

KG

11365

587

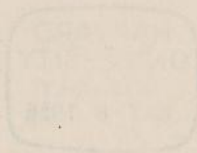


KG-11365.587











KG 11365.587









Nov. 5 1907 (Tuesday)

Double Star = 169 (Comstock's List) = 11 Aquila

$$\begin{array}{r} 18 \\ 22 \\ \hline 40 \end{array} \quad \begin{array}{r} 52 \\ 40 \\ \hline 48 \end{array} \quad + 13.5$$

W Obs Hornsby Rec.  
Abandoned too low.

— H —

Double Star = 170 (Comstock's List) = 223  
Draco.

$$\begin{array}{r} 18 \\ 22 \\ \hline 3 \end{array} \quad \begin{array}{r} 54 \\ 45 \\ \hline 51 \end{array} \quad + 62.3$$

Phot R one specimen removed  
W Obs Hornsby Rec.

PA 123 Dist  $0.3' \pm$  Magn 6.0 - 9.0



Nov. 5 1907.

Index R. A.

7 39 10  
 307.3 → North prec. + bits. dis.  
 337.1 29.8 ✓  
 120.3 35.7 ✓ 2.66 ✓  
 156.0 65.5 ✓

300.0 2.65<sup>4</sup> ✓  
 336.0 36.0 ✓  
 121.6 30.3 ✓ 2.63 ✓  
 151.9 66.3 ✓

Index L. B.

216.5  
 239.6 23.1 ✓  
 25.5 40.3 ✓ 2.73 ✓  
 65.8 63.4 ✓

209.3 2.67<sup>6</sup> ✓  
 249.0 39.7 ✓  
 38.5 27.5 ✓ 2.60 ✓  
 61.0 67.2 ✓

Mean 2.62<sup>✓✓</sup>

7 49 50  
 29 0. ✓  
 7 22 30. ✓  
 +5 -5.

12 22 25. ✓

722.5 156 ✓

Sky pretty hazy, a little clearer  
 however at intervals Obs. very diff.  
 Obs one half weight.

Nov. 5 1907.

4th Type Star

+ 34° 45.00

21

36

+ 34.8

23

36

Full Aperture

2

0

Color 6

Phot 5

W. O. H. Hornsby Rec.



Nov. 5 1907

Index R A.

8 35 20

283.4 → 4th type dis.  
 333.0 49.6<sup>v</sup>  
 109.0 37.8<sup>v</sup> -1.95<sup>v</sup>  
 146.8 87.4

288.8 -1.95<sup>v</sup>  
 328.0 39.2<sup>v</sup>  
 101.9 50.6<sup>v</sup> -1.92<sup>v</sup>  
 152.5 89.8<sup>v</sup>

Index L B.

196.0  
 241.4 45.4<sup>v</sup>  
 21.0 35.4<sup>v</sup> -2.17<sup>v</sup>  
 56.4 8.0.8<sup>v</sup>

200.9 -2.11<sup>v</sup>  
 235.5 34.6<sup>v</sup>  
 13.3 50.5<sup>v</sup> -2.05<sup>v</sup>  
 63.8 85.1<sup>v</sup>

8 H1 40  
 77 0.<sup>v</sup>  
 2 3A 30.<sup>v</sup>  
 +v -v.<sup>v</sup>

13 3A 25.<sup>v</sup> S. J. 24 0  
 7AAV, 56A4<sup>v</sup> B. A. + 2 23

Dec. + 35.3

P.A. 271.6 Ver B

Sprocket + 0.5 B.  
 + 1.5 C.

L. P. P.

Mean - 2.03<sup>v</sup>

Nov. 5 1907.

W's watch used for times  
Watch 5 sec. fast

More or less hazy whole evening  
Haze steadily increasing storm  
coming. Gen'l cloudiness now  
becoming much more pronounced.  
No chance for any thing further.



Nov. 7 1907 (Thursday)

0 Ceti

W. Obs. Hornsby. Rec.

2

12

- 3.6

Sky has somewhat suddenly become practically all cloudy. Only a few stars visible.

8 50 Sky thickly cloudy every where. No stars visible.

Nov. 8 1907 (Friday)

R L Cassiop.

26

2

22

36

50

+69.0

Phot J

3

8

46

14

W. Obs. Hornsby Rec

Abandoned for

0 Ceti

26

2

22

12

50

-3.6

3

8

22

38

Abandoned Will try



Nov 8 1907.

R L Cassiop again.

Index L + A B.

191.6 → Var. dis.

7 42 20

245.3

53.7 ✓

19.5

40.1 ✓

-1.81 ✓

59.6

93.8 ✓

199.8

-1.90 ✓

7 45 30

235.4

35.6 ✓

14.8

52.0 ✓

-1.98 ✓

66.8

87.6 ✓

Index R + B.

A.

7 48 30

102.6

152.8

50.2 ✓

291.7

32.7 ✓

-2.11 ✓

324.4

82.9 ✓

-2.08 ✓

112.2

7 50 20

144.7

32.5 ✓

126 40 ✓

282.2

52.0 ✓

-2.06

7 46 40. ✓

334.2

84.5 ✓

+5 -11. ✓

12 46 29. ✓

7888.5322 ✓

Mean -1.99 ✓

Nov 8 1907.

## Index R+B. A.

7	54	5	103.2		
			154.5	51.3 <sup>✓</sup>	
			292.0	32.1 <sup>✓</sup>	- 2.10 <sup>✓</sup>
			324.1	83.4 <sup>✓</sup>	

7	56	30	111.9		- 2.14 <sup>✓</sup>
			145.9	34.0 <sup>✓</sup>	
			284.4	47.0 <sup>✓</sup>	- 2.17 <sup>✓</sup>
			331.4	81.0 <sup>✓</sup>	

## Index L+A B.

7	59	35	15.4		
			62.9	47.5 <sup>✓</sup>	
			202.5	30.3 <sup>✓</sup>	- 2.26 <sup>✓</sup>
			232.8	77.8 <sup>✓</sup>	

8	2	10	24.8		- 2.27 <sup>✓</sup>
			55.7	30.9 <sup>✓</sup>	
			193.8	46.1 <sup>✓</sup>	- 2.28 <sup>✓</sup>
			239.9	77.0 <sup>✓</sup>	
				Mean - 2.20 <sup>✓</sup>	

8	2	10	
	232	20.	✓
7	52	5.	✓
+5		-11.	✓
12	57	54.	✓
7222.	5402		✓



Nov. 8 1907.

Index L + A. B.

8 9 20	15.4	46.5 <sup>✓</sup>	
	61.9	28.9 <sup>✓</sup>	- 2.33 <sup>✓</sup>
	202.7	75.4 <sup>✓</sup>	
	231.6		

8 12 40	25.0		- 2.36 <sup>✓</sup>
	54.9	29.9 <sup>✓</sup>	
	195.0	44.0 <sup>✓</sup>	- 2.38 <sup>✓</sup>
	239.0	73.9 <sup>✓</sup>	

Index R + B ~~A~~.

8 16 15	285.5	43.7 <sup>✓</sup>	- 2.50 <sup>✓</sup>
	328.2	27.5 <sup>✓</sup>	- 2.47
	113.9	71.2 <sup>✓</sup>	
	141.4	70.2 <sup>✓</sup>	
	296.0		- 2.54 <sup>✓</sup>

8 19 40	321.9	25.9 <sup>✓</sup>	
57 55 <sup>✓</sup>	106.6	42.2 <sup>✓</sup>	- 2.57 <sup>✓</sup>
2 14 29 <sup>✓</sup>	148.8	68.1 <sup>✓</sup>	
+5 -11 <sup>✓</sup>			
13 14 12 <sup>✓</sup>			

Mean - 2.48<sup>5</sup>

7044.55 16 Somewhat troubled by clouds in above group and especially in last half of group but much care exercised and group considered good.

L. R. P.

Nov. 8 1907.

Index R+B.

289.6  
Clouds.

S. I. 24 0  
 H<sub>A</sub> -2 43  
 Dec. +68.7  
 P.A. 207.7 Ver B  
 Sprocket -1.5 B  
 " -0.5 C

0 Ceti

26		
24	12	-3.6
1	25	
10	47	
	13	

Sky now completely cloudy.  
 Evidently no chance for any thing  
 further

W's watch used for lines  
 Watch 11 sec. fast



Nov. 9 1907 (Saturday.)

0 Ceto

26

12

-3.6

23

0

3

12

8

48

Phot W.

W. Obs. Hornsby Rec.

Nov. 9 1907.

Index R+B A.

222.6 Var. dis.

231.1

8.5<sup>v</sup>

44.3

6.1<sup>v</sup>- 5.98<sup>v</sup>

50.4

14.6<sup>v</sup>

224.0

- 6.04<sup>v</sup>

229.9

5.9<sup>v</sup>

43.6

7.9<sup>v</sup>- 6.10<sup>v</sup>

51.5

13.8<sup>v</sup>

Index L+A B.

134.1

141.5

7.4<sup>v</sup>

314.5

6.5<sup>v</sup>- 6.08<sup>v</sup>

321.0

13.9<sup>v</sup>- 6.23<sup>v</sup>

136.1

140.1

4.0<sup>v</sup>

313.6

8.1<sup>v</sup>- 6.38<sup>v</sup>

321.7

12.1<sup>v</sup>Means - 6.14<sup>v</sup>

7 47 10

23 40.<sup>v</sup>7 41 50.<sup>v</sup>+v -12.<sup>v</sup>12 42 32.<sup>v</sup>7049.5249<sup>v</sup>



Nov. 9 1907.

Index L + a. B.

7 49 50	134.1		
	141.5	7.4 ✓	
	314.7	5.9 ✓	- 6.18 ✓
	320.6	<u>13.3</u> ✓	

	136.0		- 6.28 ✓
	139.7	3.7 ✓	
	313.4	8.5 ✓	- 6.37 ✓
	321.9	<u>12.2</u> ✓	

Index R + B. A.

43.2		
51.9	8.7 ✓	
224.7	5.4 ✓	- 6.05 ✓
230.1	<u>14.1</u> ✓	

- 6.04 ✓

8 1 30	44.4	5.9 ✓	
<u>111 20. ✓</u>	50.3	8.4 ✓	- 6.02 ✓
7 55 40. ✓	222.9	<u>14.3</u> ✓	
45 - 1A. ✓	231.3		

Mean - 6.16 ✓

12 55 22. ✓	S. J.	23	45
7 22 9.53 25 ✓	A	- 2	33
	Dec.	- 4.0	

Nov. 9 1907

Double Star #18 (Gomstock's List) =  $\approx 125$

25

19

-1.2

24

0

1

19

10

41

P.A. 345

Dist 0.7'  $\pm$

Mags. 8.0-10.3

Phot W.

W. Obs. Hornsby Recd



Nov. 9 1907

Index L B.

8 39 55

26.2	→ South and bits dis.	
67.6	41.4 <sup>✓</sup>	
212.9	29.0 <sup>✓</sup>	249 <sup>✓</sup>
241.9	<u>70.4<sup>✓</sup></u>	

32.6		2.44 <sup>✓</sup>
63.4	30.8 <sup>✓</sup>	
206.0	42.7 <sup>✓</sup>	2.39 <sup>✓</sup>
248.7	<u>73.5<sup>✓</sup></u>	

Index B. A.

296.4		
338.0	41.6 <sup>✓</sup>	
119.7	34.7 <sup>✓</sup>	2.31 <sup>✓</sup>
154.4	<u>76.3<sup>✓</sup></u>	

300.2		2.24 <sup>6</sup> <sup>✓</sup>
-------	--	--------------------------------

8 47 30	
<u>27.25<sup>✓</sup></u>	
2 43 42 <sup>✓</sup>	
<u>+5 -12<sup>✓</sup></u>	
13 43 24 <sup>✓</sup>	
7229.5712 <sup>✓</sup>	

334.0	33.8 <sup>✓</sup>	
114.9	45.9 <sup>✓</sup>	2.20 <sup>✓</sup>
160.8	<u>79.7<sup>✓</sup></u>	
	Mean	2.34 <sup>5</sup> <sup>✓</sup>

Nov. 9 1907.

Double Star #12 (Comstock's list)  $\Sigma 80$

24	52	0.0
24	36	
<hr/>		
0	17	
11	43	

Phot R one prism removed

W. Obs. Hornsby Res

PA. 320

Disc  $0.4'' \pm$  Mag.



Nov. 9 1907.

Index L + a B.

9 19 10

198.0 → South fol +

257.0

59.0 ✓

14.0

65.5 ✓

1.10 ✓

79.5

124.5 ✓

195.5

1.12 ✓

260.2

64.7 ✓

19.1

57.8 ✓

1.14 ✓

76.9

122.5 ✓

Index A + B. A.

109.5

165.0

55.5 ✓

290.3

54.7 ✓

1.41 ✓

345.0

110.2 ✓

104.9

1.26 ✓

168.7

63.8 ✓

287.5

59.5 ✓

1.12 ✓

347.0

123.3 ✓

Mean 1.19 ✓

9 26 10

45 20. ✓

9 22 40. ✓

+5 -12. ✓

14 22 22. ✓

7229.5929 ✓

W's watch used for times.

Watch 15 sec. fast.  
L. P. P.

Nov. 11 1907 (Monday)

$\alpha$  (alpha) Lyrae

18	32	+38.7
23	0	
<hr/>		
4	28	

7

25

Clouds

Phot J.

W. Obs. Hornsby Reg.

After clouds disappeared put on Phot J and examined region of Alpha Lyrae. The seeing is somewhat blurry due to rising barometer wind and some cold <sup>+ moonlight</sup> so that companion is not well enough seen to night to measure. Will probably wait until moon is out of way. The J of Alpha Lyrae's companion can be satisfactorily seen in Phot J on a dark night and with good seeing, there is a star which can be used as an intermediate star above 15' south of Alpha.

Nov. 11 1907.

Double Star #172 (Gonstouck's List) = 31 Aquilae

Abandoned Too low.

H

Double Star #176 (Gonstouck's List) =  $\sigma$  Draconis

19	31	+69.4
23	50	
4		1923

Phot. R.

W. Obs. Hornsby Rec.

P.A. 340

Dist 5.3'  $\pm$  Mag. 5.0-11.2



Nov. 11 1907.

Index L + B. B.

8 32 35  
 131.0 → South + btr. dis.  
 137.0 6.0 ✓  
 311.1 5.3 ✓ 6.53 ✓  
 316.4 11.3 ✓

131.8 6.52 ✓  
 136.1 4.3 ✓  
 310.5 7.2 ✓ 6.50 ✓  
 317.7 11.5 ✓

Index R + A. A.

8 39 15  
 41.0  
 48.0 7.0 ✓  
 222.3 2.7 ✓ 6.87 ✓  
 225.0 9.7 ✓  
 41.5 6.73 ✓  
 45.7 4.2 ✓  
 220.4 6.8 ✓ 6.59 ✓  
 227.2 11.0 ✓  
 Mean 6.62 ✓

There is a somewhat btr. star about 2 min. north of comp. with a fainter star somewhat intermediate between the two but the southernmost of the three is about right in position, angle and distance on same line so that this southern

Nov. 11 1907.

most one was the one measured.

Double Star #185 (Comstock's list) or 683

20

26

+48.8 Phot R

24

26

W. Obs. Hornsby Rec.

4

0

PA 275

Dist. 1.0'  $\pm$ 

Magn. 6.0 - 9.0

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## Index L+B

			295.0	→	Fol + btr. dis.	
9	3	20	329.3		34.3 <sup>✓</sup>	
			122.0		20.9 <sup>✓</sup>	3.05 <sup>✓</sup>
			142.9		55.2 <sup>✓</sup>	
						2.95 <sup>✓</sup>
			301.9			
			322.9		21.0 <sup>✓</sup>	
			112.8		39.2 <sup>✓</sup>	2.85 <sup>✓</sup>
			152.0		60.2 <sup>✓</sup>	

## Index R+A.

			203.6			
			241.3		37.7 <sup>✓</sup>	
			31.8		21.8 <sup>✓</sup>	2.88 <sup>✓</sup>
			53.6		59.5 <sup>✓</sup>	
			211.3			2.95 <sup>✓</sup>
9	10	55	233.8		22.5 <sup>✓</sup>	
			26.0		33.5 <sup>✓</sup>	3.02 <sup>✓</sup>
			59.5		56.0 <sup>✓</sup>	
						Mean 2.95 <sup>✓</sup>

The region thoroughly identified by D M Chart The star is measured is marked as double on said chart The positions checked and this is the only star in this region which has a companion at



Nov. 11 1907

given position angle and distance  
The interval however is somewhat less  
than according to Prof. Comstock's  
estimate so that this is the star  
we wanted.

Double Star #192 (Comstock's List) = 56 Cygni

20	44	+ 43.6
25	05	
<hr/>		
4	21	Phot R

W. Obs. Hornsby Rec.

PA  $45^\circ$  Dist  $1.3' \pm$  Magn

Nov. 11 1907.

Index R + A. A.

9 34 0

129.7 → South pec + hts. dis.  
 135.8 6.1<sup>v</sup>  
 311.3 2.9<sup>v</sup>  
 314.2 9.0<sup>v</sup> 7.03<sup>v</sup>

132.6 7.17<sup>v</sup>  
 134.6 2.0<sup>v</sup>  
 309.8 5.9<sup>v</sup>  
 315.7 7.9<sup>v</sup> 7.31<sup>v</sup>

Index L + B. B.

9 40 50

39.9  
 46.0 6.1<sup>v</sup>  
 221.7 2.5<sup>v</sup>  
 224.2 8.6<sup>v</sup> 7.13<sup>v</sup>

41.1 7.16<sup>v</sup>  
 44.8 3.7<sup>v</sup>  
 220.5 4.7<sup>v</sup>  
 225.2 8.4<sup>v</sup> 7.18<sup>v</sup>  
 Mean 7.16<sup>v</sup>

Nov. 11 1907

Double star 195 (from stocks list) = 61 Cygni<sup>BC</sup>

21	0	+ 38.0
25	40	
<hr/>		
4	40	Phot

W. Obs. Hornsby Reg.

$\rho$  a  $197^\circ$  Dist  $4.8 \pm$  mags.



Nov. 11 1907.

Index R+B A.

10	11	0	36.0		
			50.8	14.8 ✓	
			211.6	<u>28.4</u> ✓	3.60 ✓
			240.0	43.2 ✓	

3.64 ✓

			31.6		
			55.9	24.3 ✓	
			214.5	<u>17.2</u> ✓	3.69 ✓
			231.7	41.5 ✓	

Index L+A. B.

			306.4		
			322.3	15.9 ✓	
			121.0	<u>25.6</u> ✓	3.69 ✓
			146.6	41.5 ✓	

3.60 ✓

10	18	50	300.0		
			327.3	27.3 ✓	
			125.0	<u>17.6</u> ✓	3.51 ✓
			142.6	44.9 ✓	

Mean 3.62 ✓

W's watch used for times.  
 Watch 31 sec. fast.

L. P. P.

Nov. 12, 1907 (Tuesday)

Z Persei

26	33	+42.1
<del>23</del>	5	
	<del>32</del>	
3	28	
8	32	

Phot J

W. Obs. Hornsby Rec.

Measts. on fol. page.

Nov. 12 1907.

I

Index R+a A.

109.9 → Comp. star dis.

146.5 366 ✓

295.1

319.4

243 ✓

 $\frac{243}{60.9}$  ✓

+2.83 ✓

116.7

25.4 ✓

+2.72 ✓

142.1

288.5

34.1 ✓

326.6

 $\frac{34.1}{63.5}$  ✓

+2.73 ✓

Index L+B. B

17.6

37.7 ✓

55.3

203.8

29.6 ✓

233.4

 $\frac{29.6}{67.3}$  ✓

+2.60 ✓

22.6

27.2 ✓

+2.56 ✓

50.4

198.2

41.2 ✓

240.0

 $\frac{41.2}{69.6}$  ✓

+2.52 ✓

Mean +2.67 ✓

7 43 0

7 45 10

7 48 10

7 50 40

127 0.

7 46 45.

+5 -32.

12 46 7.

7292.5320



Nov. 12 1907.

II

Index L+B. B.

$$\begin{array}{r}
 15.5 \\
 61.9 \quad 46.4 \\
 204.7 \quad 22.2 \\
 233.5 \quad \hline 225.2 \quad +2.34^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 23.1 \quad 26.2 \quad +2.32^{\checkmark} \\
 49.9 \\
 197.2 \quad 46.0 \\
 243.2 \quad \hline 72.2 \quad +2.42^{\checkmark}
 \end{array}$$

Index R+A. A.

$$\begin{array}{r}
 287.4 \quad 42.4 \\
 329.8 \\
 114.6 \quad 26.5 \\
 141.1 \quad \hline 64.9 \quad +2.54^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 8 \quad 2 \quad 30 \\
 \hline
 233 \quad 50^{\checkmark} \\
 7 \quad 52 \quad 24.5^{\checkmark} \\
 +5 \quad -32. \\
 \hline
 12 \quad 57 \quad 50. \\
 7292.5402
 \end{array}$$

$$\begin{array}{r}
 292.4 \quad 31.6 \quad +2.42^{\checkmark} \\
 324.0 \\
 106.4 \quad 44.5 \\
 150.9 \quad \hline 76.1 \quad +2.31^{\checkmark}
 \end{array}$$

mean +2.40<sup>✓</sup>

Nov. 12 1907.

III

Index R + A. A.

8	5	50	284.8	44.4	
			329.2		
			113.7	$\frac{29.5}{73.9}$	
			143.2		+2.32 <sup>v</sup>

8	9	10	293.9	29.6	+2.36 <sup>v</sup>
			323.5		
			106.6	$\frac{45.7}{75.3}$	
			152.3		+2.34 <sup>v</sup>

Index L + B. A.

8	13	15	193.0	50.5	
			243.5		
			21.0	$\frac{32.6}{23.1}$	
			53.6		+2.10 <sup>v</sup>

8	16	10	203.3	32.3	+2.10 <sup>v</sup>
			235.6		

			44	25.1 <sup>v</sup>	
A	11		6.1 <sup>v</sup>		
+5			-32.1 <sup>v</sup>		

13	10	24.1 <sup>v</sup>	64.0	$\frac{51.0}{23.3}$	+2.10 <sup>v</sup>
					mean +2.23 <sup>v</sup>

7292.5429

Nov. 12 1907.

IV

Index L + B. B.

$$\begin{array}{r}
 8 \quad 20 \quad 10 \\
 191.0 \\
 245.5 \quad \sqrt{54.5} \\
 19.1 \quad \underline{35.2} \\
 54.9 \quad \underline{9.3} \quad +1.91^{\vee}
 \end{array}$$

$$\begin{array}{r}
 8 \quad 22 \quad 45 \\
 201.0 \\
 235.7 \quad \sqrt{34.7} \quad +1.22^{\vee} \\
 7.8 \quad \underline{52.0} \\
 65.8 \quad \underline{9.2.7} \quad +1.24^{\vee}
 \end{array}$$

Index R + A. A.

$$\begin{array}{r}
 8 \quad 27 \quad 35 \\
 102.4 \\
 155.0 \quad \sqrt{52.6} \\
 290.4 \quad \underline{34.2} \\
 325.2 \quad \underline{27.6} \quad +1.92^{\vee}
 \end{array}$$

$$\begin{array}{r}
 8 \quad 33 \quad 40 \\
 8 \quad 30 \quad 45 \\
 \hline
 104 \quad 10. \\
 2 \quad 26 \quad 2. \\
 +5 \quad -32. \\
 \hline
 13 \quad 25 \quad 24. \\
 7292.5593
 \end{array}$$

$$\begin{array}{r}
 108.9 \quad 110.3 \\
 147.1 \quad 147.9 \\
 279.5 \quad 277.2 \\
 335.0 \\
 34.2 \\
 \underline{55.5} \\
 93.7 \quad +1.22^{\vee}
 \end{array}$$

Mean +1.29<sup>✓</sup>



Nov. 12 1907.

V

Index R + A. A.

8	38	50	98.8			
			156.7	579 <sup>✓</sup>		
			288.1	39.4 <sup>✓</sup>		+1.72 <sup>✓</sup>
			327.5	97.3 <sup>✓</sup>		

8	41	20	109.0			+1.76 <sup>✓</sup>
			147.7	38.7 <sup>✓</sup>		
			280.5	55.3 <sup>✓</sup>		+1.81 <sup>✓</sup>
			335.8	94.0 <sup>✓</sup>		

Index L + R. B.

8	45	20	6.2			
			66.0	59.8 <sup>✓</sup>		
			198.5	40.0 <sup>✓</sup>		+1.66 <sup>✓</sup>
			238.5	99.8 <sup>✓</sup>		
						+1.58 <sup>✓</sup>

8	48	50	16.0			
			60.0	44.0 <sup>✓</sup>		
			187.2	62.2 <sup>✓</sup>		+1.51
			249.4	106.2 <sup>✓</sup>		
						Mean +1.67 <sup>✓</sup>

8	48	50				
	174	20. <sup>✓</sup>				
A	43	35. <sup>✓</sup>				
+v		-3A. <sup>✓</sup>				
13	42	57. <sup>✓</sup>				
	7092.5715					

Nov. 12 1907.

