KG
11365
562

KG 11365.562

1903pnae.proj...563W

KG11365.562

HARVARD
UNIVERSITY
LIBRARY
MAY 8 1956

# July 30. 1903. (Thursday).

| B.+C. 1182. | | | Bond 394. | | |
|---|---|---|---|---|---|
| 12 | 15 | 14.0 | 12 | 16 | 0.0 |
| | 16 | 14.0 | | 17 | 0.0 |

Dis Jup Sat IV Phot R
W. Obsr.
Colson Recorder

Compared with the most following and brighter of two sats near together on following side a little way from Jupiter = Sat III. Sat I has within a short time (13:07) come out from behind Jup. on following side.

12 45 22 Clds

| | | | | | |
|---|---|---|---|---|---|
| | 12 | 53 | 57 | | 7.0 |
| 12 54 22<br>+ 52<br>12 55 14 | | 54 | 12 | 44.2 | 51.2 |
| | | | 34 | 47.1 | 5.5 |
| | | | 44 | 45.6 | 52.6 |
| | | 55 | 05 | | 8.0 |
| 12 55 30<br>52<br>12 56 22 | | | 21 | 42.0 | 50.0 |
| | | | 38 | 41.1 | 8.9 |
| | | | 55 | 41.6 | 50.0 |
| 12 56 38<br>52<br>12 57 30 | | 56 | 13 | | 12.8 |
| | | | 26 | 35.2 | 48.0 |
| | | | 47 | 33.0 | 12.0 |
| | | 57 | 04 | 34.1 | 45.0 |
| 12 58 14 | | | 22 | 29.6 | 12.9 |

July 30. 1903

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 12 | 58 | 32 | 12 | 57 | 40 | 27.7 | 42.5 |
| | | 57 | | 58 | 05 | 27.1 | 14.8 |
| | 59 | 12 | | | 20 | 24.3 | 41.9 |
| | | 24 | | | 32 | 23.8 | 17.6 |
| | | 41 | | | 49 | 21.4 | 41.4 |
| | 00 | 01 | | 59 | 09 | 20.0 | 20.0 |
| | | 17 | | | 25 | 17.7 | 40.0 |
| | | 37 | | | 45 | 16.2 | 22.3 |
| | | 58 | 13 | 00 | 06 | | 38.5 |

Not seen later
Limit of Visibility

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 13 | 00 | 57 | 13 | 00 | ~~26~~ | | 23.0 |
| | | + 52 | | | 48 | 16.2 | 39.2 |
| 13 | 01 | 49 | | 01 | 04 | 15.8<br>16.0 | 22.9 |
| | | | | 01 | 27 | | 38.7 |

Impossible to begin photometric measures of Eclipse earlier than was done. There was so much cld. that equalizations could not be made and a part of the time Sat IV was invisible in the Photometer at full brightness. Photometric observations begun, however, as soon as sky became clear enough to

July 30. 1903.

measure sat. Sky or end of settings fairly clear

B. + C. 1182.
13 27 8.5
28 8.4

B. 394.
13 28 0.0
29 0.0

Corr for eclipse = + 52$^s$ throughout.

July 31. 1903 (Friday).

Comet 1903 c (Borrelly) Fr. obs.
Phot. T.

11 51 +52°.8
16 42
+ 4 51

Approximate setting on comet by circles.
16.57 S. T.
5.05 52°.4
11 52

8 12 Sky cloudy.

8 57 Clouds so thick everywhere and especially in the region of the comet, that it is impossible to see the region long enough to identify stars.

10 42 Impossible to get comet to-night. Clouds everywhere.

Aug. 1, 1903. (Saturday)

C's watch = 7s fast at 7:36

BDC1182 Bond 394
7 36 12,5 7 37 00

Comet 1903 c (Borrelly) W. Obs.
Phot. J.

11 44 +51°.4
16 45
+5 01

8.00 Clouds thick in this region.

Comparison star for photometric measurements = +51° 1693 (7.3)

Exposures, on next page.

Aug. 1. 1903.

Index to left.

38.1 ← 39.4 ✓ Comp. Star dis.
9 11 20 77.5
212.2 51.7 ✓
263.9 91.1 ✓ +1.88 ✓

(+1.87) ✓

30.3 53.0 ✓
83.3
217.3 39.2 ✓
256.5 92.2 ✓ +1.86 ✓

Index to right
309.2 39.2 ✓
348.4
119.4 53.4 ✓
172.8 92.6 ✓ +1.84 ✓

(+1.80) ✓

299.5 55.4 ✓
354.9
9 27 0 127.2 40.1 ✓
167.3 95.5 ✓ +1.77 ✓

mean +1.84 ✓

Aug. 1. 1903.

S. T. = 18 28
H. A. = 6 45
Dec. = 51° 4
P. A. = 81°. 0 = Ver. a.
Sprocket = 3.7 A
4.5 B
5.1 C

W's watch used in connection with previous measts. Watch is 22 secs. slow.

C's watch used from this time on.

~~Ep~~ Expts with Phot. R. Campbell Bs.

ζ Urs. maj. Σ 1744 Phot. R.

13 19 +55.6
19 9

5 50

see next page.

Aug. 1, 1903

| | | | |
|---|---|---|---|
| | 279.6 | | |
| 10 26 00 | 337.4 | 57.8 | |
| | 85.8 | 68.0 | |
| | 153.8 | 125.8 | 1.07 |
| | 278.6 | | 1.30 |
| | 335.2 | 56.6 | |
| | 99.1 | 48.1 | |
| | 147.2 | 104.7 | 1.54 |
| | | Mean | 1.49 |
| | 188.3 | | |
| | 236.3 | 48.0 | |
| | 10.6 | 48.6 | |
| | 59.2 | 96.6 | 1.74 |
| | 180.2 | | 1.68 |
| 10 35 00 | 241.8 | 61.6 | |
| | 14.5 | 39.8 | |
| | 54.3 | 101.4 | 1.62 |

Aug. 1, 1903

Σ 1495 Phot. R
Campbell, obs.
+59°.6

10 52
19 38
+8 46

abandoned, cat gut does not work.

Σ 1520 Phot R
Campbell obs.
+53°.4

11 09
19 50
8 41

266.2 < br. dis.
11 03 30 335.8 69.6
89.0 68.1
157.1 137.7 — 0.82

273.7 — 0.91
337.8 64.1
97.2 60.4
157.6 124.5 — 1.10

11 13 Abandoned. Double rather close so that it does not reverse easily. Closed up.

Aug 3, 1903 (Monday)

| B&C. 1182 | | | | Bond 394 | | |
|---|---|---|---|---|---|---|
| 7 | 32 | 45.2 | Campbell | 7 | 33 | 0.0 |
| 7 | 33 | 45.0 | Ellenbogen | 7 | 34 | 0.0 |

C's watch = $9^s$ fast at 7.35

Experiments with Phot. R,
Campbell, obs.

Twilight too strong for other work yet.

Σ 50' Distance 338
+46° H Mags. 3.7, 5.0

20 10
16 50
-3 20
12 00
8 40

20 10
16 55
3 15
8 45

Aug. 3, 1903

Brighter dis.
Index above

~~144.1~~
137.8
8 23 288.4
104.4
Abandoned for the present.

R Urs. Maj. Estimate
Campbell, obs.
10 32 +69°.5
17 32
+7 00

Moonlight

8.90
9.23
9.06

8 42 L 1, 2 m

S. Bootis
14 17 +54°.2 C. Ob.
17 47
+3 30

Moonlight

13.59
13.39
9 17 P 3, 2 q 13.49 Estim. difficult

Aug. 3, 1903

R Camelop

15.10 + 84.5

~~18~~ 18 30

+ 3 20

C. Ob

10.52
10.70
10.61

9 42 f 2, 1 g m

R Cassiop

23 52 50°.0

18 52

-5 00

12 00

7 00

C Ob

23 44 50°.6

18 55

-4 49

12 00

10.80
10.78
10.79

10 01 p 3, 2 q m

~~20 0~~

Aug. 3, 1903

R Delphini

| | | |
|---|---|---|
| 20 | 08 | +10° 0 |
| 19 | 08 | |
| -1 | 00 | |
| 12 | 00 | |
| 11 | 00 | |

C. Obs.

12.24
12.18
12.21

10:21 q 4, 1m

Exp. with Plot R. Campbell Obs

~~Σ 15 20~~ Plot R.

ζ Urs Maj.

Σ 1744

| | | |
|---|---|---|
| 13 | 19 | +55°.6 |
| 19 | 29 | |
| 6 | 10 | |

See next page

Aug. 3, 1903

Index below

174.8

10
~~9~~ 42 254.2 79.4

354.4 75.8

70.2 155.2 0.47

174.8 0.68

246.4 71.6

359.2 62.2

61.4 133.8 0.90

Plot Reversed Mean = 0.81

82.8

156.6 73.8

267.1 67.2

334.3 141.0 0.75

79.7 0.94

10 48 152.7 73.0

280.4 49.9

10 45.0 330.3 122.9 - 1.13

Aug. 3, 1903
Same Again

| | | | |
|---|---|---|---|
| | 77.4 | | |
| 10 50 | 161.2 | 88.8 | |
| | 270.1 | 67.3 | |
| | 337.4 | 156.1 | 0.46 |
| | | | |
| | 87.4 | | 0.55 |
| | 161.3 | 73.9 | |
| | 270.3 | 72.8 | |
| | 343.1 | 146.7 | 0.64 |

Phot. Reversed — Mean = 0.42

| | | | |
|---|---|---|---|
| | 59.8 | | |
| | 173.0 | 113.2 | |
| | 262.4 | 91.7 | |
| | 354.1 | 204.9 | |
| | | 155.1 | 0.48 |
| | 66.6 | | |
| 10 57 | 167.1 | 100.5 | 0.30 |
| | 259.4 | 86.4 | 0.3 |
| 10 53.5 | 345.8 | 186.9 | |
| | | 173.1 | 0.13 |

Aug. 3, 1903.

Same again

170.2
11 07 248.2 78.0
354.4 59.8
54.2 137.8 − 0.82

185.3 0.85
241.1 55.8
3~~56.5~~ 70 2 78.8
70.3 134.6 − 0.88

Phot. Reversed Mean = 0.78
159.3
265.9 106.6
330.2 120.6
90.8 227.2
132.8 0.92

163.5 0.71
11 16 270.6 107.1
333.2 99.2
11 11.5 72.4 206.3
153.7 0.50

11 22 Moon rather bright and some troublesome tonight.

11 30 Closed up.

C's watch used tonight

Aug. 7, 1903 (Friday)

Bond 394
B+C 1182 7 20 00
7 21 42.8 (Ellenbogen) 7 21 00
7 22 43.0 (Campbell)

C's watch $15^s$ slow at 7.20

Phot. R
Campbell, obs.

~~Σ 50′~~ ~~Distance 338~~
~~46°.4~~

20 10
16 59
—
−3 11
12 00
—
8 49

Experimental only.

Meas of a comp. of Σ 50′ with an adjacent star.

204.0
8 04 230.0 26.0
29.9 24.0
53.9 50.0 − 3.27
~~211.0~~
201.0 − 3.43
223.3 22.3
26.9 21.0
47.9 43.3 − 3.59

Aug. 7, 1903

Phot. Reversed        Mean = 3.98

118.8
132.0        13.2
300.9        13.3
314.2        26.5        -4.67

120.2        -4.54
8 12    133.9.        13.7
298.9        16.1
315.0        29.8        -4.42

Estimates of Var. Stars

R Comae        Campbell, obs.

11 53        + 20°.2
17 33        9.60
        9.26
+5 40        9.43

8 35    l 2, 4 m

R Virginis

C. Clf

12 34        + 7°.6
17 55
+5 21

Too low
church steeple interferes.

Aug. 7, 1903

δ Urs. maj.

C Obs.

12 36 61°.9

18 16

+5 40

9.33
9.54
9.44

m

9 08 g 5, 2 k.

Meas. of δ Bootis Phot R.
Campbell Ob.

15 10 33°.8
18 40
+3 30

15 10 + 33°.8
18 52
3 42

abandoned

Σ 29′ Phot R.
Campbell Obs.

16 18 + 34°.0
19 08
2 50

Experimental only

(see next page)

Aug. 7, 1903.

8.0
9 58 75.9 67.9
176.9 72.8
249.7 140.7 - 0.76

5.8 - 0.56
77.9 72.1
169.2 88.9
258.1 161.0 - 0.36

Phot. Reversed Mean - - 0.29
355.7
79.1 83.4
168.1 97.7
265.8 181.1
178.9 + 0.02

349.9 - 0.02
10 08 83.4 ~~75.1~~ 93.5
179.2 82.6
261.8 176.1 - 0.07

Aug. 7, 1903.

Σ 1888 Phot. R, Campbell, obs.

14 46 + 19°.6
19 32
+4 46

1~~26.3~~ 116.0
10.26 142.8 26.8
289.7 31.1
320.8 57.9 - 2.94

112.2 - 3.15
140.0 27.8
295.9 20.2
316.1 48.0 - 3.36

Mean = - 3.24

Phot. reversed
24.7
45.9 21.2
200.2 29.8
230.0 51.0 - 3.23

20.7 - 3.34
10.33 49.6 28.9
208.8 17.5
228.3 46.4 - 3.44

Aug. 7, 1903.

Same over

25.9
10 42 49.1 23.2
203.9 24.0
227.9 47.2 − 3.40

24.5 − 3.44
51.1 26.6
207.0 19.1
226.1 45.7 − 3.47

Phot. reversed Mean = − 3.43
297.0
314.9 17.9
110.9 29.3
~~142.9~~ 47.2 − 3.40
140.2

− 3.42

290.6
10 50 321.9 31.3
115.8 15.3
131.1 46.6 3.43

Aug. 7, 1903.

Same Clear.

| | | | |
|---|---|---|---|
| | 295.0 | | |
| 10 55 | 317.3 | 22.3 | |
| | 113.8 | 24.6 | |
| | 138.4 | 46.9 | - 3.41 |
| | | | |
| | 290.9 | | - 3.34 |
| | 320.0 | 29.1 | |
| | 115.1 | 21.0 | |
| | 136.1 | 50.1 | - 3.27 |
| | | | |
| | Phot. reversed | | Mean - 332 |
| | 206.2 | | |
| | 226.0 | 19.8 | |
| | ~~19.8~~ 21.0 | 28.9 | |
| | 49.9 | 48.7 | 333 |
| | | | |
| | 200.2 | | 3.30 |
| 11 05 | 229.9 | 29.7 | |
| | 24.8 | 20.1 | |
| | 44.9 | 49.8 | 328 |

Moon at the full and very troublesome throughout the evening.

11.15 closed up

C's watch used tonight

Aug. 8, 1903. (Saturday)

| | |
|---|---|
| BrC 1182 | Bond 394 |
| 7 22 19.2 (Ellenbogen) | 7 20 |
| 7 23 19.0 (Ellenbogen) | 7 21 |

7 30 cloudy

~~8~~7 55 Clearer

Experiments with phot. R.
Campbell, obs.

ε 1888

14 46 +19°.6
17 30
+2 ~~3~~44

8 30 Too cloudy.

ζ Urs. Maj. ε 1744

13 19 +55°.6
1~~0~~7 53
+4 34

Aug 8, 1903

8 38 39.8
8 39 44.0

~~Pos~~ Estimated position angle, 150

271.1
8 46 336.5 65.4
91.0 64.7
155.7 130.1 − 0.98

271.8 − 0.93
334.6 62.8
89.2 72.0
161.2 134.8 − 0.88

Phot. reversed Mean = −0.99
182.1
242.5 60.4
0.3 57.7
58.0 118.1 − 1.23

180.0 − 1.05
8 53 245.9 65.9
359.0 69.3
68.3 135.2 − 0.87

9 00 Sky much clearer

Aug 8, 1903

Same Again

178.9 C's watch =
9.05 249.5 70.6 18s fast at 9.02
359.8 63.2
63.0 133.8 − 0.90

182.0 − 0.92
245.2 63.2
0.8 68.0
68.8 131.2 − 0.95

Phot. reversed Mean = − 0.86
96.0
160.2 64.2
272.2 68.3
340.5 132.5 − 0.93

87.9
9 11 155.8 67.9 − 0.80
270.0 75.0
345.0 142.9 − 0.68

Aug. 8, 1903.

Same Again

90.1
9.14 161.7 71.6
279.3 56.7
336.0 128.3 — 1.01

91.0 — 0.82
155.9 64.9
265.2 82.2
347.4 147.1 — 0.63

Phot. reversed Mean = — 0.88
183.7
252.8 69.1
2.8 59.4
62.2 128.5 — 1.01

183.7 — 0.95
9 22 249.0 65.3
357.8 69.2
67.0 134.5 — 0.89

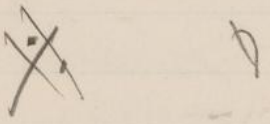
18 45 S. T.
+ 5 23 H. A. ~~55.8~~
+ 55°. 8 Dec
138 .8 P. A

Aug 8, 1903

Σ 1888

14 45 + 19°.6
18 55
+4 10

Chain broke and shutter can not be moved.
Abandoned.


κ Herculis Σ 2010

16 02 +17°.4
19.02
3 00

Position angle 15°
~~Distance~~,

Aug. 8. 1903.

~~brighterdis~~
61.1 fainterdis
10 00 163.0 101.9
230.3 121.7
352.0 223.6
300.0
136.4 – 0.85
50.0
167.8 117.8
232.3 – 0.92
345.0 112.7
230.5
300.0
129.5 – 0.99
~~89.8~~ Phot. Reversed
~~141.8~~ 89.8 < ~~fainterdis~~
141.8 brighterdis. 52.0
263.9 54.8
318.7 106.8 – 1.49

89.2 – 1.44
10 06 133.2 44.0
253.5 67.1 – 1.39
111.1
320.6

mean = – 1.18

Aug. 8, 1903.

Same Again

72.7
10 08 149.0 76.3
257.3 62.5
319.8 138.8 - 0.80

-0.88

76.3 63.9
140.2 67.2
255.2 131.1 - 0.96
322.4

Phot. reversed
~~50.4~~ 171.1
~~244.9~~ 230.1 59.0
348.0 61.5
49.5 120.5 -1.18

-1.14

173.0
10 14 230.3 57.3
348.4 66.4
54.8 123.7 - 1.11

19 35 S.T.
+ 3 32 H.A
+17° 6 Dec.
213.3 P.A

mean =1.01

Aug. 8, 1903.

