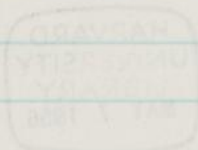


KG
11365
466

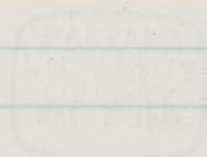
1077446 prof. 4018

R 23 16 11365.466



KG 1136 5.466





Manhattan

1030 27.7

1035 27.7

1040 27.7

1045 27.7

1050 27.7

1055 27.7

1100 27.7

1105 27.7

1110 27.7

1115 27.7

1120 27.7

1125 27.7

1130 27.7

1135 27.7

1140 27.7

1145 27.7

1150 27.7

1155 27.7

1200 27.7

1205 27.7

1210 27.7

1215 27.7

1220 27.7

1225 27.7

1230 27.7

1235 27.7

1240 27.7

1245 27.7

1250 27.7

1255 27.7

1300 27.7

1305 27.7

1310 27.7

1315 27.7

1320 27.7

1325 27.7

1330 27.7

1335 27.7

1340 27.7

1345 27.7

1350 27.7

1355 27.7

1400 27.7

1405 27.7

1410 27.7

Mars & Saturn

Oct. 1

Will obs.

f. 36

[2]

103.0 217.2

123.8 217.5

128.2 215.5

130.0 210.5

126.5 217.0

126.3 215.5

126.5 217.0

126.8 217.5

128.5 214.5

124.5 217.2

128.2 219.5

126.9 217.1

Nov 9th 1877. Mounted Zöllner Photometer
to measure faint stars.

Pliades

α ϵ γ δ
 β ζ

θ

ι

κ

λ

μ ν

Nov. 9th 1877. A.S. L. clouds
 Mrs. L. L. clouds

Alt. of clouds at 9 41°

And also mention for satellites.

Aug. 26th Hold

" 28th

Sept 13th by Bouly must have been part L. 2nd 477

15th E.C.P.

Nov 11th 1877R_h D_i M_i E_mM_{hi}D_iJ_{ap}H_{emba}

α Lyra

α Aquilae 323.1 182".6

α Cygni 102.5 108.5

Photo Net 1877 5.45 - steady - W. Dene
 date cut. of Photo T.

2.2 Aquila cust.

176.3	+2.1
172.4	-1.8
177.2	+3.0
170.8	-3.4
177.9	+3.7
170.7	-3.5
253	17.5
174.2	29.2
	5.0510

Zollner Photometer
 Star set at various readings

120.0	7.6	7	8	
41.2	7.3	8	8	
49.7	7.8	9	6	+16
+ 22.3	~~8.4~~			
+ 3.3	~~8.2~~			

	light field.	right hand image
+ 17.1	8.9	
- 11.6	8.3	
+ 16.2	9.0	
- 26.8	7.2	
+ 35.8	7.7	
- 8.9	8.7	
+ 15.8	9.3	
+ 19.4	8.4	
+ 43.1	7.5	
- 53.4	7.4	
+ 15.0	9.5	
- 5.1	9.0	
+ 89.8	7.4	
- 17.2	8.2	
+ 61.1	7.9	
- 20.9	8.4	
+ 14.5	9.4	
- 28.3	8.1	
+ 27.2	8.6	
- 40.3	7.9	
+ 14.4	9.4	
- 43.9	7.3	

22
9 48

limits +10 -5

	+ 27.6	8.4	
	- 38.2	7.4	
	+ 14.6	9.3	
	- 4.9	8.9	
	+ 19.0	8.7	
	+ 1.3	9.3	
	+ 13.3	9.5	
20	11.4	~~8.0~~ 8.1	
	+ 13.8	9.1	
	34.0	7.5	
	+ 2.4	9.6	
	- 5.7	8.7	
-	+ 13.6	9.3	
	- 3.3	8.8	
	+ 37.6	8.0	
	+ 1.6	9.3	
	+ 14.3	9.0	
-	- 12.3	8.4	
	+ 19.8	9.4	
	- 41.8	~~7.3~~ 7.2	
	+ 14.0	9.0	
	- 8.7	8.6	
	+ 18.2	8.8	
	- 0.2	9.0	
	+ 14.1	9.5	
	- 14.9	8.3	
	+ 12.3	9.6	
	- 65.7	7.5	

(A) W.A.R. no.

7.5	- 68.3	8.5	+ 35.2
8.0	- 30.0	8.0	51.4
8.5	- 24.5	9.5	16.9
9.0	- 9.9	7.5	90.2
9.5	- 2.1	9.0	~~19.6~~ 18.7
7.5	+ 90.8	8.5	- 10.6
8.0	+ 59.3	7.5	- 45.2
8.5	+ 39.3	9.0	- 5.4
9.0	+ 23.2	8.0	- 24.3
9.5	+ 14.2	9.5	+ 1.6

artif star appears fainter at A possibly due
to shake of table

+12.0	+1.8
+12.4	+1.0
+12.0	+3.4
+12.2	2.0
+11.0	3.2
96	11.4
11.92	22.8

11.92
<u>22.8</u>
14.20
7.10

9.5	12.1	15.3
9.0	13.3	14.2
8.5	14.8	24.6
8.0	29.3	27.1

7.5	-75.3	+83.8	+83.2	-52.2
8.0	37.0	52.3	44.4	31.3
8.5	31.5	32.3	28.2	17.6
9.0	16.9	16.2	11.7	12.4
9.5	9.1	7.2	9.9	5.4

⁰⁰ 7.5	⁸⁰ 8.0	⁶⁰ 8.5	⁴⁰ 9.0	²⁰ 9.5
9.9855	9.7725	9.7181	9.4634	9.1991
.9975	.8983	.7278	.4456	.0981
.9969	.8449	.6744	.3070	.2353
.8977	.7156	.4805	.3319	8.9736
3.675	44	26008	35	50
<u>9.92</u>	<u>9.81</u>	<u>9.65</u>	<u>9.39</u>	<u>9.17</u>

7.5 =	9.92	.11
8.0	9.81	.16
8.5	9.65	.26
9.0	9.39	.22
9.5	9.17	

Aperture used with Phot. J. + 7.4 mm
 Replaced by aperture in tip of 11.3 mm $\pm$ 2.6

Culvert of F. & L. Luni
 257.1 267.4
 257.2 266.7

Nov 19th 1877.

β Crimi culvert

87.6	78.6
88.4	78.6
87.7	79.3
87.7	78.5
88.1	79.9 cl depth

26.9	126.3
30.6	127.6
	126.6

Star from β Crimi
 1.01
 2.5

Dec. 1, 1877.
 Zöllner photometer in library. Color
 circle at 4.3. String tied to horn handle
 of setting circle; readings to be considered
 positive when this handle is towards the
 observer.

2 Aquilae	Altitude 47°	E.C.P. obs.
+ 23.5	13.0	35.0
- 163.2	4.8	28.8
168.0		
10.5	17.8	63.8
	4.45	15.95

21.8	8.1	35.5
183.9		30.8
185.3	1.4	
13.7	<u>9.5</u>	<u>16.3</u>
	23.7	<u>16.57</u>

for the new

38

10.9

+3.2	14.4	80
+11.2		
-17.5	<u>1.47</u>	7.1
-189.1	<u>7.1</u>	15.1
	29.1	
	7.27	3.77

E.C.P.	~~1.5~~	
+36.3	14.1	58.5
151.8		65.0
-143.2	7.6	123.5
-22.2	21.7	<u>5.42</u>
		<u>30.87</u>

11.7		
+28.2	16.5	39.9
~~173.3~~ + 164.3	2.6	200
155.7 -	25.1	77.9
	6.27	<u>19.97</u>

π 34.6		
+170.8	14.2	2546.0?
+26.8	24.8	
-27.1	34.1	
-23.3	<u>30.3</u>	
	1024	
	60	

30.4 c

+9.8

+22.5

-15.4

156.3

16.8

16.8

?

20.7

543

183

3.