VI

Index L + B. B.

8	58	0	5.6		
			69.0	63.4 ✓	
			198.5	42.0 ✓	+1.53 ✓
			240.5	105.4 ✓	

9	0	15	16.7		+1.50 ✓
			58.8	42.1 ✓	
			185.8	65.6 ✓	+1.47
			257.4	107.7 ✓	

Index R + a. A.

9	4	0	275.0		
			340.2	65.2 ✓	
			106.8	41.5 ✓	+1.49 ✓
			148.3	106.7 ✓	

+1.44 ✓

9	7	40	284.4		
			331.2	46.8 ✓	
			96.7	64.5 ✓	+1.39
			161.2	111.3 ✓	
7	2	29			
45		-32			
14	1	51			

Mean +1.47 ✓

7492.5A46 ✓ S. J. 1 0  
 H. A. -1 37  
 Dec. + 41.2  
 P.A. 16.1 Ver B.  
 Sprocket -2.5 B  
 -1.5 C

L. A. A.

Nov. 12 1907.

Somewhat troubled by clouds in preceding series especially in latter 3rd and 4th groups. In other groups sky generally pretty clear. The clouds were not very dense although of a feathery nature sometimes being a little thicker than at other. As obs. was delayed by clouds in last set of 4th group, this set retaken with a new time. When clouds were obnoxious obs. waited. Great care exercised and obs. considered good.

W's watch used for times  
Watch 38 sec. fast.



Nov. 13. 1907. (Wednesday).

Double Star No. 13 (Comstock's List) =  $\mu$  Cassiope.  
Phot. R.

1 0 +54.4  
1 10 P.A.  $210^\circ$  Dist.  $3\frac{1}{2} \pm$   
+10 mag.  $\sqrt{3}, 11.0$

9-37

R + A. A.

264.0

275.6

27.1

94.2

$\frac{7.7}{15.3}$

5.87 ✓

264.0

274.0

26.5

95.3

A + B.

172.1

124.1

357.7

5.0

$\frac{7.3}{13.3}$

6.12 ✓

172.0

145.1

357.9

4.6

$\frac{7.1}{6.7}$

$\frac{6.7}{13.2}$

6.10 ✓

6.14 ✓

6.02

9-54

Nov. 13, 1907.  
 Double Star of 219 (Comstock's list) = 60 Pegasi,  
 23 ✓ + 26.1 Phot. R,

$$\begin{array}{r} 25 \\ + 240 \\ \hline 239.0 \end{array} \quad \begin{array}{r} 45 \\ + 26.1 \\ \hline 271.1 \end{array} \quad \begin{array}{l} \text{P.A. } 290^\circ \text{ Dist. } 4.0 \pm \\ \text{R + B. A. } \text{mag. } 6.0, 9.0 \end{array}$$

$$\begin{array}{r} 31.0 \\ \sqrt{2.0} \end{array} \quad 21.0^\circ$$

$$\begin{array}{r} 204.1 \\ + 239.0 \\ \hline 443.1 \end{array} \quad \begin{array}{r} 30.9^\circ \\ \sqrt{1.9^\circ} \end{array} \quad 3.20^\circ$$

$$\begin{array}{r} 25.5 \\ \sqrt{6.1} \end{array} \quad 30.6^\circ \quad 3.12^\circ$$

$$\begin{array}{r} 210.5 \\ + 235.0 \\ \hline 445.5 \end{array} \quad \begin{array}{r} 24.5^\circ \\ \sqrt{5.1^\circ} \end{array} \quad 3.05^\circ$$

$$\begin{array}{r} 124.5 \\ + 147.0 \\ \hline 271.5 \end{array} \quad 22.5^\circ$$

$$\begin{array}{r} 301.9 \\ + 332.9 \\ \hline 634.8 \end{array} \quad \begin{array}{r} 31.0^\circ \\ \sqrt{3.5^\circ} \end{array} \quad 3.12^\circ$$

$$\begin{array}{r} 115.5 \\ + 150.0 \\ \hline 265.5 \end{array} \quad 34.5^\circ \quad 3.06^\circ$$

$$\begin{array}{r} 303.0 \\ + 326.0 \\ \hline 629.0 \end{array} \quad \begin{array}{r} 22.2^\circ \\ \sqrt{6.7^\circ} \end{array} \quad 2.99^\circ$$

$$\text{mean } 3.09^\circ$$

L. P. A.

Nov. 13, 1907.  
 Transit of Mercury. Obs. Sarah Wendell rec.  
 No. 3451. B. 394.

6	12	1.0	20	19	0.0
6	19	1.2		210	0.0
6	20	1.3		21	0.0

1st. and 2d. contacts not visible as they occur before sunrise.

15-inch Telescope diaphragmed down to 6 inches aperture.

1 inch Gundlach eyepiece used. Power, 270.

Times of 3d. and 4th. contacts. by 15 inch telescope.

- H. M. S.

6	47	19.	= 3d contact.	} mean 6 <sup>h</sup> 47 <sup>m</sup> 22."
	47	25.	= 4th "	

49	49	= 4th	} mean 6 <sup>h</sup> 49 <sup>m</sup> 53."
49	57	= "	

No. 3451.			B. 394.		
7	0	7.5	21	1	0.0
	1	7.7		2	0.0



Nov. 13, 1907.

Reduction of observations on preceding page.

$$\begin{array}{r}
 6^h \quad 47^m \quad 19^s \quad \text{by Fr. 3451.} \\
 6 \quad 47 \quad 25^s \quad \text{" " " } \\
 \hline
 \text{mean} = 6 \quad 47 \quad 22^s \\
 6 \quad 12 \quad 1^s \\
 \hline
 0 \quad 29 \quad 21^s \\
 \hline
 \quad \quad \quad -5^s \\
 \hline
 0 \quad 29 \quad 16^s \\
 20 \quad 19 \quad 0^s \\
 \hline
 20 \quad 48 \quad 16^s = \text{East. Line 3d. contact.}
 \end{array}$$


---

$$\begin{array}{r}
 6^h \quad 49^m \quad 49^s \quad \text{by Fr. 3451.} \\
 6 \quad 49 \quad 57^s \quad \text{" " " } \\
 \hline
 \text{mean} = 6 \quad 49 \quad 53^s \\
 6 \quad 12 \quad 9^s \\
 \hline
 \quad \quad \quad -5^s \\
 \hline
 6 \quad 49 \quad 48^s \\
 6 \quad 12 \quad 1^s \\
 \hline
 \quad \quad \quad 31 \quad 47^s \\
 20 \quad 19 \quad 0^s \\
 \hline
 20 \quad 50 \quad 47^s \\
 \hline
 \text{East. Line 4th contact} = 20 \quad 50 \quad 47^s
 \end{array}$$

1907phae.proj...588W

Nov. 14 1907 (Thursday)

R L Cassiop

26

36

69.0

23

6

3

30

8

30

Phot. J

W. Obs. Hornsby Reg.



Nov. 14 1907.

Index L + 8.  $\beta$  I.13.8  $\rightarrow$  Var. dis.

7 28 10

60.4 46.6  $\checkmark$ 

202.7

233.6

 $\frac{30.9}{77.5} \checkmark$ 

-2.27

23.5

32.2  $\checkmark$ 

-2.30

7 30 20

55.7

195.0

238.3

 $\frac{43.3}{75.5} \checkmark$ 

-2.33

Index R + 13.  $\alpha$ .

283.3

334.8

113.2

143.3

51.5  $\checkmark$  $\frac{30.1}{81.6} \checkmark$ 

-2.15

7 33 40

294.6

323.6

104.5

151.2

29.0  $\checkmark$  $\frac{46.7}{75.7} \checkmark$ 

-2.32

-2.24

7 36 30

122 40.  $\checkmark$ 7 32 10.  $\checkmark$ +5 -55.  $\checkmark$ 12 31 15.  $\checkmark$ 7494.5216  $\checkmark$ 

mean -2.27

Nov. 14 1907.

III

Index R + B. A.

7 40 20

286.3

331.2

449<sup>s</sup>

113.2

142.3

$$\begin{array}{r} 29.1 \\ \hline 74.0 \end{array}$$

-2.32

7 43. 0

293.8

323.1

29.3 ✓

- 2.34

105.5

150. 2

$$\frac{44.7}{7 \text{ K.O.}}$$

- 2.3A

Index Lt A. B.  
J 198.3 398<sup>v</sup>

7 246 0

198.3

238. 2

39.9<sup>v</sup>

24.8

52.6

$$\begin{array}{r} 27.4 \\ \hline 67.7 \end{array}$$

-2.59

7 48 15

204.6

231.6

27.0 ✓

 $-2, \sqrt{4}$ 

177  $3\sqrt{v}$

7 4'4 24. ✓

$$+ \sqrt{\quad} \quad - \sqrt{\quad} \sqrt{\quad}$$

12 43 29. v

7094.5302 ✓

16.4

59.8

$$\frac{43.4^\circ}{70.4^\circ}$$

-2.49

Mean = 2.46

Nov. 14 1907.

III

Index L + A. B.

$$\begin{array}{r}
 7 \quad 52 \quad 45 \\
 197.9 \\
 237.6 \quad 39.7^{\vee} \\
 25.0 \quad 26.9^{\vee} \\
 51.9 \quad \underline{66.6^{\vee}} \quad -2.62
 \end{array}$$

$$\begin{array}{r}
 7 \quad 55 \quad 10 \\
 205.2 \\
 231.0 \quad 25.2^{\vee} \quad -2.63 \\
 17.4 \\
 57.8 \quad \underline{40.4^{\vee}} \quad -2.64 \\
 \quad \quad \underline{66.2^{\vee}}
 \end{array}$$

Index R + B. A.

$$\begin{array}{r}
 7 \quad 58 \quad 0 \\
 106.5 \\
 149.7 \quad 43.2^{\vee} \\
 294.8 \\
 320.1 \quad \underline{25.3^{\vee}} \quad -2.56 \\
 \quad \quad \underline{64.5^{\vee}}
 \end{array}$$

$$\begin{array}{r}
 8 \quad 0 \quad 40 \\
 \hline
 226 \quad 35^{\vee} \\
 7 \quad 56 \quad 39^{\vee} \\
 +5 \quad -55^{\vee} \\
 \hline
 12 \quad 55 \quad 44^{\vee} \\
 7294.5327^{\vee}
 \end{array}$$

$$\begin{array}{r}
 115.2 \\
 141.9 \quad 26.7^{\vee} \quad -2.52 \\
 287.6 \\
 328.4 \quad \underline{40.4^{\vee}} \quad -2.59 \\
 \quad \quad \underline{67.5^{\vee}}
 \end{array}$$

Mean -2.60



Nov. 14 1907

IV

Index B + B. A.

8	5	30	105.7		
			147.8	42.1 <sup>v</sup>	
			296.0	24.0 <sup>v</sup>	
			320.0	<u>66.1<sup>v</sup></u>	-2.64

8	8	0	115.2	27.2 <sup>v</sup>	
			142.4		-2.64
			288.5	34.5 <sup>v</sup>	
			327.0	<u>65.7<sup>v</sup></u>	-2.65

Index L + A. B.

8	11	25	18.7	34.7 <sup>v</sup>	
			57.4		
			205.7	24.2 <sup>v</sup>	
			229.9	<u>62.9<sup>v</sup></u>	-2.75

8	13	30	26.4	25.1 <sup>v</sup>	-2.76
			51.5		
			198.7	37.3 <sup>v</sup>	
			236.0	<u>62.4<sup>v</sup></u>	-2.77

8	13	30	3.2	25.1 <sup>v</sup>	
			9	36.1 <sup>v</sup>	
			+5	-55.1 <sup>v</sup>	
			13	41.1 <sup>v</sup>	
			7294.5	477 <sup>v</sup>	

Mean -2.70

Nov. 14 1907.

V.

Index L + a B.

8	21	0	19.3	37.3 <sup>✓</sup>	
			56.6	23.1 <sup>✓</sup>	-2.84 <sup>✓</sup>
			206.1	60.4 <sup>✓</sup>	
			229.2		
					-2.84 <sup>✓</sup>

8	23	30	27.0	24.0 <sup>✓</sup>	
			51.0	36.4 <sup>✓</sup>	-2.84 <sup>✓</sup>
			198.0	60.4 <sup>✓</sup>	
			234.4		

Index R + B. A.

8	26	30	287.7	39.8 <sup>✓</sup>	
			327.5	21.8 <sup>✓</sup>	-2.80 <sup>✓</sup>
			116.8	61.6 <sup>✓</sup>	
			138.6		
					-2.76 <sup>✓</sup>

8	30	20	296.2	24.4 <sup>✓</sup>	
			320.6	38.4 <sup>✓</sup>	-2.76 <sup>✓</sup>
			101	62.8 <sup>✓</sup>	
			20.		
			25		
			20.		
			-55.		
			13		
			24		
			25.		
			7294.5526 <sup>✓</sup>		

Mean - 2.80<sup>✓</sup>

Nov. 14 1907.

Index R + B. A.

8	40	50	290.5	34.5 <sup>✓</sup>	
			325.0	22.3 <sup>✓</sup>	- 2.98 <sup>✓</sup>
			116.4	56.8 <sup>✓</sup>	
			138.7		
					- 2.96 <sup>✓</sup>

8	43	10	297.0	22.6 <sup>✓</sup>	
			319.6	35.5 <sup>✓</sup>	- 2.93
			109.6	58.1 <sup>✓</sup>	
			145.1		

Index L + A. B.

8	46	45	200.0	34.2 <sup>✓</sup>	
			234.2	24.5 <sup>✓</sup>	- 2.91 <sup>✓</sup>
			26.6	58.7 <sup>✓</sup>	
			51.1		- 2.88 <sup>✓</sup>

8	49	30	205.1	23.6 <sup>✓</sup>	
	120	15 <sup>✓</sup>	228.7	36.3 <sup>✓</sup>	- 2.86
A	45	4 <sup>✓</sup>	20.9	59.9 <sup>✓</sup>	
			57.2		
+5		-5 <sup>✓</sup>			Mean - 2.92 <sup>✓</sup>

13	44	9 <sup>✓</sup>	S J	24	45
7294.5	723 <sup>✓</sup>		HA.	-1	58
			Dec.	+68.9	
			P.A.	27.2	Var B.
			Sprockets.	-1.5	B
				-0.5	b



Nov. 14 1907.

Double Stars #22 (Gomstock's list) =  $\Sigma$  142

251	24	+146
1	20	
	4	
11	56	

Phot R.

W Obs Hornsby Rec.  
 P.A. 345 Dist 15" Mag. 20, 22  
 Southern component assumed to be  
 slightly the brighter.  
 Measts. on following page.

Nov. 14 1907.

Index L B.

0.4 → South + brs. dis.

82.6	82.2 <sup>✓</sup>	
177.4	89.1 <sup>✓</sup>	0.16 <sup>✓</sup>
266.5	<u>171.3<sup>✓</sup></u>	

357.8

87.1

184.0

262.6

89.3<sup>✓</sup>78.6<sup>✓</sup>167.9<sup>✓</sup>0.23<sup>✓</sup>

$$\frac{0.20<sup>✓</sup>}{0.17}$$

Index R A.

267.6

354.7

88.7

175.7

87.1<sup>✓</sup>87.0<sup>✓</sup>174.1<sup>✓</sup>0.11<sup>✓</sup>0.14<sup>✓</sup>

268.8

357.3

90.3

172.2

88.8<sup>✓</sup>81.9<sup>✓</sup>170.7<sup>✓</sup>0.17<sup>✓</sup>Mean 0.12<sup>✓</sup>

W's watch used for times.  
 Watch 55 sec. fast.

L. P. P.



Nov. 14, 1907.

Dis. Jup I. Phot. R. - ~~unobs.~~ ~~Shaw res.~~  
 Compared with nearer of two  
 Sats. (After eclipse) on same preceding  
 side. = Sat IV

B. + C. 1122.

12 6 42.0  
 7 42.0

B. 394.

12 7 0.0  
 2 0.0

12  
~~12~~  
 17 12 46.<sup>v</sup>  
 +13.<sup>v</sup>  
 17 12 59.<sup>v</sup>

17  
 12 20 24.<sup>v</sup>  
 +13.<sup>v</sup>  
 17 20 41.<sup>v</sup>

17  
 12 21 45.<sup>v</sup>  
 +13.<sup>v</sup>  
 17 21 58.<sup>v</sup>

17  
 12 23 4.<sup>v</sup>  
 +13.<sup>v</sup>  
 17 23 17.<sup>v</sup>

17 24 30.<sup>v</sup>  
 +13.<sup>v</sup>  
 17 24 43.<sup>v</sup>

18 11  
 18 32  
 18 59  
 19 21  
 19 58

20 19  
 20 36  
 21 01  
 21 18

21 36  
 21 55  
 22 12

22 33  
 22 54  
 23 13  
 23 34  
 23 54

24 23  
 24 44

105.7<sup>v</sup>  
 106.0<sup>v</sup>  
 105.2<sup>v</sup>

109.7<sup>v</sup>  
 105.4<sup>v</sup>  
 107.6<sup>v</sup>

110.2<sup>v</sup>  
 109.3<sup>v</sup>  
 110.0<sup>v</sup>

110.9<sup>v</sup>  
 108.1<sup>v</sup>  
 109.5<sup>v</sup>

109.3<sup>v</sup>  
 109.4<sup>v</sup>  
 109.4<sup>v</sup>

173.0  
 278.7 1 -0.6  
 173.5  
 279.5  
~~280.8~~  
 169.2

278.9 2 -0.7  
 172.8  
 278.2

170.7  
 281.5  
~~282.8~~ 3 -0.2  
 170.0

279.3  
 170.8  
 281.7 4 -0.2  
 171.9

280.0  
 170.7  
 280.0  $\checkmark$  -0.7  
 169.8



Nov. 14, 1907.

17	25	01	279.2	
17	25	22	171.5	
17	25	41	280.0	6 -0.7
17	26	00	169.1	
17	26	19	278.0	
17	26	34	172.5	
17	26	52	277.8	7 -0.6
17	27	12	172.2	
17	27	22	275.9	
17	27	38	172.4	
17	27	55	280.1	2 -0.5
17	28	12	177.0	
17	28	29	278.5	
17	28	38	176.0	-0.2
17	29	50	272.5	-0.2
30	4		178.0	
30	19		270.8	-0.1
30	36		179.0	-0.1
30	53		268.0	0.0
31	9		184.8	+0.3
31	22		262.0	+0.5
31	35		190.0	+0.7
31	42		256.5	+0.9
32	2		196.8	+1.2
32	19		245.0	+1.7
32	37			

32 Not seen later  
 Limit of visibility

17	33	03	196.5	
17	33	29	245.0	
17	33	46		+1.7

Nov. 14, 1907

12	33	41
	<del>3</del> 3	53

196.8
247.0

Seeing ~~a part~~ during the early part of the eclipse fairly good, altho a little blurry at times. ~~as late~~. About the time of sat. beginning to diminish in light, the seeing grew worse so that observations had to be made more slowly, observer waiting for moments of better seeing. Last setting rather uncertain. It may also be added in conclusion, that the seeing in was in general troublesome during diminution in light.

B. + C. 1122.		
12	50	44.5
	51	44.5

B. 394.		
12	51	0.0
	52	0.0



Nov 15 1907 (Friday.)

8 40 Cloudy first of evening but became somewhat clear a short time since. The sky now pretty thickly cloudy every where.

323, 324 Cygni B.

Double stars  $\leq 55'$ , (In old Double Stars Bk.)

21	19	+36.8
25	10	

3	51	Phos R
		W. Obs. Hornsby Res.

P.A.  $310^\circ$

Dist.  $6' \pm$

Mags.

South following stars assumed to be slightly the brighter.



Nov. 15 1907.

Index L+B B.

9 24 50

80.4	→ South fol. comp. dis.	
185.4	105.0 ✓	
269.0	87.0 ✓	
356.0	192.0 ✓	0.23 ✓
	168.0 ✓	

91.0		0.22 ✓
175.8	84.8 ✓	
261.0	107.1 ✓	
8.1	191.9 ✓	0.22 ✓
	168.1 ✓	

Index R+A. A.

351.3	✓	
102.0	110.7 ✓	
189.2	77.8 ✓	0.16 ✓
267.0	188.5 ✓	
	171.5 ✓	

9 32 0	84.4	82.4 ✓	
✓ 6 ✓ 0. ✓	174.8	101.7 ✓	
9 24 2 ✓ ✓	276.5	184.1 ✓	0.05 ✓
✓ ✓ ✓ ✓ ✓		175.9 ✓	
14 27 30. ✓			

789 ✓ 6024 ✓

Mean 0.17 ✓

The two components are so distant that they are a little beyond the grasping power of phot. and do not reverse over each other properly. The measures were as carefully made as could be under the circumstances but were

Nov. 15 1907.

not quite satisfactory.  
 According to the merits on prec. page, the ~~now~~ north  
 free. component is slightly the better.  
 Double Star  $\approx 2758$  (Old D.S. Bk) = 616 n g

21

1

+ 38.1

25

40

4

39

Phot R  
 W. Obs. Hornsby Rec.

P. A.  $130^\circ$ Dist.  $15''$ 

Mags. 5.3-6.0



Nov. 15 1907.

Index R + A A

284.0 → North prec + bits dis.  
 345.8 61.8 ✓  
 95.2 75.6 ✓ 0.83 ✓  
 170.8 137.4 ✓

278.7

348.2

100.0

167.4

69.5 ✓

67.4 ✓

136.9 ✓

0.84 ✓

0.84 ✓

Index L + B. B.

188.0

258.5

4.2

76.0

70.5 ✓

71.8 ✓

142.3 ✓

0.73 ✓

185.6

261.8

9.0

73.5

76.2 ✓

64.5 ✓

140.7 ✓

0.74 ✓

0.76 ✓

Mean 0.79 ✓

10 1 20  
 116 30. ✓  
 9 52 15. ✓  
 +5 -55. ✓  
 14 57 20. ✓  
 7A95.6231 ✓

W's watch used for times.  
 Watch 55 sec. fast.

Clouds are now getting so thick + every  
 where that it is quite impossible to  
 do any thing further. L. A. P.



Nov. 16 1907 (Saturday)

B Lyrae

18	46	+33.2
<del>23</del>	21	
4	35	

6" Cap.

Phot J.

W. Obs. Hornsby Rec.

For masts. see fol. pages.

Nov. 16. 1907.

Index L + A. B.

188.9 Var. dis.

7 34 5

247.3

58.4 ✓

16.5

41.9 ✓

-1.65 ✓

58.4

100.3 ✓

198.4

-1.70 ✓

238.7

40.3 ✓

7.5

55.7 ✓

-1.76 ✓

63.2

96.0 ✓

Index R + B. A.

106.7

150.5

43.8 ✓

280.6

52.0 ✓

-1.76 ✓

332.6

95.8 ✓

101.6

-1.80 ✓

154.6

53.0 ✓

286.6

40.0 ✓

-1.83

326.6

93.0 ✓

Mean -1.75 ✓

7 45 5  
 7 79 10. ✓  
 7 39 35. ✓  
 +5 -1 A. ✓  
 12 3A 27. ✓  
 7296.5267 ✓

Nov. 16 1907.

Index R + B. A.

7	52	0	107.6	41.3 <sup>✓</sup>	
			148.9	50.2 <sup>✓</sup>	-1.87 <sup>✓</sup>
			281.8	91.5 <sup>✓</sup>	
			332.0		

103.0		-1.90 <sup>✓</sup>
154.0	51.0 <sup>✓</sup>	
288.0	38.8 <sup>✓</sup>	-1.92
326.8	89.8 <sup>✓</sup>	

Index L + A B.

18.2		
59.5	41.3 <sup>✓</sup>	
188.4	55.7 <sup>✓</sup>	-1.73 <sup>✓</sup>
244.1	97.0	

10.0		-1.75 <sup>✓</sup>
65.1	55.1 <sup>✓</sup>	
198.1	40.5 <sup>✓</sup>	-1.77
238.6	95.6 <sup>✓</sup>	

Mean -1.82<sup>✓</sup>

8	0	5
	112	✓ <sup>✓</sup>
7	56	2. <sup>✓</sup>
+5	-1	A. <sup>✓</sup>
12	54	54. <sup>✓</sup>
7296.5321 <sup>✓</sup>		



Nov. 16 1907.

