

1904phae.proj...571W

KG

11365

570



KG 11365.578









KG-11365.570





Aug 26, 1904 ~~Friday~~.  
Cont. from B146.  
Sat. I with III

Below

117.6 (ILO is

10.36.20 235.6  
294.4  
58.5

1180 v  
119.1 v  
237.1 v  
122.9 v +1.13 v

115.9

243.0

298.2

60.6

Above

27.0

144.8

206.6

328.3

127.1 v +1.2 v  
117.4 v  
244.5 v +1.29 v  
115.5 v

Mean = +1.18 v

28.2

104145 141.8

78 05 203.2

10 39 02 325.1

15 38 57

1178 v  
121.7 v  
239.5 v  
120.5 v +1.18 v  
113.6 v +1.14 v  
121.9 v  
235.5 v  
124.5 v +1.10 v

Aug. 26, 1904  
Sat. 7 with ~~III~~

Below

116.5 < ~~III~~ Dis.

10. 49 0

241.5

- 125.0"

294.4

110.6"

- 55.0"

235.6"

124.4" - 1.10"

111.7

240.2

128.5"

291.2

119.0"

- 1.23"

60.2

247.5"

Above.

112.5"

- 1.36"

149.8

Mean = - 1.54"

200.8 < 4 Dis.

56.0"

336.0

43.2"

19.2

94.2" - 1.80"

X

159.7

45.0" - 1.84"

10 54.25

204.7

103 25

334.3

10 51 42

20.1

45.8"

90.8" - 1.89"

15 51 37



Aug. 26, 1904  
Sat. II with III

Above.

105845 155.7 ~~II~~ Dis.  
197.1  
338.2  
16.2

41.4<sup>v</sup>  
38.0<sup>v</sup>  

---

79.4<sup>v</sup> - 2.21<sup>v</sup>

156.1 - 2.19<sup>v</sup>

196.6  
336.8  
17.3  
40.5<sup>v</sup>  
40.5<sup>v</sup>  

---

81.0<sup>v</sup> - 2.17<sup>v</sup>

Below.

67.3  
108.3  
244.8  
289.2

Mean = - 2.14<sup>v</sup>  
41.0<sup>v</sup>  
44.4<sup>v</sup>  

---

85.4<sup>v</sup> - 2.04<sup>v</sup>

65.3

- 2.10<sup>v</sup>

110530 106.0  

---

12415 248.4  
110208 288.8  
160203

40.7<sup>v</sup>  
40.4<sup>v</sup>  

---

81.1<sup>v</sup> - 2.16<sup>v</sup>

4

Aug. 26, 1904

Sat III with III

Below

69.5 (III Dis)

101.1

246.8

283.2

31.6 v

36.4 v

 $\frac{68.0}{v} - 2.57^v$ 

72.3

108.9

247.7

282.4

31.6 v

34.7 v

 $\frac{66.3}{v} - 2.63^v$ 

- Above

Mean = -2.78<sup>v</sup>

162.7

191.1

340.5

12.4

28.4 v

31.6 v

 $\frac{60.0}{v} - 2.86^v$ 

162.6

- 2.81 v

192.3

339.8

12.7

29.7 v

32.9 v

 $\frac{62.6}{v} - 2.76^v$ 

Is watch used for time and  
5 sec slow fast.

18 30

18 14.00

22 30

11 11 15

16 11 10

11 30



Aug. 27, 1904 (Saturday)

J.D. 6720

L.C. Ob.

7 20 Too cloudy in S.W. to observe  
Ceres or comp. stars.

St Agni.

$$\begin{array}{r}
 20 \quad 10 \quad + 56.1 \\
 18 \quad 05 \\
 \hline
 2 \quad 05 \\
 9 \quad 53 \\
 \hline
 \end{array}$$

7.36

$$\begin{array}{r}
 m3, 1m \quad 11.99 \\
 \quad \quad 12.05 \\
 \hline
 \quad \quad 12.02
 \end{array}$$

Clearer in S.W.,  
Ceres,

$$\begin{array}{r}
 16.21 - 260 \\
 1818 \\
 \hline
 157
 \end{array}$$

15" Equat.

Phot X  
L.C. Ob.

see fol. pages for  
measures.

Actual measures made with  
large wedge B.

Aug 27, 1904  
 Star e. C.M. - 24.12690 (2.6)  
 Wedge A = 18.0

8.40      19.2  
           18.8  
           21.0  
           18.0  


---

           477.0  
           19.2  
           14.9

Star f = C.M. - 24.12691 (2.4)

8.704      18.4  
           18.0  
           13.6  


---

           13.7

Star a = C.M. - 22.4173 (2.4)

8.130      24.6  
           24.5  
           24.7  
           23.4  


---

           24.7

Star j = C.M. - 24.12762 (2.4)

8.17      18.5  
           11.4  
           10.9  
           12.5  


---

           12.1

Star x = C.M. = 24.12765 (6.4)<sup>3</sup>

8.19      28.5  
           27.4  
           27.4  
           28.5  


---

           21.8  
           28.0



Aug 27, 1904

~~Star f~~ Best Wedge a.

Ceres  
Wedge 20.0

~~Re 20~~

10.24 14.9

~~102~~ <sup>8.248</sup> 23.8

21.6

20.9

22.4

A. 7

22.2

26.9

8.27 26.4

25.3

26.0

26.6

26.2

Star ~~f~~ = C.M. - 24.12762 (2.4)

These measures not to  
be used considered only  
experimental

~~Star f~~

Region too low to continue  
observations tonight.

Est of Cus -

A 32

f 3.6 S A. 7

Aug 27, 1904.

W. Bernes 15"

$$\begin{array}{r} 16 \quad 36 \quad + 36.4 \\ 19 \quad 41 \\ \hline 3 \quad 05 \end{array}$$

9.18

$$04, 0 \star p. \quad \begin{array}{r} 12.08 \\ 12.02 \\ \hline 12.05 \end{array}$$

E. b. P.'s new variable

$$1824 + 23.2$$

$$\begin{array}{r} 20.00 \\ \hline 1.36 \end{array}$$

see 5" record book

T. Pogittarii.

$$\begin{array}{r} 19 \quad 14 \quad - 16.6 \\ 20 \quad 14 \\ \hline 1 \quad 00 \end{array}$$

9.43

m 2, 3 n

Qi 74 = 11

$$\begin{array}{r} 11.2 \\ \hline \end{array}$$



Aug 27, 1904

Meas. of Sat. of Jupiter

Photo T.

L.C.C.B.

$$\begin{array}{r}
 25 \quad 55 + 100 \\
 20 \quad 25 \\
 \hline
 5 \quad 30 \\
 6 \quad 30 \\
 \hline
 \end{array}$$

I      ⊙      IV      II      III

10. ———  
 ———  
 ———

a.      ⊙      b.      c.  
                                  d.

(over)

Aug 27, 1905

a comp with d

Above

304.0

49.6

122.7

229.8

299.7

54.0

123.3

234.6

Below

215.3

305.5

29.0

146.3

270.2 assumed as 210.2

314.1

38.8

140.0

10 24

10 210

Ch. dis

Plot

105.6<sup>v</sup>

107.1<sup>v</sup>

212.7<sup>v</sup>

147.3<sup>v</sup>

+ 0.63<sup>v</sup>

114.3<sup>v</sup>

+ 0.76<sup>v</sup>

111.3<sup>v</sup>

225.6<sup>v</sup>

134.4<sup>v</sup>

+ 0.89<sup>v</sup>

Mean = + 0.63<sup>v</sup>

90.2<sup>v</sup>

117.3<sup>v</sup>

207.5<sup>v</sup>

152.5<sup>v</sup>

+ 0.53<sup>v</sup>

10 39.9<sup>v</sup>

+ 0.00<sup>v</sup>

101.2<sup>v</sup>

205.1<sup>v</sup>

158.9<sup>v</sup>

+ 0.44<sup>v</sup>



Aug. 27, 1904.

A. with B.

I &amp; II

Plot T.

Below

~~244.6~~

235.3 &lt; A dis.

8.27  $\rightarrow$  ~~288.6~~  
302.0

54.5

116.0

66.7<sup>v</sup>61.5<sup>v</sup>222.2<sup>v</sup>- 1.02<sup>v</sup>

239.6

299.3

59.3

121.8

Above

~~136.4~~

136.9

215.3

320.2

28.6

59.7<sup>v</sup>62.5<sup>v</sup>122.2<sup>v</sup>- 1.14<sup>v</sup>Mean 0.88<sup>v</sup>78.9<sup>v</sup>68.4<sup>v</sup>147.3<sup>v</sup>- 0.63<sup>v</sup>- 0.67<sup>v</sup>

140.2

103530 212.3

30 321.5

103115 32.8

721<sup>h</sup>71.3<sup>h</sup>143.4<sup>h</sup>- 0.71<sup>h</sup>

Aug. 27 1904  
Sat. A. with B.

I D IV

Below

Photo T

~~110.2~~ { B. Disto  
10.410

234.3

115.9 v

299.3

115.0 v

54.3

230.9 v

120.8129.1 v - 1.00 v

236.8

116.0 v - 0.88 v

301.7

104.0 v

45.7

220.0 v

Above.

140.0 v - 0.77 v

41.3

Mean = -0.71 v

141.9

100.6 v

217.7

98.8 v

316.5

199.4 v  
150.6 v - 0.56 v

40.8

10.46.30

134.6

93.8 v

- 0.54 v

212.0

103.1 v

15 43 15

315.1

196.9 v

153.1 v - 0.07 v



Aug. 27, 1904  
Sat. C. with D. Phot. R.

Below

~~70.0~~  
185.0  $\leftarrow$  Ddie

10550

252.5

1.0

61.4

67.5 v

60.4 v

127.9 v + 1.02 v

+

178.7

248.2

5.0

62.5

69.5 v

+ 1.03 v

57.5 v

127.0 v + 1.04 v

Above

90.0

154.3

270.2

330.0

\*

87.7

Mean = +1.08 v

61.3 v

59.8 v

121.1 v + 1.17 v

+ 1.14 v

11.02

146.2

270.3

1058.5

335.9

58.5 v

65.6 v

124.1 v + 1.10 v

Aug 27, 1904  
Sat. B. with B., Phot R.

Above

340. K. 10 is

IV to II

11 06 0

81.4

101.3 v

159.1

108.2 v

267.3

209.5 v

150.5 v - 0.57 v

333.7

87.2

103.5 v - 0.56 v

149.0

115.5 v

264.5

219.0 v - 0.56 v

Below

151.0 v

Mean = 0.08 v

247.8

350.0

102.2 v

61.6

113.6 v

175.2

215.8 v - 0.69 v

144.2 v

243.1

- 0.55 v

11 11.30

351.8

108.7 v

17 30

62.5

113.0 v

11 A 45

175.5

221.7 v

151.3 v

- 0.41 v



Aug 29, 1904, (Monday)  
~~Photo R.~~  
 JD. 6722 L.C. Obs.

7.30

Too cloudy for observations.

R. Vulpeculae

20 52 + 21, 7

Funder

20 25

0 27

11.33

9.07

9.029.04

9.46

9.3, 1h

S. Cephei

Funder

21 17 + 76.4

20 37

0 40

11 20

10 02

9 3, 3h

10.14

9.9210.03

Jupiter

2.6 0 + 12

21 0

5 0

7 0

Aug 29, 1904.

Phot. R

Sat. II comp. with I.

Right.

175.0  $\leftarrow$  Dis

10 14 20

265.8

90.8 $\checkmark$ 

350.2

74.3 $\checkmark$ 

164.8

165.1 $\checkmark$  - 0.24 $\checkmark$ 

176.1

- 0.33 $\checkmark$ ~~248.9~~72.8 $\checkmark$ 

343.9

97.1 $\checkmark$ 

71.0

159.9 $\checkmark$  - 0.34 $\checkmark$ 

Left.

73.5

- 0.41 $\checkmark$  2 $\checkmark$ 

151.9

78.4 $\checkmark$ 

260.0

74.6 $\checkmark$ 

334.6

153.0 $\checkmark$  - 0.52 $\checkmark$ 

78.9

- 0.30 $\checkmark$ 

10 20

155.2

76.3 $\checkmark$ 

10 17 10

260.2

79.3 $\checkmark$ 

339.5

155.6 $\checkmark$  - 0.47 $\checkmark$

Aug. 29, 1904, Phot. R.  
Sat. ~~II~~ with ~~II~~.

Left

259.2  $\leftarrow$  ~~II~~ Dis.

10 25 333.5  
86.4  
148.0

74.3 ✓  
61.6 ✓  

---

135.9 ✓ - 0.46 ✓

262.1

- 0.44 ✓

328.8

66.7 ✓

80.2

70.7 ✓

150.9

---

137.4 ✓ - 0.43 ✓

Right

= 0.45 ✓

164.9

245.4

40.5 ✓

352.4

66.5 ✓

58.9

---

147.0 ✓ - 0.63 ✓

179.9

- 0.46 ✓

10 30 236.5

56.6 ✓

---

10 27.5 351.8

64.7 ✓

60.5

---

125.3 ✓ - 1.04 ✓



Aug. 29, 1904

Phot R.

Sat. I with III

Right.

174.3 &lt; I 20 is

10 32

238.2

63.9 v

355.6

56.5 v

52.1

120.4 v

1.18 v

175.7

235.8

5.0

60.1

60.1 v

1.24 v

55.1 v

115.2 v

1.30 v

Left.

73.1

151.4

261.9

333.3

Mean

0.96 v

72.3 v

71.4 v

149.7 v

0.58 v

80.1

0.68 v

10.37.20

143.6

63.5 v

2.256.5

76.4 v

10.35.40

332.9

139.9 v

0.78 v

Aug 29, 1904.

Phot, T

Sat ~~IV~~ with III.

Below

326.7 (320 is)

1047.40

33.2

147.2

213.1

66.5 v

65.9 v

132.4 v

0.93 v

330.5

28.5

142.8

211.8

58.0 v

69.0 v

127.0 v

1.04 v

0.94 v

Above

235.4

305.5

84.3

112.9

70.1 v

58.6 v

128.7 v

1.00 v

Mean = 0.93 v

237.4

1054

299.9

10140

46.8

105050

124.3

62.5 v

77.5 v

140.0 v

0.92 v

0.77 v

Aug. 29, 1904.

Phot. T

Sat. II with III

Above,

227.8 (III Dis)

10.5-8

302.1

74.3 v

48.8

71.7 v

120.5

146.0 v

0.65 v

237.4

0.62 v

304.9

67.5 v

48.3

81.0 v

129.3

148.5 v

0.60 v

Below

134.3

Mean 0.63 v

206.5

72.2 v

320.4

68.1 v

28.5

140.3 v

0.77 v

138.7

0.64 v

11.03

210.8

71.1 v

316.5

82.7 v

39.2

153.8 v

0.50 v

H

11 00.5

P



Aug. 29, 1904  
 Phot. T.  
 Sat. I with III

Below

181 .1 (3 Dis)

11 05 30 223 .0

819 .3

36 .7

91.9v

77.4v

169.3v

0.29v

136 .5

214 .1

311 .2

38 .1

Above

43.0

180.8

231.2

304.3

77.6v

86.9v

164.5v

0.29v

Mean = 0.29v

27.8v

73.1v

160.9v

0.36v

11

40.9

0.34v

11.11

120.5

226.5

11 08.5

309.9

79.6v

83.4v

163.0v

0.32v

*[Signature]*

Aug. 30/1904 (Tuesday)  
L. b. Observer  
 beres.

16 21 - 260  
 1A 35 Phot X  
 2 14

Star e.  
 Wedge ~~2~~ A = 18.2

8.00

30.4

30.6

30.1

29.3

30.1 Star f.

30.0

8.01 30

31.1

29.1

30.0

30.0<sup>0.2</sup> Star m.

31.5

8.03

31.6

32.5

31.6

31.6<sup>2.2</sup> Star l.

20.1

20.4

8.05:09

20.9

20.8

22.0

21.0<sup>4.1</sup>

Aug. 30/1904, Phot X.  
Star a.

81330 ~~26.3~~  
22.0  
21.6  
22.2  
22.3

22.0

Star f

27.2

27.6

29.0

81930 28.6

32.4

28.1

Star x

33.3

82020 33.4

34.2

33.9

33.4

Star g

13.8

82630 16.2

15.4

14.9

20.3

15.1

Beres

26.0

8280 25.4

24.0

24.8

20.2

25.0



24

Aug 30 1904

Shot x

8.30

Estimate = f 3, 6 p  
Star A<sup>d</sup>

26.8

8 36 30

28.5

~~Ident. of c & d doubtful.~~

28.4

~~so reject these means~~

27.9

L.C.  
Aug 31 1904

27.9

31.6

32.4

32.5

31.9

32.7

9.5

32.4

U Capric

15"

cir 74-II

2036-14.7

1950

046

1114

3  
18.0

9.10

no 5, var.

~~Y Capric~~

Y Capricorni

2134-14.7

20.07

127

1083

130

9.21

no 5, var.

cir 74-II

Aug 30 1904.

T Pegasi Cir 74-II

$$22 \ 04 + 10.9$$

$$\begin{array}{r} 20 \ 20 \\ \hline 1 \ 44 \end{array}$$

$$10 \ 16$$

$$\underline{\underline{10.4}}$$

63, 3m.

V Ceti.

Cir 74-II

$$2 \ 3 \ 4 \ 5 - 9.0$$

$$\begin{array}{r} 20 \ 40 \\ \hline 3 \ 05 \end{array}$$

$$\underline{\underline{8 \ 55}}$$

$$C \ 4.0 \ d \quad \underline{\underline{9.0}}$$

~~A Pegasi.~~

R Cassiope.

$$23 \ 52 + 49.6$$

$$\begin{array}{r} 20 \ 52 \\ \hline 3 \ 00 \end{array}$$

$$9 \ 00$$

64, 3m

$$12.52$$

$$12.10$$

$$\underline{\underline{12.31}}$$

10.13

Aug. 30, 1904.

R. Andromedae

24 11 + 36.0

21 11

300

900

13.65

23 var

+ Andromedae

24 12 + 25.6

21 18Reject 254  
Var. prob. not seen after all.

2, 2

13.26  
13.26  
13.26Var. & comp stars quite  
faint but barely just seen.

U bassish.

24 37 + 47.7

21 30

307

853

Cir 74-14

p. 3, 89, 12.0~~Bond 236~~

B 394

11 20

Too cloudy for obs



Aug 30, 1904.

12 00 Still too cloudy

12 30 Growing cloudier but not  
certainly so

13 00 Too cloudy even for the  
eclipse. L.P.P.

Aug 31, 1904 (Wednesday)  
L. B. Obs.

Geres Phot. X.

1621 - 26.0

1825  
204

Wedge A = 40.0  
Star e

7.43.30  
30.5  
31.5  
30.7  
31.0

30.7  
30.7

Star f.

7.45 →  
29.8  
30.0  
29.8  
30.2

30.0  
30.0

Star d.

7 48  
21.6  
21.2  
22.4  
20.0

21.2  
21.2

Star m

7.49.30  
28.5  
28.6  
27.1

27.1  
27.1

Aug. 31, 1904.  
Star a. Phot X

7.53 28.6  
28.3  
22.8  
23.0

28.2

26.0

7.56 26.0

26.0

25.0

23.0

25.0

32.4

7.58 32.9

32.0

32.5

18

32.4

14.0

8.00 12.0

11.0

12.0

9.0

12.2

27.0

8.03 27.0

26.4

26.3

26.7

26.7

Star f

Star x

Star p

beres



Aug. 31, 1904

Star x

8.05.30

33.4  
32.4  
32.7  
32.8

32.8  
32.8

Star y

8.07

26.1  
27.1  
27.1  
27.8

27.0  
27.0

Ceres

8.09.10

25.0  
26.0  
25.1  
25.0

21.1  
25.3

~~Star d~~

16      44  
19      10  
— 21.0  
2      26

8.25

Electric light moved so further settings cannot be made.

Aug. 31, 1904,  
L. b. Obs.

S. Ophiuchi.

1623 - 16.6

1926  
303

8-38

25. N

$\angle 13.5$  bir. 74-II

2 Ophiuchi

179 - 0.8

1940  
231

7.5

8-50

C 3, 1 d photog Not  
R S Aquilae

1946 - 8.88

1953  
0 0.07

Est = 12.0

8-06

$\alpha$  3, 2/3

see C Chart

W. Aquarii

20 40 - 5.6

20 05

35  
11 25

photog Not.

9-17

Var Not seen  
d easily seen

Aug 31, 1904

V Pegasus

21 55 + 6.0

20 15

1 38

1022

Ext 11.0

9 30

X 4, 2/3

Z Pegasus

23 50 + 24.4

20 30

3 20

840

9 30

Too cloudy here so  
abandoned for Jupiter

Jupiter

26 0 + 15.0

20 35

5 25

6 35



Aug. 31, 1904  
Phot R,  
Sat 3 comp. with Sat I.

Right

9.4820 258.7 (3 Dec)

338.1

80.3

158.1

~~Left~~

258.8

336.1

77.8

158.1

Left

159.1

245.7

336.4

5X.5

164.6

9.54

242.9

9 51 10

343.2

14 51.2

74.6

79.4<sup>v</sup>

77.8<sup>v</sup>

157.2<sup>v</sup> + 0.43<sup>v</sup>

+ 0.43<sup>v</sup>

77.3<sup>v</sup>

80.3<sup>v</sup>

157.6<sup>v</sup> + 0.43<sup>v</sup>

+ 0.36<sup>v</sup>

86.6<sup>v</sup>

75.1<sup>v</sup>

161.7<sup>v</sup> + 0.33<sup>v</sup>

161.7<sup>v</sup>

+ 0.28<sup>v</sup>

78.3<sup>v</sup>

91.3<sup>v</sup>

169.6<sup>v</sup> + 0.20<sup>v</sup>

Aug. 31, 1904.

Plant R.

Sat IV with III

Right.

~~51.8~~

353.2 ← III 10 is.

53.7

170.9

236.1

~~8~~

348.0

53.9

171.2

240.8

Left

259.1

323.9 hazy

79.9

144.3

255.5

326.1

82.1

142.8

60.5v

65.2v

125.7v - 1.07v

-0.96v

65.9v

69.6v

136.5v - 0.84v

-0.97v

64.8v

64.4v

129.2v - 1.00v

-0.98v

70.6v

60.7v

131.3v - 0.95v

10,04,30

123 30

10 01 45



Aug. 31, 1904  
 Left, Phot. R.  
 Right, IV with III

10.06 262.5  
 326.9  $\frac{64.4}{66.3} v$   
 81.5  $\frac{130.7}{130.7} v$  — 0.96v  
 147.8 Images very dim.

256.0 — 0.96v  
 10.09 327.4  
 80.0  $\frac{71.4}{59.4} v$   
 139.4  $\frac{130.8}{130.8} v$  — 0.96v

Right cloudy  
 Too hazy to continue.  
 Clearer

Mean = -1.06<sup>v</sup>

~~348.8~~  
 175.5  
 10.4730 828.1  
 348.8  $\frac{52.6}{66.1} v$   
 54.9  $\frac{118.7}{118.7} v$  — 1.22v

169.2  
 10.49 238.5  
 111.30 356.9  
 10.2752 52.4  $\frac{69.3}{53.5} v$   
 $\frac{124.8}{124.8} v$  — 1.09v



Aug. 31, 1904.  
Phot. T  
Sat. II with IV

Above

53.8 < II Dis >

10.56.30

118.4

228.5

302.1

6 K 6v

73.6v  
138.2v

-0.81v

54.1

124.8

227.8

300.5

Below

318.08

~~44.3~~

40.5

137.9

210.9

0.1

325.5

28.8

143.1

216.8

Mean = -0.58v

86.5v

73.0v

159.5v 0.38v

0.40v

83.3v

73.7v

157.0v 0.42v

L.P.P.

11.04

11 00 15

Sept 2, 1904 (Friday)

8 00 Clearer now L.C. Obs.  
 IV Pegasi

$$\begin{array}{r} 23 \quad 19 \quad + \quad A.O \\ 19 \quad 19 \\ \hline 4 \quad 00 \end{array}$$

8 10 Cloudy again

8 30 Too cloudy

8 50 All cloudy with no prospects of clearing.

~~R.D. Obs.~~

~~$$\begin{array}{r} 17 \quad 45 \quad - \quad 6.1 \\ 17 \quad 40 \\ \hline 2 \quad 00 \end{array}$$~~

~~Wells Plot T.~~

~~Cs watch used.~~

Sept. 6. 1904. (Tuesday).

