there were at one time occasional shiverings of the discs of the Sun and planet from slight tremulousness of the atmosphere, but the eye was not confused, as would have been the case if the discs had been ill-defined and unsteady by excessive vibration. In the first case the eye could and did select its opportunity for measurement. At other stations for the same transit the atmospheric disturbance distorted the appearance of the fine crescent of coronal light apparently surrounding part of the disc of Venus when the planet was partially off the Sun's limb; but at Cerro Roblero the steadiness of the atmosphere at the time of the last exhibition of this phase permitted us to see the long, thin, white crescent, as fine and sharp and regular as if cut by a graver, die away in excessive minuteness.

In conclusion, I may mention that I have been fortunate in my observations of the transits of Venus and of Mercury never to have had the exhibition of "ligament" or "black drop"; and in solar eclipses to have never seen "Baily's beads," &c. In my experience the occurrence of supreme steadiness of the atmosphere is very rare indeed, but has happened oftener at great elevations of mountain peaks, and the narrow crest-line of a mountain-range during the winter season of this coast.

---

**The Jovian Eevotion. By E. Nevill.**

In the year 1876, whilst discussing the observations of the Moon made at Greenwich and Washington during the years 1862–74, Professor Newcomb discovered a new inequality in the motion of the Moon in longitude.

This inequality was subsequently shown to arise from the disturbing action of the planet Jupiter, and to be the term in the perturbations produced by that planet which corresponds to the well-known evjection due to the disturbing action of the Sun. Hence the name—the Jovian Evocation.

In the Memoirs (vol. xxi, 1861) Sir G. Airy has given the results obtained by him from a discussion of the Greenwich lunar observations during the period 1750–1851, and among other results he has deduced the corrections to the adopted theory having for argument the sine and the cosine of the Moon's mean anomaly. He gives the value deduced for the coefficient of these terms for twenty-one consecutive periods of about nine years each. These coefficients are tabulated on pp. 12 and 14, under the heads—values of $S$ and of $T$ respectively.

From a discussion of these values Sir G. Airy deduces the existence of apparent inequalities in the longitude of the Moon of the form—

\[
\begin{align*}
+0''47 \sin (a + B) \\
-0''17 \cos (a + B) \\
-1''12 \sin (a - B) \\
+0''37 \cos (a - B)
\end{align*}
\]
where \( a \) denotes the Moon's mean anomaly, and \( B \) denotes the mean longitude of the ascending node of the orbit of the Moon.

The disturbing action of neither the Sun nor planets can give rise to inequalities of this form in the expression for the longitude of the Moon, and Sir G. Airy appears to have been unable to account for their existence, although convinced that they were real. Yet even at that period it might have been seen that terms of this form must be introduced through the effect of the ellipticity of the Earth, for it was known that through this cause a term was introduced into the expression for the Moon's longitude having for its argument the longitude of the Moon's node as measured from the true equinox. Under the form—

\[ +6''6 \sin (a - y), \text{ or } 6''6 \sin B, \]

this term had been introduced into the tables on which Sir G. Airy had based his reductions; but as this term does not involve the mean longitude of the Moon in its argument it must have associated with it two companion inequalities with the arguments

\[
\begin{align*}
(a + B) \\
(a - B)
\end{align*}
\]

with small coefficients of the same order as those found from observation by Sir G. Airy.

As the Jovian Ejection differs in period very slightly from the mean anomaly, it must give rise to an apparent inequality in the value found from observation for the terms with the argument sine mean anomaly and cosine mean anomaly. Hence, from a discussion of the variations in the values of these coefficients, as given by Sir G. Airy under the headings \( S \) and \( T \) (pp. 12 and 14, Memoirs, vol. xxix., 1861), it should be possible to derive the value of the Jovian Ejection.

Let

\[ l_{iv} \]

denote the mean longitude of the perigee of the lunar orbit,

\[ l_{iv} \]

denote the mean longitude of the planet Jupiter,

then the argument of the Jovian Ejection may be written in the form

\[ 2 \theta_{iv} - \alpha = \alpha - 2(l_{iv} - \Lambda), \]

where the mean motion of

\[ 2(l_{iv} - \Lambda) \]

differs from the mean motion of the Moon's ascending node by only the very small quantity

\[ \kappa = -1^\circ.32 \times (T - 1832). \]

Hence the argument of the Jovian Ejection can be written as

\[ 2\theta_{iv} - \alpha = \alpha - (B + \kappa). \]

It remains to deduce the exact value of the Jovian Ejection and associated inequalities from a discussion of the values for the coefficients \( S \) and \( T \) of the terms with the argument \( \sin \alpha \)
and cos α, derived by Sir G. Airy from the Greenwich lunar observations made between 1750 and 1851.