Index L + A. B.

$$\begin{array}{r}
 15.8 \\
 61.8 \\
 192.4 \\
 242.6 \\
 \hline
 50.2 \\
 96.2 \\
 \hline
 -1.75^{\checkmark}
 \end{array}$$

8 9 30

$$\begin{array}{r}
 17.0 \\
 60.8 \\
 190.4 \\
 244.0 \\
 \hline
 43.8 \\
 53.6 \\
 97.4 \\
 \hline
 -1.74^{\checkmark} \\
 -1.72^{\checkmark}
 \end{array}$$

17.0 18.7  
60.8 196.8  
190.4 241.0  
244.0

Index R + B A.

$$\begin{array}{r}
 282.0 \\
 331.9 \\
 108.4 \\
 149.4 \\
 \hline
 49.9 \\
 41.0 \\
 90.9 \\
 \hline
 -1.89^{\checkmark} \\
 -1.89^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 8 \quad 25 \quad 5 \\
 \hline
 34 \quad 30^{\checkmark} \\
 2 \quad 17 \quad 10^{\checkmark} \\
 + \quad -1 \quad 2^{\checkmark} \\
 \hline
 13 \quad 16 \quad 10^{\checkmark} \\
 7296.5529^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 288.4 \\
 328.3 \\
 103.0 \\
 153.9 \\
 \hline
 39.9 \\
 50.9 \\
 90.8 \\
 \hline
 -1.89^{\checkmark} \\
 -1.89^{\checkmark} \\
 \text{Mean} - 1.89^{\checkmark}
 \end{array}$$

Nov. 16 1907.

Index R + B. A.

8	34	10.	282.4		
			331.3	48.9 <sup>✓</sup>	
			107.6	41.9 <sup>✓</sup>	-1.89 <sup>✓</sup>
			149.5	90.8 <sup>✓</sup>	

287.5		-1.58 <sup>✓</sup>
328.3	40.8 <sup>✓</sup>	
103.3	50.8 <sup>✓</sup>	-1.87
154.1	91.6 <sup>✓</sup>	

Index L + A B.

195.2		
241.0	45.8 <sup>✓</sup>	
6.5	60.4 <sup>✓</sup>	-1.51 <sup>✓</sup>
66.9	106.2 <sup>✓</sup>	

8	41	30			
	75	40. <sup>✓</sup>	17.0	16.7	61.4 <sup>✓</sup>
A	37	50. <sup>✓</sup>	57.7	58.5	40.7 <sup>✓</sup>
+	-1	A. <sup>✓</sup>			102.1 <sup>✓</sup>
					-1.61 <sup>✓</sup>
13	36	42. <sup>✓</sup>	S. J. 24. <sup>✓</sup>	50	
72	96.5	67.2 <sup>✓</sup>	Pa. 5	59	

Dec. 33.2

Pa. 13.5 Ver B

Sprocket. -7.5 B

-6.3 C

mean -1.72<sup>✓</sup>

Nov. 16 1907.

~~Fourth~~  
 Region now getting a little  
 low and obs. a little more dif.  
 also bright moonlight some fog  
 and haze

Double Star # 209 (Sommer's List) = 10 Lacertae

22

33

+38.3

25

20

2

47

Phot R one picture <sup>removed</sup>

N. Obs. Hornby Res.

P.A. 45

Dist. 1' ±

Mags. 4.9-10.0



Nov. 16 1907

Index R + B A.

9 28 35

311.4 → South prec + bts. dis.  
 324.9 13.5<sup>✓</sup>  
 134.0 6.1<sup>✓</sup> 5.33<sup>✓</sup>  
 140.1 19.6<sup>✓</sup>

313.2

5.18<sup>✓</sup>

322.3

9.1<sup>✓</sup>

131.0

13.3<sup>✓</sup>5.04<sup>✓</sup>

144.3

22.4<sup>✓</sup>

Index L + A. B.

220.7

235.6

43.6

51.0

14.9<sup>✓</sup>7.4<sup>✓</sup>5.05<sup>✓</sup>22.3<sup>✓</sup>5.10<sup>✓</sup>

223.6

232.3

41.0

53.5

8.7<sup>✓</sup>12.5<sup>✓</sup>5.16<sup>✓</sup>21.2<sup>✓</sup>Mean 5.14<sup>✓</sup>

9 37 20  
 6.5<sup>✓</sup> 5.5<sup>✓</sup>  
 9 32 5.2<sup>✓</sup>  
 4.5<sup>✓</sup> -1 2.5<sup>✓</sup>  
 14 31 5.0<sup>✓</sup>

7296.6055<sup>✓</sup>

Measts, rather  
 dis. on account of bright  
 moonlight (moon is very nearly  
 full) considerable fog and some  
 haze.

Nov. 16 1907.

Double Star 2215 (Comstock's List) = 16 Lacertae A C

22	50	+41.0	
25	55		Photo R one prism removed.
3	5		W. Obs. Hornsby Rec.
P.A. 47°		Dist 1.1 ±	Mag 5.2 - 8.8

Index L + A B.

34.9 → South prec + hts. dis.

9 59 50

59.6	24.7 ✓	
217.6	18.3 ✓	3.61 ✓
235.9	43.0 ✓	

38.9

3.55 ✓

57.1

18.2 ✓

213.6

27.1 ✓

3.49 ✓

240.7

45.3 ✓

Index B + B. A.

303.5

329.2

25.7 ✓

130.0

15.6 ✓

3.70 ✓

145.6

41.3 ✓

307.2

3.60 ✓

325.9

18.7 ✓

124.0

26.6 ✓

3.49 ✓

150.6

45.3 ✓

10	5	20
12	✓	10. ✓

-10	2	35 ✓
-----	---	------

+5	-1	2. ✓
----	----	------

15	1	27. ✓
----	---	-------

7296.6260 ✓

Mean 3.58 ✓

Nov. 16 1907

By accident the 6" cap which  
was used in connection with  
obs. of  $\beta$  Lyrae, was left on  
so that the 2 preceding doubles  
were observed with this cap on.

W. D. watch used for times  
Watch 1 m 8. sec. fast.

L. P. P.



Nov. 25. 1907. (Monday).

Double Star No. 209 (Constocks' List) =  
= 10 Lacertae. P.A. 48° Dist. 1' ± mag. 4.8, 10.0  
22 33 + 34.3 W. obs. W. rec.

26 47  
+ 4 14

Index L. + A. B.

10 25 2  
224.0  
232.4  
40.5  
53.1  
126  
21.0  
5.12

221.0  
235.9  
43.9  
51.2  
14.9  
7.3  
22.2  
5.12

Index R. + B. A.

313.0  
322.5  
130.6  
144.1  
9.5  
13.5  
23.0  
4.92

10 34 7  
312.0  
325.4  
131.5  
139.2  
13.5  
2.3  
21.7  
5.04  
5.11

Mean 5.02

L. P. A.

Nov. 25. 1907,  
 Double Star 2754 (in old double star book) = 61 Cygni.  
 21      1      + 34.1

Abandoned. Sky poor.

Nov. 27 1907 (Wednesday)

Eros.

Phot J

23

37

+28.6

24

25

2 W. Obs. Hornsby Rec.

28

Star 1 with Star 2.

9.3

9.0

9.0

7 56

8.8

9.0

8.8

9.1

9.0

Star 2 - 3.0' south of Star 1  
Stars 2 and 3.

9.0

9.2

7 58

8.8

8.8

8.9 mean.

8.5

8.8

8.1

Star 2 - 4.8' south of Star 3



Nov. 27 1907.

Star 3 and 4

15.1

15.0

8 3

15.2

15.0

15.0

15.0

14.9

Star 3 - 1.2' south of Star 4

Star 5 and 2

17.3

Star 5 with Star 1.

7.7

7.8

8 10

8.1

8.0

8.0

8.0

8.0

Star 5 is 6.0' south of Star 1.

Nov. 27 1907.

Star 3 with Star 4.  
 15.0 } 15.0  
 15.0 }

Star 1 with Star 5.  
 8.5  
 8.0

Star 1 with Star 2.  
 10.0  
 10.0  
 10.2  
 10.0  
 10.4

Star 2 with Star 3.  
 8.1  
 7.9  
 7.8  
 7.7  
 7.6

Therefore Star 2 is Eros. It has moved in the right direction with

Nov. 27 1907.

reference to stars 1 and 3 and  
by the right amount and is now  
about 3.8' south of star 1. It also  
agrees quite closely with the  
Ephemeris

For measts of Eros, see fol. pages.

Comp. Star =  $+29^{\circ} 4997$  (9.5)



Nov. 27 1907.  
 Eras. Phot. F. H. sh. Hornsby rec.  
 Index L+A B I

8 53 50  
 178.5 + Comp. Star dis.  
 259.1 80.6 ✓  
 8.3 63.3 ✓ +0.70 ✓  
 71.6 143.9 ✓

186.8 +0.72 ✓  
 250.3 63.5 ✓  
 359.3 78.5 ✓ +0.73 ✓  
 77.8 142.0 ✓

Index R+B. A

87.4  
 171.4 84.0 ✓  
 275.5 64.2 ✓ +0.61 ✓  
 339.7 148.2 ✓

96.0 +0.59 ✓

9 1 25  
 115 15. ✓  
 2 57 32. ✓  
 +5 -14. ✓

13 57 24. ✓  
 7967.5 +15 ✓

160.2 64.2 ✓  
 265.6 86.0 ✓ +0.57  
 351.6 150.2 ✓

mean +0.65<sup>6</sup> ✓

Nov. 27 1907.

Index R + B. A. II

$$\begin{array}{rcl}
 85.6 & & \\
 169.4 & 23.4^{\vee} & \\
 277.5 & & \\
 339.2 & \frac{61.7^{\vee}}{145.5^{\vee}} & +0.66^{\vee}
 \end{array}$$

$$\begin{array}{rcl}
 97.0 & & \\
 160.4 & 63.4^{\vee} & +0.60^{\vee} \\
 265.6 & \frac{44.0^{\vee}}{151.4^{\vee}} & +0.55^{\vee} \\
 353.6 & &
 \end{array}$$

Index L + A. B.

$$\begin{array}{rcl}
 1.5 & & \\
 75.1 & 73.6^{\vee} & \\
 187.2 & \frac{62.3^{\vee}}{135.9^{\vee}} & +0.46^{\vee} \\
 249.5 & &
 \end{array}$$

$$\begin{array}{rcl}
 8.8 & & \\
 69.4 & 60.6^{\vee} & +0.76^{\vee} \\
 175.5 & \frac{45.6^{\vee}}{146.2^{\vee}} & +0.65^{\vee} \\
 261.1 & & \\
 \text{mean} & & +0.64^{\vee}
 \end{array}$$

$$\begin{array}{rcl}
 9 & 13 & 45 \\
 \hline
 35 & 25^{\vee} & \\
 9 & 4 & 51^{\vee} \\
 +5 & & -14^{\vee} \\
 \hline
 74 & 4 & 37^{\vee} \\
 7907.5 & 295^{\vee} &
 \end{array}$$

Nov. 27 1907.

Index L + A. B.

III

$$\begin{array}{r}
 9 \quad 17 \quad 25 \\
 357.0 \\
 79.4 \\
 187.5 \\
 245.7 \\
 \hline
 52.2 \\
 140.6 \\
 +0.76
 \end{array}$$

$$\begin{array}{r}
 9 \quad 19 \quad 50 \\
 9.1 \\
 69.3 \\
 176.2 \\
 260.0 \\
 \hline
 60.2 \\
 43.2 \\
 147.0 \\
 +0.69
 \end{array}$$

Index R + B. A.

$$\begin{array}{r}
 9 \quad 23 \quad 0 \\
 263.6 \\
 350.4 \\
 98.0 \\
 159.0 \\
 \hline
 26.2 \\
 61.0 \\
 147.2 \\
 +0.62
 \end{array}$$

$$\begin{array}{r}
 9 \quad 25 \quad 30 \\
 25 \quad 45. \\
 9 \quad 21 \quad 26. \\
 +5 \quad -14. \\
 \hline
 14 \quad 21 \quad 12. \\
 7907.5920
 \end{array}$$

$$\begin{array}{r}
 278.7 \\
 337.6 \\
 84.0 \\
 170.0 \\
 \hline
 52.9 \\
 46.0 \\
 144.9 \\
 +0.62
 \end{array}$$

mean +0.62



Nov. 27 1907.

Index R + B. A. IV

9 33 30

$$\begin{array}{r}
 263.0 \\
 350.4 \quad 27.4^v \\
 98.5 \\
 158.8 \quad \frac{60.3^v}{147.7^v} + 0.62^v
 \end{array}$$

9 36 0

$$\begin{array}{r}
 277.4 \quad 63.0^v \quad + 0.54^v \\
 340.4 \\
 84.0 \quad \frac{22.2^v}{151.2^v} + 0.55^v \\
 172.2
 \end{array}$$

Index L + A. B.

9 39 40

$$\begin{array}{r}
 174.0 \quad 43.2^v \\
 257.2 \\
 7.5 \\
 67.0 \quad \frac{59.5^v}{142.7^v} + 0.72^v
 \end{array}$$

9	42	0
<hr/>		
	151	10. <sup>v</sup>

9	37	42. <sup>v</sup>
+5		-14. <sup>v</sup>
<hr/>		

14	37	34. <sup>v</sup>
----	----	------------------

7907.6094<sup>v</sup>

$$\begin{array}{r}
 182.5 \quad 67.7^v \quad + 0.62^v \\
 250.2 \\
 355.5 \quad \frac{24.2^v}{152.5^v} + 0.53^v \\
 80.3
 \end{array}$$

Mean + 0.60<sup>v</sup>

Nov. 27 1907.

Index L + A. B. V

$$\begin{array}{r}
 9 \quad 47 \quad 45 \\
 175.9 \\
 258.6 \quad + 2.7^{\circ} \\
 7.5 \\
 68.6 \quad \frac{61.1^{\circ}}{143.4^{\circ}} \quad + 0.70^{\circ}
 \end{array}$$

$$\begin{array}{r}
 9 \quad 49 \quad 40 \\
 187.7 \\
 249.0 \quad 61.3^{\circ} \\
 359.0 \\
 80.0 \quad \frac{41.0^{\circ}}{142.3^{\circ}} \quad + 0.73^{\circ}
 \end{array}
 \quad + 0.72^{\circ}$$

Index B + B. A.

$$\begin{array}{r}
 10 \quad 6 \quad 40 \\
 9 \quad 53 \quad 40 \\
 \text{clouds.} \\
 86.4 \\
 172.0 \\
 272.7 \\
 341.5 \\
 264.0 \\
 350.9 \\
 96.1 \\
 159.2 \\
 66.9^{\circ} \\
 63.1^{\circ} \\
 \frac{63.1^{\circ}}{150.0^{\circ}} \quad + 0.52^{\circ}
 \end{array}$$

$$\begin{array}{r}
 10 \quad 8 \quad 40 \\
 9 \quad 1 \quad 40 \\
 \hline
 232 \quad 45^{\circ} \\
 9 \quad 52 \quad 11^{\circ} \\
 +5 \quad -14^{\circ} \\
 \hline
 14 \quad 57 \quad 57^{\circ} \\
 7907.6236^{\circ}
 \end{array}$$

$$\begin{array}{r}
 95.0 \\
 160.0 \\
 276.2 \\
 341.0 \\
 85.0 \\
 169.9 \\
 64.2^{\circ} \\
 24.9^{\circ} \\
 \frac{24.9^{\circ}}{149.7^{\circ}} \quad + 0.52^{\circ}
 \end{array}$$

mean  $+0.65^{\circ}$

Nov. 27 1907.

Index R + B. A. VI

$$\begin{array}{r}
 10 \quad 21 \quad 20 \\
 264.8 \\
 349.5 \quad 44.7'' \\
 96.5 \\
 158.9 \quad \frac{63.4''}{147.1''} + 0.63''
 \end{array}$$

$$\begin{array}{r}
 10 \quad 24 \quad 20 \\
 277.5 \quad 63.0'' \\
 340.5 \quad +0.60'' \\
 86.2 \\
 173.8 \quad \frac{47.6''}{150.6''} + 0.56''
 \end{array}$$

Index L + A. B.

$$\begin{array}{r}
 10 \quad 27 \quad 5 \\
 175.9 \quad 45.4'' \\
 261.3 \\
 7.2 \quad \frac{61.4''}{146.2''} + 0.64'' \\
 68.6
 \end{array}$$

$$\begin{array}{r}
 10 \quad 30 \quad 50 \\
 103 \quad 35.7'' \\
 10 \quad 25 \quad 54.7'' \\
 +5 \quad -14.7'' \\
 \hline
 15 \quad 25 \quad 40.7'' \\
 188.5 \quad 62.2'' \quad +0.64'' \\
 251.3 \\
 356.7 \quad \frac{22.3''}{145.1''} + 0.65'' \\
 79.0 \\
 \text{mean} + 0.63''
 \end{array}$$

7907.6429



Nov. 27 1907.

Index L + A. B. VII

10 36 10	176.1		
	258.8	82.7 <sup>v</sup>	
	8.0	59.3 <sup>v</sup>	+0.73 <sup>v</sup>
	67.3	142.0 <sup>v</sup>	

10 38 10	189.2		+0.69 <sup>v</sup>
	251.0	61.8 <sup>v</sup>	
	355.4	84.6 <sup>v</sup>	+0.65 <sup>v</sup>
	80.0	146.4 <sup>v</sup>	

Index R + B. A.

10 41 40	86.6		
	171.3	84.7 <sup>v</sup>	
	278.5	58.3 <sup>v</sup>	+0.71 <sup>v</sup>
	336.8	143.0 <sup>v</sup>	

10 45 30	97.3		+0.70 <sup>v</sup>
161 30. <sup>v</sup>	159.5	62.2 <sup>v</sup>	
10 40 22. <sup>v</sup>	266.0	82.6 <sup>v</sup>	+0.68 <sup>v</sup>
+5 -14. <sup>v</sup>	348.6	144.8 <sup>v</sup>	
		mean +0.70 <sup>v</sup>	

15 40 A. S. J. 3 29  
 7907.65 29<sup>v</sup> H. A. +3 43

Dec. +30.0

P. A. 178.5 Ver B.

Sprocket - 0.5 A

+0.5 B

+1.0 C.

Nov. 27 1907.

Troubled by clouds in 5th  
group Last 2 sets retaken.

W's watch used for times.  
Watch 14. sec. fast.

At end of observations, Eros  
had moved very plainly to  
South following so that object  
assumed as Eros was correct.

L. P. P.

Nov. 29 1907 (Friday)

Eros

23

37

+28.6

24

10

33 %

Phot J  
H. Obs. Hornsby. Rec.

Star 2 and Star 3.

32.1

31.9

31.5

31.8

7 45

32.4

32.1

32.0

32.3

32.4

32.5

32.4

32.1.3

32.1

Star 3 is ~~practically~~ in the same dec. as Star 2. Star 3 is presumably Eros. The transits are not individually quite as close <sup>as sometimes</sup> from the fact that obs. <sup>at 45°</sup> is continually troubled by variable haze.



Nov. 29 1907.

same again

8 4

32.9

33.0

33.0

33.0

Star 3 from the last proceedings transits also it is very evident that Star 3 is ~~not~~ It is also very in its computed place and there is no star comparable with it in magnitude sufficiently near it to be confounded with it ~~on account~~ No more transits taken at present as sky is rather more hazy. It is also impossible to measure it at present.

Nov. 29 1907.

same again.

8 21

33.4

33.5

33.5

Although the sky is still hazy and transits rather dim, star 3 is certainly Eros. Its distance from star 2 is steadily increasing and it is now a little south of star 2 as it should be.

Sky is so continuously hazy that it is impossible to measure Eros to night.  
# Abandoned #

9 10

Clouds now becoming so thick & more pronounced every where that it is impossible to do any thing further.

Nov. 30, 1907. (Saturday.)

Eros.

$$\begin{array}{r}
 23 \\
 24 \\
 \hline
 37 \\
 15 \\
 \hline
 38 \text{ W.}
 \end{array}
 + 28.6$$

Phot I  
W. Obs. Hornsby Rec.

Star 1 with Star 2.

8.0

8.3

7.5

8.1

7.8

8.0

7.8

7.7

8.2

8.0

7.9 W.

7 38

7.9 Means.



Nov. 30 1907.

Star 2 is 1.8' north of Star 1

Star 2 and Star 3.

24.8

25.0

25.0

7 44

24.7

24.8 Mean

24.5

24.9

24.9

7 17 3.8

7 55

Cross now follows + 25° 46' 47" (9.0)  
by 28 sec. and is 2.9' South of it.

Star 1 with Star 2.

7.3

7.5

7.5

7.3

7 59

7.4

7.4 Mean

7.5

7.6

7.5

59.6

Nov. 30 1907.

Comp. Star follows  $+28^{\circ} 46' 47''$   
by 41 sec. and is 14' south  
of it.  $\therefore$  Comp. Star is  $+28^{\circ} 46' 50'' (9.3)$ .

Nov. 30 1907.

1.

Index I+A

B.

268.9 → Comp. Star dis.

8 15 35

348.7

79.2

97.3

157.0

$$\frac{59.7}{139.5}$$

+0.72

279.7

69.0

+0.62

348.7

87.0

168.1

$$\frac{21.1}{150.1}$$

+0.57

Index R+B.

A.

175.8

24.5

260.3

6.2

63.1

69.3

$$\frac{147.6}{147.6}$$

+0.62

188.6

60.4

+0.62

249.0

357.9

20.9

78.8

$$\frac{141.3}{141.3}$$

+0.75

8	23	40
2	19	42. ✓
+5		-40. ✓
13	19	2. ✓
79	10.5550	

Mean +0.62



Nov. 30 1907.

2.

Index R+B. A

8 27 0

176.0	21.4	
257.4		
7.1	60.7	
67.8	<u>142.1</u>	+0.73

190.6	50.1	
248.7		+0.74
355.8	23.1	
78.9	<u>141.2</u>	+0.75

Index L+A. B

88.0	24.1	
172.1		
281.9	57.7	
339.6	<u>141.2</u>	+0.74

98.0	60.2	+0.74
158.8		

268.0	20.7	
348.7	<u>141.5</u>	+0.74

mean +0.74

8	35	0
	6.2	0.
2	31	0.5
+5		-40.5
13	30	20.5

7910.5627

Nov. 30 1907.

3.

Index L + A. B

$$\begin{array}{r}
 87.0 \quad \cancel{348.2} \\
 170.0 \quad 23.0 \\
 278.0 \quad 60.4 \\
 338.4 \quad \underline{143.8} \quad +0.71
 \end{array}$$

$$\begin{array}{r}
 98.2 \quad 52.2 \quad +0.75 \\
 157.0 \\
 268.1 \quad 20.6 \\
 348.7 \quad \underline{139.4} \quad +0.79
 \end{array}$$

Index R + B. A.

$$\begin{array}{r}
 356.0 \\
 77.4 \quad 21.4 \\
 191.0 \quad 56.7 \\
 247.7 \quad \underline{132.1} \quad +0.21
 \end{array}$$

$$\begin{array}{r}
 8 \quad 48 \quad 35 \\
 27 \quad 30.5 \\
 2 \quad 43 \quad 45.5 \\
 +5 \quad -40.5 \\
 \hline
 13 \quad 43 \quad 5.5 \\
 7910.5716
 \end{array}$$

$$\begin{array}{r}
 8.5 \quad 52.0 \quad +0.20 \\
 66.5 \\
 177.6 \quad 20.6 \\
 258.2 \quad \underline{132.6} \quad +0.20
 \end{array}$$

mean +0.72

Nov. 30 1907.

Index R+B A. IV.

8 52 5

356.0

78.9 22.9

189.2

247.0

57.2

140.7

+0.76

9.0

67.8

54.2

+0.72

177.9

258.5

20.6

1394

+0.79

Index L+A. B.

267.1

350.5

97.2

156.8

23.4

59.6

143.0

+0.71

277.0

338.4

86.3

168.4

61.4

22.1

143.5

+0.70

+0.70

8 59 50

111

55.5

2

55

52.5

+5

-40.5

13

55

12.5

7910.52015

Mean +0.74













Dec. 2, 1907 (Monday).

Eras. W. obs. Willard J. Rowe rec.

$$\begin{array}{r} 23 \quad 37 \\ 24 \quad 20 \\ \hline \end{array} \quad + 20.6$$

Class 1 and 2  
2d. 5

7 47

$$\begin{array}{r} 26.5 \\ 26.5 \\ 26.5 \\ \hline 79.5 \end{array}$$

2 2

$$\begin{array}{r} 27.7 \\ 27.6 \\ 27.2 \\ \hline 27.7 \end{array}$$

∴ Star 2 is Eros.

∴ Eroo prec. + 2.8° 46.54 (9.3) by 27.7 and is slightly south of it.

Comp. Star =  $22^{\circ} 4655$  (43)

Dec. 2. 1907

Index R + B.

- 15.8 ← C. V. L.

58.8

231.4

198.0

8 28 20

~~Index L + B.~~

Stopped by clouds.