19.2 v

- 28.8

-161.2

+171.1

+20.8

- 8.3

9.9

125

125

5.60

323

27.7

29.1

568

14.20

30.8 p

+26.9

+166.3

-152.1

- 18.4

30.4

16.8

18.5

18.4

18.4

18.4

5.67

8

45.3

41.6

86.9

21.72

34.6

p

34.1

33.2

-7.6

+23.1

+171.2

-158.8

15.5

12.4

30

20.7

6.97

30.7

30.0

60.7

15.17

$$\begin{array}{r}
 33.4 \quad \varepsilon \\
 -149.8 \\
 -10.0 \\
 +65.4 \quad ? 25.4 \\
 -170.5 \\
 \hline
 \end{array}
 \quad
 \begin{array}{r}
 33.2 \\
 15.4 \\
 10.7 \\
 20.3 \\
 26.1 \\
 6.52 \\
 \hline
 \end{array}
 \quad
 \begin{array}{r}
 35.4 \\
 39.7 \\
 75.1 \\
 18.77 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 37.6 \\
 +154.6 \\
 -140.1 \\
 -24.3 \\
 +34.8 \\
 \hline
 \end{array}
 \quad
 \begin{array}{r}
 \gamma \quad 37.3 \\
 10.5 \\
 14.5 \\
 \hline
 250 \\
 6.25 \\
 \hline
 3.88
 \end{array}
 \quad
 \begin{array}{r}
 294.7 \\
 59.1 \\
 65.3 \\
 124.4 \\
 31.10 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 35.7 \quad \beta \\
 +163.2 \\
 -154.7 \\
 -16.9 \\
 +23.4 \\
 \hline
 \end{array}
 \quad
 \begin{array}{r}
 8.5 \\
 6.8 \\
 \hline
 15.3 \\
 3.82 \\
 \hline
 \end{array}
 \quad
 \begin{array}{r}
 31.79 \\
 42.1 \\
 82.7 \\
 20.67 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 35.2 \quad \alpha \\
 +89.2 \\
 +60.6 \\
 -76.8 \\
 \hline
 \end{array}
 \quad
 \begin{array}{r}
 2.1 \\
 1.1 \\
 \hline
 3.2 \\
 \hline
 \end{array}$$

Ok 18m Am 2, 8 C. P. obs.

2.31 S.I. Estimate Magnitude by modeling spectrum
of Murch Creek

6 m with full apert.

8.3 " apert 105.

8.6 " " 53.

Circle made of 2. Plot.

$a > x$

$a < x$

$+(a+x)$

$+(a+x)$

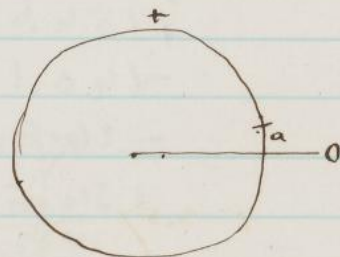
$+(a-x)$

$-(a-x)$

$-(180-a+x)$

180°

$-(180-a-x)$



Dec. 2, 1877.

528 β Aquilae 40.8

30.2

168.8

205.8

stuck last.

530 β Aquilae 40.4

40.4

125.9

166.3

208.6

131.6

340.2

755.5

257.5

25.62

35

30.7

 β Aquilae~~30.7~~

535

28.3

141.0

169.3

201.6

150.5

352.1

751.3

291.5

7.82

72.87

30.2

 γ Aquilae

539

24.7

149.6

174.3

200.1

150.1

350.2

44.3

299.7

7.32

74.92

31.8

 δ Aquilae

542

41.6

118.4

160.0

126.0

209.1

335.1

35.8 μ Aquilae

5 45

24.8

174.5

199.6

354.4

753.3

4.32

35.4

149.7

154.8

304.5

76.12

 ϵ Aquilae

5 47

28.7

169.7

202.8

344.2

74 5.4

6.35

141.0

141.4

282.4

70.60

34.7

 ϵ Aquilae

5 50

34.8

170.3

202.4

352.4

759.9

9.97

34.8

135.5

140.0

275.5

68.87

μ Aquilae, Stars at distances
2.5 & 2.5 having apparent
position angles of 225 & 300

5 53

26.6

173.1

201.3

351.2

752.2

8.05

146.5

149.9

296.4

74.10

29.6 α Aquilae

5 55 36.4 129.2

165.6

208.8

346.2

757.25

27.4

137.4

266.6
66.65 α Aquilae

5 57

21.2

172.4

198.3

353.2

745.1
6.27

27.3

151.2

154.9

306.1

76.52

 α Aquilae

5 59

26.4

173.9

201.9

350.2

752.4
4.10

35.8

147.5

148.3

295.8

739.5

 β Aquilae

6 1

35.6

163.8

206.4

342.3

744.1

7.02

128.2

135.9

264.1

66.02

30.8 η Aquilae

6 3

29.6

135.2

164.8

209.1

138.3

347.4

750.9

2735

7.72

64.37

6 11

 β Aquilae

A.S. dr.

29.7

131.8

161.5

210.0

132.2

342.2

743.4

264.0

5.85

66.0

615

3

Alo. 33.1

 β Aquilae

A.S. dr.

30.9

140.3

171.2

204.0

135.0

339.0

745.1

275.3

6.27

168.42

Dec. 3, 1877

6 28.8 β Aquilae Pinhole 6

639	170.8	35.2
	206.0	
	340.5	48.0
	28.5	
	745.8	83.2
	186.45	20.8

23.3 μ Aquilae

652	14.2	160.0
	174.2	
	198.8	154.7
	353.5	
	740.7	314.7
	185.17	78.67

21.6 ϵ Aquilae

657	26.0	146.2
	172.2	
	202.5	143.6
	346.1	
	746.8	289.8
	186.7	72.45

70 21.2 α Aquilae (perhaps too low for the window)

	22.7	140.5
	163.2	
	209.7	137.1
	346.8	
	742.4	277.6
	185.50	66.40

21.0 μ Aquilae

7 5

21.0 148.0
169.0

207.9 142.4

350.3

748.2 290.4

187.05 72.60

23.0 β Aquilae

7 11

40.8 110.1

150.9

214.0 124.8

338.8

47.8 ^{234.9} This last reading taken to test the first
 744.5 of this set.
 186.12 58.72

 δ Orionis Σ C.P. μ H W. Eggen

153.6

13.8

167.4

335.3

12.7

368.0

1004.3

26.5

251.07

6.62

5 52

153.6

14.8

168.8

346.3

12.7

333.6

1002.3

27.5

250.57

6.87

Comparison Stars for D Sami Zöllner photometer
in W. Dome.

0 Sami 51.2

9.6

9 6 42.8 117.0

159.8

213.9 122.2

336.1

752.6 239.2

188.15 59.80

E Sami

9 8

51.8

39.3

119.5

148.8

220.2

115.9

336.1

744.4

235.4

186.10

58.85

E Sami

9 11

44.6

38.6

118.8

157.4

55.4

212.8

331.5

123.7

745.3

242.5

186.32

60.62

E Sami

9

13 50.5

103.7

45.0

154.2

212.9

122.0

334.9

188.12

225.7

E Sami

56.42

52.3

9

15 41.6

108.1

190.57

149.7

762.3

236.4

98.2

190.57

208.3

E Lanni 52.4

9 16 50.6 94.3

144.9

224.9 103.5

328.4

~~758.8~~ 197.8
187.2 49.45

9 18 V Lanni 51.4

41.3

153.2 111.9

223.4 112.1

335.5

~~713.4~~ 224.0

178.35 56.00

V Lanni 46.2

9 21 45.3 107.2

152.5

219.4 122.2

341.6

~~758.8~~ 229.4

182.7 57.35

9 23 E Lanni 53.1

41.9

148.2 106.3

224.2 106.4

330.6

~~744.9~~ 212.7

186.32 53.17

0 Lanni

53.1

Same thought to cut off stars

9 25 40.2 107.7

147.9

219.3 109.0

328.3

~~735.7~~ 216.7

183.92 54.17

o Luni
9 27 40.2 107.6
147.8
221.8 112.8
334.6

744.4 220.4
186.10 55.10

1	2	3		
Dec 3d 1877 Estimate of D. M. magnitude of U. 9 R.				
4.0	0.0	7.4	0.0	7.0
4.6	1.1	7.7	0.6	Amis 4.5
5.0	1.4	8.0	1.0	" 5.0
7.0	2.5	8.8	2.8	8.8 1.9
5.0	1.2	8.7	2.1	8.5 1.4
6.0	1.8	8.3	1.7	8.7 2.0
6.5	0.8	9.0	2.9	9.0 2.3
7.8	2.6	7.5	0.7	8.0 0.9
6.5	1.5	9.1	2.7	9.1 2.4
6.6	1.6	7.9	1.1	8.5 1.2
6.0	1.3	8.7	2.2	8.7 1.8
7.5	2.2	8.5	1.3	8.0 0.8
8.0	3.0	8.6	1.6	9.2 2.6
7.8	2.7	8.5	1.5	8.8 1.5
5.0	0.7	9.2	2.6	8.6 1.6
7.0	1.9	8.0	0.8	8.4 1.3
6.7	2.0	8.7	1.8	8.7 2.2
7.0	2.4	7.0	1.2	7.7 1.1
8.0	3.5	8.9	2.4	9.2 2.7
4.8	0.9	8.1	0.9	7.7 0.7
7.0	2.3	8.7	2.3	9.3 2.9
8.0		8.8	2.0	8.7 1.7
7.5	4.5	8.3	1.4	8.9 2.1
		8.6	1.9	9.6 2.8
		Amis.	5.0	8.4 1.0
		9.7	4.5	7.8 0.6
		9.5	4.0	9.8 4.0
		7.6	0.0	7.2 0.0

