 82025,29 | 7，789 | ＋9，4698 | 8,7506 $+9,5609$ | ，8915 | ，9644 | 227 | $\underline{+, 012}$ |  |
| 1424 | 2 | a $+691017,53$ $+\quad 72821,95$ | 7,800 7,821 | $+0,0065$ $+9,7404$ | $+9,5609$ $+8,7050$ | ， 899321 | ，9643 | 2276 | －，013 | 二，01 |
| 1425 | 2 | $+72821,95$ +711472 | 7,821 7848 | $+9,7404$ $+9,7372$ | $+8,7050$ $+8,6908$ | , 8932 $+0,8947$ | ，9641 $+9,9639$ | 217 | ,+ 015 ,+ 008 | ,- 01 ,- 05 |
| 1426 | 3 | ＋ 71144872 | 7,848 7,912 | $+9,7372$ $-9,1875$ | $\begin{array}{r}+8,6908 \\ \hline-9,341\end{array}$ | $\begin{array}{r}+0,8947 \\ , 8983 \\ \hline, 89\end{array}$ | $\begin{array}{r}+9,9639 \\ \hline, 9632\end{array}$ | 218 | ＋，008 | 二，06 |
| 1427 | 3 2 2 |  | 7,912 7,912 | $+9,1875$ $+9,8395$ | $\begin{array}{r}+8,3441 \\ +9,0752 \\ \hline\end{array}$ | ，8983 | －，9632 | 225 | ＋，010 | －，17 |
| 1429 | 3 | ＋17374，56 | 7，976 | ＋9，8395 | ＋9，0808 | ，9018 | ，9626 | 228 | ＋，004 | 二， 07 |
| 1430 | 3 | $+174856,65$ | 8，013 | ＋9，8414 | ＋9，0875 | ，9038 | ，9622 | 3 |  | －，20 |
| 1431 | 4 | －11 $31 \begin{array}{lll}14,51\end{array}$ | 8，019 | ＋9，3979 | －8，8847 | ＋0，9041 | ＋9，9621 | 231 | ＋，025 | － 19 $+\quad 03$ |
| 1432 | － | ＋31 148,76 | 8,024 | ＋9，9268 | $+9,3147$ $+8,5043$ | ，9044 | ，9621 | 235 | ,+ 013 +016 | ＋ 03 |
| 1433 | 2 | ＋ 43421,08 | ${ }_{8}^{8,037}$ | $+9,7041$ +97458 +9, | $+8,5043$ $+8,7486$ | ，9070 | ，，9616 | 241 | ＋，009 |  |
| 1434 | 3 | $+\quad 75955,34$ $+\quad 113444,47$ | 8,072 8,141 | $+9,7458$ $+9,2838$ | $+8,748$ $-8,9109$ | ，9107 | ，＇9608 | 245 |  | －，03 |
|  |  |  |  | ＋9，8426 | ＋9，0974 | ＋0，9090 | ＋9，9612 | 246 | ＋，017 |  |
| 14337 | 2 | $\begin{array}{lll}+18 & 0 & 16,91 \\ +17 & 35 & 10,47\end{array}$ | 8，126 | $+9,848$ $+9,8395$ | ＋9，0884 | ，9099 | ，9610 | 244 | ＋，004 | $4-0$ |
| 1438 | － 2 | ＋ 7123 3，26 | 8，190 | ＋9，7372 | ＋8，7103 | －，9133 | －，9603 | ［ 248 | ,+ 007 $+\quad, 004$ |  |
| 1439 | 3 | ＋1159 14，10 | 8,200 | $+9,7882$ $+9,7490$ | $+8,9297$ $+8,7753$ | 3 |  | － | ＋，019 | 1 － |
| 1440 |  | $+82020,71$ | 8，227 | ＋9，7490 | $+8,7753$ | ，, 152 |  |  |  |  |



| No. | No. Obs. | Declination <br> Jan. 1, 1836. | Annual <br> Precession. | Logarithms of |  |  |  |  | Annual P. M. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | $a^{\prime}$ | $b^{\prime}$ | $c^{\prime}$ | $d^{\prime}$ |  | A. R. | Decn. |
|  |  |  |  |  |  |  |  |  |  |  |
| 1441 | 3 | +1031 22,87 | + 8,237 | +9,7738 | +8,8758 | +0,9158 | +9,9598 | 253 | -,005 | +,13 |
| 1442 |  | +50 8 | 8,280 | +9,9899 | +9,5013 | ,9180 | ,9594 | 262 | +,003 |  |
| 1443 | 4 | +3755 57,69 | 8,317 | +9,9547 | $+9,4067$ | ,9200 | ,9590 | 263 | +,005 | -, 04 |
| 1444 | 3 | +10 349,03 | 8,386 | +9,7671 | +8,8641 | ,9236 | ,9582 | 268 | +,004 | - ,22 |
| 1445 | 2 | $+173748,45$ | 8,386 | +9,8376 | +9,1029 | ,9236 | ,9582 | 270 | +,017 | -, 08 |
| 1446 | 3 | $-421544,75$ | 8,434 | -9,4609 | -9,4517 | +0,9260 | +9,9577 | 266 | -,003 | + ,01 |
| 1447 | 2 | +35 41 33,04 | 8,449 | +9,9455 | +9,3909 | ,9268 | ,9575 | 277 | +,008 | - , ,13 |
| 1448 | 3 | + 52255,40 | 8,460 | +9,7143 | +8,5977 | ,9274 | ,9594 | 272 | ,000 | - ,14 |
| 1449 | 3 | +1847 0,37 | 8,460 | +9,8482 | +9,1332 | ,9274 | ,9594 | 274 | +,039 | -, ,04 |
| 1450 | 3 | +56 3855,38 | 8,497 | +9,9978 | +9,5492 | ,9293 | ,9570 | 284 | +,024 | -, 03 |
| 1451 | 3 | +194836,97 | 8,592 | +9,8537 | $+9,1623$ | +0,9341 | $+9,9559$ | 287 | +,023 | - ,17 |
| 1452 | 3 | + 23253,05 | 8,602 | +9,6758 | +8,2809 | ,9346 | ,9558 | 285 | +,007 | ,00 |
| 1453 | 2 | +55 2656,96 | 8,587 | +9,9956 | +9,5477 | ,9338 | ,9560 | 292 | +,025 | -,15 |
| 1454 | 4 | -19 3721,44 | 8,650 | +9,0253 | $-9,1610$ | ,9370 | ,9552 | 288 | +,006 | - ,13 |
| 1455 | 3 | +32 52 1,52 | 8,750 | +9,9304 | +9,3748 | ,9420 | ,9541 | 300 | +,036 | -, 16 |
| 1456 | 3 | +193734,43 | 8,771 | +9,8519 | $+9,1674$ | +0,9430 | +9,9538 | 301 | +,020 | - ,11 |
| 1457 | 4 | + 9565,37 | 8,839 | +9,7649 | $+8,8819$ | ,9464 | ,9530 | 307 | -,004 | -,19 |
| 1458 | 1 | +172532,54 | 8,850 | +9,8344 | $+9,1215$ | ,9469 | ,9529 | 308 | +,018 | -, ,10 |
| 1459 | 3 | $+181923,30$ | 8,907 | +9,8414 | +9,1454 | ,9497 | ,9522 | 312 | +,015 | + ,02 |
| 1460 | 7 | +1723 50,95 | 8,922 | +9,8338 | +9,1242 | ,9505 | ,9520 | 315 | +,019 | + ,02 |
| 1461 | 2 | - 83925,63 | 8,943 | +9,4683 | -8,8268 | +0,9515 | $+9,9520$ | 314 | -,013 | -,04 |
| 1462 | 3 | +111] 19,15 | 8,954 | +9,7781 | +8,9384 | ,9520 | ,9517 | 317 | $+, 017$ | -,03 |
| 1463 | 2 | +1954 16,05 | 8,975 | +9,8531 | +9,1833 | ,9530 | ,9514 | 321 | -,001 | -, 17 |
| 1464 | 4 | +113158,47 | 9,073 | +9,7810 | +8,9573 | ,9578 | ,9502 | 326 | $\underline{+, 005}$ | - , ,10 |
| 1465 | 4 | +2353 40,00 | 9,082 | +9,8797 | +9,2637 | ,9580 | ,9501 | 327 | +,012 | -,03 |
| 1466 | 4 | +172726,66 | 9,162 | +9,8331 | +9,1373 | +0,9620 | +9,9491 | 335 | +,015 | -, 06 |
| 1467 | 3 | +192147,35 | 9,276 | +9,8470 | +9,1860 | ,9673 | ,9477 | 338 | +,004 | -, 08 |
| 1468 | 4 | +1058 45,28 | 9,286 | +9,7745 | +8,9458 | ,9678 | ,9475 | 336 | +,002 | +,02 |
| 1469 | 5 | +11 922,42 | 9,286 | +9,7767 | +8,9529 | ,9678 | ,9475 | 337 | +,005 | + , ,13 |
| 1470 | 3 | $+164240,76$ | 9,296 | +9,8267 | +9,1252 | ,9693 | ,9474 | 341 | $+, 010$ | -, 04 |
| 1471 | 3 | + 72856,96 | 9,317 | +9,7364 | +8,7820 | +0,9693 | +9,9471 | 345 | $+, 012$ | $+, 01$ |
| 1472 | 3 | -21 1750,78 | 9,333 | +8,9191 | -9,2279 | ,9700 | ,9469 | 339 | +,006 | + ,04 |
| 1473 | 3 | + 6910,88 | 9,338 | +9,7210 | +8,6994 | ,9702 | ,9469 | 348 | +,006 | -, 05 |
| 1474 | 3 | -23 4 41,18 | 9,358 | +8,7243 | $-9,2623$ | ,9712 | ,9466 | 346 | +,006 | -, 03 |
| 1475 | 2 | +11 734,62 | 9,358 | +9,7760 | +8,9550 | ,9712 | ,9471 | 350 | +,005 | +,07 |
| 1476 | 3 | +65041,90 | 9,441 | +9,7292 | +8,7496 | +0,9750 | +9,9455 | 357 | +,010 | + , 01 |
| 1477 | 4 | + 7329,75 | 9,492 | +9,7372 | +8,7940 | ,9774 | ,9448 | 363 | +,005 | -,04 |
| 1478 | 3 | + 65758,95 | 9,497 | +9,7308 | +8,7594 | ,9776 | ,9448 | 364 | +,011 | + ,02 |
| 1479 | 2 | -38 18 36,97 | 9,518 | -9,3096 | $-9,4688$ | ,9785 | ,9445 | 359 | -,009 | - ,38 |
| 1480 | 4 | +215944,22 | 9,518 | +9,8645 | +9,2501 | ,9785 | ,9445 | 368 | +,002 | + ,07 |
| 1481 | 4 | -18 4133,91 | 9,564 | +9,1139 | $-9,1843$ | +0,9806 | +9,9439 | 367 | +,005 | + ,07 |
| 1482 | 4 | $\begin{array}{r}184151,99 \\ -0215 \\ -1649 \\ \hline\end{array}$ | 9,656 | $+9,6314$ | -7,4890 | , 98888 | ,9427 | 376 | +,018 | -,13 |
| 1483 | 4 | -16 49 53,26 | 9,743 | +9,2095 | -9,1481 | ,9887 | ,9415 | 381 | +,010 | -, 07 |
| 1484 | 5 | $\begin{array}{r}15 \\ -153 \\ \hline\end{array}$ | 9,768 | +9,2504 | -9,1246 | ,9898 | ,9411 | 387 | +,006 | -,04 |
| 1485 | 2 | +163948,37 | 9,773 | +9,8241 | +9,1461 | ,9900 | ,9410 | 392 | $+, 011$ | -, 20 |

Ixviii Mean Right Ascension and Declination of 2050 Stars


| No. | $\begin{aligned} & \text { No. } \\ & \text { Obs. } \end{aligned}$ | Declination Jan. 1, 1836. | Annual <br> Precession. | Logarithms of |  |  |  | $\begin{aligned} & \dot{\sim} \\ & \text { 云 } \\ & \text { 閏 } \end{aligned}$ | Annual P. M. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | $a^{\prime}$ | $6^{\prime}$ | $c^{\prime}$ | $d^{\prime}$ |  | A. R. | Decn. |
|  |  | ${ }^{\circ}{ }^{\prime \prime}{ }^{\prime \prime}$ | " |  |  |  |  |  |  |  |
| $\begin{aligned} & 1486 \\ & 1487 \end{aligned}$ | 3 | - 7240,21 | +9,773 | +9,5105 | $-8,7760$ | +0,9900 | +9,9410 | 389 | +,019 | -, 07 |
| 1488 | 4 | -19 5788 | 9,783 | -9,9414 | -9,2212 | ,9905 | ,9409 | 388 | +,001 | -, 15 |
| 1489 |  | , |  |  | +9,1619 | , 9012 | ,9408 | 394 | +,012 | 01 |
| 1490 | $\stackrel{3}{3}$ |  | 9,799 9,860 | $+8,8692$ $+9,3424$ | $-9,2650$ $-9,0564$ | ,9912 <br> , 9939 | ,9407 | 390 396 | ,+ 001 ,+ 007 |  |
| 1491 | 3 | -12 54 11,62 | 9,865 | +9,3598 | -9,0409 | +0,9941 | +9,9398 | 398 | +,011 | +,03 |
| 1492 | 3 | - 92244,50 | 9,890 | +9,4579 | -8,9048 | ,9,752 | ,9394 | 399 | +,017 | -,06 |
| 1493 | 3 | +23 1219,64 | 9,890 | +9,8704 | +9,2887 | ,9952 | ,9394 | 401 | +,005 | + ,04 |
| 1494 | 3 | - 12014,72 | 9,936 | +9,6170 | -8,0620 | ,9972 | ,9388 | 403 | +,031 | -,15 |
| 1495 | 4 | +1624 9,01 | 9,986 | +9,8202 | +9,1486 | ,9994 | ,9380 | 409 | +,019 | -,06 |
| 1496 | 3 | + 15829,30 | 9,991 | +9,6665 | +8,2332 | +0,9996 | +9,9380 | 407 | +,018 | +,05 |
| 1497 | 1 | +2038 4,46 | 10,037 | +9,8519 | +9,2466 | 1,0016 | ,9573 | 415 | +,013 | -,06 |
| 1498 | 3 | +16338,61 | 10,032 | +9,8214 | +9,1540 | 1,0014 | ,9374 | 413 | +,009 | + ,05 |
| 1499 | 3 | +19 44 46,00 | 10,117 | +9,8451 | +9,2319 | 1,0051 | ,9361 | 422 | +,011 | -, 17 |
| 1500 | 2 | +21 855,77 | 10,142 | +9,8555 | +9,2615 | 1,0061 | ,9358 | 424 | +,018 | + ,07 |
| 1501 | 3 | +16 266,73 | 10,158 | +9,8195 | +9,1564 | +1,0068 | +9,9355 | 2 | -,005 | -,03 |
| 1502 | 4 | - 63825,26 | 10,167 | +9,5211 | -8,7679 | ,0072 | ,9354 | 423 | +,017 | -,05 |
| 1503 | 2 | +25 48 2,91 | 10,172 | +9,8842 | +9,3444 | ,0074 | ,9353 | 5 | +,007 | +,01 |
| 1504 | 3 | -91919,19 | 10,208 | +9,4609 | -8,9154 | ,0089 | ,9348 | 4 | +,009 | -,08 |
| 1505 | 2 | -634 2,75 | 10,218 | +9,5224 | -8,7646 | ,0094 | ,9346 | 6 | +,006 | -,10 |
| 1506 | 2 | +20 31 28,55 | 10,238 | +9,8500 | +9,2533 | +1,0102 | +9,9343 | 15 |  | -,09 |
| 1507 | 1 | - 63749,28 | 10,253 | +9,521] | -8,7704 | ,0108 | ,9341 | 8 | +,017 | -, 03 |
| 1508 | 2 | - 03625,61 | 10,253 | +9,6284 | -7,7167 | ,0108 | ,9341 | 12 | +,017 | -, 19 |
| 1509 | 3 | + 5523,10 | 10,268 | +9,7160 | +8,7203 | ,0115 | ,9339 | 17 | +,016 | -,03 |
| 1510 |  | +63 13 | 10,278 | +9,9827 | +9,6607 | ,0119 | ,9337 | 30 |  |  |
| 1511 | 2 | $+53526,16$ | 10,288 | +9,7126 | +8,6997 | +1,0123 | +9,9,936 | 19 | +,014 | -, 15 |
| 1512 | 1 | - 01814,75 | 10,293 | +9,6335 | -7,4047 | ,0125 | ,9335 | 18 | +,016 | - , 14 |
| 1513 | 1 | +154116,21 | 10,308 | +9,8129 | +9,1437 | ,()132 | ,9333 | 23 | +,016 | +, 16 |
| 1514 |  | -11 19 28,90 | 10,318 | +9,4116 | -9,0038 | ,0136 | ,9331 | 20 | +,011 | -, 08 |
| 1515 | 1 | +20 5210,14 | 10,338 | +9,8513 | +9,2645 | ,0144 | ,9328 | 27 | +,015 | +,01 |
| 1516 | 3 | +15 4354,14 | 10,393 | +9,8129 | +9,1480 | +1,0167 | +9,9820 | 32 | +,020 | -, 04 |
| 1517 | 2 | +26 1533,25 | 10,413 | +9,8848 | +9,3616 | ,0176 | ,9317 | 36 |  | +,03 |
| 1518 | 3 | + 44913,70 | 10,428 | +9,7024 | +8,6418 | ,0182 | ,9315 | 35 | +,015 | -, 18 |
| 1519 1520 |  | +1536 | 10,434 | +9,8116 | +9,1465 | ,0184 | ,9314 | 38 | +,022 |  |
| 1520 | 3 | -12 74 | 10,472 | +9,0892 | -9,0401 | ,0200 | ,9308 | 3.9 | +,014 | - |
| 1521 | 3 | - 020 52,45 | 10,482 | +9,6325 | -7,4832 | +1,0205 | +9,9306 | 41 | +,017 | -,10 |
| 1522 | 2 | + 6521,58 | 10,498 | +9,7177 | +8,7455 | ,0211 | ,9304 | 43 | -,010 | -,03 |
| 1523 | 3 | + 6 63,66 | 10,498 | +9,7177 | +8,7467 | ,0211 | ,9304 | 44 | -,013 | -, 08 |
| 1524 | 3 | + 25446,56 | 10,537 | +9,6776 | +8,4273 | ,0227 | ,9297 | 46 | +,005 | -,12 |
| 15:25 | 2 | -16 47 18,82 | 10,543 | +9,2279 | $-9,1815$ | ,0229 | ,9297 | 45 | +,016 | -,12 |
| 1526 | 3 | - 3 3 333,77 | 10,572 | +9,5888 | $-8,4481$ | $+1,0241$ | +9,9292 | 50 | -,006 | + ,03 |
| 1527 | 3 | +2216,39 | 10,682 | +9,6712 | +8,3354 | ,0246 | ,9290 | 51 | +,012 | ,00 |
| 1528 | 1 | $+36640,82$ | 10,621 | +9,9299 | +9,4946 | ,0262 | ,9284 | 55 | +,016 | -,02 |
| 1529 | 4 | +4613 4,67 | 10,666 | +9,9595 | $+9,5846$ $+9,4980$ | ,0280 | ,9277 | 63 | +,014 | +,00 |
| 1530 | 4 | +36 15 24,12 | 10,671 | +9,9299 | +9,4980 | ,0282 | ,9276 | 61 | +-,005 | + ,06 |



| No. | No.Obs. | Declination Jan. 1, 1836. | Annual <br> Precession. | Logarithms of |  |  |  | $\begin{aligned} & \dot{8} \\ & \text { 菏 } \\ & \text { N } \end{aligned}$ | Annual P. M. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | $a^{\prime}$ | $b^{\prime}$ | ${ }^{\circ}$ | ${ }^{\prime}$ |  | A. R. | Decn. |
|  |  | +15 22 14,68 |  |  |  |  |  |  |  |  |
| 1531 | 3 | +15 2214,68 <br> -1447 | +10,754 | $+9,8075$ $+9,3117$ | $+9,1533$ $-9,1372$ | $\begin{array}{r}+1,0316 \\ 0324 \\ \hline 0326\end{array}$ | +9,9263 | 68 |  | 12 |
| 1533 | 3 | +21 3155,83 |  |  | +9,2866 | ,0326 | ,9259 | 72 |  |  |
| 1534 | 3 | +60 822,08 | 10,808 | +9,9759 | +9,6700 | ,0338 | ,9254 | 82 | +,030 |  |
| 1535 | 3 | -14 47 0,13 | 10,838 | +9,3139 | -9,1393 | ,0349 | ,9249 | 73 | +,002 | -,13 |
| 1536 | 2 | $\begin{array}{lll}-18 & 50 & 3,30\end{array}$ | 10,907 | +9,1461 | -9,2443 | +1,0377 | +9,9237 | 80 | +,011 | - ,04 |
| 1537 | 2 | +22 25 56,79 | 10,907 | +9,8579 | +9,3176 | ,0377 | ,9237 | 86 | -,007 | + ,06 |
| 1538 | 3 | -652 5,93 | 10,912 | +9,5198 | -8,8124 | ,0379 | ,9237 | 84 | +,003 | -,15 |
| 1539 | 3 | +22 2914,82 | 10,965 | +9,8579 | +9,3209 | ,0400 | ,9228 | 91 | +,007 | + ,04 |
| 1540 | 3 | - 65151,27 | 10,960 | +9,5198 | $-8,8144$ | ,0398 | ,9928 | 90 | +,010 | -,14 |
| 1541 | 3 | -22 28 15,35 | 10,965 | +8,9085 | -9,3200 | +1,0400 | +9,9228 | 88 | +,020 | 05 |
| 1542 | 2 | -16 20 36,61 | 11,014 | +9,2577 | -9,1890 | ,0419 | ,0219 | 94 | +,013 | + , 23 |
| 1543 | 2 | -7 4 52,56 | 11,014 | +9,5159 | -8,8300 | ,0419 | ,9219 | 95 | +,003 | -, 06 |
| 1544 | 3 | +56 23 58,48 | 11,013 | +9,9713 | +9,6605 | ,0417 | ,9220 | 104 | +,010 | -, 32 |
| 1545 | 3 | -12 53 54,47 | 11,043 | +9,3747 | -9,0899 | ,0431 | ,9214 | 96 | ,000 | + , 07 |
| 1546 | 1 | -9 20333,83 | 11,052 | +9,4669 | -8,9515 | +1,0435 | +9,9213 | 8 | +,021 | -,04 |
| 1547 | 3 | -18 5131,47 | 11,058 | +9,1523 | -9,2510 | ,0437 | ,9212 | 97 | +,017 | ,00 |
| 1548 | 2 | +21014,47 | 11,058 | +9,8476 | +9,2964 | ,0437 | ,9212 | 101 | +,018 | + ,02 |
| 1549 | 2 | -16 1830,26 | 11,073 | +9,2601 | -9,1900 | ,0442 | ,9209 | 100 | +,010 | - ,09 |
| 1550 | 1 | - 61141,60 | 11,098 | +9,5327 | -8,7743 | ,0452 | ,9205 | 103 | +,015 | -,02 |
| 1551 | 2 | +2053 4,46 | 11,116 | +9,8463 | +9,2963 | +1,0459 | +9,9202 | 106 | +,012 | -, 07 |
| 1552 | 2 | -23 594848,90 | 11,121 | +8,7634 | -9,3532 | ,0461 | ,9201 | 105 | +,027 | -,04 |
| 1553 | 3 | $+95021,98$ +950 | 11,189 | +9,7559 | $+8,9800$ | ,0488 | ,9189 | 110 | +,007 | -,16 |
| 15.54 | 2 | +23 3328,95 | 11,189 | +9,8633 | $+9,3487$ $+9,3496$ | ,0488 | ,9189 | 113 | $+, 002$ | -,04 |
| 1555 | 2 | +23 3054,03 | 11,227 | $\bigcirc 9,8627$ | +9, | ,0503 | ,9182 | 118 | +,001 | -,04 |
| 1556 | 2 | $\begin{array}{lll}-2 & 4 & 1,57\end{array}$ | 11,233 | +9,6064 | -8,3020 | +1,0505 | +9,9181 | 115 | +,015 | -, 08 |
| 1557 | 2 | + 03232,57 | 11,237 | +9,6454 | +7,7309 | ,0506 | ,918] | 116 | +,014 | -, 16 |
| 1558 | 1 | + 23848,33 | 11,242 | $+9,8597$ | +9,3434 | ,0508 | ,9180 | 122 | +,010 | -,08 |
| 1559 | 2 | + 05038,75 | 11,247 | +9,6493 | +7,9203 | ,0510 | ,9179 | 117 | +,005 | -,06 |
| 1560 | 2 | +10 4154,31 | 11,252 | +9,7634 | +9,0186 | ,0512 | ,9178 | 120 | $+, 013$ | -,23 |
| 1.561 | 2 | -3 5657,96 | 11,266 | +9,5752 | $-8,5861$ | +1,0518 | +9,9175 | 121 | +,005 | -, 14 |
| 1562 | 2 | -19 4054,15 | 11,291 | +9,1173 | -9,2778 | ,0527 | ,9171 | 123 | -,001 | -,07 |
| 150 | 1 | -14 23 33,61 | 11,304 | +9,3324 | -9,1459 | ,0532 | ,9169 | 125 | +,008 | - ,09 |
| 1564 | 2 | +23 45 3,22 | 11,314 | +9,8633 | +9,3570 | ,0536 | ,9167 | 130 | +,014 | +,01 |
| 1565 | 1 | - 42339,02 | 11,323 | +9,5682 | $-8,6353$ | ,0540 | ,9165 | 128 | -,022 | -,06 |
| 1566 | 2 | - 35824,96 | 11,328 | +9,5752 | $-8,5903$ | +0,0542 | +9,9164 | 129 | +,015 | - , 11 |
| 1567 | 2 | -20 4 41,66 | 11,338 | +9,0969 | $-9,2880$ | ,0545 | ,9162 | 127 | +,012 | -,17 |
| 1568 | 2 | +22537,32 | 11,368 | +9,6702 | +8,3816 | ,0556 | ,9157 | 134 | +,006 | -,03 |
| 1569 | 2 | +22 5456,65 | 11,372 | +9,8579 | +9,3445 | ,0558 | ,9156 | 137 | +,011 | -,07 |
| 1570 | 3 | + 123 7,57 | 11,397 | +9,6571 | +8,1427 | ,0567 | ,9152 | 6 | +,011 | -,01 |
| 1571 |  | +62 54 | 11,420 | +9,9685 | +9,7052 | +1,0577 | +9,9148 | 150 | ,000 |  |
| 1572 | 2 | +23 413,79 | 11,424 | +9,8579 | +9,3492 | ,0578 | ,9147 | 141 | +,004 | -, 05 |
| 1573 | 3 | - 35544,97 | 11,434 | +9,5753 | -8,5907 | ,0582 | ,9145 | 138 | +,019 | -, 06 |
| 1574 1575 | 2 <br> 3 | $\begin{array}{r}\text { - } 239 \\ -238 \\ \hline\end{array}$ | 11,434 11,438 | $+9,5966$ $+9,5977$ | $-8,4185$ $-8,4159$ | ,0582 | ,9145 | 140 | -,010 |  |
|  |  |  |  |  |  |  | ,9144 |  | +,012 |  |



| No. | $\left\|\begin{array}{c} \text { No. } \\ \text { Oss. } \end{array}\right\|$ | Declination$\text { Jan. 1, } 1836$ | Annaal <br> Precession. | Logarithms of |  |  |  |  | Annual P. M. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | 6 | c | $d^{\prime}$ |  | A. R. | Decn |
| 1576 | 3 | +10 49 14,66 | +11,458 | +9,7634 | +9,0312 | +1,0591 | +9,9141 | 143 | $\stackrel{\text { s. }}{+, 020}$ |  |
| 1577 | 4 | - 458 5,16 | +11,511 | +9,5575 | -8,6965 | +,0611 | +,9131 | 148 | +,005 | -, 21 |
| 1578 | 2 | + 224 1,18 | 11,511 | +9,6702 | +8,3811 | ,0611 | ,9131 | 149 | +,011 | + ,02 |
| 1579 | 3 | + 75355,70 | 11,520 | +9,7340 | +8,8976 | ,0615 | ,9129 | 151 | +,007 | - ,13 |
| 1580 | 3 | + 02042,57 | 11,530 | +9,6425 | +7,5458 | ,0618 | ,9127 | 152 | +,001 | -, 45 |
| 15 |  | +23 15 | 11,525 | +9 | +9,3563 | +1,0616 | +9,9128 | 155 | +,019 |  |
| 1582 | 2 | + 74312 | 11,549 | +9,7324 | +8,8895 | ,0625 | ,9124 | 156 | +,010 | -, 16 |
| 158 |  | -458 | 11,611 | +9,5587 | -8,7003 | ,0649 | ,9112 | 158 | +,001 |  |
| 1584 | 3 | - 5 55 59,39 | 11,649 | +9,5416 | -8,7787 | ,0663 | ,9105 | 159 | +,012 | -, 10 |
| 1585 | 2 | -622 9,41 | 11,649 | +9,5327 | -8,8081 | ,0663 | ,9105 | 160 | +,005 | -,02 |
| 15 | 2 | -10 34 42,0 |  | + | -9,0278 | +1,0664 | +9,9104 | 161 | +,010 | -, 14 |
| 15 | 2 | -22 42 9,05 | 11,696 | +8,9395 | -9,3522 | ,0680 | ,9096 | 166 | +,011 |  |
| 1588 |  | -2.242 44,59 | 11,701 | +8,9395 | $-9,3527$ | ,0682 | ,9095 | 167 | +,021 | -, 04 |
| 1589 |  | $\begin{array}{r}+19 \\ + \\ \hline\end{array} 24,38$ | 11,701 | +9,8299 | +9,2818 | ,0682 | ,9095 | 171 | +,005 | -, 11 |
| 1590 | 4 | - 35920,19 | 11,748 | +9,5763 | -8,6077 | ,0700 | ,9086 | 175 | +,012 | -,05 |
| 15 | 3 | +10 4248,81 | 11 | +9,7612 | +9,0374 | +1,0700 | +9,9086 | 178 | +,005 | -, 18 |
| 15 | 1 | +48 2234,24 | 11,748 | +9,9513 | +9,6417 | ,0700 | ,9086 | 184 | +,008 |  |
| 1593 | 3 | $+481923,05$ $+323257,57$ | 11,772 11,862 11 | $+9,9508$ $+9,9031$ | $+9,6422$ $+9,5030$ | ,0708 | ,9081 | 184 |  | -,23 |
| 1594 | 3 | $+323257,57$ $+48948,38$ | 11,862 11,917 | $\begin{aligned} & +9,9031 \\ & +9,9494 \end{aligned}$ | $+9,5030$ $+9,6499$ | ,0741 | ,9063 | 190 | ,- 003 ,+ 005 | -,07 <br> ,+ 03 |
| 1595 |  | $+483948,38$ $-938 \quad 25$ |  |  | -8,9976 | +1,0767 | 9,9050 | 93 |  |  |
| 1596 | 3 2 2 | - 93882,54 $+14926,99$ | 11,932 | $+9,4680$ $+9,7903$ | +9,1645 | +1,0777 | ,9044 | 198 |  |  |
| 15 | 1 | + | 11,964 | +9,4698 | -8,9958 | ,0779 | ,9043 | 195 | -,006 | - , 20 |
| 1599 | 2 | +68 1321,28 | 11,950 | +9,8621 | +9,7433 | ,0774 | ,9046 | 208 | +,022 |  |
| 1600 | 2 | +157 +1096 | 11,969 | +9,6637 | +8,3116 | ,0781 |  | 197 | +,021 | +,02 |
| 1601 | 2 | +10 4512,04 | 11,978 | +9,75 | +9, | +1,0784 | +9,9040 | 201 | +,004 |  |
| 1 ¢0 | 2 | +33 28 3,15 | 11,988 | +9,9052 | +9,5185 | ,0787 | ,9038 | $202$ | +,010 | - ,02 |
| 160 | 2 | r $-23639,90$ $+\quad 244344$ | 12,002 <br> 12,038 | $+9,5977$ $+9,6730$ | $\begin{array}{r} 8,4340 \\ +8,4623 \end{array}$ | ,0792 | ,9036 | 205 | ,+ 004 ,+ 004 |  |
| 1604 1605 | 3 |  | 12,038 12,048 | $+9,6730$ $+9,7308$ | $+8,4623$ $+9,0510$ | ,0809 | ,9026 | 206 | +,023 | + ,23 |
| 1606 | 2 | +56 | 12,05 | $+9$ | +9, | +1,0811 | +9,9025 | 217 | +,009 |  |
| 1607 | 4 | + 15555,95 | 12,104 | +9,6637 | +8,3128 | ,0829 | ,9015 | 214 | +,013 | - ,03 |
| 160 | 3 | - 15237,81 | 12,127 | +9,6180 | -8,2947 | ,0×38 | ,9010 | 216 | ,+ 010 +007 | 22 |
| 1609 |  | +59 5233,01 | 12,118 | +9,9576 | +9,7185 | ,0834 | ,9012 | 226 | ,+ 007 ,+ 002 |  |
| 1610 | 2 | +491238,91 | 12,156 | +9,9469 | +9,6620 | ,08 |  |  |  |  |
| 1611 | 2 | -1737 56,02 | 12,174 | +9,2380 | -9,2644 | +1,0854 | +9,9000 | 218 |  |  |
| 1612 | 3 | -4570,35 | 12,178 | +9,561] | -8,7181 | ,08556 | 8999 | 221 | +,016 |  |
| 16 | 3 | +483654,78 | 12,178 | +9,9460 | $+9,6590$ $+9,6771$ | ,0856 | ,8999 | 236 | +,011 | +,07 |
| 1614 | $\xrightarrow{2}$ | $+511728,49$ $+123125,58$ | 12,211 | $+9,9494$ $+9,7752$ |  |  | ,8989 | 231 | -,001 | -,02 |
| 1615 | 2 | +12 3125,58 | 12,229 | +9,7752 | $+9,1219$ $-9,2134$ | ,0874 $+1,0876$ | + ${ }^{\text {,8988 }}$ | 229 | +,009 |  |
| 1616 | 2 | -15 3247,39 | 12,234 | $\begin{array}{r} +9,3139 \\ +9,7767 \end{array}$ | $\begin{array}{r} 9,2134 \\ +9,1306 \end{array}$ | $\begin{array}{r} +1,0876 \\ , 0882 \end{array}$ | $\begin{array}{r} +9,8987 \\ , 8984 \end{array}$ | 235 | +,024 | -, 03 |
| 1617 | 2 | +124525,18 | $\begin{aligned} & 12,253 \\ & 12,263 \end{aligned}$ | $\begin{aligned} & +9,7767 \\ & +9,9552 \end{aligned}$ | $\begin{aligned} & +9,1306 \\ & +9,7292 \end{aligned}$ | ,0882, | ,8982 | 252 | +,020 | + , 04 |
| 1620 | 2 | +30 + + | 12,312 | +9,8870 | +9,4876 | ,0903 | ,8971 | 249 | +,004 | ,17 |

1xxiv Mean Right Ascension and Declination of 2050 Stars.


