

KG
11366
v.340

February 10 (Wednesday)

S. Cancri

Phot T

W. obs

Compared with Sun. $+19^{\circ} 20''$ (9.0)

8	36
4	3
4	33
12	
7	27

Index left and above

345.6 Lvar der

~~445~~ 45.3

348.7

43.1

$$\begin{array}{r} 59.7 < \\ 54.4 < \\ \hline 114.1 < \end{array} - 1.32 <$$

348.6

43.9

345.4

46.7

$$\begin{array}{r} 55.3 < \\ 61.3 < \\ \hline 116.6 < \end{array} - 1.27 <$$

Index right and below

75.0

134.8

78.3

135.4

$$\begin{array}{r} 59.8 < \\ 57.1 < \\ \hline 116.9 < \end{array} - 1.26 <$$

78.2

-(1.24)

133.8

75.4

139.1

$$\begin{array}{r} 55.6 < \\ 63.7 < \\ \hline 119.3 < \end{array} - 1.21 <$$

$M = -1.27$

February 10 1897
Same again

57 18

74.9
136.8 61.9 <
76.7 $\frac{57.1}{119.0}$ < 1.21 <
138.8

78.9

(1.23)

58 56

134.5 55.6 <
75.1 $\frac{61.8}{117.4}$ < II 1.20 <
136.9

Index left and above

7 2 15

167.0
227.0 60.0 <
168.1 $\frac{56.9}{116.9}$ < 1.26 <
225.0

170.0

(1.27)

7 4 0

226.6 56.6 <
168.1 $\frac{59.4}{116.0}$ < 1.28 <
227.5

4 2 32 <
12 0 38 <
-1 26 <
11 59 12

M = 1.25

Same again.

7 7 16

166.6
227.7 61.1 <
169.0 $\frac{55.9}{117.0}$ < 1.26 <
224.9

February 10 1897.

7 8 4
 169.5
 225.1 55.6 < (1.28)
 167.0 59.2 <
 226.2 114.8 < III 1.31 <

Indep right and below

7 10 48
 257.1
 304.0 46.9 <
 261.1 50.8 <
 311.9 97.7 < 1.71 <

7 13 15
 439 23 < 203
 12 9 51 <
 12 8 25 <
 260.6 (1.59)
 318.0 52.4 <
 259.2 55.4 <
 314.6 107.8 < 1.47 < M = 1.44

Same again:

7 15 26
 258.0
 315.4 57.4 <
 260.2 53.8 <
 314.0 111.2 < 1.39 <

7 17 38
 259.1 (1.44)
 310.7 51.6 <
 258.1 55.9 <
 314.0 107.5 < IV 1.48 <

February 10 1897

7 21 58

346.2

47.0 60.8 <

349.4 $\frac{53.8}{114.6}$ 1.31 <

43.2

349.0

(1.30)

44.8 55.8 <

347.1 $\frac{59.9}{115.7}$ 1.29 <

47.0

M = 1.37

7 22 18

4(77 20 <

12 19 20 <

4 26

12 17 54

+19° 20' 44" (9.0) with +19° 20' 92" (9.1)

Index above

15-4.8

241.0 < 2092 dis.

86.2 <

152.5

89.6 < +0.08 <

242.1 175.8 <

(10.14) <

7 38 54

15-4.0

240.4

15-4.5

238.3

86.4 <

83.8 <

170.2 <

+0.19 <

Index below

247.8

328.7

80.9 <

245.0

86.9 <

+0.23 <

331.9

167.8 <

7 42 32

February 10 1897.

$$\begin{array}{r}
 7 \ 43 \ 53 \\
 \hline
 4(157 \ 18) \ 28 \\
 12 \ 39 \ 20 \\
 \hline
 12 \ 37 \ 54
 \end{array}
 \quad
 \begin{array}{r}
 244.6 \\
 880.0 \\
 \hline
 245.6 \\
 329.3 \\
 \hline
 \text{Same again}
 \end{array}
 \quad
 \begin{array}{r}
 85.4 \\
 83.7 \\
 \hline
 169.1
 \end{array}
 \quad
 \begin{array}{l}
 (+0.22) \\
 +0.20 \\
 M = +0.18
 \end{array}$$

$$\begin{array}{r}
 7 \ 46 \ 54 \\
 \hline
 246.3 \\
 329.3 \\
 \hline
 244.4 \\
 332.0 \\
 \hline
 \end{array}
 \quad
 \begin{array}{r}
 83.0 \\
 82.6 \\
 \hline
 170.6
 \end{array}
 \quad
 \begin{array}{l}
 (0.18) \\
 0.18
 \end{array}$$

$$\begin{array}{r}
 7 \ 48 \ 43 \\
 \hline
 244.4 \\
 332.6 \\
 \hline
 247.0 \\
 329.0 \\
 \hline
 \end{array}
 \quad
 \begin{array}{r}
 88.2 \\
 82.0 \\
 \hline
 170.2
 \end{array}
 \quad
 \begin{array}{l}
 0.19 \\
 \text{II}
 \end{array}$$

Index above

$$\begin{array}{r}
 7 \ 52 \ 21 \\
 \hline
 336.1 \\
 60.4 \\
 \hline
 335.3 \\
 59.0 \\
 \hline
 \end{array}
 \quad
 \begin{array}{r}
 84.3 \\
 73.7 \\
 \hline
 158.0
 \end{array}
 \quad
 \begin{array}{l}
 0.42
 \end{array}$$

$$\begin{array}{r}
 7 \ 52 \ 57 \\
 \hline
 4(200 \ 55) \\
 12 \ 50 \ 14 \\
 \hline
 12 \ 48 \ 48
 \end{array}
 \quad
 \begin{array}{r}
 335.1 \\
 57.8 \\
 \hline
 332.0 \\
 58.8 \\
 \hline
 \end{array}
 \quad
 \begin{array}{r}
 82.7 \\
 86.8 \\
 \hline
 169.5
 \end{array}
 \quad
 \begin{array}{l}
 (0.31) \\
 0.20 \\
 M = 0.24
 \end{array}$$

February 10. 1897.
 $+19^{\circ} 2092$ (9.1) with $+19^{\circ} 2097$ (A.2)
~~25~~ Index to left

353.2 ≈ 2097 dis.

$$\begin{array}{r} 45.1 \\ 348.9 \\ 45.7 \\ \hline 51.9 < \\ 56.8 < \\ 108.7 < \end{array} \quad 1.45 <$$

347.2

$$\begin{array}{r} 47.9 \\ 349.8 \\ 43.0 \\ \hline 60.7 < \\ 53.2 < \\ 113.9 < \end{array} \quad 1.33 <$$

(1.39) <

Index right

262.0

312.4

256.5

315.8

$$\begin{array}{r} 50.4 < \\ 59.3 < \\ 109.7 < \end{array} \quad 1.42 <$$

259.8

314.0

262.7

312.6

$$\begin{array}{r} 54.2 < \\ 49.9 < \\ 104.1 < \end{array}$$

1.5-6 < $M = 1.44$

Same again.

261.8

313.0

258.0

314.0

$$\begin{array}{r} 51.2 < \\ 56.0 < \\ 107.2 < \end{array} \quad 1.48 <$$

February 10 1897.

8 20 8

260.0

314.8

261.7

318.7

54.8 <

$$\frac{520 <}{106.8 <}$$

(1.48) <

1.49 <

Index left

331.6

8 23 42

41.5

348.0

45.9

49.9 <

$$\frac{57.9 <}{107.8 <}$$

1.47 <

947.6

46.3

349.7

41.9

58.7 <

$$\frac{52.2 <}{110.9 <}$$

(1.44) <

1.40 <

M = 1.46

$$\begin{array}{r} 8 \ 24 \ 30 \\ \hline 483 \ 56 < \\ 1.3 \ 20 \ 759 \end{array}$$

D. beta

Photo R.

N-obs

$$\begin{array}{r} 2 \quad 4 \quad - \quad 2.5 \\ \hline 6 \quad 22 \\ 4 \quad 18 \end{array}$$

Index to left

131.9 < var dis.

142.9

132.1

143.0

11.0 <

$$\frac{10.9 <}{21.9 <}$$

5.09 <

8 53

February 10 1897.

133.1			
143.3	102 <		(5.12)
131.5	<u>11.1 <</u>	5.10 <	
142.6	21.3 <		

Index right

221.0		
233.7	12.7 <	
222.2	<u>11.7 <</u>	4.86 <
233.9	24.4 <	

(4.96)

8	58	
13	55	30
	-1	26
13	54	4

221.5			
233.2	11.7 <		
221.8	<u>10.6 <</u>	5.05 <	M = -5.04
232.4	22.3 <		

9 2

221.4
233.5
221.6

Watch 1^m 26["] fast.
∴ Subtract 1^m 26["] from all previous
times this evening.

Feb. 10. 1897.

 $\Sigma 16\overset{15.61}{47}$ 290 Wm. Maj. W-obs

$$\begin{array}{r}
 11 \quad 32 \quad +45.8 \\
 \hline
 7 \quad 27 \\
 4 \quad 27 \\
 \hline
 12 \quad 83 \\
 7 \quad 83
 \end{array}$$

Position angle 265- dist 9"
 mag 5.7 8.1

Index right and below

26.0, *bits dis*

9 38

$$\begin{array}{r}
 67.3 \quad 41.3 < \\
 19.7 \quad \underline{54.7} < \quad 176 < \\
 74.4 \quad 196.0 <
 \end{array}$$

19.6

(172)

72.8

53.2 <

23.5

45.3 <

169 <

68.8

98.5 <

Index left and above

112.8

165.2

52.4 <

106.3

62.2 <

131 <

168.5

114.6 <

February 10 1897.

$$\begin{array}{r} 9 \quad 46 \\ \hline 14 \quad 42 \quad 0 \end{array}$$

$$\begin{array}{r} 112.1 \\ 169.9 \\ \hline 112.3 \\ 162.0 \end{array} \quad \begin{array}{r} 57.3 < \\ \hline 49.7 < \\ 107.0 < \end{array} \quad \begin{array}{l} (1.40) \\ 1.49 \\ M = 1.56 \end{array}$$

$$\Sigma 20'$$

$$\begin{array}{r} 11 \quad 49 \\ \hline 7 \quad 29 \\ 4 \quad 20 \\ \hline 12 \\ 7 \quad 40 \end{array} \quad +47.2$$

Position angle 110° dis $1'$
Mag 6.0 6.5

Index left and above

188.2 \angle btr dis.

9 53

$$\begin{array}{r} 267.7 \\ 185.0 \\ \hline 268.5 \end{array} \quad \begin{array}{r} 79.5 < \\ \hline 80.5 < \\ 160.0 < \end{array} \quad \begin{array}{l} 0.38 < \end{array}$$

$$188.3 \quad (0.38)$$

$$\begin{array}{r} 269.1 \\ 185.9 \\ \hline 268.3 \end{array} \quad \begin{array}{r} 80.8 < \\ \hline 79.4 < \\ 160.2 < \end{array} \quad \begin{array}{l} 0.38 < \end{array}$$

February 10 1897.

Index right and below

275.2

357.8

250.8

352.5

82.6

71.7

154.3

0.49

(0.57)

282.6

352.8

276.4

358.5

70.2

82.1

152.3

0.53

$M = 0.44$

$\Sigma 1610$

12 8 + 33.5

7 41

4 27

12

7 33

February 11 1897. (Thursday)

S. Cancri Phot T W=obs

$$\begin{array}{r} 8 \quad 36 \quad +18.8 \\ 4 \quad 58 \\ \hline 3 \quad 38 \end{array}$$

$$\begin{array}{r} 12 \\ \hline 8 \quad 22 \end{array}$$

✓ Cancri compared with Sun. + 19° 20' 00" (9.0)

Index and above

346.0 < comp dis

47.9 61.9 <

346.9 $\frac{57.0 <}{118.9 <}$ 1.22 <

48.9

350.4

42.2 51.8 <

344.5 $\frac{63.8 <}{118.6 <}$

48.3

1.29 <

I (1.26)

Index right and below

73.9

136.0 62.1 <

79.6

133.0 $\frac{53.4 <}{115.5 <}$ 1.29 <

February 11 1897

(1.28)

7 31 43	77.9			
<u>4(115 36)</u>	134.8	56.9		
12 28 54	75.8	<u>59.5</u>	1.27	M = 1.27
-1 20	135.3	116.4		
<u>12 27 34</u>				

Same again

7 33 12	74.2			
	136.0	61.8		
	78.7	<u>55.7</u>	1.25	
	134.4	117.5		

7 34 35	79.3		(1.22)	
	135.7	56.4		
	74.5	<u>63.3</u>	1.20	<u>II</u>
	138.1	119.7		

Index left and above

7 37 9	164.8			
	227.3	62.5		
	167.8	<u>55.3</u>	1.24	
	223.1	117.8		

(1.24)

7 39 43	168.0			
<u>4(23 39)</u>	225.1	57.1		
12 35 55	165.9	<u>61.1</u>	1.23	M = 1.23
-1 20	228.0	118.2		
<u>12 34 35</u>	227.0			

February 11 1897

Sun. +19° 20 22 (2.0) with +19° 20 92 (9.1)

Index above

242.9 L 9.0 mag dis.

7 44 22

331.5

98.6

238.0

98.6

336.1

187.2

0.14

172.8

239.2

335.9

96.7

(0.14)

242.8

90.2

333.0

186.9

0.13

173.1

I

Index below

150.3

8 50 0

243.8

93.5

148.0

97.0

245.0

190.5

0.20

1169.5

147.5

7 52 56

249.2

101.7

(0.24)

150.5

93.1

243.6

194.8

0.28

165.2

M = 0.19

419 3 36 96

12 48 24

-1 20

12 47 F.

149.0

7 55 56

245.1

96.1

147.3

98.3

245.6

194.4

0.27

165.6

February 11 1897

7 57 8
 148.0
 246.4 98.4
 151.3 91.7
 243.0 190.1 II
 169.9 0.19 II

Index below above

8 2 21
 58.4
 153.3 94.9
 54.9 101.3
 156.2 196.2
 163.8 0.31

8 4 51
 56.8
 157.0 100.2
 56.9 96.1
 153.0 196.3
 163.7 0.31
 (0.31)
 0.27 mean.
 12 58 44 +19° 2092 (2.1) with +19° 2097 (2.2)

Index to left

8 10 53
 350.9 < 2.2 mag. dis.
 42.0 51.1
 347.2 58.7
 40.9 109.8 1.52

8 12 28
 347.0
 45.1 58.1
 348.6 53.4
 42.0 111.5 I 1.32
 (1.40)

February 11 1897

Index to right

8 18 4

78.5

132.8

54.3

77.4

57.9

135.3

112.2

1.37

75.7

136.8

61.1

79.9

53.1

133.0

114.2

1.32

(1.34)

1.37 mean.

8 19 31
 4/20 56 <
 13 10 14 <
 -1 20
 13 13 54 <

8 21 33

77.9

132.8

54.9

76.0

59.1

135.1

114.0

1.33

8 23 12

77.0

135.9

58.9

77.6

55.6

138.2

114.5

1.31

II
(1.32)

Index

170.6

229.6

53.8

165.0

73.0

238.0

126.8

1.05

8 26 12

February 11 1897

8	2.7	25	166.9	227.5	60.6	$\frac{(11.5)}{1.2 \text{ K mean.}}$
<hr/>			167.8	$\frac{56.7}{117.3}$		
13	24	36	224.5	1.25		
<hr/>						
13	23	16				

Q betw

Phot R

W-obs

2	4	-2.5
6	18	
4	14	

Index to right

8 44

40.7	warder	
53.1	12.4	✓
41.9	11.3	✓
53.2	23.7	✓ - 4.92

41.5

(-4.90)

53.2	11.7	✓
40.8	12.3	✓
53.1	24.0	✓ - 4.49

Index to left

131.0	
143.0	12.0 ✓
132.1	10.3 ✓
142.4	22.3 ✓ - 5.05

February 11 1897

8	51	
13	47	30
	-1	20
13	46	10

132.5			
143.1	10.6 ✓		(-v.06)
131.8	11.6 ✓		
143.4	22.2 ✓	v.06	-K.92 mean

8 53

131.6		
143.0	11.4 ✓	
132.3	10.7 ✓	
143.0	22.1 ✓	-v.07

132.4			(-v.04)
143.2	10.8 ✓		
131.2	11.9 ✓		
143.1	22.7 ✓	-v.01	

Index to right

220.4		
233.2	12.8 ✓	
221.8	11.2 ✓	
233.0	24.0 ✓	-K.99

221.7			(-K.90)
232.8	11.1 ✓		
220.5	12.8 ✓		
233.3	23.9 ✓	-K.90	-K.97 mean

8	58	
13	05	30
	-1	20
13	54	10

Feb. 11. 1897.
 Watch used in previous obs.
 was 1^m 20^{sec.} fast.

M. D. 441

Phot R

95-obs 41

$$\begin{array}{r} 3 \quad 31 \quad +62.8 \\ 7 \quad 21 \\ \hline 3 \quad 50 \end{array}$$

Index below and left

$$\begin{array}{r} 202.1 \quad \text{var dis} \\ 254.5 \quad 52.7^{\checkmark} \\ 203.9 \quad 46.8^{\checkmark} \\ \hline 250.7 \quad 99.5^{\checkmark} - 1.67 \end{array}$$

205.3

251.6

201.0

254.0

$$\begin{array}{r} 46.3^{\checkmark} \\ 53.0^{\checkmark} \\ \hline 99.3^{\checkmark} - 1.67 \end{array}$$

(-1.67)

Index above and to right

289.9

343.5

293.1

344.9

$$\begin{array}{r} 53.6^{\checkmark} \\ 51.8^{\checkmark} \\ \hline 105.4^{\checkmark} - 1.53 \end{array}$$

February 11 1897

9	56
14	52 30
	1 20
14	51 10

294.0
342.9
290.3
~~342.0~~

48.9 ✓
52.3 ✓
101.2 ✓

(-1.52)
-1.63 -1.62 mean

v.l.o

Σ

668 Beta Orionis

Phot R 9.1/2

v.l.o 9 - 8.4

7	46
---	----

v.l.o

2	37
---	----

abandoned

v.l.o

Σ

730.

5	25	+17.0
7	54	
2	29	

Position angle 150° dis 9"
Mag 6.6, 6.8

sky pretty cloudy

February 11 1897

Index left as above

10 15

4.3 $\frac{1}{2}$ hr. drs.

87.5 83.2

6.4 80.1

86.5 163.3

- 0.32

6.5

- 0.35

86.2

79.7

5.0

80.2

85.2 159.9

- 0.38

Index below

Mean = -0.35

95.6

178.6 83.0

96.3 78.7

175.0 161.7

- 0.35

98.0

- 0.35

10 23

177.0 80.0

97.1 81.7

178.8 161.7

- 0.35

15 19 0

 $\Sigma 16'$ Theta² Orionis

5 29 -5.5

8 11

2 42

February 11 1897

Position angle 70° dist $50''$
Mags ~~4.8~~ 5.0 6.2

Index right and above

196.7 < intr. dis

255.9

59.2

199.9

54.1

254.0

113.3

- 1.34

200.5

- 1.36

255.2

54.7

198.4

57.1

255.5

111.8

- 1.38

Index left and below Mean = -1.41

287.0

345.0

58.0

293.0

51.6

344.6

109.6

- 1.43

292.1

- 1.40

344.1

52.0

288.1

55.4

343.5

107.4

- 1.48

East setting extremely difficult
on account of increasing cloudiness
stars almost invisible.

February 13 1897 (Saturday)

S. Cancri

Phot. T.

W. obs

8 36 +18.8

5 4

3 32

12

Watch v. 2. sec. fast.

8 28

S. Cancri compared with Sun. +19° 20' 22" (9.0)

Index left and above

345.5 var dis

7 23 3

43.6

55.1

346.9

60.4

1.29

47.3

115.5

~~34~~

342.9

(1.35)

7 24 44

45.0

55.1

349.0

55.1

1.41

47.1

110.2

Index right and below

51.7

7 27 42

134.0

52.3

75.0

62.1

1.32

137.1

114.4

73.7

(1.26)

7 30 11

137.9

64.2

~~72.7~~ 75.9

55.0

1.21

133.9

119.2

$\mu = 1.30$

4 (10 5 40
12 26 25

February 13 1897

Same again.

7 32 40

78.9		
135.2	56.3 <	
74.8	62.0 <	1.23 <
136.5	118.3 <	

(1.24)

7 33 51

73.9		
136.2	62.3 <	
79.7	55.3 <	1.25 <
135.0	117.6 <	

Index left and above

7 35 48

170.4		
225.0	54.6 <	
165.7	60.6 <	1.30 <
226.3	115.2 <	

7 37 35

165.5		(1.28)
227.2	61.7 <	
169.5	55.7	1.25
225.5	117.2	

12	19	54	54
	34	58	

M = 1.26

Am. +19° 2000 (9.0) with +19° 2092 (9.1)

Index above

7 44 14

152.4	9.1 mag die.	
241.7	89.3 <	
159.2	78.2 <	0.24
239.4	167.5 <	

February 13 1897

157.7

(0.20)

237.3

79.6

151.8

$$\begin{array}{r} 91.2 \\ 190.8 \\ \hline \end{array}$$

0.17

243.0

Index below

244.2

330.0

80.8

247.1

$$\begin{array}{r} 80.2 \\ 166.0 \\ \hline \end{array}$$

0.27

327.3

(0.24)

7

247.4

8.51

327.9

80.5

295-14

242.8

$$\begin{array}{r} 87.6 \\ 168.1 \\ \hline \end{array}$$

0.22

M = 0.22

12 47 37

330.4

Same again

244.0

331.2

87.2

246.9

$$\begin{array}{r} 80.2 \\ 167.4 \\ \hline \end{array}$$

0.24

327.1

(0.24)

249.2

330.1

80.9

244.0

$$\begin{array}{r} 87.0 \\ 167.9 \\ \hline \end{array}$$

0.23

331.0

February 13 1897
Index above

329.1

61.1

337.2

57.3

920.0

80.1

172.1

0.10

(0.20)

336.0

54.9

331.6

60.0

7

88.9

88.4

+77.5

167.3

0.24

M = 0.22

+19° 2092 (9.1) with +19° 2097 (A.2)

Index to left

170.0 < 8.2 mag. dis.

223.2

167.9

226.5

53.2

58.6

111.8

1.3 D

(1.3 D)

167.9

227.0

170.8

222.9

59.1

52.1

111.2

1.39

Index to right

258.9

311.0

257.0

317.9

52.1

60.9

113.0

1.35

February 13 1897

$$\begin{array}{r} 8 \quad 16 \\ \hline 13 \quad 12 \quad 30 \end{array}$$

$$\begin{array}{r} 257.2 \\ 815.5 \\ 259.0 \\ \hline 312.7 \end{array}$$

$$\begin{array}{r} 58.6 \\ 53.7 \\ \hline 112.3 \end{array}$$

(1.36)

1.36 - $M = 1.37$

Same again

$$\begin{array}{r} 8 \quad 19 \end{array}$$

$$\begin{array}{r} 260.9 \\ 313.4 \\ 258.4 \\ \hline 317.0 \end{array}$$

$$\begin{array}{r} 52.5 \\ 58.6 \\ \hline 111.1 \end{array}$$

1.39

(1.40)

$$\begin{array}{r} 259.0 \\ 314.9 \\ 259.0 \\ \hline 312.8 \end{array}$$

$$\begin{array}{r} 55.9 \\ 53.8 \\ \hline 109.7 \end{array}$$

1.42

Index to left

$$\begin{array}{r} 349.9 \\ 43.0 \\ 347.5 \\ \hline 47.6 \end{array}$$

$$\begin{array}{r} 53.1 \\ 60.1 \\ \hline 113.2 \end{array}$$

1.34

(1.36)

1.37

 $M = 1.38$

$$\begin{array}{r} 8 \quad 27 \\ \hline 13 \quad 23 \quad 0 \end{array}$$

$$\begin{array}{r} 346.1 \\ 44.9 \\ 349.7 \\ \hline 42.9 \end{array}$$

$$\begin{array}{r} 58.8 \\ 53.2 \\ \hline 112.0 \end{array}$$

Feb 13. 1897.

