

1912phae.proj..610X

KG

11365

609

KG-11365.609





KG-11365.609



Mar. 30, 1912. (Saturday).

Enebo's Hora. H. J. Brand rec.
Photo J.

$$\begin{array}{r} 6 \quad 43 \quad + 341 \\ 7 \quad \sqrt{55} \\ \hline +1 \quad 12 \end{array}$$

March 30, 1912

I

Index right and below

7-13-50

$$\begin{array}{r}
 97.9 \text{ Nova dis} \\
 155.2 \quad 57.3 \\
 280.0 \quad 56.2 \\
 336.2 \quad \underline{113.5} \quad -1.34
 \end{array}$$

$$\begin{array}{r}
 97.9 \quad 54.2 \quad -1.35 \\
 156.1 \\
 281.0 \quad \underline{54.2} \\
 335.2 \quad \underline{112.4} \quad -1.36
 \end{array}$$

Index left and above

$$\begin{array}{r}
 10.3 \\
 68.0 \quad 57.7 \\
 188.6 \quad \underline{56.6} \\
 245.2 \quad \underline{114.3} \quad -1.32
 \end{array}$$

$$11.3 \quad 54.3 \quad -1.34$$

7-19-50

$$\begin{array}{r}
 33 \quad 40. \\
 7 \quad 16 \quad 50. \\
 +5 \quad -9. \\
 \hline
 12 \quad 16 \quad 41. \\
 9492.5 \quad 116
 \end{array}$$

$$\begin{array}{r}
 190.1 \quad 54.7 \\
 244.8 \quad \underline{109.0} \quad -1.44
 \end{array}$$

$$\begin{array}{r}
 -1.36 \\
 6.49 \\
 \hline
 5.13
 \end{array}$$

March 30, 1912

II

Index left and above

10.0

65.5 $\sqrt{55}^{\vee}$ 187.5 $\sqrt{57.7}^{\vee}$ 245.2 $\frac{113.2^{\vee}}{113.2^{\vee}} -1.3K^{\vee}$

10.2

67.0 $\sqrt{56.2}^{\vee}$ -1.36^{\vee} 189.7 $\sqrt{5K.9}^{\vee}$ 244.6 $\frac{111.7^{\vee}}{111.7^{\vee}} -1.3A^{\vee}$

Index right and below

281.2 $\sqrt{35}^{\vee}$

334.7

99.0 $\sqrt{55.6}^{\vee}$ 154.6 $\frac{109.1^{\vee}}{109.1^{\vee}} -1.4K^{\vee}$ 278.9 $\sqrt{55.7}^{\vee}$ -1.40^{\vee}

334.6

99.6 $\sqrt{56.2}^{\vee}$ -1.37^{\vee} 155.8 $\frac{111.9^{\vee}}{111.9^{\vee}}$

7-27-0

2 25.5

7 24 12.5

+5

-9.5

12 24 3.5

9492.5167

P. A. 157.3 Vernier B

 $-1.3A^{\vee}$

6.49

 $\sqrt{5.51}^{\vee}$

Color 6 in Photometer on scale of 10.

Mar. 30. 1912.
R. I. Cassin.

$$\begin{array}{r} 2 \quad 36 \quad +69.0 \\ 2 \quad 31 \\ \hline +5 \quad \checkmark \checkmark \end{array}$$

March 30, 1912

I

Index left and about

$$\begin{array}{r}
 185.6 \text{ Var di's} \\
 7-52-55 \quad 247.8 \quad 62.2^{\checkmark} \\
 \quad 15.4 \quad 43.1^{\checkmark} \\
 \quad 58.5 \quad 105.3^{\checkmark} \quad -1.53^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 195.0 \quad 44.5^{\checkmark} \quad -1.44^{\checkmark} \\
 239.5 \quad 64.7^{\checkmark} \\
 \quad 4.9 \quad 109.2^{\checkmark} \quad -1.44^{\checkmark} \\
 69.6
 \end{array}$$

Index right and below

$$\begin{array}{r}
 94.5 \quad 67.5^{\checkmark} \\
 162.0 \\
 286.8 \quad 122.1^{\checkmark} \\
 328.9 \quad 109.6^{\checkmark} \quad -1.43^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 105.0 \quad KKK^{\checkmark} \quad -1.41^{\checkmark} \\
 7-59-25 \quad 149.4 \\
 \quad 12 \quad 20.5^{\checkmark} \quad 273.4 \quad 67.0^{\checkmark} \\
 7 \quad 56 \quad 10.5^{\checkmark} \quad 340.4 \quad 111.4^{\checkmark} \quad -1.39^{\checkmark} \\
 +5 \quad -9.5^{\checkmark} \quad -1.44^{\checkmark} \\
 12 \quad 56 \quad 1.5^{\checkmark} \\
 9492.5389^{\checkmark}
 \end{array}$$

March 30, 1912.

II

Index right and below

8-3-√

$$\begin{array}{r}
 91.4 \\
 161.4 \quad 70.0^\vee \\
 288.3 \quad 32.2^\vee \\
 327.1 \quad \underline{102.2^\vee} \quad -1.45^\vee
 \end{array}$$

$$\begin{array}{r}
 105.5 \quad 44.5^\vee \quad -1.42^\vee \\
 150.0 \\
 276.0 \quad 67.1^\vee \\
 343.1 \quad \underline{111.6^\vee} \quad -1.32^\vee
 \end{array}$$

Index left and above

$$\begin{array}{r}
 4.0 \\
 73.5 \quad 69.5^\vee \\
 196.5 \quad 43.0^\vee \\
 239.5 \quad \underline{112.5^\vee} \quad -1.36^\vee
 \end{array}$$

$$\begin{array}{r}
 8-8-45 \quad 17.7 \quad 39.5^\vee \quad -1.42^\vee \\
 1150.^\vee \quad 57.2 \quad 186.2 \quad 63.4^\vee \\
 2555.^\vee \quad 249.6 \quad \underline{102.9^\vee} \quad -1.59^\vee \\
 +5 \quad 9.^\vee \quad -1.45^\vee \\
 13546.^\vee \\
 9492.5457^\vee
 \end{array}$$

March 30, 1912.

III

Index left and above

$$\begin{array}{r}
 8-11-40 \quad 6.0 \quad 62.4^{\vee} \\
 \quad 68.4 \\
 198.5 \quad 37.6^{\vee} \\
 \hline
 236.1 \quad 100.0^{\vee} \quad -1.66^{\vee}
 \end{array}$$

$$\begin{array}{r}
 19.5 \quad 34.9^{\vee} \quad -1.70^{\vee} \\
 58.4 \\
 189.1 \quad 57.9^{\vee} \\
 \hline
 247.0 \quad 96.2^{\vee} \quad -1.74^{\vee}
 \end{array}$$

Index right and below

$$\begin{array}{r}
 276.6 \quad 59.6^{\vee} \\
 336.2 \\
 107.2 \quad 41.7^{\vee} \\
 \hline
 148.9 \quad 101.3^{\vee} \quad -1.62^{\vee}
 \end{array}$$

$$\begin{array}{r}
 287.8 \quad 32.9^{\vee} \quad -1.64^{\vee} \\
 326.7
 \end{array}$$

$$\begin{array}{r}
 10 \quad 20. \quad 96.2 \quad 61.0^{\vee} \\
 2 \quad 15 \quad 10. \quad 157.2 \quad 99.9^{\vee} \quad -1.66^{\vee} \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 +5 \quad -9. \quad \vee \\
 13 \quad 15 \quad 1. \quad \vee \\
 \hline
 9492.5521^{\vee}
 \end{array}$$

$$-1.67^{\vee}$$

March 30, 1912

IV

Index right and below

$$\begin{array}{r}
 8-2325 \\
 279.2 \\
 336.1 \\
 108.0 \\
 146.3
 \end{array}
 \begin{array}{r}
 56.9^{\checkmark} \\
 34.3^{\checkmark} \\
 \hline
 95.2^{\checkmark}
 \end{array}
 -1.78^{\checkmark}$$

$$\begin{array}{r}
 289.4 \\
 326.7 \\
 98.0 \\
 156.8
 \end{array}
 \begin{array}{r}
 37.3^{\checkmark} \\
 54.2^{\checkmark} \\
 \hline
 96.1^{\checkmark}
 \end{array}
 -1.76^{\checkmark}$$

Index left and above

$$\begin{array}{r}
 190.6 \\
 243.5 \\
 20.3 \\
 55.0
 \end{array}
 \begin{array}{r}
 52.9^{\checkmark} \\
 34.7^{\checkmark} \\
 \hline
 47.6^{\checkmark}
 \end{array}
 -1.92^{\checkmark}$$

$$\begin{array}{r}
 8-30-30 \\
 \hline
 53 \quad 55. \\
 A \quad 26 \quad 54. \\
 +5 \quad -9. \\
 \hline
 13 \quad 26 \quad 49. \\
 9492.5603^{\checkmark}
 \end{array}
 \begin{array}{r}
 199.2 \\
 235.6 \\
 10.6 \\
 62.8
 \end{array}
 \begin{array}{r}
 36.4^{\checkmark} \\
 52.2^{\checkmark} \\
 \hline
 44.6^{\checkmark}
 \end{array}
 \begin{array}{r}
 -1.96^{\checkmark} \\
 -1.95^{\checkmark} \\
 -1.26^{\checkmark}
 \end{array}$$

March 30, 1912.

V

Index left and above

8-33-40

$$\begin{array}{r}
 192.6 \\
 243.0 \quad 50.4^v \\
 22.0 \quad 32.2^v \\
 \hline
 54.2 \quad 22.6^v \quad -2.12^v
 \end{array}$$

$$\begin{array}{r}
 200.5 \quad 35.7^v \\
 236.2 \quad 35.7^v \quad -2.06^v \\
 11.5 \quad 51.4^v \\
 62.9 \quad 27.1^v \quad -1.99^v
 \end{array}$$

Index right and below

$$\begin{array}{r}
 101.2 \\
 152.1 \quad 50.9^v \\
 292.3 \quad 32.0^v \\
 324.3 \quad 22.9^v \quad -2.11^v
 \end{array}$$

$$\begin{array}{r}
 8-39-50 \\
 13 \quad 30. \quad 282.5 \quad 44.1^v \\
 + 36 \quad 45. \quad 330.6 \quad 22.1^v \quad -2.13^v \\
 + 5 \quad -9. \quad -2.09^v \\
 \hline
 13 \quad 36 \quad 36. \quad P.A. 205.2 \text{ Vernier B} \\
 9492.5671^v
 \end{array}$$

Mar. 30, 1912,

Eusebio Kovac

$$\begin{array}{r} 6 \quad 43 \quad +341 \\ 9 \quad 31 \\ \hline 72 \quad KA \end{array}$$

March 30, 1912.

Index above

8-57-15

10.4. — Nova Dis

68.2 57.2

188.4 596 ✓

$$248.0 \quad \frac{1.10}{117K} - 1.25$$

7.6 52.2[✓]

-1.27 ✓

65.8

1.89.9 57.2 ✓

$$\begin{array}{r} 189.9 \\ 247.1 \end{array} \quad \frac{1.2}{115.4} \quad -1.29$$

Index below

280.6 $\sqrt{3.7}^{\vee}$

3 3 4.3

99.6 55.7 ✓

$$155.3 \overline{) 1094} - 143$$

279.0 562 ✓

-1.43^v

335.2

101.6 53.4 ✓

$$\begin{array}{r} 101.6 \\ 155.0 \overline{) 155.0} \end{array} \quad \begin{array}{r} 109.6 \\ 109.6 \overline{) 109.6} \end{array} \quad -1.43$$

8-57-15

30. ✓

8 54 125

$$+5 \quad -9$$

13 54 6.

P. A. 156.8 Vernier B

9492.5793

$$= 1,35^{\circ}$$

6. Ag ✓

5. 54

Watch used 7² fast L. P. P.

Apr. 3. 1912. (Wednesday).

Eneb's Nov. H. obs. Grand vac.
Phot. I.

$$\begin{array}{r}
 6 \quad 43 \quad + 341 \\
 \hline
 A \quad 6 \\
 +1 \quad 23
 \end{array}$$

April 3, 1912.

I

Index left and above

7-12-10

$$\begin{array}{r}
 189.9 \leftarrow \text{Nova dis} \\
 244.0 \quad 54.1^{\vee} \\
 11.4 \quad 55.0^{\vee} \\
 \hline
 66.4 \quad 109.1^{\vee} - 1.44^{\vee}
 \end{array}$$

$$\begin{array}{r}
 189.8 \quad 56.2^{\vee} \\
 246.0 \quad -1.42^{\vee} \\
 10.2 \quad 54.9^{\vee} \\
 65.1 \quad 111.1^{\vee} - 1.39^{\vee}
 \end{array}$$

Index right and below

$$\begin{array}{r}
 91.9 \quad 69.6^{\vee} \\
 161.5 \\
 273.3 \quad 68.0^{\vee} \\
 341.3 \quad 137.6^{\vee} - 0.42^{\vee}
 \end{array}$$

$$\begin{array}{r}
 93.2 \quad 69.0^{\vee} \quad -0.46^{\vee} \\
 7-17-40 \quad 162.2 \\
 9 \quad 50.5^{\vee} \quad 274.3 \quad 65.3^{\vee} \\
 7 \quad 14 \quad 55.5^{\vee} \quad 339.6 \quad 134.3^{\vee} - 0.49^{\vee} \\
 +5 \quad -16.5^{\vee} \\
 \hline
 1214 \quad 39.5^{\vee} \\
 9496.5101^{\vee}
 \end{array}$$

$$\begin{array}{r}
 -1.14^{\vee} \\
 6.49^{\vee} \\
 \hline
 5.75^{\vee}
 \end{array}$$

April 3, 1912.

II

Index right and below

7-20-20

$$\begin{array}{r}
 96.0 \\
 161.5 \\
 273.8 \\
 337.0
 \end{array}
 \begin{array}{r}
 65.5^{\vee} \\
 63.2^{\vee} \\
 124.7^{\vee}
 \end{array}
 \begin{array}{r}
 \\
 \\
 -1.00^{\vee}
 \end{array}$$

$$\begin{array}{r}
 94.2 \\
 161.3 \\
 272.8 \\
 338.5
 \end{array}
 \begin{array}{r}
 67.1^{\vee} \\
 65.7^{\vee} \\
 132.2^{\vee}
 \end{array}
 \begin{array}{r}
 -0.96^{\vee} \\
 \\
 -0.92^{\vee}
 \end{array}$$

Index left and above

$$\begin{array}{r}
 9.4 \\
 67.6 \\
 186.0 \\
 245.2
 \end{array}
 \begin{array}{r}
 54.2^{\vee} \\
 59.2^{\vee} \\
 117.4^{\vee}
 \end{array}
 \begin{array}{r}
 \\
 \\
 -1.25^{\vee}
 \end{array}$$

$$\begin{array}{r}
 10.7 \\
 66.0
 \end{array}
 \begin{array}{r}
 55.3^{\vee} \\
 55.1^{\vee}
 \end{array}
 \begin{array}{r}
 -1.33^{\vee} \\
 \\
 \end{array}$$

$$\begin{array}{r}
 6 \ 20. \\
 7 \ 23 \ 10. \\
 +5
 \end{array}
 \begin{array}{r}
 189.9 \\
 245.0 \\
 -16.
 \end{array}
 \begin{array}{r}
 55.1^{\vee} \\
 110.4^{\vee} \\
 \\
 \end{array}
 \begin{array}{r}
 \\
 -1.41^{\vee} \\
 \\
 \end{array}$$

$$\begin{array}{r}
 12 \ 22 \ 5K. P. A. \\
 9496.5
 \end{array}
 \begin{array}{r}
 336.6 \\
 159^{\vee}
 \end{array}
 \begin{array}{r}
 \text{Vernier B} \\
 \\
 \end{array}$$

Color 6.5 in Photometer

$$\begin{array}{r}
 -1.14^{\vee} \\
 6.89^{\vee} \\
 5.75^{\vee}
 \end{array}$$

Apr. 3, 1912.

S.V. in Trap. of Orion.

April 3, 1912.

Index right and below

7-50-30

$$\begin{array}{r} 301.8 \text{ --- Comp Star dis} \\ 330.5 \quad 22.7'' \\ 120.9 \quad 30.2'' \\ 151.1 \quad \frac{30.2''}{52.9''} + 2.90'' \end{array}$$

$$\begin{array}{r} 302.2 \quad 22.3'' \\ 330.5 \quad 22.3'' \quad + 2.49'' \\ 120.5 \quad 31.2'' \\ 151.7 \quad \frac{31.2''}{59.5''} + 2.22'' \end{array}$$

Index left and above

$$\begin{array}{r} 210.9 \quad 33.2'' \\ 244.1 \\ 30.9 \quad 32.5'' \\ 63.4 \quad \frac{32.5''}{65.7''} + 2.65'' \end{array}$$

$$\begin{array}{r} 211.4 \quad 32.1'' \quad + 2.66'' \\ 243.5 \quad 30.6 \quad 32.9'' \\ 63.5 \quad \frac{32.9''}{65.0''} + 2.62'' \end{array}$$

$$\begin{array}{r} 7-59-0 \\ 9 \quad 30'' \\ 7 \quad 54 \quad 45'' \\ +5 \quad 16'' \\ \hline 12 \quad 54 \quad 29'' \\ 9496 \quad 5372'' \end{array}$$

$$+ 2.72''$$

April 3, 1912.

II

Index left and above

$$\begin{array}{r}
 8-2-20 \quad 210.9 \quad 31.6'' \\
 \quad 242.5 \quad 31.6'' \\
 \quad 30.3 \quad 31.6'' \\
 \quad 61.9 \quad 63.2'' + 2.74''
 \end{array}$$

$$\begin{array}{r}
 210.8 \quad 31.2'' \quad + 2.74'' \\
 242.0 \quad 31.2'' \\
 30.5 \quad 31.9'' \\
 62.4 \quad 63.1'' + 2.74''
 \end{array}$$

Index right and below

$$\begin{array}{r}
 120.4 \quad 32.1'' \\
 152.5 \quad 32.1'' \\
 302.2 \quad 29.6'' \\
 331.8 \quad 61.7'' + 2.40''
 \end{array}$$

$$\begin{array}{r}
 8-10-40 \\
 \hline
 13 \quad 0. \\
 + \quad 6 \quad 30. \\
 + \quad -16. \\
 \hline
 13 \quad 6 \quad 14. \\
 9496.5459''
 \end{array}$$

$$\begin{array}{r}
 121.6 \quad 30.2'' \\
 151.8 \quad 30.2'' \\
 301.2 \quad 30.4'' \\
 331.6 \quad 60.6'' + 2.44'' \\
 \quad \quad \quad + 2.74''
 \end{array}$$

Apr. 3, 1912.

R L Cassio.

$$\begin{array}{r} 2 \quad 36 \quad +69.0 \\ 9 \quad 26 \\ \hline +6 \quad 50 \end{array}$$

April 3, 1912.

Index left and above

8-28-10

$$\begin{array}{r} 23.7 \\ 52.7 \end{array} \leftarrow \text{Var dis} \quad 29.0^\circ$$

$$\begin{array}{r} 206.8 \\ 228.6 \end{array} \quad \begin{array}{r} 21.2^\circ \\ 50.2^\circ \end{array} \quad -324^\circ$$

$$\begin{array}{r} 27.3 \\ 48.1 \end{array} \quad \begin{array}{r} 20.2^\circ \\ \end{array} \quad -3.12^\circ$$

$$\begin{array}{r} 201.8 \\ 234.7 \end{array} \quad \begin{array}{r} 32.9^\circ \\ 53.7^\circ \end{array} \quad -3.11^\circ$$

Index right and below

~~$$\begin{array}{r} 288.6 \\ 327.4 \\ 115.9 \\ 140.6 \end{array} \quad \begin{array}{r} 32.2^\circ \\ 24.7^\circ \\ 63.5^\circ \end{array}$$~~

Something wrong probably
in last set.
Last two sets retaken
on next page.

~~$$\begin{array}{r} 296.4 \\ 320.8 \\ 118.0 \\ 146.7 \end{array} \quad \begin{array}{r} 24.1^\circ \\ 20.7^\circ \\ 53.1^\circ \end{array}$$~~
~~$$\begin{array}{r} 835-20 \\ 8334^\circ \\ 43145^\circ \\ +5-16^\circ \\ 133129^\circ \\ 9496.5635+ \end{array}$$~~

P. A. 204.8 Verrier B

Apr. 3, 1912.

290.3

35.9^v

326.2

113.0

140.7

27.7^v63.6^v - 2.73^v

295.0

24.7^v-2.76^v

319.7

108.7

36.2^v

145.5

61.5^v - 2.20^v~~2.97~~-2.97^v2 47 0.275 10.5^v2 37 35.5^v75 -16.5^v13 37 19.5^v9496.5676^v

Apr. 3, 1912.

Enoch's Star,

$$\begin{array}{r} 6 \quad 43 \\ 9 \quad \sqrt{1} \\ \hline +3 \quad 2 \end{array} \quad + 3\frac{1}{2}$$

Abandoned,

Watch used 16th fast
L. P. P.

Apr. 4, 1917. (Thursday).

Encke's Asteroid W. do. Brand rec.
Phot. L.

$$\begin{array}{r} 6 \quad 43 \quad +341 \\ A \quad 13 \\ \hline +1 \quad 30 \end{array}$$

April 4, 1912.

I

Index left and above

7-12-0

179.4	Nora dis
252.0	72.6 ^v
2.0	65.3 ^v
67.3	<u>137.9^v</u> - 0.22 ^v

183.8	66.5 ^v	-0.91 ^v
250.3		
6.2	62.5 ^v	
68.7	<u>129.0^v</u> - 1.00 ^v	

Index right and below

89.4	
169.0	79.6 ^v
264.6	42.2 ^v
346.8	<u>167.8^v</u> - 0.33 ^v

7-17-20	86.6	46.6 ^v	-0.30 ^v
	173.0		

9	20 ^v	267.9	77.9 ^v	-0.26 ^v
7	14	40 ^v	347.8	
+5		+15 ^v	<u>166.3^v</u>	
12	14	55 ^v		
9497.5	103 ^v			

-0.60 ^v
6.29 ^v
<u>6.29^v</u>

April 4, 1912.

II

Index ~~left~~ right and below

7-19-10

87.0	23.4 ^v	
170.4		
263.0	25.0 ^v	
348.0	162.4 ^v	-0.22 ^v

84.6	26.4 ^v	-0.26 ^v
171.0		
267.8	77.1 ^v	
344.9	163.5 ^v	-0.31 ^v

Index left and above

7.0	61.9 ^v	
68.9		
186.4	62.1 ^v	
248.5	124.0 ^v	-1.11 ^v

7-24-15

8.7	57.9 ^v	-1.12 ^v
68.6		

43	25.1 ^v	188.9	57.9 ^v	-1.24 ^v
7	21	42.2 ^v	246.8	117.4 ^v

45 +15.1^v

1221 57.1^v Color 7 in Photometer

9497.5 153^v

P.A. 336.5 Vernier B

Gen. mean 6.23

-0.72^v
6.29^v
6.17^v

Apr. 4, 1912.

Apr. 4, 1912.

~~Wrong Star.~~~~Index left and below~~~~174.0 — l dis~~~~264.8~~~~3.3~~~~69.5~~~~183.9~~~~251.2~~~~354.0~~~~81.9~~

7-42-45

April 4, 1912

Star s' compared with star l

Index left and below

7-52-40

188.2 ← l dis

248.9 60.7[✓]19.4 36.4[✓]55.8 97.1[✓] + 1.73[✓]

197.7

41.2[✓]+ 1.67[✓]

239.5

60.1[✓]

8.8

101.9[✓] + 1.61[✓]

68.9

Index right and above

91.4

70.2[✓]

162.2

24.2[✓]

285.9

115.0[✓]+ 1.30[✓]

330.1

116.5

33.5[✓]+ 1.44[✓]

7-58-10

150.0

10 50[✓]

271.8

69.7[✓]103.2[✓]+ 1.52[✓]7 55 25[✓]

341.5

+ 5[✓] + 15[✓]12 55 40[✓]9497.5347[✓]+ 1.56[✓]6.49[✓]2.45[✓]

April 4, 1912.

Star g compared with star s'

Index right and above

8-3, 35

$$\begin{array}{r}
 170.4 \quad g \text{ dis} \\
 267.2 \quad 96.2^{\vee} \\
 0.6 \\
 73.5 \quad \frac{72.9^{\vee}}{169.7^{\vee}} - *0.20^{\vee} \\
 \hline
 181.6 \quad 74.7^{\vee} \quad -*0.17^{\vee} \\
 256.3 \\
 348.7 \quad \frac{97.6^{\vee}}{172.3^{\vee}} - *0.14^{\vee} \\
 86.3
 \end{array}$$

Index left and below

$$\begin{array}{r}
 79.0 \\
 175.8 \quad 96.2^{\vee} \\
 268.9 \quad \frac{75.2^{\vee}}{172.0^{\vee}} - *0.15^{\vee} \\
 344.1
 \end{array}$$

8-10-20

$$\begin{array}{r}
 93.5 \quad 70.7^{\vee} \quad -*0.16^{\vee} \\
 164.2 \\
 257.2 \quad 99.2^{\vee} \\
 357.0 \quad \frac{170.5^{\vee}}{170.5^{\vee}} - *0.12^{\vee}
 \end{array}$$

+5 +15

13 7 13 P.A. 134.1 Verrier B

$$\begin{array}{r}
 9497.5466
 \end{array}$$

$$\begin{array}{r}
 -*0.16^{\vee} \\
 \frac{2.45^{\vee}}{2.29^{\vee}}
 \end{array}$$

April 4, 1912

Star is compared with star q

Index left and above

9-2-20

$$\begin{array}{r}
 263.0 \leftarrow q \text{ dis} \\
 353.0 \\
 92.2 \quad 90.0^{\vee} \\
 \underline{162.2} \quad 70.0^{\vee} \\
 160.0^{\vee} + 0.32^{\vee}
 \end{array}$$

$$\begin{array}{r}
 271.2 \quad 69.4^{\vee} \quad +0.80^{\vee} \\
 340.6 \\
 80.9 \quad 49.2^{\vee} \\
 \underline{170.1} \quad 152.6^{\vee} \quad +0.41^{\vee}
 \end{array}$$

Index right and below

$$\begin{array}{r}
 176.6 \quad 42.2^{\vee} \\
 259.4 \\
 9.6 \quad 57.2^{\vee} \\
 \underline{67.4} \quad 140.6^{\vee} \quad +0.76^{\vee}
 \end{array}$$

$$\begin{array}{r}
 187.9 \quad 57.1^{\vee} \quad +0.76^{\vee} \\
 245.0 \\
 355.8 \quad 43.2^{\vee} \\
 \underline{79.0} \quad 140.3^{\vee} \quad +0.77^{\vee}
 \end{array}$$

$$\begin{array}{r}
 9-7-50 \\
 10 \quad 10.0^{\vee} \\
 9 \quad 5^{\vee} \quad 5.0^{\vee} \\
 +5 \quad +15.0^{\vee} \\
 14 \quad 20.0^{\vee} \\
 9497.5270^{\vee}
 \end{array}$$

$$\begin{array}{r}
 +0.52^{\vee} \\
 2.22^{\vee} \\
 \underline{2.20^{\vee}}
 \end{array}$$

April 4, 1912.