2

	8-12	13-17	18-22	23-27	27-29
6.7				9.1	
7.7	8.0	8.3	8.7	9.2	8.8
7.5	7.9	8.5	8.7	8.9	9.0
	8.0	8.6	8.7	8.7	9.1
	7.0	8.5	8.8		
	8.1	8.3	8.6		
	4.0	2.1	3.5	1.9	
7.6	7.80	8.44	8.70	8.72	8.97
6.5	1.0	1.5	2.0	2.5	2.8

7.7	8.0	8.3	8.8	9.0	9.2
7.8	8.5	8.8	8.7	9.1	9.3
	8.1	8.6	8.7	9.2	9.6
	7.7	8.4	8.7	9.3	
	8.4	8.7	8.9		
7.75	8.14	8.56	8.76	9.12	9.37

Die 8^{te} 1877. Cont. Sec. y Aguila

$$\begin{array}{r}
 535 \quad \begin{array}{r} 324 \\ 21.1 \\ 167.4 \\ 205.9 \\ \hline 350.8 \end{array} \quad \begin{array}{r} \epsilon \\ 146.3 \\ 144.9 \\ 291.2 \\ \hline 72.80 \end{array} \\
 \hline
 186.30
 \end{array}$$

$$\begin{array}{r}
 539 \quad \mu \quad \begin{array}{r} 32.7 \\ 21.1 \\ 171.3 \\ 201.9 \\ \hline 354.5 \end{array} \quad \begin{array}{r} \\ 150.2 \\ 152.5 \\ 302.7 \\ \hline 75.67 \end{array} \\
 \hline
 187.17
 \end{array}$$

$$\begin{array}{r}
 541 \quad \begin{array}{r} 8 \\ 30.2 \\ 161.8 \\ 212.2 \\ \hline 343.1 \end{array} \quad \begin{array}{r} 27.8 \\ 131.6 \\ 130.9 \\ 262.5 \\ \hline 65.62 \end{array} \\
 \hline
 186.82
 \end{array}$$

$$\begin{array}{r}
 545 \quad \begin{array}{r} v \\ 18.1 \\ 174.2 \\ 200.6 \\ \hline 357.8 \end{array} \quad \begin{array}{r} 25.2 \\ 156.1 \\ 26.4 \\ 157.2 \\ \hline 313.3 \\ 78.32 \end{array} \\
 \hline
 187.67
 \end{array}$$

548

25.1

225	149.4
171.9	
201.8	151.8
353.6	
749.8	301.2
187.45	75.30

550

24.2	143.5
167.7	
205.3	143.5
349.5	
748.0	287.0
187.00	71.75

554

22.9	
206	134.8
163.4	
206.8	141.7
348.5	
747.30	276.5
186.82	69.12

558

278

n cl. ?

27.9	140.4
165.3	
208.4	139.4
347.8	
752.4	279.8
188.10	69.95

Dec. 9, 1977

B Ricci

505

β 38.4
 81.0 ~~154.6~~
 235.6 90.8
 326.4 ~~36.9~~
^{40.9, 3.3}
~~43.2~~

 686.3 128.5
 171.57 32.12

508

ρ 38.3
 26.9 132.0
 158.9
 229.6 123.8
 343.4

 748.8 255.8
 187.20 63.95

511

β 39.1
 54.2 84.4
 138.6
 236.3 80.9
 317.4

 746.5 165.3
 186.62 41.32

513

ρ 39.2
 29.4 133.8
 163.2
 212.9 129.6
 342.5

 748.0 263.4
 187.00 65.85

506 β h/w m.
 45.2 83.2
 121.4
 239.4 88.1
327.5
 736.5 171.3
 184.12 42.82

518 ρ
 365 126.3
 162.8
 208.0 143.2
351.2
 758.5 269.5
 189.62 67.37

521 β 529 87.7
 140.6
 239.2 77.0
316.2
 748.9 164.7
 187.22 41.17

522 ρ
 324 130.7
 183.1
 210.4 133.7
264.1
 750.0 264.4
 187.50 66.10

406

5.26

 π

214

150.3

171.7

201.3

154.6

355.9

750.3 304.9

187.57 76.22

5.28

179

155.1

173.0

178.8 157.8

356.6

746.3 312.9

186.57 78.22

5.31

 β α γ

40.5

112.9

153.4

220.1

116.7

336.5

750.8 229.6

187.70 57.40

5.33

 ρ

27.5

142.5

170.3

206.5

140.3

346.5

751.4 282.8

187.85 70.70

above
K β

+

p

 π π β β

e

538 β
 43.8 109.7
 153.5
 212.8 122.9
335.7
 745.8 232.6
 186.45 58.15
 28.5 ρ
 165.3 136.8
 203.4
 368.2 144.8
745.4 281.6
 186.35 70.40

