KG
11365
564

KG 11365.56.4

Oct. 30, 1903

to

KG 11365.564

HARVARD
UNIVERSITY
LIBRARY
MAY 8 1956

Oct. 30, 1903
Cont. from p. 140,

Wells.
Phot T.
9.5" cap.

04 40 68

28 39 +67.2
23 19

5 20
6 40

L.t.A.
312.8 ∠ comp * dis
8 39.4 340 81.2
137.0 71.0
208.0 152.2 + 0.53
318.2
28.6 70.4 + 0.48
129.0 87.6
216.6 158.0 + 0.42
R.t.B. Mean = ~~+~~ +0.56
225.0
303.8 78.8
50.2 67.4
11~~6~~7.6 146.2 + 0.65

229.7 + 0.68
8 46.2 2~~9~~98.0 68.3
856 45.4 79.3
8428 124.7 147.6 + 0.62
1340.1
6418.

P.A. 259.2 Var B.
H.A. -5.64 East
Dec. 67.4 North
S.T. = 23: 38

Sp. Wh. = { +0.5 / +1.5 / +2.1

Oct. 30, 1903

RR Lyrae Wilk. Phot T.

19 20 + 43.0
23 53
+ 4 33

Bond 236 Ball cd3
9 09 32.5 9 09 0.0
10 32.6 10 0.0

Lt Above Bond 236 used

151.5 < Var dia ✓
9 14 02 194.4 42.9 ✓
328.4 50.2 ✓
18.6 x93.1 ✓ − 1.83 ✓
146.8
16 09 199.4 52.6 ✓ − 1.84 ✓
333.5 39.8 ✓
13.3 92.4 ✓ − 1.85 ✓

Rt Below mean = − 1.89 ✓
649
18 33 104.1 39.2 ✓
238.6 51.3 ✓
289.9 90.5 ✓ − 1.90 ✓

58.7 ✓
9 20 13 107.2 48.5 ✓ − 1.94
28 57 244.2 38.7 ✓
9 17 14 282.9 87.2 ✓ − 1.97 ✓
5 − 34
14 16 40 GMT. 6418.5949
6418. 6418.0339
+ 0.5610

Oct. 30, 1903

II

Rt Below

67.0
9 23 15 99.3 32.3
238.1 500
288.1 82.3 − 213

58.6
26 14 107.6 − 2.06
2~~44~~.6 49.0
283.0 38.4
87.4 − 1.98

Lt Above

334.7 Mean = − 1.99
28 30 13.4 38.7
148.1 50.9
199.0 89.6 − 1.92

327.7 − 192
9 30 33 18.7 51.0
28 52 154.0 38.4
9 27 13 192.4 89.4 − 1.93
5 − 35
14 26 38 G.M.T.
6418.6018
6418.6007 ~~0339~~
~~+0.5609~~
0.0011

Oct. 30, 1903

III

L & Above

333.5

9 33 00 14.3 40.8

148.3 48.3

196.6 89.1 — 1.94

328.9 — 1.94

37 25 18.6 49.7

153.9 39.7

193.6 89.4 — 1.93

R & Below Mean = — 2.05

~~244.8~~

39 35 282.5 37.7

62.2 44.1

106.3 81.8 — 2.14

240.3 — 2.16

285.7 45.4

9 ~~41 58~~ 66.7 34.8

31 58 101.5 80.2 — 2.19

9 38 00

5 — 37

14 37 23 G.M.T.

6418.6093

6418.~~0339~~ 6067

~~0.5~~

+0.0086

Oct. 30, 1903

R.D. Below IV

244.4

9 43 53 283.4 39.0

62.8 43.3

106.1 82.3 — 2.13

239.4 — 2.14

4527 286.3 46.9

66.8 35.0

101.8 81.9 — 2.14

L.D. above Mean = −2.05

153.8

4803 192.5 38.7

327.6 50.6

18.2 89.3 − 1.93

147.8

9 4953 197.6 49.8 − 1.96

334.7 37.9

12.6 87.7 — 1.98

Reject

Oct. 30, 1903.

V

P.a.

9 54 1 . clouds
~~9 5~~

9 58 . Stopped by clouds.

P. a. = 35.1 Var B
H.a. = +5:23 West
Dec. = +43.1 North.
S.T. = 0:47
R.O.B. Spoh. = { -0.5 B
+0.5 C

Last group taken in more or less
clouds, observer noticed in settings
of last group that images were faint
and especially was it noticed at equalization
the equalizations being somewhat difficult.
On looking out of shutter at end
of group noticed that clouds were
not only in the region but above
the line of the telescope. Further
observations prevented by clouds.
10 05 Last group rejected.

Oct. 30, 1903

Bond 236	Ball 103
10 09 42.0	10 09 00
10 42.2	10 00
11 58 58.2	11 58 00.0
12 00 58.5	12 00 00.0

27 00
23 02
3 58 W

−7.8

Re Jup. I Phot R. W. Obs.
Colson Recorder.

Compared with more remote of three sets on following side (counting set II and also another set which has emerged from the edge of the planet) = set II.

Limit of Visibility

	12 19 03		198.0
12 19 26	23	26.0	224.0
* −1−1	34	25.3	198.5
12 18 25	19 46	25.6	2238

12 23 34

~~Seen~~. False alarm!
~~# 25 fine~~: ~~See Mayor~~
~~McNamee~~

Oct 30. 1903.

12	22	50	12	23	51		191.0	
		58			59		234.0	
	23	9		24	10		180.8	
		17			18		242.1	
		26			27		180.0	
		34			35		244.5	
		43			44		172.5	
		56			57		254.2	
	24	10		25	11		165.0	
		19			20		256.0	
					~~31~~			
		43			44		162.5	
		52			53		258.2	
	25	05		26	06		161.5	
		16			17		258.1	
		29			30		159.3	
		40			41		260.4	
		53			54		158.9	
	26	9		27	10		260.5	
					31		160.0	
12	27	50			42	98.4	258.4	
	-1	1				102.2		
12	26	49			56	100.3	158.3	1
				28	10		260.5	
12	28	48			25		160.2	
	-1	1			42	98.8	259.0	
						100.4		
12	27	47			55	99.6	158.5	2
				29	11		258.9	
					22		158.0	
					42		261.0	

Oct 30, 1903.

12 29 51	12	30	03	103.0 98.0 100.5	160.0	3
x −1 2			17		258.0	
12 28 49			34		161.0	
			45	98.5 98.5 98.5	259.5	
12 30 54 −1 2		31	01		160.5	
12 29 52			15		259.0	4
			29	98.5 97.0 97.8	160.0	
12 32 33 −1 2			41		258.5	5
12 31 31	Moved images slightly in field					
		33	26		161.0	
			36		258.0	
			48		159.8	
12 34 14 x −1 2		34	03	100.2 99.7 100.0	260.0	
12 33 12 x			27		160.5	6
			38		260.2	
			59		159.85	
12 35 32 x −1 2		35	12	101.0 100.0 100.0	260.5	7
12 34 30 ✓			49		160.0	
		36	06		260.0	
			19		160.5	
12 36 37 −1 2			37	99.3 101.0 100.2	259.8	
			48		159.0	8
12 35 35		37	03		260.0	

Jup. rather low. Seeing fairly good but on account of low altitude disc of Jup somewhat colored. Proximity of moon and low altitude delayed a little the first settings.

Oct. 30. 1903.

B. 236			= Bolton 103.		
12	52	4.1	12	51	0.0
	53	4.2		52	0.0

Oct. 31, 1903 (Saturday)

7 02 C's watch = 18s slow.

u Herculis

17 13 +33.2
22 33
5 20

Wells
Plate I
9.5 cap

I

Above

245.2 < var. dis.

7 44.8 283.8 38.6″

60.0 46.1″

106.1 84.7″ − 2.06″

249.8

286.2 45.4″ − 2.16″

67.9 32.5″

[illegible] 100.4 77.9″ − 2.26″

Below Mean = − 2.26″

158.1

190.0 31.9″

332.7 42.0″

14.7 73.9″ − 2.38″

151.5

7 51.8 196.2 44.7″ − 2.35″

9 6.6 $3\overset{3}{\cancel{4}}9.2$ 31.0″

7 48.3 10.2 75.7″ − 2.32″

12 48.6

6419.

Oct. 31, 1903

Same Over

II

Below
156.2
7 54.0 189.7 335
332.1 434
15.5 76.9 – 2.29

5
1~~4~~0.8
196.5 457 – 2.28
339.0 31.3
10.3 77.0 – 2.28

Above Mean = – 2.22
67.2
99.9 327
241.3 47.2
288.5 79.9 – 2.20

8
5~~9~~.1 – 2.16
8 0.0 106.5 48.4
7 57.0 247.1 33~~5~~8
12 57.39 m.T. 280.~~6~~9 ~~81.9~~ – 2.13
6419. 82.2

P.A. = 310.3 Var B
Ha. = +5.43 West
Dec. = 33.3 North
S.T. = 22:58
Sp.wh { = –1.5 B
= –0.5 C

Oct. 31, 1903

~~VAA~~

~~Obsv~~

Auroral light in North somewhat of an arching form and extending in altitude apparently 2/3 way to the pole
8 12 star from the horizon. There certainly are auroral streamers and what seems ~~to~~ to be auroral light below the pole star is probably not light cloud.

Moon quite bright, making observation a little difficult ~~Beto~~ but it can be told before long
8 15 whether this general light is light cloud or aurora. There certainly however have been auroral streamers.

u Herculis

W.O.b.
Phot$_{II}$ T
9.5 Cap

17   13 + 33.3
23   29
6   10

(Over)

Oct. 31, 1903

III

Above
67.5
8 34.5 101.0 33.5
242.1 44.5
286.6 78.0 − 225

62.8 −2.32
103.4 40.6
246.6 33.4 − 238
280.0 74.0

Below Mean = − 2.38
338.7
368.8 30.1
151.1 42.5
193.6 72.6 − 2.42

334.3 −2.45
8 41.3 15.0 40.7
7 5.8 157.4 30.1
8 37.9 187.5 70.8 − 248
13 38.2 G. M. T.
6419.

Oct 31, 1903

~~IV~~

Below

337.1

8 44.2 370.9 — 33.8′

152.7 — 42.0′

194.7 — 75.8′ − 2.32′

332.8 — − 2.40′

12.5 — 39.7′

158.1 — 30.8

188.9 — 70.5′ − 2.49′

Above — Mean = − 2.38′

246.2

2~~7~~80.4 — 34.2′

62.1 — 42.1′

104.2 — 76.3 − 2.31′

242.1 — − 2.35′

8 51.4 284.8 — 42.7′

95.6 68.0 — 31.0′

8 47.8 ~~198.5~~ — 73.7′ − 2.39′

13 ~~4~~8.1 G.M.T. 99.0

6419.

~~R.A. =~~

~~H.A. =~~

~~Dec =~~

~~S.T. = 2~~

~~Sp. Wh. L~~

Over

Oct. 31, 1903.

V

Above

246.9

9 15.0 280.6 33.7

63.4 39.0

102.4 72.7 — 2.42

242.1 — 2.38

284.1 42.0

66.0 32.9

98.9 74.9 — 2.35

Below Mean = — 2.46

157.8

188.0 30.2

335.4 39.2

146 69.4 — 2.53

154.9 — 2.56

9 24.4 192.7 37.8

39.4 338.5 31.0

9 19.7 369.5 68.8 — 2.55

14 20.0 G.M.T.

64.9

Pa = 130.5 Vn B

R.A. = +7:07 West

Dec. = +33.3 North

S.T. = 0:21

Sp wh = 5 — 15 B — 0.5 C

Oct. 31, 190

~~At~~ On watching the Northern sky after making the remarks on page 13 relative to the aurora, it was evident that the general light seen in the North independently of the scattered streamers was aurora

9 30 At present time an auroral arch ~~abo~~ in the north under pole star and about 2/5 the altitude of pole star is seen. This arch is fairly bright in the moonlight and beyond all question is aurora and not cloud.

9 54 Auroral arch has now disappeared. ~~although~~ although there seems to be traces of auroral light in north.

χ Cygni W Obs.
Phot T

19 45 +32.6
24 55
5 10

Oct. 31, 1903

X Cygni

Above
250.2 < var dis
10 6.4 276.9 26.7:
68.0 29.8 — 3.00
97.8 56.5

247.1 — 2.99
249.8 32.7
71.7 24.2
95.9 56.9 — 2.98
Below Mean = −2.86
155.5
191.4 35.9
339.8 28.1
367.9 64.0 — 2.71

159.6 −2.72
10 13.6 147.4 27.8:
20.0 335.9 35.9
10 10.0 371.8 63.7 −2.73
15 10.3 G.M.T.
6419.

Oct 31, 1903

Same Obser

Below

155.2

10 16.2 191.8 36.6

340.3 27.0

367.~~4~~3 63.6 — 2.73

159.9 — 2.73

187.3 27.4

336.0 36.1

372.1 63.5 — 2.73

Above Mean = — 2.86

8.11

68.0 5.25 Magn.

99.0 31.0

250.0 26.4

276.4 57.4 — 2.96

72.2 — 2.99

10 23.8 95.2 23.0

10 20.0 246.6 33.0

15 20.34 M.T. 279.6 56.0 — 3.02

6419

P.A. = 24.0 on β

H.A. = 5.34 West

Dec. = +32.8 North

S.T. = 1:21

Sp.wh. = $\left\{\begin{matrix}0.5 & B\\1.5 & C\end{matrix}\right.$

Oct. 31, 1903.

T Cygni wrb

Plot ~~90~~

20 43 +34.0
25 33
4 50

Above < var. dis. -
249.7
10 43.0 277.9 28.2
66.2 34.0
100.2 62.2 — 2.78
245.9
281.6 35.7 — 2.78
70.7 26.1
96.8 61.8 — 2.79
Below Mean = — 2.67
158.8
188.8 300
334.1 39.4
123.5 69.4 — 2.53

153.8 — 2.56
10 48.8 192.2 38.4
11.8 339.4 29.5
10 45.9 368.9 67.9 — 2.58
15 46.2 G.M.T.
6419.

Oct. 31, 1903.

Same Over

Below
158.1
10 50.8 188.4 30.3
335.1 37.1
372.2 67.4 − 2.59

155.3
191.4 36.4 − 2.66
339.8 27.5
364.3 63.9 − 2.72

Above Mean = − 2.72
69.6
96.6 27.0
245.3 37.1
282.4 64.1 − 2.71

− 2.79

66.6
10 56.4 99.0 32.4
10 53.6 2~~7~~50.6 27.2
15 53.9 Em. T. 277.8 59.6 − 2.887
6419

Var. so low that it is not advisable to take another group. Images rather too faint.

PA = 8.2 Var B
HA = 5:09
Dec = 34.1
11 05 ST = 1:54
Sp. wt. = δ − 0.5B + 0.5 C

Oct. 31, 1903.

11 20 Apparently no auroral light now in north or other portions of sky, as nearly as can be determined in moon-light.

November 3, 1903 (Tuesday)

6 55 C's watch used and is correct.

u Herculis W Obs.
Phot. T.
9.5" caf.

17 13 +33.2
22 23
5 10

Above
63.4 < var dis
7 18.8 93.2 29.8
236.9 42.6
279.5 > 2.4 − 2.43
60.1
97.1 37.0 − 2.51
243.3 30.7
274.0 67.7 − 2.59
Below mean = − 2.5~~4~~6
335.7
362.7 27.0
149.2 39.3
188.5 66.3 − 2.63

329.3
7 25.6 368.1 38.8 − 2.62
44.4 155.1 27.8
7 22.2 182.9 66.6 − 2.62
12 22.2 g.m.t.
6.22.

November 3, 1903.

II

Below

335.7
7 28.2 363.8 28.1
147.4 40.8
188.2 68.9 — 2.54

327.5
366.5 39.0 — 2.60
155.3 26.6
181.9 65.6 — 2.66

Above mean = — 2.53

242.6
274.6 32.0
59.0 39.2
98.2 71.2 — 2.47

238.6 — 2.46
7 35.0 279.0 40.4
63.2 62.8 31.7
12 36.6 G.m.T 94.5 72.1 — 2.44
6422.

November 3, 1903.

III

Above

242.9
7 56.4 244.7 31.8
57.5 41.6
99.1 73.4 — 2.40

238.0
279.9 41.9 — 2.41
62.4 30.9
93.3 72.8 — 2.42

Below Mean = — 2.50

154.2
183.6 29.4
328.8 38.6
367.4 68.0 — 2.57

150.2 — 2.58
8 04.6 188.0 37.8
8 00.5 333.2 29.5
13 005 G.M.T. 3~~4~~62.7 67.3 — 2.60
6422.

November 3, 1903

Below IV

154.9

8 06.8 182.9 28.0

329.2 38.6

367.8 66.6 — 2.62

149.6 — 2.62

188.0 38.4

334.0 28.2

362.2 666 — 2.62

Above Mean = — 2.56

63.3

93.6 30.3

238.1 39.5

277.6 69.8 — 2.51

59.4

8 12.8 97.5 38.1 — 2.50

13 9.8 gmt 241.5 32.8

6422. 274.3 70.9 — 2.48

Nov. 3, 1903

Above — V

62.3
8 17.8 — 92.9 — 30.6
236.8 — 42.8
279.6 — 73.4 — 2.40

57.4 — 2.42
9~~7~~6.7 — 39.3
242.7 — 32.6
275.3 — 71.9 — 2.44

Below — Mean = — 2.50

334.0
362.9 — 28.9
147.8 — 40.0
187.8 — 68.9 — 2.54

329.4
8 24.6 — 368.6 — ~~4~~39.2 — 2.58
13 21.2 — 154.4 — 27.8
6422. — 182.2 — 67.0 — 2.61

November 3, 1903

VII

Below

333.9

δ 26.4 364.5 30.6 ✓

149.5 38.8

188.3 69.4 ✓ — 2.53

327.8

368.8 41.0 ✓ — 2.52

153.7 28.8 ✓

182.5 69.8 ✓ — 2.51

Above Mean = — 2.47

241.8

274.5 32.7 ✓

57.1 41.2 ✓

98.3 73.9 ✓ — 2.38

237.2 — 2.42

δ 32.4 278.4 40.8 ✓

13 29.4 62.6 30.2 ✓

6422. ~~93.0~~ 71.0 ✓ — 2.47

92.8

November 3, 1903

VIII

Above

242.6
δ 44.0 275.5 32.9
56.2 40.7
96.9 73.6 − 2.39

−2.40
236.2
279.5 43.3
62.5 30.0
92.5 73.3 − 2.40

Below Mean = − 2.46

153.1
183.6 30.5
328.2 39.2
367.4 69.7 − 2.52

148.1
δ 50.6 188.4 40.3 − 2.52
13 47.3 333.7 29.2
6422. 362.9 69.5 − 2.52

Nov. 3, 1903.