13 Cs watch 3<sup>rd</sup> fast of B 394

R. D. Oph. W. C. B. Plot

17 45 - 61

19 45

2 00

Cs watch used tonight for times

Above < Comp & dis

240.3

8 44.8 298.0

51.7

119.6

233.2

299.6

60.0

111.3

Below

151.6

201.6

322.4

29.4

146.6

8 53.4

209.3

98.2

331.2

8 49.1

23.0

13 49.1

5.27 ✓

6 7.9 ✓

120.6 + 1.18 ✓

66.4 + 1.21 ✓

51.3 ✓

117.7 + 1.24 ✓

mean = + 1.24 ✓

50.0 ✓

67.0 ✓

117.0 + 1.26 ✓

62.7 + 1.28 ✓

51.8 ✓

114.5 + 1.31 ✓



Sept 6, 1904

Same Again

Below

$\begin{array}{r} 152.2 \\ 201.6 \\ 323.6 \\ 30.9 \end{array}$

$\begin{array}{r} 49.4 \\ 67.3 \\ \hline 116.7 \end{array} + 1.27$

$\begin{array}{r} 144.4 \\ 212.2 \\ 330.0 \\ 24.5 \end{array}$

$\begin{array}{r} 67.5 \\ 32.5 \\ \hline 120.0 \end{array} + 1.23$

Above

Mean = +1.16

$\begin{array}{r} 51.8 \\ 120.4 \\ 238.2 \\ 295.2 \end{array}$

$\begin{array}{r} 68.6 \\ 57.0 \\ \hline 125.6 \end{array} + 1.07$

$\begin{array}{r} 59.4 \\ 111.0 \\ 241.2 \\ 302.2 \end{array}$

$\begin{array}{r} 51.2 \\ 71.0 \\ \hline 122.2 \end{array} + 1.10$

Sept. 6, 1904

III

Above

9 17.0  
~~54.4~~  
 120.4  
 242.4  
 291.1

69.4<sup>✓</sup>  
 48.7<sup>✓</sup>  
 118.5<sup>✓</sup> + 1.23<sup>✓</sup>

60.4  
 111.4  
 233.6  
 299.0

50.9<sup>✓</sup>  
 65.4<sup>✓</sup>  
 115.3<sup>✓</sup> + 1.27<sup>✓</sup>

Below

331.4  
 19.9  
 148.0  
 210.6

48.1<sup>✓</sup>  
 67.6<sup>✓</sup>  
 115.7<sup>✓</sup> + 1.29<sup>✓</sup>

324.1

+ 1.27<sup>✓</sup>

9 25.0

30.2

66.1<sup>✓</sup>

9 27.0

144.6

51.2<sup>✓</sup>

14 21.0

200.8

117.3<sup>✓</sup> + 1.25<sup>✓</sup>

P.A. = 134.5 Ver B  
 A.A. = 3.00 West  
 Dec. = -6.7 South  
 S.T. = 20.45  
 Sp Wh. =  $\begin{matrix} -2.5 A \\ -1.5 B \\ -0.5 C \end{matrix}$



Sept. 6, 1904.

9 33 Meas. made with difficulty  
immigrant pencils quite radically  
out, in other words they overlap and  
are not coincident so that observer  
has to be very careful about the  
position of eye. The pencils are  
also a little concealed behind the  
eyestip so that a slight movement  
of the eye causes a variation in  
the light. Several result however  
considered good

V Aquilae W Obs.  
Plot T.

18 59 - 5.1  
+9  
20 59  
2 00  
9.5 cap

Abbr

329.4 < Comp x obs

9 49.6 24.5 55.1  
136.1 79.1  
215.2 134.2 + 0.89

315.8

34.4

144.5

20.8

78.6 - + 0.84  
61.3  
139.9 + 0.78

OVER

Green + 0.88



Sept. 6, 1904  
Same cont.

Below

234.4

297.9

47.4

124.2

226.6

306.4

56.3

118.4

60.2 ✓

76.4 ✓

136.6 ✓

+ 0.8 ✓

20.2 ✓

+ 0.8 ✓

57.1 ✓

137.1 ✓

+ 0.83 ✓

9 55.6

9 52.6

14 52.6

Same Data

Below

P.A. = 120.0 Ver B

H.A. = 220 West

Dec. = -6.1 South

St. T. = 21.1 P

Sp. Wh. = -2.5 B

-1.5 C

Sept 6, 1904.

Doubtful Var +51.762

27 46 +50.2  
 21 30  
 6 16  
 5 44

Wells  
 Plot 2

Rd.

10 31.3 21.8.8 < comp \* dis

304.1  
 47.7

25.6 ✓  
 103.61 ✓

129.2 \* -0.17  
 170.8 ✓

123.7

237.4

313.4

39.7

2013

43.2

128.8

220.4

316.0

103.7 ✓ -0.18 ✓  
 26.3 ✓

190.0 ✓

170.8 ✓

mean = -0.11 ✓

25.6 ✓

95.6 ✓

181.2 ✓

178.8 ✓

-0.02 ✓

101.1 ✓

22.4 ✓

-0.04 ✓

123.5 ✓

176.5 ✓

-0.06 ✓

10 31.3

136.3

9.6

224.4

10 39.8

306.8

18 39.8

35.2

176.3

Dec +51.2

Ha -5.33 East

T 22:00

Spur f -1.5a  
 -0.5 B  
 +0.1 C

Sept 6, 1904

O Ceto Webb  
Phot ~~20~~

26 12 - 3.6

22 12

400 A

R &amp; A 800

11 03.3

53.5 &lt; Vardis

149.8

76.1 ✓

244.7

89.9 ✓

334.6

166.0 - 0.27 ✓

66.3

155.9

89.6 ✓ - 0.28 ✓

253.9

75.2 ✓

329.1

164.8 - 0.29 ✓

R &amp; B

mean = -0.27 ✓

capt = 9.19

mag = 8.92

343.9

74.5

548.4

90.2 ✓

155.2

164.7 - 0.29 ✓

245.4

344.0

66.4

92.4 ✓ - 0.26 ✓

163.2

74.2 ✓

237.4

166.6 - 0.24 ✓

167.1

11 09.0

11 60

16 60 ✓



Sept. 6, 1904

PA - ~~35.5~~ VerB.  
 HA - 3.44 East  
 Dec. = -3.4 South  
 S.T. = 22.29

PA Not used as end piece is  
 (1) ~~13~~ not yet soldered.

L. P. P.

Sept. 7, 1904 (Wednesday)

7 15

C's watch = 30<sup>s</sup> slow of B 394  
in Ephemeris W Obs

21 39 + 54.1 Photo.

19 17

2 22

9 38

9.5 captured

C's watch used tonight.  
Above

151.1 < V or dis.

A 05.6

194.8

332.9

10.8

153.9

193.8

334.1

369.7

Below

66.2

101.6

242.5

279.2

63.2

A 13.0

103.2

A 9.3

242.1

13 9.8

279.5

43.7

37.9

81.6

39.9

35.6

75.5

35.4

36.7

72.1

40.0

37.4

77.4

- 2.15

- 2.34

- 2.33

Mean = - 2.30

- 2.44

- 2.36

- 2.27

Sept. 7, 1904

Altitude pretty high rendering  
observations a little diffident.

P.A. 178.0 Ver 13  
 H.A. +21.02 East  
 Dec. +58.4 North  
 N.T. 19.39  
 Sp. wh.  $\delta$  - 6.5 B  
 - 5.5 -  $\alpha$

$\rho$  Cassiop. W.O.B.  
 Plot 1  
 23 47 + 56.7 9.5 cap  
 19 57  
 3 50  
 8 10

Left  
 321.0  
 23.8  
 141.9  
 320.0  
 21.1  
 143.8  
 201.2  
 Right  
 232.5  
 293.0  
 53.5  
 108.6  
 233.2  
 292.4  
 152.0  
 110.4

(Var. dis. 62.8  
 60.0 - 1.13  
 122.8  
 61.1 - 1.16  
 58.4  
 119.5 - 1.20  
 mean = -1.21  
 60.5  
 53.1  
 115.6 - 1.29  
 59.5  
 58.4  
 117.9 - 1.26  
 -1.24

$\delta$  46.6  
 $\delta$  53.0  
 99.6  
 $\delta$  49.8  
 10 50.3



Sept. 7, 1904  
Same Over

Right

234.8

293.8

52.8

107.2

590

54.4

113.4 - 1.34

236.4

291.5

50.2

110.8

551

60.6

115.7 - 1.29

Mean = -1.30

Left

143.5

201.6

323.9

20.6

58.1

56.7

114.8 - 1.31

143.4

200.2

322.0

21.7

56.8

59.7

116.5 - 1.27

9 10.4

15.4

~~14 7.9~~

9 7.7

14 8.2

Sept. 7, 1904.

III

Left

9 16.0  
 1403.1  
 2017.5  
 321.6  
 22.2

58.4  
 60.6  
 119.0 - 1.21

143.2  
 201.2  
 322.0  
 20.8

58.0 - 1.24  
 58.0  
 116.0 - 1.26

Right

Mean = -1.26

51.2  
 110.4  
 235.6  
 293.2

59.2  
 57.6  
 116.8 - 1.28

9 21.8  
 57.8  
 9 12.9  
 14 19.4

51.3  
 104.2  
 233.6  
 293.8

55.9  
 60.2  
 116.1 - 1.28

PA. = 302.5 Ver B.

HA. = -3.03 East

Dec. = +56.9 North

S.T. = 20.47

Sp. wh. = 5 - 10.5 a.  
 + 0.5 B.  
 + 1.0 C.

over

Sept. 7, 1905  
 Obs. rather difficult on  
 account of high altitude.

044068 - Camelop.

Wob.

$$\begin{array}{r} \times 2836 + 67.9 \text{ Phot T} \\ \hline 2100 \\ \hline 736 \\ \hline 424 \end{array} \quad 9.5 \text{ cap}$$

2000.

44.0 < Comp \* dis

$$\begin{array}{r} 958.4 \\ 120.1 \\ 230.5 \\ \hline 291.5 \\ 52.4 \\ \hline 111.4 \\ 223.0 \\ \hline 302.7 \\ 1273. \\ \hline 310.4 \\ 31.9 \\ 141.5 \\ \hline 204.0 \end{array}$$

$$\begin{array}{r} 76.1 \\ 61.0 \\ \hline 137.1 + 0.83 \end{array}$$

$$\begin{array}{r} 59.3 + 0.81 \\ 79.7 \\ 139.0 + 0.79 \\ \hline \text{mean} = 4.078 \end{array}$$

$$\begin{array}{r} 81.2 \\ 62.7 \\ \hline 143.9 + 0.70 \end{array}$$

$$\begin{array}{r} 10060 \\ \hline 10022 \\ 152.7 \\ \hline 10022 \\ 152.7 \\ \hline 10022 \\ 152.7 \end{array}$$

$$\begin{array}{r} 323.7 \\ 23.1 \\ \hline 133.2 \\ 212.3 \end{array}$$

$$\begin{array}{r} 59.4 + 0.75 \\ 79.1 \\ \hline 138.5 + 0.80 \end{array}$$



Sept. 7, 1904.

$$PA = 260.5 \text{ Var } B$$

$$HA = -7.09 \text{ East}$$

$$Dec = +64.2 \text{ North}$$

$$ST = 21.32$$

$$Sp wh = f - 1.5 B$$

$$-0.5 \alpha$$

T Lyrae with  
Phot. T.

$$\begin{array}{r} 18 \quad 40 + 37.4 \\ 21 \quad 5.8 \\ \hline 3 \quad 1.8 \end{array}$$

$$\begin{array}{r} 18 \quad 31 \\ 22 \quad 07 \\ \hline 3 \quad 36 + 36.8 \end{array}$$

$$1058.4 \quad 216.9$$

$$303.2$$

$$42.4$$

$$118.8$$

$$224.2$$

$$311.4$$

$$36.6$$

$$\text{Below}$$

$$42.4$$

$$136.7$$

$$210.8$$

$$312.6$$

$$29.6$$

$$135.0$$

$$221.1$$

$$303.9$$

$$\begin{array}{r} 11 \quad 4.6 \\ 11 \quad 01.5 \\ 16 \quad 2.0 \end{array}$$

$$91.7$$

$$99.2$$

$$190.9$$

$$169.1$$

$$105.4$$

$$85.2$$

$$190.6$$

$$169.4$$

$$84.3$$

$$101.8$$

$$186.1$$

$$173.9$$

$$105.4$$

$$82.8$$

$$188.2$$

$$171.8$$

$$+ 36.8$$

$$+ 0.20$$

$$+ 0.20$$

$$+ 0.20$$

$$\text{Mean} = + 0.17$$

$$+ 0.11$$

$$+ 0.14$$

$$+ 0.16$$

Sept. 7, 195X

P.A. 180.3 Ver B

ST 22.29

Ha. 4.00 West

Dec. +36.5 North

Spwl.	- 3.5	a
	- 2.5	B
	- 1.9	C

L. P. P

Sept. 10. 1904. (Saturday).

7 10 Rather cloudy.

2 10 Cs watch 6 fast of B 39 C  
Cs watch used for times tonight  
in Her. W Ab  
Photo T.  
9.5 cap

$$\begin{array}{r} 17 \ 12 + 33.2 \\ 19 \ 45 - \\ \hline 2 \ 39 \end{array}$$

Below

28.0 69.0  
95.2 (Vardis)

244.5

280.1

64.2

102.0

250.3

273.3

Above

340.5

365.7

151.7

191.1

331.6

8 35.0 12.6

63.0

8 31.6 158.1

13 31.4 184.9

26.2 ✓

35.6 ✓

61.8 ✓

- 279

37.8 ✓ - 281

23.0 ✓

60.8 ✓

- 283

Mean = - 273

25.2 ✓

39.4 ✓

64.6 ✓

- 269

25.2 ✓

41.0 ✓

26.8 ✓

67.8 ✓

26.8 ✓

26.8 ✓

26.8 ✓

26.8 ✓

Pa - 133.8 Ver B Dec + 32.8  
Ha. 2:58 Ant Spal. = 7 - 45 B  
ST. = 20.12 - 3.50



Sept. 10, 1904.

St. Punto - Wobs

18	43	-	21	Plew
20	48		9.5	cap.
2	05			

155 16  
 56. 08

44  
 05

Above Comp  $\times = - \delta^{\circ} 4732 (\delta.2)$ 

9 31.5 210.5 < Var. dis.

324.1

19.7

142.3

204.6

313.8

29.6

Below

45.8

117.1

237.1

287.5

73.2  
 55.6

130.8 - 0.96

62.3 - 0.88

75.8

138.1 - 0.81

Mean = - 1.02

71.3

50.4

121.7 - 1.16

55.7

109.9

227.7

296.7

53.2 - 1.15

69.0

122.2 - 1.14

9 37.7

9 34.6

14 34.5

Sept. 10, 190K  
 Stars Again

Below

9 39.8  
 47.3  
 114.2  
 236.1  
 288.0

69.9<sup>v</sup>  
 51.9<sup>v</sup>  
 121.8<sup>v</sup> — 1.15<sup>v</sup>

56.7  
 106.8  
 224.8  
 297.7

50.1<sup>v</sup> — 1.14<sup>v</sup>  
 72.9<sup>v</sup>  
 123.0<sup>v</sup> — 1.13<sup>v</sup>

Above

314.0  
 28.6  
 143.4  
 199.9

Mean = -1.06<sup>v</sup>

72.6<sup>v</sup>  
 56.5<sup>v</sup>  
 129.1<sup>v</sup> — 1.00<sup>v</sup>

323.1  
 19.8

— 0.98<sup>v</sup>

56.7<sup>v</sup>

74.9<sup>v</sup>  
 131.6<sup>v</sup> — 0.95<sup>v</sup>

9 46.8  
 46.6  
 9 43.3  
 1443.2

134.2  
 212.1

Final Mean = -1.0K  
 PA 2:50V B S. T. 21:24  
 HA 2:39 West  
 Dec. S. 5 South S/W. 9 -1.5 a.  
 -0.5 B.  
 +0.1 C



Sept. 10, 1904.

R 5<sup>th</sup> Epsilon

$$\begin{array}{r} 20.58 \\ 22.05 \\ \hline 1.07 \end{array}$$

-17.8

Webb  
Photo T.

Full aperture.

$$\begin{array}{r} 38 \\ 13 \end{array}$$

$$\begin{array}{r} 50 \\ 02 \end{array}$$

Comp. star =  $-17^{\circ}.6189$  (P.3)

Above

1051.0

220.2

305.6

44.6

116.8

227.8

296.5

37.9

125.8

&lt;comp star

85.4 ✓

72.2 ✓

154.6 ✓

+0.43 ✓

68.7 ✓

+0.44 ✓

87.2 ✓

156.6 ✓

+0.45 ✓

Below

134.0

204.3

307.9

35.8

125.4

215.8

314.8

26.2

Mean = +0.41

70.3 ✓

87.9 ✓

158.2 ✓

+0.41 ✓

90.4 ✓

+0.38 ✓

71.4 ✓

161.8 ✓

+0.35 ✓

10 57.0

10 54.0

13 539



Sept. 10, 1904

Same Again

Below

10 58.8

136.1

207.3

311.5

34.4

71.2

82.9

154.1

+0.50

130.2

216.0

319.4

27.2

Above

36.4

127.0

227.8

300.0

85.8

68.8

8.8

154.6

+0.49

Mean = +0.44

47.0

11 05.0

114.5

123.8

219.3

11 01.9

16 01.8

306.4

70.5

87.1

157.6

+0.38

+0.43

PA 3200 Ver B

H.C. 1.41 West

Dec -18.2 South

11 15

Sp. T. 22.42

Sp. Wh. -4.5 A

-3.5 B

-2.9 C

Sept. 15. 1904 (Thursday).

Examination of Prof. Rees's photometer, similar in construction to Phot. V. of this Observatory.

The photometer seems to be well constructed and the achromatic prism excellent. The image of one of the stars compared does not completely disappear in both positions of the micrometer. This is probably due to the fact that a portion of one of the supplementary pencils passes the eye stop and enters the eye, so that the eye stop would seem to need adjustment, or possibly a Foucault prism could with advantage be substituted for the micrometer. Will examine further by daylight.

Meant. of diff. in brightness of two stars. (see next two pages)



Sept. 15, 1904.  
 Prof. Reeds' Phot. G. H. obs. G. r. c.

~~26.2~~ Index above,  
 26.1  $\leftarrow$  72.4  $\leftarrow$  betw. dis.

9 45

94.5  
 211.5  $\frac{59.0}{131.4} \checkmark$   
 270.5  $\frac{131.4}{0.95} \checkmark$

37.0  
 41.5 44.5  $\checkmark$  1.02  
 202.2 201  $\checkmark$   
 202.3  $\frac{124.6}{1.09} \checkmark$

Index below.

302.0 54.2  $\checkmark$   
 2.2

112.0  $\frac{77.2}{131.4} \checkmark$   
 129.2  $\frac{131.4}{0.95} \checkmark$

292.0 20.0  $\checkmark$  0.46  $\checkmark$   
 12.0

122.0  $\frac{59.5}{139.5} \checkmark$   
 121.5  $\frac{139.5}{0.72} \checkmark$

mean 0.94  $\checkmark$

10 13

118

9 59



Sept. 15. 1904.

Index below.

10 17

$$\begin{array}{r}
 302.0 \checkmark \\
 2.5 \checkmark \\
 113.0 \checkmark \\
 189.0 \checkmark \\
 \hline
 60.5 \checkmark \\
 76.0 \checkmark \\
 136.5 \checkmark \\
 0.84 \checkmark
 \end{array}$$

$$\begin{array}{r}
 192.9 \\
 293.0 \checkmark \\
 13.8 \checkmark \\
 119.0 \checkmark \\
 180.2 \checkmark \\
 \hline
 80.8 \checkmark \\
 61.2 \checkmark \\
 142.0 \checkmark \\
 0.73 \checkmark
 \end{array}
 \quad 0.78 \checkmark$$

$$\begin{array}{r}
 213.2 \checkmark \\
 273.2 \checkmark \\
 28.7 \checkmark \\
 100.0 \checkmark \\
 \hline
 60.0 \checkmark \\
 71.3 \checkmark \\
 131.3 \checkmark \\
 0.95 \checkmark
 \end{array}$$

$$\begin{array}{r}
 202.1 \checkmark \\
 280.8 \checkmark \\
 30.5 \checkmark \\
 96.1 \checkmark \\
 \hline
 74.7 \checkmark \\
 60.6 \checkmark \\
 139.3 \checkmark \\
 0.79 \checkmark \\
 \text{mean } 0.82 \checkmark
 \end{array}
 \quad 0.87 \checkmark$$

10 32

10 24.5

Sept. 15. 1904.

In preceding measts, again pretty low. In last setting, lower small shutters slightly interfere.

These measts, although fairly good, confirm the fact that there is trouble with one of the supplementary images.

Will examine photometer still more by daylight, especially with reference to this point.

Sept. 16, 1904 (Friday)

Experiments with Mr. Reed's photometer  
similar to Phot. 7. of this Observatory.  
W. obs.

Photometric meas. of 2 stars at  
about 19<sup>h</sup> 0<sup>m</sup> 8<sup>s</sup> - 19<sup>h</sup> 2<sup>m</sup>

Above		W. Obs.	
	< br dis.		E. eq.
9 13.6	246.1		
	285.8	39.2 <sup>v</sup>	
	71.2	29.8 <sup>v</sup>	
	101.0	69.0 <sup>v</sup>	- 2.54 <sup>v</sup>
	250.8		
	281.89	31.1 <sup>v</sup>	- 2.52 <sup>v</sup>
	66.2	39.0 <sup>v</sup>	
	105.2	70.1 <sup>v</sup>	- 2.50 <sup>v</sup>
	Below	Mean = - 2.47 <sup>v</sup>	
	154.2		
	194.6	40.4 <sup>v</sup>	
	339.9	30.7 <sup>v</sup>	
	10.6	71.1 <sup>v</sup>	- 2.47 <sup>v</sup>

9 20.4	158.9		
9 17.0	192.1	33.2 <sup>v</sup>	- 2.42 <sup>v</sup>
14 17.0	334.2	41.1 <sup>v</sup>	
	15.3	74.3 <sup>v</sup>	- 2.37 <sup>v</sup>



Sept. 16, 1904.  
Same Over

Below

	155.0		
9 22.2	196.2	41.2v	
	338.7	<u>32.1v</u>	- 2.40v
	10.A	73.3v	

	159.A		- 2.42v
	190.A	51.0v	
	334.A	<u>40.7v</u>	
	15.5	71.7v	- 2.45v

Above

Mean = - 2.45v

	69.4		
	100.5	30.1v	
	244.7	<u>42.3v</u>	
	287.0	72.4v	- 2.43v

	65.2		- 2.48v
9 29.0	105.4	40.2v	
9 25.6	251.1	<u>29.2v</u>	
14 25.6	280.3	69.4v	- 2.53v

There are three stars nearly on the N. & S. line which are the three stars on which experiments were made last night in a preliminary way. The two stars comp. in above.

Sept. 16, 1904

Measurements are the Northern most and intermediate one of the three. The two stars to be compared in the following measurements are the Northern most and the Southernmost of the three.

The Southernmost of the three is considerably reddish. W. obs.

Above  $\angle$  N. & S. dis.

9 40.0

323.8

25.2

61.4<sub>v</sub>

152.2

48.3<sub>v</sub>200.5<sup>-</sup>109.7<sub>v</sub> - 1.42<sup>v</sup>

327.0

23.9

56.9<sub>v</sub> - 1.36<sup>v</sup>

146.0

58.1<sub>v</sub>

204.1

115.0<sub>v</sub> - 1.30<sup>v</sup>

Below

Mean = 1.35<sup>v</sup>

242.0

290.5

48.5<sub>v</sub>

53.2

64.4<sub>v</sub>

117.6

112.9<sub>v</sub> - 1.35<sup>v</sup>

236.3

295.8

59.5<sub>v</sub>

57.4

54.9<sub>v</sub>

112.3

114.4<sub>v</sub>- 1.34<sup>v</sup>- 1.32<sup>v</sup>

9 46.2

9 43.1

14 43.1



Sept. 16, 1904

Same Cloor

Below

948.0  
237.4  
292.3  
51.9  
114.4

54.9  
62.5  
117.4 - 1.25

234.0 - 1.24  
296.1  
54.6  
114.3  
61.8  
56.7  
118.5 - 1.23

Above

Mean = - 1.29.

146.8  
203.5  
337.1  
23.4

56.7  
56.3  
113.0 - 1.35

~~146.8~~ 148.8

954.4  
951.2  
1451.2  
204.0  
335.4  
284.4

55.2 - 1.34  
59.0  
114.2 - 1.32

In the last two groups the two stars compared are about 40' of arc apart, ~~and~~ this distance being sealed in the finder.

In above measures W's eyepiece & nicol used. With this apparatus and



Sept. 16, 1904

proper adjustment of the pencils  
all the difficulties experienced last  
night ~~disappeared~~ with Mr. Reed's  
eyepiece & Nicol, disappear.

Both images completely disappear  
also at the proper points. Will see  
Mr. Lumbin and have Mr. Reed's eyepiece  
properly arranged. The last pair of  
stars measured tonight are the  
same pair & with which difficulty  
was experienced last night when  
Mr. Reed's eyepiece was used, it  
being perfectly evident, on inspection,  
what the trouble was in this respect  
and that it could be easily  
remedied.

~~Stop~~ Still further tests with  
photometer made, and the instrument  
thoroughly examined in all points.

Sept. 16, 1904.

B. + C. 11A2.

B. 394.

12 46 3.2

12 46 0.0

47 4.0

47 0.0

Dis. Jup. I Pluton R. No obs still recorder.

Compared with northernmost of two stars between  
Jup and lat. ~~IV~~ = lat. III.

5-6 42 48.7

12 57 01

52 146.8

1  $\frac{98.1}{95.5} - 0.3$   
96.2

- 4

57 07 49.5

12 56 57

24 145.0

38 50.2

58 00

53 142.8

2  $\frac{92.6}{94.5} - 0.1$   
93.6

- 4

58 06 49.5

57 56

21 144.0

40 49.0

59 03

57 144.2

3  $\frac{95.2}{95.1} - 0.2$   
95.2

- 4

59 10 49.9

58 59

24 145.0

42 48.0

13 00 08

59 143.7

4  $\frac{95.7}{96.2} - 0.2$   
96.2

- 4

60 14 48.2

13 00 04

36 145.0

moved images slightly.

13 01 36

01 9 47.8

- 4

23 143.5

✓  $\frac{95.7}{96.6} - 0.2$   
96.2

13 01 32

42 47.5

02 01 145.1

26 48.0



Sept. 16 - 1904.