Star compared with star in

Index left and above

9-12-30

349.1 ← t dis

85.4 96.3[✓]

186.3 67.2[✓]

253.5 163.5[✓] -0.31[✓]

2.2

67.5[✓]

-0.31[✓]

69.7

96.2[✓]

169.6

163.7[✓]

-0.31[✓]

265.8

Index right and below

273.0

70.1[✓]

343.1

78.0

96.9[✓]

174.9

167.0[✓]

-0.25[✓]

259.3

96.9[✓]

-0.24[✓]

356.2

70.4[✓]

92.0

167.3[✓]

-0.24[✓]

162.4

9-18-45

11 15[✓]

9 15 32[✓]

+5 +15[✓]

14 15 53[✓]

P.A. 231.7

9497.5943[✓]

-0.20[✓]

2.20[✓]

A. 52[✓]

April 4, 1912

Star & with star t

Index left and above

199.3

238.9

10-4-50

April 4, 1912.

Nova again with C. S. L (7.0) (6.49)

Index ~~left~~ and above

10-9-10

349.8 Nova dis
80.8 91.0 ✓
186.4 64.0 ✓
254.4 159.0 ✓ -0.40 ✓

6.0 64.2 ✓ -0.51 ✓
70.8
176.4 227 ✓
259.1 147.5 ✓ -0.62 ✓

Index below

266.0 23.6 ✓
349.6
91.9 64.0 ✓
159.9 151.6 ✓ -0.54 ✓

272.5 64.2 ✓ -0.64 ✓
341.3

10-15-10

24 20 ✓
10 12 10 ✓
+5 +15 ✓
15 12 25 ✓
9497.6 336 ✓

91.2 72.5 ✓
163.7 141.3 ✓ -0.75 ✓

-0.52 ✓
6.49 ✓
6.31 ✓

Watch used 15² slow L. P. A.

Apr. 5. 1912. (Friday).

Nova Gen. No. 2. = Ender's Nova

$$\begin{array}{r}
 6 \quad 43 \quad +341 \\
 2 \quad 15 \\
 \hline
 +1 \quad 32
 \end{array}$$

April 5, 1912.

I

Index left and above

7-5-55

$$\begin{array}{r}
 189.6 \text{ Nova dis} \\
 246.6 \quad \checkmark 7.0 \checkmark \\
 7.7 \quad \checkmark 9.2 \checkmark \\
 66.9 \quad \checkmark 116.2 \checkmark - 1.22 \checkmark
 \end{array}$$

$$\begin{array}{r}
 186.2 \quad \checkmark 9.2 \checkmark \\
 245.4 \quad \checkmark 6.2 \checkmark \\
 10.0 \quad \checkmark 115.4 \checkmark - 1.29 \checkmark \\
 66.2
 \end{array}
 \quad -1.2 \checkmark$$

Index right and below

$$\begin{array}{r}
 88.6 \quad 71.5 \checkmark \\
 160.1 \quad 70.0 \checkmark \\
 273.8 \quad 141.5 \checkmark - 0.74 \checkmark \\
 343.8
 \end{array}$$

$$\begin{array}{r}
 88.9 \quad 74.7 \checkmark \\
 163.6 \quad 70.4 \checkmark \\
 272.0 \quad 145.1 \checkmark - 0.67 \checkmark \\
 342.4
 \end{array}
 \quad -0.70 \checkmark$$

$$\begin{array}{r}
 7-12-0 \\
 17 \quad \checkmark 5.1 \checkmark \\
 7 \quad 2 \quad \checkmark 5.0 \checkmark \\
 + \checkmark \quad +26. \checkmark \\
 12 \quad 9 \quad 24 \checkmark
 \end{array}$$

$$9492.506 \checkmark - \checkmark$$

$$\begin{array}{r}
 - \quad \checkmark 10.0 \quad -0.99 \checkmark \\
 6.29 \quad 6.29 \checkmark \\
 \checkmark 1.29 \quad \checkmark 5.90
 \end{array}$$

April 5, 1912.

II

Index right and below

7-13-50

92.0	
164.9	72.9 ✓
273.0	
345.0	72.0 ✓
	<hr/> 144.9 ✓
	-0.62 ✓

$$\begin{array}{r} 88.9 \\ 163.5 \\ 276.6 \\ 340.2 \end{array} \quad \begin{array}{r} 74.6^{\circ} \\ \\ 63.6^{\circ} \\ \hline 132.2^{\circ} \end{array} \quad \begin{array}{r} -0.74^{\circ} \\ \\ \\ -0.41^{\circ} \end{array}$$

Index left and above

$$\begin{array}{r} 6.4 \\ 68.5 \\ 188.1 \\ 246.1 \end{array} \quad \begin{array}{r} 62.1 \\ 52.0 \\ \hline 120.1 \end{array} \quad -1.19$$

$$\begin{array}{r}
 10.4 \\
 7-19-35 \quad 67.8 \quad \rightarrow K^r \\
 \hline
 33 \quad 25^r \quad 187.8 \quad \frac{59.0^r}{1116.4^r} \\
 7 \quad 16 \quad 42^r \quad 246.8 \quad -1.27^r \\
 +5 \quad +26^r
 \end{array}$$

12 17 2. ✓ P.A. 336.8 Vernier B - 0.92 ✓
9492.5119 ✓ 6.29 ✓

Color 7 in Photometer

V. 91
L. P. A.

Watch used 26 seconds slow

Apr. 6. 1912. (Saturday).

Encke's Nova. W. obs. Grand rec.
Phot. J.

6	43	+34.1
A	23	
<hr/> +1	<hr/> 40	

April 6, 1912.

I

Index above

7-18-0

354.2 Nova dis

80.4 262^v187.1 65.8^v252.9 152.0^v - 0.54^v

7.3

59.7^v- 0.5A^v

67.0

175.3

27.5^v262.8 147.2^v - 0.63^v

Index below

253.9

105.1^v

359.0

85.8

79.2^v

1650

1243^v175.7^v + 0.02^v

270.9

73.2^v+ 0.02^v

344.1

74.8 1042^v179.6 172.0^v - 0.04^v

7-25-25

43 25^v7 21 42^v+5 -56^v12 20 46^v9499.4155-^v- 0.22^v6.89^v6.67^v

April 6, 1912

II

Index below

7-28-10

$$\begin{array}{r}
 254.0 \\
 359.8 \quad 105.2^{\checkmark} \\
 90.0 \quad 73.5^{\checkmark} \\
 \hline
 163.5 \quad 179.3^{\checkmark} \quad -0.01^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 272.0 \\
 342.9 \quad 70.9^{\checkmark} \\
 94.0 \quad 106.4^{\checkmark} \\
 \hline
 180.7 \quad 177.3^{\checkmark} \quad -0.05^{\checkmark}
 \end{array}
 \quad -0.03^{\checkmark}$$

Index above

$$\begin{array}{r}
 178.6 \\
 264.0 \quad 25.4^{\checkmark} \\
 6.4 \quad 61.4^{\checkmark} \\
 \hline
 68.2 \quad 147.2^{\checkmark} \quad -0.63^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 7-34-15 \quad 187.7 \quad 60.7^{\checkmark} \quad -0.60^{\checkmark} \\
 \hline
 62 \quad 25.1^{\checkmark} \quad 248.4^{\checkmark} \quad 352.1 \quad 49.1^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 7 \quad 31 \quad 12.1^{\checkmark} \quad 81.2 \quad 149.4^{\checkmark} \quad -0.54^{\checkmark} \\
 +5 \quad -56.1^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 -0.32^{\checkmark} \\
 6.49^{\checkmark} \\
 \hline
 6.57^{\checkmark}
 \end{array}$$

1230 16.1 Color 6 in Photometer

9499.5210^v

P.A. 336.7

April 6, 1912

Star g with star m

Index left and above

$$\begin{array}{r}
 7-48-40 \\
 262.0 \quad \checkmark \text{ g dis.} \\
 354.0 \quad 92.0 \checkmark \\
 89.2 \quad 74.0 \checkmark \\
 163.2 \quad \underline{166.0} + 0.27 \checkmark
 \end{array}$$

$$\begin{array}{r}
 270.3 \quad 76.9 \checkmark \quad +0.26 \checkmark \\
 347.2 \\
 83.8 \quad \underline{49.6} \checkmark \\
 173.4 \quad \underline{166.5} + 0.25 \checkmark
 \end{array}$$

Index right and below

$$\begin{array}{r}
 178.2 \quad 40.7 \checkmark \\
 258.9 \\
 7.9 \quad 60.1 \checkmark \\
 68.0 \quad \underline{140.2} + 0.76 \checkmark
 \end{array}$$

$$\begin{array}{r}
 7-54-35 \\
 3 \text{ hr.} \\
 7 \quad \checkmark 1 \text{ hr.} \\
 + \checkmark \quad \checkmark 6. \\
 \hline
 12 \text{ hr.} \quad 42. \checkmark \\
 9499.5352
 \end{array}$$

$$\begin{array}{r}
 187.6 \quad 62.2 \checkmark \quad +0.74 \checkmark \\
 249.8 \\
 357.6 \quad \underline{40.6} \checkmark \quad +0.72 \checkmark \\
 78.2 \quad \underline{142.4} \checkmark \\
 \hline
 207.9 \quad \checkmark
 \end{array}$$

$$\begin{array}{r}
 +0.50 \checkmark \\
 \underline{2.22} \checkmark \\
 2.72 \checkmark
 \end{array}$$

P.A. 207.9 Vernier B $\text{mag. } u = 2.72 \checkmark$

April 6, 1912

Star t with star u

Index right and below

8-1-5

260.6 ← Star t dis

357.9

97.3 ✓

88.0

77.4 ✓

165.4

174.7 ✓

-0.10 ✓

271.2

73.4 ✓

-0.14 ✓

344.6

93.5 ✓

-0.25 ✓

80.9

166.9 ✓

0.19

174.4

Index left and above

174.0

66.8 ✓

260.8

3.2 65.8 ✓

69.0 152.6 ✓

-0.52 ✓

187.0

61.8 ✓

-0.52 ✓

248.8

85.5 ✓

8-9-0

10 ✓

355.9

147.3 ✓

-0.63 ✓

4 ✓ 2 ✓

81.4

-0.38 ✓

+5 -56 ✓

13 4 6 ✓

P.A. 51.2 Verrier B

9499.9445 ✓

mag. t = 2.46

" " = 4.32 ✓

April 6, 1912

Star & with star +

Index left and above

$$\begin{array}{r}
 8-18-30 \quad 201.1 \quad \text{+ dis} \\
 237.4 \quad 36.3 \\
 203.0 \\
 233.8 \quad \frac{30.2}{67.1} \quad +2.60
 \end{array}$$

$$\begin{array}{r}
 219. \quad 31.3 \quad +2.62 \\
 53.2 \\
 203.7 \quad 31.0 \\
 234.7 \quad \frac{62.3}{62.3} \quad +2.77
 \end{array}$$

Index right and below

$$\begin{array}{r}
 285.8 \quad \text{KKK} \\
 330.2 \\
 -112.7 \quad 31.2 \\
 143.9 \quad \frac{75.6}{75.6} \quad +2.33
 \end{array}$$

$$\begin{array}{r}
 289.0 \quad 34.5 \quad +2.34 \\
 323.5 \\
 107.0 \quad 40.0 \\
 147.0 \quad \frac{74.5}{74.5} \quad +2.36
 \end{array}$$

$$\begin{array}{r}
 8-26-20 \\
 K450. \\
 A \quad 22 \quad 25 \\
 +5 \quad -56
 \end{array}$$

$$\begin{array}{r}
 13 \quad 21 \quad 29 \quad P.A. \quad 168.0 \quad \text{Vernier B} \\
 9499.5566
 \end{array}$$

$$\begin{array}{r}
 +2.51 \\
 2.48 \\
 \hline
 \text{mean. } 2 \quad 10.96
 \end{array}$$

April 6, 1912.

Star α with star t

Index right and below

$$\begin{array}{r}
 8-30-15 \\
 105.5 \text{ Star } t \text{ dis} \\
 147.9 \quad 42.4^{\vee} \\
 291.8 \quad 30.5^{\vee} \\
 322.3 \quad \underline{72.9^{\vee}} \quad +2.41^{\vee}
 \end{array}$$

$$\begin{array}{r}
 109.3 \quad 32.7^{\vee} \quad +2.40^{\vee} \\
 142.0 \\
 285.9 \quad 41.1^{\vee} \\
 327.0 \quad \underline{73.4^{\vee}} \quad +2.34^{\vee}
 \end{array}$$

Index left and above

$$\begin{array}{r}
 21.5 \\
 55.3 \quad 33.6^{\vee} \\
 205.0 \quad 29.2^{\vee} \\
 234.2 \quad \underline{63.0^{\vee}} \quad +2.75^{\vee}
 \end{array}$$

$$\begin{array}{r}
 24.3 \quad 26.7^{\vee} \quad +2.66^{\vee} \\
 51.0
 \end{array}$$

$$\begin{array}{r}
 8-37-15 \\
 \underline{7 \quad 30.5^{\vee}} \quad 196.4 \quad 41.6^{\vee} \\
 2 \quad 33 \quad 45.5^{\vee} \quad 238.0 \quad \underline{62.3^{\vee}} \quad +2.56^{\vee}
 \end{array}$$

$$+2.53^{\vee}$$

$$\begin{array}{r}
 +5 \quad -56. \\
 13 \quad 32 \quad 49^{\vee} \text{ P.A. } 359.6 \text{ Vernier B} \\
 9499.5-645-^{\vee}
 \end{array}$$

$$\begin{array}{r}
 2.48^{\vee} \\
 \underline{10.94^{\vee}}
 \end{array}$$

April 6, 1912

Star X with star t

Index left and above

8-41-10

$$\begin{array}{r}
 197.2 \quad t \text{ dis} \\
 240.3 \quad 43.1^{\vee} \\
 21.6 \quad 30.3^{\vee} \\
 51.9 \quad \underline{73.8^{\vee}} \quad +2.40^{\vee}
 \end{array}$$

$$\begin{array}{r}
 201.5 \\
 235.7 \quad 34.2^{\vee} \quad +2.31^{\vee} \\
 15.7 \quad 44.2^{\vee} \\
 60.5 \quad \underline{79.0^{\vee}} \quad +2.22^{\vee}
 \end{array}$$

Index right and below

$$\begin{array}{r}
 100.8 \\
 152.0 \quad 51.2^{\vee} \\
 288.6 \quad 37.3^{\vee} \\
 325.9 \quad \underline{42.5^{\vee}} \quad +1.95^{\vee}
 \end{array}$$

$$\begin{array}{r}
 104.7 \quad 42.2^{\vee} \quad +1.90^{\vee} \\
 146.9
 \end{array}$$

$$\begin{array}{r}
 8-46-40 \\
 7 \quad 50.0^{\vee} \quad 284.4 \quad 50.5^{\vee} \\
 + \quad 43 \quad 55.0^{\vee} \quad 334.9 \quad 92.7^{\vee} \quad +1.24^{\vee} \\
 +5 \quad 56.0^{\vee} \\
 13 \quad 42 \quad 59.0^{\vee} \quad P.A. \quad 159.5 \quad \text{Vernier B} \\
 9499.5715 -
 \end{array}$$

$$\begin{array}{r}
 +2.10^{\vee} \\
 2.48^{\vee} \\
 \underline{10.55^{\vee}}
 \end{array}$$

Watch used 56 seconds fast L. P. P.

Apr. 2, 1912. (Monday)

Engels' Novar H. obs. Brand rec,
Phot. L

$$\begin{array}{r}
 6 \quad 43 \quad +341 \\
 4 \quad 30 \\
 \hline
 +1 \quad 47
 \end{array}$$

April 8, 1912.

I

Index above

7-11-10

185.1 ← Nova dis.

254.4

69.3"

4.3

63.6"

67.9

$$\begin{array}{r} 63.6 \\ 132.9 \end{array} - 0.92"$$

184.1

253.0

64.9"

-0.47"

1.5

64.7"

70.2

$$\begin{array}{r} 64.7 \\ 137.6 \end{array} - 0.42"$$

Index below

81.6

29.3"

170.9

267.2

22.3"

349.5

171.6"

-0.16"

7-31-30

83.5

263.9

26.5"

-0.16"

~~7-18-0~~

165.2

350.4

42 40.5"

263.5

84.8

24.2"

7

21 20.5"

169.6

171.3"

-0.16"

+5

-14.5"

12 21 6.5"

-0.52"

9501.5149"

6.29"

$$\begin{array}{r} 6.29 \\ 6.37 \end{array}$$

April 8, 1912.

II

Index below

$$\begin{array}{r}
 733-45 \\
 265.2 \\
 352.6 \quad 27.4^{\vee} \\
 84.0 \quad 25.2^{\vee} \\
 169.2 \quad \underline{172.6^{\vee}} \quad -0.14^{\vee}
 \end{array}$$

$$\begin{array}{r}
 264.9 \quad 24.1^{\vee} \quad -0.16^{\vee} \\
 349.0 \\
 81.5 \quad 26.4^{\vee} \\
 167.9 \quad \underline{170.5^{\vee}} \quad -0.12^{\vee}
 \end{array}$$

Index above

$$\begin{array}{r}
 184.1 \quad 67.2^{\vee} \\
 252.9 \\
 3.3 \quad 69.1^{\vee} \\
 72.4 \quad \underline{137.9^{\vee}} \quad -0.22^{\vee}
 \end{array}$$

$$\begin{array}{r}
 739-25 \quad 184.3 \quad 67.9^{\vee} \quad -0.26^{\vee} \\
 73 \quad 10. \quad 252.2 \\
 736 \quad 35. \quad 5.2 \quad 66.3^{\vee} \\
 45 \quad -14. \quad 71.5 \quad \underline{134.2^{\vee}} \quad -0.29^{\vee}
 \end{array}$$

123621. Color 6.5 in Photometer

$$\begin{array}{r}
 -0.51^{\vee} \\
 6.29^{\vee} \\
 \hline
 6.32^{\vee}
 \end{array}$$

9501.5253^v~~PA.~~

April 8, 1912

Star α with star τ

Index left and above

$$\begin{array}{r}
 7-58-40 \\
 18.0 \leftarrow \tau \text{ dis} \\
 54.8 \quad 36.8'' \\
 203.4 \quad 24.5'' \\
 231.9 \quad \underline{65.3''} \quad +2.67''
 \end{array}$$

$$\begin{array}{r}
 25.4 \quad 25.5'' \quad +2.71'' \\
 50.9 \\
 200.2 \quad \underline{37.5''} \quad +2.75'' \\
 237.7 \quad \underline{63.0''}
 \end{array}$$

Index right and below

$$\begin{array}{r}
 287.8 \quad 39.5'' \\
 327.3 \quad 30.6'' \\
 112.1 \quad \underline{70.1''} \quad +2.50'' \\
 142.7
 \end{array}$$

$$\begin{array}{r}
 293.6 \quad 30.2'' \quad +2.44'' \\
 323.8
 \end{array}$$

$$\begin{array}{r}
 8-4-30 \\
 3 \quad 10.1'' \\
 + \quad 1 \quad 35.1'' \\
 +5 \quad -14.1'' \\
 \hline
 13 \quad 1 \quad 21.1'' \quad P.A. 169.2 \quad \text{Verner B} \\
 9501.5427''
 \end{array}$$

$$\begin{array}{r}
 +2.60'' \\
 2.40'' \\
 \hline
 11.08''
 \end{array}$$

April 8, 1912.

Star B with star T

Index right and below

$$\begin{array}{r}
 8-11-25 \\
 286.8 \leftarrow T \text{ dis} \\
 327.8 \quad 41.0 \\
 112.7 \quad 30.2 \\
 142.9 \quad \underline{71.2} \quad +2.47
 \end{array}$$

$$\begin{array}{r}
 292.3 \quad 30.6 \\
 322.9 \\
 116.6 \quad 31.5 \\
 148.1 \quad \underline{62.1} \quad +2.76
 \end{array}$$

+2.62

Index left and above

$$\begin{array}{r}
 19.5 \quad 34.7 \\
 54.2 \\
 206.3 \quad 26.9 \\
 233.2 \quad \underline{61.6} \quad +2.20
 \end{array}$$

+2.21

$$\begin{array}{r}
 8-19-15 \\
 10 \quad 40 \quad 201.8 \quad 34.7 \\
 A \quad 15 \quad 20 \quad 236.5 \quad \underline{61.0} \quad +2.22
 \end{array}$$

$$\begin{array}{r}
 +5 \quad -14 \\
 13 \quad 15 \quad 6 \quad P. A. 358.7 \quad \text{Vernier B} \\
 9501.5522 \\
 \hline
 11.17
 \end{array}$$

+2.72
A. 48

April 8, 1912

Star γ with star τ

Index left and above

8-25-0

23.7 τ dis $\sqrt{3.9}$ 30.2 $^{\circ}$ 205.4 24.5 $^{\circ}$ 229.9 $\sqrt{4.7}$ +3.07 $^{\circ}$ 26.9 22.0 $^{\circ}$ +3.02 $^{\circ}$

48.9

200.6 $\sqrt{5.4}$ 236.0 $\sqrt{7.4}$ +2.96 $^{\circ}$

Index right and below

110.1 36.3 $^{\circ}$ 146.4 36.3 $^{\circ}$ 293.2 26.3 $^{\circ}$ 319.5 $\sqrt{62.6}$ +2.76 $^{\circ}$

113.9

24.7 $^{\circ}$ +2.71 $^{\circ}$

8-35-40

142.6

60 40.5 $^{\circ}$

290.6

36.9 $^{\circ}$ 2 30 20.5 $^{\circ}$

327.5

 $\sqrt{65.6}$

+2.66

+5 -14.5 $^{\circ}$ 13 30 6.5 $^{\circ}$

P.H. 192.0 Vernier B

9501.5626 $^{\circ}$

$$\begin{array}{r}
 +2.46 \\
 2.48 \\
 \hline
 11.38
 \end{array}$$

April 8, 1912.

Star x with star t

Index right and below

$$\begin{array}{r}
 8-42-15 \\
 102.9 \quad \leftarrow \text{t dis} \\
 150.9 \quad \cancel{48.0}^{\vee} \\
 289.4 \quad \underline{35.2}^{\vee} \\
 325.2 \quad \underline{63.2}^{\vee} \quad +2.02^{\vee}
 \end{array}$$

$$\begin{array}{r}
 110.0 \quad 36.1^{\vee} \quad +2.11^{\vee} \\
 146.1 \\
 284.6 \quad \underline{45.7}^{\vee} \\
 330.3 \quad \underline{21.2}^{\vee} \quad +2.14^{\vee}
 \end{array}$$

Index left and above

$$\begin{array}{r}
 15.2 \quad 42.0^{\vee} \\
 57.2 \quad \underline{30.9}^{\vee} \\
 200.8 \quad \underline{72.9}^{\vee} \quad +2.41^{\vee} \\
 231.7
 \end{array}$$

$$\begin{array}{r}
 22.0 \quad 30.3^{\vee} \quad +2.40^{\vee} \\
 8-47-35 \quad \underline{52.3}
 \end{array}$$

$$\begin{array}{r}
 9 \quad 50. \quad 195.3 \quad 43.1^{\vee} \\
 2 \quad 44 \quad 55. \quad 238.4 \quad \underline{73.4}^{\vee} \quad +2.40^{\vee} \\
 +5 \quad -14 \\
 13 \quad 44 \quad 41. \quad A. \quad 339.0 \quad \text{Vernier B} \\
 901.5727^{\vee}
 \end{array}$$

$$\begin{array}{r}
 +2.26^{\vee} \\
 2.48^{\vee} \\
 \hline
 10.72^{\vee}
 \end{array}$$

April 8, 1912

Star y with star t -

Index right and above

14.8 \leftarrow L dia

8-59-35

60.1

45.3^v

197.0

43.0^v

240.0

44.3^v + 196^v

18.2

55.2

37.0^v + 2.03^v

195.6

46.2^v

241.8

43.2^v + 2.10^v

Index left and below

280.4

334.2

104.7

149.4

53.2^v44.7^v94.5^v + 169^v

289.0

332.2

97.8

156.2

43.2^v + 1.66^v52.4^v101.6^v + 162^v

9-4-55

430^v9 2 15^v25 -14^v14 2 1^v9501.5247^v

P.A. 137.7 Verrier B

+1.44^v2.46^v10.30^v

10.29

L. P. P.

Watch 14 sec fast

Apr. 10. 1912. (Wednesday).