VIII

Below
153.2
8 52.8 182.8 29.6
327.2 41.2
368.4 70.8 — 2.48

146.6 — 2.52
186.6 40.0
333.9 28.6
362.5 68.6 — 2.55

Above Mean = — 2.48
61.8
92.2 30.4
236.9 42.0
278.9 72.4 — 2.43

56.3 — 2.44
~~8~~ 9 0.0 97.2 40.9
13 56.4 242.7 30.9
6422. 273.6 71.8 — 2.45

Nov. 3, 1903

Above IX

61.8

9 6.0 92.6 31.3

238.5 39.7

278.2 71.0 — 2.47

57.1 — 2.45

97.2 40.1

242.0 32.1

274.1 72.2 — 2.43

Below Mean = —2.48

333.6

362.6 29.0

147.2 40.0

187.2 69.0 — 2.54

328.1

9 15.0 368.5 40.4 — 2.50

21.0 152.1 30.8

14 10.5 182.9 71.2 — 2.47

6422.

P.A. = 130.4 Var β

H.A. = +7:07 West

Dec. = +33.4 North

S.T. = 0:27

Sf. wh = { −1.5 B / −0.5 C

over

Nov. 3, 1903.

It is not advisable to take any more groups, the region being now rather low, (the object glass of telescope being nearly to top of lowest small shutter) and seeing a little unsteady. The greatest care was exercised throughout in making the settings and although the air was a little unsteady the observations are considered good.

AA
2000 36 — Cygni Wells
Comp. Star = +36° 3848 (8.1) Plot I

19 51 19 49 +36.1
25 31 25 24

5 40 above 5 35
229.6
10 38.5 285.8 ∠ comp ✶ dis
56.2
41.6 69.2
110.8 125.4 +1.08
221.4 +1.06
293.7 72.3
51.6 54.5
106.1 126.8 +1.05
Below Mean = +0.96
136.9
198.5 61.6
311.7 74.5
26.2 136.1 +0.85

Nov. 3, 1903.

+ 08.6

128.3

10 46.3 204.9 76.6

10 42.4 329.3 59.4 + 086

15 42.4

6422.654 18.7 136.0

Same Over

Below

137.4

1049.5 196.8 59.4

311.7 75.9

27.6 135.3 + 087

129.3

204.9 75.6 + 0.86

318.8 60.6

19.4 136.2 + 085

Above

48.9 Mean = + 0.92

104.2 55.3

220.4 75.7

296.1 131.0 + 0.98

+ 0.98

340.7

10 58.6 110.2 72.5

10 8 1

10 54.0 229.7 56.9

15 54.0 286.6 129.4 + 0.99

6422.662 Final Mean = + 0.94

P.A. = 353.0 Var B

H.A. = + 6:07 West

Dec. = + 37.1 North

11 08 S.T. = = 2:13

Sp. wh. = { − 1.5 B
− 0.5 C

LP

Nov. 4 1903 (Wednesday)

B. 236 Ball × 13

~~5 17 42.0~~ ~~5 18 00~~

~~18 40.0~~ ~~19 00~~

~~19~~ ~~20 .0~~

5 21 11.5 5 21 00

22 11.6 5 22 00

Ze Cephei Wells Phot.

24 50 + 81.1

20 30

4 20

~~7 40~~

B. 236 used

~~LOd~~

I

307.1 Lcomp+dis.

5 34 43 28.0 80.9

135.1 65.8

200.9 146.7 + 0.64

314.6 + 0.60

37 07 19.1 64.5

122.3 87.0 + 0.55

209.3 151.5

~~R8B~~ mean = + 0.68

217.7

40 00 298.5 80.8

46.5 61.0

107.5 141.8 + 0.74

Nov. 4, 1903

226.6
5 42 10 247.8 61.2 0.76″
154 00 37.7 78.7
5 38 30 116.4 139.9 +0.78
5 - 14
10 38 16

R d β II

218.2
5 44 15 296.8 78.6
47.6 61.4
109.0 140.0 +0.77
225.3
46 33 288.7 63.4 +0.73
37.2 80.8
118.0 144.2 +0.69
L.d.a. Mean = +0.68
125.7
49 43 208.7 83.0
335.5 65.7
21.2 148.7 +0.60

135.6 +0.62
5 52 00 ~~19~~200.3 64.7
32 31 305.8 81.8
5 48 08 27.6 146.5 +0.6x
5 -16
10 47 52

Nov. 4, 1903.

Focus slightly altered. III.

LfA

126.6
5 59 45 207.5 80.8
305.9 73.1
19.0 153.9 + 0.50

132.2 + ~~0.66~~ 0.58
6 01 25 200.8 68.6
308.7 76.8
25.5 145.4 + 0.67

RfB Mean = + 0.66

39.5
6 04 55 116.1 76.6
224.1 65.0
289.1 141.6 + 0.74

46.4 + 0.74
6 07 10 108.6 62.2
13 15 217.4 79.7
6 03 19 297.1 141.9 + 0.74
5 - 19
11 03 00

Nov. 4 1903

IV

ROB

39.1
6 9 33 114.7 75.6
224.4 64.2
288.6 139.8 + 0.78

47.6 + 0.75
11 38 109.7 62.1
218.0 80.4
298.4 142.5 + 0.72

LBA. Mean = + 0.70

305.8
14 17 28.7 82.9
134.1 64.2
198.3 147.1 + 0.63

315.1 + 0.64
6 16 23 20.5 65.4
11 51 125.9 80.1
6 12 58 206.~~4~~0 145.5 + 0.6~~7~~6
5 - 20
11 12 38 P.a = 16.0 Vaup
6 4 2 ~~6~~ 3 HA = - 3:27 East
Dec = + 80.8
S.T. = 21:27
Spirl = { 1.5 B
2.5 C

Nov. 4, 1903

Bond 236 Ball 103
6 40 24.5 6 40 00
41 24.7 41 0.0

6 42 CS watch = 7 sec slow

α Herculis Wells

17 12 +33.2 I Plat T
22 17 9"5 cap
3 05

Above

240.4 <Var. dis.
7 15.4 273.9 33.5
56.5 42.3
98.8 75.8 − 2.32
234.7
278.5 43.8 − 2.30
60.6 33.1
98.7 76.9 − 2.29
Mean = − 2.31

Below

150.1
185.4 35.3
326.4 42.6
369.0 77.9 − 226

145.6 − 2.32
7 22.0 188.0 42.4
37.4 31.9
7 18.7 332.0 74.3 − 2.37
5 +.1
12 18.8 363.9

Nov. 4, 1903.

Same Obs.

II

Below

149.7

7 23.8 184.9 35.2

325.7 42.3

368.0 77.5 — 2.32

146.0 — 2.35

186.7 40.7

330.4 33.2

363.6 73.9 — 2.38

Above Mean = — 2.30

60.7

94.6 33.9

235.1 45.6

280.7 79.5 — 2.21

55.9 — 2.26

7 28.4 96.6 40.7

12.2 239.2 35.2

7 26.1 274.4 75.9 — 2.32

5 +.1

12 26.2 G.M.T.

P.A. = 310.4 Vn B

H.A. = +5.25 West

Dec. = +33.3 North

S.T. = 22.39

Sp. Wh. = { −1.5 B
{ −0.5 C

Nov. 4, 1903

u Herculis. 2 obs.

III

Above

23.

~~7 55~~ Too much cloud of irregular density to proceed at present. Images varying relatively and somewhat dim. Comp ☆ wholly invisible in finder and variable considerably fainter than in previous graphs.

Above

III

238.8

8 15.0 276.9 38.1

55.0 43.3

98.3 81.4 − 2.15

235.2

279.8 44.6 − 2.16

58.2 36.6

94.8 81.2 − 2.16

Below Mean = − 2.20

149.2

185.9 36.7

325.5 43.4

368.9 80.1 − 2.19

145.7 2.24

8 25.4 189.0 43.3

8 20.2 330.5 34.0

13 20.3 364.5 77.3 − 2.28

6423.

Nov. 4, 1903

IV

Below

149.8
β 27.2 184.7 34.9
325.0 44.0
369.0 78.9 − 2.23

145.1 − 2.20
1902 45.1
329.5 35.7
365.2 80.8 − 2.17

Above Mean = −2.15

59.6
95.3 35.7
232.5 47.3
279.8 83.0 − 2.11

55.3 − 2.1~~6~~0
β 33.4 98.9 43.6
2362 39.6
β 30.3 275.8 83.2 − 2.10
13 30.4
6423.

Troubled more or less throughout the last two groups by light cloud. ~~The clouds~~ Cloud was more abundant in the first one of the last two groups, than in the last one. In the last group for most of the time, the light was of more uniform density and somewhat thinner. Images also a little steadier as regards

Nov. 4, 1903

relative variation in brightness, while these last two groups are not considered quite as solid as the first two, taken tonight, yet with the care exercised they are thought to be pretty good. The last taken above was considered by the observer a little better than the preceding one.

8 40

Very shortly after last group comp. star entirely disappeared owing to rather low altitude, some cloud, and bright moonlight. Impossible to do anything further tonight on this star.

8 55

P.A. = 310.2 Var B
H.A. = 6:47
Dec. = +33.4
S.T. = 0:00
Sp.wh. = $\left\{\begin{matrix} -1.5 & B \\ -0.5 & C \end{matrix}\right.$

The P.A. is correct; and the ~~Sp.wh.~~ setting of the Sprocket was very close although from the fact that the clouds became more abundant and the comp.* disappeared in them ~~they were~~ the images were not exactly superimposed.

Nov. 4, 1903.

U Herculis 20 obs.

V

Region rather low but sky some clearer

Above

58.4

9 11.4 93.8 35.4

233.6 47.0

280.6 82.4 — 2.12

53.5

99.3 45.8 —2.14

239.1 35.6

274.7 81.4 — 2.15

Below Mean = — 2.15

329.0

365.9 36.9

144.6 45.1

189.7 82.0 — 2.13

323.3

9 20.4 369.1 45.8 — 2.16

31.8 149.5 34.5

9 15.9 ~~183.6~~ 80.3 — 2.19

14 16.0

6423. 184.0

This last group considered good but region now rather too low to make any more settings

P.A. = 130.v for B

H.A. = + 7:18

Dec. = + 33.4

S.T. = 0:33

Spwh = { −1.5 B, −0.5 C

over.

Nov. 4, 1903.

~~9 30~~ Sky pretty clear in last group.

Clouds now much more abundant in West and coming in somewhat heavy masses,

9 55 The character of the clouds is not that of a heavy massive kind, but rather of a light character

L. P.

Nov. 7, 1903 (Saturday)

~~7 08 C's watch = 2^s fast~~

C's watch out of commission tonight.

u Herculis WCB

17 13 +33.2 Phot T.

23 23 9.5" cap.

6 10

Bond 236 Bell 103

8 23 58.2 8 24 0.0

24 58.5 25 8.0

Bond 236 used tonight

Above Lvardis.

2424

A 31.0 ~~271.1~~ ~~28.7~~

~~68.6~~ ~~.0~~

~~91.6~~

2837.3

8 36.0 278.6 41.3

62.5 27.3

89.8 68.6 — 2.55

~~Below~~ ~~Mean~~ — 2.54

241.4 30.2

271.6 39.2 — 2.53

57.2 69.4

96.4 clouds (over)

Nov. 7, 1903

Below continued

147.4
185.8 38.4
333.1 28.4
361.5 66.8 − 2.61

154.2 − 2.57
δ 46.4 182.5 28.3
13 41.2 326.0 40.3
73 −0 366.3 68.6 − 2.55
13 41.2

Mean = − 2.56

Same Area
Below stars gone,
147.0 clouds stars dim
δ 56.5 186.4 39.4
334.7 26.9
361.6 66.3 − 2.63
151.9
181.9 30.0 − 2.63
328.3 36.4
364.7 66.4 − 2.63

Above Mean = − 2.60
56.6
94.6 38.0
241.4 30.0
271.4 68.0 − 2.57
62.1
9 06.8 91.2 29.1 − 2.56
9 01.6 237.2 39.2
14⁵ −1 276.4 68.3 − 2.56
14 1.5

Nov. 7, 1903

PA = 310.2 Var to B
Ha = + 7:16 West
Dec = 33.4 North
S.T. = 0:31

S.phot. { -1.5 B
-0.5 C

Observations somewhat difficult on account of some streaks and patches of light cloud in this region, and also from the fact that the region was rather low, and the seeing somewhat blurry, but observer waited for images to steady and to cease any alternation in brightness so that observations are considered pretty good.

Doubt. Var + 28.707

W Obs.
Phot

4 44 +27.7
1 14
3 30
8 30

over

Nov. 7, 1903

+ 28°, 70~~4~~7 wolb.

Above

221.8 < comp * dis

10 84 292.2 70.4

37.2 69.0

106.2 139.4 + 0.79

225.3 + 080

297.9 72.6

42.9 65.2

108.1 137.8 + 0.82

Below Mean = + 0.66

132.5

201.2 68.4

304.6 83.7

28.3 152.4 + 0.53

123.4 + 0.53

10 15.6 208.2 84.8

24.0 313.4 67.3

10 12.0 20.7 152.1 + 0.53

15 - 3

15 11.7

Nov. 7, 1903

Same Over

Below

131.6

10 17.4 ~~19~~ 200.6 69.0

303.5 84.9

28.4 153.9 + 0.50

124.1 + 0.52

210.1 86.0

315.1 66.1

21.2 152.1 + 0.53

Above Mean = + 0.61

45.0

107.6 62.6

216.0 81.0

297.0 143.6 + 0.70

+ 0.70

38.0

10 21.0 113.6 75.6

x1.4 222.4 67.5

10 20.7 289.9 143.1 + 0.71

5 - .3

15 20.4

P.A. = 36.0 Vert B

HA. = - 2:58 ~~East~~

Dec. = + 27.6

S.T. = 1:47

Spek = { 0.5 B
{ 1.5 C

⊗ Nov. 7, 1903

o Ceti wreb
2 12 −3.6 Phot w
1 52
0 20
11 40

Left
< vardis
173.2
10 42.8 257.0 83.8
345.0 101.4
86.4 185.2 +0.10
174.8
165.2
264.8 99.6 +0.10
351.3 86.0
77.3 185.6 +0.11
174.4

Right.
Mean = +0.20
9.19
9.39
79.3
171.6 92.3
252.7 104.5
357.2 196.8
163.2 +0.32

70.2
10 51.5 178.0 107.8 +0.30
94.3 262.0 86.6
10 47.2 348.6 194.4
15 46.8 G.M.T. 165.6 +0.27

Nov. 7, 1903

Same Over

Right
79.8
10 53.7 170.4 90.6
251.8 107.4
359.2 198.0
162.0 +0.34

71.5
177.9 106.4 +0.32
260.0 89.8
349.8 196.2
163.8 +0.30

Mean = +0.23
9.19
9.42

Left
352.6
76.9 84.3
162.5 103.3
265.8 187.6 +0.15
172.4

344.3 +0.14
11 0.9 86.0 101.7
11 4.6 171.8 85.5
10 57.3 257.3 187.2 +0.14
15 56.9 G.M.T. 172.8

PA = 240.0 V on B
HA = +0:11 West
Dec = −3:08
S.T. = 2:24

The plest. goes a ~~little~~ hard into the adapter so that in twisting ~~the~~ plest. to get it into said adapter, the adapter turned some in ~~the~~ socket. Dan Last night of obs. of this star

+ will have it soldered so it will not turn again

Nov. 7, 1903

B 236	Ball 03
11 12 250	11 12 05

L. P.

Nov. 9, 1903 (Monday)

B 236 Ball 103
5 01 00 5 01 00
5 02 0.3 5 02 00.

Cs watch = 5^{2} slow at 5:03

U Cephei 20 Obs.
24 50 +81.1 Phot T.
20 30
4 20
~~7 40~~ Bond 236 used

Ltd.
123.2 <comp. star dis.
5 16 48 206.3 83.1
314.5 62.9
17.4 146.0 + 0.65
132.0
18 49 199.6 67.6 +0.61
304.8 82.9
27.7 130.5 + 0.57
R. & B. mean + 0.70
8.41
37.4 9.11
22 21 113.0 75.6
225.1 62.1
287.2 137.7 +0.82
46.4
5 24 34 106.8 60.4 + 0.78
2 32 215.2 80.6
5 20 38
5 – 3 295.8 141.0 + 0.75
10 20 35 GMT.

Nov. 9, 1903

II

ROB

	36.7		
5 28 15	114.6	77.9	
	226.3	60.0	
	286.3	137.9	+0.82
	45.7		+0.80
30 34	105.6	59.9	
	215.9	79.2	
	295.1	139.1	+0.79

LOA. Mean = +0.72

	305.0		8.41
33 06	24.1	82.1	9.13
	134.1	64.1	
	~~2~~198.2	146.2	
			+0.65
	314.0		
5 3~~2~~5 05	19.6	65.6	+0.64
7 00	124.4	82.3	
5 31 45	206.~~8~~7	147.9	+0.62
5 – 5			
10 31 40×2m			

R.A. = 15.7 Var B.
~~H.A.~~ = 3.48 East
S.T. = 21.07
Dec. = +~~80.8~~ ~~North~~.

Sp.ech {= 0.5 a
= 1.5 B
= 2.1 C

1903phae.proj..56sW

Nov. 9, 1903.

u Herculis 20 Obs.
17 12 +33.2 Phot I.
21 52 9″5 cap.
4 40
Above ~~B~~ond 236 used.
240.6 < var-dis
6 32.0 270.4 29.8″
59.7 32.4″
92.1 62.2″ − 2.78″
− 2.69″
236.7
274.6 37.9″
61.3 29.3″
90.6 67.2″ − 2.60″
Below Mean = − 2.72″
1524
179.2 26.8″
326.6 37.2″
363.8 64.0″ − 2.71″

148.9
6 40.5 184.4 35.5″ − 2.76″
6 36.2 332.4 25.9″
5 − .2 358.3 61.4 − 281″
11 36.0 GMT.