02 54	0 2	45	96.0	144.0	
- 4	0 3	04	96.3	47.9	6 - 0.2
13 02 50		<u>25</u>	<u>96.2</u>	144.2	
		52		46.9	
04 42	0 4	13	98.2	145.1	
- 4		36	98.5	47.5	7 - 0.3
04 38	0 5	08		146.3	
	0 6	<u>14</u>		46.0	
06 44		29	99.8	145.8	8 - 0.4
- 3	0 7	01	99.9	47.1	
06 41		<u>14</u>	<u>99.4</u>	146.0	
		35	100.2	46.3	- 0.4
12 <sup>3</sup> > 32		48	103.9	146.5	- 0.5
45	8	06	99.4	42.6	- 0.4
A 03		28	92.0	142.0	- 0.1
25		42	88.7	50.0	0.0
39		54	84.5	138.7	+ 0.2
51	9	06	80.9	54.2	0.3
03		17	76.6	135.1	0.5
14		29	72.6	58.5	0.7
26		38	66.1	131.1	0.9
35		54	60.1	65.0	1.2
51	10	07	53.1	125.1	1.5
10 4		17	40.8	72.0	2.1
14		29	31.9	112.8	2.7
26		43	25.6	80.9	3.2
40		53		106.5	
50					

not seen later



Sept. 16, 1904.

Limit of visibility

10 11 47	11	32	81.0	27.0	
<u>    </u>		38	108.0	<u>23.5</u>	
<u>    </u>		50	82.5	<u>25.2</u>	3.2
13 11 44	12	07	106.0		

The ~~fact~~ rather close proximity of  
 Lat II to Lat III as well as the  
 high altitude of Jupiter rendered  
 observations a little difficult, but  
 great care exercised and eclipse  
 considered good. East setting  
 of all a little bit uncertain.  
 Seeing pretty good.

B + C. 1122.  
 13 43 2.5  
 44 2.5

B. 394.  
 13 43 0.0  
 44 5.0  
 L. P. P.

Sept. 17, 1904 (Saturday)

Bd 236  
 > 10 08.5  
 11 08.7

B 394  
 > 10 00  
 11 00

7 12 C watch > 2 fast of B 394

As the 5" could not be moved in Dec,  
 and binding screw could not be loosened easily,  
 spent some little time trying to fix it. The  
 telescope so that it would move in Dec.

This could, however, not be easily and safely  
 be done to night, so concluded to wait  
 until Monday and have it remedied by  
 day daylight and with better appliances.

S 50.0 Adjusted pencils of Phot. 7.

S. Scute

W. L. b.  
 Phot. 7.

18 42 - S. 1

21 02

2 20

9.5 cap

18 38 - S. 1

9 17 29.5

18 22.0

Sept. 17, 1904.

above

St. Pauli

As water used tonight

$$\begin{array}{r}
 20.4 < \text{Vardis} \\
 9 \ 25.0 \ 80.8 \\
 194.3 \\
 276.0 \\
 60.4 \\
 71.7 \\
 \hline
 132.1 - 0.94
 \end{array}$$

$$\begin{array}{r}
 15.4 \\
 87.9 \\
 200.3 \\
 257.8 \\
 72.5 - 0.96 \\
 57.5 \\
 \hline
 130.0 - 0.98
 \end{array}$$

Below

Mean = -1.06

$$\begin{array}{r}
 293.2 \\
 346.1 \\
 106.9 \\
 175.3 \\
 52.9 \\
 68.4 \\
 \hline
 121.3 - 1.16
 \end{array}$$

$$\begin{array}{r}
 286.3 \\
 9 \ 31.0 \ 352.7 \\
 9 \ 28.0 \ 113.4 \\
 14 \ 27.99 \ 168.3 \\
 674.1 \\
 66.4 \\
 54.9 \\
 \hline
 121.3 - 1.16
 \end{array}$$



Sept. 17, 1904.

Below

9 330 295.0  
 346.9  
 106.2  
 1477.4

51.9 ✓  
 71.2 ✓  
 123.1 - 1.13

284.4  
 357.9  
 113.4  
 169.4

73.5 - 1.06  
 55.7 ✓  
 129.2 - 1.00

Above

Mean = -1.01

203.2  
 259.1  
 14.2  
 84.0

55.9 ✓  
 72.8 ✓  
 128.7 - 1.01

9 37.8 198.6  
 266.4  
 19.8  
 9 35.4 80.0

72.8 - 0.96  
 60.2 ✓  
 133.0 - 0.92

14 353 9.2  
 6741.

Pa. = 285.0 Var B  
 Ha. = +2.57 West  
 Dec. = -8.4 South  
 S.T. = 21.42  
 Sp Wh. = -1.5 a  
 -0.5 B  
 +0.1 C

Sept. 17, 1904

Note: - The moon which is a little past the quarter is not very far distant, so that the field is rather bright. This object was measured tonight ~~as~~ not merely as a duplicate observation but also to see what effect the field considerably illuminated by moonlight ~~also~~ would have on the observation. The variable is somewhat red but redness not particularly apparent with 9" cap on telescope. The observation tonight is identical with that of Sept 10<sup>th</sup> when there was no moonlight; it would therefore seem that the moonlight has no effect on the measurement of the star.

945

T Lyrae Webb  
Phot T.

18	32	+38.6	9" cap.
21	52		
<hr/>		3 20	

(over)

Sept. 17, 1904

C's watch used

T Lyrae

see previous page

Above

10 5.2

95.2 < comp \* dis  
 189.2  
 282.9  
 358.8  
 94.0  
 75.9  
 169.9 + 0.19

101.7  
 182.0  
 282.5  
 366.4

80.3 + 0.13

95.9  
 176.2 + 0.07

Below

mean = +0.06

0.5

99.0  
 191.8  
 269.9

94.5  
 176.1  
 176.6 + 0.06

10 12.0

9.2

99.4  
 181.8

83.5 + 0.00

15 8.59.2  
 6741

281.2

99.4  
 182.9  
 177.1 - 0.05

P.A. 179.8 Vert B  
 H.A. 3:48 West  
 Dec. +36.4 North  
 S.T. 22:16  
 Sph. -35.5  
 -2.5  
 -1.9



Sept. 17, 1904.

O CetoW. C. B.  
Photo W

26 12 - 3.6

22 42

3 30

A 30

OS watch used.

Right

10 52.0 59.7 < Vardis  
139.9 80.2 v  
227.9 102.1 v  
330.0 182.3 v

177.7 v

+ 0.04 v

49.9  
146.8  
235.6

317.1

Left

324.8

49.9

141.2

240.6

82.1 v

99.4 v

181.5 v179.5 v

+ 0.01 v

Mean = + 0.04 v

320.3

10 57.6 62.3

10 54.0 147.0

15 54.7 231.7

67.4 v

102.0 v

84.7 v

186.7 v173.3 v

+ 0.07 v

+ 0.13 v

Sept. 17, 190K  
Same Char

Left

10 59.2	327.5	85.0 <sub>v</sub>	
	52.5	1000 <sub>v</sub>	
	138.8	1250 <sub>v</sub>	
	238.8	1750 <sub>v</sub>	+ 0.09 <sub>v</sub>
	319.4		
	61.3	101.9 <sub>v</sub>	+ 0.06 <sub>v</sub>
	148.8	79.7 <sub>v</sub>	
	228.5	181.6 <sub>v</sub>	+ 0.03 <sub>v</sub>
		178.4 <sub>v</sub>	

Right

241.0			
316.9	75.9 <sub>v</sub>		
49.9	99.3 <sub>v</sub>		
149.2	175.2 <sub>v</sub>	- 0.09 <sub>v</sub>	

mean = - 0.02<sub>v</sub>

11 05.0	229.2	
	328.6	
11 02.1	59.4	
16 02.09 <sub>h</sub>	136.9	
6741.		

97.4 <sub>v</sub>	- 0.09 <sub>v</sub>
77.5 <sub>v</sub>	
174.9 <sub>v</sub>	- 0.09 <sub>v</sub>

~~PO~~

H.A. 3.03 East  
Dec. 3.4 South  
S.T. 23.09

throughly  
identified  
L.P.P.

Sept. 19. 1904 (Clear Day).

Epts. w/ly + adjustment of Ess. Read's photometer.  
Clouds coming. W. obs.

7 10

7 20

All cloudy.  
Some clearer. Adjustment of photometer.

$$\begin{array}{r} \text{Double Star } 21^h 6^m + 22.1 \\ E 2769 = 21 \ 6 \ + 22.1 \quad \text{Phot. R. L. obs.} \\ \quad 20 \ 20 \\ \hline \quad - 0 \ 46 \end{array}$$

Pos. Aug.  $305^\circ$  Dist.  $12''$  mag. 6.4, 7.4  
Index right + above.

$$\begin{array}{r} 270.0 \\ 337.2 \\ 24.2 \\ 156.0 \\ \hline 67.2 \checkmark \\ 71.2 \checkmark \\ 139.6 \checkmark \end{array} \quad 0.72 \checkmark$$

$$\begin{array}{r} 271.1 \\ 335.5 \\ 93.2 \\ 157.0 \\ \hline 64.4 \checkmark \\ 63.2 \checkmark \\ 122.2 \checkmark \end{array} \quad 0.90 \checkmark \quad 1.02 \checkmark$$

Index left & below.

$$\begin{array}{r} 6.5 \\ 62.4 \\ 141.5 \\ 242.0 \\ \hline 55.9 \checkmark \\ 66.5 \checkmark \\ 122.4 \checkmark \end{array} \quad 1.14 \checkmark$$



Sept. 19. 190K.

2  $\sqrt{\sqrt{}}$ 

$$\begin{array}{r}
 35K.1 \\
 62.2 \\
 121.2 \\
 245.0 \\
 \hline
 1319
 \end{array}
 \begin{array}{r}
 64.1^{\vee} \\
 63.2^{\vee} \\
 1319^{\vee}
 \end{array}
 \begin{array}{r}
 1.04^{\vee} \\
 0.94^{\vee} \\
 \text{mean } 0.97^{\vee}
 \end{array}$$

Double Star

22 21 -17.2 Phot. R. W. obs.

Clouds.

Pos. Aug. 310° Dist. 10" mag. 6.5, 6.2

22 21 -17.2 " "

$$\begin{array}{r}
 21 \quad 25 \\
 \hline
 -0 \quad 56
 \end{array}$$

Index left + above B

$$\begin{array}{r}
 161.0 \\
 245.2 \\
 \hline
 406.2
 \end{array}
 \begin{array}{r}
 24.2^{\vee} \\
 25.0^{\vee} \\
 \hline
 49.2^{\vee}
 \end{array}
 \begin{array}{r}
 \text{Pole dis.} \\
 0.20^{\vee}
 \end{array}$$

9  $2\sqrt{\sqrt{}}$ 

$$\begin{array}{r}
 164.4 \\
 250.2 \\
 339.9 \\
 67.5 \\
 \hline
 173.4
 \end{array}
 \begin{array}{r}
 45.2^{\vee} \\
 27.6^{\vee} \\
 173.4^{\vee}
 \end{array}
 \begin{array}{r}
 0.16^{\vee} \\
 0.13^{\vee}
 \end{array}$$

Sept. 19. 1904.  
Index right & below. A.

$$\begin{array}{r} 2.5 \text{ } 4.2 \\ 33 \text{ } 7.5 \quad A2.7'' \\ 7.5 \text{ } 5.5 \quad A1.5'' \\ 1.5 \text{ } 7.0 \quad \underline{16.2''} \quad 0.30'' \end{array}$$

$$\begin{array}{r} 2.5 \text{ } 2.0 \\ 33 \text{ } 6.7 \quad A2.7'' \\ 7.5 \text{ } 2.2 \quad A1.4'' \\ 1.5 \text{ } 6.6 \quad \underline{16.1''} \quad 0.26'' \end{array}$$

$$\text{mean} = 0.22''$$

Somewhat troubled by clouds in above measurement.

Experiments with Mr. Reed's photometer again.

Double Star

Phot. R. G. obs.

$$\begin{array}{r} 20 \text{ } 24 \quad -1.29 \\ 22 \text{ } 50 \\ \hline +2 \text{ } 26 \end{array}$$

Region rather too low with the present atmospheric conditions.

L. P. K.



Sept. 21, 1904 (Wednesday)

7 05 As noted = 6<sup>2</sup> slow of 13394

$\begin{array}{r} \text{\$ 2745} \\ 20 \ 59 \\ \underline{19 \ 49} \\ 1 \ 10 \\ \underline{10 \ 50} \end{array}$

webs  
 Plot R  
 Pa 190°  
 Dist 4"  
 Magn 6  
       7.5

7 40 Clouds thick in this region  
double gone

at 7:53:30 (Correcting) while W.  
 was in the above <sup>W</sup> heard a noise  
 which very much resembled a heavy  
 explosion. There is nothing how-  
 ever to be seen either from the East  
 or West Balconies as a result of  
 an explosion. Campbell also heard  
 a noise somewhat similar to  
 that described above at the same time

7 55 Clouds still thick in this region  
and overspreading most of the sky but  
with varying density.



Sept. 21, 1904.

Left

$\phi$  14.0  
 177.2 < br. dis  
 233.6  
 5.8  
 50.4  
 5-6.4  
 45.0  
 101.4 - 1.62

182.7  
 228.8 clouds  
 357.2 clouds thick  
 62.2  
 46.1 - 1.50  
 65.0  
 111.1 - 1.39

Right

Mean = - 1.45

85.2  
 149.0  
 271.8  
 324.3  
 63.8  
 52.5  
 116.3 \* - 1.27

$\phi$  33.0  
 $\phi$  23.5  
 13 23.6  
 96.4  
 143.6  
 264.4  
 322.4  
 47.2  
 57.6  
 104.8 \* - 1.54  
 - 1.40

$\phi$  39 Clouds open

Meas. of preceding double very difficult  
 very strong and gusty N.W. wind.  
 The Barometer is high and the seeing  
 is very bad. It is only at very rare

Sept 21, 1904

intervals that observer can see the companion separated even fairly well from primary and then only for a moment. Settings however made as carefully as possible under the circumstances. The double bring a close one the images run together and overlap most of the time.

Double 21 57 -17.4  
 21 57 -17.4 with  
 21 17 Phot P.  
 0 40 Pa 250°  
 11 20 Dist 6"  
 Magn 7.0-7.1

The two components are nearly equal in brightness but fol. to N. one assumed to be very slightly the brighter.

see next page.



Sept 21, 1904.

Right of Below

342.4<sup>0</sup> f. 0 N. 06. dis

9 f. 0

$$\begin{array}{r} 73.5 \\ 165.8 \\ \hline 249.2 \end{array}$$

$$\begin{array}{r} 91.5 \\ 83.4 \\ \hline 174.9 \end{array} - * 0.09$$

$$\begin{array}{r} 341.4 \\ 73.2 \\ 159.2 \\ \hline 252.0 \end{array}$$

$$\begin{array}{r} 86.8 \\ 92.8 \\ \hline 179.6 \end{array} - * 0.10$$

clouds

Left of Below

Mean = \* + 0.06

$$\begin{array}{r} 249.2 \\ 341.2 \\ 64.7 \\ \hline 163.6 \end{array}$$

$$\begin{array}{r} 92.0 \\ 98.9 \\ \hline 190.9 \\ 160.1 \end{array} + 0.38$$

246.4

clouds thick.

+ 0.22

9 300

343.3

9 19.0

172.0

14 19.1

165.8

6745

167.8

9 44.0

$$\begin{array}{r} 251.6 \\ 338.8 \\ \hline 70.7 \end{array}$$

$$\begin{array}{r} 87.2 \\ 93.9 \\ \hline 181.1 \\ 178.9 \end{array}$$

$$\begin{array}{r} 182.7 \\ 177.3 \\ \hline 177.3 \end{array} + 0.05$$

$$\begin{array}{r} 70.7 \\ 164.6 \end{array}$$

B

+ 0.02

9 44.0

$$\begin{array}{r} 244.3 \\ 342.1 \\ 40.8 \\ \hline 160.0 \end{array}$$

$$\begin{array}{r} 98.4 \\ 89.2 \\ \hline 187.6 \\ 172.4 \end{array}$$

+ 0.08

$$\frac{172.4}{8} \text{ over } + 0.13 \text{ Mean } * 0.05$$



ROTB. Sept. 21, 1904.

9 48.0	162.8	89.2	
	252.0	92.3	
	339.9	181.5	+ 0.03
	72.2	178.5	
	1591		
9 50.6	252.6	93.5	
23.6	334.2	89.2	+ 0.04
9 45.9	71.4	182.7	
14 46.0		177.3	+ 0.05

6445.

Reject first group on this double.  
In first group troubled a good deal  
by clouds and very bad seeing as  
well as very high & gusty wind. As  
~~and~~ sky became clear, and wind  
much less violent and seeing considerably  
better this double was remeasured. ~~Altho~~  
images were somewhat blurry at times  
yet the conditions were very much  
better than in the first group.

Double 23 49.2 - 27 36

23 49 - 27.6

22 35

1 14

10 46

Wells

Photo

~~RA~~  
~~Dec~~  
Dec 1

Sept 21, 1904

Pa 270° Dist 87" Magn 6.4 - 4.73

Above  $\angle$  fol & br. dis

10	31.2	322.7	75.9 ✓	
		38.6	79.3 ✓	
		142.1	<u>155.2</u> ✓	- 0.47.
		226.4		

	323.3			- 0.46.
	41.2	77.9 ✓		
	141.5	78.2 ✓	- 0.46.	
	219.7	<u>156.1</u> ✓		

Below B.

Mean = -0.34

	230.1			
	313.4	83.0 ✓		
	511.0	81.5 ✓		
	132.5	<u>164.5</u> ✓	- 0.29.	

	229.6			- 0.30.
10	41.0	314.1	84.5 ✓	
10	36.1	52.0	79.2 ✓	
15	36.2	121.2	<u>163.7</u> ✓	- 0.31.
	6874.5			

In meas of first two doubles tonight power of about 250 used, partly because components were so close together that it was needed in order to separate them sufficiently. In meas of the last double power 185 used, thus being the



Sept. 21, 1904.

power. ordinarily used on Phot R.

In meas. on last double, the  
images were ~~stretched~~ & seems better  
than in the case of the two preceding.

1150 This was due to the fact that the sky  
was perfectly clear, that the wind  
had nearly died out and also a  
lower power could be used since  
the stars were a little farther apart.

L. J. D.



Sept 22, 1904 (Thursday)

Cs watch 30 sec slow of B 394

Double 20 59 - 6 13

21 00 - 6.2

19 40

1 20

10 40

PA 190°

Dist 4"

Magn 6 or 7.5

Web  
Photo R

Cs watch used tonight for times

Labour

260.4 < b. obs

7 32.0 325.4

57.3v

92.8

49.8v

142.6

107.1v - 1.49v

272.6

323.1

49.5v - 1.47v

86.6

59.2v

145.8

108.7v - 1.45v

R & B

142.1

mean = - 1.40v

254.5

63.4v

354.8

55.0v

52.8

118.4v - 1.23v

146.9

1.34v

7 44.0 229.2

52.3v

7 38.0 358.8

57.5v

12 38.5 56.3

109.8v - 1.45v

Seeing tonight better than last night in connection with meas. of this double. In first two

Sept. 22, 1904  
 setts of tonight, images clearly  
 separated; after reversal of Photom  
 seeing became a little ~~more~~ blurry  
 growing better however towards the  
 end. The measures made tonight  
 under pretty good circumstances confirm  
 the meas. of last made under poorer  
 circumstances. 1

 $\Sigma$  3050

Wells

Phot T

2 3 54 + 33.2

20 28 PA. 200°

3 26 Dist - 3'

8 34 Magns. 6.0 - 6.2

Rt Below B. &lt; br. dis.

856.0 343.2

676

162.4

249.2

342.2

67.2

163.8

249.0

Lt Above

251.5

338.7

42.5

161.3

250.8

339.8

70.7

158.3

844v

86.8v

171.2v

85.0v

85.2v

170.2v

87.2v

88.8v

176.0v

89.0v

87.6v

176.6v

- 0.17v

- 0.18v

- 0.19v

Mean = - 0.12v

- 0.08v

- 0.07v

- 0.06v

9 07.0

12.30

8 01.5

14 2.0



Sept. 22, 1904.

~~Due~~ Before measures were actually attempted the seeing was extremely bad, but upon waiting for a short time it improved. When measures were actually made the seeing was ~~fairly~~ <sup>fairly</sup> good, altho not perfect by any means. Altitude high, settings made with all possible care and very slowly.

Double 21 57 -17 27

21 57 -17.4

21 57

Pa. 25° 0'

Dist 6"

Magn. 7.0 - 7.1

The two stars seem to be equal in brightness in ordinary eyepiece. Sometimes one thought to be ~~than~~ the brighter & then in turn the other, but will assume that the fol. component is brighter as was assumed last night.

Over for measures



Sept 22, 1904

21 57 - 17.4

A.

Right Above fol &amp; slightly to dis.

158.2

9 49.9

249.8

341.7

66.1

91.6<sup>v</sup>84.4<sup>v</sup>176.0<sup>v</sup> - 0.08<sup>v</sup>

162.2

248.8

3129.3

70.9

86.6<sup>v</sup>- 0.06<sup>v</sup>91.6<sup>v</sup>178.2<sup>v</sup> - 0.03<sup>v</sup>Left & Above B. mean = -0.03<sup>v</sup>

74.4

160.6

248.5

343.2

86.2<sup>v</sup>94.7<sup>v</sup>180.9<sup>v</sup>179.1<sup>v</sup> + 0.02<sup>v</sup>

70.8

10 01.4

162.6

110.4

251.2

9 55.2

338.0

14 55.7

91.8<sup>v</sup>0.00<sup>v</sup>86.8<sup>v</sup>178.6<sup>v</sup> - 0.03<sup>v</sup>

Sept. 22, 1904.

Double 23 49.2 - 27 36

Week  
Plot R.

$$\begin{array}{r} 2350 \\ 2235 \\ \hline \end{array}$$

$$\begin{array}{r} 115 \\ 1040 \\ \hline \end{array}$$

-27.6

Pa. 270"

Dist 7"

Magne 6.7 - 7.3.

Left Polar <sup>13</sup>  $\angle$  fil & br. obs

(0 31.0

$$\begin{array}{r} 1479 \\ 226.9 \\ 324.5 \\ 49.2 \end{array}$$

$$\begin{array}{r} 790 \\ 81.7 \\ \hline 160.7 \end{array} - 0.37$$

1461

228.5

326.7

49.3

R.D.A. A.

59.6

137.6

241.7

318.7

824.

82.6.

165.0.

0.33.

0.29.

Mean = 0.40.

780.

77.0.

153.0.

0.48.

60.0

1043.0

1032.0

1537.0

138.3

242.1

321.3

783.

792.

157.5

0.46.

0.43.

On obs. of the last double seen most  
of the time fairly good. In observations



Sept. 22, 1904

On last double power of 135  
used this being the power usually  
used with Phot. R. In the  
~~presenting~~ observations on the other  
doubles measured tonight power  
of about 250 used as these  
doubles were so close that the  
ordinary power could not be used.

D.P.



Sept. 23, 1904 (Friday)

30 Cs watch 3<sup>rd</sup> fast of B394.  
30 Clear. some.

Cs watch used tonight.

Double

$\Sigma 305.0$

W. Ob.  
Plot R.

23 54 + 33.2

20 05

P.A. =  $200^\circ$

3 49

Dist = 3'

8 11

Magns. =  $\begin{cases} 6.0 \\ 6.2 \end{cases}$

L. Below

254.6

7 57.8 339.3

74.5

160.1

248.2

340.0

70.8

161.9

R. Above

159.9

250.0

341.3

69.2

164.8

8 03.0

253.8

344.6

70.9

N. Ob. dis. 84.4<sub>v</sub>  
85.6<sub>v</sub>

170.3<sub>v</sub> - 0.18<sub>v</sub>

91.8<sub>v</sub>

- 0.06<sub>v</sub>

91.1<sub>v</sub>

182.9<sub>v</sub>

+ 0.05<sub>v</sub>

177.1<sub>v</sub>

Mean = - 0.06<sub>v</sub>

90.1<sub>v</sub>

87.9<sub>v</sub>

178.0

- 0.04<sub>v</sub>

- 0.06<sub>v</sub>

89.0<sub>v</sub>

86.3<sub>v</sub>

175.3<sub>v</sub>

- 0.09<sub>v</sub>

(over)

Sept. 23, 1904

meas. of double made through some light cloud. Moon nearly at the full. Seeing fairly good. The images of the stars tonight altho not perfectly round all the time but a little fuzzy, yet were pretty good. The components of the double were distinctly separated from each other. Measures considered very good indeed. The result of last night agrees very closely with that of tonight. However the seeing of tonight is a little better than that of last night when the double. Shortly after finish, the above measures the clouds became more massing again and began to cover in one broad sweep across the sky.

8 15

Clouds now coming thick

8 40

Clouds thick everywhere & entirely covering the sky. Double par. meas. not visible in large telescopes. Moon also quite dim. Apparently no chance for anything further

Sept. 26. 190K. (Monday).

Exp. Leavitt's stars Algol Variables &  
 L. obs. Phot. T.

$$\begin{array}{r} 18 \quad 9 \quad -15.5 \\ 22 \quad 25 \\ \hline +4 \quad 16 \end{array}$$

$$\begin{array}{r} 18 \quad 9 \\ 22 \quad 36 \\ \hline +4 \quad 27 \end{array}$$

$$\begin{array}{r} 18 \quad 9 \\ 22 \quad 56 \\ \hline 4 \quad 47 \end{array}$$

Region low, telescope fully horizontal  
 no stars visible either in finder or  
 large telescope. Moon bright and near  
 the full, cleared suddenly but  
 considerable fog remaining in the air  
 causing a glare from the moonlight  
 shining on it.