| No. | No. Obs. | Declination <br> Jan. 1, 1836. | Annual Precession. | Logarithms of |  |  |  | $\begin{aligned} & \text { O } \\ & \text { B } \\ & \text { N } \\ & \text { Ni } \end{aligned}$ | Annual P. M. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | $a^{\prime}$ | $b^{\prime}$ | $c^{\prime}$ | $d^{\prime}$ |  | A. R. | Decn. |
| 1621 | 3 | $\bigcirc$ | " |  |  |  |  |  |  |  |
| 1622 |  | +15 15 57,88 | +12,013 | +9,7973 | +9,2093 | +1,0903 | +9,8971 | 247 |  | 09 |
| 1622 | 2 | - 313130,85 | 12,326 | +9,5899 | $-8,5357$ | ,0908 | ,8968 | 246 | +,006 | - 08 |
| 1623 | 3 | +12.4525,38 | 12,336 | +9,7760 | +9,1341 | ,0911 | ,8966 | 251 | +,012 | -1,18 |
| 1624 | 2 | + 75224,31 | 12,354 | +9,7308 | +8,9270 | ,0918 | ,8962 | 253 | +,005 | -, 11 |
| 1625 | 1 | +6958 5,08 | 12,344 | +9,9489 | +9,7624 | ,0915 | ,8964 | 265 |  | - ,191 |
| 1626 | 2 | +1250 44,84 | 12,363 | +9,7767 | +9,1373 | +1,0921 | +9,8960 | 255 | +,,008 | -, 01 |
| 1627 | 1 | +12 4351,01 | 12,363 | +9,7760 | +9,1339 | ,0921 | ,8960 | 256 | +,010 | -, 06 |
| 1628 | 3 | -11 3123,59 | 12,409 | +9,4314 | -9,0920 | ,0937 | ,8950 | 259 | +,012 | - ,07 |
| 1629 | 2 | -2 2556,19 | 12,445 | +9,6010 | -8,4469 | ,0950 | ,8942 | 260 | +,016 | - ,04 |
| 1630 | 3 | +165935,22 | 12,445 | +9,8089 | +9,2590 | ,0950 | ,8942 | 261 | +,017 | + ,06 |
| 1631 | 2 | +25 30 3,67 | 12,467 | +9,8621 | +9,4281 | +1,0958 | +9,8937 | 268 | +,014 | -, 10 |
| 1632 | 1 | -11 33 1,73 | 12,473 | +9,4314 | $-9,0949$ | ,0960 | ,8936 | 262 | +,008 | -, 05: |
| 1633 | 2 | +1059 13,50 | 12,487 | +9,7597 | +9,0751 | ,0964 | ,8933 | 269 | +,016 | - , 11 |
| 1634 | 2 | -26 2435,19 | 12,500 | +8,6232 | -9,4429 | ,0969 | ,8930 | 266 | +,006 | -,10 |
| 1635 | 1 | $+131233,56$ | 12,500 | +9,7789 | +9,1541 | ,0969 | ,8930 | 271 | +,012 | -, 05 |
| 1636 | 2 | +1532 43,07 | 12,559 | +9,7973 | +9,2252 | +1,0990 | +9,8917 | 275 |  | - , 09 |
| 1637 | 2 | +34 5735,89 | 12,573 | +9,9036 | +9,5557 | ,0994 | ,8914 | 278. | +,036 | - , 177 |
| 1638 | 3 | + 32935,06 | 12,591 | +9,6812 | +8,5838 | ,1001 | ,8910 | 277 | +,010 | -, 07 |
| 1639 | 3 | +34 52 13,94 | 12,618 | +9,9031 | +9,5564 | ,1010 | ,8904 | 283 | +,005 | -, 20 |
| 1640 |  | +2514 | 12,641 | +9,8591 | +9,4298 | ,1018 | ,8899 | 287 | +,001 |  |
| 1641 | 2 | +1659 6,16 | 12,654 | +9,8075 | +9,2662 | +1,1022 | +9,8896 | 288 | $+, 015$ | + ,02 |
| 1642 |  | + 032 | 12,663 | +9,6444 | +7,7828 | ,1025 | ,8894 | 286 |  |  |
| 1643 | 3 | +64 3342,20 | 12,686 | +9,9474 | +9,7571 | ,1033 | ,8889 | 295 | ,000 | $-02$ |
| 1644 | 1 | -9 242,54 | 12,70:3 | +9,4885 | -8,9979 | ,1039 | ,8884 | 290) | +,011 | + , 15 |
| 1645 | 3 | +11 3 6,10 | 12,745 | +9,7589 | +9,0865 | ,1053 | ,8875 | 292 | +,026 | -,09 |
| 1646 | 3 | +2530 44,69 | 12,785 | +9,8591 | +9,4395 | +1,1067 | +9,8866 | 300 | +,010 | - ,11 |
| 1647 | 2 | +30 3 46,82 | 12,830 | +9,8808 | +9,5063 | ,1082 | ,8855 | 308 | +,007 | -, 15 |
| 1648 | 2 | +62 45 37,85 | 12,848 | +9,9450 | +9,7559 | ,1088 | ,8851 | 315 | +,046 | -, 07 |
| 1649 | 1 | +62 3731,58 | 12,866 | +9,9445 | +9,7559 | ,1094 | ,8847 | 317 | +,005 | + ,27 |
| 1650 | 4 | -13 12 37,16 | 12,902 | +9,39⿺7 | $-9,1673$ | ,1106 | ,8838 | 311 | +,002 | + ,04 |
| 1651 | 3 | +62 370,18 | 12,915 | +9,9440 | +9,7576 | +1,1111 | +9,8835 | 326 | $+, 006$ | + ,05 |
| 1652 | 3 | +25 34 41:00 | 12,947 | +9,8579 | +9,4457 | ,1121 | ,8829 | 319 | -,001 | -,09 |
| 1653 | 3 | + 52854,25 | 12,963 | +9,7033 | +8,7923 | ,1127 | ,8823 | 318 | +,013 | - ,12 |
| 1654 | 2 | $+254737,91$ | 12,978. | +9,8591 | +9,4502 | ,1132 | ,8820 | 324 | ,000 | -,06 |
| 1655 | 2 | + 14946,15 | 13,014, | +9,6618 | +8,3214 | ,1144 | ,8811 | 327 | +,007 | -,10 |
| 1656 |  | +54 57 | 13,102 | +9,9390 | +9,7285 | +1,1172 | +9,8791 | 349 |  |  |
| 1657 | 3 | - 52422,17 | 13,110 | +9,5575 | -8,7879 | ,1176 | ,8788 | . 340 | +,017 | -,21 |
| 1658 | 2 | -16 46 29,83 | 13,141 | +9,2945 | -9,2768 | ,1186 | ,8780 | 343 | +,012 | H , 22 |
| 1659 | 3 | - 51852,13 | 13,141 | +9,5,587 | -8,7822 | ,1186 | ,8780 | 344 | +,019 | - ,16 |
| 1660 | 2 | - 34945,75 | 13,148 | +9,5821 | $--8,6402$ | ,1189 | ,8778 | 346 | +,016 | -, ,06 |
| 1661 | 2 | - 043 50,53 | 13,149 | +9,9284 | -7,9141 | +1,1189 | +9,8778 | 347 | $+, 013$ | -,11 |
| 1662 | 2 | + 65822,33 | 13,163 | +9,7185 | +8,9022 | ,1193 | ,8774 | 362 | +,010 | -,01 |
| 1663 | 2 | -26 55 47,12 | 13,176 | +8,6624 | -9,4736 | ,1198 | ,8771 | 348 | +,013 | -, 15 |
| 1664 |  | +1078,29 | 13,189 | +9,7474 | +9,0636 | ,1202 | , 8768 | 354 | +,01 ${ }^{-1}$ | -, 16 |
| 1665 | 1 | +27 38 23,36 | 13,193 | +9,8651 | $+9,4850$ | ,1204 | , ,8767 | 358 | +,0] | -, ,04 |

1xxvi Mean Right Ascension and Declination of 2050 Stars


| No. | No.Obs. | Declination Jan. 1, 1836. | Annual <br> Precession. | Logarithms of |  |  |  | $\begin{aligned} & \text { o } \\ & \text { R } \\ & \text { 感 } \end{aligned}$ | Annual P. M. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | $a^{\prime}$ | $b^{\prime}$ | $c^{\prime}$ | $d^{\prime}$ |  | A. R. | Deạn. |
| 1666 | 2 | $+643630$ | +13,203 | +9,7152 | +8,8878 | +1,1206 | +9,8765 | 355 | s. ,+ 019 |  |
| 1667 | 2 | + 64231,27 | 13,207 | +9,7152 | +8,8869 | -1208 | +0,8763 | 356 | +,060 |  |
| 1668 | 2 | -26 11 24,36 | 13,211 | +8,7559 | - 9,4636 | ,1209 | ,8762 | 353 | +,033 | -,12 |
| 1669 | 1 | - 73013,48 | 13,242 | +9,521] | -8,9347 | ,1219 | ,8755 | 360 |  | - ,09 |
| 1670 | 2 | - 5 9 35,68 | 13,255 | +9,5623 | $-8,7735$ | ,1224 | ,8751 | 364 | +,001 | -, 16 |
| 1671 | 2 | -26 43 48,23 | 13,273 | +8,7076 | $-9,4738$ | +1,1229 | +9,8747 | 361 | +,032 | -,08 |
| 1672 |  | +69 19 | 13,255 | +9,9320 | +9,7916 | ,1224 | ,8751 | 374 | +,057 |  |
| 1673 | 2 | -32 1016,42 | 13,281 | -8,4914 | $-9,5473$ | ,1232 | ,8745 | 363 | +,007 | - , 04 |
| 1674 | 1 | -15 $54.2,98$ | 13,281 | +9,3243 | $-9,2589$ | ,1232 | ,8745 | 367 | +,007 | - ,14 |
| 1675 | 2 | + 32017,42 | 13,286 | +9,6785 | +8,5881 | ,1234 | ,8743 | 368 | +,011 | -, 17 |
| 1676 |  | -747 | 13,317 | +9,5172 | -8,9541 | +1,1244 | +9,8736 | 369 | +,014 |  |
| 1677 |  | +1049 | 13,337 | +9,7528 | +9,0972 | ,1251 | ,8730 | 371 |  |  |
| 1678 |  | +112 | 13,347 | +9,6532 | +8,1444 | ,1254 | ,8728 | 372 | +,008 |  |
| 1679 | 2 | + 65438,17 | 13,363 | +9,7168 | +8,9047 | ,1259 | ,8723 | 373 | +,012 | - ,02 |
| 1680 | 2 | -16 2828,75 | 13,406 | +9,3117 | -9,2778 | ,1273 | ,8713 | 375 | +,009 | ,00 |
| 1681 | 1 | + 7250,39 | 13,407 | +9,7185 | +8,9154 | +1,1273 | +9,8712 | 378 | +,002 | -,09 |
| 1682 | 2 | -16 47 49,95 | 13,428 | +9,3032 | -9,2866 | ,1280 | ,8706 | 377 | +,018 | -,05 |
| 1683 | 2 | -7 $\begin{array}{r} \\ \hline\end{array} 42,19$ | 13,446 | +9,5302 | -8,9176 | ,1286 | ,8702 | 385 | +,013 | ,00 |
| 1684 | 2 | -32 1950,86 | 13,455 | -8,4624 | -9,5549 | ,1289 | ,8699 | 384 | +,020 | -, 10 |
| 1685 | 2 | +160,14 | 13,455 | +9,6513 | +8,1167 | ,1289 | ,8699 | 388 | +,009 | -, ,16 |
| 1686 | 2 | -35142,72 | 13,485 | +9,5832 | $-8,6549$ | +1,1298 | +9,8691 | 390 | +,013 | + ,01 |
| 1687 | 4 | +58 4111,27 | 13,532 | +9,9325 | +9,7610 | ,1312 | ,8680 | 400 | +,015 | + ,06 |
| 1688 | 3 | - 42820,48 | 13,563 | +9,5752 | $-8,7202$ | ,1323 | ,8670 | 396 | +,007 | -,06 |
| 1689 | 2 | -1730 34,75 | 13,567 | +9,2878 | $-9,3086$ | ,1325 | ,8669 | 394 | +,027 | +,06 |
| 1690 | 3 | - 35647,59 | 13,572 | +9,582] | $-8,6669$ | ,1326 | ,8668 | 397 | +,014 | -,10 |
| 1691 | 3 | -27 5820,14 | 13,588 | +8,5798 | $-9,5025$ | +1,1333 | +9,8662 | 398 | +,015 | -, 11 |
| 1692 | 3 | +32 40 18,40 | 13,610 | +9,8814 | +9,5643 | ,1338 | ,8658 | 407 | +,016 | +,03 |
| 169 |  | -138 | 13,640 | +9,6170 | $-8,2877$ | , 1348 | ,8649 | 408 |  |  |
| 1694 | 4 | - 55935,66 | 13,682 | +9,5514 | $-8,8522$ | ,1362 | ,8638 | 416 | +,008 | - , 11 |
| 1695 | 3 | +40 4330,40 | 13,699 | +9,9058 | +9,6493 | ,1367 | ,8633 | 420 | +,020 | +,03 |
| 1696 | 3 | +40 353,26 | 13,699 | +9,9042 | +9,6434 | +1,1367 | +9,8633 | 421 | +,011 | - , 12 |
| 1697 | 2 | + 92126,93 | 13,677 | +9,7380 | +9,0456 | ,1360 | ,8639 | 419 | +,018 | -,09 |
| 1698 |  | + 92133,13 | 13,729 | +9,7380 | +9,0472 | ,1376 | ,8625 | 422 | +,015 | -,05 |
| 1699 | 1 | +63140,30 | 13,772 | +9,7110 | +8,8942 | ,1390 | ,8613 | 427 | +,010 | -, 06 |
| 1700 | 3 | -11 49 14,38 | 13,784 | +9,4425 | -9,1481 | ,1394 | ,8609 | 426 | +,019 | -,08 |
| 1701 | $\beta$ | -25 42 57,50 | 13,788 | +8,8808 | $-9,4747$ | +1,1395 | +9,8608 | 425 | +,019 | -, 13 |
| 1702 | 2 | +20 27 48,98 | 13,835 | +9,8189 | +9,3830 | ,1410 | ,8595 | 434 | +,019 | -, 03 |
| 1703 | 3 | -13357,23 | 13,843 | +9,6180 | -8,2714 | ,1412 | ,8592 | 432 | +,005 | + ,06 |
| 1704 | 2 | -18 4513,89 | 13,860 | +9,2528 | -9,3465 | ,1418 | ,8588 | 433 | +,003 | ,00 |
| 1705 | 2 | -65256,19 | 13,873 | +9,5378 | -8,9178 | ,1422 | ,8584 | 438 | +,014 | +,05 |
| 1706 | 1 | -42 $1 \quad 58,26$ | 13,936 | -9,2014 | $-9,6678$ | +1,1441 | +9,8566 | 442 | -,037 | -,15 |
| 1707 | 1 | +2820 28,68 | 13,932 | +9,8591 | +9,5188 | ,1440 | ,8567 | 447 | +,009 | - ,06 |
| 1708 | 2 | +38 5155,43 | 13,935 | +9,8971 | +9,6399 | ,1441 | ,8566 | 452 | -,002 | - ,02 |
| 1709 | 1 | + 21742,30 | 13,961 | +9,6656 | $+8,4496$ | ,1449 | ,8558 | 448 | +,014 | ,00 |
| 1710 | 2 | +28 2646,02 | 13,965 | +9,8591 | +9,5213 | ,1450 | ,8557 | 453 | -,001 | -,25 |

lxxviii
Mean Right Ascension and Declnation of 2050 Stars

| No. | Star's name and Mag. |  | No. Obs. | $\begin{gathered} \text { Right } \\ \text { Ascension } \\ \text { Jan. 1, 1836. } \end{gathered}$ | Annual Precession. | Logarithms of |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | $a$ |  |  | $b$ | $c$ | $d$ |
| 1711 | Cygni | 6.7 |  | 2 | $\left\|\begin{array}{ccc} h_{0} & m . & s . \\ 20 & 56 & 43,35 \end{array}\right\|$ | $\left\lvert\, \begin{gathered} s . \\ +2,319 \end{gathered}\right.$ | +8,7710 | -8,7829 | +0,3653 | $+8,5607$ |
| 1712 | Vulpeculæ |  |  | 57 | 2,659 | ,7047 | ,7151 | , 4247 | $+8,2998$ |
| 1713 | Microscopii | 7.8 | 2 | 57 44,84 | 3,657 | ,7397 | ,7473 | ,5631 | -8,4603 |
| 1714 | Vulpeculæ | 8 | 3 | 57 56,95 | 2,664 | ,7056 | ,7129 | , 4255 | +8,2968 |
| 1715 | Capricorni | 8 | 2 | $58 \quad 0,52$ | 3,352 | ,6885 | ,6953 | 52,53 | $-8,1448$ |
| 1716 | Capricorni | 7.8 | 2 | 58 5,15 | 3,348 | $+8,6882$ | -8,6945 | +0,5248 | -8,1386 |
| 1717 |  | 7 | 2 | 58 11,98 | 3,409 | ,6996 | ,7027 | ,5327 | -8,2251 |
| 1718 | Vulpeculæ | 7 | 2 | 58 30,28 | 2,553 | ,7268. | ,7319 | ,4070 | $+8,4050$ |
| 1719 | Capricorni | 8 | 3 | 5850,57 | 3,345 | ,6894 | ,6929 | ,5240 | $-8,1367$ |
| 1720 | Aquarii | 7 | 2 | 59 2,10 | 3,171 | ,6744 | ,6775 | ,5012 | -7,7090 |
| 1721 | Equulei | 8 | 3 | 59 5,41 | 3,010 | $+8,6728$ | -8,6756 | +0,4786 | $+7,4585$ |
| 1722 | Vulpeculæ | 8 | 1 | 59 15,43 | 2,600 | ,7196 | ,7219 | ,4150 | +8,3659 |
| 1723 | Cygni | 8 | 2 | 59 32,25 | 2,310 | ,7803 | ,7816 | ,3636 | +8,5762 |
| 1724 | Vulpeculæ. | 8.9 | 1 | 210 | 2,672 | ,7092 | ,7082 | ,4268 | +8,2972 |
| 1725 | Microscopii | 7.8 | 2 | 0 14,18 | 3,6:20 | ,7383 | ,7365 | ,5587 | -8,4418 |
| 1726 | Capricorni | 7.8 | 2 | 0 14,71 | 3,361 | +8,6943 | -8,6925 | +0,5265 | -8,1663 |
| 1727 | Equulei | 7 | 2 | 0 22,08 | 2,963 | ,6771 | ,6751 | ,4717 | +7,7220 |
| 1728 | Cygni | 8 | 1 | 0 33,47 | 1,863 | ,8851 | ,8826 | ,2702 | +8,7816 |
| 1729 | Microscopii | 7.8 | 2 | 0 42,01 | 3,592 | ,7339 | ,7304 | ,5553 | -8,4213 |
| 1730 | Cygni | 9 | 1 | 049,48 | 2,310 | ,7839 | ,7801 | ,3636 | +8,5813 |
| 1731 | Capricorni | 8 | ] | 1 1,26 | 3,344 | +8,6936 | $-8,6890$ | +0,5243 | -8,1431 |
| 1732 | Equulei | 9 | 1 | 1 10,65 | 3,010 | ,6769 | ,6717 | ,4786 | +7,4647 |
| 1733 | Cygni | 8 |  | 1 | 2,060 | ,8435 | ,8:370 | ,3139 | +8,7083 |
| 1734 | Equulei | 8 | 3 | 141,03 | 3,030 | ,6772 | ,6702. | ,4814 | +7,2807 |
| 1735 | Aquarii | 7.8 | 2 | 156,21 | 3,233 | ,6840 | ,6760 | ,5096 | -7,9237 |
| 1736 | Cygni | 8 | 2 | 212,88 | 2,534 | +8,7391 | -8,7302 | +0,4038 | +8,4345 |
| 1737 | Equulei | 8 | 1 | 216,77 | 2,902 | , 6847 | ,6756 | ,4627 | +7,9279 |
| 1738 | Piscis Aust. |  |  | 2 | 3,562 | ,7324 | ,7217 | ,5517 | -8,4028 |
| 1739 | Capricorni | 8 | 1 | 2 42,60 | 3,426 | ,7087 | ,6976 | ,5348 | -8,2627 |
| 1740 | Aquarii | 7.8 | 1 | 3 1,96 | 3,321 | ,6950 | ,6826 | ,5213 | -8,1136 |
| 3741 | Cygni | 7.8 | 2 | 3 8,87 | 2,601 | +8,7285 | -8,7158 | +0,4151 | +8,3802 |
| 1742 | Aquarii | 9.10 | 2 | 4 4,02 | 3,195 | ,6854 | ,6692 | , 5045 | -7,8180 |
| 1743 | Picis Aust. | 7.8 | 2 | 44 <br> 18,29 | 3,610 | ,7453 | ,7289 | ,5575 | -8,4484 |
| 1744 | Equalei | 7.8 | 2 | 418,57 | 2,886 | ,6899 | ,6730 | ,4603 | +7,9757 |
| 1745 | Cygni | 7.8 | 2 | 419,39 | 2,598 | ,7314 | ,7145 | ,4146 | +8,3870 |
| 1746 | Vulpeculæ | 8 | 2 | 4 23;94 | -2,676 | $+8,7177$ | -8,7003 | +0,4275 | +8,3084 |
| 1747 | Capr | 8 | 2 | 4 33,93 | 2,686 | ,7164 | ,6984 | -,4291 | +8,2980 |
| 1748 | Capricorni | 8.9 | 3 | 438,20 | 3,418 | ,7115 | ,6930 | ,5338 | -8,2605 |
| 1749 | Aquarii | 7.8 | 1 | 4 49,80 | 3,174 | ,6856 | ,6664 | ,5016 | -7,7439 |
| 1750 | Cygni | 6 | 2 | 511,60 | 1,847 | ,9030 | ,8827 | ,2665 | +8,8048 |
| 1751 | Equulei | 8 | 3 | 5 25,39 | 2,896 | $+8,6911$ | -8,6699 | +0,4618 | +7,9538 |
| 1752 | Capricorni | 8.9 | 2 | 537,72 | 3,429 | ,7153 | ,6931 | -,5352 | -8,2781 |
| 1753 | - | 7 | 1 | 538,68 | 3,449 | ;7185 | ,6963 | ,5377 | $-8,3007$ |
| 1754 | Equulei | 9 | 2 | 6 17,44 | 2,897 | ,6921 | ,6688 | ,4619 | +7,9534 |
| $1755^{\circ}$ | Aquarii | 8 | 2 | $7 \quad 0 ; 99$ | 3,226 | ,6931 | ,6655 | ,5087 | -7,9233 |


| No. | $\left\|\begin{array}{c} \text { No. } \\ \text { Obs. } \end{array}\right\|$ | Declination Jan. 1, 1836. | Annual <br> Preces sion. | Logarithms of |  |  |  | $\begin{aligned} & \dot{\circ} \\ & \text { 芷 } \\ & \text { 喊 } \end{aligned}$ | Annual P. M. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | $a^{\prime}$ |  | ${ }^{\prime}$ | $d^{\prime}$ |  | A. R. | Decn. |
|  |  | +38 0 43,46 |  |  |  |  |  |  |  |  |
| 17 | 1 | $\begin{array}{rrr}+38 & 0 & 43,46 \\ +23 & 10 & 32,99\end{array}$ | +13,976 | $+9,8938$ $+9,8331$ | $+9,6331$ $+9,4394$ | +1,1454 | +9,8553 | 455 | +,017 | 15 |
| 171 | 2 | +23 <br> $+314250,84$ <br> +25 | 14,0 | ${ }_{-7,7781}^{+9,8081}$ | ${ }_{-9,5662}$ | ,1476 | ,8532 | 459 | +,025 | ,+ 15 $+\quad 09$ |
| 171 | 2 | +22 57 2,58 | 14,053 | +9,8312 | +9,4371 | ,1478 | ,8531 | 464 | +,011 | , , 02 |
| 1715 | 2 | -16 37 27,31 | 14,061 | +9,3263 | $-9,3024$ | ,1480 | ,8529 | 460 | +,027 | + ,03 |
| 1716 | 3 | -16 23 37,58 | 14,069 | +9,3324 | -9,2966 | +1,1483 | +9,8526 | 461 | -,008 | -, 09 |
| 1717 | 3 | -19 44 23,89 | 14,074 | +9,2253 | -9,3749 | ,1484 | ,8525 | 462 | -,005 | -, 11 |
| 1718 | 1 | +28 2644,01 | 14,090 | +9,8573 | +9,5251 | ,1489 | ,8520 | 467 | +,003 | - , 04 |
| 1719 | 3 | -16 1642,57 | 14,114 | +9,3385 | $-9,2950$ | ,1497 | ,8512 | 466 | +,005 | -, ,11 |
| 1720 | 3 | -613 52,45 | 14,123 | +9,5490 | $-8,8825$ | ,1499 | ,8510 | 470 | +,025 | + ,12 |
| 1721 | 4 | + 32915,68 | 14,127 | +9,6776 | +8,6338 | +1,1501 | +9,8509 | 471 | +,009 | -,06 |
| 1722 | 1 | +26 61621,32 | 14,136 | +9,8470 | +9,4946 | ,1503 | ,8506 | 473 | +,008 | +,05 |
| 1723 | 1 | +38 40 22,47 | 14,152 | +9,8932 | +9,6447 | ,1508. | ,8501 | 480 | -,003 | -,01 |
| 1724 |  | +22 45 | 14,189 | +9,8280 | +9,4380 | ,1520 | ,8490 | 482 | +,015 |  |
| 1725 | 3 | -30 22 54,92 | 14,202 | +8,2553 | -9,5539 | ,1523 | ,8486 | 477 | -,009 | -, 15 |
| 1726 | 1 | -17 1632,16 | 14,205 | +9,3117 | $-9,3225$ | +1,1523 | +9,8486 | 481 | +,010 | $-97$ |
| 1727 | 2 | + 61954,93 | 14,206 | +9,7067 | +8,8954 | ,1525 | ,8485 | 484 | +,010 | + ,03 |
| 17 | 1 | +515756,48 | 14,214 | +9,9149 | +9,7472 | ,1527 | ,8482 | 490 | -,011 |  |
| 17 | 2 | -29 | 14,231 | +8,5563 | $-9,5386$ | ,1532 | ,8477 | 483 | +,014 | -,06 |
| 1730 | 1 | +38 5025,45 | 14,234 | +9,8921 | +9,6488 | ,1533 | ,8476 | 489 | -,002 | + ,07 |
| 173 |  | -162140,79 | 14,247 | +9,3385 | $-9,3012$ | +1,1537 | +9,8472 | 487 | +,010 | -, 10 |
| 17 | 2 | + 3305 5, 9 | 14,262 | +9,6776 | +8,6399 | ,1542 | ,8469 | 488 | +,016 |  |
| 1733 | 1 | + 47434,33 | 14,279 | +9,9079 | +9,7175 | ,1547 | ,8462 | , |  | + ;05 |
| 1734 | 3 | + 21651,98 | 14,288 | +9,6646 | +8,4565 | ,1550 | ,8459 | 492 | +,015 | -;03 |
| 1735 | 3 | -11 0 56,43 | 14,304 | $-9,4843$ | -9,0932 | ,1556 | ,8454 | 49 | 017 | -, 23 |
| 1736 | 2 | +29 4248,76 | 14,317 | +9,8597 | +9,5493 | +1,1558 | +9,8450 | 9. | $+, 027$ | -, ,11 |
| 17 | 1 | +10 426,64 | 14,321 | +9,7396 | +9,0972 | ,1560 | ,8449 | 5 | +,037 | -,16 |
| 17 |  | -2756 | 14,345 | +8,7482 | $-9,5251$ | ,1567 | ,8441 |  |  |  |
| 1739 | 2 | -20 5950,06 | 14,353 | +9,1903 | -9,4090 | ,1569 | ,8438 | 8 | +,028 | - , 08 |
| 1740 | 2 | -15 13 34,65 | 14,373 | +9,3729 | -9,2742 | ,1576 | ,8432 | 11 | +,015 | -,16 |
| 1741 | 2 | +26 38 | 14,378 | +9,8451 | +9,5075 | + 1,1577 | +9,8431 | 13 | +,006 | ,00 |
| 1742 |  | -749 | 14,433 | +9,5263 | -8,9900 | ,1594 | ,8412 | 16 | +,003 |  |
| 1743 | 3 | -30 19 59,96 | 14,437 | +8,3979 | -9,5606 | ,1595 | ,8411 | 14 | +,045 | -, 15 |
| 1744 | 2 | +11 650,64 | 14,447 | +9,7482 | +9,1436 | ,1598 | ,8408 | 19 | +,014 | -,02 |
| 17 | 2 | +26 531313,97 |  | +9,8457 | +9,5183 | ,1598 | ,8408 | 22 | $+, 008$ | + ,03 |
| 1746 | 2 | +22 551,35 | 14,450 | +9,8261 | $+9,4487$ | +1,1600 | +9,8406 | 23 | $+, 003$ | -,05 |
| 1747 | 2 | +22 2452,64 | 14,463 | +9,8228 | +9,43.79 | ,1602 | ,8403 | 25 | +,019 | -,02 |
| 1748 | 2 | -20 4540,16 | 14,471 | +9,2068 | -9,4075 | ,1605 | ,8401 | 20 | +,004 | -,16 |
| 1749 1750 | 2 | + 63456,54 $+525344,18$ | 14,483 14,498 | $+9,5465$ $+9,9101$ | -8,9171 $+9,7612$ | ,1608 | ,8398 | 24 32 | ,+ 002 ,+ 013 | - ,01 |
| 1750 | 2 | +52 5344,18 | 14,498 | +9,9101 | +9,7612 | ,1613 | ,8391 | 32 | +,013 | -,07 |
| 1751 | 2 | +1032 25,18 | 14,515 | +9,7435 | +9,1225 | +1,1618 | +9,8386 | 29 | +,031 | - ,11 |
| 1752 | 3 | -21 $27.28,06$ | 14,531 | +9,1818 | -9,4231 | ,1623 | ,8381 | 28 | -,001 | -, 11 |
| 175 | 2 | -22 29 18,34 | 14,531 | +9,1399 | -9,4425 | ,1623 | ,8381 | 27 | +,,010 | - ,07 |
| 1754 | 2 | +1030 44,52 | 14,547 | +9,7427 | +9,1221 | ,1628 | ,8375 | 36 | -,007 | $\square$ |
| 17 | 2 | - 94755,74 | 14,615 | +9,4941 | -9,0931 | ,1648 | ,8853 | 39 | -,002 | - 20 |



| No. | No. Obs. | Declination Jan. 1, 18:36. | Annual Precession. | Logarithms of |  |  |  | $\begin{aligned} & \text { O } \\ & \text { B } \\ & \text { A } \\ & \text { Ex } \end{aligned}$ | Annual P. M. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | $a^{\prime}$ | $b^{\prime}$ |  | $d^{\prime}$ |  | A. R. | Decn. |
| 1756 |  | -10 4110,64 |  |  |  |  |  |  |  | " |
| 1757 | 2 | $\begin{array}{ccc}-10 & 4 & 10,64 \\ -20 & 51 & 3,23\end{array}$ | +14,619 | +9,4ヶ85 | -9,1048 | +1,1649 | +9,83.51 | 40 | ,001 | - , 11 |
| 1758 | 2 | $\begin{array}{r}\text {-20 } \\ -31 \\ \hline\end{array} 25$3,23 <br> 1,39 | 14,647 | +8,1461 | -9,58116 | 1654 | ,8346 | 41 | -,012 | - ,18 |
| 1759 |  | +5918 | 14, $6+3$ | +9,9074 | +9,7\%82 | ,1656 | ,8343 | 51 | $+, 007$ |  |
| 1760 | 3 | +10 022,14 | 14,674 | +9,7364 | +9,1050 | ,1666 | ,8332 | 48 | +,014 | -,18 |
| 1761 | 3 | +10 $15 \begin{array}{ll}15,50\end{array}$ | 14,982 | +9,7388 | +9,1158 | +1,1668 | +9,8330 | 49 | +,002 | - , 11 |
| 1762 | 4 | + 43416,80 | 14,707 | +9,68866 | +8,76×1 | ,1675 | , 8321 | 53 | -,002 | - , ,17 |
| 1763 | 1 | +59 2519,91 | 14,702 | +9,9063 | +9,8005 | ,1674 | ,8323 | 61 | +,018 | -,09 |
| 1764 | 2 | -2926 49,72 | 14,746 | +8,6532 | $-9,55 \times 1$ | ,1687 | ,8308 | 55 | +,009 | -, 05 |
| 1765 | 2 | +412030,88 | 14,738 | +9,8887 | +9,6866 | ,1684 | ,8311 | 63 | +,016 | + ; 25 |
| 1766 | $]$ | +18 1651,78 | 14,757 | +9,7952 | +9,3640 | + I,1690 | +9,8304 | 62 | +,002 | + ,07 |
| 1767 | 2 | -12 5650,44 | 14,762 | +9,4346 | -9,2165 | ,1691 | ,8302 | 59 | +,016 | +,07 |
| 1768 | 2 | -27 53 38,99 | 14,801 | +8,8388 | -9,5380 | ,1703 | ,8288 | 65 | +,014 | + ,05 |
| 1769 | 3 | +165639,91 | 14,806 | +9,7867 | +9,3:335 | ,1704 | ,8287 | 67 | +,020 | -,01 |
| 1770 | 2 | $+81634,31$ | 14,822 | +9,7210 | +9,0283 | ,1709 | ,8282 | 68 | +,034 | -, 11 |
| 1771 | 2 | +17 210,54 | 14,832 | +9,7867 | +9,3364 | +1,1712 | +9,8277 | 69 | -,006 | + ,04 |
| 1772 | 2 | +171814,82 | 11,840 | +9,7882 | +9,3432 | ,1714 | ,8275 | 73 | $+, 012$ | -, 02 |
| 1773 | 2 | -61026,72 | 14,85:3 | +9,5551 | $-8,8997$ | ,1718 | ,8270 | 70 | +,007 | -, 14 |
| 1774 | 2 | $\begin{array}{lll}+17 & 8 & 19,68\end{array}$ | 14,880 | +8,7875 | +9,3403 | ,1726 | ,8261 | 77 | +,005 | +,01 |
| 1775 | 2 | +29 320,74 | 14,908 | +9,8476 | +9,5579 | ,1734 | ,8:251 | 80 | +,010 | -,02 |
| 1776 | 3 | $-295126,75$ | 14,914 | +8,6434 | -9,5684 | +1,1736 | +9,8248 | 78 | +,021 | - ,14 |
| 1777 | 2 | -2 2845,14 | 14,918 | +9,6117 | -8,4392 | ,1737 | ,8247 | 79 | +,018 | -, 14 |
| 1778 | 2 | +55 635,78 | 14,923 | +9,9009 | +9,7859 | ,1738 | ,8245 | 86 | $+, 010$ | -,16 |
| 1779 | 3 | -12 851,70 | 14,942 | +9,4533 | -9,1944 | ,1744 | ,8238 | 82 | +,015 | - ,09 |
| 1780 | 1 | $+3396,51$ | 15,008 | +9,6767 | +8,6802 | ,1763 | ,8214 | 90 | +,009 | -,01 |
| 1781 | 3 | +22 1148,44 | 15,019 | $+9,8142$ | +9,4523 | + 1,1766 | $+9,8210$ | 94 | +,016 | + ,09 |
| 1782 | 4 | + 34737,35 | 15,019 | +9,6785 | +8,6979 | ,1766 | , 8210 | 91 | +,022 | -, 12 |
| 1783 | 3 | -4 14 26,67 | 15,038 | +9,5843 | -8,7417 | ,1772 | ,8203 | 95 | +,026 | -, 07 |
| 1784 1785 | 1 | $+23 \quad 749,13$ <br> +2615 <br> 29,92 | 15,053 15,065 | $+9,8189$ +89868 | +9,47()2 | ,1776 | ,8197 | 103 | -,010 | - , ,04 |
| 1785 | 2 | -2615 29,92 | 15,065 | $+8,9868$ | $-9,5215$ | ,1780 | ,8193 | 96 | +,004 | -,05 |
| 1786 | 3 | $\begin{array}{llll}-25 & 7 & 15,04\end{array}$ | 15,073 | +9,0531 | $-9,5038$ | +1, $\mathbf{1 2}^{-172}$ | +9,8190 | 98 | +,030 | - ,15 |
| 1787 | 3 | -23 5918,71 | 15,085 | +9,1106 | -9,4853 | ,1785 | +,8185 | 101 | +,010 | -, ,02 |
| 1788 | 3 | -12 28 41,79 | 15,127 | +9,4518 | -9,2114 | ,1797 | ,8169 | 106 | +,015 | + ,06 |
| 1789 1790 | 2 2 | $\begin{array}{r}\text {-25 } \\ +40 \\ +40 \\ \hline 14 \\ \hline\end{array}$ | 15,157 | $+9,() 170$ $+9,8774$ | -9,5192 | ,1806 | ,8158 | 108 | +,020 | - ,02 |
| 1790 | 2 | +40 14-2,34 | 15,158 | +9,8774 | +9,6890 | ,1806 | ,8158 | 116 | +,043 | -,10 |
| 1791 | 3 | $-24122,47$ | 15,177 | +9,6052 | -8,5469 | +1,1812 | $+9,8150$ | 112 | +,009 | -, 05 |
| 1792 | 2 | -25 11114,40 | 15,177 | +9,0607 | -9,5078 | ,181\% | +,8150 | 111 | ,+ 009 ,+ 013 | -, ,15 |
| 1793 | 2 | +56 38 9,60 | 15,211 | +9,893x | +9,8020 | ,1821 | ,8137 | 124 | +,018 | + ,06 |
| 1794 1795 | 2 3 | $\begin{array}{r}+761917,97 \\ -2825 \\ \hline\end{array}$ | 15,199 | $+9,8663$ | +9,8674 | ,1818 | ,8142 | 137 | -,064 | + ,08 |
| 1795 | 3 | -28 25 52,00 | 15,248 | +8,8633 | $-9,5585$ | ,18.32 | ,8122 | 121 | +,025 | -,02 |
| 1796 | 2 | -20 5457,07 | 15,268 | +9,2405 | -9,4341 | +1,1838 | +9,8115 | 123 | +,008 | - ,11 |
| 1797 | 3 | -14 17 40,15 | 15,275 | +9,4166 | -9,2737 | ,1840 | ,,+ 8115 , 8112 | 125 | +,015 ,+ 017 | - ,09 |
| 1798 | 3 3 | -22 <br> -14 <br> -14 <br> 14 | 15,302 15,309 | $+9,1903$ $+9,4150$ | $\begin{array}{r} -9,4638 \\ -09781 \end{array}$ | ,1847 | ,8102 | 127 | +,017 | - ,34 |
| 1799 | 3 3 | $\begin{aligned} & -1424 \\ & -12\end{aligned} 288,54$ | 15,309 15,320 | $+9,4150$ $+9,4502$ | $-9,2781$ $-9,2226$ | ,1849 | ,8099 | 128 | +,026 | -,12 |
|  |  | -12 38 10,13 | 15,320 | +9,4502 | -9,2226 | ,1853 | ,8094 | 130 | -,005 | -, 07 |