Nov. 9, 1903

Same Over

II

Below
153.1
6 43.5 180.1 27.0 ✓
327.4 35.7 ✓
363.1 62.7 — 2.76 ✓

150.9 −2.81 ✓
184.3 33.4 ✓
332.2 26.7 ✓
358.9 60.1 — 2.86 ✓

Above Mean = −2.75 ✓
61.8
89.1 27.3 ✓
237.5 36.3 ✓
273.8 63.6 — 2.73 ✓

57.3 −2.69 ✓
6 51.6 93.2 35.9 ✓
95.1 241.0 29.8
6 47.6 270.8 65.7 −2.65 ✓
5 −.3
11 47.3

Nov. 9, 1903

III

Above
241.8
7 12.4 272.0
57.0
92.2

30.2
35.2
65.4 — 2.66

238.5
275.3
60.0
88.5

−2.66
36.8
28.5
65.3 — 2.67
Mean = −2.69

Below
152.4
179.9
327.2
363.8

27.5
36.6
64.1 — 2.71

147.8
184.0
332.1
359.8

7 20.2
7 16.3
5 ~~12~~ −4
12 15.9

36.2 — 2.72
27.7
63.9 — 2.72

Nov. 9, 1903

IV

~~Above~~ Below

151.8

7 22.4 179.8 28.0

327.4 35.6

363.0 63.6 −2.73

149.2

184.3 35.1 −2.76

332.4 27.0

~~358.5~~ 62.1 −2.78

359.4

~~Below~~ Above Mean = −2.72

61.1

90.5 29.4

239.1 36.0

275.1 65.4 −2.66

57.2 −2.69

7 29.1 91.1 33.9

51.5 241.6 30.0

7_5 25.8 −.4 271.6 63.9 −2.72

12 25.4

Nov. 9, 1903

V

~~Below~~
Above
59.8
746.0 90.6 30.8
237.4 37.4
274.8 68.2 — 2.57

56.6 —2.61
94.1 37.5
243.7 28.4
271.1 65.9 — 2.65

Below Mean = − 2.68
332.2
359.3 27.1
147.6 35.3
182.9 62.4 − 2.77

327.2 − 2.76
755.6 364.3 37.1
101.6 153.1 26.2
750.8 179.3 63.3 — 2.74
5 — .4
12 50.4

Nov. 9, 1903.

VI

Below

331.8

7 58.5 359.8 28.0 ✓

147.0 37.0 ✓

184.0 65.0 — 2.68 ✓

— 2.72 ✓

327.3

363.7 36.4 ✓

153.5 26.4 ✓

179.9 62.8 — 2.76 ✓

Above Mean = — 2.72 ✓

242.1

271.8 29.7 ✓

58.0 33.3 ✓

91.3 63.0 — 2.75 ✓

237.4

8 06.0 275.8 38.4 — 2.72 ✓

124.5 61.7 26.0

A 02.2 87.7 64.4 — 2.70 ✓

5 — .5

13 1.7

P.A. 310.5 Var B

H.A. 6:18 West

Dec. +33.4 North

S.T. = 23:37

Spwh {= −2.5 B.
= −1.5 C.

The chain carrying achromatic prisms of photometer is probably still a little too slack, although the screws were set up a little the other night as a result of this slight

1903phae.proj..565W

Nov. 19, 1903 –

slackness ~~the~~ two or three links slipped on Sp Wh. when running prisms up the tracks, which accounts for the slight difference in reading of Sp Wh tonight relatively to that on the previous night. Will set the screws up a little more.

γ Aqui Wabs. Plot. T

19 4 V – +32.6
24 1 V
4 30 C's watch used

~~Lf~~ Above
241.7 (vardis)
8 53.0 270.4 28.7
63.4 22.8
86.2 51.5 – 3.21
243.8
267.6 23.8 – 3.18
61.4 29.2
90.6 53.0 – 3.14
Rf Below Mean = – 3.04
149.6
181.5 31.9
333.8 26.4
360.2 58.3 – 2.93
151.7
9 02.0 178.2 26.5 – 2.91
113.0
8 57.5 331.2 32.6
5 4.1 363.8 59.1 – 2.89
13 57.6

Nov. 9, 1903

Same Over

Rt Below
147.8
9 4.0 181.8 34.0
333.6 27.0
360.6 61.0 — 2.82 ✓

151.3 — 2.83 ✓
178.9 27.6
331.4 32.9
364.3 60.5 — 2.84 ✓

Lf above
Mean = — ~~3.04~~ 2.99 ✓
~~8.~~
~~5.87~~
61.6
89.3 27.7
243.8 24.8
268.6 52.5 — 3.16 ✓

9 10.6 → 63.8 — 3.15 ✓
87.6 23.8
9 7.3 242.0 29.1
5 +.1 271.1 52.9 — 3.16 ✓
14 7.4 G.M.T.
6428.

~~PA = Var B~~
~~HA =~~
~~Dec =~~
~~St =~~
~~Sp/wh = 9~~

Nov 9, 1903

III

LOA
61.7
9 18.7 88.5 26.8"
244.9 24.5
269.3 51.3 — 3.22"

62.3
88.3 26.0" — 3.12"
241.2 30.0
271.2 56.0" — 3.02"

ROB Mean = — 2.96"
329.1
360.7 31.6
151.8 29.2
181.0 60.8 — 2.83"

332.0
9 25.0 360.7 28.7" — 2.80"
43.7 148.8 33.8
9 21.8 182.6 62.5 — 2.77
5 +1 Final m = 3.00
14 21.9 P.a. 206.0 Ver B. 8.11
6428. Ha. 5.11 West 5.11
Dec +32.8 North
St. T. = 0:57
Sp.h. { −0.5 B
+0.5 C
(over)

Nov. 9, 1903.

~~As~~ the seeing tonight is a little poor, although the images are not very blurry yet it is a little difficult to get and retain a sharp focus. For this reason a third group was taken on χ Cygni. Focus bettered very slightly before taking third group.

046068 — Camelop. Walls
9.5 cap
Phot T.

4 40 +68.8
1 8

3 32
8 28 C's watch used

Left, ~~Above~~

∠ comp & dis

125.0
9 46.5 205.8

80.8
75.5
156.3 + 0.45

308.7
24.2
125.6 78.8 + 0.44
204.4 79.2
305.6 158.0 + 0.42
24.8

~~Below~~ Right

Mean = +0.54

216.6
294.0
43.8 77.4
110.6 66.8
144.2 + 0.69

221.2 + 0.63
52.5 290.8 69.6
9 49.5 35.7 80.9
14 49.6 116.6 150.5 + 0.57

Nov. 9, 1903.

~~Below~~ Same Over
Right

214.1
9 54.4 296.4 82.3″
45.3 65.1″
110.4 147.4″ + 0.63″

222.6 + 0.64″
290.4 67.8″
38.1 77.7″
115.8 145.5″ + 0.66″

~~Left~~ Mean = + 0.56″
120.2
208.0 87.8″
310.7
18.3 67.7″
155.5″ + 0.47″

130.6 + 0.48″
10 0.4 201.7 71.1″
9 57.4 305.3 83.5″
28.8 154.6″ + 0.49″
14 57.5 G.M.T.

6428. P.a = 79° Var B
Ha − 3.12 East
Dec. + 67.2 North
S.T. = 1:31
Speck { 0.5 B
1.5 C

Nov. 9, 1903

B.236			Ball 03	
10	10	56.5	10	10 00
	11	56.7		11 00

L. P. P.

Nov. 10, 1903 (Tuesday)

B 236 Ball 10.3
8 00 29.5 8 01 00
01 29.7 02 00

C's watch = 34ˢ slow at 8:03

U Cephei W Obs.
Phot T

24 50 +8/1.1
23 35
1 15
Std. 10 45

B. 236 used

51.6
8 14 58 99.8 < var. dis
233.8
276.0
560
17 38 97.3
228.6
28~~4~~3.6
RoB
315.1
20 ~~4~~53 ~~3~~13.8
142.3
189.4
321.1
8 23 08 369.8
76 31 134.7 6429.
8 19 8 196.2
5 +35 GMT
13 19 43

48.2
42.2
90.4 − 1.90

4~~8~~1.3 − 1.82
55.0
96.3 − 1.75
Mean = − 1.64
8.41
~~10.05~~
6.77

58.7
47.1
105.8 − 1.52

48.7 − 1.46
61.5
110.2 − 1.41

Nov. 10, 1903

II

R ∅ B.

314.8

8 25 31 376.4 61.6

143.0 46.7

189.7 108.3 − 1.46

− 1.44

321.7

27 16 369.8 48.1

134.6 61.5

196.1 109.6 − 1.43

L ∅ A. Mean = − 1.60

226.2

30 12 284.3 58.1

54.1 41.5

95.6 99.6 − 1.67

− 1.76

23~~8~~7.7

8 32 30 277.7 40.0

115 39 48.4 52.8

8 28 55 101.2 92.8 − 1.84

5 + 38

~~13 28 17~~

13 29 33

6429.

~~PA = 15.0 Nr B~~

~~HA = −0.46 East~~

~~Dec = +80.8 North.~~

δT = 0.11

Nov. 10, 1903.

III

B&A.

2282
8 4221 — 244.1 — 55.9
53.9 — 42.3
96.2 — 98.2 — 1.70

233.8
45 45 — 279.9 — 46.1 — 1.69
48.5 — 53.1
101.6 — 99.2 — 1.68

R&B. — Mean = −1.60

135.7/6
4854 — 195.6 — 59.9
321.8 — 47.7
369.5 — 107.6 — 1.47

142.5 — 1.50
8 51 26 — 189.7 — 47.2
28 26 — 316.6 — 58.0
8 47 06 — 374.6 — 105.2 — 1.53
5 +43 — Final Mean = −1.61
13 47 49 — P.A. 195.2 Ver B — 8.41
6429. — H.A. 0:28 East — 6.80
Dec +8 0.8 North
S.T. 0:28
Sp.Wh. { 0.5 B
1.5 C

(over)

Nov. 10, 1903

Troubled somewhat by light cloud and haze during observations. ~~The~~ During the progress of the observations the sky was progressively growing rather freer from haze. Sky rather the most hazy in first group and the least so in the last group. Images varying a little in brightness at times, ~~but~~ ~~observer~~ and owing to falling barometer images not perfectly round part of the time. But observer waited for images to remain steady in brightness as much as possible and observations considered pretty good.

β.236	Ball & B
9 03 47.2	9 04 00
04 47.5	05 00

Doubtful 51°.762

3 36 +57.2
1 06
2 30
9 30

Wells
Phot T

C's watch used

9 35 Clouds.

Nov. 10, 1903

+ 51°.762

Above

31.8 <comp ★ dis

co 6.4 118.7 86.9

203.9 103.4

307.3 190.3 − 0.20

169.7

27.2

124.2 97.0 − 0.16

210.9 89.8

300.7 186.8 − 0.13

173.2

Below

Mean = − 0.18

301.0

31.3 90.3

112.8 101.8

214.6 192.1

167.9 − 0.23

293.0

10 13.5 37.0 104.0 − 0.20

19.9 122.4 84.6

10 10.0 207.0 188.6

5 +.6 171.4 − 0.16

15 10.6 G.M.T.

Nov. 10, 1903

Same Over

Below
3029
10 16.0 31.1 89.1
113.9 101.8
215.7 190.9 − 0.20
1691

293.0 −0.19
36.8 103.8
121.0 85.8
206.8 189.6 − 0.18
Above 170.4 Mean = −0.16
212.3
300.0 87.7
25.6 100.4
126.0 188.1 − 0.15
171.9

2046 − 0.14
10 24.4 307.9 103.3
33.0 83.9
10 20.2 116.9 187.2 −0.14
5 +.6 172.8
15 20.8 G.M.T. Mean = −0.17
6429.

P.a = 355.1 Ver. B.
H.a. = −1.33 East
Dec = +50.4 North
S.T. = 2:02
Sp wh { 0.5 B.
{ 1.5 C

L. P.

Nov. 11 1903 (Wednesday)

7 04 C's watch = 29 fast.

U Cephei words

24 50 +81.1 Plot T.
22 45
2 05
9 55

B 236 Ball 103
7 15 22.5 7 16 00
16 23.0 17 00

Bond 236 used on U Cephei

~~L.O.A.~~

I

226.1
7 18 58 282.1 2 vasdiö 56.1
55.0 40.4
95.4 96.5 −1.74
233.2
21 33 276.7 −1.72
47.1 43.5
102.2 55.1
~~R.O.B.~~ 98.6 −1.69 mean = −1.59
134.3
25 34 196.3 62.0
322.7 46.0
368.7 108.0 −1.46
143.4
7 27 50 188.8 45.4 −1.46
7 15 55 313.7 62.4
7 23 59 376.1 107.8 −1.47
5 + 35
12 24 34
6430.

Nov. 11, 1903

II

R. & B.
134.3
7 30.00 196.7 62.4
321.6 46.1
367.7 108.5 − 1.45

141.2
32 05 188.6 47.4 − 1.46
314.8 60.5
375.3 107.9 − 1.47

L. & A. Mean = − 1.59
46.9
35 05 102.8 55.9
234.1 41.8
275.9 97.7 − 1.71

55.0 − 1.72
7 34 28 95.4 40.4
14 38
227.4 56.6
7 33 40 ~~288.5~~ 97.0 − 1.73
5 + 33 284.0
12 34 13 r. M.T.
6430

P.A. = 158 Var B
H.A. = − 1 : 37 East
Dec. = + 80.4, North
S.T. = 23 . 18

0.5 B
1.0 C

Nov. 11, 1903.

The wind N.E. and a little strong. The images are not perfectly round, but nearly so, varying however, as regards roundness, a little from time to time. Much care exercised and Observations considered good.

u Herculis W.Obs.
17 12 +33.2 Phot. T.
23 52 9.5 cap
6 40 Growing cloudy from east
Bond 236 used.

Above
60.8 < var dis.
p 22.5 89.4 28.6
234.4 37.6
272.0 66.2 — 2.64
56.8
91.2 Reject 34.4 — 2.74
240.6 26.5
267.1 60.9 — 2.83
Below
331.8
361.4 Clouds 29.6

P.A. = 131.0 Var B
H.A. = +6.5 E
Dec. = 33.4
S.T. = 0.13
S.p.wl. = {−2.5 B, −1.5 C}

Clouds came rather fast during observations so that it was impossible to finish group. Partial group rejected although it is possible allowing for difference between sides some hint may be obtained as regards

Nov. 11. 1903

the brightness of the variable :-

8 45 Thickly cloudy everywhere, no stars visible, no chance for further work

X

B. 236
8 47 43,7

B all 103
8 48 00

L.P.P.

Nov. 12, 1903 (Thursday)

Bond 236 Ball 103
7 04 ~~42.8~~ 43.3 7 05 0.0
05 43.5 06 0.0

c's watch correct at 7:03

U Cephei Wollbz
24 50 +81.1 Phot T.
22 50
2 00 Bond 236 used
L.D.A. 10 00
47.0 ∠ Var. dis.
7 18 20 100.5 53.5 I
233.3 42.3
275.6 95.8 − 1.76
54.3
2050 94.6 40.3 − 1.76
226.4 55.5
282.2 95.8 − 1.76 − 1.64
R.J.B. mean = ~~1.59~~
312.0 8.41
6.77
24 25 17.5 65.5
142.6 42.4
185.0 107.9 — 1.47

324.2 − 1.52
7 26 35 368.5 44.3 6431.5159
10 10 135.9 59.1
7 22 32
5 +13 195.0 103.4 − 1.57
12 22 45 G.M.T.

Nov. 12, 1903

II

R.&B.

314.9

7 2~~9~~8 40 16.9   62.0 ✓

143.1   42.9 ✓

186.0   104.9 ✓   −1.54 ✓

323.3   −1.56 ✓

30 40 368.3

135.4   45.0 ✓

194.1   58.7 ✓

103.7 ✓ − 1.57 ✓

L.&A.   Mean = −1.64 ✓

225.4

34 14 285.2   59.8 ✓

54.4   39.3 ✓

93.7   99.1 ✓ −1.68 ✓

234.0   −1.71 ✓

7 36 36 276.3   42.3 ✓

10 10 47.1   54.3 ✓

7 32 32 101.4   96.6 ✓ −1.74 ✓

5 +10

12 32 42 G.M.T.

6431.5227

1903phae.proj..56SW

Nov. 12, 1903

III

LOA

225.7
7 42 54 283.9 58.2
54.1 40.1
94.2 98.3 − 1.70

235.0 42.2 − 1.74
4517 277.6 53.1
47.5 95.3 − 1.77
~~9~~ 100.6

ROB Mean = − 1.60

132.7
4726 195.5 62.8
323.0 45.3
368.3 108.1 − 1.46

142.6
7 50 37 187.0 44.4 − 1.45
26 14 312.8 64.5
7 46 34 377.3 108.9 − 1.44
5 + 9
12 46 43 PA. 195.0 Var B
6431, 5324 H.A. − 1:22 East
Dec. + 80.4 North
S.T. 23:33
Sp. Wh. { 0.5 B
1.5 C

Seeing a little blurry ~~the~~ Sharp focus cannot be quite attained on images and held steadily. Images nearly round but not exactly so and varying a little with movements of air currents. Observations considered good.

Nov. 12, 1903.

u Herculis Wells
17 12 +33.2   Phot T
24 15   9.5 cap
7 03   B 236 used

Above
240.3
8 43 00   269.3   29.0′
56.6   34.8′
91.4   63.8 − 2.72′

234.5   − 2.68′
273.3   38.8′
61.1   27.5′
88.6   66.3′ − 2.63′
Below   Mean = − 2.65′
151.5
179.9   28.4′
325.8   39.5′
365.3   67.9′ − 2.58′

146.4
8 50 08   − 2.62′
8 46.5   185.1   38.7′
5 − 0   332.3   26.8′
13 46.5   359.1   65.5′ − 2.66

Nov. 12, 1903.

Below
150.8
8 52 10 177.2 26.4
325.9 37.2
363.1 63.6 − 2.73

146.0
182.4 36.7 − 2.73
332.8 27.0
359.8 63.7 − 2.72

above Mean = − 2.68
61.1
88.9 27.8
235.6 38.0
243.6 65.8 − 2.65

54.2 − 2.64
9 01 10 92.6 38.4
113 20 241.4 28.3
8 56 40 269.7 66.7 − 2.62
8 56.7
5 − .1
13 56.6

P.a. = 310.0 ver B
H.a. = + 7:30 West
Dec. = + 33.4 North
S.T. = 0:45
Spark = { 2.5 B, −1.5 C

Nov. 12, 1903

U Z Cygni Wells
Phot I!