539 π
 19.5 165.3
 174.8
 200.3 154.3
354.6
 749.2 309.6
 187.30 77.40

541
 20.2 150.1
 170.3
 197.6 160.8
358.4

542
 746.5 310.9
 186.62 77.72

1878 Jan. 7
 Photometer Z at chamber window.
 S. Urs. Min. P. obs.

6 30

~~48.6~~ Pinhole 2. Color circle at 216

23.7	
165.2	
209.3	44.1
350.3	33.4
	<u>77.5</u>
	19.37

6 32

S. Urs. Min.

357.3	19.5
16.8	
175.6	14.7
190.3	34.2
	8.55

6 35

DM. +86° 272

195.2	20.0
357.7	19.9
17.6	
175.2	39.9
	9.97

DM. +87° 169

181.4	12.9
194.3	
1.7	10.8
12.9	23.7
	5.92

DM + 88° 104
 6 40 2.3 134
 15.7
 180.4 122
 192.6 25.6
 6.40

DM + 88° 105
 180.9 10.8
 191.7
 2.5 9.8
 12.3 20.6
 5.15

DM + 88° 101
 6 45 3.9 7.4
 11.3
 182.8 7.4
 190.2 14.8
 37°

λ Ues. Main
 6 48 196.2 19.1
 177.1
 1.3 15.9
 17.2 350
 87°

6 50 S Urs. Min.
 28.6
 164.9
 207.9
 346.8
 43.0
 41.8
 84.8
 21.2

8 25 S Urs. Min.
 29.4
 160.9
 203.8
 344.9
 44.8
 42.9
 87.7
 21.92

8.28 S Urs. Min. - 8.112 6.5
 359.2
 177.5
 194.7
 19.3
 17.2
 20.1
 37.3
 9.32

8 32 $\mu = 110^\circ$ $s = 1.5$
 178.6
 194.7
 373.3
 16.1
 8.05

8 34 $\mu = 110^\circ$ $s = 1.0$ 8.130 8.6
 184.3
 190.6
 374.9
 6.3
 3.5

8 35 $\mu = 120^\circ$ $S = 0.7$ ~~8.217~~ 8.5
 191.4
 - 183.5
 374.9
 7.9
 3.95

8 36 $\mu = 90$ $S = 1.2$ 6.344 6.0
 176.3
 197.1
 373.4
~~9.8~~
 20.8
 10.4

8 37 $\mu = 270$ $S = 0.8$ 6.347 8.6
 181.4
 191.9
 373.3
 10.5
 5.25

8 38 $\mu = 115^\circ$ $S = 0.6$ 5.409 8.0
 194.2
 176.7
 370.9
 17.5
 8.75

8 40 $\mu = 50^\circ$ $S = 1.0$
 180.5
 192.2
 372.7
 11.7
 5.85
 5.401
 8.0

8 42 $\mu = 85^\circ$ $S = 0.2$ 5.399 7.5
 180.5
 192.9
 373.4
 12.5
 6.2

8 43 $\mu = 135^\circ$ $s = 0.5$ 5.403 7.8
 193.6
 180.9 12.7
 6.55

8 44 $\mu = 85^\circ$ $s = 4.3$ 5.400 8.0
 183.3
 191.5 8.2
 4.10

8 45 $\mu = 0^\circ$ $s = 0.3$ 5.398 8.5
 190.9
 183.4 7.5
 3.75

8 46 $\mu = 70^\circ$ $s = 0.5$ 4.523 8.4
 183.2
 191.6 8.4
 4.20

8 47 $\mu = 60^\circ$ $s = 0.7$ 4.517 6.5
 175.7
 196.0 20.3
 10.15

8 48 $\mu = 100^\circ$ $s = 0.6$ 4.516 8.0
 181.1
 192.6 11.5
 5.75

849 $\mu = 85^\circ$ $s = 0.4$ 4.5138 7.3
 181.1
 192.5 11.4
 570

850 $\mu = 120^\circ$ $s = 0.7$ 3.640 5.0
 170.8
 201.2 304
 15.2

857 $\mu = 80^\circ$ $s = 1.3$ 2.704 8.0
 192.1
 180.4²⁰ 12.2
 193.2 6.1

853 $\mu = 80$ $s = 1.1$ 2.700 8.0
 181.6
 192.7 11.1
 3.55

854 $\mu = 140^\circ$ $s = 0.3$ 2.703 5.0
 200.4
 174.7 25.7
 12.55

855 $\mu = 170^\circ$ $s = 0.5$ 2.707 8.5
 183.6
 190.3 6.7
 3.55

8 Urs. Min.

8 57

196.3

15.1

179.2

359.7

14.1

13.8

29.2

7.30

8 Urs. Min.

8 58

25.3

34.4

350.9

163.2

42.0

205.2

76.4

19.10

9.24 8 Urs. Min.

194.5

13.4

181.1

0.1

15.2

15.9

18.6

7.15

9.22 8 Delta Urs. Min.

358.3

33.8

6.269

4.5

24.1

160.8

45.1

205.9

78.9

19.72

9.25 $\mu = 30$, $d = 1.5$ 5.294 7.0
 182.9
 192.8 9.9
 4.95

$\mu = 30$, $d = 1.5$ 4.406 8.2
 182.9
 191.3 8.3
 4.15

9.27 $\mu = 100$, $d = 5$ 4.412 7.5
 182.2
 192.6 10.2
 5.10

$\mu = 100$, $d = 3$ 4.415 8.5
 183.2
 191.6 8.4
 4.80

9.30 $\mu = 20$, $d = 3$ 4.413 8.5
 182.9
 191.3 8.4
 4.20

$\mu = 200$, $d = 3$ 4.405 8.4
 182.9
 192.4 9.5
 4.75

9.32 $\mu = 300 - d = .4$ 3.527 7.7
 182.4
 192.3 7.7
 4.75

$\mu = 30 - d = 0$ 3.530 7.8
 194.3
 181.1 1.2
 6.60

9.35 $\mu = 40 - d = 6$ 3.532 9.0
 182.2
 193.1 10.9
 5.45

$\mu = 60 - d = 1.1$ 3.535 7.4
 192.9
 180.8 12.1
 6.05

9.36 $\mu = 40 - d = 3$ 3.536 6.2
 194.4
 195.2 17.8
 4.90

8
 210.7 44.6
 165.6
 348.6 47.8
 364
 724

λ
 9 40 16.8
 179.4 14.8
 194.2
 359.2 17.6
 35.4
 8.85

1878 Jan. 26
 51 Cephei P. ds.

8 53 351.8
 16.5 24.7
 178.4
 196.3 17.9
 743.0 42.6
 10.65
 185.75

2 Urs. Min. Unsatisfactory; star too bright

8 55 42.3 979 85.5
 140.2
 220.2 80.0
 316.8 165.5
 719.5 41.37
 179.87
 2 Urs. Min.

8 57 1.8 10.4
 12.2
 181.4 11.0
 192.4
 387.8 21.4
 96.95 6.35

8 58 δ Urs. Min.
 348.1
 22.1 34.0
 173.3
 203.1 29.8
 746.6 63.8
 186.65 15.95

9 0 δ Urs. Min.
 354.4
 20.2 25.8
 173.1
 199.6 26.5
 747.3 52.3
 186.82 13.07

9 1 δ Urs. Min.
 1.9
 12.8 10.9
 180.9
 192.9 12.0
 388.5 22.9
 97.12 5.72

9 2 δ Urs. Min.
 338.2
 43.4 65.2
 152.5 72.8
 225.3
 759.4 138.0
 189.85 34.50

9 4 51 Ceph.
 355.3 18.9
 141.2
 178.4 15.5
 193.9
 741.8
 185.45 34.4
 8.60

9 09 51 Ceph. S. obs
 353.8 28.5
 22.3 ? 12.3
 172.9 13.5
 196.4
 186.35 42.0
 10.50 last evolved
 recommended

9 14 51 Ceph
~~357.8~~
 357.5 21.9
 194
 179.2 15.3
 194.5
 750.6
 187.65 37.3
 9.30

9 20 α
 304.1 128.6
 69.7
 137.5 89.2
 226.7
 738.0 214.8
 184.50 53.70

9 26

2	
2.2	
11.1	8.9
182.4	
192.4	10.0
~~188.1~~	~~18.9~~
97.02	4.72
δ	

9 28

20.0	
169.5	29.1
198.6	
	28.2
351.8	
739.9	57.3
184.97	14.32
δ	

9 31

δ	
22.4	28.9
	~~29.9~~
172.3	29.5
201.8	
353.5	
750.0	58.4
187.50	14.60

Large comets

9 36

~~359.6~~	2
0.3	
13.4	13.1
178.2	
196.1	17.9
388.0	
97.00	<u>31.0</u>
	7.75

9 40

 α

234.9

51.7

257.3

64.9

08.8

48.9

45.9

71.3

58.9

225.0

56.25

Cap. lucky very badly

9 44

27.1

170.2

201.7

351.9

750.9

187.72

51 Ceti

31.5

35.2

66.7

16.67

Jul 8th 1878

80°. 544

Dm 62

544		P	R
- 0.0	6.0	1.7	7.7
2.5	8.7	1.8	7.9
3	6.5	1.2	6.9
- 0.0	6.6	0.5	6.6
4.0	9.2	2.4	8.7
- 0.0	0.2	1.9	8.1
8	6.5	1.4	7.5
4	6.6	2.0	7.6
2.6	8.6		
1.5	7.9		
1.6	7.8		
1.3	7.0		
2.2	6.8		
1.1	6.7		
2.7	8.8		
0.2	6.4		
7	6.7		
2.9	8.9		
1.0	6.9		
2.3	8.5		
1	6.3		
2.1	8.2		
4.5	9.6		
not seen	5.0		
2.5	9.0		
0.6	6.0		
0.9	6.5		

Ht. 1141898. 80° 544 Dm 62

R

P

R

P

At 19th 1878 λ Urae Minore.

R	P	R	P
6.7	0.0	6.7	7.0
7.9	2.0	5.9	6.9
7.5	1.4	5.9	9.4
8.1	1.9	6.2	6.8
8.8	2.4	6.4	8.7
6.9	0.5	6.4	8.8
7.7	1.2	6.5	9.0
8.0	1.8	6.2	6.8
6.9	0.0	6.9	
8.6	1.7	6.9	
7.1	0.9	6.2	
7.0	0.6	6.4	
9.1	2.8	6.3	
invis	5.0		
9.6	4.5	5.1	
7.8	2.1	5.7	
7.0	0.1	6.9	
8.6	2.3	6.3	
7.7	1.0	6.7	
9.0	2.9	7.1	
7.3	0.7	6.6	
7.0	0.2	6.8	
8.9	2.7	6.2	
7.6	1.1	6.5	
8.7	2.2	6.5	
8.2	1.3	6.9	
8.1	1.6	6.5	
7.3	1.5	5.8	
8.8	2.6	6.2	

Stars don't come to gas
will defined images.

1878, Feb. 24. A. W. M. M.