Q beti

gr-obs

$$\begin{array}{r}
 2 \quad 4 \quad -2.5- \\
 \hline
 6 \quad 24 \\
 4 \quad 20
 \end{array}$$

Index to left

132.0

143.5

132.2

143.5

11.5

11.3

22.8

5.00

(5.04)

131.5

143.2

131.3

143.0

11.4

11.7

22.1

5.07

Index to right

220.1

233.9

221.7

232.8

13.8

11.1

24.9

4.81

221.7

233.0

220.9

232.5

11.3

11.6

22.9

4.99

(4.90)

M = -4.97

$$\begin{array}{r}
 4 \quad 51 \\
 13 \quad 48 \quad 30 \\
 \hline
 13 \quad 47 \quad 38
 \end{array}$$

February 13 1897
Same again

8	54	221.0		
		232.7	11.7 c	
		221.7	11.4 c	4.98 c
		233.1	23.1 c	

(5.00)

221.6		
232.8	11.2 c	
220.3	11.5 c	5.01 c
232.8	22.7 c	

Index to left

311.5		
323.2	11.7 c	
312.5	10.3 c	5.08 c
322.8	22.0 c	

(5.02)

9	10
13	57 0
	52
13	56 08

311.9	
323.1	11.2 c
310.8	12.2 c
323.0	23.4 c

4.95 c $M = -5.01$

Final Mean = -4.99

February 13 1897.

Nova Aurigae

W-obs

5	23	+32.0
<u>7</u>	<u>23</u>	
2	00	

abandoned

 Σ 1543

572 hrs. mag

W-obs

Phot H

11	22.4	+40.0
<u>7</u>	<u>39</u>	
3	43.4	
<u>12</u>		
8	16.6	

11	22.4	+40.0
<u>7</u>	<u>39</u>	
	4	

Seeing too poor for this double
abandoned

February 13 1897.

 Σ 1615-

Phot R

W-obs

$$\begin{array}{r}
 12 \quad 8 \quad + 33, 5- \\
 \hline
 7 \quad 53 \\
 4 \quad 15 \\
 \hline
 12 \\
 \hline
 7 \quad 45
 \end{array}$$

Position angle 90° dist $25''$
 mag 6.0, 8.2

Index above and to left

25.0 \angle index

10

10

70.6

45.6 \angle

24.7

45.4 \angle

70.1

91.0 \angle

1.89

1.84

23.0

70.0

47.0 \angle

23.2

47.5 \angle

70.7

94.5 \angle

1.80

Index right and below

115.4

4

159.1

43.7 \angle

113.8

48.0 \angle

161.8

91.7 \angle

1.87

1.82

February 13 1897

10	17
15	13
30	

113.5		
161.0	47.5	
113.4	47.0	1.80
160.4	94.5	

 Σ 1622 2 bar. Ven. Phot R 95-012

12	10	+ 41.3
8	14	
3	56	
12		
8	4	

Position angle 265° dist $10''$
 mag 5.7 8.1

Index right and below

10	29	158.6 < beta dis.	
		182.9	24.3 <
		156.5	28.1 < 3.17
		184.6	52.4 <

3.16

158.4		
187.5	29.1 <	
158.6	23.7 <	3.10
182.3	52.8 <	

February 13 1897

clouds

Clouds thick

Index left and above

249.9

271.7

246.1

274.4

21.8 <

$$\frac{28.3 < 3.27}{50.1 <}$$

- 3.34

247.0

273.2

250.2

271.3

26.2 <

$$\frac{21.1 < 3.40}{47.3 <}$$

3.25

10	40
15	34 30

Observations made through clouds
and therefore difficult, seeing
quite blurry.

 $\Sigma 16.25$

12	10	+80.0	Phot. R	W-obs
8	38			
3	32			
12				
8	28			

Position angle 210° dist 14"
Mag 6.0 6.4

February 13 1897
Index right and below
308.5 \angle btr dis

10 55

$$\begin{array}{r} 30.6 \\ 812.7 \\ 25.0 \end{array} \quad \begin{array}{r} 82.1 \angle \\ \underline{723 \angle} \\ 154.4 \angle \end{array} \quad \begin{array}{l} 0.49 \end{array}$$

-0.49

$$\begin{array}{r} 812.6 \\ 28.2 \\ \text{clouds thick.} \\ 311.0 \\ 30.0 \end{array} \quad \begin{array}{r} 75.6 \angle \\ \underline{79.0 \angle} \\ 154.6 \angle \end{array} \quad \begin{array}{l} 0.49 \end{array}$$

Index left and above

0.54

$$\begin{array}{r} 43.4 \\ 118.4 \\ 43.1 \\ 116.3 \end{array} \quad \begin{array}{r} 75.0 \angle \\ \underline{73.2 \angle} \\ 148.2 \angle \end{array} \quad \begin{array}{l} 0.61 \end{array}$$

-0.59

$$\begin{array}{r} 44.7 \\ 118.5 \\ 41.4 \\ 118.0 \end{array} \quad \begin{array}{r} 73.8 \angle \\ \underline{76.6 \angle} \\ 150.4 \angle \end{array} \quad \begin{array}{l} 0.57 \end{array}$$

Observations difficult on account of clouds being rather bluish.

February 16 1897 (Tuesday)

Q betti

Phot. R.

94-obs

$$\begin{array}{r} 2 \quad 4 \quad - 2.5^- \\ 5^- \quad 30 \\ \hline 3 \quad 26 \end{array}$$

~~5-38~~

Index to right.

~~3 44.0~~ ~~warder~~

3 44.0 ~~warder~~

3 56.5 12.5°

3 44.1 $\frac{12.1^{\circ}}{24.6^{\circ}} - 4.84^{\circ}$

3 56.2

$-(4.82)^{\circ}$

3 44.5

3 56.7 12.3°

3 44.0 $\frac{12.8^{\circ}}{25.1^{\circ}} - 4.79^{\circ}$

3 56.8

Index to left.

73.9

86.8 12.9°

74.5 $\frac{12.5^{\circ}}{25.4^{\circ}} - 4.77^{\circ}$

87.0

$-(4.84)^{\circ}$

75.0

86.9 11.9°

74.3 $\frac{11.9^{\circ}}{23.8^{\circ}} - 4.91^{\circ}$

86.2

$M = -4.83$

$$\begin{array}{r} 7 \quad 50 \\ \hline 12 \quad 46 \quad 0^{\circ} \\ 12 \quad 45 \quad 45^- \end{array}$$

February 16 1897
Same again

7

54

74.9

86.5

75.1

86.9

11.6

11.8

23.4

-4.902

74.8

87.0

74.0

86.5

12.2

12.5

24.7

-4.83

-(4.89)

Index to right

164.0

177.2

164.7

176.5

13.2

11.8

25.0

-4.80

-(4.78)

164.4

177.0

164.0

176.4

12.6

12.8

25.4

-4.77

M = -4.84

Final Mean = -4.84

8 0
12 57 0
12 56 45

S. bancroft Phot. T. W. ops.
Compared with Sun. +19° 20.22 (9.0)

8 36 +18.5
6 8
2 28
12
9 32

February 16, 1897,
Index left and above

171.0 \angle var dis.

8 17 29

225.9	54.9 \angle	
169.4	58.0 \angle	-1.30 \angle
227.4	112.9 \angle	

- (1.36) \angle

8 19 23

226.6	57.1 \angle	
170.6	55.2 \angle	-1.36 \angle
225.8	112.3 \angle	

Index right and below

6 291.3

8 22 55

318.4	27.1	57.1 \angle	
6 290.1	27.3	54.3 \angle	-1.39 \angle
314.4	51.4	111.4 \angle	

$\sqrt{}$ 289.9

- (1.37)

8 25 30

316.0	26.1	56.1 \angle	
$\sqrt{}$ 289.3	26.7	56.7 \angle	-1.35 \angle
316.0	52.8	112.8 \angle	

4 (80-17) \angle
13 21 19 \angle

$M = -1.36$

Same again.

260.0

8 30 8

315.4	55.4 \angle	
259.1	56.8 \angle	-1.37 \angle
315.9	112.2 \angle	

February 16 1897

8 33 12

259.0

 $-(1.36)^\circ$

316.0

 57.0°

259.6

 55.4° -1.36°

315.0

 112.4°

Index right and above

357.0

8 39 0

46.5

 55.5°

349.0

 55.9° -1.39°

44.9

 111.4°

349.1

 $-(1.33)^\circ$

46.7

 57.6°

348.0

 58.8° -1.27°

46.8

 116.4° $M = -1.34^\circ$

Same again.

347.9

8 44 9

49.0

 61.1°

348.0

 57.9° -1.21°

45.9

 119.0°

349.3

 $-(1.24)^\circ$

47.1

 57.8°

347.9

 59.2° -1.26°

47.1

 117.0°

February 16 1897
Index right and below

8 508

77.8

138.0

60.2 <

79.1

59.0 <

1.21 <

138.1

119.2 <

(1.20) <

78.5

8 5200

138.0

59.5 <

77.9

60.1 <

1.20 <

$M = -1.22$

$\frac{4(192.22)}{1348.06}$

138.0

119.6 <

Watch used in previous measures
15 sec fast.

$\Sigma 422$

P III 98

Phot H

W-obs

3 31 + 0.2

$\frac{7.12}{3}$

3 41

Position angle 250° dist $6\frac{1}{2}$ " 7"
mag 5.9 8.0

Abandoned: Phot H & could not
be used to right, and stars too
close for Phot R

February 16. 1897.

Σ 464 Zeta Pup

$$\begin{array}{r} 8 \quad 46 \quad + 31.5 - \\ 7 \quad 48 \\ \hline 4 \quad 2 \end{array}$$

Abandoned: too bright

Σ 518 40 Erid Phot R 91-obs

$$\begin{array}{r} 4 \quad 10 \quad - 7.8 \\ 8 \quad 53 \\ \hline 3 \quad 43 \end{array}$$

Position angle 110° dis. $1.5'$
mag 4.0 9.1

Index left and below

254.0 L brs dis

$$\begin{array}{r} 266.3 \quad 12.3 \\ 254.1 \quad 12.2 \\ \hline 266.3 \quad 24.5 \end{array}$$

- 4.85 - ✓

254.5

- 4.86 - ✓

266.2

11.7

254.5

12.5

- 4.87 - ✓

267.0

24.2

February 16 1897

Index right and above

343.7

356.9

13.2

343.5

13.7

357.2

26.9

- 4.64

343.7

- 4.62

10 3

10.0

357.5

13.8

343.4

13.7

357.1

27.5

- 4.59

Mean = 4.74

 $\Sigma 9'$

Phot R

H-obs

4 15

+ 22.0

5 10

3 52

Position angle 130° dist 0.55"

mag 4.0 5.0

Index above

Index

29.3 (btr dis)

10

25

138.1

27.6

138.4

103.8

110.8

214.6

145.4

- 0.67

February 16 1897

29.7		-0.67
134.5	104.8	-0.60
29.1	<u>103.5</u>	
132.6	208.3	
	<u>151.7</u>	-0.54

Index below

Mean - 0.86

50.4		
113.2	62.8	
52.2	<u>58.9</u>	
111.1	121.7	-1.16

51.9		-1.11
112.4	60.5	
48.0	<u>65.5</u>	-1.06
113.5	126.0	

16	30
<hr/>	
10	27.5

Observations difficult. Prism
run way up to end of tube.
Stars decidedly elongated into
spectra.

 $\Sigma 10'$

4	21	
1	39	
<hr/>		
4	18	

+15.6

M. obs.

February 16 1897.

Position angle 330° dist $5.7''$
 Magns 4.7 5.0

Index below

130.9, ~~130.9~~ Smith & Birtwistle

10 41

209.2

78.3

131.2

81.7

212.9

160.0 - 0.34

131.4

-0.42

213.0

81.6

135.3

74.0

209.3

153.6 - 0.47

Index above

Mean = - 0.68

227.3

293.4

661

227.2

673

294.5

133.4 - 0.91

229.0

-0.96

10 49

293.4

64.4

227.2

64.8

292.0

129.2 - 1.00

Observations difficult. Prism run
 way up to end of tube. Stars decidedly
 elongated into spectra

February 16 1897

 Σ 550 1 barrel

W-obs

Phot R

4	2.2	+53.6
1	5.7	
<hr/>		
5	8.0	

Position angle 310° dist $10''$
 mag 5.1 6.2

Index right and above

42.1 L br. dis

115.5	73.4
50.1	60.6
<hr/>	
110.7	63.8

51.4

107.0

56.6

42.9

73.4

116.3

129.0

Index left and below

185.9

206.0

70.1

144.4

66.9

198.3

127.0

February 16 1897

11	5	141.8	
		198.9	57.1
		136.2	67.7
		203.9	124.8

A. + D. 952.

11	29	11.0
	30	11.1

B. 394.

11	29	0.0
	30	0.0

Dis. Jup. I. Phot. R. W. dr. Waiter rec.
 Comp. with second sat. on pre. side
 = Sat. II.

11 43 43 ⁺	11	43	15	321.0	
-11			29	102.0 ⁺	63.0
11 43 32 ⁺	East.		57	101.1 ⁺	142.9
	M. Time.		10	101.6 ⁺	244.0
		44	19		146.8
44 35 ⁺			29	99.2 ⁺	246.0
-11			41	103.2 ⁺	144.0
44 24 ⁺			52	101.2 ⁺	247.2
		45	02		142.3
45 16 ⁺			11	103.7 ⁺	246.0
-11			21	103.3 ⁺	142.0
45 05 ⁺			31	103.5 ⁺	245.3
			40		141.3
45 53 ⁺			48	106.5 ⁺	247.8
-11			58	101.9 ⁺	143.2
45 42 ⁺				104.2 ⁺	

Feb. 16, 1897.

11 46 36 ⁺	11	46	06	245.1	
- 11			18	143.0	
11 46 25 ⁺			28	100.2 [*]	242.2 ✓
			44	103.1 ⁺	141.0
			55	101.6 ⁺	244.1
51 30 ⁺	51	10		147.1	
- 11			20	97.5 ⁺	244.9
51 19 ⁺			32	109.1 ⁺	142.7 6
			59	103.4 ⁺	251.8
52 34 ⁺	52	17		139.2	
- 11			29	105.3 ⁺	244.5
52 23 ⁺			40	101.9 ⁺	147.0 7
			52	103.6 ⁺	248.9
	53	13		140.0	
53 35 ⁺			27	105.0 ⁺	248.0 8
- 11			42	103.2 ⁺	142.0
53 24 ⁺			58	105.6 ⁺	245.2
54 26 ⁺	54	08		140.3	
- 11			20	107.5 ⁺	247.8
54 15 ⁺			33	106.3 ⁺	140.7 9
			42	106.9 ⁺	247.0
			54		141.3
55 12 ⁺	55	06		104.6 ⁺	245.9
- 11			18	109.0 ⁺	139.1 10
55 01 ⁺			30	106.5 ⁺	248.1
			41		138.0
			55		248.8

Feb. 16, 1897.

56 01 ⁺	11	56	09	110.5 ⁺		11
-11			18	105.3 ⁺	140.1	
55 50 ⁺			32	109.6 ⁺	248.4	
56 21 ⁺			45		142.3	
34 ⁺			55		244.0	
44 ⁺			07		141.0	
56 ⁺	57	07	18		244.7	
57 07 ⁺			32		148.0	
21 ⁺			41		243.0	
30 ⁺			57		145.0	
46 ⁺			08		233.8	
57 ⁺	58	08	16		147.4	
57 05 ⁺			28		230.9	
17 ⁺			38		158.1	
27 ⁺			47		223.2	
36 ⁺			58		165.7	
47 ⁺			14		218.2	
59 03 ⁺	59	14	37		177.9	
26 ⁺					208.0	

Not seen later.

Limit of Vis

11	59	55	178.0
12 00 15 ⁺	12	09 33F	211.8
-11		20 30.7 ⁺	179.1
12 00 04 ⁺		36 32.2 ⁺	209.8

Sat. dia. close to limit of Jup. so that settings had to be made slowly and with care.

Feb. 16, 1897.

Comp. of Chron.

A + 10.958

B 394.

$$\begin{array}{rclclcl}
 13 & 00 & 11.1 & = & 13 & 00 & 00.0 \\
 13 & 01 & 11.1 & = & 13 & 01 & 00.0
 \end{array}$$

A + 10.958

Comp. of Chron.

B 394.

$$\begin{array}{rclclcl}
 16 & 42 & 11.1 & = & 16 & 42 & 00.0 \\
 16 & 43 & 11.1 & = & 16 & 43 & 00.0
 \end{array}$$

Dis. Jup. II. Phot. R. W. obs. Waitress.
 Comp. with southern and brighter
 of two rather close sets. of on
 following side = Sat. II.

$$16 \ 52 \ 14^+ \ 16$$

$$-11$$

$$16 \ 52 \ 03^+$$

$$53 \ 17^+$$

$$-11$$

$$53 \ 06^+$$

$$54 \ 21^+$$

$$11$$

$$54 \ 10^+$$

$$51 \ 53 \ 240.0$$

$$52 \ 05 \ 530^+ \ 323.0$$

$$21 \ 79.9^+ \ 242.2$$

$$35 \ 71.4^+ \ 322.1$$

$$49 \ 242.8$$

$$53 \ 04 \ 79.1^+ \ 321.9$$

$$28 \ 76.9^+ \ 244.9$$

$$43 \ 75.0 \ 321.8$$

$$54 \ 01 \ 245.0$$

$$15 \ 78.5^+ \ 323.8$$

$$27 \ 54.3^+ \ 240.7$$

$$40 \ 51.6^+ \ 325.0$$

$$1. \ (+0.3^+)$$

$$2. \ (+0.3^+)$$

$$3. \ (+0.3^+)$$

Feb. 16, 1897.

1700	17 ⁺ 16	59	58		241.1
11	17	00	09	51.6 ⁺	322.7
	11		21	76.3 ⁺	243.7
1700	06 ⁺		40	79.0	320.0
01	22 ⁺	01	00		249.0
11			12	73.5 ⁺	322.8
01	11 ⁺		24	77.0 ⁺	245.0
			54	70.4 ⁺	322.0
02	27 ⁺	02	06		246.0
11			19	74.1 ⁺	320.1
02	16 ⁺		36	73.1 ⁺	245.1
			48	73.6 ⁺	318.2
			59		245.8
03	23 ⁺	03	17	75.1 ⁺	320.9
11			31	74.5 ⁺	245.2
03	12 ⁺			75.0 ⁺	Clouds.
			45		320.0
43 ⁺			56		246.1
55 ⁺		04	09		316.2
04	12 ⁺		23		252.0
25 ⁺			39		318.0
46 ⁺			57		250.1
05	13 ⁺	05	24		316.0
					Clouds.
26 ⁺			37		254.2
41 ⁺			52		309.2

Feb. 16, 1897.

17	05	56	17	06	07	260.8
	06	14			25	306.0
		30			46	263.0
		51		07	02	303.0

Not seen later.

Limit of Visibility.

05	10	17	07	46	264.0	
	-11		08	01	37.1	301.1
				18	37.1	263.0 (+2.H)
07	59			35	37.1	300.1

Observations made through cloud and with considerable difficulty. Sat. also obs. quite close to limit of Jup. Probably sat. obs. a little early for these reasons.

Comp. of Chrom.

A+Q	958.1		B	394.		
17	26	11.2	=	17	26	00.0
17	27	11.2	=	17	27	00.0

February 19 1897 (Friday)

U. Cephei Phot 7.

W-rbe

0 30

Index above

121.3 var die

6 22 17

244.5 115.2

131.6 107.7

239.3 222.9 + 0.83

137.1

133.0

+ (0.84)

6 24 58

240.1 107.1

127.5 117.3

245.1 224.4 + 0.86

135.6

Index below

219.5

6 26 47

333.0 113.5

224.3 104.1

328.4 217.6 + 0.73

142.4

225.0

(+0.73)

329.9 104.9

221.3 112.7

334.0 217.6 + 0.73

142.4

M = +0.78

6 27 52

421.54

11 25 28

+17

11 25 45

February 191897

6
 37 54
 222.3
 335.1 112.8
 225.3 103.7
 329.0 216.5 +0.70
 143.5

6
 34 56
 223.8 + (0.68)
 326.9 103.1
 221.1 110.3
 331.4 213.4 +0.64
 146.6

Index above

310.0
 63.0 113.0
 312.5 104.6
 57.1 217.6 +0.73
 142.4

315.9 + (0.66)

6 40 45
 4 10-1 45-2 225-
 112 37 56
 +17
 11 38 13
 310.1 111.3
 61.4 211.4 +0.60
 148.6 $M = +0.68$

308.5
 61.9 113.1
 316.0 101.0 +0.66
 57.0 214.1
 145.9

February 19 1897

7 44 42

386.2

55.4

313.0

58.0

+ (0.56) <

$$\begin{array}{r} 99.2 < \\ 105.0 < \\ \hline 204.2 < \\ 100.8 < \end{array}$$

+ 0.46 <

Index below

42.1

6 46 31

146.9

104.8 <

45.9

95.6 <

141.5

200.4 <

159.6 <

~~+ 0.39~~ + 0.39 <

47.0

+ (0.40) <

146.9

99.9 <

43.1

101.8 <

144.9

201.7 <

158.3 <

+ 0.41 < $M = + 0.48 <$

6 48 31

$$\begin{array}{r} 4(20\ 56 < \\ 11\ 45\ 14 < \\ + 17 \\ \hline 11\ 45\ 31 \end{array}$$

7 57 18

41.5

147.1

105.6 <

46.4

95.9 <

142.3

201.5 <

158.5 <

+ 0.41 <

47.8

+ (0.32) <

6 52 3

142.5

94.7 <

47.4

96.7 <

144.1

191.4 <

168.6 <

+ 0.22 <

February 191897
Index above

133.5

6 55 48

238.4

104.9

136.8

97.2

+ 0.42

234.0

202.1

157.9

+ (0.34)

139.6

6 56 21

233.9

94.3

135.7

99.8

+ 0.27 M = + 0.33

235.5

194.1

165.9

4(15-30-210
11 53 52-
+17
11 04 9

136.3

6 58 37

238.8

102.5

139.0

90.7

+ 0.35

234.7

198.2

161.8

+ (0.26)

139.3

7 0 24

231.0

91.7

138.4

96.9

235.3

158.6

171.4

+ 0.16

Index below

229.1

7 3 30

326.0

96.9

233.8

87.6

321.4

184.5

170.5

+ 0.08

February 19 1897.