ζ Coronae Σ 1965

15 35 +37°.0

19 45

+4 10

Position angle, 300

80.0

10 35 139.1 59.1

261.8 60.1

321.9 119.2 − 1.21

80.0 − 1.05

148.7 68.7

264.4 65.5

329.9 134.2 − 0.89

Phot. Reversed Mean = −1.00

160.5

230.9 70.4

347.1 65.1

52.2 135.5 − 0.87

170.0 − 0.94

10 40 235.2 65.2

351.5 63.1

54.6 128.3 − 1.01

Aug. 8, 1903

Same again

173.8
10 42 231.0 57.2
349.1 66.1
55.2 123.3 −1.12

168.9 −1.14
236.2 67.3
354.7 54.7
49.4 122.0 −1.15

Phot. reversed . Mean = −1.20
84.5
142.0 57.5
266.2 59.8
326.0 117.3 − 1.25

80.0 − 1.25
10 47 141.8 61.8
~~10 44~~ 260.2 55.8
316.0 117.6 − 1.25

20 08 S.T
4 33 H.A
37° [illegible].2 Dec,
250.0 P.A

Aug 8, 1903.

Partly cloudy first of evening; clear the latter part. More clouds at close. Moon very bright.

11 00 Closed up.

C's watch used tonight.

Aug. 10, 1903 (Monday)

B&C 1182 Bond 394
7 24 26 (Ellenbogen) 7 21
7 25 26 (Ellenbogen) 7 22
E's watch 1 m. 56s fast, at 8.46

S. Z. Cygni
Phot. R
Campbell obs.

20 29 + 46°.2
17 09
-3 20
12 00
8 40

20 37 + 44°.8
17 17
-3 20
12 00
8 40

7 52 k 4, 1 ~~m~~ l
Seagrave notation

Aug. 10, 1903

Comparison star = star l = +46°.2965 (9.1)

RdA

67.0 < Comparison star dis.

8 04 13 160.8 93.8

246.1 96.7

342.8 190.5 – 0.20

169.5

66.2

169.8 103.6 – 0.26

247.6 93.0

340.6 196.6

~~L.T.B.~~ 163.4 – 0.32

Phot. reversed

65.9 < variable dis. from here on to end.

90.3

156.2 ~~252.6~~

252.6 76.6

329.2 166.9 – 0.25

76.6

1

8 1~~2~~ 50 155.6 79.0 – 0.21

16 03 246.4 91.8

8 08 02 338.2 170.8 – 0.17

5 – 1 56

13 06 06 G.M.T.

Mean = –0.24

Aug. 10, 1903.

LFB

Same Again

69.2
8 13 20 156.4 87.2″
256.6 78.3″
334.9 165.5″ − 0.27″

71.0
149.8 78.8″ − 0.24″
249.8 89.4″
339.2 168.2″ − 0.22″

RGA.
Phot. Reversed Mean = − 0.34″
345.2
65.2 80.0″
168.2 70.9″
239.1 150.9″ − 0.56″

349.9 − 0.44″
8 19 12 56.3 66.4″
157.9 97.4″
8 .16 16 250.3 163.8″ − 0.31″
5 −1 56 Final Mean − 0.29″
13 14 20″

17 50 S.T.
− 2 : 41 East. H. A. altitude high,
+45.6 Dec observations
209.8 P. A rather difficult.

Aug. 10, 1903

Estimates of variables
Campbell, obs.
R. Comae.

11. 53 + 28.2
17 53
+6 00

Clouds in the west.
Too low and west.
Abandoned.

R. et S. Scorpii

16 11 − 22°.7
18 21
+2 10

16 11 − 23°.0
18 35
2 24

16 17 − 23°.1
18 37
+2 20

Aug. 10, 1903.

Campbell, obs.

R Scorpii

x9 19 ~~25~~ m 3, 1 n

$$\begin{array}{r} 9.54 \\ 9.45 \\ \hline 9.50 \end{array}$$

S. Scorpii

9 21 variable suspected and if certainly seen ~~= to~~ equal to alpha

~~θ~~ $\alpha$ = Var. 12.97

Some moonlight and possibly a little haze.

T, Ursae Maj.

$$\begin{array}{rr} 12 & 34 \\ 18 & 54 \\ \hline +6 & 20 \end{array} \qquad +60°.4$$

Too cloudy
Moonlight strong.
abandoned.

9 40 Conditions are too bad to continue with variables.

Aug. 10, 1903.

ε 1888

14 46 +19°.6
19 16
+4 30

Abandoned

ε 1744

13 19. +53°.6
19 39
+6 20

|  | Above. | Clouds. |  |
|---|---|---|---|
| 10 | 185.2 |  |  |
| ~~9~~ 16 | 222.3 | 37.1 ✓ |  |
|  | 355.1 | 51.1 ✓ |  |
|  | 46.2 | 88.2 ✓ | −1.96 ✓ |
|  | 166.3 |  | −1.64 ✓ |
|  | 232.9 | 66.6 ✓ |  |
|  | 358.6 | 47.3 ✓ |  |
|  | 45.9 | 113.9 ✓ | − 133 ✓ |

Aug. 10, 1903

Phot. Reversed

~~88 3~~ 89.7 5

133.2 3

261.8 4~~4~~.5

316.3 54.5

98.0 −1.71

74.7 661 −1.52

10 22 140.8 47.4

268.3 113.5 −1.34

315.7 mean = −1.58

Same Again

87.2

10 25 136.8 49.6

263.9 61.3

325.2 110.9 −1.40

76.2 −1.31

149.0 72.8

~~24~~ 269.2 45.8

315.0 118.6 −1.22

Phot. Reversed

0.0 45.0

45.0 63.4

169.8 108.4 −1.45

233.2

Aug 10, 1903

-1.33"

10.30 351.6 63.6"
55.2 55.4"
176.8 119.0" -1.21"
232.2

mean = -1.32"
final mean = -1.45"

20.00 S.T.

40
2~~36~~.6 P.a
+6 40 H.a
+55°.9 Dec.

ν Herculis

16 02 +17°.4
20 12
+4 10

see following pages.

Aug 10, 1903.

265.6
10 47 323.2 57.6✓
82.2 57.1✓
139.3 114.7✓ −1.31✓

262.2
317.9 55.7✓ −1.24✓
79.8 65.3✓
145.1 121.0✓ −1.17✓

Phot. Reversed
343.1
55.1 72.0✓
169.5 61.3✓
230.8 133.3✓ − 0.91✓

352.2 62.8✓ −0.95✓
10 53 55.0 66.7✓
167.1
233.8 129.5✓ −0.99✓

~~5~~ mean = ~~−1.18~~
−1.10

Aug. 10, 1903

Same again.

353.2 57.5
1056 50.7
169.0 67.2
236.2 124.7 -1.09

348.0 -0.96
54.8 66.8
166.7 70.3
237.0 137.1 -~~x~~0.83

Phot. reversed
66.4
262.8
329.2 66.9
78.3 ~~123.3~~ ~~-1.12~~
145.2 133.3 0.91

265.1 53.5 -1.00
11 00 318.6 71.9
71.7 125.4 -1.08
143.6

mean = 0.98

20 30 S. T.
280.0 P.A. final mean = -1.04
+17°.6 Dec.
4.20 H.A

(over)

Aug, 10, 1903.

Troubled during evening more or less by light clouds and strong moonlight.

11 15 Closed up.

Aug 12, 1903 (Wednesday)

B+C 1182 Bond 394

7 26 33.2 (Ellenbogen) 7 23

7 27 33.2 (Ellenbogen) 7 24

Comet ~~c~~ 1903c (Borrelly)

Phot. J.

Windell, obs.

10 42 +38°.5
17 10
+6 28

11 00 +40.0
17 30
6 30

17 30 S. T.
+6.37 H. A.
+40°.0 Dec.

10 53 = R. A.

Aug. 12, 1903.

226.2
8 35 36 254.4
22.8

Clouds in this region more or less all the time, but immediately after beginning measurements clouds became thick and comet and star disappeared entirely.

9 00 Abandoned.

Phot X adjusted by W.
Experiments with Phot. X.
Campbell, obs.

4.1
7.4
5.7 6)336
5.8 5.6
5.6
5.0

~~Image~~ Star to left
2.4
6.2
6.8 5)25.9
4.5 5.2
6.0

Aug. 12, 1903

Star to right

10 20 Stopped by clouds.

Experiments on doubles
Phot. R.
Campbells obs.

κ Herculis

16 02 +17.4
20

abandoned for

ζ Urs Maj. Phot R. C. Ob.
Σ 1744

13 19 +55°.6
20 19
7 00

(over)

Aug 12, 1903.

~~226.1~~
353.7 Rejected
10 52 47.0

55.3
10 54 167.5 faint dis.
228.6
354.1

112.2
125.5
237.7
122.3 − 1.14

45.1
176.3
238.1
352.9

131.2 −1.24
114.8
246.0
114.0 − 1.33

Mean = −1.21

Phot. Reversed
82.6 brighter dis
144.2
260.4
324.2

61.6
63.8
125.4 − 1.08

78.8
10 59 138.5
261.8
318.7

−1.18

59.7
56.9
116.6 − 1.27

10 56.5
5 −.6
15 55.9 G.M.T.

Aug. 12, 1903

Same again

79.5
11 02 139.0 — 59.5
267.5 — 48.9
316.4 — 108.4 − 1.45
~~887.7~~

− 1.28

87.7
138.8 — 51.1
252.1 — 72.9
325.0 — 124.0 − 1.10

Phot. Reversed. — Mean = − 1.32

Final Mean = −1.26

348.8
54.0 — 65.2
170.0 — 59.6
229.6 — 124.8 − 1.09
~~209.~~

−1.37

353.8
11 07 45.0 — 51.2
11 04.5 176.0 — 49.0
5 −.6 225.0 — 100.2 − 1.65
16 03.9 G.M.T.

S. T. = 20 42
H. A. = + 7 25
Dec +55°.9
P. A. = + 257.1

11 15 closed up

C.P. watch used ~~#~~ on double.
35 s fast at 9.30

Aug. 13, 1903. (Thursday)

B&C 1182
7 16 18
7 17 18

Bond 394
7 12
7 13

Comet c 1903 (Borrelly)
Wr obs.

10 53
0 03
10 50
17 11
210
+6 ~~22~~

+ 40°.0
.8
+ 39°.2

7 45 Clouds in this region.

8 36 setting on comet
18 13 = S.T.
+ 39°.7 = Dec
7 21 = H.a.
10 52 = R.a.

8 50 Too cloudy for comet. Comet seen, but clouds prevented measurement.

Aug 13, 1903

Estimates of faint variables

R. Cygni Campbell, obs.

19 33 +49°.9
18 33
-1 00

11. 00 C's watch 39s fast at 7.22

9 07 x 4, 2 y
13 16
12.94
13.05

S. Cygni

20 10 +56°.1
18 50
-1 20

10 40

abandoned - Too cloudy

R. Sagittarii

19 09 -19°.2
18 54
-0 15 t 2, 2 u
11.36
11.32
11.34

9 23
11 45

Aug 13, 1903

R Ophiuchi

17 02 −15°.5
19 02
+2 00

9 37 Clouds prevent observation, Moon rising.

Conditions are too bad to continue on faint variables,

Measures of Doubles
Phot. R
Campbell, obs.

κ Herculis

16 02 +17°.4
19 18
+3 16

Estimated position angle = 190.

Aug 13, 1903.

81,6
9 55 135,5 53.9
263,5 53.5
317,0 107.4 — 1.48

89,0 —1.52
137,7 48.7
265,2 55.0
320,2 103.7 — 1.57

Phot. Reversed Mean = — 1.40
353,5
49,1 55.6
174,1 53.4
227,5 109.0 — 1.44

350,8 — 1.27
10 01 48,2 57.4
163,3 66.7
9 58.0 230,0 124.1 — 1.10
5 —.6
14 57.4 G.M.T.

Aug. 13, 1903.

Same again

350.2
10 04 49.8 59.6
171.0 62.2
233.2 121.8 − 1.15

347.5 − 1.16
49.8 62.3
172.6 58.4
231.0 120.7 − 1.18

Phot. Reversed Mean = − 1.21
83.2
133.5 50.3
257.7 60.5
318.2 110.8 − 1.40

78.8 − 1.26
10 10 141.4 62.6
10 7.0 267.0 60.8
15 6.4 G.M.T. 327.8 123.4 − 1.12

Final Mean = −1.30

P.A = 296.7
Dec = 17°.6
H.A = 3.48
S.T. = 19.48

Aug. 13. 1903.

Σ 1944

13 19 + 55°.6
19 49
+6 30

167°.3
10 21 234.0 66.7
348.0 51.5
39.5 118.2 − 1.23

174.3 − 1.20
224.2 49.9
345.0 71.6
56.6 121.6 − 1.16

~~78.5~~ Mean = −1.23
Plat Reversed
78.5
146.4 67.9
267.5 46.5
314.0 114.4 − 1.32

83.0 −1.26
10 27 138.0 55.0
10 24.0 259.1 64.8
15 23.49 M.T. 323.9 119.8 − 1.20

Aug, 13, 1903

Same Again

| | | | | |
|---|---|---|---|---|
| | | 81.0 | | |
| 10 | 30 | 136.7 | 55.7 | |
| | | 263.0 | 52.5 | |
| | | 315.5 | 108.2 | − 1.46 |
| | | | | |
| | | 84.7 | | − 1.42 |
| | | 135.6 | 50.9 | |
| | | 262.8 | 60.1 | |
| | | 322.9 | 111.0 | − 1.39 |
| | | Plat, Reversed | | Mean = − 1.33 |
| | | 172.0 | | |
| | | 241.0 | 69.0 | |
| | | 351.5 | 52.5 | |
| | | * 44.0 | 121.5 | − 1.16 |
| | | | | |
| | | 173.3 | | − 1.24 |
| 10 | 35 | 225.3 | 52.0 | |
| | | 349.3 | 62.0 | |
| 10 | 32.5 | 51.3 | 114.0 | − 1.33 |
| 15 | 31.9 G.M.T. | | | |

P.A. = 257.9 Final Mean = − 1.28

Dec = 55°7

H.A. = 6.57

S.T. = 20 14

Aug 13, 1903

Estimates of variables (resumed)

T. Herculis Campbell, obs.

18 02 + 30°.5
20 17
+2 15

10 53 r 3, 1 s 12.71
12.86
12.78

U. Herculis

16 15 + 19°.5
20 35
+4 20

11 01 t 1, 3 u 11.70
11.72
11.71

Aug. 13, 1903

S. Herculis

16 46 + 15°.2
20 46
4.00

11.16 ✓
11.22 ✓
11.19 ✓

11.07 q 3, 1r

Troubled somewhat by clouds during the evening.

11 15 Closed up.

C's watch used for times to here this evening.

Aug. 13. 1903.

| B. & C. 11 & 2. | | | Bond 394. | | |
|---|---|---|---|---|---|
| 12 | 25 | 22.8 | 12 | 21 | 0.0 |
| | 26 | 22.8 | | 22 | 0.0 |

Dis Jup. ~~IV~~ I Phot R
W. Obs.
Colson Recorder.

Compared with nearer to Jupiter ~~of~~ two sats on ~~following side = sat~~ (the two sats being rather near together) = sat. III.

| | | | | |
|---|---|---|---|---|
| | 48 | | | |
| 12 49 49 × 12 | ~~49~~ 57 | | √338.0 | |
| -4 23 | 49 ~~50~~ 38 | 81.9 | √589.9 | 1 |
| 12 45 26 × | 50 04 | 72.0 | 345.5 | |
| | 38 | ~~77.0~~ | 587.5 | |
| | 51 05 | | 339.0 | |
| 51 45 | 30 | 79.7 | 588.7 | |
| -4 23 | | 75.3 | | 2 |
| 12 47 22 × 12 | 52 00 | ~~77.5~~ | 345.9 | |
| | 25 | | 691.2 | |
| | 52 | | 343.7 | |
| 12 53 48 | 53 17 | 73.1 | 56.8 | 3 |
| 4 23 | 54 25 | 78.6 | 343.2 | |
| 12 49 25 × | 38 | 75.8 | 61.8 | |
| | 55 15 | | 347.9 | |
| 12 56 42 × | ~~47~~ | 71.7 | ~~67.0~~ | |
| 4 23 | | 81.0 | 59.6 | |
| 12 52 19 × | 56 17 ~~53~~ | 76.4 | ~~337.2~~ | |
| | 57 20 | | 339.4 | |

Aug 13. 1903

| | | | | |
|---|---|---|---|---|
| | 12 57 54 | | 60.4 | 4 |
| | 58 24 | 74.1 | 342.2 | |
| 12 59 00 ×<br>-4 23 | 46 | 73.0 | 56.3 | |
| 12 54 37 × | 59 12 | 73.6 | 343.8 | ✓ |
| | 36 | | 56.8 | |
| | 13 00 02 | | 343.5 | |
| 13 00 39 ×<br>-4 23 | 26 | 77.5<br>76.6 | 61.0 | |
| 12 56 16 × | 54 | 77.0 | 342.0 | 6 |
| | 01 14 | | 58.6 | |
| | 32 | | 341.1 | |
| 13 02 08 ×<br>4 23 | 55 | 75.8<br>76.7 | 56.9 | 7 |
| 12 57 45 × | 02 18 | 76.2 | 345.2 | |
| | 45 | | 61.9 | |
| | 03 07 | | 343.0 | |
| 12 03 46 × | 31 | 77.3 | 60.3 | 8 |
| 4 23 | 04 03 | 74.0<br>75.6 | 341.0 | |
| 12 59 23 × | 22 | | 55.0 | |
| 13 00 16 ✓ | 39 | 66.1 | 349.7 | |
| | 55 | 60.8 | 55.8 | |
| 32 ✓ | | | | |
| 48 ✓ | 0.5 11 | 52.2 | 355.0 | |
| 1 03 ✓ | 26 | 48.2 | 47.2 | |
| 23 ✓ | 46 | 41.3 | 359.0 | |
| 48 ✓ | 06 11 | 41.1 | 40.3 | |
| 2 8 ✓ | 30 | 31.0 | 359.2 | |
| 26 ✓ | 48 | 18.2 | 30.2 | |
| 44 ✓ | 07 06 | 16.7 | 12.0 | |
| 3 9 | 37 | | 28.7 | |

Aug 13. 1903.

Not seen later.
Limit of Visibility

13 8 36 ×
4 22
13 4 14 ×

13 07 55 — 14.7
08 25 15.6 — 30.3
48 15.2 — 13.7
13 09 17 15.4 28.9

When photometer was put on and electric light attached found that there was trouble with the light. The trouble could not be remedied with some trying and as time was short the electric light was abandoned and Mr Colson read circles with Bull's eye lantern and also read time and recorded, so that settings were necessarily made somewhat slowly. ~~For~~ In some of the early readings the figure 6 was evidently taken for figure 9 (these being in the observations for full brightness). This was detected and proved by the reading for full brightness also following these, consequently the first figure of the wrong readings altered.

corr = $-4^{m}\ 23^{s}$ up to 13 6 22
corr = − 4 22 from 13 6 22 on.