Ixxxii Mean Right Ascension and Declination of 2050 Stars


| No. | No. Obs. | Declination <br> Jan. 1, 1836. | Annual Precession. | Logarithms of |  |  |  | $\begin{aligned} & \dot{0} \\ & \text { N } \\ & \text { N } \\ & \text { H. } \end{aligned}$ | Annual P. M. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | $a^{\prime}$ | $b^{\prime}$ | $c^{\prime}$ | $d^{\prime}$ |  | A. R. | Decn. |
| 1801 | 1 | -12 4744,74 |  |  |  |  |  |  |  |  |
| 1802 | 3 | $\begin{array}{rrr}-12 & 47 & 44,74 \\ +46 & 0 & 5,67\end{array}$ | $+15,323$ 15,323 | $+9,4472$ $+9,8837$ | $-9,2277$ $+9,7405$ | +1,1854 | +9,8093 | 131 | +,013 | +,10 |
| 1803 | 2 | +46 8 8,07 | 15,323 | $+9,8837$ $+9,5999$ | $+9,7405$ $-9,6190$ | ,1854 | ,8093 | 140 |  | - ,55 |
| 1804 | 1 | + 59316,86 | 15,348 | $+9,5999$ $+9,8893$ | $+9,6190$ $+9,8174$ | ,1856 | ,8090 | 135 | ,+ 031 +031 | ,00 |
| 1805 | 3 | - 33536,76 | 15,358 | +9,5944 | $+9,8174$ $-8,6782$ | ,1863 | ,8084 | 146 | ,+ 031 ,+ 006 | ,- 07 $+\quad 06$ |
| 1806 | 3 | -3 19 6,29 | 15,353 | +9,5977 | -8,6444 | +1,1862 |  |  |  |  |
| 1807 | 3 | -12 4724,75 | 15,399 | +9,4502 | -8,6444 | $+1,1862$ , 1875 | $+9,8081$ , 8062 | 138 | ,+ 034 ,+ 013 | - 0,03 |
| 1808 | 2 | -14 4414,09 | 15,402 | $+9,4099$ | -9,2905 | ,1875 | ,8062 | 143 | ,+ 013 ,+ 021 | ,+ 17 ,+ 16 |
| 1809 | 2 | +2652 13,23 | 15,418 | +9,8299 | +9,5414 | ,1880 | ,8055 | 151 | ,+ 021 ,+ 009 | +,16 |
| 1810 | 3 | -25 8 31,37 | 15,418 | +9,0864 | -9,5139 | ,1880 | ,8055 | 147 | ,+ 008 ,+ 028 | +,23 |
| 1811 | 2 | +3130 40,74 | 15,425 | +9,8476 | +9,6045 | +1,1882 | +9,8052 | 153 | +,018 |  |
| 1812 | 3 | +52 1119,23 | 15,436 | +9,8865 | $+9,7843$ $+9,8$ | $+1,1882$ , 1885 | $+-9,8052$ , 8047 | 156 | ,+ 018 ,+ 042 | ,+ 09 $+\quad, 01$ |
| 1813 1814 | 3 | $\begin{array}{r}\text { + } \\ + \\ +545139,43 \\ \hline\end{array}$ | 15,529 | +9,6857 | +8,8178 | ,1911 | ,8009 | 163 | +,008 | -, 19 |
| 1814 | 1 3 | $\begin{array}{rrr}+54 & 42 & 7,65 \\ +7 & 140,43\end{array}$ | 15,565 | +9,8837 | +9,8020 | ,1922 | ,7993 | 170 | +,024 | - ,02 |
| 1815 | 3 | $-7140,43$ | 15,580 | +9,5490 | -8,9765 | ,1926 | ,7987 | 167 | +,017 | - ,03 |
| 1816 | 2 | -28 3627,49 | 15,580 | +8,9031 | -9,5704 | +1,1926 | +9,7987 | 164 |  | -, 04 |
| 1817 | 3 | $-212349,61$ | 15,583 | $+9,2430$ | -9,4525 | +1,1927 | $\begin{array}{r}+9,7986 \\ \hline, 7985\end{array}$ | 165 | ,+ 032 ,+ 044 | - ,04 |
| 1818 | 2 | +23 <br> + <br> +65 <br>  | 15,610 | +9,8096 | +9,4857 | ,1934 | ,7975 | 174 | ,+ 044 ,+ 007 | + , ,01 |
| 1819 | 2 | $+655638,97$ +2837 | 15,607 | +9,8751 | +9,8519 | ,1933 | ,7976 | 183 | +,041 | + |
| 1820 | 4 | $-283710,70$ | 15,62] | $+8,9085$ | -9,5718 | ,1937 | ,7970 | 169 | +,013 | + ,02 |
| 1821 | 3 | -14 10 19,08 | 15,621 | +9,4281 | -9,2799 | +1,1937 | +9,7970 | 172 | $+, 020$ |  |
| 1822 | 2 | +22 4023,88 | 15,642 | +9,8069 | +9,4785 | +1,1943 | +9,7960 | 178 | +,020 | - , ,04 |
| 1823 | 1 | -7 5433,80 | 15,642 | +9,5490 | -8,9833 | ,1943 | ,7960 | 175 | $+, 027$ | - ,08 |
| 1824 | 2 | $\begin{array}{rrr}-6 & 8 & 21,10 \\ -0 & 30 & 1,57\end{array}$ | 15,650 <br> 15,672 | $+9,5611$ $+9,6325$ | $-8,9201$ | ,1945 | ,7957 | 176 | +,012 | - ,45 |
| 1825 | 2 | - 030 | 15,672 | +9,6325 | -7,8193 | ,1951 | ,7948 | 182 | -,001 | ,00 |
| $1 \times 26$ | 3 | -21 $10 \begin{array}{ll}9,08\end{array}$ | 15,678 | +9,2553 | $-9,4506$ | +1,1953 | +9,7945 | 179 | +,017 |  |
| 1827 | 2 | -9 9844,22 | 15,693 | +9,5079 | $-9,1240$ | -1957 | +,7938 | 186 | +,012 | - , ,21 |
| 1828 | 2 | -19 58 16,30 | 15,708 | +9,2945 | -9,4268 | ,1961 | ,7932 | 187 | +,006 | - ,15 |
| 1829 1830 | 1 | $+413433,16$ -19 | 15,708 | +9,8669 | +9,7163 | ,1961 | ,7932 | 191 | +,,007 | +,01 |
| 1830 | 2 | $-19714,38$ | 15,762 | +9,3181 | $-9,4101$ | ,1976 | ,7908 | 193 | +,011 | +,04 |
| 1831 | 1 | +58 5051,64 | 15,783 | +9,8756 | +9,8287 | +1,1982 | +9,7898 | 205 |  |  |
| 1832 | 2 | +23 4326,73 | 15,805 | +9,8096 | +9,5019 | +1988 | $+9,7898$ , 7889 | 200 | +,009 | -, 01 |
| 1833 1834 | 3 3 3 | 1910 +301686 +3601 | 15,816 | $+9,3201$ $+9,831$ | -9,4127 | ,1991 | ,7884 | 199 | -,001 | -, ,08 |
| 1834 | 3 3 | $+301643,01$ -26103944 | 15,837 | +9,8351 | +9,6006 | ,2000 | ,7874 | 210 | +,023 | - ,14 |
| 1835 | 3 | -26 1039,44 | 15,843 | +9,0755 | -9,5421 | ,1999 | ,7871 | 204 | +,026 | + ,02 |
| 1836 | 2 | -16 59 5, 61 | 15,848 | +9,3729 | -9,3627 | +1,2000 | +9,7869 | 206 | +,014 | ,05 |
| 1837 | 2 | -28 3733,53 | 15,859 | +8,9445 | -9,5784 | , 2003 | ,7864 | 207 | +,017 | + ,03 |
| 1838 | 3 | + 55343,78 | 15,888 | +9,6946 | +8,9123 | ,2010 | ,7851 | 216 | +,019 | + , ,10 |
| 1839 |  | +61 4 | 15,883 | +9,8716 | +9,8411 | ,2009 | ,'7853 | 221 | +, | -, |
| 1840 | 3 | -14 4740,66 | 15,930 | +9,4216 | --9,3066 | ,2022 | ,7831 | 218 | +,015 | -,16 |
| 1841 | 3 | +65 030,52 | 15,933 | +9,8663 | +9,8597 | $+1,2023$ | +9,7830 | 229 | +,017 |  |
| 1842 | 3 | +3834 54,09 | 15,972 | +9,8603 | +9,6964 | +1,2033 | ,7813 | 228 | ,+ 017 ,+ 017 | -,12 |
| 1843 | 3 | $\begin{array}{r}+ \\ + \\ +6451 \\ +13,68 \\ \hline\end{array}$ | 15,990 | $+9,6522$ $+9,8663$ | $+8,2950$ | ,2038 | ,7803 | 227 | +,011 | - , 03 |
| 1844 1845 | 1 3 | $\begin{array}{r}+6451 ~ 13,34 \\ \hline\end{array}$ | 15,987 | +9,8663 | +9,8586 | ,2037 | ,7805 | 236 | +,144 | -, 13 |
| 1845 | 3 | -22 40 5,17 | 16,032 | +9,2279 | -9,4886 | ,2050 | ${ }^{\text {, }} 7788$ | 230 | -, 010 | + ,02 |


together with their annual precessions and proper motions, \&c.

| No. | No. | Declination Jan. 1, 1836. | Annual <br> Precession. | Logarithms of |  |  |  |  | Annual P. M. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | $a^{\prime}$ | $b^{\prime}$ | $c^{\prime}$ | $d^{\prime}$ |  | A. R. | Decn. |
| 184 | 3 | $\begin{array}{ll} -22 & 24 \\ 9,74 \end{array}$ |  | +9,2380 | $-9,4837$ | +1,2050 | 88.3 | 231 |  |  |
| 1847 | 4 | $\begin{array}{lll}-22 & 24 & 9,74 \\ -15 & 3,16\end{array}$ | $+16,002$ 16,042 | +9,21199 | -9,48:2:3 | +1,2053 | $+9,7778$ <br> $\substack{778 \\ \hline}$ | 232 | ,+ 036 ,+ 008 |  |
| 18 | 3 | + 03354,08 | 16,157 | +9,1434 | +7,9115 | ,20.6 | ,7771 | 237 | +,010 |  |
| 1849 | 4 | - 02350,82 | 16,097 | +9,6335 | -7,7] $\cup 9$ | ,20, | ,7751 | 234 | +,014 | -,20 |
| 1850 | 2 | - 91228,89 | 16,112 | +9,5224 | -9,1082 | ,2071 | ,7744 | 240 | -,002 | -,02 |
| 1851 | 4 | +34 4550,74 | 16,177 | $+9,8407$ | +9,6632 | +1,2089 | +9,7711 | 253 | +,017 | -, 14 |
| 1852 | 2 | +5650)22,33 | 16,184 | +9,8639 | +9,8300 | ,2091 | ,7708 | 256 | +,002 | + ,01 |
| 1853 | 3 | - 52845,14 | 16,216 | +9,5752 | -8,8456 | ,2099 | ,7692 | 254 | +,007 | + ,03 |
| 185* | 3 | +4018 2,24 | 16,219 | +9,8519 | +9,7190 | ,2100 | ,7690 | 261 | +,008 | -,05 |
| 18.5 | 3 | +2: 411,31 | 16,246 | +9,7938 | +9,4834 | ,2107 | ,7676 | 26.2 | +,006 | + ,02 |
| 1850 | 3 | +28 23 3,77 | 16,277 | $+9,8176$ | +9,5819 | +1,2116 | +9,7661 | 267 | + +,010 | -, 12 |
| 18.57 | 4 | +56 6919,88 | 11,287 | +9,8603 | $+9,83: 35$ | ,2118 | ,7655 | 277 | +,043 | +,01 |
| 1858 | 1 | +23101,70 | 16,308 | +9,7924 | $+9,4874$ | ,2124 | ,7644: | 274 |  | -, 20 |
| $1 \times 59$ | 4 | - 45248,75 | 16,318 | +9,5832 | -8,8393 | ,2127 | ,76:39 | 272 | $+, 023$ | -, 17 |
| 1800 | 5 | +24 49 47,46 | 16,354 | +9,8041 | $+9,5352$ | ,2136 | ,7620 | 279 | +,013 | -,10 |
| 18 | 4 | -16 49 57,22 | 16,375 | +9,3944 | $-9,3736$ | +1,2142 | +9,7609 | 280 | -,013 | -, 16 |
| 1862 | 1 | -1 2144822,42 | 16,375 | +9,8035 | +9,535:2 | $\cdots 142$ | ,7609 | 284 | +-,018 | -, 10 |
| 1863 | 3 | +68 1811,33 | 15,408 | +9,8414 | $+9,8812$ | ,2151 | ,7541 | 293 | +,007 | -,10 |
| 1864 | 3 | -23 3434,51 | 16,422 | +y,2279 | $-9,5153$ | 2154 | ,7584 | 286 | +,013 | + ,03 |
| 1865 | 3 | - 03319,15 | 16,428 | +9,6325 | -7,8825 | ,2156 | ,7580 | 287 | +,013 | -,12 |
| 1816 | 3 | +1025 4,87 | 16,438 | +9,7251 | +9,1718 | $+1,2159$ | $\mid+9,7575$ | 289 | +,020 | -,16 |
| 1867 | 2 | +32 217,33 | 110,499 | +9, $922(6)$ | +9,6401 | ,2173 | ,7546 | 299 | +,012 | +,09 |
| $18:$ | 4 | -1657 | 16,502 | +9,3979 | - 9,3798 | ,2175 | ,7540 | 296 | +,007 | -,22 |
| 1869 | 4 | -2 2145.40 | 16,533 | +9,220] | -9,5259 | ,2183 | ,7594 | 301 | +,019 | -,06 |
| $18: 0$ | 3 | +57 5368046 | 16,544 | -99,8500 | $+9,8114$ | ,2197 | ,7491 | 309 | +,004 | +,03 |
| 1871 | 4 | +67 $11 \begin{array}{ll}17 & 50,62\end{array}$ | 16,584 | +9,8494 | +9,8-124 | $+1,2197$ | +9,7494 | 310 | +,002 | + , 03 |
| 1872 | 4 | -17 49 54,06 | 16,610) | +9,38:38 | $-9,4041$ | ,220.4 | ,7479 | 307 | $+, 0: 1$ | + ,02 |
| 1873 | 4 | +43 7336,16 | 11,607 | +9,8451 | +9,7533 | ,20313 | ,7481 | 313 | +,022 | -,04 |
| 1874 |  | +19 3 3 38.84 | 16,620 | +9,7730 | +9,4331 | ,2206 | ,7474 | 312 | +,012 | -,01 |
| 1875 | 4 | $+135014,59$ | 16,6:33 | +9,7443 | +9,2986 | ,2210 | ,7466 | 316 | +,012 | -,05 |
| 1876 | 3 | +60 3034,89 | 16,647 | +9,8432 | +9,8592 | +1,2913 | +9,7459 | 318 | +,028 | -,08 |
| 1877 | 4 | - $\because 04655,83$ | 16,6,59 | +9,3201 | $-9,46 i 94$ | ,2211 | ,7451 | 317 | +, 012 | +,03 |
| 1878 | 3 | +60 50 57,10 | 16,727 | +9,8401 | +9,8627 | ,2234 | ,7+11 | 328 | +,017 | + ,04 |
| 1879 | 4 | $+352124,93$ | 16i,7i9 | +9,8:74 | +9,6845 | ,2237 | ,7404 | 325 | +,015 | -,15 |
| 1880 | 3 | + 13518,29 | 16,788 | +9,65:2 | +-8,3735 | ,2250 | ,7375 | 330 | - + ,008 | -,03 |
| 1881 | 3 | -38 3156,97 | 16,791 | -7,0000 | -9,7174 | +1,2251 | +0,7373 | 329 | +,029 | - , 11 |
| 1882 | 3 | +5933 77,01 | 16,78\% | +9,8395 | +9,8587 | ,2250 | ,7375 | 334 | +,023 | -,02 |
| 1883 | 4 | -19 58 0,06 | 16,819 | +9,3463 | -9,4568 |  | ,73555 | $3: 33$ | +,007 | -,13 |
| 1884 | 4 <br> 2 |  | 16,836 16,798 | $+9,8248$ $+9,8432$ | $+9,6871$ $+9,8270$ | ,2262 | ,7345 | 337 335 | +,004 |  |
|  |  |  |  |  |  |  |  |  |  |  |
| 1886 | 3 | +20 2748,83 | 16,854 | +9,7745 | +9,4687 | +1,2267 | +9,73:34 | 339 | +,009 | -,06 |
| 1887 | 3 | +202258,62 | 16,864 | +9,7745 | +9,4673 | ,2269 | ,7328 | 342 | +,004 | -, 10 |
| 1888 | 3 | +62 5745,90 | 16,479 | +9,8306 | +9,8752 | ,2273 | ,7318 | 349 | +,0,037 | -,03 |
| 1889 | 2 <br> 3 | $\begin{array}{r}\text { r } \\ +550 \\ -7311,38 \\ \hline\end{array}$ | 16,882 | $+9,8388$ $+4,5635$ | $+9,8433$ $-9,0154$ | ,2274 | ,7316 | 347 350 | ,+ 010 +014 | - |
| 1890 | 3 | - $7 \quad 3 \quad 18,41$ | 16,960 | +9,5635 | -9,0154 | ,2294 | ,7266 | 350 | +,014 | -.,04 |



| No. | No.Obs. | Declination Jan. 1, 1836. | Annual <br> Precession. | Logarithms of |  |  |  |  | Annual P. M. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | $a^{\prime}$ |  |  | $a^{\prime}$ |  | A. R. | Decn. |
| 1891 | 3 | -18 $10 \begin{array}{ll}3,88\end{array}$ | +16,977 | +9,3909 | -9,4213 | +1,2298 | +9,7256 | 352 | $\stackrel{s .029}{-, 029}$ |  |
| 1892 | 3 | + 0826,99 | 16,988 | +-9,6395 | +7,3919 | +2301 | -,7248 | 353 | +,016 |  |
| 1893 | 3 | -25 4733,26 | 17,004 | +9,2068 | -9,5668 | ,2305 | ,7238 | 354 | +,014 | -, 12 |
| 1894 | 2 | -18 17 56,69 | 17,02:3 | +9,3409 | -9,4256 | ,2310 | ,7226 | 356 | +,019 | +,04 |
| 1895 | 4 | $\begin{aligned} & +26\end{aligned} 001,91$ | 17,035 | +9,7931 | +9,5715 | ,2313 | ,7218 | 359 | +,017 | +,02 |
| 1896 | 4 | - 154 48,53 | 17,065 | +9,6191 | $-8,4507$ | $+1,2321$ | +9,7197 | 364 | +,030 | +,06 |
| 1897 | 3 | +48 2022,68 | 17,072 | +9,8319 | +9,80:37 | ,2323 | ,7193 | 368 | +,010 | -, 04 |
| 1898 | 2 | +26 242,56 | 17,083 | +9,7924 | +9,5735 | ,2:326 | ,7185 | 369 | +,006 | -, 05 |
| 1899 | 3 | -27 5016,89 | 17,088 | +9,1461 | -9,5997 | ,2327 | ,7183 | 367 | +,009 | -, ,06 |
| 1900 | 3 | +5652 31,96 | 17,090 | +9,8293 | +9,8539 | ,2327 | ,7181 | 373 | $+, 026$ | + ,07 |
| 1901 | 3 | $\begin{array}{llll}+10 & 11 & 8,85\end{array}$ | 17,094 | +9,7160 | +9,1791 | +1,2329 | +9,7177 | 370 | +,005 | - ,16 |
| 1902 | 3 | - 14221,08 | 17,102 | +9,6222 | -8,3990 | ,2:330 | ,7173 | 371 | +,012 | + ,03 |
| 1903 | 3 | -22 3112,21 | 17,14. | +9,30:33 | --9,5159 | ,2341 | ,7143 | 377 | +,016 | +,02 |
| 1904 | 3 | -13 4829,44 | 17,156 | +9,4742 | -9,3095 | ,2344 | ,7135 | 379 | +,003 |  |
| 1905 | 4 | -29 5155,35 | 17,231 | +9,0864 | -9,6311 | ,2363 | ,7082 | 384 | +,003 | -, ,10 |
| 1906 | 4 | + 51015,74 | 17,2 | +9,6794 | + $+8,8,908$ | $+1,2369$ | +9,7065 | 390 | +,012 | - ,13 |
| 1907 | 4 | + 51852,62 | 17,261 | +9,6803 | +8,90333 | , 2371 | ,7061 | 391 | +,013 | -, 19 |
| 1908 |  | -23 2111,24 | 17,284 | +9,3032 | -9,5279 | ,2377 | ,7044 | 343 | -,001 | +, ,12 |
| 1909 | 3 | + 42353,64 | 17,291 | +9,6739 | +8,8224 | ,2378 | ,7040 | 395 | +,006 | -, 12 |
| 1910 | . | -33 55 29,76 | 17,329 | +8,9031 | $-9,6832$ | ,2388 | ,7011 | 398 | +,031 | +,04 |
| 1911 | 3 | +4418 58,77 | 17,329 | +9,8202 | $+9,7812$ | +1,2:38 | +9,7011 | 404 | +,018 | -, 03 |
| 1.712 | 3 | -2634 0,41 | 17,343 | +9,2148 | -9,5874 | ,2391 | ,7001 | 400 | -,018 | +,07 |
| 1913 | 3 | - 71054,25 | 17,349 | +9,5670 | $-9,1) 324$ | ,2393 | ,6996 | 403 | +,015 | -, 05 |
| 1914 | 3 | +3:3 431515,23 | 17,355 | +9, 21055 | +9,68:2 | ,2394 | ,6092 | 409 |  | +,06 |
| 1915 | 3 | +24 2136,47 | 17,367 | +9,7789 | +9,5510 | ,2397 | ,6988 | 411 | +,008 | +,03 |
| 1916 | 4 | - 02742,54 | 17,378 | +9,6335 | -7,8167 | $+1,2400$ | +9,0974 | 412 | -,001 | - ,19 |
| 1917 |  | + 1565,73 | 17,404 | +9,6532 | + +,4705 | ,2407 | ,6954 | 417 | +,010 | -, |
| 1918 | 2 | +58 2131,35 | 17,434 | +9,8122 | +9,8681 | ,2414 | , 64932 | 4 | +,015 | -, 06 |
| 1919 |  | +42 23 4, 619 | 17,494 | +9,8122 | +9,7697 | ,2429 | ,6885 | 8 | +,004 | +,07 |
| 1920 | 2 | +58 2917,02 | 17,496 | +9,808:2 | +9,8717 | ,2429 | ,6883 | 12 | +,021 | +,11 |
| 1921 | 4 | $\begin{array}{llll}-15 & 1 & 57,76\end{array}$ | 17,510 | +9,4669 | $-9,3548$ | $+1,2433$ | +9,6872 | 7 | $+, 016$ | -, 16 |
| 1922 | 3 | -42 91818,03 | 17,564 | -7,1000 | -9,7693 | ,2446 | ,6828 | 18 | +074 | -,61 |
| 1923 | 3 | +63 19 2,44 | 17,57( | +9,7459 | +9,8940 | ,2448 | ,6824 | 24 | +,018 | -, 02 |
| 1924 | 3 | +33 4753,38 | 17,602 | +9,7966 | +9,0891 | ,2455 | , 67:0 | 29 | +,018 | -,10 |
| 19:5 | 3 | + 8408093 | 17,617 | +9,6498 | +9,1237 | ,2459 | ,6781 | 30 | $+, 011$ | -,05 |
| 1926 | 4 | -26 4641,63 | 17,623 | +9,2380 | $-9,5974$ | $+1,2461$ | +9,6780 | 25 | +-,008 | + ,01 |
| 19 | 4 | -623 47,28 | 17,648 | +9,5786 | -8,9896 | ,2467 | ,6759 | 35 | +,016 | -,06 |
| 1928 | 3 | +23:30 10,52 | 17,670 | +9,7679 | +9,5465 | ,2472 | ,6740 | 39 | +,010 | + ,05 |
| 1929 | 2 | +6: 23 i 57,17 | 17,672 | +9,9910 | +9,4933 | ,2473 | ,6737 | 42 | -,005 | + ,03 |
| 1930 | 3 | $\begin{array}{llll}-18 & 1 & 3,85\end{array}$ | 17,678 | +9,4265 | -9,4354 | ,2474 | ,6733 | 38 | +,017 | +,0¢ |
| 1931 | 3 | +62 212,46 | 17,731 | +9,7882 | +9,8941 | +1,2487 | +9,6687 | 53 | +,017 | + , 07 |
| 1932 | 3 | +28 2126,18 | 17,75: | +9,8803 | +9,6-43 | ,2492 | ,666, | 52 | +,114 | + ,01 |
| 1933 | 4 | + 441626,93 | 17,754 | +9,1028 | +9,7914 | ,2493 | ,6666 | 65 | +, (0) | - ,04 |
| 1934 | 2 | $\begin{array}{r}\text { + } \\ +1381,90 \\ \hline 989\end{array}$ | 17,789 | +9,7226 | +9,3052 | ,2502 | ,6634 | 0 | +,013 | -,07 |
| 1935 |  | - 91925,97 | 17,819 | +9,5490 | -9,1574 | ,2509 | ,6607 | 59 | +,005 | -,,09 |



| No. | $\begin{aligned} & \text { No. } \\ & \text { Obs. } \end{aligned}$ | Declination Jan. 1, 1836. | Annual <br> Precession. | Logarithms of |  |  |  |  | Annual P.M. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | $b^{\prime}$ |  | $d^{\prime}$ |  | A. R. | Decn. |
| 1930 | 3 | +19 84505 |  |  |  |  |  |  |  |  |
| 193 | 2 | $\begin{array}{ccc}+13 & 15 & 0,34 \\ +\end{array}$ | +17,843 | +9,7218 | $+9,450$ $+9,3102$ | $\begin{array}{r}+1,2510 \\ \hline 2515\end{array}$ | +9,6602 | $\begin{gathered} 60 \\ 62 \end{gathered}$ |  | , 11 |
| 1938 | 3 | +365652,96 | 17,853 | +9,7994 | +9,7289 | ,2517 | ,6575 | 65 | +,004 | +,,06 |
| 1939 | 4 | +13 12 42,36 | 17,893 | +9,7202 | +9,3104 | ,25:7 | ,6538 | 69 | +,008 | -,01 |
| 1940 | 4 | $\begin{array}{llll}-7 & 3 & 55,81\end{array}$ | 17,898 | +9,5752 | -9,0388 | ,2528 | ,6533 | 68 | +,005 | -,01 |
| 1941 | 4 | + 74758,66 | 17,913 | +9,6911 | +9,0848 | +1,2532 | +9,6518 | 73 | +,010 | -,15 |
| 1942 | 4 | + 54253,06 | 17,995 | +9,6776 | +8,9527 | ,2551 | ,6439 | 82 | +,015 | -, 01 |
| 1943 | 4 | $\begin{array}{lll}-11 & 1 & 25,15\end{array}$ | 18,002 | +9,5340 | -9,2339 | ,2553 | ,6431 | 83 | +,004 | -,10 |
| 1944 | 4 | $+354948,51$ | 18,005 | +9,7846 | +9,7211 | ,2554 | ,6429 | 87 | +,018 | 00 |
| 1945 | 4 | +62 4420,63 | 18,146 | +9,7612 | +9,9057 | ,2588 | ,6281 | 109 | +,015 | +,03 |
| 19 | 4 | + 34122,47 | 18,150 | +9,6628 | +8,7667 | +1,2589 | +9,6276 | 106 | +,011 | - ,02 |
| 1947 | 2 | +31 016,66 | 18,18:3 | +9,7701 | +9,6697 | ,2597 | ,6240 | 113 | +,014 | -,04 |
| 1948 | 3 | +62 29 44,43 | 18,182 | +9,7581 | +9,9055 | ,2597 | ,6240 | 115 | +,002 | +, 05 |
| 1949 | 2 | -10 3420,81 | 18,190 | +9,5428 | -9,2205 | ,2598 | ,6232 | 110 | +,014 | -, 15 |
| 1950 | 3 | -10 29 56,06 | 18,197 | +9,5453 | -9,2180 | ,2600 | ,6224 | 11 | +,015 | -,08 |
| 1951 | 3 | -25 0022,75 | 18,239 | +9,3:385 | --9,5847 | +1,2610 | +9,6177 | 119 | +,010 | -,07 |
| 1952 | 2 | -33 11130,57 | 18,25:3 | +9,1367 | -9,6974 | ,261.3 | ,6161 | 124 | +,039 | +,02 |
| 1953 | 4 | $\begin{array}{llllllllllllll}-11 & 27 & 48,14\end{array}$ | 14,2533 | +9,5353 | -9,2572 | ,2613 | ,6161 | 125 | +,012 | -,01 |
| 1954 | 4 | + 32942,77 | 18,260 | +9,6009 | +8,7473 | ,2615 | ,6153 | 127 | $+, 007$ | -,08 |
| 1955 | 3 | -11 263785 | 18,262 | +9,5353 | $-0,2567$ | ,2616 | ,6149 | 126 | +,003 | -,03 |
| 19 | 5 | $\begin{array}{lll}-14 & 26 & 5,83\end{array}$ | 18,297 | +9,5024 | -9,35 | +1,2624 | +9,6110 | 133 | +,007 | -, 01 |
| 19 | 3 | -1820)2(0,43 | 18,3:25 | +9,4548 | -9,4584 | ,2630 | ,6076 | 138 | +,003 | + ,03 |
| 1958 | 3 | -24 50112,50 | 18,409 | +9,3579 | -9,5860 | ,2650 | ,5972 | 146 | +,007 | -,11 |
| 1959 | 4 | -21 46 47,23 | 18,423 | +9,4099 | -3,532.5 | ,2653 | ,5954 | 148 | +,015 | -, 04 |
| 1960 | 2 | -32 2916,05 | 18,436 | +9,1931 | -9,6935 | ,2657 | ,59:37 | 154 | -,002 | + ,01 |
| 1961 | 4 | -21 5614,58 | 18,452 | +9,4082 | $-9,5361$ | +1,2660 | +9,5916 | 155 | +,014 | + , 03 |
| 190 | 2 | +38 4419,23 | 18,461 | +9,7649 | +9,7608 | ,2663 | ,5904 | 159 | +,041 | -, 12 |
| 19 | 1 | +38 4651,87 | 18,475 | +9,7642 | +9,7616 | ,26160 | ,5886 | 163 |  | -, 26 |
| 1964 | 4 | -28 17 33,19 | 18,4×8 | +9,2988 | -9,64(1) | ,2669 | ,5864 | 162 | +,056 | -, 01 |
| 1965 | 3 | - 42727,57 | 18,551 | +9,0004 | -8,8562 | ,2684 | ,5782 | 171 | +,014 | -, 09 |
| 1 | 5 | - 42420,84 | 18,601 | +-9,6064 | -8,8508 | +1,2695 | $+9,5711$ | 183 | +,008 | -, 12 |
| 1917 | 4 | -28 6833,99 | 18,603 | +9,3181 | -9,6404 | ,2696 | ,5707 | 182 | +,002 | + ,03 |
| 1968 | 1 | +13 4121,39 | 18,614 | +9,7067 | +9,3428 | ,2698 | ,5692 | 186 | +,0.32 | -,02 |
| 1969 | 2 | -10 58 50,30 | 18,634 | +9,5514 | $-9,2470$ | ,2703 | ,5663 | 188 | +,012 | -,07 |
| 1970 | 3 | +56 329 9,01 | 18,634 | +9,7372 | +9,8900 | ,2703 | ,5663 | 194 | +,043 | + , 14 |
| 1971 | 3 | - 41940,33 | 18,644 | +9,6085 | -8,8435 | +1,2705 | +9,5647 | 191 | +,017 |  |
| 1972 | 4 | - 91626,40 | 18,683 | +9,5682 | -9,1756 | ,2714 | ,5589 | 204 | +,,008 | + ,01 |
| 1973 | 4 | -. 82830,16 | 18,718 | +9,5763 | $-9,1375$ | ,2723 | ,55:33 | 206 | +,008 | -,03 |
| 1974 | 4 | - 82528,09 | 18,735 | +9,5763 | -9,13:53 | ,2726 | ,5507 | 208 | +,018 | + ,04 |
| 1975 | 3 | -10 33 22,24 | 18,772 | +9,5587 | $-9,2328$ | ,2735 | ,5447 | 213 | +,010 | -,23 |
| 1976 | 4 | +29 3549,40 | 18,777 | +9,7405 | $+9,6658$ | +1,2736 | +9,5436 | 214 | -,011 | -, ,45 |
| 1977 | 3 | +45 2112,67 | 18,814 | +9,7404 | +9,8250 | ,2745 | ,5375 | 222 | +,021 | -, 11 |
| 1978 | 2 | -5 5 5 35,50 | 18,8.21 | +9,6042 | -8,9187 | ,2747 | ,5,361 | 220 | +,018 | -, 24 |
| 1979 | 4 | -20 33333,30 | 18,826 | +9,4564 | $-9,5178$ | ,2748 | ,5354 | 221 | +,002 |  |
| 1980 | 3 | -33 $40 \quad 8,50$ | 18,867 | +9,2405 | -9,7171 | 2,757 | ,5285 | 224 | $+, 019$ | + , ,07 |



| No. | No. Obs. | Declination <br> Jan. 1, 1836. | Annual <br> Precession. | Logarithms of |  |  |  | $\begin{aligned} & \dot{8} \\ & \text { 药 } \\ & \text { 药 } \end{aligned}$ | Annual P. M. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | $a^{\prime}$ | $b^{\prime}$ |  | $d^{\prime}$ |  | A. R. | Decn. |
| 1981 | 4 | - 819 28,87 | ,890 |  |  |  |  |  | $012$ | 3 |
| 1982 | 4 | + 2410003 | 18,962 | +9,6513 | +8,6490 | ,2779 | ,5104 | 237 | +,018 | - , 13 |
| 1983 | 4 | - 53140,98 | 18,993 | +9,6042 | $-8,9582$ | ,2786 | ,5045 | 242 | +,029 | -, ,04 |
| 1984 | 3 | - 52243,20 | 19,122 | +9,6064 | $-8,9492$ | ,2815 | ,4765 | 259 | +,014 | - ,09 |
| 1985 | 4 | $+383048,24$ | 19,121 | +9,7210 | +9,7740 | ,2815 | ,4769 | 260 | -,006 | + ,02 |
| 1986 | 2 | + 6283,51 | 19,132 | +9,6665 | +9,0325 | +1,2817 | +9,4745 | 26.3 | +,008 | -, ,08 |
| 1.987 | 3 | +8354 21,26 | 19,138 | +9,5331 | +9,9775 | ,2819 | ,4729 | 280 | ,000 | +,03 |
| 1988 | 3 | -319 1,64 | 19,155 | +9,6191 | -8,7405 | ,2823 | ,4688 | 269 | +,010 | -, ,01 |
| 1989 | 1 | -27 037,68 | 19,160 | +9,4048 | -9,6372 | ,2824 | ,4676 | 270 | +,023 | - ,17 |
| 1990 | 5 | + 62851,47 | 19,160 | +9,6674 | +9,0343 | ,2824 | ,4676 | 271 | +,012 | -, ,08 |
| 1991 | 3 | + 63022,88 | 19,168 | +9,6674 | +9,0367 | +1,2826 | +9,4659 | 273 | +,009 | -, 01 |
| 1992 | 3 | +51 2535,35 | 19,174 | +9,6972 | +9,8740 | ,2827 | ,4643 | 276 | +,006 | + ,09 |
| 1993 | 3 | -23 40 3,80 | 19,188 | +9,4487 | -9,5844 | ,2830 | ,4609 | 277 | +,029 | + ,03 |
| 1994 | 4 | +15213,11 | 19,233 | +9,6928 | +9,4053 | ,2840 | ,4495 | 283 | +,013 | -, 16 |
| 1995 | 4 | +173751,53 | 19,322 | +9,6937 | +9,4658 | ,2860 | ,4246 | 300 | +,024 | +,05 |
| 1996 | 4 | +19 1 134,83 | 19,328 | +9,6955 | +9,4980 | +1,2862 | $+9,4228$ | 301 | +,029 | -,02 |
| 1997 | 4 | -953 43,97 | 19,363 | +9,5832 | -9,2196 | ,2870 | ,4120 | 307 | +,018 | - ,20 |
| 1998 | 3 | $+284824,85$ | 19,363 | +9,7024 | +9,6681 | ,2870 | ,4120 | 309 | +,008 | + ,17 |
| 1999 | 3 | + 85334,80 | 19,418 | +9,6693 | +9,1765 | ,2882 | ,3942 | 3 | +,019 | + ,01 |
| 2000 | 4 | + 4653,92 | 19,430 | +9,6532 | +8,8443 | ,2885 | ,3902 | 5 | +,005 | -,06 |
| 2001 | 3 | + 1729,26 | 19,45] | +9,6425 | +8,2895 | +1,2889 | +9,3827 | 10 | $+, 021$ | -, 04 |
| 2002 | 4 | -10 27 39,54 | 19,461 | + 9,5843 | -9,2451 | ,2892 | ,3791 | 12 | +,012 | -, 02 |
| 2003 | 4 | + 61726,00 | 19,477 | +9,6599 | +9,0279 | ,2895 | ,3734 | 13 | +,020 | + ,03 |
| 2004 | 4 | + 11841,17 | 19,480 | +9,6425 | +8,3598 | ,2896 | ,3718 | 15 | +,005 | + ,03 |
| 2005 | 4 | $-292058,14$ | 19,488 | +9,4216 | -9,6779 | ,2898 | ,3687 | 16 | +,019 | + ,03 |
| 2006 | 4 | +184435,39 | 19,491 | +9,6866 | +9,4953 | +1,2898 | +9,3677 | 20 | +-,008 | - , 01 |
| 2007 | 4 | + 02459,18 | 19,519 | +9,6385 | + 7,8672 | ,2905 | ,3564 | 21 | +,014 | - ,22 |
| 2008 | 4 | -29 3439,58 | 19,531 | +9,4249 | -9,6818 | ,2907 | ,3515 | 25 | +,033 | -,19 |
| 2009 | 4 | +1722 0,53 | 19,533 | +9,6821 | +9,4641 | ,2907 | ,3510 | 27 | +,019 | - ,04 |
| 2010 | 4 | +26 4226,09 | 19,575 | +9,6857 | +9,6426 | ,2917 | ,3319 | 38 | +,014 | -,03 |
| 2011 | 5 | +26 4242,69 | 19,581 | +9,6848 | +9,6429 | +1,2918 | +9,3296 | 44 | ,000 | -, 01 |
| 2012 | 2 | -14 20 47,42 | 19,581 | +9,5647 | -9,3830 | ,2918 | ,3296 | 41 | +,045 | - ,06 |
| 2013 | 2 | + 43050,01 | 19,581 | +9,6532 | + 8,8893 | ,2918 | ,3296 | 43 | +,063 | - ,26 |
| 2014 | 2 | +2255 51,44 | 19,601 | +9,6830 | +9,5813 | ,2923 | ,3197 | 48 | +,015 | - ,09 |
| 2015 | 3 | +40 5131,24 | 19,612 | +9,6656 | +9,8065 | ,2925 | ,3143 | 54 | +,016 | + ,03 |
| 2016 | 4 | $+254252,96$ | 19,643 | +9,6794 | +9,6289 | +1,2,932 | +9,2984 | 60 | +,006 | -, 06 |
| 2017 | 4 | -114026,48 | 19,653 | +9,5866 | -9,2967 | ,2934 | ,2934 | 64 | +,031 | + ,21 |
| 2018 | 4 | + 5178,41 | 19,679 | +9,6532 | +8,9589 | ,2940) | ,2780 | 72 | $+, 013$ | -,02 |
| 2019 | 3 | +223450,14 | 19,688 | +9,6739 | +9,5769 | ,2942 | ,2727 | 74 | +,013 | + ,07 |
| 20:0 | 4 | $\begin{array}{llll}-13 & 51 & 1,80\end{array}$ | 19,707 | +9,5775 | $--9,3712$ | ,2946 | ,2606 | 79 | $+, 015$ | + ,07 |
| 2021 |  | -22 5 28,88 | 19,710 | $+9,5237$ | -9,5675 | +1,2947 | +9,2593 | 80 | $+, 007$ | - ,09 |
| 2022 | 3 | -13 49 45,35 | 19,725 | +9,5786 | -9,3706 | ,2950 | ,2489 | 85 | +,008 | + ,03 |
| 2023 | 5 | + 51020,83 | 19,741 | +4,6513 | +8,9507 | ,29,34 | ,2382 | 93 | +,016 | - , 19 |
| 2024 | 3 | + 511158,52 | 19,760 | +9,6513 | +8,9539 | ,29.58 | ,2243 | 98 | +,025 | - , 43 |
| 2025 | 4 | -42 5314,13 | 19,767 | +9,3117 | -9,8267 | ,2959 | ,2191 | 94 | +,020 | -, 02 |

In addition to the foregoing catalogue-in the years 1836-1837, the places of several Stars--whose names only occur in Vols. II and III-have been delermined; --and several more-where the result of one observation ouly had been given, or where discordance among several observations had, occurred or where a large proper motion was observed ;-in all these cases, a re-exammation of former results has been inslituted, and further observations (when necessary) made, as follows.
sUpplimentary catalogue of the a. R. of the fixed stars.