Suppose the complete expression for the Moon’s true longitude to contain the terms

\[ δv = +A_a \sin α + B_a \sin (α + B) + C_a \sin (α - B) + K_a \sin (α - [B + κ]) \]

\[ + A_c \cos α + B_c \cos (α + B) + C_c \cos (α - B) + K_c \cos (α - [B + κ]) \]

then

\[ S = A_a + (B_a + B_c) + K_a \cos κ + K_c \cos κ \sin B \]

\[ + (B_c - B_a) - K_a \sin κ + K_c \cos κ \sin B \]

and

\[ T = A_a - (B_a - B_c) + K_a \cos κ + K_c \sin κ \sin B \]

\[ + (B_c + B_a) - K_a \sin κ + K_c \cos κ \cos B. \]

For convenience, the mean value of S or \((-0.364)\) has been subtracted from each separate value for S, and after applying to T Sir G. Airy’s correction for the motion of anomaly

\[ = -0.496 - 0.162 \times \text{number of group from 1801} \]

they have been reduced to the same unit as those of S or to a T.

There are thus obtained the following system of equations of condition:

\[
\begin{array}{cccccccc}
A_a & B_a & C_a & K_a & K_c & S \\
+1 & -1 & -1 & 0 & 0 & +1 & -98 & +0.82 \\
+1 & 0 & 0 & -1 & +1 & -0.00 & -0.9 & +0.06 \\
+1 & 0 & +1 & 0 & 0 & +0.02 & +1.00 & -0.005 \\
+1 & 0 & 0 & +1 & -1 & +0.99 & +1.12 & -1.120 \\
+1 & -1 & -1 & 0 & 0 & -0.20 & -0.97 & +1.013 \\
+1 & 0 & 0 & -1 & +1 & -0.95 & +0.33 & +1.169 \\
+1 & +1 & +1 & 0 & 0 & +0.42 & +0.91 & +0.63 \\
+1 & 0 & 0 & +1 & -1 & +0.85 & -0.53 & -0.027 \\
+1 & -1 & -1 & 0 & 0 & -0.62 & -0.79 & +0.113 \\
+1 & 0 & 0 & -1 & +1 & -0.72 & +0.70 & +1.125 \\
+1 & +1 & +1 & 0 & 0 & +0.77 & +0.64 & -0.383 \\
+1 & 0 & 0 & +1 & -1 & +0.56 & -0.83 & -0.150 \\
+1 & -1 & -1 & 0 & 0 & -0.89 & -0.45 & -0.067 \\
+1 & 0 & 0 & -1 & +1 & -0.36 & +0.93 & -0.011 \\
+1 & +1 & +1 & 0 & 0 & +0.97 & +0.26 & -0.049 \\
+1 & 0 & 0 & +1 & -1 & +0.16 & -0.99 & +0.062 \\
+1 & -1 & -1 & 0 & 0 & -1.00 & -0.05 & +0.091 \\
+1 & 0 & 0 & -1 & +1 & +0.05 & +1.00 & -1.123 \\
+1 & +1 & +1 & 0 & 0 & +0.99 & -0.16 & -0.203 \\
+1 & 0 & 0 & +1 & -1 & -0.26 & -0.97 & +0.011 \\
+1 & -1 & -1 & 0 & 0 & -0.93 & +0.36 & +0.071 \\
\end{array}
\]
These yield the following set of normal equations:

\[
\begin{align*}
A_e & + \frac{1}{2} b_s + b_c + \frac{1}{2} b_e = + \frac{1}{2} \mu T \\
+ \mu & + b_s + b_c + \mu + b_c = - \frac{1}{2} \mu T
\end{align*}
\]

On solution these yield the following set of values for the eight unknowns:

\[
\begin{align*}
A_e &= -0.041 \\
K_s &= -1.018 \\
b_s &= +0.393 \\
b_c &= -0.320 \\
A_c &= +0.017 \\
K_c &= -0.0078 \\
b_c &= -0.141 \\
b_e &= -0.0138
\end{align*}
\]