7 5 31	236.5		$-(0.02)_{\angle}$
<u>4(8) 2_{\angle}</u>	319.9	83.4_{\angle}	
12 2 0_{\angle}	232.1	<u>89.9_{\angle}</u>	-0.13_{\angle}
+17	322.0	173.3_{\angle}	$M = +0.12$
<u>12 2 17</u>			

7 8 5	230.0		
	321.3	91.3_{\angle}	
	236.3	<u>80.9_{\angle}</u>	-0.15_{\angle}
	317.2	172.2_{\angle}	

7 11 47	236.5		$-(0.16)_{\angle}$
	319.0	82.5_{\angle}	
	232.9	<u>88.6_{\angle}</u>	-0.17_{\angle}
	321.5	VI 171.1_{\angle}	

Index above

7 12 57	320.4		
	51.3	90.9_{\angle}	
	326.4	<u>80.6_{\angle}</u>	-0.16_{\angle}
	47.0	171.5_{\angle}	

7 14 32	324.0		$-(0.21)_{\angle}$
<u>4(47) 21_{\angle}</u>	46.1	82.1_{\angle}	
12 11 50_{\angle}	324.0	<u>84.0_{\angle}</u>	-0.26_{\angle}
+17	48.0	166.1_{\angle}	$M = -0.18_{\angle}$
<u>12 12 7</u>			

February 19 1897

$$\begin{array}{r}
 7 \quad 18 \quad 33 \\
 321.9 \\
 49.8 \\
 326.0 \\
 44.2 \\
 \hline
 87.9 < \\
 78.2 < \quad -0.26 < \\
 166.7 <
 \end{array}$$

-(0.24) <

$$\begin{array}{r}
 7 \quad 19 \quad 36 \\
 324.9 \\
 47.1 \\
 322.5 \\
 48.0 \\
 \hline
 82.2 < \\
 85.5 < \\
 \text{VII} \quad 167.7 < \quad -0.23 <
 \end{array}$$

Index below

$$\begin{array}{r}
 7 \quad 22 \quad 15 \\
 51.8 \\
 135.3 \\
 55.9 \\
 132.3 \\
 \hline
 83.5 < \\
 76.4 < \quad -0.38 < \\
 159.9 <
 \end{array}$$

-(0.40) <

$$\begin{array}{r}
 7 \quad 24 \quad 23 \\
 4(84 \quad 47) < \\
 12 \quad 21 \quad 12 < \\
 \quad \quad +12 \\
 \hline
 12 \quad 21 \quad 29 \\
 \hline
 183.3 \\
 54.9 \\
 134.9 \\
 \hline
 77.2 < \\
 80.0 < \quad -0.43 < \\
 157.2 <
 \end{array}$$

M = -0.32

$$\begin{array}{r}
 7 \quad 26 \quad 15 \\
 55.7 \\
 136.9 \\
 56.9 \\
 184.5 \\
 \hline
 81.2 < \\
 77.6 < \quad -0.40 < \\
 158.8 <
 \end{array}$$

February 19 1897

$$\begin{array}{r}
 57.6 \\
 7 \quad 28 \quad 45 \quad - \quad 133.1 \\
 55.1 \\
 \hline
 133.9 \quad \text{VIII} \quad \begin{array}{r} 75.5 < \\ 78.8 < \\ \hline 154.3 < \end{array} \quad \begin{array}{l} -(0.44) \\ -0.49 < \end{array}
 \end{array}$$

Index above

$$\begin{array}{r}
 147.9 \\
 7 \quad 32 \quad 12 \quad - \quad 228.0 \\
 148.9 \\
 225.4 \quad \begin{array}{r} 80.1 < \\ 76.5 < \\ \hline 156.6 < \end{array} \quad \begin{array}{l} -0.45 < \end{array}
 \end{array}$$

$$\begin{array}{r}
 150.2 \\
 7 \quad 33 \quad 34 \quad - \quad 225.8 \\
 \hline
 4 \quad 120 \quad 46 < \\
 12 \quad 30 \quad 12 < \\
 +17 \\
 \hline
 12 \quad 30 \quad 29 \\
 145.8 \\
 228.0 \quad \begin{array}{r} 75.6 < \\ 82.2 < \\ \hline 157.8 < \end{array} \quad \begin{array}{l} -0.42 < \\ \text{III} = -0.44 \end{array}
 \end{array}$$

$$\begin{array}{r}
 146.0 \\
 7 \quad 37 \quad 10 \quad - \quad 227.8 \\
 148.1 \\
 223.9 \quad \begin{array}{r} 81.2 < \\ 75.1 < \\ \hline 156.3 < \end{array} \quad \begin{array}{l} -0.45 < \end{array}
 \end{array}$$

$$\begin{array}{r}
 151.5 \\
 7 \quad 38 \quad 10 \quad - \quad 223.6 \\
 146.3 \\
 227.2 \quad \begin{array}{r} 72.1 < \\ 80.9 < \\ \hline 153.0 < \end{array} \quad \begin{array}{l} -(0.48) < \\ -0.52 < \end{array} \quad \text{IX}
 \end{array}$$

February 19 1897
Index below

238.4

316.3

248.9

310.0

77.9 <

66.1 <

144.0 <

-0.69 <

-(0.77) <

245.0

308.2

241.6

314.6

63.2 <

73.0 <

136.2 <

-0.80 <

 $M = -0.62$

7 41 47
+11

7 44 11
161 18 < 28
12 40 20 <
+17
12 40 37

240.7

314.0

244.0

309.6

73.3 <

65.6 <

138.9 <

-0.80 <

-(0.80) <

7 49 12

242.9

310.0

241.1

312.2

67.1 <

71.1 <

138.2 <

-0.81 <

X

Index above

330.6

44.2

332.2

38.7

73.6 <

66.5 <

140.1 <

-0.77 <

7 52 14

February 19, 1897.

$$\begin{array}{r}
 7 \ 54 \ 57 \\
 \hline
 4 \ 203 \ 23 \ 2 \\
 12 \ 50 \ 51 \ 2 \\
 \hline
 +17 \\
 \hline
 12 \ 57 \ 8
 \end{array}
 \quad
 \begin{array}{r}
 335.8 \\
 38.2 \\
 \hline
 330.2 \\
 49.0
 \end{array}
 \quad
 \begin{array}{r}
 62.9 \ 2 \\
 \hline
 72.8 \ 2 \\
 135.7 \ 2
 \end{array}
 \quad
 \begin{array}{r}
 - (0.82) \ 2 \\
 - 0.86 \ 2 \\
 \hline
 M = -0.81
 \end{array}$$

Watch used in preceding measurements was
17. secs. slow.

R. Leonis minoris
Phot.

W-obs.

$$\begin{array}{r}
 9 \ 40 \quad +34.8 \\
 \hline
 6 \ 55 \ 2 \\
 \hline
 2 \ 45 \\
 \hline
 12 \\
 \hline
 9 \ 15 \ 2
 \end{array}$$

S. cancri

Phot T

W-obs.

$$\begin{array}{r}
 8 \ 38 \quad +19.4 \\
 \hline
 7 \ 8 \\
 \hline
 1 \ 30 \\
 \hline
 12
 \end{array}$$

~~W-obs.~~

10 30 (ran down)
Watch stopped and was started again.
Comparison again made with B. 394.
See correction on p. 71.

February 19 1897
Index above

8 08 24
64.0
126.0
62.8
129.7
9.0 mag. (comp. star) des.
62.0 <
 $\frac{66.9}{128.9}$ < +1.00 <

9 00 48
62.0
129.5
64.1
128.0
(+0.98)
67.5 <
 $\frac{63.9}{137.4}$ < +0.95 <

Index below

9 4 21
151.4
223.1
148.2
227.2
71.7 <
 $\frac{79.0}{150.87}$ < +0.56 <

9 6 18
14 2 28
+1 54
14 4 22
149.4
224.4
149.8 151.4
222.6
70.0 <
 $\frac{71.2}{146.2}$ < +0.65 <
M = +0.79
(+0.60)

9 9 20
150.9
222.6
150.3
223.2
71.7 <
 $\frac{72.9}{144.6}$ < +0.68 <

February ¹⁹ 1897.

9 11 17
 149.4
 224.6
 150.9
 224.5

(+0.64) <
 75.2 <
 73.6 <
 148.8 <
 II +0.60 <

Index above

8 14 26
 244.4
 311.0
 242.9
 313.2

66.6 <
 70.3 <
 136.9 <
 +0.84 <

II

9 16 30
 243.9
 310.0
 244.0
 309.2

(+0.90) <
 66.1 <
 65.2 <
 131.3 <
 +0.95 <
 M = +0.77

4(51 33) <
 14 12 53 <
 +1 54
 14 14 47 <

9 18 32
 244.0
 307.9
 244.9
 311.1

63.9 <
 66.2 <
 130.1 <
 +0.98 <

(+1.08) <

9 20 31
 244.8
 311.2
 245.0
 309.8

66.4 <
 54.8 <
 121.2 <
 III +1.17 <

February 19
Index below

$$\begin{array}{r}
 330.8 \\
 40.4 \quad 69.6 < \\
 928.4 \quad \frac{75.1 <}{144.7 <} + 0.68 < \\
 43.5
 \end{array}$$

(+0.72) <

~~300~~ 330.4

$$\begin{array}{r}
 9 \quad 25 \quad 56 \\
 \hline
 488 \quad 54 < \\
 14 \quad 22 \quad 14 < \\
 \quad +1 \quad 54 \\
 \hline
 14 \quad 24 \quad 8
 \end{array}
 \quad
 \begin{array}{r}
 42.0 \\
 331.6 \\
 40.8
 \end{array}
 \quad
 \begin{array}{r}
 71.6 < \\
 \frac{69.2 <}{140.8 <} + 0.76 < \\
 M = +0.90 <
 \end{array}$$

$$\begin{array}{r}
 329.0 \\
 41.5 \\
 334.5 \\
 37.1
 \end{array}
 \quad
 \begin{array}{r}
 72.5 < \\
 \frac{672.6 <}{135.1 <} + 0.87 <
 \end{array}$$

(+0.87) <

$$\begin{array}{r}
 333.0 \\
 36.4 \\
 328.4 \quad 330.4 \\
 42.1
 \end{array}
 \quad
 \begin{array}{r}
 63.4 < \\
 \frac{71.7 <}{135.1 <} + 0.87 < \\
 \text{IV}
 \end{array}$$

Index above

$$\begin{array}{r}
 59.2 \\
 132.0 \\
 65.1 \\
 124.3
 \end{array}
 \quad
 \begin{array}{r}
 72.8 < \\
 \frac{59.2 <}{132.0 <} + 0.94 <
 \end{array}$$

February 19 1897

$$\begin{array}{r}
 9 \ 41 \ 18 \\
 \hline
 4(15-1) \ 1 < \\
 14 \ 37 \ 45 < \\
 \hline
 +1 \ 54 \\
 \hline
 14 \ 39 \ 39
 \end{array}$$

66.2

123.3

57.0

133.1

57.1 <

$$\frac{76.1 <}{133.2 <}$$
 $(+0.92) <$ $+0.91 < \quad M = +0.90$

9 44 50

62.7

129.0

68.0

127.3

66.3 <

$$\frac{64.3 <}{132.6 <}$$
 $+0.97 <$ $(+0.90-) <$

9 46 56

64.0

128.6

61.6

129.4

64.6 <

$$\frac{67.8 <}{132.4 <}$$
 $+0.93 <$

Index below.

149.6

9 50 11

221.4

148.2

224.5

71.8 <

$$\frac{76.3 <}{148.1 <}$$
 $+0.61 <$ $(+0.64) <$

9 52 5

150.0

226.1

150.7

220.2

76.1 <

$$\frac{69.5 <}{645.6 <}$$
 $+0.66 <$ $M = +0.80$

$$\begin{array}{r}
 9 \ 52 \ 5 \\
 \hline
 4(194) \ 2 < \\
 14 \ 48 \ 30 < \\
 \hline
 +1 \ 54 \\
 \hline
 14 \ 50 \ 24
 \end{array}$$

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$$\begin{array}{r}
 9 \quad 57 \quad 32 \\
 +150.0 \\
 224.4 \quad 74.4 < \\
 147.4 \quad 75.1 < \\
 222.5 \quad 149.5 < \quad +0.58 <
 \end{array}$$

$$\begin{array}{r}
 56 \quad 31 \\
 148.6 \quad (+0.58) < \\
 223.1 \quad 74.5 < \\
 148.3 \quad 74.5 < \\
 222.8 \quad 149.0 < \quad \text{VI} \quad +0.59 <
 \end{array}$$

Index above

$$\begin{array}{r}
 10 \quad 00 \quad 10 \\
 248.5 \\
 246.2 \\
 308.2 \quad 62.0 < \\
 248.4 \quad 65.8 < \quad +1.03 < \\
 309.2 \quad 127.8 <
 \end{array}$$

$$\begin{array}{r}
 10 \quad 2 = \text{Assume} \quad 50 \\
 4(234) \quad 3 \quad 12 \\
 14 \quad 0.8 \quad 31
 \end{array}$$

$$\begin{array}{r}
 243.7 \quad (+0.98) < \\
 312.1 \quad 310.6 \quad 66.9 < \\
 243.4 \quad 65.6 < \\
 309.2 \quad 122.4 < \quad +0.93 < \quad M = 0.78 \\
 132.0 <
 \end{array}$$

$$\begin{array}{r}
 10 \quad 9 \quad 20 \\
 243.4 \\
 309.3 \quad 65.9 < \\
 246.9 \quad 62.0 < \quad +1.02 < \\
 308.9 \quad 127.9 <
 \end{array}$$

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(+0.98)

10 11 10	244.7		
	310.6	65.9 <	
	244.1	65.9 <	+0.94 <
	310.0	<u>VII</u> 131.8 <	

Index below

~~329.3~~
~~44.5~~

10 15 48	329.5		
	40.0	70.5 <	
	833.1	<u>64.5</u> <	+0.88 <
	87.6	135.0 <	

(+0.92)

10 17 57 = 57	333.0		
	36.5	63.5 <	
<u>454 15</u>	332.9	<u>68.1</u> <	+0.95 <
15 13 34	41.0	131.6 <	M = +0.95
+1 54			
15 15 28			

10 21 40	330.4		
	41.6	71.2 <	
	334.8	<u>68.5</u> <	+0.92 <
	36.3	<u>3</u> 2.7	

(+0.90)

23 54	332.3		
	39.2	66.9 <	
	330.8	<u>VIII</u> 68.4 <	+0.87 <
	39.2	135.3 <	

February 19 1897

Index above

10 27 3
 62.0
 129.9 67.9 <
 64.3 63.9 <
 128.2 131.8 < +0.94 <

(+0.96) <

10 29 12
 4 (21 51) < "
 15 25 28 <
 +1 54
 15 27 22
 128.1 63.1 <
 64.2 67.2 <
 131.4 130.3 < +0.97 < M = +0.93

10 34 24
 61.2
 138.0 71.8 <
 64.0 64.4 <
 128.4 136.2 < +0.80 <

(+0.83) <

10 36 28
 63.1
 128.5 65.4 <
 60.0 72.7 <
 132.7 138.1 < +0.81 <
 IX

Index below

10 39 15
 149.3
 225.2 75.9 <
 151.6 70.3 <
 221.9 146.2 < +0.65 <

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10 41 17	150.1		(+0.60) <	
4 (101 24 <	224.2	74.1 <		
15 37 51 <	148.2	77.7 <	+0.54 <	M = +0.72
+1 54	225.9	151.8 <		
15 49 45				

10 49 30	146.0		
	229.2	83.2 <	
	149.5	72.1 <	+0.47 <
	221.6	155.3 <	

10 50 40	149.3		(+0.50) <
	223.7	74.4 <	
	148.0	70.4 <	+0.52 <
	226.4	152.8 <	

Index above

10 56 17	242.0		
	314.1	72.1 <	
	242.9	70.2 <	+0.73 <
	313.1	142.3 <	

10 58 11	244.2		(+0.70) <
4 (214 38 <	313.5	69.3 <	
15 53 29	242.2	70.8 <	+0.77 <
+1 54	313.0	140.1 <	M = +0.62
15 55 34			

February 19 1947.

11	15	18	145.0		
			225.8	80.8 <	
4			148.0	<u>76.1 <</u>	
			224.1	106.9 <	+0.44 <

(0.46)

11	10	57	147.0		
			225.8	78.8 <	
			148.3	<u>75.9 <</u>	
			224.2	<u>XII</u> 154.7 <	+0.48 <

Index above below.

11	19	37	238.7		
			314.0	75.3 <	
			238.9	<u>72.6 <</u>	
			311.5	147.9 <	+0.62 <

(0.63)

11	21	19	239.4		
			311.3	71.9 <	
			237.9	<u>74.6 <</u>	
16	18	18	312.5	146.5 <	+0.64 <
					M = +0.54
16	20	12			

11	23	7	237.2		
			313.6	76.4 <	
			237.6	<u>76.9 <</u>	
			314.0	153.3 <	+0.51 <

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$$\begin{array}{r}
 2450 \\
 237.1 \\
 312.2 \\
 238.7 \\
 314.0
 \end{array}
 \begin{array}{r}
 75.1 < \\
 75.3 < \\
 \hline 150.4 <
 \end{array}
 \begin{array}{l}
 + (0.54) < \\
 + 0.57 <
 \end{array}$$

Index below above.

$$\begin{array}{r}
 112728 \\
 324.4 \\
 43.4 \\
 328.0 \\
 40.8
 \end{array}
 \begin{array}{r}
 79.0 < \\
 72.8 < \\
 \hline 151.8 <
 \end{array}
 \begin{array}{l}
 + 0.54 <
 \end{array}$$

$$\begin{array}{r}
 112900 \\
 \hline 42425 < \\
 16266 < \\
 + 1.54 \\
 \hline 16280
 \end{array}
 \begin{array}{r}
 326.8 \\
 41.7 \\
 327.4 \\
 45.0
 \end{array}
 \begin{array}{r}
 74.9 < \\
 72.6 < \\
 \hline 152.5 <
 \end{array}
 \begin{array}{l}
 + (0.54) < \\
 + 0.53 <
 \end{array}
 M = + 0.54 <$$

$$\begin{array}{r}
 3146 \\
 327.1 \\
 44.8 \\
 326.3 \\
 45.6
 \end{array}
 \begin{array}{r}
 77.7 < \\
 79.3 < \\
 \hline 157.0 <
 \end{array}
 \begin{array}{l}
 0.44 <
 \end{array}$$

$$\begin{array}{r}
 113328 \\
 329.9 \\
 44.8 \\
 323.4 \\
 45.2
 \end{array}
 \begin{array}{r}
 74.9 < \\
 81.8 < \\
 \hline 156.7 <
 \end{array}
 \begin{array}{l}
 + (0.44) < \\
 0.44 <
 \end{array}$$

February 19 1897
Index ~~above~~ below.

59.3
11 35 52 135.6 76.3
57.4 80.9 + 0.43
137.3 157.2

+ (0.47)

60.0
11 37 32 133.7 73.7
41 38 56.1 79.7
16 34 40 135.8 153.4 + 0.51 M = + 0.46
+1 34
16 36 34

58.1
11 39 33 134.1 76.0
57.6 78.6 + 0.49
136.2 154.6

+ (0.42)

54.5
1 41 30 134.2 79.7
55.3 81.7 + 0.35
137.0 161.4

Index ~~below~~ above.

141.8
11 44 31 230.4 88.6
147.6 80.3 + 0.21
227.9 168.9

146.3

Feb. 19. 1897.

11 48 18	146.3		+ (0.20) =
<u>4</u> 173 52 < 1/2	228.7	82.4 <	
16 43 28 <	142.6	87.3 <	+ 0.20 <
+ 1 54	229.9	169.7 <	
<u>16 45 22</u>			M = + 0.31

Watch 1^m 5^s 4^{sec} slow.
 ∴ Correct all the preceding ~~results~~ times
 on δ Cancri by + 1^m 5^s 4^{sec}.

February 23 1897 (Tuesday)

Q beti

Phot R

rr-obs

$$\begin{array}{r} 2 \quad 4 \quad -2.5- \\ 3 \quad 56 \\ 1 \quad 52 \end{array}$$

$$\begin{array}{r} 2 \quad 4 \\ 5 \quad 41 \\ 3 \quad 37 \end{array}$$

Index to left

95.6

110.3 14.7<

97.0

110.0 $\frac{13.0<}{27.7<} -4.5A<$

97.3

12.9<

$-(4.61)<$

110.2

96.0

110.0 $\frac{14.0<}{26.9<} -4.6K<$

Index to right

186.4

13.3<

199.7

186.9

200.0 $\frac{13.1<}{26.4<} -4.6A<$

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$$\begin{array}{r}
 7 \ 26 \ 4 \\
 \hline
 258 \\
 12 \ 22 \ 29 \\
 \hline
 39 \\
 \hline
 12 \ 21 \ 50
 \end{array}$$

$$\begin{array}{r}
 186.5 \\
 200.0
 \end{array}
 \begin{array}{r}
 13.5 \\
 \\
 \hline
 26.5
 \end{array}
 - (4.66)$$

$$\begin{array}{r}
 186.5 \\
 199.8
 \end{array}
 \begin{array}{r}
 13.3 \\
 26.2 \\
 \hline
 26.2
 \end{array}
 - 4.65$$

mean -4.64

Same again

$$7 \ 28 \ 50$$

$$\begin{array}{r}
 186.3 \\
 199.8 \\
 186.7 \\
 199.6
 \end{array}
 \begin{array}{r}
 13.5 \\
 \\
 12.9 \\
 26.4 \\
 \hline
 26.4
 \end{array}
 - 4.64$$

$$\begin{array}{r}
 187.0 \\
 199.8 \\
 186.2 \\
 199.5
 \end{array}
 \begin{array}{r}
 12.4 \\
 \\
 13.3 \\
 26.1 \\
 \hline
 26.1
 \end{array}
 - (4.70)$$

$- 4.71$

Index to left

$$\begin{array}{r}
 276.8 \\
 289.8 \\
 277.0 \\
 299.9
 \end{array}
 \begin{array}{r}
 13.0 \\
 \\
 12.9 \\
 25.9 \\
 \hline
 25.9
 \end{array}
 - 4.73$$

$$\begin{array}{r}
 277.1 \\
 289.9
 \end{array}
 \begin{array}{r}
 12.4 \\
 \\
 \hline
 26.4
 \end{array}
 - (4.64)$$

$$\begin{array}{r}
 7 \ 37 \ 32 \\
 \hline
 266 \ 22 \\
 12 \ 33 \ 11 \\
 \hline
 39 \\
 \hline
 12 \ 32 \ 32
 \end{array}$$

$$\begin{array}{r}
 276.0 \\
 290.0
 \end{array}
 \begin{array}{r}
 14.1 \\
 26.9 \\
 \hline
 26.9
 \end{array}
 - 4.64$$

mean -4.69

$$\begin{array}{r}
 \text{Final mean} = -4.66 \\
 9.20 \\
 \hline
 \text{mean} = -4.54
 \end{array}$$

February 23 1897.

R. Cancri.

W-o-0

8	9	+11.5
<u>6</u>	33	
7	36	
<u>12</u>		
19	24	

A	4	+11.5
<u>6</u>	K2	
-1	22	
10	38	

μ	5-	B
B	4	γ
γ	3	δ
δ	4.5	E
E	5	ϵ
ϵ	4	η
η	3.5-	θ
θ	6	K
K	5.5	λ
λ	4.5	μ
μ	5.4	ν

 λ compared with m

February 23 1897
Index to left and below

267.2 < brtr dis

286.3

19.1 <

269.8

15.2 <

4.11 <

285.0

34.3 <

269.1

(420) <

284.4

15.3 <

270.8

16.1 <

4.30 <

286.9

31.4 <

Index to right and above

358.7

13.5

14.8 <

359.6

14.5 <

4.45 <

14.1

29.3 <

359.9

(436) <

15.0

15.1 <

358.5

16.9 <

4.26 <

$M = 4.28 <$

15.4

32.0 <

K compared with m

356.0

16.1

20.1 <

357.0

18.3 <

3.86 <

15.3

38.4 <

February 23 1897

$$\begin{array}{r}
 355.1 \\
 17.6 \\
 355.3 \\
 15.1 \\
 \hline
 22.5 \\
 19.8 \\
 \hline
 42.3
 \end{array}
 \quad
 \begin{array}{l}
 (3.75) \\
 \\
 3.64 \\
 \\
 \end{array}$$

Index to left

$$\begin{array}{r}
 84.8 \\
 105.7 \\
 86.2 \\
 105.1 \\
 \hline
 20.9 \\
 18.9 \\
 \hline
 39.8
 \end{array}
 \quad
 \begin{array}{l}
 \\
 \\
 3.78 \\
 \\
 \end{array}$$

$$\begin{array}{r}
 86.5 \\
 104.7 \\
 85.4 \\
 108.0 \\
 \hline
 18.2 \\
 22.6 \\
 \hline
 40.8
 \end{array}
 \quad
 \begin{array}{l}
 (3.75) \\
 \\
 3.72 \\
 \\
 \end{array}$$

$$\begin{array}{r}
 85.4 \\
 108.0 \\
 \hline
 22.6 \\
 40.8 \\
 \hline
 3.75
 \end{array}
 \quad
 M = 3.75$$

~~Delta~~ θ compared with m

$$\begin{array}{r}
 83.8 \\
 107.0 \\
 82.5 \\
 106.1 \\
 \hline
 23.2 \\
 23.6 \\
 \hline
 46.8
 \end{array}
 \quad
 \begin{array}{l}
 \\
 \\
 3.42 \\
 \\
 \end{array}$$

$$\begin{array}{r}
 84.9 \\
 105.3 \\
 84.8 \\
 107.0 \\
 \hline
 20.4 \\
 22.2 \\
 \hline
 42.6
 \end{array}
 \quad
 \begin{array}{l}
 (3.52) \\
 \\
 3.63 \\
 \\
 \end{array}$$

February 23 1897
Index to right

174.0		
199.9	25.9 <	
172.6	<u>26.7 <</u>	3.16 <
199.3	52.6 <	

173.0 (3.24)

10	35	197.9	24.9 <		
		174.1	<u>23.7 <</u>	3.33 <	M = 3.38
		197.8	48.6 <		

η compared with m

10	35	170.7		
		200.8	30.1 <	
		171.3	<u>29.5 <</u>	2.87 <
		200.8	59.6 <	

171.6 (2.92)

199.8	28.2 <	
171.2	<u>29.3 <</u>	2.96 <
200.5	57.5 <	

Index to left

263.4		
288.8	24.9 <	
264.0	<u>25.3 <</u>	3.26
289.3	50.2 <	

February 23 1917

10

45

257.0

(3.22)

290.0

26.1

264.1

25.9

31.8

 $M = 3.07$

290.0

52.0

5 compared with m

257.0

10

48

295.0

38.0

258.2

37.3

2.34

295.5

75.3

(2.36)

258.2

295.0

36.8

258.4

37.2

2.38

295.6

74.0

Index to right.

348.0

24.9

36.9

349.0

35.7

2.42

24.7

72.6

347.9

(2.38)

10

55

25.1

37.2

346.7

37.8

2.35

 $M = 2.37$

24.8

75.0

Watch 39 secs. fast.