| Reference. | Names. |  | $\begin{gathered} \text { Mean A. R. Jath. I, } \\ \text { 1836.- irom } \end{gathered}$ |  | Concludel Mean A. R Jan. 1, 1836 | Annual |  | Remaris. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| No. Vol. |  |  | former ubs | present ols. |  | Precesn. | P. M. |  |
|  |  |  | $\begin{gathered} \text { s. } \\ 6=28 y^{\prime \prime} \end{gathered}$ | $\overbrace{3-90}^{s-50}$ | h. m. s. | $\begin{gathered} s . \\ +3.069 \end{gathered}$ | $\left\lvert\, \begin{gathered} \mathrm{s} \\ +0,081 \end{gathered}\right.$ | Piazzi's P. M. is too small.* |
| 2 . III | 61 Andromed. | $\beta$ | $3=28$ $3=1,22$ | $3=2,59$ $3=1,17$ |   <br> 5 1,20 <br>   | +3,090 | +,007 |  |
| $5 . \mathrm{lII}$ | 96 Piscium |  | $3=58.10$ | $\mathrm{I}=57,90$ | 858,05 | 3.075 | -,010 | The Paramata obsservations reduced to 1836 |
| 21. II | Tucanæ | 3 | $6=27,49$ | $3=29,38$ | 11 | 2,920 |  | give the place of this star $23^{\prime} 465^{\text {: }}$ : Can the pro- |
| 41 . II | 15 Cassiopera | $\kappa$ | $5=44,19$ | $3=44,50$ | 23 44,31 | 3,324 | +,027 | ( per motion amount to, 5368 s? |
| 44. II | Tucane | $\beta^{1}$ | $6=59,50$ | $2=59,83$ | 23 59,58 | 2,796 | - |  |
| 45.11 |  | $\beta^{2}$ | $3=0,36$ | $2=0,54$ | $24 \quad 0,43$ | 2,786 | - |  |
| 46 . II |  | $\beta^{3}$ | $5=13.73$ | $2=13,53$ | $25 \quad 13,67$ | 2,771 |  |  |
| $51 . \mathrm{II}$ | Piscium |  | $4=7,83$ | $1=8,02$ | 27 7,87 | 3.064 | +,008 |  |
| 27.111 | 117 Andromed. |  | $2=29,82$ | $3=30,10$ | 28 29,99 | 3,139 | + ,014 | $m$ |
| $55 . \mathrm{II}$ | Ceti |  | $4=55.00$ | $3=55,01$ | 2855.00 | 2,988 | +,110 | $\left\{\begin{array}{l} 4 \text { obs. } 1832=28 \\ 3-1837=28 \\ 38,62 \\ 3-10 \end{array}\right\} \quad \therefore \text { P. M. }=+, 108 s$ |
| 56.11 | Piscum |  | $5=4,16$ | $2=4,16$ | 29 4,16 | 3,074 | + | $\{3-1837=2858,10\}$ |
| $31 . \mathrm{III}$ | 128 Andromed. |  | $\mathrm{l}=55,28$ | $3=55,12$ | 32 55,09 | 3150 | $+.027$ |  |
| 66 . II | Ceti |  | $5=31,66$ | $1=30,73$ | 34 30,67 | 2,991 | +,007 | These results appear discorlant; but from the |
| 91.11 | Cephei |  | $4=37,24$ | $3=38,14$ | 47 37,63 | 6,468 | +,197 | $\left\{\begin{array}{l} \text { proximity of this star to the pole, the disagree- } \\ \text { ment }=\text { only } 1^{\prime \prime} \text { of are } \end{array}\right.$ |
| 96 . II | 38 Andromed. |  | $7=27,92$ | $1=27,71$ | 4827,89 | 3,183 | +,015 |  |
| $108 \cdot$ II | 74 Piscium | $\psi^{1}$ | $3=54,33$ | $1=54,08$ | 5654,27 | 3,191 | - 0003 $+\quad 403$ |  |
| 67 69 | $\mu$ Cassiopler |  | - $=20.63$ | $2=24,87$ | 5724,87 | 3,526 | +,403 | Piazzi says the P. M. $=+5, \% 0$ |
| 69. 111 | ${ }_{27}^{100 ~ P e t i s c i u m ~} \dagger$ |  | $2=20,63$ $4=24,38$ | $1=20,32$ $1=24,35$ | 57 <br> 57 <br> 57 <br> 24,57 | 3,092 3,005 | $+0,006$ ,+ 011 |  |
| 110 . II | 28 - |  | $8=51,59$ | $2=51,73$ | 5751.62 | 3,005 | +, 004 |  |
| $112 \cdot 11$ | Phonicis | $\beta$ | $6=45,45$ | $3=4516$ | 5845.35 | 2,698 |  |  |
| 81. III | 181 Andromed. |  | $1=1,95$ | $2=1,73$ | $1 \begin{array}{lll}1 & 1 & 1,80\end{array}$ | 3.377 | -,006 |  |
| 123 . 11 | Phomeicis | \% | $2=28,35$ | $2=28,55$ | 128,45 | 2.542 | - |  |
| $132 \cdot 11$ | Piscrum | $\zeta_{1}$ | $5=10,27$ | $1=10,32$ | 510,28 | 3,112 | +,013 |  |
| 91. III | $b$ Ceti |  | $3=8,59$ | $3=8,53$ | $6 \quad 8,56$ | 3,009 | + ,017 |  |
| 185 . 11 | 88 Piscium |  | $6=11,00$ | $1=10,99$ | 611,011 | 3,108 | + ,009 |  |
| 97.111 | ${ }_{10}^{\text {C Cassiopex }}$ |  | $3=48,94$ $2=1298$ | $1=49,25$ $2=109$ | 949,122 | ${ }_{3} 3606$ | $\underline{+, 008}$ | S The star ohserved in 1835 was Piazzi No. $39-$ |
| $\begin{array}{r}198 \\ 147 \\ \hline\end{array}$ | $119-$ | $\delta$ | $2=12,98$ $9=9,02$ | $2=14,97$ $4=9,16$ | $\begin{array}{cc}10 & 14,97 \\ 15 & 9,06\end{array}$ | 3.890 3,790 | $\begin{array}{r}\text { + } \\ +.087 \\ \hline-.016\end{array}$ | $\left\{\begin{array}{l}\text { Differs }-1,42 s \text {, from A. S. C. }\end{array}\right.$ |
| 103 . III | 242 Piscium |  | $3=14.41$ | $\mathrm{l}=1471$ | 1514,18 | 3,096 | +, 005 |  |
| $158 \cdot 11$ |  |  | $5=47,59$ | $2=47.55$ | 1941.58 | 3,124 | + +006 |  |
| 161 . 11 | Pheemcis | $\gamma$ | $6=14.34$ | $2=14.27$ | 2114,32 | 2,619 | +,017 |  |
| $164 \cdot 11$ | Cetı |  | $5=58,05$ | 3-5773 | 21 57,93 | 2,836 | - |  |
| 167 . Il | Pheenicis | $\delta$ | $5=24,99$ | $3=24,95$ | 24 24,97 | 2,497 | - |  |


| Reference. | Names. |  | Mean A. R. Jan 1, 1830.-Ffrom |  | Concluded <br> Mean A. R. Jan. 1, 1836. | Anuual |  | Remarks. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| No. Vol. |  |  | former obs. | \|rresent obs. |  | Precesn. | P. M. |  |
| 170 of II | 1001 Piscrium |  | $\begin{gathered} \mathrm{s} . \\ 5=9,60 \end{gathered}$ | $\begin{aligned} & \text { s. } \\ & 3=9,60 \end{aligned}$ | $\begin{array}{rll} \hline \text { h. m. } & \text { s. } \\ 1 & 20 & 9,60 \end{array}$ | $\begin{gathered} s \\ +3,169 \end{gathered}$ | $\begin{gathered} \text { s. } \\ +, 010 \end{gathered}$ |  |
| 176 . Il | 51 Audromed. | $\mathrm{R}^{2}$ | $6=57.82$ | $1=57,92$ | 27577,84 | 3.617 | +,017 |  |
| 178. II | 102 Pisisum | $\pi$ | $10=2486$ | $2=24.93$ | 2'34,87 | 3,168 | +,004 |  |
| 133. 111 | g Cassioper |  | $3=21,09$ | $3=20,59$ | 30 20, 84 | 4,468 | +,044 | N. P. D. 20,13 |
| 135 . 111 | 49 Mach. Elect. |  | $2=8,16$ | $2=8,35$ | 318,25 | 2,817 | +,021 |  |
| 138 . III | 137 Cassirnpere |  | $1=17.86$ | $3=17.83$ | 3217,84 | 3,960 | + ,032 |  |
| 146 . Iil | CRayder. |  | $3=39,92$ | $4=40,53$ | 3840,27 | 5.572 | +,105 |  |
| 194. 11 | 53 Cui | $x^{2}$ | $6=32.12$ | $6=31,97$ | 41 32,04 | 2,952 | +,005 |  |
| 167.111 | 147 Cassioper |  | $2=57,26$ | $2=57.53$ | 48 57,39 | 5,624 | +,088 |  |
| 170 . Ill | $150-$ |  | $1=4,46$ | $3=5,43$ | $50 \quad 5,19$ | 5,435 | + 0,020 | N. P. D. $14,42 \therefore$ diff $=3,6$ of are |
| 220 . II | 57 Aultomed. | $\gamma$ | $9=51.64$ | $2=51.92$ | 53 51,70 | 3,630 | + 012 |  |
| 181. 111 | $3{ }^{3}$ Aictin |  | $3=21,75$ | $3=21,89$ | 64 21,42 | 3,369 | + +0.015 |  |
| 201.111 | 6 Andremed. |  | $1=5823$ | : $=58,14$ | $2 \quad 258,16$ | 3,717 | +,009 |  |
| 205.111 | 292 |  | $2=16,29$ | $2=16,49$ | 4 4 16,39 | 3,835 | -,024 |  |
| 209 . 111 | Macil. Elect. | $\beta$ | $1=40,97$ | $1=41,20$ | 541,11 | 2,641 | $+, 005$ |  |
| 211 . 111 | (i) Arictis |  | $1=23,59$ | $1=23,67$ | 623.58 | 3.395 | +,020 |  |
| 217 . 111 | 41 Prusui |  | - | $1=16,09$ | 746,09 | 4,141 | +,009 |  |
| 225. 111 | 2955 Andionned. |  | $1=8,99$ | $1=9.50$ | $10 \quad 9,25$ | 3408 | + ,018 |  |
| 243 . 11 | 68 Crli | 0 | $6=4,18$ | 6:= 4,26 | 11 4,22 | 3,1221 | + +012 |  |
| 240 , II | 24 Arictis | $\because$ | $5=2,17$ | $1=2,27$ | $16 \quad 2,19$ | 3,197 | +, 008 |  |
| 253 . II | 12 Trianguli | $c$ | $5=3438$ | $3=3130$ | 18344,35 | 3,487 | +,005 |  |
| 238 . 111 | 46 Masmms |  | $4=13,35$ | $4=11.24$ | 19 13,84 | 5,2:6 | +,027 | N. P. D. 19,27 |
| 256 . II | Trusani | $\kappa$ | $8=58,36$ | $3=58,43$ | 20.58 .38 | 2.199 | $\cdots$ |  |
| 248. III | Crati |  | - | $4=1653$ | 23 16,53 | 2,846 | -,001 |  |
| 251 . III | 46 Triunguli |  | $4=50,77$ | $3=51,94$ | 25) 51,94 | 3,604 | +,034 | A wrong star observed in 1835. |
| 268 . 11 | Ceti |  | $5=5,87$ | $5=5.97$ | $27 \quad 5,92$ | 3.153 | +, ,130 |  |
| 253.1111 | $d^{1}$ - |  | $2=7,08$ | $1=6,86$ | $27 \quad 7,111$ | 3,009 | -,005 |  |
| 256 . 1111 | 418 - |  | - | $4=18.7 .4$ | $2.718,74$ | 3,167 | +, 0,21 |  |
| 279.11 | 34 Arutis |  | $4=37.66$ $=8=8.14$ | $5=37.07$ $3=8,07$ | $\begin{array}{ll}31 & 37,40 \\ 33 & 8,12\end{array}$ |  | $1 \begin{aligned} & \text { - } 01010 \\ & +\quad, 022\end{aligned}$ | \{ we menil is crroncously stated to be 37,83 s. in |
| 2833 - II | 34. Aretis | $u$ | $i=8,14$ | $3=8,07$ | 338 | 3,357 | +, 023 |  |
| $295 \cdot 11$ | Mudrue |  | - | $4=6,06$ | 37 0,06 | 0,868 | - | differs 12s, from A. S. C. |
| 306, 11 | Kirmactis | $\beta$ | $5=1: 372$ | $1=13,17$ | $42.13,73$ | 2,502 | + ,00! |  |
| 286 , 111 | 98 Pinsei |  | $8=13,10$ | $3=13,27$ | 4) 13,43 | 4.208 | +,005 |  |
| 324 , I1 | Inown ii | $\beta$ | - | - | $51-\cdots$ | 1,202 | -- | Not now visible! |
| 325 . 11 | Wridium | 0 | $5=2,76$ | $2=2,47$ | $52 \quad 2,68$ | 2,277 | -,008 |  |
| 337 . II | Pumacis |  | - | - | 55. | 2,663 | - | Not now visibla ! |
| 340 . II | 1'mersi |  | $6=16,15$ | $3=16,40$ | $5716,4,3$ | 4,138 | + +146 |  |
| $346 \cdot 11$ | Arietis |  | $5=43,73$ | $4=43,40$ | $\begin{array}{llll}3 & 0 & 48.76 \%\end{array}$ | 3.535 | - | differs 4,28s. from A. S. C. |
| 356 . II | 14. Frudani |  | $5=39.45$ | 3--39,20 | 839,36 | 2,899 | + 01019 |  |
| 317 . III | 140 Persei |  | $1=28,96$ | $4=29,20$ | 1029,15 | 3,981 | +,002 |  |
| 318 . III | (fi) Cuss, Mess. |  | $3=30102$ | $3=31,33$ | 103112 | 5,005 | + |  |
| 321.111 | 142 Peisei |  | $3=20,05$ | $3=88,38$ | 1138.38 | 4,195 | +,018 | A wrong star observed in 1835. |
| 329 - III | 15 Tuw |  | $3=1,115$ $3=27,14$ | $2=1,36$ $3=9795$ | $\begin{array}{ll}21 & 1.17 \\ 20 & 27.71\end{array}$ | 4,179 | +,010 | \{ Forruer observations discordant: $27,8 \mathrm{~s}$. is pro- |
| 341 332 | 15\% Thuri |  | $3=27,46$ $6=30,90$ | $3=27,95$ $2=31,09$ | 20 <br> 20 <br> 20 <br> 10,97 | 3,3,366 | +006 ,+ 005 | $\{$ bubly nearer the truth than the mean. |
|  |  |  |  |  |  |  |  |  |
| 333 . III | Premi |  | $3=35,11$ | $4=35,12$ | 2035.11 | 4,187 | +,004 |  |
| 337 . I11 | 14.9 Crideni |  | $3=4,93$ | $3=5,27$ | $22.5,10$ | 2,056 | -,001 |  |
| 341 . III | Persei |  | $4=21,19$ | $3=20.97$ | 27 21,10 | 3,690 | -,003 |  |
| 399 . 11 | 41 | $\nu$ | $0=4.68$ | $3=4,777$ | 34.4 .70 | 4,935 | +,014 |  |
| 358 . 111 | Formacis |  | $3=43,89$ | $3=43,80$ | 3543,84 | 2,381 | -,0122 |  |


| Reference. | Names. |  | Mean A. R. 1836.-f | $\begin{aligned} & \text { R. Jan. I, } \\ & \text { from } \end{aligned}$ | Concluded <br> Mean A. R | Annua |  | Remaris. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| No. Vol. |  |  | former obs. pr | present obs. | Ja | Precesn. | P. M. |  |
| 363 of III | 27 Psalt. Georg. |  | $\stackrel{ }{\text { s. }}$ | $\begin{gathered} \mathrm{s} . \\ 4=33,75 \end{gathered}$ | $\begin{aligned} & \text { h. m. s. } \\ & 33633,75 \end{aligned}$ | $\longdiv { s . }$ | $\begin{array}{r} \mathrm{s} . \\ +\quad, 007 \end{array}$ |  |
| 365 . III | 12 Pleiadum |  | - | $4=37,00$ | 37 37,00 | 3,543 | +,017 |  |
| 369 . III | 118 Tauri |  | $4=$ | $2=28,75$ | 39 28,75 | 3,541 | +,016 | A wrong star observed in 1835. |
| 373 . III | 132 |  | $1=14,19$ | $2=14,47$ | 40 14,38 | 3,504 | +,011 |  |
| 424 . II | 28 Eridani |  | $5=36,75$ | $8=36,82$ | 4036,80 | 2,571 | -,003 |  |
| 374 . III | Fornacis |  | - | $2=42,07$ | 4042,07 | 2,436 | +,006 |  |
| 378 . III | 206 Eridani |  | - | $2=39,60$ | 4139,60 | 2,251 | +,002 |  |
| 380 . III | H Camelop. |  |  | $3=1,35$ | 431,35 | 5,200 | +,015 |  |
| 445 . II | 35 Eridani |  | $6=13.76$ | $1=13,49$ | 5313,72 | 3,028 | +,001 |  |
| 403 . III | 171 Tauri |  | $* 3=4,41$ | $3=4,38$ | $55 \quad 4,40$ | 3,224 | +,022 | $\left\{\begin{array}{c}\text { neous to the amount of a years precession. }\end{array}\right.$ |
| 455 . II | Reticuli | $\gamma$ | $8=32,79$ | $3=32,82$ | $58 \quad 2,80$ | 0,841 | - |  |
| 454 . 11 | Tauri |  | $6=36.42$ | $1=36,45$ | 58 36,43 | 3,418 | +,007 |  |
| 421. III | $205-$ |  | $2=45,54$ | $1=45,15$ | 4645,41 | 3,188 | -,005 |  |
| 432 . III | ${ }^{1}{ }^{1}$ Eridani |  | - | $3=51,35$ | (2 51,35 | 2,501 | +,008 |  |
| 433 . III | Z |  | $1=4,47$ | $3=4,44$ | 13 4,45 | 3,058 | -,002 | \{ Piazzi properly places this star in the constella- <br> $\{$ tion Taurus. |
| 436 . III | 220 Persei |  | *3 $3=0,43$ | $4=0,44$ | $14 \quad 0,44$ | 3,858 | +,019 |  |
| 500 . II | Reticuli | $\theta$ | $4=51,29$ | $3=51,65$ | 1551.45 | 0,643 | - |  |
| 503 . II | 71 Tauri |  | $4=0,62$ | $3=0,54$ | $\begin{array}{ll}17 & 0,59\end{array}$ | 3,395 | +,025 |  |
| 508 . II | 75 - |  | $5=4,29$ | $1=4,41$ | 19 4,31 | 3,414 | +,001 |  |
| 445 . III | 265 - |  | $1=-$ | $4=11,00$ | 2111,00 | 3,388 | +,013 |  |
| 447 . III | 269 |  | - | $4=24,32$ | 2124,32 | 3,412 | +, 020 |  |
| 529 . II | 88 - | d | $4=38,88$ | $1=39,08$ | 26 38.92 | 3,280 | +,007 |  |
| 463 . III | 335 Eridani |  | - | $3=29,77$ | 27 29,77 | 2,393 | -,001 |  |
| 465 . III | Scep. Brand. |  | $3=58,03$ | $1=57,56$ | 28 57,92 | 2,877 | -,005 |  |
| 467 . III | 40 Camelop. |  | - | $3=39,67$ | 30 39,67 | 6,502 | +, 036 |  |
| 555 . II | 96 Tauri | K | $5=21,53$ | $2=21,66$ | 4021,56 | 3,419 | + ,014 |  |
| 499 . III | 52 Camelop, |  | $3=4,30$ | $4=4,75$ | $44 \quad 4,56$ | 7,429 | -, 018 |  |
| 577 . II | 10 - | $d^{1}$ | $6=51,51$ | $2=52,29$ | 4851,71 | 5,286 | +,005 |  |
| 515 . III | Eridani |  |  | $3=40,41$ | 5140,41 | 2.828 | +,003 |  |
| 518 . III | 61 Camelop. |  | $1=57,58$ | $3=57,83$ | 51 57,77 | 5,176 | +,010 |  |
| 523 . III | $e$ Auriga |  | , | $3=31,61$ | 5431,61 | 5,504 | +,014 |  |
| 530 . III | $b-$ |  | $4=30,87$ | $2=31,08$ | 58 30,94 | 4,439 | +,014 |  |
| 610 . II | Doradus | $\zeta$ | $7=42,53$ | $4=42,68$ | $5 \quad 242,58$ | 1,021 | - |  |
| ${ }^{622}$ • II | Columbe |  | $5=49,99$ | $2=49,70$ | 8 49,91 | 2,400 | +,006 |  |
| 554 . III | 2 - |  | $1=54,00$ | $3=53,87$ | 953,90 | 2,151 | +,003 |  |
| 626 . II | Leporis |  | $5=8,50$ | $3=8,46$ | $10 \quad 8,49$ | 2,750 | - |  |
| 635 . II | 22 Orionis | - |  | $6=23,68$ | 13 23,68 | 3,055 | +,016 |  |
| 641 . II | Eridani |  | $6=2,78$ | $3=2,62$ | 15 2,73 | 2,459 | + ,011 |  |
| 577 . III | 367 Tauri |  | $4=49,63$ | $1=49,34$ | 20 49,57 | 3,609 | +,006 | S The place now obscrved agrees with Piazzi, bu |
| 661 . 11 | 25. Aurigæ | $\chi^{1}$ | $12=3,61$ | $3=3,67$ | 22 3,62 | 2,941 | +,011 | $l$ differs 8,21s. from A. S.C. |
| 594 . III | 27 Columb |  | - | $3=56,73$ | 2656.73 | 1,697 | +,006 |  |
| ${ }_{597}^{679}$. III | 41 Orionis 84 Camelop. |  | $4=\overline{3,72}$ | $6=13,28$ $1=4,16$ |   <br> 27 13.28 <br> 29 3,81 | 2,941 5,495 | $\begin{array}{r}\text {,000 } \\ -.014 \\ \hline\end{array}$ |  |
| 691 . II | 47 Orionis |  | $6=31,88$ | $3=31,75$ | 30 31,84 | 3,161 | $\begin{array}{r}\text { + } \\ +, 010 \\ \hline\end{array}$ | \{ The place now observed agrees with Piazzi, differs nearly 5 s. from the A. S. C. |
| 609 . III | 393 Tauri |  | $\mathbf{l}=15,34$ | $3=15,11$ | - 3315,17 | 3,524 | +,014 |  |
| 626 . III | Columbæ |  | $\mathrm{l}=5,63$ | $3=5,51$ | $1 \begin{array}{ll}38 & 5,54\end{array}$ | 1,972 | +, 007 |  |
| 743 . II | Aurigæ |  | $5=42,21$ | $2=42,11$ | 50 42,18 | 3,765 | +, 006 |  |
| 658 . III | $n$ Camelop. |  | - | $3=29,06$ | 5129,06 | 4,752 | +,005 |  |
| 677 . III | Columbx |  | $1=45,72$ | $4=45,39$ | 59 45,45 | 1,730 | -,001 |  |
| 447 . IV | Geminor. | $q$. | - | $\mathrm{l}=7,54$ | 6 4 7,54 | 3,663 | -,001 | This observation was omitted. |

* See errata.

| Reference. | Names. | $\begin{gathered} \text { Mean A. R. Jan. } 1, \\ \text { 1836. }- \text { from } \end{gathered}$ |  |  | Concluded Mean A. R. Jan. 1, 1836. | Annual |  | Remaris. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| No. Vol. |  |  | former ols. | present obs. |  | Precesn. | P. M. |  |
|  |  |  |  | $4=4,15$ |  | $\begin{gathered} \mathrm{s} . \\ +3,303 \end{gathered}$ | s. <br> +.010 | \{ The results in each year agree very well interse :-this star must be re-examined. |
| 785 of II | Orionis | $l$ | $* 5=4,65$ | $\begin{aligned} & 4=4,15 \\ & 3=18,65 \end{aligned}$ | 6 6 ¢ 8 4,43 | $\left.\begin{array}{r} +3,303 \\ 2,767 \end{array} \right\rvert\,$ | + | ( $\begin{gathered}\text { se }: \text { :-this star must be re-examined. } \\ \text { These observations were omitted }\end{gathered}$ |
| 452. IV | 25 Monocer. |  | $2=\overline{60,70}$ | $3=18,65$ $3=52,04$ | 818,65 95204 | 2,767 2,817 | +008 -017 | These observations were omitted. |
| 703 . III | 25 Monocer. |  | $2=60,70$ | $3=52,04$ | 952,04 11 | 2,817 | - ,017 | In 1835 a wrong star appears to have been ob- |
| 710 . III | 31 Geminor. |  | $1=33,40$ | $3=33.44$ | 1133,44 | 3,586 | +,007 | served; - on the present occasion the small |
| 716 . III | 9 Lyncis |  | $4=29,06$ | $2=29,52$ | 12 29,21 | 5,243 | -,001 | star mention by P. was observed ; preceding $25 \mathrm{~min} .15,05 \mathrm{~s}$. |
| 718 . III | Cauis Maj. |  | ${ }^{*} 1=55,90$ | $2=56,17$ | 14 56,08 | 2,300 | +,014 | The result in Vol. III belongs to Piazzi, No. 81. |
| 793 . II | Monocer. |  | $6=39,90$ | $1=39,73$ | $14.39,88$ | 3,158 | +,005 |  |
|  | Geminor. |  | $3=59,24$ | $6=59,20$ | 17 59,21 | 3,576 | + ,012 | Omitted in Vol. III. |
| 799 . II | 15 - |  | $5=0,07$ | $6=0,12$ | 18 0,10 | 3,576 | +,009 |  |
| 728 . 111 | 11 Navis |  | $4=19,94$ | $2=19,95$ | 18 19,94 | 2,078 | +,002 |  |
| 805 . II | 17 Geninor. |  | * - | $2=25,28$ | 10 25,28 | 3,588 |  | This Star is now of the $9,10 \mathrm{mag}$. |
| 739.111 | 120 Camelop. |  | $3=26,42$ | $3=23,56$ | 21 25,04 | 30,934 | +,066 | N. P. D. $=2^{\circ}, 44^{\prime} \therefore$ diff, $=2^{\prime \prime}, 04$ of arc. |
| 758 . III | 50 Geminor. |  |  | $4=32,33$ | 2632,33 | 3,474 | +,007 |  |
| 760 . III | 26 Navis |  | - | $3=44,05$ | 26444,05 | 2,047 | +,002 |  |
| 770 . 111 | $6 v^{\text {C }}$ Canis prac. |  | $3=12,14$ | $3=12,26$ | 2912,20 | 2,624 | +,005 |  |
| 772 . III | Lyncis |  | $1=20,05$ | $5=20,63$ | 3020,54 | 5,326 | +,007 |  |
| 774 . 111 | $22=$ |  |  | $3=27,78$ | 3027,78 | 5,114 | +,019 |  |
| 783.111 | Camelop. |  |  | $3=52,60$ | 3259,60 | 6,201 | +,012 |  |
| 835. II | 43 - | q | $0=58.92$ | $6=59,29$ | 3559,10 345143 | 6.522 3.254 | - | ( (nearly $2^{\prime \prime}$ ) from the A. S. C. |
| 794 . III | Monocer. |  | $1=51,29$ | $3=51,47$ | 3751,43 |  | + ,013 |  |
| 795 . III | 49 Navis |  | $1=54,82$ | $2=55,08$ | 3754.99 | 1,099 | +,039 |  |
| 840 . II | 18 Monocer. | $\%$ | $6=18,56$ | $1=18,28$ | 3918,50 | 3.128 | + ,005 |  |
| 807 . III | 29 Iyncis- |  | $4=10,95$ | $3=11,24$ | 4311,07 | 5148 | +,014 |  |
| 848 . 11 | 13 Can Maj. | $\mathrm{r}^{2}$ | $19=43,04$ | $l=13,04$ | 43 43,04' | 2,238 | +,004 |  |
| 855 . II | Geminor. |  | $6=44,21$ | $3=44,17$ | 4644,20 | 3,492 | +,010 |  |
| 814. . III | Tyncis |  | $3=6,31$ | $1=6,69$ | $47 \quad 6,43$ | 5,143 | + ,009 |  |
| 897.111 | 131 Camelop. |  | \% $3=54,117$ | : $=565,23$ | 5355.15 | 11,802 | -,033 | N. P. D. $=8^{0}, 27^{\prime}$ |
| 83.3 . III | Monocer. |  | - | $4=18,50$ | 0418.50 | 2,977 | +,013 |  |
| 888 . II | 51 Geminor. |  | $12=56,99$ | $1=57,25$ | $7 \quad 3$ 767,02 106644 | 3,447 $-0,475$ | +,107 |  |
| 901 . II | Piscis. Vol, | $\gamma$ | $6=6,92$ | $4=0,48$ | 10 (0,74 | -0,475 | - |  |
| 881 . III | Iyncis |  | $1=48,03$ | $2=48,31$ | $11.48,22$ | +-5,013 | + , 003 |  |
| 891.111 | 144 Geminor. |  | - | $: 3=20,90$ | 14 20,90 | 3,740 | +,011 |  |
| 910 . III | Navis |  | $1=0,63$ | $3=0,49$ | 229.52 | 2,380 | + ,014 |  |
| 925 . 111 | 1.53 Camelop. |  | $5=47,51$ | $3=49,02$ | 28 48,08 | 10,586 | +, , 198 |  |
| 93.36 . III |  |  | - | $3=33,56$ | 32 33,56 | 10,237 | +,019 |  |
| 054 . III | Off. Typ. |  | - | $3=48,67$ | 40 48,67 | 2,815 | + ,015 |  |
| 0666 . III |  |  | $1=51,54$ | $3=51,53$ | 44 51,53 | 2,781 | +,011 |  |
| 974 . II | 11 Argus. |  | $6=48,72$ | $3=48,74$ | 4948,73 | 2,578 | +, 003 |  |
| 980 . III | Camelop. |  | $4=43,11$ | $3=43,38$ | 5143,23 | 4,972 | $+, 005$ |  |
| 982 . II | A rgus. | $\chi$ | $8=36,26$ | $2=36,20$ | 5236,26 | 1,530 | - |  |
| 988 . II | 55 Camelop. |  | $6=23,61$ | $3=23,77$ | 56 23,67 | 6,107 | - |  |
| 993 . III | Navis |  | $\mathrm{l}=11,31$ | $2=11,51$ | 5711,41 | 2,659 | + , 015 |  |
| 997 . II | Cancri |  |  | $6=19,62$ | $8 \quad 219,62$ | 3,278 | +,004 |  |
| 1024 . II |  | $\psi^{2}$ |  | $6=51,22$ | 1651,22 | 3,643 | +,001 |  |
| 1029 . Il | Argus |  | $6=59,24$ | $2=59,25$ | 17 59,24 | 2,589 | +, 026 |  |
| 1038 . II | 34 Cancri |  | $6=44,34$ | $4=43,86$ | 23 44,15 | 3,271 | +,014 |  |
| 1041 . II | Monocer. |  | $5=8,94$ | $2=9,07$ | 24 8,98 | 2,696 | + ,022 |  |
| 1049 . II | Cancri |  | $5=25,79$ | $2=25,83$ | 30 25,80 | 3,457 | +,016 |  |
| 1057 . III | 102 Cancri |  | $4=56,91$ | $1=56,76$ | 30 56,88 | 3,457 | + ,020 |  |
| 1055 . II |  |  | $9=2,12$ | $1=1,95$ | 31 2,10 | 3,456 | +,003 |  |

* See errata.

\begin{tabular}{|c|c|c|c|c|c|c|c|c|}
\hline Reference, \& \multirow[t]{2}{*}{Names.} \& \multicolumn{3}{|r|}{Mean A. R. Jan. 1, 1836.-from} \& \multirow[t]{2}{*}{Concluded Mean A. R. Jan, 1, 1836.} \& \multicolumn{2}{|l|}{Annual} \& \multirow[t]{2}{*}{Remaris.} <br>
\hline No. Vol. \& \& \& former obs. Pp \& present obs. \& \& Precesn. \& P. M. \& <br>
\hline 1067 of III \& Navis d \& $d$ \& $$
\begin{gathered}
\mathrm{s} . \\
1=32,08
\end{gathered}
$$ \& $$
\begin{gathered}
\mathrm{s} . \\
2=32,78
\end{gathered}
$$ \& $$
\begin{array}{lll}
\hline \text { h. } & \text { m. } & \text { s. } \\
8 & 38 &
\end{array}
$$ \& $$
\begin{gathered}
\mathrm{s} . \\
+2,139
\end{gathered}
$$ \& s. \& The Paramatta obs. differ 3 s. from this result. <br>
\hline 1068 . III \& 133 Cancri \& \& $3=38,48$ \& $2=38,98$ \& 39 38,68 \& 3,307 \& +,020 \& (The Parmatta obscrvations wilh the Trausit, dif-- <br>
\hline 1105. II \& Argus. $c$ \& 20 \& $20=30,25$ \& $4=29,69$ \& - 5830,16 \& 2,068 \& \& $\{$ fer 1,32 s from this result. <br>
\hline 1109. III \& 209 Cancri \& \& $3=51,10$ \& $3=51,39$ \& $9 \quad 051,24$ \& 3,272 \& +,004 \& <br>
\hline 1112 . II \& Pixid Naut. \& \& $6=50,94$ \& $2=51,38$ \& 051,05 \& 1,498 \& +,012 \& <br>
\hline 1118 . III \& Hydre \& \& $5=51,03$ \& $1=51,02$ \& 651,03 \& 2,935 \& +,008 \& <br>
\hline $1121 . \mathrm{III}$ \& Navis $k^{1}$ \& $k^{1}$ \& $8=25,11$ \& $2=25,20$ \& 825,13 \& 2,384 \& -,008 \& <br>
\hline 1127 . II \& 24 Hydre \& \& $5=38,94$ \& $1=39,51$ \& 839,03 \& 2,940 \& -,009 \& <br>
\hline 1132. II \& Leonis \& \& $5=37,50$ \& $4=37,62$ \& 1137,55 \& 3.523 \& \& <br>
\hline 1148 . II \& Urse Maj. d \& d 1 \& $10=50,55$ \& $3=50,88$ \& 1950,63 \& 5,500 \& -,021 \& N. P. D. 190,20. <br>
\hline 1155. II \& Ieonis \& $h$ \& $6=9,79$ \& $3=9,87$ \& 23 9,82 \& 3,224 \& +,022 \& <br>
\hline 1162 . III \& 88 Ursee Maj. \& \& $4=40,50$ \& $3=41,07$ \& 2740,74 \& 5,761 \& -,016 \& <br>
\hline 1185 . III \& 66 Leonis. \& \& \& $3=30,97$ \& 3830,97 \& 3,370 \& +,022 \& <br>
\hline 1191. II \& 9 Sextantis \& \& $6=32,30$ \& $2=32,57$ \& 4532,37 \& 3,143 \& +, 011 \& <br>
\hline 1226. II \& Aut. Pneum. \& \& $6=37,14$ \& $3=37,33$ \& 101037,20 \& 2,739 \& +, 013 \& <br>
\hline 1233 . II \& Leonis \& $z$ \& - \& $1=25,38$ \& 1425,38 \& 3,145 \& +,002 \& <br>
\hline 1256. III \& Leonis \& \& - \& $3=56,91$ \& 1656,91 \& 3,166 \& +,011 \& <br>
\hline 1260 . III \& Sextantis \& \& \& $3=12,77$ \& 1912,77 \& 3,067 \& +,012 \& <br>
\hline 1246. II \& $28-$ \& $k$ \& $5=8,25$ \& $5=8,94$ \& 218860 \& 3,050 \& -,004 \& <br>
\hline 1268 . III \& Urse Maj. \& \& $3=24,11$ \& $1=23,81$ \& 2324,04 \& 3,828 \& + ,009 \& <br>
\hline 1270 . II \& 34 Sextantis \& \& $7=9,45$ \& $3=9,39$ \& 34 9,43 \& 3,106 \& +,033 \& <br>
\hline 1275. II \& 36 - \& \& $4=42,77$ \& $3=42,54$ \& 3642,67 \& 3,096 \& +,015 \& <br>
\hline 1276 . II \& Argus. \& \& $18=7,49$ \& $2=7,56$ \& 37

40
40 \& 2,117 \& $\overline{+, 032}$ \& <br>
\hline ${ }^{734}$. IV \& Sextantis \& \& $5=4,67$ \& $2=4,97$
$3=28,71$ \& 42
46
46
48,761 \& 3,006
2,920 \& ,+ 032
,- 007 \& These observations were omitted in the Catalogue. <br>
\hline 1311 . III \& Hydræ \& \& - \& $3=28,71$ \& 46 28,71 \& 2,920 \& -,007 \& <br>
\hline 1294 . II \& Argus. \& $u$ \& $11=51,61$ \& $4=51,48$ \& 46 51,58 \& 2,396 \& -- \& <br>
\hline 1328 . III \& Leonis P \& $p^{1}$ \& $3=13,16$ \& $2=13,20$ \& 5513,18 \& 3,073 \& +,009 \& <br>
\hline 1329 . III \& 216 Urse Maj. \& \& $3=22,96$ \& $1=22,98$ \& 55 22,96 \& 3,369 \& +,014 \& <br>
\hline 748 . IV \& Leonis \& \& $1=4,71$ \& $4=4,70$ \& 58 4,70 \& 3,118 \& +, ,008 \& These observations were omitted in the Catalogue <br>
\hline 1341. III \& Ursee Maj. \& \& $3=10,40$ \& $2=10,55$ \& 11010,46 \& 3,558 \& +,006 \& <br>
\hline 1344 . III \& 223 Uisæ Maj. \& \& $3=57,36$ \& $1-57,64$ \& 157,43 \& 3,447 \& + 010 \& <br>
\hline 1350 . III \& \& \& $1=4,84$ \& $3=4,90$ \& ${ }_{5}^{5} \quad 4,89$ \& 3,500 \& + ,010 \& <br>
\hline 1353 . III \& 322 Leonis \& \& $2=22,26$ \& $1=22,20$ \& 722,24 \& 3,141 \& + \& <br>
\hline 1368 . III \& Нуdæ X \& X ${ }^{1}$ \& $1=17,51$ \& $2=17,27$ \& 1517,35 \& 2,886 \& +,011 \& <br>
\hline 1370. III \& 370 Leonis \& \& $3=43,89$ \& $4=43,67$ \& 16 43,76 \& 3,097 \& +,006 \& <br>
\hline 1376 . III \& Hyd. \& Crat. \& \& $1=15,20$ \& | $2=14,88$ \& $19.14,99$ \& 3,020 \& +,016 \& <br>
\hline 1353. II \& \& \& $7=36,20$ \& 2=36,14 \& 23 36,18 \& 3,047 \& +,003 \& <br>
\hline 1354 . II \& 17 Crateris \& \& $6=9,45$ \& 2 $=9,25$ \& $24 \quad 9,40$ \& 2,955 \& -, 014 \& <br>
\hline 1355. II \& \& \& $5=27,97$ \& 3=27,76 \& 24 27,89 \& 3,043 \& +,016 \& <br>
\hline 1411 . III \& Hydræ \& 0 \& $1=4,55$ \& 3 $3=4,86$ \& 32 4,78 \& 2,960 \& -,006 \& <br>
\hline 1416. III \& I \& V \& $3=33,75$ \& $51=33,75$ \& 3333,75 \& 2,974 \& +,013 \& <br>
\hline 1427 . III \& Leonis \& \& $1=31,72$ \& 3 $=32,14$ \& 4032,03 \& 3,099 \& -, 004 \& <br>
\hline 1388 . III \& Virginis \& \& $6=38,31$ \& $14=38,25$ \& - 5238,29 \& 3,067 \& +,007 \& <br>
\hline 1454 . III \& Coryi \& \& $1=36,91$ \& $13=36,61$ \& 1115436,69 \& 3,056 \& +,007 \& <br>
\hline 1400 . II \& I 3- \& \& $5=38,34$ \& $4 \quad 4=38,12$ \& $12 \quad 238,25$ \& 3,074 \& +,014 \& <br>
\hline 1406 . II \& Crucis \& \& \% $13=29,50$ \& $0 \quad 4=28,90$ \& - 629,37 \& 3,125 \& - \& Difters $2 \mathrm{~s} .+$ from $\mathrm{A}, \mathrm{S} .1 \mathrm{C}$. <br>
\hline 1493 . III \& Virginis \& $g$ \& $3=45,06$ \& $6 \quad 2=45,60$ \& - 95 4,28 \& 3,071 \& +,006 \& <br>