+ Cygni webs.  
 Phot T.

$$\begin{array}{r} 20 \quad 41 \quad +33.8 \\ 23 \quad 11 \\ \hline 2 \quad 30 \end{array}$$

C watch used = P<sup>2</sup> slow.

(over)



Sept. 26, 1904

T Agui

Above

var.

< ~~var.~~ & dis.

I

10 44.0

112.6

143.2

293.5

320.3

30.6 ✓

26.8 ✓

57.4

- 296

114.8

141.2

291.8

322.8

26.4 ✓

31.0 ✓

57.4

- 296

- 296

Below

Mean = - 2.92

22.9

54.1

204.2

231.2

31.2 ✓

27.0 ✓

58.2

- 293

24.8

10 50.8

52.2

94.8

201.5

10 47.4

235.0

15 47.5 ✓

27.4 ✓

33.5 ✓

60.9

- 288

- 283

Sept. 26, 1904

II

Below

10 53.8  
~~55.0~~21.7  
55.0  
204.2  
232.8

33.3 ✓

28.6 ✓  
61.9 - 2.79

1/2 wt.

23.4

- 2.80

51.9

28.5 ✓

201.8

32.5 ✓

234.3

61.0 - 2.82

Above

Mean = - 2.80

291.8

324.2

32.4 ✓

113.6

28.5 ✓

142.1

60.9 - 2.83

292.4

321.5

11 01.0

11 x.8

110.6

10 57.4

145.2

10 57.5 ✓

27.8 ✓ - 2.80

34.6 ✓

62.4 - 2.77

Sept. 26, 1905

Above

114

11 04.8 291.8  
324.5  
114.9  
141.9

32.7  
27.0  
59.7 - 2.87

294.3  
321.1  
112.0  
144.9

26.8 - 2.87  
32.9  
59.7 - 2.87

Below

Mean = -2.85

201.7  
235.0  
24.1  
~~44~~ 51.7

33.3  
27.6  
60.9 - 2.83

11 10.0 205.0  
231.8  
11 7.4 20.8  
16 7.5 54.8  
6750

26.8 - 2.83  
34.0  
60.8 - 2.83

Unweighted mean = -2.87

P.A. 8.5 Vort B  
H.A. + 3.05 West  
Dec. + 33.6 North  
S.T. 23.49  
Sp. vel. 3.5 dB  
-2.5 C



Sept. 26, 1904.

Night rather poor; cleared suddenly.  
In first group sky fairly clear, in  
last group nearly as clear as in first  
group. Troubled by clouds in the  
second group. The atmospheric conditions  
best poorest in second group.

11 15

Second group  $\frac{1}{2}$  bright.

L. P. P.

Sept 27, 1904 (Tuesday)  
 B236  
 7 06 56.5  
 07 56.8  
 B394  
 7 07 00  
 08 00

7 09 CS watch 36<sup>2</sup> slow of B394  
 Miss Leavitts Var (Algol) =  
 $-15^{\circ}49'05''(9.5)$   
 18 12 - 15.8  
 $\begin{array}{r} 20 \ 00 \\ \hline 1 \ 48 \end{array}$

7 28 37  
 29 25

7 32 19.0  
 33 45.0

Comp. star =  $-15^{\circ}49'08''(9.0)$

B.236 used on this Var. for  
 times.

see next page for meas.

Sept 27, 1904.

Above

$$\begin{array}{r}
 1.6 \quad \text{comp \& dis} \\
 74110 \quad 72.1 \\
 175.6 \\
 264.2 \\
 \hline
 159.1 \quad + 0.40
 \end{array}$$

$$\begin{array}{r}
 351.7 \\
 4345 \quad 83.1 \\
 186.3 \quad \text{clouds} \\
 257.7 \\
 \hline
 91.4 \\
 65.4 \\
 156.8 \quad + 0.44
 \end{array}
 \quad (+ 0.42)$$

Below

$$\begin{array}{r}
 275.0 \\
 4644 \quad 339.4 \\
 88.3 \\
 173.1 \\
 \hline
 64.4 \\
 91.8 \\
 156.2 \quad + 0.45
 \end{array}
 \quad \text{Mean} = + 0.47$$

$$\begin{array}{r}
 276.8 \\
 74843 \quad 340.8 \\
 2022 \quad 85.3 \\
 745 \quad 170.6 \\
 8124503 \quad \text{2 m. Clouds} \\
 \hline
 64.0 \\
 85.3 \\
 149.3 \quad + 0.59
 \end{array}
 \quad (+ 0.52)$$

6751



Sept. 27, 1904

11

Below

29435

7 51 28 3.52.0

94. #3

162, A

Sp. 5

6 p. 5-

1570 40.44

2748

53 45- 341.2

DLF

171. (3)

66.4 + 0.48

86.5-

$$152.9 + 0.52$$

Howe

174. 7

545 53 174.7  
261.7

166

73.0

A 7.0.

4. 4

$158:4 + 0.4!$

1830

7040

7 58 14 252.6

696.

353.1

89.5

19	23	003.1
514	51	82.6

159.1 → 0.40

5 - 4

$\overline{12\ 54\ 47} \quad P.A. = 338.0 \text{ Var } B$   
 $140 = 3:33 \text{ 11.1}$

$\lambda_a = 2.33 \text{ \AA}$

Dec. 7, -15.9 south

0.1 p. wt. = 1.50  
= 0.50

$$S.T. = 20.44$$

Sept. 27, 1904

Note: - <sup>some</sup> troubled by broken floating clouds during measurements. These clouds however were not very dense & did not have hard sharp edges. Greatest care exercised in the measurements, and observations considered good.

R. S. Capron W. C. L.

210116

20 54

- 17.8

21 28

0 30

S 54 15.5 Var

55 15.0 Comp X

As watch used on this variable

Above

174.8 Comp X obs

262.5

87.7

0.0

74.6

144.6

162.3

+ 0.34

180.2

256.6

74.4

+ 0.32

352.3

89.5

81.8

163.9

+ 0.30

Below

95.0

mean = + 0.45

162.8

67.8

268.3

83.2

351.5

151.0

+ 0.56

86.0

1870.0

84.0

+ 0.58

276.4

65.0

341.4

149.0

+ 0.59

9 07.0

9 3.6

144.2 9.44



Sept. 27, 1904

II

Below

9 09.0

94.4  
163.8  
266.0  
348.8

69.4 ✓  
82.8 ✓  
152.2 + 0.52 ✓

86.1  
171.2  
276.3  
342.1

85.1 ✓ + 0.54 ✓  
65.8  
150.9 + 0.56 ✓

Above

Mean = +0.45

3.4  
74.0  
174.6  
263.2

70.6 ✓  
88.6 ✓  
159.2 ✓ + 0.40 ✓

9 15.0

352.8  
82.2  
182.1

89.4 ✓ + 0.36 ✓  
73.3

9 12.0

255.4

162.7 + 0.33 ✓

14 12.6

PA = 329.0 Ver K  
ST = 21.5 f  
Ha = 0.56 West  
Dec = -17.2 South  
Spkrtf = 45.2  
          = 35.3  
          = 2.8



Sept 27, 1904

9 55 Clouds. Sky quite cloudy

044068 — Camelop. Webb  
Phot.~~044~~

2A 40 + 600

22 50

5 506 10

9 5 cap

As Watch used

10 15 Still cloudy in this region.  
Late

10 20, 2 7.6 &lt; Comp Ache

70.2

182.0

252.0~~35~~ 2.2

74.1

184.2

248.1

RTB

271.1

346.5

96.7

156.2

276.6

339.2

88.8

165.0

62.6

71.0

133.6

+ 0.90

71.9

69.9

132.8

+ 0.91

+ 0.92

Mean = + 0.88

74.7

59.5

134.2

+ 0.89

+ 0.84

62.6

76.2

138.8

+ 0.80

over

10 26.2

15 23.2

18 23.2

Sept 27, 1904

$$Pa = 261.0$$

$$Na = 5.32$$

$$ST = 23.10$$

$$Dec. = +68.2$$

$$Sp. wh. = -1.5 B$$

$$-0.5 C$$

214058 Cepheid

Observed 21 39 +58.1 Wols  
 23 19 Plot I  
 9.5 cap.

199.2

235.9 &lt; Varchis

18.2

54.6

199.4

238.6

17.2

56.2

104.1

152.3

286.0

300.4

105.2

152.6

282.8

332.6

50.1 8 m T

38.7

36.4

75.1

39.2

39.0

78.2

48.1

44.4

92.5

47.4

49.8

97.2

C. watch used

- 2.35

- 2.30

- 2.25

mean = - 2.04

- 1.85

- 1.79

- 1.73



Sept 27, 1904

$$\begin{aligned}
 \rho\alpha &= 177.5 \text{ Ver } B \\
 \text{HA} &= 11.58 \text{ West} \\
 \text{N.T.} &= 23.37 \\
 \text{Dec.} &= +58.3 \text{ North} \\
 \text{Sp. W.} &= \begin{cases} -6.5 B \\ -5.5 C \end{cases}
 \end{aligned}$$

1105

In above measures on  $\mu$  after ~~troubled~~ altitude pretty high. The images not the very best. This is partly due to the character of the night as well as the wide separation in the sky of the stars measured. The difference between notes A & B is undoubtedly partly due to the fact that the <sup>accuracy of the</sup> images is not quite as good after reversal as before reversal in the case of the variable, <sup>especially</sup> which is pretty bright. It can however be adjusted as closely as possible.

1108

~~Delayed~~  
troubled more or less by floating clouds especially the latter part of the evening

B 236

11 09 380

B 394

11 09 00

L.P.P.



Sept. 28, 1904 (Wednesday)

B 236  
6 47 49.0  
48 48.8

B 394  
6 48 00  
49 00

6 50

is watch 4<sup>th</sup> slow of B 394

Algol Var - 15.4905 (9.5)

18 12 -15.8  
19 42  
1 30

WOB  
Photo 1

B 236 used on this Algol Var.  
L 00.

7 06 00 4.4 < comp \* dis

66.4 ✓

80.5 ✓

146.9 ✓

+ 0.64

84.1 ✓

+ 0.60

66.3 ✓

150.4 + 0.57

Mean = + 0.66

59.8 ✓

81.1 ✓

140.9 ✓

+ 0.76

48.8 ✓

64.9 ✓

143.7 ✓

+ 0.73

+ 0.70

08 34 80.0

178.1

285.6

355.9

80.0

186.2

252.5

289.0

339.8

86.3

167.4

268.2

347.0

93.8

158.7

09 12

09 35

09 42

09 42

09 42

09 42

09 42

Sept. 20, 1904

ROV3

278.8

7 1437

338.8

87.9

164.4

60.0<sup>v</sup>76.5<sup>v</sup>136.5<sup>v</sup>+0.84<sup>v</sup>

274.3

1624

346.6

97.8

158.6

75.3<sup>v</sup>60.8<sup>v</sup>136.1<sup>v</sup>+0.84<sup>v</sup>+0.85<sup>v</sup>

L80.

#.

185.4

20 14

249.3

359.1

78.0

63.6<sup>v</sup>78.9<sup>v</sup>142.5<sup>v</sup>+0.72<sup>v</sup>

179.2

7 2246

258.7

74.01

5.8

7 1830

69.6

12 1836<sup>v</sup>79.5<sup>v</sup>63.8<sup>v</sup>143.3<sup>v</sup>+0.71<sup>v</sup>+0.72<sup>v</sup>



Sept. 28, 1904

III

LCC

7 31 00 186.4  
248.2  
357.4  
77.8

61.8<sup>✓</sup>  
80.4<sup>✓</sup>  
142.2 +0.73<sup>✓</sup>

33 10 177.8  
258.4  
87.2  
70.5

80.6<sup>✓</sup>  
63.3<sup>✓</sup>  
143.9 +0.70<sup>✓</sup>

+0.72<sup>✓</sup>

RTB

36 25 98.0  
154.1  
268.3  
343.6

59.1<sup>✓</sup>  
77.3<sup>✓</sup>  
136.4 +0.85<sup>✓</sup>

+0.82<sup>✓</sup>

7 38 28 174  
164.9  
19 03 278.2  
7 34 46 337.6  
12 34 49<sup>✓</sup>

80.5<sup>✓</sup>  
59.4<sup>✓</sup>  
139.9 +0.78<sup>✓</sup>

98.8



Sept. 28, 1904

IV

Rd.

~~24725~~  
~~74922~~  
~~75038~~  
~~26.9~~  
~~94.8~~  
~~15~~  
~~210.5~~  
~~267.1~~  
~~18.5~~  
~~96.5~~

56.6  
 78.0  
 134.6 + 0.88

5318  
 201.0  
 276.2  
 29.2  
 88.8

+ 0.88  
 75.2  
 59.6  
 134.8 + 0.88

Rd.  
 117.0  
 56 10 178.8  
 286.4  
 367.9

61.8  
 81.5  
 143.3 + 0.70

Mean = + 0.82

108.6  
 187.0  
 298.1  
 7 58 31 358.26

+ 0.70  
 78.4  
 60.5  
 138.9 + 0.80

18 37  
 7 54 39  
 5 0  
 12 56 39

Sept. 28, 1904

Lga.

V

~~8 04 20~~ ~~176.1~~ clouds

~~8 09 14~~ ~~368.2~~ ~~167.8~~  
 8 12 24 184.1  
 248.6  
367.7

108.9

8 15 13 184.5

296.5

360.0

KOD

18 42 28.5  
 86.3

202.5

275.6

8 22 41 96.4 clouds.

29 00 209.3

8 17 15 267.9

5 - 4

13 17 11

~~8 04 20~~ ~~176.1~~  
 86.3  
79.1  
 145.4 + 0.67 ✓  
 78.61 + 0.70 ✓  
63.5  
 142.1 + 0.73 ✓

Mean = +0.78 ✓

57.8  
73.1  
 130.9 + 0.96 ✓

8 15.3 clouds, stars nearly gone +0.87 ✓

81.1

58.6

139.7 + 0.722 ✓

Sept. 28 190K

VI

RTB

27.0  
 34 20 89.3  
 200.2 Clouds  
 275.4

62.3  
 75.2  
 137.5 - + 0.82

20.0  
 39 55 95.0  
 207.7  
 268.2

75.0 + 0.84  
 60.3  
 135.3 - + 0.87

Lt. C.

296.6  
 44 50 358.7  
 108.4  
 188.6

62.1  
 80.2  
 142.3 - + 0.73

Mean = +0.79

287.4  
 48 20 367.2  
 7 25 114.1

79.8 + 0.74  
 62.1  
 141.9 - + 0.75

41 51 179.2  
 5 - 4  
 13 41 43

8 50 Clouds



Sept. 28, 1908

VII

L &amp; A.

$$P.A. = 336.5 \text{ Ver B}$$

$$H.A. = 3.57$$

$$Dec. = -16.0$$

$$S.T. = 22.10$$

$$Sp. Wh. = \begin{cases} -1.5 & A \\ -0.5 & B \\ +0.1 & C \end{cases}$$

Troubled more or less throughout preceding observations by light cloud, especially in this section of the sky. As far as known the ~~first~~ sky was somewhat clearer in this region in the earlier observations than in the latter. ~~However~~ In the latter part, clouds became more definitely troublesome, but from the extreme care used throughout, the slowness with which the settings were made as well as the accordance of the individual results, the observations are considered to be good. The intelligent pencils gave some trouble, but great care was exercised in this respect. Moon rose during observations. Moon 4 days past the full.

Sept. 28, 1904

Doubtful Var  $+28.0707$ 

28 39 + 29.0

Webb  
Plott.

23 09

5 30

6 30

CS watch used.

Above

26.2

10 42.4

#91.0

200.0

273.4

&lt; comp \* dis.

64.8

73.4

138.2

+ 0.81

19.2

96.4

207.2

268.4

Below

298.6

354.3

108.8

187.4

77.5

61.2

138.7

+ 0.80

Mean = + 0.80

58.7

78.6

137.3

+ 0.83

+ 0.81

289.1

365.1

10 48.0

10 45.2

115.8

15 45.3

179.2

76.0

63.4

139.4

+ 0.89

Sept. 28, 1904

II

Below

10 50.5

297.8  
 359.8  
 109.5  
 188.0

620

78.5

140.5

+0.76

291.5  
 366.0  
 118.0  
 179.3

74.5  
 61.3

+0.81

135.8

+0.86

Above

Mean = +0.76

206.4  
 269.4  
 18.2  
 98.2

63.0

80.0

143.0

+0.71

197.8  
 246.0  
 26.6  
 90.6

+0.72

78.2  
 64.0

142.2

+0.73

10 58.5  
 10 54.5  
 15 54.6

= 37.5 Var B  
 = -4.57 East  
 = +28.4 North  
 = 23.47  
 = 15 B  
 = -0.5 C

p.a.  
 t.a.  
 Dec  
 S.T.  
 Spwh.

11 0.5



Sept 28, 1904.

B 236  
11 09 33.0

B 394  
11 09 00

L. P. P.

Sept. 30, 1904 (Friday)

B 236

7 05 53.5  
06 53.7

B 394

7 06 05  
07 00

7 08

Watch 1<sup>st</sup> fast of B 394

~~15.5904~~

-15.4905 (95) Wobs

Miss Leavitts Algol Var. Photo

15 12 -15.8  
21 38

3 26

Bond 236 used for times on this star.

Above

66.2

Comp \* dis

8 57 28

134.2

69.0

237.2

27.1

324.3

156.1v

+ 0.462

58.0

+ 0.482

59 38

142.8

84.8

248.1

68.5

316.6

153.3v

+ 0.514

Below

mean = + 0.542

338.6

9 03 00

43.8

65.2

148.7

23.6

232.3

148.8v

+ 0.602

Sept 30, 1904

~~B~~cont. from ~~pre~~ page

330.9

0.61L

9 06 28 51.4

80.5

~~74~~ 158.1

67.4

6 34 225.5

147.9L + 0.62L9 01 38  
5 - 1314 01 25

Below

~~33~~

341.2

~~11~~

9 11 45 43.2

62.0

149.8

81.1

238.9

143.1L + 0.71L

332.1

+ 0.68L

14 06 52.1

80.0

157.2

66.9

224.1

146.9L + 0.64L

Above

mean = + 0.55L

18 00 318.9

74.9

57.7

84.6

144.3

159.5L + 0.39L

239.4

9 20 48 324.8

85.4

+ 0.42L

24 39 65.1

71.3

9 16 10 136.4

156.7L + 0.44L

5 - 15

Pa = 334.5 VmB

N.T. = 22:18

14 15 55L

Ha = 4.06 Unit

NFW = 5

over

Dec = 16.1 South



Sept. 30, 1904

Above  
6.

III

9

PA. 338.5 Var B

ST = 22.26

Hd. = +4.12 West

Dec. = -16.1

$$SpWh. = \begin{cases} -1.5 & a \\ -0.5 & B \\ +0.1 & C \end{cases}$$

33

~~Below~~

Measurements throughout difficult seeing especially at this altitude, blurry and vibratory. In latter part of 2nd group the region was so low that the upper part of the lowest small shutter slightly covered the object glass. An attempt was made to take a third group but it was utterly impossible to do so.

Observation waited in 2 groups taken for images to grow as steady as possible but throughout the images were rather poor and varying somewhat in their light.

Sept. 30, 1904.

for heading & general remarks see end of series

C's watch now used

- 5.0

19 30

22 5.0

3 20

-5.0 5.0 2.3 (2.5) with -5.0 5.0 2.0 (2.3) plot

with

+ H.C.O. obs.

Above

56.2

10 17.2

145.1

247.5

315.6

65.8

133.9

238.2

325.9

Below

327.7

53.9

156.8

227.8

8

337.2

10 23.8

43.4

146.0

10 20.5

238.2

15 20.5

&lt; b. dis.

meas. with Phot. J. (2 groups)

and with Reed's Photometer

88.9 (last 2 groups on pp. 123-124)

68.1

157.0 ✓ - 0.44 ✓

68.1

- 0.45 ✓

87.7

155.8 ✓ - 0.46 ✓

Mean = - 0.45 ✓

86.2

71.0

157.2 ✓ - 0.43 ✓

- 0.43 ✓

65.2

92.2

157.4 ✓ - 0.43 ✓

Sept. 30, 1904

Below

II

10 26.0

327.4

54.4

87.0

157.0

68.1

225.1

155.1<sub>v</sub>— 0.48<sub>v</sub>3<sup>3</sup>  
319.3— 0.49<sub>v</sub>

44.2

64.9

147.6

89.0

236.6

153.9<sub>v</sub>— 0.50<sub>v</sub>

Above

Mean = -0.46<sub>v</sub>

234.6

326.0

87.4

65.7

69.7

135.4

157.1<sub>v</sub>— 0.44<sub>v</sub>

244.0

10 33.5

313.9

66.9

— 0.43<sub>v</sub>

59.5

54.2

91.3

10 29.8

145.5

158.2<sub>v</sub>— 0.42<sub>v</sub>

15 29.8

P.A.

330.5 Var A

lta.

3:57 West

Dec.

-5.8 North

SIT.

231.30

Sp whf

-4.5 B.

-3.5 C.



Sept 30, 1904.

Reed's photometer

Above

10 51.8 13.4 L br chis  
 101.4 28.0  
 202.3 68.1  
 270.4 156.1<sub>v</sub> — 0.46<sub>v</sub>

21.3  
 90.6 69.3 — 0.46<sub>v</sub>  
 192.4 26.3  
 278.7 155.6<sub>v</sub> — 0.47<sub>v</sub>

Below

Mean = -0.48<sub>v</sub>

281.8  
 369.7 27.9  
 113.7 65.6  
 179.8<sub>3</sub> 153.5<sub>v</sub> — 0.51<sub>v</sub>

10 58.8 292.7  
 10.8 354.4 — 0.49<sub>v</sub>  
 10 58.3 100.8  
 15 55.3 191.5  
 90.7  
 155.4<sub>v</sub> — 0.47<sub>v</sub>

Sept 30, 1904

Below

II

11 01.4

281.7  
 370.8<sup>3</sup>  
 112.0  
 182.4

88.6

70.4

159.0<sub>v</sub> - 0.40<sub>v</sub>

291.8

- 0.42<sub>v</sub>

359.5

67.9

102.4

89.4

191.8

157.1<sub>v</sub> - 0.44<sub>v</sub>

Above

Mean = - 0.45<sub>v</sub>

192.0

278.3

86.3

23.6

67.6

91.2

153.9<sub>v</sub> - 0.50<sub>v</sub>

200.9

✓

- 0.48<sub>v</sub>

272.7

71.8

13.5

84.5

98.0

156.3<sub>v</sub> - 0.45<sub>v</sub>

11 07.6

9.0

11 4.5

16 4.5

H.A.

4:32 West

Dec

- 5.8 South

S.T.

0:05

P.A.

Sept 30, 1904.

The preceding four groups were  
comparisons of  $-5.5023(7.5)$  with  
 $-5.5020(4.3)$ .

The first two groups were with  
Phot. T of this Observatory.

The last two groups were taken  
with Prof Reed's Phot. recently  
made at Clarke's telescope works.

The phot. is similar in construction  
to phot T, as is seen by the preced-  
ing results the phot. seems to work  
substantially right. Region getting a  
little low in last settings but  
seeing throughout pretty good.

B 236

B 39K.

11 27 ~~40~~ 34.5

11 27 0.0

L P P



October 1, 1904 (Saturday)

7 07 C watch = 3<sup>rd</sup> fast of B 394

B 236

7 08 11.0

09 11.3

B 394

7 08 50

09 50

Miss Leavitt's Algol Var - 15.4905

1 A 12 - 15.4 W. Ob.

20 15 B 236 used Phot T.

2 03

Above

106.0

7 31 55 195.1 (comp & dis) 89.1<sub>v</sub>

293.4

364.8

74.4<sub>v</sub>

163.5<sub>v</sub> + 0.31<sub>v</sub>

113.6

34 20

185.6

73.0<sub>v</sub> (+0.34<sub>v</sub>)

286.4

88.2<sub>v</sub>

374.6

161.2<sub>v</sub> + 0.36<sub>v</sub>

Below

mean = +0.43<sub>v</sub>

26.4

37 45

93.2

66.8<sub>v</sub>

195.3

91.3<sub>v</sub>

286.6

158.1<sub>v</sub> + 0.42<sub>v</sub>

19.7

7 39 30 101.8

82.1<sub>v</sub>

(+0.52<sub>v</sub>)

7 35 52 206.1

65.4<sub>v</sub>

+5 -3 271.5

147.5<sub>v</sub> + 0.62<sub>v</sub>

12 35 49

Oct. 1, 1904

II

Below

74153 27.8  
 981.5  
 195.6  
 283.5

63.7  
 87.9  
 151.6 + 0.54.

4430 19.3  
 104.0  
 205.3  
 274.8

(+0.52)  
 84.7  
 69.5  
 154.2 + 0.49.

Above

Mean = +0.46<sup>v</sup>

295.3 olds; stars gone

5230 366.4  
 106.2  
 193.8

71.1  
 87.6  
 158.7 + 0.41.

284.2

75426 ~~14.1~~ stars gone 86.9 (+0.40)  
 74820 113.3  
 +5 -3 186.0  
 12 48 17 159.6 +0.39

PA = 33.0 Var B  
 HA = +2.43 West  
 Dec = -15.9 South (over)  
 S.T. = 20.56  
 Sp. Wh. - f - 1.5 a.  
 - 0.5 B.  
 +0.1 C.