February 24 1897 (Wednesday)

W Cephei

Phot 9

W-obs

$$\begin{array}{r} 0 \quad 30 \quad +81.7 \\ 4 \quad \quad 45- \\ \hline 4 \quad \quad 5- \end{array}$$

Index above

310.4 Lvar dis.

6 16 48

$$\begin{array}{r} 62.5 \quad 112.4 < \\ 315.6 \quad \underline{101.4} < \\ 57.0 \quad 213.8 < \quad +0.65 < \\ 146.2 < \end{array}$$

~~21~~

315.5

+ (0.59) <

6 19 38

$$\begin{array}{r} 56.1 \quad 100.6 < \\ 312.2 \quad \underline{107.0} < \\ 59.2 \quad 207.6 < \quad +0.53 < \\ 152.4 < \end{array}$$

Index below

48.0

6 22 16

$$\begin{array}{r} 145.9 \quad 97.9 < \\ 42.3 \quad \underline{107.6} < \\ 149.9 \quad 205.5 < \quad +0.51 < \\ 153.5 < \end{array}$$

42.2

+ (0.42) <

6 24 3

148.5 106.3 <

$$\begin{array}{r} 168 \quad 51.7 \quad \underline{90.9} < \\ 11 \quad 20 \quad 41 < \quad 142.6 \quad \underline{197.2} < \\ -1 \quad 12 \quad \quad \quad \underline{162.8} < \\ 11 \quad 19 \quad 29 \end{array}$$

+ 0.33 <

M = +0.50 <

February 24 1897

b 25 44

$$\begin{array}{r}
 49.1 \\
 140.5 \\
 43.7 \\
 149.7 \\
 \hline
 91.4 < \\
 106.0 < \\
 197.4 < \\
 162.6 <
 \end{array}
 \quad + 0.33 <$$

b 27 43

$$\begin{array}{r}
 47.4 \\
 147.5 \\
 48.7 \\
 141.0 \\
 \hline
 100.1 < \\
 92.3 < \\
 192.4 < \\
 167.6 <
 \end{array}
 \quad \text{II} \quad + 0.28 <$$

Index above

b 31 3

$$\begin{array}{r}
 140.1 \\
 234.3 \\
 134.3 \\
 238.4 \\
 \hline
 94.2 < \\
 104.1 < \\
 198.3 < \\
 161.7 <
 \end{array}
 \quad + 0.35 <$$

b 33 4

$$\begin{array}{r}
 135.1 \\
 239.5 \\
 \hline
 104.4 <
 \end{array}
 \quad + (0.34) <$$

$$\begin{array}{r}
 4117 \quad 34 < \\
 11 \quad 29 \quad 24 < \\
 \hline
 1 \quad 12 \\
 11 \quad 28 \quad 12
 \end{array}$$

$$\begin{array}{r}
 140.1 \\
 232.9 \\
 \hline
 92.8 < \\
 197.2 < \\
 162.8 <
 \end{array}
 \quad + 0.33 < \quad M = + 0.31 <$$

b 35 47

$$\begin{array}{r}
 140.6 \\
 233.0 \\
 134.0 \\
 235.9 \\
 \hline
 92.4 < \\
 101.9 < \\
 194.3 < \\
 165.7 <
 \end{array}
 \quad + 0.27 <$$

February 24 1897

6	37 44	135.5			
		237.9			+ (0.26) c
		142.0		102.4 c	
		232.9		90.9 c	+ 0.20 c
			III	193.3 c	
				166.7 c	

Index below

6	40 21	234.9			
		319.6		84.7 c	
		229.0		96.7 c	
		325.7		181.4 c	+ 0.03 c
				178.6 c	

		229.1			+ (0.01) c
		323.9		94.8 c	
6	42 6	234.6		84.6 c	- 0.01 c
		319.2		179.4 c	M = + 0.14 c
	4/10 5 58 c				
	11 38 59.5 23.8				
	11 37 48				

6	44 39	233.7			
		319.5		85.8 c	
		229.7		93.7 c	- 0.01 c
		323.4		179.5 c	

		227.9			- (0.04) c
6	46 43	322.0		94.1 c	
	41 43	237.6		81.8 c	- 0.08 c
		319.4	IV	170.9 c	

February 24 1897
Index above

b 49 32

322.6
49.5 86.9
319.2 91.9
51.1 178.8 - 0.02

-(0.06)

b 57 15
4 19 2 9
11 48 2
- 1 12
11 46 50

318.0
52.4 94.4
325.0 79.9 - 0.11 M = -0.05
44.9 174.3

b 54 0

324.7
48.0 83.3
319.6 92.9 - 0.07
52.5 176.2

-(0.16)

b 56 31

322.1
51.6 89.5
327.3 76.6 - 0.26
46.8 166.1
43.9

V

Index below

7 1 29

59.7
132.6 72.9
54.6 81.5 - 0.49
136.1 104.4

February 24 1897

7 3 30	53.4			
<u>4236 30</u>	136.2	82.8		$-(0.45) <$
11 59 8	57.8	75.8	$-0.41 <$	$M = -0.30$
<u>-1 12</u>	133.6	150.6		
11 57 56				

~~12~~

7 8 31	58.1			
	133.6	75.5		
	56.7	77.5	$-0.52 <$	
	134.2	153.0		

7 10 18	56.0			$-(0.50) <$
	135.0	79.0		
	56.1	76.6	$-0.47 <$	
	132.7	155.6		

Index above

7 12 33	150.0			
	222.6	72.6		
	142.2	86.9	$-0.39 <$	
	229.1	159.5		

7 14 22	144.8			$-(0.38) <$
<u>44 44</u>	228.5	83.7		
12 11 26	148.1	76.6	$-0.38 <$	$M = -0.44$
<u>-1 12</u>	224.7	160.3		
12 10 14				

February 24 1897

$$\begin{array}{r}
 148.2 \\
 7 \quad 16 \quad 9 \quad 222.5 \quad 74.3 < \\
 145.9 \quad 84.1 < \\
 229.9 \quad 158.4 < \quad -0.41 <
 \end{array}$$

$$\begin{array}{r}
 144.2 \\
 7 \quad 19 \quad 1 \quad 229.0 \quad 84.8 < \\
 150.2 \quad 73.8 < \\
 224.0 \quad 58.6 < \quad -0.41 <
 \end{array}$$

Index below

$$\begin{array}{r}
 244.9 \\
 7 \quad 23 \quad 24 \quad 310.4 \quad 65.5 < \\
 238.0 \quad 75.9 < \\
 318.9 \quad 141.4 < \quad -0.75 <
 \end{array}$$

$$\begin{array}{r}
 241.3 \\
 7 \quad 25 \quad 30 \quad 312.9 \quad 71.6 < \\
 4(84) \quad 4 < \quad 242.8 \quad 67.2 < \\
 12 \quad 21 \quad 1 < \quad 310.0 \quad 138.8 < \quad -0.80 < \quad M = -0.60 < \\
 -1 \quad 12 \\
 12 \quad 19 \quad 49
 \end{array}$$

$$\begin{array}{r}
 245.8 \\
 7 \quad 31 \quad 33 \quad 307.1 \quad 61.3 < \\
 237.9 \quad 75.7 < \\
 313.6 \quad 137.0 < \quad -0.83 <
 \end{array}$$

February 24 1897

7	33	44	240.7			$-(0.82) <$
			319.4			
			248.4			
			309.4	VIII	$\frac{72.7 <}{6+60 <}$	$-0.80 <$
					$\frac{138.7 <}{138.7 <}$	

Index above

7	36	28	334.8			
			37.1		$62.9 <$	
			328.9		$\frac{74.9 <}{137.7 <}$	$-0.82 <$
			43.8			

 $-(0.81) <$

7	37	21	329.0			
			44.0		$75.0 <$	
			333.7		$\frac{63.8 <}{138.8 <}$	$-0.80 <$
			37.5			$M = -0.82 <$

4	20	6 <
12	35	2 <
	-1	12
12	33	50

7	41	1	334.1			
			36.1		$62.0 <$	
			330.3		$\frac{72.1 <}{134.1 <}$	$-0.89 <$
			42.4			

7	43	4	328.8			$-(0.84) <$
			44.9		$76.1 <$	
			334.6		$\frac{62.8 <}{138.9 <}$	$-0.80 <$
			38.7	IX		
			37.4			

February 24 1897
Index below

7 41 49
67.5
123.9 56.4
63.5 65.8 - 1.14
129.3 122.2

60.6 - (1.08)

7 48 58
4 19 44 224
12 44 56
- 1 12
12 43 44
130.8 70.2
66.9 57.3 - 1.03
124.2 127.5
M = -0.96

7 51 23
66.3
121.8 55.5
60.9 69.1 - 1.09
130.0 124.6

7 53 37
63.3 - (1.06)
129.7 66.4
64.2 60.5 - 1.04
124.7 126.9 X

Index above

7 56 30
157.7
218.0 60.3
152.3 67.7 - 1.02
220.0 128.0

February 24 1897.

$$\begin{array}{r}
 7 \quad 58 \quad 56 \\
 \hline
 4(20 \quad 26) \\
 12 \quad 55 \quad 6 \\
 \hline
 -1 \quad 12 \\
 \hline
 12 \quad 53 \quad 54
 \end{array}
 \quad
 \begin{array}{r}
 153.0 \\
 220.6 \\
 157.4 \\
 217.0
 \end{array}
 \quad
 \begin{array}{r}
 67.6 \\
 59.6 \\
 127.2
 \end{array}
 \quad
 \begin{array}{r}
 -(1.03) \\
 -1.04 \\
 M = -1.04
 \end{array}$$

Watch used in preceding measts was
 1st 12 sec. fast.

R. Lanceris. Phot. J. W. L.

$$\begin{array}{r}
 7 \quad 4 \quad +11.0 \\
 \hline
 7 \quad 6 \\
 58 \\
 \hline
 12
 \end{array}$$

11 2

λ compared with m
 Index below

267.0 comp. dis.

8 51

286.2 19.2

268.1 16.8 4.00

284.9 36.0

269.3

(410)

284.0

14.7

267.0

18.4

4.19

285.4

33.1

February 24 1897
Index above to right

359.4

13.8	15.4	
358.0	15.7	4.32
13.7	<u>31.1</u>	

(4.31)

358.0

9 1

14.2	16.2	
1.3	15.3	4.30
16.6	<u>31.5</u>	

M = 4.20

Index to right.
K compared with m

357.1

9 4

16.1	19.0	
357.8	17.1	4.00
14.9	<u>36.1</u>	

(3.98)

356.7

15.1	18.4	
356.8	18.4	3.95
15.2	<u>36.8</u>	

Index to left

85.0

106.0

86.1

103.1

21.0

17.0

38.0

3.88

February 24 1897.

9	14	85.0			
		103.9	18.9 c	(3.80)	
		85.8	20.1 c	3.82	
		<u>105.9</u>	39.0 c		M = 3.92

Theta compared with m
Index to left

9	17	83.4			
		109.0	25.6 c		
		84.7	21.9 c	3.39	
		106.6	47.5 c		
				(3.43)	
		84.7			
		105.8	21.1 c		
		83.0	24.6 c	3.47	
		107.6	45.7 c		

Index to right

		179.1			
		198.1	25.0 c		
		174.0	22.9 c	3.37	
		196.9	47.9 c		
				(3.39)	
9	28	175.0			
		196.8	21.8 c		
		173.6	25.1 c	3.41	
		198.7	46.9 c		
				M = 3.41	

February 24 1897.
 Index to right.
 Eta compared with m

9

38

201.3	29.6	
172.2	26.3	3.02
198.5	55.9	

(2.96)

171.2		
200.3	29.1	
171.1	29.6	2.91
200.7	58.7	

Index to left

~~(299)~~

262.5		
288.9	26.4	
260.8	28.2	3.07
289.0	54.6	

(3.12)

9

40

263.7		
289.5	25.8	
262.8	27.2	3.14
290.0	53.0	

M = 3.04

Zeta compared with m
 Index to left.

9

45

259.5		
293.6	34.1	
257.9	35.1	2.03
293.0	69.2	

February 24 1897

$$\begin{array}{r}
 256.2 \\
 292.5 - \\
 259.1 \\
 292.3
 \end{array}
 \begin{array}{r}
 36.3 < \\
 33.2 < \\
 \hline
 69.5 <
 \end{array}
 \begin{array}{r}
 (2.52) \\
 2.52
 \end{array}$$

Index to right

$$\begin{array}{r}
 \cancel{349.0} \\
 \cancel{23.2} \\
 \cancel{348.3} \\
 349.0 \\
 23.6 \\
 347.9 \\
 23.3 \\
 \cancel{348.2}
 \end{array}
 \begin{array}{r}
 34.6 < \\
 35.4 < \\
 \hline
 70.0 <
 \end{array}
 \begin{array}{r}
 2.51 \\
 2.51
 \end{array}$$

(2.51)

9 5-9

$$\begin{array}{r}
 348.2 \\
 22.9 \\
 348.7 \\
 24.0
 \end{array}
 \begin{array}{r}
 34.7 < \\
 35.3 < \\
 \hline
 70.0 <
 \end{array}
 \begin{array}{r}
 2.51 \\
 2.51
 \end{array}
 \quad M = 2.52$$

μ 4.5 B
 B 5 Y
 Y 2 S
 S 4 E
 E 3.5 G
 G 5.5 H
 H 3.5 O
 O 4.5 K
 K 5 L

10 10

February 24 1897

λ 4.5 μ
 μ 4.5 V

N. bancro

8	18	+ 17.5
9	5	
<hr/>		
	47	

W-ops

Went over to West Dome and revised
 N. Hydras with Mr. Reed.

February 25, 1897. (Thursday.)

Comp. of Chron.
 B 354, A + 10. 958,
 13 05 00.0 = 13 05 16.0
 13 06 00.0 = 13 06 16.0

Re. Inf. II., Phot. R., W. obs., Waiters,
 Comp. with mean of two sets,
 on following side = Sat. II.
 Chron. correction 16 sec.

13	25	Clouds.
13 32 11✓	32 27	179.2
32✓	48	207.8
46✓	33 02	175.1
32 52✓	14	209.2
33 10.✓	26	171.2
21.✓	37	213.0
35.✓	51	172.0
KA✓	34 04	215.8
3K 2.✓	18	166.5
13.✓	29	217.8
30.✓	46	162.1
3K KA✓	59	222.5

Feb. 25, 1897.

Corrected times

13	34	✓	13	35	14	166.0
	35	✓			26	222.2
		✓			36	166.1
		✓			45	223.9
		✓			54	160.8
		✓		36	06	224.2
13	35	✓	13	36	11.✓	162.8
		✓			16	60.0 ✓
		✓			27	222.8
		✓			36	160.3
		✓			45	222.8
13	36	✓	13	36	✓ 3.✓	160.0
		✓			58	223.1
		✓		37	14	157.2
		✓			27	225.8
		✓			38	155.3
13	37	✓	13	37	✓ 2.✓	227.9
		✓			46	156.1
		✓			56	72.2 ✓
		✓		38	10	228.3
		✓			24	156.0
13	38	✓	13	38	✓ 29.✓	233.2
		✓			35	154.2
		✓			48	232.0
		✓		39	09	151.6
		✓			22	233.2
13	39	✓	13	39	✓ 34.✓	151.8
		✓			44	80.3 ✓
		✓		40	00	
		✓			14	
13	40	✓	13	40	✓ 46.✓	
		✓			27	

Feb. 25, 1897.

13	41	05	148.2	27.2 ^v	
		16	234.0	16.61 ^v	
		30	151.2	23.0 ^v	0.3 ^v
13	41	32 ^v		20.7 ^v	
13	41	54 ^v	231.9	77.0 ^v	
	42	08	155.0	157.7 ^v	
		18	232.0	72.2 ^v	0.4 ^v
		32	152.1	22.2 ^v	
13	42	35 ^v	234.3	77.2 ^v	
13	42	51 ^v	154.1	159.4 ^v	
	43	10	231.3	79.7 ^v	0.4 ^v
		23	152.8	22.4 ^v	
13	43	32 ^v	235.2	77.2 ^v	
13	43	42 ^v	152.8	160.2 ^v	
	44	25	230.6	20.1 ^v	0.4 ^v
		42	150.1	27.0 ^v	
13	44	47 ^v	237.1	20.4 ^v	
13	45	3 ^v	151.8	167.4 ^v	
	45	09	232.2	23.7 ^v	0.2 ^v
		23	150.1	21.9 ^v	
13	45	35	232.0	23.6 ^v	
13	45	51 ^v	150.2	165.5 ^v	
	46	04	233.8	22.2 ^v	0.3 ^v
		15	154.2	76.2 ^v	
		28	231.0	20.9 ^v	
13	46	30 ^v	152.8	157.7 ^v	
13	46	46 ^v		72.2 ^v	0.4 ^v
		52			

Feb. 25, 1897.

13	47	04
		<u>16</u>

13	47	23.	13	47	39.
					<u>28</u>
					41
				48	<u>10</u>
					24

13	42	23.	13	42	39.
					<u>33</u>
					45
					<u>55</u>

13	49	12.	13	49	22.
					<u>07</u>
					21
					36
					<u>50</u>
					58

13	50	2.	13	50	24.
					<u>18</u>
					35
					<u>44</u>
					53

13	50	56.	13	51	12.
					<u>05</u>
					19
					<u>31</u>
					40

13	51	40.	13	51	56.
					<u>50</u>
					52
					<u>02</u>
					13

233.7	
150.8	20.4"
231.2	20.0"
150.2	160.4"
230.2	20.2" 0.4"

153.2	
237.1	23.9"
152.9	79.2" 1.
232.1	163.1" 0.3"
	41.6"

155.0	76.0"
231.0	22.1"
152.0	152.1" 2.
234.1	79.0" 0.4"

154.8	22.0"
236.8	24.9" 3.
148.1	166.9"
233.0	23.4" 0.3"

152.0	79.2"
231.2	78.2" 4.
154.0	157.4"
232.2	74.7" 0.4"

151.2	78.9"
230.1	75.2"
155.0	154.1" 5.
230.2	77.0" 0.5"

Feb. 25, 1897.

13	52	25	151.8	23.1 ^v
		35	234.9	44.2 ^v
13 52 31.	13 52 47.	57	151.0	167.3 ^v
	53	11	235.2	23.6 0.2 ^v
		21	152.2	79.0 ^v
		32	231.2	79.0 ^v
13 53 21.	13 53 37.	43	154.1	72.9 ^v
		53	233.0	157.9 ^v
	54	02	155.1	72.9 ^v 0.4 ^v
		26	231.1	76.0 ^v
13 54 16.	13 54 32.	42	153.1	77.7 ^v
		59	230.8	153.7 ^v
				76.2 ^v 0.1 ^v

Limit of Visibility of Jupiter

13	55	44	183.2	20.9 ^v
13 55 43.	13 55 59.	54	204.1	17.0 ^v
	56	04	184.0	37.9 ^v
		14	201.0	14.9 ^v 3.9 ^v

Sat. reappeared quite close to limit of Jup. Observer comp. with Sat. II. He set the images for Reap. of IV about as the Almanac would indicate, but Sat. reappeared

Feb. 25, 1897.

much closer to limb of Jup.
than this. Obs. then ran
piece down close to eye-
piece, to adjust as quickly
as possible but it was then
found that Sat. IV was close
on edge of comp. image of Jup.
itself. An attempt was
then made to run for another
sat. but string of photo. in the
photo. tube somehow caught
and would not respond, so that
observer was forced to hold to
Sat. II, which was also quite
close to limb of Jup. and coming
close to the edge going into
transit. This was the best that
could be done.

Comp. of Chron.

B 394.

A + 10.958.

14 20 00.0 = 14 20 16.0

14 21 00.0 = 14 21 16.0

February 27 1897 (Saturday)

R Cancri.

W-obs

8	4	+11.5-
6	12	
1	52	
12		
10	8	

μ	5	β
β	5	γ
γ	2	δ
δ	5	ϵ
ϵ	4	ζ
ζ	5	η
η	4	θ
θ	5	κ
κ	6	λ
λ	4	μ
μ	5	ν

7 40

February 27 1897

S. Hydrae

Phot T.

W-obs

8	41	+ 3.1
<u>6</u>	<u>44</u>	
1	57	
<u>12</u>		
10	8	

m	4	n
n	6	o
o	8	p
p	4.5	q
q	4	r
r	4.5	s
s	5	t

Index to left
88.2 < comp. des.

104.0

87.1

105.0

wrong star

86.1

106.8

86.2

104.9

February 27 1897.
Index to right

177.2

195.1

175.0

196.1

175.2

196.6

175.4

196.2

175.4

196.2

\bar{s} compared with \bar{h}

177.7

193.5

15.8 <

178.1

$\frac{17.7}{33.5} <$

4.16 <

195.8

33.5 <

178.0

(4.17)

194.4

16.4 <

177.9

$\frac{16.8}{33.2} <$

4.18 <

194.7

33.2 <

Index to left

268.7

285.9

17.2 <

268.6

$\frac{16.4}{33.6} <$

4.15 <

285.0

33.6 <

February 27 1897

9

23

267.9

284.0

268.0

284.4

16.1 <

16.4 <

32.5 <

(418)

4.22 <

 $M = 4.18$ z compared with h

9

27

265.8

285.3

265.0

287.9

19.5 <

22.9 <

42.4 <

3.64 <

265.0

286.3

266.1

284.9

21.3 <

18.8 <

40.1 <

(3.70) <

3.76 <

Index to right.

354.9

14.7

355.1

15.8

19.8 <

20.7 <

40.5 <

3.74 <

354.0

17.0

355.6

15.9

23.0 <

20.3 <

43.3 <

(3.66) <

3.59 <

 $M = 3.68$

February 27 1897
q compared with *h*
 Index to right.

9 57

357.2

20.1

28.9 <

352.1

28.3 <

2.97 <

20.4

57.2 <

351.6

(2.98)

~~20.2~~

19.5

27.9 <

350.9

28.9 <

2.98 <

19.8

56.8 <

Index to left

82.0

111.0

29.0 <

82.6

27.3 <

3.00 <

109.9

56.3 <

82.5

(3.06)

10

5

109.0

26.5 <

84.0

26.8 <

3.13 <

M = 3.02

190.8

53.3 <

h compared with *h*

78.1

110.9

32.2 <

79.5

31.4 <

2.71 <

110.9

64.2 <

February 27 1897.

79.8			(2.71)
112.1	32.3 <		
80.0	<u>31.9 <</u>	2.71 <	
111.9	64.2 <		

Index to right

169.5		
203.7	34.2 <	
168.8	<u>35.9 <</u>	2.50 <
204.7	70.1 <	

	168.4		(2.48)
10	17	204.3	35.9 <
		168.7	<u>35.1 <</u>
		203.8	71.0 <
			2.47 <
			$M = 2.60$

0 compared with h
Index to right

10	19	165.4	
		205.2	39.8 <
		167.1	<u>37.3 <</u>
		204.4	77.1 <
			2.28 <

	167.9		(2.30)
	203.8	35.9 <	
	165.8	<u>40.1 <</u>	2.32 <
	205.9	76.0 <	

February 27 1897.
Index to left

259.0		
295.4	36.4 <	
257.0	37.0 <	2.40 <
294.0	<u>73.4 <</u>	

(2.38) <

18 28

257.8			
294.9	37.1 <		
257.2	37.5 <	2.36 <	$\overline{M} = 2.34$
294.7	<u>74.6 <</u>		

V Cancri.

W-obs

8	18	+17.5
<u>9</u>	<u>36</u>	
1	18	

f'	4	g
g	4	h
h	3	k
k	3.5	l
l	5	m
m	4.5	n

February 27 1897

Reap. Imp. II. Phot. R. W. Az. Turbulence
Comp. Sat. = Sat. III. probably.

11 50 00 ⁺	11 50 23	71.1
20 ⁺	38	115.0
26 ⁺	44	79.2
36 ⁺	54	129.1
46 ⁺	4	73.9
59 ⁺	17	129.6
51 09 ⁺	27	70.9
17 ⁺	85	136.0
23 ⁺	41	69.1
35 ⁺	53	137.2
43 ⁺	52 1	66.2
51 ⁺	9	138.0
52 03 ⁺	+ 21. assumed	66.9
12 ⁺	30	141.0
20 ⁺	88	65.0
32 ⁺	50	140.2
44 ⁺	53 2	60.8
52 ⁺	10	142.1
59 ⁺	17	66.0
53 07 ⁺	25	140.8
53 44 ⁺	34	67.0
- 15	40	72.1 ⁺ 139.1
53 26 ⁺	43	73.0 ⁺ 65.6
	57	72.6 ⁺ 138.0
	8	65.0
54		

1 (+ 0.7)

Feb. 27. 1297 73.0° 138.0
 15 - 70.0° 68.0 (+0.7)
 25 - 71.5° 138.0 2

11 54 20⁺
 - 15
 11 54 02⁺

32 138.0
 32 138.0
 54 67.0

55-

4 71.0° 138.0 (+0.7)
 12 74.9° 65.0 3

55 07⁺
 - 15
 54 49⁺

19 73.0° 139.9
 22 68.0

55 52⁺
 - 15

56

44 70.7° 143.1 (+0.7)
 5 67.0° 68.7 4

55 34⁺
 56 41⁺
 - 15

19 71.3° 136.2
 27 71.1
 36 63.9° 135.0 (+0.9)
 46 67.5° 68.2 ✓
 54 66.8° 136.0

56 23⁺

57 20⁺
 - 15

57

8 69.9
 13 66.3° 136.2 (+1.0)

57 02⁺

24 63.5° 72.2 6
 31 65.0° 136.0

57 55⁺
 - 15

40 72.3 (+1.0)
 49 63.9° 136.2 7

57 37⁺

58

59 65.6° 71.7
 11 64.5° 137.3

59 48⁺
 - 15

59

32 70.0 (+0.9)
 41 62.5° 132.5 2
 50 70.5° 67.5
 68 138.0

59 25⁺

February 29. 1897.