2 1 5 7 +44.0
2 5 3 0
3 3 3 B. 236 used.

Above
134.1 <comp ★ dis
10 07 28 196.3 62.2
321.3 46.4
367.7 108.6 +1.45
140.6
14 20 186.6 46.0 +1.40
311.1 66.5
377.6 112.5 +1.36
Below Mean = +1.43
45.7
15 38 108.2 62.5
232.0 44.6
276.6 107.1 +1.49

53.1
10 19 24 97.1 44.0 +1.46
13 50 221.4 64.9
10 13 22 286.3 108.9 +1.44
5 -19
15 13 03 G.M.T.

6431.6340 6431.6340
6432.3680 6401.0640
-0.7340 30.5700

Nov. 12, 1903

Same Over

Below
42.8
10 22 45 105.6 62.8
229.8 48.3
278.1 111.1 + 1.39

52.9 + 1.40
26 35 98.0 47.1
225.3 63.2
288.5 110.3 + 1.41
Above Mean = + 1.37
312.0
31 48 16.6 64.6
138.9 49.1
188.0 113.7 + 1.33

318.8 + 1.34
10 37 35 367.9 49.1
38 43 131.8 63.8
10 29 41 195.6 112.9 + 1.35
5 -22 Final Mean = + 1.40
15 29 19 G.M.T.
6431.6453 P.A. = 331.5 V on B
6432.3680 H.A. = 3.33 West
-0.7227 Dec. = 44.2 North
6431.6453 S.T. = 2:29
6401.0640 Sp. Wh. = 0.5 B
30.5813 = 1.5 C

Nov. 12, 1903

B. 236	Ball 103
11 05 28.1	11 05 00

L. P. P.

Nov. 13, 1903. (Friday).

9 20 all cloudy

Nov. 14, 1903 (Saturday)

u Herculis W Obs.
Phot T
9.5 caf

17 12 +33.2
22 59
0 47 C's watch used.

C's watch = 20s slow at 7:07
Above < var dia

240.7
7 19.2 269.4 28.7
54.6 36.4
91.0 65.1 - 2.67
236.3
274.6 38.3 - 2.69
60.9 25.9
86.8 64.2 - 2.71
Mean = - 2.74
Below
195.4
220.9 25.5
8.8 36.8
45.6 62.3 - 2.77

- 2.78
191.9
7 27.2 226.8 34.9
46.4 14.1 26.7
7 23.2 40.8 61.6 - 2.80
5
~~+2~~ +.4
12 23.6 G.M.T.
6433.

Nov. 14, 1903

Same Over

II

Below
195.1
7 29.4 225.9 25.8
5.9 41.5
47.4 67.3 −2.60

~~191.5~~ −2.62
14.1
41.9 27.8
188.0 37.9
225.9 65.7 −2.65
Above Mean = −2.67
280.3
314.8 34.5
102.8 27.3
130.1 61.8 −2.79
283.6
7 38.8 315.3 −2.72
6 8.2 98.1 29.7
36.0
7 34.1 134.1 65.7 −2.65
5 +.4
12 6.45 GM.T.
6433.

Nov. 14, 1903

Above

III

279.9

7 45.5 316.9 37.0

103.5 26.7

130.2 63.7 −273

285.0 −270

314.0 29.0

98.8 35.8

134.6 64.8 −268

Below

Mean = −2.68

190.0

228.0 38.0

13.7 27.4

41.1 65.4 −2.66

195.0 −2.65

7 52.4 221.3 26.3

97.9 6.9 39.7

7 49.0 46.6 66.0 −2.64

5 +.4

12 49.4 G.M.T.

6433.

Nov. 14 1903.

IV

Below

	190.5		
8 33.0	224.9	37.4	
	15.9	26.3	
	42.2	63.7	-2.73
	192.3		-2.71
	221.4	29.1	
	10.8	35.6	
	46.4	64.7	-2.69

Mean = -2.71

Above

	99.3		
	134.6	35.3	
	282.2	29.6	
	311.8	64.9	-2.68
	103.5		-2.71
8 39.7	131.7	28.2	
8 36.4	278.7	34.9	
13 36.8 M.M.T.	313.6	63.1	-2.74
6433.			

Nov. 14 1903

~~VI~~

V

Above

98.2

8 41.8 135.8 37.6

283.5 27.7

311.2 65.3 − 2.67

101.8 − 2.64

121.1 29.3

~~28~~ 279.4 37.6

317.0 66.9 − 2.61

Mean = − 2.66

Below

10.1

45.3 35.2

192.2 28.1

220.3 63.3 − 2.74

14.3 − 2.69

8 47.4 44.4 30.1

8 44.6 189.5 35.9

13 45.0 G.M.T. 225.4 66.0 − 2.64

6433.

P.A. = 131.0 VEAB.

H.A. = 7:24 West.

Dec = +33.4 North.

S.T. = 0:39

Sp.wh = { − 3v − a

− 2v − B

− 1.8 c

Nov. 14, 1903.

044068 — Camelop. [illegible]
Plot I.
9N cap

04 40 +68.0
1 04

3 36
8 24

Left
164.8 ∠ Comp. & dis
9 34.8 249.6 84.8
353.4 65.8
59.2 150.6 + 0.56

173.7
242.9 69.2 + 0.54
344.8 83.2
68.0 152.4 + 0.53
Mean = +0.59

Right
75.6
158.8 83.2
264.7 64.9
329.6 148.1 + 0.61

~~8~~88.8 + 0.6x
9 41.8 152.1 63.3
76.6 255.8 82.0
9 38.3 337.8 145.3 + 0.67
14 38.7 G.M.T.

Nov. 14, 1903.

Same Over

Right $\overline{II}$

79.7
9 43.5 159.9 80.2
261.8 68.8
330.6 149.0 +0.59

87.1
150.7 63.6 +0.62
256.2 82.9
339.1 146.5 +0.64

Left Mean = +0.57

344.9
66.5 81.6
174.2 67.3
241.5 148.9 +0.60

353.3 +0.52
9 49.9 64.8 71.5
9 46.7 166.7 85.1
14 47.1 G.M.T 251.8 156.6 +0.45
6433

Final Mean = +0.58

P.a. = 79.0 VnB.
H.A. = −3.00 East
Dec. = +67.4 North
S.T. = 1:41
Sp. Wh. = −0.5 B
+0.5 C

Nov. 14 1903

U Z Cygni   Wells.
Plot T

21 57 + 44.0
26 07
4 10

Bond 236   Ball 103
10 26 47.0   10 27 00.
27 47.1   28 00

Above Bond 236 used on this star

349.3 ∠comp + obs
10 30 53   65.1   75.8
176.5   58.1
234.6   133.9   + 0.90
356.1
33 10   58.2   62.1   + 0.88
169.2   74.1
243.3   136.2   + 0.85
Below   mean = + 0.94
263.1
35 56   335.6   72.5
89.0   57.2
146.2   129.7   + 0.99

269.1   + 1.00
10 39 00   326.6   57.5
18 59
10 34 45   82.0   71.5
5 + 12   153.5   6433.6498   129.0 + 1.00
6432.3680
15 34 57 G.M.T.
1.2818

Nov. 14 1903

Same Over

Below
262.6
10 42 52 335.1 72.5
88.4 57.1
145.5 129.6 + 0.99

269.0
46 42 326.1 +1.03
82.6 57.1
68.7
151.3 125.8 +1.07

Above Mean = + 0.95
169.9
51 37 245.0 75.1
358.0 58.5
56.5 133.6 + 0.90

176.0 +0.87
10 54 06 238.1 62.1
35 17 351.0 74.6
10 48 49 65.6 136.7 + 0.84
5 +9
10 48 58 G.M.T.
6433.6590
6432.3680
1.2910
11 00

P.A. = 321.5 Ver B
H.A. = 4:52 West
Dec = +44.3 North
S.T. = 2:47
Sp Wh. = { −0.5 B
+0.5 C

On account of sharp cold the pinion
causing 3 point biting
ran up track somewhat hard, ~~but~~
to slip one sprocket wheel
which accounts for diff. of one unit
in reading 7 sp to night &
last night. Region thoroughly ident
& right stars used.

Nov. 14, 1903

Bond 236	Ball 103
11 09 53.7	11 10 00

L. P. P.

Nov. 19, 1903 (Thursday)

u Herculis meas

C's watch used = 2^{s} fast at 7:08 Phot T

17 12 + 33.2
23 22
6 10

Abar
285.0 < nardis

7 21.5 310.4 25.4 ✓
100.6 35.9 ✓
136.5 61.3 ✓ − 2.81
277.6
314.6 37.0 ✓ − 2.79
106.1 25.3 ✓
131.4 62.3 ✓ − 2.77

Below Mean = 2.80
195.2
221.7 26.5 ✓
11.2 34.2 ✓
45.4 60.7 ✓ − 2.84

189.4 − 2.82
7 27.7 225.8 36.4 ✓
7 24.6 16.0 25.1 ✓
12 24.6 41.1 61.5 ✓ − 2.80
6438

Nov. 19, 1903

Same Over

Below

194.9
7 29.4 219.9 25.0 ✓
11.4 34.5 ✓
45.9 59.5 ✓ — 2.88

189.7
226.6 36.9 ✓ — 2.82
15.8 25.7 ✓
41.5 62.6 ✓ — 276

Above Mean = 2.80
105.0
131.2 26.2 ✓
279.8 36.4 ✓
316.2 62.6 ✓ — 2.76

100.0 — 2.78
7 35.0 134.0 34.0 ✓
7 32.2 284.0 27.2 ✓
5 0.0 ~~312.4~~ 61.2 ✓ — 2.79
12 32.2 311.2
6438.

Nov. 19, 1903

III

Above

104.1
8 7.8 131.8 27.7
280.3 36.5
316.8 64.2 — 2.71

99.3 — 2.75
134.6 35.3
285.3 26.7
312.0 62.0 — 2.79

Below Mean = 2.78
15.2
42.2 27.0
199.9 34.0
224.9 61.0 — 2.82

10.4
8 14.8 45.7 35.0 — 2.80
22.6 194.2 26.9
8 11.3 221.1 61.9 — 2.79
13 11.3 G.M.T.
6 43 P.

Nov. 19, 1903.

IV

Below
15.7
8 17.8 43.7 28.0
190.0 35.7
225.7 63.7 — 2.73

10.8
46.5 35.7 — 2.75
194.0 26.6
220.6 62.3 — 2.77

Above Mean = −2.78
283.8
311.0 27.2
101.0 33.3
134.3 60.5 — 2.84

279.9 — 2.82
A 23.8 315.5 35.6
41.6 104.4 25.7
8 20.8 130.1 61.3 — 2.81
13 20.8 G.M.T.
6 43 P. P.A. = 310.1 Vert B
H.A. = +7:19 West S.T. = { −3.5 B
Dec. = +33.4 North −2.5 C
S.T. = 0:34 Over

Nov. 19, 1903

In running prisms up the tracks two or three links of chain slipped on sp. Wh. causing slight difference in reading of tonight & previous night. Region thoroughly identified & right stars observed

χ Cygni WOS.
19 45 +32.6 Phot T.
25 08
LOA: 5 23

285.1 ∠ var dis
9 7.8 312.9 27.8
100.9 31.3
132.2 59.1 −2.89
282.6
−2.96
314.9 32.3
105.8 23.0
128.8 55.3 −3.06
ROB. Mean = −2.79
187.4
227.4 40.0
14.1 28.0
42.1 68.0 −2.57

194.5 −2.62
9 14.0 222.2 27.7
9.7 37.1
21.8
9 10.9 46.8 64.8 −2.68
14 10.9
6638

Nov. 19, 1903

R.T.B.
189.3
9 16.0 225.9 36.6
14.4 27.4
41.6 64.0 — 2.71

194.3
222.3 28.0 — 2.68
9.8 38.0
47.8 66.0 — 2.64

L.O.A. Mean = −2.81
104.7
130.1 25.4
282.2 33.6
315.8 59.0 − 2.90

101.6
9.21.2 132.4 30.8 − 2.94
372 285.5 26.2
9 18.6 311.8 57.0 — 2.98
14 18.6
64.38

Mean = −2.80

P.A. = 240 Vert B
H.A. = +5.46 West
Dec = +32.8 North
S.T. = 1.31
Sp.M. = −2.5 B
−1.5 C

In running prisms up track
chain slipped on sprocket by
3 or 4 links causing difference
between reading of tonight and
that of prev. obs. Region
however thoroughly identified.

Nov. 19/1903

δ¹δ² Cygni

Wells
Eliot T

21 34 + 16 3.6
26 18
4 44

L&a.

350.5
10 19.0 67.2 < var dis 76.7
160.5 97.2
257.7 173.9 -0.11
338.2
77.2 99.0 -0.06
1684 79.9
248.0 178.9 - 0.02
R&B. Mean = -0.18
260.8
335.5 74.7
72.9 90.1
163.0 164.8 - 029

- 0.30

252.1
10 26.0 346.6 94.5
450 86.1 69.7 - 0.30
10 225 154.8 164.2
15 225
6438.

Nov. 19, 1903.

Same Obser

RαB

260.4

10 28.4 336.8 764

73.0 91.3

164.3 167.7 − 0.23

253.8 − 0.28

345.5

83.6 91.7

154.8 71.2

162.9 − 0.32

LαA Mean = − 0.20

169.7

247.5 76.8

339.0 97.5

76.5 174.3 − 0.11

159.5 − 0.11

10 36.0 256.5 97.0

15 32.2 349.5 77.3

6438 66.8 174.3 − 0.11

8.90
0.19
8.71

PA = 58.0 Va B

HA = +5.08

Dec = +43.6

S.T = 2.46

δ Inch = { −4 V a
−3 V B
−2 A C

Over

Nov. 19/1903

As chain had been slipping on S.p. wh. lately by small amounts for ~~a~~ several nights, set up the screws at end of track ~~to-night~~ previous to taking S.s. again. The chains are
10 45 now moderately taught and prisms seem to run smoothly up the track without chains slipping on S.p. wh.

o Ceti W.Obs. Phot W

2 12 −3.6
2 58
L & A 0 46

176.3 Lrardis
10 57.0 263.8 87.5
348.5 98.5
87.0 186.0 + 0.11
168.9 174.0 + 0.07
266.6
355.7 97.7 + 0.03
79.9 84.2
ROB 181.9 Mean = + 0.16
82.8 178.1
174.3
255.8 91.5
358.4 102.6
75.2 194.1 + 0.29
164.9
11 4.0 L75.9
16 00.5 100.7 + 0.25
6438 259.0 98.6
349.0 191.3 + 0.21
168.7

Nov. 19, 1903

Slave Over

RTB.
80.0
11 5.8 170.0 90.0
251.5 106.0
357.5 196.0
164.0 + 0.30

72.3
175.3 103.0 + 0.30
256.6 93.2
349.8 196.2
163.8 + 0.31

~~Rell.~~ mean = + 0.15
350.~~5~~0
74.8 84.8
165.2 95.5
260.7 180.3
179.7 + 0.01

344.7
11 12.0 80.8 96.1 − 0.00
17.8 173.5 82.6
16 8.9 256.1 178.7 − 0.02
64.38

P.A. = 144.5 Ver B. +0.16
H.A. = 9.19
Dec. = 9.35
S.T. = 3:24 over

Nov. 19, 1903

Region of _o_ ceti thoroughly identified; the PA tonight is of no value inasmuch as holder carrying plate moved through quite a large amount of arc in inserting
11 20 photometer. Will have it soldered. Telescope also accidently moved before reading so same was not taken.

L.P.P.

~~Thursday~~.

Nov. 20, 1903 (Friday)

Bond 236 correct at 7:00.

Reap. Jup. II. 20 Obs. Campbell Rec.

As catgut string has come off of Plate R. it is impossible to move or adjust prisms, hence eclipse taken with ordinary eyepiece.

7 10 53	) 10 50	seen		+13
11 07	11 04	better seen		+27
11 19	11 16	well seen		+39
11 25	11 22	strongly seen		+45

Sat. susp. 10 secs. before first announcement, although from the fact that seeing was so bad and satellite somewhat nearer Jup. than almanac represented that it was impossible to confirm it. Observer however is now perfectly confident that Sat. was really seen at that time. Seeing very bad images of Jup. & Sats. nearly all the time very blurry. Practically impossible at any instant to get even a moderately sharp limb on Jup.

Bond 236 = 4^s fast at 7:16

Nov. 20, 1903

μ Herculis

W Obs
Phot T
9".5 cap

17 12 +33.2
24 12
7 00

Ob watch used = 8^s slow.

I

Above

106.9 ∠ Var dis.

8 10.8 131.5 24.6
37.4

279.3
316.7 62.0 − 279

100.8 37.5 − 274
138.3 27.0
284.3 64.5 − 269
311.3

~~B~~ Below Mean = −274

16.3
43.9 27.6
190.4 36.2
226.6 63.8 − 272

10.0 − 273
8 18.0 46.8 36.8
8 14.4 195.2 26.4
13 14.5 221.6 63.2 − 274
6439.

Nov. 20, 1903

II

Below

16.6

8 20.4 43.0 26.4

191.0 33.4

224.4 59.8 — 2.87

12.2 — 2.84

48.3 36.1

195.9 25.0

220.9 61.1 — 2.82

above Mean = — 2.81

285.5

311.5 26.0

100.4 35.4

135.8 61.4 — 2.81

279.6

8 27.6 316.2 36.6 — 2.78

8.0 105.4 26.0

8 24.0 131.4 62.6 — 2.76

13 24.1

64.39

Nov. 20, 1903

III

Above

284.6
8 35.0 312.2 27.6✓
101.1 35.1✓
136.2 62.7✓ − 2.76✓

281.1 35.1✓ − 2.78✓
316.2
105.0 26.6✓
131.6 61.7✓ − 2.80

Below Mean = − 2.78

194.5
221.9 27.4✓
13.4 34.4
47.8 61.8✓ − 2.79✓

190.4 34.6✓ − 2.79
42.0 225.0 27.4✓
77.0 16.2
8 38.5 48.6 62.0✓ = 2.79
13 38.6 G.M.T.
6439. PA ~~310~~ ✓ 130.8 Ver B
Ha = 7:41 West
Dec = 33.4 North
S.T. = 0:56
Spect. = { −4.5 B.
−3.5 C.