Dec. 3, 1907. (Tuesday).

7 5

Sky practically all cloudy.

7 45

Sky still thickly cloudy.

8 0

Sky thickly cloudy. No stars visible.

Dec. 4, 1907 (Wednesday)

Eros	W obs.	Rowe rec.	pho. T
28h	37m	+ 28.6	
24	27		
<hr/>			
+ 50			

- 7 10 clouds coming in from the south east.
- 7 20 Sky now practically all cloudy.
- 7 40 Sky still thickly cloudy.
- 8 0 Sky thickly cloudy with no prospect of clearing

Dec. 5, 1907 (Thursday)

Cross W. obs. Rowe rec. pho. T.

$$\begin{array}{r} 23 \quad 37 \\ 24 \quad 25 \\ \hline + 48 \end{array} \quad + 28.6$$

Stars 1+2-

23.5

23.5

23.4

7 36

23.3

24.0

23.8

$$\begin{array}{r} 23.7 \\ 7 \overline{) 163.2} \\ \hline 23.6 \end{array}$$

Stars 2 and 3

23.7

24.0

7 39

23.9

23.8

23.7

$$\begin{array}{r} 23.7 \\ 6 \overline{) 142.8} \\ \hline 23.8 \end{array}$$

Star 2 is about 2.0' south of star 1.

Star 3 is about 0.7' south of star 2.



Dec. 5, 1907

Stars 1 and 2 (again)

24.4

24.5

Stars 2 and 3

~~22.9~~

22.3

22.5

22.5

∴ Star 2 is 900 as supposed.

For measts. of Err, see foll. pages.

Comp. Star =  $+27^{\circ} 46' 44''$  (9.3)

Dec. 5, 1907.

Eros.

Index L &amp; A. B Comp. Star des. 1.

8 15 10

$$\begin{array}{r}
 96.4 \\
 159.6 \quad \leftarrow 63.2 \checkmark \\
 286.8 \\
 329.6 \quad \frac{42.8 \checkmark}{106.0 \checkmark} \quad +1.51
 \end{array}$$

$$\begin{array}{r}
 104.6 \quad \checkmark 1.0 \quad +1.42 \\
 155.6 \\
 275.5 \quad \frac{62.9 \checkmark}{113.9 \checkmark} \quad +1.33 \\
 338.4
 \end{array}$$

Index R + B. A.

$$\begin{array}{r}
 7.4 \\
 68.2 \quad 60.4 \checkmark \\
 190.6 \\
 239.9 \quad \frac{49.3 \checkmark}{110.1 \checkmark} \quad +1.42
 \end{array}$$

$$\begin{array}{r}
 16.0 \quad 44.9 \checkmark \quad +1.42 \\
 60.9 \quad \frac{65.0 \checkmark}{109.9 \checkmark} \quad +1.42 \\
 185.5 \\
 252.0 \quad 250.5
 \end{array}$$

$$\begin{array}{r}
 8 \quad 27 \quad 35 \\
 \hline
 42 \quad 45 \checkmark \\
 2 \quad 21 \quad 22. \checkmark \\
 + \checkmark \quad +23. \checkmark \\
 \hline
 13 \quad 21 \quad 45 \checkmark \\
 79 \quad 15 \quad 55 \quad 60 \checkmark
 \end{array}$$

+1.42

Dec. 5, 1907

Index R+B. A. II

8 33 40

6.1	65.1 <sup>✓</sup>	
71.2	<u>47.6</u> <sup>✓</sup>	
194.4	112.7 <sup>✓</sup>	+1.36
<del>243.1</del>	242.0	

13.5	46.6 <sup>✓</sup>	+1.32
60.1		
187.7	<u>63.9</u> <sup>✓</sup>	
251.6	110.5 <sup>✓</sup>	+1.41

~~277~~

Index L+a B.

277.0	60.1 <sup>✓</sup>	
337.1		
105.5	<u>44.5</u> <sup>✓</sup>	
150.0	104.6 <sup>✓</sup>	+1.54

286.9	42.1 <sup>✓</sup>	+1.64
329.0	<u>54.9</u> <sup>✓</sup>	
101.4	97.0 <sup>✓</sup>	
<del>159.9</del>	156.3	+1.73

8	43	55
<hr/>		
77	35	<sup>✓</sup>
A	32	42 <sup>✓</sup>
+5		+23 <sup>✓</sup>
<hr/>		
13	39	11 <sup>✓</sup>
<hr/>		
79	15	5629 <sup>✓</sup>

+1.51



Dec. 5, 1907

Index L. + A B.

III

8 51 30

$$\begin{array}{r}
 280.8 \\
 337.0 \\
 106.8 \\
 148.7
 \end{array}
 \begin{array}{r}
 \\
 \sqrt{6.2}^{\vee} \\
 \\
 \frac{41.9^{\vee}}{92.1^{\vee}}
 \end{array}
 \begin{array}{r}
 \\
 \\
 \\
 +1.70
 \end{array}$$

$$\begin{array}{r}
 283.0 \\
 331.0 \\
 103.8 \\
 160.2
 \end{array}
 \begin{array}{r}
 \\
 42.0^{\vee} \\
 \\
 \frac{56.4^{\vee}}{94.4^{\vee}}
 \end{array}
 \begin{array}{r}
 \\
 \\
 \\
 +1.55
 \end{array}
 \begin{array}{r}
 \\
 +1.62
 \end{array}$$

Index R. + B A.

$$\begin{array}{r}
 189.4 \\
 247.6 \\
 16.0 \\
 60.5
 \end{array}
 \begin{array}{r}
 \\
 \sqrt{2.2}^{\vee} \\
 \\
 \frac{44.5^{\vee}}{102.7^{\vee}}
 \end{array}
 \begin{array}{r}
 \\
 \\
 \\
 +1.59
 \end{array}$$

$$\begin{array}{r}
 195.6 \\
 239.9 \\
 7.5 \\
 69.0
 \end{array}
 \begin{array}{r}
 \\
 44.3^{\vee} \\
 \\
 \frac{61.5^{\vee}}{105.8^{\vee}}
 \end{array}
 \begin{array}{r}
 \\
 \\
 \\
 +1.52
 \end{array}
 \begin{array}{r}
 \\
 +1.56
 \end{array}$$

$$\begin{array}{r}
 9 \ 4 \ 20 \\
 \hline
 115 \ 50.^{\vee} \\
 2 \ 57 \ 55.^{\vee} \\
 +5 \ 23.^{\vee} \\
 \hline
 13 \ 52 \ 12.^{\vee} \\
 79 \ 15.5 \ 21.^{\vee}
 \end{array}$$

+1.59

Dec. 5, 1907

Index R+B A.

9 11 45

187.0

61.3<sup>v</sup>

IV

248.3

14.6

45.9<sup>v</sup>

60.5

107.2<sup>v</sup>

+1.42

195.9

44.3<sup>v</sup>

+1.42

240.2

6.3

63.0<sup>v</sup>

69.3

107.3<sup>v</sup>

+1.42

Index L + a B.

98.0

62.2<sup>v</sup>

160.8

284.1

331.0

46.9<sup>v</sup>109.7<sup>v</sup>

+1.43

104.9

149.6

277.4

337.3

44.7<sup>v</sup>59.9<sup>v</sup>104.6<sup>v</sup>

+1.44

+1.44

+1.44

9	31	55
<hr/>		
33	40.	<sup>v</sup>

9	16	50.
<sup>v</sup>		
+5	+23.	
<sup>v</sup>		

14	17	13.
<hr/>		
79	15.	59
<sup>v</sup>		

Dec 5 1907

Index L + A B.

9 43 10

275.6 63.0<sup>v</sup>V

338.6

105.9

44.0<sup>v</sup>

149.9

107.0<sup>v</sup>

+1.49

286.0

43.2<sup>v</sup>

329.2

+1.47

95.0

65.4<sup>v</sup>

160.4

100.6<sup>v</sup>

+1.45

Index R + B. A.

186.5

65.2<sup>v</sup>

252.3

12.9

46.2<sup>v</sup>

59.7

112.6<sup>v</sup>

+1.36

196.8

45.7<sup>v</sup>

242.5

+1.40

6.1

63.1<sup>v</sup>

69.2

100.2<sup>v</sup>

+1.45

+1.48

9 53 10

96 20.5<sup>v</sup>9 42 10<sup>v</sup>+23.14 42 33.5<sup>v</sup>7915.6171<sup>v</sup>



Dec 5, 1907

9 58 30

Index R+B. A. VI

187.5

250.2

62.7<sup>✓</sup>

14.6

60.1

 $\frac{45.5}{102.2}$ <sup>✓</sup>

+1.46

195.0

240.2

45.2<sup>✓</sup>

+1.48

5.4

67.0

 $\frac{61.6}{106.0}$ <sup>✓</sup>

+1.49

Index R+A. B.

97.6

~~159.6~~ 160.062.4<sup>✓</sup>

283.2

331.2

 $\frac{42.0}{110.8}$ <sup>✓</sup>

+1.41

105.2

151.3

46.1<sup>✓</sup>

+1.45

277.3

338.1

 $\frac{60.2}{106.9}$ <sup>✓</sup>

+1.49

+1.46

10 10 10

122 40. ✓

10 4 20. ✓

+5 +23. ✓

15 4 43. ✓

7915.6223<sup>✓</sup>

Dec 5, 1907

Index L + d. B.

10 19 5

95.3 63.2<sup>✓</sup>VII

158.5

288.0 42.5<sup>✓</sup>831.5 111.7<sup>✓</sup> +1.32104.4 45.6<sup>✓</sup>

+1.41

150.0 63.4<sup>✓</sup>276.0 109.0<sup>✓</sup> +1.44~~338.8~~ 339.4

Index R + B A.

4.0 65.2<sup>✓</sup>

69.8

194.8 42.7<sup>✓</sup>243.5 114.5<sup>✓</sup> +1.3114.4 42.2<sup>✓</sup>

+1.30

62.6

184.5 66.9<sup>✓</sup>251.4 115.1<sup>✓</sup> +1.3010 28 2547 30.<sup>✓</sup>10 23 45.<sup>✓</sup>+5 +23.<sup>✓</sup>15 24 2.<sup>✓</sup>79 15.64 12.<sup>✓</sup>

+1.36

Dec. 5, 1907

Index R. &amp; B. A.

10 33 10

6.3	62.3 ✓	VIII
68.6		
195.4	45.1 ✓	
240.5	<u>107.4</u> ✓	+1.42

15.2	45.4 ✓	+1.42
60.6		
185.8	67.1 ✓	
252.9	<u>112.5</u> ✓	+1.36

Index L &amp; A. B.

275.4	65.4 ✓	
340.8		
105.0	45.6 ✓	
150.6	<u>111.0</u> ✓	+1.39

284.6	47.0 ✓	+1.40
331.6		

96.7	62.2 ✓	
159.5	<u>109.2</u> ✓	+1.42

+1.41

L. A. A.

10	41	0
74	10.	✓
10	37	✓
+5	+23.	✓
15	37	2A. ✓
79	15.	6510 ✓



Dec. 5, 1907

S. T.	+ 3 hr 59m
H. A.	+ 4 hr 7m.
Dec.	+ 28.3°
P. A.	347.0°
Sprocket.	+ 0.5 B.
	+ 1.5 C.

Eros at end of series has moved quite a large amount and in the right direction. Hence object observed for Eros was Eros.

W's watch used for time  
Watch twenty three seconds slow.

Comp. Star =  $27^{\circ} 46' 44''$  (9.3)

Preceding series difficult of observation.  
Sky hazy and seeing very blurry. Air cold, and some wind. At times, Eros would nearly disappear <sup>in the haze</sup> from bad seeing and haze.

Dec. 6, 1907 (Friday)

W obs.

Rowe rec.

7 15

7 30

7 45

8 0

8 15

8 30

8 40

Sky pretty cloudy.

" " "

" " "

" " "

" " "

" " "

Sky all cloudy. Apparently no  
chance for any work.

Dec. 7, 1907 (Saturday)

Gross

W obs.

Rowe rec

23	37				
24	40			+	28.6
1	3				

Stars 1 + 2

7 30

3.2  
3.2  
3.3  
3.2  
3.4  
516.3  
9.3

Stars 3 + 4

7 32

2.2  
2.0  
2.2  
2.0  
2.4  
2.3  
2.4  
715.5  
2.2



Dec. 7, 1907

Stars 3 &amp; 4 (again)

3.2

3.3

3.3

3.3

3.3

3.2

3.4

3.5

3.4

3.4

3.3

3.4

1240.0  
3.3

7 54

For measr. of Eros, see fol. pages.

Comp. Star = +27° 46' 52" (9.0)

Dec. 7, 1907.

Err.

Index R+A.

C. P. dis. A

I

8 19 45

$$\begin{array}{r}
 8.5 \\
 64.6 \\
 197.0 \\
 238.7 \\
 \hline
 56.1 \\
 41.7 \\
 97.8 \\
 +1.71
 \end{array}$$

$$\begin{array}{r}
 17.0 \\
 58.7 \\
 190.5 \\
 247.4 \\
 \hline
 41.7 \\
 56.9 \\
 98.6 \\
 +1.69
 \end{array}$$

Index L+B.

B.

$$\begin{array}{r}
 278.2 \\
 336.0 \\
 106.0 \\
 148.1 \\
 \hline
 57.2 \\
 42.1 \\
 99.9 \\
 +1.66
 \end{array}$$

$$\begin{array}{r}
 289.2 \\
 324.0 \\
 97.4 \\
 155.0 \\
 \hline
 34.2 \\
 57.6 \\
 92.4 \\
 +1.45
 \end{array}$$

$$\begin{array}{r}
 8 \ 28 \ 15 \\
 42 \ 0. \\
 A \ 24 \ 0. \\
 +5 \quad +46. \\
 \hline
 13 \ 24 \ 46. \\
 7917.5549
 \end{array}$$

$$\text{mean} = 4.73$$

Dec. 7, 1907

8 33 25

Index L+B

B

278.3

334.0

107.5

147.0

55.7<sup>✓</sup>39.5<sup>✓</sup>~~40.7~~95.2<sup>✓</sup>95.2<sup>✓</sup>+172<sup>✓</sup>

287.9

327.3

99.0

156.3

39.4<sup>✓</sup>+176<sup>✓</sup>57.3<sup>✓</sup>96.7<sup>✓</sup>+174<sup>✓</sup>

Index R+A

A.

189.9

243.5

125

59.0

53.6<sup>✓</sup>45.5<sup>✓</sup>99.1<sup>✓</sup>+162<sup>✓</sup>

195.4

239.8

7.5

68.7

44.4<sup>✓</sup>+160<sup>✓</sup>61.2<sup>✓</sup>105.6<sup>✓</sup>+152<sup>✓</sup>mean +162<sup>✓</sup>

8 42 20

75 45<sup>✓</sup>A 37 52<sup>✓</sup>+5 +46<sup>✓</sup>13 3A 3A<sup>✓</sup>7917.5645<sup>✓</sup>



Dec. 7, 1907

Index R + a A.

8 47 15

$$\begin{array}{r} 189.1 \\ 246.7 \end{array} \quad \sqrt{7.6} \quad \text{III}$$

$$\begin{array}{r} 16.8 \\ 57.6 \end{array} \quad \frac{40.8}{98.4} \quad +1.70$$

$$\begin{array}{r} 197.0 \\ 238.6 \end{array} \quad \begin{array}{r} 41.6 \\ 7.6 \end{array} \quad +1.69$$

$$\begin{array}{r} 65.0 \\ 65.0 \end{array} \quad \frac{\sqrt{7.6}}{99.0} \quad +1.68$$

Index L + B B.

$$\begin{array}{r} 95.0 \\ 158.0 \end{array} \quad \begin{array}{r} 157.8 \\ 62.8 \end{array}$$

$$\begin{array}{r} 288.5 \\ 325.6 \end{array} \quad \frac{37.1}{99.9} \quad +1.66$$

$$\begin{array}{r} 108.0 \\ 151.7 \end{array} \quad \begin{array}{r} 43.7 \\ 57.9 \end{array} \quad +1.64$$

$$\begin{array}{r} 276.4 \\ 334.3 \end{array} \quad \frac{57.9}{101.6} \quad +1.62$$

Mean +1.66

$$\begin{array}{r} 8 \quad 56 \quad 45 \\ \hline 104 \quad 0. \quad \checkmark \\ A \quad \sqrt{2} \quad 0. \quad \checkmark \\ +5 \quad +46. \quad \checkmark \\ \hline 13 \quad \sqrt{2} \quad 46. \quad \checkmark \\ 7917. \sqrt{724} \quad \checkmark \end{array}$$

Dec. 7, 1907

Index L + B. B.

9 8 15

98.9  
 153.5 54.6<sup>✓</sup> IV  
 285.6  
 326.3  $\frac{40.7}{95.3}$  +1.77<sup>✓</sup>

107.4  
 148.0 40.6<sup>✓</sup> +1.71<sup>✓</sup>  
 276.0  
~~335.0~~ 335.8  $\frac{59.7}{99.7}$   
 100.4<sup>✓</sup> +1.6<sup>✓</sup>

Index R + A. A.

7.0

67.0 60.0<sup>✓</sup>

196.6

237.9  $\frac{41.3}{101.3}$  +1.62<sup>✓</sup>

14.6

57.0 42.4<sup>✓</sup> +1.60<sup>✓</sup>

185.4

246.1 ~~247.4~~  $\frac{60.7}{103.9}$  +1.52<sup>✓</sup>

mean +1.66<sup>✓</sup>

9 21 20  
 29 35<sup>✓</sup>  
 9 14 42<sup>✓</sup>  
 +5 +46<sup>✓</sup>  
 14 15 34<sup>✓</sup>  
 7917.5941<sup>✓</sup>

Dec. 7, 1907.

Index R+a A.

V

9 31 40

7.5  
66.4 58.9<sup>v</sup>  
196.9  
238.8

41.9<sup>v</sup>  
100.8<sup>v</sup>

+1.64<sup>v</sup>

16.2  
59.0  
190.0  
248.6

42.8<sup>v</sup>+1.63<sup>v</sup>

58.6<sup>v</sup>  
101.4<sup>v</sup>

+1.62<sup>v</sup>

Index f+B B.

276.8

336.8

59.5<sup>v</sup>

109.1

1218.0

38.9<sup>v</sup>  
98.4<sup>v</sup>

+1.70<sup>v</sup>

289.0

326.2

37.2<sup>v</sup>+1.77<sup>v</sup>

97.3

153.0 ~~155.0~~

55.7<sup>v</sup> +1.24  
92.9<sup>v</sup> +1.79

9 40 15

71 <sup>vv.</sup><sup>v</sup>9 35 <sup>va.</sup><sup>v</sup>45 +46.<sup>v</sup>14 36 44<sup>v</sup>7917.6022<sup>v</sup>mean +1.70<sup>v</sup>



Dec. 7, 1907

Index L + B

B.

VI

9 50 0

277.6

335.8

58.2

107.6

146.9

$$\frac{39.3}{97.5} + 1.72$$

288.3

325.5

37.2

+1.75

97.8

155.7

$$\frac{57.9}{95.1} + 1.72$$

Index R + A

A.

188.6

247.6

59.0

14.3

57.2

$$\frac{42.9}{101.9} + 1.61$$

196.8

236.1

40.1

+1.60

5.9

~~68.3~~~~67.8~~

68.8

~~61.9~~~~102.8~~

62.9

103.0 + 1.54

10 2 0  
 112 0.<sup>v</sup>  
 9 56 0.<sup>v</sup>  
 +5 +46.<sup>v</sup>  
 14 56 46.<sup>v</sup>  
 7917.6222<sup>v</sup>

mean +1.62

Dec <sup>7</sup> 1907

Index R. fa A

VII

18 11 40

186.6

247.8 61.2<sup>✓</sup>

16.3

58.0

$$\frac{41.7^{\checkmark}}{102.9^{\checkmark}} + 1.59^{\checkmark}$$

197.6

238.5 40.9<sup>✓</sup> +160<sup>✓</sup>

7.4

67.8

$$\frac{60.4^{\checkmark}}{101.3^{\checkmark}} + 1.62^{\checkmark}$$

Index L + B. B.

98.2

156.2 58.0<sup>✓</sup>

289.4

327.0

$$\frac{37.6^{\checkmark}}{95.6^{\checkmark}} + 1.77^{\checkmark}$$

108.8

147.7 38.9<sup>✓</sup> +1.72<sup>✓</sup>

277.9

337.9

$$\frac{60.10^{\checkmark}}{98.9^{\checkmark}} + 1.62^{\checkmark}$$
mean +166<sup>✓</sup>

$$\begin{array}{r} 18 \ 20 \ 0 \\ \hline 31 \ 40.^{\checkmark} \\ 10 \ 15 \ 50.^{\checkmark} \\ +^{\checkmark} \quad +46.^{\checkmark} \\ \hline 15 \ 16 \ 36.^{\checkmark} \\ 7917.636^{\checkmark} \end{array}$$

L. P. P.

Dec. 7, 1907

S.T. 4 54

H.A. +4 0

P.A. 113.6

Dec. + 28.2

Sprocket + 2.5 B

+ 1.5 C

Troubled somewhat (and increasingly so) by light fog and haze. Although fog and haze were not very pronounced, yet it was somewhat troublesome, especially at the last. Not considered advisable to continue observations longer. Observations considered pretty good.

W's watch used for time in connection with preceding series. Watch forty six (46) seconds slow



Dec. 7. 1907.

B. + C. 1122.

B. 394.

12 47 14.7  
42 14.5

12 ~~14~~ 00  
12 00  
19 00

Phot R

Dis Jup I. "w" obs. show recorder  
Compared with mean of two sat  
(after eclipse) on same preceding  
side = Sat II

12 59 11	10 5.4 <sup>v</sup>	82.8	
17 59 50 <sup>v</sup>	59 33	188.2	1 -0.6 <sup>v</sup>
-29 14 <sup>v</sup>	<del>59 54</del>	79.0	
17 30 36 <sup>v</sup>	00 10	15.0	
	<del>00 27</del>	181.9	
12 1 2 <sup>v</sup>	00 44	87.0	
-29 14 <sup>v</sup>	00 58	182.2	2
17 31 54 <sup>v</sup>	01 17	85.0	-0.2 <sup>v</sup>
	<del>01 34</del>	181.7	
12 2 2 <sup>v</sup>	01 47	84.1	3
-29 13 <sup>v</sup>	02 01	182.5	
17 32 55 <sup>v</sup>	02 15	85.4	-0.3 <sup>v</sup>
	<del>02 29</del>	181.0	
12 3 3 <sup>v</sup>	02 44	84.0	
-29 13 <sup>v</sup>	02 56	183.2	4
17 33 50 <sup>v</sup>	03 11	83.5	-0.4 <sup>v</sup>
	<del>03 22</del>	184.0	
	03 38	83.2	

Dec. 9. 1907.

12 3 54. ✓  
~~-29 13.~~  
 17 34 41 ✓

12 4 45. ✓  
~~-29 13.~~  
 17 35 32 ✓

12 ✓ 49. ✓  
~~-29 13.~~  
 17 36 36 ✓

17 37 15 ✓

17 37 29 ✓

17 37 40 ✓

17 37 52 ✓

17 32 6. ✓

17 32 21 ✓

17 32 34. ✓

17 32 42 ✓

17 39 0 ✓

17 39 14 ✓

17 39 30. ✓

17 39 41. ✓

17 39 53 ✓

17 40 9. ✓

17 40 22 ✓

13 03 47 96.8 ✓  
~~04 00 97.9 ✓~~  
~~04 10 97.4 ✓~~  
 04 20 98.0 ✓  
 04 30 180.5 ✓  
 04 58 96.1 ✓  
~~05 11 97.0 ✓~~  
 05 27 97.3 ✓  
 05 41 93.3 ✓  
~~05 56 95.3 ✓~~  
~~06 13 95.3 ✓~~  
 06 28 95.5 ✓  
 06 42 27.3 ✓  
 06 53 26.2 ✓  
 07 05 23.5 ✓  
 07 19 20.2 ✓  
 07 34 77.7 ✓  
 07 47 73.5 ✓  
 08 01 66.4 ✓  
 08 13 61.9 ✓  
 08 27 57.6 ✓  
 08 43 45.7 ✓  
 08 54 39.4 ✓  
 09 06 35.5 ✓  
 09 22 147.2 ✓  
 09 35 Not seen later

180.0  
~~83.1~~  
 181.0  
 82.5  
 180.5  
 84.7  
~~180.8~~  
 84.1  
 181.4  
 85.1  
~~178.4~~  
 90.0  
 175.5  
 88.2  
 175.0  
 91.5  
 171.7  
 94.0  
 167.5  
 101.1  
 163.0  
 105.4  
 151.1  
 111.7  
 147.2

✓  
~~-0.3~~  
 6  
~~-0.3~~  
 7  
~~-0.2~~  
~~+0.2~~  
~~+0.1~~  
~~+0.1~~  
~~+0.2~~  
~~+0.4~~  
~~+0.5~~  
~~+0.6~~  
~~+0.9~~  
~~+1.1~~  
~~+1.3~~  
~~+1.9~~  
~~+2.2~~  
~~+2.5~~

Limit of Visibility

18 10 42. ✓  
~~-29 13.~~  
 17 41 29 ✓

10 12  
~~52~~  
 10 27  
 10 50

35.6 ✓  
~~34.8~~  
 35.2 ✓  
 110.5  
 146.1  
 115.2  
~~+2.5~~



Dec. 7, '07

13 11 to 17

15.0 Assume No. 0

This observations rather difficult seeing blurry - especially, ~~during~~ as sat. began to grow faint, observer was compelled to ~~not~~ wait for moments of better seeing but throughout the observations were somewhat difficult and not fully quite satisfactory. It is thought, however, that general run of eclipses will be <sup>fairly</sup> ~~very~~ good ...