Oct. 1, 1904.

Troubled somewhat by clouds  
in preceding observations. Extremes  
can however be used, observer  
waiting for moments of steady images  
when clouds were present and  
observations considered good.  
Altitude fairly good and better than last  
night.

033451 Doubtful Var +51.762

27 3A +50.3 wobb.  
21 43 Plot T.

Above 5 55  
100.6 < Var 6 05 Cs watch used

9 01.5

198.2

97.6

290.3

80.6

10.9

178.2 - 0.03

110.0

80.8 (-0.06)

190.8

93.8

282.6

174.6 - 0.10

16.4

Mean = -0.05

Below

9.7

108.4

201.6

281.4

20.3

98.3

190.9

290.4

98.0

80.1

179.1 - 0.02

78.0 (-0.04)

99.5

177.5 - 0.05

9 8.4

9 5.1

4 5.1

14 5.1



Oct. 1, 1904.

H

Below

11.4

9 10.8

109.1

201.6

211.3

22.2

98.6

191.8

290.4

97.7<sub>v</sub>79.7<sub>v</sub>177.4<sub>v</sub> - 0.05<sub>v</sub>76.4<sub>v</sub>(- 0.07<sub>v</sub>)98.6<sub>v</sub>175.0<sub>v</sub> - 0.09<sub>v</sub>

Mean = \* - 0.06. ✓

Above

281.3

17.5

111.2

191.2

96.2.

80.0.

176.2. - 0.07.

(- 0.06.)

79.3.

97.3.

176.6. - 0.06.

9 17.6 290.3

369.6

101.3

198.6

14 14.2

Pa = 357.0 Var B

Ha = - 5.14 East

Dec = + 50.2 North

S.T. = 22.20

S/W = 15 a

+ 0.5 B

Oct. 1, 1904.

Doubtful Var +26.01117

$$\begin{array}{r}
 306 \quad 2 \\
 22 \quad 52 \\
 \hline
 7 \quad 10 \\
 4 \quad 50 \\
 \hline
 \end{array}$$

+26.0

Wellb.

Phot T

CS watch used.

10 15

Too low

060521

Doubt. Var 21.0 1146

Wellb  
Phot ~~AT~~ T

$$\begin{array}{r}
 306 \quad 6 \\
 23 \quad 15 \\
 \hline
 6 \quad 51 \\
 5 \quad 09 \\
 \hline
 \end{array}$$

+22.5

CS watch used

above

289.0

{Var dis

10 22.4

12.2

115.4

183.9

295.4

363.4

108.8

192.2

Below

194.6

284.9

24.4

93.8

203.8

278.5

13.3

105.3

83.2.

68.5.

151.7. - 0.54.

68.0.

83.4.

151.4. - 0.55.

[- 0.54.]

Mean = -0.43.

90.3.

69.4.

159.7. - 0.39.

74.7. [- 0.32.]

92.0.

166.7. - 0.25.

$$\begin{array}{r}
 10 \quad 276 \\
 10 \quad 24 \quad 35 \quad \checkmark \\
 +5 \quad -3 \quad \checkmark \\
 \hline
 15 \quad 24 \quad 32 \quad \checkmark
 \end{array}$$



Oct 1, 1904.

$$208.0 = P.A.$$

$$23.24 = S.T.$$

$$-6:42 = H.A. East$$

$$+21.6 = Dec$$

$$\left. \begin{array}{l} a - 3.5 \\ B - 2.5 \\ \hline \end{array} \right\} = Sp. Wh.$$

$$a - 1.9$$

~~B 236~~~~B 394~~

10 32 47.0

10 32 00

B &amp; C 1182

B 394

$$\begin{array}{r} 10 \ 34^5 \ 95 \\ \quad \quad \quad 95 \\ \hline 34 \ 95 \end{array}$$

$$\begin{array}{r} 10 \ 34 \ 00 \\ \quad \quad \quad 95 \ 00 \\ \hline \end{array}$$

Jupiter

$$\begin{array}{r} 28 \ 45 \ +9 \\ \hline 23 \ 35 \\ \hline 2 \ 10 \\ \hline 9 \ 50 \\ \hline \end{array}$$

(over)



Oct 1, 1904.

Dis. Jup III Phot R.

W. C. B.

Campbell's Recorder

Compared with nearer of two  
Remainings (after eclipse) on same mer.

10 45 21	10 46 06	67.0	120.9
	28 <sup>22</sup>	187.9	(120.9) - 1.2
	51	67.5	120.9
47	17	188.4	120.8
	32 <sup>17</sup>	68.0	(120.4) - 1.2
10 46 36	49	188.8	120.0
	02	68.9	119.0
	22 <sup>20</sup>	188.9	(119.4) - 1.2
	36	68.5	119.9
10 47 41	53 <sup>17</sup>	187.5	115.1
	12	69.1	(114.7) - 1.0
	27 <sup>15</sup>	189.0	114.3
	49	73.0	116.8
10 48 53	50	188.1	(113.1) - 0.9
	06	72.6	109.4
	20	186.9	
	44 <sup>24</sup>	72.0	
10 50 2	51	188.8	
	02	72.8	
	18 <sup>16</sup>	182.2	
	31	76.9	
	48 <sup>17</sup>	184.0	
10 51 8	52	73.5	
	02	184.4	
	21 <sup>19</sup>		
	43		
	53		
	01		

note = Sat II

Oct. 1, 1904.

10 52 12' 10	53	14	74.0	110.0
		26 12	184.0	(108.9) - 0.7
		46	74.4	107.8
	54	02	182.2	
53 14		19 105.0	77.0	105.0
		33 104.5	182.0	(103.6) - 0.5
		45 102.3	<del>77.5</del> 77.5	102.3
	55	01 102.8	179.4	
54 15		15 103.0	77.0	103.0
		34 103.5	180.0	(102.13) - 0.5
		51 101.6	76.5	101.6
	56	06 98.0	154.1	
55 20		16 95.9	80.1	95.9
		28 98.5	176.0	
	Byint	54	77.0	(96.8) - 0.3
	57	07 97.5	77.5	97.8
		23	175.3	
56 26		34	83.2	90.3
		50	153.5	(88.6) + 0.1
	58	01	84.8	86.8
		16	171.6	
57 28		34	86.2	83.7
		54	169.9	(81.2) + 0.3
	59	04	87.5	78.5
		15	166.3	
58 15		26	90.0	73.9
		37	163.9	(73.0) + 0.7
		43	90.9	72.1
11	00	09	163.0	



Oct. #1, 190K

10	58	50	11	00	21	95.0	66.5'	+0.9'
	59	1			32	161.5	66.0'	+0.9'
	59	10			40	95.5	64.6'	+1.0'
	59	22			53	160.1	63.6'	+1.0'
	59	31	01	02		96.5	59.7'	+1.2'
	59	4X <sup>2</sup>		13		156.2	57.1'	+1.3'
	59	55		27		99.1	55.7'	+1.4'
11	0	12		44		154.8	51.2'	+1.6'
	0	19		51		103.6	47.4'	+1.8'
	0	34	02	06		151.0	45.9'	+1.9'
	0	41		13		105.1	41.8'	+2.1'
	0	5X <sup>5</sup>		27		146.9	40.4'	+2.2'
	1	45		38		106.5	38.5'	+2.3'
	1	51	03	24		145.0		
	2	27	04	01		not seen later		
			limit of Visibility					
		6	04	11		110.5	30.8'	
11	3	5		32		141.3	(30.9)	+2.8'
				49		111.0	31.0'	
			11	05	08	142.0		

B &amp; C 1182

11" 07 37.0

08 37.0

B 394

11 06 00

07 00

Altitude quite high so that in a protracted run it was not so easy to get hold of the light symmetrically as it would have been had the altitude been



Oct. 1, 1904  
 lower. Seeing fairly good

B. + C. 1142  
 12 46 32.0  
 47 32.0

B. 394  
 12 45 00  
 46 00

Dis. Jup. II. Phot. R. W. obs. Hill rec.  
 compared with sat. on ~~for~~ fol. side =  
 = Sat. I.

12 48  
 49  
 50  
 51  
 52  
 53  
 54  
 55  
 57  
 58

These were simply the current  
 minutes as before eclipse and  
 do not correspond to any set-  
 tings

12 57 28

12 58 33

49

59 02

17

59

13 0 11

24

58 44

10.9 58.3

69.2 63.1 60.7 + 1.2

81.0 121.4

71.1

71.1

74.0 66.9 64.4 + 1.0

8.9 62.0

Oct. 1, 1904.

	13	0	39		70.9
			<u>52</u>		8.5 64.0
12 59	<del>39</del>	1	05		72.5 63.8 + 1.0
			21		8.1 63.7
			<u>34</u>		71.8
			47		7.5
13 0	41		58		72.7 65.2
		2	29		62.5 6.1 1.1
			<u>42</u>		10.2 59.9
13 01	21		54		70.1
1	35	3	08		7.7 60.1 1.2
1	46		19		67.8 60.5 1.5 1.5
1	54		27		16.4 45.6 1.9
2	2		35		62.0 43.5 2.0
2	20		53		18.5 42.2 2.0
2	31	4	04		60.7 40.6 2.1
2	45		18		20.1 36.2 2.4
2	53		26		56.3 31.7 2.7
3	6		39		24.6 28.9 2.9
3	14		47		53.5 25.4 3.2
3	30	5	03		28.1 21.7 3.6
3	40		13		49.8 19.5 3.9
4	<del>143</del>		46		31.3 14.8 4.4
					46.1

not seen later.  
Limit of visibility.

13 05 16	13	6	27		32.1
			36		47.0
			55		32.1
					14.9 (14.8) 1.4
					14.6



Oct. 1. 1904.

13

7

15

46.9

B. + C. 1122.

13

27

26.2

13

28

26.2

B. 394.

13

26

00

13

27

00

It was intended to observe the reappearance of Sat III if possible but Sat III reappeared on the lower left hand edge of Jupiter and right upon the limb of Jupiter. When this was found to be the case observer immediately began to observe Sat II which was going into eclipse about this time. Had he known under what conditions Sat III would reappear he would have begun to observe Sat II a little earlier.



138

Oct. 3, 1904. (Monday)

6 45 - All cloudy

7 00 - All cloudy

7 30 - All cloudy, no stars visible

8 00 - Somewhat clearing N. W. a few stars visible

Miss Leavitt's new Algol bar -  $15^{\circ} 49' 05''$ 

$$\begin{array}{r} 18 \ 12 - 15.8 \\ 21 \ 20 \\ \hline 3 \ 08 \end{array}$$

W. Obs.  
Phot. J.

8 22 - all cloudy

$$\begin{array}{r} 18 \ 12 - 15.8 \\ 22 \ 10 \\ \hline 3 \ 58 \end{array}$$

$$\begin{array}{r} 18 \ 12 - 15.8 \\ 22 \ 23 \\ \hline 4 \ 11 \end{array}$$

9 30 - Sky still cloudy everywhere with no prospect of clearing &amp; growing worse.

Oct. 4, 1904 (Tuesday)

Miss Seavitts' new Algol Var.  $-15^{\circ}.4905$

$$\begin{array}{r} 18 \quad 12 \quad -15.8 \\ 20 \quad 22 \\ \hline 2 \quad 10 \end{array}$$

W. Obs.  
Phot. 7.

Index left & above.

7 33 35

~~294.0~~ C.S. dis.

5.9 ~~+0.15~~ 71.1<sup>v</sup>

107.4 27.0<sup>v</sup>

194.4 152.1<sup>v</sup> +0.42<sup>v</sup>

~~288.5~~

288.5 25.8<sup>v</sup>

14.3

110.8 71.5<sup>v</sup>

152.3 157.3<sup>v</sup> +0.43<sup>v</sup>

(+0.42)<sup>v</sup>

Index right & below

207.5 65.2<sup>v</sup>

272.7

17.3 23.8<sup>v</sup>

101.1 149.0<sup>v</sup> +0.59<sup>v</sup>

198.7 25.6<sup>v</sup>

284.3

25.5 66.8<sup>v</sup>

92.3 152.4<sup>v</sup> +0.53<sup>v</sup>

(+0.56)<sup>v</sup>

+0.53<sup>v</sup>

mean +0.49<sup>v</sup>

$$\begin{array}{r} 7 \quad 43 \quad 48^v \\ +5 \quad +2^v \\ \hline 12 \quad 43 \quad 50^v \end{array}$$

Oct. 4, 1904.

7 5

Same again.

205.3

69.5 ✓

274.8

19.0

23.5 ✓

102.5

153.0 ✓

+0.52 ✓

196.7

88.9 ✓

+0.50 ✓

281.6

23.5

70.4 ✓

93.9

155.3 ✓

+0.87 ✓

Index left above

114.0

64.5 ✓

182.5

288.9

26.6 ✓

15.5

155.1 ✓

+0.48 ✓

105.5

89.5 ✓

+0.42 ✓

195.0

294.7

71.9 ✓

6.6

161.4 ✓

+0.35 ✓

8 13 10

7 66 5 ✓

+5 +2 ✓

12 66 7 ✓

13 6 7 ✓

mean +0.46 ✓

Gen. mean +0.48 ✓



Oct. 4. 1904.

P. d.	337.5°	
S. Y.	<del>211.37m</del>	21 <sup>h</sup> 37 <sup>m</sup>
H. d.	3 <sup>h</sup> 24 <sup>m</sup>	3 <sup>h</sup> 24 <sup>m</sup>
Dec.	-16.0	
Sprocket.	-1.5 A	
"	-0.5 B	
"	+0.1 C	

Soubitful Var. +24° 707

Gr. ds.  
Phot. L.

2A  
K K2 +24.1  
~~22~~  
~~6 K2~~

2A K2 +24.1  
23 10  

---

-5 32  
6 2A

over

Oct, 4, 1904

Cor. from previous page.

Index above  $\Delta$ 209.0  $\leftarrow$  62.6v C.V. dis.

271.6

23.0  $\frac{72.1v}{134.7v}$ 95.1  $\frac{134.7v}{+0.88v}$ 

10 17 40

200.7

 $(+0.84v)$ 279.1  $\frac{78.4v}{60.3v}$ 

29.2

89.5  $\frac{138.7v}{+0.80v}$ Index below  $\beta$ 124.6  $\frac{57.4v}{182.0}$ 

182.0

292.4  $\frac{76.8v}{134.2v}$   $+0.89v$ 9.2  $\frac{134.2v}{+0.88v}$  $(+0.88v)$ 

113.2

197.6  $\frac{74.4v}{60.7v}$ 300.9  $\frac{135.1v}{1.6}$ 

1.6

 $+0.87v$ 10 40 010 28 50 $\downarrow$  $+v$   $+2v$ 15 28 52.mean  $+0.86v$

Oct, 4, 1904

B

Same again.

10 45 50

120.7

190.0 69.3 L

294.5 73.4 L +0.72 L

7.9 142.7 L

~~112~~

( +0.80 L )

114.0

187.6 73.6 L

380.0 61.6 L +0.87 L

+ 116 135.2 L

Index above. J

31.6

90.5 59.2 L

214.1 69.8 L +1.00 L

283.9 129.0 L

( +1.04 L )

-23.5

79.3 L

102.5

+1.09 L

224.4 45.5 L

269.9 124.8 L

Means +0.92 L  
Gen. Mean +0.89 L

11 2 20

10 54 5

+5 +2

15 54 7



144

Oct. 4, 1904

P.A.  $38^{\circ}.0$  ?  
 S.T.  $24^h 13^m 40$   
 l-l. a.  $-4^h 32^m$   
 llec  $+28.2$   
 Sprocket  $-1.5$  B  
 "  $-0.5$  C

The watch used throughout for times to-night.  
 Watch 2 secs. slow.

Oct. 5, 1904 (Wednesday)

Miss Leavitt's new Algol var.  $-15^{\circ}.4905$

$$\begin{array}{r} 18 \ 12 \ - \ 15.8 \\ 20 \ 0 \\ \hline 41 \ 48 \end{array}$$

W. Abs.  
Phot. 7.

Index left & above 13

$$\begin{array}{r}
 65430 \\
 189.978.8 \checkmark \\
 296.665.5 \checkmark \\
 2.1144.3 \checkmark + 0.69 \checkmark
 \end{array}$$

$7045 \begin{matrix} L \\ m \\ m \end{matrix} \begin{matrix} 114.5 \\ 183.1 \\ 287.5 \end{matrix} \begin{matrix} 62.6 \\ \cancel{69.4} + 0.4 \\ 86.4 \end{matrix} \begin{matrix} 2 \\ L \\ v \end{matrix}$   
 $\cancel{4} \quad 13.9 \quad 155.0 \quad v$

Index right & below A

7 40<sup>m</sup> 20.5  
99.6 78.8v + 0.69v  
207.0 65.2v  
272.2 144.0v + 0.70v

$$\begin{array}{r} 7 \overline{) 645} \\ 7 \quad 2 \quad 30 \\ + 5 \quad \quad + 1.0 \\ \hline 12 \quad 2 \quad 31.0 \end{array}$$

Mean  $+0.64$  ✓

146

Oct. 5, 1919

Same again A

23.5

L m v  
7 12 20

101.1 77.6v + 0.81v

210.6 60.4v

271.0 138.0v

+ 0.78v

29.1

15 10

91.5 62.4v + 0.74v

201.4 79.2v

280.6 141.6v

Index left above B

290.8

18 40

10.0 79.2v

115.8 66.8v + 0.65v

182.6 146.0v

~~29~~

+ 0.58v

296.0

21 50

4.2 68.2v

7 17 0v

107.2 84.4v + 0.52v

+5 +1.0

191.6 152.6v

12 17 1.0v

mean + 0.68v

Gen. mean + 0.66v



Oct 5, 1904

Same again

292.0

★

7 29 0 10.5

Clouds stars gone

7 34 45 Clouds thick in this region

45 15 Clouds " no stars visible in this region

148

Oct <sup>5</sup> 1904

Index left &amp; above

~~114.1~~

Clouds

Index left &amp; above

115.1

7 53 20 114.7

289.5

11.2

Clouds

109.6

59 50 Clouds, stars gone.

P. A.  $338^{\circ}.5$  Ver. B.S. T.  $21^h 29^m$ H. A.  $3^h 15^m$ Dec.  $-16^{\circ}.0$ Sprocket  $-1.5$  A"  $-0.5$  B"  $+0.1$  C

W's watch used for times tonight.

Watch is 1.50 slow

8 24 10 Sky now all cloudy everywhere no stars visible.

Oct. 6, 1904 (Thursday)

Miss Leavitt's Algol bar -15.4905

$$\begin{array}{r} 15 \ 12 \quad -15.8 \\ \hline 20.23 \\ 2 \ 11 \end{array}$$

w. Obs  
Phot T.

$$\begin{array}{r} 18 \ 12 \quad -15.8 \\ \hline 20.26 \\ 2 \ 14 \end{array}$$

Index left above B  
295.2 C.S. dis.

7 22 25

$$\begin{array}{r} 5.6 \quad 70.3 \sim \\ 107.8 \quad 86.7 \sim +0.44 \sim \\ \hline 194.4 \sim 157.0 \sim \end{array}$$

79

+0.40 ~

284.0

$$\begin{array}{r} 10.6 \quad 86.6 \sim \\ 113.1 \quad 73.8 \sim +0.37 \sim \\ \hline 186.9 \quad 160.4 \sim \end{array}$$

Index right below A

$$\begin{array}{r} 207.2 \\ 273.6 \quad 66.4 \sim +0.54 \sim \\ 17.6 \quad 85.2 \sim \\ \hline 102.8 \quad 151.6 \sim \end{array}$$

+0.55 ~

197.8

85.4 ~

$$\begin{array}{r} 3450 \ 253.2 \\ 7 \ 28 \ 38 \ 27.4 \\ +5 \quad -1.0 \ 93.0 \\ \hline 12 \ 28 \ 38 \end{array}$$

$$\begin{array}{r} 65.6 \sim +0.56 \sim \\ \hline 151.0 \sim \end{array}$$

Mean +0.48 ~



Oct. 6, 1904

Same again A

7	40	0	207.9	68.9 <sub>v</sub>	
			276.8		+ 0.54 <sub>v</sub>

20.1	83.1 <sub>v</sub>
103.2	152.0 <sub>v</sub>

+ 0.54<sub>v</sub>

197.9	85.9 <sub>v</sub>	
283.8	66.2 <sub>v</sub>	+ 0.53 <sub>v</sub>
27.0	152.1 <sub>v</sub>	

93.2<sub>v</sub>

Index left &amp; above B

114.5	71.7 <sub>v</sub>	
186.2		+ 0.39 <sub>v</sub>

286.6	88.0 <sub>v</sub>
14.6	159.7 <sub>v</sub>

+ 0.39<sub>v</sub>~~105.5~~

5+ 40 194.7

105.1

54 45 195.7

7 47 23<sub>v</sub> 296.4+5 -1.0<sub>v</sub> 5.212 47 22<sub>v</sub>90.6<sub>v</sub> + 0.39<sub>v</sub>

68.8 <sub>v</sub>
159.4 <sub>v</sub>

Mean + 0.46<sub>v</sub>Gen Mean + 0.47<sub>v</sub>

Oct. 6. 1904

P. a. 337.<sup>0</sup>8 ver. B.  
 S. T. 21<sup>h</sup> 25<sup>m</sup> 15<sup>s</sup>  
 H. a. 3<sup>h</sup> 14<sup>m</sup>  
 Llec. -15.<sup>0</sup>9  
 Sprocket. -7.<sup>0</sup>5 A  
 " -0.5 B  
 " +0.1 C

Barometer rising, air a little cool, wind  
 N. N. W. seeing however, fairly good.  
 The greatest possible care exercised  
 with the settings.

144402 ✓ Scute!

W. Obs. Phot. T.

18 36 - 8.5  
 21 56  
 3 20

Index right & above Var. dis.

208.5  
 56 15 270.5 62.7<sup>v</sup> -0.83<sup>v</sup> A  
 8 22.6 74.3<sup>v</sup>  
 96.9 137.0<sup>v</sup>

-0.86<sup>v</sup>

202.6  
 278.8 76.2<sup>v</sup>

Oct. 6, 1904

$$\begin{array}{r} 32.3 \\ 90.0 \\ \hline 122.3 \end{array} \quad \begin{array}{r} 57.7 \\ 133.9 \\ \hline \end{array}$$

-0.90 $\checkmark$ 

Index left &amp; below B

$$\begin{array}{r} 121.0 \\ 181.3 \\ \hline 302.3 \end{array} \quad \begin{array}{r} 60.3 \\ 77.9 \\ \hline 138.2 \end{array}$$

-0.81 $\checkmark$ Mean -0.84 $\checkmark$ 

$$\begin{array}{r} 290.5 \\ 8.4 \\ \hline 302.2 \end{array} \quad \begin{array}{r} 77.9 \\ 138.2 \\ \hline \end{array}$$

-0.82 $\checkmark$ 

$$\begin{array}{r} 89 \quad 4 \quad 20 \\ 9 \quad 0 \quad 18 \\ +5 \quad \quad -1.0 \\ \hline 14 \quad 0 \quad 17 \end{array}$$

109.6

80.4 $\checkmark$ -0.82 $\checkmark$ 

190.0

57.2 $\checkmark$ 

302.2

137.6 $\checkmark$ 

359.4

Same again

Same again.

122.2

59.9 $\checkmark$ -0.79 $\checkmark$ 

182.1

79.2 $\checkmark$ 

290.5

139.1 $\checkmark$ 

10.0

-0.84 $\checkmark$ 

112.1

77.2 $\checkmark$ -0.79 $\checkmark$ 

189.3

57.1 $\checkmark$ 

302.1

134.3 $\checkmark$ 

359.2

Mean -0.86 $\checkmark$ 

Index right &amp; above

32.9

55.9 $\checkmark$ -0.75 $\checkmark$ 

88.8

80.3 $\checkmark$ 

198.9

136.2 $\checkmark$ 

279.2

-0.89 $\checkmark$ 

23.1

73.6 $\checkmark$ 

96.7



$$\begin{array}{r} 9 \ 11 \ 38 \\ +5 \\ \hline 14 \ 11 \ 37 \end{array}$$

$$\begin{array}{r} 212.3 \\ 270.9 \end{array}$$

$$58.6 \vee -0.93 \vee$$

Oct. 6, 1904

Gen. mean 0.85 ~

P. a.  $284.0$  br. B.  
 S. T.  $22^h 44^m$   
 H. a.  $3^h 58^m$   
 Dec.  $-8.2$   
 Sprocket.  $-1.5$  A  
            $-0.5$  B  
            $+0.1$  C

Williams new bar. (See Keotype No. 160/  
 W. Obs. Phot. T)

$$\begin{array}{r} 22 \ 21 \\ + 31.1 \end{array}$$

$$\begin{array}{r} 23 \ 10 \\ \hline \end{array}$$

$$+0.49$$

$$\begin{array}{r} 22 \ 21 \\ + 31.1 \end{array}$$

$$\begin{array}{r} 23 \ 13 \\ \hline \end{array}$$

$$+0.32$$

$$\begin{array}{r} 22 \ 21 \\ + 31.1 \end{array}$$

$$\begin{array}{r} 23 \ 20 \\ \hline \end{array}$$

$$0.59$$

For means see next page.

Oct. 6, 1904  
Williams Row Var.