R	P	R	P
~~6.8~~	~~0.0~~	7.5	1.7
6.7	0.0	7.9	1.8
9.1	3.5	7.6	1.2
8.9	3.0	7.2	0.5
8.8	2.5	8.6	2.4
6.9	0.3	8.4	1.9
9.5	4.0	7.0	1.4
7.2	0.8	8.1	2.0
7.0	0.4	6.7	0.0
9.0	2.6		
8.7	1.5		
8.6	1.6		
8.2	1.3		
8.6	2.2		
6.9	0.0		
7.7	1.1		
8.9	2.7		
7.1	0.2		
6.9	0.7		
8.9	2.9		
7.1	1.0		
8.7	2.3		
6.8	0.1		
8.8	2.1		
mis	4.5		
mis	5.0		
8.9	2.8		
8.9	0.6		
7.3	0.9		

Living
excellent

1878, Feb. 26, 7 hrs. min

0.0	6.5
2.0	7.9
1.4	7.5
1.9	7.7
2.4	8.6
.5	7.0
1.2	7.6
1.8	8.3
1.7	8.4
.9	7.6
.6	7.2
2.8	9.0
5.0	more
4.5	9.6
2.1	8.6
0.1	6.7
2.3	8.6
0.0	6.8
1.0	8.0
2.9	8.8
0.7	7.1
0.2	6.7
2.7	8.9
1.1	7.8
2.2	8.6
1.3	8.0
1.6	8.2
1.5	8.3

2.6	8.8
0.4	8.6
0.8	6.9
4.0	9.2
0.3	8.4
2.5	8.9
3.0	8.9
3.5	9.1
0.0	6.5

Seeing admirable and
images brighter than 9.0
clearly resemble real stars

Feb 26th. 1878.

2 Lines. Minus

3.5	8.9
3.0	8.8
2.5	8.6
.3	6.8
4.0	9.3
0.0	8.9
.8	7.0
.4	6.9
2.6	8.7
1.5	8.0
1.6	7.9
1.3	8.2
0.0	6.7
2.2	8.4
1.1	7.6
2.7	8.5
.2	6.9
.7	7.0
2.9	8.9
1.0	8.1
2.3	8.8
.1	7.1
2.1	8.5
0.0	6.9
4.5	invis
5.0	invis
2.8	8.9
.6	6.9 6.9
.9	7.2

1.7	7.9 8.1
1.8	8.3
1.2	8.4
0.5	6.9
2.4	8.7
1.9	8.3
1.4	7.6
2.0	8.4

Longer result as on
Feb 26th

64

March 16th 1878
Sat. H 1

5x Optical

R	P	R	P
8.7	2.0	6.7	0.4
7.6	1.4	6.4	.8
7.9	1.9	6.4	0.0
8.0	2.4	9.0	4.0
6.1	5	6.0	.3
6.9	1.2	8.4	2.5
8.0	1.8	8.7	3.0
7.8	1.7	8.9	3.5
5.9	0.0	5.9	0.0
6.2	.9		
6.1	6		
8.8	2.8	5.86	
	5.0	6.80	
9.3	4.5	.94	
8.7	2.1	.87	
5.9	0.1		
8.5	2.3		
5.7	0.0	6.53	
7.2	1.0	.347	
8.9	2.9	.87	
9.7	0.7		
6.0	.2		
8.6	2.7		
7.5	1.1		
8.6	2.2		
7.0	1.3		
7.6	1.6		
7.0	1.5		
8.5	2.6		

Sun. H 1

5.7

6-7.0

R	P	R	P
7.0	0.0	7.1	9
9.4	3.5	7.6	17
9.0	3.0	7.9	18
8.7	2.5	8.0	1.2
6.7	.5	6.7	.5
6.5	0.0	8.6	2.4
9.4	4.0	8.5	1.9
7.5	.8	8.0	1.4
6.9	.4	8.3	2.0
8.9	2.6	6.9	0.0
8.0	1.5		
8.1	1.6		
6.8	0.0		
7.6	1.3		
8.7	2.2		
8.3	1.1		
8.8	2.7		
6.7	.2		
6.9	.7		
8.6	2.9		
7.6	1.0		
8.7	2.3		
6.8	.1		
8.4	2.1		
9.5	4.5		
9.6	5.0		
8.6	2.8		
6.8	0.0		
7.0	.6		

Centaurus
believed to be
the best yet
made.

March 19th 51 Cithus

Set II 2

~~5.7~~	~~2.0~~	5.7	0.0	5.7
~~7.0~~	2.0	6.9	2.0	4.9
~~7.2~~	1.4	7.0	1.4	5.6
-		6.9	1.9	5.0
		7.5	2.4	5.1
		~~6.8~~	.5	5.8
		7.4	1.2	6.2
		~~8.9~~	1.8	6.1
		6.2	0.0	6.2
		7.5	1.7	5.8
		7.2	0.9	6.3
		6.2	0.6	5.6
		8.5	2.8	5.7
		9.6	5.0	4.6
		9.3	4.5	4.8
		7.8	2.1	5.7
		5.8	0.0	5.8
		~~6.0~~	0.1	4.9
		8.2	2.3	5.9
		6.9	1.0	5.9
		8.6	2.9	5.7
		6.1	.7	5.4
		5.9	.2	5.7
		8.4	2.7	5.7
		~~6.9~~	1.1	5.8
		7.8	2.2	5.6
		7.3	1.3	6.0
		7.2	1.6	5.6
		6.0	0.0	6.0

7.4 1.8
8.2 2.6 5.6
5.8 4 5.4
5.9 8 5.1
8.8 4.0 4.8
6.5 3 6.2
7.3 2.5 4.8
7.8 3.0 4.8
8.4 3.5 4.9
5.7 00 5.7

51 Cephei with pen

Sex III 2

6.4	0.0	6.4
9.2	3.5	5.7
9.0	3.0	6.0
8.5	2.5	6.0
6.8	.3	6.5
9.5	4.8	5.5
7.0	.8	6.2
6.7	0.0	6.7
7.0	4	6.6
8.8	2.6	6.2
8.4	1.5	6.9
8.2	1.6	6.6
7.5	1.3	6.2
8.3	2.2	6.1
6.5	0.0	6.5
7.2	1.1	6.1
8.6	2.7	5.9
6.9	.2	6.7
7.0	7	6.3
8.9	2.9	6.0
7.8	1.0	6.8
8.6	2.3	6.3
7.2	.1	7.1
8.4	2.1	6.3
	4.5	
4.9	5.0	4.9
	2.8	Clouds
6.7	.6	6.1
7.2	9	6.3
6.9	0.0	6.9

8.5	1.7	6.8
8.2	1.8	6.4
6.9	1.2	5.7
7.0	5	6.5

March 19th 2 Urban Minors
Clear.

6.8	0.0
8.0	2.0
7.7	1.4
7.9	1.9
8.3	2.4
6.9	0.0
7.1	.5
7.8	1.2
8.0	1.8
7.9	1.7
7.6	.9
7.4	.6
8.9	2.8
	5.0
9.7	4.5
8.7	2.1
7.9	.1
8.4	2.3
8.2	1.0
7.8	0.0
8.8	2.9
8.0	.7
7.7	.2
8.9	2.7
8.0	1.1
8.5	2.2
8.2	1.3
8.6	1.6
8.4	1.5

7.0	0.0
8.6	2.6
7.5	.4
7.8	.8
9.0	4.0
7.3	.3
8.5	2.5
8.8	3.0
9.0	3.5
6.9	0.0

March
With Prism

Set ~~IV~~ V 1

71

11 20.00 min

9.5	3.5	6.4	7.3
9.3	3.0	with	with
9.0	2.5		
8.2	.3		
9.0	0.0		
	4.0		
7.7	.8		
7.2	4		
8.5	2.6		
8.3	1.5		
8.0	1.6		
8.1	1.3		
8.6	2.2		
7.7	0.0		
8.0	1.1		
9.0	2.7		
7.4	.2		
7.6	.7		
9.4	2.9		
8.3	1.0		
9.2	2.3		
7.0	.1		
8.2	2.1		
9.7	4.5		
	5.0		
9.0	2.8		
7.8	.6		
8.0	9		
8.2	1.7		
8.4	1.8		

72

7.5	0.0
8.2	1.2
7.8	.5
9.1	2.4
8.8	1.9
8.5	1.4
8.8	2.0
7.4	0.0

Without Prism	At Wren. Rim
6.5	0.0
7.2	
7.0	1.4
7.6	1.9
8.4	2.4
6.6	5
6.7	1.2
6.5	0.0
8.1	1.8
7.9	1.7
6.8	9
6.6	1.6
6.5	0.0
8.7	2.8
~~8.7~~	5.0
9.7	4.5
7.8	2.1
6.3	1
8.0	2.3
7.6	1.0
8.6	2.9
7.4	7
6.5	2
8.4	2.7
7.7	1.1
8.6	2.2
7.0	0.0
7.2	1.3
7.6	1.6
7.5	1.5

74

8.2 2.4
6.6 .4
7.4 .8
9.4 4.0
6.4 3
8.7 .2 = 2.6 ?
8.6 3.0
9.2 3.5
6.6 0.0
6.9

March 21st 51 Cephei
 Without prism Su II.3 8.