\hline 1496 . III \& 18 Canum Ven. \& \& $\underline{14}=\overline{16,05}$ \& 5 | $1=14,56$ |
| :--- |
| $4=16,19$ | \&  \& 3,028

3,068 \& $1 \begin{aligned} & +, 006 \\ & +011\end{aligned}$ \& <br>
\hline 1412. II \& 45 Comæ Ber. \& \& $1=16,52$ \& 2 ${ }^{\text {a }}$ 3=16,26 \& (11 16,33 \& 3,031 \& + +000 \& <br>
\hline
\end{tabular}

| Reference. | Names. | Mean A. R. Jan. 1, 1836.-from |  | Concluded Mean A. R. Jan. 1, 1836 | Annual |  | Remarks. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| No. Vol. |  | former obs. | present obs. |  | Precesn. | P. M. |  |
| 1501 of III | 19 Draconis. | s. | S. ${ }_{\text {S }}$ | h. m. s. | s |  |  |
| 1503 . III | 26 Corvi. | 42,0 | $3=25,96$ | 12 1125,00 | 5 |  |  |
| 1516. III | Comæ Ber. | - | $3=42,16$ | $15.42,00$ | 3,021 | -,007 |  |
| 1445. II | 20 Virginis. | $5=44,86$ | $4=44,87$ | 24 44,86 | 3,040 | +,006 |  |
| 1540 . III | Corvi. | $2=29,34$ | $3=29,27$ | 2529,30 | 3,130 | + ,028 |  |
| 1544 . III | Comæ Ber. | $1=35,20$ | $3=35,78$ | 26 35,64 | 2,995 | + ,007 |  |
| 1460. II | 26 Virginis. $\quad \chi$ | $6=47,53$ | $4=47,35$ | 3047,46 | 3,090 | +,,011 |  |
| 1562 - III | 311 Virginis. $\chi$ | $1=10,19$ | $3=10,23$ | 3810,22 | 3,028 | ,+ 013 ,+ 013 |  |
| 1577 - III | Comæ Ber. | $3=5,97$ | $1=6,27$ | 43 6,04 | 2,977 | +,011 |  |
| 828 . IV | - pre, | $2=47,65$ | $3=47,82$ | 43 47,71 | 2,975 | +,038 | These were omitted in the Catalogue. |
| 1578 . III | - | $3=47,69$ | $1=48,12$ | $4.34 .7,79$ | 2,975 | + ,017 |  |
| 1598 . III | Centauri. | $3=4,52$ | $3=4,24$ | $52 \quad 4,38$ | 3,262 | -,004 |  |
| 1604 - III |  | $1=45,19$ | $4=44,90$ | $54.44,96$ | 3,277 | + , 010 |  |
| 1503. . II | 14 Canum Ven. $f$ | , | $3=3,98$ | $58 \quad 3,98$ | 2,820 | +,011 |  |
| 1615 . III | 456 Virginis. | $l=16,08$ | $3=16,14$ | $13 \quad 216,12$ | 3,126 | -,003 |  |
| 1619 . III | Centauri. m | $]=56,37$ | $3=56,03$ | 250,12 | 3,341 | -. 018 |  |
| 1639 . III | 205 Comæ Ber. | $3=15,86$ | $1=15,77$ | 1215,84 | 2,928 | + |  |
| 1649 . III | Ursæ Maj. | $3=18,96$ | $2=18,83$ | 1818,93 | 2,410 | +,013 |  |
| 1659 . III | Vinin $y$ | $3=25,40$ | $\mathrm{l}=25,28$ | 22 25,37 | 2,227 | +,002 |  |
| 1660 . III | Virginis. | *3 $=22,83$ | $2=22,90$ | 23 22,80 | 3,080 | -,043 |  |
| 1608. III | 7 Bootis. | - | $3=57,60$ | $20.67,60$ | 2,951 | +,009 |  |
| 1694.1515 | 86 Virginis. | $1=11,23$ | $3=11,17$ | 37 11,19 | 3,169 | $\underline{-, 004}$ |  |
| 1565 - II | 86 - 0 | $0=12,68$ | $1=12,04$ | 3712,72 | 3,180 | +,010 |  |
| 1568 - II | 3 Bootis. | - | $3=6,29$ | $\begin{array}{lr}39 & 0,29\end{array}$ | 2,789 | + ,005 |  |
| 1570 . II | Ceutauri. $\quad$ y | - | $2=42,19$ | 39 42,19 | 3,553 | +,005 |  |
| 1728 - III | Bootis. | $3=45,13$ | $2=45,05$ | 50 45,10 | 2,807 | + ,004 |  |
| 1594. II | Virgiuis. | $5=26,72$ | $1=26,48$ | 5126,18 | 3,14.8 | +,012 |  |
| 1608 . II 17 | 96 - $\quad y$ | $7=16,99$ | $2=16,86$ | 14016,95 | 3,180 | +,010 |  |
| 17559 . III |  | $2=37,15$ | $3=37,30$ | 137,24 | 2,930 | + +010 |  |
| 1759 , III | 642- | $3=17,73$ | $3=17,39$ | 317751 | 3,131 | $+, 013$ |  |
| 936 - IV | Bootis. | $3=40,28$ $3=36,19$ | $3=40,33$ $1=30,32$ | $4.40,30$ $\square$ | 2,901 | +007 | Thesc observations were omitted in the Catalogue. |
| 1627 . III | 18-~ $\quad \begin{gathered}k \\ t\end{gathered}$ | $3=36,1.9$ | $1=36,32$ | 736,22 | 2,140 | +,028 |  |
| 1630 . II | dre. |  | $4=20,16$ | 1120,16 | 2,891 | +,019 |  |
| 1633 . II | Sulitarii. | -. | $1=28,47$ | 13 15 28,47 | 3,442 3,300 | ,- 002 ,+ 009 |  |
| 1795 . III | Bootis. | - | $2=34,29$ | 1834.29 | 2,792 | + ,009 |  |
| 1801 . III | Hydrec. Virginis. | $4=210$ | $2=0,18$ | 210,18 | 3,489 | -,018 |  |
|  | Virginis. | $4=2,10$ $3=36,06$ | $1=1,84$ $2=35,80$ | $\begin{array}{ll}25 & 2,05 \\ 28 & 3,06\end{array}$ | 3,153 | +,009 | This observation was omitted in the Catalogue. |
| 1822. III | Libro. | $3=36,06$ $2=28,51$ | $2=35,80$ | $28 \quad 35,96$ | 3,113 | -,001 |  |
| 960 - IV | Librw. | $2=28,51$ | $2=28,46$ | 33 28,48 | 3,236 | -,004 | These observations were omitted in the Catalogue. |
| 1671 - II | 11 Hydræ. | - | $4=51,50$ | 3751,50 | 3,462 | +,014 |  |
| 1673 . II | Libs. 13 Hydre. | -- | $4=55.37$ | 3755,37 | 3,387 | +,011 |  |
| 1854 . III | 13 Hydrec. | $2=25$ | $4=23,19$ | 38 23,19 | 3,481 | +,008 |  |
| 1690 . II | Libre. | $2=25,49$ $5=54,30$ | $1=25,61$ | 45 25,53 | 3,064 | + ,007 |  |
|  |  |  | $5=54,55$ | 47 54,42 | 3,404 | +,079 | Differs 3s. from A. S. C. See Piazzi's Note, - |
|  | 1 Serpentis. | - | $4=9,15$ | 49 9,15 | 3,060 | $+, 011$ |  |
| 1698 . II | Bootis. Libre. | $6=25,37$ | $3=32,96$ $2=25$ | 4932,96 | 2,792 | +,006 |  |
| 1707. II | 41 Librer. ${ }^{\text {Bootis. }} \quad \omega$ | $6=25,37$ | $2=25,37$ $4=55,54$ | 53 54 545,37 | 3,179 | + |  |
| 1709 . II | Libre. | - | $4=50,57$ $3=42,12$ | 5455,57 | 2,642 | +,016 |  |
|  | Jibu. | - | $3=42,12$ | 56 42,12 | 3,456 | +,017 |  |

[^11]| Reference. <br> No. Vol. | Names. |  | Mean A. R. Jan. 1, 1836.-from |  | Concluded Mean A. R. Jan. 1, 1836. | Annual |  | Remaris. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | former obs. | present obs. |  | Precesn. | P. M. |  |
|  |  |  |  |  |  | $\begin{gathered} \mathrm{s} . \\ -0,537 \end{gathered}$ |  |  |
| $\begin{aligned} & 1879 \text { of III } \\ & 1885 . \mathrm{III} \end{aligned}$ | 33 Ursæ Min. |  | $2=4,36$ | $\begin{aligned} & 2=12,87 \\ & 3=5,13 \end{aligned}$ | $\left.\begin{array}{rrr} 14 & 56 & 12,87 \\ 58 & 4,82 \end{array} \right\rvert\,$ | $\left\lvert\, \begin{aligned} & -0,537 \\ & -0,567 \end{aligned}\right.$ | $\begin{array}{r} +0,019 \\ +, 012 \end{array}$ |  |
| $1718 \text {. II }$ | $\overline{\text { Lupi }}$ | $\kappa^{1}$ | $2=4,36$ | $3=5,13$ $5=34,63$ | $\begin{array}{crr} & 58 & 4,82 \\ 15 & 0 & 34,63\end{array}$ | -0,561 | $\underline{+, 012}$ | ${ }_{\pi^{2}}^{\mathrm{N}}$ follows at $0 \mathrm{~m} .36,16 \mathrm{~s}$. |
| 1719 . II | 46 Buotis | $b$ | - | $3=19,10$ | 119,10 | 2,585 | +,009 |  |
| 1720 . II |  |  | - | $3=26,84$ | 126,84 | 2,610 | + ,004 |  |
| 1898 . III | 97 Libre |  | $3=12,84$ | $3=12,81$ | 512,82 | 3,378 | -, 001 |  |
| 1727 . II | 3 Serpentis |  |  | $4=2,57$ | 7 2,57 | 2,973 | +,004 |  |
| 1736 . 11 | $5-$ |  | - | $4=56,95$ | 1056,95 | 3,026 | +,032 |  |
| 1737 . II | Bootis |  | - | $4=3,45$ | 11 3,45 | 2,685 | +,003 |  |
| 1743 . II | 6 Serpentis |  | - | $4=41,54$ | 12 41,54 | 3,045 | +,024 |  |
| 1906. . III | Cor. Bor. | 0 | $3=21,68$ | $1=21,65$ | 13 21,67 | 2,487 | +,003 |  |
| 1744 . II | 30 Libre | $0{ }^{2}$ |  | $2=53,90$ | 1353,90 | 3,327 | +,008 |  |
| 1001 . IV | Cor. Bor. |  | $2=32,82$ | $1=32,58$ | 13 32,74 | 2,484 | + ,001 | This observation was omitted in the Catalogue, |
| 1752 . II | Libre |  | - | $3=55,67$ | 20 55,67 | 3,375 | - |  |
| 1757 . II | Triang. Aust. | $\varepsilon$ | - | $4=49,09$ | 2149,09 | 5,349 | - |  |
| 1763 . II | 37 Libree | $f^{1}$ | $7=13,30$ | $\mathrm{I}=13,48$ | 2513,32 | 3,242 | +,023 |  |
| 1768. H | $39 \longrightarrow$ |  | - | $3=5,22$ | 275 5,22 | 3,615 | +,006 |  |
| 1769 . II | Scorpii |  | - | $2=39,18$ | 27 39,18 | 3,574 | +,010 |  |
| 1771. II | 15 Serpentis |  | - | $2=6,90$ | 28 6,90 | 2,721 | +,003 |  |
| 1772 . II | 14 - | $\mathrm{A}^{1}$ | - | $2=9.37$ | 28 9,37 | 3,068 | +,006 |  |
| 1773 . 11 | Lihre |  | - | $2=18,69$ | 2818,69 | 3,619 | +,008 |  |
| 1776 . II | 18 Serpentis | $t^{2}$ | - - | $2=56,04$ | 2856,04 | 2,752 | +,009 |  |
| 1778 . II | 41 Libre | 中 | - | $3=29,14$ | 29 29,14 | 3,427 | +,021 |  |
| 1779 . II | Lupi | g | - | $l=54,55$ | 2954.55 | 4,093 | +,071 |  |
| 1790 . Il | 8 Cor. Bor. | $\gamma$ | - | $4=51,45$ | 3551,45 | 2,522 | +,010 |  |
| 1792 . II | 15 Ursæ Min. | $\theta$ | - | $4=26,03$ | 3626,03 | -1,977 | -,034 |  |
| 1804. II | 36 Serpentis | $b$ | - | $4=43,57$ | 4243,51 | +3,118 | +,003 |  |
| 1805 . II | 10 Cor. Bur. | - | - | $4=43,11$ | 42 43,11 | 2,516 | +,002 |  |
| 1808 . Il | Scorpii | $f 1$ |  | $4=8,10$ | 4488 | 3.561 | + ,033 |  |
| 1965 . III | Lupi | , | $3=25,60$ | $2=25,51$ | 46 25,56 | 3,806 | +,006 |  |
| 1032 . JV |  | $\xi^{2}$ | - | $2=26,17$ | 46 26,17 | 3,807 | + ,020 | These were omitted in the Catalogue. |
| 1966 . III | 100 Serpentis |  | $3=45,22$ | $4=45,14$ | 4645,17 | 2,890 | +,012 |  |
| 1817 . II | Serpentis |  | - | $4=21,13$ | 47 21,13 | 2,643 | -,002 |  |
| 1821. II | Lupi | $\eta$ | - | $4=16,60$ | 49 16,60 | 3,943 | +,001 | \{ On the 11 th June 1837 a star was observed at the <br> \{ Transit, following at $0,42 \mathrm{~s}$ |
| 1824 . II | 16 Ursm Min. |  | - | $4=4,50$ | $50 \quad 4,50$ | $-2,371$ | +,023 | ( Transit, ,ollowing at 0,4:2s |
| 1835 . Il | Lupi | $\theta$ | - | $4=5077$ | 55 50,77 | +3,909 | +,011 |  |
| 1987. III |  |  | $3=30,36$ | $4=30,52$ | 5630,45 | 3,911 | +,012 |  |
| 1988 . III |  |  | - | $2=4.9,15$ | 56 49,15 | 3,911 | + ,008 |  |
| 1839 . II | 6 Herculis | $v$ | - | $4=41,55$ | 57 41,55 | 1,856 | +,019 |  |
| 1838 . II | 10 Scorpii | $\omega^{2}$ | - | $3=48,01$ | 57 48,01 | 3,4¢6 | +,013 |  |
| 1992 . III | Serpentis |  | - | $1=2,75$ | 58 2,75 | 2,857 | +,003 |  |
| 1847 . II | 7 Herculis | $\kappa^{1}$ | - | $2=40,51$ | $16 \quad 040,51$ | 2,703 | +,002 |  |
| 1848 . II | Scorpii |  | - | $2=51,89$ | 0 51,89 | 3,709 | -,001 |  |
| 1850 . II | 13 - | $c^{2}$ | - | $2=13,01$ | 213,01 | 3,673 | +,000 |  |
| 1853 . II | 16 - |  | - | $3=14,68$ | 3 14,68 | 3,234 | +,012 |  |
| 1855 . II | 48 Serpentis |  | - | $3=3,38$ | 4 3,38 | 2,708 | +, 005 |  |
| 1856 . II | 10 Herculis | T |  | $4=39,14$ | 4 39,14 | 2,549 | +,004 |  |
| 2014.7 III | $37-$ |  | $3=12,79$ | $1=13,17$ | 8 12,88 | 2,656 | +,010 |  |
| 1866 . II | Scorpii | $h$ | - | $4=11,43$ | 911,43 | 3,764 | +,016 |  |
| 2018 . III | 101 |  | $1=29,02$ | $3=29,47$ | 1029,36 | 3,492 | + ,020 |  |

of the A. R. of the Fixed Stars.

| Reference. | Names. |  | Mean A. R. Jan. 1, 1836.-from |  | Concluded Mean A. R. Jan. 1, 1836. | Annual |  | Remaris. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| No. Vol. |  |  | former obs. | present obs. |  | Precesn. | P. M. |  |
| 1058 of IV | Scorpii | prec. | $\begin{aligned} & \mathrm{s} . \\ & \mathrm{l}=55,11 \end{aligned}$ | $\frac{\mathrm{s} .}{\mathrm{l}=55,16}$ | $\begin{array}{ll} \text { h. m. s. } \\ 1610 & 55,14 \end{array}$ | $\begin{gathered} \mathrm{s} . \\ +3,494 \end{gathered}$ | s. $+\quad, 001$ | Omitted in the Catalogue, |
| 1059. IV | Stir | seq. | $\mathrm{l}=55,69$ | $1=55,49$ | 1055,59 | 3,494 | -,006 |  |
| 1877. II | 5 Ophiuchi | $g$ | $3=45,65$ | $2=46,00$ | 1545,79 | 3,578 | +,004 |  |
| 1881. II | 21. Cor. Bor. | $\nu^{2}$ | - | $4=18,75$ | 16 18,75 | 2,255 | + ,017 |  |
| 1072 . IV | Scorpii |  | $4=2,53$ | $3=2,34$ | $20 \quad 2,45$ | 3,627 | + ,012 |  |
| 1888 . II | 22 Scorpii | $i$ | - | $4=15,41$ | 2015,41 | 3,626 | +,010 |  |
| 2076 . III | Urse Min. |  | - | $4=1,41$ | 351,41 | $-3,528$ | -,021 |  |
| 2078 . III | Draconis |  | - | $4=1,18$ | 36 1,18 | +0,771 | +,007 |  |
| 2080 . III | - |  | - | $4=22,05$ | 37 22,05 | 1,179 | +,027 |  |
| 1086 . IV | Scorpii |  | - | $1=25,35$ | 3925,35 | 4,183 | -,010 | This observation was omitted in the Catalogue. |
| 1921. II | Scorpii | $\mu^{2}$ | - | $3=14,78$ | 4114,78 | 4,040 | +,005 |  |
| 2094 . III | 151 |  | $3=32,42$ | $2=32,68$ | 4232,52 | 4,185 | -,001 |  |
| 2097. III | 150 Scorpii | var. | - | $2=42,10$ | 42 42,10 | 4,187 | +,026 |  |
| 2101. III | Draconis |  | - | $4=30,11$ | 43 30,11 | 1,217 | +,035 |  |
| 1930 . II | 51 ITerculis | $\mathrm{X}^{2}$ | - | $2=57,48$ | $44.57,48$ | 2,480 | +,005 |  |
| 1029. II | Aræ | $\zeta$ |  | $2=5,16$ | $45 \quad 5,16$ | 4,922 | $\square$ |  |
| 1933. II |  | $\varepsilon$ | - | $2=32,73$ | 46 32,73 | 4,743 | -- |  |
| 1938. II | 54 Herculis |  | - | $2=9,84$ | $48 \quad 9,84$ | 2,638 | -, 003 |  |
| 1939. II | Ophiuchi |  | - | $4=55,99$ | 4955,99 | 3,657 | +,013 |  |
| 2113 . 11 I | $90-$ |  | - | $3=59,30$ | $4.959,30$ | 3,429 | + ,012 |  |
| 1942. II | Ophiuchi |  | $5=12,08$ | $1=12,07$ | 5012,08 | 3,481 | +,016 |  |
| 2119. III | Trerculis |  |  | $6=32,23$ | 52 32,23 | 2,818 | +,010 |  |
| 2123 . III | 103 Ophiuchi |  | - 8 | $4=38,89$ | 5438,80 | 3,677 | + ,002 |  |
| 1950 . 11 | 19. Draconis | $h$ | $3=8,07$ | $2=8,37$ | $55 \quad 8,27$ | 0,266 | +,048 | N, P, D. $=24^{\circ}, 36^{\prime}$. |
| 2125 . III | $122-$ |  | $1=36,84$ | $2=37,39$ | 55 37,21 | 0,279 | +,004 | N. P. D. $=24^{\circ}, 43^{\prime}$ |
| 1953. II | 32 Ophiuchi |  | - | $4=37,36$ | 55 37,30 | 2,740 | + ,013 |  |
| 19956. II | - |  | - | $4=5,62$ | $57 \quad 5,62$ | 3,083 | + ,011 |  |
| 1958 . II | $\square$ |  | $4=43,90$ | $2=44,12$ | 58 4.4,03 | 3,471 | +,007 |  |
| 2135. 111 | Inerrulis |  | - | $3=28,93$ | 17 () 28,93 | 1,581 | +, 020 |  |
| 1965 . II | 20 Scorpii |  | - | $3=2,39$ | 42,39 | 3,722 | +,010 |  |
| 2150. III | Dracouis |  | - | $3=38.77$ | 438,77 | 1,146 | -, 002 |  |
| 2154. 115 | 129 - |  | - | $2=13,31$ | 613,31 | 0,688 | +,012 |  |
| 2155. III | Iterculis |  | $3=20,03$ | $2=20,35$ | (6) 20,16 | 2,725 | + ,007 |  |
|  | 39 Ophinchi | 0 | - | $2=1,15$ | $8 \quad 1,15$ | 3,650 | + ,001 |  |
| 1974. II |  |  | - | $2=6,76$ | $8 \quad 6,76$ | 3,644 | +, 020 |  |
| 1977. II | 22 Draconis | $\zeta$ | - | $2=10.52$ | 819,52 | 0,153 | +,004 |  |
| 1979. 11 | Ophiuchi |  | - | $2=21019$ | 1021.09 | 3,481 | +,009 |  |
| 1983  <br> 1984. II <br> 1  | Are: | ${ }^{\gamma}$ | -- | $2=3136.94$ $2=4129$ | 1136,94 11 | 5,019 4,058 | - | Differs ${ }^{\prime \prime}$,60 from A, S, C. |
| 1984 • II | Oplituchi | $\beta$ | $3=53,77$ | $2=41,29$ $2=53,70$ | $\begin{array}{ll}11 & 41,29 \\ 1653,75\end{array}$ | 4,958 3,480 | $+\overline{, 005}$ |  |
| 2004. II | Ophiurhi |  | $2=28,06$ | $3=27,96$ | 2028,00 | 3,057 | + ,003 |  |
| 2014. 11 | 541 |  | - | $2=49,30$ | 26 40, 30 | 2,756 | + ,022 |  |
| 2195. III | Herculis |  | $\square$ | $3=52,21$ | 28 62,21 | 1,521 | +,009 |  |
| 2022. II | 24. Draronis | $\nu^{\prime \prime}$ | - | $2=57,27$ | 28 57,27 | 1,150 | +-,029 |  |
| 2023 . II | $25-$ | $\gamma^{2}$ | - | $2=2,42$ | $29 \quad 2,12$ | 1,157 | +,028 |  |
| 2030 . II | 27 Duaconis | $f$ | $1=317,86$ | $2=38,00$ | 32 37,95 | -0,290 | +,003 |  |
| 2213 . 1111 | 323 TIerculs |  | - | $3=59,30$ | $34.59,30$ | +2,458 | +,008 |  |
| 1185. IV | 83 - |  | $2=45,14$ | $2=45,09$ | 3545,11 | +2,458 | +,001 |  |
| 2217. 111 | 144 Draconis |  | - | $1=13,76$ | 3718,76 | -1,668 | -,022 |  |
| 2220 . III | Opliuchi |  | $2=54,13$ | $3=54,57$ | 3754,40 | +2,929 | +,003 |  |


| Reference. <br> No. Vol. | Names. | Mean A. R. Jan. 1, 1836.-from |  |  | Concluded Mean A. R. Jan. 1, 1836. | Annual |  | Remaris. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | former obs. pre | resent obs. Ja |  | Precesn. P | P. M. |  |
| 2041 of II 28 | 28 Draconis | ${ }_{*}$ | $\begin{gathered} \mathrm{s} . \\ 3=54,65 \end{gathered}$ | $\begin{gathered} \mathrm{s} . \\ 2=55,19 \end{gathered}$ | $\begin{gathered} \text { h. m. } \mathrm{ss}_{1} \\ 173754,87 \end{gathered}$ | $\begin{gathered} \text { s. } \\ -0,367 \end{gathered}$ | $\begin{gathered} s . \\ +, 005 \end{gathered}$ |  |
| 2221 . III | Ophiuchi |  | * $4=55,07$ | $4=55,23$ | 3755,15 | +2,934 + | +,006 |  |
| 2222 . III |  |  | 仡 | $2=39,44$ | 3839,44 | 2,932 + | $\pm, 015$ |  |
| 1194. IV | - |  | $2=0,46$ | $\mathrm{I}=0,18$ | 39 0,37 | 2,934 | +,009 | This observation was omitted in the Catalogue. |
| 2047 . II | Sagitarii |  | - | $1=39,86$ | 40 39,86 | 3,852 + | +,014 |  |
| 2232 . III | Telescopii |  | - | $2=57,63$ | 4157,63 | 3,969 | +,018 |  |
| 2233 . III | Ophiuchi |  | - | $l=7,13$ | $42 \quad 7,13$ | 3,539 | +,010 |  |
| 2234 . III | Telescopii |  | . | $1=27,08$ | 42 27,08 | 3,996 | +,004 |  |
| 2236 . III |  | 1) | $1=58,90$ | $1=59,14$ | 4259,02 | 3,992 | +,002 |  |
| 2246 . III 3 | 356 Herculis |  | - | $3=46,06$ | 4546,06 | 1,563 | +,020 |  |
| 2251 . III | Herculis |  | - | $2=44,75$ | 46 44,75 | 1,948 | +,010 |  |
| 2062. II | 6 Sagittanii |  | -- | $2=51,71$ | 5151,71 | 3,480 | -,005 |  |
| 2063 . II |  |  | $1=58,34$ | $5=58,45$ | $51.58,43$ | 3,628 | +,004 |  |
| 2064 . II | 66 Ophiuchi | $n$ | - | $1=8,54$ | 52 8,54 | 2,970 | +,001 |  |
| 2065 . II | 94 Herculis | $\nu$ | - | $2=13,92$ | 52 13,92 | 2,291 | +,018 |  |
| 2261. III | 19 Sagittarii |  | - | $1=35,27$ | $52.35,27$ | 3,632 | , 000 |  |
| 2067. II | 7 - | $a$ | $4=48,53$ | $1=48,13$ | 52 48,45 | 3,670 | +, 007 | Differs 1,5s. from A. S. C. |
| 2069 . II | Sagittarii |  | - | $1=50,52$ | 52 50,52 | 3,573 | + ,002 |  |
| 2070 . II | Tauri Pon |  | - | $1=53,21$ | 52 53,21 | 2,921 | +,019 |  |
| 2073 . II | Are | $\theta$ | - | $1=52,35$ | 53 52,35 | 4,665 | - |  |
| 2264. III | Sagittarii |  |  | $1=59,71$ | 53 59,71 | 3,630 | +,002 |  |
| 2266 . III | Telescopii | B | $3=58,67$ | $1=58,55$ | $54.58,64$ | 4,333 | -,011 |  |
| 2268. III | Draconis |  | - | $2=54,77$ | 55 54,77 | -2,743 | +,017 |  |
| 2084. II | Saritarii |  | - | $5=47,15$ | 5647,15 | $-2,710$ $+3,593$ | -,018 |  |
| 2083 . II | Sagittarii |  | - | $3=21,71$ | 57 21,71 | +3,593 | + ,012 |  |
| 2281 . III | Sagittarii |  | - | $1=22,24$ | $18 \quad 022,24$ | 3,721 | - , 006 |  |
| 1246. IV | -- |  | $3=29,20$ | $2=29,15$ | 729,18 | 4,085 | -, 003 | These observations were omitted in the Catalogue. |
| 2298 . III | Clyp. Sob. |  | $\mathrm{I}=20,80$ | $2=20,96$ | 12 20,91 | 3,460 | + , 008 |  |
| 2109. II | 58 Serpentis | $\eta$ | - | $3=49,70$ | 1249,70 | 3,092 | -, 008 |  |
| 2110 . II | 20 Sagittarii | $\varepsilon$ | $\varepsilon \quad 7=17,15$ | $1=17,21$ | 1317,16 | 3,983 | -,001 |  |
| 2119. II | Pavonis | $\nu$ | $\nu$ - | $2=3,37$ | $\begin{array}{lll}16 & 3,37\end{array}$ | -5,615 | - |  |
| 2306 . III | 167 Draconis |  | $3=13,70$ | $2=14,10$ | 1613,86 | -0,350 | +,005 |  |
| 2311. III | Sagittarii |  | $2-$ | $4=15,87$ | $19 \quad 15,87$ | +3,938 | + ,009 |  |
| 2125.11 | Clyp. Sob. |  | , $6=50,94$ | $3=51,17$ | 1951,02 | 3,416 | - |  |
| 2126 . II | Sagittarii | $v^{1}$ | $v^{1} \quad 2=19,50$ | $1=19,57$ | 2019,52 | 3,935 | +,001 |  |
| 2127. II | Clyp. Sob. |  | - | $3=25,89$ | 20 25,89 | - 3,417 | - |  |
| 2135. II | Sagittarii | $v^{2}$ | $v^{2} \quad-$ | $\mathrm{l}=12,05$ | $5 \quad 2312,05$ | - 3,936 | -, 001 |  |
| 2136. II | II - |  | - | $5=13,04$ | $4 \quad 2313,04$ | 4 3,666 | + , 209 |  |
| 1267. IV | - |  | $2=19,86$ | 6 $1=20,00$ | - 2319,91 | 3,933 | + , 004 | This observation was omitted in the Catalogue. |
| 2137 . II | Clyp. Sob. |  | $s^{1}+$ | $3=21,57$ | - 2321,57 | 7 3,424 | + , 004 |  |
| 2140 . II | 1 Sagittarii |  | - | $2=33,79$ | - 23 33,79 | 9 3,512 | +,007 | \{ Differs - 2,65s. from A. S. C. |
| 2138 . II | 1 Pavonis |  | $4 \quad-\frac{1}{}$ | 2 $2=4,9,46$ | (1) 23 49,46 | 6 7,054 | monermum | $\left\{\begin{array}{l} \mathrm{O}+2,19 \mathrm{~s} . \\ \hline \end{array}\right.$ |
| 2141. II | $24 \begin{aligned} & \text { Sagittarii } \\ & \text { Clyp Sob }\end{aligned}$ |  | $s^{2} \quad 1=52,54$ | 4 $\begin{aligned} & 1=52,47 \\ & 3=16,96\end{aligned}$ | 23 52,50 <br> 241696  | 0 3,666 | $\underline{+} 000$ | (- 2,10s. Paramata Obs. |
| $2142 . ~ I I ~$ 2324. III | II $\begin{aligned} & \text { Clyp. Sob. } \\ & \text { Sagitarii }\end{aligned}$ |  | $s^{2} \quad \overline{1=41,61}$ | $1 \begin{aligned} & 3=16,96 \\ & 1=41,35\end{aligned}$ | 56 | 6 3,423 <br> 8 3,931 | $\underline{+}$ |  |
|  |  |  | 1-1, 1 |  |  |  |  | (The observation in 1835 is incomplete, and mark- |
| 2328 . III | I lyræ |  | $\mathrm{I}=21,66$ | 6 1 $1=22,40$ | 0 2722,15 | 5 2,005 | +,009 | \{ ed "faint."-I have given it half the credit of |
| 2151. II | I Clyp. Sob. |  | - | 2 $2=20,28$ | 8 - 2820,28 | 8 3,483 | +,006 | ( the other. |
| 2152 . II | I Sagittarii |  | - | 2=32,62 | 28832,62 | 2 3,649 | +,015 |  |
| 2153, II | I Herculis |  | - | $2=40,20$ | $0 \quad 2840,20$ | 0 2,492 | -, 008 |  |
| 2154 . II | I Sagittarii |  | - | $3=6,74$ | $4 \quad 29 \quad 6,74$ | 4 3,582 | 1+,002 |  |

* See errata,

| Reference. | Names. |  | $\begin{gathered} \text { Mean A. R. Jan. } 1, \\ \text { 1836. from } \end{gathered}$ |  | Concluded Mean A. R. Jan. I, 1836. | Annual |  | Remaris. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| No. Vol. |  |  | former obs. | present obs. |  | Precesn. | P. M. |  |
| 2332 of III | 37 Lyree |  | $\left\lvert\, \begin{gathered} s \\ * 2=51,63 \end{gathered}\right.$ | $\begin{gathered} \mathrm{s} . \\ 2=52,52 \end{gathered}$ | h. m. s. <br> 182952,07 | $\left\lvert\, \begin{gathered} \mathrm{s} \\ +2,004 \end{gathered}\right.$ | s. <br> $+\quad 002$ |  |
| 2340 . III | 14 Cor. Aust. |  | $3=33,46$ | $1=33,38$ | 1832 33,44 | 4,172 | -,021 |  |
| 1281. IV | - |  | $\mathrm{l}=35,51$ | $1=35,82$ | 32 35,66 | 4,172 | -, 019 | This observation was omitted in the Catalogue. |
| 2347 . III | Lyre |  |  | $3=35,81$ | 3635,81 | 2,095 | +,005 |  |
| 2183 . II | Sagittarii |  | $2=5,08$ | $2=5,07$ | $46 \quad 5,04$ | 3,634 | +,013 |  |
| 2366 . III | Sagittarii |  | - | $1=38,75$ | 46 38,75 | 3,632 | +,015 |  |
| 2193. II | 64 Serpentis |  | $1=2.12$ | $2=1.83$ | 49 1,92 | 3,015 | +,011 |  |
| 2389 . III | 114Lyr $๕$ |  | $3=48,19$ | $3=47.85$ | 5648,02 | 1,693 | +,014 |  |
| 1350. IV | Aquilæ |  | $3=58,76$ | $2=58,71$ | $19 \quad 658,74$ | 2,864 | $\left\lvert\, \begin{array}{r} 0,026 \\ +, 00 \end{array}\right.$ | These were omitted in the Catalogue. |
| 1354. IV |  |  | $2=16,54$ | $1=16,66$ | 816,58 | 2,864 | $\|+, 009\|$ | Do. Do. Do. |
| 2236 . II | Sagittarii |  | - | $\mathrm{l}=3892$ | 938,92 | 3,430 | -, 004 |  |
| 2244 . II |  | $\beta^{2}$ | -. | $1=21,36$ | 11 21,36 | 4,346 | -,012 |  |
| 2246 . II |  |  | - | $1=0,08$ | 12 0,08 | 3,519 | -, ,003 |  |
| 2247 . II | 28 Aquilæ | A | - | $1=0,23$ | $12 \quad 0,22$ | 2,796 | -,001 |  |
| 2249 . II | $27-$ | d | - | $l=8,08$ | 1288,01 | 3,095 | +,009 |  |
| 2264 . II | Sagittarii |  | $\mathrm{l}=6,07$ | $2=6,03$ | 17 6,04 | 3,403 | +,008 |  |
| 2269 . II | 4 Vulpecule |  | I-6,0 | $2=17,05$ | 18 17,05 | 2,623 | +,014 |  |
| 2271.11 | 3 Cygni |  | - | $2=38,66$ | 18 38,66 | 2,491 | -,009 |  |
| 2272 . II | 60 Draconis |  | - | $2=39,4 \mathrm{l}$ | 18 39,41 | $-1,057$ | +,036 | N. P. D. $16^{\circ}, 54^{\prime}$. |
| 1387. IV | Anseris |  | $2=18,18$ | $\mathrm{l}=18,47$ | 1918,28 | +2,621 | +, 005 | This obserrvation was omitted in the Catalogue. |
| 2427 . III | 19 Cygni |  | $3=5,81$ | $3=5,82$ | $\begin{array}{ll}20 & 5,81\end{array}$ | 1,571 | + |  |
| 2276 • II | Sagittarii |  | $5=9,76$ | $2=9,72$ | $21.9,75$ | 3,566 | +,005 |  |
| 2446 - III | 39 Cygni |  | $3=45,26$ | $2=45,29$ | 2745,27 | 1,272 | +,007 |  |
| 2447 • III | Sagittarii |  |  | $2=50,20$ | 2750,20 | 3,298 | +, 007 |  |
| 1430 . IV | Sagitto |  | $3=5,55$ | $1=5,35$ | 34 5,50 | 2,674 | +,009 |  |
| 1436 . IV | Sagittro |  | $2=18,86$ | $1=18,75$ | 3518,83 | 2,670 | +,016 | $\}$ These observations were omitted in the Catalogue. |
| 1437. IV |  |  | $4=28,18$ | $2=28,23$ | 35 28,20 | 2.680 | +,004 |  |
| 2464 . 111 | 73 Cygni |  | $2=27,59$ | $2=27,27$ | 37 27,43 | 1,610 | -,001 |  |
| 2465 - IIII | Aquilæ | $v$ | $2=41,29$ | $1=41,43$ | 37 41,33 | 2,914 | +,017 |  |
| 2468 . III | Cygni |  | $3=38,64$ | $2=38,60$ | 39 38,63 | 2,197 | $+, 005$ |  |
| 2478. III | Aquilæ |  | $3=23,05$ | $1=22,76$ | 44 22,98 | 2,830 | -, 014 |  |
| 2481. 111 | 25 Sagitte |  | $3=3,02$ | $1=2,95$ | $45 \quad 3,00$ | 2,673 | +,002 |  |
| 2482 . III | 187 Aquilæ |  | $3=44,52$ | $2=44,85$ | 4544,65 | 3,250 | -,017 |  |
| 1475. IV |  |  | $3=5,91$ | $2=5,80$ | $54.5,87$ | 2,835 | +,004 | These observations were omitted in the Catalogue. |
| 2505 . III | 18 Cephei |  |  | $2=38,96$ | 55 38,96 | 1,242 | +,022 |  |
| 2363 . II | 63 Aquile |  | 5-4434 | $3=7,66$ $2=44$ | $\begin{array}{rr}56 & 7,66 \\ 56 & 44,28\end{array}$ | $2.929$ | $\left\|\begin{array}{\|c} +, 009 \\ -.002 \end{array}\right\|$ |  |
| 2365. II | 15 Sayitle | ${ }^{z}$ | $5=44,34$ | $2=44,13$ $2=43,32$ |  | 2,686 0,657 | +,002 |  |
| 2370. II | 17 Vulpeculæ | , | $5=50,36$ | $1=50,56$ | 5950,39 | 2,573 | -,008 |  |
| 2524. III | Antinous |  | $2=$ | $1=52,27$ | $20 \quad 2 \quad 52,27$ | 3,080 | +,015 | The result in Vol. II. belongs to Piazzi No. 12. |