To reduce these to seconds of arc multiply the first pair by \(\gamma''\), and the others by \(\gamma'' \times \frac{\pi}{2}\). They then become
\[\begin{align*}
A_s &= -0.029 \\
K_s &= -1^\prime 120 \\
\bar{B}_s &= +4^\prime 32 \\
\bar{B}_s &= -3^\prime 52 \\
A_c &= +0.012 \\
K_c &= -0.086 \\
\bar{B}_c &= -1^\prime 15 \\
\bar{B}_c &= -1^\prime 12
\end{align*}\]

Hence the value of the Jovian Evection derived from Sir G. Airy's reduction of the Greenwich lunar observations for the period 1750–1851 is

\[
\text{Jovian Evection} = -1^\prime 120 \sin (2\theta_{iv} - a) - 0^\prime 086 \cos (2\theta_{iv} - a).
\]

The supplementary terms are

\[
= -0^\prime 352 \sin (a - B) - 0^\prime 152 \cos (a - B) + 0^\prime 432 \sin (a + B) - 0^\prime 155 \cos (a + B).
\]

The values found by Sir G. Airy were

\[
-1^\prime 12 \sin (a - B) + 0^\prime 37 \cos (a - B) + 0^\prime 47 \sin (a + B) - 0^\prime 17 \cos (a + B).
\]

Hence the first pair are reduced to about a third of the value found by Sir G. Airy and the sign of the cosine term is changed, whilst the second pair remain practically unaltered.

Put

\[a = 2 (l_{iv} - A),\]

then as far as the same set of terms is concerned

\[
\delta \varrho = + [K_s + A_s \cos a - A_c \sin a + \bar{B}_s \cos \kappa - \bar{B}_c \sin \kappa] \sin (2\theta_{iv} - a) + [\bar{B}_s \cos \kappa + \bar{B}_c \sin \kappa] \sin (2\theta_{iv} - a + 2a)
\]

\[
+ [K_c + A_s \sin a + A_c \cos a + \bar{B}_s \sin \kappa + \bar{B}_c \cos \kappa] \cos (2\theta_{iv} - a) - [\bar{B}_s \sin \kappa - \bar{B}_c \cos \kappa] \cos (2\theta_{iv} - a + 2a).
\]

Hence these terms give rise to inequalities in the apparent value of the coefficient of the Jovian Evection of the form

\[
\delta K_s = A_s \cos a - A_c \sin a + \bar{B}_s \cos \kappa - \bar{B}_c \sin \kappa
\]

\[
\delta K_c = A_s \sin a + A_c \cos a + \bar{B}_s \sin \kappa + \bar{B}_c \cos \kappa.
\]

In determining from observation the apparent value of the coefficient of the Jovian Evection care is taken to eliminate the terms depending on the argument \(a\), so that there only remain the terms depending on the argument \(\kappa\), or

\[
\delta K_s = \bar{B}_s \cos \kappa - \bar{B}_c \sin \kappa \\
\delta K_c = \bar{B}_s \sin \kappa - \bar{B}_c \cos \kappa.
\]

It remains to ascertain how far this inequality affects the values for the Jovian Evection which have been deduced from
the observations of late years. There are four such values, based on the comparison of Hansen's Tables with the observations for the periods:

I. 1847-58 Mean year 1853.0
II. 1862-74 1868.5
III. 1862-77 1870.0
IV. 1878-88 1883.5

Hence from the value of $\kappa$

I. $\delta K_a = +.86 \bar{B}_a +.52 \bar{B}_c$
II. $= +.65 +.76$
III. $= +.62 +.79$
IV. $= +.33 +.95$

$\delta K_c = -.52 \bar{B}_a +.86 \bar{B}_c$

$= -.76 +.65$
$= -.79 +.62$
$= -.95 +.33$

By employing the values of $\bar{B}_a$, $\bar{B}_c$, given by the preceding discussion of the Greenwich observations for the period 1750-1851, or

$\bar{B}_a = -0''.35$
$\bar{B}_c = -0''.14,$

there results the correction

I. $\delta K_a = -.48$
II. $= -.35$
III. $= -.33$
IV. $= -.23$

$\delta K_c = +.06$
$= +.17$
$= +.20$
$= +.29$

Hence the value of these coefficients, as deduced from the observations of these periods, will appear too large by the above quantities.

Before proceeding it is necessary to know the theoretical value for the coefficient of the Jovian Evection.