Index left  $\sqrt{3}$

115.5 C. P. dis.

184.8

69.2 $\checkmark$

307.1

50.5 $\checkmark$

337.6

119.7 $\checkmark$

+1.20 $\checkmark$

125.5

52.0 $\checkmark$

+1.26 $\checkmark$

177.6

299.1

62.9 $\checkmark$

2.0

114.9 $\checkmark$

+1.31 $\checkmark$

205.2 Index right

208.8

64.3 $\checkmark$

273.1

36.2

49.6 $\checkmark$

85.8

113.9 $\checkmark$

+1.33 $\checkmark$

217.0

49.1 $\checkmark$

+1.31 $\checkmark$

266.1

26.6

66.7 $\checkmark$

93.3

115.2 $\checkmark$

+1.29 $\checkmark$

Mean +1.28 $\checkmark$

Comp. Star in above measts. =  
= +29° 46' 2" (2.9)



Oct 6, 1904

Star +29° 46' 9" (A.A.)

(Suspected of variability  
and ~~was~~ fol. Williams  
star Var. by 17<sup>th</sup>, slightly  
north.)

Index left B

283.3 ← C. S. dis.  
11 16 0 12.6  
113.8 29.3 ✓  
184.0 70.2 ✓  
159.5 ✓ +0.39 ✓

298.2 69.9 ✓ +0.37 ✓  
8.1

104.9 91.2 ✓  
196.7 161.7 ✓ +0.35 ✓

Index right A

194.0 29.2 ✓  
283.2  
24.7 72.2 ✓  
96.9 161.4 ✓ +0.35 ✓

205.2 71.2 ✓ +0.34 ✓  
276.4

11 23 0  
11 19 30 ✓  
+5 -1.0  
16 19 29 ✓  
106.7 91.2 ✓  
163.0 ✓ +0.32 ✓

Mean +0.36 ✓

It's watch used for times to night.  
Watch is 1.0 sec. fast.

Comp. star in above measts = +29° 46' 2" (A.A.)  
(Same comp. star as was used with Williams'  
Var. on preceding page.)



Oct. 6, 1904

P. A.  $255.5^{\circ}$  Ver. B.  
 S. T.  $24^h 46^m$   
 H. A.  $2^h 11^m$   
 Dec.  $+31.0$   
 Spoke.  $-1.5$  A  
 "  $-0.5$  B  
 "  $+0.1$  C

The previous readings of Spoke & P. A.,  
 etc., are on the bar. The other star  
 measured which is close at hand  
 was thoroughly identified.

Oct. 7, 1904 (Friday)

Miss Lewis's bar.  $-15^{\circ}.4905$ 

$$\begin{array}{r} 18 \ 12 \ -15.8 \\ 20 \ 40 \\ \hline 2 \ 28 \end{array}$$

$$\begin{array}{r} 18 \ 12 \ -15.8 \\ 20 \ 45 \\ \hline 2 \ 33 \end{array} \quad W$$

Index left &amp; above B

$$\begin{array}{r} 73645 \quad 289.5 \quad \leftarrow \text{C.P. dis.} \\ \quad 13.0 \quad 83.5^v \\ \quad 115.2 \quad 69.3^v \\ \quad 184.5 \quad 152.8^v \\ \hline \quad \quad \quad +0.52^v \\ \quad \quad \quad +0.48^v \end{array}$$

$$\begin{array}{r} 295.2 \\ 5.8 \\ 107.5 \\ 193.5 \\ \hline 70.6^v \\ 86.0^v \\ 156.6^v \\ \hline +0.45^v \end{array}$$

Index right &amp; below A

$$\begin{array}{r} 198.0 \\ 282.3 \\ 27.6 \\ 92.0 \\ \hline 84.3^v \\ 64.4^v \\ 148.7^v \\ \hline +0.60^v \\ +0.62^v \end{array}$$

$$\begin{array}{r} 208.2 \\ 47 \ 152 \ 73.7 \\ \hline 7 \ 42 \ 0^v \ 20.2 \\ +5 \quad +1 \ 101.5 \\ \hline 12 \ 42 \ 1^v \end{array} \quad \begin{array}{r} 65.5^v \\ 81.3^v \\ 146.8^v \\ \hline +0.64^v \end{array}$$

Mean  $+0.55^v$

Oct. 7, 1904

Same again &amp;

$$\begin{array}{r}
 7 \quad 51 \quad 40 \\
 201.1 \\
 281.6 \\
 27.8 \\
 93.5 \\
 \hline
 80.3^v \\
 65.7^v \\
 146.2^v \\
 +0.65^v \\
 +0.51^v
 \end{array}$$

$$\begin{array}{r}
 196.3 \\
 273.0 \\
 19.3 \\
 103.4 \\
 \hline
 76.7^v \\
 84.1^v \\
 160.8^v \\
 +0.37^v
 \end{array}$$

Index left above B

$$\begin{array}{r}
 105.2 \\
 193.3 \\
 296.3 \\
 6.3 \\
 \hline
 88.1^v \\
 70.0^v \\
 158.1^v \\
 +0.42^v \\
 +0.44^v
 \end{array}$$

$$\begin{array}{r}
 8 \quad 2 \quad 0 \\
 7 \quad 56 \quad 50 \\
 +5 \quad +1 \\
 \hline
 12 \quad 56 \quad 51 \\
 116.3 \\
 186.0 \\
 287.6 \\
 13.5 \\
 \hline
 69.7^v \\
 85.9^v \\
 155.6^v \\
 +0.47^v
 \end{array}$$

Mean  $+0.48^v$   
 Gen. Mean  $+0.52^v$



Oct. 7, 1964

Same again

B

$$\begin{array}{r}
 107.5 \\
 8 \cdot 17 \cdot 10 \quad 193.4 \quad 85.9^{\vee} \quad +0.53^{\vee} \\
 297.4 \quad 66.6^{\vee} \\
 4.0 \quad 152.5^{\vee}
 \end{array}$$

 $+0.52^{\vee}$ 

$$\begin{array}{r}
 117.1 \\
 184.9 \quad 67.5^{\vee} \\
 288.2 \quad 85.5^{\vee} \quad +0.51^{\vee} \\
 13.7 \quad 153.3^{\vee}
 \end{array}$$

Index right &amp; below A

$$\begin{array}{r}
 21.1 \\
 98.1 \quad 77.0^{\vee} \\
 206.9 \quad 69.5^{\vee} \quad +0.64^{\vee} \\
 276.4 \quad 146.5^{\vee}
 \end{array}$$

 $+0.59^{\vee}$ 

$$\begin{array}{r}
 27.0 \\
 35 \cdot 10 \quad 93.4 \quad 66.4^{\vee} \\
 8 \cdot 26 \cdot 10^{\vee} \quad 197.5 \quad 85.5^{\vee} \quad +0.54^{\vee} \\
 +5 \quad +1 \quad 283.0 \quad 151.9^{\vee} \\
 13 \cdot 26 \cdot 11^{\vee}
 \end{array}$$

mean  $+0.56^{\vee}$

Oct, 7, 1904

P.A. 158.8  $\text{hr}$ , B.  
 S.I.T. 22<sup>h</sup> 13<sup>m</sup>  
 H.A. 4<sup>h</sup> 2<sup>m</sup>  
 Dec. -15.9  
 Sprocket. -1.5 A.  
 " -0.5 B.  
 " +0.1 C.

Doubtful var. 044528

4 42 + 28.1

28	42	28	42
22	38	22	42
<hr/>		<hr/>	
6	4	6.	00
5	58	6	

28	42
22	45
<hr/>	
5	57

Index above A

28.4 Var. dis.

9 40 30

90.5	72.1 <sup>v</sup>	-0.72 <sup>v</sup>
199.7	80.5 <sup>v</sup>	
	<hr/>	
280.2	152.6 <sup>v</sup>	

-0.72<sup>v</sup>

17.5	181.7 <sup>v</sup>	
99.2	61.7 <sup>v</sup>	-0.71 <sup>v</sup>
	<hr/>	
210.0	143.4 <sup>v</sup>	
271.7		

Oct. 7, 1904

Index below  $\beta$ 

$$\begin{array}{r}
 303.4 \\
 359.2 \\
 112.9 \\
 189.5 \\
 \hline
 965.0
 \end{array}
 \begin{array}{r}
 55.8^v \\
 76.6^v \\
 \hline
 132.4^v
 \end{array}
 \begin{array}{l}
 -0.93^v \\
 -0.90^v
 \end{array}$$

$$\begin{array}{r}
 292.6 \\
 45.40 \\
 9 \ 43 \ 5^v \\
 +5 \quad +1 \\
 \hline
 14 \ 43 \ 6^v
 \end{array}
 \begin{array}{r}
 8.9 \\
 121.5 \\
 179.9
 \end{array}
 \begin{array}{r}
 76.3^v \\
 58.4^v \\
 \hline
 134.7^v
 \end{array}
 \begin{array}{l}
 -0.88^v
 \end{array}$$

mean =  $\ast 0.81^v$ 

P. A. 219.0 hr. B.

S. T. 23<sup>h</sup> 5<sup>m</sup>H. A. -5<sup>h</sup> 49<sup>m</sup>

Dec. +28.1

Spoch. -1.5 B

" -0.5 C

Exp. with Mr. Reed's Phot.

In the case of a 5<sup>th</sup> mag. star the images completely disappear as they should.



Oct. 7, 1904

Williams new bar.

22	21	+31.1	22	21
23	25		23	32
1	4		1	11

Index left below B

298.5 C. P. dir.

10	31	10	359.2	60.7 <sup>v</sup>	+1.39 <sup>v</sup>
			125.5	50.7 <sup>v</sup>	
			176.2	110.4 <sup>v</sup>	

+1.36<sup>v</sup>

306.9	48.3 <sup>v</sup>	+1.32 <sup>v</sup>
355.2	65.8 <sup>v</sup>	
117.6	114.1 <sup>v</sup>	
183.4		

Index right above A

208.7	62.6 <sup>v</sup>	+1.31 <sup>v</sup>
271.3	52.0 <sup>v</sup>	
34.5	114.6 <sup>v</sup>	
86.5		

+1.34<sup>v</sup>

43	216.5	48.4 <sup>v</sup>	+1.38 <sup>v</sup>
10 43	264.9	63.3 <sup>v</sup>	
10 37	29.1	111.7 <sup>v</sup>	
+5	+1 92.4		
15 37	11		

Mean +1.35<sup>v</sup>

Oct. 7, 1904  
 Susp. Var. D. m. + 29.4659 (8.8) (near Williams' New Var.)

Index left & below B

$$\begin{array}{r}
 284.0 \leftarrow \text{C. S. di.} \\
 10 \ 37 \ 10 \quad 13.4 \quad 89.4^v \quad +0.44^v \\
 \hline
 117.7 \quad 67.6^v \\
 185.3 \quad 157.0^v
 \end{array}$$

+0.43<sup>v</sup>

$$\begin{array}{r}
 296.0 \\
 5.2 \quad 69.2^v \quad +0.42^v \\
 106.2 \quad 89.0^v \\
 \hline
 195.2 \quad 158.2^v
 \end{array}$$

Index right & above A

$$\begin{array}{r}
 194.7 \\
 283.9 \quad 89.2^v \quad +0.36^v \\
 25.2 \quad 72.1^v \\
 \hline
 97.3 \quad 161.3^v
 \end{array}$$

+0.40<sup>v</sup>

$$\begin{array}{r}
 202.5 \\
 10 \ 46 \ 20 \ 277.3 \quad 74.8^v \quad +0.45^v \\
 10 \ 41 \ 45 \ 13.3 \quad 81.7^v \\
 \hline
 +5 \quad +1 \ 105.0 \quad 156.5^v \\
 15 \ 41 \ 46
 \end{array}$$

Mean +0.42<sup>v</sup>

Oct. 7, 1904.

P. a.  $259.5$  hr B.S. T.  $24^h 14^m$ H. a.  $1^h 55^m$ Dec.  $+29.8$ Sprocket.  $-1.5$  a."  $-0.5$  B."  $+0.1$  C

W's watch used for times tonight.  
The watch is 1.0 slow.



Oct. 10. 1904 (Monday).

imp. Leavitt's star Variable  $-15^{\circ} 49.05$ .

Cloudy.

$$\begin{array}{r} 12 \quad 12 \quad -15.0 \\ 19 \quad 42 \\ \hline +1 \quad 36 \end{array}$$

All cloudy (thickly so) everywhere.

6 30

No stars visible.

6 55

" " "

166

October 14, 1904 (Friday.)

7 0 0 Generally cloudy.

7 25 0 " " "

Ceraski's new bar. +46.740 (9.5)

W. Cels. Phot. T.

$$\begin{array}{r} 27 \\ 3 \end{array} \quad 33 + 47.3$$

$\begin{array}{r} 21 \\ 6 \\ \hline 5 \end{array}$	$\begin{array}{r} 20 \\ 13 \\ \hline 47 \end{array}$	$\begin{array}{r} 27 \quad 33 \\ 21 \quad 28 \\ \hline 6 \quad 5 \\ 5 \quad 55 \end{array}$
--	--	---

43 0 Clouds still in this region.

$\begin{array}{r} 27 \quad 33 \\ 22 \quad 4 \\ \hline 5 \quad 29 \end{array}$	$\begin{array}{r} 11 \quad 60 \\ 5 \quad 29 \\ \hline 6 \quad 31 \end{array}$	$\begin{array}{r} 27 \quad 36 \\ 23 \quad 10 \\ \hline 4 \quad 26 \end{array}$	$\begin{array}{r} 11 \quad 60 \\ 4 \quad 26 \\ \hline 7 \quad 34 \end{array}$
---	---	--	---

9 35 0 Sky all cloudy in this region and it is impossible to get variable at present time.

7 Oct, 14, 1904.

2. Cygni 28.40 + 33.4

9 40 0 <sup>23 30</sup> all cloudy here

Ceraski's new bar + 46.740

$$\begin{array}{r} 27 \quad 33 \\ 23 \quad 33 \\ \hline 4 \quad 00 \end{array} \quad \begin{array}{r} 12 \\ 4 \\ \hline 8 \end{array} \quad + 47.3$$

10.00

Tried thoroughly for Ceraski's new bar throughout evening but impossible to get. Troubled by clouds throughout whole of evening, impossible to any thing further. Clouds everywhere, no stars visible.





Oct. 15, 1904

Same again A

7	49	30	209.2		
			272.0	62.8 <sup>✓</sup>	
			18.7	83.8 <sup>✓</sup>	+0.64 <sup>✓</sup>
			102.5	146.6 <sup>✓</sup>	

+0.62<sup>✓</sup>

201.1	82.0 <sup>✓</sup>	
283.1	66.5 <sup>✓</sup>	+0.60 <sup>✓</sup>
28.8	148.5 <sup>✓</sup>	
95.3		

Index left &amp; above B

116.9	68.3 <sup>✓</sup>	
185.2	77.3 <sup>✓</sup>	+0.64 <sup>✓</sup>
288.2	146.6 <sup>✓</sup>	
15.6		

+0.56<sup>✓</sup>

58	10	194.2	86.0 <sup>✓</sup>	
106	40	297.3	68.7 <sup>✓</sup>	+0.45 <sup>✓</sup>
7	53	20.6	134.7 <sup>✓</sup>	
45	45			

12 53 30 P. A. = 337.7<sup>°</sup> Ver. B.H. A. = 3<sup>h</sup> 54<sup>m</sup>Dec. = -15.8<sup>°</sup>S. T. = 22<sup>h</sup> 5<sup>m</sup>

Spoked = -1.5 A

" = -0.5 B.

" = +0.1 C

So results considered good.

Mean +0.59<sup>✓</sup>Jan Mean +0.57<sup>✓</sup>

Region rather low, moon at the quarter & not far distance, sky rather bright, images a little poor, hence obs. a little difficult but extreme care used



170

Oct. 15, 1904

155. 1904 Ceraski's new val. +46. 740 (9.5)

$$\begin{array}{r} 27 \ 33 \ +47.3 \ 1160 \\ 22 \ 17 \\ \hline 5 \ 16 \end{array} \quad \begin{array}{r} 5 \ 16 \\ \hline 6 \ 44 \end{array}$$

$$\begin{array}{r} 27 \ 33 \ 1160 \\ 22 \ 26 \ 57 \\ \hline 5 \ 07 \ 653 \end{array}$$

Comp. Star = +46° 739 (9.2)

Right above

296.1 ← Com. S. dis.

9 22 50

$$\begin{array}{r} 7.1 \ 71.0 \ 71.0 \ 53.7 \ +1.09 \ 124.0 \ 124.7 \ 177.7 \end{array}$$

+1.04

$$\begin{array}{r} 306.0 \ 56.4 \ 2.4 \ 73.5 \ 112.5 \ 129.9 \ 186.0 \end{array}$$

0.98

Left below

B

$$\begin{array}{r} 207.8 \ 68.2 \ 276.0 \ 56.0 \ 32.6 \ 124.2 \ 88.6 \end{array}$$

1.10

~~212.0~~

1.06

$$\begin{array}{r} 212.0 \ 58.5 \ 32 \ 40 \ 970.5 \ 69.3 \ 26.7 \ 127.8 \ 96.0 \end{array}$$

1.03

Mean +1.05

$$\begin{array}{r} 32 \ 40 \ 970.5 \\ 2 \ 55 \ 30. \\ +2 \ 27 \ 45. \\ \hline 74 \ 2A \ 7. \end{array}$$



Oct. 15, 1904

Same again

B

9 39 15

205.5	71.3 $\angle$	
276.8	58.6 $\angle$	+0.98 $\angle$
32.5	<u>129.9 <math>\angle</math></u>	
91.1		

+0.93  $\angle$ 

210.5	61.7 $\angle$	
272.2	72.9 $\angle$	+0.58 $\angle$
25.5	<u>134.6 <math>\angle</math></u>	
98.4		

Right &amp; above

A

115.1	68.6 $\angle$	
193.7	53.7 $\angle$	+1.14 $\angle$
304.3	<u>122.3 <math>\angle</math></u>	
358.0		

+1.16  $\angle$ 

123.5	54.0 $\angle$	
47 40 177.5	67.1 $\angle$	+1.17 $\angle$
26 55 297.5	<u>121.1 <math>\angle</math></u>	
9 43 22. 4.6		
22.		

Mean 1.04  $\angle$ Gen Mean 1.04  $\angle$ 

14 43 50, P, A. =  $\times 359.0$  Ver. B, Alt. rather high & growing  
 H. A. =  $-3^h 24^m$  more so, making obs. a little  
 Dec. =  $46.3$  difficult but extreme care  
 S. T. =  $23^h 50^m$  exercised & obs. considered  
 Spuck. =  $-2.5 B$  good.  
 " =  $-1.5 C$   
 " =

Oct. 15, 1904

Doubtful var 054130 = +30°1014

$$\begin{array}{r}
 29 \\
 5 \quad 45 \quad +31.7 \quad 11 \quad 60 \\
 24 \quad 15 \quad \quad \quad 5 \quad 30 \\
 \hline
 5 \quad 30 \quad \quad \quad 6 \quad 30 \quad 6.35
 \end{array}$$

$$\begin{array}{r}
 29 \quad 45 \\
 24 \quad 25 \\
 \hline
 5 \quad 40 \\
 6 \quad 20
 \end{array}$$

Abandoned

060521 =  
Doubt. var  $\Delta$  +21.1146

Gr. sh.  
Phot. J.

$$\begin{array}{r}
 30 \quad 6 \\
 6 \quad 3 \quad +21.9 \\
 24 \quad 05 \\
 \hline
 5 \quad 28
 \end{array}$$

$$\begin{array}{r}
 30 \quad 3 \\
 24 \quad 32 \\
 \hline
 5 \quad 25 \\
 6 \quad 35
 \end{array}$$

Oct. 15, 1904

Sout. Var.  $060 \vee 21 = +21^{\circ} 1146$ .

$$\begin{array}{r}
 6 \quad 6 \\
 30 \quad 6 \\
 28 \quad 45 \\
 \hline
 5 \quad 21 \\
 6 \quad 39
 \end{array}$$

+22.5 H. oh. Phot. J.

Right above A

$$\begin{array}{r}
 108.7 \leftarrow \text{var. dir} \\
 192.7 \leftarrow 240^{\circ} \\
 294.8 \\
 4.5 \\
 \hline
 70.0^{\circ} \\
 154.0^{\circ} - 0.50^{\circ}
 \end{array}$$

$$\begin{array}{r}
 116.9 \quad 67.6^{\circ} \quad -0.54^{\circ} \\
 184.5 \\
 290.7 \quad 22.3^{\circ} \\
 13.0 \quad 149.9^{\circ} \quad -0.54^{\circ}
 \end{array}$$

Left below B

$$\begin{array}{r}
 11.7 \quad 96.0^{\circ} \\
 107.7 \\
 205.8 \quad 70.0^{\circ} \\
 275.8 \quad 166.0^{\circ} \quad -0.27^{\circ}
 \end{array}$$

$$\begin{array}{r}
 28.0 \quad 62.4^{\circ} \quad -0.36^{\circ} \\
 8 \quad 0 \quad 96.4 \\
 11 \quad 4 \quad 15 \quad 195.5 \quad 22.3^{\circ} \\
 +5 \quad +15 \quad 283.8 \quad 156.7^{\circ} \quad -0.44^{\circ} \\
 16 \quad 4 \quad 30.5
 \end{array}$$

mean -0.45



174

Oct. 15, 1904

Same again

 $\beta$ 

$$\begin{array}{r}
 11 \quad 10 \quad 0 \quad 117.0 \quad 99.2^{\circ} \\
 205.5 \quad 71.5^{\circ} \\
 277.0 \quad \underline{170.7}^{\circ} \quad -0.17^{\circ}
 \end{array}$$

$$\begin{array}{r}
 27.0 \quad 64.3^{\circ} \quad -0.22^{\circ} \\
 95.3 \\
 187.2 \quad \underline{96.4}^{\circ} \\
 284.0 \quad \underline{165.1}^{\circ} \quad -0.24^{\circ}
 \end{array}$$

Right  
~~Left~~ above  $\checkmark$

$$\begin{array}{r}
 290.8 \\
 14.2 \quad 43.4^{\circ} \\
 117.0 \quad 64.5^{\circ} \\
 185.5 \quad \underline{151.9}^{\circ} \quad -0.54^{\circ}
 \end{array}$$

$$\begin{array}{r}
 303.1 \quad 61.4^{\circ} \quad -0.57^{\circ} \\
 15 \quad 10 \quad 4.5
 \end{array}$$

$$\begin{array}{r}
 11 \quad 12 \quad 35.1 \quad 106.5 \quad 47.3^{\circ} \\
 +5 \quad +15.1 \quad 193.5 \quad \underline{144.7}^{\circ} \quad -0.60^{\circ} \\
 16 \quad 12 \quad 50.
 \end{array}$$

mean  $-0.40^{\circ}$ P.A. =  $27.5^{\circ}$  or B. Gen. mean =  $-0.42^{\circ}$ H.A. =  $-4^h 56^m$  EastDec. =  $16.9$ S.T. =  $25^h 5^m$ Spuch. =  $-3.5^a$ " =  $-2.5^B$ " =  $-1.9^C$

Oct. 15, 1904

Region rather low & images rather  
blurry <sup>but</sup> ~~the~~ <sup>in</sup> time are excised

W's watch used for times to night.  
Watch is 15 secs. slow.

Oct. 17. 1904. (Monday).

Exp. Hewitt's New Algal Var. -15° 49.0 v.  
H. obs. Phot. J.

1A 12 -15A  
20 2A  
2 16 W's watch used

Above A. (camp & dis)

I

6 33 20

306.3

54.1 v

360.4

117.2

69.0 v

186.2

123.1 v

+11.3 v

29 300.3

35 45

364.0

63.7 v

+12.0 v

123.2

53.0 v

176.2

116.7 v

+12.7 v

Below B

Mean =

~~55.37.9~~

39 10

84.3

46.4 v

209.9

62.5 v

272.4

104.9 v

+1.44 v

28.0

63.2 v

+1.39 v

6 42 15

91.8

150 30

217.6

6 37 32

267.0

+5 +22

11 32 0 v

49.4 v

113.2 v

+1.34 v

Mean + 1.30 v



Oct. 17, 1904.

II

Below B

$$\begin{array}{r}
 38.4 \\
 45.40 \quad 84.5 \\
 209.8 \\
 274.4 \\
 \hline
 65.1 \\
 111.2 \\
 \hline
 +1.39
 \end{array}$$

$$\begin{array}{r}
 30.6 \\
 4800 \quad 91.8 \\
 217.9 \\
 267.6 \\
 \hline
 61.2 \\
 49.7 \\
 110.9 \\
 \hline
 +1.40
 \end{array}$$

Above A

Mean =

$$\begin{array}{r}
 306.2 \\
 5230 \quad 352.9 \\
 114.6 \\
 183.9 \\
 \hline
 46.7 \\
 66.3 \\
 113.0 \\
 \hline
 +1.35
 \end{array}$$

$$\begin{array}{r}
 299.8 \\
 65545 \quad 364.4 \\
 20155 \quad 126.7 \\
 65030 \quad 176.1 \\
 +22 \\
 \hline
 115052
 \end{array}$$

$$\begin{array}{r}
 61.6 \\
 49.4 \\
 111.0 \\
 \hline
 +1.39
 \end{array}$$

$$\begin{array}{r}
 +1.37 \\
 +1.39 \\
 \hline
 \text{mean } +1.34
 \end{array}$$

Oct. 17, 1904

III

Above A

6 59 30  
309.6  
353.7  
118.1  
184.1

46.1<sup>v</sup>  
66.0<sup>v</sup>  
112.1<sup>v</sup> + 137<sup>v</sup>

7 02 30  
298.6  
363.4  
124.0  
176.2

64.8<sup>v</sup> (+ 132<sup>v</sup>)  
52.2<sup>v</sup>  
117.0<sup>v</sup> + 126<sup>v</sup>

Below B

216.5  
07 30 266.4  
330.6  
90.8

Mean = +  
49.9<sup>v</sup>  
60.2<sup>v</sup>  
110.1<sup>v</sup> + 142<sup>v</sup>

210.7  
7 12 35 271.69  
22<sup>v</sup> 37.7  
7 5 31.5 38.2  
+5 +22<sup>v</sup> 82.0  
12 5 53.5

61.2<sup>v</sup> (+ 142<sup>v</sup>)  
43.2<sup>v</sup>  
105.0<sup>v</sup> + 154<sup>v</sup> + 140<sup>v</sup>  
mean + 137

Oct 17, 1904

~~Same again~~  
 Same again. Below.