[^12]| Reference. | Names. |  | $\begin{gathered} \text { Mean A. R. Jan. 1, } \\ \text { 1836.-from } \end{gathered}$ |  | Concluded Mean A, R. Jan. 1, 1836. | Annual |  | Remaris. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| No. Vol. |  |  | former obs. | present obs. |  | Precesn. | P. M. |  |
| 2379 of II | 19 Vulpeculx |  | 3 ¢ ${ }_{5}^{\text {8 }}$ | s. $2=56,87$ | $\left\lvert\, \begin{array}{lcc} h_{.} & m_{.} & \mathrm{s} . \\ 20 & 4 & 57,12 \end{array}\right.$ | $\begin{gathered} \mathrm{s} . \\ +2,503 \end{gathered}$ | s. ,+ 027 | These bave been omitted in the Cataloguc |
| 2534, III | Cygni | $b^{3}$ | $1=23,68$ | $\mathrm{l}=23,68$ | - 823,68 | 2,236 | +,015 |  |
| 1530. IV |  |  | $1=31,77$ | $3=31,69$ | 831,71 | 2,239 | +,003 | These were omitted in the Catalogue. |
| 2390. II | 18 Sagittæ |  | $5=7,56$ | $2=7,49$ | $3 \quad 7,54$ | 2,632 | +,013 |  |
| 1540. IV | Antinoi |  | $3=23,88$ | $2=23,97$ | 12 23,91 | 3,202 | +,011 |  |
| 1542. IV | Capricorni |  | $2=5,80$ | $1=6,02$ | 13 5,87 | 3,395 | + ,015 |  |
| 2546 . III | Cephei |  | -5,80 | $2=31,76$ | 13 31,76 | -1,905 | +,097 | N. P. D. $122^{\circ}, 40^{\prime} \therefore$ P. M. $=0^{\prime \prime}, 30$ of arc. |
| 2567. III | Cygni |  | - | $5=50,70$ | 23 50,70 | +1,836 | +,007 |  |
| 2575. III | Ursa Min. | $\lambda$ |  | $1=54,00$ | 2454,00 | --49,116 | + .094 | N. P. D. $1^{0}, 11^{\prime} \therefore$ P. M. $=00103$ of arc. |
| 2420. II | 46 Cygni | $\omega^{3}$ | $\mathrm{I}=15,52$ | $2=15,26$ | 26 15,35 | +1,848 | + |  |
| 1598. IV | Aquarii |  | $2=21,34$ | $1=21,47$ | 26 21,38 | 3,248 | -,004 | This obscrvation was onitted in the Catalogue. |
| 2576. III | 53 Capricorni |  | $3=31,30$ | $1=31,20$ | 28 31,28 | 3,407 | + ,019 |  |
| 2431. II | 27 Vulpeculæ | $p$ |  | $2=5,11$ | $30 \quad 5,11$ | 2,554 | +,011 |  |
| 2434 . II | 8 Delphini | 0 | $6=59,65$ | $\mathrm{l}=59,55$ | 3059,63 | 2,829 | +,011 |  |
| 2433 . II | 1 Aquarii |  | - | $2=0,41$ | 310,41 | 3,070 | +,009 |  |
| 2592 . III | Delphini |  | $1=26,69$ | $2=26,44$ | 3426,52 | 2,750 | + ,016 |  |
| 1642. IV | Aquarii |  |  | - | 36 |  | - | Not now visible ! |
| 2603 . III | 61 Cephei |  | - | $\mathrm{l}=37,71$ | 38 37,71 | -3,109 | + ,023 | This observation was omitted in the Catalogue. |
| 1652. IV | Vulpeculæ |  | $2=43,78$ | $1=43,91$ | 40 43,82 | +2,579 | ,000 | $\int$ The A. R. observed in 1833 pertains to another |
| 2460 . II | Capricorni |  | $3=$ |  | 41 - | 3,595 |  | $\left\{\begin{array}{l} \text { star-the place in the A. S. C. must be wrong, } \\ \text { or the star bas disappeared. } \end{array}\right.$ |
| 2478. II | 32 Vulpeculæ | $q$ | $6=34,44$ | $2=34,40$ | 4634,43 | 2,552 | + 012 |  |
| 2622 . III |  |  | -50, | $1=1,87$ | $48 \quad 1,87$ | 2,552 | $1+, 009$ |  |
| 2488 . II | 33 - | $x$ | $2=56,60$ | $4=56,86$ | 50 56,77 | 2,678 | + ,016 |  |
| 2629 . III |  |  | - | $1=43,60$ | 5043,60 | 2,678 | +,009 |  |
| 2638 . III | Microscopii |  | - | $\mathrm{l}=8,37$ | 55 8,37 | 3,693 | + ,028 |  |
| 2641. III | Microscopii | $\eta$ | $2=43,87$ | $2=43,89$ | 5543,88 | 3,934 | - |  |
| 2643 . III | Vulpeculæ |  | $2=13,91$ | $2=13,87$ | 5613,89 | 2,653 | +,002 |  |
| 2646 . III | Microscopii |  | $3=10,77$ | $1=10,44$ | 5910.69 | 3,596 | +,029 |  |
| 2649 . III | Vulpeculæ |  | $3=43,65$ | $\mathrm{l}=43,96$ | $21 \quad 043,72$ | 2,668 | +,005 | S The blank which precedes this in Vol. IIL. must |
| 2664 . III | Aquarii |  | , | $1=11,50$ | 611,59 | 3,193 | + ,013 | $\{$ be cancelled. |
| 2517. II | 8 Equulei | $a$ | $6=37,44$ | $1=37,00$ | 7 37,38 | 2,995 | +,006 |  |
| 2688 . III | Cephei |  |  | $1=7,89$ | 19 7,89 | 1,728 | +,006 |  |
| 1807. IV | Aquarii |  | $3=34,66$ | $\mathrm{l}=34,86$ | 2034,71 | 3,262 | +,015 | This observation was omitted in the Catalogue. |
| 2701 . III | 111 Cephei |  | $2=35.22$ | $1=35,74$ | 2435,39 | 1,175 | + ,020 |  |
| 2554 . II | Capricorni |  | $5=19,66$ | $2=19,61$ | 2519,65 | 3,280 | +,016 |  |
| 2706 . III | . Aquarii |  | - | $1=1,96$ | $27 \quad 1,96$ | 3,065 | +,008 |  |
| 2726 . III | 377 Cygni |  | - | $4=47,53$ | 35 47,53 | 2,401 | +,014 |  |
| 1854. IV |  |  | $2=57,61$ | $5=57,76$ | 3557,72 | 2,402 | +,011 | These olservations were omitted in the Catalogue. |
| 2727 . III | Aquarii |  | $\square$ | $2=10,26$ | 3610,26 | 3,203 | +,015 |  |
| 2583 . II | 10 Pegasi | $\ldots$ | $4=13,34$ | $1=13,15$ | 3713,30 | 2,706 | +,004 |  |
| 2733 . III | Pegasi |  | $2=48,93$ | $2=48,65$ | 3848,79 | 2,753 | +,005 |  |
| 2735 . III | $64 \sim$ |  | - | $2=14,15$ | 4114,15 | 2,519 | +,008 |  |
| 2746 • III | Gruis | $v^{2}$ | $3=7,40$ | $4=7,27$ | 47 7,33 | 3,649 | + ,028 |  |
| 1902 . IV | ${ }_{174}^{\text {Aquarii }}$ |  | $3=6,59$ | $l=6,68$ | 54 6,61 <br> 20  | 3,088 | +,013 | This observation was omilted in the Catalogue. |
| 2771 . III | 174 Cephei |  | $1=5,41$ | $2=5,89$ | 2205,73 | 1,840 | +,015 | SSee Piazzi's Note to these Stars. |
| 2772 . III | 175 Cephei |  |  | $1=1,78$ | 0 1,78 | 1,812 | +,014 |  |
| 2774 . III |  |  | $1=3,70$ | $2=3,65$ | 3 3,66 | 2,004 | +,010 |  |
| 2775 . III |  |  | $2=25.71$ | $1=25,20$ | 3 25,54 | 2,025 | + ,024 |  |
| 2640 . II | 39 Aquarii |  | $5=34,80$ | $3=34,83$ | 3 34,81 | 3,243 | +,005 |  |
| 2641 . II | Pegasi |  | - | $1=56,37$ | 3 56,37 | 2,891 | +,013 |  |

of tife A, R. of the Fixid Stars.

| Refere, ce. | Names. |  | $\begin{aligned} & \text { Mean A. R. Jan. 1, } \\ & \text { 1836. from } \end{aligned}$ |  | Concluded Mean A R Jab. 1, 1836. | Annual |  | Remarrs. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| No. Vol, |  |  | former obs. | presentobs. |  | Precesn. | P.M. |  |
| 2648 of II | Gruis | $\mu^{\text {l }}$ | 8 $4=42,66$ | s. <br> $1=42,42$ | $\left\lvert\, \begin{array}{ccc} \mathrm{h}_{\mathrm{y}} & \mathrm{~s} . & \mathrm{s} . \\ 22 & 3 & 42.61 \end{array}\right.$ | $\left\|\begin{array}{c}\text { s. } \\ +3.649\end{array}\right\|$ | \| $\begin{gathered}8 \\ +\quad .023\end{gathered}$ |  |
| 2658 . II | 1 Lacerta | $\mu^{\prime}$ | $4=4,68$ $5=9,86$ | $1=42,42$ $1=4,75$ | - | +3,599 | + |  |
| 2796 . III | 162 Aquarii |  | $2=11,60$ | $2=11,62$ | 1311,61 | 3,141 | +,003 |  |
| 2687 . It | 37 Pegasi | $\mathrm{H}^{\text {a }}$ | $5=40,66$ | $1=40,85$ | 2140,69 | 3,033 | +,.006 |  |
| 2688 . II | 57 Aquarii | $\sigma$ | $8=57,83$ | $1=57,99$ | 2157,85 | 3,182 | +,003 |  |
| 2689 . II | 17 Pis, Aust. | $\beta$ | $6=9,95$ | $1=10,29$ | 2210,00 | 3,431 | + , 011 |  |
| 2818 . III | 42 Licerta |  |  | $3=20,57$ | 23 20,57 | 2,379 | + , ,088 |  |
| 2821. III | 221 Cephei |  | -- | $2=20,54$ | 25 20,54 | $-3,465$ | +,176 | N. P. D. $40,44^{\prime} \therefore$ P. M. $=0^{\prime \prime}, 21$ of arc. |
| 2823 . III |  |  | - | $2=52,99$ | 25 52,99 | -3,596\| | +,106 | N. P. D. $40,37^{\prime} \therefore$ P. M. $=0^{\prime \prime}, 13$ of arc. |
| 2825 . III | Piscis Aust. | 。 | $2=20,72$ | $2=20,82$ | 27 20,77 | $+3,402$ | ,000 |  |
| 2833 . III | 7 Androm. |  | $1=34,91$ | $2=35,07$ | 2834,97 | 2,651 | +, 004 |  |
| 2844 . III | Pegasi | po | $2=51,39$ | $1=51,78$ | 3351,52 | 2,949 | +, 001 |  |
| 2711 . II | 43- | 。 |  | $2=3,92$ | $34.3,92$ | 2,802 | +,, 10 |  |
| ${ }^{2213}$. II | Aquaxii |  | $6=27,99$ | $1=27,92$ | 3427,81 | 3,147 | +, 022 |  |
| 2852. . Ill |  |  | $3=22,85$ | $2=22,89$ | 39 22,87 | 3,108 | +, 003 |  |
| 2856 . III | 237 Agparii |  | $1=13,24$ | $1=13,32$ | 4213,28 | 3,131 | + , 001 |  |
| 2885, III |  |  | - | $4=28,20$ | 59 28,20 | 3,266 | + ,018 |  |
| 2895 . Ill | 303 Pegasi |  | $1=46,32$ | $4=46,22$ | 23146,24 | 3,015 | +0,010 |  |
| 2007 . III |  | N | $2=28,49$ | $1=28,14$ | 9 28,38 | 2,977 | + , ,006 |  |
| 2908 . III | Pis. Aust. |  | $3=41,20$ | $1=41,51$ | 941,28 | 3,231 | + + , 045 |  |
| 2909 . Ill | - |  | $1=15,61$ | $1=15,50$ | 1015.60 | 3,229 | +, 008 |  |
| 2784 . II | 7 Piscium | $b$ | $5=50,31$ | $1=54.77$ | 11 59,39 | 3,0:16 | + , 014 |  |
| 2787 . II | 62 Pegasi | r | $5=31,80$ | $2=31,56$ | 12 31,73 | 2,952 | + ,012 |  |
| 2814. Il | Aquarii |  | $5=4,54$ | $1=4,32$ | 27.450 | 3,097 | + | The star observed here is of the 9 th mag, grreeing |
| 2828 . II | $104-$ | $A^{2}$ | - | $4=10,12$ | 3316,12 | 3,122 | +, 048 | $\left\{\begin{array}{l} \text { with the small star mentioned by Piazzi ; has } \\ \text { then A disappeared? } \end{array}\right.$ |
| 2959 . III | Androm. |  | 3 $3=27,44$ | $1=27,13$ | 3627,30 | 2,930 | -, 001 |  |
| ${ }^{2966}$, III | 300 Cephai |  | 3 $=533,51$ | $1=53,55$ | 40 5, 3 , ${ }^{2}$ | 2,860 | +,026 |  |
| 2056 . IV | Pegasi |  | $4=31,02$ | $1=34,07$ | 4534.103 | 3,052 | +,014 |  |
| 2868 . Il | Cassiopre |  | - | $4=17,67$ | 533 17,67 | 2,996 | - |  |

In bringing up the results of Vol. II. and III. to 1836, as well as in reducing those of $1836-37$, to the same epoch, the Annual Precession only has generally been employed; but in a fow cases (where the P. M. was large) this too has roughly been applied ; thus, to the results brought up with Precession from Vol. II, forr times the amount of proper motion has been added: and to those from Vol. III. and from observation in 1830-37 one years proper motion only has been applied.

## SUPPLIMENTARY CATALOGUE OF THE DECLINATION OF THE FIXED STARS.

| Reference. | A. | Names. |  | Mean Decn. Jan. 1, 1836,--from |  | ConcludedMean Decn.Jan. 1, 1836. | Annual Precession. | P. M. | Remarks. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| No. Vol. |  |  |  | former obs. p | present obs. |  |  |  |  |
|  | H. M. |  |  | " | " | $0{ }^{\circ} 1$ | " | " |  |
| 1 of 1 II | 01 | 24 Ceti |  | - | $4=37,01$ | -6 937,01 | +20,038 | -0,06 |  |
| 2 . III | 4 | 61 Andromedæ |  | $\cdot 5=43,30$ | $2=41,07$ | $+40 \quad 742,66$ | 20,038 | -,08 |  |
| 16 . II | 6 | 35 Piscium | B | $5=34,70$ | $1=35,80$ | + 75434,88 | 20,035 | -,10 |  |
| 21. II | 11 | Tucanæ | $\stackrel{4}{4}$ | $10=23,19 *$ | $2=19,76$ | -65 50 22,62 | 20,019 | - | Differs $2^{\prime}$ from A.S.C. |
| 19. III | 22 | 117 Piscium |  | $3=47,35$ | $1=51,00$ | +15 7748,26 | 19,947 | - ,13 |  |
| 40. II | 23 | Phœnicis | $\lambda^{1}$ | $10=42,26$ | $1=41,67$ | -49 42 42,21 | 19,940 | - | Differs nearly $1^{\prime}$ from A. S. C. |
| 44.11 | 23 | Tucanæ | $\beta^{1}$ |  | $1=42,32$ | -63 5142,32 | 19,935 | - |  |
| 45. 11 | 23 | -- | $\beta^{2}$ | - | $1=7,97$ | $\begin{array}{llll}-63 & 52 & 7,97\end{array}$ | 19,935 | $\square$ |  |
| 22. III | 26 | App. Sculp. | $\xi$ | $4=3,75$ | $l=6,90$ | $\begin{array}{lll}-35 & 53 & 4,38\end{array}$ | 19,916 | -, 51 |  |
| 27. III | 28 | 117 Andromedæ |  | $4=45,11$ | $1=45,67$ | +23 645,22 | 19,887 | -,01 |  |
| 59. II | 30 | 31 Andromedx | $\delta$ | $11=41,41$ | $4=40,29$ | +29 5741,12 | 19,968 | -, 30 | $\{$ This large P. M. is in accordance |
| 79. II | 39 | Piscium |  | $5=5,88$ | $6=7,53$ | + 426 6,77 | 19,747 | -1,25 | $\{$ with the diff. from A. S. C. |
| 58. III | 50 | 322 Cephei |  | $4=4,18$ | $3=4,31$ | +86 $16 \begin{array}{ll}6 & 4,24\end{array}$ | 19,554 | +0,12 | In Vol. III. the result was accident- |
| 108. II | 56 | 74 Piscium | $\psi$ | $5=36,51$ | $2=36,79$ | +20 3536,59 | 19,435 | -0,03 | ally omitted. |
| 67.1 III | 57 | Cassioper | $\mu$ | $4=44,89$ | $2=44,80$ | +54 644,86 | 19,418 | -1,55 | Piazzi states P, M. $=-0^{\prime \prime}, 65$. |
| 113. II | 58 | 79 Piscium | $\psi^{2}$ | $4=52,92$ | $2=52,30$ | +19 51 52,71 | 19,386 | -0,19 | ( A wrong star observed in 1832 Pi . |
| 124. II | 11 | 32 Ceti |  | $5=-$ | $3=51,76$ | -9 9651,76 | 19,321 | - , 29 | gives P. M. $-{ }^{\prime \prime}, 02$ |
| 132. II | 4 | 86 Piscium | $\zeta^{1}$ | $6=23,35$ | $1=23,65$ | +64223,39 | 19,245 | -, 05 |  |
| 135. II | 5 | 88 - |  | $5=34,73$ | $1=37,11$ | +6735,13 | 10,221 | -, 04 |  |
| 140. IV | 9 | Cassioper |  | $2=37,10$ | $1=36,81$ | +57 2037,03 | 19,119 | + , 02 |  |
| 97. III | 10 | Cassiopeæ | $\phi$ | $4=2,92$ | $2=3,60$ | +54 $22 \begin{array}{ll}3,15\end{array}$ | 19,114 | + 06 |  |
| 158 . II | 19 | Piscium |  | $5=34,71$ | $\mathrm{J}=34,68$ | + 7 ¢ 6334,70 | 18,850 | + |  |
| 162. II | 21 | 98 - | $\mu$ | $10=43,11$ | $5=40,83$ | + 51742,35 | 18,795 | - , 17 |  |
| 167 . II | 24 | Phœnicis | $\delta$ | $8=41,62$ | $4=39,77$ | -49 5541,00 | 18,706 | - |  |
| 178.11 | 28 | 102 Piscium | $\pi$ | $5=4,99$ | $4=3,15$ | +11 18 4,17 | 18,580 | + , 09 |  |
| 138. III | 32 | 137 Cassioper |  | $4=11,46$ | $3=10,98$ | $\begin{aligned} & +59 \\ & + \\ & +18\end{aligned} 111,25$ | 18,434 | + , ,17 |  |
| 183. IV | 44 | 5 Arietis | $\gamma^{1}$ | $9=22,10$ | $4=20, \mathrm{c} 2$ | +18 2921,74 | 18,001 | -, 14 | $\left\{\begin{array}{l}\text { looked. }\end{array}\right.$ |
| 172. III | 50 | 153 Cassioper |  | $5=30,15$ | $2=35,08$ | +633535,84 | 17,730 | +,04 |  |
| 217 . II | 52 | 59 Ceti | $v^{2}$ | $7=30,10$ | $3=30,07$ | -21 52 30,09 | 17,697 | -, 04 | Differs 11" from C. 0. |
| 220 . II | 53 | 57 Andromedæ | $\gamma$ | $5=22,31$ | $2=21,82$ | +41 3222,17 | 17,635 | ,00 |  |
| 181. III | 54. | 37 Arietis |  | $4=26,66$ | $1=23,05$ | +25 825,76 | 17,587 | -, 17 |  |
| 196 . III | 22 | 52 - |  | $4=$ - ${ }^{*}$ | * $4=32,93$ | +25 9332,93 | 17,267 | -, 05 | N. P. D. $5^{\circ}$ wrong in Vol. II. |
| 214 . III | 6 | Persei | $\chi$ | $4=6,55$ | $3=5,23$ | +56 | 17,050 | -, 05 |  |
| 219 . III | 9 | 262 Eridani |  | - | $1=27,09$ | +48 1127,09 | 16,954 | + ,12 |  |
| 243 . II | 11 | 68 Ceti | 0 | - | $4=47,26$ | - 343 47, 26 | 16,868 | - , 69 |  |
| 218. IV | 13 | Ceti |  | $4=47,68$ | $2=45,70$ | - 34247,02 | 16,732 | -, 03 |  |
| 227 . IV | 19 | Trianguli |  | $2=54,30$ | $7=52,93$ | +28 5654,00 | 16,452 | -,12 |  |
| 247 . III | 23 | 43 - |  | $4=49,06$ | $4=49,20$ | +33 48 49,13 | 16,270 | -, 05 |  |
| 251 , III | 25 | 46- |  | $4=2,00$ | $3=59,23$ | +33 58 0,81 | 16,108 | +,15 |  |
| 230 . IV | 25 | - |  | $4=13,33$ | $3=9,93$ | $+34011,87$ | 16,140 | $-, 12$ |  |
| 268. II | 27 | Ceti |  | $5=1,42$ | $3=1,39$ | +6 6 6 1,40 | 16,075 | +1,45 | This P. M. accounts for the diff. |
| 270. 11 | 27 | 30 Arietis |  | $10=45,22$ | $3=47,72$ | +235547,72 | 16,051 | -0,05 | I have retained the result of 30 Arietis |
| 271 . II | 27 |  |  | - | $3=46,37$ | +23 5546,37 | 16,048 | -, 05 | for 1836 , in order to shew the dif- |
| 253 . III | 27 | Ceti | $d^{1}$ | $4=43,01$ | $1=43,00$ | - 41543,01 | 16,043 | -, 56 | ference of Declination. |
| 234 . IV | 29 | Persei |  | $2=51,86$ | $2=54,02$ | +48 5052,94 | 15,926 | + ,06 |  |

* See errata.

| Reference. | A. R. | Names. |  | $\begin{aligned} & \text { Mean Dec } \\ & 1836 .- \end{aligned}$ | $\begin{aligned} & \text { cn. Jan. I, } \\ & \text {-from } \end{aligned}$ | Concluded Mean Decn. | Annual Preces- |  | Remaris. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| No. Vol, |  |  |  | former obs. | present obs. | Jan. 1, 1836. | sion. |  |  |
|  | H. M. |  |  |  |  | $\bigcirc$ | " | " |  |
| 280 . II | 232 | 83 Ceti | $\varepsilon$ | $9=16,22$ | $4=18,55$ | -12 3416,99 | 15,829 | -, 20 |  |
| 295. III | 36 | Hydri | $\varepsilon$ |  |  | -68 $58-$ | 15,528 |  | Not now visible: |
| 242 . IV | 37 | Persei |  | $2=35,28$ | $1=33,41$ | +48 2934,66 | 15,470 | -, 10 |  |
| 252. IV | 49 |  |  | $2=40,02$ | $3=36,87$ | +51 2238,23 | 14,805 | +,05 |  |
| 324 . II | 51 | Horologii | $\beta$ |  |  | -63 $31 \sim$ | 14,701 |  | Not now visible! |
| 330 of II | 52 | 8 Eridani | $\rho^{1}$ | $10=47,28$ | $4=46,64$ | - 818 47,10 | +14,610 | -,09 | $\int$ The observations in 1833 refer to ano- |
| 337 - II | 55 | Fornacis |  | $2=23,65$ |  | -23 $37-$ | 14,483 |  | $\{$ ther star ;-from a recent examina- |
| 261. IV | 33 | Camelop. |  | $2=26,76$ | $2=26,34$ | +65 226,55 | 13,948 | - ,08 | \ tion this star is not now visible ! |
| 303 . III | 5 | Messoris | $\mathrm{A}^{2}$ | $4=34,10$ | $3=33,84$ | +65 233,99 | 13,801 | -, 11 |  |
| 321 . III | 12 | 142 Persei |  | 4 - | $2=9,26$ | +4837 9726 | 13,418 | -,05 | A wrong star observed in 1835. |
| 368 . II | 13 | Eridani | $e$ | $9=0,98$ | $3=59,96$ | $\begin{array}{lll}-43 & 42 & 0,72\end{array}$ | 13,346 | + ,87 | Piazzi states the P. M. to be $+0^{\prime \prime}, 83$ |
| 341 . III | 27 | Persei |  | $4=13,87$ | $4=15,40$ | +30 3414,63 | 12,368 | -,05 |  |
| 389 - II | 28 | 20 Eridani | F |  | $6=49,28$ | $\begin{array}{llll}-18 & 0 & 49,28\end{array}$ | 12,302 | -, 06 |  |
| 426 - II | 42 |  |  | $5=33,10$ | $4=35,75$ | $\begin{array}{llll}-38 & 7 & 34,28\end{array}$ | 11,329 | -,18 |  |
| 429 . II | 43 | Tauri |  | $7=59,94$ | $2=1,51$ | +16 500,29 | 11,248 | ,00 |  |
| 384.111 | 44 | 210 Eridani |  | $4=6,41$ | $1=6,21$ | -533 6,37 | 11,169 | -,06 |  |
| 439. II | 49 | Hydri |  | $1=56,93$ | $3=35,44$ | -74 447 <br> 5,44 | 10,772 |  | The observation in 1833 refers to |
| 450. I1 | 56 | Reticuli | $f$ | $10=53,80$ | $4=52,04$ | -61 5153,30 | 10,318 | - | another star. |
| 483. Il | 411 | Doradus |  | $10=13,10$ | $3=10,25$ | - 515412,44 | 9,133 |  |  |
| 482. II | 11 | 41 Eridani | X | $10=10,41$ | $3=0,57$ | -34 1210,28 | 9,011 | + , 05 |  |
| 436 . III | 14 | 220 Persei |  | $4=26,59$ | $4=26,61$ | +33 2726,60 | 8,922 | -- | A wrong star. |
| 506. If | 17 | 43 Eridani |  | $10=8,03$ | $3=8,14$ | -34, 24 8,05 | 8,656 | -, 02 |  |
| 515 . II | 21 | 80 Tauri |  |  | $4=20,30$ | +15 1620,30 | 8,434 | -, 17 |  |
| 448 . III | 22 |  | $m$ | 4 | $3=43,31$ | +42 40 43,31 | 8,307 | + ,14 |  |
| $46 \%$. III | 27 | Eridani | $v^{1}$ | $4=12,59$ | $3=11,96$ | $-30 \quad 6 \quad 12,32$ | 7,896 | -,29 |  |
| 465. III | 28 | Scep. Brand. |  | $4=54,01$ | $2=32,06$ | - 84753,36 | 7,740 | + ,04 |  |
| 332 . IV | 28 | Eridani |  | $4=6,83$ | $2=0,43$ | -838 6 6,70 | 7,858 | -,07 |  |
| 543 - II | 32 | Tauri | $\tau$ | $14=0,58$ | $2=9,30$ | +22 $38 \quad 9,55$ | 7,504 | -,01 |  |
| 578. II | 50 |  |  | $1=0,00$ | $3=6,90$ | $\begin{aligned} & +14 \\ & 17 \\ & 7\end{aligned} 7,42$ | 6,081 | -. 07 |  |
| 515 . Ill | 51 | Eridani |  | - | $3=27,21$ | -10 3627,21 | 5,877 | -,08 |  |
| 523. III | 54 | Aurige | $e$ | - | $3=14,11$ | +62 15 14, J | 5,659 | +,07 |  |
| 610.11 | 53 | Doradus | $\zeta$ | $7=54,95$ | $3=51,41$ | $-5741 \begin{array}{ll}53,89\end{array}$ | 4,965 | + 18 |  |
| 612. II | 4 | 1.4 Auriga | $a$ |  | $3=21,01$ | +32 2921,01 | 4,819 | +,18 |  |
| 554 . III | 10 | 2 Columbe |  | $4=57$, 52 | $3=55,70$ | -35 6 66,74 | 4,338 | -, 10 | (This P. M. is in accordance with the |
| 630 . II | 11 |  | 0 | $10=40,32$ | $3=39,40$ | $-35 \quad 340,11$ | 4,223 | -, 58 | $\left\{\right.$ diff. $\left(20^{\prime \prime}+\right)$ from A.S.C. |
| 667 . II | 24 | 120 Tauri |  | - | $3=59,60$ | +18 24 59,60 | 3,173 | ,00 |  |
| 672 . II | 25 | Columbe | $\varepsilon$ | $5=43,89$ | $4=45,76$ | -35 35 44,72 | 3,034 | -,17 |  |
| 590. III | 26 | Orionis |  |  | $4=23,99$ | -4 4523,99 | 2,922 | -, 14 |  |
| 593. III | 27 |  | $\mathrm{c}^{2}$ |  | $3=12,40$ | - 45812,46 | 2,813 | -, 08 |  |
| 685. II | 28 | $40-$ | $\phi^{2}$ | $8=42,06$ | $3=44,39$ | + 91142,69 | 2,827 | -,30 |  |
| 693.11 | 31 | 490 Orionis | d | $0=36,44$ | $4=39,04$ | -7 1837,24 | 2,558 | - ,11 |  |
| 609. III | 33 | 393 Tauri |  | $3=37,51$ | $2=39,05$ | +18 53 38,13 | 2,315 | -,03 |  |
| 699. II | 34 | Columbe | ${ }^{*}$ | $43=55,88$ | $4=56,99$ | -34 9 56,43 | 2,313 | -,01 |  |
| 721. II | 42 | Tauri |  |  | $4=35,04$ | +135935,04 | 1,647 | + 02 | A wrong star observed in 1832. |
| 732 . II | 4.5 | Columbe | $\beta$ | $9=6,24$ | $4=5,05$ | -35 <br> -50 | 1,314 | + ,25 |  |
| 735 . II | 47 | 34 Aurigx | $\beta$ | $11=13,75$ | $3=14,26$ | +44 5513,86 | 1,131 | - , 15 |  |
| 658.111 | 51 | Camelop. | $n$ |  | $3=4,58$ | +51 344,58 | 0,723 | + ,03 |  |
| 746 . II | 52 | Columbe | $\gamma$ | $10=22,96$ | $4=21,80$ | $-3518 \quad 22,63$ | 0,742 | -,11 |  |
| 757 . II | 57 | 67 Orionis | $\nu$ | $27=48,00$ | $3=48,33$ | +14 4648,03 | 0,187 | - ,23 |  |
| 674 . III | 59 | 191. Aurigæ |  | $3=5,66$ | $2=4,78$ | +4844 5,31 | 0,058 | ,03 |  |


| Reference. <br> No. Vol. | A. R. | Names. |  | $\begin{gathered} \text { Mean Decn. Jaw. 1, } \\ \text { 1836. -from } \end{gathered}$ |  | Concluded <br> Medı Decu. <br> Jau. 1, 1836. | Annual <br> Piecession. | P. M. | Rrmaris. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | former obs. pre | resent obs. |  |  |  |  |
|  | H. M. |  |  | - - | $3=52,68$ | ${ }^{\circ} 1,1111$ | $-0.152$ | " |  |
| 684.11161 | 51 | Columbx 24 Munocer. |  | - | $\begin{aligned} & 3=52,68 \\ & 3=37,55 \end{aligned}$ | arr $-371052,68$ +58837 | - $\begin{array}{r}0,152 \\ 0,770 \\ \hline\end{array}$ | + 03 <br> $+\quad 04$ |  |
| 700. III 8 | 8 10 | 24 Munocer. |  | - | $3=37,55$ $3=12,12$ |  | 0,770 | +,04 |  |
| ${ }^{7703}$. 11 II II 10 | 10 | $25 \overline{\text { Columlex }}$ |  | $10=29,52$ | $3=12,12$ $4=29,49$ | -13 $\begin{array}{llll}-10 & 50 & 12,12 \\ -35 & & 29,51\end{array}$ | 0,014 | - |  |
| 787 <br> 7807.111 <br> 711 | 11 | Columlze Lyncis |  | $3=11,69$ | $4=29,49$ $1=11,41$ | +58 3011,62 | 1,018 | -,10 |  |
| 791 of II 14 | 14 | 1 Canis Maj | $\zeta 1$ | $10=48.09$ | $3=46,00$ | -29 59 48,57 | - 1,205 | - , 09 |  |
| 793. Il 15 | 15 | Monocer. |  | $5=26,30$ | $2=26,27$ | + 35026,29 | 1,254 | -,08 |  |
| 794. II 15 | 15 | 8 - | $b$ | $5=7,32$ | $4=8,50$ | + 442784 | 1,290 | -,69 |  |
| 799. II 18 | 18 | 15 Geminor. |  | $5=58,85$ | $4=59,27$ | +2052 59,03 | 1,541 | -,03 |  |
| 726 . III 18 | 18 | 122 Camelop. |  | $4=12,63$ | $3=9,76$ | +79 43011,26 | 1,582 | -,32 |  |
| 728 . III 19 | 19 | 11 Nayis |  | $4=32,53$ | $2=34,22$ | -36 37 33,10 | 1,620 | , 00 |  |
| 747, III 23 | 23 | 17 Lyncis |  | - | $3=51,44$ | +61 3651,44 | 2,083 | +125 |  |
| 770 . IIII 30 | 30 | Canis Maj. | $\nu^{1}$ | $4=46,61$ | $2=44,58$ | -18 31456,93 | 2,558 | +0 19 |  |
| 780.111 | 32 | 23 Lyncis | seq | $4=43,36$ | $2=40,28$ | +59 3542,33 | 2,795 | $-.15$ |  |
| 790. III 3 | 35 | Cauis $\mathrm{Maj}_{\mathrm{j}}$. |  |  | $3=49,88$ | -27 28 49,88 | 3,078 | + . 10 |  |
| 490 . IV | 39 | Canis Maj. |  | $3=25,96$ | $2=29,40$ | -20 $36 \quad 27,33$ | 3,400 | +, 02 |  |
| 807. III | 43 | 29 Lyncis |  | $4=38,73$ | $3=38,25$ | + 574538,52 | 3,778 | , 00 |  |
| 809. III | 45 | Canis Maj. | $h$ | $4=9,51$ | $1=9,25$ | -31 31 9,46 | 3,853 | +,09 |  |
| 854. II | 46 | 14 - - | $\theta$ | - | $3=18,17$ | -1150 18,17 | 4,0121 | ,00 |  |
| 814. III | 47 | Lyncis |  | $1=30,43$ | $1=32,97$ | +574831,70 | 4,116 | +,05 |  |
| 820. III | 50 | 112 Canis Maj. |  | $3=$ | $3=14,44$ | -16 5314.44 | 4,363 | -, 05 | A wrong star olserved in 1835 ;- |
| 871. II | 52 | Geminor. |  | $5=14,88$ | $\mathrm{l}=13,50$ | +29 3614,65 | 4,567 | -, 81 | Differs $20^{\prime \prime}, 50$ from A. S. C. |
| 831. III | 55 | Lyncis |  | - | $4=31,58$ | +60 5931,58 | 4,798 | + .06 |  |
| 511. IV 7 | 70 | Navis |  | $1=$ | $3=6.65$ | -43 $23 \quad 6,65$ | 5,109 | + , 46 | The result in the Catalogue is erro |
| 847 . III | 2 | 123 Geminor: |  | $4=42,78$ | $3=44,50$ | +1535 43,52 | 5,367 | -,10 | neous. |
| 528 . IV | 9 | 19 Inncis |  | $1=58,80$ | $2=1,33$ | +55 $34 \begin{array}{ll}0,48\end{array}$ | 6,010 | -, 06 |  |
| 891 . III | 14 | 144 Geninor. |  | - | $3=51,4.3$ | $1+275651,43$ | 6,410 | +,05 |  |
| 894 . III | 16 | Navis |  | $4=8,65$ | $4=8,14$ | -31 44 8, 80 | 6,569 | +,05 |  |
| 917. III | 26 | Canis Min. |  |  | $3=37,95$ | +34137,95 | 7.384 | -,02 |  |
| 943 . III | 35 | 186 Navis |  | $8=13,52$ | $3=12,94$ | $\begin{array}{lllll}-38 & 9 & 13,36\end{array}$ | 8,120 | -,04 |  |
| 944 . III | 36 | Navis |  | - | $3=44,94$ | -38 8 44,94 | 8,179 | -,02 |  |
| 947. III | 38 |  | T | T $3=38,28$ | $3=39,90$ | -4.4 4539,09 | 8,312 | -, 50 |  |
| 95\% . III | 42 | 217 N.wis |  | - | $3=26,93$ | -24 3326.93 | 8,6,39 | - 38 |  |
| 989. II | 56 | 9 Cancri | $\mu^{1}$ | 1 $5=51,98$ | $3=5^{9}, 32$ | $1+23 \quad 5 \quad 52,11$ | 1 9,734 | -, 06 |  |
| 993 . III | 57 | Navis |  | - | $3=55,21$ | -19 18 55,21 | 9,824 | +,12 |  |
| 999. II 8 | 82 | 15 Cancri | $\psi^{3}$ |  | $3=27,74$ | $\begin{aligned} & +30\end{aligned} 827,74$ | $4 \quad 10,216$ | +,11 |  |
| 1004. II! | ! 5 | 5 .- |  | $4=51,76$ | $1=51,46$ | +18 9 51,70 | 10,356 | -, 04 |  |
| 1009. II | 1 | Piscis Vol. |  | $\varepsilon$ - | $3=3.87$ | $\begin{array}{llll}-68 & 8 & 3,87\end{array}$ | 7 10,572 | - |  |
| 1013. III | , | 7 Navis |  | - | $3=54,98$ | -31 3954,98 | 10,537 | +, 09 |  |
| 1024. 11 | 16 | 23 Cancri | $\phi^{2}$ | $\phi^{2}$ | $3=53,14$ | $+272753,14$ | 411,243 | +,02 |  |
| 1032. II | 10 | 1 Argus |  | - | $3=57.65$ | -58 58 57,65 | 11,426 |  |  |
| 1049. II | I 31 | 1 Cuncri |  | $5=-\sim$ | $2=45,33$ | +20 645.33 | 12,206 | --, 16 | has created much confusion:- |
| 1055. 11 | 1131 | 1 - |  | $5=7,75$ | $3=6,91$ | +20 $7 \quad 7.51$ | 12.249 | -,11 | these must be re-examined. |
| 1061 - 11 | 133 | 3 Pixid Naut. |  | $\beta \quad 11=51,15$ | $3=51,47$ | -34 433 51,23 | 12,439 | -, 10 | Differs above $23^{\prime \prime}$ from G. C. |
| 1066 . III | 37 | 7 Monocer. |  | $4=51,08$ | $3=48,86$ | -638 50,13 | 3 12,600 | +,02 |  |
| 1080. II | 141 | 1 Cancri |  | $5=30,19$ | $2=29,80$ | +18 3630,09 | 9 12,952 |  |  |
| 646 . IV | 90 | 0 Pisid. Naut. |  | $3=47,03$ | $3=47$,68 | -25 1047,36 | 14,208 | -, 13 |  |
| 1124. II | I 7 | 7 Arsus |  | $8=41,23$ | $4=43,02$ | -61 38 41,68 | 14,623 | $3-$ |  |
| 1121. III |  | 9 Navis |  | $k^{1} \quad 4=26,28$ | $3=25,32$ | -36 5525.87 | 14,692 | - ,02 |  |
| 1136 . III | I 15 | 5 Hydra |  | $4=49,10$ | 4 $=49,44$ | $4+41149,27$ | 15,062 | -,11 |  |


