Schreiben des Herrn *M. R. Dolman*, Observators der Sternwarte Durham, an den Herausgeber.

I have the pleasure of sending you a new determination of the orbit of Clio (84), together with some further observations of that, and Planet (85).

The following true normal places were formed by comparison of observation with an ephemeris very nearly representing the motion of the planet, and were adopted as the basis of the calculation.

Gr. M. T.	x	δ	Mean Equin. 1865,0
Aug. 27,5	21 ^h 32 ^m 27 ^s .79	—14° 9' 17".9	
Sept. 12,0	21 21 10,43	—12 36 4,2	
Sept. 28,0	21 18 51,34	—10 48 28,0	

The first place depends upon 5 observations, the second upon 6, and the third on 5.

From these data we have the following elements:

$$\begin{aligned}
 \text{Epoch} &= 1865 \text{ Aug. } 27,5. \\
 M &= 353^{\circ} 35' 13''.67 \\
 \pi &= 339 \text{ } 10 \text{ } 0,75 \\
 \Omega &= 327 \text{ } 21 \text{ } 45,67 \\
 i &= 9 \text{ } 22 \text{ } 10,08 \\
 \varphi &= 13 \text{ } 38 \text{ } 5,74 \\
 \log a &= 0,3728471 \\
 \mu &= 978,8944.
 \end{aligned}
 \left. \begin{array}{l} \\ \\ \\ \\ \\ \end{array} \right\} \text{Mean Equin. } 1865,0$$

The heliocentric co-ordinates are represented by the equations

$$\begin{aligned}
 x &= r(9,9983196) \sin(v + 69^{\circ} 30' 55''.29) \\
 y &= r(9,9320018) \sin(v + 336 \text{ } 27 \text{ } 5,46) \\
 z &= r(9,7208984) \sin(v + 347 \text{ } 42 \text{ } 39,95).
 \end{aligned}$$

Comparing the whole of the published observations of the planet with an Ephemeris from the foregoing elements I have formed the following normal errors.

Day	C—O		Nr. of observ. in group.
	α	δ	
Aug. 27,50	—0".03	—0".0	5
Sept. 7,75	+0,05	+0,8	9
" 12,00	—0,05	+0,9	6
" 16,00	—0,04	+0,7	10
" 24,00	—0,13	+2,3	13
" 28,00	0,10	+0,9	5

Observations of Clio (84) and Planet (85)
made with a bar micrometer.
(Professor *Temple Chevallier*, Director.)

Clio (84).		Geoc. AR	Geoc. NPD	Comp.*
1865	Greenw. M. T.			
Oct. 19	9 ^h 37 ^m 36 ^s	21 ^h 30 ^m 55 ^s .97	98° 6' 43".3	<i>a</i>
" 20	7 56 34	21 31 47,37	97 59 11,5	<i>b</i>
" 21	7 25 21	21 32 42,72	97 51 13,2	<i>c</i>
" 21	7 50 4	21 32 43,24	97 51 5,5	<i>d</i>

Planet (85).

1865	Greenw. M. T.	App. AR	$[p' \times \Delta]$	App. NPD	$[p'' \times \Delta]$	Comp.*
Oct. 25	7 ^h 55 ^m 54 ^s	0 ^h 49 ^m 23 ^s .34	—9,356	83° 49' 14".4	0,8156	<i>e</i>
25	9 55 36	0 49 20,49	—8,792	83 50 17,4	0,8069	<i>f</i>
26	6 50 43	0 48 53,34	—9,439	83 59 1,1	0,8228	<i>e</i>
27	15 35 50	0 48 9,46	+9,512	84 12 45,6	0,8341	<i>g</i>
28	6 50 40	0 47 50,64	—9,428	84 19 5,2	0,8330	<i>g</i>

Assumed mean places of comparison-stars for 1865,0:

<i>a</i> = Rümker 21 ^h . 90; W. B. 21. 722	$\alpha = 21^{\text{h}} 31^{\text{m}} 16^{\text{s}}.22$, $\delta = -8^{\circ} 9' 10''.0$
<i>b</i> = Rümker 21 ^h . 100; W. B. 21. 862	21 36 16,01 —8 1 27,5
<i>c</i> = W. B. 21. 747	21 32 5,08 —7 53 14,9
<i>d</i> = W. B. 21. 822	21 33 55,70 —7 48 41,4
<i>e</i> = B. A. C. 252	0 48 19,93 +6 7 18,5
<i>f</i> = B. A. C. 270	0 51 19,47 +6 6 49,5
<i>g</i> = B. A. C. 274; Armagh Cat. 210	0 52 49,97 +5 45 13,1

The Right Ascensions of *e* and *f* were obtained by meridional observations.

Observatory Durham, 1865 Nov. 24.

Mondeford R. Dolman.