Exposure from H. do. Brandreese
Phot. L.

$$\begin{array}{r}
 6 \\
 2 \\
 \hline
 +1 \\
 \hline
 57
 \end{array}
 \begin{array}{r}
 43 \\
 40 \\
 \hline
 57
 \end{array}
 \begin{array}{r}
 +341
 \end{array}$$

April 10, 1912

I

Index above

7-16-30

$5.1 \leftarrow$ Nova dis
 $71.1 \quad 66.0 \checkmark$
 $184.0 \quad 67.0 \checkmark$
 $251.0 \quad \underline{133.0 \checkmark} - 0.92 \checkmark$

~~3.8~~ $-0.96 \checkmark$

$185.8 \quad 64.3 \checkmark$
 250.1
 $5.0 \quad 64.2 \checkmark$
 $69.8 \quad \underline{129.1 \checkmark} - 1.00 \checkmark$

Index below

$86.3 \quad 23.7 \checkmark$
 170.0
 $269.0 \quad 23.0 \checkmark$
 $352.0 \quad \underline{166.7 \checkmark} - 0.2 \checkmark$

$85.0 \quad 23.0 \checkmark \quad -0.2 \checkmark$
 168.0
 $265.9 \quad 23.2 \checkmark$
 $349.7 \quad \underline{166.2 \checkmark} - 0.2 \checkmark$
 $-0.60 \checkmark$
 $6.29 \checkmark$
 $\underline{6.29 \checkmark}$
 $7-25-30$
 $742 \quad 0. \checkmark$
 $721 \quad 0. \checkmark$
 $+5 \quad -54. \checkmark$
 $\underline{1220 \quad 6 \checkmark}$
 $9503.5140 \checkmark$

April 10, 1912.

II

Index below

7-27-50

$$\begin{array}{r}
 85.4 \\
 170.8 \\
 267.9 \\
 347.9
 \end{array}
 \begin{array}{r}
 25.4^{\checkmark} \\
 20.0^{\checkmark} \\
 165.4^{\checkmark}
 \end{array}
 \begin{array}{r}
 -0.24^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 85.8 \\
 167.5 \\
 266.1 \\
 349.3
 \end{array}
 \begin{array}{r}
 21.7^{\checkmark} \\
 23.2^{\checkmark} \\
 164.9^{\checkmark}
 \end{array}
 \begin{array}{r}
 -0.24^{\checkmark} \\
 -0.29^{\checkmark}
 \end{array}$$

Index above

$$\begin{array}{r}
 4.0 \\
 70.9 \\
 184.5 \\
 250.4
 \end{array}
 \begin{array}{r}
 66.9^{\checkmark} \\
 65.9^{\checkmark} \\
 132.4^{\checkmark}
 \end{array}
 \begin{array}{r}
 -0.92^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 3.0 \\
 72.0
 \end{array}
 \begin{array}{r}
 69.0^{\checkmark} \\
 70.2^{\checkmark}
 \end{array}
 \begin{array}{r}
 -0.46^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 7-34-0 \\
 61.50 \\
 730.55
 \end{array}
 \begin{array}{r}
 183.8 \\
 254.0
 \end{array}
 \begin{array}{r}
 70.2^{\checkmark} \\
 139.2^{\checkmark}
 \end{array}
 \begin{array}{r}
 -0.79^{\checkmark}
 \end{array}$$

+5 -54.5

1230 1 P.A. 336.4 Vernier B.

9503.5204

Color 7 in Photometer

$$\begin{array}{r}
 -0.57^{\checkmark} \\
 6.49^{\checkmark} \\
 6.32^{\checkmark}
 \end{array}$$

April 10, 1912

Star y with star t

Index right and above

8-6-55

14.9 - t dis

62.5 47.6[✓]199.8 35.6[✓]235.4 $\frac{43.2}{+3.2} + 2.10^{\checkmark}$ 22.2 34.0[✓]

56.2

+2.12[✓]195.1 42.1[✓]243.2 $\frac{42.1}{+2.1} + 2.13^{\checkmark}$

Index left and below

282.7 54.3[✓]

337.0

108.0 41.0[✓]149.0 $\frac{95.3}{+1.77}^{\checkmark}$ 289.3 36.6[✓]

325.9

+1.72[✓]19 55.5[✓]

98.5

52.5[✓]A. 9 54.5[✓]

157.0

95.1[✓]+1.72[✓]+5 -54.5[✓]13 9 4[✓]

P.A. 138.0 Vernier B

9503.5420[✓]+1.95[✓]
 $\frac{2.46}{10.40}^{\checkmark}$

April 10, 1912.

Star 8 with star t

Index left and below

$$\begin{array}{r}
 8-24-0 \quad 292.2 \quad \leftarrow \text{t dis} \\
 \quad \quad 323.2 \quad 31.0^{\checkmark} \\
 \quad \quad 115.3 \quad 24.3^{\checkmark} \\
 \quad \quad 139.6 \quad \underline{55.3^{\checkmark}} \quad +3.04^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 297.2 \quad 21.2^{\checkmark} \\
 318.4 \quad \quad \quad +3.04^{\checkmark} \\
 110.1 \quad 32.4^{\checkmark} \\
 142.5 \quad \underline{53.6^{\checkmark}} \quad +3.11^{\checkmark}
 \end{array}$$

Index right and above

$$\begin{array}{r}
 207.1 \quad 23.6^{\checkmark} \\
 230.7 \\
 286 \quad 17.3^{\checkmark} \\
 45.9 \quad \underline{40.9^{\checkmark}} \quad +3.72^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 8-35-20 \quad 208.0 \quad 20.0^{\checkmark} \quad +3.56^{\checkmark} \\
 \quad \quad 228.0 \\
 \quad \quad \underline{59.20^{\checkmark}} \quad 23.9 \quad 26.9^{\checkmark} \\
 \quad \quad 229.40^{\checkmark} \quad 50.8 \quad \underline{46.9^{\checkmark}} \quad +3.41^{\checkmark} \\
 \quad \quad +5 \quad -54. \\
 \quad \quad \underline{1324.46^{\checkmark}} \quad \text{P.A. } 317.0 \text{ Vernier B.} \\
 \quad \quad 9503.5617^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 +3.37^{\checkmark} \\
 \underline{4.48^{\checkmark}} \\
 11.79^{\checkmark}
 \end{array}$$

April 10, 1912

Star γ with star δ

Index left and above

$$\begin{array}{r}
 8-47-55 \\
 20.5 \leftarrow \text{A dis} \\
 52.3 \quad 31.2 \checkmark \\
 206.9 \quad 24.3 \checkmark \\
 231.2 \quad \underline{56.1} \checkmark + 3.01
 \end{array}$$

$$\begin{array}{r}
 27.2 \quad 22.0 \checkmark \quad + 3.02 \\
 49.2 \\
 202.5 \quad \underline{33.6} \checkmark \\
 236.1 \quad \underline{55.6} \checkmark + 3.03
 \end{array}$$

Index right and below

$$\begin{array}{r}
 289.0 \\
 326.4 \quad 37.4 \checkmark \\
 115.2 \quad 25.6 \checkmark \\
 140.8 \quad \underline{63.0} \checkmark + 2.75
 \end{array}$$

$$\begin{array}{r}
 296.0 \quad 24.6 \checkmark \quad + 2.72 \\
 320.6
 \end{array}$$

$$\begin{array}{r}
 8-55-40 \\
 103 \quad 35. \checkmark \quad 109.4 \quad 36.4 \checkmark \\
 + 51 \quad 42. \checkmark \quad 145.8 \quad \underline{61.0} \checkmark + 2.22 \\
 + 5 \quad - 54. \checkmark \\
 13 \quad 50 \quad 54 \checkmark \quad P. A. 191.6 \quad \text{Vernier B} \\
 9503.5770
 \end{array}$$

$$\begin{array}{r}
 + 2.90 \\
 2.46 \checkmark \\
 \underline{11.34} \checkmark
 \end{array}$$

Watch 54 seconds fast
L. P. P.

^{13.}
Nov. 12, 1912. (Saturday)

Encke's Nova. H. ob. Brand rec.
 Phot. I.

6	43	+34.1
2	42	
<hr/>		
+2	✓	

April 13, 1912.

I

Index above

7-11-30

182.2 Nova dis

256.5 74.3^v2.6 67.6^v70.2 141.9^v -0.74^v

182.5

71.2^v-0.62^v

253.7

1.1 76.7^v77.8 147.9^v -0.62^v

Index below

76.2 99.0^v

175.2

268.1 79.6^v347.7 174.6^v -0.03^v

89.0

77.0^v-0.06^v

7-17-25

166.0

28 55.5^v 259.8 94.4^v7 14 24.5^v 358.2 175.4^v -0.09^vtr -9.5^v12 14 19.5^v9506.5099^v-0.37^v6.819^v6.52^v

April 13, 1912.

II

Index below

7-19-40

$$\begin{array}{r} 82.5 \\ 173.2 \\ 266.0 \\ 345.7 \end{array} \quad \begin{array}{r} 90.7^{\checkmark} \\ \\ 79.7^{\checkmark} \\ 170.4^{\checkmark} \end{array} \quad \begin{array}{r} \\ \\ \\ -0.12^{\checkmark} \end{array}$$

$$\begin{array}{r} 85.9 \\ 168.0 \\ 258.9 \\ 356.0 \end{array} \quad \begin{array}{r} 42.1^{\checkmark} \\ \\ 97.1^{\checkmark} \\ 179.2^{\checkmark} \end{array} \quad \begin{array}{r} -0.10^{\checkmark} \\ \\ -0.02^{\checkmark} \end{array}$$

Index above

$$\begin{array}{r} 2.0 \\ 75.8 \\ 186.0 \\ 250.0 \end{array} \quad \begin{array}{r} 73.4^{\checkmark} \\ 64.0^{\checkmark} \\ 137.4^{\checkmark} \end{array} \quad \begin{array}{r} \\ \\ -0.42^{\checkmark} \end{array}$$

$$\begin{array}{r} 7-25-35 \\ 45 \\ 7-22-34 \\ 45 \end{array} \quad \begin{array}{r} 72.4 \\ 15.4 \\ 256.1 \\ 79.1 \end{array} \quad \begin{array}{r} 66.5^{\checkmark} \\ 74.1^{\checkmark} \\ 140.6^{\checkmark} \end{array} \quad \begin{array}{r} -0.79^{\checkmark} \\ -0.76^{\checkmark} \\ -0.44^{\checkmark} \end{array}$$

122229 P.A. 336.5 Verner B.

$$\begin{array}{r} 9506.5-156^{\checkmark} \\ 6.49^{\checkmark} \\ 6.45^{\checkmark} \end{array}$$

Color 7 in Photometer

Sky a little murky and cloudy with
 some twilight.

April 13, 1912

Star 8 with star t

Index right and above

$$\begin{array}{r}
 23.7 \\
 7-42-15 \quad 50.8 \quad \leftarrow t \text{ dis} \\
 209.2 \quad 27.1^v \\
 227.9 \quad \underline{12.7^v} \\
 \quad \quad 45.4^v \quad +3.47^v \\
 \\
 31.0 \quad 15.4^v \quad +3.50^v \\
 146.8 \\
 203.9 \quad 24.5^v \\
 232.4 \quad \underline{44.3^v} \quad +3.5K^v
 \end{array}$$

Index left and below

$$\begin{array}{r}
 292.6 \quad 30.3^v \\
 322.9 \\
 116.4 \quad 23.5^v \\
 139.9 \quad \underline{53.8^v} \quad +3.11^v \\
 \\
 298.0 \quad 21.7^v \quad +3.03^v \\
 7-52-25 \quad 319.7 \\
 94.40^v \quad 109.6 \quad 35.9^v \\
 7 \quad 47.20^v \quad 145.5 \quad \underline{57.6^v} \quad +2.95^v \\
 +5 \quad -9.1^v \\
 1247.11^v \quad P.A. 137.2 \\
 9506.5327^v \\
 \\
 +3.26^v \\
 8.40^v \\
 \underline{11.71^v}
 \end{array}$$

Apr. 13. 1912.

R Z Cassio. W. Br. Grand rec.
Phot. L.

$$\begin{array}{r} 2 \quad 36 \quad +69.0 \\ 9 \quad 46 \\ \hline +7 \quad 10 \end{array}$$

April 13, 1912.

I

Index left and above

$$\begin{array}{r}
 8-23-15 \\
 202.8 \quad \text{Var dis} \\
 234.7 \quad 31.9' \\
 28.0 \quad 21.9' \\
 49.9 \quad \underline{53.8} \quad -3.1'
 \end{array}$$

$$\begin{array}{r}
 205.0 \quad 25.7' \\
 230.7 \quad -2.94' \\
 19.7 \quad 37.0' \\
 56.7 \quad \underline{62.7} \quad -2.76'
 \end{array}$$

Index right and above

$$\begin{array}{r}
 108.0 \\
 144.7 \quad 36.7' \\
 293.8 \quad 27.0' \\
 320.8 \quad \underline{63.7} \quad -2.73'
 \end{array}$$

$$\begin{array}{r}
 8-28-40 \quad 115.3 \quad 26.6' \quad -2.74' \\
 \quad 141.9 \\
 \quad 51 \quad 55. \quad 290.8 \quad 36.6' \\
 4 \quad 25 \quad 54. \quad 327.4 \quad \underline{63.2} \quad -2.74' \\
 +5 \quad -9. \\
 \quad 13 \quad 25 \quad 49. \\
 9506.5596' \quad -2.44'
 \end{array}$$

April 13, 1912.

II

8-31-45

Index right and below

$$\begin{array}{r}
 108.5 \\
 146.3 \\
 295.2 \\
 320.7
 \end{array}
 \begin{array}{r}
 37.8 \\
 25.5 \\
 63.3
 \end{array}
 \begin{array}{l}
 \text{Var. dis.} \\
 \\
 \\
 - 2.74
 \end{array}$$

$$\begin{array}{r}
 114.8 \\
 140.2 \\
 289.9 \\
 327.8
 \end{array}
 \begin{array}{r}
 25.4 \\
 37.9 \\
 63.3
 \end{array}
 \begin{array}{l}
 \\
 \\
 - 2.74 \\
 - 2.74
 \end{array}$$

Index left and above

$$\begin{array}{r}
 22.1 \\
 54.4 \\
 204.6 \\
 229.8
 \end{array}
 \begin{array}{r}
 32.3 \\
 25.2 \\
 57.5
 \end{array}
 \begin{array}{l}
 \\
 \\
 - 2.96 \\
 - 2.96
 \end{array}$$

$$\begin{array}{r}
 27.2 \\
 50.4
 \end{array}
 \begin{array}{r}
 23.2 \\
 34.2
 \end{array}
 \begin{array}{l}
 \\
 - 2.96
 \end{array}$$

$$\begin{array}{r}
 8-38-35 \\
 70 \ 20 \ 200.4 \\
 35 \ 10 \ 234.6
 \end{array}
 \begin{array}{r}
 50.4 \\
 34.2 \\
 57.4
 \end{array}
 \begin{array}{l}
 \\
 - 2.96 \\
 - 2.96
 \end{array}$$

$$\begin{array}{r}
 +5 \\
 13 \ 35 \ 1.5 \\
 9506.5660
 \end{array}
 \begin{array}{r}
 -9. \\
 P.A. \ 24.8 \\
 \text{Vernier B}
 \end{array}
 \begin{array}{l}
 \\
 \\
 - 2.25
 \end{array}$$

L. P. P.

No watch used, watch 9 seconds fast

Apr. 15. 1912. (Tuesday)

Encke's Nova.

$$\begin{array}{r}
 6 \quad 43 \quad +34.1 \\
 9 \quad 0 \\
 \hline
 +2 \quad 17
 \end{array}$$

Clouds came immediately
preventing observation.



April 15, 1912.

Apr. 19, 1912. (Friday).

Erector Nova.

$$\begin{array}{r} 6 \quad 43 \quad +34.1 \\ 9 \quad 16 \\ \hline +2 \quad 33 \end{array}$$

April 19, 1912.

Index above

$$\begin{array}{r}
 2420 \\
 7-24-20 \quad 185.1 \quad \text{Nova dis} \\
 \quad \quad 255.2 \quad 70.1^{\checkmark} \\
 \quad \quad 4.7 \quad 65.9^{\checkmark} \\
 \quad \quad 70.6 \quad \underline{136.0}^{\checkmark} \quad -0.46^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 181.4 \quad 74.5^{\checkmark} \quad -0.72^{\checkmark} \\
 255.9 \quad 74.5^{\checkmark} \\
 \quad 1.1 \quad 69.2^{\checkmark} \\
 \quad 70.9 \quad \underline{144.3}^{\checkmark} \quad -0.69^{\checkmark}
 \end{array}$$

Index below

$$\begin{array}{r}
 85.7 \quad 25.3^{\checkmark} \\
 171.0 \quad 25.3^{\checkmark} \\
 264.6 \quad 27.1^{\checkmark} \\
 351.7 \quad \underline{172.4}^{\checkmark} \quad -0.14^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 7-28-40 \quad 82.9 \quad 26.0^{\checkmark} \quad -0.13^{\checkmark} \\
 \quad \quad 168.9
 \end{array}$$

$$\begin{array}{r}
 \sqrt{3} \quad 0.1^{\checkmark} \quad 262.8 \quad 27.5^{\checkmark} \\
 7 \quad 26 \quad 30.1^{\checkmark} \quad 3 \quad 50.3 \quad \underline{173.5}^{\checkmark} \quad -0.12^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 \sqrt{2} \quad +\sqrt{2.1}^{\checkmark} \\
 12 \quad 27 \quad 22.1^{\checkmark} \\
 9512.5 \quad 190^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 -0.46^{\checkmark} \\
 6.29^{\checkmark} \\
 \underline{6.43}^{\checkmark}
 \end{array}$$

April 19, 1912.

II

Index below

7-30-45

86.8	21.0 ^v	
167.8		
268.9	79.0 ^v	
347.9	160.0 ^v	-0.32 ^v

87.5	79.3 ^v	-0.32 ^v
166.8		
267.6	80.6 ^v	
348.2	159.9 ^v	-0.34 ^v

Index above

1.3	72.3 ^v	
73.6		
179.4	77.4 ^v	
256.8	149.7 ^v	-0.54 ^v

359.4	75.1 ^v	-0.54 ^v
74.5		

7-35-30

6	15.2 ^v	179.7	74.5 ^v	
7	33.4 ^v	258.2	153.6 ^v	-0.50 ^v

+5 +52.

12 34 0. P.A. 336.3 Vernier B

9512.5236 Color 6. in Photometer

-0.46^v
6.49^v
6.43^v

Measurements made thru more or less

cloud, but considered good

Watch 52 slow

L. P. P.

Apr. 20, 1912 (Saturday).

Enebro's hour.

$$\begin{array}{r} 6 \quad 43 \quad + 34.1 \\ 9 \quad 20 \\ \hline + 2 \quad 37 \end{array}$$

72

April 20, 1912.

I

Index above

$$\begin{array}{r}
 359.5 \\
 78.0 \quad 78.5^{\vee} \text{ Nova dis} \\
 178.8 \quad 20.2^{\vee} \\
 \hline
 259.0 \quad 158.7^{\vee} \quad -0.41^{\vee}
 \end{array}$$

$$\begin{array}{r}
 356.0 \quad 22.0^{\vee} \\
 78.0 \\
 181.3 \quad 76.7^{\vee} \\
 \hline
 258.0 \quad 154.7^{\vee} \quad -0.41^{\vee}
 \end{array}$$

Index below

$$\begin{array}{r}
 262.5 \\
 353.2 \quad 90.7^{\vee} \\
 84.4 \quad 25.2^{\vee} \\
 \hline
 170.2 \quad 176.5^{\vee} \quad -0.06^{\vee}
 \end{array}$$

$$\begin{array}{r}
 264.7 \quad 29.3^{\vee} \\
 354.0 \\
 \hline
 84.9 \quad 47.7^{\vee} \\
 172.6 \quad 177.0^{\vee} \quad -0.06^{\vee}
 \end{array}$$

$$\begin{array}{r}
 7-26-50 \\
 \hline
 225^{\vee} \\
 7 \quad 24 \quad 12^{\vee} \\
 +5 \quad +59^{\vee} \\
 \hline
 12 \quad 25 \quad 11^{\vee} \\
 9513.5175+^{\vee}
 \end{array}$$

$$\begin{array}{r}
 -0.24^{\vee} \\
 6.29^{\vee} \\
 \hline
 6.65^{\vee}
 \end{array}$$

April 20, 1912.

II

Index below

7-28-55

$$\begin{array}{r}
 262.7 \\
 353.4 \quad 90.7^{\checkmark} \\
 83.6 \quad 24.6^{\checkmark} \\
 172.2 \quad \underline{179.3^{\checkmark}} \quad -0.01^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 262.4 \\
 352.1 \quad 29.7^{\checkmark} \quad -0.01^{\checkmark} \\
 84.0 \quad 29.9^{\checkmark} \\
 173.9 \quad \underline{179.6^{\checkmark}} \quad -0.01^{\checkmark}
 \end{array}$$

Index above

$$\begin{array}{r}
 177.0 \\
 256.8 \quad 79.2^{\checkmark} \\
 357.7 \quad 20.7^{\checkmark} \\
 78.4 \quad \underline{76.5^{\checkmark}} \quad -0.37^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 176.8 \quad 21.2^{\checkmark} \quad -0.42^{\checkmark} \\
 258.0 \\
 0.8 \quad \underline{78.4^{\checkmark}} \quad -0.43^{\checkmark} \\
 76.4 \quad \underline{156.6^{\checkmark}}
 \end{array}$$

$$\begin{array}{r}
 7-34-5 \\
 3 \quad 0. \quad \checkmark
 \end{array}$$

$$\begin{array}{r}
 7 \quad 3 \quad 1 \quad 30. \quad \checkmark
 \end{array}$$

$$\begin{array}{r}
 +59. \quad \checkmark
 \end{array}$$

$$\begin{array}{r}
 12 \quad 32 \quad 29. \quad P.A. \quad 336.5 \quad \text{Vernier B}
 \end{array}$$

$$\begin{array}{r}
 9513.5225+ \quad \checkmark
 \end{array}$$

Color 6.5 in Photometer

$$\begin{array}{r}
 -0.22^{\checkmark} \\
 6.29 \\
 \underline{6.6} \quad \checkmark
 \end{array}$$

Apr. 20, 1912.

R Z Cassio. H. obs. Brand rec.
Phot. J.

$$\begin{array}{r}
 2 \quad 36 \quad +69.0 \\
 10 \quad 0 \\
 \hline
 +7 \quad 24
 \end{array}$$

April 20, 1912.

I

Index left and above

$$\begin{array}{r}
 21.8 \text{ Var dis} \\
 54.0 \quad 32.2 \\
 204.5 \\
 230.4 \quad \frac{25.9}{52.1} \quad -2.93
 \end{array}$$

$$\begin{array}{r}
 25.5 \quad 25.2 \quad -2.23 \\
 51.3 \\
 199.6 \quad \frac{37.4}{63.6} \quad -2.73 \\
 237.4
 \end{array}$$

Index right and below

$$\begin{array}{r}
 288.4 \\
 327.7 \quad 39.3 \\
 113.6 \quad 26.4 \\
 140.0 \quad \frac{65.7}{65.7} \quad -2.65
 \end{array}$$

$$\begin{array}{r}
 296.8 \quad 25.3 \quad -2.71 \\
 322.1
 \end{array}$$

$$\begin{array}{r}
 8-1-30 \\
 117 \quad 35. \\
 752 \quad 42. \\
 145.2 \quad \frac{37.2}{62.5} \quad -2.77
 \end{array}$$

$$\begin{array}{r}
 +5 \quad +59. \\
 1259 \quad 47. \\
 9513.5416 \quad -2.77
 \end{array}$$

April 20, 1912.

II

Index right and below

8-3-30

$$\begin{array}{r} 291.1 \\ 326.6 \end{array} \quad 35.5''$$

$$\begin{array}{r} 1142 \\ 140.1 \end{array} \quad \begin{array}{r} 25.9'' \\ 61.4'' \end{array} \quad -2.81''$$

$$\begin{array}{r} 296.8 \\ 318.8 \\ 106.3 \\ 147.8 \end{array} \quad \begin{array}{r} 22.0'' \\ 41.5'' \\ 63.5'' \end{array} \quad \begin{array}{r} -2.77'' \\ -2.73'' \end{array}$$

Index left and above

$$\begin{array}{r} 199.3 \\ 235.4 \\ 27.2 \\ 49.2 \end{array} \quad \begin{array}{r} 36.1'' \\ 22.0'' \\ 52.1'' \end{array} \quad -2.93''$$

$$\begin{array}{r} 205.4 \\ 231.5 \\ 20.6 \\ 56.2 \end{array} \quad \begin{array}{r} 26.1'' \\ 35.6'' \\ 61.7'' \end{array} \quad \begin{array}{r} -2.86'' \\ -2.80'' \end{array}$$

$$\begin{array}{r} 8-8-50 \\ 12 \quad 20. \\ 2 \quad 6 \quad 10. \\ +5 \quad +59. \\ \hline 13 \quad 7 \quad 9. \\ 9513.5466'' \end{array}$$

$$-2.82''$$

April 20, 1912.

III

Index left and above

8-10-40

$$\begin{array}{r}
 200.8 \\
 236.2 \\
 27.8 \\
 49.8
 \end{array}
 \begin{array}{r}
 35.4' \\
 \\
 \frac{22.0'}{57.4'} \\
 -2.96'
 \end{array}$$

$$\begin{array}{r}
 204.9 \\
 230.8 \\
 21.2 \\
 54.9
 \end{array}
 \begin{array}{r}
 25.9' \\
 33.7' \\
 \frac{59.6'}{-2.47}
 \end{array}$$

-2.92'

Index right and below

$$\begin{array}{r}
 108.0 \\
 146.5 \\
 295.5 \\
 320.4
 \end{array}
 \begin{array}{r}
 34.5' \\
 24.9' \\
 \frac{63.4'}{-2.73'}
 \end{array}$$

-2.42'

$$\begin{array}{r}
 8-15-45 \\
 26 \ 25. \\
 2 \ 13 \ 12.
 \end{array}
 \begin{array}{r}
 116.5 \\
 139.3 \\
 290.8 \\
 326.5
 \end{array}
 \begin{array}{r}
 22.2' \\
 35.7' \\
 \frac{54.5'}{-2.92'}
 \end{array}$$

$$\begin{array}{r}
 +5 \\
 13 \ 14 \ 11
 \end{array}
 \begin{array}{r}
 +59. \\
 \\
 \\
 \end{array}$$

-2.47'

$$9513.55154'$$

April 20, 1912.