Aug. 13. 1903.

| B. + C. 1182. | | | Bond 394. | | |
|---|---|---|---|---|---|
| 13 | 27 | 22.3 | 13 | 23 | 0.0 |
| | 28 | 22.3 | | 24 | 0.0 |

Aug. 14, 1903 (Friday)

C's watch = 32$^s$ fast 7:20

R.O.C. 1182 Bond 394.
7 25 33.5 C. 7 21 0.0

Comet 1903 C (Borrelly) W. ob.
Phot T.
+ 39°.4

10 51
17 16
+6 25

setting on comet
+38°.9 Dec
+6.50 H.a
17 40 S.T.

Setting on Star a
39°.0 = Dec.
6.45 H a
17 42 = S.T.

Magnitude of Star a, 7.8
star b precedes Star a 1 m.
30 s. and is 8'.2 south of it.
Magnitude of b is 9.0
Star c precedes star b 33 seconds

# Aug. 14, 1903

and is about 14′ south of it
Magnitude of Star c; 7.5 to ~~or~~ 7.8
Star d precedes star c, 38 seconds
and is 4.5′ north of it.
Magnitude of d, 9.0.
Star e follows star c, 35 seconds
and is about 2.8′ north of it
Magnitude of star e, 9.4

8 15 The comet now precedes star c about 10′ and is about 22′ north of it.

Measmt. of Comet. Plot. I.
Index O to left. and above. W. obs.

| | | | | |
|---|---|---|---|---|
| | 128.4 | < Comet dia. 40.5 | | |
| 8 26 | 168.9 | 51.4 | | |
| | 301.0 | 91.9 | 1.86 | |
| | 352.4 | | | |
| | | | | |
| | 122.0 | 52.0 | (1.88) | |
| | 174.0 | | | |
| | 308.2 | 38.7 | | |
| | 346.9 | 90.7 | 1.90 | |

Aug. 14, 1903.

phot. Reversed Index to right and below.

41.0
74.5 33.5 ✓
217.0 39.4 ✓
256.4 72.9 ✓ 2.41″

(2.39″)

35.7 40.7 ✓
8 35 76.4
8 30.5 219.2 33.6 ✓
13 30.5 252.8 74.3 ✓ 2.37″

mean 2.14″

+7 32 = H.A.
+38°.6 = Dec
18 22 = S.T.
157.5 = P.A. vernier B
2.5 A (sprocket
3.5 B
4.1 C

Comp. Star in prec. measts. is Star C (on p. 64) = +38° 2197 (8.4)

Region low, sky rather clear during observations, but observations rather difficult on account of low altitude. Observations considered good however. Extreme care exercised. W's watch used for times. Watch 3 secs. fast.

Aug 14, 1903

Estimates of Faint Variables
R. Ophiuchi, Campbell, obs.

17 02 − 15°.5
18 32
+1 30

8 59 s 1, 4 t 12.09
12.17
12.13

S. Librae

15 10 − 20°.3
18 45
+3 35

abandoned.
too low.

S. Coronae

15.16 +33°.4
18 56
+ 3 40

9 17 q 2, 1 r 11.29
11.73
11.51

# Aug. 14, 1903

## R. Herculis

15 55 +18°.2~~0 2~~
19 05

+3 10

14.05

9 30 m 3, 2 w variable extremely faint, but surely identified.

## W. Herculis

16 36 + 36°.7
19 16

+2 40

abandoned for present

## S. Bootis

14 17 +34°.2
19 17

+5 00

13 04
13 09

13.06

9 40 01, 2 p

Aug. 14, 1903.

R Delphini

20 10 +8°.5
19 25

4
~~0~~ – ~~3~~5

11 . 15

20 08 + 10°.0
19 38

30

11 30

11.49
11.52
11.50

10 02 05, 1p

W. Herculis (Resumed)

16 37 +36°.7
19 47

+ 3 10

13.49
13.30
13.40

10 11 a3, 2 t

Aug. 14, 1903

S. Cephei

21 30 77°.3
20 05

-1 25
10 35

21 15 +76°.4
20 15

-1 00
11 00

10 39 g 3, 2 h 10.14
10.02
10.08

R. Cassiopeiae
23 52 + 49°.7
20 25

-3 27
8 33

10 50 v 5, 1 p 10.43
10.40
10.42

Aug. 14, 1903

R Aquarii

23 35 − 16°.2
20 35
-3 0 0

9 0 0

11 05 0 2, 3 p

10.34
10.24
10.29

Night rather good for observations. Only variables were observed.

11 15 Closed up.

Aug. 15, 1903 (Saturday)

C's watch = 19 secs. fast at 7:24

JD. 6342 Campbell Observer

7 37 Antares & Mars (Campbell & Eelanbogen
altitude of stars about equal. See other book

Observations of faint variables

R. Virginis

12 . 34 +7°.6
17 34
+5 00

C Obs.

7 56 l 1, 3 m 9.05
9.04
9.04

U. Virginis

12 40 +6°.7
17 45
5 05

8 10 Abandoned. Region is too low and variable apparently very faint.
Light clouds in this region

Aug. 15, 1903.

S. Librae

15 11 -19°.0 C Ob

18 00

2 49

15 10 -20°.3

18 10

3 00

8 24 05, 195

~~10.85~~
~~10.70~~
~~10.78~~

10.85
11.10
10.98

S. Cygni C Ob

19 53 +58°.5

18 13

-1 40

10 20

8 43 h2, OK, 3l

10.86
11.08
11.06
11.00

Aug. 15, 1903

V Cygni

20 43 +47°.3

18 33

— Obs.

- 2 10

9 50

13.67

8 54 u 2, variable

Experiments with Phot. x

Campbell obs.

Measurements for faint comparison stars for

S. Bootis

14 17 +54. 2

18 47

+4 30

(See other side)

Aug. 15, 1903.

Measurements of star o.

9 18 14.6
12.9
16.9
15.0

4/19.4
14.8

Star ps
14.6
12.8
17.6
13.9

4/18.9
14.7

star qs

Owing to extreme difficulty of measurement, observations on faint stars discontinued. Observer thinks this is possibly do to foggy conditions in the atmosphere.

Measures of Doubles.
Phot. R.
Campbell, obs.

Aug. 15, 1903

Σ 1744

13 19 +55.°6
19 29

+6 10

COb

Position Angle = 340 (estimated)

~~158.4~~
260.4
9 49 330.0 69.6
88.9 58.1
147.0 127.7 −1.03

265.5 −1.06
324.8 59.3
86.9 64.9
151.8 124.2 −1.10

Phot-Revrsed Mean = −1.18
172.3
240.2 67.9
355.2 53.2
48.4 121.1 −1.17

184.0 −1.30
9 54.0 229.0 45.0
9 51.5 351.9 64.1
5 −.3 56.0 109.1 −1.44

14 51.2 GMT

Aug. 15, 1903.

Same Again

| | | | |
|---|---|---|---|
| | 175.0 | | |
| 9 56 | 232.3 | 67.3 | |
| | 1.0 | 47.9 | |
| | 48.9 | 115.2 | − 1.30 |
| | 182.2 | | − 1.34 |
| | 230.8 | 48.6 | |
| | 353.3 | 63.2 | |
| | 56.5 | 111.8 | − 1.38 |
| | Phot. Reversed | | Mean = 1.22 |
| | 83.1 | | |
| | 146.3 | 63.2 | |
| | 267.7 | 57.0 | |
| | 324.7 | 120.2 | − 1.19 |
| | 88.3 | | − 1.10 |
| 10 01 | 145.9 | 57.6 | |
| | 261.0 | 71.0 | |
| | 332.0 | 128.6 | − 1.01 |

Final Mean = −1.20

P.a. = 217.7
Dec 55°.7
H.a 6.31
S.T. = 19.50

Aug. 15, 1903

κ Herculis

16 02   +17°.4   Clb
19 52

3 50

Estimated position Angle = 210

165.0
10 13   243.2   78.2
3.0   46.5
49.5   124.7 — 1.09

177.7
− 1.20
233.3   55.6
354.0   58.9
52.9   114.5 — 1.31

Phot. Reversed   Mean = −1.27

80.0
147.0   67.0
274.6   44.2
318.8   111.2 — 1.39

89.2   − 1.34
10 18   141.7   52.5
262.3   62.9
325.2   115.4 − 1.29

Aug, 15, 1903.

Same Again

77.4
10 21 149.0 71.6
270.1 51.6
321.7 123.2 — 1.12

83.7 — 1.12
140.2 56.5
261.3 66.3
327.6 122.8 — 1.13

Phot, Reversed Mean = — 1.23
351.9
54.7 62.8
181.0 56.0
237.0 118.8 — 1.22

359.8 — 1.34
10 27 49.0 49.2
176.2 59.3
235.5 108.5 — 1.45

Final Mean = — 1.25

P. A. = 259.6
Dec = 17°7
H. A. = 4.12
S. T. = 20.14

Aug. 15, 1903

Nova Persei no. 2

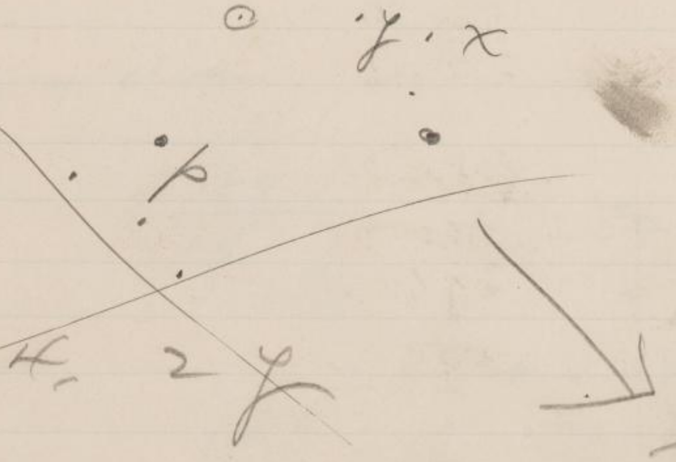
C Ob.

~~28~~ 27 12
20 27
~~27~~ 6 15
5 45

+ 42.8

~~x = Hag. 42~~
~~y = Hag. 49~~

Reject. not sure of identification. obs. — from memory.



11 00 ~~x 4, 2 y~~

Night fairly good but not very good for very faint stars.

11 15 Closed up.

Aug. 16. 1903. (Sunday).

Eclipse of Sat, IV ~~could~~ can not be taken. Cloudy and rainy. Y.

C's watch = 16$^s$ fast at 7:49

S. Z. Cygni
phot. R.
Campbell, obs.

20 36 +44.°8
17 56

~~0~~-2 40
9 20

8 06 Estimate - m 1, 2 m
R. A.

82.4 (comp * dis.
8 13 154.0 71.6
257.6 80.1
339.7 151.7 + 0.54

77.7 + 0.36
156.8 79.1
247.5 92.0
339.5 171.1 + 0.17

Aug. 17, 1903

Phot. Reversed L.B.B.

351.5
64.4 — 72.9
176.3 — 72.0
248.3 — 144.9 +0.68

352.4 — +0.44

8 20 30
33 30

74.8 — 82.4
167.4 — 86.8
254.2 — 169.2 +0.20

8 16.8 ~~45~~
5 -0.3
1~~5~~3 16.5 G.M.T.
6344.

Mean = +0.40

S.T. = 18:17
P.a. = 118.6
H.a. = 2h:08 East
Dec. +45.6 E.

Altitude is too high to take a second group.

Experiments on Measurements
of Fourteenth Magnitudes
Phot X. Campbell, obs.

R. Serpentis

15 40 — +15°.9
18 45
+3 05

Aug. 17, 1903

9 20 ~~9 00~~ ~~24, 12~~ 93 ola Finder in

~~Light is too faint for 12th magnitudes~~ 15"

Electric Light too faint for ~~20~~ 15. Will try 16.

Hagen Star 16

9 26 0.3
2.0 4)5.8
1.6 1.45
1.9

Hagen Star 17

2.6
3.3 4)11.7
2.9 2.92
2.9

Hagen Star 20

6.9
3.8 4)23.7
6.1 5.92
9 32± 6.9

Hagen Star 21
12.7
9 34 8.8

Rejected. Probably affected by clouds

clouds

No clouds noticed while star 21 was being measured.

Abandoned.

Aug. 17, 1903.

Measurements of Doubles
Phot. R.
Campbell, obs.

Σ 2272

+ 2°.6

18 00
19 50
+1 50

10 00 abandoned - Clouds.

Σ 2838

−3°.9

21 48
20 03
−1 45
10 15

Sky becoming very cloudy

10 10 Apparently no chance to get anything else.

10 15 closed up.

Aug. 17. 1903.

X Cygni. Phot. T. W. obs.

19 45 +32.6
22 41
+2 56

19 45 +32.6
22 50
3 05

Index left and above.

220.0 ∠ Comp. star dis.
14 19 50 254.1
45.50
71.0

223.2
250.2
36.8

14 40 Impossible to finish X Cygni tonight. Continually troubled by cloud.

Aug. 18, 1903 (Tuesday)

C's watch = 22$^s$ fast at 7:26

S. Z. Cygni

Phot. R.

Campbell, obs

20 36 + 44.8
17 36
−3 00
9 00

7 45 Estimated, − m 1, 2 n
l 4 m
m 3 n valid

~~F. + B.~~
~~348.2~~
7 52.~~00~~50 ~~71.0~~
~~163.7~~
~~246.4~~

~~348.6~~
~~73.0~~
~~159.0~~
~~255.6~~

Reject. wrong stars being observed See next page

# Aug. 18, 1903.

R. + a.

~~339~~, 341.1 ← variable dis

8 08.3 66.2 85.1

155.0 105.0

261.0 190.1

169.9 + 0.19

334.1

74.6 100.5 + 0.15

168.8 85.2

254.0 185.7

174.3 + 0.11

L + B

354.0 ← comp. dis. Mean = + 0.43

66.2 72.2

175.0 62.5

237.5 134.7 + 0.88

354.1 + 0.71

8 16.7 66.0 71.9

25.0 163.1 80.0

8 12.5 243.1 151.9 + 0.54

13 12.1 G.M.T.

6345.550

S. T. = 18:17

P. a = 267.7

H. a = − 2:12

Dec. = + 45°.5

altitude extremely high

observations difficult.

Aug 18, 1903.

Experiments with Phot. K
on Fourteenth Magnitudes.

R. Serpentis

15:39 + 15°.9
18:29
+2:50

Oil Dome

Hagen Star 16.

8 46 1.0
0.8 4)4.4
1.7 1.10
0.9

Hagen Star 17

0.9
2.0 4)6.8
1.4 1.70
2.5

Hagen Star 20

3.9
1.9 4)10.9
2.4 2.72
2.7

Aug, 18, 1903.

Hagen Star 21

4.0
6.1
7.4
7.6

$4\overline{)25.1}$
6.28

Star a

17.3
17.0
19.9
8 58 20.9

$4\overline{)75.1}$
18.8

Star b

9 00 20.2
21.0
16.8
19.0

$4\overline{)77.0}$
19.2

Experiments with Pilot X abandoned. measurements of faint fourteenths too difficult. Tried high power, but too difficult to manage same.

Estimates of faint variables
Campbell, obs.

(over)

Aug 18, 1903.

S. Pegasi

23 20 +8°.0
19 30
-3 50
8 10

23 12 +7.°2
19 37
-3 35
8 25

12.69
12.84
12.76

9 46 u 2, 1w

R Andromedae

24 13 +37.1
19 48
-4 25
7 35

9 59 variable extremely faint but certainly seen
Alpha 2 variable
Beta not seen

14.14 ✓

Aug. 18, 1903

R. Aurigae

29 03 +53.0
20 03

−9 00

3 00

10 12 variable too faint to be seen at this low altitude.

Nova ~~Persiae~~ Persei No. 2

27 13 +43.0
20 13

−7 00

5 00

10 31 Hagen 34 * 4, 1 Hagen 42

S. Aquarii

22 48 −20°.9
20 33

~~0~~ 2 15

9 45

8.12
8.10

8.11

10 45 d 5, 0e

Aug. 18, 1903

R. Arietis

26 02 +25°.2
20 48
-5 14
6 46

11.35
11.38
11.36

10 52 o2, 2p

S. Persei

26 08 +57.2
20 58
-5 10
6 50

9.17 ✓
9.23
9.20 ✓

11 01 f1, 3g Finder

R. Piscium

2~~6~~5 19 +2°.8
21 04
-4 15
7. 45

8.82 ✓
8.65 ✓
8.74 ✓

11 10 h1, 3K

Aug. 18, 1903

R. Aurigae (Resumed)

29 03 +53.0
21 23
−~~8~~7 40

~~3~~4 20

13.46
13.42
13.44

11:33 v 2, 2 p
variable and comparison stars used very faint. Close proximity of variable to a makes observation still more difficult.

11 45 Closed up.

Aug. 18. 1903.

χ Cygni. Phot. T. W. obs.

19 45 +32.6
23 40
3 55

19 40
22 45
3 05

19 45
22 47
3 02

For meas'ts see next page.

Aug. 18. 1903.

χ Cygni (Muesto.)

Index Left and above

220.5 ← Comp. star des.

13 15 00 252.5 32.0 ✓

44.5 27.3 ✓

71.8 59.3 ✓ +2.89 ✓

223.5 (+2.82 ✓)

251.1 27.6 ✓

40.5 35.0 ✓ +2.76 ✓

75.5 62.6 ✓

Index Right and below

132.7 32.1 ✓

164.8

315.0 27.4 ✓

342.4 59.5 ✓ 2.86 ✓

134.9 27.7 ✓ (+2.80 ✓)

13 25 10 162.6

13 20 05 311.0 36.2 ✓

18 20.0 G.M.T. 347.2 63.9 ✓ +2.72

6345. mean +2.81 ✓

Same again

130.8

13 29 0 164.7 33.9 ✓

313.2 29.8 ✓

343.0 63.7 ✓ +2.73 ✓

(+2.74 ✓)

133.9 28.3 ✓

162.2

310.0 35.0 ✓ +2.74 ✓

345.0 63.3 ✓

Aug. 18. 1903.
Index Left and Above.

41.1
73.8 32.7
224.5 26.1
250.6 58.8 +2.91
~~257.6~~

(+2.88)

44.4 26.3
70.7
13 44 30
73 30
13 36 45
18 36.7 G.M.T.
6345.