B. &amp; C. 1142.

13 22 12.0

13 23 12.0

B. 394.

12 53 0.0

12 54 0.0



Dec. 2, 1907. (Sunday).

B. + C. 11A2

12 2 10.2  
12 3 10.2

B. 394.

12 2 0.0  
12 3 0.0

Photo R.

This Jup II, W. obs. show Residual  
Compared with nearer of two sets  
on fall side = Sat II

17 13 6.0	12 12 37
-11.0	13 00
17 12 55.0	13 15
	13 34
	13 59
17 14 23.0	14 16
-11.0	14 30
17 14 12.0	14 46
	15 06
	15 24
17 15 32.0	15 40
-11.0	15 57
17 15 21.0	16 23
	16 41
17 16 44.0	16 56
-11.0	17 14
17 16 37.0	

72.5	186.5	
71.4	259.0	1 + 0.7
72.0	186.6	
	258.0	
	187.1	
71.3	258.4	2 + 0.7
70.8	188.4	
71.0	259.2	
	188.1	
69.5	257.6	3 + 0.2
70.2	187.7	
70.7	258.5	
	189.0	
69.1	258.1	4 + 0.2
69.5	189.0	
69.3	258.5	

# Altered focus slightly

Sunday, Dec. 8, 1907

$$\begin{array}{r}
 12 \quad 18 \quad 35 \\
 17 \quad 19 \quad \checkmark \\
 \quad \quad -11. \checkmark \\
 \hline
 17 \quad 18 \quad \checkmark
 \end{array}$$

$$\begin{array}{r}
 17 \quad 20 \quad 6. \checkmark \\
 \quad \quad -11. \checkmark \\
 \hline
 17 \quad 19 \quad \checkmark
 \end{array}$$

$$\begin{array}{r}
 17 \quad 21 \quad 2. \checkmark \\
 \quad \quad -11. \checkmark \\
 \hline
 17 \quad 20 \quad \checkmark
 \end{array}$$

$$\begin{array}{r}
 17 \quad 22 \quad 6. \checkmark \\
 \quad \quad -11. \checkmark \\
 \hline
 17 \quad 21 \quad \checkmark
 \end{array}$$

$$\begin{array}{r}
 17 \quad 23 \quad 11. \checkmark \\
 \quad \quad -11. \checkmark \\
 \hline
 17 \quad 23 \quad 0. \checkmark
 \end{array}$$

$$\begin{array}{r}
 17 \quad 24 \quad 14. \checkmark \\
 \quad \quad -11. \checkmark \\
 \hline
 17 \quad 24 \quad 3. \checkmark
 \end{array}$$

$$\begin{array}{r}
 17 \quad 25 \quad 12. \checkmark \\
 \quad \quad -11. \checkmark \\
 \hline
 17 \quad 25 \quad 1. \checkmark
 \end{array}$$

$$\begin{array}{r}
 18 \quad 35 \\
 19 \quad 02 \\
 19 \quad 15 \\
 19 \quad 28 \\
 \hline
 19 \quad 43
 \end{array}$$

$$\begin{array}{r}
 19 \quad 59 \\
 20 \quad 13 \\
 20 \quad 27 \\
 20 \quad 42 \\
 \hline
 21 \quad 04
 \end{array}$$

$$\begin{array}{r}
 21 \quad 16 \\
 21 \quad 32 \\
 21 \quad 47 \\
 21 \quad 59 \\
 22 \quad 11 \\
 22 \quad 27 \\
 22 \quad 42
 \end{array}$$

$$\begin{array}{r}
 23 \quad 05 \\
 23 \quad 21 \\
 23 \quad 36 \\
 23 \quad 51 \\
 24 \quad 06 \\
 24 \quad 23 \\
 24 \quad 34 \\
 24 \quad 54
 \end{array}$$

$$\begin{array}{r}
 25 \quad 05 \\
 25 \quad 17 \\
 25 \quad 33 \\
 25 \quad 52
 \end{array}$$

$$\begin{array}{r}
 69. \checkmark \\
 70.9 \checkmark \\
 70.2 \checkmark
 \end{array}$$

$$\begin{array}{r}
 67.1 \checkmark \\
 65.0 \checkmark \\
 66.0 \checkmark
 \end{array}$$

$$\begin{array}{r}
 65. \checkmark \\
 64. \checkmark \\
 65.0 \checkmark
 \end{array}$$

$$\begin{array}{r}
 64.6 \checkmark \\
 64.3 \checkmark \\
 64.4 \checkmark
 \end{array}$$

$$\begin{array}{r}
 64. \checkmark \\
 64.0 \checkmark \\
 64.2 \checkmark
 \end{array}$$

$$\begin{array}{r}
 65.0 \checkmark \\
 65.1 \checkmark \\
 65.0 \checkmark
 \end{array}$$

$$\begin{array}{r}
 66.0 \checkmark \\
 64.9 \checkmark \\
 65.4 \checkmark
 \end{array}$$

$$\begin{array}{r}
 189.1 \\
 258.5 \checkmark +0.2 \checkmark \\
 186.6 \\
 257.5 \\
 \hline
 189.0
 \end{array}$$

$$\begin{array}{r}
 256.1 \quad 6 +0.9 \checkmark \\
 191.5 \\
 256.5 \\
 \hline
 191.0
 \end{array}$$

$$\begin{array}{r}
 256.5 \quad 7 +1.0 \checkmark \\
 191.5 \\
 256.0 \\
 \hline
 191.5
 \end{array}$$

$$\begin{array}{r}
 256.1 \quad 2 +1.0 \checkmark \\
 191.8 \\
 256.1 \\
 \hline
 191.0
 \end{array}$$

$$\begin{array}{r}
 256.5 \quad 9 +1.0 \checkmark \\
 192.0 \\
 256.0 \\
 \hline
 192.0
 \end{array}$$

$$\begin{array}{r}
 257.5 \quad 10 +1.0 \checkmark \\
 191.1 \\
 256.2 \\
 \hline
 190.5
 \end{array}$$

$$\begin{array}{r}
 256.5 \quad 11 +1.0 \checkmark \\
 191.5 \\
 256.4 \\
 \hline
 190.0
 \end{array}$$



Sunday, Dec. 8, 1907.

17 26 19. ✓ 12	26 09	66.5 ✓	256.5
<u>-11. ✓</u>	26 33	63.0 ✓	193.0 12 +1.0 ✓
17 26 8. ✓	26 43	64.4 ✓	256.0
	<u>27 11</u>		193.1 →
17 27 41. ✓	27 38	60.4 ✓	253.5 +1.1 ✓
<u>-11. ✓</u>	27 51	63.0 ✓	191.0
17 27 30. ✓	28 05 (?)	61.7 ✓	254.0
	<u>28 44</u>		192.0
17 29 6. ✓	28 58	64.0 ✓	256.0 +1.1 ✓
<u>-11. ✓</u>	29 14	61.7 ✓	192.8
17 29 55. ✓	29 30	62.8 ✓	254.5
	<u>29 47</u>		192.0
17 30 7. ✓	30 00	64.5 ✓	256.5 +1.0 ✓
<u>-11. ✓</u>	30 12	63.9 ✓	191.0
17 29 56. ✓	30 30	64.2 ✓	254.9
	<u>30 42</u>		192.0
17 31 7. ✓	31 02	64.0 ✓	256.0 +1.1 ✓
<u>-11. ✓</u>	31 16	62.0 ✓	193.0
17 30 56. ✓	31 29	63.0 ✓	255.0
	<u>31 43</u>		192.9
17 32 5. ✓	31 56	61.1 ✓	254.0 +1.1 ✓
<u>-11. ✓</u>	32 10	62.0 ✓	192.5
17 31 54. ✓	32 30	61.6 ✓	254.5
	<u>32 52</u>		194.0
17 33 16. ✓	33 06	60.0 ✓	254.0 +1.2 ✓
<u>-11. ✓</u>	33 22	59.0 ✓	193.0
17 33 5. ✓	33 46	59.5 ✓	252.0
	<u>34 23</u>		192.0



Sunday, Dec. 8, 1907.

17 34 42.12 <sup>v</sup>	34 36	62.5 <sup>v</sup>	254.5
-11.1 <sup>v</sup>	34 47	63.0 <sup>v</sup>	192.1 <sup>0</sup> +1.1 <sup>v</sup>
17 34 31.1 <sup>v</sup>	35 04	62.0 <sup>v</sup>	255.0
	35 15	✓6.0 <sup>v</sup>	195.2
17 35 39.1 <sup>v</sup>	35 34	✓4.0 <sup>v</sup>	251.2 +1.4 <sup>v</sup>
-12.1 <sup>v</sup>	35 45	✓5.4 <sup>v</sup>	196.2
17 35 27.1 <sup>v</sup>	36 02		251.0
	36 13	✓2.9 <sup>v</sup>	196.1
17 36 32.1 <sup>v</sup>	36 27	✓0.0 <sup>v</sup>	249.0 +1.6 <sup>v</sup>
-12.1 <sup>v</sup>	36 39	✓1.4 <sup>v</sup>	198.1
17 36 20.1 <sup>v</sup>	36 50		248.1
	37 05		201.5
17 37 27.1 <sup>v</sup>	37 17	44.5 <sup>v</sup>	246.0 +2.0 <sup>v</sup>
-12.1 <sup>v</sup>	37 32	40.7 <sup>v</sup>	203.5
17 37 15.1 <sup>v</sup>	37 54	42.6 <sup>v</sup>	244.2
	38 10		204.5
17 38 28.1 <sup>v</sup>	38 21	39.5 <sup>v</sup>	244.0 +2.3 <sup>v</sup>
-12.1 <sup>v</sup>	38 35	37.2 <sup>v</sup>	205.3
17 38 16.1 <sup>v</sup>	38 47	32.4 <sup>v</sup>	242.5
	39 02		205.7
17 39 20.1 <sup>v</sup>	39 12	32.3 <sup>v</sup>	244.0 +2.4 <sup>v</sup>
-12.1 <sup>v</sup>	39 25	33.0 <sup>v</sup>	206.1
17 39 8.1 <sup>v</sup>	39 40	36.0 <sup>v</sup>	239.29
17 39 52.1 <sup>v</sup>	40 04		206.8 +2.9 <sup>v</sup>
40 9.1 <sup>v</sup>	40 21	29.7 <sup>v</sup>	236.5 +3.1 <sup>v</sup>
40 22.1 <sup>v</sup>	40 34 (?)	27.0 <sup>v</sup>	209.5 +3.2 <sup>v</sup>
40 46.1 <sup>v</sup>	40 58	26.0 <sup>v</sup>	235.5 +3.5 <sup>v</sup>
41 0.1 <sup>v</sup>	41 12	22.5 <sup>v</sup>	213.0

Sunday Dec. 8, 1907

17	41	11.1	✓	12	41	23	19.7	232.7	+3.2	✓
	41	25.1	✓		41	37	17.9	214.8	+4.0	✓
	41	42.1	✓		41	54	17.2	232.0	+4.1	✓
	42	3.1	✓		42	15	14.5	217.5	+4.5	✓
	42	23.1	✓		42	35	10.7	228.2	+5.1	✓
	42	35.1	✓		42	47	2.5	219.7	+5.6	✓
	43	12.1	✓		43	24				

Not seen later.

Limit of visibility

17	43	59.1	✓	12	43	38	12.4	217.5		
		-12.1	✓		43	52	10.1	229.9		
					44	06	11.2	218.0	+5.0	✓
17	43	47.1	✓		44	22		228.1		

Seeing fairly good and improving somewhat during progress of eclipse. On account, however, of the fact that no Sat. was easily available, except Sat II and this was rather far off from IV, being on other side of planet the images were somewhat elongated and a little unlike Eclipse. Not to be pretty good, however.

Dec. 2, 1907.

B. + C, 1122.

12	59	12.5
13	0	12.5

B. 394.

12	59	0.0
13	0	0.0



Dec. 11, 1907 (Wednesday)

lb. Obs. Rowa Rec.

2 (omicron) Ceti.

Pho. W.

2 12.

- 3.6°

1 17  
- 0 55

12 0  
11 5

Wrong,

2 12

- 3.6

1 12  
- 1 0

11 0

Dec. 11, 1907

~~130.4~~

131.4

136.6

308.5

319.0

~~Does not~~

Abandoned for Pho. R.

Variable does not properly disappear.

7 49 40

Dec, 11, 1907

Index Above. A.

7 59 35

133.6 ← Var. des.

143.5

313.8

325.2

9.9<sup>v</sup> $\frac{12.2}{22.1}$ <sup>v</sup>-5.07<sup>v</sup>

132.1

146.8

314.3

324.1

13.9<sup>v</sup>-5.00<sup>v</sup>9.8<sup>v</sup> $\frac{9.8}{23.7}$ <sup>v</sup>-4.92<sup>v</sup>

Index Below. B.

44.6

54.1

222.8

235.7

9.5<sup>v</sup> $\frac{13.7}{23.2}$ <sup>v</sup>-4.97<sup>v</sup>

43.6

56.5

224.5

234.2

12.9<sup>v</sup>-5.00<sup>v</sup>9.7<sup>v</sup> $\frac{9.7}{22.6}$ <sup>v</sup>-5.02<sup>v</sup>Mean -5.00<sup>v</sup>

8 5 45  
 125 20.<sup>v</sup>  
 9 2 40.<sup>v</sup>  
 +5 -24.<sup>v</sup>  
 14 2 16.<sup>v</sup>  
 7921.5 A49<sup>v</sup>



Dec. 11, 1907.

U. Cephei.

Pho. T

U. Obs.

Roue Rec.

0	50	+	81.1
1	50		
<hr/>			
+1	0		

8h 28m

Clouds.

For mercurio see fol. pages.

Clouds.

Dec 11, 1907

Index R + A

A.

8 49 40

267.2

Var. dis.

349.2

82.0<sup>v</sup>

I.

96.2

162.2

$$\begin{array}{r} 6 \\ 76.0^v \\ + 58.0^v \\ \hline 142.0^v \end{array} - 0.61^v$$

275.4

8 51 25

337.1

61.7<sup>v</sup>-0.52<sup>v</sup>

(Assumed 24.7) 34.7

173.9

$$\begin{array}{r} 29.2^v \\ + 89.2^v \\ \hline 200.9^v \\ 150.9^v \end{array} - 0.56^v$$

Index L + B

B.

8 53 45

171.1

263.2

92.1<sup>v</sup>

4.1

72.8

$$\begin{array}{r} 68.7^v \\ 160.8^v \end{array} - 0.37^v$$

183.0

250.2

67.2<sup>v</sup>-0.37<sup>6v</sup>

350.8

84.0

$$\begin{array}{r} 93.7^v \\ 160.9^v \end{array} - 0.36^v$$

8 55 30

270 20.0<sup>v</sup>A 52 30.0<sup>v</sup>+v -24.0<sup>v</sup>13 52 11.0<sup>v</sup>7921.5779<sup>v</sup>

$$\begin{array}{r} \text{mean} - 0.47^v \\ 2.41^v \\ \hline 7.94^v \end{array}$$

Dec. 11, 1907  
Clouds.

Index L+B B.

II.

8 57 45

$$\begin{array}{r} 167.9 \\ 262.7 \\ 6.0 \\ 71.7 \end{array} \begin{array}{r} 94.2^{\vee} \\ \\ 65.7^{\vee} \\ 160.5^{\vee} \end{array} \quad -0.37^{\vee}$$

8 59 20

$$\begin{array}{r} 182.2 \\ 249.4 \\ 350.9 \\ 83.2 \end{array} \begin{array}{r} 67.2^{\vee} \\ \\ 92.3^{\vee} \\ 159.5^{\vee} \end{array} \quad \begin{array}{r} -0.32^{\vee} \\ \\ -0.39^{\vee} \end{array}$$

Index R+A A.

9 1 45

$$\begin{array}{r} 84.1 \\ 173.6 \\ 274.3 \\ 340.4 \end{array} \begin{array}{r} 49.5^{\vee} \\ \\ 66.1^{\vee} \\ 155.6^{\vee} \end{array} \quad -0.47^{\vee}$$

9 3 20

$$\begin{array}{r} 96.0 \\ 163.9 \\ 259.8 \\ 352.6 \end{array} \begin{array}{r} 67.9^{\vee} \\ \\ 92.2^{\vee} \\ 160.7^{\vee} \end{array} \quad \begin{array}{r} -0.42^{\vee} \\ \\ -0.37^{\vee} \end{array}$$

45 -24.1<sup>✓</sup>

14 0 2.1<sup>✓</sup>

7921.5234<sup>✓</sup>

mean -0.40<sup>✓</sup>

$$\begin{array}{r} 2.41^{\vee} \\ 2.01^{\vee} \end{array}$$



Dec. 11, 1907

Index R+a A.

9 5 40

$$\begin{array}{r}
 81.3 \\
 176.8 \quad 95.5 \\
 \hline
 272.0 \quad 62.3 \\
 340.3 \quad 163.4 \quad -0.31^{\vee}
 \end{array}$$

111.

9 7 40

$$\begin{array}{r}
 93.1 \\
 163.8 \quad 164.6 \\
 \hline
 260.2 \quad 71.5^{\vee} \\
 355.0 \quad 94.2^{\vee} \\
 \hline
 166.3^{\vee} \quad -0.26^{\vee}
 \end{array}$$

 $-0.22^{\vee}$ 

Index L+B B.

9 11 5

$$\begin{array}{r}
 344.2 \quad 105.0^{\vee} \\
 89.2 \\
 178.0 \quad 77.3^{\vee} \\
 \hline
 255.3 \quad 142.3^{\vee} \\
 177.7^{\vee} \quad +0.04^{\vee}
 \end{array}$$

9 13 10

$$\begin{array}{r}
 37 \quad 35^{\vee} \\
 9 \quad 9 \quad 24^{\vee} \\
 +5 \quad -24^{\vee} \\
 \hline
 14 \quad 9 \quad 0.0 \\
 7921.5296^{\vee}
 \end{array}$$

$$\begin{array}{r}
 0.8 \\
 75.8 \quad 75.0^{\vee} \quad +0.01^{\vee} \\
 163.9 \quad 104.1^{\vee} \\
 268.0 \quad 179.1^{\vee} \quad -0.02^{\vee}
 \end{array}$$

mean  $-0.14^{\vee}$ 

$$\begin{array}{r}
 2.41^{\vee} \\
 \hline
 2.27^{\vee}
 \end{array}$$

Clouds.

Dec. 11, 1907

Index L+B B. TV.

9 15 40

$$\begin{array}{r}
 345.2 \\
 90.3 \\
 179.8 \\
 254.1 \\
 \hline
 359.
 \end{array}
 \begin{array}{r}
 105.1^{\vee} \\
 \\
 74.3^{\vee} \\
 179.4^{\vee} \\
 \hline
 -0.01^{\vee}
 \end{array}$$

9 17 50

$$\begin{array}{r}
 359.9 \\
 75.9 \\
 164.0 \\
 269.0 \\
 \hline
 179.0
 \end{array}
 \begin{array}{r}
 76.0^{\vee} \\
 105.0^{\vee} \\
 121.0^{\vee} \\
 179.0^{\vee} \\
 \hline
 +0.02^{\vee}
 \end{array}
 \begin{array}{r}
 0.00^{\vee} \\
 \\
 \\
 +0.02^{\vee}
 \end{array}$$

Index R+A A.

9 20 45

$$\begin{array}{r}
 257.9 \\
 357.7 \\
 89.0 \\
 166.9 \\
 \hline
 177.7
 \end{array}
 \begin{array}{r}
 99.2^{\vee} \\
 77.9^{\vee} \\
 177.7^{\vee} \\
 \hline
 -0.04^{\vee}
 \end{array}$$

$$\begin{array}{r}
 9 \ 23 \ 5 \\
 \hline
 77 \ 20.^{\vee} \\
 9 \ 19 \ 20.^{\vee} \\
 +5 \ -24.^{\vee} \\
 \hline
 14 \ 12 \ 56.^{\vee} \\
 7921.5964^{\vee}
 \end{array}$$

$$\begin{array}{r}
 270.8 \\
 344.6 \\
 72.5 \\
 181.4 \\
 \hline
 177.3
 \end{array}
 \begin{array}{r}
 73.2^{\vee} \\
 102.9^{\vee} \\
 122.7^{\vee} \\
 177.3^{\vee} \\
 \hline
 +0.05^{\vee}
 \end{array}
 \begin{array}{r}
 0.00^{\vee} \\
 \\
 \\
 +0.05^{\vee} \\
 \hline
 \text{mean} = 0.00^{\vee} \\
 \hline
 2.41^{\vee} \\
 \hline
 2.41^{\vee}
 \end{array}$$

Dec. 11, 1907.

Index Rta. A. V.

	253.7		
9 26 20	359.7	106.0 <sup>v</sup>	
	84.1		
	171.0	86.9 <sup>v</sup>	
		<u>192.9<sup>v</sup></u>	
		167.1 <sup>v</sup>	+0.24 <sup>v</sup>
	266.0		
9 28 25	347.5	81.5 <sup>v</sup>	
	73.5		+0.22 <sup>v</sup>
	183.0	109.5 <sup>v</sup>	
		<u>191.0<sup>v</sup></u>	
		169.0 <sup>v</sup>	+0.21 <sup>v</sup>

Index Lt B.

	160.4	B.	
9 32 0	272.9	112.5 <sup>v</sup>	
	356.0		
	81.5	85.5 <sup>v</sup>	
		<u>198.0<sup>v</sup></u>	
		162.0 <sup>v</sup>	+0.34 <sup>v</sup>
	171.4		
	257.6	86.2 <sup>v</sup>	
	339.6		+0.30 <sup>v</sup>
	96.0	116.4 <sup>v</sup>	
		<u>202.6<sup>v</sup></u>	
		157.4	+0.43 <sup>v</sup>
9 33 50			
<u>12.0</u>	35.1 <sup>v</sup>		
9 30	9.1 <sup>v</sup>		
+5	-24.1 <sup>v</sup>		
<u>14 29</u>	45.1 <sup>v</sup>		
7921.6041 <sup>v</sup>			

mean +0.30<sup>v</sup>  
2.41<sup>v</sup>  
 2.71<sup>v</sup>



Dec. 11, 1907.

Index L+B B.

VI.

$$\begin{array}{r}
 9 \quad 36 \quad 35 \\
 158.4 \\
 273.3 \\
 353.4 \\
 80.3 \\
 \hline
 172.9
 \end{array}
 \begin{array}{r}
 114.9^{\vee} \\
 26.9^{\vee} \\
 201.4^{\vee} \\
 154.2^{\vee} \\
 \hline
 +0.42^{\vee}
 \end{array}$$

$$\begin{array}{r}
 9 \quad 39 \quad 30 \\
 259. \\
 337.0 \\
 96.8 \\
 \hline
 172.9
 \end{array}
 \begin{array}{r}
 260.2^{\vee} \\
 87.3^{\vee} \\
 119.2^{\vee} \\
 207.1^{\vee} \\
 152.9^{\vee} \\
 \hline
 +0.47^{\vee}
 \end{array}$$

Index R+A. A.

$$\begin{array}{r}
 9 \quad 42 \quad 30 \\
 72.0 \\
 184.0 \\
 267.6 \\
 352.6 \\
 \hline
 82.4
 \end{array}
 \begin{array}{r}
 112.0^{\vee} \\
 25.0^{\vee} \\
 197.0^{\vee} \\
 163.0^{\vee} \\
 \hline
 91.6^{\vee}
 \end{array}$$

$$\begin{array}{r}
 9 \quad 45 \quad 5 \\
 163 \quad 40. \\
 9 \quad 40 \quad 55^{\vee} \\
 +5 \quad -24. \\
 \hline
 14 \quad 40 \quad 31. \\
 7921.6115^{\vee}
 \end{array}
 \begin{array}{r}
 249.6 \\
 3.8 \\
 114.2^{\vee} \\
 205.2^{\vee} \\
 154.2^{\vee} \\
 \hline
 +0.49^{\vee}
 \end{array}$$

$$\begin{array}{r}
 \text{Mean} \quad +0.44^{\vee} \\
 \hline
 2.41^{\vee} \\
 2.45^{\vee}
 \end{array}$$

Dec. 11, 1907

S. T. 3 26

H. A. + 2 29

Dec. + 82.0

P. A. 16.0 Ver. B.

Sprocket -1.5 B - 0.5 C

Full aperture used in preceding observations.