From a provisional investigation (Monthly Notices, April 1877, p. 358) the theoretical value of the main portion of this coefficient was determined to be

$K_a = -1''.163.$

Besides the principal term there exist some secondary small ones, whose sum was determined by a provisional investigation to be (Memoirs, vol. xlviii. p. 403)

$\delta K_a = -.105$
$\delta K_c = +.182.$

A subsequent more extended investigation shows these values to be somewhat too great, and the true theoretical value of the Jovian Evection may be said to be

$K_a = -1''.186$
$K_c = +.106.$
Professor G. W. Hill, in his computation of the theoretical value of this term, makes the value to be

\[ K_s = -0''.903 \quad K_e = +0''.000. \]

(“On certain Lunar Inequalities due to the Action of Jupiter,” *Astronomical Papers, American Nautical Almanac*, vol. iii., part iv., p. 390, 1886.) But it has been shown that there is reason to believe that the method employed by Professor Hill is not complete, and yields only a portion of the complete value of the coefficient of this term (*Monthly Notices*, June 1886, p. 403).

By employing this value of the theoretical coefficient of the *Jovian Ejection* there are obtained the following for the apparent value of the *Jovian Ejection* at the different specified epochs:

<table>
<thead>
<tr>
<th>Epoch</th>
<th>( K_s )</th>
<th>( K_e )</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. 1853.0</td>
<td>-1''67</td>
<td>+0''17</td>
</tr>
<tr>
<td>II. 1868.5</td>
<td>-1''54</td>
<td>+0''28</td>
</tr>
<tr>
<td>III. 1870.0</td>
<td>-1''52</td>
<td>+0''31</td>
</tr>
<tr>
<td>IV. 1883.5</td>
<td>-1''42</td>
<td>+0''40</td>
</tr>
</tbody>
</table>

From a discussion of the observations made at Greenwich during the twelve years 1847–58 Professor Newcomb found for the epoch 1853 the value

I. \( K_e = -1''.66. \)

From a more elaborate discussion of the thirteen years' observations made at Washington and Greenwich during the period 1862–74, Professor Newcomb found for the epoch 1868.5 the value

II. \( K_s = -1''.53. \)

(*Monthly Notices*, June 1876, p. 360).

From a discussion of the observations made at Greenwich during the sixteen years 1862–77 it was shown that for the epoch 1870 the value of the term was

\[ K_s = -1''.41 \quad K_e = +0''.15. \]

But in this investigation (“On the Corrections required by Hansen's Tables de la Lune,” *Memoirs*, vol. xlviii., 1885, p. 492) it was supposed that the motion of the lunar perigee adopted in the tables was sensibly correct. A more extensive comparison of Hansen's Tables with observation has shown that this is not the case, and that it is necessary to apply a correction to the tabular motion of the lunar perigee. This has rendered it necessary to revise the investigation, and on revision there is obtained for the epoch 1870 the values

III. \( K_s = -1''.51 \quad K_e = +0''.28. \)
May 1890.  

Jovian Ejection.  

Last year, on the completion of the discussion of the results obtained by comparing Hansen’s Tables with the Greenwich observations for the eleven years 1878–88, it was ascertained that the observations for this period yielded for the epoch 1883.5 the values

\[ IV. \ K_s = -1''43 \quad K_e = +0''47. \]

A comparison of these results with those calculated above show how closely they agree:

<table>
<thead>
<tr>
<th>Epoch</th>
<th>Observed</th>
<th>Calculated</th>
<th>Observed</th>
<th>Calculated</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. 1853.0</td>
<td>-1''66</td>
<td>-1''67</td>
<td>...</td>
<td>+0''17</td>
</tr>
<tr>
<td>II. 1868.5</td>
<td>-1''55</td>
<td>-1''54</td>
<td>...</td>
<td>+0''28</td>
</tr>
<tr>
<td>III. 1870.0</td>
<td>-1''51</td>
<td>-1''52</td>
<td>+0''28</td>
<td>+0''31</td>
</tr>
<tr>
<td>IV. 1883.5</td>
<td>-1''43</td>
<td>-1''42</td>
<td>+0''47</td>
<td>+0''40</td>
</tr>
</tbody>
</table>

No comparison between observation and calculation could agree more closely, or appear more satisfactory. Yet this very agreement is a striking illustration of the difficulties inherent in the perfection of the theory of the Moon, and affords an example of the unexpected difficulties which have done so much to retard my work on the Theory of the Terms of Long Period in the motion of the Moon, and especially in that part where the theory has to be compared with observation.