220.8 34.0 +2.85
254.~~5~~8 60.3

mean +2.81
Gen. mean +2.81

Waited for Mr. Brasch to go down to photographic insts.

H. A. = 4 43 00
Dec. = +32.8
S. T. = 24 32 00
P. A. = 23.8
Sprockets = 4.5 A
5.5 B
6.1 C

W's watch used for times on X Cygni. Watch 2 secs. fast.

Eye stops a little out of adjustment but extreme care exercised and observations considered good.

## Aug. 20. 1903. (Thursday)

o Ceti. Phot. Ro. W. obs.

2 14 −3.4

$$\begin{array}{rr} 26 & \overset{7}{1}\overset{4}{4} \\ 22 & 32 \\ \hline 3 & 42 \\ 12 & 00 \\ \hline 8 & 18 \end{array}$$

$$\begin{array}{rr} 26 & \overset{7}{1}\overset{4}{4} \\ 22 & 37 \\ \hline 3 & 37 \\ 12 & 00 \\ \hline 8 & 23 \end{array}$$

For measts. see next page.

Aug. 20. 1903.

o Ceti. Index Left and below

14.~~7~~2 51.1 Var. dis.

12 41 30 65.3

194.0 49.2

243.2 100.3 −1.65

(−1.60)

11.8 48.8

60.6

188.0 55.0

243.0 103.8 −1.56

Index Right and Above

277.7 54.4

332.1

100.5 49.1

149.6 103.5 −1.57

(−1.52)

279.9 48.1

12 52 53 328.0 59.6

12 47 12 95.7 107.7 −1.47

+5 −3 155.3 mean −1.56

17 47 9

17 47.2 = G. m. T. H.A. −3.6 (h m)

Dec. −4.0

S.T. 23 10

P.A. 157.8 Ver. A

~~Sprocket~~

L's watch used for times.
Watch 3 secs. fast.

# Aug. 21, 1903 (Friday)

C's watch = $10^{s}$ fast at 7:3V —

S. Z. Cygni
Phot. R.
Campbell, obs.

20 36 +44°.8
18 00
—
− 2 36

9. 24
7 59 l3 , 1 m

9.4
9.4
9.4

R. & B comp. star dio
269.4 ✓
8 04.3 347.0 78.6 ✓
81.9 94.9 ✓ + 0.12 ✓
176.8 173.5 ✓

+0.20 ✓
263.0
35~~5~~4.~~8~~1 91.1 ✓
90.8 74.3 ✓
165.1 165.4 ✓ + 0.28 ✓

August 21, 1903.

L. & B.

179.3 72.6
251.9 98.0
348.8 170.6 +0.18
86
~~90~~.8

+0.16

170.7 96.7
8 10.6 267.4 75.6
8 7.4 0.4 172.3 +0.14
13 7.2 G.M.T. 76.0

mean = +0.18

312.7 = P.A.
45°.4 = Dec
− 2:06 = H.A. (East)
18:~~24~~ = S.T.

8 30 Aurora in north west. See Record Book for 5-inch.

Estimates of Variable Stars — Campbell obs.

R. et S. Scorpii

16 12 −22°.7
18 52
+2 40

16 17 −23°.1
18 57
+2 40

Aug, 21, 1903,

Campbell, ob

R. Scorpii

8 59 n2, 1o

9.75
10.06
9.90

S. Scorpii

9 02 Alpha 3, 1 Beta

13.27
13.10
13.18

R. Ophiuchi

17 03 −15°.5
19 23
+2 20

11.77 ✓
11.36 ✓
11.56 ✓

9 16 g 5, 2 r

R. Camelop.

15 00 +83°.1
19 40
+4 40

10.02
10.02
10.02

9 43 e 2, 3 f

S. Pegasi

23 13 +7°.1
20 03
−3 10
8 50

12.28
12.44
12.36

10 01 t 2, 0.5 u

Aug. 21, 1903.

R. Arietis

26 07 + 24°.4
20 20

−5 47
6 13

11.25
11.38

11.32

10 13 o1, 2 p

u Persei

25 54 +54°.2
20 30

5 24
6 36

F.4

Cas Sequence

10 27 Variable 3d in Finder

b and c not marked on chart used.

R Trianguli

26 30 + 34°.0
20 45

−5 45
6 15

l = H.17
l′ = H.26

9.5

10 34 l 4, 2 l′

Aug. 21, 1903

R. Piscium

25 19 +2°.8
20 54

-4 25

7 35

10 46 h 2, 2 K

8.92
8.75

8.84

S. Aquarii

22 : 48 -21°.0
21 30

-1 18

10 42

8.40
8.27

8.34

11 22 e 3, 1 f

R Aquarii

23 35 -16°.2
21 35

-2 00

10 00

10.44
10.44

10.44

11 32 o 3, 1 p

Aug. 21, 1903.

R. Lyncis

30 50 +55°1
21 50
-9 00
3 00

Abandoned for present
Clouds in N. E.

δ Ceti

24 12 -9°.6
21 55
-2 17
9 43

11 46 m 2, 1 w
10.39
10.39
10.39

R Lyncis (Resumed

30 50
22 05 +55°.0
-8 45
3 15

Abandoned
Too cloudy

Aug. 21, 1903.

Observer intended to stay and observe variables in the east, but near 11:30 ~~12~~ o'clock clouds appeared in the N. W. and now bid fair to cover the whole sky. Observing abandoned for the night.

12:15 Closed up.

Aug. 24, 1903 — (Monday)

C's watch = $24^s$ fast at 7:30

phot. R. campbell, obs

S Z Cygni

+44.8

20:36
18 00
−2 36
9 24

7 44 K 3, 1 l 9.0

L + B
170.8 ← comp. star dis
7 52.1 263.7 92.9
345.2 103.7
88.9 196.6
360.0
163.4 −0.32
166.9 103.2
270.1 101.7 −0.40
346.1 204.9
87.8 155.1 −0.48

~~Stars 9~~0

~~8 39.6 8.0~~

Aug. 24, 1903.

phot. Reversed

256.0
0.0 104.0
73.0 105.3
178.3 209.3 -0.56
150.7

252.2 -0.52
7 58.5 0.9 107.7
10.6 76.0 97.1
7 53.3 173.1 204.8 -0.47
5 -.4 155.2
12 54.9 G.M.T. 12$\overset{3}{8}$.3 = P.A
6$\overset{3}{2}$51.538 18:22 = S.T.
-2:07 = H.A
+45° 5 = Dec

mean = -0.46

Experiments with Phot. K.
on region of R Serpentis Campbell, obs.

15 39 +16.0
18 45
+3 06

Star 20

8 40 4.0
3.3
3.9
3.9 4)15.1
3.8

Aug. 24, 1903.

Star 21
8.5
9.0 4)35.5
10.8 8.9
7.2

Star 17
1.9
1.9 4)2.5
1.3 1.6
8 46 1.4

Star 16
0.8
1.0 4)4.5
1.8 1.1
8 48 0.9

Star a
850.5 12.8
~~8 50.5~~ 13.9 4)19.4
15.9 14.8
8 53.5 16.8
14th magns.
~~Star 14~~ are too faint to measure
Is just barely seen

# Aug. 24, 1903

Star 16

8 55.5 0.9

1.7 4⟌4.6
1.2

0.8

1.2

Star 17

0.8

2.0 4⟌5.7
1.4

0.9

2.0

Star 20

6.5

7.4 4⟌23.2
5.8

4~~9~~.7

4.6

Star 21

8.8

4.9 4⟌29.1
7.3

6.1

9 03 9.3

Hagen 15, 3 Hagen 16
16, 2 17
17, 3 20
20, 4 21

Aug. 24, 1903

S Coronae

15 16 +33°.4
20 01
+4 45

9 47 q ~~p~~ 2; 5 r

11.29
11.33
11.31

S. Bootis

14 17 +54°.2
20 17
+6 00

9.55 n 3, 20

12.80
12.74
12.77

Σ1744 Phot. R

13 19 +55°.6 Campbell, obs

20 19
7 00

(see other page

Aug. 24, 1903

~~169.8~~
~~10 04~~ 270.0
10 04.7 338.4 68.4
~~111.~~398.8 59.6
158.4 128.0 — 1.02

280.2 — 1.08
338.4 58.2
93.0 64.0
157.0 122.2 — 1.14

Phot. Reversed Mean = -1.08
175.4
252.2 76.8
6.1 55.1
61.2 131.9 — 0.94

188.3
10 15.7 248.5 60.2 — 1.08
20.4 0.5 59.2
10 10.2 59.7 119.4 — 1.21
15 9.8 G.M.T.
6351.632

Aug. 24, 1903

10 17.5 180.2
245.0 64.8
2.8 54.4
57.2 118.2 — 1.13

181.1
239.3 58.2 — 1.06
350.5 70.8
61.3 129.0 — 1.00

Phot. Reversed Mean = -1.12

86.0
151.0 65.0
272.3 53.7
326.0 118.7 — 1.22

89.6 — 1.18
10 21.6 148.7 59.1
39.1 264.2 63.8
10 19.6 328.0 122.9 — 1.13
15 19.2 G.M.T.
6351.638+ 330.4 P.A.
+7:26 H.A.
+55.8 Dec
20:46 S.T.

Aug. 24, 1903

T Herculis Campbell, obs.

18:06 +31°.4
20 50

+2 44

13.16
13.10
13.13

11 00 s2, 2t

R Lyncis

30 50 +55°.0
21 30

—9 20
2 40

11 25 e3, 2f In large telescope 8.90 8.82 8.86
11 26 e4, 2f In Finder 9.00 8.82 8.91

o Ceti

26:15 -1°.5
22 00

-4:15
7 45

7.38
7.72
7.55

11 47 d1, 3β

Aug. 24, 1903

R Ceti

26 15 — 0°.2
22 15
—
−4.00
8.00

12 04 K 3, 2 l — 9.72 / 9.55 / 9.64

R Tauri

28 16 +9°.1
22 40
—
−5 36
6 24

12:28 variable 2 o, 5 p — 10.06 / 10.14 / 10.10

The brighter comparison stars are too bright to use to-night

S Tauri

variable very faint at this altitude
Estimated as

12 39 ~~3 t~~, t 3, 3 u — 12.76 / 12.71 / 12.74

Aug. 24,

Vesta

28 11 +15°.2
23 11

-5 00

7 00

Not Vesta. see next page
DM+14.686

13 : 15 Supposed Vesta follows the 9.3 ^
12 seconds, and is North. ±3'.
Will return to this later.

U. Ceti

26 32 -12°.5
23 42

-2 50

9 10

13 26 e 2, 2 ~~f~~ d (recorded wrong. f bad)) in finder

7.31
7.28

7.30

R Geminorum

6:56 + 22°.8
0.00

-6:56

5:04

6 55 + 20.8
0 15

14 02 -6 40 g 2, 2 h
5 20

7.80
7.72

7.76

Aug. 24, 1903

Neptune

6 : 14 +22°.8
0 30
-5 : 44
6 : 16

a = +22.1352 (7.5)
b = +21.1268 (8.1)

14 15 a 4 Neptune, Neptune 0.5 b
In Finder

Vesta (Resumed)

4 20 +15°.6
0 40
-3 40
8 20

e = +14.689 (8.5)
b = +14.692 (9.0)

14 30 Vesta follows D. M. + 14° 689 (8.5) ‡ 22± seconds
and is between 5 and 6 south of it.

14 32 a 1, 4 b. See D. M. chart for notation
(In Finder) Note:- the correction inserted here confirmed from memory by Mr Ellenbogen and Mr. Campbell both.

U Orionis

5 47 +20°.0
1 00
-4 : 47
7 : 13

14 40 U 1, 3 a

9.10
9.06
9.08

Aug. 24, 1903

~~Nov~~

Nova Gem (1903)

6 36 + 29°.1

1 06

−5:30

6:30

14 48 q 3, 1 r

c's visual notation used

See White's chart

---

7 20 + 8°.5

1 15

−6 05

5 55

15:00 Impossible to get S. Canis Min.

Too low and in some thin cloud.

15:15 Closed up

Aug. 27, 1903 (Thursday)

C's watch $9^s$ fast at 9:46

9 50 Cloudy early part of evening clearer now.

Experiments with phot X.
Campbell Obs.

Region of R Pegasi

23 3 +9.0
20 33
2 30
9 30

Abandoned - Too cloudy.

δ Herculis

16 45 + 15°.2
20 45
+4 00

Hagen Star no. 15.
Too bright for artificial star.

Hagen 16
Same conditions as 15.

Hagen 17.
Too hazy for experimenting with Phot. X.

Aug. 27, 1903.

Measurements of Doubles
Phot R
Campbell, obs.

Σ1821
14 09 +52°.4
21 09
+7 00

Estimated position angle = 60°
Distance 12″ ±

4.1
10 45.4 50.0 45.9
182.2 43.8
226.0 89.7 −1.92

4.0 −1.80
51.8 47.8
184.3 50.7
235.0 98.5 −1.69

Phot, Reversed
277.2 50.7
327.9 38.9
98.0 89.6 −1.92
136.9
−1.86

276.8 41.2
10 51.8 318.0 52.6
10 48.6 90.2 93.8 −1.81
15 48.4 G.M.T. 142.8
6354 mean = −1.83

Aug. 27, 1903

Same Again

275.2
10 53.5 323.2 48.0 ✓
94.9 39.1 ✓
134.0 87.1 ✓ -1.99 ✓

275.1 -2.04 ✓
315.8 40.7 ✓
100.0 42.9 ✓
142.9 83.6 ✓ -2.09 ✓

Phot. Reversed

188.8 44.9 ✓
233.7 47.7 ✓
05.2 92.6 ✓ -1.84 ✓
52.9

188.0 ✓ -2.03 ✓
10 59.5 227.7 39.7 ✓
10 56.5 6.0 39.3
15 56.3 G.M.T. 45.3 79.0 ✓ -2.22 ✓
6354.

mean = -2.04 ✓
final mean = -1.94 ✓

P.a. = 135.0

Telescope accidentally moved before other readings were made. Observer is positive that correct star was observed.

Not much more observer can do advantageously, though
11 15 sky is rather clear.

Closed up.

Sep. 1, 1903 (Tuesday)

C's watch 2s fast at 7:07.

Campbell, obs.

S Z Cygni

20:36 +44°.8
18 10
-2 26
9:34

9.8

7 32 m 3, 2n
Too high for photometric measurement.

U U Cygni
Phot. R.
Campbell, obs

21:34 +42°.6
18:24
-3:10
8:50

7 40 Alpha 2, 3 Beta

S.S. Cygni 11.97
7 44 0 2, 2 p 11-94
11-96

Comparison star is too far away to
measure U. U. Cygni
Abandoned

Moon too bright and sky too hazy and
cloudy for fainter work, will proceed with
doubles.

Sept. 1, 1903

Measurements of Doubles
Phot. R.
Campbell obs.

δ Cassiop

24 35 +56°.0
18 55
—————
−5 40
6 20

Estimated position angle = 255°
Distance 1′ ±

~~119.1~~
~~8 10~~ ~~126.2~~
~~307.8~~
~~125~~ Below
119.7
8 13.5 124.~~7~~4 4.7 ✓
297.7 7.1 ✓ ✓
304.8 11.8 ✓ −6.44

−6.28 ✓
118.0 6.9 ✓
124.9 6.7 ✓
298.1 13.6 ✓ −6.13 ✓
304.8

Sept 1, 1903.

Phot. Reversed Above

28.5
34.0 5.5
208.7 7.3
216.0 12.8 −6.26

29.0 −6.20
8 22.6 36.3 7.3
36.1 208.7 6.2
8 18.0 214.9 13.5 −6.15
13 18.0 G.M.T. mean = −6.24
6359.

~~Same Again~~

Σ 131

25 25 +60°.0
19 35
−5 50
6 10

25 33 +60°.6
19 43
−5 50
6 10

abandoned
unable to identify double

Sep. 1, 1903

43 Herculis

16 : 41    + 8°.8
19 : 51
+3 : 10

Estimated position angle = 240°
Distance = 1½' ±

112.3
9 05.5    133.3    21.0
294.5    18.4
312.9    39.4    − 3.80

~~111.0~~ 107.7    − 3.74
131.0    23.3
293.3    18.2
311.5    41.5 − 3.69

Phot. Reversed    Mean = − 3.97

27.9
42.4    14.5
202.8    17.2
220.0    31.7 − 4.28

4.20
23.2
9 12.0    40.0    16.8
17.5    202.7    17.4 − 4.11
9 8.8    220.1    342
14 8.8 G.M.T.
6359

Sep. 1, 1903

Dec. = +9°.1
H. a = +3:30
S. J. = 20:10

Σ 2325

18 25      −10.9
20 15
+1 50

Distance = 12" of arc
Position angle = 85.0

Moon too near this region so that a satisfactory observation can not be made.

Σ 2082

16 35      +49°.2
20 35
+4:00

Estimated position angle = 80°.0
Position Angle = 25" of arc

Abandoned.

Companion too faint (~~See next page~~)
to measure

Sep. 1, 1903.

Σ1744

13 19 $+5\overset{5^{\circ}}{\cancel{9}}.6$
20 59
+7 40

Estimated Position Angle = 100

90.1
10 06 147.6 57.5
274.7 53.0
327.7 110.5 − 1.41

90.2 − 1.42
147.1 56.9
276.3 52.1
328.4 109.0 − 1.44

Phot. Reversed Mean = − 1.39

03.5
49.9 46.4
173.8 66.4
239.2 112.8 − 1.35

357.8 − 1.36
10 12 53.8 56.0
15 9.0 G.M.T. 180.2 55.7
6 35 9. 235.9 111.7 − 1.38

Sep. 1, 1903.

Same Again

358.2
10 14 56.7 58.5
178.1 56.9
235.0 115.4 − 1.29

356.5 − 1.29
56.5 60.0
177.8 55.6
233.4 115.6 − 1.29

Phot. Reversed Mean = −1.38

270.0
321.0 51.0
86.8 56.1
142.9 107.1 − 1.49

268.0 1.48
10 18 325.2 57.2
10 16.0 91.4 50.1
15 1609 M.T. 141.5 107.3 − 1.48
6359.

+55°.8 = Dec
+7:55 = H A
21:15 = S. T.

Sep. 1, 1903

Experiments of Measurements of Jupiter's Satellites

Phot. R. Campbell, obs. Ellenbogen, Recorder

23 24 −5°.5
21 28
−2 04
9 56

Satellite 4 compared with satellite 1.
Satellite IV disappeared.