Seeing somewhat blurry especially at times in preceding observations.

Seeing very bad during <sup>preceding</sup> observations on  $\eta$  Cassiopeia. Images large and blurry, continually changing in size and general appearance. Sharp focus could not be obtained. Troubled also by clouds.

Dec. 11, 1907.

Double Star No. 220 (Comstock's Lists) =  
Arg. 540

$$\begin{array}{r} 23 \quad 6 \quad + \quad 56.4 \\ 27 \quad 53- \\ \hline 4 \quad 49 \end{array}$$

Pho. R.

P. A.  $200^\circ$  Dist. 1.7' Mags. 6.0 + 10.0

For measurements see fol. page



Dec. 11, 1907.

Index R + a B.

10 29 40

$$\begin{array}{rcl}
 312.0 & \leftarrow & \text{North. fol. betw. dis.} \\
 326.5 & - & 14.5 \checkmark
 \end{array}$$

129.0

148.5

$$\begin{array}{r}
 19.5 \checkmark \\
 \hline
 34.0 \checkmark
 \end{array}$$
4.13  $\checkmark$ 

308.6

328.6

20.0  $\checkmark$ 4.07  $\checkmark$ 

130.9

146.7

$$\begin{array}{r}
 15.8 \checkmark \\
 \hline
 35.8 \checkmark
 \end{array}$$
4.01  $\checkmark$ 

Index R + B A.

221.0

236.0

15.0  $\checkmark$ 

38.6

58.9

$$\begin{array}{r}
 20.3 \checkmark \\
 \hline
 35.3 \checkmark
 \end{array}$$
4.04  $\checkmark$ 

219.3

239.0

19.7  $\checkmark$ 

4.10

41.7

55.5

$$\begin{array}{r}
 13.8 \checkmark \\
 \hline
 33.5 \checkmark
 \end{array}$$
4.16  $\checkmark$ 4.08  $\checkmark$ 

10 37 30

W's watch used for times Watch  
 twenty four (24) seconds fast.

L. P. P.

Dec. 12, 1907. (Thursday)

.c U. Obs. Roue Rec.

Double Star No. 193. (Constock's Lists)  
= 59 Cygni.

$$\begin{array}{r}
 20 \quad 54 \quad + 47.0 \\
 25 \times \quad 20 \\
 + 4 \quad 26
 \end{array}$$

P. A.  $352^\circ$  Dist.  $20''$

Mags.  $4.5 + 8.5$

$9.5''$  cap used.

Pho. R.

Dec. 12, 1907

Index Below A.

7 57 25

$131.0$   
 $146.7 \leftarrow$  Southern  
 $308.3$   
 $329.7$

$15.7^{\vee}$   
 $21.4^{\vee}$   
 $37.1^{\vee}$

$+ \text{Bright, dis. } R$   
 $3.93^{\vee}$

$128.3$   
 $149.7$   
 $308.8$   
 $327.4$

$21.4^{\vee}$   
 $18.6^{\vee}$   
 $40.0^{\vee}$

$3.85^{\vee}$   
 $3.77^{\vee}$

Index Above A.

~~38.4~~~~59.1~~

220.0

239.6

38.8

59.8

$19.6^{\vee}$   
 $21.0^{\vee}$   
 $40.6^{\vee}$

$3.74^{\vee}$

219.4

238.4

37.8

59.1

$19.0^{\vee}$   
 $21.3^{\vee}$   
 $40.3^{\vee}$

$3.74^{\vee}$   
 $3.75^{\vee}$

$8$     $12$     $5$   


---

 $129$     $30.^{\vee}$   
 $2$     $4$     $45.^{\vee}$   
 $+5$     $-32.^{\vee}$   


---

 $13$     $4$     $13.^{\vee}$   
 $7922.^{\vee} 445^{\vee}$

Mean  $3.80^{\vee}$



Dec. 12, 1907

Fourth Type Star + 38° 15' 39" (6.3)

$$\begin{array}{r}
 6 \quad 27 \\
 \underline{2 \quad 15} \\
 - 4 \quad 12 \\
 12 \quad 0 \\
 \underline{7 \quad 48}
 \end{array}
 \quad + 38.6$$

Color 6 in large telescope

Pho. T

Dec. 12, 1907

Index R &amp; A A.

8 50 50

201.6 ← Fourth Type Disk.

231.1 29.5<sup>v</sup>

27.0

48.8  $\frac{21.8}{51.3}$ <sup>v</sup> - 3.22<sup>v</sup>

206.5

- 3.14<sup>v</sup>226.4 20.9<sup>v</sup>

21.2

 $\frac{33.7}{54.6}$ <sup>v</sup>54.9 54.6<sup>v</sup> - 3.07<sup>v</sup>

Index L &amp; B B.

111.4

142.0

30.6<sup>v</sup>

297.0

316.4  $\frac{19.4}{50.0}$ <sup>v</sup> - 3.27<sup>v</sup>

117.3

- 3.26<sup>v</sup>

137.7

20.4<sup>v</sup>

291.9

30.1<sup>v</sup>

322.0

50.5<sup>v</sup> - 3.25<sup>v</sup>

8 58 50

109 40.<sup>v</sup>2 54 50.<sup>v</sup>+5 -32.<sup>v</sup>13 54 12.<sup>v</sup>7922.5794<sup>v</sup>- 3.20<sup>v</sup>

Dec. 12, 1907

S. T. 3 . 45

H. a. - 3 46

~~+38.0~~

Dec. +38.0

P. a. 191.0

Sprocket - 3.5 B - 2.5 C.



Dec. 12, 1907

Fourth Type Star + 59° 28' 10"

0	2	+ 58.3
<u>3</u>	<u>13</u>	
3	11	

Color 7 in large telescope

Dec. 12, 1907

Index R + B A.

$$\begin{array}{r}
 83.6 \leftarrow \text{Fourth Type Dist.} \\
 170.0 \quad 86.4' \\
 272.0 \quad 71.5' \\
 343.5 \quad 157.9' \quad -0.42'
 \end{array}$$

$$\begin{array}{r}
 91.0 \\
 163.0 \quad 72.0' \\
 267.4 \quad 80.9' \\
 348.3 \quad 152.9' \quad -0.52'
 \end{array}$$

Index L + A. B.

$$\begin{array}{r}
 360.8 \\
 77.8 \quad 77.2 \quad 76.4' \\
 181.8 \quad 68.0' \\
 249.8 \quad 144.4' \quad -0.69'
 \end{array}$$

③

$$\begin{array}{r}
 3.8 \\
 70.8 \\
 177.0 \\
 252.0
 \end{array}$$

$$\begin{array}{r}
 67.0' \\
 75.0' \\
 142.0' \quad -0.73'
 \end{array}$$

-0.71'

$$\begin{array}{r}
 10 \quad 8 \quad 25 \\
 \hline
 111 \quad 25.5' \\
 9 \quad 55 \quad 42.5' \\
 +5 \quad -32.5' \\
 \hline
 14 \quad 55 \quad 10.5' \\
 7922.6216'
 \end{array}$$

-0.59'

Dec. 12, 1907

S. T. 3 47

H. A. + 3 51

Dec. + 60.0

P. A. 78.7 Vernia B.

Sprocket - 0.5 B + 0.5 C



Dec. 12, 1907

Double Star No 14 (Constock's List)  
 =  $\sigma^2$  Piscium

$$\begin{array}{rcl}
 1 & 0 & + 31.4 \\
 4 & 5 & \\
 + 3 & 5 & 
 \end{array}$$

P.A.  $295^\circ$  Dist 0.9  
 Mags

Pho. R.

Dec. 12, 1907.

Index R &amp; A A.

10 36 28

218.5 ← South foll. btr. dis.  
 237.0 18.5 ✓  
 44.0  
 54.3  $\frac{10.3}{28.8}$  ✓ 4.49 ✓

223.3 4.34 ✓  
 235.2 11.9 ✓  
 37.7  $\frac{21.2}{33.1}$  ✓ 4.19 ✓  
 58.9

Index L &amp; B. B.

127.8  
 149.0 21.3 ✓  
 313.4  $\frac{11.6}{32.9}$  ✓ 4.20 ✓  
 325.0

133.1 11.6 ✓ 4.27 ✓  
 144.7

308.6  $\frac{19.3}{30.9}$  ✓ 4.34 ✓  
 327.9 327.6

L. P. A.

4.30 ✓

10 45 55  
 2 15 ✓  
 10 41 2 ✓  
 +5 -32 ✓

15 40 36. W's watch used for time. Watch 32 seconds fast.

7922.6532" Companion rather faint. Sky in this region rather bright from moonlight. Some wind, air rather cold and seeing a little blurry so that observations were difficult. Great care, however, exercised and general result considered good.

Dec. 17, 1907. (T<sup>u</sup>esday).

W. Obs. <sup>Willard J.</sup>  
Rover Rec.

Double Star No 213 (Comstock's List)  
= Arg. 528

22 35

Abandoned. Clouds.

Double Star No 48 (Comstock's List)  
=  $\Sigma$  634 H. obs. Rover rec. Phot. R.

5	4	+79.1
1	41	
3	23	
12		
8	37	

P. A. 20° Dist. 13"  
Mags. 4.2, 7.5

Pho. R.



Dec. 17, 1907

Index R+B. A.

7 50 20

214.3

242.5

39.6

59.5

28.2

19.9

48.1

South. Prec. + Btr. Disk.

3.36

219.2

240.6

36.5

61.5

21.4

25.0

46.4

3.44

3.40

~~3.38~~

Index L+a B.

128.0

151.8

308.0

330.1

23.8

22.1

45.9

3.46

127.5

149.9

306.3

331.5

22.4

25.2

47.6

3.42

3.38

mean 3.41

7 59 30

109 50.

7 54 55.

+5 -32.

12 54 17.

7927.5377

Dec. 17, 1907

Fourth Type Star  $+31^{\circ} 1388$  Hillard I.  
 W. ob. Rowe rec.  
 Phot. J.

6	23	+ 32.6
2	11	
4	12	
12		
7	28	

Pho. T.

Dec. 17, 1907

Index R+B A.

8 38 0

$$\begin{array}{r} 249.0 \leftarrow \text{Fourth Type dist.} \\ 2.8 \\ \hline 251.8 \end{array}$$

$$\begin{array}{r} 81.0 \\ 163.5 \\ \hline 244.5 \end{array} \quad \begin{array}{r} 82.6 \\ 196.3 \\ \hline 278.9 \end{array} \quad +0.31$$

$$\begin{array}{r} 263.1 \\ 349.0 \\ 72.5 \\ \hline 684.6 \end{array} \quad \begin{array}{r} 85.9 \\ 111.0 \\ 196.9 \\ \hline 392.8 \end{array} \quad +0.32$$

Index L+A B.

$$\begin{array}{r} 159.0 \\ 272.8 \\ 351.0 \\ 78.0 \\ \hline 860.8 \end{array} \quad \begin{array}{r} 113.8 \\ 187.0 \\ 200.8 \\ 159.2 \\ \hline 660.8 \end{array} \quad +0.40$$

$$\begin{array}{r} 169.5 \\ 259.0 \\ 335.9 \\ 93.0 \\ \hline 857.4 \end{array} \quad \begin{array}{r} 89.5 \\ 157.1 \\ 206.6 \\ 153.4 \\ \hline 606.6 \end{array} \quad +0.46$$

$$\begin{array}{r} 8 \quad 47 \quad 35 \\ \hline 25 \quad 35 \\ 2 \quad 42 \quad 48 \\ +5 \quad -32 \\ \hline 13 \quad 42 \quad 10 \\ 7927.5709 \end{array}$$

mean +0.39



Dec. 17, 1957

S. T. 2 50

H. A. - 3 48

Dec. + 81 0

P. A. 109.7

Sprocket. -3.5 A. -2.5 B. -2.0 C

9 15

Sky now thickly cloudy. No chance  
for any thing further.

W's watch used for times.

Watch thirty eight (38) seconds fast.

L. P. A.

Dec. 12, 1907. (Wednesday)

Dis. Jup. II.

L. obs. H. rec.

Cleared somewhat suddenly so that eclipse had to be taken with Positive Eye Piece (1 inch). H's watch used, Watch running well.

Set. gone at  $10^h 30^m 50.^s$  by H's watch.

$-33.^s =$  Watch correction.

$10^h 30^m 17.^s =$  Eastern (corrected) time.

Troubled somewhat by clouds and haze.

Dec. 19, 1907 (Thursday)

U. Obs. Rowe Rec

Double Stars = H

$$\begin{array}{r}
 20 \quad 24 \\
 25 \quad 23 \\
 + \quad 4 \quad 59 \\
 \hline
 \end{array}
 + 10.8$$

Although the D.M. volume and chart are not at hand, yet the star set on is the only brightish star in this general region.

This is evidently the star wanted. Star examined with ring micrometer, eye piece No 1, also with positive eye pieces, two inch, 1 in, and  $\frac{1}{2}$  inch, eye pieces, but no certain sign of duplicity seen. Barring out some irregularities of seeing, due to moderate cold and low altitude, one would say that this star is probably not double. It may, however, be a close double. At any rate it is impossible to measure it to night.



Dec. 19, 1907

Fourth Type Star  $+14^{\circ} 1283$

U. Obs. Row Rec. Pho. T.

Abandoned. Too near Moon.

Dec. 19, 1907

Double Star No. 157 (Winstock's Lists)  
 = 36 Draconis

18	11	+ 64.41
<u>262</u>	<u>11</u>	
8	0	

P.A.  $265^\circ$  Dist.  $5.0 \pm$   
 Mags. 5.0, 10.5

Pho. R.

For remarks, see next page.

Dec. 19, 1907

Index Lt B. B.

8 19 40

134.0 — South, foll. &amp; hite dis.

145.3 11.3<sup>v</sup>315.6 7.1<sup>v</sup>322.7 18.4<sup>v</sup>5.47<sup>v</sup>135.2 7.2<sup>v</sup>

142.4

312.9

324.8 324.3

$$\begin{array}{r} 44.4 \\ 18.6 \\ \hline 11.9 \\ 19.1 \end{array}$$
5.43<sup>v</sup>5.39<sup>v</sup>

Index R. &amp; A. A.

44.6

55.5 10.9<sup>v</sup>224.6 8.5<sup>v</sup>233.1 19.4<sup>v</sup>5.36<sup>v</sup>46.6 7.8<sup>v</sup>5.34<sup>v</sup>

53.8

223.2

235.0

$$\begin{array}{r} 11.8 \\ 19.6 \\ \hline \end{array}$$
5.33<sup>v</sup>Mean 5.38<sup>v</sup>

8	30	55
	50	35 <sup>v</sup>
A	25	12 <sup>v</sup>
+5		-29 <sup>v</sup>
13	24	49 <sup>v</sup>
79	29.55	49 <sup>v</sup>



Dec. 19, 1907

Fourth Type Star +340 56

0	29	+32.9
2	47	
2	18	

U. obs. Rowe Rec.

Pho. T.

Color 6 with ordinary eyepiece  
 " 6 " photometer.

For merits. see next page.

Dec. 19, 1907,

Index R+A A.

8 58 30

$$\begin{array}{r}
 177.6 \\
 255.2 \leftarrow 77.6 \text{ 4th type dis.}
 \end{array}$$

6.0 62.9 ✓

$$\begin{array}{r}
 68.9 \\
 \hline
 140.5 \text{ ✓}
 \end{array}$$

186.5

61.9 ✓

-0.76 ✓

248.4

-0.70 ✓

351.5

84.2 ✓

75.7

$$\begin{array}{r}
 84.2 \\
 \hline
 146.1 \text{ ✓}
 \end{array}$$

-0.65 ✓

Index Lt B. B.

92.8

163.9

7.1.1 ✓

280.0

54.2 ✓

334.2

$$\begin{array}{r}
 54.2 \\
 \hline
 125.3 \text{ ✓}
 \end{array}$$

-1.08 ✓

100.0

58.5 ✓

158.5

68.6 ✓

-1.06 ✓

273.9

127.1 ✓

342.5

-1.04 ✓

mean -0.88 ✓

$$\begin{array}{r}
 9 \quad 5 \quad 0 \\
 \hline
 \quad 3 \quad 30. \text{ ✓} \\
 9 \quad 1 \quad 45. \text{ ✓} \\
 +5 \quad \quad -29. \text{ ✓} \\
 \hline
 14 \quad 1 \quad 16. \text{ ✓} \\
 7929.5442 \text{ ✓}
 \end{array}$$

Dec. 19, 1907

S. T. 3 - 18

H. A. 2 53

Dec. + 35.2

P. A. 156.2 Vernia B.

Sprocket. -3.5 B, -2.5 C.



Dec. 19, 1907.

Fourth Type Star  $+25^{\circ} 205'$

1	6	+ 23.8
<u>3</u>	<u>27</u>	
2	21	

9 32 5 Color 5 with ordinary eyepiece

Pho. T.

For measts, see next page.

Dec. 19, 1907

Index L + A. B.

167.9 ← 4<sup>th</sup> Type Dno  
 147.0 39.1  
 290.0 34.1  
 324.1 73.2

-2.40<sup>v</sup>110.4 34.9<sup>v</sup>145.3 38.6<sup>v</sup>-2.40<sup>v</sup>287.5 73.5<sup>v</sup>

326.1

-2.39<sup>v</sup>

Index R + B. A.

18.0 40.0<sup>v</sup>58.0 32.5<sup>v</sup>201.0 72.5<sup>v</sup>

233.5

-2.43<sup>v</sup>21.9 31.1<sup>v</sup>-2.42<sup>v</sup>53.0 42.3<sup>v</sup>196.0 73.4<sup>v</sup>238.3 -2.40<sup>v</sup>

Mean -2.41

9 39 25

72 25<sup>v</sup>9 36 12<sup>v</sup>+v -29<sup>v</sup>14 35 43<sup>v</sup>7929.6021<sup>v</sup>

Dec. 19, 1907

S. T. 4 51

H. A. +2 38

Dec. +25.8

P. A. 213.8 Vernia B.

Sprocket - 3.5 B, -2.5 C.



Dec. 19, 1907

Fourth Type Star  $+2^{\circ} 17' 15''$ 

7	25	+ 2.2
4	35	
2	50	
12		
9	10	

Abandoned. <sup>Full</sup> Moon too bright. + near.

U's watch used for times  
 Watch twenty nine (29) seconds fast.

L. P. A.

Dec 21, 1907 (Saturday)

U. Obs.      Roua Rec.

Double Star "Rev. Harvard Phot." No.  
observed for Prof. Pickering, ~~again~~

20	26	+ 10.8
<u>25</u>	<u>17</u>	
4	51	

P. A.  $266^{\circ}$       Dis.  $15''$

Magn. 7.4, 7.6

Pho. R.

Dec. 21, 1907

1.5 ← Foll. &amp; Brite dis.

106.6

New start, as shorter prob. under wrong image disappears.

Index R. &amp; B

106.6

— Foll. &amp; Brite dis.

180.5

739

276.9

89.9 ✓

6.8

163.8 ✓

0.31 ✓

93.0

90.9 ✓

183.9

83.3 ✓

280.3

174.2 ✓

3.6

0.11 ✓

0.21 ✓

Index R + A.

5.7

85.3 ✓

91.0

86.9 ✓

185.6

172.2 ✓

272.5

0.15 ✓

3.7

87.1 ✓

90.8

82.2 ✓

189.6

169.3 ✓

271.8

0.20 ✓

0.18 ✓

7 19 48

31 0. ✓

7 15 30. ✓

+5 - -22. ✓

12 15 2. ✓

7931.5/105 ✓

Mean 0.20 ✓



Dec. 21, 1907

M. Cephei

0	50
1	48
8	58

+81.1  
W. ds. Rowe rec.

Pho T.

Full aperture used.

Index R + a A.

7 58 20

85.3	← Var. Dis.
170.7	85.4
274.4	63.1
337.5	148.5

I

-0.60 ✓

8 0 30

96.3	64.6
160.9	86.5
263.0	151.1
349.5	0.55

-0.58 ✓

-0.55 ✓

Index L + B. B

8 3 15

349.6	91.7
81.3	67.0
182.0	158.7
249.0	0.41

-0.41 ✓

8	5	20
247	25	✓
1	51	✓
+5	-22	✓
13	29	✓
79	31.5	427 ✓

4.5	66.3
70.8	92.4
170.6	158.7
263.0	0.41

Mean -0.50 ✓  
-0.41 ✓

Dec 21, 1907

Index Lt B B.

H

27 40

351.9	92.0 <sup>✓</sup>	
83.9	69.1 <sup>✓</sup>	
182.9	<del>151.7</del>	
252.0	161.1 <sup>✓</sup>	-0.36 <sup>✓</sup>

~~0.55~~

8 9 55

3.1	70.8 <sup>✓</sup>	
73.9	95.0 <sup>✓</sup>	-0.32 <sup>✓</sup>
168.9	165.8 <sup>✓</sup>	<del>0.11</del>
263.9		

-0.27<sup>✓</sup>

Index R.ta A.

8 12 30

259.3	98.1 <sup>✓</sup>	
349.4	69.1 <sup>✓</sup>	
94.0	<del>168.7</del>	
163.1	159.2 <sup>✓</sup>	-0.40 <sup>✓</sup>

0.22

8 14 30

44 35 <sup>✓</sup>	271.4	72.6 <sup>✓</sup>	-0.36 <sup>✓</sup>
2 11 9 <sup>✓</sup>	343.0	91.7 <sup>✓</sup>	<del>0.28</del>
+5 -22 <sup>✓</sup>	82.3	168.3 <sup>✓</sup>	-0.32 <sup>✓</sup>
13 10 47 <sup>✓</sup>	174.0	3	<del>0.50</del>

-0.34<sup>✓</sup>Mean ~~0.35~~2.41<sup>✓</sup>mean. 2.07<sup>✓</sup>7931.5492<sup>✓</sup>

Dec. 21, 1907.

Index R+A \*

III

8 17 40

259.8

353.7

93.8

165.5

93.9 ✓

71.7 ✓

165.6 ✓

-0.27 ✓

~~278.9~~~~349.7~~

259.1

351.7

93.2

166.6

92.6 ✓

-0.27 ✓

73.4 ✓

166.8 ✓

-0.27 ✓

8 20 55

Index L+B B

8 24 30

165.1

267.2

358.0

77.0

102.1 ✓

79.0 ✓

181.1 ✓

178.9 ✓

+0.02

+0.2

177.3

257.5

342.9

96.0

80.2 ✓

107.1 ✓

187.3 ✓

172.7 ✓

+0.14 ✓

+0.08 ✓

8	26	50
29	55	✓
22	29	✓
+5	-22	✓
13	22	7 ✓
7931.5570 ✓		

Mean  $-0.10$  ✓  
 $+0.15$  ✓  
 $2.41$  ✓  
 Mean  $2.31$  ✓



Dec. 21, 1907

Index L + B B,

$$\left. \begin{array}{l} 163.5 \\ 267.0 \end{array} \right\} \text{new start, - uncertain about reversal of images.}$$

Index L + B

$$\begin{array}{r} 854.7 \\ 77.0 \\ 164.3 \\ 269.3 \end{array} \quad \begin{array}{r} 82.3 \\ 105.0 \\ 187.3 \\ 172.7 \end{array}$$

+0.14 ✓

345.5

106.2 ✓

+0.12 ✓

91.7

85.4 ✓

-0.9

173.4

$$\begin{array}{r} 191.6 \\ 164.4 \end{array}$$

+0.22

258.8

$$\begin{array}{r} 178.4 \\ 10.0 \end{array}$$

Index R + A. A,

264.2

85.0 ✓

349.2

$$\begin{array}{r} 105.2 \\ 190.2 \end{array}$$

73.8

190.2 ✓

179.0

169.8 ✓

+0.19 ✓

256.6

102.8 ✓

358.8

$$\begin{array}{r} 84.5 \\ 187.3 \end{array}$$

+0.18 ✓

86.0

187.3 ✓

170.5

172.7 ✓

+0.14 ✓

8 38 40

140 30. ✓

2 35 2. ✓

+5 -22. ✓

13 34 46. ✓

7931.5659 ✓

$$\begin{array}{r} \text{Mean } 0.13 \\ \text{Range } 0.52 \end{array}$$

Dec. 21, 1907

Index R+a

A.