Nov. 20, 1903

— Camelop WObs.
~~Phot T.~~
9½" cap

04 40 +67.2
1 25
3 15
8 45

C's watch used.

~~Left~~

354.0 ∠ comp ~~★~~ dis.

9 22.5 63.9 69.9
167.0 86.0
253.0 155.9 + 046

347.0 + 0.44
71.1 84.1
173.1 73.8
246.9 157.9 + 0.42

Right Mean = + 0.49

265.2
333.7 68.5
77.4 83.0
160.4 151.5 + 0.55

254.6 + 0.54
9 29.8 341.8 87.2
12.3 87.4 64.9
9 26.2 152.3 152.1 + 0.53
14 26.3
64 39.

P.A = 259.5 Ver B Dec + 67.4 Sfwh { −1.5 B
HG = −2.57 East S.T = 1:45 { −0.5 C

Nov. 20, 1903

S S Cygni 2 Obs
Plot T

21 34 +42.6
25 54
4 20 C's ~~watch~~

~~Left~~

346.6 var. dis
9 5~~4~~2.5 172.5 86.9
158.3 99.3
257.6 186.2 + 0.12
337.4 173.8
78.9 101.5 + 0.10
167.4 83.4
250.8 184.9 + 0.09
Right 175.1 mean = + 0.02
260.4
339.2 78.8
70.2 96.6
166.8 175.4 - 009

249.2 - 0.05
9 58.6 348.0 98.8
9 55.6 79.5 80.9
14 55.7 160.4 179.7 - 0.01
64 39

Nov 20/1903

4

Right
258.5
10 00.6 339.8 81.3
71.6 95.6
167.2 176.9 — 0.06

— 0.08

251.3
346.5 95.2
80.1 79.1
159.2 174.3 — 0.11

Left Mean = — 0.03
168.7
251.0 82.3
338.9 99.3
78.2 181.6
178.4 + 0.03

158.9
1007.4 257.3 98.4 + 0.02
347.6 82.6
10 4.0 70.2 181.0
15 4.1 179.0 + 0.02
64.39

PA = 58.2 Vers
HA = +4:43 West
Dec. = +4.35 North
S.T. = 2:23
Sep. = { — 4.5 a
— 3.5 B
— 2.8 c

Nov. 20, 1903

μ Cephei W Obs.

21 39 +58.1 Phot T.
26 39 9½ cap
5 00

Cs! Watch.

Above
186.6 < var chs
10 35.0 230.2 43.6
10.2 36.1
46.3 79.7 — 2.20

190.0
228.8 38.8 — 2.22
9.0 39.7
48.7 78.5 — 2.24
Below mean = — 2.16
99.9
138.7 38.8
276.9 44.9
321.8 83.7 — 209

98.8 — 2.11
10 42.4 140.6 41.8
77.4 278.8 40.4
10 38.7 319.2 82.2 — 213
15 38.8
6439.

Nov. 20, 1905

II

Below
101.1
10 45.0 138.1 — 39.0″
247.8 — 42.2″
320.0 — 79.2″ — 2.22″

97.2
139.9 — 42.7″ — 2.15″
248.1 — 41.4″
349.5 — 84.1″ — 2.08″

Above — Mean = −2.18″
9.9
48.9 — 39.0″
187.2 — 41.7″
228.9 — 80.7″ — 2.17″

9.6 — − 2.28″
10 52.0 48.6 — 39.0″
97.0 188.0 — 40.3″
10 48.5 228.3 — 79.3″ — 2.22″
15 48.6
6439.

P.A. = 352.8 Ven B
HA = +5.″27 West
Dec. = +5″8.7 North
11 00 S.T. = 3.07
Sp.Wh. = { 6.5 B
3.5 C

L.P.P.

Nov. 21, 1903 (Saturday)

7 02 C's watch = 5s slow

u Herculis

W Obs
Phot. T.
9.5″ cap.

17 12 + B 3.2
23 25
6 13

C's watch used tonight

Above

2844 < Var dis.

7 18.2 312.6 28.2
1020 33.7
135.7 61.9 – 2.79

280.5
316.2 35.7 – 2.80
105.7 25.9
131.6 61.6 – 2.80

Mean = – 2.78

Below
196.2
221.8 25.6
10.7 37.3
48.0 62.9 – 2.75

190.9
7 24.8 227.1 36.2 – 2.76
15.6 26.4
7 21.6
/2 21.7 42.0 62.6 – 2.76

6440.

Nov. 21, 1903

Same Over — II

Below
194.8
7 27.5 221.4 26.6
10.4 35.6
46.0 62.2 —2.78

—2.80
190.9
222.7 34.8
16.2 26.1
42.3 60.9 —2.83

Above Mean = -2.78
105.1
132.4 27.2
279.6 36.2
315.8 63.4 —2.73

101.7 —2.76
7 35.3 135.7 34.0
7 31.4 284.9 27.6
12 31.5 312.5 61.6 —2.80
644

H.a.-310.4 Verts
S.T.=23:53
Dec.=+33.4 North
~~H~~a=6:39 West
Sp.wt={ —4.5 B
—3.5 C

Nov. 21, 1903

044068 — Camelop. Wells
Phot T.
9.5" cap.

04 40 67.4
0 40
4 00
8 00

Left

348.1 <comp * dis.

8 36.0 68.9 80.8
173.3 71.9
245.2 152.7 +0.521

353.7 +0.48
64.1 70.4
166.4 87.3
253.7 157.7 +0.431

mean = +0.517

Right
266.6
333.6 67.0
79.2 79.2
158.4 146.2 +0.65

258.2 +0.66
8 44.0 339.5 81.3
8 40.0 87.8 64.4
13 40.1 152.2 145.7 +0.66
6440

Nov. 21, 1903

[illegible] II

Right

266.8

8 46.0 332.0 65.2

74.3 85.0

159.3 150.2 +0.57

258.6 +0.64

336.4 77.8

86.3 65.9

152.2 143.7 +0.70

Left Mean = +0.59

168.0

252.0 84.0

351.2 72.7

63.9 156.4 +0.45

173.2 +0.44

8 54.0 247.6 74.4

8 50.0 346.2 82.4

13 50.1 68.6 156.8 + 0.44

PA = 79.6 Ver β

S.T. = 1:12

H.A. = −3.29 East

Dec. = +67.4 North

Sp. Wh = { −1.5 β
−0.5 α

Nov. 21, 1903

SS Cygni w Obs plot t

21 34 +42.6
25 44
4 10

Left above
70.6 ∠ comp + dis
9 37.0 164.7 94.1
258.3 80.1
338.4 174.2 + 0.11

81.0
156.5 75.5 + 0.16
251.5 94.2
345.7 169.7 + 0.20

Right & Below Mean = + ~~[illegible]~~ 0.10

338.7
78.1 99.4
169.0 78.8
247.8 178.2 + 0.03

350.0 + 0.04
9 44.2 69.5 79.5
81.2 160.0 97.8
14 40.7 257.8 177.3 + 0.05
64 40

Nov 21, 1903
Same Over
II

R of B

341.2
9 46.4 80.0 — 98.8
166.5 — 81.2
247.7 — 180.0 — ~~0.00~~

347.6
71.6 — 84.0 — −0.0K
158.0 — 100.0
258.0 — 184.0
176.0 — −0.08
Mean = + 0.08

L of A.
249.7
347.1 — 97.4
82.0 — 74.2
156.2 — 171.6 — + 0.16

260.6 — + 0.20
9 54.0 336.9 — 76.3
9 50.2 72.8 — 92.4
14 50.3 165.2 — 168.7 — +0.23
6440.

P.A. 56.4 V on B — Final M = +0.09
S.T. 2:12
H.A. 4:36
Dec 43.6
S'pvk { 4.5a
{ 3.4 B
2.8 C

Nov. 21, 1903

R X Cygni Wells Phot. I.

20 9 +46.3 9.5 cap.
26 29
6 20

Above
948 ∟comp * this
10 22.6 143.7 48.9
266.6 63.6
330.2 112.5 +1 36

86.2 +1 36
149.2 63.0
274.2 50.0
324.2 113.0 +1 35
Below Mean = +1 ~~28~~
1.3
53.6 52.3
175.5 65.7
241.2 118.0 +1 24

356.2
10 30.2 62.3 66.1 +1 21
10 26.4 180.9 54.8
235.7 120.9 +1 17
15 26.5

Nov. 21, 1903.

Same Over

Below

4.0

10 32.6 56.8 52.8

174.6 66.8

241.4 119.6 + 1.20

+1.22

355.5

63.7 68.2

183.3 49.6

232.9 117.8 +1.24

above Mean = +1.26

272.2

323.3 51.1

86.2 66.3

152.5 117.4 +1.25

266.1 +1.30

10 40.0 331.0 64.9

10 36.3 95.6 48.6

15 36.4 ~~143.0~~ 113.5 +1.34

144.2

Pa. 358.5 Var B

S.T. 2:59

~~H~~a 6:52 West

Dec. +48.2 ~~North~~

S'pul 5.5 a
4.5 B
3.8 C

L. P. P.

Nov. 24, 1903 (Tuesday)

Bond 236
7 00 41.1
7 01 41.0

Ball 103
7 01 0.0
7 02 00

RR Lyrae, W.Obs
Phot T.

19 21 +42.5
23 34
4 13

RDB.

274.12 vandis

B. 236 used.

7 18.00 323.48
98.8
139.9
277.0

49.7
41.1
90.8 -1.89

19 50 320.4
96.3
143.7
L.D.A.
187.2

43.4 -1.89
47.4
90.8 -1.89

Mean = -1.78

22 15 229.1
0.4
57.9

41.9
57.5
99.4 -1.67

177.8
7 23 27 240.4
83 32 4.8
7 20 23 51.8
5 +16
12 20 39

-1.67
52.6
47.0
99.6 -1.67

6443.6243
6443.5489
-0.0246

Nov. 24 1903

II

Lfa

188.0
7 26 25 230.3 — 42.3″
1.4 — 55.4″
56.8 — 97.7″ — 1.71″

8
8 1~~7~~0.2 — − 1.70″
2~~9~~ 05 235.2 — 55.0″
6.5 — 63.2″
49.7 — 98.2″ — 1.80
Rfβ — Mean = − 1.88″
96.2
30 27 142.3 — 46.1″
279.8 — 40.2″
320.0 — 86.3″ — 2.01″

100.6 — − 2.06″
7 31 47 130.6 — 36.0″
116 44 275.0 — 46.6″
7 29 11 321.6 — 82.6″ — 2.12″
5 +15
12 29 26
6443.5204
6443.5389
−0.0185

Nov. 24, 1903.

III

R.T.B.

99.6
7 33 50 140.6 41.0
280.9 37.8
318.7 78.8 — 2.23

101.6 — 2.18
35 32 137.8 36.2
276.1 46.5
322.6 82.7 — 2.12

L.J.A. Mean = — 2.02

3.3
38 35 55.6 52.3
185.6 44.6
230.2 96.9 — 1.73

8.1 — 1.85
7 40 40 48.9 40.8
28 37 184.9 47.2
7 37 09 232.1 88.0 — 1.97
5 +1.3

12 37 22
6443.5260
6443.5389
—0.0129

Nov. 24 1903

IV

L.O.A.

4.7
7 42 31 53.2 48.5
189.3 39.5
228.8 88.0 −1.97

8.4 −1.96
44 28 48.0 39.6
183.3 49.0
232.3 88.6 −1.95

R.O.B. Mean = −2.12
276.3
47 25 321.2 44.9
103.0 33.2
136.2 78.1 −2.25

280.3 −2.28
7 49 24 316.9 36.6
23 48 100.4 39.6
7 45 67 140.0 76.2 −2.31
5 +12
12 46 09
6443.5320
6443.5389
−0.0069

Nov 24 1903

V

R & B

275.7
7 51 40 320.4 44.7
103.1 33.7
136.8 78.4 − 2.24

− 2.24

281.3
53 37 317.6 36.3
98.2 41.9
140.1 78.2 − 2.25

L & B. Mean = − 2.20

190.5
55 53 226.6 36.1
5.1 45.8
50.9 81.9 − 2.14

186.4 − 2.17
7 54 50 231.0 44.6
19 00 10.8 ~~35.1~~
7 54 45 45.9 79.7 − 2.20
5 +10
12 54 55 P.a = 34.0 Van B
6443.5381 H.a = 5.10A West
6443.5389 δ' T. = 0.32
−0.0008 Dec = 42.9 North
Sp Wh − 3.5 B
− 2.5 C

Nov. 24, 1903.

04 40 6 8 — Camelop Wells
Eliot T.

4 40 67 = 9 40f
1 20

3 20 Cs watch used =
~~8 40~~ 6^s slow at 8:55

Left ~~4~~

353.7 ∠ comp * dis.
9 0.8 63.3 69.6
169.0 84.2
253.2 153.8 + 0.50
347.7
67.7 80.0 + 0.52
174.0 71.7
245.7 157.7 + 0.54
Right Mean = + 0.62
265.1
329.9 64.8
79.8 78.2
1~~6~~58.0 143.0 + 0.71

254.9
9 8.4 340.0 82.1 + 0.72
9 4.6 88.6 59.5
5 ~~8~~4.1 148.1 141.6 + 0.74
14 4.7 R.M.T.

Nov. 24 1903

II

Same Over

Right

264.6

9 11.2 333.7 69.1

78.8 81.2

160.0 150.3 + 0.57

257.6 + 0.64

339.2 81.6

88.5 61.7

150.2 143.3 + 0.71

Left Mean = + 0.58

174.5

243.7 69.2

345.3 82.2

67.5 clouds 151.4 + 0.55

168.0 + 0.52

9 21.0 252.9 84.9

353.7 cld 69.8

32.2

9 16.1 63.5 154.7 + 0.48

14 16.2

P.A. = 79.0 Ver B

S.T. = 1:54

H.a. = -8:48 East

Dec. = +67.3 North

Sp. wh. = { -1.5 B

-0.5 C

Nov. 24, 1903

Clouds

$S^t S^r$ Cygni W.Ob.

Phot T.

21 3K +42.6
26 04
4 30

C's watch used

clouds moderately thick everywhere

Left & above

A6.5 Comp ✶ dis

10 07.0 148.8 clds. 62.3
271.4 55.1
326.5 117.4 +1.25
90.0

10 10.0 144.4 clds. again 54.4 +1.22
264.8 66.2
331.0 120.6 +1.18
R of B mean = +1.13
356.3

10 22.0 66.3 clds 70.0
179.4 57.6
237.0 127.6 +.1.03

clds

3.1 +1.0K
10 28.6 58.3 56.2
67.6 172.6 71.1 +1.04
10 16.9 243.7 127.3

15 17.0 G.M.T.
6443.

132

Nov. 24, 1903

Same Over

ROB.
356.0
10 31.6 64.6 68.6
181.1 55.7 10
236.8 124.3 + 1.~~09~~

1.08
~~B~~ 1.7 + ~~1.09~~
33.8 57.3 55.6
143.2 70.2
243.4 126.8 + 1.05

LOA. Mean = + 1.12
262.8 Olds again
34.2 334.0 71.2
94.4 50.0
144.4 121.2 +1.17

272.8 + 1.16
10 40.0 324.6 51.8
142.6 84.3 69.5
10 35.6 153.8 121.3 + 1.16
15 .357 E.M.T
6443.

PA = 57.5 Ver. B.
HA = 5:32 East
1 0 56 S.T. = 3:~~X~~12
Dec. = +43.6 North
Spurh = {−4.5 a / −3.5 B / −2.9 C

Nov. 24, 1903

B 236	Ball Co
10 56 18.0	10 56 00

L. P. P.

Nov. 25/1903 (Wednesday)

7 05 C's watch used = 20s slow

u Herculis Wrds
Phot T.
9.5 caf

17 12 +33.2
2 3 42
6 30

Above
105.2 < Vardia.
7 16.0 131.0 25.8
281.4 34.7
318.1 60.5 − 2.84
99.4
135.7 36.3 − 2.78
284.9 27.8
312.7 64.1 − 2.71
Below Mean = − 2.68
15.2
43.3 28.1
189.4 39.3
228.7 67.4 − 2.59

10.3 − 2.58
7 23.6 46.9 36.6
39.6 192.3 31.8
7 19.8 224.1 68.4 − 2.56
12 20.1 G.M.T.
6444

Nov. 25, 1903.

Same Over

Below

12.6
7 25.4 44.6 32.0
191.6 35.7
227.3 67.7 — 2.59
10.7 — 2.62
47.2 36.5
195.5 30.2
225.7 66.7 — 2.65

Above Mean = — 2.68
284.5
314.5 300
101.3 33.8
135.1 63.8 — .272

281.2 — 2.74
7 32.4 317.2 36.0
57.8 105.4 26.4
7 28.9 131.~~7~~8 624 — 277
12 29.2 G.M.T.
6444. P.A.
H.A.

Nov. 25, 1903

III

Above

286.1

7 44.5 313.2   271

100.8   348

135.6   619 — 2.79

— 2.76

280.7

317.2   36.5

104.6   27.3

131.9   63.8 — 2.72

Below   Mean = — 2.73

194.4

222.4   28.0

10.8   36.3

47.1   64.3 — 2.70

191.5

7 51.4 226.8   35.3 — 2.70

95.9 15.0   28.7

7 48.0 43.7   64.0 — 2.71

12 48.3 G.M.T.

6444.

Nov 25, 1903

IV

Below
194.6
7 54.0 222.6 28.0
13.0 34.1
47.1 62.1 — 2.78

192.1 — 2.81
224.6 32.5
14.7 28.0
42.7 60.5 — 2.84

Above Mean = −2.81
104.5
132.3 27.8
282.1 34.1
316.2 61.9 — 2.79

101.6 — 2.81
8 07.4 133.7 32.1
121.4 284.0 28.7
A 00.7 312.7 60.8 — 2.83
13 01.0 G.M.T.
6444.

P.A. = 310.3 Ver B
H.A. = 7:28 West
Dec. = 33.5 North
S.T. = 0:41
Spirl = { −45 B
−3.5 C

The seeing a little blurry & a little vibratory throughout. Troubled also by some cld in 3d and a little cld in the 4th group. The first two groups considered good, the 3d also considered very good, as much

Nov. 25, 1903

Care was exercised and Observer waited for images to become steady, the 4th is also considered pretty good but made with a little more difficulty and a little more uncertain than the three previous groups.