*The difference of Declination here found $=1^{0} 10^{\prime} 50^{\prime \prime}, 1$ from obs, on the same evening.
Do. from the Greenwich Catalogue $=1^{0} 16^{\prime} 55^{\prime \prime}, 3$

- Piazzi's Catalogue $=1^{0} 16^{\prime} 52^{\prime \prime}, 7$

| Reference. <br> No. Vol. | A. R. | Names. |  | Mean Decn. Jan. 1, 1836.-from |  | Concluded Mean Decn, Jau. 1, 1836. | Annual <br> Precession. | P. M. | Remaris. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | former obs. | present obs. |  |  |  |  |
|  | H, M. |  |  | " | " | $\bigcirc{ }^{\circ}$ | " |  |  |
| 1965 of III | 1546 | Lupi |  | $3=40,01$ | $2=39,40$ | -33 28839,77 | -11,014 | + ,05 |  |
| 1990 . III | 57 |  |  | $4=39,58$ | $2=43,00$ | -38 $38 \quad 40,72$ | 10,187 | -, 25 |  |
| 1046. IV | 161 | Serpentis |  | $4=46,53$ | $l=46,92$ | + 55046,61 | 9,966 | -, 07 |  |
| 1058. IV | 11 | Scorpii |  | $4=55,50$ | $1=57,74$ $5=39,59$ | -19 4255,95 <br> -2248 | 9,167 | -, 04 |  |
| 2072 . III | 34 |  |  |  | $5=39,59$ | -22 48 39,59 | 7,333 | ,00 | (This star belongs to Vol. III, but was |
| 1090 . IV | 42 | Scorpii |  |  | $3=37,89$ | -41 327,89 | 6,603 | -, 11 | introduced through mistake into |
| 2097 . III | 42 | 150 |  | $3=58,38$ | $2=61,00$ | -41 33 59,43 | 6,614 | +. 10 | Vol. IV. |
| 1942. II | 50 | Ophiuchi |  | $4=6,33$ | $2=4.98$ | $\begin{array}{llll}-17 & 59 & 5,88\end{array}$ | 6,040 | -,06 |  |
| 2127 . III | 56 | 117 |  | $3=37,00$ | $5=37,72$ | +135037,45 | 5,502 | -, 19 |  |
| 2142 . III | 171 | Herculis |  | - | $5=11,26$ | +27 1911,26 | 5,052 | +,03 |  |
| 1973 . II | 7 | 39 Ophiuchi | 0 | - | $6=0,57$ | $\begin{array}{lll}-24 & 6 & 0,57\end{array}$ | 4,538 | -,06 |  |
| 1974. II | 7 |  |  | - | $4=59,97$ | -23 5259,97 | 4,531 | -,08 |  |
| 1980. II | 11 | 66 Herculis | ${ }^{\omega}$ |  | $4=55,38$ | +11 255,38 | 4,285 | -,12 |  |
| 1985. II | 11 | 53 Serpentis | $\nu$ | - | $3=22,59$ | -12 4022,59 | 4,229 | -,02 |  |
| 1991 . II | 15 | 33 Scorpii |  | - | $2=7,21$ | $\begin{array}{llll}-24 & 5 & 7,21\end{array}$ | 3,934 | + ,02 |  |
| 1996 . II | 17 | 73 Herculis |  | - | $2=6,07$ | +23 76 6,07 | 3,739 | -, 01 |  |
| 1997 . II | 18 | 47 Ophiuchi |  | - | $2=38,93$ | -12 2138.93 | 3,695 | -,17 |  |
| 1998 . II | 18 | $\underline{\square}$ |  | - | $2=9,66$ | -456 9,66 | 3,686 | - ,21 |  |
| 2014 . II | 25 | 54 |  |  | $3=45,74$ | +13 16 45,74 | 2,917 | -, 07 |  |
| 2193. III | 27 | 245 - |  | $1=4,81 *$ | $2=5,17$ | +1314 5,05 | 2,824 | -1,78 | $\left\{\left.\begin{array}{c} \text { Piazzi's Decchation is probably } 1^{\prime} \text { too } \\ \text { large, in which case } \mathrm{P}^{\prime} \mathrm{M} .=-0^{\prime \prime}, 11 \end{array} \right\rvert\,\right.$ |
| 2015. II | 27 | 53 Ophiuchi | $f$ | - | $3=8,77$ | + 9428,77 | 2,915 | -, 19 |  |
| 2018. II | 28 | Serpentis |  |  | $2=50,14$ | -15 $27 \begin{array}{ll}\text { 50,14 }\end{array}$ | 2,802 | -, 12 |  |
| 2024. II | 29 | Sagittarii |  | - | $2=1,02$ | $\begin{array}{llll}-32 & 7 & 1,02\end{array}$ | 2,708 | + ,07 |  |
| 1170. IV | 30 | Ophiuchi |  | $4=46,71$ | $1=46,76$ | +114546,72 | 2,651 | + ,03 |  |
| 2026 . II | 31 | 79 Herculis |  | - | $2=44,41$ | +24.2444,41 | 2,572 | -, 12 |  |
| 2209 . III | 34. | 142 Draconis |  | - | $2=48,06$ | +62 3348,06 | 2,286 | -, 01 |  |
| 2033. II | 34 | Ophiuchi |  | - | $1=46,94$ | -22 646,94 | 2,256 | -, 06 |  |
| 2034. II | 34 |  |  | - | $1=5,22$ | +16 25 , 22 | 2,239 | +, ,17 |  |
| 2214. III | 35 | Draconis |  |  | $1=14,11$ | +68 1314,11 | 2,170 | -,06 |  |
| 1185. IV | 35 | 83 Herculis |  | $3=4,61$ | $3=5,50$ | +24 $39 \quad 5,06$ | 2,101 | -, 18 |  |
| 2221 . III | 38 | Ophiuchi |  |  | $1=10,71$ | + 54610,71 | 1,915 | + , 17 |  |
| 1191. IV | 38 |  |  | $2=22,99$ | $1=23,14$ | $1+254723,04$ | 1,944 | -,04 |  |
| 2222 . III | 38 |  |  |  | $2=37,29$ | + 55037,29 | 1,851 | -, 07 |  |
| 2042. II | 38 | Sugittarii |  | - | $\mathrm{I}=17,29$ | $-313817,29$ | 1,909 | -,03 |  |
| 2226 . III | 41 | Ophiuchi |  | - | $1=44,07$ | + 54544,07 | 1,671 | -,11 |  |
| 2229 . III | 41 | Telescopii |  | $3=47,19$ | $3=44.78$ | -34 44 45,98 | 1,613 | -,03 |  |
| 2231 . III | 42 | 339 Herculis. |  | , | $2=47,14$ | +19 1847,14 | 1,590 | ,00 |  |
| 2235 : III | 43 | 290 Ophiuchi |  | - | $2=1446$ | -19 41414,46 | 1,497 | -, 11 |  |
| 2237 . III | 43 | Tauri Pon. |  | - | $1=44,30$ | + 51644,30 | 1,468 | -, 14 |  |
| 2239 . III | 44 | 297 Ophiuchi |  | - | $\mathrm{l}=8,85$ | + 1218,85 | 1,357 | ,00 |  |
| 2248 . III | 46 | 302 Ophiuchi |  | - | $1=54,01$ | -18 4654,01 | 1.183 | -, 01 |  |
| 2252 . III | 47 | 357 Herculis |  | - | $2=52,97$ | +24 4852,97 | 1,136 | -,09 |  |
| 2254 . III | 48 | 7 Tauris Pon. |  |  | $1=5,91$ | $1+0425,91$ | 1,037 | -, 03 |  |
| 2257. III | 51 | 172 Serpentis |  | - | $1=56,00$ | - 44756,00 | 0,781 | - ,23 |  |
| 2062 . II | 51 | 6 Sagittarii |  | - | $1=36,15$ | $5-17836,15$ | 0,741 | -,08 |  |
| 2063 , II | 52 | Sagittarii |  | - | $1=3,50$ |  |  | -,02 |  |
| 2261.111 | 52 | 19 |  | - | $1=41,60$ | -22 5341,60 | 0,630 | +,02 |  |
| 2067 - II | 53 | 7 - | $a$ | - | $2=21,94$ $2=21,34$ |  | 0,663 | -, 05 |  |
| $\begin{cases}2074 . \\ 2078 . & \text { II }\end{cases}$ | 53 55 | 9 - |  |  | $2=21,34$ $2=55,34$ | 4 4 -24 21 21,34  <br> -24 23 55,34 | 0,573 0,460 | - 0,02 |  |
|  | 55 |  |  |  |  | - ${ }^{\text {a }}$ |  | -, |  |

* See errata.

| Reference. <br> No. Vol. | A. R. | Names. |  | Mean Decn. Jan. 1, 1836.-from |  | Concluded Mean Decn. Jan. 1, 1836. | Annual Precession. | P. M. | Remaris. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | former obs, | present obs. |  |  |  |  |
|  | H. M. |  |  | " | " | $\bigcirc{ }^{\circ}$ | " | " |  |
| 2269 of III 17 | 1756 | Ursee Min. |  | - | $2=33.66$ | +74 3533,66 | - 0,338 | -, 19 | Piazzi gives P. M. $=-0^{\prime \prime}, 30$ |
| 2276 . III | 59 | Sxgittarii |  | - | $3=17,25$ | -24 0 17,25 | 0,041 | + ,02 |  |
| 2278 . III 18 | 180 | 406 Herculis |  | $\cdots$ | $2=51,34$ | +425651,34 | - 0,006 | -,07 |  |
| 2283 . III | 1 |  | $i$ | - | $2=42,32$ | +26 4. 42,32 | + 0,117 | + , 30 |  |
| 2305 - III | 15 | 444 |  | $4=$ | $3=7,67$ | $+2947 \quad 7,67$ | 1,287 | + ,08 |  |
| 2118. II | 15 | 21 Sagittarii |  | - | $3=20,18$ | -20 37720,18 | 1,330 | -, ,11 |  |
| 2123. II | 18 | Sagittarii |  |  | $1=28,75$ | -17 4728,75 | 1,574 |  | for the star intended-** |
| 2126 . II | 20 |  | $v^{1}$ | $5=18,49$ | $1=16,11$ | -33 5 18,10 | 1,741 | -,09 |  |
| 2127. II | 20 | Clypei Sob. |  |  | $4=59,30$ | -14 4059,30 | 1,759 | - |  |
| 2132 . II | 22 | Sagittarii |  | - | $3=25,31$ | -18 3025,31 | 1,875 | -, 07 |  |
| 2318. III | 22 | Cor. Aust. | $\chi$ | $3=59,59$ | $3=0,19$ | -38 4959,89 | 1,950 | +,05 |  |
| 2135. II | 23 | Sagittarii | $v^{2}$ | - | $3=44,45$ | -33 7144,45 | 1,991 | -,02 |  |
| 2139 . II | 23 | 61 Serpentis | $e$ | - | $3=46,70$ | - 1646,70 | 2,024 | -,06 |  |
| $12140, \text { II }$ | 23 | Sagittarii |  | - | $2=48.73$ | -18 28 48,73 | 2,026 | -, 02 |  |
| $2150 \text {. II }$ | 28 | - |  | - | $2=31,87$ | -21 31 31,87 | 2,419 | -, 16 |  |
| 2151 . II | 28 | Clypei Sob. |  | - | $4=4.5,74$ | -17 2145,74 | 2,441 | , 00 |  |
| 2152. II | 28 | Sagittarii |  | -- | $3=9,31$ | -2338 38,31 | 2,457 | + ,02 |  |
| 2153. II | 28 | Herculis |  | - | $2=22,89$ | +23 28 22,89 | 2,480 | -, 51 |  |
| 2157. II | 32 | 26 Sagittarii |  | - - | $4=39,82$ | -23 58839,82 | 2,745 | -, 02 |  |
| 2202. II | 54 |  | S | - | $3=45,03$ | -31 $164.5,03$ | 4,636 | - , 07 |  |
| 2212 . II | 58 | Sagittarii |  | - | $3=51,14$ | -28 $52 \quad 51,14$ | 4,917 | + ,07 |  |
| 2215 . II | 58 | , |  | -- | $3=24,09$ | -24 54: 24,09 | 5,006 | -, 11 |  |
| 2217 . II | 58 |  |  | $\square$ | $3=24,14$ | -19 32 24,41 | 5,042 | - 12 |  |
| 2248. II | 1912 | 44 - | $\rho^{1}$ | - | $1=51,52$ | -18 8831,52 | 6,178 | $+, 12$ | S This star has been looked for fre- |
| 2249 . II | 12 | 27 Aquiles | $d$ | -m |  | $-113-$ | 6,178 |  | $\{$ quently but not observed yet. |
| 2250 . II | 12 | 45 Sagiltanii | $\rho^{2}$ | - | $1=16,82$ | -18 3616,82 | 6,189 | -, 08 |  |
| 2251. II | 12 | $46 \longrightarrow$ |  |  | 1=21,59 | $-161521,59$ | 6,192 | -, 09 |  |
| 2261 . II | 16 |  | 0 | - | $1=38,77$ | $\begin{array}{llll}-30 & 3 & 38,77\end{array}$ | 6,540 | -, 17 |  |
| 2262 , II | 17 | - |  | - | $]=20,49$ | -15 2220,49 | 6,567 | $-17$ |  |
| 2263 . II | 17 | 2 Sagitto |  | $\square$ | $2=31,32$ | $+163731,32$ | 6,585 | $+, 11$ |  |
| 2264 . II | 17 | Sagittarii |  | - | $2=13,87$ | $\begin{array}{llll}-14 & 52 & 13,87\end{array}$ | 6,588 | - ,14 |  |
| 2267 . II | 18 | 2 Cygni | $a$ |  | $1=17,51$ | +29 181817,51 | 6,642 | -,08 |  |
| 24.27 . III | 20 | $19-$ |  | $3=7,05$ | $3=10,82$ | +49 57 8 8,93 | 6,784 | -, 09 |  |
| 2457 . III | 35 | Draconis |  | $9=$ | $2=1,67$ | +69 26 1,67 | -8,056 | + , 38 |  |
| 2465 . III | 38 | Aquilæ | $v$ | $2=18,52$ | $2=17,18$ | + 71317,85 | 8,300 | -,06 |  |
| 2264. III | 38 | 73 Cygni |  | $3=46,04$ | $3=46,52$ | $+50846,28$ | -8,274 | - , 28 |  |
| 2326 . II | 42 | 51 Aquilæ | D | - | $3=23,97$ | -11 11023,97 | -8,582 | -, 08 |  |
| 2478 . III | 45 |  |  | $3=44,13$ | $2=46,30$ | +11 1345,00 | -8,828 | -, 27 |  |
| 2482 . III | 46 | $187-$ |  | $3=50,00$ | $1=51,01$ $2=40,91$ | $+183850,25$ +19545268 | 8,938 <br> 8,969 | ,+ 01 ,- 16 |  |
| 2483 . III | 47 | Sagitto |  | $3=54,53$ | $2=49,91$. | , $+195452,68$ | -8,969 | -,16 |  |
| 2494 . III | 52 | Sagittarii | H | $3=9,06$ | $2=9,39$ | -38 | -9,476 | - ,08 |  |
| 2510. III | 59 | Draconis | $e^{1}$ | - | $4=47,85$ | +64 2147,85 | 5 10,001 | $+, 02$ |  |
| 2528. III | 206 | Acuix |  | $3=50,69$ | $2=51,68$ $2=28,54$ | $\left\lvert\, \begin{array}{llll}+63 & 13 & 51,09 \\ +15 & 36 & 28,54\end{array}\right.$ | 10,373 | + $+\quad 00$ $+\quad 15$ |  |
| 1519. IV | 6 | Aquilæ <br> Sayittarii |  | - | $2=28,54$ $3=30,89$ | +15 <br> 16 <br> -42 3830,54 | 10,434 <br> 10,882 | ,+ 15 ,- 18 | $\{$ the Catalogue. |
| 2539 . III | 11 | Sagittarii | $I^{\prime}$ | - | $3=30,89$ | -42 3330,89 | 10,882 | -, ,18 |  |
| 2567 . III | 25 | Cygni |  | $4=18,14$ | $3=16,44$ | +48843 17,41 | 111,776 | -, 02 |  |
| 2420. II | 27 | 46 Urse Min | $\omega^{3}$ | $2=13,46$ | $1=11,70$ | +48 <br> +40 <br> +88 | $7{ }^{7} 11,926$ | 2 l |  |
| 2575 . III | 28 | Ursw Min. | $\lambda$ | $3=$ | $1=57,35$ | + $+884857,35$ | 5 11,852 | + ,06 |  |
| 24,38 . II | 31 | 28 Vulpecule |  | - | $2=43,59$ | $1+233243,59$ | 12,279 | $1+, 07$ |  |
| 2589 . 11I | 34 | Dolphini |  | $3=44,32$ | $\mathrm{l}=45,07$ | $\underline{+131344,51}$ | 1 12,482 | -, 03 |  |

* A star of the 6 th Magnitude near this has been observed, Declination $-17^{\circ} 53^{\prime} 30^{\prime \prime}, 09$.

| $\left.\begin{array}{\|cc} \hline \text { Reference. } \\ \text { No. } & \\ \text { Vol. } \end{array} \right\rvert\, \text { A. }$ | Names. |  | Mean Decn, Jan. 1, 1836,-from |  | Concluded Mean Decn. Jan, 1, 1836. | Annual <br> Preces- <br> sion. | P. M. | Remarks. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | former obs. | present obs. |  |  |  |  |
| н. M. |  |  | " | " | 01 | " | " |  |
| 1656 of IV 2044 | Cephei |  |  | $2=43,74$ | +445843,74 | +13,102 | +1,23 |  |
| 2495 . Il 54 | 2 Equalei | $\lambda$ | $5=25,08$ | $3=24,46$ | + 63224,85 | 13,785 | -,02 |  |
| 2649. III 59 | Vulpecula |  |  | $1=36,31$ | +22 5536,31 | 14,164 | - |  |
| 2664. III 216 | 1quarii |  | - | $1=40,14$ | - 74540,14 | 14,563 | -,03 |  |
| 2683. III 19 |  |  | $4=21,82$ | $2=22,84$ | -12 4722,16 | 15,226 | -, 16 |  |
| 2688. III 19 | Cephei |  | - | $2=18,87$ | +57 1418,87 | 15,313 | +, 08 |  |
| 2691, III 21 | Vulpecule | $z$ | $4=53,44$ | $1=52,82$ | +26 5358,31 | 15,387 | -, 01 |  |
| 2706. III 27 | Aquarii |  | - | $1=3,26$ | + 0153.26 | 15,751 | -, 19 |  |
| 2565. II 29 | 4 Pegasi | T | $6=2,89$ | $2=3,07$ | + 522.298 | 15,902 | -, 14 | Differs 9" from A. S. C. |
| 2568 . II 32 | 42 Capricorni | $d^{1}$ | - | $3=32,16$ | -14 4632,16 | 16,022 | -, 41 |  |
| 2757. III 54 | Piscis Aust. |  | - | $3=31,94$ | -30 4131,94 | 17,090 | -, 16 |  |
| 2775. . III 224 | Cephei |  | $2=59,22$ | $1=56,61$ | +58 258,35 | 17,510 | +, 05 |  |
| 2774. III 4 |  |  | $2=29,65$ | $2=28,69$ | +58 29 29,17 | 17,496 | ,00 |  |
| 2648. Il | Gruis | $\mu^{1}$ | $5=35,02$ | $3=31,12$ | -42 933,56 | 17,586 | -,08 |  |
| 2678 . Il 17 | 53 Aquarii | $\mathrm{E}^{\circ}$ | - | $4=22,19$ | -1734 22, 19 | 18,066 | +, 06 |  |
| 2689 . II 22 | 17 Piscis Aust. | $\beta$ | $5=1,98$ | $1=0,27$ | $\begin{array}{lllll}-33 & 11 & 1,90\end{array}$ | 18,232 | -, 02 |  |
| 2699 . 11127 | 61 Aquarii | L | $5=13,93$ | $1=12,21$ | -18 18 13,64 | 18,402 | -,09 |  |
| 2825. JII 27 | Piscis Aust. | - | $4=28,83$ | $2=29,80$ | -32 3029,15 | 18,434 | +,03 |  |
| 2833. III 29 | 7 Aidromedæ |  | $4=15,00$ | $4=14,06$ | +384714,53 | 18,475 | -, 07 |  |
| 2850. III 37 | 222 Aquarii |  | $4=14,99$ | $1=15,66$ | -10 3015,12 | 18,741 | -, 13 |  |
| 2852 . Ill 40 | Aquarii |  | $4=45,87$ | $2=45,06$ | - 544850 | 18,82, 3 | -, 51 |  |
| 2872 . III 51 |  |  | $4=28,16$ | $2=25,15$ | -27127,16 | 19,157 | -, 11 |  |
| 2885. 11515 |  |  |  | $4=12,52$ | -29 4212,52 | 19,353 |  |  |
| 2784 . II 2312 | 7 Piscium | $b$ | $5=13,24$ | $2=12,84$ | + 42013,08 | 19,599 | -, 08 |  |

One remark is here necessary with regard to the foregoing Catalogue,--namely, that the precessions in Declination are those copied from the Vols. already printed; and consequently pertain to the epochs for which those tables were constructed, and not to the year 1836, to which the places of the stars are reduced: with a view to remedy this defect, as well as to supply an every day want of the practical Astronower, I have connputed the following tables.

## cxiii

## A Table of the annual variation of the Precession in Right Ascension in time.

arg at top the Declination and at the side the A. R. of the Star.

| Declin. North. | $10^{0}$ | $30^{\circ}$ | $50^{\circ}$ | $60^{\circ}$ | $65^{\circ}$ | 700 | 750 | 780 | 800 | $82^{\circ}$ | Declin. South. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathrm{H}_{\mathrm{n}}^{\mathrm{M} .}$ | 0000 | + 0001 | $s$. |  |  |  |  |  |  |  |  |
| $30$ | $\begin{aligned} & , 0000 \\ & , \quad 00 \end{aligned}$ | ,+ 0001 , 02 | $+, 0003$ | +,0004 | +,0006 | +,0008 | +,0011 | +,0014 | +,0017 | +,0021 | XII 0 |
|  | ${ }^{\prime}, 00$ |  |  | 06 07 |  | , 11 | , 16 , 20 | , 22 <br> $\quad 29$ |  | , 38 ,$\quad 54$ |  |
| 30 | , 00 | 02 | 05 | , 07 | , 11 | , 15 | , 22 | , 34 | , 45 | 66 | 30 |
|  | , 00 | , 02 | , 05 | , 07 | , 12 | , 18 | , 25 | , 37 | , 52 | , 76 | XIV 0 |
| 30 | 00 | , 03 | , 05 | , 08 | , 12 | , 17 | , 27 | , 39 | , 54 | 80 | 30 |
| 111 | ,0000 | +,0003 | +,0005 | +,0008 | +,0012 | +,0017 | +,0027 | +,0040 | +,0055 | +,0081 | XV 0 |
| 30 | , 00 | , 02 | , 05 | , 08 | , 11 | , 16 | , 26 | , 38 | , 52 | , 78 |  |
|  | , 00 | , 02 | , 04 | , 07 | , 10 | , 15 | , 21 | , 33 | , 45 | , 68 | XVI 0 |
| 30 | , 00 | , 01 | , 03 | , 05 | , 08 | , 12 | , 17 | , 26 | , 37 | , 54 | 30 |
| V 0 | , 00 | , 01 | , 02 | , 03 | , 05 | , 07 | , 12 | , 18 | , 26 | , 38 | XVII 0 |
| 30 | , 00 | , 00 | , 01 | , 01 | , 03 | , 04 | , 07 | , 09 | , 13 | , 20 | 30 |
| VI 0 | ,0000 | -,0000 | -,0000 | -,0000 | 0 | -,0000 | -,0000 | -,0000 | 0000 | -,0000 | XVIII 0 |
| 30 | , 00 | 00 | , 01 | , 02 | , 03 | , 04 | , 07 | , 09 | , 13 | , 20 |  |
| VII 0 | , 00 | , 01 | , 02 | , 04 | , 05 | , 08 | , 12 | , 18 | , 26 | 38 | X 0 |
| 30 | , 00 | , 02 | , 03 | , 05 | , 07 | , 11 | , 17 | , 26 | , 37 | 54 | 30 |
| VIII 0 | , 00 | - 02 | , 04 | , 07 | , 09 | , 14 | , 21 | , 33 | , 45 | - 68 | XX 0 |
| 30 | , 00 | 03 | 05 | 08 | 11 |  | 26 | 38 | , 52 | , 78 | 30 |
| IX 0 | ,0000 | -,0003 | -,0005 | -,0008 | -,0012 | -,0017 | -,0027 | -,0040 | -,0055 | -,0081 | XXI 0 |
| 30 |  | 03 | , 05 | , 01 | , 12 |  | , 27 | , 39 | , 54 | , 80 |  |
| X 0 | , | , 02 | , 04 | , 07 | , 11 | , 17 | 25 | , 37 | 52 | , 76 | XXII 0 |
| Xr 30 | , 00 | - 02 | , 04 | , 07 | , 10 | , 15 | 22 | \|, 34 | , 45 | , 66 | 30 |
| XI 0 | , 00 | , 02 | , 04 | , 06 | , 09 | 13 | 20 | , 29 | , 37 | , 54 | XXIII 0 |
| 30 | 00 | 02 | 03 | 05 | 07 |  | 16 | 22 | 28 | , 38 | 30 |
| XII 0 | ,0000 | -,0001 | -,0002 | -,0003 | -,0005 | -,0007 | -,0011 | -,0014 | -,0017 | -,0021 |  |
| XIL 30 | , 00 | -, 01 | -, 01 | -, 02 | -, 03 |  | -, 06 |  | -, 06 | -, 05 | 30 |
| XIII 0 | , 00 | $-\quad 00$ | , 00 | , 00 | 00 |  | 00 | +, 01 | +, 04 | $\pm+11$ | 10 |
| 30 | , 00 | t, 00 | +, 00 | +, 01 | +, 02 | +, 02 | +, 03 | +, 07 | +, 14 | $4+26$ | 30 |
| XIV 0 | , 00 | +, 00 | $t, 01$ | $+, 02$ | +, 03 | t, 03 | +, 06 | $6+, 13$ | +, 21 | +-, 38 | II 0 |
| 30 | 00 | +. 00 | t, 01 | +, 02 | +, 03 | +, 04 | +, 07 | $7 t, 16$ | +, 24 | $4+, 47$ | 30 |
| $\begin{array}{rr}\text { XV } & 0 \\ 30\end{array}$ | , 0000 , 00 | ,+ 0001 , 01 | ,+ 0002 , 02 | ,+ 0003 , 03 | ,+ 0004 , 05 | $4 \begin{array}{r}+, 0005 \\ , 06\end{array}$ | + $+\begin{array}{r}+, 0009 \\ , \quad 10\end{array}$ | ,+ 0017 ,$\quad 17$ | $7 \begin{array}{r}+, 0026 \\ , \quad 27\end{array}$ | $7 \begin{array}{r}+, 0050 \\ , 49\end{array}$ |  |
| XVI 0 | , 00 | , 01 | , 02 | , 03 | , 05 | , 07 | , 11 | 1 , 18 | , 28 |  | 0 |
| 30 | , 00 | 01 | , 02 | , 03 | , 04 | , 06 | , 10 | , 16 | , 24 | 1.39 | 30 |
| XVII 0 | , 00 | , 00 | , 01 | , 02 | , 03 | , 04 | , 07 | 7 , 12 | , 17 |  | $\checkmark 0$ |
| 30 | 00 | , 00 | , 01 |  | 02 |  | , | , 06 | , 09 | 9 , 14 | 30 |
| XVIII 0 | ,0000 | -,0000 | -,0000 | -,0000 | -,0000 | -,0000 | -,0000 | -,0000 | -, 0000 | -, 0000 | VI 0 |
| 30 | , 00 | , 00 | , 01 | , 01 | , 02 |  | , 04 | 4 , 06 | S , 09 |  | 30 |
| XIX 0 | , 00 | , 00 | , 01 | , 02 | , 03 | , 04 | , 07 | 7 , 12 | , 17 | 7 , 28 | VII 0 |
| 30 | , 00 | 01 | , 02 | , 03 | - 05 | , 06 | , 10 | , , 16 | , 24 | , 39 | 30 |
| XX 0 | , 00 | 01 | , 02 | 03 | , 05 | ", 06 | , 10 | , 18 | , 28 | , 47 | VIII 0 |
| 30 | 00 | 01 | 02 | 03 | , 05 |  | 10 | 17 | , 27 | , 49 | 30 |
| XXI 0 | ,0000 | -,0001 | -,0002 | -,0003 | -,0004 | -,0005 | -,0009 | -,0017 | $7-, 0026$ | -,0050 | IX 0 |
| 30 | , 00 | , 01 | , 02 | , 03 | , 04 | , 05 | , 08 | 8 , 16 | 6, 24 | 4,47 | 30 |
| XXII 0 | , 00 | 00 | , 01 | , 02 | 03 | 04 | 06 | 6,13 | , 21 | 1 , 38 | X 0 |
| 30 | 00 | 00 | 01 | 01 | 02 |  | 04 | 4,07 | [, 14 | 4 , 26 | 30 |
| XXIII 0 | , 00 | 00 | 00 | , 00 | 00 |  | , 00 | 0 , 01 | 1.04 | 4,11 | XI 0 |
| 30 | , | +, 00 | +, 01 | +, 02 | +, 03 | 1+, 04 | 1+, 06 | 6 +, 06 | $1+, 06$ | $6{ }^{+}+, 05$ | 30 |

A Table of the annual variation of the Precession in Declination.
arg at top the Declination, at the side the $A, R$. of the Star.

| Declin. North. $\quad 0^{\circ}$ | $30^{\circ}$ | $50^{\circ}$ | $60^{\circ}$ | $65^{\circ}$ | $70^{\circ}$ | 750 | 780 | $80^{\circ}$ | $82^{0}$ | Declin. South. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| H. M. | s. | 8. | s. | $s$. | s. | s. | s. | $s$ | $s$ |  |
| XII $0+0000-$ | +,0000- | +,0000- | +,0000 | $+, 0000-$ | +,0000- | +,0000- | $+, 0000-$ | +,0000- | $+, 0000-$ | 00 |
| 30 , 06 | , 05 | , 05 | , 05 | , 05 | , 05 | , 05 | +, 04 | +, 04 | +, 03- | 30 |
| XIII 00,11 | , 10 | , 10 | , 09 | , 08 | , 08 | , 07 | +, 05- | +, 04 | , 02 | 10 |
| 30,17 | , 15 | , 14 | , 12 | , 10 | , 09 | , 06 | +, 03- | , 00 | - $03+$ | 30 |
| XIV 0,22 | , 20 | , 17 | 14 | , 11 | , 09 | , 04 | $-\quad 01+$ | , 06+ | -, $12+$ | II 0 |
| 30,27 | , 23 | 19 | , 15 | , 11 | , 08 | , 00 | $-07+$ | 14+ | - $24+$ | 30 |
| XV 0 O,+ 0032 | $+, 0026$ | +,0020 | +,0015- | + | $+, 0005$ | $-, 0005+$ | -, 0014 + | -, 0023+ | $-, 0037+$ | III 0 |
| 30,36 | , 28 | , , 21 | , 14 | , 10 | +, 02- | , 11 | , 22 | , 34 | , 51 | 30 |
| XVI 00,39 | , 30 | , 21 | 13 | , 09 | $-, 01+$ | , 16 | , 30 | , 45 | , 65 | $1 V 0$ |
| - 30,41 | , 32 | , 21 | 13 | , 07 | $.04$ | , 20 | , 36 | , 54 | , 78 | 30 |
| XVII 0 | - 33 | , 22 | , 12 | , 04 | , 07 | , 24 | , 4l | , 60 | 86 | V 0 |
| 30 , 44 | , 33 | , 22 | , 12 | , 04 | , 08 | , 26 | , 44 | , 63 | , 92 | 30 |
| XVIII $0+0045-$ | +,0033- | +,0022 | +,0012 | +, 0003- | $-, 0009+$ | -,0028+ | $-, 0047+$ | $-, 0066+$ | $-, 0093+$ | VI 0 |
| 30,44 | , 33 | , 22 | , 11 | , 03 | , 08 | , 26 | , 44 | , 63 | , 92 | 30 |
| XIX 0 | , 33 | , 22 | , 12 | , 04 | , 07 | , 24 | , 41 | , 60 | , 86 | VII 0 |
| [ 30 | , 32 | 21 | , 12 | 06 | , 04 | , 20 | , 36 | , 54 | , 78 | 30 |
| XX 0 , 39 | , 30 | , 21 | 13 | 09 | , 01 | , 16 | 30 | 45 | 65 | 10 |
| 30 , 36 | , 28 | 21 | 14 | 10 | , 02 | 11 | , 22 | , 34 | , 51 | 30 |
| XXI $0+0032-$ | +,0026- | +,0020 | $+, 0019$ | +,0011- | +,0005- | $-, 0005+$ | $-, 0014+$ | -,0023+ | -,0037+ | IX 0 |
| 30 , 27 | , 23 | , 19 | , 14 | , 11 | , 08 | , 00 | -, $07+$ | $-14+$ | -, 24+ | 30 |
| XXII 0 | , 20 | , 17 | , 14 | , 11 | , 09 | +, 04- | $-01+$ | $-06+$ | $-12+$ | X 0 |
| XXII 30,17 | , 15 | , 14 | , 12 | , 10 | , 08 | , 06 | +, 03- | , 00 | $\cdots, 03+$ | 30 |
| XXIII 01,11 | , 10 | 10 | 09 | , 08 | 08 | , 07 | +, 05- | $+, 04-$ | + +, 02- | XI 0 |
| 30 , 06 | , 05 | 05 | 05 | , 05 | , 05 | , 05 | +, 04- | +, 04- | +, 03- | 30 |
| $00-0$ | $-, 0000+$ | -,0 | $-, 0000+$ | -,0000+ | $-, 0000+$ | $-, 0000+$ | $-2,0000+$ | $-, 0000+$ | $-, 0000+$ | XII 0 |
| 30 , 06 | , 06 |  | , 06 | , 06 | , 07 | , 07 | , 08 | , 08 | , 09 | 30 |
| I 10 | , 12 | , 13 | , 14 | , 14 | , 15 | , 16 | , 17 | , 19 | , 21 | III 0 |
| $\begin{array}{lll} 30 \\ \hline \end{array}$ | $18$ | , 20 | $, 22$ | , 23 | , 25 | , 27 | , 30 | , 34 | , 38 | 30 |
| II 00,22 | , 25 | 28 | , 31 | , 33 | , 36 | , 40 | , 45 | , 50 | , 57 | XIV 0 |
| 30 , 27 | , 31 | , 35 | , 40 | , 43 | , 47 | , 54 | , 60 | , 68 | , 79 | 30 |
| III 0 -, | -, 0 | $-, 0043+$ | $-, 0049+$ | -, | -, 00,58+ | $-, 0068+$ | -,0076+ | -, $0086+$ | $-, 0101+$ | XV 0 |
| 30, 36 |  | , 50 | , 57 | , 61 | , 68 | , 081 | , 091 | , 104 | , 121 | 30 |
| IV 0,39 | , 48 | , 56 | , 64 | , 70 | , 79 | , 093 | , 106 | , 121 | , 140 | XVI 0 |
| T 30,4$]$ | , 52 | 61 | , 70 | 77 | , 88 | , 103 | , 119 | , 134 | 150 | 30 |
| V 0, 43 | , 55 | , 65 | , 75 | , 82 | , 93 | , 111 | , 130 | , 146 | , 170 | XVII 0 |
| $30 \mid$, 44 | , 56 | 67 | 77 | , 85 | , 97 | , 116 | , 135 | , 152 | , 180 | 30 |
| VI $0-, 0045$ | -,005 | -,00 | -,0078 | $-, 0086+$ | $-, 0098+$ | -, 0117+ | $-, 0136+$ | $-, 0155+$ | $-, 0183+$ | XVIII 0 |
| 30,44 | , 56 | , 67 | , 77 | , 85 | , 97 | , 116 | , 135 | , 152 | , 180 | 30 |
| VII 0 | , 55 | , 65 | 75 | ,, 82 | , 93 | , 111 | , 130 | , 146 | , 170 | XIX 0 |
| 30 , 41 | , 52 | , 6I | 70 | , 77 | , 88 | , 103 | , 119 | , 134 | , 156 | 30 |
| VIII 0 | , 48 | , 56 | , 64 | , 70 | , 79. | , 093 | , 106 | , 121 | , 140 | XX 0 |
| 30,36 | , 43 | 50 | 57 | , 61 | , 68 | , 081 | , 091 | , 104 | , 121 | 30 |
| IX $00-0032+$ | -,0038 | -,0043 | $-, 0049+$ | $-, 0052+$ |  |  | $-, 0076+$ | -,0086+ |  | XXI 0 |
| 30 $\times \quad 0$ | -32 | , 35 | , 40 | , 43 | $\text { , } 47$ | , 54 | , 60 | , 68 | , 079. | XXI 30 |
| X 00,22 | 25 | 28 | 31 | , 33 | , 36 | , 40 | , 45 | , 50 | ,057 | XXII 0 |
| (30 , 17 |  | 20 | 22 | , 23 | , 25 | , 27 | , 30 | , 34 | ,038 | 30 |
| XIr 0 | 12 | 13 | 14 | 14 | , 15 | , 16 | , 17 | , 19 | ,021 | XXIII 0 |
| 301 , 06 |  |  |  |  |  |  | 08 |  | ,009 | 30 |

## PROPER MOTION OF THE FIXED STARS.

In Vol. III. is given the Mean of the Proper Motions of all the Stars in the Catalogue, (3005 in number) both in Right Ascension and Declination : and from what there appeared to be-a tendency to exhibit a general proper motion in the whole system of Stars, or more simply, a movement of the Solar System in space, I have been induced to follow up the enquiry with the 2066 Stars which occur in the present volume, and have in a similar manner brought about 2600 Stars from the Catalogue of Volume II., to bear upon the same subject: how far these have succeeded in establishing this point will appear presently;-in the mean time, it may be proper to remark, that in an investigation of this nature, we may imagine that every star is affected with true* Proper Motion, more or less: some Proper Motions from their magnitude, are at once recognized, whilst others from their minuteness, are lost sight of in the errors incident to obser-vations:-we may expect however among the latter class, that-occurring indifferently + or - as the larger proper motions do,-the mean among a great many Stars would approximate to zero, and thereby leave disengaged any apparent Proper motion which might exist; accordingly in the table which now follows, I have given the mean of all the Proper Mutions in Right Ascension for each hour of A. R., omitting only those alluded to in the column "P. M. Stars;"-those Stars in fact whose proper motion exceeds all possible limits of error of observation ; thus ;-the largest error of A. R. found in the Madras Results was in the case of 169 Ceti, which differed $0,52 \mathrm{~s}$. in 1835, from the place determined in 1832 : should the whole of this amount in the way of error, apply to one of the determinations; and should an error to the same amount but contrary direction occur in Piazzi's Catalogue, it would give rise to an error $\pm, \frac{52+, 52}{t}$ in the observed P. M. ( $t$ being the date of the Catalogue since 1800): in addition to this, we must take account of the fact, that the Equinoctial Puint assumed by Piazzi in the construction of his Catalogue, was the same as that employed by Dr. Maskelyne; whereas we have employed a zero point $0,20 \mathrm{~s}$, behind this; hence the Comparison of our Catalogue with Piazzi's, ought to exhibit a P. M. in Right Ascension to the amount $\frac{+, 20 s}{t}$; combining this with the above, we may safely assume,-that in either Catalogue-any value found in the Column "P. M. in A. R," which exceeds the limits $\frac{+1,24 \mathrm{~s}}{t}$ and $\frac{-0,84 s}{t}$, is more or less the effect of Proper Motion, notwithstanding the errors of observation : thus we bave

[^13]A Table of the Proper Motions of the fixed Stars in A. R.