Experimental only.

| | | | | | |
|---|---|---|---|---|---|
| 10 | 36 | 26 | | 331.9 | |
| | | 37 | 114.7 | 86.6 | |
| | | 48 | 112.1 | 332.7 | −1.0 |
| | | 57 | 113.4 | 84.8 | |
| | 37 | 07 | | 333.2 | |
| | | 16 | 108.4 | 81.6 | |
| | | 27 | 106.4 | 333.9 | −0.7 |
| | | 40 | 107.4 | 80.3 | |
| | | 49 | | 335.8 | |
| | | 05 | 109.4 | 85.2 | |
| | | 18 | 100.0 | 33~~10~~8.0 | −0.6 |
| | | 27 | 104.7 | 78.0 | |
| | | 40 | | 339.8 | |
| | | 51 | 96.5 | 76.3 | −0.5 |
| 10 | 39 | 06 | 107.0 | 335.2 | |
| | | 15 | 10[illegible].8 | 82.2 | |
| | | 24 | | 333.3 | |
| | | 33 | | 78.9 | |

Sep. 1, 1903

Experimental only

| | | | | | |
|---|---|---|---|---|---|
| | | | 105.6 | | |
| 10 | ~~42~~ 39 | 42 | 104.6 | 335.2 | |
| | | 54 | 105.1 | 79.8 | -0.6 |
| 10 | 40 | 03 | | 336.1 | |
| | | 11 | 105.1 | 81.2 | |
| | | 17 | 106.9 | 335.4 | -0.6 |
| | | 25 | 106.0 | 82.3 | |
| | | 34 | | 336.3 | |
| | | 44 | 104.0 | 80.3 | |
| | | 55 | 105.1 | 337.8 | -0.6 |
| 10 | 41 | 04 | 10.4.6 | 82.9 | |

Adjusted Images in field

| | | | | | |
|---|---|---|---|---|---|
| | | 57 | | 337.2 | |
| | 42 | 04 | 106.7 | 83.9 | |
| | | 11 | 107.6 | 333.6 | -0.7 |
| | | 18 | 109.2 | 81.2 | |
| | | 27 | | 342.8 | |
| | | 38 | 109.0 | 81.8 | -0.6 |
| | | ~~46~~ | Reject | ~~343.9~~ | |
| | 43 | 01 | 101.9 | 338.~~1~~ | |
| | | 09 | 105.4 | 80.0 | |
| | | 19 | | 334.0 | |
| | | 28 | 108.2 | 82.2 | -0.6 |
| | | 38 | 104.9 | 335.~~4~~ | |
| | | 47 | 106.6 | 80.3 | |
| | | 56 | | 333.4 | |
| | 44 | 07 | 109.7 | 83.1 | |
| | | 18 | 105.6 | 338.0 | -0.7 |
| | | 28 | 107.6 | 83.6 | |
| | | 42 | | 113.2 | |

Sep 1, 1903

10:45 05 ~~05~~
10 45 ~~8~~ 18
10 45 29

100.2
80.4 214.1
90.3 121.2
201.6

The last four settings are an attempt at limit of visibility. These were ~~A~~ taken first by bringing satellite I to disappearance and second sat, II to disappearance, third and fourth repetition of first and second respectively

11 00 Closed up,

Sept. 3. 1903.

W. carried achromatic prisms of Phot. T. to the Clarks in August vacation and had them refigured and also made of the same foci.

W. went to the Clarks yesterday and got them back. The prisms are much improved and subsequent trials on stars show the the two prisms are now of the same foci and the figure of them very good ~~±~~ indeed. The star images are now very satisfactory.

W.

Sept. 2, 1903 (Wednesday)

C's watch = 12s fast at 7:17

B&C 118 2 Ball 103
7 18 12.5 7 18 00

ρ (Rho) Cassiop. Phot. T. H. obs.
9.5 inch cap used

23 : 47 +56°.7
19 20
-4 27
7 33

Comp. Star +56° 3115 (7.5)
variable dis. Index left and above

121.7 51.1 ✓
8 36.0 172.8 ✓
303.1 51.1 ✓
354.2 102.2 ✓ -1.60 ✓

122.5 51.7 ✓ -1.60 ✓
174.2 ✓
302.5 50.1 ✓
352.6 101.8 ✓ -1.61 ✓

Sep. 2, 1903

5

Index right and below
Phot. Reversed

35.1 45.9 ~~1.80~~
81.0
212.7 47.7
260.4 93.6 -1.82

33.0 50.0 -1.80
8 45.0 83.0
8 40.5 214.9 45.2
13 40.3 260.1 ~~105.2~~
95.2 -1.78
6360.569
mean -1.70

Same Again

~~35.4~~
~~8 48.2~~ 81.6 Index right and below
33.3 50.6
8 50.5 83.9
212.3 47.6
259.9 98.2 -1.70

34.9 47.7 -1.72
82.6
212.2 48.7
260.9 96.4 -1.75

Sep. 2, 1903

Index left and above.
Phot. Reversed

299.7 53.7
353.4
121.7 52.7
174.4 106.4 −1.50

300.8 51.9
8 57.3 352.7 −1.50
7.8 ~~114.3~~ ~~61.6~~
8 53.9 ~~175.9~~
13 53.7 G.M.T. 54.5
6360.579 106.4 −1.50
mean −1.61
120.5 Weighted mean = 1.68
175.0

Much troubled by clouds in last group above. This group 1/3 weight.

+56°.4 = Dec.
−3:40 = H.A.
20:12 = S.T.
121.2 vernier B = P.A.
~~75.84 B+C = sprocket~~
Sprocket 7.5 ~~A~~ B
" 2.4 ~~A~~ C

Sep. 2, 1903.

u Herculis

phot J. W. obs,

17: 12    +33°.2
20 27
+3 15

Clouds

9 351

Index below
224.6 <variable dis,
9 56.5    250.6    26.0
41.0    32.4
73.4    58.4    -2.92
~~24~~

220.5    35.5    -2.88
256.0
45.5    24.8
70.3    60.3    2.85

Sep 2, 1903

Index above
Phot. Reversed
128.5
167.7 39.2
310.7 32.9
343.6 72.1 −2.44

132.5 30.5 −2.48
10 06.4 163.0
10 01.4 306.8 39.3 −2.51
15 01.2 346.1 69.8
6360.626
Mean −2.68

+33°.5 = Dec
+3:55 = H.a.
21:12 = S.T.
310.7 vernier B = P.a.
3.5 B } sprocket
4.4 C }

Clouds in this region prevented second group being taken.

Sep. 2, 1903

184408 S Scuti

18 43 −8°.1 Phot. T. W. Obs.
21 33
+2 50

18 28 −8°.3
21 43
+3 15

Index right and above
110.6 var. dis.
10 5~~4~~5.2 182.9 72.3
296.7 61.7
358.4 134.0 − 0.90
~~146.6~~
~~149.5~~

− 0.88

116.6
177.5 60.9
290.1 75.0
5.1 135.9 − 0.86

Sep. 2, 1903.

Index Left and Below
Phot. Reversed

Mean = -0.94

21.6
94.4
207.5
266.7

72.8
59.2
132.0 — -0.94

29.4
11 02.4 — 87.2
11.76 — 203.5
10 58.8 — 271.6
15 58.6
6360.666

57.8
68.1
125.9 — -1.07

-1.00

Same Again

~~22.3~~
~~11 05.4~~ ~~91.6~~ Index Left and Below
209.1
11 07.4 — 266.9
24.0
94.5

57.8
70.5
128.3 — -1.01

205.6
269.7
29.7
85.3

64.1
55.6
119.7 — -1.20

-1.10

Sep. 2, 1903.

Index Right and above
Phot. Reversed  Mean = -1.00

117.9
177.9  60.0
291.1  74.1
05.2  134.1  -0.89

111.7  -0.89
11 16.5  183.2  71.5
23.9  296.7  62.7
11 12.0  359.4  134.2  -0.89
16 11.8  G.M.T.  Final Mean = -0.97
6360. 675+

-7°.7 = Dec.
+3:30 = H.A.
283.0 = P.A.
6.5 B } Sprocket.
7.5 C }

Above observations somewhat difficult. Moon not far distant, sky bright and rather murky; region a little low; a little cloud also, passing, but extreme care exercised.

Night rather poor. Troubled more or less throughout evening by clouds, bright moonlight and somewhat poor atmospheric conditions.

W's watch used throughout evening for time.

Sep. 2, 1903.

watch 15 seconds fast

11:40 ~~30~~ closed up.

L.P.

Sept. 3, 1903 (Thursday)

For comparisons see C's Record book.

ρ Cassiop. Pliot T.
9.5″ cap used. W. Ob.
23 47 +56.7
18 47
5 00
7 00

Left
123.4 < Var. dis.
7 52.5 168.3 44.9✓
303.4 48.9✓
352.3 93.8 − 1.81″
121.8
172.6 50.8✓ −1.75″
303.5 47.8✓
351.3 98.6 − 1.69″
Right mean = − 1.70″
32.4
84.1 51.7″
212.1 49.7″
261.8 101.4 − 1.62″

32.9
7 59.6 83.9 51.0✓ −1.66″
12.1 213.2 47.4✓
7 56.0 260.6 98.4 − 1.70″
12 55.7 G.M.T.
6361.539

Sept. 3, 1903

Same Over

Right
33.6
8 01.7 82.6
213.1
261.5

49.0
48.4
97.4 — 1.72

33.2
84.3
213.3
260.4

-1.71

51.1
47.1
98.2 — 1.70

mean = -1.70

~~Left~~

304.3
350.6
121.4
173.6

46.3
52.2
98.5 — 1.69

301.1
352.8
123.1
17~~3~~4.~~2~~4

-1.68

51.7
48.3
100.0 — 1.66

8 06.8
8.5
8 4.2
13 3.9 G.M.T.
6361.544

P.A. 121.1 Var. B.
H.A. — 4:36 East
Dec. + 56.4
S.T. 19:14
Sprocket { B 7.5, C 8.4

Sept. 3, 1903.

181315 — Serpentis

Full aperture. Phot. T.

18 12 −15.9 Wells.

19 52

1 40 Comp ✱ = −15.4927 (5.7)

Above

223.0 Comp ✱ ~~Last~~ dis

9 1.0 251.7 28.7

45.4 23.8

69.2 52.5 + 3.16

224.8 + 3.14

250.2 25.4

42.7 28.1

70.8 53.5 + 3.12

Below mean = + 3.03

132.5

163.2 30.7

314.3 28.1

342.4 58.8 + 2.91

133.6 + 2.92

9 7.0 160.7 27.1

312.3 31.4

9 4.0 343.7 58.5 + 2.92

14 3.7 G.M.T.

6361.586

# Sept. 3, 1903.

## Same Over

Below

132.2

9 9.0 163.3 31.1

313.8 28.1

341.9 59.2 + 2.89

134.2 + 2.94

158.3 24.1

312.2 32.3

344.5 56.4 + 3.00

Above Mean = + 3.06

42.8

72.6 29.8

226.0 23.8

249.8 53.6 + 3.11

46.2

9 15.0 ~~X~~68.4 22.2 + 3.18

223.6 28.3

9 12.0 251.9 50.5 + 3.25

14 11.7 G.M.T.

6061.592 P.A. 322.5 for B Final + 3.04

H.A. + 2:08 West

Dec. ~~++~~ − 15.4

S.T. 20:22

Sp. wh. of 5.5 B.

6.2 C.

Sept. 3, 1903.

u Herculis   Phot T.
17 12 +33.2   W. Obs.
20 57   Full aperture
3 45
~~8 15~~

Above
309.8 < var. dis
10 0.4   345.3   35.5
129.8   34.8
164.6   70.3 — 2.50

308.1
346.0   37.9 — 2.46
130.2   34.9
165.1   72.8 — 2.42
Below   mean — 2.68

224.0
251.4   27.4
41.9   31.4
73.3   58.8 — 2.91

— 2.91
220.6
10 7.2   250.0   32.4
7.6   44.3   26.3
10 3.8   70.6   58.7 — 2.91
15 3.5 G.M.T.
6361.628

Sept 3, 1903

Same Over

Below

222.7

10 9.2 251.0 283

42.8 31.1

72.9 59.4 — 2.88

221.8

251.9 301 2.93

44.1 26.8

70.9 56.9 — 2.98

Above Mean — 2.68

131.4

163.9 325

307.5 37.7

345.2 70.2 — 2.50

129.2 — 2.44

10 15.0 166.1 36.9

308.4 36.9

10 12.1 345.6 73.8 — 2.38

15 11.8 G.M.T.

6361.633 P.a. = 310.6 Ver. B.

H.a. = +4.8 West

Dec. = 33.4

S.T. = 21:23

[illegible] = B = 3.5

C = 4.4

Sept. 3, 1903.

o Ceti  2 w Ob.,
Phot. 2 w.

26 12 — 3.6
21 52
4 20
7 40

Left
356.8 < var dis ✓
11 7.5 49.7 52.9 ✓
166.3 72.0 ✓
238.3 124.9 ✓ — 1.09
349.1
57.9 68.8 ✓ — 1.14 ✓
177.1 52.0 ✓
229.1 120.8 — 1.18 ✓
Right. Mean = — 1.14 ✓
266.9
319.1 52.2 ✓
78.4 68.4 ✓
146.8 120.6 ✓ — 1.18 ✓

258.4 — 1.15 ✓
11 14.4 326.7 68.3 ✓
21.9 86.2 55.2 ✓
11 11.0 141.4 123.5 — 1.12
16 10.7+ G.M.T.
6361.674+

Sept. 3, 1903.

Same Obsr

Right
266.4
11 16.5 321.4 55.0
77.4 72.0
149.4 127.0 − 1.04

257.0 − 1.06
328.5 71.5
86.4 54.3
1~~3~~40.7 125.8 − 1.07
Mean = − 1.10
Left
147.4
231.8 54.4
349.2 69.9
59.1 124.3 − 1.10

169.0
11 23.5 238.6 69.6 − 1.14
358.1 51.4
11 20.0 49.~~1~~ ~~8~~5 121.0 − 1.17
16 19.7 G.M.T. Final M = − 1.12
6361.681 P.A. = 83.0 Var B 9.19
H.A. = 3:43 East Magn = 8.07
S.T. = 22:32
11 30 Dec. = − 3.°9

L. N. J.

C's watch used throughout evening. (L.C)

Sept 4, 1903. (Friday)

UU Aqui..

Plot T

21 34 +42.5 Wells

18 34

3 00

9 00 Comp.

Above <comp + obs

204.7

7 56.0 268.4 63.7

30.8 54.0

84.8 117.7 + 1.24

+1.23

211.4

265.1 53.7

25.1 64.9

90.0 118.6 +1.22

Below Mean = +1.08

111.3

184.0 72.7

297.3 59.4

356.7 132.1 + 0.94

118.2 +0.92

8 4.0 177.8 59.6

8 0.0 289.8 74.7

12 59.8 G.M.T. 364.5 134.3 + 0.89

6362.542

Sept 4, 1903.

Comp. Star = +42° 4169 (A?)

Below
110.8
8 7.5 187.0 76.2
298.2 57.8
356.0 134.0 ~~+0.89~~ +0.90

~~11~~ 119.2 +0.88
178.8 59.6
288.3 76.1
364.4 135.7 + 0.86

Above Mean = + 1.03
203.8
270.2 66.4
30.2 54.0
84.2 120.4 + 1.18

211.1 + 1.18
8 15.4 263.3 52.2
22.9 24.9 67.8
2
13 11.4 9 M.T. 92.7 120.0 + 1.19
6362.549 Final Mean = + 1.06
P.A. = 334 Over B
H.A. - 2:08 east
Dec +42.3
S.T. = 19:27
Sp. Wt. of B = 5.5
C = 6.5

Sept. 4, 1903.

Doubtful Var +67°.350

W.Ob.
Phot T.

28A 39 + 68.0
20 09
8 30
3 30

Above
19.7 < comp ~~s~~ dia.
9 15.6 96.3 76.6
205.8 66.6
272.4 143.2 + 0.71
24.1 + 0.71
89.3 65.2
199.0 78.2
247.2 143.4 + 0.71
Below Mean = + 0.60
285.0
369.2 84.2
114.4 67.3
181.7 151.5 + 0.55

2920 + 0.49
9 20.6 362.2 70.2
362 105.4 87.0
9 18.1 192.4 157.2 + 0.43
14 17.9 G.M.T.
6362.596

Sept 4, 1903

Same Obsr

Below

286.5

9
[illegible] 220 — 369.7 — 83.2

114.2 — 67.2

181.4 — 150.4 +0.57

290.3 — +0.50

364.9 — 74.6

107.3 — 82.3

189.6 — 156.9 + 0.44

Mean = +0.59

Above

198.2

277.5 — 79.3

24.8 — 64.9

89.4 — 144.2 +0.69

206.4 — +0.68

9 27.5 — 269.8 — 63.4

9.5 — 16.9 — 81.1

9 24.8 — 98.0 — 144.5 +0.68

14 24.6 G.M.T. — Final M = +0.60

6362, 601 — P.A. 79.4 Ver B

H.A. — 8:03 East

Dec +67.8

S.T. 20:40

Sp.W.h. a 5.5
B 6.5
C 7.1

Sept. 4, 1903

& u Herculis.

17 12 +33.2 Wells Phot T.
20 5 2
3 40

Co' watch = 15s fast at 9:46

Below

225.1 < vardis'

9 52.6 250.9 25.8
40.0 34.0
740 59.8 − 2.87

218.9
253.8 34.9 − 2.87
45.2 24.8
70.0 59.7 − 2.87

Above Mean = − 2.78

1337
161.6 27.9
309.2 36.6
345.8 64.5 − 2.69

130.2
9 58.81 165.4 35.2 − 2.70
9 55.7 313.2 29.2
14 55.59 MT 342.4 644 − 2.70
6362.622+

Sept. 4, 1903

Same Again

About — 1/2 weight.

134.4
10 0.4 161.9 — 27.5
308.8 — 37.6
346.4 — 65.1 — 2.67

128.3 — 2.63
165.6 — 37.3
312.7 — 30.1
342.8 — 67.4 — 2.59

Below — Mean = — 2.70

45.7
70.7 — 25.0
219.7 — 35.6
255.3 — 60.6 — 2.84

38.8 — 2.77
10 07.0 76.3 — 37.5
10 3.7 224.1 — 26.8
15 3.5 G.M.T. 250.9 — 64.3 — 2.70
6362.628 +

~~R.A.~~
~~H.A.~~
~~Dec~~
~~S.T.~~
~~Spect.~~

Sept. 4, 1903.