IK

Index right and below

8-17-20

$$\begin{array}{r}
 106.8 \\
 146.4 \\
 296.1 \\
 320.8
 \end{array}
 \begin{array}{r}
 39.6^{\circ} \\
 \\
 24.7^{\circ} \\
 \hline
 64.3^{\circ}
 \end{array}
 \begin{array}{r}
 \\
 \\
 \\
 -2.70^{\circ}
 \end{array}$$

$$\begin{array}{r}
 114.7 \\
 142.5 \\
 290.0 \\
 327.5
 \end{array}
 \begin{array}{r}
 27.2^{\circ} \\
 \\
 37.5^{\circ} \\
 \hline
 65.3^{\circ}
 \end{array}
 \begin{array}{r}
 \\
 -2.62^{\circ} \\
 \\
 -2.67^{\circ}
 \end{array}$$

Index left and above

$$\begin{array}{r}
 22.0 \\
 56.3 \\
 205.6 \\
 228.2
 \end{array}
 \begin{array}{r}
 34.3^{\circ} \\
 \\
 22.6^{\circ} \\
 \hline
 56.9^{\circ}
 \end{array}
 \begin{array}{r}
 \\
 \\
 \\
 -2.92^{\circ}
 \end{array}$$

$$\begin{array}{r}
 8-22-40 \\
 40 \quad 0. \\
 + 20 \quad 0. \\
 + 59. \\
 \hline
 13 \quad 20 \quad 59. \\
 9513.5563
 \end{array}
 \begin{array}{r}
 27.2 \\
 51.3 \\
 200.4 \\
 236.2
 \end{array}
 \begin{array}{r}
 24.1^{\circ} \\
 \\
 35.2^{\circ} \\
 \hline
 59.9^{\circ}
 \end{array}
 \begin{array}{r}
 -2.92^{\circ} \\
 \\
 -2.26^{\circ} \\
 \\
 -2.40^{\circ}
 \end{array}$$

April 20, 1912.

IV

Index left and above

8-24-30

$$\begin{array}{r}
 20.4 \\
 56.2 \quad 35.8'' \\
 205.4 \quad 25.3'' \\
 \hline
 230.7 \quad 61.1'' \quad -2.42''
 \end{array}$$

$$\begin{array}{r}
 26.8 \quad 25.0'' \\
 51.8 \\
 201.2 \quad 34.2'' \\
 \hline
 236.0 \quad 59.8'' \quad -2.47''
 \end{array}$$

Index right and below

$$\begin{array}{r}
 290.6 \quad 36.6'' \\
 327.2 \quad 24.7'' \\
 \hline
 116.0 \quad 61.3'' \quad -2.41'' \\
 140.7
 \end{array}$$

$$\begin{array}{r}
 296.2 \quad 24.2'' \\
 321.0
 \end{array}$$

$$-2.76''$$

$$\begin{array}{r}
 8-29-45 \\
 54 \quad 15.5'' \\
 A \quad 27 \quad A. \\
 +v \quad +59.5'' \\
 \hline
 13 \quad 2A \quad 7.5''
 \end{array}$$

$$\begin{array}{r}
 107.4 \quad 39.1'' \\
 \hline
 146.5 \quad 63.9'' \quad -2.72''
 \end{array}$$

$$-2.40''$$

$$\begin{array}{r}
 13 \quad 2A \quad 7.5'' \\
 9513.5 \quad 612''
 \end{array}$$

P.A. 204.3 Vernier B.

Apr. 20. 1912.

Enebos' star, again.

$$\begin{array}{r} 6 \quad 43 \quad +34.1 \\ 10 \quad 50 \\ \hline +4 \quad 7 \end{array}$$

April 20, 1912.

Index above

842-10
 177.0 Nova dis
 259.0 22.0^v
 356.9 79.3^v
 76.2 161.3^v -0.36^v

180.0 23.0^v -0.33^v
 263.0 21.3^v
 356.0 164.3^v -0.30^v
 77.3

Index below

78.7 102.4^v
 181.1
 266.0 24.9^v
 350.9 127.3^v
 172.7^v +0.14^v

848-10
 10 20.^v
 24^v 10.^v
 +5^v +59.^v
 13 46 9.^v P.A. 156.5 Varian B
 9513.5737^v

84.8 25.2^v +0.06^v
 170.0 94.2^v
 259.8 179.4^v -0.01^v
 354.0
 -0.14^v
 6.89^v
 6.7^v

Watch 59 seconds slow. L.P.P.

May. 27. 1912. (Sunday)

Nova Gen. = Enebos' Nova.

$$\begin{array}{r}
 6 \quad 43 \quad +341 \\
 12 \quad 35 \\
 \hline
 +5 \quad 52
 \end{array}$$

Nova not found. Moon bright.
 Sky hazy. Troubled also by
 strong twilight.

June 3. 1912. (Monday)

Enslin's Arg. H. de Brand rec.
Phot. J.

$$\begin{array}{r}
 6 \quad 43 \quad + 34.1 \\
 13 \quad 0 \\
 \hline
 + 6 \quad 17
 \end{array}$$

June 3, 1912

Index left and above

8-46-20 83.2 ← Comp stor dis
 171.8 22.6^v
 272.1 62.6^v
 340.7 157.2^v + 0.43^v

88.9 22.9^v + 0.32^v
 171.8 26.6^v
 263.2 169.5^v + 0.20^v
 349.8

Index right and below

359.0 76.5^v
 75.5 190.0 52.3^v + 0.00^v
 248.3 134.2^v + 1.09^v

+ 0.92^v
 + 1.02^v

8-50-55 9.0 57.7^v
 66.7 97 15.5^v 181.7 73.9^v
 2 42 32.5^v 255.6 131.6^v + 0.95^v
 15 42 47.5^v
 95 57.5 75.6^v

~~40.6~~ + 0.61^v
~~6.29~~ 6.29^v
~~7.56~~ 7.50^v

June 3, 1912

Index right and below

$$\begin{array}{r}
 8-52-50 \quad 1.0 \\
 75.9 \quad 74.9^{\checkmark} \\
 189.8 \quad 59.3^{\checkmark} \\
 \hline
 249.1 \quad 134.2^{\checkmark} \quad +0.89^{\checkmark} \\
 9.5^{\checkmark} \quad 60.9^{\checkmark} \quad +0.90^{\checkmark} \\
 70.4 \\
 182.0 \quad 72.5^{\checkmark} \\
 \hline
 254.5^{\checkmark} \quad 133.4^{\checkmark} \quad +0.91^{\checkmark}
 \end{array}$$

Index left and above

$$\begin{array}{r}
 263.0 \\
 353.1 \quad 90.1^{\checkmark} \\
 92.8 \quad 69.0^{\checkmark} \\
 \hline
 161.8 \quad 159.1^{\checkmark} \quad +0.40^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 272.8 \quad 62.0^{\checkmark} \quad +0.40^{\checkmark} \\
 340.8
 \end{array}$$

$$\begin{array}{r}
 8-57-5^{\checkmark} \quad 80.5^{\checkmark} \quad 91.5^{\checkmark} \\
 \hline
 172.0 \quad 159.5^{\checkmark} \quad +0.39^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 +9.5^{\checkmark} \\
 \hline
 13.5^{\checkmark}
 \end{array}$$

$$9557.5200 \text{ P.A. } 335.3$$

$$\begin{array}{r}
 +0.65^{\checkmark} \\
 6.29^{\checkmark} \\
 \hline
 7.54^{\checkmark}
 \end{array}$$

L. A. P.

Watch app. slow.

June 5, 1912 (Wednesday)

Encke's Star, H. K. Brand rec,
Phot. J.

$$\begin{array}{r}
 6 \quad 43 \quad +34.1 \\
 \hline
 13 \quad 0 \\
 +6 \quad 17 \\
 \hline
 \quad 27 \\
 +6 \quad 42
 \end{array}$$

June 5, 1912

Index left and above

I

$$\begin{array}{r}
 275.8 \\
 8-33-15 \quad 340.4 \text{ comp star dis} \\
 81.8 \quad 646^{\checkmark} \\
 171.6 \quad 29.8^{\checkmark} \\
 \quad \quad \underline{154.4^{\checkmark}} \quad +0.49^{\checkmark} \\
 258.5 \quad 92.0^{\checkmark} \\
 350.5 \quad 75.5^{\checkmark} \quad +0.36^{\checkmark} \\
 90.5 \quad \underline{167.5^{\checkmark}} \quad +0.24^{\checkmark} \\
 166.0
 \end{array}$$

Index right and below

$$\begin{array}{r}
 188.0 \quad 60.5^{\checkmark} \\
 248.5 \quad 20.1^{\checkmark} \\
 357.6 \quad \underline{140.6^{\checkmark}} \quad +0.76^{\checkmark} \\
 77.7
 \end{array}$$

$$\begin{array}{r}
 180.1 \quad 77.1^{\checkmark} \quad +0.42^{\checkmark} \\
 257.2
 \end{array}$$

$$\begin{array}{r}
 8-38-0 \\
 \underline{71 \quad 15^{\checkmark}} \\
 2 \quad 35 \quad 34^{\checkmark} \\
 +5 \quad +42^{\checkmark} \\
 \underline{13 \quad 36 \quad 20^{\checkmark}} \\
 9559.5669^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 9.5 \quad 52.1^{\checkmark} \\
 67.6 \quad \underline{135.2^{\checkmark}} \quad +0.47^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 +0.59^{\checkmark} \\
 6.29^{\checkmark} \\
 \underline{7.88^{\checkmark}}
 \end{array}$$

June 5, 1912

II

Index right and below

8-40-0
 192.0 55.2 ✓
 247.8
 355.6 77.6 ✓
 73.2 133.4 ✓ +0.91 ✓

177.4 72.6 ✓ +0.26 ✓
 256.0
 7.0 59.5 ✓
 66.5 132.1 ✓ +0.21 ✓

Index left and above

93.2 67.4 ✓
 160.6
 263.5 90.0 ✓
 353.5 157.4 ✓ +0.43 ✓

8-45-55 84.0 22.0 ✓ +0.40 ✓
 172.0
 5 55.2 ✓ 272.2 72.2 ✓
 4 42 52.2 ✓ 345.0 160.2 ✓ +0.37 ✓
 +5 +42.2 ✓
 13 43 40 P.A. 335.0 Vernier B +0.63 ✓
 9559.5720 6.29 ✓
 7.52 ✓

Watch 42 sec. slow

L.P.P.

June 10, 1912. (Tuesday),

Musae Maj. H. O. Brand rec.

$$\begin{array}{r}
 12 \quad 37 \quad + 61.9 \\
 13 \quad 37 \\
 \hline
 +1 \quad 0 \\
 13 \quad 50 \\
 \hline
 +1 \quad 13
 \end{array}$$

Twilight and clouds.

Became thickly cloudy before anything
could be done.

June 11, 1912 (Tuesday)

St. Urs. reg. G. obs. Board rec.
Phot. T.

$$\begin{array}{r} 12 \quad 37 \\ 13 \quad 37 \\ \hline +1 \quad 0 \end{array} \quad +61.9$$

$$\begin{array}{r} 13 \quad 50 \\ \hline +1 \quad 13 \end{array}$$

Comp. Star used is fol. measure =
" " g in Vol. 37

$$C.S. g = +61^{\circ} 13' 11'' (9.2), (\text{Phot. magn.} = 8.41)$$

June 11, 1912.

Index left and above

I

9-20-35 98.1 ← Var des
 158.6 60.5[✓]
 270.8 74.3[✓]
 345.1 134.6[✓] - 0.22[✓]

87.2 20.7[✓] - 0.22[✓]
 167.9
 280.0 54.7[✓]
 334.7 135.4[✓] - 0.27[✓]

Index right and below

10.7 55.4[✓]
 66.1
 183.1 71.5[✓]
 254.6 126.9[✓] - 1.04[✓]

9-27-20 5.0 62.1[✓] - 1.10[✓]
 73.1
 47 55. 191.8 52.9[✓]
 244.7 121.0[✓] - 1.17[✓]

9 23 52.5[✓]
 15 - 12.5[✓]
 14 23 40.0[✓]
 9565.5992[✓]

~~0.94~~
 - 0.99[✓]
 2.21[✓]
 Magn. 7.22[✓]

June 11, 1912.

II

Index right and below

$$\begin{array}{r}
 9-33-35 \\
 12.6 \\
 65.3 \\
 184.8 \\
 249.9 \\
 \hline
 52.7^{\vee} \\
 65.1^{\vee} \\
 117.4^{\vee} \\
 -1.24^{\vee}
 \end{array}$$

$$\begin{array}{r}
 5.9 \\
 71.9 \\
 191.8 \\
 244.8 \\
 \hline
 66.0^{\vee} \\
 53.0^{\vee} \\
 119.0^{\vee} \\
 -1.22^{\vee} \\
 -1.21^{\vee}
 \end{array}$$

Index left and above

$$\begin{array}{r}
 279.8 \\
 337.0 \\
 90.0 \\
 163.9 \\
 \hline
 57.2^{\vee} \\
 73.9^{\vee} \\
 131.1^{\vee} \\
 -0.96^{\vee}
 \end{array}$$

$$\begin{array}{r}
 272.4 \\
 348.0 \\
 \hline
 75.6^{\vee} \\
 -0.90^{\vee}
 \end{array}$$

$$\begin{array}{r}
 9-40-35 \\
 74.10^{\vee} \\
 97.2 \\
 157.9 \\
 \hline
 60.7^{\vee} \\
 136.3^{\vee} \\
 -0.85^{\vee}
 \end{array}$$

$$\begin{array}{r}
 14.36 \\
 47. \\
 \hline
 61.66
 \end{array}$$

$$\begin{array}{r}
 9565.6049 \\
 P.A. 48.5 \\
 Vernier B \\
 \hline
 7.75^{\vee}
 \end{array}$$

June 11, 1912.

III

Index left and above

$$\begin{array}{r}
 9-54.50 \\
 279.6 \quad 57.1^{\checkmark} \\
 336.7 \\
 88.0 \quad 79.4^{\checkmark} \\
 167.8 \quad \underline{136.9^{\checkmark}} - 0.24^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 268.3 \quad 79.9^{\checkmark} \\
 348.2 \quad 79.9^{\checkmark} \\
 100.4 \quad 57.2^{\checkmark} \\
 158.2 \quad \underline{137.7^{\checkmark}} - 0.22^{\checkmark}
 \end{array}
 \quad -0.23^{\checkmark}$$

Index right and below

$$\begin{array}{r}
 192.0 \quad 52.0^{\checkmark} \\
 244.0 \\
 3.2 \quad 69.2^{\checkmark} \\
 72.4 \quad \underline{121.2^{\checkmark}} - 1.17^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 180.0 \quad 77.0^{\checkmark} \\
 257.0 \quad 77.0^{\checkmark} \\
 12.0 \quad 52.3^{\checkmark} \\
 64.3 \quad \underline{129.3^{\checkmark}} - 0.99^{\checkmark}
 \end{array}
 \quad -1.02^{\checkmark}$$

$$\begin{array}{r}
 10-2-0 \\
 116 \quad 50.0^{\checkmark} \\
 95.2 \quad 25.0^{\checkmark} \\
 15 \quad 15
 \end{array}$$

$$14 \quad 52 \quad 7.0^{\checkmark}$$

9565.623 \checkmark Sky in this region somewhat murky. $\frac{2.21}{7.25}$ -0.96^{\checkmark}

Watch 18 seconds fast

L. A. P.

June 13, 1912. (Thursday)

N. Mrs. Eug. H. Brand rec.
Phot. L.

$$\begin{array}{r} 12 \quad 37 \\ 14 \quad 2 \\ \hline +1 \quad 25 \end{array}$$

+61.9

June 13, 1912

Index left and above

$$\begin{array}{r}
 88.9 \leftarrow \text{Vardis} \\
 169.6 \leftarrow 20.7 \\
 280.9 \leftarrow 57.1 \\
 338.0 \leftarrow 137.4 \quad -0.42^{\vee}
 \end{array}$$

$$\begin{array}{r}
 100.3 \quad 59.7^{\vee} \quad -0.46^{\vee} \\
 160.0 \\
 270.7 \quad 74.2^{\vee} \\
 345.5 \quad 134.5^{\vee} \quad -0.49^{\vee}
 \end{array}$$

Index right and below

$$\begin{array}{r}
 1.5 \\
 73.9 \quad 72.4^{\vee} \\
 188.4 \quad 54.3^{\vee} \\
 246.7 \quad 130.7^{\vee} \quad -0.96^{\vee}
 \end{array}$$

$$\begin{array}{r}
 11.4 \quad 53.1^{\vee} \quad -0.94^{\vee} \\
 64.5 \\
 94 \quad 0. \quad 179.6 \quad 75.3^{\vee} \\
 147 \quad 0. \quad 254.9 \quad 126.4^{\vee} \quad -1.01^{\vee}
 \end{array}$$

$$\begin{array}{r}
 13 \quad 46 \quad 45. \\
 9567.5742^{\vee}
 \end{array}$$

$$\begin{array}{r}
 -0.92^{\vee} \\
 2.21^{\vee} \\
 7.89^{\vee}
 \end{array}$$

June 13, 1912.

II

Index right and below

8-53-30 $\begin{array}{r} 7.2 \\ 73.0 \\ 102.0 \\ 244.2 \end{array}$ $\begin{array}{r} 70.8 \\ 42.2 \\ 113.0 \end{array}$ Something wrong in this set.
Reject.

$\begin{array}{r} 10.9 \\ 64.4 \\ 179.0 \\ 254.8 \end{array}$ $\begin{array}{r} 53.5 \\ 75.8 \\ 129.3 \end{array}$ -0.99

Index left and above

$\begin{array}{r} 266.5 \\ 349.0 \\ 101.2 \\ 156.8 \end{array}$ $\begin{array}{r} 42.5 \\ 55.6 \\ 138.1 \end{array}$ -0.41

$\begin{array}{r} 278.8 \\ 334.9 \end{array}$ $\begin{array}{r} 56.1 \\ 78.4 \end{array}$ -0.45

$\begin{array}{r} 89.2 \\ 167.6 \end{array}$ $\begin{array}{r} 78.4 \\ 134.5 \end{array}$ -0.49

9-1-20
114 50.

2 57 25.

+5 -15.

13 57 10.

9567.5213

P.A. 49.2 Vernier B.

$\begin{array}{r} -0.92 \\ 8.41 \\ 7.49 \end{array}$

June 13, 1912.

III

Index left and above

9-14-30

$$\begin{array}{r}
 268.4 \\
 348.8 \\
 98.6 \\
 158.5
 \end{array}
 \begin{array}{r}
 20.4^{\vee} \\
 \\
 59.9^{\vee} \\
 140.3^{\vee}
 \end{array}
 \begin{array}{r}
 \\
 \\
 -0.77^{\vee}
 \end{array}$$

$$\begin{array}{r}
 278.2 \\
 338.0 \\
 87.9 \\
 170.0
 \end{array}
 \begin{array}{r}
 59.2^{\vee} \\
 22.1^{\vee} \\
 141.9^{\vee}
 \end{array}
 \begin{array}{r}
 -0.76^{\vee} \\
 \\
 -0.74^{\vee}
 \end{array}$$

Index right and below

$$\begin{array}{r}
 181.1 \\
 254.0 \\
 11.6 \\
 65.6
 \end{array}
 \begin{array}{r}
 72.9^{\vee} \\
 54.0^{\vee} \\
 126.9^{\vee}
 \end{array}
 \begin{array}{r}
 \\
 \\
 -1.04^{\vee}
 \end{array}$$

$$\begin{array}{r}
 191.2 \\
 244.7 \\
 3540. \\
 91750. \\
 +5141735. \\
 9567.5955^{\vee} +
 \end{array}
 \begin{array}{r}
 53.5^{\vee} \\
 71.4^{\vee} \\
 124.9^{\vee}
 \end{array}
 \begin{array}{r}
 -1.06^{\vee} \\
 -1.09^{\vee}
 \end{array}$$

$$\begin{array}{r}
 -0.91^{\vee} \\
 4.21^{\vee} \\
 7.90^{\vee}
 \end{array}$$

June 13, 1912.

IV

Index right and below

$$\begin{array}{r}
 189.0 \quad 55.0' \\
 244.0 \quad 1.0 \quad 74.5' \\
 75.5 \quad \underline{129.5} \quad -0.99'
 \end{array}$$

$$\begin{array}{r}
 177.6 \quad 77.4' \\
 255.4 \quad \underline{77.0} \quad -0.94' \\
 10.1 \quad 67.1 \quad \underline{134.2} \quad -0.44'
 \end{array}$$

Index left and above

$$\begin{array}{r}
 96.8 \quad 54.1' \\
 154.9 \quad 76.5' \\
 270.5 \quad \underline{134.6} \quad -0.44' \\
 347.0
 \end{array}$$

$$\begin{array}{r}
 89.5 \quad 79.1' \quad -0.47' \\
 168.6 \quad 56.7' \\
 279.5 \quad \underline{135.4} \quad -0.46' \\
 336.2 \\
 9-43-30 \quad 20 \quad 55.0' \\
 9 \quad 40 \quad 22.0' \\
 +5 \quad -15.0' \\
 14 \quad 40 \quad 13.0' \\
 9567.6112'
 \end{array}$$

$$\begin{array}{r}
 -0.90' \\
 4.41' \\
 \underline{7.91'}
 \end{array}$$

Watch 15 sec. fast.

L. P. P.

June 14, 1912. (Friday).

✓ Mrs. Maj. W. G. Brand rec
Phot. L.

$$\begin{array}{r} 12 \quad 37 \\ 14 \quad 16 \\ \hline +1 \quad 39 \end{array} \quad +61.9$$

June 14, 1912

Left and above

I

8-50-15

265.0 Var dis

344.5 79.5

99.4 61.4

160.8 140.9 -0.76

278.2

58.2

337.0

-0.77

89.0 41.0

170.0 139.2 -0.74

Right and below

2.3

72.8

70.5

190.0

58.2

248.8

129.3

-0.99

8.0

57.7

-0.96

8-57-40

65.7

75.0

-0.92

7 55.5

179.2

132.7

2 53 54.5

254.2

-0.46

+5 -19.

4.21

13 53 39.

7.95

9560.5729

June 14, 1912

Right & below

II

9-1-0

$$\begin{array}{r}
 1.5 \\
 73.6 \\
 190.0 \\
 246.2
 \end{array}
 \begin{array}{r}
 72.1 \\
 56.2 \\
 \hline
 128.3
 \end{array}
 -1.01$$

$$\begin{array}{r}
 10.0 \\
 65.8 \\
 178.0 \\
 256.0
 \end{array}
 \begin{array}{r}
 55.2 \\
 72.0 \\
 \hline
 133.2
 \end{array}
 \begin{array}{l}
 -0.96 \\
 -0.90
 \end{array}$$

Index left and above

$$\begin{array}{r}
 269.2 \\
 347.0 \\
 99.7 \\
 158.0
 \end{array}
 \begin{array}{r}
 77.4 \\
 52.3 \\
 \hline
 136.1
 \end{array}
 -0.45$$

$$\begin{array}{r}
 279.4 \\
 335.5
 \end{array}
 \begin{array}{r}
 56.1 \\
 44.0 \\
 \hline
 140.1
 \end{array}
 \begin{array}{l}
 -0.41 \\
 -0.77
 \end{array}$$

9-9-10

$$\begin{array}{r}
 10 \quad 10. \\
 9 \quad \checkmark \quad \checkmark \quad \checkmark \\
 14 \quad \checkmark \quad 46. \\
 95.64, 54.67
 \end{array}
 \begin{array}{r}
 87.0 \\
 171.0
 \end{array}
 \begin{array}{r}
 44.0 \\
 140.1
 \end{array}
 -0.77$$

-0.44

2.21

7.93

June 14, 1912

III

Index left and above

9-14-15

268.1	77.5	
345.6		
99.1	52.9	
158.0	<u>136.4</u>	-0.25

278.5	59.3	-0.79
337.8		
86.2	23.0	
169.2	<u>142.3</u>	-0.73

Right & below

178.9	76.2	
255.7		
10.1	54.0	
64.1	<u>130.2</u>	-0.96

190.8	54.0	-0.97
-------	------	-------

244.8	76.1	
359.2	<u>130.1</u>	-0.92
75.3		

9-24-30	
32 45.5	
9 19 22.5	
+5 -19.5	
14 19 3.5	
9562.5965+	

P.A. 228.9 Vernier B

-0.82
8.21
<u>7.93</u>

Sky slightly hazy. Seeing pretty good.

Watch 19 sec. fast

Y. P. P.

June 18. 1912. (Tuesday)

Fr. 3451.
 $\begin{array}{r} 7 \\ 59 \\ 0 \end{array} \begin{array}{r} 17.5 \\ 17.6 \end{array}$

B. 394
 $\begin{array}{r} 7 \\ 59 \\ 0 \end{array} \begin{array}{r} 0.0 \\ 0.0 \end{array}$

✓ Uro. Maj. H. Ob. Brandt res.

$\begin{array}{r} 12 \\ 14 \\ +1 \end{array} \begin{array}{r} 37 \\ 17 \\ 0 \end{array} \quad +61.9$

June 18, 1912

Left and above

8-26-45

82.0	Var. dis		I
170.1	A. A		
278.5	61.5		
340.0	<u>149.6</u>	-0.52	
Clouds			
96.8	62.7	-0.62	
159.5	A. 3.7		
267.3	<u>146.4</u>	-0.65	
351.0			

Right and below

356.0	A. 0.4	
76.4		
192.2	52.2	
245.0	<u>233.2</u>	-0.91

8-32-35	11.2	53.2	-0.49
	65.0		
59 20.	177.7	A. 1.7	
A 29 40.	259.4	<u>135.5</u>	-0.47
45	-7.		

13 29 33.

9572.5622

-0.76

A. A

A. 0.5

June 18, 1912

II

Right and below

8-34-10

$$\begin{array}{r}
 356.5 \quad 81.7^{\circ} \\
 78.2 \\
 190.0 \quad \frac{59.0^{\circ}}{140.7^{\circ}} \quad -0.76 \\
 249.0
 \end{array}$$

$$\begin{array}{r}
 11.5 \quad 55.5^{\circ} \quad -0.84 \\
 67.0 \\
 180.0 \quad \frac{74.9^{\circ}}{130.5^{\circ}} \quad -0.91 \\
 254.9
 \end{array}$$

Left and above

$$\begin{array}{r}
 267.4 \quad 24.6^{\circ} \\
 352.0 \\
 98.0 \quad \frac{61.5}{146.1} \quad -0.65 \\
 159.5
 \end{array}$$

-0.66

$$\begin{array}{r}
 8-38-30 \quad 279.9 \quad 57.2 \\
 337.1 \quad 27.5 \\
 72.40^{\circ} \quad 84.0 \quad \frac{144.7}{171.5} \quad -0.64 \\
 236.20^{\circ}
 \end{array}$$

$$\begin{array}{r}
 +5 \quad -7.1 \\
 13 \quad 36 \quad 13.1 \\
 9572.566
 \end{array}$$

P.A. 49.2 Verrier B

$$\begin{array}{r}
 -0.75 \\
 2.21 \\
 \hline
 2.06
 \end{array}$$

June 1st. 1912.