IV.

$$\begin{array}{r}
 218.0 \\
 7^h 21^m 25^s \quad 265.0 \quad 47.0'' \\
 \quad 31.3 \\
 \quad 90.0 \quad \underline{52.7''} \\
 \quad \quad 105.7'' \quad +1.52''
 \end{array}$$

$$\begin{array}{r}
 209.9 \\
 7^h 25^m 30^s \quad 270.9 \quad 61.0'' \quad +1.51'' \\
 \quad 38.2 \quad \underline{45.3''} \\
 \quad 83.5 \quad 106.3'' \quad +1.50''
 \end{array}$$

Above

Above.

$$\begin{array}{r}
 126.1 \\
 7^h 34^m 00^s \quad 175.3 \quad 49.2'' \\
 \quad 298.8 \quad \underline{64.4''} \\
 \quad 3.2 \quad 113.6'' \quad +1.34''
 \end{array}$$

$$\begin{array}{r}
 116.5'' \\
 7^h 38^m 00^s \quad 185.0 \quad 64.5'' \quad +1.24'' \\
 \quad 112.55'' \quad 306.0 \\
 7^h 29^m 44.356.9 \quad \underline{50.9''} \\
 \quad \quad 119.4'' \quad +1.21'' \\
 +5'' \quad +22.1'' \\
 \hline
 12^h 30^m 6.1''
 \end{array}$$

mean + 1.40''



Oct 17, 1904

Same again. A

V

7 44 50

127.6  
~~174.7~~ 47.1<sup>v</sup>  
 297.3 67.4<sup>v</sup>  
 4.7 114.5<sup>v</sup> +1.31<sup>v</sup>

7 48 <sup>7 m</sup> 15<sup>s</sup> 115.9 67.9<sup>v</sup> +1.26<sup>v</sup>  
 183.8  
 304.0 50.9<sup>v</sup>  
 354.9 114.4<sup>v</sup> +1.22<sup>v</sup>

Below

B

7 54 45

~~438.3~~  
~~43.3~~ 46.2<sup>v</sup>  
 84.2  
 208.9 61.7<sup>v</sup>  
 270.6 107.9<sup>v</sup> +1.47<sup>v</sup>

7 58 10

31.0 54.5  
 89.5

+1.45<sup>v</sup>206 0<sup>v</sup> 216.2 51.07 51 30<sup>v</sup> 267.2 109.5 +1.43<sup>v</sup>

+5 +22<sup>v</sup>  
12 51 52<sup>v</sup>

Mean +1.36<sup>v</sup>

Oct 17, 1904

$\begin{array}{r} 36.6 \\ 80.9 \\ 209.7 \\ 271.7 \\ \hline 518.9 \end{array}$ 
 $\begin{array}{r} 84.3 \\ 62.0 \\ \hline 146.3 \end{array}$

Reject, <sup>another</sup> ~~last~~ impossible  
to finish ~~series~~ group or pro-  
ceed further.

D.C. = 159.0 Ver. B.

H.C. = 3257 m W

Dec =  $-16^{\circ} 0$

S.S. = 22<sup>h</sup> 10<sup>m</sup>

Sprods = -1.5 A

" = -0.5 B

" = +0.1 C

Earlier part of the observations sky  
hazy in this region.

In latter part of observations sky  
somewhat clearer, but throughout  
all the observations, measurements  
were rather difficult on account  
of bit moonlight, <sup>fit</sup>ness of object,  
and decreasing and quite low  
altitude at the end. At end of  
series the object glass was about  
down to the upper edge of lowest  
small shutter. The greatest possible  
care, however exercised throughout,  
settings made slowly, hence observations  
considered good.



Oct 17, 1904

155.1904 = Ceraskis new Var.  $\rightarrow$  <sup>46°</sup> 740 (9.5  
W. obs. Plot I

$$\begin{array}{r} 27.33 \\ 22.37 \\ \hline 4.56 \end{array} \quad +47.3$$

~~8:53:00~~

finder Right & above A  
298.0  $\leftarrow$  66.3<sup>✓</sup> C.S. dis.  
4.3

8:53:00

$$\begin{array}{r} 123.4 \\ 179.2 \end{array} \quad \begin{array}{r} 55.2^{\checkmark} \\ 122.1^{\checkmark} \end{array} \quad +1.1K^{\checkmark}$$

$$\begin{array}{r} 299.9 \\ 355.7 \end{array} \quad 55.2^{\checkmark} \quad +1.12^2$$

$$\begin{array}{r} 115.2 \\ 184.0 \end{array} \quad \begin{array}{r} 68.2^{\checkmark} \\ 124.6^{\checkmark} \end{array} \quad +1.07^9$$

Left &amp; below B

$$\begin{array}{r} 205.4 \\ 277.7 \\ 32.7 \\ 87.3 \end{array} \quad \begin{array}{r} 72.3^{\checkmark} \\ 54.6^{\checkmark} \\ 126.9^{\checkmark} \end{array} \quad +1.04^{\checkmark}$$

$$\begin{array}{r} 213.5 \\ 269.9 \end{array} \quad \begin{array}{r} 56.4^{\checkmark} \\ 74.4^{\checkmark} \end{array} \quad +1.00^{\checkmark}$$

$$\begin{array}{r} 23.2 \\ 98.0 \end{array} \quad \begin{array}{r} 74.4^{\checkmark} \\ 131.2^{\checkmark} \end{array} \quad +0.95^{\checkmark}$$

mean +1.05<sup>6</sup>

$$\begin{array}{r} 90135 \\ 175435 \\ 25712. \\ +22. \\ \hline 135740. \end{array}$$



Oct 17, 1904

Same again.

$$\begin{array}{r}
 90500 \quad 202.2 \quad 71.2^{\checkmark} \\
 274.0 \quad 55.2^{\checkmark} \\
 33.2 \quad 127.0^{\checkmark} \\
 \hline
 879 \quad 88.4 \quad +1.04^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 212.1 \quad 57.0^{\checkmark} \quad +1.04^{\checkmark} \\
 269.1 \quad 70.3^{\checkmark} \\
 24.0 \quad 127.3^{\checkmark} \\
 94.3 \quad +1.04^{\checkmark}
 \end{array}$$

Right above. A

$$\begin{array}{r}
 117.2 \quad 64.2^{\checkmark} \\
 186.0 \quad 51.4^{\checkmark} \\
 305.9 \quad 120.2^{\checkmark} \\
 357.3 \quad +1.19^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 122.5 \quad 54.0^{\checkmark} \quad +1.20^{\checkmark} \\
 176.5 \quad 65.2^{\checkmark}
 \end{array}$$

$$\begin{array}{r}
 91550 \quad 298.3 \quad 119.4^{\checkmark} \quad +1.20^{\checkmark} \\
 20 \quad 50 \quad 4.1 \\
 9 \quad 10 \quad 25. \quad 14 \quad 10 \quad 47. \\
 +5 \quad +22.
 \end{array}$$

mean +1.12<sup>9</sup>  
 Gen. mean +1.02<sup>9</sup>

Oct 17, 1904

$$P.A. = 359.5 \text{ Veru. B.}$$

$$16.A. = -3^h 46^m$$

$$Lac. = +46.4$$

$$S.Y. = 23^h 33^m$$

$$Sprock. = -2.5 B$$

$$'' = -1.5 C$$

$$\begin{array}{r} 2612 \\ 2358 \\ \hline 314 \end{array} \quad \begin{array}{r} 2612 \\ 2353 \\ \hline 219 \end{array} \quad \begin{array}{r} 3.4 \\ -2.4 \end{array}$$

o Ceti w. obs. Photo W.

10 05 30

$$\begin{array}{r} 161.2 \\ 261.7 \\ 333.4 \\ 86.8 \end{array} \leftarrow \begin{array}{r} 100.5'' \\ 113.4'' \\ \hline 213.9'' \\ 146.1'' \end{array} \begin{array}{l} \text{Var. dis} \\ +0.6'' \end{array}$$

$$\begin{array}{r} 155.7 \\ 268.7 \\ 345.6 \\ 82.3 \end{array} \begin{array}{r} 113.0'' \\ 96.7'' \\ \hline 209.7'' \\ 150.3'' \end{array} \begin{array}{l} +0.61'' \\ +0.57'' \end{array}$$

Oct 17, 1904.

Right &amp; above A

$$\begin{array}{r}
 75.2 \\
 169.7 \\
 248.2 \\
 2.0 \\
 \hline
 113.2 \\
 204.3 \\
 151.7
 \end{array}
 \begin{array}{l}
 94.5'' \\
 \\
 \\
 +0.54''
 \end{array}$$

$$\begin{array}{r}
 65.3 \\
 183.7 \\
 258.3 \\
 355.7
 \end{array}
 \begin{array}{l}
 112.4'' \\
 97.4'' \\
 215.2'' \\
 144.2''
 \end{array}
 \begin{array}{l}
 +0.62'' \\
 \\
 +0.69'' \\
 \text{mean } +0.62''
 \end{array}$$

$$\begin{array}{r}
 101440 \\
 \hline
 2010 \\
 1010 \\
 +5 \quad +22 \\
 \hline
 15102
 \end{array}$$

Same Again A

$$\begin{array}{r}
 779 \\
 172.2 \\
 248.6 \\
 4.8 \\
 \hline
 116.2'' \\
 210.5'' \\
 149.5''
 \end{array}
 \begin{array}{l}
 94.3'' \\
 \\
 +0.54'' \\
 \\
 +0.54''
 \end{array}$$

$$\begin{array}{r}
 70.0 \\
 184.9 \\
 262.5 \\
 355.8 \\
 \hline
 114.9'' \\
 93.3'' \\
 202.2'' \\
 151.2''
 \end{array}
 \begin{array}{l}
 +0.56'' \\
 \\
 +0.54'' \\
 \\
 +0.54''
 \end{array}$$



Oct 17, 1904  
O Ceti (cont)

Soft & below. B

351.2

89.0

162.8

279.0

97.2<sup>v</sup>

116.2<sup>v</sup>

214.0<sup>v</sup>

146.0<sup>v</sup> + 0.6<sup>v</sup>

343.8

116.0<sup>v</sup>

+ 0.66<sup>v</sup>

99.8

173.0

272.2

99.2<sup>v</sup>

215.2<sup>v</sup>

144.4<sup>v</sup>

+ 0.6A<sup>v</sup>

mean + 0.61<sup>v</sup>

gen. mean + 0.62<sup>v</sup>

10	26	40
<del>4</del>	43	30.
10	21	45.
+5		+22 <sup>v</sup>
15	22	7.

~~B. C. =~~

16. B. = - 1<sup>h</sup> 43<sup>m</sup>

Dec = - 3<sup>h</sup> 4

S. J. = 0<sup>h</sup> 32<sup>m</sup>

~~or~~ <sup>or</sup> ~~seen~~

or seen in the finder is very perceptibly fainter than C.S.

We watch used for times to-night.  
Watch 22 sec. slow.

Oct 18, 1904 (Tuesday)

Miss Seavitts New Algol Var. - 15° 49' 05"  
W. obs. Phot T.

$$\begin{array}{r} 18^h \quad 12 \\ 21 \quad 14 \\ \hline 3 \quad 02^m \end{array} \quad -15.8$$

Index left & above

109.2

7 26 10

191.2

299.1

1.3

117.0

185.3

285.2

17.2

Right & Below.

18.2

99.2.

7 48 ±

25.0

$$\begin{array}{r} 18 \quad 12 \\ 22 \quad 04 \\ \hline 3 \quad 52 \end{array}$$

P. A. = 157.0° Vern. B.

H. A. = 3<sup>h</sup> 45<sup>m</sup> W.

Dec. = -15°.9

S. J. Spro = 21<sup>h</sup> 57<sup>m</sup>

Sprock. -1.5 A

-0.5 B Sprock + 8.1 C

Oct 18, 1904

Region low at the start, Moon  
bright. Observations throughout  
very difficult. ~~Faint~~ Fog also  
began to come during observations  
actually taken. Fog became so dense  
that it was impossible to finish  
group.

Cerasus's New Variable +46° 7' 40" (9.5)

$$\begin{array}{r} \cancel{18} \cancel{12} \quad 27.33 \\ \underline{22 \quad 25} \\ 5 \quad 08 \end{array}$$

+47.3° ✗

W. Ab. Phot. 7.

Bright &amp; above ✓

$$\begin{array}{r} 298.3 \\ 5.6 \end{array} \quad 67.3 \quad \checkmark \quad \text{C.S. dis.}$$

8 33 30

$$\begin{array}{r} 120.3 \\ 176.9 \end{array} \quad \underline{56.6} \quad \checkmark \quad \begin{array}{r} 123.9 \quad \checkmark \\ +1.11 \quad \checkmark \end{array}$$

$$\begin{array}{r} 305.8 \\ 357.2 \end{array} \quad 51.4 \quad \checkmark \quad +1.13 \quad \checkmark$$

$$\begin{array}{r} 113.9 \\ 184.3 \end{array} \quad \underline{70.4} \quad \checkmark \quad \begin{array}{r} 121.2 \quad \checkmark \\ +1.15 \quad \checkmark \end{array}$$



~~Sept~~ Oct 18, 1904.

Sept & below. B

2	42.4	204.9	70.5	
4	37.4	275.4		
+5	+22.	29.8	57.9	
13	30.7	87.7	124.4	+1.01

mean + 1.07

~~8 49 30~~  
~~212.2~~  
~~266.8~~  
~~22.9~~

P.A. 179.0 Vern. B  
 H.A. - 4<sup>h</sup> 02<sup>m</sup>  
 Dec. + 46.5  
 S. 23<sup>h</sup> 14  
 Sprock. - 2.5 B  
 - 1.5 C

Very heavy fog came in again preventing last setting in group being taken. The last setting actually taken a little bit uncertain and perhaps the two settings before that slightly affected.

We watch used for times to-night.  
 Watch 24 secs. slow.

Oct 20, 1904 (Wednesday)

155. 190K = Ceraski's New Var. +46° 240 (9.5)  
 W. Alb. Phot. "Y"  
 + 47° 3

$$\begin{array}{r} 27 \ 33 \\ 21 \ 00 \\ \hline 6 \ 33 \end{array}$$

$$\begin{array}{r} 27 \ 33 \\ 21 \ 11 \\ \hline 6 \ 22 \\ \checkmark \ 34 \end{array}$$

Right above A

298.0 < C.S. dis.

751 50

$$\begin{array}{r} 2.7 \quad 64.7^{\checkmark} \\ 122.2 \quad 55.1^{\checkmark} \\ 177.3 \quad \hline 119.8^{\checkmark} \quad +1.20^{\checkmark} \end{array}$$

$$\begin{array}{r} - 300.3 \quad 52.6^{\checkmark} \quad +1.12^{\checkmark} \\ 358.9 \\ 117.1 \quad 62.1^{\checkmark} \\ 185.2 \quad \hline 126.7^{\checkmark} \quad +1.05^{\checkmark} \end{array}$$

Oct 20, 1904

Left below B

202.7	
277.2	74.5"
30.7	
88.1	<u>57.4</u> "
	131.9" + 0.94"

211.7	56.7"	
806 30 268.4		+0.94"

110 20. 21.7	<u>75.2</u> "	
7 59 10. 97.5	132.5" + 0.93"	mean +1.03"
+5 +21."		

12 59 31. Same again B

8 13 00 204.3	72.4"
276.7	
34.9	<u>50.5</u> "
85.4	122.9" + 1.13"

213.0	52.6"	
265.6		+1.06"
20.9	<u>77.5</u> "	
98.4	130.1" + 0.94"	



Oct 20, 1904

Right &amp; above A

$$\begin{array}{r}
 108.8 \\
 186.6 \\
 306.1 \\
 353.7 \\
 \hline
 125.4^{\vee} + 1.0A^{\vee}
 \end{array}
 \quad
 \begin{array}{r}
 77.2^{\vee} \\
 47.6^{\vee} \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 124.0 \\
 177.6 \\
 296.4 \\
 6.0 \\
 \hline
 123.2^{\vee} + 1.12^{\vee}
 \end{array}
 \quad
 \begin{array}{r}
 53.6^{\vee} \\
 69.6^{\vee} \\
 \hline
 \end{array}
 \quad
 +1.10^{\vee}$$

$$\begin{array}{r}
 8 \ 31 \ 30 \\
 \hline
 * \ 44 \ 30^{\vee} \\
 2 \ 22 \ 15^{\vee} \\
 +5 \quad +21 \\
 \hline
 13 \ 22 \ 36.
 \end{array}$$

$$\begin{array}{r}
 27 \ 13 \\
 23 \ 19 \\
 \hline
 3 \ 54
 \end{array}$$

$$O.A. = 359^{\circ}.0 \text{ Vern. B}$$

$$K.A. = 354 \text{ E.}$$

$$Dec. = +46.7$$

$$S.T. = 23^h 22$$

$$S.preds. = -2.5 \text{ B}$$

$$= -1.5 \text{ C}$$

V. Refluc.

$$\begin{array}{r}
 23 \ 50 \\
 23 \ 25 \\
 \hline
 0^h \ 25 \text{ E}
 \end{array}$$

W. Alt: Phot. Y.

$$+82^{\circ}.4$$

For measrs. see next 2 pgs.

Oct 29, 1904

V Caphri. (meant.) Phot. J. W. obs.

Left &amp; above.

Comp. Star = +42° 7' 4" (7.0)

Var 21.5

9:28:15

108.2

191.0

301.1

2.0

42.8 ✓

60.9 ✓

143.7 ✓ - 0.70 ✓

Full aperture used.

117.9

66.3 ✓

- 0.64 ✓

184.2

292.2

12.0

79.4 ✓

146.1 ✓ - 0.6v - ✓

Right &amp; below.

25.2

100.3

208.8

274.6

75.1 ✓

65.2 ✓

140.9 ✓ - 0.76 ✓

20.8

92.4

202.2

275.6

71.6 ✓

73.4 ✓

145.0 ✓ - 0.67 ✓

- 0.72 ✓

Mean - 0.70 ✓

9 3830

66 45

9 33 22

+5 +21.

14 33 43.

Oct 20, 1904.

Same again

~~94110~~  
 94110

20.2		
99.1	74.9	✓
206.2	63.2	✓
270.0	142.7	✓ - 0.72

31.8	65.1	✓ - 0.72
96.9		
201.7	72.0	✓
279.7	143.1	✓ - 0.71

So far above

292.2	77.4	✓
10.0		
119.0	63.1	✓
182.1	140.9	✓ - 0.76

3030.3	64.9	✓ - 0.72
5.2		

9	49	30		
90	40.	109.8	40.0	✓
9	45	20.	189.8	144.9
45				✓ - 0.64
	+21.			
14	45	41.		

Mean - 0.72  
 Gen. mean - 0.71

We watch used for times to night.  
 Watch 21 sec. slow.



Oct 20, 1904.

D.C. 143.0 Vermin B  
 16.A. 0h 17m W  
 Dec. +82.8  
 S. Y. 0h 17m  
 Sprocket. -2.5 B  
 " -1.5 C

Observations made through more or less clouds. Clouds continually drifting past regions but of rather a feathery character although rather dense at times causing some delay in making observations. Observer, however, waited for thin places and gaps in clouds ~~and~~ also for steady images so that observations are considered good. Object glass covered with a thin coating of fog.

Comparison star used in above measurements equals <sup>on R Cepheus</sup> +82 748 (7.0) Full aperture used.

Object glass looked at again and found to be quite heavily dewed. The coating on object glass becoming somewhat denser with the progress of the evening. ~~On~~ General cloudiness also steadily approaching. Abandoned any further work. Southern send now also beginning to come in a more pronounced way.

Oct 21, 1904 (Friday)

Cereskin's new Var. +46° 7' 40" (9.5)

27:33

+47° 3' W. obs. Phot. S.

21:50

5 43

~~Camp. Star = +42° 7' 36" (9.5)  $\frac{K}{H}$  Aug.~~

Right & above Camp. Star = +46° 7' 39" (9.2)

116.0

C. S. dis.

7 49 40

186.6 70.6°

303.8 52.2°

356.6 123.4° +1.12°

124.3 54.0°

+1.10°

178.3

294.8 71.2°

6.0 125.2° +1.02°

Left & below.

23.0

Clouds.

97.0 74.0°

210.3 57.2°

268.1 132.2° +0.94°

32.7

55.0°

+1.06°

87.7

70.4°

205.1

125.4° +1.02°

275.5

Mean +1.06°

8401455

111 25.°

7 55 42.°

+5 +29.°

12 56 11.°



Oct 21, 1904.

Same again

$$\begin{array}{r}
 8 \ 1345 \ 24.7 \\
 95.0 \quad 70.3^{\vee} \\
 213.4 \quad 54.6^{\vee} \\
 268.0 \quad \underline{124.9^{\vee}} \quad +1.09^{\vee}
 \end{array}$$

$$\begin{array}{r}
 34.6 \quad 53.6^{\vee} \quad +1.04^{\vee} \\
 88.2 \\
 203.9 \quad 73.4^{\vee} \\
 277.7 \quad \underline{127.4^{\vee}} \quad +1.03^{\vee}
 \end{array}$$

Right above.

$$\begin{array}{r}
 267 \ 297.2 \quad 62.0^{\vee} \\
 5.2
 \end{array}$$

$$\begin{array}{r}
 123.0 \quad 52.4^{\vee} \\
 175.8 \quad \underline{120.4^{\vee}} \quad +1.12^{\vee}
 \end{array}$$

$$305.2 \quad 55.2^{\vee} \quad +1.14^{\vee}$$

$$\begin{array}{r}
 82510 \\
 \hline
 3A \ 55.2^{\vee} \quad 114.3 \quad 69.2^{\vee} \\
 A \ 19 \ 2A. \quad 183.5 \quad \underline{124.4^{\vee}} \quad +1.10^{\vee}
 \end{array}$$

$$\begin{array}{r}
 +5 \quad +29.2^{\vee} \\
 13 \ 19 \ 57.2^{\vee}
 \end{array}$$

$$P.A. = 358.5^{\circ} B$$

$$16-A. = 4^h 23^m$$

$$Dec = +46.6$$

$$S.D. = 22^h 55^m$$

$$Sprock. = -2.5 B$$

$$" = -1.5 C$$

$$\begin{array}{l}
 Mean +1.10^{\vee} \\
 Gen. Mean +1.00^{\vee}
 \end{array}$$



Oct 21, 1904.

V Cephei. W. Alb. Phot. I.

23 50

+ 82.4

23 16

34

Comp. Star = +42° 736 (A.V.)

Left &amp; below

+42° 742 (7.0)

(see p. 200) adopted  
as the comp. star.

Var. dia.

42.8"

9 13 30

310.0

352.8

133.0

168.0

 $\frac{35.0}{77.8} - 2.26$ 

313.6

32.4"

-2.26"

346.0

129.2

45.1"

174.3

 $\frac{77.5}{77.5} - 2.27$ 

Right &amp; above.

211.0

55.0"

266.0

44.1

35.2"

79.3

 $\frac{90.2}{90.2} - 1.91$ 

220.4

38.8"

-1.88"

258.2

33.9

87.0

53.1"

 $\frac{91.9}{91.9} - 1.86$ 

mean - 2.07"

9 21 25

34 55"

9 17 22"

+5 +29"

14 17 57"

Oct 21, 1904

Same again.

92310

212.2

266.8

411.9

79.0

2.2

~~221.9~~

258.3

351.6

85.8

~~54.6~~54.6<sup>v</sup>37.1<sup>v</sup>91.7<sup>v</sup>-1.87<sup>v</sup>36.1<sup>v</sup>-1.94<sup>v</sup>50.2<sup>v</sup>86.3<sup>v</sup>-2.01<sup>v</sup>

Left &amp; below.

127.9

174.1

313.3

345.3

46.2<sup>v</sup>32.0<sup>v</sup>78.2<sup>v</sup>-2.25<sup>v</sup>-2.25<sup>v</sup>

133.6

33.6<sup>v</sup>

93200

55 10<sup>v</sup>9 27 30<sup>v</sup>+5 +29<sup>v</sup>14 20 4<sup>v</sup>

167.2

307.0

351.4

44.4<sup>v</sup>78.0<sup>v</sup>-2.25<sup>v</sup>Mean - 2.10<sup>v</sup>Gen. Mean - 2.02<sup>v</sup>

P.A. = 53.0 Vern B

16. A. = +0° 07' m

Dec. = +82° 7'

S.I. = 23° 57' m

Sprock - 2.5 B

-1.5 C

Full aperture used in above measurements

Oct 21, 1904

v Cepheid

Comp. Star =  $+22^{\circ}742(7.0)$ 

9 1/2 in. Cap.

Soft <sup>above</sup> ~~below~~

295.2 ← Var. dis.