OAV 068 — Camelop New Obs Plot T

4 40 +67.2 9''5 cap
1 28
3 12
8 48

Left
167.3 < comp * dis
9 14.0 252.3 85.0
355.0 66.2
61.2 151.2 + 0.55'
174.4
242.4 68.0 +0.52'
344.6 86.2
~~69.4~~ 70.8 154.2 + 0.49'
Right Mean = +0.55'
78.7
160.7 82.0
265.4 65.8
331.2 147.8 + 0.62'

87.4
9 22.0 152.2 67.8 +0.58'
14 18.32 M.T. 257.0 84.2
6444 341.2 152.0 +0.54'

Nov 25, 1903

II

Right

78.4

9 23.6 159.7 — 71.3″

264.5 — 77.6″

332.1 — 148.9″ + 0.60″

+ 0.62″

~~88.4~~

153.8 — 65.4″

256.7 — 81.2″

337.9 — 146.6″ + 0.64″

Left — Mean = + 0.60″

346.8

~~70.8~~ 69.7 — 82.9″

178.6 — 63.2″

241.8 — 146.1″ + 0.65″

355.3 — 0.59

9 30.8 ~~61.1~~ 62.9 — 67.6″

64.4

9 27.2 168.0 — 84.5″

14 27.6 252.5 — 152.1″ + 0.53″

6444.

P.a. = 79.3 Ver B

H.a. = −2:36 East

S.T. = 2:06

Sp.Wh. = { B. −1.5 / C. −0.5 }

Dec. = +67.4 North

Nov. 25, 1903

SS Cygni WCB

plot T.

21 34 42.6
26 34
5 00

Left

278.1 < ~~var~~ comp ☆ dis

10 11.0 325.8 47.7

95.5 45.1

140.6 92.8 +1.84

276.3 +1.72

322.7 46.4

90.5 55.9

146.4 102.3 +1.60

Right Mean = +1.49

184.1

235.9 51.8

359.4 64.5

63.9 116.3 +1.27

179.4 +1.26

10 19.0 243.0 63.6

64.5 53.5

10 15.0 58.0 117.1 +1.26

15 15.3 G.M.T.

6444.

Nov. 25, 1903

Sawe

Right
1846
10 21.0 235.5 50.9'
0.2 61.4'
61.0 112.3' + 1.36'

175.3 + 1.29'
242.5 67.2'
3.9 51.5'
55.4 118.7' + 1.22'
Left Mean = + 1.42'
87.8
146.9 59.1'
275.7 45.8'
321.5 104.9' + 1.54'

97.1 + 1.57'
10 29.6 142.3 45.2'
10 25.3 269.8 57.3'
15 25.6 9m 327.7' 102.3' + 1.60'
6 " " "

P.A. = 57.3 Ver B.
H.A. = 5.26 West
S.T. = 3.05
Dec. = +43.5 North
Sp. wh. = { = -4.5 a
= 3.5 B
> 2.9 C

Nov. 25, 1903.

Tested 4 inch telescope sent to
10 55 Observatory. Instrument found to be
not very good.

W.

Nov. 26. 1903 Thursday,

Tested 4 inch telescope again, (sent to
11 4v the Observatory). First class images cannot
be obtained. and stars unsteady.
H.W.

Nov. 28, 1903 (Saturday)

u Herculis W.C.B.

17 12 +33.2 plot T.

23 55 9.5 cap

6 43

7 03 Cs watch used & correct

Above < var. dis.

106.3

7 19.7 131.3 27.0

283.3 34.6

317.9 61.6 -2.80

100.5

136.5 36.0 -2.80

~~284.7~~ 286.5 25.4

311.9 61.4 -2.81

Below mean = -2.78

16.9

44.2 27.3

194.0 35.0

229.0 62.3 -2.77

11.8 -2.76

7 27.7 46.1 34.3

196.3 28.6

7 23.7 224.9 62.9 -2.75

12 23.7 G.M.T.

6447.

Nov 28, 1903

II

Below
16.0
7 29.6 44.8 28.8
191.2 37.6
228.8 66.4 − 2.60

11.2 − 2.70
48.4 37.2
196.1 25.1
221.2 62.3 − 2.77

Above Mean = −2.75
286.0
312.9 26.9
~~7~~100.2 35.5
135.7 62.4 − 2.77

282.5 − 2.80
7 35.4 314.2 34.7
105.4 26.4
7 32.5 131.8 61.1 − 2.82
12 325 G.M.T.
6447.

Nov. 28, 1903.

VII

Above
286.2
7 43.6 314.7 28.5
101.6 340
135.6 62.5 − 2.77

282.4 − 2.79
318.2 35.8
106.9 25.6
132.5 61.4 − 2.81
Below Mean = − 2.80
195.7
221.3 25.6
11.4 35.5
46.9 61.1 − 2.82

192.3 − 2.80
7 49.2 226.3 34.0
16.1 28.2
7 46.4 ~~44~~.3 62.2 − 2.78
12 46.4
6447.

P.A. 130.4 Var B
Dec. 33.4 North
S.T. 0:35
~~H~~a. 7:21 West
Spvel = { −4.5 B
−3.5 α

Nov. 28, 1903

Bond 236	Ball 103
7 16 12.5	7 16 0.0
7 17 12.6	7 17 0.0

Reap Jup. III Phot R. W. Obs.
Campbell Rec.

Comp. with nearest (before Eclipse) of three satellites on following side of Sat I.

Limit of Visibility.

	8 23 10		219.0
8 24 04	23	24.5	243.5
-17			
8 23 47	53	22.6	220.5
		23.6	
	24 07		243.1

8 32 49	8 33 07	seen
33 04	22	211.0
15	33	258.0
31	49	203.2
44	34 02	262.8
56	14	201.0
34 08	26	264.0
20	38	198.0
30	48	265.3

Nov 28, 1903.

8 35 52	8	35 18		197.0
35 4		22		271.5
16		34		195.8
33		51		270.2
44		36 02		189.0
57		15		273.1
36 24		42		179.0
43		37 01		276.9
37 35 ×		14		185.1
-18		29	92.1	277.2
37 17 ×		43	96.7	183.5
			94.4	280.2
		54		
38 36		38 07		182.5
-18		21	98.5	281.0
38 18.		51	98.9	184.0
		39 05	98.7	282.9
39 48		22		182.6
-18		37	101.4	284.0
39 30		52	100.6	183.0
		40 23	100.7	283.0
40 56		35		181.1
18		49	101.7	282.8
40 38		41 03	101.8	180.0
		17	101.8	281.8
41 57		28		179.5
18		44	104.0	283.5
41 39			104.9	
			104.4	

Nov. 28, 1903

	8	42	12		180.1	
			25		285.0	
			38		180.8	
43 06 ×			53	102.7	283.5	
18 ×		43	19	107.0	178.8	
42 48			32	104.8	285.8	
			48		179.0	
44 13		44	04	106.5	285.5	1
18				108.4		
43 55			28	107.4	177.5	
			39		285.9	
			54		178.0	
45 18		45	11	107.0	285.0	2
18				106.5		
45 00			27	106.8	178.7	
			39		285.2	
			56		179.0	
46 21		46	10	105.9	284.9	3
18			28	107.5	178.8	
46 03				106.7		
			49		286.3	
47 28		47	08		179.0	
18			20	106.5	285.5	4
47 10			33	106.6	178.9	
			49	106.6	285.6	
~~48~~ 46		48	27		179.0	
−19			40	107.0	286.0	
48 27			52	108.0	179.1	5
		49	05	107.5	287.1	

Nov. 28, 1903

49 48 19 49 29	8	49	21		178.0	
			40	109.8	287.8	6
			57	110.3	177.5	
		50	13	110.0	287.8	
50 55 19 50 36			27		177.5	
			46	109.5	287.0	
		51	04	109.8	178.1	7
			22	109.6	287.2	
			48		178.5	
52 13 -19 51 54		52	04	108.5	287.0	
			18	109.5	178.0	8
		52	43	109.0	287.5	

Bond 236	Ball 13
8 55 19.0	8 55 00
56 19.1	56 00

Seeing fairly good, observer slightly delayed in first setting from the fact that satellite reappeared in a little different position than was
9 02 indicated by the almanac so that images had to be adjusted before first setting.

Nov. 28, 1903.

χ Cygni W.A.B.
Phot T.

19 45 +32.6
26 15

6 30

C's watch used henceforth for tonight.

Left

107.2 < Var. dis.

9 44.0 132.7 — 25.5
271.1 — 36.8
307.9 — 62.3 — 2.77

102.8 — 2.84
135.0 — 32.2
286.1 — 26.3
312.4 — 58.5 — 2.92

Right — Mean = −2.60

8.4
51.3 — 42.9
194.1 — 31.0
225.1 — 73.9 — 2.38

14.4
9 51.2 46.5 — 32.1 — 2.36
95.2 188.7 — 43.0
9 37.6 231.7 — 75.1 — 2.34
14 37.6
6447

Nov. 28, 1903

Same Over

Right
9.2
9 53.0 50.1 40.9
193.1 32.4
225.5 73.3 − 2.40

14.2 − 2.36
46.2 32.0
187.0 43.8
230.8 75.8 − 2.32

Left Mean = −2.61"
284.0
315.6 31.6
106.9 27.1
134.0 58.7 −2.91

− 2.86
9 59.8 285.3
312.5 27.2
9 56.4 102.5 34.0
14 56.4 136.5 61.2 −2.81
6447.

P.A. 240 Vert B
S.T. 2:46 −25 B
H.A. 7:02 West −1.5 C
Dec. +33.8 North

Nov. 28, 1903

S^t S^t Cygni Wilbs.
Phot T.

21 34 +42.6
27 07
5 33

Left

91.8 < comp ~~*~~ dis

(a 34.8 136.9 45.1"

283.9 30.4"

314.3 75.5 + 2.38

102.8

136.0 33.2" + 2.33

277.6 42.4"

320.0 75.6 + 2.33

Right mean = +2.24"

6.2

52.9 46.7"

190.6 36.0"

226.6 82.7 + 2.12"

140 +2.14"

10 45.0 46.5 32.5"

79.8 186.4 48.2"

10 39.9

15 39.9 234.6 80.7 + 2.17"

6447

Nov. 28, 1903.

Same Over

Right

3.9

10 48.5 54.3 50.4

192.7 34.0

226.4 84.4 + 2.07

12.7

44.8 35.1 + 2.08

184.9 48.3

233.2 83.4 + 2.10

~~Left~~ Mean = + 2.19

248.8

320.3 41.5

102.7 32.9

135.6 74.4 + 2.36

281.8 + 2.30

10 58.7 316.0 34.2

10 53.6 98.2 44.3

15 53.6 142.5 78.5 + 2.24

6447.

P.A. = 57.1 Var B

H.A. = 6.08 West

10 S.T. = 3:47

11 Dec. = +43.6

Sp. wh. = -4.5 a
-3.5 B
-2.9 O

Nov. 30, 1903 (Monday)

β Lyrae 9.5" caf.

No 1 (lightest tint) shade glass inserted in front of field lens in eyepiece. Phot T. Wells

7 08 C's watch = 32ˢ fast

18 46 +33.2
24 06
5 20

Bond 236 Ball 103

7 24 58.5 7 25 00
25 58.7 26 00

above Comp ✶ = δ Lyrae

276.5 ∠ var dis

7 31 12 322.1 45.6 ✓
91.1 54.8 ✓
145.9 100.4 ✓ − 1.65 ✓
269.4

33 46 327.3 57.9 ✓ − 1.66 ✓
97.5 41.8 ✓
139.3 99.7 ✓ − 1.66 ✓

Below Mean = − 1.66 ✓
5.77
.4.11

188.8

37 10 230.6 41.8 ✓
1.0 57.8 ✓
58.8 99.6 ✓ − 1.67 ✓
182.2

7 39 03 238.2 56.0 ✓ − 1.66 ✓
21 11 7.2 44.3 ✓
7 35 18 51.5 100.3 ✓ − 1.65 ✓
5 . 2
12 35 16 G.M.T.

Nov. 30, 1903

II

Below
186.1
7 41 35 230.1 44.0
12 51.6
52.8 95.6 − 1.7~~4~~7

181.1 − 17~~4~~3
43 11 23~~7~~6.7 55.6
7.6 0 42.9
5~~4~~.5 98.5 − 169
Above Mean = − 1.66
98.0
47 00 140.1 42.1
268.9 62.3
331.2 104.4 − 155

90.0
7 ~~48~~ 48 146.4 56.4 − 1.59
20 34 276.6 44.6
7 45 08 32~~2.3~~1.2 101.0 − 1.63
5 −.5
12 45 03

Nov. 30, 1903.

III

	Above		
	98.5		
8 24 55	141.2	42.7 ✓	
	268.1	61.8 ✓	
	329.9	104.5 ✓	— 1.55 ✓
	91.2		— 1.56 ✓
27 30	147.6	56.4 ✓	
	274.3	47.5 ✓	
	321.8	103.9 ✓	— 1.56 ✓
	Below	Mean = — 1.62 ✓	
	8.0		
31 06	51.8	43.8 ✓	
	180.5	55.9 ✓	
	236.4	99.~~6~~7 ✓	— 1.6~~7~~6 ✓
	1.3		— 1.68 ✓
8 34 15	56.8	55.5 ✓	
117 46	186.5	42.8 ✓	
8 29 26	229.3	98.3 ✓	— 1.76 ✓
5 — 18			
13 29 08	G.M.T.		

Nov. 30, 1903

IV

Below.

7.6
8 36 45 51.8 44.2 ✓
179.1 57.9 ✓
237.0 102.1 ✓ – 1.61 ✓

359.4 –1.59 ✓
38 55 59.9 60.5 ✓
187.5 47.9 ✓
230.4 103.4 ✓ – 1.57 ✓

Above Mean = –1.65 ✓

275.8
42 15 321.5 45.7 ✓
89.7 57.0 ✓
146.7 102.7 ✓ – 1.59 ✓

269.2 –1.71 ✓
8 45 10 320.4 51.2 ✓
163 05 97.7 42.1 ✓
8 40 46 139.8 93.3 ✓ – 1.83 ✓
5 –20
13 Leo 26 ✓
6449.

Nov. 30, 1903

V

above

8 58 20 ↘ 275.7
321.4 45.7✓
88.6 59.0✓
147.6 104.7✓ — 1.54✓

268.2 — 1.58✓
9 01 00 328.4 60.2✓
97.6 40.9✓
13 ~~0.9~~ 8.5 101.1✓ — 1.63✓

Below Mean = — 1.60✓

05 12 ↘ 186.5
231.5 45.0✓
~~4~~ 0.8 56.5✓
57.3 101.5✓ — 1.62✓

180.4
9 07 10 236.6 56.2✓ — 1.63✓
11 44 6.4 44.5✓
9 02 56 50.9 100.7✓ — 1.64✓
5 — 28
14 02 28✓ GMT.

Nov. 30, 1903

VI

	Below		
	1865		
9 09 50	232.3	45.8 ✓	
	2.0	56.6 ✓	
	58.6	102.4 ✓	−1.60 ✓
	179.8		−1.62 ✓
11 30	237.0	57.2 ✓	
	7.2	43.9 ✓	
	51.1	101.1 ✓	−1.63 ✓
	Above	Mean =	−1.62 ✓
	88.4		
13 53	148.0	59.6 ✓	
	276.1	45.0 ✓	
	321.1	1046 ✓	−1.54 ✓
	97.0		−1.63 ✓
9 15 40	139.0	42.0 ✓	
10 53	270.1	55.5 ✓	
9 12 43	326.6	97.5 ✓	−1.72 ✓
5 −31			
14 12 12 ✓			
6449.			

P.A. = 11.1 Ver B

S.T. = 2:09

H.A. = 7:24 West

Dec. = +33.4 North

Sp wl. = { 7.5 B
6.5 C

Nov. 30, 1903.

Emergent pencils not quite together but pretty close. The adjustment of cap over eye-piece also gives a little trouble, but the greatest care exercised and the observations made slowly. Observations considered very good. Region now too low to do anything further to advantage.

Bond 236 | Ball C B
9 49 42.0 | 9 49 00
9 50 42.0 | 9 50 00

Cs. watch used henceforth

R X Cygni WCB
Phot T. 9.5" cap.

above 20 9 +46 3

97.2 26 41

60 6.0 145.5 comp Polis 6 32 48.3 ✓
269.9 64.5
334.4 112.8 ✓ + 1.35 ✓

91.8
151.1 59.3 ✓ +1.40 ✓
247.4 49.3 ✓
326.7 108.6 ✓ + 1.45 ✓

Below Mean = +1.38 ✓

7.2
57.7 50.5 ✓
180.3 63.3 ✓
243.6 113.8 ✓ +1.33 ✓

av +1.36 ✓

Nov. 30, 1903

1.9
10 12.0 62.1 60.2
10 9.0 186.3 50.4
15 8.5 G.M.T. 236.7 110.6 +1.40

Same over II
Below
7.6
10 13.7 59.0 51.4
179.5 64.4
243.9 115.8 + 1.29
0.0
64.6 64.6 +1.30
187.0 50.1
237.1 114.7 + 1.31
Above Mean = + 1.32
277.2
327.4 50.2
88.8 64.4
153.2 114.6 + 1.31
269.0
10 19.0 334.3 65.3 + 1.35
10 16.4 97.8 47.3
15 15.9 G.M.T. 45.1 112.6 + 1.36
6449.636 Gen. mean = + 1.35

P.a. 358.2 Ver B
S.T. 3:11
H.a. 7:04 West
Dec. +48.2 North
Spl.h. − 5.5 a
− 4.5 b
3.8 c

Nov. 30, 1903

o Ceti ~~wells~~ Phot. W.

2 12 — 3.6
3 35
1 23

2 6 — 3.1
3 44
1 38

~~[illegible]~~
12.3 < Vardis.
11 6.5 99.0
~~184.3~~
281.6
~~179.9~~
~~280.1~~
~~0.0~~
~~101.9~~
~~[illegible]~~
85.4
190.0
273.3
361.1

89.8
11 22.4 184.3
28.9 262.2
11 14.4
16 13.9 370.4

186.8
269.9
1.4
99.0

86.7 ✓
97.3 ✓
184.0 ✓
176.0 ✓ + 0.08 ✓

83.1 ✓ + 0.04 ✓
97.6 ✓
180.7 ✓
179.3 ✓ + 0.01 ✓

Mean = + 0.19 ✓
9.19
9.38

104.6 ✓
87.8 ✓
192.4 ✓
167.6 ✓ + 0.24 ✓

94.5 ✓ + 0.34 ✓
108.2 ✓
202.7 ✓
157.3 ✓ + 0.43 ✓

Nov. 30, 1903.