Limit of visibility

$$\begin{array}{r}
 12 \ 01 \ 10^+ \\
 \underline{-15} \\
 12 \ 00 \ 52^+
 \end{array}
 \qquad
 \begin{array}{r}
 12 \quad 0 \quad 43 \cdot 89.8 \\
 1 \quad \quad 12.7 \cdot 116.9 \\
 \underline{2 \ 243 \cdot 91.8} \\
 3 \ 256.7 \cdot 116.1
 \end{array}
 \qquad
 + (3.2)$$

Seeing rather blurry
satellite appeared ^{very} close
to limb of Jupiter. This probably
caused a little delay in getting
first setting.

$$\begin{array}{r}
 A. + D. 95.2. \\
 12 \quad 23 \quad 17.5 \\
 \quad 24 \quad 17.5
 \end{array}
 \qquad
 \begin{array}{r}
 B. 394. \\
 12 \quad 23 \quad 0.0 \\
 \quad 24 \quad 0.0
 \end{array}$$

February 28 1897 (Sunday)

α 'Cancer'. Phot. T. Gr. obs.

9 17 0

157.0 \angle var. dis.

220.9 69.9 \angle

161.0 $\frac{50.5 \angle}{120.4 \angle} - 1.1 \text{ A} \angle$

211.5

$-(1.16) \angle$

9 19 51

157.4

221.2 69.8 \angle

161.0 $\frac{52.0 \angle}{121.8 \angle} - 1.15 \angle$

213.0

Index to right and below.

9 23 40

253.2

299.1 45.9 \angle

246.6 $\frac{60.1 \angle}{106.0 \angle} - 1.51 \angle$

306.7

$-(1.44)$

9 25 11

248.2

306.8 63.6 \angle

250.9 $\frac{48.7 \angle}{112.3 \angle} - 1.36 \angle$

299.6

$M = -1.30$

$\frac{48.5 \angle}{142 \angle}$

14 21 26 \angle

$\frac{-2 \angle}{1418 \angle}$

14 18 40

9 26 48

252.7

315.4 87.7 \angle

246.5 $\frac{60.5 \angle}{109.2 \angle} - 1.46$

307.0

February 28 1897

9 28 57	244.8 189.0 252.7		
9 30 54	300.9 248.3 305.8	II	$\begin{array}{r} 48.2 < \\ 60.5 < \\ 108.7 < \end{array}$ $- (1.46) <$ $- 1.45 <$

Index left and above

9 33 53	336.2 37.5 340.0 35.4		$\begin{array}{r} 61.3 < \\ 55.4 < \\ 116.7 < \end{array}$ $- 1.27 <$
9 36 5	841.0 33.9 833.9 38.0		$- (1.26) <$ $\begin{array}{r} 52.9 < \\ 64.1 < \\ 117.0 < \end{array}$ $- 1.26 <$
$\begin{array}{r} 4(127) 43 < \\ 14 31 56 < \\ -2 86 \\ \hline 14 29 10 \end{array}$			$M = -1.36 <$
9 38 26	335.8 39.2 339.2 38.8		$\begin{array}{r} 63.4 < \\ 54.6 < \\ 118.0 < \end{array}$ $- 1.24 <$
	339.7		$- (1.21) <$
9 40 1	35.6 333.5 38.4	III	$\begin{array}{r} 55.9 < \\ 64.9 < \\ 120.8 < \end{array}$ $- 1.18 <$

February 28 1897.
Index right and below

9 42 55

67.8

125.0

71.1

121.7

57.2 <

50.6 <

107.8 <

-1.47 <

-(1.44) <

9 44 33

71.6

121.5

49.9 <

65.1

60.6 <

-1.41 <

$M = -1.32 <$

14 41 31 <

125.7

110.5 <

-2 46

14 38 45

70.0

9 46 46

120.2

50.2 <

65.1

61.8 <

-1.37 <

126.9

112.0 <

-(1.36) <

9 48 16

62.6

125.4

62.8 <

71.2

49.5 <

-1.36 <

120.7

112.3 <

Index left and above

158.9

57 30

214.2

55.3 <

153.9

64.1 <

-1.21 <

218.0

119.4 <

February 28 1897

$$\begin{array}{r}
 9 \quad 5-8 \quad 20 \\
 \hline
 4199 \quad 52 \times 202 \\
 14 \quad 49 \quad 58 \times \\
 \hline
 -2 \quad 46 \\
 \hline
 14 \quad 49 \quad 12
 \end{array}
 \quad
 \begin{array}{r}
 152.9 \\
 221.6 \\
 160.2 \\
 215.8 \\
 \hline
 160.2
 \end{array}
 \quad
 \begin{array}{r}
 68.7 < \\
 55.6 < \\
 124.3 <
 \end{array}
 \quad
 \begin{array}{l}
 -(1.16) \\
 -1.10 \\
 \hline
 M = -1.26
 \end{array}$$

$$\begin{array}{r}
 9 \quad 5-5-15- \\
 \hline
 212.12 \\
 151.9 \\
 221.80
 \end{array}
 \quad
 \begin{array}{r}
 52.0 < \\
 69.7 < \\
 124.7 <
 \end{array}
 \quad
 \begin{array}{l}
 -1.16 <
 \end{array}$$

$$\begin{array}{r}
 9 \quad 57 \quad 31 \\
 \hline
 150.6 \\
 221.5 \\
 157.0 \\
 212.9
 \end{array}
 \quad
 \begin{array}{r}
 70.9 < \\
 55.9 < \\
 126.8 <
 \end{array}
 \quad
 \begin{array}{l}
 -(1.10) < \\
 -1.05 < \\
 \hline
 V
 \end{array}$$

Index right and below

$$\begin{array}{r}
 10 \quad 0 \quad 32 \\
 \hline
 253.1 \\
 299.9 \\
 245.0 \\
 307.8
 \end{array}
 \quad
 \begin{array}{r}
 46.2 < \\
 62.8 < \\
 109.6 <
 \end{array}
 \quad
 \begin{array}{l}
 -1.43 <
 \end{array}$$

$$\begin{array}{r}
 10 \quad 2 \quad 6 \quad 235 \\
 \hline
 439 \quad 55 \quad 24 < \\
 14 \quad 58 \quad 51 < \\
 \hline
 -2 \quad 46 \\
 \hline
 14 \quad 56 \quad 5-
 \end{array}
 \quad
 \begin{array}{r}
 244.9 \\
 307.0 \\
 252.1 \\
 301.7 \\
 \hline
 301.7
 \end{array}
 \quad
 \begin{array}{r}
 62.1 < \\
 49.6 < \\
 111.7 <
 \end{array}
 \quad
 \begin{array}{l}
 -(1.40) < \\
 -1.38 < \\
 \hline
 M = -1.25
 \end{array}$$

blends

February 28 1897
Index above

339.4

10 10 37

86.5

57.1 <

337.0

59.9 <

-1.26 <

36.9

117.0 <

~~337.8~~

-(1.30) <

~~12 7~~

337.8

12 8

34.0

56.2 <

337.3

57.2 <

-1.34 <

34.5

VI

113.4 <

Index below.

70.0

10 17 15

133.8

63.8 <

65.0

59.7 <

-1.12 <

124.7

123.5 <

65.4

-(1.22)

15 19 9

125.5

57.1 <

4(19 9 < 12)

70.9

56.6 <

-1.33 <

M = -1.26

15 14 47 <

126.9

113.7 <

-2 46

15 12 1

69.0

10 21 4

121.9

52.9 <

65.2

59.2 <

-1.37

124.4

112.1 <

21 4

February 28 1897

10 23 43

67.1

-(1.41)

128.6

69.2

121.8

VII

56.0 <

$$\begin{array}{r} 52.6 < \\ 108.6 < \end{array} - 1.45 <$$

Index above

156.4

10 26 13

214.0

57.6 <

154.2

$$\begin{array}{r} 64.8 < \\ 122.4 < \end{array} - 1.14 <$$

219.0

154.9

-(1.12)

219.8

64.9 <

157.1

58.9 <

216.0

123.8 <

-1.11 < $M = -1.26$

152.8

10 39 38

218.0

65.2 <

157.4

$$\begin{array}{r} 61.0 < \\ 126.2 < \end{array} - 1.06$$

218.1

-(1.14)

157.0

218.0

61.0 <

157.3

57.2 <

214.5

VIII

118.2 < - 1.23

10 41 48

February 28 1897
Index below

10 45 29
250.7
308.5 52.8 <
248.1 60.3 < - (1.35) <
308.4 113.1 <
247.7 - (1.32) <

10 47 27
4 174 22 < 142 248.3 57.6 <
15 43 36 < 306.0 57.7 < - 1.30 < M = -1.23
-2 46 115.3 <
15 40 50

10 50 43
250.9
308.9 53.0 <
248.5 58.7 < - 1.38 <
307.2 111.7 <
247.5 - (1.38) <

52 37
305.3 57.8 <
249.1 54.2 < - 1.37 <
303.3 IX 112.0 <

Index above

56 18
338.4
35.0 56.6 <
387.4 60.8 < - 1.25 <
38.2 117.4 <

February 28 1897

333.9

- (1.26)°

$$\begin{array}{r} 10 \quad 57 \quad 51 \\ \hline 4(17 \quad 29 \quad 27) \\ 15 \quad 54 \quad 22 \\ -2 \quad 46 \\ \hline 15 \quad 51 \quad 36 \end{array}$$

36.1

340.7

34.1

62.2°

53.9°

116.1°

- 1.28° $M = -1.32°$

340.1

10 59 22

35.4

334.0

37.9

55.3°

63.9°

119.2°

- 1.21°

334.0

- (1.23)°

11 1 40

37.0

339.0

33.6

63.0°

54.6°

117.6°

- 1.25°

Index below.

71.7

11 4 55

122.5

67.3

124.5

51.1°

57.2°

108.3°

- 1.46°

67.1

- (1.42)°

$$\begin{array}{r} 11 \quad 6 \quad 31 \\ \hline 4(12 \quad 28 \quad 2) \\ 16 \quad 3 \quad 7 \\ -2 \quad 46 \\ \hline 16 \quad 0 \quad 21 \end{array}$$

124.0

66.7

121.3

56.9°

54.6°

111.5°

- 1.38°

 $M = -1.32°$

February 25 1897.

$$\begin{array}{r}
 11 \quad 13 \quad 54 \\
 65.0 \\
 124.1 \\
 64.7 \\
 126.4
 \end{array}
 \begin{array}{r}
 59.1 < \\
 61.7 < \\
 \hline
 120.8 <
 \end{array}
 - 1.18 <$$

- (1.23) <

$$\begin{array}{r}
 11 \quad 16 \quad 24 \\
 65.5 \\
 + 26.9 \\
 68.8 \\
 124.0
 \end{array}
 \begin{array}{r}
 126.3 \\
 60.8 \cancel{26.8} \\
 55.2 < \\
 \hline
 116.0 <
 \end{array}
 - 1.28 <$$

XI

Index above

$$\begin{array}{r}
 11 \quad 19 \quad 38 \\
 159.4 \\
 217.5 \\
 156.0 \\
 216.0
 \end{array}
 \begin{array}{r}
 58.1 < \\
 60.0 < \\
 \hline
 118.1 <
 \end{array}
 - 1.23 <$$

In

- (1.22) <

$$\begin{array}{r}
 11 \quad 28 \quad 31 \\
 155.4 \\
 217.6 \\
 157.2 \\
 214.3
 \end{array}
 \begin{array}{r}
 62.2 < \\
 57.1 < \\
 \hline
 119.3 <
 \end{array}
 - 1.21 <$$

M = -1.22 <

$$\begin{array}{r}
 11 \quad 25 \quad 25 \\
 158.2 \\
 214.9 \\
 154.1 \\
 217.1
 \end{array}
 \begin{array}{r}
 56.7 < \\
 63.0 < \\
 \hline
 119.7 <
 \end{array}
 - 1.20 <$$

25 25 February 25 1897

11 27 23 155.4 - (1.20)
 218.5
 167.0
 213.6

XII

63.1 <
 56.6 <
 119.7 < - 1.20 <

Index below

11 30 15 249.0
 304.9
 247.1
 308.5

56.9 <
 61.4 <
 118.3 < - 1.23 <

246.8 - (1.28) <

11 31 24
 16 28 38
 - 2 46
 16 25 52

315.9
 249.0
 304.0

59.1 <
 55.0 <
 114.1 <

- 1.32 < M = - 1.24

11 35 25 249.8
 307.7
 245.5
 307.2

57.9 <
 61.7 <
 119.6 < - 1.20 <

246.4 - (1.26) <

11 37 0± 306.4
 250.8
 305.0

XIII

60.0 <
 54.2 <
 114.2 < - 1.32 <

February 28 1897
Index above

11 39 54	337.0		
	37.1	60.1 <	
	335.9	<u>62.1 <</u>	- 1.14 <
	38.0	122.2 <	

	335.1		-(1.14) <
--	-------	--	-----------

11 41 35	37.6	62.5 <	
<u>4 103 54 <</u>	337.2	<u>60.1 <</u>	- 1.14 < M = -1.20
16 38 24 <	37.3	122.6 <	
<u>- 2 46</u>			
16 35 42			

11 43 43	337.2		
	37.0	59.8 <	
	334.2	<u>63.6 <</u>	- 1.12 <
	37.8	123.4 <	

	334.5		-(1.13) <
11 45 37	38.0	63.5 <	
	337.0	<u>59.0 <</u>	- 1.14 <
	36.0	XIV 122.5 <	

Index below

11 48 8	66.6		
	122.7	56.1 <	
	66.5	<u>59.8 <</u>	- 1.28 <
	126.3	115.9 <	

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$$\begin{array}{r}
 11 \quad 49 \quad 40 \quad 65.1 \\
 \hline
 4 \quad (27) \quad 8 \quad 125.0 \\
 16 \quad 46 \quad 47 \quad 65.4 \\
 \hline
 -2 \quad 46 \quad 124.6 \\
 16 \quad 44 \quad 1
 \end{array}
 \quad
 \begin{array}{r}
 59.9 < \\
 59.2 < \\
 \hline
 119.1 <
 \end{array}
 \quad
 \begin{array}{l}
 - (1.24) \\
 - 1.21 \\
 M = -1.18
 \end{array}$$

$$\begin{array}{r}
 11 \quad 53 \quad 48 \quad 67.8 \\
 1 \quad 124.5 \\
 \hline
 66.2 \\
 126.5
 \end{array}
 \quad
 \begin{array}{r}
 57.0 < \\
 60.3 < \\
 \hline
 117.3 <
 \end{array}
 \quad
 \begin{array}{l}
 - 1.25 <
 \end{array}$$

$$\begin{array}{r}
 11 \quad 54 \quad 15 \quad 65.4 \\
 \hline
 127.0 \\
 65.4 \\
 123.0
 \end{array}
 \quad
 \begin{array}{r}
 61.6 < \\
 57.6 < \\
 \hline
 119.2 <
 \end{array}
 \quad
 \begin{array}{l}
 - (1.23) < \\
 - 1.21 <
 \end{array}$$

Index above

$$\begin{array}{r}
 11 \quad 57 \quad 0 \quad 158.0 \\
 \hline
 214.9 \\
 156.8 \\
 208.1
 \end{array}
 \quad
 \begin{array}{r}
 56.9 < \\
 51.3 < \\
 \hline
 108.2 <
 \end{array}
 \quad
 \begin{array}{l}
 - 1.46 <
 \end{array}$$

$$\begin{array}{r}
 11 \quad 59 \quad 2 \quad 154.5 \\
 \hline
 4 \quad (24) \quad 5 \quad 219.1 \\
 16 \quad 56 \quad 1 \quad 154.0 \\
 \hline
 -2 \quad 46 \quad 216.0 \\
 16 \quad 53 \quad 15
 \end{array}
 \quad
 \begin{array}{r}
 64.6 < \\
 62.0 < \\
 \hline
 126.6 <
 \end{array}
 \quad
 \begin{array}{l}
 - (1.26) < \\
 - 1.05 < \\
 M = -1.24
 \end{array}$$

Feb. 2^d, 1897.

Watch used in previous measts, was
2^m 46^s fast.

Posted to here.

Mar. 4. 1897. (Thursday.)

o Ceti. Phot R. W-obs

$$\begin{array}{r} 2 \quad 4 \quad -2.5 \\ \sqrt{\quad} \quad \sqrt{4} \\ +3 \quad \sqrt{0} \end{array}$$

Index to left.

274.6 \angle var des

291.7 17.1 \angle

276.0 14.2 \angle

290.2 $\frac{31.3\angle}{-4.31\angle}$

275.9 15.0 \angle $-(4.34)\angle$

290.9

275.3 15.6 \angle

290.9 $\frac{30.6\angle}{-4.36\angle}$

Index to right

4.6 16.2 \angle

20.8

4.9 15.4 \angle

20.3 $\frac{31.6\angle}{-4.29\angle}$

$-4.32\angle$

5.2 15.0 \angle

20.2

5.0 15.7 \angle

20.7 $\frac{30.7\angle}{-4.35\angle}$

Mean 4.33 \angle

$$\begin{array}{r} 7 \quad 12 \\ 12 \quad 4 \quad 30 \end{array}$$

March 4 1897
Same again

7 13

$$\begin{array}{r} 4.6 \\ 20.5 \\ 5.3 \\ 20.4 \end{array} \quad \begin{array}{r} 15.9 < \\ \\ 15.1 < \\ \hline 31.0 < \end{array} \quad - 4.33 <$$

$$\begin{array}{r} 5.2 \\ 20.6 \\ 4.8 \\ 20.2 \end{array} \quad \begin{array}{r} 15.8 < \\ \\ 15.8 < \\ \hline 30.6 < \end{array} \quad \begin{array}{l} - (4.34) < \\ \\ - 4.35 < \end{array}$$

Inded to left

$$\begin{array}{r} 94.3 \\ 110.5 \\ 95.9 \\ 110.8 \end{array} \quad \begin{array}{r} 16.2 < \\ \\ 14.9 < \\ \hline 31.1 < \end{array} \quad - 4.32 <$$

$$\begin{array}{r} 95.7 \\ 110.9 \end{array} \quad \begin{array}{r} 15.2 < \\ \\ 15.6 < \end{array} \quad \begin{array}{l} - (4.34) < \\ \\ - 4.35 < \end{array}$$

7 19.
12 16 0

$$\begin{array}{r} 94.8 \\ 110.4 \end{array} \quad \begin{array}{r} 15.6 < \\ \hline 30.2 < \end{array} \quad \begin{array}{l} - 4.35 < \\ \\ \text{mean } 4.34 \end{array}$$

7 21

$$\begin{array}{r} 95.0 \\ 110.4 \\ 95.8 \\ 110.3 \end{array} \quad \begin{array}{r} 15.8 < \\ \\ 14.5 < \\ \hline 29.9 < \end{array} \quad \begin{array}{l} \\ \\ - 4.41 < \end{array}$$

March 4 1897.

$$\begin{array}{r}
 95.6 \\
 110.5 \quad 14.9 < \quad - 4.39 \\
 95.2 \quad 15.5 < \\
 110.7 \quad 30.4 < \quad - 4.37
 \end{array}$$

Index to right.

$$\begin{array}{r}
 185.0 \\
 201.0 \quad 16.0 < \\
 185.3 \\
 200.9 \quad 31.6 < \quad - 4.29 <
 \end{array}$$

$$\begin{array}{r}
 185.9 \quad 14.3 < \quad - (4.32) < \\
 200.2 \\
 184.7 \quad 16.4 < \\
 201.1 \quad 30.7 < \quad - 4.35 < \quad 4.3
 \end{array}$$

$$\text{Mean} = 4.36 <$$

$$\text{Final Mean} = -4.34$$

Faint comparison stars for

S. Hydrac Phot T N-obs

$$\begin{array}{r}
 8 \quad 41 + 3.1 \\
 7 \quad 56 \\
 \hline
 12 \quad 45 \\
 11 \quad 15
 \end{array}$$

March 4 1897

$$\begin{array}{r}
 8 \quad 41 \\
 \hline
 8 \quad 1 \\
 1 \quad 40 \\
 \hline
 12 \\
 10 \quad 20
 \end{array}$$

$$\begin{array}{r}
 A \quad 41 \\
 7 \quad 4 \\
 \hline
 -1 \quad 37 \\
 10 \quad 23
 \end{array}$$

m 40n
 n 6 0
 0 4 7
 7 4 9
 9 3.5 2
 2 5 2
 2 4.5 t

t compared with h
 Index to left.

$$\begin{array}{r}
 89.8 \\
 103.3 \\
 89.0 \\
 101.9
 \end{array}
 \begin{array}{r}
 13.5 < \\
 12.9 < \\
 \hline
 26.4 <
 \end{array}
 \begin{array}{r}
 4.68 <
 \end{array}$$

March 4 1897

89.1			(4.64) <
103.0	13.9 <		
88.3	<u>13.7 <</u>	4.59 <	
102.0	27.6 <		

Index to right

179.0			
192.8	13.8 <		
177.9	<u>14.2 <</u>	4.55 <	
192.1	28.0 <		

177.8		(4.50) <
-------	--	----------

193.7	15.9 <	
179.0	<u>13.3 <</u>	4.46 <
192.3	29.2 <	M = 4.57

S compared with h

178.5		
194.7	16.2 <	
178.6	<u>16.9 <</u>	4.19 <
195.5	33.1 <	

177.9		(4.17) <
-------	--	----------

194.4	16.5 <	
179.0	<u>17.1 <</u>	4.10 <
196.1	33.6 <	

March 4 1897

Index to left.

268.0

283.6

15.6 <

267.8

15.1 <

4.35 <

282.9

30.7 <

267.5

(4.28) <

284.2

16.7 <

268.5

16.2 <

4.20 <

M = 4.22

284.7

32.9 <

r compared with h

264.2

286.9

22.7 <

267.0

20.1 <

3.62 <

287.1

42.8 <

266.0

(3.58) <

287.7

21.7 <

265.1

22.8

3.53 <

287.9

44.5 <

Index to right.

355.0

14.9

15.7

20.7 <

~~355.9~~

19.5 <

3.76 <

357.1

40.2 <

16.6

March 4 1897.

9

44

354.9

(3.73)

15.7

20.8 <

355.1

20.4 <

3.70 <

15.5

41.2 <

 $M = 3.66$

g compared with h

9

50

357.0

19.4

28.4 <

357.1

29.2 <

2.95 <

20.3

57.6 <

349.9

(2.90) <

21.1

31.2 <

357.0

28.7 <

2.86 <

19.7

59.9 <

Index to left.

82.2

111.4

29.2 <

82.0

27.3 <

3.00 <

109.3

56.5 <

81.5

(3.00) <

109.9

28.4 <

82.5

28.2 <

2.99 <

110.7

56.6 <

 $M = 2.95$

March 4 1897.

Index left and above
re compared with h

80.5

10 3

111.0

30.5 <

80.6

29.9 <

2.84 <

110.5

60.4 <

80.5

(2.78) <

112.9

32.4 <

80.8

31.2 <

2.71 <

112.1

64.2 <

Index right and below

166.5

203.3

36.5 <

169.7

31.7 <

2.57 <

201.4

68.2 <

170.5

(2.59) <

9 11

202.4

31.9 <

169.5

34.9 <

2.61 <

M = 2.68

204.4

66.8 <

R. Draconis

W. obs.

16	26	+67.3
9	40	
6	46	
5	14	

March 4 1897

9 20

9 2 var, var 3 r in large tel.
 too faint for finder: estimate 12.2

✓

9 35

T. var. Maji

Mobs

12	3 2	+ 60.4
9	1-5-	
2	3 7	
9	2 3	

5 3.5 var, var 1.5-t in large
 telescope too faint for finder
 estimate 12.5. ✓

Comp. of Chron.

B 394.