On inspecting the several columns in the above table, we perceive (as indeed might have been expected), that the errors incident to observation, combined with the chance excess of + or - true Proper Motion-exert a very power. ful sway over our results; examining the column "Mean," there is however a determination to plus maximum in the neighbourhood of O hours, which is certainly not the effect of chance :-- on referring to the formulæ for the Precession in Right Ascension (c).

$$
c=+46,021+20,043 \text { sin. a tan. } \delta
$$

it is at once evident, that although a slight modification of the assumed General Precession of the Equinoxes, may be necessary; still, the cause of variation throughout this column remains unexplained: with regard to the effect of error in the Precession upon this table; it is necessary to know approximately, the situation of the stars observed: on referring to the Catalogues, it will be found that they are pretty evenly distributed, and that about one half of the whole number in each hour, is situated within $\pm 20^{\circ}$ of Declination; thus,


If we now compute for each hour of $\mathbf{A}$. R. -the change of annual precession due to each of these 703 Stars from a change of $1^{\prime \prime}$ in the value of the General Precession in Longitude-and then take the means,-they will exhibit to a sufficient degree of accuracy, the nature of the corrections which apply to the column "Proper Motion in A. R." in case the Precession has been wrongly assumed ; thus

# Error of the Column "Mean P. M. in A. R." cornsypunting to an error of 1 " in the General Precession in Longitude. 

Right Ascension. error in time.

| $h$. | $m$. |  | $s$. |
| ---: | :--- | ---: | :--- |
| 0 | 30 |  | $=, 063$ |
| I 30 |  | $=, 065$ |  |
| II 30 |  | $=, 068$ |  |
| III 30 |  | $=, 070$ |  |
| IV 30 |  | $=, 071$ |  |
| V 30 |  | $=, 072$ |  |
| VI 30 |  | $=, 072$ |  |
| VII 30 |  | $=, 071$ |  |
| VIII 30 |  | $=, 070$ |  |
| IX 30 |  | $=, 068$ |  |
| X 30 |  | $=, 065$ |  |
| XI 30 |  | $=, 063$ |  |
| XII 30 |  | $=, 058$ |  |
| XIII 30 |  | $=, 055$ |  |
| XIV 30 |  | $=, 053$ |  |
| XV 30 |  | $=, 051$ |  |
| XVI 30 |  | $=, 052$ |  |
| XVII 30 |  | $=, 051$ |  |
| XVIII 30 |  | $=, 051$ |  |
| XIX 30 |  | $=, 052$ |  |
| XX 30 |  | $=, 053$ |  |
| XXI 30 |  | $=$ |  |

Since then the disposition of the above numbers is not such as to explain the various values found in the column " Proper Motion in A. R.;" we will now consider what effect a motion of the Solar System in space would have upon the question : in the first place we notice with regard to its general effect-that there would be two opposite neutral points, situated in the axis of motion, and that at right angles to this-there would be a plane of maximum motion:with regard to its effect upon our results for the A. R.-it is necessary to consider again the position of the Stars constituting the results : on consulting the table at page CXVII, it appears that the whole of the Stars may roughly be supposed-to be congregated about a circle of $15^{\circ}$ of North Declination, or surrounding the pole at a distance of $75^{\circ}$ from it: with this view of the subject, we perceive that our results should exhibit two zero points, and one of + , and another of - maximum; and moreover, that the mean of the 24 results
should $=0$; on taking the mean however, it comes cut $+s, 0025$ : exhibiting with reference to the above table,-that the General Precession in Innmilurle should be increased $0^{\prime \prime}, 0416$;* If we now apply to our results the corrections due to this, and convert them into space, we have as follows-

Observed General Proper Motion of the Fixed Stars in A. R.

| A. |  | P. M. Space |  | P. M. in arc of a great circle. |
| :---: | :---: | :---: | :---: | :---: |
| $h$. | $m$. | , |  | " |
| 0 | 30 | +,0420 | or | +,0368 |
| I | 30 | +,0315 |  | +,0266 |
| II | 30 | -,0015 |  | -,0000 |
| III | 30 | -,0060 |  | -,0026 |
| IV | 30 | +,0090 |  | +,0101 |
| V | 30 | -,0195 |  | -,0139 |
| VI | 30 | -,0165 |  | -,0114 |
| VII | 30 | -,0225 |  | -,0173 |
| VIII | 39 | -,0135 |  | -,0101 |
| IX | 30 | -,0240 |  | -,0190 |
| X | 30 | -,0165 |  | -,0127 |
| XI | 30 | -,0105 |  | -,0076 |
| XII | 30 | -,0030 |  | -,0024 |
| XIII | 30 | -,0315 |  | -,0254 |
| XIV | 30 | -, 0255 |  | -,0203 |
| XV | 30 | -,0090 |  | -,0077 |
| XVI | 30 | -,0495 |  | -,0393 |
| XVII | 30 | -,0165 |  | -, 0140 |
| XVIII | 30 | -,0090 |  | -,0076 |
| XIX | 30 | +.0090 |  | + ,0089 |
| XX | 30 | + ,0240 |  | +,0203 |
| XXI | 30 | +,0345 |  | +,0444 |
| XXII | 30 | +,0345 |  | +,0304 |
| XXIII | 30 | +,0420 |  | +,0368 |

The reduction into arc, has been effected with reference to the table at page CXVII on the supposition that the Declination of each group of Stars is constant, or the P. M. in arc $=$ P. M. in space $\times\left(\underline{26 . \cos 42^{\circ} 30^{\prime}+\frac{42 . \operatorname{cos.35}}{703}+31 . \cos .+8 c .}\right)$

We will now leave the above table for the present, and proceed to take notice of the Annual Proper Motion in Declination. Taking the Means in each hour of A. R. we obtain as follows.

[^14]A Table of the dyserved Proper Motion of the Fixed Stars in Declination.

| Vol. 11. for 1832;-2881 Stars. |  |  |  | Vol. III. for 1834 ;-3003 Stars. |  |  | Vol. IV. for 183\% ;-2066 Stars. |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| A. R. |  | No. and $+\&-\mathrm{P} . \mathrm{M}$ | Mean. |  | No. and sum of $+\&-$ P. M. | Mean. |  | $\begin{aligned} & \text { No. and sum of } \\ & +\&-\mathrm{P} . \mathrm{M} . \end{aligned}$ | Mean. |
| H. |  |  |  |  |  |  |  |  |  |
| $0$ | 6 | $\begin{aligned} & 32=+2,10 \\ & 67=-6,30 \end{aligned}$ | , ,0424 | 5 | $\begin{aligned} & 29=+0,99 \\ & 43=-3,73 \end{aligned}$ | -,0381 | 1 | $\begin{aligned} & 43=+2,03 \\ & 80=-6,19 \end{aligned}$ | -,0338 |
| I | 7 | $41=+2,11$ $52=-5,41$ | ,0355 | 2 | $48=+2,28$ $60=-5,37$ | -,0286 | 2 | $30=+1,69$ | -,0187 |
| II |  | $20=+0,95$ | ,0688 | 7 | $37=+2,51$ |  | 2 | $29=+1,76$ | , 0149 |
| 11 | 9 | $74=-7,42$ |  | 7 | $61=-5,97$ |  | 2 | $30=-2,64$ | 49 |
| III | 3 | $27=+1,47$ $72=-6,39$ | -,0497 | 7 | $\begin{aligned} & 41=+1,90 \\ & 62=-5.03 \end{aligned}$ | -,0304 | 3 | $\begin{aligned} & 20=+1,19 \\ & 30=-2,55 \end{aligned}$ | -,0272 |
| IV | 9 | $\begin{aligned} & 32=+1.76 \\ & 97=-10,23 \end{aligned}$ | -,0657 | 5 | $\begin{aligned} & 51=+3,19 \\ & 70=-6,36 \end{aligned}$ | -,0262 | 2 | $\begin{aligned} & 28=+1,70 \\ & 27=-2,18 \end{aligned}$ | -,0087 |
| V | 9 | $38=+1,95$ | ,056 | 3 | $53=+3,96$ $74=-699$ | -,0239 | 4 | $38=+1,96$ $30=200$ | -,0007 |
|  |  | $\begin{aligned} & 88=-9,04 \\ & 29=+2,37 \end{aligned}$ |  |  | $74=-6,99$ $72=+4,56$ |  |  | $30=-2,00$ $28=+2,31$ |  |
| VI | 8 | $29=+2,37$ $76=-6,14$ | ,0359 | 10 | $79=-7,61$ | 2 | 1 | $38=-3,22$ | -,0138 |
| VII | 2 | $\begin{aligned} & 32=+2,25 \\ & 69=-6.41 \end{aligned}$ | -,0412 | 5 | $\begin{aligned} & 59=+2,96 \\ & 89=-7,49 \end{aligned}$ | -,0306 | 1 | $\begin{aligned} & 29=+2,08 \\ & 33=-3,25 \end{aligned}$ | -,0189 |
| VIII | 3 | $22=+1,31$ | -,0511 | 2 | $30=+1,70$ |  | 2 | $25=+1,12$ $40=2$ | 84 |
|  | - | $67=-5,86$ $16=+1,32$ |  | 2 | $76=-6,31$ $31=+1,36$ |  |  |  |  |
| IX | 6 | $10=+1,32$ $58=-5,29$ | ,053 | 3 | $31=+1,36$ $75=-5,55$ | -,0395 | 1 | $23= \pm 2,20$ $37=-2,65$ | -,0170 |
| X | 5 | $20=+1,13$ | ,0667 | 2 | $39= \pm 1,55$ $79=-8,19$ | -,0563 | 2 | $11=+0,65$ | -,0449 |
| XI | 5 | $23=+0,74$ | - ,0568 | 6 | $28=+1,45$ | ,0599 | 1 | 6-+ 0,31 |  |
|  |  | $55=-5,25$ |  |  |  |  |  | $36=-3,76$ $10=+39$ |  |
| XII | 5 | $\begin{aligned} & 22=+0,96 \\ & 60=-5,59 \end{aligned}$ | ,0565 | 3 | $\begin{aligned} & 51=+3,47 \\ & 87=-8,14 \end{aligned}$ | -,0338 | 2 | $10=+0,39$ | -,0814 |
| XIII | 7 | $\begin{aligned} & 18=+0,95 \\ & 68=-6,81 \end{aligned}$ | -,0681 | 2 | $\begin{aligned} & 46=+2,57 \\ & 90=-7,45 \end{aligned}$ | -,0359 | 6 | $\begin{aligned} & 24=+1,31 \\ & 52=-4,27 \end{aligned}$ | -,0389 |
| XIV | 13 | $21=+1,48$ | -,057 | 5 | $\begin{aligned} & 41=+1,91 \\ & 90=-8,13 \end{aligned}$ | -,0475 | 2 | $\begin{aligned} & 10=+0,42 \\ & 43=-3,82 \end{aligned}$ | -,0642 |
|  |  | $5=-1,96$ $23=+1,28$ |  |  | $31=$ 31 |  |  | $16=-3,47$ |  |
| XV | 18 | $70=-6,48$ |  | 3 | $72=-6,27$ |  | 1 | $41=-4,12$ | -,0640 |
| XVI | 9 | $\begin{aligned} & 24=+1,81 \\ & 73=-8,07 \end{aligned}$ | -,0645 | 6 | $\begin{aligned} & 38=+1,94 \\ & 95=-10,41 \end{aligned}$ | -,0637 | 1 | $\begin{aligned} & 18=+0,84 \\ & 44=-3,61 \end{aligned}$ | $\}-, 0446$ |
| XVII | 15 | $21=+1,32$ | -,0435 | 10 | $32=+1,25$ | $\}-, 0650$ | 6 | $27=+0,92$ | -,0616 |
|  |  | $\begin{aligned} & 60=-4,84 \\ & 22=+1,30 \end{aligned}$ | ,0503 |  | $\begin{aligned} & 76=-8,27 \\ & 31=+1,73 \end{aligned}$ |  |  | $\begin{aligned} & 90=-8,13 \\ & 15=+0,86 \end{aligned}$ | -,0016 |
| XVIII | 19 | $64=-6,40$ | -,0593 | 4 | $31= \pm 1,72$ $76=-8,42$ | -,0625 | 1 | $80=-7,61$ | -,0710 |
| XIX | 19 | $29=+1,30$ | -,0593 | 4 | $\begin{aligned} & 33=+1,90 \\ & 80=-8,20 \end{aligned}$ | $-, 0558$ | 8 | $32=+1,28$ | -,0662 |
| XX | 6 | $40=+2,55$ | -,0535 | 5 | $43=+3,03$ | -,0476 | 4 | $52=+2,85$ $158=-14,87$ | -,0572 |
| XXI | 12 | $\begin{aligned} & 78=-8,86 \\ & 26=+1,73 \end{aligned}$ | ,- 0535 -.0586 | 5 | $\begin{aligned} & 85=-9,12 \\ & 33=+1,50 \end{aligned}$ | -,0476 | 4 | $158=-14,87$ $53=+2,76$ | -,0572 |
| XXI | 12 | $\begin{aligned} & 26=+1,73 \\ & 75=-7,65 \end{aligned}$ | -. 0586 | 2 | $\begin{aligned} & 33=+1,50 \\ & 78=-7,76 \end{aligned}$ | -,0564 | 3 | $\begin{aligned} 53 & =+2,76 \\ 130 & =-11,97 \end{aligned}$ | $\}-, 0503$ |
| XXII | 9 | $\begin{aligned} & 27=+1,65 \\ & 84=-8,36 \end{aligned}$ | -,0605 | 4 | $\begin{aligned} & 45=+2,43 \\ & 67=-5,85 \end{aligned}$ | -,0354 | 4 | $\begin{aligned} & 29=+1,50 \\ & 51=-4,21 \end{aligned}$ | $\}-, 0339$ |
| XXIII | 9 | $\begin{aligned} & 84=-8,36 \\ & 27=+1,77 \\ & 72=-6,26 \end{aligned}$ | -, 0454 | 3 | $\begin{aligned} & 43=+2,59 \\ & 70=-5,58 \end{aligned}$ | $\}-, 0265$ | 4 | $\begin{aligned} & 24=+1,41 \\ & 40=-3,64 \end{aligned}$ | \} -,0348 |

Here we find all the results affected with the sign minus, which leads us to enquire what circumstances may affect the Palermo or Madras Observations to account for such a disposition ;-in the first place, the Latitudes $l, l^{\prime}$ of Palermo or Madras, may be wrong; and in the next place the error of the tables of refraction will enter; added to which any error in the General Precession in Longitude, will effect each result by a quantity $x$. cos. A. R.; or each of the above results may possibly be erroneous to the amount $\frac{d l+d l^{\prime}+d}{t} r+d r^{\prime}$ $+x$. cos. A. R.; which put $=\mathrm{S}+x \cos$. A R.
With regard to the first of these terms, it will be observed-that its effect is constant throughout, for each catalogue; but would be larger upon that for 1832 than that for 1835 or 1836 -in proportion to the value of $t$ (the date since 1800); whereas the term depending upon the A. R., (which is common to each catalogue), being variable throughout the column, to the same extent + , as it is--, will be lost sight of on taking the mean of the 24 hours; thus-taking the mean for the 24 hours of the three catalogues we get

$$
\begin{aligned}
\text { General Annual P. M. in Declination. } & =-, 0544+\frac{\mathrm{S}}{32,5} \\
& =-, 0417+\frac{\mathrm{S}}{35} \\
& =-, 0406+\frac{\mathrm{S}}{37}
\end{aligned}
$$

$$
\therefore \mathrm{s}=+3^{\prime \prime}, 61
$$

With regard to the value of $d l^{\prime}$, we have no evidence to shew the extent of accuracy obtained, we only could have expected and wished, that the results of so great and good a catalogue as Piazzi's had in this respect been free from any serious error: the value $d l^{\prime}$ has already been found at page 73 to be- $1^{\prime \prime}$; which is probably within a tenth or two of a second of the truth; to form an estimate of the value $d r$; it may be safely assumed, that the uncertainty of refraction, for altitudes above $10^{\circ}$-varies as the amount of refraction itself, or nearly as the tangent of the zenith distance of the Star: if then with reference to the table at page cxvii, we compute the value

$$
\underline{26 \tan .41^{\circ} 30^{\prime}}+\frac{42 \tan \cdot 35^{\circ}+31 \tan \cdot 25^{\circ}+8 \mathrm{cc}}{703}
$$

we find, that the uncertainty of refraction for the Palermu, observations is such as would apply to a Star situated $43^{\circ}, 15$ from the zenith; at which place, half a second is certainly the extreme limit of error, or $d r= \pm ", 5$ : with regard to the Madras results, the case is much more favorable, for the Stars are so evenly disposed on either side of the zenith, that it matters not what table of
cxxii Proper Motion of the Fixed Stars.
refractions had been employed; hence $d r \equiv 0$ and we have found altogether

$$
\mathrm{S}=3^{\prime \prime}, 61=d l-1^{\prime \prime}, 0 \pm 0^{\prime \prime}, 5 \pm 0 \therefore d l \text { is between } 4^{\prime \prime}, \mathrm{l} \text { and } 5^{\prime \prime}, 1
$$

or it would appear that the Latitude of Palermo is above $4^{\prime \prime}$ less than that assigned to it by Piazzi.

A variation of above $4^{\prime \prime}$ however, and that built only upon very slender grounds,-cannot for the present be admitted; we will therefore substract the mean result of each catalogue from its several constituents' values, and then combine the results according to their weight; when, putting $s$, for the true correction which remains to be applied to these to render them just; and $x$ for any error which may result from a wrong assumption of the General Precession, we obtain as follows-

| A. R. | General P. M. in Declination. | Cord. General P. M. in Declination. |
| :---: | :---: | :---: |
| h. m. | No. 1. | No. |
| 030 | $s+, 0078+, 991 x$ | $s$-, 0071 |
| [ 30 | +,0172 +, 923 | + ,0038 |
| II 30 | + , 0032 + ,793 | -,0083 |
| III 30 | +,0099 + ,608 | +,0009 |
| IV 30 | $+, 0072+, 382$ | +,0015 |
| V 30 | +,0146 +, 130 | +,0127 |
| VI 30 | + ,0216-,130 | +,0235 |
| VII 30 | +,0139 - ,382 | +,0196 |
| VIII 30 | +,0037-, 608 | +,0127 |
| IX 30 | +,0073-,793 | +,0188 |
| X 30 | -,0121 - ,923 | +,0013 |
| XI 30 | -,0171 -, 991 | -,0023 |
| XII 30 | -,0037 - ,991 | +,0111 |
| XIII 30 | -,0009 - ,923 | +,0126 |
| XIV 30 | 二,0111-,793 | +,0004 |
| XV 30 | -,0043-,608 | +,0047 |
| XVI 30 | -,0142 - ,382 | -,0085 |
| XVII 30 | -,0134 - ,130 | -,0115 |
| XVIII 30 | -,0190 + ,130 | -,0211 |
| XIX 30 | -,0160 + ,382 | -,0217 |
| XX 30 | -,0090 + 608 | -,0180 |
| XXI 30 | -,0094 + ,793 | -,0209 |
| XXII 30 | + , $0019+, 923$ | -,0115 |
| XXIII 30 | +,0108 + ,991 | -,0041 |

In which $s$,-if the above error of $4^{\prime \prime}$ in the Palermo Latitude be admitted, $=+, 00595$.

Examining column No. 1, we find a pretty regular determination to + and -, which cannot possibly arise from accident-we notice, that any small correction for error of Precession, such as found at page cxix,-since it interferes in no respect with the general tendency of the numbers, it may be applied or not, at pleasure; to be consistent however, it will be proper to apply the
correction due to an alteration of ," 041 in the General Precession as found at page cxix; viz, thus ",0150 cos. A. R.: thus No. 2. If we now divide the line A, B, Fig. 1 into 24 equal parts, to represent hours of A. R., and, making use of any convenient scale-set off opposite to $0 h .30 \mathrm{~m} . \mathrm{l} h .30 \mathrm{~m} . \& \mathrm{c}$. the perpendiculars $a 1, a 2, \& c$. corresponding to the values given in the table at page cxix, and perform the same for the above table; we get two series of lines $1,2,3$, and $1,2,3$, exhibiting in the firstinstance, the observed annual Proper Motion in A. R., of Stars supposed to be situated at $0 \mathrm{~h} .30 \mathrm{~m} .1 \mathrm{~h} .30 \mathrm{~m} . \& \mathrm{c}$. of Right Ascension, and at a distance of $75^{\circ}$ from the North Pole; and in the second case, exhibiting the nature of the annual P. M. of the same Stars in declination, but not its extent. If we now with freedom draw a curve line through each of these serieses of points, conforming as nearly with them as is consistent with the character of a curve; we shall by measuring the ordinates, obtain corrected values of the Proper Motion, thus

## Corrected Proper Motion.

| $h$. | in A. R. in are |  | in Declination. |
| :---: | :---: | :---: | :---: |
|  | $m$. |  |  |
| 0 | 30 | +,0312 | $s$-, 0100 |
| 1 | 30 | + ,0250 | -,0070 |
| II | 30 | +,0180 | -,0020 |
| 1 II | 30 | +,0135 | +,0040 |
| IV | 30 | +,0060 | +,0100 |
| V | 30 | -,0035 | +,0145 |
| VI | 30 | -,0110 | +,0180 |
| VII | 30 | -,0160 | +,0190 |
| VIII | 30 | -,0175 | +,0180 |
| IX | 30 | -,0190 | +,0170 |
| $\mathbf{X}$ | 30 | -,0200 | +,0145 |
| XI | 30 | -,0210 | +,0115 |
| XII | 30 | -,0210 | +,0080 |
| XIII | 30 | -,0200 | +,0040 |
| XIV | 30 | -,0190 | -,0015 |
| XV | 30 | -,0180 | -,0065 |
| XVI | 30 | -,0158 | -,0110 |
| XVII | 30 | -,0115 | -,0145 |
| XVIII | 30 | -, 0045 | -,0175 |
| XIX | 30 | +,0067 | -,0195 |
| XX | 30 | +,0163 | -,0195 |
| XXI | 30 | +,0240 | -,0175 |
| XXII | 30 | +0300 | -,0160 |
| XXIII | 30 | +,0320 | -,0140 |

These numbers it will readily be admitted, have been arrived at in a legitimate way, and they are to all intents and purposes Proper Motions: since then it will not for a moment be contended that they represent "true" or actual Proper Motions of the Stars themselves, we will see how far the supposition of a motion of the Solar System in space will account for the several values;
for this purpose, on the centre $P$ (fig. 3) with the chord of $75^{\circ}$ describe a circh. which divide into 24 equal parts, corresponding to the several points at which we have determined the Proper Motions: with reference to the P. M. in A. R. we find, that it arrives at $O$ at about $V$ and XIX hours; whereas to represerat the effect of motion of the Solar System these points should be separated by 12 hours: let us then assume VI and XVIII to reprosent the zero points is A. R., and draw the line VI-XVIII : if we assume the point to which the motion of the Solar System is directed, to be situated any where in the dinsetime P. XVIII, it will at once represent the nature of the above table for the A.R. : for the effect of advancing to any point $N$, being to increase the are $N$ S. to $\mathbf{N S}^{\prime}$ (in which S. $\mathrm{S}^{\prime}=$ M. sin. N S.) its effect at any point hetwert 18 $h$. and $6 h$, is to increase the Right Ascension, whereas at the corropmoning points between 6 . and $18 h$. it causes a diminution to the like amount : examining these results, it appears on trial that no single value for M, will satisty both of these tables; if we allow that Piazzis Latitude has been correctly ob. served (and since writing the above, I find in the Nautical Almanar, from latte observations an exact confirmation of the value assigued by Piazzi); then, the distance of the point $N$ from $P$, comes out between $23^{\circ}$ and $24^{\prime \prime}$, a point which is sufficiently enough distinguished, as being the Pole of the liclipftic: with regard to the Declination Proper Motions, - the very improbable result arrived at, at page cxxifrom the mean of the whole 24 hours, teaches us... that little drpendance can be placed upon individual results; and on examining differn tables of Refraction, it will be found, that the various corrections for temperature, which are given in one or other of these, offers a sufficicut explanation for the want of agreement of the P. M. from the Declination ohservations, with that found from the Right Ascensions. Since writing the above, on consultimg the three several results of the table at page exvi-instead of the meran which has hitherto been employed-I find that the determination to 'I and ...maximum is much more strongly marked in the first catalogne than it is in the second; and that the second is more strongly marked than the third: Now this result is precisely the one which should obtain from a motion of the solar system in space; for, on consulting the first catalegue (Vol. II) it will be found to contain several stars of the first and second maguitudes, and a great many of the third and fourth \&c. or it may be assumed, that-...

For the Cataloguc in Vol. II. the average mag. . .5,4


Although in individual instances-the degree of brightness exhibited by the fixed stars cannot be assumed as a measure of their relative distances; still in large catalogues such as the above, it is natural to suppose that-taken en masse, those are nearest to us which are the brightest ; hence the stars in Vol. II. from being brighter-nearer to us-should render a movement of the Solar System in space more apparent than those given in Vol. III or IV: with this view of the subject, the anomalies met with at pages cxxi and cxxii, (where the P. M. in Declination from the three catalmg'l s gave $S=3^{\prime \prime}, 61$ and Piazzi's Latitude above $4^{\prime \prime}$ in error) are fully explained and accounted for : and for the present it may be assumed-that the Solar System is in motion in space, and that its motion is directed towards the North Pole of the Ecliptic; and, exhibiting in the fixed Stars with reference to their average distance (if such an expression can be tolerated), -an annual change of place in Latitude, to the amount + ",059 cos. Lat. of the Star.

## Supplimentary Observations and Memoranda.

In the ordinary course of Observing and computing, it often happenedthat an appearance different from ordinary, an error, an omission, or a discordance of some kind or other-has offered, which it was desireable should be placed on record, or, that the matter if doubtful, should on a subsequent occasion be re-examined \&c.-in either of these cases the observing or computing books not offering sufficient accomodation for remarks, and in some cases being in-appropriate,--I have been in the habit of entering into a memorandum book, these circumstances \&c. as they have occurred, and in the course of printing, when opportunity has offered-I have availed myself of its contents;-several of these memoranda which still remain, are for my own private, information and guidance, whilst others again-appear to belong to this work: such as they are, I have thought it best to give them here in the rough manner and order in which they have been made, thus-

## Memoranda \&c.

I. Re-examined the N. P. D. of 40 Lyncis $r$ which exhibits a strange disagreement when compared with the Greenwich place-thus

| Greenwich plac Madras | observations in | Reduced to Jan. 1, ${ }_{\text {o }}^{1 / 835 .}$ |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 1825 | 54 | 54 | 52,76 |
|  |  | 1831 |  |  | 58,20 |
|  | - | 1832 |  |  | 57,45 |
| - |  | 1833 |  |  | 57,38 |

cxxvi Supplimentary Observations \&c.

|  |  | , | " |  |
| :---: | :---: | :---: | :---: | :---: |
| 1836 | March 26 | 5455 | 12,01) | 56,25 |
|  | April 13 |  | 10,61 $\} 1836$ |  |
|  | - 16 |  | 10,59 |  |
| 1837 | Feb. 4 |  | 11,92 <br> 12,08 | 57,53 |
|  | March $\begin{array}{r}18\end{array}$ |  | 12,08 11,73 |  |
|  | 7 |  | 12,76 1837 |  |
|  | 18 |  | 12,69 ${ }^{1837}$ |  |
|  | 19 |  | 12,32 |  |
|  | 20 |  | 12,84 |  |
|  | April 13 |  | 12,47 |  |

II. No. 171 in II hours is preceded by another Star at 16 seconds, whereas Piazzi says at 12 seconds.
III. No. 152 in IV hours:-Piazzi's Declination probably five minutes in error; examine this.
IV. No. 64 in IX hours is not observed :-I looked for it on the 29th and 30th April 1837 (it being very clear), saw No. 65 but 64 had disappeared.
V. No. 15 in XI hours:-It is very extraordinary that Piazzi has not noticed the star following this at 4-5 seconds, and $23^{\prime \prime}$ to the North.
VI. No. 154 in XII hours :-in Piazzi's Catalogue the A. R. is given $187^{\circ} 36^{\prime} 50^{\prime \prime}, 4$; instead of $187^{\circ} 39^{\prime} 50^{\prime \prime}, 4$ I imagine.
VII. No. 39 in XIII hours:-Piazzi's Annual Precession is erroneous, hence the Right Ascension is probably so too.
VIII. No. 25 in XIII hours:-Piazzi gives diff. Declination between this and the accompanying Star $\quad=16^{\prime \prime}, 9$ whereas from our obs. 1837 May $23=25^{\prime \prime}, 0$

$$
-24=27^{\prime \prime}, 2
$$

IX. No. 12 in XXI hours :-or No. 2511 of R.A.S. C. the Proper Motion is determined by $\quad$ B. $\mathbf{F}$. with $\mathbf{P}=-1^{\prime \prime}, 09$

-     - $\quad \mathbf{P} \quad \mathbf{P}-\mathbf{P}=-0^{\prime \prime}, 60$
X. No. 168 in XVIII hours:-On the 25th April 1837, I observed two stars here, $5^{\prime}$ North and 0,60 s. following.
XI. No. 53 in XIX hours:-Piazzi says, " 6 ", 2 temporis alia $\mathrm{s}, 9$ æ magnitud. praecedit, $3^{\prime}$ ad Boream": it now in (1837) differs 7,8 seconds.
XII. No. 106 in XIX hours:-May 3d 1837 I observed two stars here; Piazzi has not noticed this-
XIII. No. 252 in XIX hours :--Two Observations with the Transit give the A. R. $1 m$. or $15^{\prime}$ different from Piazzi ; in the Catalogue I have through inad vertence supposed our results to be erroneous; but this must be re-examined.
XIV. No. 103 in XX hours :-Piazzi mentions a Star accompanying this, its place now is $\left\{\begin{array}{l}\text { A. R. 20h. } 13 \mathrm{~m} .19,98 s . \\ \text { Dec. }-6^{\circ} 11^{\prime} 58^{\prime \prime}, 25\end{array}\right\}$
XV. No. 221 in XX hours:-Piazzi says " $8^{\prime \prime}$ temporis $6^{\prime}$ ad austrum alia 8 æ magn. sequitur: I cannot find this Star, but have observed one 20 seconds preceding and $6^{\prime}$ to the South-examine this again.
XVI. No. 286 in XX hours:-This Star is not to be found in the place assigned from Piazzi's Catalogue; the nearest Star is 10-11 minutes of space distant.
XVII. No. 42 in XX hours:-I re-examined the place of this Star on the 14th September in 1837, when the A. R. January 1, 1837 came out 20 h .4 m . $37,94 \mathrm{~s}$. confirming the large P. M. -, 330s. found in Vol. III.



## Errata in the present Volume.

Page 4, line 15, for observations read observation - 57, - 39, - semid. $15^{\prime} 52^{\prime \prime}, 62$ read $15^{\prime} 58^{\prime \prime}, 62$

In the Catalogue No. 124 P. M. A. R. -,+ 905 read,+ 005
183 Mag. - 8 - 6
-- Declin. - No. obs. $2=32^{\prime \prime}, 36$ read $4=20^{\prime \prime}, 92$
709 A. R. - Joh. - 9 .
710 - insert 10h.
1233 Log. $d$ - $-5,9780 \quad-\quad+5,9780$
1235 Log. $d-\quad-\quad+4,5105 \quad-\quad 4,5105$
Page xciv - No.69-Vol. II. - No. 69-Vol. III.
Additional Errata in Vol. II.

| In the Catalogne No. | $\begin{array}{r} 21 \\ 109 \\ 147 \\ 155 \\ 157 \\ 274 \\ 701 \\ 805 \\ 989 \\ 1365 \\ 1540 \\ 1690 \\ 1968 \\ 2051 \\ 2110 \\ 2174 \\ 2455 \\ 2456 \end{array}$ |  |  | read $43^{\prime \prime}, 27$ <br> - $100^{\circ} 52^{\prime}$ <br> - 3,833s. <br> - 1 h .18 m . <br> - 1 h. 19 m . <br> - $2 h .28 \mathrm{~m}$. <br> - $5 h .33 m$. <br> - - it was not obsd. <br> - $102^{\circ} .56^{\prime}$ <br> - $102^{\circ} 16^{\prime}$ <br> - $\overline{110}^{\circ} 38^{\prime}$ a wrong star. <br> - $\quad 53,62 \mathrm{~s}$. <br> - 17 h .47 m . <br> - $18 h .13 \mathrm{~m}$. <br> - 36,32s. <br> - $56^{\circ} 39^{\prime}$ <br> - 29,19s. |
| :---: | :---: | :---: | :---: | :---: |

Additional Errata in Vol. III.
In the Catalogue at pages $x x$, xxvi, xxxii, xxxiv, xxxviii and xliv, correct the date to 1835 .

*This however must be re-examined.

$$
3
$$




[^0]:    *There fell 7,5 Inches, in the course of 12 hours-for the indications of the Barometer see the end.

[^1]:    *This is omitted in taking the Mean.

[^2]:    * In Vol. III. page 17 line 34 et seq., I have committed an unaccountable mistake and an oversight;-1st in stating the reading of the Reflecting Collimator tolbe $(\mathbf{C}+\mathbf{L}+\mathbf{P}) \times 2$,-and 2ndly, in omiltins a correction due to the want of parallelism of the centre and moveable wires. As the numbers stand in Vol. III. they are however right, or veryincarly so, in consequence of the correction for want of parallelism inmonting to 7 or 8 tenths of a second-nearly that of $P$;-thus, the reading of the last column or $2 P$, should be $P+^{\prime \prime}, 75 \therefore P=-0^{\prime \prime}, 77$. And for lines 1-5 page 18 the followins should be substituted -

    Illuminating Pivot East, the reading was $+13^{\prime \prime}, 81=(C+L) \quad \times 2$
    West, $\quad-5,43=-\overline{C+L-2 ~} \times 2$
    assuming $P=-0^{\prime \prime}, 80$, we get $L=1^{\prime \prime}, 29 \mathrm{E}$. and $C=5,{ }^{\prime \prime} 61$; whereas from the level Observations we find $L=2^{\prime \prime}$, 11 $E ;$ and, from the Observation of the $N$. and $S . M a r k s ~ C=6, " 15$, and from inversion $6^{\prime \prime}, 39$.

[^3]:    * This is omitted in taking the mean.

[^4]:    * Mean A. R. January 1, $\left\{\begin{array}{lccr}1836 & \text { h. } & \text { m. } & \text { s. } \\ 1837 & & 1 & 6,06 \\ 22,15\end{array}\right.$

[^5]:    * This is omitted in taking the Mean,

[^6]:    *The Greenwich Catalogue here alluded to, refers to that of 720 Stars for 1830 , published in 1829 or 1830 -there have I believe been later catalogues issued from the Greenwich Royal Observatory, but I have not been so fortunate as to obtain a copy.

[^7]:    * The regularity of the barometer in inter-tripical climates will permit this mode of proceedure, whereas in a high Latitude; one, or even two tenths of an inch might be lost sight of in the varied amount of atmospheric pressure which is experienced.

[^8]:    - Rerromeously stated per zen in Vol. III.

[^9]:    * Omitted in taking the Mean ${ }_{\text {. }}$

[^10]:    * I was watching the approach of this star to the Moon's dark border, when my attention was arrested by the appearance of a nebulosity, abont as bright as a star of the 6 th magnitude,-situated upon the Moon's disc, at about 4 minutes from the unenlightened cdge;-on referring to a chart of the Moon, the phenomenon evidently proceeded from the spot Aristarchus; I have frequently looked for this appearance during the early age of the Moon, but have never before seen any thing to compare with the brilliancy which 1 have this evening witnessed.
    $\dagger$ The same appearance continues.

[^11]:    * See errata.

[^12]:    * It has long been a subject of great perplexity to me-that the discordances to be met with among observations, should occasionally so far exceed the probable, and even what one conld suppose the possible limits of error-this complaint however, is not altogether new ; - for, so far' back as 1825, Mr. Pond remarked that the results of observations of the Star Regulus derived from the two Mural Circles at Greenwich, differed, to an amount exceeding that which could reasonably be attributed either to the observers, or to the Instruments; be this as it may - the discordance which here occurs is so singularly large, that it merits particular investigation;-according I have examined and re-examined again and again every figure of the computation, in the hope of finding an error, or some circumstance, whereby the credit of the observer and instrument might be vindicated; the only circumstances which affect the two observations in the one case from those in the other, are-different observers-and, that in the former observations a Lyrce was observed in conjunction with this star (it being in the field with observers-and, that in the former observations a Lyra was observed in conjuyction witter circumstance may mploun hiflius ; but I have noticed, that any disturbance of the observer's attention, such as being hurried to observe a second star, invariably causes lim to note the time too soon.

[^13]:    - By the term true" Proper Motion is meant an actual movement of the Star in space with reference to any point we may consider fixed; whereas apparent Proper Motion is such as would result from a movement of the Solar System.

[^14]:    * Agreable to the formulx employed in deducing these three catalogues;-the Precession in A. R. for $1830=46^{\prime \prime}, 0206+20,0426 \sin$. $\alpha \tan . \delta$, whereas it would appear from this result, that the proper formulx is $=46^{\prime \prime}, 0587+20,0577 \sin . \alpha \tan . \delta$