4.0

68.8<sup>v</sup>

108.44

79.9<sup>v</sup>

188.3

142.7-0.60<sup>v</sup> $+22^{\circ}742(7.0)$   
adopted as the  
comparison star.

290.2

20.6<sup>v</sup>

-0.60

10.8

115.6

67.4<sup>v</sup>  
142.0<sup>v</sup>-0.61<sup>v</sup>

183.0

Bright below

200.0

279.1

79.1<sup>v</sup>

27.6

95.0

67.4<sup>v</sup>  
146.5<sup>v</sup>-0.64<sup>v</sup>

208.1

66.4<sup>v</sup>-0.63<sup>v</sup>

274.5

19.8

21.3<sup>v</sup>

101.1

147.7<sup>v</sup>-0.62<sup>v</sup>mean -0.62<sup>v</sup>

9 57 35

106 v.

9 53 2. v

+29. v

14 53 31. v



Oct 21, 1954

Same again

$$\begin{array}{r}
 10 \ 00 \ 15 \\
 199.3 \\
 279.1 \quad 79.8 \\
 27.7 \quad 64.3 \\
 92.0 \quad \underline{144.1} \quad -0.69
 \end{array}$$

8

$$\begin{array}{r}
 208.8 \quad 63.4 \quad -0.62 \\
 272.2 \\
 18.8 \quad 41.7 \\
 100.5 \quad \underline{145.1} \quad -0.67
 \end{array}$$

Left above.

$$\begin{array}{r}
 110.0 \\
 190.5 \quad 20.5 \\
 298.7 \quad 63.5 \\
 2.2 \quad \underline{144.0} \quad -0.69
 \end{array}$$

A

$$118.9 \quad 63.4 \quad -0.72$$

$$182.3$$

$$\begin{array}{r}
 10 \ 10 \ 10 \\
 10 \ 25. \checkmark \\
 10 \ \checkmark \ 12. \checkmark \\
 +5 \quad +29. \checkmark \\
 \hline
 15 \ \checkmark \ 41. \checkmark
 \end{array}$$

$$292.7 \quad 72.0$$

$$11.0 \quad \underline{141.4}$$

$$10.7$$

$$-0.75 \quad \text{mean} = -0.70$$

$$\text{Gen. mean} = -0.66$$

$$P.A. = 3 \frac{2}{3} 4.5 \text{ Vern. B}$$

$$H.A. = +0^h 35^m$$

$$\text{Dec} = +82.7$$

$$S.I. = 0^h 33^m$$

$$Sproc = -2.5 B$$

$$-1.5 C$$

Oct 21, 1904

Doubtful Star 044528

W. obs. Photo. 2.

4<sup>e</sup> 40

+ 29.2

0 42

3 58 E.

Comp. Star = + 22° 70' 4" (7.4)

Index above A

26.7

91.2

6 K. v. &lt; C.S. dis.

10 39 30

201.8

7 A. v. v

280.3

143.0 v

+ 0.71 v

23.5

7 2.6 v

+ 0.76 v

96.1

209.2

6 v. A v

275.0

13 A. K v

+ 0.41 v

Index below. B

300.6

63.1 v

3.7

108.9

42.1 v

191.0

145.2 v

+ 0.67 v

291.0

79.7 v

+ 0.66 v

10.7

117.3

6 v. A v

183.1

145.5 v

+ 0.66 v

mean + 0.71 v

10 47 00

26 30. v

10 43 15. v

+ v + 29. v

15 43 44. v

Oct 21, 1904

Same again, B

$$\begin{array}{r}
 298.0 \\
 5.0 \\
 \hline
 111.1 \\
 190.3
 \end{array}
 \begin{array}{r}
 67.0^v \\
 79.2^v \\
 \hline
 146.2^v
 \end{array}
 +0.6v^v$$

$$\begin{array}{r}
 291.5 \\
 9.2 \\
 \hline
 121.1 \\
 182.3
 \end{array}
 \begin{array}{r}
 77.7^v \\
 61.2^v \\
 \hline
 138.9^v
 \end{array}
 +0.72^v$$

$$\begin{array}{r}
 208.8 \\
 271.9 \\
 221.3 \\
 97.3
 \end{array}
 \begin{array}{r}
 63.1^v \\
 75.0^v \\
 \hline
 138.1^v
 \end{array}
 +0.40^v$$

Under above. A

$$\begin{array}{r}
 203.8 \\
 278.3 \\
 29.5 \\
 89.9
 \end{array}
 \begin{array}{r}
 74.5^v \\
 60.4^v \\
 \hline
 134.9^v
 \end{array}
 +0.21^v$$

+0.4K<sup>v</sup>

$$\begin{array}{r}
 105745 \\
 107 K^v \\
 1053 v2. \\
 +v \\
 \hline
 155421.
 \end{array}
 \begin{array}{r}
 278.3 \\
 29.5 \\
 89.9
 \end{array}
 \begin{array}{r}
 74.5^v \\
 60.4^v \\
 \hline
 134.9^v
 \end{array}
 +0.22^v$$

mean +0.70<sup>v</sup>Gen. mean +0.74<sup>v</sup>

D.C. 38.0 Vern. B

H.C. - 329<sup>m</sup>

Dec +28.3

S.I. 1217

Sprock. -1.5 B

" -0.5 C

K's watch used for times to-night.  
 Watch 29 sec. slow.



Oct 22, 1904 (Saturday)

Cassiopeia Var +46° 740 (9.5)

27 33

+47° 3

21 43

5 50

~~mean~~ Abandoned

moon too brt.

Troubled also by clouds.

U Cephei 9 1/2 cal W. obs. Phot. J.

23 50

+82° 4

21 58

Clouds.

1 52

Comp. Star = +22° 742 (7.0)

Left & above

293.2

Var dis

7 59 20

8.7

75.5

113.5

71.7

185.2

147.2

-0.63

297.8

67.1

-0.62

-4.9

109.1

209

148.0

-0.61

190.0

Regent & below

B

201.7

77.9

279.6

64.5

29.2

142.4

-0.73

93.7

-0.72

206.0

64.0

274.0

75.5

24.0

143.4

-0.71

mean -0.67

99.5

8 11 50

4 11 10

+4 5 +3 5

Oct 22, 1904

Samae again B

8 23 30  
 201.2  
 278.5 77.3<sup>v</sup>  
 27.8  
 92.7  $\frac{64.9}{142.2}$  -0.73<sup>v</sup>

207.9  
 275.4 67.5<sup>v</sup> -0.62<sup>v</sup>  
 19.8  
 99.3  $\frac{79.5}{147.0}$  -0.63<sup>v</sup>

Left above. A

111.6  
 189.4 77.2<sup>v</sup>  
 296.0 70.3<sup>v</sup>  
 6.3  $\frac{70.3}{144.1}$  -0.61<sup>v</sup>

112.7 73.0<sup>v</sup> -0.62<sup>v</sup>  
 185.7

8 34 10  
 57 40.<sup>v</sup>  
 2 22 50.<sup>v</sup>  
 +5 +32.<sup>v</sup>  
 13 29 22.<sup>v</sup>

Mean -0.65<sup>v</sup>  
 Gen. mean -0.66<sup>v</sup>

H. A. = -0.53<sup>m</sup>

Dec = +82.76

S. J. = 23.05<sup>m</sup>

S. frock = -2.5 B

" = -1.5 C

Oct 22, 1904

Cygni.  
y ~~Cygni~~ 9.5 Cap. W. Obs. Plot J.

23.17

$$\begin{array}{r} 20 \ 40 \\ \hline 2 \ 37 \ W \end{array} \quad + 33.4$$
Left alone B  
4.6.3 L Var. dis.

90620

$$\begin{array}{r} 76.0 \quad 29.7'' \\ 224.9 \quad \underline{32.7''} \\ 257.6 \quad 62.4'' \end{array} \quad - 2.77''$$

$$\begin{array}{r} 45.2 \quad 226.2 \\ 75.9 \quad 254.6 \\ 43.9 \quad \underline{32.4''} \\ 76.7 \quad 61.2'' \end{array} \quad \begin{array}{l} 24.4'' \\ - 2.21'' \end{array} \quad - 2.79''$$

Right below. A

$$\begin{array}{r} 134.7 \quad 32.6 \\ 167.3 \quad \underline{24.9} \\ 316.0 \quad 61.5'' \end{array} \quad - 2.20''$$

$$\begin{array}{r} 136.2 \quad 31.1 \\ 167.3 \end{array} \quad - 2.75''$$

$$\begin{array}{r} 9 \ 17.00 \\ \hline 23 \ 20. \\ 9 \ 11 \ 40. \\ +5 \quad +32. \\ \hline 14 \ 12 \ 12 \end{array}$$

$$\begin{array}{r} 313.7 \quad \underline{32.3} \\ 347.0 \quad 64.4'' \end{array} \quad - 2.70'' \quad \text{Mean } - 2.77''$$



Oct 22, 1904

Same again. A

$$\begin{array}{r}
 132.8 \\
 91820 \quad 167.7 \quad 34.9 \\
 315.5 \quad \underline{29.2} \\
 345.3 \quad \underline{64.7} \quad -2.69
 \end{array}$$

$$\begin{array}{r}
 135.9 \quad 30.9 \quad -2.72^v \\
 166.8 \\
 314.2 \quad \underline{32.1} \\
 346.3 \quad \underline{63.0} \quad -2.7^v
 \end{array}$$

Soft above. B

$$\begin{array}{r}
 45.0 \quad 32.3 \\
 77.3 \\
 226.3 \quad \underline{29.2} \\
 255.5 \quad \underline{61.5} \quad -2.40^v
 \end{array}$$

$$\begin{array}{r}
 46.8 \quad 29.4 \quad -2.40^v \\
 76.2
 \end{array}$$

$$\begin{array}{r}
 92600 \\
 44 \quad 20. \quad \checkmark \quad 224.2 \quad \underline{32.4} \\
 9 \quad 22 \quad 10. \quad \checkmark \quad 256.6 \quad \underline{61.4} \quad -2.79 \\
 + \quad +32. \quad \checkmark \\
 14 \quad 22 \quad 42 \quad \checkmark
 \end{array}$$

Mean  $-2.76^v$   
 Gen. Mean  $-2.76^v$

P.A. = 9.4 Vern B. The watch used for  
 H.A. = +3<sup>h</sup> 05<sup>m</sup> times to right. Watch  
 Dec = 33.6 32. secs. slow.  
 S. L. = 23<sup>h</sup> 50<sup>m</sup>  
 Sprock -3.5 B  
 -2.5 C.  
 9 1/2 Cap.

Oct 24, 1904 (Monday)  
~~Oct 22, 1904~~

Unso Seant's New Var.  $-15^{\circ} 49' 05''$

21 35

18 12

3 23

W. lls. Plot. T.

$-15^{\circ} 8'$

Left 2 above.

~~293.9~~

~~6.2~~

~~122.0~~

~~122.0~~

C.S. dis

~~72.3~~

~~0.0~~

300.9

54.1

359.0

115.3

187.9

72.6

130.7 + 0.96

Right below

27.2

96.0

62.2

+1.02

7 32 30

69

30.1

214.0

55.2

7 34 45

45.1

269.8

124.6

+1.09

+34.1

12<sup>h</sup> 35<sup>m</sup> 19<sup>s</sup>

= 24<sup>h</sup> 12<sup>h</sup> 35.3

24 9 43.0

+ 2<sup>h</sup> 52.3 = 0.119

P.Q. = 159.5 Vern. B.

16.C = +3 47

Dec = -15.9

S.J. = 22<sup>h</sup> 15<sup>m</sup>

Sprock = -1.5 A

" = -0.5 B

" = +0.1 C



Oct 24, 1904.

The preceding

Measurements extremely difficult on account of very bright moonlight (The moon being full tonight) low altitude and some fog and haze especially in this part of the sky. At the start it was considered extremely doubtful if a full group could be taken.

The preceding measurements were mainly taken to give an approximate idea of the brightness of the variable at the time. Impossible to finish group. I brought a misunderstanding between observer and recorder in the latter part of first set and owing to the extreme difficulty expressed in making the settings the last setting of the first set was accidentally omitted, so that only two settings were taken, one after and one before reversal of photometer. These sets  $\frac{1}{3}$  weight.



210

Oct 24, 1904.

171333 <sup>u</sup> ~~u~~ <sub>A</sub> Herculis 9 1/2" Cap.  
22 50 w. clb. Plot 7.

$$\begin{array}{r} 17 \ 2 \ 2 \\ \hline 5 \ 28 \ W \end{array} + 33.2$$

Left &amp; below B

833 30

$$\begin{array}{r} 315.6 \\ 345.1 \\ 131.4 \\ 170.3 \\ \hline 62.4 \end{array} \begin{array}{l} 29.5^\circ \\ 32.9^\circ \\ 62.4^\circ \end{array} \begin{array}{l} < \text{Vardis.} \\ \\ -2.56 \end{array}$$

$$\begin{array}{r} 311.7 \\ 351.0 \\ 135.4 \\ 164.9 \\ \hline 67.6 \end{array} \begin{array}{l} 32.1^\circ \\ 29.5^\circ \\ 67.6^\circ \end{array} \begin{array}{l} -2.52 \\ \\ -2.59 \end{array}$$

Right &amp; above A

$$\begin{array}{r} 225.4 \\ 257.3 \\ 42.2 \\ 78.0 \\ \hline 67.7 \end{array} \begin{array}{l} 31.9^\circ \\ 35.2^\circ \\ 67.7^\circ \end{array} \begin{array}{l} \\ \\ -2.59 \end{array}$$

$$\begin{array}{r} 222.2 \\ 260.8 \\ 44.3 \\ 15.2 \\ \hline 69.5 \end{array} \begin{array}{l} 32.6^\circ \\ 30.9^\circ \\ 69.5^\circ \end{array} \begin{array}{l} -2.56 \\ \\ -2.52 \end{array}$$

$$\begin{array}{r} 8 \ 42 \ 30 \\ 7 \ 6 \ 0 \\ + 3 \ 4 \ 0 \\ + 5 \\ \hline 13 \ 34 \ 34 \end{array}$$

mean -2.57

Oct 24, 1904.

Same Again +

$$\begin{array}{r}
 84540 \\
 225.3 \\
 256.9 \quad 31.6^{\vee} \\
 41.8 \quad 34.9^{\vee} \\
 76.7 \quad \underline{66.5^{\vee}} - 262
 \end{array}$$

$$\begin{array}{r}
 221.2 \quad 40.5^{\vee} \quad -254^{\vee} \\
 261.7 \\
 44.3 \quad 30.9^{\vee} \\
 75.2 \quad \underline{71.4^{\vee}} - 246
 \end{array}$$

2 left &amp; below. B

$$\begin{array}{r}
 1341.8 \quad 31.4^{\vee} \\
 166.2 \\
 311.7 \quad 39.1^{\vee} \\
 350.8 \quad \underline{70.5^{\vee}} - 249
 \end{array}$$

$$\begin{array}{r}
 85330 \\
 99 \quad 10.0^{\vee} \\
 249 \quad 35.0^{\vee} \\
 +5 \quad +34.0^{\vee} \\
 \hline
 1350 \quad 9.0^{\vee}
 \end{array}
 \quad
 \begin{array}{r}
 131.0 \\
 169.9 \quad 32.9^{\vee} \quad -252^{\vee} \\
 316.7 \quad 29.5^{\vee} \\
 346.2 \quad \underline{64.4^{\vee}} - 256^{\vee}
 \end{array}$$

mean - 253

Gen. mean - 255

P.Q. = 133.0 Veru B.

H.Q. = +6<sup>m</sup> 14<sup>m</sup>

Dec = +32.7

S.S. = 23<sup>m</sup> 29

Sproc = -4.5 B

-3.5 C

9 1/2" cap used.

Oct 24, 1904

182836  $\gamma$  Lyrae (182836) Full Aperture used.  
Wells. Phot. Y.

$$\begin{array}{r} 23 \ 34 \\ 18.25 \\ \hline 5.09 \end{array} \quad +37.0$$

Soft &amp; above. B

9 3810

$$\begin{array}{r} 24.8 \\ 93.7 \\ 198.1 \\ 283.0 \end{array} \quad \begin{array}{r} \text{Var 215} \\ 62.9^{\vee} \\ 44.9^{\vee} \\ 153.2^{\vee} \end{array} \quad -0.50^{\vee}$$

$$\begin{array}{r} 20.7 \\ 100.0 \\ 207.4 \\ 274.2 \end{array} \quad \begin{array}{r} 79.3^{\vee} \\ 66.2^{\vee} \\ 146.1^{\vee} \end{array} \quad \begin{array}{r} -0.54^{\vee} \\ -0.65^{\vee} \end{array}$$

Rigid &amp; below. A

$$\begin{array}{r} 296.0 \\ -6.0 \\ 165.2 \\ 193.7 \end{array} \quad \begin{array}{r} 70.0^{\vee} \\ 22.5^{\vee} \\ 157.5^{\vee} \end{array} \quad -0.41^{\vee}$$

$$\begin{array}{r} 288.6 \\ 13.8 \end{array} \quad \begin{array}{r} 25.2^{\vee} \end{array} \quad -0.44^{\vee}$$

$$\begin{array}{r} 9 \ 4715 \\ \hline 25.25^{\vee} \\ 9 \ 42 \ 42^{\vee} \\ +5 \quad +34^{\vee} \\ \hline 14 \ 43 \ 16^{\vee} \end{array} \quad \begin{array}{r} 115.5 \\ 185.5 \end{array} \quad \begin{array}{r} 70.0^{\vee} \\ 155.2^{\vee} \end{array} \quad -0.47^{\vee}$$

Mean  $-0.51^{\vee}$



Oct 24, 1904

Same again A

~~295.5~~ ~~296.2~~

294.7

95200

4.7

73.0<sup>✓</sup>

115.7

72.1<sup>✓</sup>

193.8

151.1<sup>✓</sup>

-0.55

289.8

24.1<sup>✓</sup>

-0.42

13.9

113.2

74.6<sup>✓</sup>

187.8

154.7<sup>✓</sup>

-0.41

Left above. B

204.7

70.6<sup>✓</sup>

275.3

24.2<sup>✓</sup>

18.0

102.2

154.2<sup>✓</sup>

-0.42

199.1

24.7<sup>✓</sup>

-0.50

283.8

100200

295400<sup>✓</sup>

26.2

62.6<sup>✓</sup>9570.0<sup>✓</sup>

94.8

153.3<sup>✓</sup>

-0.51

+5 +3K<sup>✓</sup>14573K<sup>✓</sup>

mean -0.49

P.A. = 0.1 Verrier B Gen. mean -0.50

16.0 = +62.2

Dec = +36.4

S.J. = 0h 41

Sprock = -3.5 A

.. = -2.5 B

.. = -1.9 C

Moonlight very bright

Observations a

little difficult

Full aperture used

214

Oct 24, 1904.

214058  $\mu$  Cephei.  $+58^{\circ}23.4$   $9\frac{1}{2}''$  cap.  
 25 16 W. cllo. Phot. J.  
 21 39  $+58^{\circ}.1$   
3 37

Index above Var. Lis. A  
 129.2  $\swarrow$  39.5"  
 168.7  
 310.2  $\swarrow$  42.0"  
 352.2  $\swarrow$  21.5" - 2.15"

105320

129.9  $\swarrow$  41.7" - 2.10"  
 171.6  
 309.0  $\swarrow$  43.4"  
 352.4  $\swarrow$  25.1" - 2.05"

Index below B  
 37.2  $\swarrow$  44.0"  
 81.2  
 218.3  $\swarrow$  45.5"  
 263.8  $\swarrow$  29.5" - 1.93"

37.8  $\swarrow$  44.4" - 1.91"  
 82.2  
 217.0  $\swarrow$  46.6"  
 263.6  $\swarrow$  31.0" - 1.89" mean - 2.00"

105930  
105625  
 +5 +34.  
105659

Oct 24, 1904.

P.A. = 177.5 Ver. B

H.A. = +3<sup>h</sup> 47<sup>m</sup>

Dec. = 58.3

S.T. = 1<sup>h</sup> 30<sup>m</sup>

Sprock = -6.5 B

" -5.5 C

We watch used for times to-night.  
Watch 34. sec. slow.



216

Wednesday Oct 26, 1904

210116 R S Capricorn

23 13

W. Lb. Phot 7.

$$\begin{array}{r} 20^h 53^m \\ 3 \quad 15 \end{array}$$

-17.80

Left above.  $\beta$ 8<sup>h</sup> 56<sup>m</sup> 30<sup>s</sup>

283.2

← C. S. dis.

4

17.8

94.6 ✓

110.2

84.2 ✓

194.4

178.8 ✓

+0.02 ✓

290.5

99.7 ✓

10.2

101.0

96.5 ✓

+0.07 ✓

197.5

176.2 ✓

+0.04 ✓

Right & below.  $\alpha$ 

203.7

75.6 ✓

279.3

17.2

85.7 ✓

102.9

161.3 ✓

+0.36 ✓

195.3

88.9 ✓

284.2

24.8

71.9 ✓

+0.37 ✓

96.7

160.8 ✓

+0.36 ✓

$$\begin{array}{r} 9 \quad 07 \quad 00 \\ 3 \quad 30. \quad \checkmark \\ 9 \quad 1 \quad 45. \quad \checkmark \\ +5 \quad +3A. \quad \checkmark \\ \hline 14 \quad 2 \quad 23. \quad \checkmark \end{array}$$
~~Sum~~ mean +0.20 ✓

Oct 26, 1904

Same again &amp;

9 19. 20	201.2		
	280.4	79.2 <sup>✓</sup>	
	17.5		
	102.2	84.7 <sup>✓</sup>	
		<u>16 3.9<sup>✓</sup></u>	+0.30 <sup>✓</sup>
	194.7		
	284.8	90.1 <sup>✓</sup>	
	23.6		+0.29 <sup>✓</sup>
	98.7	75.1 <sup>✓</sup>	
		<u>16 5.2<sup>✓</sup></u>	+0.24 <sup>✓</sup>

Left above.

B

	102.2			
	199.2	97.0 <sup>✓</sup>		
	289.7			
	11.3	81.6 <sup>✓</sup>		
		<u>17 8.6<sup>✓</sup></u>	+0.93 <sup>✓</sup>	
	108.0			0.00 <sup>✓</sup>
9 29 30	193.9	85.9 <sup>✓</sup>		<del>0.10</del>
KA 50.✓	281.3			
9 24 25.✓	17.0	9.5 <sup>✓</sup>		
		<u>8 5.7</u>	-0.03 <sup>✓</sup>	
tr +36.✓		121.6 <sup>✓</sup>		
14 25 3.✓		17.4 <sup>✓</sup>		
		<u>17 4.4</u>		

X A = 329.0  
 16. A, 2 +3.407 m  
 2lec = -17.2  
 9.5 = 0.12 m  
 Sprock -4.5 A  
 -3.5 B  
 -2.9 C

mean ~~0.20~~  
 Gen. mean ~~0.20~~  
 +0.15<sup>✓</sup>  
 +0.16<sup>✓</sup>

Oct 26, 1904.

SS Cygni w. obs. Oct. J.

24 23

21434

-142.5

2 49

Left above B

114.4

2 Var. dis

186.5

72.1<sup>v</sup>

286.7

87.7<sup>v</sup>

14.4

159.8<sup>v</sup>-0.38<sup>v</sup>

105.8

194.4

88.6<sup>v</sup>

296.0

68.9<sup>v</sup>

4.9

157.5<sup>v</sup>-0.40<sup>v</sup>-0.43<sup>v</sup>

Right below

A

28.0

- 96.0

68.0<sup>v</sup>

196.3

89.5<sup>v</sup>

285.8

157.5<sup>v</sup>-0.43<sup>v</sup>

16.0

104.6

88.6<sup>v</sup>-0.44<sup>v</sup>

205.9

68.1<sup>v</sup>

274.0

156.7<sup>v</sup>-0.44<sup>v</sup>mean = 0.42<sup>v</sup>10 18 0027 00.<sup>v</sup>10 13 30.<sup>v</sup>+5 +3A.<sup>v</sup>15 14 A.<sup>v</sup>



Oct 26, 1901.

Same again. A

25.9

10 20 15

~~957~~ 96.270.3<sup>✓</sup>

195.6

89.1<sup>✓</sup>

284.7

159.4<sup>✓</sup>- 0.39<sup>✓</sup>

14.9

102.4

87.5<sup>✓</sup>- 0.42<sup>✓</sup>

206.2

69.4<sup>✓</sup>

275.6

156.9<sup>✓</sup>- 0.44<sup>✓</sup>

Left above. B

285.6

151.3

89.7<sup>✓</sup>

115.3

72.2<sup>✓</sup>

187.5

161.9<sup>✓</sup>- 0.34<sup>✓</sup>

294.8

6.3

81.5<sup>✓</sup>- 0.36<sup>✓</sup>102700K 7 15<sup>✓</sup>

106.1

88.2<sup>✓</sup>10 23 3A<sup>✓</sup>

194.3

159.7<sup>✓</sup>- 0.39<sup>✓</sup>+r +3A<sup>✓</sup>1r 24 16<sup>✓</sup>Mean - 0.39<sup>✓</sup>

D.C. = 58.4 Vern. B

16. Ci. + 3a 3A 2<sup>m</sup>

Elec. + 42.9

S. J. 1a 13<sup>m</sup>

Sprock. - 4.5 A

Sprock - 3.5 B

" " - 2.9 C

General mean - 0.40<sup>✓</sup>Comparison star used  
in above measurements  
was star "e", = old  
star "m".We watch used for times tonight.  
Watch 30. sec. slow.













1904phae.proj...571W