A + D 958.

12	07	00.0	=	12	07	20.0
12	08	00.0	=	12	08	20.0

March 4, 1897.

Re. Jup. I. Phot. R. W. obs. Wente rec.

Comp. with nearer of two sets,
following Set. I = II.

12	29	01	21	2	29	41	rec.
		05	23			45	87.7
		11	31			51	120.9
		20	40	30	00		81.2
		27	47		07		128.0
		34	54		14		78.0
30		41	01		21		129.7
		50	10		30		76.2
		57	17		37		134.3
		05	23		45		69.0
		14	34		54		133.9
		23	43	31	03		71.0
		30	50		10		136.0
		39	59		19		65.0
31		45	05		28		137.9
32		54	14		34		64.8
		02	22		42		136.9
		11	31		51		60.8
		17	37		57		144.2
		26	46	32	06		59.0

March 4, 1897

12 31 56 ⁺	12 32 16	144.0	
06 ⁺	26	58.8	
15 ⁺	35	146.8	
24 ⁺	44	56.0	
32 ⁺	52	147.7	
12 33 15 ⁺	33 03	55.0	
-20	10	92.0 ⁺ 147.0	
12 32 55 ⁺	20	90.9 ⁺ 56.9	
	41	91.4 ⁺ 147.8	1 ⁺ (-0.1) ⁺
12 34 15 ⁺	56	57.2	
-20	34 05	90.6 ⁺ 147.8	
12 33 35 ⁺	22	56.2 58.8	
	36	55.4 ⁺ 145.0	2 ⁺ (+0.1) ⁺
12 34 37 ⁺	45	53.0	
-20	52	91.0 ⁺ 146.0	
12 34 37 ⁺	35 02	59.9 ⁺ 57.2	
	10	90.4 ⁺ 147.1	3 ⁺ (0.0) ⁺
12 35 41 ⁺	25	58.8	
-20	37	55.2 ⁺ 147.0	
12 35 21 ⁺	45	90.0 ⁺ 58.0	4 ⁺
	57	59.1 ⁺ 148.0	(0.0) ⁺
	36 05	59.1	
12 36 24 ⁺	14	57.9 ⁺ 147.0	
-20	35	56.7 ⁺ 57.3	5 ⁺ (+0.1) ⁺
12 36 04 ⁺	44	57.3 ⁺ 144.0	

March 4, 1897.

123714 ⁺ 12	36	56	58.0	
-20	37	04	F60 ⁺ 144.0	6.
123654 ⁺		23	F40 ⁺ 61.0	(+0.2) ⁺
		31	F50 ⁺ 145.0	
123755 ⁺		45	59.2	
-20		53	F56 ⁺ 147.8	
123735 ⁺	38	03	F40 ⁺ 59.0	7.
		12	F63 ⁺ 143.0	(+0.1) ⁺
		20	60.0	
123532 ⁺		27	F49 ⁺ 144.9	
-20		35	F50 ⁺ 57.8	8.
123512 ⁺		45	F64 ⁺ 145.8	(+0.1) ⁺

Limit of Visibility

123936 ⁺ 12	39	04	60.2	
-20		23	25.9 ⁺ 116.1	
123916 ⁺		47	27.7 ⁺ 59.3	(+3.1) ⁺
	40	10	26.5 ⁺ 117.0	

Seeing pretty good.
Electric light gave a little trouble, failing
to respond instantaneously sometimes.

Comp. of Chron.

13 39 4	A+D 9 58.
13 10 00.0	= 13 10 20.0
13 11 00.0	= 13 11 22.0

March 6 1897 (Saturday)

cloudy at eclipse time
still considerably cloudy.

Σ 1138 2 Harris W-obs
Phot. R

7	40
7	84
	6

-144

12

11 54

Too cloudy

Σ 1415 H. No. 145- W-obs

10	8	+ 71.7
7	39	
2	29	
12		
9	31	

Position angle 160° , dist 17"
mag 5.5, 6.8

March 6 1897

Index above

242.1 < into dis

321.3

79.2 <

249.6

70.5 <

0.58 <

320.1

149.7 <

(0.54) <

245.0

320.4

75.4 <

243.6

78.1 <

0.51 <

321.7

153.5 <

Index below

336.2

51.1

74.9 <

340.0

66.1 <

0.75 <

46.1

141.0 <

3

340.3

(0.70) <

45.5

64.52 <

332.3

80.9 <

0.65 <

53.2

146.1 <

M = 0.62

 Σ 1138 2 hours

4 40 -14.4

Too cloudy

March 6 1897

 Σ 1183

Phot R

Nobs

$$\begin{array}{r}
 8 \quad 0 \quad -8.9 \\
 \hline
 8 \quad 9.3 \\
 \hline
 23
 \end{array}$$

$$\begin{array}{r}
 8 \quad 0 \\
 \hline
 8 \quad 33 \\
 \hline
 33 \\
 \hline
 27
 \end{array}$$

Position angle 330° dist. $30''$
 Mag 5.5 7.9

Index left and above

 $76.0 < \text{brts dis}$

9 23

$$\begin{array}{r}
 128.2 \quad 52.2 < \\
 76.0 \quad \underline{51.9 <} \quad 1.56 < \\
 127.9 \quad 104.1 <
 \end{array}$$

75.7

 $(1.58) <$

127.4

blonde thick $51.7 <$

77.0

127.4

$$\begin{array}{r}
 \underline{50.4 <} \quad 1.61 < \\
 102.1 <
 \end{array}$$

March 6 1897

Index right and below

167.7

217.6

clouds thick,

167.4

217.8

clouds thick.

49.9

50.4

100.3

1.60

(166)

168.2

215.2

165.8

217.7

47.0

51.9

98.9

1.68 - $M = 1.62$

Measurements very difficult, stars observed through pretty thick clouds.

 $\Sigma 23$ 32, 33 Com. Ber.

Phot R

NT-obs

12

46

+17.8

9

1

3

45

8

10

12

46

9

6

3

40

8

20

clouds thick.

March 6 1897

12	46
9	20
<hr/>	
3	26
8	34

Position angle 50° , dist $3'$
 mag 5.3, 5.9

Index below

248.0 \angle btr dis3 19.8 \angle 71.8 \angle 248.4 \angle 79.5 \angle 0.55 \angle 322.9 \angle 151.3 \angle

(0.5-8)

244.2

320.6 \angle 76.4 \angle 247.7 \angle 71.2 \angle 0.62 \angle 318.9 \angle 147.6 \angle

Index above

336.8

48.8

72.0 \angle

334.1

80.9 \angle 0.52 \angle

355.0

152.9 \angle

(0.48)

331.1

52.8

81.7 \angle

334.6

75.0 \angle 0.44 \angle

49.0

156.7 \angle $M = 0.53$

March 6 1897

S Hydral Phot. J.

W-obs

$$\begin{array}{r}
 8 \quad 41 \quad + 3.1 \\
 9 \quad 52 \\
 \hline
 1 \quad 11
 \end{array}$$

I compared with the
Index above and to left

257.0 < comp. dis.

10 - 46

$$\begin{array}{r}
 294.8 \quad \cancel{7.2} \\
 257.2 \quad \cancel{3.2} \\
 295.3 \quad \underline{32.1} \quad 2.14 \\
 \quad \quad \quad 21.9
 \end{array}$$

$$\begin{array}{r}
 257.5 \quad 37.2 \quad (2.25) \\
 294.7 \\
 256.5 \quad \underline{37.5} \quad 2.36 \\
 294.0 \quad 74.7
 \end{array}$$

Index below and to right.

$$\begin{array}{r}
 347.6 \\
 23.6 \quad 36.0 \\
 348.5 \quad \underline{35.8} \quad 2.45 \\
 24.3 \quad 71.8
 \end{array}$$

(2.46)

$$\begin{array}{r}
 10 \quad 54 \\
 \hline
 15 \quad 50 \quad 0
 \end{array}$$

$$\begin{array}{r}
 345.4 \\
 23.3 \quad 37.9 \\
 349.6 \quad \underline{33.1} \quad 2.47 \\
 22.7 \quad 71.0
 \end{array}$$

M = 2.36

March 6 1897.

Index to left
 ± compared with h
 90.5 ← comp dis.

104.2	13.7	
89.4	12.2	4.73
101.6	25.9	

(4.64)

90.0		
104.0	14.0	
89.4	14.1	4.55
103.5	28.1	

Index to right.

178.6		
192.3	13.7	
178.0	14.0	4.58
192.0	27.7	

(4.52)

11	18
16	14 0

178.1		
194.0	15.9	
178.8	13.2	4.47
192.0	29.1	

M = 4.58

m 4 m

n 5 0

o 4.5 m

p 4.5 q

q 4 r

r 4.5 s

s 4 t

March 10 1897 (Wednesday)

Q betti

Phot R

W-obs

$$\begin{array}{r} 2 \quad 4 \quad -2.5- \\ \hline 6 \quad 5.0 \\ 4 \quad 4.6 \end{array}$$

$$\begin{array}{r} 2 \quad 4 \\ \hline 6 \quad 5.2 \\ 4 \quad 4.8 \end{array}$$

Index to left

7 30

274.5 < was dis

$$\begin{array}{r} 291.0 \quad 16.5 < \\ 275.4 \quad \underline{15.8 <} \quad 4.24 < \\ 291.2 \quad 32.3 < \end{array}$$

(4.21)

$$\begin{array}{r} 275.0 \\ 290.4 \quad 15.4 < \\ 273.9 \quad \underline{17.8 <} \quad 4.18 < \\ 291.7 \quad 33.2 < \end{array}$$

Index to right

$$\begin{array}{r} 3.1 \\ 21.8 \quad 18.7 < \\ 5.7 \quad \underline{14.9 <} \quad 4.15 < \\ 20.6 \quad 33.6 < \end{array}$$

March 10 1897

7	37
<hr/>	
12	33
	30
	13
<hr/>	
12	33
	17

5.0		(4.12)
20.8	15.8 <	
3.5-	<u>18.9</u> <	4.09 <
22.4	34.7 <	M = -4.16

Same again.

7	38
---	----

22.2	19.3 <	
4.9	<u>16.4</u> <	4.02 <
21.8	35.7 <	

5.0		(4.05) <
20.8	15.8 <	
3.1	<u>19.0</u> <	4.08 <
22.1	34.8 <	

Index to left.

93.2		
112.4	19.2 <	
94.7	<u>17.6</u> <	3.95 <
112.3	36.8 <	

94.7		(3.96) <
------	--	----------

7	45
<hr/>	
12	41
	30
12	41
	17

110.9	16.2 <	
92.9	<u>20.2</u> <	3.98 <
113.1	36.4 <	M = -4.00 <

Radial wheels came off the track. so had to block up the chair and replace them.

Final Mean = -4.08

March 10 1897

S cancri

Phot J.

W-obs

8	36	+18.7
7	26	
1	10	
12		
10	50	

8	36
5	11
	25
11	35

Comp. Star = Sun. $+19^{\circ} 20' 22''$ 9.0

Index above star

243.5 \angle comp. star

8 52-0

307.9 64.1 \angle 239.5 72.6 \angle +0.84 \angle 312.4 136.7 \angle

237.5

+ (0.82)

8 54 18

312.7 74.9 \angle 243.9 63.9 \angle +0.80 \angle 307.5 138.8 \angle

Index below

334.0

339.7 65.7 \angle 330.4 72.9 \angle +0.80 \angle 43.8 138.6 \angle

8 57 58

March 10 1897

333.3

+ (0.96) <

$$\begin{array}{r}
 8 \quad 59 \quad 54 \\
 \hline
 424 \quad 10 < \\
 13 \quad 56 \quad 2.5 < \\
 \hline
 13 \quad 55 \quad 49
 \end{array}$$

35.7

65.4 <

335.9

$$\begin{array}{r}
 57.5 < \\
 \hline
 122.9 <
 \end{array}$$

+ 1.13 <

M = + 0.89

33.4

382.9

9 1 4

35.8

62.9 <

330.1

$$\begin{array}{r}
 69.9 < \\
 \hline
 132.8 <
 \end{array}$$

+ 0.92 <

40.0

(0.88) <

328.9

9 4 0

41.1

72.2 <

333.0

$$\begin{array}{r}
 65.0 < \\
 \hline
 137.2 <
 \end{array}$$

+ 0.83 <

35.0

Index above

61.1

9 7 38

130.2

69.1 <

58.5

$$\begin{array}{r}
 75.3 < \\
 \hline
 144.4 <
 \end{array}$$

+ 0.69 <

133.8

(0.69) <

57.9

9 35

134.7

76.8 <

62.7

$$\begin{array}{r}
 62.6 < \\
 \hline
 144.4 <
 \end{array}$$

+ 0.69 <

130.3

~~0.74~~

M = + 0.78 <

$$\begin{array}{r}
 14 \quad 22 \quad 19 < \quad 137 \\
 \hline
 14 \quad 5 \quad 34.82 < \\
 \hline
 14 \quad 0 \quad 21
 \end{array}$$

March 10 1897

$$\begin{array}{r}
 64.8 \\
 9 \ 13 \ 30 \quad 132.0 \quad 67.2 < \\
 \quad 61.1 \quad \quad 71.0 < \quad +0.81 < \\
 132.1 \quad \quad \underline{138.2} <
 \end{array}$$

$$\begin{array}{r}
 61.9 \quad + (0.78) < \\
 9 \ 15-28 \quad 132.3 \quad 70.4 < \\
 \quad 59.8 \quad \quad \underline{70.6} < \quad 0.70 < \\
 130.4 \quad \quad \underline{IV} \quad 141.0 <
 \end{array}$$

Index below

$$\begin{array}{r}
 149.2 \\
 9 \ 15 \ 12 \quad 220.8 \quad 71.6 < \\
 \quad 147.8 \quad \quad \underline{77.2} < \quad +0.60 < \\
 225.0 \quad \quad \underline{148.8} <
 \end{array}$$

(0.58) <

$$\begin{array}{r}
 149.5 \\
 9 \ 20 \ 2 \quad 225.0 \quad 75.5 < \\
 \quad 148.7 \quad \quad \underline{74.7} < \quad +0.57 < \quad M = +0.68 < \\
 4(67 \ 12 < 192) \quad 148.7 \quad \quad \underline{150.2} < \\
 14 \ 16 \ 48.0 < \quad 223.4 \\
 \quad -13 \\
 \underline{14 \ 16 \ 35}
 \end{array}$$

$$\begin{array}{r}
 153.7 \\
 9 \ 23 \ 12 \quad 224.4 \quad 70.7 < \\
 \quad 148.7 \quad \quad \underline{75.4} < \quad +0.65 < \\
 224.1 \quad \quad \underline{146.1} <
 \end{array}$$

23

12

March 10 1897

9 24 0

149.4
222.3
149.6
223.7

(0.64) -

$$\text{IV} \quad \begin{array}{r} 72.9 < \\ 74.1 < \\ \hline 147.0 < \end{array} + 0.63 <$$

Inded above

9 26 41

242.9
311.0
239.3
313.1

$$\begin{array}{r} 68.1 < \\ 73.8 < \\ \hline 141.9 < \end{array} + 0.74 <$$

240.4

(0.74)

$$\begin{array}{r} 9 \quad 25 \quad 12 \\ \hline 4(22 \quad 9 < 12) \\ 14 \quad 25 \quad 32.2 < \\ \hline 14 \quad 25 \quad 19 \end{array}$$

312.2

241.0

311.1

$$\begin{array}{r} 71.8 < \\ 70.1 < \\ \hline 141.9 < \end{array}$$

+ 0.74 <

 $M = +0.69 <$

9 30 25

240.0

310.4

239.0

312.2

$$\begin{array}{r} 70.4 < \\ 73.2 < \\ \hline 143.6 < \end{array} + 0.70 <$$

241.0

(0.73) -

9 35 55

310.8

239.1

310.3

V

$$\begin{array}{r} 69.3 < \\ 71.2 < \\ \hline 140.5 < \end{array} + 0.76 <$$

March 10 1897.

Index below

334.5

38 49

39.7

65.2 <

332.1

68.9 <

+ 0.89 <

41.0

134.1 <

(0.85) <

331.9

9 40 41

38.9

67.0 <

4(145.50) < 110

332.7

71.2 <

+ 0.81 <

M = 0.79 <

14 36 27.5 <

43.9

138.2 <

-13

14 36 15

333.3

2

48 15

40.6

67.3 <

330.1

71.5 <

+ 0.80 <

41.6

138.8 <

(0.74) <

332.3

9 44 37

42.2

69.9 <

334.0

70.5 <

+ 0.67 <

39.5

145.4 <

Index above

6

60.0

9 48 21

132.2

72.2 <

58.0

73.2 <

+ 0.67 <

131.2

145.4 <

March 10 1897

58.1

(0.63) <

$$\begin{array}{r}
 9 \quad 48 \quad 50 \quad 133.0 \\
 \hline
 14 \quad 45 \quad 30.8 < \quad 123 \quad 18.1 \\
 \quad \quad -13 \quad 132.6 \\
 \hline
 14 \quad 45 \quad 18
 \end{array}$$

$$\begin{array}{r}
 74.9 < \\
 74.5 < \\
 \hline
 149.4 <
 \end{array}
 + 0.59 < \quad M = + 0.68 <$$

60.1

9 53 4

133.7

56.4

133.7

$$\begin{array}{r}
 73.6 < \\
 77.3 < \\
 \hline
 150.9 <
 \end{array}
 + 0.56 <$$

(0.56) <

9 55 54

132.6

58.0

132.9

VII

$$\begin{array}{r}
 76.1 < \\
 74.3 < \\
 \hline
 150.4 <
 \end{array}
 + 0.57 <$$

Index below

151.3

9 57 46

223.6

148.8

226.4

$$\begin{array}{r}
 72.3 < \\
 77.6 < \\
 \hline
 149.9 <
 \end{array}
 + 0.58 <$$

(0.58) <

10 0 16

226.6

151.6

223.9

$$\begin{array}{r}
 77.1 < \\
 72.3 < \\
 \hline
 149.4 <
 \end{array}$$

$$+ 0.59 < \quad M = + 0.57$$

$$\begin{array}{r}
 14 \quad 56 \quad 45.0 < \\
 \quad \quad -13 \quad 223.9 \\
 \hline
 14 \quad 56 \quad 32
 \end{array}$$

March 10 1897

$$\begin{array}{r}
 10 \ 2 \ 23 \\
 148.4 \\
 223.6 \\
 148.7 \\
 226.3 \\
 \hline
 75.2 < \\
 77.6 < \\
 \hline
 152.8 < + 0.52 <
 \end{array}$$

$$\begin{array}{r}
 10 \ 4 \ 6 \\
 147.9 \\
 225.2 \\
 149.9 \\
 225.1 \\
 \hline
 77.3 < \\
 75.2 < \\
 \hline
 152.5 < + 0.53 <
 \end{array}$$

(0.52) <

Index above

$$\begin{array}{r}
 10 \ 7 \ 52 \\
 240.8 \\
 313.0 \\
 241.9 \\
 312.5 \\
 \hline
 72.2 < \\
 70.6 < \\
 \hline
 142.8 < + 0.72 <
 \end{array}$$

$$\begin{array}{r}
 10 \ 9 \ 44 \\
 240.1 \\
 311.4 \\
 240.2 \\
 311.8 \\
 \hline
 71.3 < \\
 71.6 < \\
 \hline
 142.9 < + 0.72 <
 \end{array}$$

(0.72) <

$$\begin{array}{r}
 10 \ 12 \ 11 \\
 240.9 \\
 311.9 \\
 240.7 \\
 313.1 \\
 \hline
 71.0 < \\
 72.4 < \\
 \hline
 143.4 < + 0.71 <
 \end{array}$$

12 " March 10 1897.

239.9

(0.70) -

313.4

240.7

311.8

$$\begin{array}{r} 73.5 < \\ 71.1 < \\ \hline 144.6 < \end{array} + 0.68 <$$

Indel below

330.3

41.9

331.0

43.8

$$\begin{array}{r} 71.6 < \\ 72.8 < \\ \hline 144.4 < \end{array} + 0.69 <$$

~~3~~

330.0

(0.70) -

10 19 33

$$\begin{array}{r} 4(23 \quad 24 < \quad 204 \\ 15 \quad 15 \quad 5/10 < \\ -13 \\ \hline 15 \quad 15 \quad 38 \end{array}$$

44.1

331.8

41.6

$$\begin{array}{r} 74.1 < \\ 69.8 < \\ \hline 143.9 < \end{array}$$

+0.70 - $M = +0.70$

331.9

43.4

329.8

43.3

$$\begin{array}{r} 71.5 < \\ 73.5 < \\ \hline 145.0 < \end{array} + 0.67 <$$

332.2

(0.66) -

10 24 11

44.5

330.3

44.0

$$\begin{array}{r} 72.3 < \\ 73.7 < \\ \hline 146.0 < \end{array} + 0.65 <$$

March 10. 1897.

Index above

57.5

10 26 8

133.7

76.2 <

58.0

76.1 <

+ 0.53 <

134.1

15 2.3 <

(0.53) <

57.9

10 29 8

134.0

76.1 <

4(21 46 < 106

57.8

76.1 <

+ 0.53 <

15- 25- 26.5 <

133.9

15 2.2 <

M = + 0.60 <

-13

15 25 13

58.2

10 33 17

133.0

74.8 <

57.2

77.3 <

+ 0.53 <

134.5

15 2.1 <

(0.46)

55.1

10 35 8

136.6

81.5 <

57.5

78.7 <

+ 0.38 <

136.2

XI 160.2 <

Index below

148.1

10 37 54

225.6

77.5 <

143.9

85.0 <

+ 0.33 <

228.9

162.5 <

March 10. 1898.

10	40	1	142.1			
			227.8	85.7		(0.27) -
4	146	20	145.7	83.3	+0.21	M = +0.36
15	36	350	229.0	169.0		
		-13				
15	36	22				

10	44	38	144.0			
			228.0	84.0		
			144.6	84.7	+0.21	
			229.3	168.7		

10	46	35	145.8			(0.27) -
			227.0	81.2		
			145.8	81.3	+0.33	
			227.1	162.5		

Index above

10	49	18	236.3			
			315.5	79.2		
			237.9	81.5	+0.37	
			319.4	160.7		

10	50	47	237.6			(0.38) -
			317.0	79.4		
4	191	18	238.2	79.7	+0.40	
15	47	49.5	317.1	159.1		M = +0.32
		-13				
15	47	37				

March 10. 1897.

$$\begin{array}{r}
 10 \quad 53 \quad 27 \\
 237.0 \\
 315.9 \\
 238.3 \\
 316.2 \\
 \hline
 78.9 \\
 77.9 \\
 156.8
 \end{array}
 + 0.44$$

(0.40)

$$\begin{array}{r}
 10 \quad 55 \quad 30 \\
 236.3 \\
 315.2 \\
 236.5 \\
 315.0 \\
 \hline
 81.9 \\
 78.5 \\
 160.4
 \end{array}
 + 0.37$$

Index below

$$\begin{array}{r}
 10 \quad 58 \quad 3 \\
 326.5 \\
 45.6 \\
 324.0 \\
 47.9 \\
 \hline
 79.1 \\
 83.9 \\
 163.0
 \end{array}
 + 0.32$$

(0.37)

$$\begin{array}{r}
 10 \quad 59 \quad 43 \\
 325.4 \\
 46.0 \\
 327.7 \\
 45.3 \\
 \hline
 80.6 \\
 77.6 \\
 158.2
 \end{array}
 + 0.42$$

$$\begin{array}{r}
 10 \quad 4(26 \quad 43) \quad 163 \\
 56 \quad 40.8 \\
 -13 \\
 15 \quad 56 \quad 28
 \end{array}$$

$$M = +0.38$$

$$\begin{array}{r}
 11 \quad 1 \quad 38 \\
 324.6 \\
 47.0 \\
 325.9 \\
 47.3 \\
 \hline
 82.4 \\
 81.4 \\
 163.8
 \end{array}
 + 0.31$$

(+0.30)

$$\begin{array}{r}
 (11 \quad 3 \quad 32) \\
 324.2 \\
 49.0 \\
 327.0 \\
 46.9 \\
 \hline
 84.8 \\
 79.9 \\
 164.7
 \end{array}
 + 0.29$$

11 1 3 8
3 3 8

March 10 1897

Index above

0.30

11 7 6

57.0

136.4

53.0

139.0

79.4

86.0

165.4

+0.28

(0.24)

52.9

138.9

86.0

54.3

83.1

137.4

169.1

+0.20 M = +0.27

11 8 56
16 4 21 18 78
5 19.5
-13
16 5 7

56.8

138.0

56.1

139.6

81.2

83.5

164.7

+0.29

(0.30)

11 13 19

57.0

137.7

54.4

137.0

80.7

82.6

XV

163.3

+0.32

Index below

145.1

11 15 55

230.8

143.7

229.9

85.7

86.2

171.9

+0.157

March 10 1897.