Recap. Jup. I. Photo Tr.
 H. obs. Braund recd
 Comp. with Sat. on fol. side =
 = Sat. III.

$$\begin{array}{r}
 16 \quad 26 \quad - 210 \\
 14 \quad 50 \\
 \hline
 -1 \quad 36 \\
 + 10 \quad 24
 \end{array}$$

For 1st. Chrom. Comp. (3451) for
 eclipse, see p. 103 and for last comp-
 arison, see p. 110.

Fr. 3451 used for times on eclipse.

June 1st, 1912

(Fr. 3451 used for times)

14	22	43	9	23	14	seen.
22	55		23	26	27.1	+3.1 216.2
23	10			41	35.3	+2.5 243.3
23	21			52	43.1	+2.0 208.0
23	35	24		6	49.1	+1.7 251.1
23	47			18	51.0	+1.6 202.0
23	56			27	54.9	+1.4 253.0
24	6			37	61.5	+1.1 198.1
24	17			48	64.0	+1.0 259.6
24	20			59	64.3	+1.0 194.8
24	40	25		11	64.5	+1.0 259.1
24	51			22	67.5	+0.9 194.6
25	4			25	73.3	+0.6 262.1
25	20			51	72.1	+0.5 188.8
25	31	26		3	77.0	+0.5 266.9
25	51			23	77.2	+0.5 189.9
14	26	15		47		267.1
			27	0	71.2	193.3
9	27	16		10	24.7	264.5
45		-32		20	72.0	+0.5 183.5
14	26	44		35		268.2
				47	80.5	188.2
9	28	4		58	79.2	268.7
45		-32	28	11	79.2	+0.4 186.0
14	27	32		21		265.2
				31	76.1	188.9
9	28	53		49	80.2	265.0
45		-32			78.2	+0.5
14	28	21				

June 18, 1912,

9 29 1 186.8 3

12 267.0

34 76.1 189.1

44 79.1 265.2

52 77.6 +0.5 190.0 4

14 29 16. 30 0 269.1

12 75.0 190.0

24 77.1 265.0

37 76.0 +0.5 188.3 ✓

48 265.4

57 79.4 186.8

9 76.0 266.6

21 77.9 +0.5 189.5 6

31 265.5

44 77.5 188.5

54 74.9 266.0

1 76.2 +0.5 190.4 7

9 265.3

20 76.0 189.0

28 77.2 265.0

38 76.6 +0.5 188.0 8

50 265.2

34

38 77.0 188.1

46 74.4 265.1

56 75.9 +0.5 190.3 9

5 265.1

35

June 18, 1912

$$\begin{array}{r} 9-35 \\ 9 \quad 35 \quad 32 \\ +5 \quad -33 \\ \hline 14 \quad 34 \quad 59 \end{array}$$

14	79.1	✓	186.9	
24	76.1	✓	266.0	10
34	77.6	✓ + 0.5	189.9	
57			266.0	

Limit of Visibility

$$\begin{array}{r} 9 \ 36 \ 43 \checkmark \\ \text{tw} \quad - 33 \checkmark \\ \hline 14 \ 36 \ 10 \checkmark \end{array}$$

Seeing pretty good with the exception that Jupiter is a little fuzzy and surrounding region a little hazy

Boards' watch used on S. Mrs. V. Maj.
Watch 7 sec. fast.

L. A. P.

June 12, 1912,

Fr. 3451.

9 49 35.1
50 35.5

B. 394.

9 49 0.0
50 0.0

L. P. P.

June 19, 1912. (Wednesday).

5th Uss. Maj. L. O. Brand rec.
Phot. 5.

12	37	+61.9
14	25	
<hr/> +1	42	

June 19, 1912.

Index left and above.

8-32-50

$$\begin{array}{r}
 765.2 \quad \text{Var dis} \\
 350.0 \quad 84.4' \\
 94.8 \quad 67.7' \\
 \hline
 162.5 \quad 152.5' \quad -0.53'
 \end{array}$$

$$\begin{array}{r}
 276.1 \quad 61.6' \quad -0.55' \\
 327.7 \\
 84.3 \quad 22.5' \\
 \hline
 172.8 \quad 150.1' \quad -0.57'
 \end{array}$$

Index right and below.

$$\begin{array}{r}
 179.4 \quad 76.1' \\
 255.5 \\
 9.8 \quad 55.4' \\
 \hline
 65.2 \quad 131.5' \quad -0.95'
 \end{array}$$

$$\begin{array}{r}
 8-40-55 \quad 188.3 \quad 52.1' \quad -0.93' \\
 73.45' \quad 246.4 \\
 36.52' \quad 1.0 \quad 75.0' \\
 +5 \quad -15' \quad 76.0 \quad 133.1' \quad -0.91' \\
 \hline
 13 \quad 36 \quad 37' \quad -0.9 \\
 9573.5675'
 \end{array}$$

$$\begin{array}{r}
 -0.74' \\
 2.21' \\
 \hline
 2.07'
 \end{array}$$

June 19, 1912.

II

Right and below.

$$\begin{array}{r}
 8-44-20 \quad 181.2 \quad 75.0^{\vee} \\
 256.2 \quad 75.0^{\vee} \\
 8.5^{\vee} / \frac{57.9^{\vee}}{132.9^{\vee}} \quad -0.92^{\vee} \\
 66.4
 \end{array}$$

$$\begin{array}{r}
 190.0 \quad 52.6^{\vee} \quad -0.90^{\vee} \\
 248.6 \\
 359.3 \quad 75.6^{\vee} \\
 74.9 \quad \frac{132.2^{\vee}}{132.2^{\vee}} \quad -0.49^{\vee}
 \end{array}$$

Left and above

$$\begin{array}{r}
 84.5 \quad 91.5^{\vee} \\
 176.0 \quad 91.5^{\vee} \\
 274.3 \quad 66.1^{\vee} \\
 340.4 / \frac{157.6^{\vee}}{157.6^{\vee}} \quad -0.43^{\vee}
 \end{array}$$

$$\begin{array}{r}
 8-50-30 \quad 95.5 \quad 62.5^{\vee} \quad -0.42^{\vee} \\
 164.0 \quad 62.5^{\vee} \\
 94.50 \quad 266.4 \quad 23.2^{\vee} \\
 A \quad 47.25 \quad 349.6 \quad \frac{151.7^{\vee}}{151.7^{\vee}} \quad -0.54^{\vee}
 \end{array}$$

$$\begin{array}{r}
 +5. \quad -15. \\
 13 \quad 47 \quad 10. \quad P.A. \quad 49.2 \quad \text{Vernier B} \\
 9573.5744^{\vee}
 \end{array}$$

$$\begin{array}{r}
 -0.69^{\vee} \\
 2.211^{\vee} \\
 2.12^{\vee}
 \end{array}$$

L. P. A.

Watch 15 secs fast.

June 20. 1912. (Thursday)

Encke's Nova,

$$\begin{array}{r}
 6 \quad 43 \quad +34.1 \\
 14 \quad 39 \\
 \hline
 +7 \quad 56
 \end{array}$$

5th Urs. Maj. H. St. Brand rec.
Photo. J.

$$\begin{array}{r}
 12 \quad 37 \quad +61.9 \\
 14 \quad 39 \\
 \hline
 +2 \quad 2
 \end{array}$$

June 20, 1912.

I

8-39-50

Left & above

264.4 Var dis

350.6 26.2

95.4 66.2

161.6 152.8 -0.53

274.3 64.0

338.3 -0.54

83.9 47.5

171.4 151.5 -0.55

Right & below.

179.1 20.1

259.2 8.2

8.2 55.2

64.0 135.9 -0.46

8-47-20

189.3 57.9

247.2

-0.47

7 10. 358.4 76.4

243 35. 75.2 134.7 -0.44

15 -12.

13 43 23.

-0.70

2.21

4.11

9574.5712

June 20, 1912.

II

Left and above

8-56-15

$\checkmark 83.7$ $24.1 \checkmark$
 171.8
 774.6 $\underline{65.4} \checkmark$
 340.0 $1535 \checkmark$ $-0.51 \checkmark$

$9\sqrt{7}$ 66.6° $-0.5K^{\circ}$
 162.3
 267.7 $\frac{82.9^{\circ}}{149.5^{\circ}}$
 $3\sqrt{0.6}$ $-0.5A^{\circ}$

Right and below

$$\begin{array}{r} 359.7 \\ 75.4 \\ \hline 186.5 \\ 247.0 \end{array} \quad \begin{array}{r} 75.7 \\ 75.7 \\ \hline 60.5 \\ 1362 \end{array} \quad \begin{array}{r} \\ \\ \\ -0.45 \end{array}$$

7.6 59.2 -0.26
67.4

$$\begin{array}{r} 9-2-10 \\ \hline 118.25 \end{array}$$

$$\begin{array}{r} 180.0 \\ 256.0 \\ \hline 135.8 \end{array}$$

$$\begin{array}{r} 76.0 \\ \hline 135.8 \end{array}$$

$$-1.86$$

$$\begin{array}{r} + 59.12 \\ + 5.12 \\ \hline 13.59 \end{array}$$

$$9574.5226$$

P.A. 229.4 Ver. B

$$\begin{array}{r} -0.70 \\ 2.21 \\ \hline 2.11 \end{array}$$

L. P. B.

Watch 12 seconds fact.

June 22. 1912. (Saturday)

St. Mrs. May. H. B. Grand rec.

$$\begin{array}{r}
 12 \quad 37 \\
 14 \quad 20 \\
 \hline
 +1 \quad 43
 \end{array}
 \quad +61.9$$

June 22, 1912.

I

Left + above.

$$\begin{array}{r}
 81.9 \leftarrow \text{Var dis} \\
 8-24-\sqrt{\quad} \quad 173.4 \quad 91.5 \\
 \quad \quad 275.0 \quad 65.6 \\
 \quad \quad 340.6 \quad \underline{157.1} \quad -0.44
 \end{array}$$

$$\begin{array}{r}
 94.3 \quad 62.5 \\
 162.8 \quad \quad \quad -0.49 \\
 266.8 \quad \underline{43.5} \\
 350.3 \quad \underline{152.0} \quad -0.54
 \end{array}$$

Right X below.

$$\begin{array}{r}
 177.3 \quad 20.4 \\
 257.7 \quad \quad \quad \\
 10.6 \quad \underline{54.9} \\
 65.5 \quad \underline{135.3} \quad -0.27
 \end{array}$$

$$\begin{array}{r}
 189.8 \quad 57.2 \quad -0.24 \\
 8-33-\sqrt{\quad} \quad 247.0 \\
 \quad 57 \quad 25. \quad 355.0 \quad \underline{20.6} \quad -0.66 \\
 2 \quad 24 \quad 42. \quad 75.6 \quad \underline{137.2} \quad -0.22 \\
 +5 \quad \quad +6. \\
 13 \quad 24 \quad 44. \\
 9576.5617
 \end{array}$$

June 22, 1912

II

Right X below

$$\begin{array}{r}
 178.2 \\
 8-35-30 \quad 258.0 \quad 79.8 \\
 8.3 \quad \underline{59.2} \\
 67.5 \quad 139.0 \quad -0.79
 \end{array}$$

$$\begin{array}{r}
 188.9 \quad 60.3 \\
 249.2 \\
 357.8 \quad \underline{79.2} \\
 77.0 \quad 139.5 \quad -0.74
 \end{array}$$

Left X above

$$\begin{array}{r}
 83.4 \quad 24.6 \\
 172.0 \\
 274.0 \quad \underline{64.2} \\
 338.2 \quad 152.8 \quad -0.52
 \end{array}$$

$$\begin{array}{r}
 8-42-50 \quad 93.3 \quad 70.5 \\
 163.8 \\
 72 \quad 20. \quad 266.7 \quad \underline{82.9} \\
 39 \quad 10. \quad 349.6 \quad 153.4 \quad -0.51 \\
 +5 \quad +6. \\
 13 \quad 39 \quad 16. \quad P.A. \quad 49.2 \quad \text{Vernier B} \\
 9576.5690
 \end{array}$$

$$\begin{array}{r}
 -0.65 \\
 A.21 \\
 \hline
 0.16
 \end{array}$$

Watch 6 sec. slow.

L. P. P.

June 24. 1912. (Monday).

✓ Uss. Neg. H. do. Brand rec,
Phot. I.

12	37	+61.9
14	40	
+2	3	

June 24, 1912.

I

Left & above

8-34-0

$$\begin{array}{r}
 82.3 \text{ Var. dis.} \\
 175.9 \quad 93.6 \\
 275.0 \quad 62.4 \\
 337.4 \quad \underline{156.0} \quad -0.46 \checkmark
 \end{array}$$

$$\begin{array}{r}
 95.1 \quad 67.9 \quad -0.44 \checkmark \\
 163.0 \\
 263.1 \quad 90.3 \\
 353.4 \quad \underline{152.2} \quad -0.42 \checkmark
 \end{array}$$

Right and below

$$\begin{array}{r}
 357.7 \quad 20.7 \\
 78.4 \\
 189.5 \quad 17.5 \\
 247.0 \quad \underline{132.2} \quad -0.41 \checkmark
 \end{array}$$

$$\begin{array}{r}
 8-40-50 \quad 7.8 \quad 57.2 \quad -0.20 \checkmark \\
 65.0
 \end{array}$$

$$\begin{array}{r}
 74.50 \checkmark \quad 176.2 \quad 22.4 \\
 A \quad 37 \quad 25 \checkmark \quad 258.6 \quad 139.6 \quad -0.74 \checkmark \\
 + \checkmark \quad -22.1 \checkmark
 \end{array}$$

$$\begin{array}{r}
 13 \quad 37 \quad 3 \checkmark \\
 9574.5674 \checkmark
 \end{array}$$

$$\begin{array}{r}
 -0.62 \checkmark \\
 2.41 \checkmark \\
 \hline
 2.19 \checkmark
 \end{array}$$

June 24, 1912.

II

Index right and below

8-44-10

356.2	
75.0	72.8
188.1	60.3
248.4	<u>139.1</u>
	-0.79

$$\begin{array}{r} 8.0 \\ 67.7 \\ 177.2 \\ 259.5 \end{array} \quad \begin{array}{r} 59.7 \\ 22.3 \\ \hline 142.0 \end{array} \quad \begin{array}{r} -0.76'' \\ -0.73' \end{array}$$

Left and above

$$\begin{array}{r}
 261.1 \\
 352.0 \\
 95.8 \\
 164. \checkmark
 \end{array}
 \begin{array}{r}
 90.9 \\
 68.7 \\
 \hline
 159.6
 \end{array}
 \begin{array}{r}
 \\
 \\
 \\
 -0.39 \checkmark
 \end{array}$$

274.1 68.9 -0.43
343.0

$$\begin{array}{r} 8-51-50 \\ \hline 96 \quad 0.5 \\ + 48 \quad 0. \end{array}$$

$$\begin{array}{r} 3 \quad 4 \quad 3.0 \\ 8 \quad 4.8 \\ 1 \quad 7 \quad 1.1 \end{array}$$

$$\begin{array}{r} 62.7 \\ + 6.3 \\ \hline 69.0 \end{array}$$

$$-0.47$$

 $+5 \quad -22$

$\begin{array}{r} +5 \\ 13 \end{array}$
 $\begin{array}{r} -22 \\ 47 \end{array}$
 $\begin{array}{r} 34 \\ 957 \end{array}$
 P.A. 49.2 Vermin B

$$\begin{array}{r} -0.60 \\ 2.81 \\ \hline 2.21 \end{array}$$

L. A. B.

Watch v2 seconds fast

June 26, 1912. (Wednesday)

✓ Mrs. May. H. obs. Grand rac.
Phot. I.

$$\begin{array}{r}
 12 \quad 37 \\
 14 \quad 37 \\
 \hline
 + 2 \quad 8 \\
 \hline
 42 \\
 + 2 \quad 11
 \end{array}
 \quad + 61.9$$

June 26, 1912.

I

Index left and above

$$\begin{array}{r}
 79.0 \quad \text{Var dis} \\
 8-29-45 \quad 173.8 \quad 94.4' \\
 272.7 \quad 69.1' \\
 \hline
 341.8 \quad 163.9' \quad -0.30'
 \end{array}$$

$$\begin{array}{r}
 93.0 \quad 62.0' \quad -0.34' \\
 161.0 \\
 261.5 \quad 27.9' \\
 \hline
 349.4 \quad 155.9' \quad -0.46'
 \end{array}$$

Right + below

$$\begin{array}{r}
 0.0 \\
 74.0 \quad 74.0' \\
 188.0 \quad 59.5' \\
 \hline
 247.5 \quad 133.5' \quad -0.91'
 \end{array}$$

$$\begin{array}{r}
 8-35-20 \quad 8.5 \quad 60.1' \quad -0.41' \\
 65 \quad 5' \quad 68.6 \\
 2 \quad 32 \quad 32' \quad 175.0 \quad 23.0' \\
 \hline
 +5 \quad -26' \quad 258.0 \quad 143.1' \quad -0.71' \\
 \hline
 13 \quad 32 \quad 6' \\
 9520, 5640'
 \end{array}$$

$$\begin{array}{r}
 -0.60' \\
 2.21' \\
 \hline
 2.21'
 \end{array}$$

June 26, 1912

II

Index right and below

8-37-20

$$\begin{array}{r}
 357.5 \\
 77.9 \\
 185.2 \\
 250.6 \\
 \hline
 65.4 \\
 145.4 \\
 \hline
 20.4 \\
 -0.66 \\
 -0.66
 \end{array}$$

$$\begin{array}{r}
 6.7 \\
 68.4 \\
 176.0 \\
 259.6 \\
 \hline
 61.7 \\
 83.6 \\
 145.3 \\
 \hline
 -0.67
 \end{array}$$

Left + above

$$\begin{array}{r}
 265.0 \\
 354.6 \\
 91.5 \\
 163.0 \\
 \hline
 29.6 \\
 71.5 \\
 161.1 \\
 \hline
 -0.36
 \end{array}$$

-0.36

8-42-45

$$\begin{array}{r}
 273.3 \\
 341.0 \\
 81.5 \\
 175.2 \\
 \hline
 67.7 \\
 93.7 \\
 161.4 \\
 \hline
 -0.38
 \end{array}$$

+5 -26.

13 39 36 P.A. 49.3 Vernier B
9500.5692

$$\begin{array}{r}
 -0.51 \\
 2.21 \\
 \hline
 2.30
 \end{array}$$

June 26, 1912.

This page omitted by mistake.

June 26, 1912.

III

Index left and above

$$\begin{array}{r}
 85.0 \\
 8-52-5 \quad 172.1 \quad 27.1 \\
 273.0 \quad 69.2 \\
 \hline
 342.8 \quad 156.9 \quad -0.44''
 \end{array}$$

$$\begin{array}{r}
 91.9 \\
 162.5 \quad 70.6 \\
 266.2 \quad 20.1 \\
 \hline
 346.3 \quad 150.7 \quad -0.56''
 \end{array}$$

Right and below

$$\begin{array}{r}
 357.0 \quad 79.9 \\
 76.9 \quad 64.0 \\
 185.3 \quad 183.9 \\
 \hline
 249.3 \quad -0.70''
 \end{array}$$

$$\begin{array}{r}
 8.0 \quad 61.9 \\
 8-59-20 \quad 69.9 \quad -0.72''
 \end{array}$$

$$\begin{array}{r}
 11 \quad 25.1 \quad 177.8 \quad 79.7 \\
 2 \quad 55 \quad 42.2 \quad 257.5 \quad 141.6 \\
 \hline
 -0.74''
 \end{array}$$

$$\begin{array}{r}
 15 \quad -26.1'' \\
 13 \quad 55 \quad 16.1'' \\
 \hline
 -0.61''
 \end{array}$$

Watch 26 seconds fast.

L. P. P.

June 27, 1912, (Thursday)

✓ Mr. Maj. H. obs. Brand rec.
Phot. L.

12	37	+61.9
14	47	
+2	10	

June 27, 1912.

I

Index left and above

8-30-50

262.3 ← Var. dis.

349.9 27.6

94.6 62.3

162.9 155.9 -0.46

272.9 62.1 -0.44

341.0

84.0 90.2

174.2 152.3 -0.41

Right and below

175.4 25.2

260.6

8.2 61.0

69.2 146.2 -0.65

-0.64

185.5 63.1

248.6

355.7 24.6

80.3 147.7 -0.62

8-40-0.

70 50.

2 35 25 ✓

+5 -26 ✓

13 34 59 ✓

15 34 59 ✓

9541 5660 ✓

-0.54

A. A. 1

2.27

June 27, 1912.

II

Index right and below

$$\begin{array}{r}
 8-42-15 \\
 175.1 \\
 260.6 \\
 8.0 \\
 68.8 \\
 \hline
 25.5 \\
 60.2 \\
 146.3 \\
 -0.65
 \end{array}$$

$$\begin{array}{r}
 185.9 \\
 249.4 \\
 356.9 \\
 79.5 \\
 \hline
 63.5 \\
 22.6 \\
 146.1 \\
 -0.65
 \end{array}$$

Left & above

$$\begin{array}{r}
 79.3 \\
 177.2 \\
 272.0 \\
 341.3 \\
 \hline
 97.9 \\
 69.3 \\
 167.2 \\
 -0.24
 \end{array}$$

$$\begin{array}{r}
 8-50-30 \\
 9-45 \\
 2-46-22 \\
 +5 \\
 \hline
 95.2 \\
 165.7 \\
 261.8 \\
 351.8 \\
 \hline
 70.5 \\
 90.0 \\
 160.5 \\
 -0.30 \\
 -0.37
 \end{array}$$

$$\begin{array}{r}
 13-45-56 \\
 95-21-5735+ \\
 \hline
 P.A. 49.3 \text{ Vernier B} \\
 -0.42 \\
 2.41 \\
 2.33
 \end{array}$$

Watch 26 seconds fast.

L.P.P.

July 1. 1912. (Monday)

N Wrs. Maj. H. obs. Broad rec.
Phot. J.

$$\begin{array}{r}
 12 \quad 37 \\
 16 \quad 4 \\
 \hline
 + 3 \quad 31
 \end{array}
 \quad + 61.9$$

July 1, 1912

I

Left & above

9-20-0

80.0	Var. dis	
176.2	96.2 ^v	
271.1	74.1 ^v	
345.2	<u>170.3</u> ^v	-0.14 ^v

89.5	20.4 ^v	-0.20 ^v
169.9		
265.5	<u>27.7</u> ^v	
353.2	162.1 ^v	-0.22 ^v

Right & below

351.0	93.7 ^v	
84.7		
182.0	<u>72.7</u> ^v	
254.7	166.4 ^v	-0.26 ^v

2.8	69.6 ^v	-0.36 ^v
72.4		

9-27-50	176.0	<u>26.5</u> ^v	-0.46 ^v
47 50 ^v	262.5 ^v	<u>156.1</u> ^v	

9 23 55 ^v			-0.24 ^v
+5	-2 ^v		<u>2.21</u> ^v
14 23 47 ^v			<u>2.53</u> ^v
952525999 ^v			

July 1, 1912.

II

Right & below

9-2 9-45

353.0	26.0 ^v	
79.0		
183.0	71.4 ^v	
254.4	<u>157.4</u> ^v	-0.43 ^v

4.0	70.6 ^v	-0.40 ^v
74.6		
173.7	90.0 ^v	
263.7	<u>160.6</u> ^v	-0.37 ^v

Left and above

263.0	49.0 ^v	
352.0		
86.1	79.4 ^v	
165.9	<u>168.4</u> ^v	-0.21 ^v

9-37-30

~~265.2~~~~342.8~~

Clouds.

Clearer - Last set taken.

-0.34
8.41
8.47

-0.28^v

9-47-30

83.0	29.9 ^v	
172.9	72.4 ^v	
270.8	<u>162.3</u> ^v	-0.34 ^v

-0.34^v

77	15 ^v	
9.32	32 ^v	
+5	-2 ^v	
14	32	30 ^v
9-47-30	6100	

P.A. 48.7 Vernier B

Watch 8 seconds fast.

8.41 ^v
8.47 ^v

July 2, 1912. (Tuesday).

Mr. Maj. H. Obo, Brand rec,
Phot. Y.

12	37	+61.9
15	212	
42	45	

July, 2, 1912

I

Index left & above

8-39-55

259.3 Var dis

353.9 94.6

90.9 77.6

168.5 172.2 -0.15

272.6 70.2 -0.16

342.8

77.4 101.5

178.9 171.7 -0.16

Right and below

169.7

264.9 95.2

1.2

71.9 70.7

165.9 -0.27

182.8 70.2 ✓

253.0

-0.32

8-48-15

22 10. ✓

351.0 29.6 ✓

2 44 ✓ ✓

80.6 109.4 ✓

-0.32

45 ~10. ✓

13 43 55. ✓

9526.5721 ✓

-0.24

2.21

457

July 2, 1912.