Same Obsn. III

Below

44.7

10 13.4 70.7 26.0

220.9 33.4

254.3 59.4 – 2.88

40.0 – 2.86

74.7 34.7

223.3 25.6

248.9 60.3 – 2.85

Above Mean = – 2.78

313.4

341.7 28.5

130.1 36.9

167.0 65.2 – 2.67

309.4

10 18.2 345.7 36.3 – 2.70

11.6 134.3 27.6

10 15.8 161,9 63.9 – 2.72

15 15.6 G.M.T. ~~Final Mean = – 2.75~~

636 2.636 P.A. 310.5 Ver. B. weighted Mean = – 2.76

H.A. 4:14 West / Troubled especially

Dec. +33.4 in second group by

S.T. 21:29 Southern sand. Images were

Sp. Wh. { 3.5 B noticed to grow dim in this second

4.4 C group. Observations considered good

however.

Sept 4. 1903

Preceding second group 1/2 weight =

10 45 Stopped by southern sands, which is now becoming much worse

Ledgered.
Plotted.
Posted.

Sept. 7. 1903. (Monday)

Tis. Refr. I. ~~Phot. R.~~ Taken with ordinary eye pieces, H. obs. ~~[illegible]~~ W. rec. B.+C. 1182 used for times.

7

| | | | |
|---|---|---|---|
| & 38 49 ✓ | &7 41 0 | Sat seen (Power 103) | |
| 39 44 ✓ | 41 55 | " " " " | |
| 40 24 ✓ | 42 35 | " " " " | |

In ~~three~~ obs. above power 103 used.
" all after this " 270 "

| | | |
|---|---|---|
| 41 49 ✓ | 44 0 | Sat. seen (Power 270) |
| 42 17 ✓ | 44 28 | " " " " |
| 42 46 ✓ | 44 57 | " " " " |
| 43 14 ✓ | 45 25 | " " " " |
| 43 33 ✓ | 45 44 | ~~Put on higher power (270)~~ " " " " |
| 43 46 ✓ | 45 57 | " susp. (Power 270) |
| 44 02 ✓ | 46 13 | " seen " " |
| 44 24 ✓ | 46 35 | " susp. (prob. seen) (270) |
| 44 43 ✓ | 46 54 | " not seen (Power 270) |
| 45 21 ✓ | 47 32 | " " " " " |
| 45 52 ✓ | 48 ~~[illegible]~~3 | " " " " " |
| 46 19 ✓ | 48 30 | " " " " " |
| 46 41 ✓ | 49 2 | " " " " " |
| 47 25 ✓ | 49 36 | " " " " " |
| 47 39 ✓ | 49 50 | " " " " " |
| &7 48 13 ✓ | 50 54 | " " " " " |

Sept. 7. 1903.

B.+C. 1182. Ballou 103.
7 59 11.2 7 57 0.0
8 0 11.1 58 0.0

Sat. disappeared rather close to limb of Jupiter. Seeing a little blurry, especially at times, but fairly good.

Moon full last night, and about 8° to 10° distant from Jupiter to right.

U U Cygni. Phot. T. Gr. obs.

21 34 +42.5
19 40
1 54
10 6

21 34 +42.5
20 04
1 30
10 26

(over)

Sept. 7. 1903.

Above
~~205.2~~ <comp *
8 47.6 203.9
269.0 65.1
33.3 50.9
84.2 116.0 + 1.28

212.7 + 1.32
260.4 47.7
25.2 64.6
89.8 112.3 + 1.36
Below Mean = + 1.10
108.9
186.4 77.5
297.2 58.1
355.3 135.6 + 0.86

118.8
8 56.0 177.2 58.4 + 0.88
1036 288.7 74.7
8 51.8 363.4 133.1 + 0.91
13 51.3 P.M. Altitude is now so high that it is
6365.577 not deemed advisible to take a second group. Extreme care exercised on group taken and observations considered good.

P.A. 154.6 Var B. S.T. = 20:21
H.A. * -1:14 Sp. Wh. { 5.5 B
Dec. 42.2 { 6.5 C

Sept. 7, 1903

C's watch = 29s fast at 9:20

~~181310~~ S Sauté

184408 wrk.

18 28 -8.3 Plot T.

20 58

~~30~~

2 30

I

Above

294.8 / vardus

10 0.0 358.~~10~~ 638

110.4 744

184.8 138.2 - 0.81

292.8

364.1 71.3 - 0.88

116.7 59.9

176.6 131.2 - 0.95

Below Mean = - 0.97

208.8

266.2 57.4

24.5 68.8

93.3 126.2 - 1.06

204.3

10 7.0 272.9 68.6 - 106

10 3.5 29.2 57.7

15 30 R.M. 186.9 126.3 - 1.06

6365.

Sept. 7, 1903

II

| | | | |
|---|---|---|---|
| | Below ... Same Over | | |
| | 209.3 | | |
| 10 10.0 | 265.6 | 56.3 | |
| | 25.8 | 65.8 | |
| | 91.6 | 122.1 | — 1.14 |
| | | | —1.16 |
| | 204.9 | | |
| | 269.7 | 64.8 | |
| | 29.7 | 55.9 | |
| | 85.6 | 120.7 | — 1.18 |
| | Above | | Mean = —1.05 |
| | 118.0 | | |
| | 177.3 | 59.3 | |
| | 291.2 | 73.5 | |
| | 364.7 | 132.8 | —0.92 |
| | 112.2 | | |
| 10 15.8 | 181.2 | 69.0 | —0.94 |
| | 296.3 | 62.0 | |
| 10 12.9 | 358.3 | 131.0 | —0.96 |

15 12.4 G.M.T.

6365.

Sept. 7, 1903

Same Over

III

Above
114.3
10 20.0 179.9 65.6
291.2 73.0
364.2 138.6 - 0.80

115.7 - 0.93
180.1 64.4
296.4 61.8
358.2 126.2 - 1.06
Below Mean = - 1.04
29.3
88.3 59.0
205.9 64.6
270.5 123.6 - 1.11

25.5 - 1.14
10 26.0 99.1 64.6
208.8 56.7
10 23.0 265.5 121.3 - 1.16
15 22.59 M.T. Final Mean = - 1.02
6366.
P.A. 102.7 Ver. B.
H.A. 3:02 West
Dec. - 7.6
S.T. 21:49
Spectr { 6.5 B
7.5 C

Sept 4, 1903

u Herculis

17 12 + 33.2 Phot T.
22 12 w. Obs.
5 00

Below
44.0 < var. dis.
10 59.5 70.9 26.9
221.4 33.1
254.5 60.0 – 2.86
40.7
72.4 31.7 – 2.83
222.8 30.0
252.8 61.7 – 2.80
Above. Mean = – 2.62
310.6
346.4 35.8
128.6 37.5
166.1 73.3 – 2.40

308.4 – 2.44
11 05.0 346.0 37.6
124.5 131.6 33.3
10 62.2 164.9 70.9 – 2.48
16 01.7 G.M.T.
6365.

Sept. 7, 1903.

Same Over

Above

310.5
11 6.4 343.8 33.3
130.4 35.6
166.0 68.9 — 2.54

308.6 — 2.49
346.4 37.8
131.1 34.1
165.2 71.9 — 2.44

Below Mean = -2.62

224.1
252.5 28.4
42.2 32.6
74.8 61.0 — 2.71

221.4 — 2.74
11 11.8 254.6 33.2
18.2 ~~44~~.0 2~~8~~9.2
11 9.1 73.~~1~~2 6~~1~~2.4 — 2.77
16 8.6 G.M.T.
6365.

P.A. = 130.4 V on B
H.A. = 5h.18 West
Dec = 33.4
S.T. = 22h.35
11 18 Seeing = {3.5 B
{4.4 C

L. P.

Sept. 8, 1903 (Tuesday)

UU Cygni. Plot I
W. Obs.

21 34 +42.5
18 54
2 40
9 20

~~Rt Below~~

289.6 <comp * dis
363.9
7 ~~4~~1.0 118.5 74.3
177.8 59.3
133.6 + 0.90

298.3
356.1 57.8 + 0.86
107.8 79.8
187.6 137.6 + 0.82
Rt Above mean = + 0.95

200.9
273.3 72.4
31.3 51.9
83.2 124.3 + 1.10

213.4 + 1.04
7 48.6 264.0 50.6
9.6 24.5 69.6
7 44.8 94.1 130.2 + 0.97
12 44.8 G.M.T.
6366.531

Sept. 8, 1903.

Same Obs.

RT Above

~~199.6~~

7 50.8 200.9
243.6 72.7
31.2 51.6
82.8 124.3 +1.10

211.4 +1.10
264.3 52.9
22.8 71.0
93.8 123.9 +1.11

LT Below Mean = +1.00

108.8
186.2 77.4
299.0 56.2
355.2 133.6 +0.90

~~116.3~~ 298.0 +0.90
7 59.8 ~~147.2~~ 356.8 58.8
10.6 111.1 75.2
7 55.3 ~~3~~ 186.3 134.0 +0.90
12 55.3 G.M.T. P.A. = 154.5
6366.538 H.A. = +2:11 ~~West~~ East.
Dec. = +42.4 North.
S.T. = 19:25
Sp. wh = { 5.5 B
6.5 C

Sept. 8, 1903.

S' S' Cygni 2 wds.
Phot T.

P.A.

41.5
8 16.4 73.8 <comp ~~x~~ dia.
216.5 32.3
260.0 43.5
75.8 + 2.32

35.3 + 2.30
78.4 43.1
221.7 33.9
255.6 77.0 + 2.28
P.B. mean = + 2.22
303.5
348.7 45.2
129.2 36.5
165.7 81.7 + 2.14

308.5 + 2.15
8 24.4 343.7 35.2
125.8 46.0
8 20.4 171.8 81.2 + 2.16
13 20.4 G.M.T.
6366.556

P.A. = 237 = Ver. B.
H.A. = 1.48 East
Dec. = +42.6 North
S.T. = 19.52
Sp. Wh. = { 3.5 B
4.5 C

Sept. 8, 1903

Nearly full moon is now pretty well up above the horizon, so that it is not considered best to take a second group on account of moon and high altitude of the star. Variable however well seen in first group, but becoming a little faint at end, on account of above mentioned conditions.

17 4406 RS Ophiuchi

WCB.

17 45 - 6.0 Phot T.
20 35
2 50

Above
203.0
9 24.5 265.5 ∠ comp * dis 62.5
35.8 45.4
81.2 107.9 +1.47
215.1
256.5 41.4 +1.56
28.4 58.7
87.1 100.1 +1.65
6366.603
Below mean = +1.45
114.8 62.8
177.6 57.7
301.6 114.5 +1.31
353.3
121.8
32.5 169.9 48.1 +1.34
63.5
9 28.5 295.8
14 28.5 MT ~~315.0~~ 359.3 111.6 +1.38

(OVER)

Sept 8, 1903.

Same Clear

Below
115.6
9 41.8 178.9 63.3
302.3 49.0
3~~4~~51.3 112.3 +

123.4
16
3
3

~~Above~~ ~~Mean = +~~

Stopped by cloud, rather low altitude and bright moonlight. Observations ~~somewhat~~ rather difficult in group taken, but group considered good.

R.A. = 136.5 Vert
H.A. = 3:26 West
Dec = -6°.3 ~~South~~
S.T. = 21:12
Sp. Wh. { 5.5 B
6.5 C

Sept. 8, 1903

V Aquilae Phot. T.
18 54 −6.0 wells
21 34
2 4 0

Above ~~Comp ★~~ =
109.6 <comp ★ dis
10 20.4 184.8 75.2
285.4 83.8
369.2 159.0 +0.40

1064 +0.35
188.6 82.2
284.5 81.7
366.2 163.9 +0.30
Below Mean = +0.40
19.4
95.6 76.2
196.5 82.4
278.9 158.6 +0.41

19.5
10 25.6 96.5 77.0 +0.46
200.0 75.9
10 23.0 275.9 152.9 +0.52
15 23.0
6366.641

Sept. 8, 1903

Same Over

Below

19.8

10 28.0 97.0 77.2

198.3 78.3

276.6 155.5 +0.47

18.4 +0.44

99.2 80.8

202.7 78.4

281.1 159.2 +0.40

Above Mean = +0.43

289.9

363.9 74.0

105.2 83.2

188.4 157.2 +0.43

285.3 +0.42

10 34.0 366.6 81.3

10 31.0 108.4 76.9

15 31.0 G.M.T. 185.3 158.2 +0.42

6366.647 Final mean = +0.42

P.A. = 297.0 Ver B.

H.A. = + 3:03 West

Dec. = − 5.4

S.T. = 22:02

Sp. Wh. = { 4.5 B
5.5 C

Sept 8, 1903.

u Herculis wObs.
plate T.

17 12 +33.2
22 12
5 00

Below
222.2 Lrardis
10 54.2 252.1 29.9
42.1 29.8
71.9 58.7 = 2.91

2228 — 2.94
254.2 31.4
45.0 25.9
70.9 57.3 — 2.96
above mean = — 2.74
132.4
164.2 31.8
308.0 37.6
345.6 69.4 — 2.53

129.6
11 0.4 164.9 35.3 — 2.55
310.5 32.7
10 57.3 343.2 68.0 — 2.57
15 57.3 9 M.T.
6366.665

Sept 8, 1903

Above
131.4
11 02.2 163.4 32.0
307.5 38.6
346.1 70.6 − 2.49

128.9 − 2.54
164.7 35.8
310.8 371
342.9 67.9 − 2.58

Below Mean = − 2.68
44.3
70.1 25.8
221.1 34.2
255.3 60.0 − 2.86

40.2 − 2.81
11 07.8 73.7 33.5
222.0 29.3
11 5.0 251.3 62.8 − 2.76
16 5.0 G.M.T Final Mean = − 2.71
6366.670 P.a. = 130.6
H.a. = 5:21 West
Dec. = +33.4 North
S.T. = 22:36
11 15 Sp. Wh. = {2.5 a
3.5 B
4.3 C

Sept. 27, 1903

11 20 C's watch used = $3^m$ fast

Ledgered, Plotted, Posted.

Sept. 10, 1903 (Thursday)

C's watch = 18s fast at 7:03

S^r S^r Cygni Phot T
20 Obs

21 34 +42.5
18 50

2 44
9 16

Above
2914 < var dis
7 32.6 362.4 71.0
101.3 91.5
192.8 162.5 − 0.33
288.0
16.2 88.2 − 0.40
114.4 67.7
182.1 155.9 − 0.46
Below mean = − 0.38
193.0
283.6 90.6
19.7 72.5
92.2 163.1 − 0.32
~~203~~
2036
7 40.4 271.2 67.6 − 0.37
7 36.5 12.5 90.2
12 362 102.7 157.8 − 0.42
6368. C's watch used on above group.

Sept 10, 1903.

P.A. = 57.6 Ver B. | Dec. +42°.6 | Comp wh. { B 3.5
H.a. −2h: 22m | S.T. 19h: 19m | C 4.5

U U Cygni Phot T.
20 Ob.

7 50 ~~Too~~ Clouds came suddenly preventing farther observations ~~at present~~.

8 50 Clouds thick. No chance for eclipse or anything further

23 30
20 40

Sco Jup. III. W. obs., F. E. Seagrave rec.

Cleared suddenly, ~~et~~ a little before time of disappearance, so that ~~disap~~ eclipse was taken without photometer and with 1 inch eye piece, power 270; of chron. B. + C. 1162 used for times. Comparison on page 177. Record of Mr. Seagrave accidentally made on separate sheet, pasted in on next page.

Sept 10, 1903.

| BAC 1182 | Ball 103 |
|---|---|
| 9 29 50.0 | 9 27 0.0 |
| 9 30 50.0 | 9 28 0.0 |

see next page for copy.

The above comparison copied on page. 177.

176 b

8

Dis. Jup. III. St. ob. F. E. Seagrave, vac.
Ecl. obs. with 1 inch eye piece power 27

9 16 20.5 = Satellite rather faint but seen
9 13 30

9 17 6.5 = Satellite faint but seen
9 14 16

9 17 24.5 = " " "
9 14 34

9 17 35.5 = " " " "
9 14 46

9 17 48.5 = not certainly seen
9 14 58

9 18 11.5 = not seen
9 15 22

9 18 27.0 = " " "
9 15 39

9 18 52.5 not seen

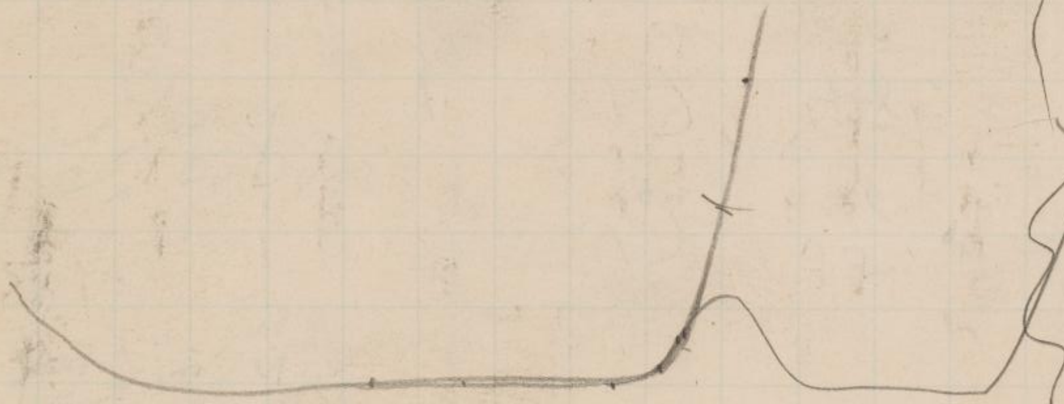
9 19 13.5 = not seen
9 16 24

9 19 37.8 = not seen
9 16 49

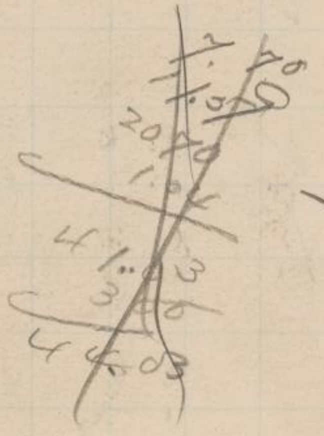
9 20 6.5 = not seen
9 17 16

9 20 32.0 = not seen
9 17 42

9 9 20 18 54.5 x not seen
9 9 21 18 26.5 36



Evidently no use to look further for Satellite as it has evidently disappeared sometime since. Seeing pretty good although sky not perfectly clear yet rather clear. Some moonlight.



Sept. 10, 1903.

~~B&C~~ 1182 Ball 103.

9 29 50.0 9 27 0.0
9 30 50.0 9 28 0.0

u Herculis Phot T.
W Obs.