Same Obs

II

Rtr3

78.2

11 31.0 191.0 1128

272.7 87.4

360.1 200.2

1598 + 0.38

87.3

180.7 + 0.34

263.1 934

365.9 1028

196.2

163.8 + 0.31

Lod. Mean = ~~+0.26~~ +0.24

9.19

9.43

1 354.5

95.4 100.9

180.1 86.2

266.3 187.1 + 0.13

172.9

1.6 + 0.14

11 41.0 88.1 86.5

172.8 101.6

11 36.0 274.4 188.1 + 0.15

16 355 G.M.T. 170.9

6449.

Gen mean = +0.22

~~Lo.~~

HA. 2:21 West

Dec −3.2 South

S.T. 4:33

Nov. 30 1903

Meas. extremely difficult. Nearly full moon ~~not very~~ very difficult for distant, and equalizations, partly on account of glare
11 50 on sky in this vicinity, as well as faintness of objects at equalizations.

Extreme care however exercised

(Tuesday) Dec 1, 1903.

B 236 Bond 394
7 06 16.5 ✱ 7 06 00
07 16.6 07 00

C's watch – 29s fast 7:08

ß Lyrae [illegible]
18 45 + 33.2 Phot T.
24 10 Shade No 1. used as on
5 25 last night

Bond 236 used for times on Beta.

Above <nordis

924
7 32 20 131.0 38.6
265.8 50.8
316.6 89.4 – 1.93
86.4
35 25 136.8 50.4 – 1.94
272.2 37.7
30 9.9 88.1 – 1.96
Below Mean = –1.97
3.3
39 16 40.0 36.7
176.3 50.0
226.3 86.7 – 2.00
356.6
– 2.00
7 41 10 46.1 49.5
28 11 181.9 37.7
7 5 37 – 03 22 219.6 87.2 – 1.99
12 36 41 G.M.T.

Dec. 1, 1903.

II

Below

	3.1		
7 43 45	40.6	37.5	
	176.2	49.5	
	225.7	87.0	— 2.00
	354.7		— 2.04
45 47	45.8	48.1	
	183.3	35.8	
	219.1	83.9	— 2.08
	Above		Mean = − 2.02
	272.1		
48 42	310.4	38.3	
	86.6	47.8	
	134.4	86.1	− 2.02
	266.8		− 2.00
7 51 06	316.6	49.8	
29 20	91.4	37.9	
7 47 20	129.3	87.7	−1.98
5 − 23			
12 46 57			

P.a. = 11.6 Ven B

S.T. = ~~[illegible]~~ 0;48

Ha. = 6.03 West

Dec. = +33.4 ~~North~~

Spth. = −7.5 B, −6.5 C

A little light cloud scattered about different parts of sky but from looking at sky before and after above measurements, it was found that region of B Lyrae was quite clear. Obs. considered good. The above mentioned cloud is very light.

Dec 1, 1903.

B. 236 B. 394
δ 23 31.2 δ 23 00
24 31.4 24 0.0
C's watch used from now on
04 40 68 — Camelop. Wells
Phot T.
9.5 cap

4 40 67.2
1 23
3 17
8 43

Left <comp * dis
341.2
8 40.0 62.2 81.0
166.2 75.2
241.4 156.2 +0.45
350.2
59.9 69.7 +0.46
161.5 85.4
246.9 155.1 +0.48
Right Mean = +0.53
251.7
335.4 83.7
82.4 63.9 +0.62
146.3 147.6
260.7 +0.60
8 46.8 329.7 69.0
δ 43.4 73.6 81.0
13 42.9 154.6 150.0 +0.58

Dec. 1, 1903.

Same Arm II

Right

254.3

8 48.8 336.~~7~~0 81.7

82.0 64.5

146.5 146.2 + 0.65

260.1 + 0.62

327.4 67.3

73.4 81.2

154.6 148.5 + 0.60

Mean = + 0.54

Left

160.1

24~~7~~51.9 87.8

3~~7~~0.3 68.9

59.2 156.7 + 0.44

168.0 + 0.46

~~8~~ 56.0 238.5 70.5

8 52.4 340.3 84.9

~~5~~

13 51.9 65.2 155.4 + 0.47

P.A. = 79.6 Ver B

S.T. = 1:52

9 B H.A. = -2.48 East

Dec = + 67.5

Spirl. = { -1.5 B
-0.5 A

Dec. 1, 1903.

Phot T
Wells

200036

19 55 +36.0
26 15
6 20

Above
265.7
9 46.5 320.9 < comp * dis
80.7
150.5
256.6
329.4
89.5
140.6

55.2 ✓
69.8 ✓
125.0 ✓ + 1.08 ✓

+ 1.10 ✓
72.8 ✓
51.1 ✓
123.9 ✓ + 1.11 ✓

Mean = + 0.95 ✓

Below
143.3
235.6
348.3
64.7

62.3 ✓
76.4 ✓
138.7 ✓ + 0.80 ✓

164.4
+ 0.80 ✓
9 53.7 242.6 78.2 ✓
9 50.1 355.6 59.9 ✓
14 49.6 54.5 138.1 ✓ + 0.81 ✓

Dec. 1, 1903.

Same Over II

Below
172.6
9 57.8 234.1 61.5
344.4 79.8
64.2 141.3 + 0.75

162.1 + 0.74
242.3 80.2
355.3 61.6
56.9 141.8 + 0.76

Above Mean = + 0.89
87.9
141.1 53.2
256.0 73.9
329.9 127.1 + 1.04

77.8 + 1.04
10 07.2 148.0 70.2
10 02.5 265.2 56.2
15 ~~0.20~~ L 321.4 126.4 + 1.05
P.a. = 352.5 n B
S.T. = 3:07
10 16 Ha = 7:07 West
Dec. = + 36.8 North
Spur.l. = { −4.5 a
−3.5 B
−2.9 C

Dec. 1, 1903

ρ Cassiop.

WObs

23 47 +56.7 Phot T.
27 2/7 9.5" cap.

3 40

Left

359.2 ⟨Var. dis..

10 46.4 42.1 52.9 ✓

179.2 49.6 ✓ ✓

228.8 102.5 − 1.60

358.0

48.6 50.6 ✓ − 1.60 ✓

178.4 51.6 ✓

230.0 102.2 − 1.60 ✓

Right mean = −1.69 ✓

269.7

318.5 48.8 ✓

92.5 45.5 ✓

138.0 94.3 − 1.80 ✓

270.8 48.0 ✓ − 1.78 ✓

10 52.8 318.8 48.2 ✓ − 1.75 ✓

10 49.6 89.6 96.2

15 49.1 1378

Dec. 1, 1903

Same Over II

Right
268.4
10 54.4 319.1 50.7
92.2 43.3 −1.81
135.5 94.0

−1.85

272.4
316.6 44.2
91.0 46.8
137.8 91.0 −1.89
~~Left~~ Mean = ~~11~~ −1.72
175.8
53.2
229.0
358.9 50.0
48.9 103.2 ~~★~~ −1.58

178.8 −1.58
11 00.0 227.6 48.8
11 4.4 357.2 54.0
10 57.2 ~~50.9~~ 51.2 102.8 −1.59
15 56.7

P.A. = 121.5 ✓ on B
S.T. = 3h 55
11 08 H.a. = 4.04 West
Dec. = 57.4 North
Split = { −0.5 B
+0.5 C

LOP

Dec. 4, 1903 (Friday)

B. 236 B 394
7 03 11.0 7 03 00
04 11.1 04 00

7 04 C's watch = 21 secs fast

β Lyrae Pilot T
18 4√ + 32.6 9" cap. D.
24 18 Shade No I.
5 33

Bond 20 b used on beta Lyrae

Left & Above

277.8 ∠ var dis.
7 22 35 308.5 30.7
~~94~~.1 35.9
130.0 66.6 − 2.62

274.2
24 23 313.5 39.3 − 2.60
~~1~~08.9 28.7
127.6 68.0 − 2.57
R & B Mean = − 2.54
188.6
27 45 218.0 29.4
1.8 42.4
44.2 71.8 − 2.45
183.0
7 29 05 222.6 39.6 − 2.49
23 48 9.0 29.8
7 25 57 38.8 69.4 − 2.53
5 −15
12 25 42 GMT

Dec. 4, 1903

II

RtB

188.8

7 31 20 217.3 28.5

1.8 43.1

44.9 71.6 — 2.45

183.6 — 2.50

33 00 222.8 39.2

8.5 294

37.9 68.6 — 255

Lda. Mean = — 2.52

99.4

36 00 127.1

273.5 295

313.0 395

69.0 — 2.54

92.5

7 37 50 131.7 39.2 — 2.54

18 10 278.3 29.6

7 34 32 307.9 68.8 — 255

5 −17

12 34 15 G.M.T.

Dec. 4, 1903

III

LPA.

97.8
7 40 10 126.8 29.0
272.6 40.9
313.5 69.9 − 2.51

−2.54

92.4
42 25 133.2 40.5
279.5 27.7
307.2 68.2 − 2.57
R.D.B. Mean = − 2.51

6.7
45 45 38.5 31.8
182.4 406
223.0 72.4 − 2.43

3.2 − 2.48
~~7 48 00~~ 42.3 39.1
16 20 188.4 29.8
7 44 05 218.2 68.9 − 2.54
5 19
12 43 46 G.M.T.

Dec. 4 1903

IV

RAB

8.4

7 50 40 39.1 — 30.7

183.0 — 39.8

222.8 — 70.5 — 2.49

— 2.48

3.0

52 28 43.5 — 40.5

188.0 — 30.4

218.4 — 70.9 — 2.48

LAA — Mean = — 2.50

279.0

56 05 307.8 — 28.8

92.6 — 41.0

133.6 — 69.8 — 2.51

— 2.52

272.9

7 58 40 313.0 — 40.1

17 53 98.8 — 29.0

7 54 38 127.8 — 69.1 — 2.54

5 −21

12 54 17 G.M.T.

PA = 118 Ver. B.

A 30 S.T. = 1.30

HA = 6:47 West

Dec = + 33.4 North

Sp.Wk. = { −7.5 B
{ −6.5 C

Dec. 4, 1903

χ Cygni

19 45 +32.6 Vis Obs. Phot 1.
25 38
5 5 3

Cs match used on χ Cygni

~~Left~~ < var dis.

279.7
8 42.1~~8~~ 309.4 29.7′
96.6 35.8
132.4 65.5′ — 2.66′
275.7
313.3 37.6′ — 2.66′
101.6 27.6′
129.2 65.2 — 2.67′
Right Mean = — 2.46′
188.2
221.5 33.3′
3.9 42.9′
46.8 76.2′ — 2.31′

183.7 — 2.26′
8 49.2 227.0 43.3′
91.3 7.4 35.9′
8 45.6 43.3 79.2 — 2.22′
5 —.4
13 45.2 G.M.T.

Dec. 4, 1903

~~Rt~~ Right II

187.5

8 51.0 222.8 35.3

4.0 43.5

47.5 78.8 — 2.23

183.2 — 2.20

227.0 43.8

7.0 36.7

43.7 80.5 — 2.18

Left mean = — 2.43

100.1

129.4 29.3

245.0 38.6

313.6 67.9 — 2.58

98.9 — 2.66

8 59.0 132.8 33.9

8 55.0 279.3 29.6

5 —.4 308.9 63.5 — 2.73

13 54.6 G.M.T.

P.A. = ~~2:06~~ 24.1 Var B

H.A. = 6:23 West

S.T. = 2:06

Dec. = +33.3 North

Sep. = { —2.5 B
—1.5 C

Dec. 4, 1903

Bond 236	Bond 394
9 24 37.5	9 24 00
25 37.6	25 00

Dis Jup. II. W.Obs. Phot. R.
Campbell Rec.
Comp with Nearest of Three Satellites on preceding side = Sat. I

Limit of Visibility

	X 9 45 31		105.5
9 46 03 −41 9 45 22	54	34.5	140.0
	46 16	33.9	105.1
	32	~~68.4~~ 34.2	139.0
47 22	48 03		seen
58	39		77.0
48 23	49 04		153.2
41	22		78.0
49 13	54		158.0
33	50 14		80.0
54	35		150.5
50 05	47		91.5
21	51 03		148.0
34	16		96.1
46	28		143.0
51 00	42		100.0
51 22	52 04		140.0

Dec. 4, 1903.

9 51 58 9 52 40 not seen later

B. 236	Bond 394
9 55 42.5	9 55 0.0
56 42.6	56 0.0

According to the almanac Sat II reappeared from occultation only between 2 and 3 minutes before its disappearance in eclipse, as a matter of fact it disappeared closer to limb of Jupiter than indicated by almanac. When first seen it was on the edge of Jupiter and practically stayed there without leaving the limb perceptibly until it disappeared. The seeing throughout was a little poor and at times quite poor, overlapping both Sats I & II so that observer had to wait at times for Satellite to be seen. Taking into account the fact of the troublesome seeing as well as the extreme closeness of both Satellites to Jupiter and general disadvantageous circumstances the eclipse is probably not good for much, the last setting quite uncertain. When limit of visibility

Dec. 4, 1903

was taken before eclipse, Sat I
was put as near the limb of Jup. as
was indicated by the almanac for
10 10 Dis. of Sat II, but as kept so close
to limb until it disappeared, Sat. I
had to be moved a little nearer to limb than
in limit of visibility.

μ Cephei W.Obs.
Phot. T.
9″ cap

21 40 +58.0
27 30
5 50

C's watch used on μ Cephei

Above < Vardis.
6.0
10 33.2 44.6 38.6
186.2 36.6
222.8 75.2 – 2.34
7.0
44.0 37.0 – 2.36
186.2 36.9
223.1 73.9 – 238
Below Mean = –2.17
272.9
316.4 43.5
92.8 44.4
137.2 87.9 –1.97
274.7 44.5 –1.98
10 40.0 319.2 43.1
10 36.6 93.9 87.6 –1.98
15 36.2
137.0

Dec. 4, 1903.

Same Over

II

Below
273.3
10 42.6 317.6 44.3
93.3 42.3
135.6 86.6
− 2.01

2731
− 2.00
318.2 45.1
94.8 41.8
136.6 86.9 − 2.00

Above Mean = −2.19
185.9
222.3 36.4
7.3 36.4
43.7 72.8 − 2.42

186.0 − 2.38
10 50.0 223.5 37.5
10 46.3 6.8 37.4
10 45.9 44.2 74.9 − 2.35
6453.

P.A. = 353.0 Vel B | Sp Vel = −6.5
11 08 H.A. = 6:21 West | = −0.5
Dec = +09.0 North
S.T. = [illegible]:57

L.J.J. All Done

Dec. 5, 1903 (Saturday)

B 236
7 05 47.6
06 47.8

B 394
7 0~~8~~7 00
0~~7~~8 00

C's watch = 31s fast 7:09

7 10 Sky thickly cloudy
7 25 " " "

7 30 Sky thickly cloudy everywhere & growing worse. No stars visible and moon & Jupiter invisible. Apparently no chance for any work.

Dec. 7, 1903 (Monday)

B236	B.394
7 06 47.5	7 07 00
7 07 47.7	7 08 00

C's watch correct at 7:08

u Herculis Wells

17 12 +33.2
24 32
7 20

7 23 Some cloud everywhere, but densest near the horizon and most of all in the west. u Herculis not certainly seen and practically no stars visible in finder.

Too cloudy also for good meas-
7 25 urements on β Lyrae.

β Lyrae invisible at present time
7 38 and practically so all the time. β Lyrae abandoned for tonight.

RR Lyrae Wells

19 20 +42.0 Plot I.
25 10
5 50

Bond 236 used on this star.

OVER

Dec. 7, 1903

RR Lyrae

I

Left to above

356.2 < var. dis.

8 17 45 52.4 56.2

182.5 42.9

225.4 99.1 - 1.68

3.2 -1.66

20 08 45.4 42.2

176.8 58.2

235.0 100.4 - 1.65

Right to Below Mean = - 1.80

274.0

22 45 313.4 39.4

91.0 47.6

138.6 87.0 -2.00

268.9 -1.94

8 25 20 322.5 53.6

5 50 95.6 37.3

8 21 28 132.9 90.9 - 1.89

5 -2

13 21 26 G.M.T.

6456.5565

56.5755

-0.0190

Dec. 7, 1903.

II

RTB

275.1

A 28 00 315.5 40.4

91.8 46.0

137.8 86.4 — 2.01

269.8

30 30 321.3 51.5 — 2.02

97.7 34.6

132.3 86.1 2.02

LOA

Mean = —1.92

186.1

33 32 226.5 40.4

357.3 54.4

51.7 94.8 — 1.79

149.1 — 1.82

A 35 38 231.5 52.4

7 40 3.2 40.4

A 31 55 43.6 92.8 — 1.84

5 - 4

13 31 51 G.M.T.

6456.5638

56.5755

- 0.0117

Dec. 7, 1903.

III

L D above

185.4
8 38 13 224.7 39.3
357.6 53.6
54.2 92.9 − 1.84

181.7 − 1.90
41 18 231.8 50.1
4.2 38.0
42.2 88.1 − 1.96

R D Below Mean = − 2.08
273.2
44 42 318.6 45.4
97.2 34.5
131.7 79.9 − 2.20

278.8 − 2.27
8. 47 32 313.3 34.5
171 45 94.9 40.8
8 42 56 ~~136.3~~ 75.3 − 2.34
5 − 6 135.7
13 42 50
6456.5714
56.5755
−0.0041

Dec. 7, 1903

IV

RfB

271.6

8 50 50 319.6 48.0

99.0 33.2

132.2 81.2 — 2.16

— 2.20

276.6

5 3 20 312.0 35.4

93.6 43.0

136.6 78.4 — 2.24

Mean = −2.12

LfA

186.6

56 50 223.4 36.8

0.7 49.0

49.7 85.8 — 2.03

— 2.03

181.3

8 59 45 230.0 47.7

20 45 5.3 38.1

8 55 11 43.84 85.8 — 2.03

5 — 8

13 55 03

6456.5799

56.5755

+0.0044

Dec. 7, 1903.