II

Right & below

$$\begin{array}{r}
 8-51-15 \\
 171.0 \\
 264.6 \quad 93.6 \\
 4.0 \quad 67.5 \\
 71.4 \quad \hline
 161.0 \quad -0.36
 \end{array}$$

$$\begin{array}{r}
 183.6 \quad 64.9 \\
 252.5 \\
 351.5 \quad 90.0 \\
 81.5 \quad \hline
 154.9 \quad -0.40
 \end{array}
 \quad -0.34$$

Left & above

$$\begin{array}{r}
 80.0 \\
 158.3 \quad 74.8 \\
 270.4 \quad 76.0 \\
 346.4 \quad \hline
 154.3
 \end{array}$$

Retaken below

$$\begin{array}{r}
 8-58-10 \\
 93.3 \quad 71.5 \\
 164.8 \\
 260.4 \quad 94.3 \\
 354.7 \quad \hline
 165.2 \quad -0.27
 \end{array}$$

P.A. 48.7 Vernier B

-0.26

$$\begin{array}{r}
 9-8-0 \\
 84.1 \\
 173.8 \quad 29.7 \\
 266.4 \quad 76.5 \\
 342.9 \quad \hline
 166.2 \quad -0.26
 \end{array}$$

$$\begin{array}{r}
 -0.32 \\
 4.41 \\
 \hline
 4.49
 \end{array}$$

July 2, 1912

III

Left & above

9-9-15

92.6	71.2	
164.4		
262.8	94.3	
357.1	166.1	-0.26

83.4	93.6	-0.26
177.0		
271.8	73.3	
345.1	166.9	-0.25

Right & below

1.9	70.1	
72.0		
170.1	95.6	
265.4	165.7	-0.27

353.1	24.9	-0.34
82.0		

9.13-55	82.0	24.9	
23 10.5	83.4	69.1	
9 11 35	252.5	152.0	-0.42

45	-10.5	
----	-------	--

14 11 25.5		
------------	--	--

9546.5913

-0.30
2.41
2.51

Watch 10 seconds fast.

July 3. 1912. (Wednesday)

H. Delphinus. H. obs. Brand rec,

$$\begin{array}{r}
 20 \quad 31 \quad +17.2 \\
 15 \quad 26 \\
 \hline
 -5 \quad 35 \\
 +6 \quad -35 \\
 +6 \quad 55
 \end{array}$$

July 3, 1912.

I

8-54-25

Right + above

85.9 ✓ Comp Star dis

8-54-25

169.2 23.3

258.8 94.2

353.0 177.5 +0.05

76.0

105.1

-0.03

181.1

266.7 21.0

347.7 146.1

173.9

-0.11

Left + below

359.1

76.2 77.1

172.2 93.2

266.0 170.9

+0.17

348.7 93.7

+0.12

82.4

9-3-20

117 45. ✓

179.8 76.2

2 52. ✓

256.0 169.9

+0.19

45 +3. ✓

+0.02

13 52. ✓

9547. 52 25+ ✓

July 3, 1912.

II

Left & below

9-8-50

359.4		
76.2	76.4 ^v	
174.8	92.0 ^v	
266.8	164.4 ^v	+0.21

354.0	87.0 ^v	
81.0		+0.32
181.9	70.9 ^v	
252.8	157.9 ^v	+0.42

Right & above

267.4		
346.6	79.2	
78.3	99.3	
177.6	174.5	+0.03

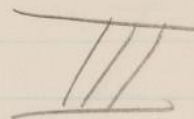
261.0		+0.07
-------	--	-------

9-16-20	355.0	94.0	
25 10. ^v	88.0	40.0	
9 12 35. ^v	168.0	174.0	+0.11

45 +3. ^v			+0.20
---------------------	--	--	-------

14 12 34. ^v		
9527.5921 ^v		

July 3, 1912.



Right & above

9-21-20

268.0

345.1

77.1

77.3

99.1

176.4

$$\frac{99.1}{176.2}$$

+0.07

258.6

353.9

95.3

+0.06

87.3

22.6

169.9

$$\frac{22.6}{177.9}$$

+0.04

Left & below

182.3

254.2

71.9

353.6

29.7

83.3

$$\frac{29.7}{161.6}$$

+0.35

170.8

264.3

93.5

+0.31

9-31-25

52 45.1

2.2

72.5

9 26 22

74.7

$$\frac{72.5}{166.0}$$

+0.27

45

+3.1

+0.12

14 26 25

95 27.60 17

July 3, 1912.

IV

Left & below

9-39-5

180.4	74.4	
254.8		
352.0	91.0	
83.0	165.4	+0.20

169.4	94.3	+0.20
263.7		
4.4	70.3	
74.7	164.6	+0.29

Right & above

86.6	24.5	
171.1		
260.0	97.0	
357.0	121.5	-0.03
	178.5	

79.0	92.6	+0.04
9-47-55	177.6	
27 0.	269.6	75.7
9 43 30.	345.3	174.3
		+0.11

+3.		+0.16
14 43 33.		
9577.6136		

July 3, 1912.

V

Right + above

9-51-50

89.3	
168.6	79.3
259.4	96.2
356.2	<u>176.1</u>
	+0.07

79.5	
176.6	97.1
267.7	79.5
347.2	<u>176.6</u>
	+0.06

Left + below

74.0	
171.1	97.1
261.7	90.7
352.4	<u>147.4</u>
	172.2
	-0.15

10-2-20

82.5	
179.5	Something wrong
253.2	Retaken
	+0.07

10-6-10	182.8	
11A 0.	257.0	74.2
9 59 0.	351.8	90.6
+5 +3	82.4	<u>164.6</u>
		+0.29
		+0.06

P. A. 164.5 Vernier B

14 59 3.

9547.6243

July 3, 1912.

Observations rather difficult throughout. Sky murky and bad, inclining to cloud. Sky rather bright on account of illumination from electric lights. Altitude a little low at beginning but great care exercised, and observations made slowly and carefully. Observations considered good.

Watch 3 seconds slow.

July 5. 1912. (Friday)

✓ No. mag.

12	37	+61.9
15	60	
<hr/>		
+2	31	

July 5, 1912.

I

8-36-20

Index left and above

79.4 Var. dis.

181.5 102.1

268.5 75.4

343.9 177.5 -0.05

88.0 23.0

171.0

+0.01

258.9 100.9

359.8 123.9 +0.07

176.1

Right & above

352.0

82.9 90.9

183.0 62.4

251.4 119.3 -0.39

2.1

62.5

-0.40

8-43-15

70.6

79 35.1 ✓

2 39 42.1 ✓

+14.1 ✓

13 40 2.1 ✓

95.49.5 69.4 ✓

172.2 49.9

262.1 152.4 -0.41

-0.20

2.41

2.61

July 5, 1912

II

Index right & below

~~8-46-20~~~~72.4~~

8-58-50

183.4

250.8

353.2

81.3

67.4

88.1
155.5

July 5, 1912.

Right & below

$$\begin{array}{r}
 8-51-35 \quad 172.5 \\
 \quad 265.8 \quad 93.3 \\
 \quad 3.9 \quad 66.2 \\
 \quad 70.1 \quad \underline{159.5} \quad -0.39
 \end{array}$$

$$\begin{array}{r}
 1840 \quad 70.0 \quad -0.34 \\
 254.0 \\
 352.0 \quad 90.0 \\
 82.0 \quad \underline{160.0} \quad -0.34
 \end{array}$$

Left & above

$$\begin{array}{r}
 74.7 \quad 106.1 \\
 180.8 \\
 270.2 \quad 77.0 \\
 347.2 \quad \underline{143.1} \\
 \quad 176.9 \quad +0.06 \\
 90.2
 \end{array}$$

$$\begin{array}{r}
 8-58-25 \quad 167.7 \quad 77.5 \quad -0.02 \\
 10 \quad 0. \quad \checkmark \quad 258.9 \quad 96.9 \\
 A \quad \checkmark \checkmark \quad 0. \quad \checkmark \quad 355.8 \quad \underline{174.4} \quad -0.11
 \end{array}$$

$$\begin{array}{r}
 +5 \quad +14. \quad \checkmark \\
 13 \quad \checkmark \checkmark \quad 14. \quad \checkmark \quad P.A. \quad 49.5 \quad \text{Vernier B.} \\
 9549.5200
 \end{array}$$

$$\begin{array}{r}
 -0.20 \\
 \underline{2.41} \\
 2.61
 \end{array}$$

July 5, 1912.

U. of Chicago, to Dr. Brand rec.
 Phot. J.
 7 inch cap.

$$\begin{array}{r}
 17 \quad 9 \\
 16 \quad 22 \\
 \hline
 -0 \quad 41 \\
 +11 \quad 19
 \end{array}
 + 1.4$$

For measts. see next page.

July 5, 1912

I

Right + above

$$\begin{array}{r}
 9-36-10 \quad 87.8 \text{ Var dig} \\
 1663 \quad 74.5 \\
 278.5 \quad 81.5 \\
 340.0 \quad \underline{140.0} \quad -0.77
 \end{array}$$

$$\begin{array}{r}
 95.2 \quad 63.2 \\
 159.0 \quad 46.0 \\
 265.0 \quad \underline{149.0} \quad -0.52 \\
 351.0
 \end{array}$$

Left + below

$$\begin{array}{r}
 1.2 \quad 73.3 \\
 74.5 \quad 49.0 \\
 193.0 \quad \underline{122.3} \quad -1.14 \\
 242.0
 \end{array}$$

$$\begin{array}{r}
 13.0 \quad 50.0 \quad -1.10 \\
 9-40-30 \quad 63.0 \\
 76 \quad 40.0 \quad 179.0 \quad 76.0 \\
 9 \quad 34 \quad 20. \quad 255.0 \quad \underline{126.0} \quad -1.06 \\
 +5 \quad +11. \\
 14 \quad 34 \quad 34 \quad P.A. 28.4 \quad \text{Vernier B} \\
 9549.6101
 \end{array}$$

-0.89

Watch 14 secs. slow

July 2, 1912. (Monday)

S' Mrs. Wm. H. obs. Brand rec.
Phot. J.

$$\begin{array}{r}
 12 \quad 37 \\
 16 \quad 0 \\
 \hline
 +3 \quad 23
 \end{array}
 \quad +61.9$$

July 9. 1912. (Tuesday).

✓ W. W. Proj. H. obs. Brand rec.
Phot. L.

$$\begin{array}{r} 12 \quad 37 \\ 15 \quad 34 \\ \hline +2 \quad 57 \end{array} \quad +61.9$$

$$\begin{array}{r} 12 \quad 37 \\ 16 \quad 3 \\ \hline +3 \quad 32 \end{array}$$

July 9, 1912.

I

Index left + above

$$\begin{array}{r}
 75.0 \leftarrow \text{Var. dis.} \\
 8-51-30 \quad 180.1 \quad 105.1 \\
 267.0 \quad 20.6 \\
 347.6 \quad 125.7 \\
 \quad \quad 174.3 \quad +0.11
 \end{array}$$

$$\begin{array}{r}
 89.0 \\
 168.8 \quad 79.8 \quad +0.06^v \\
 260.4 \quad 101.2 \\
 \quad \quad 121.0 \\
 1.6 \quad 179.0 \quad +0.02
 \end{array}$$

Right & below

$$\begin{array}{r}
 348.2 \quad 97.2^v \\
 86.0 \quad 71.6^v \\
 181.3 \quad 169.4^v \quad -0.20 \\
 252.9
 \end{array}$$

$$\begin{array}{r}
 0.7 \quad 71.3 \quad -0.20 \\
 8-59-10 \quad 72.0 \\
 10 \quad 40. \quad 169.2 \quad 92.5 \\
 4 \quad 55 \quad 20. \quad 267.7 \quad 169.2 \quad -0.19 \\
 15 \quad 0. \\
 13 \quad 55 \quad 20. \\
 9593.5201^v
 \end{array}$$

$$\begin{array}{r}
 -0.07 \\
 2.21 \\
 \hline
 2.74
 \end{array}$$

July 9, 1912.

II

Index right and below

9-1-45

$$\begin{array}{r}
 347.3 \\
 86.7 \\
 179.9 \\
 252.9 \\
 \hline
 73.0 \\
 172.4 \\
 \hline
 -0.14
 \end{array}$$

-0.14

$$\begin{array}{r}
 2.1 \\
 74.0 \\
 168.1 \\
 268.2 \\
 \hline
 71.9 \\
 100.1 \\
 172.0 \\
 \hline
 -0.15
 \end{array}$$

Left and above

$$\begin{array}{r}
 256.4 \\
 1.0 \\
 86.9 \\
 168.0 \\
 \hline
 104.6 \\
 21.1 \\
 105.7 \\
 174.3 \\
 \hline
 +0.11
 \end{array}$$

9-11-5

$$\begin{array}{r}
 267.4 \\
 349.9 \\
 75.6 \\
 179.1 \\
 \hline
 22.5 \\
 103.5 \\
 126.0 \\
 174.0 \\
 \hline
 +0.11
 \end{array}$$

+0.11

$$\begin{array}{r}
 12 \quad 20. \\
 9 \quad 6 \quad 25. \\
 +5 \quad 0
 \end{array}$$

$$\begin{array}{r}
 14 \quad 6 \quad 25. \\
 9593.5 \quad 72
 \end{array}$$

P. A. 49.2 Ver. B.

-0.02

$$\begin{array}{r}
 2.41 \\
 2.79
 \end{array}$$

July 9. 1912.

α Ophiuchi H. obs. Brand rec.
 Phot. J.
 7" cap.

$$\begin{array}{r}
 17 \quad 9 \\
 16 \quad 46 \\
 \hline
 - 0 \quad 23 \\
 + 11 \quad 37
 \end{array}
 \quad +1.4$$

July 9, 1912.

Right & above

9-35-20 269.0 Var. Dis.
 348.0 79.0 ✓
 99.0 54.0 ✓
 157.0 137.0 -0.43 ✓

 279.0 59.0 ✓ -0.77 ✓
 338.0 45.2 ✓
 85.5 143.2 ✓
 169.7 143.2 -0.71 ✓

Left & above

 178.9 76.1 ✓
 255.0 51.4 ✓
 13.1 127.5 ✓
 64.5 127.5 -1.03 ✓

-1.02 ✓

9-42-40 193.1 49.7 ✓
 242.8 73.2 ✓
 72 0.0 122.9 ✓
 9 39 0.0 ✓
 73.2 -1.13 ✓
 +5 0.0 ✓

-0.92 ✓

14 39 0.0 ✓ P.A. 27.9 Vernier B
 9593.6104

Watch correction 0.

July 12, 1912. (Friday)

U. Ophiuchi. H. obs. Grand rec.
Phot. T.
7" cap.

$$\begin{array}{r}
 17 \quad 9 \quad +1.4 \\
 \hline
 15 \quad 41 \\
 -1 \quad 24 \\
 \hline
 22 \quad 32 \\
 \hline
 16 \quad 9
 \end{array}$$

158

July 12, 1912.

Left and below.

I

8-37-20

$$\begin{array}{r}
 183.2 \leftarrow \text{Var. dis} \\
 253.1 \quad 69.9^{\vee} \\
 10.5 \quad 52.9^{\vee} \\
 63.4 \quad \underline{122.8^{\vee}} - 113^{\vee}
 \end{array}$$

$$\begin{array}{r}
 192.2 \quad 53.0^{\vee} \quad -1.09^{\vee} \\
 245.2 \\
 1.0 \quad 73.5^{\vee} \\
 74.5 \quad \underline{126.5^{\vee}} - 1.05^{\vee}
 \end{array}$$

Right and above.

$$\begin{array}{r}
 83.5 \quad 27.5^{\vee} \\
 171.0 \\
 276.7 \quad 62.1^{\vee} \\
 338.8 \quad \underline{149.6^{\vee}} - 0.52^{\vee}
 \end{array}$$

$$\begin{array}{r}
 100.9 \quad 59.1^{\vee} \quad -0.62^{\vee} \\
 160.0
 \end{array}$$

$$\begin{array}{r}
 8-43-55 \\
 \hline
 21 \quad 15^{\vee} \\
 + 40 \quad 32^{\vee} \\
 \hline
 13 \quad 40 \quad 33^{\vee} \\
 9596.5692^{\vee}
 \end{array}$$

$$\begin{array}{r}
 269.0 \quad 81.1^{\vee} \\
 350.1 \quad \underline{140.2^{\vee}} - 0.77^{\vee}
 \end{array}$$

$$-0.42^{\vee}$$

July 12, 1912.

II

Right and above

847-0

$$\begin{array}{r}
 87.0 \\
 169.2 \quad 22.2^{\checkmark} \\
 276.4 \quad 62.2^{\checkmark} \\
 \hline
 339.2 \quad 145.0^{\checkmark} \quad -0.67^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 96.9 \quad 63.1^{\checkmark} \\
 160.0 \\
 263.8 \quad 85.4^{\checkmark} \\
 \hline
 349.2 \quad 148.5^{\checkmark} \quad -0.60^{\checkmark}
 \end{array}$$

-0.64[✓]

Left and below

$$\begin{array}{r}
 1.9 \\
 75.2 \quad 73.3^{\checkmark} \\
 189.6 \quad 53.2^{\checkmark} \\
 \hline
 242.8 \quad 126.5^{\checkmark} \quad -1.05^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 8-53-25 \\
 \hline
 100 \quad 25.1^{\checkmark} \\
 250 \quad 12.1^{\checkmark} \\
 +5 \quad 0.1^{\checkmark} \\
 \hline
 1350 \quad 12.1^{\checkmark} \\
 9596.57652^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 12.3 \quad 52.6^{\checkmark} \\
 64.9 \\
 181.4 \quad 74.3^{\checkmark} \\
 \hline
 255.7 \quad 126.9^{\checkmark} \quad -1.04^{\checkmark}
 \end{array}$$

-1.04[✓]

-0.24[✓]

160

July 12, 1912.

III

Left + below

8-57-30

$$\begin{array}{r}
 2.5 \\
 73.0 \quad 70.5^{\checkmark} \\
 192.0 \quad 54.0^{\checkmark} \\
 246.0 \quad 124.5^{\checkmark} \quad -1.10^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 10.0 \\
 66.2 \quad 56.2^{\checkmark} \quad -1.03^{\checkmark} \\
 180.3 \quad 74.7^{\checkmark} \\
 255.0 \quad 130.9^{\checkmark} \quad -0.96^{\checkmark}
 \end{array}$$

Right + above

$$\begin{array}{r}
 265.7 \\
 348.0 \quad 42.3^{\checkmark} \\
 96.6 \quad 62.4^{\checkmark} \\
 159.0 \quad 144.7^{\checkmark} \quad -0.62^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 278.4 \quad 54.6^{\checkmark} \quad -0.62^{\checkmark} \\
 337.0 \\
 85.1 \quad 46.1^{\checkmark} \\
 171.2 \quad 144.7^{\checkmark} \quad -0.62^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 9-4-0 \\
 1 \quad 30.5^{\checkmark} \\
 9 \quad 0 \quad 45.5^{\checkmark} \\
 +5 \quad 0.5^{\checkmark} \\
 \hline
 14 \quad 0 \quad 45.5^{\checkmark} \\
 9596.5439^{\checkmark}
 \end{array}$$

-0.62

July 12, 1912.

IV

Right and above

266.0 45.0 ✓

351.0

95.1 65.6 ✓

160.7 150.6 ✓ -0.56 ✓

276.2 66.2 ✓

343.0

85.6 26.1 ✓

171.7 152.9 ✓ -0.52 ✓

-0.54 ✓

Left + below

180.0 77.0 ✓

257.0 55.4 ✓

9.3

64.7 132.4 ✓ -0.93 ✓

192.3 54.9 ✓

247.2

1.0 76.3 ✓

77.3 131.2 ✓ -0.95 ✓

-0.94 ✓

9-14-20

23 5.0 ✓

9 11 32. ✓

+5 0. ✓

14 11 32. ✓

9596.5914 ✓

-0.74 ✓

July 12, 1912.

V

Left & below

9-16-55

178.1		
258.4	40.3	✓
11.9	50.7	✓
62.6	131.0	✓
		-0.96

192.0	55.0	✓
247.0		-0.94
358.0	74.3	✓
76.3	133.3	✓
		-0.91

Right & above

84.4	26.7	✓
171.1		
275.0	64.8	✓
339.8	151.5	✓
		-0.55

94.0	67.0	✓
161.0		-0.50

9-25-20		
42 15	262.5	84.7
9 21 4	351.2	165.7
45 0	155.7	✓
14 21 4		-0.46
9596.5940	P. A. 207.9	Vernier B.
		-0.72

Watch 5 secs. fast

July 16. 1912. (Tuesday)

Gr. 3451.

B. 394.

A 32 32.2

A 33 39.0

A 34 39.0

A 34 0.0

A 35 0.0

A 36 0.0

Dir. Lt. III. W. obs. Brand rec.

14 10 5.✓	9 34	83.5 100.4✓
+1 15.✓	53	191.9 104.9✓
14 11 20.✓	10 13	85.9 106.6✓ -0.6✓
	39	190.8
	11 0	89.0 101.1✓
14 11 22.✓	13	190.1 100.2✓
+1 15.✓	28	88.1 100.6✓ -0.4✓
14 12 37✓	45	188.3
	12 53	88.0 99.2✓
14 13 16.✓	13 6	187.8 99.2✓
+1 15.✓	25	88.0 99.5✓ -0.4✓
14 14 31.✓	40	187.2
	14 28	84.5 105.5✓
14 14 55.✓	42	190.0 103.0✓
+1 14.✓	15 0	88.0 104.2✓ -0.5✓
14 16 9.✓	30	191.0
	16 13	84.6 104.9✓
14 16 54.✓	37	189.5 101.3✓
+1 14.✓	17 14	87.5 103.1✓ -0.5✓
14 18 A.✓		

July 16, 1912.

	9	17	31	188.8
		18	19	85.1
14 12 50. ✓			42	190.0 104.9 ✓
+1 14. ✓	19	2		82.1 104.4 ✓
14 20 4. ✓		27		190.9 106.4 ✓ -0.6 ✓
		46		85.0
14 20 14. ✓	20	4		189.3 104.3 ✓
+1 14. ✓		17		85.0 104.9 ✓
14 21 20. ✓		47		189.9 104.6 ✓ -0.6 ✓

22 0. Clouds.

Jupiter invisible in telescope.

28 43

29 10

14 30 41. ✓		29	98.0 22.1 ✓ +0.3 ✓
30 57. ✓		45	180.1 23.2 ✓ +0.3 ✓
31 11. ✓		59	96.9 20.3 ✓ +0.4 ✓
31 27. ✓	30	15	177.2 79.2 ✓ +0.4 ✓
31 44. ✓		32	98.0 79.2 ✓ +0.4 ✓
32 10. ✓		58	177.2
32 20. ✓	31	16	Fog thick.

33 35 Fog thick, Jupiter.
invisible in Photometer42 52 Jupiter faint in finder
rather faint also in Photometer
Satellite 3 not seen.43 30 Jupiter brighter in Photometer
sats. 1 + 2 seen, sat 3
not seen. Jupiter also
visible to naked eye.

July 16. 1912.

9	45	45	Fog thicker again
		59	Sats 1 & 2 seen in Photometer, but Sat. 3 not seen.
48	57		Fog thick, Jupiter not seen with naked eye or in finder or in Photometer.
50	35		Jupiter not found with naked eye, or with finder, or with Photometer.

The last 6 settings above were during the variation in light. In the settings before those, the sky was practically clear, but after them the fog began to come in quickly.

Fr. 3451

10	22	$\sqrt{6.5}$
10	23	$\sqrt{6.5}$

B. 394

10	24	00
10	25	00

July 17, 1912. (Wednesday)

5th Wrs. Maj. H. obs. Brand rec.
Phot. L.

12	37	+61.9
15	✓1	
+	3	
	14	

Cloudy.

July 19, 1912 (Friday)

Jup. Lat. I. observed in terms of Lat. III
in order to see if there is any variation in
light of Lat. ~~III~~ I.

$$\begin{array}{r}
 16 \quad 16 \quad -20.7 \\
 15 \quad 49 \\
 \hline
 0 \quad 27 \\
 23 \quad 313
 \end{array}$$

For observations see fol. pages.

July 19, 1912.

I

Index left and below

8-5-5

$$\begin{array}{r}
 100.9 \quad \text{Sat. 3 dis.} \\
 174.4 \quad 73.5^{\checkmark} \\
 287.9 \quad 63.7^{\checkmark} \\
 \hline
 351.6 \quad 137.3^{\checkmark} \quad +0.23^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 103.0 \\
 171.3 \quad 62.3^{\checkmark} \\
 280.1 \quad 75.0^{\checkmark} \\
 \hline
 355.1 \quad 143.3^{\checkmark} \quad +0.71^{\checkmark}
 \end{array}$$

8-11-35

$$\begin{array}{r}
 98.2 \\
 175.5 \quad 77.3^{\checkmark} \\
 279.4 \quad 76.6^{\checkmark} \\
 \hline
 356.0 \quad 153.9^{\checkmark} \quad +0.50^{\checkmark}
 \end{array}$$

8-14-15

$$\begin{array}{r}
 98.7 \\
 174.8 \quad 76.1^{\checkmark} \\
 277.5 \quad 74.5^{\checkmark} \\
 \hline
 356.0 \quad 154.6^{\checkmark} \quad +0.49^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 30 \quad 55^{\checkmark} \\
 2 \quad 10 \quad 14^{\checkmark} \\
 +5 \quad +24^{\checkmark}
 \end{array}$$

+0.63[✓]

$$\begin{array}{r}
 13 \quad 10 \quad 42^{\checkmark} \\
 9603.5491
 \end{array}$$

Altered focus slightly

July 19, 1912.

II

8-18-15 96.0 22.4[✓]
 178.4
 279.9 75.7[✓]
 355.6 154.1[✓] +0.42[✓]

8-20-15 98.7 77.9[✓]
 176.6
 278.0 79.4[✓]
 357.4 157.3[✓] +0.43[✓]

8-22-35 97.0 21.0[✓]
 178.0
 275.0 24.5[✓]
 359.5 165.5[✓] +0.27[✓]

8-25-15 96.9 22.1[✓]
 179.0
 276.9 79.1[✓]
 356.0 161.2[✓] +0.36[✓]

+r +24[✓]

13 21 59[✓]

9603.5569[✓]

+0.37[✓]

July 19, 1912.

III

$$\begin{array}{rcl}
 & 97.0 & \\
 8-30-30 & 177.4 & +0.4^{\checkmark} \\
 & 276.7 & +25.0^{\checkmark} \\
 & 1.7 & \frac{165.4^{\checkmark}}{+0.2A^{\checkmark}}
 \end{array}$$

$$\begin{array}{rcl}
 & 95.0 & +3.0^{\checkmark} \\
 8-34-5 & 178.0 & \\
 & 277.5 & +20.5^{\checkmark} \\
 & 358.0 & \frac{163.5^{\checkmark}}{+0.31^{\checkmark}}
 \end{array}$$

$$\begin{array}{rcl}
 & 96.2 & +2.2^{\checkmark} \\
 8-36-15 & 179.0 & \\
 & 276.5 & +24.0^{\checkmark} \\
 & 0.5 & \frac{166.2^{\checkmark}}{+0.25^{\checkmark}}
 \end{array}$$

$$\begin{array}{rcl}
 & 95.8 & +3.5^{\checkmark} \\
 8-37-40 & 179.3 & \\
 & 276.9 & +2.1^{\checkmark} \\
 & 359.0 & \frac{165.6^{\checkmark}}{+0.27^{\checkmark}} \\
 & & +0.2A^{\checkmark} \\
 & & +24. \\
 & 13 & 35 & 2^{\checkmark} \\
 & 9603.5660^{\checkmark}
 \end{array}$$

July 19, 1912.