~~#6~~

17 12 +33.2
21 42
4 30

10 15 Clouds so thick & abundant everywhere that although clouds dissapate somewhat at times, it is impossible to accomplish anything further. Clouds thicker again

L. P. P.

Sept. 11, 1903 (Friday)

St St Cygni w. Ob
Plot T.

21 34 +42.5
18 54
2 40
9 20

Above
284.0 < van dis
7 31.0 12.2 88.2
112.0 69.2
181.2 157.4 − 0.43
293.1
362.1 69.0 − 0.42
102.8 90.0
192.8 159.0 − 0.40
Below mean − 0.40
192.0
278.3 86.3
21.1 72.6
93.7 158.9 − 0.40

20 3.5
7 36.8 271.8 68.3 − 0.38
7.8 11.2 92.6.
7 33.9 103.8 160.9 − 0.36
12 33.5 G.M.T. R.A. 237.5 H.A. 2:24 Spect. {4.5 B
6369. Dec. 42.6 S.T. 19:17 5.5 C

Sept. 11, 1903.

UW Cygni Phot. T.
W. Obs.

Above

7 45.4 202.5 ← comp ✱ do

270.8 68.3 ✓

28.5 56.4 ✓

84.9 124.7 ✓ + 1.09 ✓

209.6

263.2 53.6 ✓ + 1.10 ✓

22.1 70.4 ✓

92.5 124.0 ✓ + 1.11 ✓

Below Mean = + 1.04 ✓

109.9

186.7 76.8 ✓

302.4 52.4 ✓

354.8 129.2 ✓ + 1.00 ✓

121.3 + 0.98 ✓

7 52.0 176.6 55.3 ✓

97.4 290.6 75.0 ✓

7 ~~48.7~~ 365.6 130.3 ✓ + 0.97 ✓

12 ~~48.3~~ 59 M.T.

6369.533 ✓

Sept. 11, 1903.
Same Obsr.

Below
111.4
7 54.5 184.7 73.3 ✓
299.6 56.5 ✓
356.1 129.8 ✓ + 0.98 ✓

120.0 + 1.00 ✓
176.0 56.0 ✓
291.5 72.0 ✓
363.5 128.0 ✓ + 1.02 ✓

Above Mean = + 1.03 ✓
22.0
92.3 70.3 ✓
209.8 55.8 ✓
265.6 126.1 ✓ + 1.06 ✓

32.0 + 1.06 ✓
8 01.5 86.1 54.1 ✓
116.0 199.9 72.7 ✓
7 58.0 272.6 126.8 ✓ + 1.05 ✓
12 57.6 ✓ G.M.T.
6369.540 ✓

P.A. 334.4 Var B.
Dec. +42.2 North
S.T. 19:42
H.A. 1:56 East
Spurh { B. 5.5
{ C. 6.5

Sept 11, 1903.

δ Can. Ven. Phot T.
W. Obs.

13 3 +39.3
20 10
7 07

Left & Above
190.2 Comp ✱ dis
8 45.0 285.4
22.4 95.2 ✓
95.2 72.8 ✓
201.5 168.0 ✓ +0.23 ✓
276.1 74.6 ✓ +0.18 ✓
8.6 98.2 ✓
106.8 172.8 ✓ +0.14 ✓
R. & B. Mean = +0.19 ✓
102.1
19~~4~~3.4 91.3 ✓
288.7 75.7 ✓
364.4 167.0 ✓ +0.23 ✓

104.2
8 52.4 183.4 79.5 ✓ +0.20 ✓
97.6 282.6 92.5 ✓
8 48.7 15.1 172.0 ✓ +0.15 ✓
13 48.3 ✓ G.M.T.
6369.

Sept. 11, 1903.

Slame Clear

RDB

104.4

8 55.4 192.5 88.1$^r$

292.0 76.2$^r$

368.2 164.3$^r$ +0.30$^r$

109.7 +0.27$^r$

184.0 74.3$^r$

280.1 93.2$^r$

373.3 167.5$^r$ +0.24$^r$

L.O.A Mean = +0.22$^r$

11.1

~~102.6~~ 104.2 93.1$^r$

200.0 75.2$^r$

275.2 168.3$^r$ +0.22$^r$

18.3 +0.18$^r$

9 03.0 97.4 79.1$^r$

192.5 93.4$^r$

8 59.2 285.4 9 172.5$^r$ +0.14$^r$

13 58.8 ✓ G.M.T.

6369. Final Mn = +0.20$^r$

P.A. 7.5 Var B

~~HA~~ 7:32 West

S.T. 20:44

Dec. +38.6 North

Spl. Wh. { 6.5 B
7.5 C

Sept. 11, 1903.

9 13 C's watch = 23$^s$ fast.
044068 — Camelop.

phot T.
20 lbs.

~~X~~ 39 +68.0
28
21 29

7 10
4 50

Lt Above
192.5 ∠ comp ~~x~~ dis
10 05.0 282.3 89.8
17.2 80.4
97.6 170.6 + 0.18
192.4
283.1 +0.10
90.7
14.2 87.6
101.8 178.3 + 0.03

Rt Below
Mean = +0.16
108.4
188.7 80.3
284.1 83.1
367.2 163.4, +0.32

106.5
+0.22
10 — 11.0 190.0 83.5
10 8.0 282.2 89.4
15 7.6 9 w.t. 371.6 172.9 +0.13
6369

Sept. 11, 1903

Same Over

Right of Below

106.7

10 13.2 188.3 81.6

285.7 81.6

367.3 163.2 +0.32

106.1 +0.26

188.9 82.8

282.5 87.2

369.7 170.0 +0.19

LOO. Mean = +0.15

15.6

106.9 91.3

194.0 86.0

280.0 177.3 +0.05

12.8 0.04

10 19.5 101.4 88.6

192.5 89.2

10 16.4 281.7 177.8 +0.04

15 16.0 G.M.T.

6369.

P.A. = 79.1 V&B

H.A. = 5:44 East

Dec. = +67.4 North

S.T. = 22 00

Sp.Wh. = { 5.5 B
6.5 C.

Sept. 11, 1903.

u Herculis.

Plot T w obs.

17 12 + 33.2
22 22
5 10

Below

41.4 < radius

10 48.4 43.8 32.4
222.0 31.5
253.5 63.9 − 272
42.8
72.9 30.1 − 278
222.4 30.4
252.8 60.5 − 2.84
Mean = − 2.64

Above

309.8
345.4 35.6
130.2 34.0
164.2 69.6 − 2.52

308.6 − 2.30
10 54.4 345.6 37.0
[illegible] 130.2 34.2
10 57.4
15 57.09 M.T. 164.4 71.2 − 2.47
6369.

Sept 11, 1903.

Same Clear

Above
309.2
10 56.0 344.9 35.7
1~~4~~31.1 35.1
166.2 70.8 – 2.48

308.8 – 2.48
345.2 36.4
130.6 34.6
165.2 71.0 – 2.47

Below Mean – 2.62
222.8
253.8 31.0
41.8 31.4
73.2 62.4 – 2.77

221.1 – 2.76
11 01.8 253.3 32.2
117.8 42.8 30.4
10 58.9 ~~172.5~~ 62.6 – 2.76
15 58.5
6369. 73.2

L.P.

P.A. 130.6 Var B.
H.A. 5 26 West
Dec. +33 4 North
S.T. 22 43

Sphl {
25 a
3.5 β
41 C

11 10 C's watch used throughout evening.

Sept. 12 1903. (Saturday)

SS Cygni

W Obs.
Phot T.

21 34 +42.5
18 54
2 40
9 20

C's watch used tonight.

Above
98.8 < var. dis.
> 26.4 196.4 97.9
279.1 77.0
366.1 174.9 − 0.09
110.2
186.3 76.1 − 0.11
278.8 96.3
375.1 172.4 − 0.13
Below mean = − 0.18
9.1
103.8 94.7
200.5 73.1
273.6 167.8 − 0.23

19.4 − 0.24
7 34.0 95.5 76.1
193.3 90.8
} 30.2 284.1 166.9 − 0.25
5 − .5
12 29.7 R.A. = 236.0 Var B.
6370 H.A. = −2:24 East Sp. wh {3.5 B
Dec. = +42.5 {4.5 C
S.T. = 19:14

Sept 12, 1903.

U U Cygni Plot T with.

RTB.

291.0 < Comp ★ dis.

7 44.4 365.3 74.3

129.4 59.2

178.6 133.5 + 0.93

298.8 + 0.92

357.7 58.9

111.2 74.7

185.9 133.6 + 0.92

Rob. mean = + 1.01

200.7

274.1 73.6

30.8 54.4

85.2 128.0 + 1.02

211.9

7 51.0 264.2 52.3 + 1.10

95.4 24.6 68.2

7 47.7 92.8 120.5 + 1.18

12 47.2 G.M.T.

6370.533

Sept. 12, 1903.

Same Obser

P.A.
201.3
7 54.0 271.4 70.1
30.8 54.7
85.5 124.8 +1.09

211.4 +1.12
264.8 53.4
24.2 68.4
92.6 121.8 +1.15
LtB. Mean = +1.09
111.0
184.1 73.0
~~20~~ 299.2 54.4
353.6 127.4 +1.03

121.1 +1.06
8 01.0 176.8 55.7 Wt. mean = 1.05
11 5.0 292.5 69.5
7 57.5 362.0 125.2 +1.08
12 57.0 G.M.T. Above group 1/3 weight
6370540 Last group very difficult on account of very high alt.
P.A. 154.5
H.A. −1.50 East
Dec. 42.4
S.T. 19:45
Spwh. { B 5.5
C 6.5

Sept 12, 1903.

185905 V Aquilae

20 Obs.

18 54 −6.0 Plot T
20 26

9″.5 cap.

1 3 2
9 00 C's ~~watch~~ = 29s ~~fast~~

above
296.0 ∠ comp * dis
9 7.0 356.2
105.8
185.5

60.2
79.7
139.9 + 0.78

287.2
366.2
117.8
176.2

79.0 + 0.80
58.4
137.4 + 0.82

Below

Mean = + 0.77

206.2
270.0
15.8
94.8

63.8
79.0
142.8 + 0.72

196.0
9 14.6 275.8
21.6 26.2
9 10.8 86.9
14 10.3 G.M.T.
6370.

79.8 + 0.74
60.7
140.5 + 0.76

Sept 12, 1903.

Below
206.1
9 16.6 263.9 — 57.8
~~2~~18.8 — 76.0
94.8 — 133.8 + 0.90

198.3 — + 0.89
273.1 — 74.8
26.5 — 60.2
86.7 — 135.0 + 0.88

Mean = + 0.88

Above
114.7
178.5 — 63.8
287.3 — 78.3
365.6 — 142.1 + 0.73

107.6 — + 0.72
9 24.4 185.3 — 78.7
9 20.5 293.6 — 64.1
14 20.0 G.M.T. 354.7 — 142.8 + 0.72
6370.

Final Mean = + 0.78

P.A. = 297.5 Van B.
H.A. = +2:09 West.
Dec. = −5.3
S.T. = 21:08
Spech. = { 4.5 B
5.5 C

Sept 12, 1903.

○ 44068 — Camelop

9.5" cap  Phot T.  W Obs.

28 39 +68.0
21 29
7 10
4 50

~~Loa.~~

196.6  < comp ✱ dia.
10 0.0  278.2  81.6
23.4  64.8
88.2  146.4  +0.65

202.9  +0.62
270.2  67.3
15.2  82.1
97.3  149.4  +0.59
~~RoB~~  mean = +0.63
115.9
178.9  63.0
286.2  82.1
368.3  145.1  +0.67

+0.6K
106.2  82.0
10 68  188.2  65.7
10 3.4  293.6  147.7  +0.62
15 2.99 M.T.  359.3
6370.

Sept. 12, 1903

Same Over

R & B

114.0
10 9.4 180.8 66.8
286.8 81.5
368.3 148.3 + 0.61

106.6
187.9 81.3 + 0.64
294.2 63.5
357.7 144.8 + 0.68

Mean = + 0.66

L & A

24.2
87.9 63.7
197.1 79.1
276.2 ~~132.8~~ + 0.72
142.8

~~13~~ + 0.68

10 17.4 14.7 82.4
26.8 97.1 64.8
10 13.4 204.5 147.2 + 0.63
15 12.9 G.M.T. 269.3 ~~Final mean = +0.64~~
6370

~~R.A.~~ ~~S.T.~~
~~H.A.~~ ~~Sid.~~
~~Dec.~~

Sept 12, 1903.

Same Obs; cap off

~~L~~ a.

~~19.3~~
~~10 28.5~~ ~~93.3~~ 15.9
10 35.4 ~~192.7~~ 98.4 82.5
28. 197.2 71.8
2~~7~~69.0 154.3 + 0.49

22.7
94.1 + 0.45
71.4
192.4 86.9
279.3 158.3 + 0.41

R.D.B. mean = + 0.56
295.3 64.5
359.8 80.0
107.6 144.5 + 0.68
187.6

+ 0.68

286.5 80.0
10 42.6 366.5 64.9
114.3 144.9 + 0.68
10 39.0 179.2
15 38.5 G.M.T.
6370.

P.A. = 259.5 VerB.
HA. = −6:18 East
Dec = +67.5 North
S.T. = 22:24
Sp.Wh. = { B. = 5.5
C. = 6.5

When W. looked in the finder before beginning obs. noticed at ~~first~~ once that var. was very perceptibly fainter than last night with respect to ~~comp.~~ star

Sept. 12, 1903

ω Herculis phot T. Webb

17 12 +33.2
22 32
5 29 9.5" cap used.

Above
311.6 <var dia
10 58.5 340.2 28.6
129.6 35.7 − 2.70
165.3 64.3

307.2
344.6 37.4 −2.70
132.8 26.8
159.6 64.2 − 2.71
Below Mean = − 2.73
223.5
248.8 25.3
38.8 36.0
74.8 61.3 * − 2.81
217.8
11 5.5 255.5 37.7 −2.76
124.0 43.3 26.4
~~10 5~~ 69.7 64.1 * − 2.71
11 02.0
16 01.5 G.M.T.
6370.

Sept 12, 1903

Same

Below

224.9

11 7.0 249.9 25.0

39.2 35.2

74.4 60.2 * − 2.85

218.7

256.6 36.9 * − 2.81

45.0 25.6

70.6 62.5 * − 2.77

Above Mean = * − 2.74

132.0

160.0 28.0

307.7 37.7

345.4 65.7 * − 2.65

127.7 * − 2.66

11 13.0 165.4 37.7

312.5 27.8

11 10.0 340.3 65.5 * − 2.66

16 9.5 G.M.T.

6370. P.a. 310.0 V or B

Ha. 5:41 West

Dec. + 33.6 North

S.T. 22:55

Sp.Wh. { 2.5 a.

11 20 3.5 B.

4.1 C.

L. P. P.

Sept 14, 1903 (Monday)

St S Cygni.

W Obs.
Blot T

+42.5
21 34 ~~+72~~
19 00
2 34
9 26

above
95.1 {var dis

7 21.4 198.0 102.9
281.4 89.1
10.5 192.0 + 0.23
103.6 168.0
188.3 84.7 +0.27
270.9 111.6
22.5 196.3 + 0.31
Below 163.7 mean = + 0.20
5.3
110.2 194.9
194.9 82.5
277.4 187.4 ~~x~~ + 0.14
172.6
15.2
+ 0.14
7 28.6 100.6 85.4
7 25.0 185.6 107.3
12 25.09 M.T. 287.9 187.7 + 0.14
6372. 172.3

P.A. 237.2 vid B. Dec. +42.5 Splw. = {3.5 B / 4.5 C
H.A. 2:21 East S.T. 19:20

Sept 1~~3~~4, 1903.

UU Cygni 20 c Obs.

Phot T.

Above
21.9 < comp * dis
7 39.2 92.4 70.5
210.5 53.2
263.7 123.7 +1.11

31.4 +1.14
83.4 52.0
201.2 69.8
271.0 120.8 +1.18
Below Mean = +1.10
289.0
363.0 74.0
120.4 52.0
172.4 126.0 +1.06

300.2 +1.04
7 50.0 352.2 52.0
89.2 109.7 75.6
7 44.6 185.3 177.6 +1.03
12 44.6 G.M.T.
6372.531

Altitude very light on both SS & UU Cygni prevented W. from taking seconds groups on ~~these stars~~. As observations run smoothly however second groups not considered necessary.

Sept ~~13~~ 4 1903.

P.A. 154.6    H.A. −1:53 East
Dec. +42.4    S.T. 19:42
Sprob = 5.5 B & 6.5 C

044068 — Camelop
28 39 +68.0
20 39 9.5 cap used.
8 00 Cornatch 2^m fast 0;56
4 00

~~Belt~~ Above
197.2 < comp ✱ dis.
9 3.0 276.2    79.0
240    64.7
88.7    143.7 +0.70
206.4
270.4    64.0 +0.64
12.8    85.6
98.4    149.6 +0.58
Below    mean = +0.63
116.1
179.8    63.7
285.6    82.7
368.3    146.4 +0.65

105.1    +0.62
9 11.0 188.5    83.4
9 7.0 293.6    66.3
14 7.0 G.M.T. 359.9    149.7 +0.58
6372. Pencils gave most trouble in this group. Readjusted them, as much as possible, before next group. This group weight ½.

Sept 14, 1903

Same Ovar.

~~Below~~

103.8
9 13.7 1~~4~~81.8 78.0
2~~8~~61.6 80.2
341.8 158.2 + 0.42

104.8 + 0.4~~6~~8
189.~~4~~5 84.7
292.3 67.4
359.7 152.1 + 0.53

Above Mean = + 0.55

15.0
~~X~~99.2 84.2
205.1 64.6
2~~7~~69.7 148.8 + 0.60

23.1
9 21.6 88.3 65.2 + 0.62
9 17.6 196.2 81.4
14 17.6 G.M.T. ~~248.2~~ 146.6 + 0.64
6372. 277.6
~~P.A.~~
~~H.A.~~
~~Dec.~~
~~S.T.~~

Sept 14, 1903

S Cane Ori

III

Above
~~18~~, 161.9
9 32.7 242.0 80.1
349.6 66.2
55.8 146.3 + 0.65

169.1 + 0.62
235.7 66.6
341.8 82.0
63.8 148.6 + 0.60
Below Mean = + 0.54
~~8~~79.4
146.1 66.7
250.5 84.5
335.0 151.2 + 0.55

69.5 + 0.46
9 41.0 156.1 86.6
7.37 255.5 73.2
9 36.8 G.M.T. 328.7 159.8 + 0.38
6872. Weighted Final Mean = +0.5~~7~~6

Pencils difficult to get hold of, being partly under the eyestop. Observations labored and rather difficult, but the greatest care exercised.