For, complete and satisfactory as it looks, this agreement is entirely fortuitous, and means exactly nothing. This is for two reasons, both such as might easily escape attention.

First, because the small differences between the theory embodied in the lunar tables employed by Sir G. Airy and that forming the basis of Hansen’s Tables rises into importance in the case of this particular inequality—the Jovian Ejection.

Second, because, quite unexpectedly, further investigation shows that the values deduced by Professor Newcomb for the coefficient of his empirical term differ materially from the true value of the coefficient of the Jovian Ejection deduced from the same data, though the arguments of the two are so nearly the same.

Considering the first of these reasons, it can be shown that when the observations are referred to Airy’s tables there will appear to exist inequalities of the form

\[ +0''52 \sin (a + B) + 0''04 \cos (a + B) \]
\[ -0''52 \sin (a - B) + 0''04 \cos (a - B) \]

which will not appear when the same observations are referred to Hansen’s Tables, though apparently both tables are alike in respect to terms of this kind.

For the effect of the ellipticity of the Earth on the motion of the Moon in longitude is taken into account by Sir G. Airy by introducing a term as an inequality in the true longitude,
whereas Professor Hansen introduces this term as an inequality of the mean longitude; but when introduced as by Sir G. Airy the principal term requires to be accompanied by a pair of smaller terms of the form

\[ + 0^\prime 52 \sin (\alpha + B) \]
\[ - 0^\prime 52 \sin (\alpha - B), \]

whereas no such terms are required when the principal term is introduced as by Professor Hansen. As Sir G. Airy has omitted these auxiliary terms from the tables used by him they will appear in the discussion of the observations in the form of small apparent inequalities in the coefficients of the terms depending on the argument mean anomaly; but no such inequalities will exist when the observations are referred to Hansen's Tables.

Again, in the lunar tables employed by Sir G. Airy there are no terms to take account of the effect of the motion of the plane of the ecliptic; in consequence, when the observations are referred to these tables, there will appear small inequalities in the coefficients of the terms depending on the mean anomaly of the form

\[ + 0^\prime 04 \cos (\alpha + B) \]
\[ + 0^\prime 04 \cos (\alpha - B). \]

But no such inequalities will appear when the same observations are referred to Hansen's Tables, because, though they contain no distinct terms to take into account the effect of the motion of the ecliptic, yet this is done by slightly modifying the constant portion of the argument depending on the longitude of the node.

It follows, therefore, that these terms—due to imperfections in Airy's tables—must be subtracted from those found in the previous investigation before the results can be used to correct the values of the coefficient of the Jovian Ejection founded on observations referred to Hansen's Tables. Hence the value of the coefficients which must be employed are—

\[ B_1 = (+ 0^\prime 43) - (+ 0^\prime 52) = - 0^\prime 09 \pm 0^\prime 12 \]
\[ B_2 = (- 0^\prime 15) - (+ 0^\prime 04) = - 0^\prime 19 \pm 0^\prime 12 \]
\[ B_3 = (- 0^\prime 35) - (- 0^\prime 52) = + 0^\prime 17 \pm 0^\prime 19 \]
\[ B_4 = (- 0^\prime 15) - (+ 0^\prime 04) = - 0^\prime 19 \pm 0^\prime 19 \]

Considering the uncertainty which attaches to the values deduced from observation, it is doubtful if any of these quantities is entitled to be considered real.

The values obtained by Professor Newcomb are

From the Observations of 1847-58. From the Observations of 1862-74.

\[ -1^\prime 66 \]
\[ -1^\prime 55 \]
May 1890.

Jovian Evection.

These are not really the values of the coefficient of the Jovian Evection, but of an empirical term differing slightly in epoch and period; and though the difference is so small that it might be deemed immaterial, yet a recalculation from the same data, only using the true argument, showed that this was not the case. For the results obtained are

From the Observations of 1847-58. From the Observations of 1862-74.

\[ K_a = -1''38 \quad K_a = -1''54 \]
\[ K_c = -0'16 \quad K_c = +0'29 \]

Thus, though the results derived from the observations of 1862-74 agree with those deduced by Professor Newcomb, yet this is not true of those obtained from the observation of the earlier period 1847-58. The apparent coefficient of the Jovian Evection is more than a quarter of a second smaller. A possible explanation of this discrepancy soon presented itself.