(0.14) -

$$\begin{array}{r}
 11 \quad 18 \quad 1 \\
 \hline
 4(18 \quad 20 \quad < \quad 140 \\
 16 \quad 14 \quad 350 < \\
 \quad \quad -13 \\
 \hline
 16 \quad 14 \quad 22
 \end{array}$$

143.9

229.1

142.2

229.8

8

852 -

87.6 -

172.8 -

+0.14 -

M = +0.22 -

11 20 14

141.7

232.0

143.1

232.5

90.3 -

89.4 -

179.7 -

+0.01 -

(0.00) -

11 22 57

142.1

232.4

141.5

232.0

90.3 -

90.2 -

XVI

180.5 -

179.5 -

-0.01 -

Index above

232.5 -

11 27 35

322.0

233.6

321.7

87.5 -

82.1 -

175.6 -

+0.08 -

+ (0.10) -

11 29 6

234.5

320.4

233.5

322.0

85.9 -

88.5 -

174.4 -

+0.11 -

M = +0.05 -

$$\begin{array}{r}
 11 \quad 29 \quad 6 \\
 \hline
 4(19 \quad 52 \quad < \quad 232 \\
 16 \quad 24 \quad 580 < \\
 \quad \quad -13 \\
 \hline
 16 \quad 24 \quad 45
 \end{array}$$

March 10 1897

11 33 17

234.1

320.7

232.5

318.4

86.6

$$\begin{array}{r} 85.9 \\ 172.5 \end{array} + 0.14$$

(+0.08)

11 35 12

235.0

320.8

230.6

322.9

85.8

$$\begin{array}{r} 923 \\ 178.1 \end{array} + 0.03$$

XVII

Index below

11 37 48

321.1

48.4

324.5

50.9

87.3

$$\begin{array}{r} 86.4 \\ 173.7 \end{array} + 0.12$$

(0.12)

11 39 26

322.8

49.9

322.0

49.0

87.1

87.0

$$\begin{array}{r} 87.0 \\ 174.1 \end{array} + 0.11$$

M = +0.10

$$\begin{array}{r} 4(25 \quad 43 \quad 103) \\ 16 \quad 36 \quad 25.8 \\ \hline 16 \quad 36 \quad 13 \end{array}$$

11 41 5

321.6

57.5

322.9

53.2

89.9

90.3

$$\begin{array}{r} 120.2 \\ 179.8 \end{array} + 0.00$$

$$\begin{array}{r} 179.8 \\ 179.8 \end{array} - 0.00$$

March 10 1897

11 43 14

321.4

50.6

320.4

52.0

XVIII

$$\begin{array}{r}
 89.2 \\
 91.6 \\
 \hline
 120.8 \\
 179.2
 \end{array}
 \begin{array}{l}
 - (0.01) \\
 - 0.02
 \end{array}$$

Index above

11 47 52

49.9

141.9

51.0

141.5

$$\begin{array}{r}
 92.0 \\
 90.5 \\
 \hline
 182.5 \\
 177.5
 \end{array}$$

- 0.05

52.0

- (0.08)

11 50 35

142.2

48.7

144.0

$$\begin{array}{r}
 90.2 \\
 95.3 \\
 \hline
 185.5 \\
 174.5
 \end{array}$$

- 0.10 $M = -0.04$

$$\begin{array}{r}
 418246 \\
 16 \quad 45 \quad 46.5 \\
 \hline
 16 \quad 45 \quad 29
 \end{array}$$

16 45 29

48.8

11 52 18

146.9

49.0

140.6

$$\begin{array}{r}
 97.1 \\
 91.3 \\
 \hline
 188.4 \\
 171.6
 \end{array}$$

- 0.16

48.7

144.2

49.0

143.9

XIX

$$\begin{array}{r}
 95.5 \\
 94.9 \\
 \hline
 190.4 \\
 169.6
 \end{array}
 \begin{array}{l}
 - (0.18) \\
 - 0.20
 \end{array}$$

11 54 30

March 10 1897

Index below

140.0

284.7

139.3

285.0

$$\begin{array}{r} 94.7 < \\ 95.7 < \\ \hline 190.4 < \\ 169.6 < \end{array}$$

-0.20 <

138.9

285.2

186.0

285.3

$$\begin{array}{r} 96.3 < \\ 99.3 < \\ \hline 195.6 < \\ 164.4 < \end{array}$$

- (0.25) <

-0.30 <

M = -0.22 <

Watch used in preceding measts.
was 13. secs. fast.

March 11, 1897. (Thursday)

Q beti

Phot R

W-ops

$$\begin{array}{r} 2 \quad 4 \quad -2.5 \\ 6 \quad 55 \\ \hline 5 \quad 57 \end{array}$$

Index to left

94.52 var. dec.

$$\begin{array}{r} 112.4 \quad 17.9 < \\ 96.0 \quad 16.3 < \\ 112.8 \quad \hline 38.2 < \quad 4.11 < \end{array}$$

$$\begin{array}{r} 95.8 \quad 16.7 < \\ 112.5 \\ 95.1 \quad 14.3 < \\ 113.3 \quad \hline 35.0 < \quad 4.06 < \end{array} \quad (4.02) <$$

Index to right

$$\begin{array}{r} 184.8 \quad 12.2 < \\ 203.0 \\ 185.1 \quad 12.4 < \\ 208.5 \quad \hline 36.6 < \quad 3.96 < \end{array}$$

$$\begin{array}{r} 185.2 \quad 12.4 < \\ 203.6 \\ 183.7 \\ 202.8 \quad \hline 37.5 < \quad 3.91 < \end{array} \quad (3.94) <$$

mean = 4.01 <

March 11 1897
Same again.

184.4 12.6

203.0

184.0 12.5

203.0 37.1 3.93

184.8 17.1

201.9

183.5 12.5

202.0 35.6 4.03

(3.94)

Index to left

273.9 19.7

293.6

275.8 16.2

292.0 35.9 4.01

275.4 16.9

292.3

274.1 12.9

293.0 35.2 4.01

(4.01)

mean 4.00

General mean - 4.00

8 42

12 38 0

March 11 1897.

✓

R. Comae. W-obs
Revision and extension of faint comp. stars.

12	0	
11	5.7	+19.7
7	4.5	
4	1.2	
7	4.8	

11	5.7
7	5.0
4	7
7	5.3

n	5.5	$\alpha' (L')$
$(L')/\alpha'$	4	α
α	3.5	ϵ
ϵ	6	δ
δ	4	η
η	4	θ
θ	5	κ

κ is the faintest star which can be seen to-night.

When adjacent 7.5 mag. star is covered up by bar, observer possibly at times suspects var. but cannot be at all sure of it. If var. is actually seen

March. 11 1897

it must be at least three or four
 20 grades fainter than star K.
 Or probably fainter than
~~13.9 mag.~~ 13.9 mag.

✓ I Virginis.

AT-obs

12	7	- 5, 0
9	21	
2	46	
9	14	
12	7	
9	23	
2	44	
9	16	

11	58
9	29
2	29
10 9	31

12	7
9	40
2	27
9	33

March 11. 1897.

Var. suspected at times by indirect
vision; if variable is actually
seen it must be as much as two
grades fainter than star x on Mr
Reed's small chart.
estimate

13.9 ± mag.

Star "x" put on Mr. Reed's small chart to com-
pare variable with.

g. Virginis

W-ops

12	24	-4.2
10	15	
2	9	
9	57	

Region identified and star found
about in position of var.

var = star x on Mr. Reed's small
chart. Estimate 12.8

Star "x" put on Mr. Reed's small chart
to compare variable with.

Friday, Mar. 12, 1897

Comp. of Chron.

A + D. 958 B 394.

12 56 32.8 = 12 56 00.0

12 57 32.8 = 12 57 00.0

Recap. Sat. III. Phot. R., W. obs., White rec

Comp. with nearest of three
Sats. on preceding side = Sat. I.

Limit of Visibility

13 16 27	13 16 00	207.0
- 33	17	246
	35	251
13 15.54	55	245
		231.6
		205.8
		230.9

13 25 54	13 26 27	new.
26 07	40	229.0
17	50	231.1
29	27 02	206.0
39	12	233.0
49	22	203.5
57	30	234.8

Mar. 12, 1897.

13 27 04 13	27 37	200.0
11	44	238.0
17	50	199.5
26	59	242.1
32	28 05	194.5
41	14	244.8
47	20	192.3
52	25	247.2
55	31	191.0
25 04	37	246.1
10	43	187.2
21	54	248.1
30	29 03	184.0
40	13	250.9
52	25	185.1
29 02	35	252.8
05	41	183.3
14	47	254.1
	54	182.9
30 09	30 06	724.255.3
-33	15	76.5 179.8
29 36	22	74.6 256.6
	31	179.0
30 44	41	790. 258.0
-33	49	79.0 180.0
30 11	57	79.0 259.0

Mar. 12, 1897.

$$\begin{array}{r} 31 \ 24^{\circ} \ 13 \\ -33 \\ \hline 30 \ 51^{\circ} \end{array}$$

$$\begin{array}{r} 32 \ 00^{\circ} \\ -33 \\ \hline 31 \ 27^{\circ} \end{array}$$

$$\begin{array}{r} 32 \ 35^{\circ} \\ -33 \\ \hline 32 \ 05^{\circ} \end{array}$$

$$\begin{array}{r} 33 \ 17^{\circ} \\ -33 \\ \hline 32 \ 44^{\circ} \end{array}$$

$$\begin{array}{r} 33 \ 50^{\circ} \\ -33^{\circ} \\ \hline 33 \ 17^{\circ} \end{array}$$

$$\begin{array}{r} 34 \ 24^{\circ} \\ -33 \\ \hline 33 \ 51^{\circ} \end{array}$$

$$\begin{array}{r} 31 \ 09 \ 178.0 \\ 20 \ F0.0^{\circ} \ 258.0 \\ 30 \ F0.4^{\circ} \ 177.8 \\ 38 \ F0.2^{\circ} \ 258.2 \end{array}$$

$$\begin{array}{r} 47 \ 176.0 \\ 53 \ F1.3^{\circ} \ 257.3 \\ 32 \ 05 \ F3.6^{\circ} \ 176.2 \\ 14 \ F2.4^{\circ} \ 259.8 \end{array}$$

$$\begin{array}{r} 21 \ 177.9 \\ 31 \ F2.3^{\circ} \ 260.2 \\ 43 \ F3.0^{\circ} \ 175.1 \\ 55 \ F3.6^{\circ} \ 260.1 \end{array}$$

$$\begin{array}{r} 33 \ 01 \ 177.0 \\ 14 \ F3.0^{\circ} \ 260.0 \\ 22 \ FF.0^{\circ} \ 175.0 \\ 30 \ F5.5^{\circ} \ 263.0 \end{array}$$

$$\begin{array}{r} 37 \ 175.2 \\ 46 \ F7.5^{\circ} \ 263.0 \\ 54 \ FF.2^{\circ} \ 174.8 \end{array}$$

$$\begin{array}{r} 34 \ 02 \ FF.0^{\circ} \ 263.0 \\ 12 \ 172.9 \end{array}$$

$$\begin{array}{r} 20 \ 91.2^{\circ} \ 264.1 \\ 27 \ F0.7^{\circ} \ 173.5 \\ 36 \ 91.0^{\circ} \ 264.2 \end{array}$$

$$\begin{array}{r} 46 \ 171.0 \\ 53 \ 264.7 \end{array}$$

Mar. 12, 1897.

13 34 55 ⁺ 13	35 02	93.7	171.0	
-33	11	93.3	264.3	
13 34 25 ⁺	20		169.9	
35 32 ⁺	27	95.1	265.0	
-33	36	93.0	171.0	
34 59 ⁺	44	94.0	264.0	
	54		173.8	
36 10 ⁺	36 04	59.5	263.3	
-33	17	92.0	172.0	
35 37 ⁺	27	90.5	264.0	
36 49 ⁺	32		174.2	
33	42	57.5	262.0	
36 16 ⁺	58	91.2	173.8	
	37 05	59.5	265.0	→
37 35 ⁺	21		175.0	
33	31	56.9	261.9	
37 05 ⁺	46	59.7	174.3	1.
	56	55.3	264.0	
35 24 ⁺	38 05		173.0	
33	19	57.9	260.9	
37 51 ⁺	30	57.5	174.1	2.
	40	57.5	261.9	
39 06 ⁺	47		175.0	
33	56	55.0	263.0	
35 33 ⁺	39 13	59.9	172.0	3.
	26	59.0	261.9	

Mar. 12, 1897.

13 39 57 13
33

13 39 24

41 35
-33

41 05

54 25^{*}
-33

53 55

55 25^{*}
-33

54 52

56 02^{*}
-33

55 29

39 35

40

54

03

15

26

[41]
[41]

42

30

54

10

22

32

46

55

11

20

30

38

56

09

14

174.0

clouds

59.7 263.7

90.2 172.2

90.2 263.0

173.8

clouds

59.2 263.0

91.7 173.0

90.4 Clouds.

264.7

170.7

95.3 266.0

93.5 170.0

94.6 263.8

171.2

92.7 263.9

93.5 171.2

93.2 263.0

171.7

93.5 265.5

92.6 172.2

93.2 264.8

Last measurements taken through some cloud. Seeing fairly good. Clouds came up while

Mar. 12, 1897.

constant was being taken,
causing some delay.
Belief considered good.

Comp. of Chron.
At 10. 9/58 B394.

14	05	32.8	=	14	05	00.0
14	06	32.8		14	06	00.0

March 13. 1897 (Saturday).

Q Ceti

Phot. R.

W-Lbs

$$\begin{array}{r} 2 \quad 4 \quad - 2.5 \\ 6 \quad 40 \\ \hline 4 \quad 36 \end{array}$$

Index to right

6 59

$$\begin{array}{r} 29.1 < 17.7 < \\ 46.8 \end{array}$$

$$\begin{array}{r} 29.8 \\ 48.3 \end{array} \quad \begin{array}{r} 14.5 < \\ 36.2 < \end{array} \quad 3.99 <$$

$$\begin{array}{r} 30.2 \\ 47.9 \end{array} \quad 17.7 <$$

(3.92) <

$$\begin{array}{r} 29.4 \\ 48.0 \end{array} \quad \begin{array}{r} 14.6 < \\ 36.3 < \end{array} \quad 3.92 <$$

Index to left

$$\begin{array}{r} 120.2 \\ 139.4 \end{array} \quad 19.2 <$$

$$\begin{array}{r} 120.6 \\ 139.6 \end{array} \quad \begin{array}{r} 19.0 < \\ 38.2 < \end{array} \quad 3.47 <$$

$$\begin{array}{r} 120.5 \\ 138.6 \end{array} \quad 18.1 <$$

(3.44) <

$$\begin{array}{r} 7 \quad 5 \\ \hline 12 \quad 2 \quad 0 \end{array}$$

$$\begin{array}{r} 149.0 \\ 138.7 \end{array} \quad \begin{array}{r} 19.7 < \\ 37.4 < \end{array} \quad 3.49 <$$

Mean 3.93 <

March 13 1997
Same again

7 7
119.5 12.7
138.2
120.0 12.2
138.8 37.5 39.1

120.3 17.2
138.1
119.9 12.2
138.1 36.0 40.0

(3.96)

Index to right

209.7 12.2
227.9
210.2 12.1
228.3 36.3 3.94

209.8 12.0

(3.94)

7 13 = Alt. 11.9
12 10 0

227.8
209.7 12.5
228.2 36.5 3.97

mean 3.97
General mean = 3.95

9.20
5.25

March 13 1897

T. Androm.

W-obs.

$$\begin{array}{r}
 0 \quad 14 \quad + 26.1 \\
 7 \quad 6 \\
 \hline
 6 \quad 52
 \end{array}$$

$$\begin{array}{r}
 0 \quad 14 \\
 7 \quad 12 \\
 \hline
 6 \quad 58
 \end{array}$$

$$\begin{array}{r}
 0 \quad 14 \\
 7 \quad 17 \\
 \hline
 7 \quad 3
 \end{array}$$

Too low, abandoned

m. P. 441

Phot R

W-obs

Index

$$\begin{array}{r}
 3 \quad 31 \quad + 62.8 \\
 7 \quad 23 \\
 \hline
 3 \quad 52
 \end{array}$$

Index right and above

281.1 var dis

340.0 52.9 -

284.7 50.6 -

335.3 109.5 - 1.43 -

7

48

March 13 1897

$$\begin{array}{r}
 284.0 \\
 334.7 \\
 285.2 \\
 337.8
 \end{array}
 \begin{array}{r}
 \sqrt{0.7} = \\
 \sqrt{2.6} = \\
 \hline
 103.3 = 1.5A =
 \end{array}
 \quad (1.5-0) =$$

Index left and below

$$\begin{array}{r}
 9.9 \\
 \cancel{70.4} \\
 69.1 \\
 15.0 \\
 65.7
 \end{array}
 \begin{array}{r}
 \sqrt{9.2} = \\
 \sqrt{0.7} = \\
 \hline
 109.9 = 1.42 =
 \end{array}$$

$$\begin{array}{r}
 16.2 \\
 \cancel{62.8} \\
 9.8 \\
 68.4
 \end{array}
 \begin{array}{r}
 49.1 = \\
 65.3 \\
 \sqrt{2.6} = \\
 \hline
 107.7 = 1.47 = \text{mean} = 1.47 =
 \end{array}
 \quad (1.44) =$$

Same again

$$\begin{array}{r}
 16.0 \\
 64.9 \\
 11.0 \\
 68.1
 \end{array}
 \begin{array}{r}
 44.9 = \\
 \sqrt{7.1} = \\
 \hline
 106.0 = 1.51 =
 \end{array}$$

$$\begin{array}{r}
 12.0 \\
 68.9 \\
 14.2 \\
 66.4
 \end{array}
 \begin{array}{r}
 \sqrt{6.9} = \\
 \sqrt{2.2} = \\
 \hline
 109.1 = 1.44 =
 \end{array}
 \quad (1.44) =$$

March 13 1897

Index right and above

103.0

155.0 $\sqrt{2.0}$

100.3

158.5 $\sqrt{A.2}$ $\frac{1.41}{110.2} = 1.22$

101.6

157.0 $\sqrt{5.4}$

104.0

154.6 $\sqrt{0.6}$ $\frac{1.51}{106.0} = 1.47$

(1.46)

mean = 1.47

Bar. is the btr.

General mean = 1.47

 Σ 730

Phot. P

W-obs.

5

25

+ 17.0

8

0

2

35

position angle 140° dist 9"

Mags 6.5-6.8

Index ~~left~~ ~~right~~ above

175.2 < btr dis

257.9

 $\Delta 2.7$

178.0

 $\frac{70.2}{152.9} = 0.52$

258.2

152.9

- 0.52

March 13 1897

177.3		
256.8	79.5	- 0.40
173.7	<u>85.8</u>	
259.5	165.3	- 0.28

Index below

Mean = - 0.39

268.1		
348.5	80.4	
269.9	<u>78.2</u>	
348.1	158.6	- 0.41

5

27

267.0		- 0.38
345.9	78.9	
265.7	<u>82.8</u>	
348.5	161.7	- 0.35

A. L. D. 95A.
 2 45 34.7
 48 34.2

B 394.
 2 45 0.0
 46 0.0

The above is first comparison for eclipse
 on next page.

March 13 1897

Reappearance of Imp. 1. Phot. R. W. obs.
 Terbush rec. Comp and with nearer of two rats. on Phot. R. ~~W. obs.~~
 proc. side = Sat. II. Terbush rec. checked

52	23	8	5-2	58	21.0
	39		5-3	14	72.0
	43			18	14.8
	49			24	74.8
	56			31	14.9
53	52			37	75.1
53	07			42	15.0
	12			47	79.9
	15			5-3	11.1
	25	54		9	76.0
	35			10	7.0
	41			16	79.6
	47			22	6.0
	53			28	81.8
54	01			36	5.0
	09			44	83.9
	13			45	2.1
	24			5-9	84.2
	27	5-5		2	51.1
	39			14	87.0
	45			20	0.0
	53			28	88.0
55	01			38	1.7
	11			46	87.7
	14			49	0.0

March 13 1897

<u>5 55 26</u>	8	56	1	89.3	→
		56	15	858.1	357.1
56 25			24	91.9	89.0
-35			30	91.2	856.0
<u>55 53</u>			42	91.6	87.2
			50		0.0
57 16	57		2	89.0	89.0
-35			27	90.9	359.1
<u>56 41</u>			43	89.4	90.0
			54		34
57 23	58		3		857.8
-35			14	925	90.6
<u>57 45</u>			28	973	855.0
			47	95.2	92.5
59 32	59		11		363.5
-35			28	1007	94.2
<u>55 57</u>			41	957	354.5
			54	99.7	93.2
9 0 26	9	0	7		354.0
-35			19	1005	94.5
<u>59 51</u>			30	952	354.0
			48	99.4	92.2
			1		352.8
9 2 15			27	1022	95.0
-35			9	99.3	354.2
<u>9 1 40</u>			21	100.5	93.5

(-0.1)

2
(0.0)3
(-0.2)4
(0.4)5
(-0.4)6
(-0.4)

March 13 1847

93 52	9	3	31	352.2	352.2	
<u>35</u>			35-	99.5	92.0	
93 17		4	3	95.0	355.0	7
			19	95.9	93.0	(-0.3)*
			40		35-3.0	
5 02			50	1000	93.0	2
<u>-35</u>		5	2	101.7	35-2.3	
4 27				35-100.5	94.0	(-0.4)*

Limit of visibility.

7 31	9	6	32		17.1	
<u>-35</u>			5-8	55.6	72.7	
6 56		7	14	57.2	16.9	
			44	53.4	70.5	(+1.5)*
		8	19		68.1	

Phot was found to be slipping out of tail-piece tube just about at theoretical time of reappearance so that phot. had to be removed and tube pinched a little. This caused a slight delay so that observer may have been a very little late in obtaining first setting.

March, 13. 1897.

A. + S. 95A.			B. 394.		
9	23	34.6	9	23	0.0
	24	34.7		24	0.0

wheel of chair got off from tracks, blocked up and replaced it on rail.

Nova Aurigae

W-obs

5	23	+ 32.0
9	31	
4	8	
5-	23	
9	46	
4	23	

Nova Aurigae seen but too much cloud and moon light for measurement of same

Σ 855-

Phot R

W-obs

6	2	+ 2.5-
11	1	
3	58	

Position angle 110° : dist. $30''$
 Mags 5.5 6.5

March ~~8~~ 13 1897

Index left and below

104.9_L brth. dec.

10 25

105.0

60.1

104.8

60.1

104.9

$$\begin{array}{r} 60.1 \\ 60.1 \\ \hline 120.2 \end{array} - 1.19$$

105.0

- 1.13

107.2

62.2

108.0

63.3

106.3

$$\begin{array}{r} 62.2 \\ 63.3 \\ \hline 125.5 \end{array} - 1.07$$

Index right and above Mean = -1.08

192.5

257.3

64.8

194.5

60.7

255.2

$$\begin{array}{r} 60.7 \\ 64.8 \\ \hline 125.5 \end{array} - 1.07$$

192.3

- 1.02

257.0

64.7

191.4

65.2

256.6

$$\begin{array}{r} 64.7 \\ 65.2 \\ \hline 129.9 \end{array} - 0.98$$
 Σ 872

Phot R

N = obs

6	7
10	21
4	14

+ 36.2

March 13 1897

Pos. Ang 200° : dist $10''$
 Mag. 16.1 6.9

Index left and above

190.9 \angle hrs. dia

10 41

256.8

65.9

180.2

88.1

268.3

154.0

0.48

179.0

- 0.44

265.7

26.7

188.9

72.6

261.5

159.3

- 0.89

Index right and below Mean 0.54

281.7

345.2

63.5

272.5

83.7

356.2

147.2

- 0.63

273.0

10 50

353.9

80.9

- 0.63

280.5

66.5

347.0

147.4

- 0.63

Observations difficult in clouds and
 moonlight.

March 13 1897.

Σ 900 1 Monoc Phot R W-obs.

6	17	+4.7
10	41	
4	24	

Too low in cloud.

Σ 921

6	24	+11.4
10	43	
4	19	

Companion seen but clouds getting too thick for measurements

March 15 1897 (Monday)

Q bete

Phot R.