E

8 41 40

264.9

349.6

74.0

182.2

84.7 ✓

108.2 ✓

192.9 ✓

167.1 ✓

+0.24 ✓

8 44 45

254.0

359.5

84.1

172.1

105.5 ✓

88.1 ✓

193.6 ✓

166.5 ✓

+0.24 ✓

+0.24 ✓

0.25

Index Lt B

B.

9 48 0

170.0

262.8

339.4

93.8

92.8 ✓

113.6 ✓

206.4 ✓

153.6 ✓

+0.50 ✓

0.49

8 50 25

104 50. ✓

2 46 12. ✓

+5 -22. ✓

13 45 50. ✓

7931.5735 ✓

161.6

272.3

353.4

82.8

110.7 ✓

89.4 ✓

200.1 ✓

159.9 ✓

+0.38

+0.44 ✓

mean +0.34 ✓

2.41 ✓

mean 2.7 ✓

Dec. 21, 1907

Index Lt B B.

H

8 53 40

$$\begin{array}{r}
 170.0 \\
 265.2 \\
 339.9 \\
 96.0 \\
 \hline
 95.2 \\
 116.1 \\
 211.3 \\
 148.7 \\
 \hline
 +0.60
 \end{array}$$

9 56 30

$$\begin{array}{r}
 158.4 \\
 275.5 \\
 349.5 \\
 85.4 \\
 85.6 \\
 \hline
 117.1 \\
 96.1 \\
 213.2 \\
 148.8 \\
 \hline
 +0.6
 \end{array}$$
+0.6<sup>2</sup>

Index R+a A

8 59 50

$$\begin{array}{r}
 82.4 \\
 176.7 \\
 249.5 \\
 5.3 \\
 \hline
 94.3 \\
 115.8 \\
 210.1 \\
 149.9 \\
 \hline
 +0.58
 \end{array}$$

$$\begin{array}{r}
 69.4 \\
 185.1 \\
 \hline
 115.7 \\
 94.8 \\
 \hline
 210.5 \\
 149.5 \\
 \hline
 +0.5
 \end{array}$$
+0.5<sup>2</sup>

$$\begin{array}{r}
 9 \quad 3 \quad 10 \\
 \hline
 233 \quad 10. \\
 4 \quad 52 \quad 12. \\
 +5 \quad -22. \\
 \hline
 13 \quad 57 \quad 56. \\
 7931.501A
 \end{array}$$

Mean +0.60<sup>2</sup>  
 $\frac{2.41}{9.01}$   
 9.01<sup>2</sup>



Dec. 21, 1907

S. T. 3 29

H. A. +2 32

Dec + 81.9

P. A. 16.0 Vernia B

Sprocket -1.5 B -0.5 C

Dec. 21, 1907  
Fourth Type Star +14° 128 3

$$\begin{array}{r}
 6 \quad 12 \quad + \quad 14.8 \\
 4 \quad 17 \\
 \hline
 1 \quad 55 \\
 12 \\
 \hline
 10 \quad 5
 \end{array}$$

Color 4 with ordinary eyepiece  
Index R + A

10.21 45

$$\begin{array}{r}
 181.2 \leftarrow 4^{\text{th}} \text{ type dis.} \\
 250.0 \quad 68.8 \checkmark \\
 4.4 \quad 64.8 \checkmark \\
 69.2 \quad 133.6 \checkmark
 \end{array}$$

-0.90<sup>v</sup>

184.9 186.3

625<sup>v</sup>

247.4

67.7<sup>v</sup>

-0.95<sup>v</sup>

4.2

129.2<sup>v</sup>

-0.97<sup>v</sup>

71.9

130.2<sup>v</sup>

Index L + B.

B

98.8

56.6<sup>v</sup>

155.4

53.6<sup>v</sup>

279.5

110.2<sup>v</sup>

333.1

-1.41<sup>v</sup>

99.0

56.8<sup>v</sup>

-1.40<sup>v</sup>

155.8

54.6<sup>v</sup>

279.9

111.4<sup>v</sup>

334.5

-1.39<sup>v</sup>

7<sup>v</sup>

Mean -1.18

$$\begin{array}{r}
 10 \quad 29 \quad 40 \\
 \hline
 10 \quad 25 \quad 42 \checkmark \\
 +5 \quad -22 \checkmark \\
 \hline
 15 \quad 25 \quad 20 \checkmark \\
 7931.6426 \checkmark
 \end{array}$$

Dec. 21, 1907

S. T. 4 54

H. A. -1 27

Dec. +14.2

P. A. 263.2 Vernia B

Sprocket -5.5 B, -4.5 C

W's watch used for times,  
watch twenty two (22) seconds fast.

L. P. P.



December 24 1907 (Tuesday)

Double Star (Professor Pickering's list) = Rev. Harvard Phot. "No.

W. Obs. Robert W. Gordon Rec.

Index L + B P. d. 260" Dist. 15" Phot. R

20 h	26 m	+10.8°	Mag. 7.4, 7.6
257	37		
+5	11		

7.23.30

274.0	26.5 ✓
+ 0.5	

92.5	25.3 ✓
------	--------

177.8	171.4 ✓	0.16 ✓
-------	---------	--------

282.6	75.3 ✓	0.20 ✓
-------	--------	--------

357.9	
-------	--

94.1	91.9 ✓
------	--------

186.0	167.2 ✓	0.24 ✓
-------	---------	--------

Index R + A

184.8	26.2 ✓
-------	--------

271.0	
-------	--

7.4	21.6 ✓
-----	--------

89.0	167.4 ✓	0.23 ✓
------	---------	--------

190.7	79.7 ✓	0.26 ✓
-------	--------	--------

270.4	
-------	--

4.7	25.4 ✓	0.24 ✓
-----	--------	--------

90.1	165.1 ✓
------	---------

mean 0.23 ✓

7	31	55
---	----	----

55	25	✓
----	----	---

7	27	42	✓
---	----	----	---

+5	-14	✓
----	-----	---

12	27	24	✓
----	----	----	---

7934.5	191	✓
--------	-----	---

Dec. 24, 1907

W. Obs. Gordon rec.

0 (omicron) Ceti

2 12 -3.6

Phot W

2 26

+0 14

Index R+A

309.7

104<sup>✓</sup>

320.1

129.1

13.5<sup>✓</sup>

142.6

23.9<sup>✓</sup>4.90<sup>✓</sup>

308.5

140<sup>✓</sup>

322.5

4.44<sup>✓</sup>

129.8

11.1<sup>✓</sup>

140.9

25.1<sup>✓</sup>4.79<sup>✓</sup>

Index L+B

219.4

11.2<sup>✓</sup>

231.2

38.5

13.3<sup>✓</sup>

51.8

25.1<sup>✓</sup>4.79<sup>✓</sup>

218.5

14.4<sup>✓</sup>

232.9

40.3

10.3<sup>✓</sup>

50.6

24.7<sup>✓</sup>4.43<sup>✓</sup>

8 29 10

4.2 25<sup>✓</sup>2 24 12<sup>✓</sup>+5 -14<sup>✓</sup>13 23 5.2<sup>✓</sup>7934.5543<sup>✓</sup> in certain positions of photometer.4.42<sup>✓</sup>9.19<sup>✓</sup>4.37<sup>✓</sup>

Dec 24 1907

W Obs.

Gordon Rec.

(Comstock's List)

Double Star no 216<sub>A</sub> = OE 536

$$\begin{array}{r}
 22 \quad 51 \quad +8.6 \\
 278 \quad 15 \\
 \hline
 4 \quad 24
 \end{array}$$

Index L+B B.

9 5 21

217.7

234.9 Preceding + br disk

39.7

51.5

17.2<sup>v</sup>11.8<sup>v</sup>29.0<sup>v</sup>44<sup>v</sup>

219.4

233.0

37.0

55.3

13.6<sup>v</sup>12.3<sup>v</sup>31.9<sup>v</sup>4.27<sup>v</sup>43.2<sup>v</sup>

Index R+A A.

126.2

147.0

309.8

322.6

20.2<sup>v</sup>12.2<sup>v</sup>33.6<sup>v</sup>4.15<sup>v</sup>4.10<sup>v</sup>

129.4

144.0

305.0

325.6

14.6<sup>v</sup>20.6<sup>v</sup>35.2<sup>v</sup>4.05<sup>v</sup>mean 4.24<sup>v</sup>

9 12 5

17 26<sup>v</sup>9 2 43<sup>v</sup>14 29<sup>v</sup>7934.5492<sup>v</sup>



Dec 24 1907

W. Obs.

Gordon rec.

Double Star No 218 (Comstock's List) = 57 Pegasi

23	2	+7.9	PA 195	distac 0.6'±
27	45			
4	43			

Index L+A B.

9 24 56

128.6

13.4 ✓

142.0 ← n. pole. + lon. disk

310.8

8.6 ✓

319.4

22.0 ✓ 5.08 ✓

129.6

10.9 ✓

✓ 0.0

140.5

309.0

12.7 ✓

321.7

23.6 ✓ 4.93 ✓

Index R+B A.

39.0

12.8 ✓

51.8

220.9

9.1 ✓

230.0

21.9 ✓ 5.09 ✓

$\begin{array}{r} 4 \ 1.3 \\ 42.9 \\ \hline 41.3 \end{array}$

$\begin{array}{r} 9 \ 35 \ 15 \\ \hline 60 \ 11. \end{array}$

$\begin{array}{r} 9 \ 30 \ 6. \\ \hline 229.7 \end{array}$

$\begin{array}{r} +5 \ -14. \\ \hline 14 \ 29 \ 52. \end{array}$

$\begin{array}{r} 7934.6030 \end{array}$

8.7 ✓

✓ 2.4

10.3 ✓

19.0 ✓ 5.40 ✓

mean 5.12 ✓

Observations in above group rather  
 difficult on account of moonlight, low altitude,  
 brightness of primary, and relative faintness of com-  
 panion. Some cloud also

Dec 24 1907  
W obs Gordon rec.

Double Star no 9 (Comstock's list) = 54 Piscium

0	32	+20.5
4	25	
3	53	

Index R+A

10 10 16  
130.7  
141.2<sup>F</sup> Prec + br. disk.  
310.4  
322.0  
128.4  
142.0  
312.1  
320.8

10.5<sup>✓</sup>  
11.6<sup>✓</sup>  
22.1<sup>✓</sup> 5.07<sup>✓</sup>  
13.6<sup>✓</sup> 5.06<sup>✓</sup>  
8.7<sup>✓</sup>  
22.3<sup>✓</sup> 5.05<sup>✓</sup>

Index L+B B.

41.9  
49.7  
220.2  
231.9  
39.0  
51.0  
10 14 40  
22 56<sup>✓</sup> 221.3  
10 14 22<sup>✓</sup> 230.2  
+v -14<sup>✓</sup>  
15 14 14<sup>✓</sup> W's watch used for times - 14 seconds part.  
7934.6342<sup>✓</sup> L. A. P. 5.16<sup>✓</sup>

7.8<sup>✓</sup>  
11.7<sup>✓</sup>  
19.5<sup>✓</sup> 5.35<sup>✓</sup>  
12.0<sup>✓</sup> 5.27<sup>✓</sup>  
8.9<sup>✓</sup>  
20.9<sup>✓</sup> 5.19<sup>✓</sup>

Dec. 26, 1907.

Note.

As this record book could not readily be found last night, the Reapp. of Jupiter IV. last night (Dec. 25, '07) was taken in the Accident Book, which see.



December 26 1907 (Thursday)

W. Obs.

Gordon Rec.

Full Aperture and Phot T.

7. 0

Sky pretty cloudy + hazy

7:10 Sky cloudy

W. Ephes

0	50	+81.1
1	50	
1	0	

Index R+A  $\alpha$ .

86.9  
7 35 0 167.1  
274.0  
338.5

← Var. dis

80.2  $\checkmark$   
64.5  $\checkmark$   
144.7  $\checkmark$  -0.62  $\checkmark$

92.1  
7 37 0 162.0  
266.9  
347.0

69.9  $\checkmark$  -0.63  $\checkmark$   
80.1  $\checkmark$   
150.0  $\checkmark$  -0.52  $\checkmark$

Index L+B  $\beta$ .

354.3  
7 40 25 80.5  
180.1  
250.8

85.2  $\checkmark$   
70.7  $\checkmark$   
156.9  $\checkmark$  -0.44  $\checkmark$

3.1

7  
40.7 -0.41  $\checkmark$

7 42 35

-43.8 Prob. 73.2 (This assumed)

89.5

155 0.  $\checkmark$ 

more cloudy again

100.2 -0.32

7 34 45.  $\checkmark$ 

171.1

mean -0.52  $\checkmark$ 

+5

-1.  $\checkmark$ 12 30 48.  $\checkmark$  260.6

2.41  
7.29  $\checkmark$

7936.5269  $\checkmark$

Dec 26 1907

W. Obs.

Gordon Rec.

Index I+B A

7 45 0

351.0

7 45 0

82.8

91.8 ✓

181.0

251.4

$$\begin{array}{r} 70.4 \\ \hline 162.2 \end{array} \quad \checkmark \quad -0.34 \checkmark$$

1.9

-0.33 ✓

7 47 40

74.4

72.5 ✓

170.0

90.7 ✓

-0.32 ✓

260.7

$$\begin{array}{r} 90.7 \\ \hline 163.2 \end{array} \quad \checkmark$$

Index R+A A

263.4

7 50 55

351.9

88.5 ✓

92.9

71.5 ✓

-0.38 ✓

164.4

$$\begin{array}{r} 71.5 \\ \hline 160.0 \end{array} \quad \checkmark$$

Sky more cloudy Index R+A

270.2

-0.32 ✓

7 58 53

~~341.0~~ 340.8

70.6 ✓

~~192 22~~

83.1

90.0 ✓

-0.37 ✓

202 22

173.1

$$\begin{array}{r} 90.0 \\ \hline 160.6 \end{array} \quad \checkmark$$

7 50 37

+✓

~~12 50 36~~

261.6

mean -0.36 ✓

7 59 49

351.0

$$\begin{array}{r} 2.41 \\ \hline 2.05 \end{array} \quad \checkmark$$

90.0

165.6

Dec 26 1907

W. Obs.      Gordon Rec.  
Index R + A d.

8 3 25  
 270.1  
 344.4  
 80.5  
 177.0

74.3 ✓  
 96.5 ✓  
 170.4 ✓

-0.17 ✓

8 5 52  
 259.5  
 355.3  
 87.6  
 167.8

95.4 ✓  
 100.2 ✓  
 176.0 ✓

-0.12 ✓  
 -0.02 ✓

Index L + B B.

8 8 45  
 162.9  
 267.5  
 357.4  
 78.3

104.6 ✓  
 100.9 ✓  
 105.5 ✓  
 174.5 ✓

+0.10 ✓

8 11 11  
 29 13. ✓  
 7 16. ✓  
 +5 -1. ✓

175.7  
 255.3  
 345.8  
 89.0

79.6 ✓  
 103.2 ✓  
 102.4 ✓  
 177.2 ✓

+0.02 ✓  
 +0.05 ✓

mean -0.02 ✓  
 2.41 ✓  
 2.39 ✓



Dec 26 1907

W. Obs.

Gordon Rec.

Index L + B

B

TV

8 13 48

161.4

267.5

356.6

78.5

106.1 ✓

21.9 ✓

122.0 ✓

172.0 ✓

+0.15 ✓

174.1

256.9

341.7

89.2

22.4 ✓

107.5 ✓

190.3 ✓

169.7 ✓

+0.20 ✓

Index R + A

A.

8 19 10

74.9

178.8

264.8

347.5

103.9 ✓

22.7 ✓

126.6 ✓

173.4 ✓

+0.13 ✓

84.3

170.4

254.1

1.4

26.0 ✓

107.3 ✓

193.3 ✓

166.7 ✓

+0.25 ✓

+0.19 ✓

8 21 53

71 15. ✓

2 17 49. ✓

+5 -1. ✓

13 17 42. ✓

7936.5541 ✓

mean +0.12 ✓

2.41 ✓

2.59 ✓

Dec 26 1907

W Obs.

Gordon Rec.

Index R+A

V

A.

8.26.30 69.6  
184.3  
265.2  
349.6

114.7 ✓

84.4 ✓

199.1 ✓

160.9 ✓

+0.36 ✓

8 29 0 85.4  
172.0  
252.2

86.6 ✓

+0.33 ✓

109.5 ✓

196.1 ✓

163.9 ✓

+0.30 ✓

Index L+B. B

8 37 0 339.6  
994.4  
168.9  
262.3

114.8 ✓

93.4 ✓

208.2 ✓

151.8 ✓

+0.54 ✓

351.8

94.7 ✓

+0.52 ✓

86.5

7

115.5 ✓

8 37 15  
129 45. ✓  
2 32 26. ✓  
+5 -1. ✓  
13 32 25. ✓

157.3

274.8

210.2

212.2 ✓

147.2 ✓

+0.62 ✓

7936.5642

Mean

+0.46 ✓

A. 41 ✓

A. 47 ✓

Dec 26 1907

W. Obs.

Gordon Rec.

Index L + B

A

VI

336.0  
95.0 119.0<sup>v</sup>

2 39. 0

167.9 95.6<sup>v</sup>

263.5 214.6<sup>v</sup>  
145.4<sup>v</sup>

+0.67<sup>v</sup>  
~~+0.67<sup>v</sup>~~

347.5

86.2

90.7<sup>v</sup>+0.70<sup>v</sup>~~+0.64<sup>v</sup>~~

4 42 33

156.3 118.4<sup>v</sup>374.7 217.1<sup>v</sup>142.9<sup>v</sup>+0.72<sup>v</sup>

Index R + A

A

247.2

3.0

126.8<sup>v</sup>

79.6

97.4<sup>v</sup>

177.0

224.2<sup>v</sup>713.2<sup>v</sup>746.4<sup>v</sup>+0.64<sup>v</sup>

257.2

97.8<sup>v</sup>

355.0

67.8

118.7<sup>v</sup>+0.67<sup>v</sup>

186.5

216.5<sup>v</sup>143.5<sup>v</sup>+0.70<sup>v</sup>

8 47 53

174 41.1<sup>v</sup>2 43 40.1<sup>v</sup>+5 -1.1<sup>v</sup>13 43 39.1<sup>v</sup>7936.5719<sup>v</sup>

Mean

+0.62<sup>v</sup>~~+0.66<sup>v</sup>~~8.41<sup>v</sup>9.09<sup>v</sup>



Dec 26 1907

W. Obs.	Garden Rec,
S.T.	4hr 2 min
H.A	3hr 6 min
Dec	81.7
P.A.	16.2° Vernean B
Spectet.	-1.5 B - 0.5 C

Troubled at times by clouds.

Dec 26 1907

W. Obs.

Gordon Rec.

Double Star no 20 (Comstock's List) =  $\Sigma 132$ 

1	32
4	15
<hr/>	
2	43

+ 15.8

Phot. R

PA 350 Distance 0.7'  $\pm$ 

Index R + B A.

9 51 24

10.4.30

305.4
324.7
121.5
148.3

19.3	120.6	
	148.8	28.2
26.8	302.6	25.6
46.1	328.2	52.8
		3.15

301.1

328.6

27.5

3/2

121.6

148.6

270

54.5

3.08

206.8

L + d. A.

240.8

34.0

33.1

Southern br. disk

57.4

243

58.3

2.93

213.5

238.8

25.3

2.92

29.9

60.3

304

55.7

3.03

10.0 40

5

10.

10 2 35.5

+5 -1.5

15 2 34.5

7936.626 A

3.05

W's watch used for times - 1 second fast.

L. A. P.

December 27 1907 (Friday)

W. Obs.

Gordon Rec.

Phot. R.

$\alpha$  (omicron) Ceti

$$\begin{array}{r} 2 \quad 12 \quad -3.6^{\circ} \\ 2 \quad 2 \\ \hline 0 \quad -10 \end{array}$$

7 31 55

$$\begin{array}{r} 218.3 \\ 231.8 \\ 37.0 \\ 53.5 \\ \hline 30.0 \end{array} \quad \begin{array}{l} \text{Index Below. B.} \\ 13.5^{\checkmark} \\ 16.5^{\checkmark} \\ -4.40^{\checkmark} \end{array}$$

$$\begin{array}{r} 216.8 \\ 233.0 \\ 38.2 \\ 52.1 \\ \hline 30.1 \end{array} \quad \begin{array}{l} 16.2^{\checkmark} \\ 13.9^{\checkmark} \\ -4.40^{\checkmark} \\ 30.1^{\checkmark} \end{array} \quad -4.40^{\checkmark}$$

Index Above A.

$$\begin{array}{r} 128.8 \\ 142.9 \\ 308.1 \\ 323.0 \\ \hline 29.0 \end{array} \quad \begin{array}{l} 14.1^{\checkmark} \\ 14.9^{\checkmark} \\ -4.48^{\checkmark} \end{array}$$

7-40 45

$$\begin{array}{r} 72.40^{\checkmark} \\ 736.20^{\checkmark} \\ +5 \quad 0. \end{array}$$

$$\begin{array}{r} 127.0 \\ 144.6 \\ 308.4 \\ 321.7 \\ \hline 30.9 \end{array} \quad \begin{array}{l} 17.6^{\checkmark} \\ 13.3^{\checkmark} \\ -4.34^{\checkmark} \\ 30.9^{\checkmark} \end{array} \quad -4.41^{\checkmark}$$

12 36 20.5 For schedule of readings see top mean -4.40<sup>✓</sup>  
7937.5252<sup>✓</sup> of next page. 9.19<sup>✓</sup>  
4.79<sup>✓</sup>



196

Dec 27, 1907.

S.T. 2 hrs 26 min.

H.A. 0 hrs. 10 min

Dec.  $-3.1^{\circ}$

Dec 27. 1907

W. Obs.

Gordon Rec.

Phot. R.

Double Star No 11 (Construct's List) =  $\mu$  Androm.

PA 40

Dist 4.6'  $\pm$ 

Mags 5.5 - 11.5

0	49
2	35
1	46

+37.7°

8 20 15

313.5.1

Index R+B

318.1

Altitude high and bright star does not well disappear. Photometer also slips out so that This double abandoned for the present.

Double Star No 23 (Construct's List) = 107 Piscium

1	35
3	13
1	38

+19.5

PA. 350

Dist 1.5'  $\pm$ 

Index R+B A.

311.3

8.3 $\checkmark$ 

8 46 40

319.6 S on then + br disk

132.6

5.6 $\checkmark$ 

138.2

13.9 $\checkmark$ 6.08 $\checkmark$ 

313.8

4.0 $\checkmark$ 

317.8

8.7 $\checkmark$ 

131.0

12.7 $\checkmark$ 6.28 $\checkmark$ 

139.7

6.18 $\checkmark$

Dec 27 1907

W. Ubb.

Gordon Rec.

Index L + A B.

221.2

230.3

42.8

47.7

9.1<sup>✓</sup>4.9<sup>✓</sup>14.0<sup>✓</sup>6.07<sup>✓</sup>6.12<sup>✓</sup>

223.3

228.3

41.3

49.0

5.0<sup>✓</sup>7.7<sup>✓</sup>12.7<sup>✓</sup>6.28<sup>✓</sup>mean 6.12<sup>✓</sup>8 55 54102 34. <sup>✓</sup>A <sup>✓</sup> 1 17. <sup>✓</sup>+5 0. <sup>✓</sup>13 51 17. <sup>✓</sup>7937.5 773 <sup>✓</sup>

Double Star in 47 (Comstock List) = 13 Orionis  
 Second pair

5

0

+ 9.3

Phot. R.

3

48

Mags 6.0 - 8.3

~~9~~~~48~~

1

12

10

40

200.1

248.4

28.3

65.6

212.5

243.0

15.7

71.4

Index Alone 4.483<sup>✓</sup>

Hole + Br. disk.

37.3<sup>✓</sup>85.6<sup>✓</sup>2.03<sup>✓</sup>30.5<sup>✓</sup>2.02<sup>✓</sup>55.7<sup>✓</sup>86.2<sup>✓</sup>2.02<sup>✓</sup>

9 25 56



Dec 27. 1907

W. Ols.

Gordon Rec.

Index below B.

107.4		
170.8	63.4 <sup>✓</sup>	
299.0	32.3 <sup>✓</sup>	
331.3	<u>95.7<sup>✓</sup></u>	1.76 <sup>✓</sup>

119.5		1.77 <sup>✓</sup>
-------	--	-------------------

9 33 25		
<u>✓9 1✓</u>	152.8	33.3 <sup>✓</sup>
9 29 30.✓	284.0	61.7 <sup>✓</sup>
<u>✓ 0.✓</u>	345.7	<u>95.0<sup>✓</sup></u>
		1.72 <sup>✓</sup>

14 29 30.

79 37.6039<sup>✓</sup>

Prisms run way up the tube. Mean 1.90<sup>✓</sup>  
 but images do not reverse over each other.  
 Reversal of images obtained as well as possible by change of  
 position of eyes.

Thom's Type Star + 2° 1715

7 25 +2.2

4 25

9 0

Phot T.