6.8	0.0
8.5	3.5
8.3	3.0
8.0	2.5
7.0	3.3
9.4	4.0
7.5	.8
6.9	0.0
7.2	.4
8.8	2.6
8.4	1.5
8.2	1.6
7.6	1.3
8.4	2.2
7.3	1.1
8.5	2.7
6.7	0.0
6.8	.2
6.9	.7
8.9	2.9
7.6	1.0
7.9	2.3
6.7	1
8.6	2.1
9.3	4.5
9.6	5.0
9.1	2.8
7.5	.6
7.4	.9

Without Prism

7.7 1.7

6.9 0.0

7.7 1.8

7.4 1.2

6.9 5

7.8 2.4

7.4 1.9

7.5 1.4

7.9 2.0

6.6 0.0

March 21

51 Aphaei

Sec III, 3.

With prism

7.1 0.0

8.9 2.0

9.0 1.4

9.1 1.9

9.6 2.4

8.0 0.0

7.7 .5

8.7 1.2

7.5 1.8

7.7 1.7

7.4 .9

7.2

7.2 6

9.0 2.8

7.0 5.

5.0

4.5

9.2 2.1

8.3 1

8.8 2.3

7.7 1.0

9.0 2.9

7.5 .7

7.2 .2

8.9 2.7

7.9 1.1

8.4 2.2

8.0 2.3

8.1 1.6

with prism

51 Cephie March 21

7.9 ~~1.5~~

8.6 2.6

7.2 4

7.3 8

9.6 4.0

7.0 0.0

7.6 3

8.9 2.5

9.0 3.0

9.3 3.5

7.1 0.0

Without prism March 26 λ W. W. Min

6.9	0.0
9.1	3.5
8.9	3.0
8.6	2.5
7.0	.3
6.9	0.0
9.5	4.0
7.6	.8
7.4	.4
8.9	2.6
8.2	1.5
8.0	1.6
7.6	1.3
8.3	2.2
7.9	1.1
8.7	2.7
7.0	.2
7.3	.7
9.2	2.9
7.4	1.0
8.5	2.3
6.9	0.0
6.8	.1
8.9	2.1
	4.5
	5.0
9.1	2.8
7.5	.6
7.4	.9

without prism

8.0	1.7
8.4	1.8
6.9	0.0
7.8	1.2
7.0	.5
8.3	2.4
8.4	1.9
7.8	1.4
8.4	2.0
6.9	0.0

With prism 1878, March 26 Δ Obs. Min

7.3 0.0

8.9 2.0

8.8 1.4

9.0 1.9

~~7.2~~ 0.0

9.4 2.4

8.6 5

9.0 1.2

9.2 1.8

9.5 1.7

9.4 9

8.7 6

9.7 2.8

5.0

4.5

9.3 2.1

7.2 0.0

7.0 1

9.0 2.3

8.0 1.0

9.3 2.9

7.6 7

7.4 2

9.0 2.7

8.3 1.1

9.0 2.2

8.4 1.3

8.5 1.6

8.4 1.5

9.2 2.6

With prism λ Ves. Min.

7.7 .4

7.7 0.0

8.5 .8

4.0

7.4 .3

9.2 2.5

9.5 3.0

3.5

7.4 0.0

March 30

F. 2

83

 λ 600. Min With prismGlass.
prism 7.5Spar
prism 7.2

7.2	0.0
	3.5
9.7	3.0
9.6	2.5
7.7	.3
7.2	0.0
9.5	4.0
8.7	.8
8.3	.4
9.4	2.6
8.8	1.5
8.9	1.6
8.7	1.3
9.0	2.2
8.9	1.1
9.5	2.7
7.5	0.0
7.3	.2
7.6	.7
	2.9
8.9	1.0
9.1	2.3
7.3	.1
8.5	2.1
	4.5
	5.0
9.5	2.8
8.0	6
8.2	9

March 30

With prism

N. W. W. min.

8.6	1.7
8.9	1.8
8.3	1.2
7.4	.5
9.0	2.4
7.2	0.0
8.9	1.9
8.7	1.4
9.1	2.0
7.4	0.0

March 30

IV. 2

85

Without prism

At 100 min.

6.4 0.0

8.4 2.0

7.3 1.4

8.7 1.9

6.5 0.0

8.8 2.4

6.9 5

7.3 1.2

8.0 1.8

7.8 1.7

7.6 .9

7.4 .6

9.0 2.8

5.0

4.5

8.9 2.1

7.0 .1

8.8 2.3

7.7 1.0

6.6 0.0

9.0 2.9

7.5 7

7.0 2

9.1 2.7

7.8 1.1

9.0 2.2

8.4 1.3

8.5 1.6

8.2 1.5

9.2 2.6

March 30

without pressure 2 hrs. min.

6.7	.4
7.0	.8
6.4	0.0
9.7	4.0
7.9	3
8.7	2.5
8.9	3.0
9.4	3.5
6.7	7.0
7.0	0.0

Without pens March 2nd 1878. 2 Lines Min.

6.8	0.0
9.2	3.5
9.0	3.0
8.6	2.5
7.3	.3
9.4	4.0
6.7	0.0
7.5	.8
7.3	4
~~8.9~~	2.6
8.6	1.5
8.4	1.6
8.0	1.3
8.5	2.2
7.0	0.0
7.8.0	1.1
8.8	2.7
6.9	2
7.0	7
9.2	2.9
7.5	1.0
8.7	2.3
6.8	.1
8.6	2.1
9.7	4.5
	5.0
9.0	2.8
7.7	1.6
7.4	.9
8.1	1.7

Without

8.4	1.8
8.0	1.2
7.6	5
~~6.9~~	0.0
8.8	2.4
8.6	1.9
8.3	1.4
8.5	2.0
6.9	0.0

With prism

 λ was min March 31

7.2	0.0
8.9	2.0
8.5	1.4
8.9	1.9
4.1	2.4
8.0	.5
8.2	1.2
9.0	1.8
7.4	0.0
8.8	1.7
7.7	9
7.6	6
9.2	2.8
	5.0
	4.5
8.9	2.1
7.4	.1
9.0	2.3
8.0	1.0
7.5	0.0
9.6	2.9
7.7	.7
7.5	2
9.3	2.7
8.4	1.1
9.4	2.2
8.7	1.3
8.9	1.6
8.6	1.5
9.4	2.6

With prism March 31 λ 1600 min

7.4 0.4

7.8 .8

4.0

7.3 3

7.4 0.6

9.2 2.5

9.5 3.0

9.8 3.5

7.3 0.0

Apr 2d 1898. without prism

6.4	00
9.0	3.5
8.8	3.0
9.2	2.5
7.0	3
9.5	4.0
6.4	00
7.0	0.8
6.8	0.4
8.8	2.6
8.0	1.5
8.4	1.6
8.3	1.3
8.7	2.2
8.0	1.1
8.9	2.7
7.85	.2
7.2	.7
6.5	0.0
9.4	2.9
8.0	1.0
9.0	2.3
6.6	1
8.8	2.1
ambler	4.5
"	5.0
9.0	2.8
6.7	.6
6.9	.9

8.5	1.7
6.6	1.8
8.4	1.2
8.0	1.5
9.1	2.4
8.9	1.9
6.4	0.0
7.6	1.4
8.7	2.0
6.3	0.0

K. 5.

With mean

7.4	0.0
8.8	2.0
8.6	1.4
9.0	0.9
9.2	2.5
8.0	1.5
8.5	1.2
8.7	1.8
8.8	1.7
8.4	0.9
8.0	1.6
9.5	2.8
0	5.0
0	4.5
9.3	2.1
7.5	1.1
8.9	2.3
7.2	0.0
8.5	1.0
9.5	2.9
8.0	1.7
7.7	1.2
7.3	0.0
9.2	2.7
8.8	1.1
9.1	2.2
8.7	1.3
8.9	1.6
9.0	1.5

9.3	2.6
8.0	.4
8.2	.8
0	4.0
7.9	.3
8.9	2.5
9.6	3.0
7.3	0.0
9.7	3.5
7.6	0.0

Remarkably good evening especially
with prism.

Finished at 8.16 **ES.7**

July 26th 1898. B denotes 1, 3, 5 group
 defined with full ap. 2 k₄ with ap. 3.0
 5537 B. 1, 3, 5 with ap. 3.0 2, 4 with full ap.