W-obs

$$\begin{array}{r} 2 \quad 4 \\ 6 \quad 48 \\ \hline 4 \quad 44 \end{array} \quad -2.5-$$

Index right and above

$$\begin{array}{r} 214.7 \\ 233.8 \end{array} \quad \begin{array}{l} \text{var. dis.} \\ 19.1 \end{array}$$

$$\begin{array}{r} 215.1 \\ 232.4 \end{array} \quad \begin{array}{r} 17.3 \angle \\ 36.4 \angle \end{array} \quad 3.9 \angle$$

$$\begin{array}{r} 215.0 \\ 332.6 \end{array} \quad \begin{array}{r} 17.6 \angle \\ \end{array} \quad (4.03) \angle$$

$$\begin{array}{r} 214.3 \\ 332.2 \end{array} \quad \begin{array}{r} 17.9 \angle \\ 35.5 \angle \end{array} \quad 4.03 \angle$$

Index left and below

$$\begin{array}{r} 333.8 \\ 324.2 \end{array} \quad \begin{array}{r} 302.4 \\ 21.2 \angle \end{array}$$

$$\begin{array}{r} 305.1 \\ 324.4 \end{array} \quad \begin{array}{r} 19.3 \angle \\ 41.1 \angle \end{array} \quad 3.71 \angle$$

$$\begin{array}{r} 305.9 \\ 324.2 \end{array} \quad \begin{array}{r} 14.3 \angle \\ \end{array} \quad (3.72) \angle$$

$$\begin{array}{r} 304.0 \\ 324.0 \end{array} \quad \begin{array}{r} 20.0 \angle \\ 32.3 \angle \end{array} \quad 3.46 \angle \quad \overline{3.49 = \text{mean.}}$$

$$\begin{array}{r} 7 \quad 9 \\ \hline 12 \quad 5 \quad 0 \end{array}$$

March 15- 1897

Same again

304.5- 12.6<

323.1

305.3

$$325.0 \quad \frac{19.7}{34.3} \quad 3.26<$$

304.9

19.5<

(3.20)<

324.4

303.6

$$324.8 \quad \frac{21.2}{40.7} \quad 3.73<$$
~~Index right and above~~

34.0

21.5<

55.5

36.0

12.3<

54.3

$$\frac{39.2}{3.72}<$$

35.9

12.9<

(3.22)<

54.8

34.3

53.8

$$\frac{19.5}{34.4} \quad 3.26<$$

$$3.21 = \text{mean,} \\ \text{Gen. mean} = 3.25<$$
~~Index left and below~~

124.5

20.1

144.6

124.9

144.3

$$\frac{19.4}{39.5} \quad 3.79$$

March 15-1897.

[7] 197
12 18 00

125.7			
144.1	12.4		(3.20)
124.2	20.6		
144.8	<u>30.0</u>	3.22	

Too low for completion of group. Clouds also give trouble. Last two sets were taken as a check on first ~~two~~ two sets at top of page 184, as Bobb was afraid that the phot. rotated in those sets but they come out just the same, so that probably the fear was groundless. The Observer could not well complete the group of which these last two sets formed the first part: the altitude being so low and moon bright. Clouds also, becoming troublesome, making observation difficult.

At end of observation hour Circle read $4^h 57^m$ and Sec. Circle - 3.6

Altitude 9.0 .

March 15- 1897

 Σ 471 E Per Plot P W-abs

$$\begin{array}{r}
 3 \times 50 \\
 7 \times 54 \\
 \hline
 +4 \quad 4
 \end{array}
 + 39.6$$

Index left and above

309.1 < btr. dir.

318.7

308.0

320.2

$$\begin{array}{r}
 9.6 \\
 2.2 \\
 \hline
 21.8 - 5.10
 \end{array}$$

307.3

- 5.10

321.0

137

310.4

8.2

318.3

$$\begin{array}{r}
 21.9 - 5.09
 \end{array}$$

Index right and below Mean = - 5.06

39.9

48.0

37.7

52.2

$$\begin{array}{r}
 8.1 \\
 14.5 \\
 \hline
 22.6 - 5.02
 \end{array}$$

38.0

1

- 5.03

51.2

23.2

39.5

9.2

48.7

$$\begin{array}{r}
 22.4 - 5.04
 \end{array}$$

8 24

/ 13.5

March 15 1897

Position angle 5° dist $9''$
 mag 3.2 8.5

 Σ 464 % Per Phot R

W-obs.

3	46	+ 31.0-
8	23	
4	37	

Index right and below

132.6₂ btr. dis.

8 37

138.0

5.4

131.4

5.7

137.1

11.1 - 6.57

131.0

137.0

6.0 - 6.40

130.6

7.0

137.6

13.0 - 6.23

Index left and above

Mean = -6.52

221.5

227.2

5.7

221.9

4.9

226.8

10.6

- 6.67

- 6.63

- 6.59

March 15 1897.

5	47
---	----

 13.7

221.2

226.5

222.3

228.0

53

 5.7

11.0

- 6.59

 Σ 9' K' K² Tauri

H-obs

4

18

+ 22.0

 8

45

4

27

Index below

284.2 L brtr. dis.

8

58

345.2

283.1

347.7

61.0

 64.6

125.6

- 1.07

284.5

347.1

286.3

343.8

62.6

 57.5

120.1

- 1.13

Index above

11.0

80.9

8.0

82.8

69.9

 74.8

144.7

- 0.68

March 15 1897

9 5

7.1		0.68
72.3	95.2	
10.4	68.9	
79.3	<u>144.1</u>	

0.69
 $\bar{m} = -0.90$

Position angle 170° dist $55'$

mag 5.0 5.9

Observations rather difficult as stars ^{are} elongated into spectra

Σ 10' θ' θ^2 Tanai Phot R yr obs.

4	21	+15.6
9	5	
4	44	

Index above

9 17

152.1	↳ btr. dis	
167.3		65.2
97.4		75.6
173.0		<u>140.8</u>
		-0.76 ✓
99.3		
169.5		70.2
103.0		65.3
168.3		<u>135.5</u>
		-0.82 ✓
		-0.87 ✓

March 1.5-1897

Index below

190.5

269.5

184.9

270.9

79.0

86.0

165.0 - 0.29

179.0

272.2

182.2

267.8

93.2

85.6

178.8 - 0.02

-0.16

Mean = 0.49

Position angle 330° dist $5.5''$

Mag 4.7 5.0

Observation rather difficult as stars are elongated into spectra.

 Σ 8.5

Phot R

W-obs

6

2

+2.5

9

5.6

3

54

Index left and below

285.9 < btr. dis.

344.4

285.0

342.3

58.5

57.3

115.8 - 1.29

March 15-1897

286.5

348.1

283.6

348.1

566 - 1.28

595

116.1 - 1.28

Index right and above mean = 1.21

11.4

75.0

15.5

78.5

63.6

58.0

121.6 - 1.16

15.2

74.3

12.4

76.4

59.1 - 1.14

640

123.1 - 1.13

Position angle 110° ~~310°~~ , dist 2.7"
 mag. 5.8, 6.8

 Σ 921 H. N. 2

Phot R

W-obs.

6

24

+11.4

10

10

3

51

March 15-1897

6	24
10	20
3	54

Position angle 355° , dist $15''$
 mag 6.0 7.4

Index above

295.8 \angle brtr. dis.

334.4

38.6

299.8

28.4

327.2

67.0 - 2.61 $^\circ$

299.9

- 2.70 $^\circ$

327.0

27.1

296.0

34.9

330.9

62.0 - 2.79 $^\circ$

Index below

Mean = - 2.73 $^\circ$

24.8

60.3

35.5

30.2

27.8

58.0

63.3 - 2.74 $^\circ$

29.8

- 2.76 $^\circ$

57.4

27.6

26.6

34.6

61.2

62.2 - 2.78 $^\circ$

March 15 1897

 Σ 1138 2 Navis Phot R W-obs.

7	40	- 14.4
10	41	
3	1	

Abandoned, too low

 Σ 1245 P VIII 108 Phot R W-obs.

8	29	+ 7.1
10	45	
2	16	

Position angle 20° , dist $12''$
 mag 6.6 17.7

Index right and below

191.3 \angle brtr. dis.

262.2

197.0

255.5

709
585
1294

- 0.99

196.0

256.7

191.6

258.3

60.7
66.7
127.4

- 1.01

- 1.03

March 15 1897.

Index left and above

278.2

341.5

283.0

332.5

626

495
113.1 - 1.38

287.8

336.9

282.2

347.2

-1.34

491
65.0
114.1 - 1.32

Means -1.18

March 16 1897 (Tuesday)

~~Σ 471~~
Σ 470 Phot H

W-obs.

3 45 - 3.3
7 20
3 82

Index right and below

7 38

89.6
139.0 - Ltr. dis 49.9
84.4 57.6
142.0 107.5 - 148

85.0 - 143
144.2 59.2
86.9 52.3
139.2 111.5 - 138

Index left and above Mean = -14.2

175.0
228.1 50.1
173.1 62.5
235.6 112.6 - 136

7 48

176.1 142
234.0 57.9
179.0 50.0
229.0 107.9 - 147

March 16 1897.

Seeing extremely bad, images
blurry and running together
much of the time

Position angle 340° dist $7''$
mags 4.0 6.0

Σ 9' K' K² Tauri PhotR W-obs

4	18	+ 22.0
7	5.4	
3	3.6	

Index above

189.8

~~257.4~~ brtr. dis.

255.5

188.8

255.0

65.7	
<u>66.2</u>	
131.9	- 0.94

190.4

- 0.94

253.0

62.6

188.8

70.0

258.8

132.6

- 0.93

March 16 1897
Index below

279.2	
345.2	66.0
284.5	<u>55.2</u>
339.7	121.2 - 1.17

8 23

285.1		- 1.14
341.0	55.9	
279.8	<u>67.4</u>	
347.2	123.3 - 1.12	

Mean = -1.04

Position angle 150° dist $5.5''$

Mags 5.6, 5.9

Observations rather difficult, seeing rather blurry, and stars elongated into spectra

Σ 10' θ^1 θ^2 Tauri Phot. R. W. obs.

4	21	+157.6
<u>8</u>	<u>23</u>	
4	2	

Position angle 320° dist $5.5''$

Mags 4.7, 5.1

Index below

179.2 \angle btr dis

8 38

268.0	A.P.A.
175.8	<u>93.8</u>
269.6	18.26 - 1
	<u>177.4</u> + 0.05

March 16 1897

177.0

+0.05[✓]

265.5

88.5[✓]-0.02[✓]

178.6

87.1[✓]

265.7

175.6[✓] - 0.08[✓]

Index above

Mean = ~~0.21~~[✓]
~~0.56~~

274.3

352.4

270.8

353.4

78.1[✓]82.6[✓]160.7[✓] - 0.37[✓]

272.3

355.1

275.8

350.5

82.8[✓]~~0.20~~ - 0.40[✓]74.7[✓]- 0.43[✓]~~167.5~~~~0.24~~157.5[✓]

Observations ^{rather} difficult, seeing rather
blurry, and stars elongated into
spectra.

Σ 716 168 Tauri

Phot ~~R~~
Phot H

W-Bla

5⁻

22

+ 25.0

8

50

3

28

March 16 1897

Position angle 200° , Dist $5''$
 Mags 5.8 6.5

Index right and below

347.3, bts. dis.

52.1

355.6

~~52.3~~ 57.2

6
~~44.8~~

61.6

126.4 - 105

354.2

55.8

346.0

~~60.9~~ 60.9

~~57.2~~

61.6 - - 0.94

74.9

136.5 - 0.84

Index left and above Mean = -0.84

77.7

152.8

81.8

144.5

75.1

62.7

137.8 - 0.82

80.4

146.0

74.0

152.9

65.6 - - 0.75

78.9

144.5 - 0.68

March 16 1897.

 Σ 738 λ Orionis Photo W-Oba

$$\begin{array}{r}
 5- \\
 9 \\
 \hline
 4
 \end{array}
 \begin{array}{r}
 28 \\
 40 \\
 \hline
 12
 \end{array}
 \begin{array}{r}
 +9.5 \\
 \\
 \\
 \hline
 \end{array}$$

Index left

9 47

182.4 λ betradu

224.5

183.0

223.0

~~22~~

182.5

~~226.0~~

226.6

182.1

225.0 (assumed 2260)

42.4

40.0

82.4

- 2.12

- 2.04

44.1

43.9

87.0

- 1.97

Index right

Mean = - 2.01

276.9

315.1

268.0

317.6

38.2

49.6

87.8

- 1.97

270.5

316.6

275.7

316.9

46.1

41.2

87.3

- 1.98

- 1.99

March 16, 1897.

Position angle 30° dist $4''$
 Magns 4.0 6.0

Σ 921 H.N. 2 Phot R W. obs.

6	24	+ 11.4
10	20	
23	86	

Position ang. $85^\circ 50'$ dist XX'' $15''$
 Magns 6.2, 8.3

Index right and below

22.7 \angle both dis

57.5

23.7

61.6

24.2

62.0

96.9

57.8

Index left and above

March 16 1897

~~5.5~~ 115.5

147.0

113.9

149.7

112.5

149.8

117.0

145.0

10 23

 Σ 1138 2 hours Phot R. W. Obs.

7 40 - 14.4

10 26

2 46

Position angle 330° dist $15''$
mag 6.2 6.9

Index above

99.42

163.2

94.3

172.5

63.8

78.2

142.0 - 0.73

10 35

March 16 1897

94.8

-0.72

170.7

75.9

98.1

67.1

165.2

143.0

- 0.71

Index below

190.0

254.7

182.0

261.1

64.7

79.1

143.8

- 0.70

150.0

242.3

189.7

254.8

82.3

65.1

147.3

-0.66

Mean = -0.69

 Σ 1224

5' Cam. Photo W. Obs

8 19

+ 24.9

10 46

2 27

8 19

10 56

2 4

March 10 1897

Index to left.

169.5-

241.1

167.0

245.5-

163.1

244.5

170.0

243.0

71.6

78.5

150.1

-0.57

-0.52

81.7

73.8

154.7

-0.48

Index to right

Mean = -0.60

260.9

328.0

256.0

334.2

67.1

78.2

145.3

-0.67

256.7

332.8

261.2

328.8

76.1

67.6

143.7

-0.68

-0.70

Position angle 3^{h} dist 6"

Mags 6.1 7.0

Air very cold and much wind
through out evening so that seeing
was blury and observations considerably
difficult.

March 17 1897 (Wednesday)

Driving clock for equatorial came off from pulleys and came down; replaced it.

Σ 654 ρ Orionis

$$\begin{array}{r} 5 \quad 7 \quad + 2.8 \\ 7 \quad 22 \\ \hline 2 \quad 15 \end{array}$$

$$\begin{array}{r} 5 \quad 7 \\ 7 \quad 36 \\ \hline 2 \quad 29 \end{array}$$

Mr. Linsdian came up tried new phot. on equatorial - said phot. being the one which the Clarks have made for the Lick Observatory and which corresponds to our phot. R. Tried phot. on above \times double and also on a second mag. star: phot. works very nicely. Both images of the same star can be perfectly superimposed and the images are excellent.

March 17 1897

 Σ 716 118 Tauris Phot H W-bad

$$\begin{array}{r}
 5- \quad 2 \quad 2 \quad + \quad 2 \quad 5.0 \\
 \hline
 8 \quad 4 \quad 7 \\
 3 \quad 2 \quad 5
 \end{array}$$

Index right and below

~~344.2~~ 353.0

55.1 < btr dex.

346.0

60.4

62.1

74.4

136.5 - 0.84

345.0

59.7

356.2

53.0

- 0.77

74.7

66.8

141.5 - 0.74

12

Index left and above Mean = - 0.74

81.5

144.4

74.2

153.1

~~74.2~~

70.8

152.9

70.7

143.7

62.9

70.8

141.7 - 0.74

- 0.70

62.1

63.0

145.1 - 0.67

March 17 1897

Position angle 200° dis $5''$
 Mag. 5.8 6.5-

 Σ 738 λ Orionis Photo W. obs

$$\begin{array}{r} 0- \quad 28. \quad +9.8 \\ \hline 9 \quad 13 \\ 3 \quad 45 \end{array}$$

Index to right
 92.1 [btr dis]

$$\begin{array}{r} 133.0 \quad 40.9 \\ 85.2 \quad 54.4 \\ \hline 139.6 \quad 95.3 \quad -1.77 \end{array}$$

$$\begin{array}{r} 86.0 \quad -1.84' \\ 138.4 \quad 52.4 \\ 92.0 \quad 39.9 \\ \hline 131.4 \quad 92.3 \quad -1.85 \end{array}$$

Index to left $\mu_{\text{mean}} = -1.78$

$$\begin{array}{r} 192.1 \\ \hline 228.2 \\ 227.7 \\ 178.0 \\ 130.1 \end{array} \quad \begin{array}{r} 456 \\ 52.1 \\ \hline 97.7 \quad -1.76 \\ -1.80 \end{array}$$

March 17 1897

9 27

179.1

229.0

180.6

225.0

4.99

~~4.44~~

94.3

Position angle 30° dist $4''$
 mag 4.0 6.0

 Σ 919 11 Monoc.

95-obs.

6	25	-6.7
9	34	
3	9	

Index rights and above

~~199.7~~~~281.3~~

195.0

106.0 \angle btr. dir.

A.

193.4

102.6

198.8

87.4

96.2

$$\begin{array}{r} 193.6 \\ 176.4 \\ \hline \end{array}$$

+ 0.07

103.2

196.1

103.9

191.8

92.9

87.2

180.8

179.2

+ 0.02

+ 0.04

March 17 1897
Index left and below B

198.7	
279.4	80.7
191.5	<u>96.7</u>
288.2	177.4 - 0.05

191.5		+ 0.02
257.0	95.2	
194.6	<u>90.1</u>	
257.7 284.7	185.3	
	174.7	+ 0.10
		mean = +0.03

Position ang. 300° dist. 7" Mag. 5.1 5.5
Brighter component is a close double
dist. 1 or 2 sec. of arc. The ~~bright~~
combined light of brighter component
was compared as well as possible
with the fainter component. Observations
however somewhat difficult.

Σ 845- 41 Ans. Phot R 11-obs.

6	2	+ 48.7
<u>12</u>	<u>21</u>	
4	19	

March 17 1897

Index left and below

29.0 \leftarrow btr dis.

89.0

61.5

17.2

84.8

102.0

146.3

- 0.65

14.1

- 0.58

101.8

87.7

26.6

65.2

91.8

152.9

- 0.52

Index right and above Mean = -0.60

116.3

183.8

67.5

112.2

76.0

188.2

143.5

- 0.70

- 0.63

108.0

190.9

82.9

114.5

67.9

182.7

150.8

- 0.56

Position angle 350° dist 8"

mag 5.3, 6.6

March 17 1897.

 Σ 982 38 Rem. Phot H W-Obs.

$$\begin{array}{r}
 6 \quad 48 \quad +13.4 \\
 10 \quad 42 \\
 \hline
 3 \quad 54
 \end{array}$$

clouds too thick

 Σ 1245 Per III 108

clouds too thick

 Σ 1062 19 Lyn Phot R W-Obs.

$$\begin{array}{r}
 7 \quad 13 \quad +1-0.5 \\
 10 \quad 50 \\
 \hline
 3 \quad 37
 \end{array}$$

Index left and below

207.4 _{bits-dis}

268.2

205.2

274.5

60.9

69.3

130.2

-0.97

March 17 1897 -0.97

204.3		
275.3	71.0	- 0.90
206.2	<u>66.2</u>	
272.4	137.2	- 0.83

Index right and above

296.6		Mean - 0.88
1.4	64.8	
293.0	<u>69.8</u>	
2.8	134.6	- 0.88

293.0		0.87
2.7	69.7	
295.3	<u>66.2</u>	
1.5	135.9	- 0.86

Position ang. 300°. dist 13", mag 5.1 6.5

March 23 1897 (Tuesday)

Pretty cloudy.

Σ 654 β Orionis Phot R. W. obs

$$\begin{array}{r} 5- \quad 7 \quad + 2.5 \\ 7 \quad 5-8 \\ \hline 2 \quad 51 \end{array}$$

cloudy.

M.P. 760

W. Obs

$$\begin{array}{r} 5- \quad 5-0 \quad + 20.1 \\ 8 \quad 9 \\ \hline 2 \quad 19 \end{array}$$

Too cloudy.

Σ 753 26 Apr.

W. Obs

$$\begin{array}{r} 5- \quad 30 \quad + 30.4 \\ 8 \quad 10 \\ \hline 2 \quad 40 \end{array}$$

$$\begin{array}{r} 5- \quad 30 \\ 8 \quad 21 \\ \hline 2 \quad 51 \end{array}$$

March 23 1897

clouds thick, no stars visible

clouds thick.

Star visible for a moment and gone again.

Steadily growing worse.

Σ 845 - 41 Apr.

W-obs

6	2	+ 45.7
8	38	
2	36	

All cloudy no stars visible

Still cloudy no chance for work

March 24 1897 (Wednesday)

R. Comae

W. C. C.

$$\begin{array}{r}
 11 \quad 52 \quad + 20.2 \\
 \hline
 7 \quad 56 \\
 3 \quad 56 \\
 \hline
 12 \\
 \hline
 8 \quad 4
 \end{array}$$

$$\begin{array}{r}
 11 \quad 52 \\
 \hline
 7 \quad 59 \\
 3 \quad 58 \\
 \hline
 8 \quad 7 \\
 \hline
 11 \quad 52 \\
 \hline
 8 \quad 8 \\
 3 \quad 49 \\
 \hline
 12 \\
 \hline
 8 \quad 11
 \end{array}$$

$$\begin{array}{r}
 2 \quad 6 \\
 \hline
 11 \quad 57 \\
 \hline
 -3 \quad 51 \\
 \hline
 2 \quad 9
 \end{array}$$

Sky cloudy.

March 24 1897

α	5	α'
α'	3	α
α	4	ϵ
ϵ	5	ζ
ζ	4.5	η
η	4.5	θ
θ	4	κ

clouds again.

sky pretty cloudy.

Σ 627

4 — 5.4 — + 3.4

Σ 1678

Phot R

W. Obs.

12	39	+15.0
8	42	
<hr/> 3	<hr/> 57	
12		
<hr/> 8	<hr/> 3	

clouds thick

March 24 1897.

A. + S g-a.
 2 37 52.7
 3 A 52.7

B. 3 g-a.
 2 37 0.0
 3 A 0.0

Reap. Jup. II. Plot. R. L. to. Terrest. rec.
 Compared with sat. on full. side =
 Sat. I.

56	25	8	57	21	310.8
	35			28	349.0
	39			32	306.1
	51			44	354.8
57	02			55	304.0
	06			59	358.8
	11		58	4	303.2
	15			8	358.6
	21			14	299.2
	26			19	3.7
	32			27	297.8
	40			33	1.4
	47			40	293.1
	53			46	4.9
	58			51	294.0
57	01			54	5.3
	12		59	5	292.1
	21			14	6.2
	31			24	295.0

March 24 1897

$55^\circ 42'$ ~~58~~ 59 35 10.0 ~~10~~
 $52'$ 45 292.0
 58 $00'$ 53 9.1
 07 39 9 00 0 259.8
 $26'$ ~~19~~ ~~10.1~~

9 00 19 6.2
 58 $45'$ 29 291.1 \rightarrow
 -53 41 74.0 365.1
 58 $52'$ 50 $761.292.3$

9 01 $32'$ 1 1 75.0 368.4 $+0.6$
 -53 17 294.1
 9 00 $39'$ 23 729 367.0

clouds.

39 75.0 293.0

49 74.0 368.0

58 294.0

2 7 75.5 369.8

19 76.1 293.0

35 269.1

45 294.9

56 73.3 368.2

clouds

10 70.5 296.0

17 72.0 366.8

31 73.9 293.1

40 72.2 367.0

51 73.0 294.8

$4 + 0.7$

$\sqrt{+0.7}$

March 24 1897

904 40⁺
53

903 47⁺

05 24⁺
-53

04 31⁺

06 10⁺

-53

05 17⁺

07 03⁺

53

06 10⁺

05 05⁺

53

07 12⁺

9 4 2 367.0

17 295.9

32 729 368.8

Comparison

Moved images in field slightly

50 71.2 296.0

5 1 72.0 367.2 + 0.7

10 292.7

17 729 365.0

29 74.0 294.1

39 73.4 368.1 + 0.6

50 294.6

6 3 74.5 368.8

16 73.3 292.3

33 75.0 367.6 + 0.6

6 bands

44 294.0

55 76.0 370.0

9 71.5 294.2

23 73.9 366.0 + 0.6

38

44 295.8

8 2 69.1 364.9

10 75.0 293.2

25 72.0 368.2 + 0.7

clouds thick

March 24 1897.

A. + D. 954.			B. 394.		
9	17	52.4	9	17	0.0
	11.2	52.4		11.2	0.0

clouds prevented limit of visibility being taken.

Ship thickly covered with clouds no stars visible, no chance for anything farther.

Posted to here .

1897phase proj. 1344.