Sky becoming so cloudy that observer is com-  
 pelled to abandon this star.

Double Star No 75 (Comstock's List) = 29 Minocerotis

8 2 -2.7

5 10

9 8

Dec 27. 1907

Preceding star abandoned — clouds becoming too thick

W's watch used for time — Watch correction zero (0)

L. P. A.

Dec. 28, 1907 (Saturday).

U. Obs. Rowe Rec. Full sp.

Fourth Type Star  $+2^{\circ} 17' 15''$

7 25 + 2.2

Pho. R.

4 6  
3 19

12

8 41

Sky too hazy. Star abandoned.

Fourth Type Star  $+17^{\circ} 9' 7''$

5 29 + 17.0

4 13

1 16

12

10 44

Index R+a A.

89.2

165.0

276.6

338.1

4th type dis

75.8 ✓

61.5 ✓

137.3 ✓

-0.83 ✓

97.0

155.6

272.2

348.5

58.6 ✓

76.3 ✓

134.9 ✓

-0.88 ✓

-0.86 ✓

9 47 15



Dec. 28, 1967  
Index L+B B.

352.4 86.8 ✓

79.2

186.3  $\frac{61.9}{148.7}$  ✓

248.2 148.7 ✓

-0.60 ✓

6.9

59.3 ✓

-0.65 ✓

66.2

84.2 ✓

174.5

143.5 ✓

258.7

-0.70 ✓

Mean -0.76 ✓

9 53 38

100 45 ✓

9 50 22 ✓

45 -1 ✓

14 50 21 ✓

7932.6123 ✓

S.T. 4.44

H.A. -0 53

Dec. +16.8

P.A. 217.2 <sup>12</sup> Vermeer B.

Sprocket. -1.5 B. -0.5 C.

Double Star No. 51 (Comstock's List) = 111 Tauri

5

16

+17.3

4

55

0

21

12

11

3.9

Clouds becoming thick. Star companion gone.

Clouds becoming thicker all over the sky. No chance for anything further.

Dec. 28, 1907

W's watch used for times batch one (1) second fast

L. P. P.

Dec. 31, 1907 (Tuesday)  
 W. Obs. Route Rec.

Eros

Pho. T.

$$\begin{array}{r} 0 \\ 2 \\ \hline 1 \end{array} \quad \begin{array}{r} 40 \\ 14 \\ \hline 34 \end{array}$$

$$+ 23.5$$

a + B

$$- 0.5$$

$$- 0.2$$

$$- 0.1$$

$$- 0.3$$

$$- 0.0 \quad - 1.1$$

$$+ 0.1$$

$$+ 0.2$$

$$+ 0.3 \quad + 1.1$$

$$+ 0.5$$

a + C

$$+ 2$$

$$- \cancel{0.5} 1.0$$

$$- 1.1$$

$$- 1.0$$

$$- 1.1$$

$$- 1.1$$

$$- 1.1$$

$$\begin{array}{r} 6 \quad 1.6 \quad 4 \\ \hline - 1.1 \end{array}$$

a + B again

$$+ 1.8 \quad + 2.3$$

$$+ 2.4$$

$$+ 2.2$$



Dec. 31, 1907

+2.5

+2.5

A+C again

-0.5

-0.4

-0.5

-0.5

-0.5

7 51

Index L+B B

4.6 ← comp. star dis.

66.4

61.8 ✓

176.8

82.2 ✓

259.0

144.0 ✓

+0.69 ✓

356.0

← comp. star dis.

80.3

84.3 ✓

187.9

56.9 ✓

244.8

141.2 ✓

+0.72 ✓

+0.75 ✓

Index R+A A

279.0

57.8 ✓

336.8

81.4 ✓

89.0

139.2 ✓

170.4

+0.79 ✓

+0.85 ✓

8	21	10
<hr/>		
	31	10.✓
2	15	35.✓
+5		+5.✓
<hr/>		
13	15	40.✓
7941.5526✓		

8	26	35
---	----	----

Dec. 31, 1907

270.8	76.2✓
347.0	56.9✓
97.1	133.1✓
154.0	+0.91✓

Mean +0.78✓

Index R + a. A.

II

277.8	57.8✓
335.6	78.6✓
88.4	136.4✓
167.0	+0.85✓

267.9	81.1✓	+0.86✓
349.0	54.4✓	
98.8	135.5✓	
153.2	+0.87✓	

Index L + B. B

189.3	58.2✓
247.5	83.9✓
355.0	142.1✓
78.9	+0.73✓

176.3	82.7✓	+0.74✓
259.0	58.8✓	
6.4	141.3✓	
65.2	+0.74✓	

Mean +0.80✓

8	38	0
<hr/>		
	64	35.✓
2	32	10.✓
+5		+5.✓
<hr/>		
13	32	23.✓
7941.5642✓		

Dec. 31, 1907

Index LTB B.

III~~186.3~~ 5.8 57.0 ✓~~246.7~~ 62.8 85.4 ✓~~357.9~~ 175.8 142.4 ✓~~27.1~~ 261.2 +0.73 ✓~~177.6~~ 356.0 82.0 ✓78.0 59.7 ✓

185.1 141.7 ✓

244.8

+0.74 ✓

+0.74 ✓

Index R+A. A.

277.0 60.5 ✓

337.5 79.4 ✓

86.3 139.9 ✓

165.7

+0.78 ✓

266.1

80.6 ✓

347.2 346.7 56.7 ✓ +0.80 ✓

98.1

137.3 ✓

154.8

+0.83 ✓ +0.77 ✓

mean 0.78

Index R+A A.

TR

276.0 59.6 ✓

335.6 79.2 ✓

89.2 138.8 ✓

168.4

+0.80 ✓

8 56 15

~~8 50 5~~

9 6 10

122 25. ✓

9 1 12. ✓

tr +5. ✓

14 1 17. ✓

7941.5 &amp; 42. ✓

9 13 30



Dec. 31, 1907

267.9

78.1<sup>v</sup>

346.0

58.7<sup>v</sup>+0.02<sup>v</sup>

99.8

36.8<sup>v</sup>~~0.72~~

158.0

+0.04<sup>v</sup>~~0.64~~

Index L+B B.

187.0

247.1

60.1<sup>v</sup>

355.5

81.1<sup>v</sup>

76.6

141.2<sup>v</sup>+0.75<sup>v</sup>

176.7

81.5<sup>v</sup>+0.76<sup>v</sup>

258.2

59.4<sup>v</sup>

66.7.0

140.9<sup>v</sup>

66.4

+0.76<sup>v</sup>Mean +0.79<sup>v</sup>

Index L+B B.

186.5

59.7<sup>v</sup>

246.2

80.5<sup>v</sup>

355.5

140.2<sup>v</sup>

76.0

+0.77<sup>v</sup>

175.8

80.2<sup>v</sup>+0.77<sup>v</sup>

256.0

60.2

6.8

140.4<sup>v</sup>

67.0

+0.75<sup>v</sup>

9	23	0
9	36	30 <sup>v</sup>
9	12	15 <sup>v</sup>
+5		+5 <sup>v</sup>
14	12	20 <sup>v</sup>
79	41.5	960 <sup>v</sup>

9 32 20

Dec. 31, 1907  
Index R + a. A.

97.8	57.2 ✓
155.0	81.0 ✓
265.0	138.2 ✓
346.0	+0.81 ✓

87.8	78.6 ✓	+0.84 ✓
166.4	57.4 ✓	
278.0	136.0 ✓	
335.4	+0.86 ✓	

Mean +0.80 ✓

8 43 40  
76 0. ✓  
 9 32 0. ✓  
tr tr. ✓  
 14 32 r. ✓  
 7941.6092 ✓

Index R + a. A. VI

96.5	59.5 ✓
156.0	
266.7	81.0 ✓
347.7	140.5 ✓
	+0.76 ✓

88.1		
168.4	80.3 ✓	+0.77 ✓
276.9	59.5 ✓	
336.4	139.8 ✓	

Index L + B. B. +0.78 ✓

6.8	
66.8	60.0 ✓
176.2	81.0 ✓
257.2	141.0 ✓
	+0.75 ✓

Dec 31, 1907

+0.74"

10	5	30
10	0	30.
+5		+5.
15	0	35.

7941.6254"

357.8	81.5
78.5	60.8
185.7	142.3
246.5	

+0.73"

Mean +0.76"

Index L+B B. VII

10 14 20

6.5	60.5
67.0	80.6
175.9	141.1
256.5	

+0.75"

355.6	81.0
76.6	60.9
186.7	141.9
247.6	

+0.74"

+0.74

Index R+a A.

275.2	60.6
335.8	80.2
87.0	140.8
167.2	

+0.77"

+0.76"

10	22	40
10	37	0
10	12	30.
+5		+5.
15	12	35.

7941.6379"

267.0	79.0
345.1	60.6
96.0	139.6
156.6	

+0.78"

Mean +0.76"



Dec. 31, 1907

10 26 20

Index R + A	A.	FTTL
276.8	607 ✓	
337.5	80.0 ✓	
86.5	140.7 ✓	
166.5		
	+0.76 ✓	
266.4	80.6 ✓	
347.0	60.6 ✓	+0.76 ✓
96.6	141.2 ✓	
157.2		
	+0.75 ✓	

Index L + B	B.	
186.7	60.8 ✓	
247.5	81.0 ✓	
356.0	141.8 ✓	
77.0		
	+0.74 ✓	
175.5	80.5 ✓	+0.74 ✓
256.0	60.5 ✓	
6.5	141.8 ✓	
67.0	+0.74 ✓	

10 38 43

6 ✓	✓	✓
10 32 32 ✓		
45	+5 ✓	
15 32 37 ✓		
79 41.6476 ✓		

S.T. 5 52  
H.A. +5 7  
Dec +25.1  
P.A. 108.3

Vernier B  
Sprocket not read. (See note).

As H. wished to locate Comp. Star and did not wish to lose region, the photometer was removed before reaching sprocket. Region thoroughly identified. Error moved much during this. (See ram.)

Mean +0.75 ✓

Dec. 31, 1907

Comparison star for Eros follows the 8.3 mag.  
by  $1' 39''$  and is about  $12'.7$  south of it.  
Mag. of comparison star about 9.8.

Eros now follows star A by about  $21''$ .

10 56

Eros<sup>now</sup> follows the 8.3 mag. by  $39.8$  and is  
 $9'.8$  south of it. Eros has moved during  
observations by about  $20''$ .

Mag. of Eros about 10.8

W. watch used for times  
watch five (5) seconds slow

L. P. P.

The 8.3 magn. star, referred to above =

=  $+24^{\circ} 11.5$  (A.3)

Its 2m. position =  $0^h 39^m 57.7^s +24^{\circ} 44.1'$  (1895)

Comp. Star =  $0^h 41^m 36.7^s +24^{\circ} 31.2'$  "

$+24^{\circ} 11.5$  (A.3) =  $0^h 39^m 57.7^s +24^{\circ} 44.1'$  "

Eros at  $10^h 56^m = 0^h 40^m 37.7^s +24^{\circ} 34.7'$  "

Eros is moving per day  $+2^m 30.0^s$  and  $-4' 52.0''$

~~$+24^{\circ} 11.5$  (A.3) =  $0^h 39^m 57.7^s +24^{\circ} 44.1'$  "~~

~~$+2^m 12.0^s$   $-4.0'$~~

~~$\therefore$  Transit of Eros Jan. 1.00 at  $7^h 0^m 20^s +24^{\circ} 40.5'$  "~~

See next page.



Theoret. pl. for Eros. Jan. 1. 00 at 7<sup>h</sup> 0<sup>m</sup> A.M.

Eros. at 10<sup>h</sup> 56<sup>m</sup> E.T. Dec. 31. '07 = 0<sup>h</sup> 40<sup>m</sup> 37<sup>s</sup> + 24 34.7<sup>s</sup>

+ 2 12.5<sup>s</sup> - 4.0<sup>s</sup>

∴ Eros at 7<sup>h</sup> 0<sup>m</sup> P.M. Jan. 1. 00 should ≈ 0 42 49.5<sup>s</sup> + 24 30.7<sup>s</sup> (1255)

Comp. Star

= 0 41 37.5<sup>s</sup> + 24 31.0<sup>s</sup>

+ 1<sup>m</sup> 12<sup>s</sup> - 1.1<sup>s</sup>

Hence Eros should fol. C. S. of last night by.

1<sup>m</sup> 12<sup>s</sup> and be about 1" south at 7<sup>h</sup> P.M.

Jan. 1. 00.



Jan. 1, 1908 (Wednesday)

W. Obs.

Row

Rec.

Pho. T.

Eros.

0	40	+ 23.5
2	14	
1	34	

A+B

3.9

3.9

3.8

3.7

3.8

3.7

6122.8  
3.8

7 29

7 34

Eros follows comparison star of last night by  $1' 16''$  and is  $1.2$  south of it.

A+B again.

2.7

2.4

2.1

2.1

2.1  
5111.4  
2.3

7 46

Hence star B is Eros.

Clouds

Jan. 1, 1908  
Same Comparison Star used as last night.

Index Lt B. B.

I

$$\begin{array}{r} 267.5 \\ 346.9 \\ 96.8 \\ 155.9 \\ \hline 59.1 \\ 132.5 \end{array} \begin{array}{l} \text{Comp. star dis.} \\ \checkmark \\ \checkmark \\ \checkmark \\ \checkmark \\ \checkmark \end{array} \begin{array}{l} \\ 79.4 \\ \\ +0.20 \end{array}$$

$$\begin{array}{r} 276.4 \\ 337.0 \\ 86.0 \\ 165.8 \\ \hline 79.2 \\ 140.4 \end{array} \begin{array}{l} \checkmark \\ \checkmark \\ \checkmark \\ \checkmark \\ \checkmark \\ \checkmark \end{array} \begin{array}{l} 60.6 \\ +0.72 \\ \\ +0.77 \end{array}$$

Index R + a A.

$$\begin{array}{r} 177.3 \\ 256.4 \\ 7.0 \\ 66.4 \\ \hline 59.4 \\ 132.5 \end{array} \begin{array}{l} \checkmark \\ \checkmark \\ \checkmark \\ \checkmark \\ \checkmark \\ \checkmark \end{array} \begin{array}{l} 79.1 \\ \\ +0.20 \end{array}$$

$$\begin{array}{r} 187.3 \\ 245.9 \\ 355.7 \\ 76.0 \\ \hline 52.6 \\ 132.9 \end{array} \begin{array}{l} \checkmark \\ \checkmark \\ \checkmark \\ \checkmark \\ \checkmark \\ \checkmark \end{array} \begin{array}{l} +0.20 \\ \\ +0.20 \\ +0.20 \end{array}$$

$$\begin{array}{r} 8 \quad 18 \quad 20 \\ \hline 25 \quad 0. \checkmark \\ A \quad 12 \quad 30. \checkmark \\ + \quad +19. \\ \hline 13 \quad 12 \quad 49. \checkmark \\ 7942.5506 \checkmark \end{array}$$

Index R + a A.

II

$$\begin{array}{r} 176.3 \\ 255.8 \\ 7.3 \\ 66.0 \\ \hline 79.5 \\ 52.7 \\ 132.2 \end{array} \begin{array}{l} \checkmark \\ \checkmark \\ \checkmark \\ \checkmark \\ \checkmark \\ \checkmark \end{array} \begin{array}{l} \\ +0.21 \end{array}$$

$$8 \quad 24 \quad 5$$

Jan. 1, 1908.

187.4

246.4

59.0<sup>v</sup>+0.20<sup>v</sup>

356.5

76.2

$$\begin{array}{r} 79.7^v \\ 132.7^v \end{array}$$
+0.20<sup>v</sup>

Cloudy

Index L+B. B.

88.2

167.0

74.4<sup>v</sup>

278.0

328.0

$$\begin{array}{r} 50.0^v \\ 124.2^v \end{array}$$
+1.00<sup>v</sup>

98.3

156.1

57.2<sup>v</sup>+0.93<sup>v</sup>

8 38 40

62 45.

$$\begin{array}{r} 2 \\ +5 \end{array} \quad \begin{array}{r} 31 \\ +19. \end{array} \quad \begin{array}{r} 22. \\ +19. \end{array}$$
13 31 41.<sup>v</sup>7942.5637<sup>v</sup>

Index L+B B

8 44 "10

87.9

166.6

74.7<sup>v</sup>

279.0

336.9

$$\begin{array}{r} 57.9^v \\ 136.6^v \end{array}$$
+0.24<sup>v</sup>

97.8

156.5 156.6

52.7<sup>v</sup>+0.82<sup>v</sup>

264.7

345.1

$$\begin{array}{r} 20.4^v \\ 139.1^v \end{array}$$
+0.79<sup>v</sup>



Jan. 1, 1908  
Index Rta A.

356.9

76.4

79.5<sup>v</sup>

187.4

$$\frac{59.9^v}{130.4^v}$$
+0.21<sup>v</sup>

246.3

8 55 40

99 50.5<sup>v</sup>  
49 55.5<sup>v</sup>  
+5 +19.5<sup>v</sup>  

---

13 50 14.5<sup>v</sup>  
7942.5 765<sup>v</sup>

7.0

67.2

60.2<sup>v</sup>+0.72<sup>v</sup>

176.1

257.0

20.9<sup>v</sup>

$$\frac{141.1^v}{130.4^v}$$
+0.75<sup>v</sup>mean +0.20<sup>v</sup>

Index Rta A

357.0

76.0

79.0<sup>v</sup>

187.0

246.5

$$\frac{59.5^v}{130.5^v}$$
+0.20<sup>v</sup>

9 2 0

5.9

65.8

59.9<sup>v</sup>+0.72<sup>v</sup>

175.5

255.9

20.4<sup>v</sup>

$$\frac{140.3^v}{130.5^v}$$
+0.77<sup>v</sup>

Index R+B B.

266.3

345.6

79.3<sup>v</sup>

97.3

157.0

$$\frac{59.7^v}{139.0^v}$$
+0.79<sup>v</sup>

Jan. 1, 1908

9 12 20  
 14 20.<sup>v</sup>  
 9 7 10.<sup>v</sup>  
 +5 +19.<sup>v</sup>  
 14 7 29.  
 7942.5445<sup>v</sup>

276.3  
 336.2 59.9<sup>v</sup> +0.72<sup>v</sup>  
 86.4  
 166.0  $\frac{79.6<sup>v</sup>}{139.5<sup>v}}</sup>$  +0.72<sup>v</sup>  
 mean +0.72<sup>v</sup>

Index Lt 10

B

9 18 35

265.6 82.2<sup>v</sup>  
 347.8  $\frac{60.8<sup>v}}{142.5<sup>v}}</sup></sup>$  +0.72<sup>v</sup>  
 96.6  
 156.9

+0.73<sup>v</sup>

278.8 59.0<sup>v</sup>  
 337.8 82.5<sup>v</sup>  
 85.5  $\frac{141.5<sup>v}}</sup>$  +0.74<sup>v</sup>  
 168.0

Index Rta A

176.5 80.6<sup>v</sup>  
 257.1  
 6.3  $\frac{60.4<sup>v}}{141.0<sup>v}}</sup></sup>$  +0.75<sup>v</sup>  
 66.7

185.6 60.6<sup>v</sup> +0.73<sup>v</sup>

246.2  
 354.9  $\frac{82.6<sup>v}}{143.2<sup>v}}</sup></sup>$  +0.71<sup>v</sup>  
 77.5

mean +0.73<sup>v</sup>

9 31 20  
 49 55.<sup>v</sup>  
 9 24 50.<sup>v</sup>  
 +5 +19.<sup>v</sup>  
 14 25 17.<sup>v</sup>  
 7942.6009<sup>v</sup>



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Index Rta A,

VI

175.6	80.6 <sup>v</sup>
256.2	60.5 <sup>v</sup>
6.5	141.1 <sup>v</sup>
	+0.75 <sup>v</sup>
67.0	

9 37 55

186.8	59.9 <sup>v</sup>	+0.74 <sup>v</sup>
246.7	81.7 <sup>v</sup>	
355.1	141.6 <sup>v</sup>	
76.8	+0.74 <sup>v</sup>	

Index Lt B B

85.8	81.0 <sup>v</sup>
166.8	59.3 <sup>v</sup>
277.1	140.3 <sup>v</sup>
336.4	+0.77 <sup>v</sup>

95.1	61.9 <sup>v</sup>	+0.76 <sup>v</sup>
157.0	79.3 <sup>v</sup>	
266.7	141.2 <sup>v</sup>	
346.0	+0.75 <sup>v</sup>	

9 52 40
90 34 <sup>v</sup>
9 45 12 <sup>v</sup>
+19 <sup>v</sup>
14 45 37 <sup>v</sup>
7942.6150 <sup>v</sup>

Mean +0.75<sup>v</sup>

Index Lt B B

86.0	80.9 <sup>v</sup>	VII
166.9	59.0 <sup>v</sup>	
278.0	139.9 <sup>v</sup>	+0.70 <sup>v</sup>
337.0		

10 0 55



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97.0	61.2 <sup>v</sup>	
158.2	<u>79.9</u> <sup>v</sup>	+0.76 <sup>v</sup>
265.9	141.1 <sup>v</sup>	+0.75 <sup>v</sup>
345.8		

Index Rta

A.

355.0	82.0 <sup>v</sup>	
77.0	<u>60.6</u> <sup>v</sup>	
186.1	142.6 <sup>v</sup>	+0.72 <sup>v</sup>
246.7		

10	13	50
	14	45 <sup>v</sup>
10	7	22 <sup>v</sup>
<u>15</u>		<u>+19</u> <sup>v</sup>
15	7	41 <sup>v</sup>
7942.6304 <sup>v</sup>		

5.3	62.0 <sup>v</sup>	+0.72 <sup>v</sup>
67.3	<u>81.0</u> <sup>v</sup>	
176.0	143.0 <sup>v</sup>	+0.71 <sup>v</sup>
257.0		mean +0.74 <sup>v</sup>

Index Rta A.

VIII.

10 23 15

337.2	72.2 <sup>v</sup>	
76.0		
186.6	<u>59.2</u> <sup>v</sup>	
245.8	132.0 <sup>v</sup>	+0.21 <sup>v</sup>

6.6		
66.5	59.9 <sup>v</sup>	+0.70 <sup>v</sup>
176.8	<u>20.7</u> <sup>v</sup>	
257.0	140.6 <sup>v</sup>	+0.76 <sup>v</sup>

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Index Lt B. B.

266.0  
347.9  $21.9^{\checkmark}$   
95.3  
155.4  $\frac{60.1^{\checkmark}}{142.8^{\checkmark}} + 0.73^{\checkmark}$

276.3  
335.8  $59.5^{\checkmark}$   
86.0  $21.0^{\checkmark}$   
167.0  $\frac{140.5^{\checkmark}}{140.5^{\checkmark}} + 0.76^{\checkmark}$

 $+0.74^{\checkmark}$  $+0.76^{\checkmark}$ 

10 35 10  
5A 2V  
10 29 12.  
+5 +19.  
15 29 31.  
7942.6454<sup>v</sup>

Index Lt B. B.

267.4  
347.0  $79.6^{\checkmark}$   
98.3  $57.2^{\checkmark}$   
155.5  $\frac{136.8^{\checkmark}}{136.8^{\checkmark}} + 0.84^{\checkmark}$

IX

277.0 ~~277.4~~  
335.3  $58.3^{\checkmark}$   
85.2  $81.8^{\checkmark}$   
167.0  $\frac{140.1^{\checkmark}}{140.1^{\checkmark}} + 0.77^{\checkmark}$

 $+0.80^{\checkmark}$ 

Index Rt A. A.

176.8  
256.0  $79.2^{\checkmark}$   
6.7  $59.1^{\checkmark}$   
65.8  $\frac{138.3^{\checkmark}}{138.3^{\checkmark}} + 0.81^{\checkmark}$

186.6  
247.6  $61.0^{\checkmark}$   
356.2  $80.3^{\checkmark}$   
76.5  $\frac{141.3^{\checkmark}}{141.3^{\checkmark}} + 0.75^{\checkmark}$

 $+0.78^{\checkmark}$ 

10 54 45  
93 40.  
10 46 50.  
+5 +19.  
15 47 9.  
7942.6577<sup>v</sup>

Mean  $+0.79^{\checkmark}$



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S. T. 5 58

H. A. 5 11

Dec. + 25.0

P. A. 278.7 Vernier B

Sprocket -4.5 A, -3.5 B, -3.0 C.

W's watch used for times

Watch nineteen (19) seconds slow

Place of Comp. Star used with E<sub>00</sub> to night, was the same  
one used last night.

Place of C. S. (not in Dec.) =

= R. A. = 0<sup>h</sup> 41<sup>m</sup> 36.<sup>s</sup>7 Dec. + 24° 31.0' (9.2) (10.5)

(See p. 212-3.)

L. A. P.











1907phae.proj..588W