96

840

Aug 14th 1878 51 Cephei^I
5.0

6.4	0.0
8.1	2.1
6.9	.5
6.8	1.0
8.8	2.7
7.7	2.0
6.5	.2
7.0	.8
6.5	0.0
6.8	.1
—	5.0
7.1	1.3
8.9	2.9
6.9	.9
8.9	3.0
6.8	.7
8.6	2.6
9.2	4.0
6.4	0.0
8.5	2.5
6.9	.4
9.2	3.5
8.5	1.7
7.5	.6
7.7	1.5
6.8	.3
7.3	1.9
6.5	0.0

8.6	2.2
7.8	1.2
8.4	1.6
8.8	2.3
9.5	4.6
8.8	2.4
7.8	1.4
8.6	2.8
8.3	1.8
7.8	1.1
6.7	0.0

with Brin 51

Ir

7.0	0.0
8.1	1.1
8.6	1.8
9.2	2.8
8.4	1.4
8.7	2.4
—	4.5
8.8	2.3
8.1	1.6
6.9	0.0
7.3	1.2
9.1	2.2
8.9	1.9
8.0	.3
8.5	1.5
7.9	.6
8.7	1.7
—	3.5
7.0	0.0
7.3	.4
9.0	2.5
9.6	4.0
9.3	2.6
8.0	.7
9.3	3.0
8.3	.9
7.3	0.0
9.2	2.9

8.6	1.3
—	5.0 —
8.0	.1
7.8	.8
7.2	.2
8.7	2.0
9.0	2.7
8.2	1.0
8.0	.5
9.0	2.1
8.5	0.0

Aug 18 & 19, 85 (Ceph)

R.A. Period Ceph

5.9	0.0
7.7	2.1
5.7	.5
5.6	1.0
8.0	2.7
7.8	2.0
5.8	.2
6.1	.8
5.7	.1
<u>5.8</u>	5.0
7.0	0.0
8.5	1.3
6.8	2.7 9
8.7	.9
6.2	3.0
7.9	.7
9.3	2.6
8.4	4.0
5.6	2.5
5.5	.4
8.8	0.0
6.4	3.5
6.0	1.7
6.7	.6
5.8	1.5
6.8	.3
7.6	1.9
7.0	2.2
7.3	1.2
	1.6

6.1	0.0
8.4	2.3
9.2	~~4.6~~ 4.5
8.6	2.4
8.2	1.4
8.8	2.8
8.3	1.8
6.6	1.1
5.6	0.0

With prism ^{2_h}

7.0	0.0
7.6	1.1
8.0	1.8
8.9	2.8
8.12	1.4
8.5	2.4
9.6	4.6 45
8.8	2.3
8.7	0.0
8.15	1.6
8.3	1.2
8.7	2.2
8.6	1.9
7.3	1.3
7.9	1.5
7.12	1.6
7.0	0.0
8.8	1.7
9.11	3.5
7.3	1.4
9.11	2.5
	4.0
8.9	2.6
8.10	1.7
9.3	3.0
8.12	1.9
7.2	0.0
9.2	2.9
8.4	1.3
	5.0

7.2	1.1
7.6	1.8
7.1	1.2
8.8	2.0
9.0	2.7
8.3	1.0
7.9	.5
8.9	2.1
6.9	0.0

9¹⁰
mean time

1859

Least night gave full
aperture 1.5 to 1.7 too faint

Aug 20 th 1878

X Urs. Min.

Q 10 0

6.7	0.0
8.5	2.1
7.0	0.5
7.6	1.0
8.9	2.7
8.1	2.0
6.8	0.0
6.9	0.2
7.2	0.8
6.9	0.1
9.7	5.0
7.8	1.3
7.2	0.0
8.8	2.9
7.9	0.9
8.8	3.0
7.8	0.7
8.7	2.6
9.7	4.0
9.0	2.5
6.8	0.4
9.1	3.5
8.2	1.7
7.3	0.6
8.0	1.5
6.9	0.3
8.4	1.9
6.7	0.0
8.6	2.2

8.5	1.2
8.4	1.6
8.6	2.3
—	4.6
8.7	2.4
8.3	1.4
8.5	2.8
8.3	1.8
7.0	1.1
6.9	0.0

Aug 20th
With Prism

1h

10 5-

7.0	0.0
8.0	1.1
8.8	1.8
9.1	2.8
8.5	1.4
9.0	2.4
9.7	4.6
9.3	2.3
8.8	1.6
8.4	1.2
9.0	2.2
7.3	0.0
8.3	1.9
8.0	0.3
8.3	1.5
7.5	0.6
8.6	1.7
9.6	3.5
7.9	0.4
9.4	2.5
7.4	0.0
—	4.0
9.5	2.6
8.6	0.7
9.6	3.0
8.6	0.9
9.4	2.9
8.2	1.3
—	5.0

41

7.7	0.1
8.0	0.8
7.5	0.2
8.6	2.0
7.3	0.0
9.3	2.7
8.2	1.0
7.9	0.5
8.8	2.1
7.1	0.0

Aug 25 1878

³
~~Ann. Min.~~
 51 Cephei.

8 15

5.7	0.0
7.7	2.1
7.2	0.5
7.0	1.0
8.4	2.7
8.3	2.0
6.0	0.2
6.1	0.8
5.9	0.1
5.8	0.0
9.6	5.0
8.4	1.3
8.7	2.9
7.0	0.9
8.6	3.0
6.0	0.7
7.8	2.6
9.0	4.0
8.3	2.5
5.8	0.1
9.2	3.5
~~7.2~~ 6.5	0.0
7.2	1.7
6.9	0.6
7.8	1.5
5.9	0.3
8.0	1.9
7.9	2.2
6.0	1.2

5.5	0.0
7.2	1.6
8.4	2.3
9.2	~~4.6~~ 4.6 .5
8.4	2.4
7.9	1.4
8.6	2.8
8.2	1.8
7.6	1.1
~~5.9~~ 5.9	0.0

8 22

6.4	0.0
7.8	1.1
8.8	1.8
9.0	2.8
8.2	1.4
8.9	2.4
9.7	4.6
8.6	2.3
8.5	1.6
8.1	1.2
8.3	2.2
8.2	1.9
6.8	0.0
7.0	0.3
8.2	1.5
6.9	0.6
7.9	1.7
9.2	3.5
6.9	0.4
8.3	2.5
9.1	4.0
9.0	2.6
6.6	0.0
7.1	0.7
8.8	3.0
7.0	0.9
8.7	2.9
8.4	1.3
9.8	5.0
6.9	0.0

Aug 25 - 1878 ^{5th} ~~to 2nd 1878~~
 51 Cephei with prism

{ According to recollection
 of S. R. said 6.5 here
 not 6.9 as recorded by J.H.K.

22

111

6.6	0.1
7.2	0.8
6.7	0.2
8.3	2.0
8.8	2.7
8.5	1.0
7.4	0.5
8.4	2.1
6.8	0.0

8 20

u

August 26th 1878. 51 Cephæi
without prism

5.4	0.0
7.0	2.1
6.1	0.5
6.3	1.0
8.0	2.7
7.7	2.0
5.7	0.2
6.0	0.8
5.9	0.1
5.8	0.0
—	5.0
6.9	1.3
8.6	2.9
7.0	0.9
8.4	3.0
6.5	0.7
8.7	2.6
9.0	4.0
5.8	0.0
8.4	2.5
6.3	0.4
8.9	3.5
7.0	1.7
6.2	0.6
7.5	1.5
6.0	0.0
5.9	0.3
7.7	1.9
8.2	2.2

7.6	0.0	1.2	
7.2	1.1	1.6	
7.7	2.1	2.3	
—	8.5	4.8	4.5
8.4	8.1	2.4	
7.0	10.5	1.4	
8.3	2.0	2.8	
7.1	5.8	1.8	
6.6	0.1	1.1	
5.8	1.1	0.0	

114

8 25

Aug. 26 th 1878.51 Cepheus
with prism

6.7	0.0
7.5	1.1
8.7	1.8
8.9	2.8
8.0	1.4
8.8	2.4
—	4.6 u.s.
8.9	2.3
6.9	0.0
8.2	1.6
8.4	1.2
9.0	2.2
8.7	1.9
7.0	0.3
6.8	0.0
7.8	1.5
7.0	0.6
8.3	1.7
9.7	3.5
7.1	0.4
8.8	2.5
9.5	4.0
8.6	2.6
7.3	0.7
9.1	3.0
6.6	0.0
7.1	0.9
8.8	2.9
8.3	1.3

9.7 5.0
7.2 0.1
7.4 0.8
7.0 0.2
8.1 2.0
8.7 2.7
7.7 1.0
7.0 0.5
8.5 2.1
6.6 0.0

8^h 20^mAug 27 ~~th~~ 1878

51 Cepheus

without prism

5.6	0.0
7.4	2.1
5.9	0.5
6.1	1.0
8.3	2.7
7.7	2.0
5.8	0.2
6.6	0.8
6.4	0.1
6.3	0.0
—	5.0
7.2	1.3
8.4	2.9
7.5	0.9
8.7	3.0
6.7	0.7
8.2	2.6
9.6	4.0
5.7	0.0
7.9	2.5
5.8	0.4
8.9	3.5
7.4	1.7
6.1	0.6
7.3	1.5
5.7	0.3
6.9	1.9
5.8	0.0
7.4	2.2