Obliged to change from Phot. W to Phot. R in order to adjust images rightly to each other. Phot. W run out.

IV

$$\begin{array}{r}
 8-46-0 \quad \begin{array}{r} 93.6 \\ 170.5 \\ 273.1 \\ 351.3 \end{array} \quad \begin{array}{r} 76.9 \\ 74.2 \\ 155.1 \end{array} \quad \begin{array}{l} \checkmark \\ \checkmark \\ \checkmark \\ +0.42 \checkmark \end{array}
 \end{array}$$

$$\begin{array}{r}
 8-48-10 \quad \begin{array}{r} 92.7 \\ 173.2 \\ 276.8 \\ 349.5 \end{array} \quad \begin{array}{r} 40.5 \\ 72.7 \\ 153.2 \end{array} \quad \begin{array}{l} \checkmark \\ \checkmark \\ \checkmark \\ +0.51 \checkmark \end{array}
 \end{array}$$

$$\begin{array}{r}
 8-51-35 \quad \begin{array}{r} 93.4 \\ 172.0 \\ 273.0 \\ 348.9 \end{array} \quad \begin{array}{r} 74.6 \\ 75.9 \\ 154.5 \end{array} \quad \begin{array}{l} \checkmark \\ \checkmark \\ \checkmark \\ +0.49 \checkmark \end{array}
 \end{array}$$

$$\begin{array}{r}
 8-53-40 \quad \begin{array}{r} 93.3 \\ 174.5 \\ 199 \\ 274.2 \\ 351.6 \end{array} \quad \begin{array}{r} 41.2 \\ 77.4 \\ 154.6 \end{array} \quad \begin{array}{l} \checkmark \\ \checkmark \\ \checkmark \\ \checkmark \\ +0.41 \checkmark \end{array} \\
 +5 \quad +25.2 \quad \quad \quad +0.47 \checkmark \\
 13 \quad 50 \quad 16.2 \\
 9603.5 \quad 766 \checkmark
 \end{array}$$

172

July 19, 1912.

V

$$\begin{array}{r}
 8-58-5 \quad 93.8 \\
 168.2 \quad 74.4^{\checkmark} \\
 274.0 \quad 74.5^{\checkmark} \\
 \hline
 348.5 \quad 148.9^{\checkmark} \quad +0.60^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 9-0-20 \quad 95.0 \quad 74.1^{\checkmark} \\
 169.1 \quad 74.1^{\checkmark} \\
 276.7 \quad 74.2^{\checkmark} \\
 \hline
 349.5 \quad 146.9^{\checkmark} \quad +0.64^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 9-2-35 \quad 93.5 \quad 76.5^{\checkmark} \\
 170.0 \quad 76.5^{\checkmark} \\
 275.9 \quad 73.2^{\checkmark} \\
 \hline
 349.1 \quad 149.7^{\checkmark} \quad +0.54^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 9-5-10 \quad 90.8 \quad 74.6^{\checkmark} \\
 169.4 \quad 74.6^{\checkmark} \\
 6 \quad 10^{\checkmark} \quad 273.0 \quad 76.2^{\checkmark} \\
 9 \quad 1 \quad 32^{\checkmark} \quad 349.2 \quad 154.8^{\checkmark} \quad +0.42^{\checkmark} \\
 +5 \quad +25^{\checkmark} \\
 \hline
 14 \quad 1 \quad 57^{\checkmark} \\
 9603.5447^{\checkmark}
 \end{array}$$

+0.52[✓]

July 19, 1912.

~~XXX~~
~~VI~~

$$\begin{array}{r}
 92.4 \\
 170.9 \\
 273.4 \\
 350.2
 \end{array}
 \begin{array}{r}
 74.5 \\
 76.8 \\
 155.3
 \end{array}
 \begin{array}{r}
 \checkmark \\
 \checkmark \\
 \checkmark \\
 +0.47 \checkmark
 \end{array}$$

$$\begin{array}{r}
 94.2 \\
 172.9 \\
 273.2 \\
 349.0
 \end{array}
 \begin{array}{r}
 74.7 \\
 75.4 \\
 154.5
 \end{array}
 \begin{array}{r}
 \checkmark \\
 \checkmark \\
 \checkmark \\
 +0.49 \checkmark
 \end{array}$$

$$\begin{array}{r}
 92.6 \\
 170.5 \\
 270.1 \\
 349.2
 \end{array}
 \begin{array}{r}
 77.9 \\
 79.1 \\
 157.0
 \end{array}
 \begin{array}{r}
 \checkmark \\
 \checkmark \\
 \checkmark \\
 +0.44 \checkmark
 \end{array}$$

$$\begin{array}{r}
 92.5 \\
 172.9 \\
 272.9 \\
 350.5
 \end{array}
 \begin{array}{r}
 40.4 \\
 77.6 \\
 154.0
 \end{array}
 \begin{array}{r}
 \checkmark \\
 \checkmark \\
 \checkmark \\
 +0.42 \checkmark
 \end{array}$$

$$\begin{array}{r}
 45 \\
 +25
 \end{array}
 \begin{array}{r}
 \checkmark \\
 \checkmark
 \end{array}$$

$$\begin{array}{r}
 14 \\
 13 \\
 33
 \end{array}
 \begin{array}{r}
 \checkmark \\
 \checkmark \\
 \checkmark
 \end{array}$$

$$9603.592 \checkmark$$

$$+0.46 \checkmark$$

174

July 19, 1912.

VII

$$\begin{array}{r}
 92.0 \\
 9-19-10 \quad 172.2 \quad +0.2 \checkmark \\
 271.0 \quad 79.9 \checkmark \\
 \hline
 350.9 \quad 160.1 \checkmark \quad +0.32 \checkmark
 \end{array}$$

$$\begin{array}{r}
 90.5 \quad +0.9 \checkmark \\
 8-21-55 \quad 177.4 \\
 273.0 \quad 76.6 \checkmark \\
 \hline
 349.6 \quad 157.5 \checkmark \quad +0.43 \checkmark
 \end{array}$$

$$\begin{array}{r}
 91.5 \quad 79.5 \checkmark \\
 9-24-20 \quad 171.0 \\
 271.1 \quad 74.4 \checkmark \\
 \hline
 349.5 \quad 157.9 \checkmark \quad +0.42 \checkmark
 \end{array}$$

$$\begin{array}{r}
 91.8 \quad 79.0 \checkmark \\
 9-26-20 \quad 170.8 \\
 91 \quad 45 \checkmark \quad 274.5 \quad 74.0 \checkmark \\
 9 \quad 22 \quad 56 \checkmark \quad 348.5 \quad 153.0 \checkmark \quad +0.5 \checkmark \\
 +5 \quad +26 \checkmark \\
 \hline
 14 \quad 23 \quad 22 \checkmark \\
 9603.5996 \checkmark
 \end{array}$$

+0.44 \checkmark

July 19, 1912.

VIII

$$\begin{array}{r}
 93.0 \\
 9-41-50 \quad 171.2 \quad 72.2^{\checkmark} \\
 273.0 \quad 77.2^{\checkmark} \\
 \hline
 350.8 \quad 156.0^{\checkmark} \quad +0.46^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 91.9 \\
 9-44-0 \quad 171.3 \quad 79.4^{\checkmark} \\
 274.5 \quad 74.7^{\checkmark} \\
 \hline
 349.2 \quad 154.1^{\checkmark} \quad +0.50^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 93.0 \\
 9-47-0 \quad 170.9 \quad 77.9^{\checkmark} \\
 270.3 \quad 20.3^{\checkmark} \\
 \hline
 350.6 \quad 154.2^{\checkmark} \quad +0.42^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 91.0 \\
 9-49-35 \quad 170.8 \quad 79.4^{\checkmark} \\
 22 \quad 2^{\checkmark} \quad 273.9 \quad 73.6^{\checkmark} \\
 9 \quad 45 \quad 36^{\checkmark} \quad 347.5 \quad 153.4^{\checkmark} \quad +0.51^{\checkmark} \\
 +5 \quad +26.1^{\checkmark} \\
 \hline
 14 \quad 46 \quad 2^{\checkmark} \quad +0.47^{\checkmark} \\
 9603.6153^{\checkmark}
 \end{array}$$

176

July 19, 1912.

TX

$$\begin{array}{r}
 91.1 \\
 9-54-0 \quad 170.0 \quad 72.9^{\checkmark} \\
 269.2 \quad 22.2^{\checkmark} \\
 351.4 \quad \underline{161.1^{\checkmark}} \quad +0.36^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 92.2 \\
 9-56-30 \quad 170.8 \quad 72.6^{\checkmark} \\
 275.4 \quad 73.5^{\checkmark} \\
 348.9 \quad \underline{152.1^{\checkmark}} \quad +0.53^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 91.0 \\
 9-59-5 \quad 169.5 \quad 72.5^{\checkmark} \\
 275.4 \quad 75.0^{\checkmark} \\
 350.4 \quad \underline{153.5^{\checkmark}} \quad +0.51^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 92.4 \\
 10-1-35 \quad 171.0 \quad 72.6^{\checkmark} \\
 231 \quad 10^{\checkmark} \quad 275.0 \quad 73.9^{\checkmark} \\
 9 \quad 57 \quad 42.1^{\checkmark} \quad 347.9 \quad \underline{151.5^{\checkmark}} \quad +0.55^{\checkmark} \\
 +5 \quad +26.1^{\checkmark} \\
 14 \quad 52 \quad 14.1^{\checkmark} \\
 9603.6237^{\checkmark}
 \end{array}$$

+0.49[✓]

July 19, 1912.

X

$$\begin{array}{r}
 10-7-10 \quad 92.5 \quad 76.5^{\checkmark} \\
 169.0 \\
 273.4 \quad 76.1^{\checkmark} \\
 \hline
 349.5 \quad 152.6^{\checkmark} \quad +0.52^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 10-9-25 \quad 92.0 \quad 74.1^{\checkmark} \\
 170.1 \\
 274.9 \quad 73.9^{\checkmark} \\
 \hline
 348.8 \quad 152.0^{\checkmark} \quad +0.5K^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 10-13-10 \quad 94.3 \quad 7K.6^{\checkmark} \\
 168.9 \\
 272.7 \quad 75.7^{\checkmark} \\
 \hline
 348.4 \quad 150.1^{\checkmark} \quad +0.57^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 10-15-55 \quad 93.0 \quad 76.7^{\checkmark} \\
 169.7 \\
 45 \quad 40^{\checkmark} \quad 275.4 \quad 72.1^{\checkmark} \\
 10 \quad 11 \quad 25^{\checkmark} \quad 347.5 \quad 148.6^{\checkmark} \quad +0.60^{\checkmark} \\
 +5 \quad +27.1^{\checkmark} \\
 \hline
 15 \quad 11 \quad 52^{\checkmark} \\
 9603.6332^{\checkmark}
 \end{array}$$

+0.56[✓]

178

July, 19, 1912.

XI

10-26-25

91.5	
169.9	74.4 [✓]
273.5	76.6 [✓]
350.1	155.0 [✓] +0.4A [✓]

10-28-50

94.0	
171.8	77.4 [✓]
273.5	78.5 [✓]
348.0	152.3 [✓] +0.53 [✓]

10-31-15

94.0	
170.6	76.6 [✓]
273.2	77.6 [✓]
350.8	153.7 [✓] +0.50 [✓]

10-33-50

91.9	
170.6	74.7 [✓]
120 20 [✓]	274.3
10 30 5 [✓]	74.1 [✓]
+5	348.4
+27	152.2 [✓]
15 30 32 [✓]	+0.52 [✓]
9603.6462 [✓]	+0.51 [✓]

Watch 23 seconds slow at beginning of ^{evening} observations.
 Watch 28 seconds slow at end of evening.

July 19, 1912.

of satellites being used

Images ^{in last group} began to encroach ^{on} faint supplementary image of Jupiter, which is about midway between the two principal images. This encroachment is somewhat irregular, sometimes one of the two images being on the edge of supplementary image of Jupiter, and sometimes the other.

(with Phot. L.)

In first 3 of proc. groups, observations exceptionally difficult, as observations were begun with Sat. I on limb of Jupiter, and slowly moving away from same, so that the observations were not only difficult but somewhat uncertain.

After the 1st 3 groups, observer was compelled to use Phot. R. to grasp the images and bring them together. Observations with Phot. R. somewhat better but seeing rather through-out, images generally rather unsteady and sky somewhat hazy, so that observations could not be made quite as critically and well as under better conditions.

Note: The above enclosed remark should have been put at end of observations on p. 181.

July 19, 1912.

XII

$$\begin{array}{r}
 89.2 \\
 10-42-0 \quad 171.9 \quad 42.7^{\checkmark} \\
 271.6 \quad 76.0^{\checkmark} \\
 \hline
 347.6 \quad 154.7^{\checkmark} \quad +0.81^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 90.3 \quad 40.7^{\checkmark} \\
 10-43-45 \quad 171.0 \\
 274.4 \quad 74.4^{\checkmark} \\
 \hline
 348.8 \quad 155.1^{\checkmark} \quad +0.42^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 91.9 \quad 77.2^{\checkmark} \\
 10-45-20 \quad 169.1 \\
 270.8 \quad 77.2^{\checkmark} \\
 \hline
 350.5 \quad 156.9^{\checkmark} \quad +0.44^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 92.9 \quad 75.7^{\checkmark} \\
 10-47-0 \quad 168.6 \\
 271.6 \quad 77.9^{\checkmark} \\
 \hline
 349.5 \quad 153.6^{\checkmark} \quad +0.50^{\checkmark} \\
 12 \quad \checkmark \checkmark \\
 10 \quad 44 \quad 31. \quad \checkmark \\
 +5 \quad +2.7^{\checkmark} \\
 \hline
 15 \quad 44 \quad 52. \quad \checkmark \\
 9603.6563^{\checkmark}
 \end{array}$$

+0.42⁶[✓]

XIII

$$\begin{array}{r} 93.0 \\ 168.8 \\ 272.0 \\ 350.0 \end{array} \quad \begin{array}{r} 75.2^v \\ \\ 72.0^v \\ \hline 153.2^v \end{array} \quad \begin{array}{r} \\ \\ \\ +0.50^v \end{array}$$

$$\begin{array}{r}
 93.0 \\
 170.9 \\
 273.5 \\
 347.6 \\
 \hline
 1520
 \end{array}$$

$90.9 \rightarrow 1^\circ$
 169.0
 $271.8 \rightarrow 76.7^\circ$
 $348.5 \rightarrow 15^\circ$

$$\begin{array}{r}
 92.6 \quad 77.2^{\checkmark} \\
 10-57-30 \quad 169.8 \\
 \hline
 14 \quad 50. \quad 273.6 \quad 75.2^{\checkmark} \\
 10 \quad 53 \quad 42. \quad 348.8 \quad 152.4^{\checkmark} \quad +0.5 \quad 3^{\checkmark} \\
 +5 \quad +20
 \end{array}$$

+0.51 ✓

See remark on p. 179.

July 20. 1912. (Saturday)

~~16 16~~

16	16	-20.7
16	12	
<hr/>		
-0	4	
+23	√6	

July, 20, 1912.

8-22-0

357.2

84.0

Clouds

9-5-50

354.3

Watch 4 seconds slow

9-37-0 Tried up to this time to get settings
but practically nothing could
be done.

July 22. 1912. (Monday)

N. W. Maj. H. ob. Brand rec,
Phot. T.

$$\begin{array}{r}
 12 \quad 37 \quad +61.9 \\
 16 \quad \quad \quad \\
 \hline
 +3 \quad 29
 \end{array}$$

July 22, 1912.

I

Index left & above

~~+76.9~~ Comp. Star dis.~~8-33-15~~~~261.0~~

8-36-10

8.8

Comp. Star dis.

67.0

176.2

256.0

355.4

80.3

186.9

351.1

July 22, 1912.

Left & above
 176.2 — Comp Star Dis.
 339.3
 68.5
 187.0
 249.0
 356.4
 78.5

8-40-55

July 22, 1912.

Left & above

I

8-46-0

355.9 ← Comp Star dis.
79.0 23.1187.6 65.0
252.6 142.1 - 0.613.2 65.0 - 0.62
68.2
178.1 22.2
260.9 147.4 - 0.62

Right & below

261.2
355.0 93.0
89.2 74.6
163.8 162.4 - 0.22

274.0 62.4 - 0.32

8-53-15
 99 15. ✓
 A 49 32. ✓
 15 112. ✓
 13 49 56. ✓
 960 6.576.3 ✓

274.0 62.4
 342.8
 81.9 93.0
 175.7 162.6 - 0.33

45
 + 0.5
 2.21
 9.51
 26

July 22, 1912

II

Right & below

$$\begin{array}{r}
 8-15-15 \\
 263.8 \\
 356.8 \quad 93.9 \\
 93.5 \quad \underline{70.5} \\
 164.0 \quad 163.5 \quad -0.31
 \end{array}$$

$$\begin{array}{r}
 272.9 \quad 69.6 \quad -0.22 \\
 342.5 \\
 79.8 \quad \underline{96.6} \\
 176.4 \quad 166.2 \quad -0.26
 \end{array}$$

Left & above

$$\begin{array}{r}
 176.0 \quad AK.0 \\
 260.0 \\
 6.5 \quad \underline{63.7} \\
 70.2 \quad 147.7 \quad -0.62
 \end{array}$$

$$185.3 \quad 68.2 \quad -0.60$$

$$\begin{array}{r}
 9-2-15 \\
 11.4 \quad 10.0 \\
 249.5 \quad AK.0 \\
 355.3 \quad \underline{149.2} \quad -0.59 \\
 80.3
 \end{array}$$

$$\begin{array}{r}
 2 \quad 59 \quad 10.0 \\
 15 \quad 11.4 \\
 13 \quad 59 \quad 23.0 \\
 9606.5429
 \end{array}$$

P.A. 49.0 Vernier B

$$\begin{array}{r}
 +0.44 \\
 2.21 \\
 9.25
 \end{array}$$

July 22, 1912.

U. Oppenheimer. H. obs. Brand rec.
Phot. T. P. in. cap.

$$\begin{array}{r} 17 \quad 9 \\ 17 \quad 31 \\ \hline + 0 \quad 22 \end{array} \quad +1.4$$

July 22, 1912.

Index right

9-26-30
 87.4 ✓ Var. dis.
 167.8 20.4 ✓
 279.3 61.2 ✓
 340.5 121.6 ✓ -0.74 ✓

97.7 62.4 ✓ -0.70 ✓
 160.5
 267.1 23.7 ✓
 349.8 145.5 ✓ -0.66 ✓

Index left

3.7 71.2 ✓
 74.9 51.0 ✓
 191.8 122.0 ✓
 242.8 -1.14 ✓

9-32-15 +2.1
 62.1 -1.11 ✓

9-33-40 2.0 71.0 ✓
 73.0 54.4 ✓
 60 10 1914 125.4 ✓ -1.02 ✓
 9 30 ✓ 245.8 -0.90 ✓

+1.1
 14 30 23 P. A. 28.0 Ver. B
 9606.6045-

Watch 18 secs. slow

July 23, 1912, (Tuesday).

U. Apheuerich. H. ob. Brand rec.
Phot. J. J. Cape

$$\begin{array}{r}
 17 \quad 9 \\
 16 \quad 16 \\
 \hline
 -0 \quad 59 \\
 23 \quad 11
 \end{array}
 \quad +1.4$$

192

July 23, 1912.

Index left + below

8-2-30
 178.5 Var. dis.
 257.0 74.5 ✓
 11.0 55.1 ✓
 66.1 133.6 ✓ -0.90 ✓

189.0 56.2 ✓ -0.24 ✓
 245.2 79.7 ✓
 359.3 135.9 ✓ -0.26 ✓
 79.0

Right + above

80.0
 176.9 96.9 ✓
 273.0 66.9 ✓
 339.9 163.4 ✓ -0.31

8-9-10 95.3 67.1 ✓ -0.36 ✓
 11 49.1 ✓ 162.4
 261.3 91.7 ✓
 4 50.1 ✓ 353.0 154.4 ✓ -0.40

+5 +17.1 ✓ -0.62 ✓
 13 6 7. P. A. 207.6 Vernier B
 9607.5479 ✓

July 23. 1912.

Fourth type star $+64^{\circ} 617$ H. No. Grand rec.
Phot. I.

10	35	$+64.2$
16	56	
<hr/> 46	<hr/> 91	

July 23, 1912.

Left + above

8-47-20 198.4 ← 4th Type dis.
 238.6 40.2
 22.7 27.7
 50.4 67.9 -2.54"

201.8 31.4 -2.54"
 233.6
 17.8 34.4
 56.2 70.2 -2.50"

Right & below

106.8 44.2
 151.6
 291.0 32.0
 323.0 76.4 -2.29"

8-53-35 112.0 34.9 -2.26"
 146.9
 100 55.4 284.4 44.1
 4 50 24.4 328.5 79.0 -2.22"
 45 417.4
 13 50 45.4 P.A. 236.2 Vernier B
 9607.5770" -2.40"

Color 4 in Photometer. Not bright enough with moonlight and sky conditions to estimate color satisfactorily in finder.

July 23. 1912.

Fourth Type Star $+34^{\circ} 4500$
 W. obs. Board Rec.
 Phot. L.

$$\begin{array}{r}
 21 \quad 36 \quad +34.4 \\
 \underline{17} \quad \underline{20} \\
 -4 \quad 16 \\
 +7 \quad 44
 \end{array}$$

196

July 23, 1912.

Index left & above

9-14-10

195.3 ← 4th type dis
 239.3 44.0
 23.0 29.8
 52.4 73.8 - 2.40

200.8 33.6 - 2.31
 234.4 45.6
 15.0 79.2 - 2.22
 60.6

Right & below

105.4 45.0
 151.2 33.7
 290.0 79.7 - 2.21
 323.7

- 2.20

112.0 35.4
 147.4 45.2
 285.0 20.6 - 2.18
 330.2

- 2.26

9-21-0
 35 10. ✓
 9 17 35. ✓
 + + ✓ + 17. ✓
 14 17 52. ✓
 9607.595 ✓

P.D. 248.5 Verrier B.

Color 4 in Photometer

Watch 17 secs slow.

✓

July 24. 1912. (Wednesday.)

U. Ophiuchi.

$$\begin{array}{r}
 17 \quad 9 \quad +1.4 \\
 16 \quad 30 \\
 \hline
 -0 \quad 39 \\
 23 \quad 21
 \end{array}$$

July 24, 1912.

I

Right and above

8-0-45

$$\begin{array}{r} 85.0 \\ 172.0 \\ 278.2 \\ 337.8 \end{array} \begin{array}{r} \leftarrow 27.0 \\ 59.6 \\ 146.6 \end{array} \begin{array}{l} \text{Var. dis.} \\ \checkmark \\ \checkmark \\ \checkmark \end{array} \begin{array}{l} \\ -0.6 \checkmark \end{array}$$

$$\begin{array}{r} 97.0 \\ 160.5 \\ 262.5 \\ 350.8 \end{array} \begin{array}{r} 63.5 \\ 22.3 \\ 151.8 \end{array} \begin{array}{l} \checkmark \\ \checkmark \\ \checkmark \\ \checkmark \end{array} \begin{array}{l} -0.59 \\ \\ -0.5 \checkmark \end{array}$$

Left & below

$$\begin{array}{r} 359.8 \\ 75.3 \\ 192.1 \\ 243.8 \end{array} \begin{array}{r} 75.5 \\ 51.7 \\ 127.2 \end{array} \begin{array}{l} \checkmark \\ \checkmark \\ \checkmark \\ \checkmark \end{array} \begin{array}{l} \\ -1.0 \checkmark \end{array}$$

$$\begin{array}{r} 10.5 \\ 62.0 \end{array} \begin{array}{r} 51.5 \\ 77.7 \end{array} \begin{array}{l} \checkmark \\ \checkmark \end{array} \begin{array}{l} -1.02 \checkmark \\ \end{array}$$

8-6-15

$$\begin{array}{r} 7 \\ 43 \\ 75 \\ 133 \end{array} \begin{array}{r} 0. \\ 30. \\ +14. \\ 44 \end{array} \begin{array}{l} \checkmark \\ \checkmark \\ \checkmark \\ \checkmark \end{array} \begin{array}{r} 177.8 \\ 255.5 \\ 9604.5 \end{array} \begin{array}{r} 77.7 \\ 129.2 \\ 442 \end{array} \begin{array}{l} \checkmark \\ \checkmark \\ \checkmark \end{array} \begin{array}{l} -1.00 \checkmark \\ \\ -0.80 \checkmark \end{array}$$

July 24, 1912

II

Left and below

8-14-0

$$\begin{array}{r}
 359.8 \\
 76.4 \quad 76.6 \checkmark \\
 192.0 \quad 51.5 \checkmark \\
 \hline
 243.5 \quad 124.1 \checkmark - 1.02 \checkmark
 \end{array}$$

$$\begin{array}{r}
 13.2 \quad 49.4 \checkmark \quad -1.02 \checkmark \\
 63.0 \quad 49.4 \checkmark \\
 180.4 \quad 74.6 \checkmark \\
 \hline
 259.0 \quad 124.4 \checkmark - 1.01 \checkmark
 \end{array}$$

Right & above

$$\begin{array}{r}
 263.7 \quad 49.6 \checkmark \\
 353.3 \\
 96.6 \quad 60.9 \checkmark \\
 \hline
 157.5 \quad 150.5 \checkmark - 0.57 \checkmark
 \end{array}$$

$$\begin{array}{r}
 277.0 \quad 59.7 \checkmark \quad -0.62 \checkmark \\
 336.7 \quad 59.7 \checkmark
 \end{array}$$

$$\begin{array}{r}
 8-20-15 \quad 34 \quad 15 \checkmark \quad 84.9 \quad 46.1 \checkmark \\
 17 \quad 2 \checkmark \quad 171.0 \quad 145.4 \checkmark - 0.66 \checkmark \\
 +5 \quad +14 \checkmark
 \end{array}$$

$$\begin{array}{r}
 13 \quad 17 \quad 22 \checkmark \\
 9662.5532 \checkmark
 \end{array}$$

-0.42

July 24, 1972.