The comparison which has been made between Hansen’s Tables and observation (Memoirs, 1885) shows that the tables require a correction of the form

\[ B' \sin (\theta + \mu) + B'' \cos (\theta + \mu), \]

and from this there arises an eighteen-year inequality in the apparent value of the coefficient of the Jovian Evection. As the period covered by each of these series of observations falls far short of eighteen years, it follows that the values for the coefficient of the Jovian Evection deduced from them will require correction for the effect of this inequality. The true values will be—

From the Observations of 1847-58. From the Observations of 1862-74.

\[ K_a = -1''38 + '48 B' - '15 B'' \quad K_a = -1''54 + '30 B' + '16 B'' \]
\[ K_c = -0'16 + '15 B' + '48 B'' \quad K_c = +0'29 - '16 B' + '30 B'' \]

A discussion of the observations for the sixteen years 1862-1877 yields for the approximate values of these coefficients

\[ B' = -0''59 \]
\[ B'' = +0'38 \]

It is likely, taking into consideration the probable origin of this inequality, that these coefficients in turn are affected by small inequalities of long period, and that these values are only true of the epoch for which they are determined; but for the present purpose they must be applied as they stand, excepting that, as Professor Newcomb has already applied to the observation for 1862-74 the correction

\[ -0''13 \sin (\theta + \mu), \]

for these observations, the value given above for \( B' \) must be diminished by this amount.

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This correction reduces the preceding expressions to

From the Observations of 1847-52. From the Observations of 1862-74.

\[
\begin{align*}
K_x &= -1.71 \\
K_e &= -0.07 \\
K_x &= -1.62 \\
K_e &= +0.48
\end{align*}
\]

Hence the real values of the Jovian Evacuation indicated by observation are somewhat greater than calculated by Professor Newcomb as the value of his empirical term.

The preceding investigation shows clearly that the observations indicate a value for the apparent coefficient of the Jovian Evacuation which is much greater than that resulting from theory, and render it certain that with it there is associated another inequality of some magnitude and of very similar period. It also establishes that, had Sir G. Airy been more strict in examining the results obtained by him from the reduction of the Greenwich lunar observations for the years 1750-1851, he might have discovered the existence of the Jovian Evacuation fully thirty years ago.

Both of these conclusions suggest inquiries of some interest in the theory of the motion of the Moon.

1890 February 20.

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On the Orbit of \(\delta\) Cygni. By J. E. Gore.

The following elements of \(\delta\) Cygni I computed some three years ago, but as they give the distance at the epoch of Sir W. Herschel's measure in 1783 somewhat too large, I did not publish them. As, however, they represent all the measures of position-angle fairly well, I now give them for what they are worth.

**Provisional Elements of \(\delta\) Cygni.**

\[
\begin{align*}
P &= 376.659 \text{ years} \\
\Omega &= 98^\circ 40' \\
T &= 1914.16 \\
e &= 0.327 \\
i &= 41^\circ 26'
\end{align*}
\]

\[
\begin{align*}
\alpha &= 175^\circ 7' \\
\mu &= -0^\circ 9557
\end{align*}
\]

The following is a comparison between the recorded measures and the positions computed from the above elements. The observed position-angles have been corrected for the effect of precession to 1880\(\circ\):—

<table>
<thead>
<tr>
<th>Epoch, Observer</th>
<th>Observer</th>
<th>(\theta_x)</th>
<th>(\theta_e)</th>
<th>(\theta_x - \theta_e)</th>
<th>(p_0)</th>
<th>(p_e)</th>
<th>(p_0 - p_e)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1783.72 Sir W. Herschel</td>
<td>70° 98'</td>
<td>70° 32'</td>
<td>+0° 66'</td>
<td>---</td>
<td>2° 72'</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>1826.55 Struve</td>
<td>40° 2'</td>
<td>40° 7° 5'</td>
<td>-0° 55'</td>
<td>1° 91'</td>
<td>2° 04'</td>
<td>-0° 13'</td>
<td></td>
</tr>
<tr>
<td>1828.80</td>
<td>36° 5'</td>
<td>38° 7'</td>
<td>-2° 2'</td>
<td>1° 91'</td>
<td>2° 00'</td>
<td>-0° 09'</td>
<td></td>
</tr>
<tr>
<td>1831.73</td>
<td>36° 4'</td>
<td>35° 8'</td>
<td>+0° 6'</td>
<td>1° 57'</td>
<td>1° 95'</td>
<td>-0° 38'</td>
<td></td>
</tr>
</tbody>
</table>