6.0	1.2
6.6	1.6
7.8	2.3
—	4.8 4.5
8.4	2.4
7.2	1.4
8.5	2.8
7.8	1.8
6.4	1.1
5.8	0.0

8 $\ln m$
25

52

Aug 27 th 1878	51 Cephæi
6.4	0.0 with prism
7.0	1.1
8.0	1.8
8.8	2.8
8.3	1.4
8.9	2.4
9.6	~~4.6~~ 4.5
8.7	2.3
8.8	1.6
7.5	1.2
8.2	2.2
6.6	0.0
8.5	1.9
7.5	0.3
7.8	1.5
7.0	0.6
8.0	1.7
9.2	3.5
6.9	0.4
9.0	2.5
6.5	0.0
9.5	4.0
8.9	2.6
7.0	0.7
8.9	3.0
8.0	0.9
9.1	2.9
7.8	1.3
—	5.0

7.4	0.0
7.0	0.1
7.7	0.8
6.8	0.2
8.4	2.0
9.0	2.7
8.0	1.0
7.7	0.5
8.4	2.1
7.6	0.0

2

Aug 29. 1878

Mrs. Mini

6.6

0.0

Without prism.

8.1

2.1

6.6

0.5

6.7

1.0

9.0

~~2.9~~ 2.7

8.5

2.0

7.7

0.2

7.2

0.8

7.0

0.1

—

5.0

7.7

1.3

1.3

6.7

0.0

8.8

2.9

7.5

0.9

9.0

3.0

7.6

0.7

8.8

2.6

9.2

4.0

8.8

2.5

7.8

0.4

9.0

3.5

3.5

6.7

0.0

8.0

1.7

6.8

0.6

7.6

1.5

7.0

0.3

8.2

1.9

8.6

2.2

7.7

1.2

8.2		1.6
8.4		2.3
—		4.5
8.5	2.4	2.4
6.6		0.0
7.3		1.4
8.5		2.8
8.4		1.8
8.2		1.1
6.9		0.0

2

Aug 29 1878 1 hr Min.

with prism

6.9		0.0
8.1		1.1
8.6		1.8
9.2		2.8
8.7		1.4
9.0		2.4
—		4.5
9.0		2.3
8.7		1.6
8.4	1.2	1.2
7.5		0.0
8.8		2.2
8.7		1.9
7.7		0.3
8.3		1.5
8.0		0.6
8.5		1.7
9.7		3.5
7.8	.4	0.4
7.4		0.0
8.9		2.5
—		4.0
9.3		2.6
8.2		0.7
9.1		3.0
8.4		0.9
9.3		2.9
8.6		1.3
—		5.0

7.0	1.1	0.1
6.9		0.0
7.8		0.8
7.4		0.2
8.6		2.0
9.1		2.7
8.3		1.0
8.0		0.5
8.9		2.1
7.3		0.0

*Few deposits in film, which are removed
after every two or three settings.*

Sept. 12, 1878

B

 λ Hees. Min

without prism

6.6		0.0
8.4		2.1
7.6		0.5
7.5		1.0
8.2		2.7
8.5		2.0
7.0		0.2
7.8		0.8
7.4	.1	0.1
7.0		0.0
<u>Cent ave</u>		5.0
8.6		1.3
9.0		2.9
~~7.7~~		~~0.9~~
8.8		3.0
7.2	.7	0.7
8.9		2.6
9.6		4.0
9.2		2.5
7.0	4	0.4
6.6		0.0
9.3		3.5
8.6		1.7
8.3		0.6
8.4		1.5
8.1		0.3
8.7		1.9
8.7		2.2
8.4		1.2

8.3	1.6	1.6
6.9		0.0
8.6		2.3
—		4.5
8.8		2.4
8.5		1.4
8.7		2.8
8.3		1.8
8.2		1.1
6.8		0.0

Phila. wiped after every time a. there. why
 15 more clear.

1878, Sept. 12

3

 λ obs. min
with prism

7.1		0.0
8.0		1.1 ~~1.8~~
8.8		1.8 ~~2.8~~
9.6		2.8 ~~4.4~~
9.0		1.4 ~~2.4~~
9.3		2.4 ~~4.5~~
—		4.5
8.8		2.3
8.5		1.6
8.2	1.2	1.2
7.1		0.0
8.8		2.2
8.8		1.9
8.5		0.3
9.0		1.5
8.7		0.6
8.6		1.7
9.6		3.5
7.5	.4	0.4
7.2		0.0
9.0		2.5
9.8		4.0
9.4		2.6
8.4		0.7
9.6		3.0
8.3		0.9
9.5		2.9
8.7		1.3 ~~1.8~~
—		5.0

7.3 .1 0.1
7.0 0.0
7.4 0.8
7.5 0.2
8.9 2.0
9.4 2.7
8.5 1.0
8.0 0.5
8.9 2.1
7.2 0.0

1878. Sept. 14.

 λ Ursa Min (4)

winter part

7.6	.0
8.6	2.1
7.6	.5
7.9	~~1.9~~ 1.0
8.7	2.7
8.6	2.0
7.0	.2
6.8	.0
7.1	.8
6.7	1
—	5.0
7.8	1.3
8.9	2.9
7.4	.9
9.0	3.0
7.5	.7
8.8	2.6
9.3	4.0
8.9	2.5
6.8	4
9.4	3.5
6.6	0.0
8.7	1.7
7.6	.6
8.5	1.5
6.7	.3
8.6	1.9
8.5	2.2
8.2	1.2
8.0	1.6

~~8.5~~ 2.3
— 4.6 4.5

9.0 2.4

8.0 1.4

9.2 2.8

6.6 0.0

8.3 1.8

7.8 1.1

6.8 0.0

20 36 m

2 Urse minus
with pencil

7.1	0.0
8.3	1.1
9.1	1.8
—	2.8
8.9	1.4
9.4	2.4
	4.6
9.1	2.3
8.6	1.6
8.5	1.2
7.2	0.0
9.0	2.2
9.2	1.5
8.1	.3
8.9	1.5
7.8	.6
8.6	1.7
9.2	3.5
7.4	.4
7.2	0.0
9.1	2.5
	4.0
9.4	2.6
8.2	7
9.6	3.0
8.6	9
9.7	2.9
8.7	1.3
	5.0
7.7	.1

7.4	0.0
7.8	8
7.5	2
8.9	2.0
9.4	2.7
8.5	1.0
8.3	.5
9.5	2.1
7.5	0.0

1878, Sept. 18

N. Vers. Min
without prism

6.6	0.0
8.5	21
7.9	5
8.2	10
9.0	27
8.6	20
7.6	2
7.4	8
7.0	1
9.7	50
8.0	13
8.9	2.9
7.2	0.0
7.8	9
9.4	30
8.2	7
8.9	26
9.8	40
9.7	25
7.5	4
9.3	35
8.5	17
6.7	0.0
6.9	6
7.9	15
6.6	3
8.5	19
8.4	22
8.1	12

8.3	1.6
8.6	2.3
6.8	0.0
—	4.5
8.4	2.4
8.3	1.4
8.7	2.8
8.4	1.8
8.1	1.1
6.8	0.0

Sept. 18

 λ Meas. Min.
With prism

7.2	0.0
8.5	1.1
9.5	1.8
9.7	2.8
8.8	1.4
9.0	2.4
—	4.5
8.8	2.3
8.4	1.6
8.0	1.2
8.6	2.2
7.1	0.0
8.5	1.9
7.5	3
8.2	1.5
7.8	.6
8.9	1.7
—	3.5
8.3	.4
7.5	0.0
9.0	2.5
—	4.0
9.2	2.6
7.5	7
8.9	3.0
8.2	9
9.3	2.9
8.6	1.3
—	5.0

7.2	1
7.7	8
7.6	2
9.2	2.0
8.0	0.0
9.5	27
8.3	10
7.7	5
8.8	21
7.4	0.0

Jan 29. 1879.
Observations of transits of stars
observed by diaphragm

7.7	2.0
8.5	2.5
8.8	3.5
8.7	3.0
5.5	0.0

	89.35	8.8
8.5	89.37	8.6
8.6	89.35	18.7

1877 photo-proj... 4675