III

Right and above

8-29-5

$$\begin{array}{r}
 267.6 \\
 352.0 \quad 24.4^{\checkmark} \\
 97.3 \quad 64.2^{\checkmark} \\
 \hline
 161.5 \quad 142.6^{\checkmark} \quad -0.60^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 277.7 \quad 60.5^{\checkmark} \\
 338.2 \\
 81.7 \quad 27.4^{\checkmark} \\
 \hline
 169.5 \quad 142.3^{\checkmark} \quad -0.61^{\checkmark}
 \end{array}$$

Left and below

$$\begin{array}{r}
 178.6 \\
 256.9 \quad 74.3^{\checkmark} \\
 11.9 \quad 51.9^{\checkmark} \\
 \hline
 63.8 \quad 130.2^{\checkmark} \quad -0.97^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 8-35-45 \\
 64 \quad 50.5^{\checkmark} \\
 2 \quad 32 \quad 25.5^{\checkmark} \\
 +5 \quad +14.5^{\checkmark} \\
 \hline
 13 \quad 32 \quad 39.5^{\checkmark} \\
 960 \quad 2.5 \quad 643^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 191.1 \\
 244.8 \quad 53.7^{\checkmark} \\
 0.0 \quad 75.3^{\checkmark} \\
 75.3 \quad 129.0^{\checkmark} \quad -1.00^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 -0.92^{\checkmark} \\
 -0.79^{\checkmark}
 \end{array}$$

July 24, 1912.

IV

Left and below

8-40-70

$$\begin{array}{r}
 180.9 \quad 74.3^{\checkmark} \\
 255.2 \\
 11.5 \quad \frac{51.5^{\checkmark}}{125.8^{\checkmark}} \quad -1.07^{\checkmark} \\
 63.0
 \end{array}$$

$$\begin{array}{r}
 192.9 \quad 51.9^{\checkmark} \quad -1.02^{\checkmark} \\
 244.8 \\
 355.9 \quad \frac{79.0^{\checkmark}}{130.9^{\checkmark}} \quad -0.96^{\checkmark} \\
 74.9
 \end{array}$$

Right + above

$$\begin{array}{r}
 98.5 \quad 54.3^{\checkmark} \\
 156.8 \\
 265.3 \quad \frac{45.2^{\checkmark}}{144.1^{\checkmark}} \quad -0.69^{\checkmark} \\
 351.1
 \end{array}$$

$$\begin{array}{r}
 8-45-55 \quad 84.0 \quad 45.3^{\checkmark} \quad -0.66^{\checkmark} \\
 6 \quad 15^{\checkmark} \quad 169.3 \\
 275.9 \quad 62.1^{\checkmark} \\
 2 \quad 43 \quad 2^{\checkmark} \quad 338.0 \quad \frac{147.4^{\checkmark}}{147.4^{\checkmark}} \quad -0.63^{\checkmark} \\
 +5 \quad +14^{\checkmark} \\
 13 \quad 43 \quad 22^{\checkmark} \\
 9602. \quad 712^{\checkmark}
 \end{array}$$

-0.44^{\checkmark}

202

July 24, 1912.

V

Right and above

$$\begin{array}{r}
 8-58-55 \\
 98.2 \\
 159.1 \quad 60.9^{\checkmark} \\
 265.3 \quad 46.2^{\checkmark} \\
 \hline
 351.5 \quad 147.1^{\checkmark} \quad -0.63^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 87.6 \quad 20.3^{\checkmark} \\
 167.9 \\
 277.0 \quad 60.2^{\checkmark} \\
 \hline
 337.2 \quad 140.5^{\checkmark} \quad -0.76^{\checkmark}
 \end{array}$$

Left and below

$$\begin{array}{r}
 11.7 \quad 52.2^{\checkmark} \\
 64.5 \\
 179.8 \quad 77.2^{\checkmark} \\
 \hline
 257.0 \quad 130.0^{\checkmark} \quad -0.92^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 8-59-55 \\
 1A \quad 50.0^{\checkmark} \\
 2 \quad 59 \quad 25.0^{\checkmark} \\
 +5 \quad +14.0^{\checkmark} \\
 \hline
 13 \quad 59 \quad 39.0^{\checkmark} \\
 9604.5 \quad 430^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 0.6 \quad 71.0^{\checkmark} \\
 71.6 \\
 193.2 \quad 54.0^{\checkmark} \\
 \hline
 247.2 \quad 125.0^{\checkmark} \quad -1.02^{\checkmark}
 \end{array}$$

-0.86[✓]

July 24, 1912.

VI

Left and below

9-2-25

$$\begin{array}{r}
 11.4 \\
 63.0 \quad \checkmark 1.6 \checkmark \\
 181.0 \quad \checkmark 75.2 \checkmark \\
 \hline
 256.2 \quad \checkmark 126.2 \checkmark \quad -1.05 \checkmark
 \end{array}$$

$$\begin{array}{r}
 1.6 \quad \checkmark 71.4 \checkmark \quad -1.04 \checkmark \\
 73.0 \quad \checkmark \\
 190.6 \quad \checkmark 55.9 \checkmark \\
 \hline
 246.5 \quad \checkmark 127.3 \checkmark \quad -1.04 \checkmark
 \end{array}$$

Right and above

$$\begin{array}{r}
 263.8 \quad \checkmark 27.3 \checkmark \\
 351.1 \quad \checkmark \\
 97.0 \quad \checkmark 61.9 \checkmark \\
 \hline
 158.9 \quad \checkmark 149.2 \checkmark \quad -0.59 \checkmark
 \end{array}$$

$$\begin{array}{r}
 274.5 \quad \checkmark 65.5 \checkmark \quad -0.60 \checkmark \\
 340.0 \quad \checkmark \\
 86.9 \quad \checkmark 23.4 \checkmark \\
 \hline
 170.3 \quad \checkmark 142.9 \checkmark \quad -0.60 \checkmark
 \end{array}$$

9-8-30

10 \checkmark 55.1 \checkmark 9 \checkmark 24.1 \checkmark 75 \checkmark 114.1 \checkmark 14 \checkmark 82.1 \checkmark 960.2 \checkmark 547.3 \checkmark

P.A. 207.5 Vernier B

Watch 14 secs. slow

July 25. 1912. (Thurs day).

U of Chicago: K. obs. Brand rec.
Phot. J.

$$\begin{array}{r} 17 \quad 9 \\ 16 \quad 13 \\ \hline -0 \quad 56 \\ +23 \quad 4 \end{array} \quad +1.4$$

$$\begin{array}{r} 17 \quad 9 \\ 16 \quad 46 \\ \hline -0 \quad 21 \\ +23 \quad 39 \end{array}$$

8-49-0 Too cloudy. Finally abandoned.

July 26, 1912, (Friday).

U Geminæ: W. obs. Brandt rec.
Phot. V. 7" cap.

$$\begin{array}{r}
 17 \quad 9 \\
 16 \quad 17 \\
 \hline
 -0 \quad 52 \\
 +23 \quad \Delta
 \end{array}
 \quad +1.4$$

July 26, 1912

I

Index right and above

7-59-55

$$\begin{array}{r}
 267.6 \text{ Var. dis.} \\
 348.2 \quad 20.6 \checkmark \\
 97.7 \quad 57.4 \checkmark \\
 155.5 \quad \underline{132.4 \checkmark} \quad -0.41 \checkmark
 \end{array}$$

$$\begin{array}{r}
 277.0 \quad 52.6 \checkmark \quad -0.20 \checkmark \\
 335.6 \\
 87.7 \quad 20.4 \checkmark \\
 168.1 \quad \underline{139.0 \checkmark} \quad -0.79 \checkmark
 \end{array}$$

Left and below

$$\begin{array}{r}
 181.6 \quad 73.0 \checkmark \\
 254.6 \quad 50.5 \checkmark \\
 11.7 \quad \underline{123.5 \checkmark} \quad -1.12 \checkmark \\
 62.2
 \end{array}$$

$$\begin{array}{r}
 8-6-25 \\
 620. \checkmark \\
 A \quad 3 \quad 10. \checkmark \\
 + \checkmark \quad + \checkmark \\
 13 \quad 3 \quad 14. \checkmark \\
 9610.5440 \checkmark
 \end{array}$$

$$\begin{array}{r}
 190.6 \quad 56.1 \checkmark \quad -1.09 \checkmark \\
 246.7 \\
 1.9 \quad 69.9 \checkmark \\
 71.8 \quad \underline{126.0 \checkmark} \quad -1.06 \checkmark
 \end{array}$$

$$\begin{array}{r}
 -0.94 \checkmark
 \end{array}$$

II

8-11-45

$$\begin{array}{r} 179.0 \\ 249.3 \\ 12.2 \\ 64.1 \end{array} \quad \begin{array}{r} 70.3^\circ \\ 51.9^\circ \\ \hline 122.2^\circ \end{array} \quad \begin{array}{r} -1.14^\circ \end{array}$$
$$\begin{array}{r} 193.2 \text{ kg} \checkmark \\ 242.6 \\ 0.7 \\ 70.0 \end{array} \quad \begin{array}{r} 69.3 \checkmark \\ \hline 114.7 \checkmark \end{array} \quad -1.22 \checkmark$$

Right and above

85.3 24.1 ✓
169.4 ✓
clouds $\frac{56.4}{140.5}$ ✓ -0.76 ✓
279.2 ✓
335.6 ✓

99.8 57.4 ✓

$$\begin{array}{r} 8-21-35 \\ \hline 33 \end{array} \quad \begin{array}{r} 157.2 \\ 263.6 \\ 347.7 \end{array} \quad \begin{array}{r} 1.4 \\ 24.1 \\ \hline 141.5 \end{array} \quad \begin{array}{r} -0.74 \\ -0.96 \end{array}$$

$\frac{+v}{13}$ $\frac{+d}{16}$ $\frac{+d}{44}$ Much troubled by clouds in above group.
 9610. ⁵⁵³ ~~5950~~ Images very faint at times, and
 varying relatively. This group one third
 weight.

July 26, 1912.

III

Index right and above

8-25-40

$$\begin{array}{r}
 88.2 \\
 168.0 \quad 79.4^{\checkmark} \\
 277.8 \quad 60.1^{\checkmark} \\
 \hline
 337.9 \quad 139.9^{\checkmark} \quad -0.74^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 98.6 \quad 59.0^{\checkmark} \\
 157.6 \\
 267.0 \quad 40.4^{\checkmark} \\
 \hline
 347.8 \quad 139.4^{\checkmark} \quad -0.74^{\checkmark}
 \end{array}$$

Left & below

$$\begin{array}{r}
 7.2 \quad 71.6^{\checkmark} \\
 73.8 \\
 179.5 \quad 75.4^{\checkmark} \\
 \hline
 253.9 \quad 146.0^{\checkmark} \quad -0.65^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 8-31-5 \quad 2.4 \quad 71.7^{\checkmark} \quad -0.46^{\checkmark} \\
 \hline
 56 \quad 45.1^{\checkmark} \quad 191.1 \quad 55.6^{\checkmark} \\
 \hline
 245.7 \quad 126.3^{\checkmark} \quad -1.06^{\checkmark} \\
 \hline
 13 \quad 24 \quad 30.1^{\checkmark} \\
 \hline
 9610.5614^{\checkmark}
 \end{array}$$

July 26, 1912.

IV

Left + below

8-42-45

$$\begin{array}{r}
 10.7 \\
 65.1 \\
 (1A) 2.0 \\
 \hline
 256.8
 \end{array}
 \begin{array}{r}
 74.4 \\
 \hline
 129.2
 \end{array}
 \begin{array}{l}
 \checkmark 44 \\
 \checkmark \\
 \checkmark \\
 \checkmark
 \end{array}
 \begin{array}{l}
 \text{Prob. should be } 142.0 \\
 -1.00 \checkmark
 \end{array}$$

$$\begin{array}{r}
 1.0 \\
 73.3 \\
 192.2 \\
 \hline
 245.2
 \end{array}
 \begin{array}{r}
 72.3 \\
 \hline
 125.3
 \end{array}
 \begin{array}{l}
 \checkmark \\
 \checkmark \\
 \checkmark + 3.0 \\
 \checkmark -1.04 \checkmark \\
 \checkmark -1.08 \checkmark
 \end{array}$$

Right and above

$$\begin{array}{r}
 267.7 \\
 349.0 \\
 96.3 \\
 \hline
 158.5
 \end{array}
 \begin{array}{r}
 21.3 \\
 \hline
 62.2 \\
 \hline
 143.5
 \end{array}
 \begin{array}{l}
 \checkmark \\
 \checkmark \\
 \checkmark \\
 \checkmark -0.70 \checkmark
 \end{array}$$

$$\begin{array}{r}
 8-49-55 \\
 \hline
 1240. \checkmark \\
 A 4620. \checkmark \\
 +5 +A. \checkmark \\
 \hline
 13462A. \checkmark \\
 9610. \checkmark 739 \checkmark
 \end{array}
 \begin{array}{r}
 279.7 \\
 337.4 \\
 85.8 \\
 \hline
 165.7 \\
 \hline
 79.9 \\
 \hline
 137.6
 \end{array}
 \begin{array}{l}
 \checkmark 77.7 \\
 \checkmark \\
 \checkmark \\
 \checkmark \\
 \checkmark -0.76 \checkmark \\
 \checkmark -0.42 \checkmark \\
 \checkmark -0.90 \checkmark
 \end{array}$$

210

July 16, 1917.

V

9-6-55

Right + above

$$\begin{array}{r}
 270.0 \\
 346.0 \\
 96.0 \\
 \hline
 157.8
 \end{array}
 \begin{array}{r}
 76.0 \\
 61.4 \\
 \hline
 137.4
 \end{array}
 \begin{array}{r}
 \\
 \\
 -0.42
 \end{array}$$

$$\begin{array}{r}
 275.3 \\
 340.9 \\
 86.5 \\
 \hline
 168.2
 \end{array}
 \begin{array}{r}
 65.6 \\
 41.7 \\
 \hline
 147.3
 \end{array}
 \begin{array}{r}
 \\
 \\
 -0.63
 \end{array}$$

Left and below

$$\begin{array}{r}
 180.3 \\
 256.5 \\
 10.7 \\
 \hline
 63.5
 \end{array}
 \begin{array}{r}
 76.2 \\
 52.4 \\
 \hline
 129.0
 \end{array}
 \begin{array}{r}
 \\
 \\
 -1.00
 \end{array}$$

$$\begin{array}{r}
 192.9 \\
 246.4 \\
 1.2 \\
 \hline
 77.4
 \end{array}
 \begin{array}{r}
 52.4 \\
 76.2 \\
 \hline
 129.5
 \end{array}
 \begin{array}{r}
 \\
 \\
 -0.98
 \end{array}$$

$$\begin{array}{r}
 9-13-25 \\
 20 \quad 20 \\
 9 \quad 10 \quad 10 \\
 +5 \quad +4 \\
 \hline
 14 \quad 10 \quad 14
 \end{array}$$

P. Q. 26.9 Kernia B.

9610.5905+

-0.246

Watch 8 secs. slow

July 30, 1912. (Tuesday)

U. Opdrichi. W. ok. Grand vac.
Phot. I.

$$\begin{array}{r}
 17 \quad 9 \\
 16 \quad 22 \\
 \hline
 -0 \quad 41 \\
 +23 \quad 19
 \end{array}
 \quad +1.4$$

± 25 Carve up thickly cloudy + foggy.

212

July 31. 1912. (Wednesday).

U Oppenheimer.

$$\begin{array}{r}
 17 \quad 9 \quad +1.4 \\
 17 \quad 11 \\
 \hline
 -0 \quad 2 \\
 +23 \quad \sqrt{2}
 \end{array}$$

July 31, 1912.

I

8-16-35

Index left and below

1.8 ← Var. dis.
 73.6 71.2 ✓
 190.3 19.6 ✓
 249.9 131.2 ✓ -0.9 ✓
 Clouds

9.2 55.4 ✓ -1.02 ✓
 64.6
 185.9 69.4 ✓
 255.7 125.2 ✓ -1.0 A ✓

Clouds

Right and above

~~8-26-10~~

88.2

Clouds 76.2 ✓

165.0
 276.2 65.3 ✓
 341.5 142.1 ✓ -0.73 ✓

-0.72 ✓

~~8-29-10~~

159.8

97.5 62.3 ✓

45 45 ✓ 266.9 81.5 ✓
 A 22 ✓ 2.3 48.4 143.4 ✓ -0.70 ✓

-0.27 ✓

+5 +34 ✓
 13 23 26 ✓

9615.5579 ✓

214

July 31, 1912.

II

Index right and above

$$\begin{array}{r}
 85.2 \\
 166.2 \\
 278.0 \\
 341.3
 \end{array}
 \begin{array}{r}
 A1.0 \\
 63.3 \\
 144.3 \\
 -0.69
 \end{array}
 \begin{array}{l}
 \checkmark \\
 \checkmark \\
 \checkmark \\
 \checkmark
 \end{array}$$

$$\begin{array}{r}
 98.0 \\
 156.5 \\
 266.0 \\
 347.0
 \end{array}
 \begin{array}{r}
 64.5 \\
 A1.0 \\
 149.5 \\
 -0.52
 \end{array}
 \begin{array}{l}
 \checkmark \\
 \checkmark \\
 \checkmark \\
 \checkmark
 \end{array}$$

-0.64[✓]

Left and below

$$\begin{array}{r}
 2.0 \\
 70.9 \\
 193.0 \\
 246.0
 \end{array}
 \begin{array}{r}
 64.9 \\
 53.0 \\
 121.9 \\
 -1.10
 \end{array}
 \begin{array}{l}
 \checkmark \\
 \checkmark \\
 \checkmark \\
 \checkmark
 \end{array}$$

-1.14[✓]

$$\begin{array}{r}
 8-37-40 \\
 70 \quad 10.5 \\
 A \quad 35 \quad 5.1
 \end{array}
 \begin{array}{r}
 183.8 \\
 256.0 \\
 122.3
 \end{array}
 \begin{array}{r}
 72.2 \\
 \checkmark \\
 -1.14
 \end{array}
 \begin{array}{l}
 \checkmark \\
 \checkmark \\
 \checkmark
 \end{array}$$

$$\begin{array}{r}
 +5 \\
 13 \quad 35 \quad 39. \\
 96.5 \quad 56.64
 \end{array}
 \begin{array}{r}
 +34. \\
 \checkmark \\
 \checkmark
 \end{array}$$

-0.49[✓]

July 31, 1912.

III

Left and below

$$\begin{array}{r}
 8-41-10 \quad 1.0 \\
 72.8 \quad 71.8 \checkmark \\
 194.5 \quad 52.7 \checkmark \\
 247.2 \quad 132.4 \checkmark - 1.10 \checkmark
 \end{array}$$

$$\begin{array}{r}
 10.2 \quad 53.3 \checkmark \quad - 1.02 \checkmark \\
 63.5 \quad 74.2 \checkmark \\
 177.3 \quad 131.5 \checkmark - 0.95 \checkmark \\
 255.5
 \end{array}$$

Right and above

$$\begin{array}{r}
 264.8 \quad 46.9 \checkmark \\
 351.7 \quad 60.5 \checkmark \\
 96.0 \quad 147.4 \checkmark - 0.63 \checkmark \\
 156.5
 \end{array}$$

$$\begin{array}{r}
 8-46-35 \quad 274.5 \quad 66.4 \checkmark \quad - 0.62 \checkmark \\
 340.9 \quad 84.5 \quad 82.4 \checkmark \\
 47 \quad 45 \checkmark \quad 166.9 \quad 144.4 \checkmark - 0.60 \checkmark \\
 43 \quad 52 \checkmark \quad 13 \quad 26 \checkmark \quad - 0.42 \checkmark \\
 45 \quad 43 \checkmark \quad 9615.5725 \checkmark
 \end{array}$$

216

July 31, 1912

IV

Right & above

$$\begin{array}{r}
 8-48-0 \quad 264.8 \quad 232^{\checkmark} \\
 \quad 348.0 \\
 \quad 96.3 \quad 61.2^{\checkmark} \\
 \quad 157.5 \quad \underline{144.2} \quad -0.69^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 279.9 \quad 57.5^{\checkmark} \quad -0.72^{\checkmark} \\
 337.4 \\
 84.9 \quad 44.3^{\checkmark} \\
 169.2 \quad \underline{141.4}^{\checkmark} \quad -0.74^{\checkmark}
 \end{array}$$

Left and below

$$\begin{array}{r}
 178.3 \quad 74.2^{\checkmark} \\
 256.5 \\
 111.0 \quad 52.1^{\checkmark} \\
 63.1 \quad \underline{130.3}^{\checkmark} \quad -0.97^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 8-52-45 \quad 194.0 \quad 52.1^{\checkmark} \quad -1.04^{\checkmark} \\
 \quad 246.1 \\
 \quad 100 \quad 45.2^{\checkmark} \quad 358.8 \quad 72.4^{\checkmark} \\
 \quad 4 \quad 50 \quad 22.2^{\checkmark} \quad 71.2 \quad \underline{245}^{\checkmark} \quad -1.10^{\checkmark} \\
 \quad +5 \quad +34.2^{\checkmark} \\
 \quad 13 \quad 50 \quad 56.2^{\checkmark} \\
 \quad 9615.5770
 \end{array}$$

-0.22^{\checkmark}

July 31, 1912.

V

Left and below

854-30

$$\begin{array}{r}
 180.7 \\
 254.8 \\
 11.0 \\
 65.1 \\
 \hline
 124.2 \\
 \hline
 -1.02
 \end{array}$$

$$\begin{array}{r}
 192.5 \\
 247.0 \\
 0.7 \\
 72.5 \\
 \hline
 126.3 \\
 \hline
 -1.06
 \end{array}$$

Right and above

$$\begin{array}{r}
 86.6 \\
 167.2 \\
 277.4 \\
 340.0 \\
 \hline
 143.2 \\
 \hline
 -0.71
 \end{array}$$

-0.70

$$\begin{array}{r}
 8-59-30 \\
 114 \\
 0.2 \\
 267.0 \\
 159.0 \\
 63.0 \\
 20.5 \\
 347.5 \\
 143.5 \\
 \hline
 -0.70
 \end{array}$$

+5 +34

$$\begin{array}{r}
 13 \\
 57 \\
 34 \\
 9615.5 \\
 \hline
 107.0
 \end{array}$$

Vernier B

-0.87

Watch 34 secs. slow

Aug. 1, 1912, (Thursday).

U Ophiuchi, K. obs. Grand rec,
Phot. I.

$$\begin{array}{r}
 17 \quad 9 \quad +1.4 \\
 16 \quad 41 \\
 \hline
 -0 \quad 2.4 \\
 +23 \quad 32
 \end{array}$$

August 1, 1912.

I

Right + above

7-51-5

85.5 Var dis

167.5 22.0 ✓

278.6 59.4 ✓

338.0 141.4 ✓ -0.75 ✓

96.0 64.9 ✓

-0.74 ✓

160.9 77.1 ✓

269.0 142.0 ✓ -0.73 ✓

346.1

Left and below

2.0 74.2 ✓

768

191.5 55.5 ✓

247.0 130.3 ✓ -0.97 ✓

11.2 55.4 ✓

-0.96 ✓

7-57-10

66.6

2 N. 179.2 76.0 ✓

-0.95 ✓

7 54 2. 255.2 131.4 ✓

+5 +4. ✓

12 54 12. ✓

-0.85 ✓

9616.5 376. ✓

220

Aug 1, 1912.

III

Left + below

$$\begin{array}{r}
 7-58-35 \\
 0.3 \\
 71.4 \quad 71.1 \checkmark \\
 191.9 \quad \checkmark 44 \checkmark \\
 246.3 \quad \checkmark 125.5 \checkmark -1.07 \checkmark
 \end{array}$$

$$\begin{array}{r}
 10.8 \quad \checkmark 46 \checkmark \quad -1.02 \checkmark \\
 65.4 \\
 179.0 \quad \checkmark 76.0 \checkmark \\
 255.0 \quad \checkmark 130.6 \checkmark -0.97 \checkmark
 \end{array}$$

Right + above

$$\begin{array}{r}
 266.5 \quad \checkmark 23.9 \checkmark \\
 350.4 \\
 99.0 \quad \checkmark 9.5 \checkmark \\
 158.5 \quad \checkmark 143.4 \checkmark -0.71 \checkmark
 \end{array}$$

$$\begin{array}{r}
 8-3-45 \\
 2 \quad 20. \checkmark \\
 4 \quad 1 \quad 10. \checkmark \\
 +5 \quad +4. \checkmark \\
 13 \quad 1 \quad 14. \checkmark \\
 9616. \checkmark 425+ \checkmark
 \end{array}$$

$$\begin{array}{r}
 278.3 \\
 338.0 \\
 87.0 \\
 168.9 \\
 59.7 \checkmark \\
 41.9 \checkmark \\
 141.6 \checkmark -0.74 \checkmark \\
 -0.72 \checkmark \\
 -0.47 \checkmark
 \end{array}$$

August 1, 1912.

III

Right & above

8-5-20 267.2
 349.5 22.3[✓]
 96.3 61.2[✓]
 158.1 144.1[✓] -0.69[✓]

278.2 61.2[✓] -0.70[✓]
 340.0 81.2[✓]
 88.2 143.6[✓] -0.70[✓]
 170.0

Left and below

178.3 76.6[✓]
 254.9 51.2[✓]
 12.8 127.2[✓] -1.03[✓]
 64.0

-1.03[✓]

8-11-40 191.5 55.2[✓]
 247.3
 17 0. 1.3 71.9[✓]
 30. 73.2 127.7[✓] -1.03[✓]
 4r 4r
 13 26.6 Vernier B
 9616.5-476[✓]

-0.26[✓]

This date and beyond
Con. in next Book.

1912phae.proj...630W