V

Lal,

186.3

9 06 08 223.4 — 37.1

359.10 — 50.9

49.9 — 88.0 — 1.97

179.3

08 18 229.3 — 50.0 — 1.98

5.8 — 37.0

42.8 — 87.0 — 2.00

KOB. — Mean = — 2.18

94.5

12 10 136.4 — 41.9

280.0 — 32.8

312.8 — 74.7 — 2.36

98.1

9 14.38 128.8 — 30.7 — 2.39

41 14 243.1 — 42.1

9 10 18 315.2 — 72.8 — 2.42

5 −11

14 10 07 PMT

P.a. = 214.8 wrt B

H.a. = +7.14 West

Dec = 7432 North

S.T. = 2:37

6456.5904

56.5655

+.0.0149

Sf U — 3.5 B

— 2.5 C

Dec. 4, 1903.

Bond 236			Bond 394		
~~9~~	~~2~~		~~9~~	~~28~~	~~0.0~~
9	29	14.8	9	29	0.0
	30	14.9		30	0.0

Troubled more or less throughout by
haze and light. Moon rose
a little before observations were
begun. On account of the increasing
altitude ~~of~~ of nearly full moon
the decreasing altitude of the variable
9 35 and also the light haze and clouds
the observations were progressively
more difficult, but extreme care
exercised and observations considered
pretty good, altho very difficult
in the last two and especially the
last group.

TV Geminis.

Doubtful Var
+21°1146.

6 6 22,5
3 20
2 46
9 14

Over

Os watch used now and on.

Dec. 7, 1903

21°.1146

I

Above. < var dis.

162.1
10 22.4 246.4 84.3
350.5 69.4
59.9 153.7 — 0.50

171.6 — 0.57
239.6 68.0
345.4 78.7
64.1 146.7 — 0.64

Below Mean = −0.44
69.9
160.0 90.1
259.0 72.6
331.6 162.7 — 0.33

76.6 — 0.30
10 30.0 151.5 74.9
15 26.2 G.M.T. 248.2 90.6
6456. 338.8 165.5 −0.27

Dec. 7, 1903.

II

Below

71.7
10 31.4 ~~160.8~~
~~256.7~~
~~33[illegible].3~~

76.7
15.

Above

Mean = –

P.A. = 205.6 Vn B
W.T. = 3:53
H.A. = –2:11 East
Dec. = +21.2 North
Spurk. = { –3.5 A
–2.5 B
–2.0 C

Stopped by clouds; impossible to finish last groups, this partial group rejected. In first group taken settings made easily and satisfactorily but immediately on beginning second group clouds became denser, images very faint and few settings on this group quite uncertain. Clouds also became so

Dec. 7, 1903

dense that images disappeared before groups could be finished

10 45 No chance for anything farther.

Images very nearly superimposed - before reading of P.A. & Sp. Wt., but clouds became so dense ~~that~~ ~~quite~~ superposition may have been not quite exact, however very close.

Led. Plot. Post.

(Tuesday) Dec. 8, 1903.

B 236 B. 394
7 03 40.0 7 04 00
04 40.2 05 00

C's watch = 30s fast 7:06

β Lyrae W. Obs.
Plat T.

18 45 +33.2 9.5 cap
24 35 Shadeglass No. I.
5 50

7 45 More or less cloud everywhere especially and rather dense near the horizon. β Lyrae invisible to N.E. most of the time. Image in telescope with shadeglass faint also varying relatively and at times quite invisible. Impossible to do anything with β Lyrae. Abandoned.

Camelop W. Obs.
044068 9.5 cap
4 40 +67.2 Plat T.
1 20
3 20
8 40

Dec. 8, 03.

044068 — Camelop I

C' watch used

8 08 Stars gone

~~Left~~

341.4 ∠ comp ✱ dis

8 15.0 66.3 84.9

171.4 65.8

237.2 150.7 + 0.56

351.4 + 0.53

60.2 68.8

162.0 85.2

247.2 154.0 + 0.50

Right Mean = + 0.56

254.0

338.0 84.0

84.0 63.8

147.8 147.8 + 0.62

261.9 + 0.60

8 23.0 330.2 68.3

8 19.0 74.8 80.9

13 18.54 M.T. 155.7 149.2 + 0.59

6457.

Dec. 8, 1903

II

Right

252.2

8 25.4 336.7 — 8.5

84.7 — 63.3

148.0 — 147.8 + 0.62

260.5 — + 0.60

328.3 — 67.8

75.1 — 82.1

157.2 — 149.9 + 0.58

Left — Mean = + 0.5~~2~~3

161.7

249.0 — 87.3

350.0 — 72.4

62.4 — 159.7 + 0.39

171.7 — 0.46

8 33.6 241.1 — 69.4

8 29.5 341.6 — 82.6

13 29.0 G.M.T. 64.2 — 152.0 + 0.54

64.07

P.A. = 79.6 Vert

δ 42 H.A. = −2:41 East — Sp. wh. { = 1.5 B / −0.5 C

Dec = +67.3 North

S.T. = 2:00

(over)

Dec. 8, 1903

8 43 During observations observer troubled more or less by light cloud, of somewhat varying but rather steadily increasing density. Images however were fairly steady relatively to each other and settings made slowly and with extreme caution. Observations considered good

8 45 – At present clouds growing much thicker especially west of the meridian and this condition seems to be steadily covering the eastern half of the sky.

9 10 Clouds everywhere, no stars visible except few in the zenith even Jup. dim now, and clouds coming thicker again no chance for anything further

L. P. P.

Dec. 10, 1903 (Thursday)

B 286
7 03 17.2
04 17.5

B. 394
7 03 0.0
04 0.0

C's watch = 35^{s} fast at 7:02

β Lyrae W. Obs.
18 45 +33.2 Phot T.
24 35 9.5 cap
5 50 Shade No I

7 05 Sky somewhat cloudy but will try for β Lyrae

7 08 β invisible at present time

7 22 Sky pretty cloudy everywhere, α Lyrae invisible.

7 30 Sky some clearer in region of Beta

Dec. 19, 1903
B 236 used
β Lyrae

I

Above

~~299.8~~
~~7 33 28~~ ~~322.2~~ ~~14~~ 110.0
~~7 39 45~~ ~~104.8~~
~~14~~
~~2~~
~~3~~
~~1~~
~~1~~

New start

~~Below~~ Above ~~mean~~
142.0
7 40 45 179.0 37.0
322.8 30.0
352.8 67.0 −2.61
146.7 −2.58
43 45 176.2 29.5
318.2 39.5
357.7 69.0 −2.54
Below mean = −2.64
106.9
47 28 134.3 27.4
282.9 38.5
321.4 65.9 −2.65
105.1
7 49 50 138.4 33.3
21 48 287.2 30.0 −2.70
7 45 27 317.2 63.3 −2.74
5 24

6459.531
6449.416
+10.115

12 45 03 G.M.T. 6459.531

Dec. 10, 1903.

II

Below
106,1
7 52 30 136,3 30.2'
284.2 36.3'
320.5 66.5' – 2.62'

1040 – 2.67'
56 00 138.4 34.4'
286.9 29.5'
316.4 63.9' – 2.72'
Mean = – 2.60'
Above
10.3
8 0000 48.2 37.9'
197.3 30.5'
227.8 68.4' – 2.56

14.2
8 03 08 46.2 32.0' – 2.54
231 38 194.3 37.2'
7 57 24 231.~~8~~5 69.2' – 2.53'
5 1 – 26
12 56 58 M.T. P.a. = 12.0 Ver β.
S.T. = 1:42
6459.540 Spuh = = { –7.5 β
6449.416 H.a. = +6:58 { –6.5 C
+10.124 Dec. = +33.4

over for remarks.

Dec. 10, 1903.

Difficulty experienced throughout observations on β Lyrae with respect to emergent pencils. ~~The emergent~~ Troubled apparently at first by eyestop, after second set in first group, remove eyestop, so the last half of first and whole of second group were taken with eyestop off. The removing of the eyestop however did not seem to fully remedy the difficulty. Pencils throughout apparently close ~~together~~ but some difficulty experienced in getting hold of the light easily, so that observer did not feel quite so sure footed as in observations on Dec. 4, when β was near the first summit of the curve and when the light from images were obtained easily. The greatest possible care however exercised in settings tonight and same made slowly.

Sky fairly clear during observations altho there seems to be more or less remainder of cloud in
87 28 the air. ~~[illegible]~~ Both β & γ dim to naked eye, and remainder of cloud however seems to be rather uniform in its distribution.

Dec. 10, 1903.

U Gem. Wells

7 47 + 24.0 Phot T.
2 27
5 20
6 40 C's watch used from now on.

R.O.A.

231.0 ∠ comp + do

9 19.0 294.3 63.3

45.5 71.3

116.8 134.6 +0.88

+0.97

225.8 72.0

297.8 54.1

54.1 126.1 +1.06

109.2

Left of B Mean = +0.98

145.1

200.7 55.6

316.8 74.4

31.2 130.0 +0.98

135.1 +1.00

9 27.0 206.4 71.3
9 23.0 324.8 56.4
14 22.4 G.M.T. 21.2 127.7 +1.03
6459.

Dec. 10, 1903

II

R & B.

1422
9 29.0 199.7 57.5
315.8 72.8
28.6 130.3 +0.97

+0.97
136.9
208.9 72.0
322.0 58.2
20.2 130.2 +0.97

R & a. Mean = +1.00
54.4
109.5 55.1
225.5 74.1
299.6 129.2 +1.00

+1.02
46.9
9 37.0 114.7 67.8
9 33.0 233.5 59.2
14 32.49 M.T. 292.7 127.0 +1.04
6459.

P.A. = 0.0 Vera B
S.T. = 3:08
Ha = −14:37 East
Dec. = +1 21.5 North
Spuk = { −3.5 a
−2.5 B
−1.9 c

Dec. 10, 1903.

o Ceti

Wells
Phot — w

2 12 — 3.6
4.12
2 00

I

L Nor dis

RAB
80.8

10 56.0 175.8
263.6
349.9
84.0
169.9
357.5
355.3
Lea.
349.2
80.6
174.0
255.0

354.1
11 01.4 73.3
117.4 166.0
10 58.7 261.4
15 58.1 G.M.T.
6459.

95.0
86.3
181.3
178.7 +0.02

+0.04

85.9
97.8
182.7
177.3 +0.05

Mean = ~~+~~ -0.04

91.4
81.0
172.4 ~~+~~ -0.14

-0.12

79.2
95.4
174.6 -0.10

Dec. 10, 1903

II

LOA
3464
11 3.0 80.5 94.1
169.7 84.0
253.7 178.1 −0.04

−0.10

352.5 81.6
74.1 90.3
167.9 171.9 −0.15
258.2
POB Mean = −0.04
254.3
351.2 96.9
81.4 83.6
165.0 180.5
179.5 +0.01

260.7
11 8.6 344.7 83.5 +0.01
11.6 71.8 97.2
11 5.8 169.0 180.7 +0.01
179.3
16 5.2 M.T.
6459. Ha 2:23 West

Dec −3.3

11 12 S.T. 4.35

PA not read
as order no yet
applied but region
identified by chart
L.P.

Dec. 11, 1903 (Friday)

B 236 — B 394
6 57 53.4 — 6 58 0.0
58 53.5 — 59 0.0

Cs watch = 28 sec fast at 7:00

β Lyrae Wolfs.

Phot I
9.5 oaf
Shade No. I

18 45 + 33.2
24 45
6 00

B 236 used on β Lyrae

Above
237.5 < Var dis.
7 25 31 264.7 — 30.2
522 — 41.1
93.3 — 71.3 — 2.46
232.3
27 35 273.8 — 41.5 — 2.44
56.8 — 30.9
87.7 — 72.4 — 2.43
Below — mean = – 2.44
147.9
31 08 178.0 — 30.1
322.7 — 41.8
364.5 — 71.9 — 2.44
142.7
7 33 25 184.~~7~~4 — 41.7 — 2.44
117 39 327.4 — 30.1
7 29 25 354.5 — 71.8 — 2.45
5 – 1
12 29 26 Quit

Dec. 11, 1903.

II

Below

145.6

7 36 00 178.4 30.8

324.2 38.2

362.4 69.0 −2.54

143.4 −2.53

39 00 182.2 38.8

327.5 30.9

358.4 69.7 − 2.52

Above

Mean = −2.50

57.8

43 05 88.4 30.6

231.7 40.2

271.9 70.8 −2.48

53.4

7 46 37 93.0 39.6 −2.48

164 42 235.9 31.1

7 41 10 267.0 70.7 −2.48

5 −1

12 41 09 G.M.T.

P.A. = 11.8 Vert

H.a = +6:47 West

Dec. = +33.4 North

S.T. = 1:30

Sp. wh. = { −75 B
−65 C

Dec. 11, 1903

Set pencils and cap today as nearly as possible. There is however a little difficulty still tonight in getting hold of the light easily. The difficulty however is very much less than last night. This difficulty is experienced somewhat more in some parts of the rotation of graduated circle than in others, probably due to the fact that the light as it emerges from the prism comes closer to edge of eyestop in some positions than in others. The observations were however made with the greatest care and slowness and are considered good

8 03

U Geminorum

no obs.
Plot 1.

7 47 +24.0
2 47
5 00
7 00

Bond 236

9 23 27.5
24 17.7

Bond 394

9 23 55
24 55

Dec. 11, 1903

Rt abov   Cs watch now 0 on

46.0 < comp ✱ dis

9 29.4   103.5   57.5
217.7   74.6
292.3   132.1   + 0.94

+ 1.06

38.4
102.0   63.6
226.0   56.8
282.8   120.4   + 1.18

LfB   Mean = + 1.00

316.1
11.7   55.6
126.0   75.6
201.6   131.2   + 0.95

306.3   + 0.95
9 37.0   19.6   73.3
66.4   134.9   58.1
9 33.2   193.0   131.4   + 0.95
5 - 5
14 32.7 G.M.T.
6460.

Dec 11, 1903.

II

LOB.

316.5

9 39.0 149 58.4

128.2 71.8

200.0 130.2 +0.97

309.2

17.6 68.4 +1.04

135.6 55.3

190.9 123.7 +1.01

ROA Mean = +1.01

224.4

283.1 58.7

38.3 69.3

107.6 128.0 +1.02

208.8 +0.98

9 46.6 281.2 72.4

85.6 43.7 58.9

9 42.8 102.6 131.3 +0.95

5 -.5

14 42 39 M.T.

6460.

HA = 0.0 VuB

9 54 S.T. = 3:24

Dec. = +21.4 North

HA = -4:22 East

Sp Wh. { -3.5 a

-2.5 B

-1.9 C.

Dec. 11, 1903.

(345) Tercidina   WCOb.

7 32 +5.6
3 52
3 40
8 20

35 22
36 38

37 17.5
37 27.5

38 19
38 50

41 51
42 19

10 43 33.5
44 14.0

---

45 27.5
(8.5) 45 59.0

4' N.

Dec. 11, 1903

star x ~~fea~~ (not in DM) precs. +7.1772 (8.5)
by 31.5 & 4.2 N of it.
Magn. star x = 9.0

---

10 48 28 10.0
48 38

48 49.5
48 59.0 9.5

49 8.0 9.5
49 17.5

1.0 49 Star x fols star a by 9.8 & 1.8 N of it

50 47
51 17

53 22.5
54 15.5

55 46.5
56 01.5 15.0

56 11.5
56 26.0 14.5

56 38.0 14.5
56 52.5

Dec. 11, 1903

Tercidina cont

10 56 star d fols star ~~b~~ c 14.8^s & is 3'.8 ~~North~~ of it.

11 00 star a prec star b 2^s & is 1'.5 S. of it.

11 19 32.5
19 47 14.5

19 58
20 12 14.0

20 23.5
20 37.0 13.5

13.5 23.5 ~~37~~
15.5 25.5

455
47.5

Dec. 11, 1903

11	28	43.6	
	28	57.8	14.2
	29	21.8	
	29	35.8	14.0
	29	48.0	
	30	02.2	14.2
	30	10.5	
	30	25.0	14.5
	~~30~~	~~33.5~~	
	~~31~~	~~0~~	
	31	31.0	
	31	45.5	14.5

Star d foto star e by
14.2 & is 32' N of it

~~These~~ Star seems to be probably ~~the~~ asteroid, ~~be~~ as transits seem to indicate a small amount of motion in the right direction, and the relative difference in Dec. is also in ~~the~~ right direction.

Dec. 11, 1903.
Tercidina cont.

11 35 22.5
36 15.5

11 36 Star d (supposed to be asteriod) now precedes ~~the~~ A.G (+6°1714) by 53^s & is 4.9 N. of it

L. P. P.

Dec. 12, 1903 (Saturday)

B 236	B 394
7 07 00	7 07 00
7 08 00	7 08 00

C's watch 20s slow at 7:09

β Lyrae — W obs.
Phot. T.
Shade No I
9.5 cap

18 45 + 32.6
24 50
6 05

7 15 Sky rather cloudy especially North of Zenith.

7 20 Sky pretty cloudy.

7 30 Sky a little clearer at different points but cloudier near β α practically invisible.

7 33 β faintly seen in finder—comp ✶ invisible

7 35 Clouds ~~thicker~~

7 40 α now invisible

Dec. 12, 1903.

7 45 Clouds now rather more, general everywhere.

7 58 Clouds rather thick everywhere.

β Lyrae invisible Hardly any stars to be seen.

8 05 No chance for β Lyrae tonight.

8 20 Clouds somewhere thinner at present. Few stars visible.

8 30 Clouds thicker

8 40 Clouds thick no stars visible apparently no chance for work

Dec. 12, 1903.

Sky a little clearer again, but somewhat
9 35 cloudy here and there.

Star x (of last night) near 8.5 Wc obs.

7 32 +5.6
3 20

4 12
7 48

An ~~critical~~ estimate relative to the 8.5 mag. near, somewhat hastily made last night, made star x about 0.5 mag. fainter than the 8.5, but as observer was principally trying to get hold of the asteroid, he did not spend so much time on the suspected variable as he otherwise would.

It would seem, however, that star x was a little fainter to night, and, in the finder, it appears to be nearly a mag. ftr. than the 8.5, but somewhat troubled by passing cloud and haze.

Will try to measure star x.

over.

Dec. 12. 1903.

Star X compared with +6° 1714 (B.D.)

Became cloudy again ~~jt~~ just before measts.

Ledgered, Plotted & Posted throughout.