Sept 14, 1903

P.A. - 259.0 Var B. S.T. 21:35
H.A. - 7: 09 East
Dec. +67.6

Spect. { 5.5 ~~A~~ B
6.5 B G
~~7.1~~

185905 V Aquilae

Wells
~~Plate I~~

9.5" cap used. 18 54 -6.0
21 44
~~+0~~
2 50

Above

~~259.0~~ < comp * dis

~~10 6.4 329.5~~

~~70.5 6.8~~

69.9

10 11.0 152.9 83.0
255.8 73.5 +0.45
329.3 156.5

78.1 +0.44
148.6 70.5
249.0 87.4 +0.42
336.4 157.9 mean = +0.56

Below

341.2
60.0 78.8
172.2 64.6
236.8 143.4 +0.71

347.3 +0.68
10 18.5 54.4 67.1
9.8 163.2 78.6
10 14.9 241.8 145.7 +0.66
15 14.9 Gm
6372.

Sept 14, 1903.

Same Star.

Below

341.0

10 21.6 63.4 82.4

169.0 65.4

234.4 147.8 + 0.60

351.2 + ~~0.70~~ 0.66

54.4 63.2

162.4 79.2

241.6 142.4 + 0.73

Above Mean = + 0.5~~7~~ 5

248.4

335.1 86.7

77.0 68.9

145.9 155.6 + 0.47

258.7 + 0.44

10 29.4 329.2 76.5

70.7 81.7

10 25.5 152.4 158.2 + 0.42

15 25.5 Am. T. P.a. = 297.5

6372. H.A. = + 3:23 West

S.T. = 22:23 ~~#~~

Dec = - 54 South

Sp Wh = { 4.5 B / 5.5 C

In obs. of V Aquilae eye stop removed.

Sept 14, 1903

Put on Plot X (Rumford Plot) in order to see what improvement had been made especially with artificial star images from auxiliary telescope.

The ~~X~~ light of artificial stars ~~are~~ is
considerable more intense than
before, images are very good, and
star images also good, but the light
of the artifficial stars from the
auxiliary telescope is considerably redder;
this redness is also apparent when
11 05 the light of artificial stars is reduced
so images are quite faint.

C's watch used tonight,

| BOC 1182 | Ball 103 |
|---|---|
| 11 11 11.0 | 11 11 00 |
| 11 12 11.0 | 11 12 00 |

11 15 Oil Dome

Monday Sept 14 1903

Reappearance of Jup I. Phot "R"

"W" Obs" ~~Mac~~ Mac Cullar Rec. Compared with mean of two sat. on preceding side = Sat II

H^h. ~~44~~ 45 −40 L. V. 4 | 1 14.49

|  |  |  |  |  |  |
|---|---|---|---|---|---|
| 11 45 59 | ~~4~~ |  |  | 23.8 |  |
| − 10 | 45 | 55 |  | 24.2 | 1 38.47 |
| 11 45 49 Corr E.M.T. | 4~~5~~6 | 05 | +3.4 | 24.0 | 1 14.40 |
|  | 4~~5~~6 | 16 |  |  | 1 38.42 |

|  |  |  |  |  |  |
|---|---|---|---|---|---|
| 11 52 51 | 11 53 | 00 |  | seen |  |
| 53 00 |  | 09 | +2.4 | 36.5 | 1 08.42 |
| 9 |  | 18 | +2.0 | 44.2 | 1 44.47 |
| 21 |  | 30 | +1.7 | 48.4 | 1 00.45 |
| 32 |  | 41 | +1.6 | 50.9 | 1 48.49 |
| 41 |  | 50 | +1.3 | 58.0 | 98.40 |
| 51 | 54 | 00 | +1.0 | 65.1 | 1 56.40 |
| 59 |  | 08 | +0.9 | 67.3 | 90.49 |
| 54 10 |  | 19 | +0.8 | 69.0 | 1 58.42 |
| 22 |  | 31 | +0.5 | 75.8 | 89.42 |
| 34 |  | 43 | +0.3 | 83.2 | 1 65.40 |
| 48 |  | 57 | +0.1 | 86.2 | 81.48 |
| 55 01 | 55 | 10 | +0.2 | 86.0 | 1 68.40 |
| 15 |  | 24 | +0.2 | 85.0 | 82.40 |
| 27 |  | 36 | +0.2 | 84.4 | 1 67.40 |
| 39 |  | 48 | +0.2 | 84.3 | 82.46 |
| 48 |  | 57 | +0.2 | 84.5 | 1 66.49 |
| 58 | 56 | 07 | +0.2 | 85.1 | 82.44 |
| 56 7 |  | 16 |  |  | 1 67.45 |

# Sept 14, 1903

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | 11^h | 56 | 27 | | 81.9 | | |
| 11 56 48 | | | 41 | ρ5.1 | 167.0 | +0.2 | |
| 11 56 39 Corr E.M.T. | | | 56 | ρ5.6 | 82.3 | | |
| | | 57 | 06 | ρ5.4 | 167.9 | | 1 |
| | | | 16 | | 82.0 | | |
| 57 34 | | | 27 | ρ5.5 | 167.5 | +0.2 | |
| 11 57 25 | | | 41 | ρ6.3 | 81.5 | | |
| | | | 54 | ρ5.9 | 167.8 | | 2 |
| | | 58 | 04 | | 82.8 | | |
| 58 22 x | | | 13 | ρ4.4 | 167.2 | +0.2 | |
| 11 58 13 x | | | 30 | ρ6.1 | 81.3 | | 3 |
| | | | 39 | ρ5.2 | 167.4 | | ~~3~~ |

Moved comparison sat slightly in field.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | 11^h | 59 | 06 | | 81.0 | +0.2 | |
| 59 23 | | | 15 | ρ6.2 | 167.2 | | 4 |
| 11 59 14 x E.M.T. | | | 36 | ρ4.2 | 82.8 | | |
| | | | 42 | ρ5.2 | 167.0 | | ~~4~~ |
| | | | 56 | | 81.9 | | |
| 12 01 17 | 12 | 00 | 07 | ρ6.1 | 168.0 | +0.2 | |
| 12 01 08 E.M.T. | | | - | ρ5.0 | | | 5 |
| | | 02 | 28 | ρ5.6 | 83.0 | | |
| | | | 38 | | 168.0 | | ~~5~~ |
| Reject these two settings; Jup. near edge of field | | | ~~54~~ | | ~~79.2~~ | | |
| | | 03 | ~~13~~ | | ~~170.8~~ | | |
| | | | 33 | | 82.2 | | |
| | | 04 | 10 | | 168.5 | | 6 |

Sep 14, 1903.

2h

12 4 11ˣ 04 23 86.3 83.3 +0.2

12 4 2ˣ E.M.T. 37 84.7 168.0 7

51 85.5 83.0

05 10ˣ 05 04 84.2 167.2 7

05 1ˣ E.M.T. 17 84.6 83.3 +0.2

27 84.4 167.9

38 83.2 8

06 08ˣ 06 02 86.3 169.5

12 05 59ˣ E.M.T. 85.3

06 18 85.8 83.5 +0.2 8

32 168.8

07

Satellite reappeared very close to limb of planet. making observations a little ~~very~~ difficult.

Seeing pretty good.

B. + C. 1182. Ballou 103.

12 28 8.0 12 28 0.0

29 8.0 29 0.0

Sept. 15, 1903 (Tuesday)

δ¹ δ² Cygni W Obs.
Eliot T.

21 34 +42.5
19 04
2 30
9 30

Above
321.0 {comp * dis
7 21.0 26.5 65.5
130.9 85.1
216.0 150.6 + 0.56
311.7 + 0.56
35.4 83.7
140.0 67.1
207.1 150.8 + 0.56
Below Mean = + 0.51
219.3
309.0 89.7
49.5 67.2
116.7 156.9 + 0.44

231.0 + 0.46
7 28.4 300.3 69.3
9.4 40.9 85.6
7 5 24.7 126.5 154.9 + 0.48
~~3~~ -.5
12 24.2 P.A = 236.0 Ver B | S.T. 19:20
6373. H.A = -2:19 East | Sp. Wh. { 3.5 B
Dec = +42.6 | 4.5 C

Sept. 15, 1903.

UU Cygni with Phot T.

Above

138.2 < comp * dis.

7 39.0 208.6 70.4

327.3 52.2

19.5 122.6 + 1.14

145.6 + 1.10

201.2 55.6

318.8 70.1

28.9 125.7 + 1.07

Below mean = + 1.06

46.2

120.0 73.8

234.9 56.0

290.9 129.8 + 0.98

58.2 + 1.02

7 47.4 ~~101~~ 111.1 52.9

225.7 73.9

7 43.2 299.6 126.8 +1.05

1/2 42.7 G.M.T.

6373.530

P.A. = 154.5 Ver B

H.A. = −1:56 East

Dec = +42.4 North

S.T. = 19:40

Sp. wh. = { 5.5 B
6.5 C

Sept. 15, 1903.

altitude high on both SS Cygni & UU Cygni, so that it was considered advisible only to take one

7 53 group on each. These groups considered good.

V Aquilae 2 vibs.
~~18 54~~ Phot T

18 54 −6.0

20 10 9.5'' cap

Above 1 16

~~5 4 1~~ <comp. & dis.

~~8 31.0~~ ~~11 3 3~~ 223.3 80.9

8 36.8 2 304.2 65.2

49.6 146.1 +0.65

~~114.8~~ clds. stars dim.

~~230.8~~

+0.60

297.9 67.1:

38.3 84.9:

123.2 152.0 +0.54

Below Mean = +0.67

139.0

213.8 80.8

322.7 61.9

~~24~~ 24.6 142.7 +0.72

141.4 +0.74

8 50.0 204.0 62.6

8 43.4 3141 77.8

13 42.9

6373. 31.9 140.4 +0.77

Sept 15/1903

Same Over

Below
133.2
8 52.0 212.2 79.0
322.6 63.1
25.7 142.1 + 0.73

141.0 + 0.73
204.9 63.9
313.6 78.1
31.7 142.0 + 0.73

Above Mean = + 0.72
43.6
124.2 80.6
231.4 64.3
295.7 144.9 + 0.68

50.0 + 0.70
9 00.6 114.8 64.8
8 56.3 227.3 78.5
10 55.8 305.8 143.3 + 0.71
6373.

Final Mean = + 0.70

PA 297.5
HA + 2.0
Dec − 5.3
S.T. 20:59
Sp. Wh. { 4.5 B
5.5 C

Troubled somewhat by variable haze and rather more so in second than in first group, but extreme care exercised & obs. considered good.

Sept 15, 1903

8 T

044068 — Camelop.

Phot T.
w Obs.

28 39 + 68.0
21 19
7 20
14 40

9.5" cap

L.O.A.

9 15 C's watch = 32 s fast at 9:15

311.6 < comp * dir

10 12.0 35.3 83.7

142.2 63.9

306.1 147.6 + 0.62

323.6 light cloud. + 0.61

10 27.0 ~~256~~ 130.4 ~~84.8~~ 84.8

~~141.4~~ 215.2 63.7

~~210.6~~ 320.7 148.5 + 0.60

24.4

~~ROB.~~ Mean = + 0.56

50.2

10 29.6 116.0 65.8

220.9 88.7

309.6 154.5 + 0.49

39.7

10 31.2 125.1 85.4 + 0.52

19.8 230.2 65.3

10 25.0 295.5 150.7 + 0.56

15 24.5 G.M.T.

6373.

Sept 15, 1903

Same Obser

RfB

50.2
10 33.2 117.3 671
220.0 85.8
305.8 152.9 + 0.52

+ 0.52
41.9
124.1 82.2
226.7 70.6
~~291.5~~ 297.3 152.8 + 0.52

LfA. Mean = + 0.59

323.4
26.7 633
133.5 807
214.2 1440 + 0.69
-312.2
+ 0.66
10 42.0 34.3 82.1
75.2 142.0 64.6
10 37.6 206.6 146.7 + 0.66
15 37.1 G.M.T.
6373. P.A. = 79.3 Var B Final m = + 0.58
H.A. = -6:07 East
S.T. = 22:37
Decl = + 67.6 North / Spectr { ~~4.5 B~~ 5.5 B 6.5 C
~~Dec = +6~~

Sept. 15, 1903.

Put on Phot X on large telescope
and examined light of artificial
11 15 stars. Some change in phot. since
last night reduces the redness of
the images although this redness is
still too evident. The full brightness
of images is quite satisfactory as
regards intensity of light.

Ledgered, Plotted, Posted;

Sept 18, 1903 (Friday)

7 05 C's watch = 5s slow.

SS Cygni wells slot T.

~~Pt~~

7 10 Pretty cloudy.

21 34 +425
19 20
2 14
9 46

7 22 Cloudy; 5th magn. ~~not~~ visible at present time
7 45 Clearer here.

Above

150.2 < comp ★ dis.

7 51.0 198.0 47.8
325.6 57.1
22.7 104.9 +1.54
144.8 +1.59
202.5 57.7
331.9 42.9
14.8 100.6 +1.66
Below mean = +1.52
.93
10.45
54.7 58.9
113.6 49.5
238.2 108.4 +1.45
287.7
~~6~~ 59.4 46.8 +1.44
7 58.0 106.2 62.6
7 54.5 231.0 109.4 +1.43 (over)
7 12 54.6 G.M.T.
6 376 538 293.6

Sept 18, 1903.

P.A. 237.5 on B
H.A. - 1:34 East.
Dec. +42.5 North

S.T. = 20:05
Sp. wh. = {3.5 B, 4.5 C}

8 10 Cloudier

(044068) — Camelop +67.°350

Phot T
w Obs.

28 39 +68.0
20 39
8 00
6 00

8 45 Clouds rather thick in this region at present time

9 05 Clouds too thick at present.

U Camelop w Obs.
Phot R.

27 33 +62.3
21 15
6 18
5 42

9 20 Clouds too thick.

9 30 Clouds thick everywhere & no chance for any work

L.P.

Sept. 19. 1903 (Saturday)

705 C's watch = 25s slow.
C's watch used tonight.

SS Cygni w. Obs.
phot T.

21 34 +42.6
19 20
2 14
9 46

Above
333.2 < comp + dis.
7 21.0 13.8 40.6
147.9 52.1
200.0 92.7 +1.84
328.1
19.1 51.0 +1.89
153.8 38.1
191.9 89.1 +1.94
Below mean = +1.86
8.93
242.2
284.3 < 21.1 magn = 10.79
59.0 51.8
110.8 93.9 +1.81

+1.84
235.1
7 27.4 290.0 54.9
7 24.2 65.1 36.7
12 24.6 G.M.T. 102.8 91.6 +1.87
6377.517

Sept 19, 1903.

P.A. 237.4 Var B  S.T. = 19:37
H.A. -2:03 East  Sp. with { 3.5 B
Dec. 42.6 North  { 4.4 C

UU Cygni with
Phot *.

Above
< comp * dis.

139.6
7 37.4 205.9  66.3
326.0  61.3
27.3  127.6 + 1.03
145.3

201.7  56.4 + 1.06
317.8  68.9
26.7  125.3 + 1.08
Below  Mean = + 1.02
46.2
118.8  72.6
234.6  56.5
291.1  129.1 + 1.00

55.5  + 0.97
7 44.2 111.8  56.3
81.6 225.2  75.4
7 40.8 300.6  131.7 + 0.94
5 40.4
12 41.2 P.A. 154.4 Var B | S.T. 19:54
6377.528 H.A. -1:41 East | Sp. with { ~~[illegible]~~
Dec. +42.3 North | 5.5 B
6.5 C

Sept. 19, 1903.

(044068) — Camelop. +67 35.0

9.5" cap.

28 39 +64.0
20 09
8 30
3 30

28 39
20 43
7 56

Cloudy in this region at present

8 07 time. No stars distinctly visible in finder

L&A.

312.5 ∠ comp & dis

8 40.0 ~~341~~

~~141.5~~

~~2037.7~~ clouds stars gone

~~32~~

~~1~~

Sept. 19, 1903

new Start

LOA.
320.4
8 50.4 24.3
133.2
214.2

310.4
34.4
140.5 clouds
20 . stars gone.

ROB Mean =

OVER again

Sept 19, 1903.

I

LOA.

~~30~~ ∠ comp ★ dis

319.6

9 38.0 26.7

132.3

213.8

313.4

33.0

143.~~7~~ 3

207.~~8~~7

RTB

230.2

296.2

43.1

125.9

224.1

9 45.3 303.7

8 3.3 49.0

9 41.6

14 42.0 116.7

6377.612+

67.1"
81.5"
148.6" + 0.60"

+ 0.64"

79.6"
64.4"
144.0" + 0.69"

Mean = + 0.63"

66.0"
82.8"
148.8 + 0.60"

+ 0.62"

79.6"
67.7
147.3 + 0.63"

22 D

Sept. 19, 1903

Same Again

II

R. O. B.

232.6
9 50.6 294.4 — 62.8
86.1
40.1 — 148.9 + 0.60
stars gone
126.2

223.3 — + 0.60
80.9
304.2 — 68.3
49.6 stars rather faint
117.9 — 149.2 + 0.59

L. O. A. — Mean = + 0.64

141.3
205.8 — 64.5
314.3 — 80.0
34.3 — 144.5 + 0.68

132.2
9 59.8 213.4 — 81.2 + 0.68
10.4 322.0 — 63.5
9 55.2
14 55.6 9 m T. 25.5 — 144.7 + 0.68
6 377.622

P.A. = 79.3 Vin B
H.A. = −6:32 East
Dec. = + 67.6 North

S. T. = 22:10

S'ph. = { 5.5 B.
6.5 C.

Sept 19, 1903.

T Aqui.

W.Ob.
Phot T
95″ cap.

20 40 + 33.4
22 50
2 10

Below

339.0 < var dis

10522 368.6
154.4
192.2

3346
371.8
160.9 clouds
187.2

Above

2478 clouds thick
277.2
64.7
103.6

247.2
11 01.4 283.2
11 3.6 70.0
10 56.8
15 57 2.4 M.T. 97.0
6377.665

29.6
37.8
67.4 — 2.59

— 2.66

37.2
26.3
63.5 — 2.73

Mean = — 2.61

29.4
38.9
68.3 — 2.56

41.0 — 2.56
27.0
68.0 — 2.57

Sept. 19, 1903

Same Obser
II

Above
248.2
11 3.5 278.5
64.6
103.2

30.3 ✓
38.6 ✓
68.9 — 2.54 ✓

— 2.61 ✓

243.3
283.0
71.0
96.1

39.7 ✓
25.1
64.8 — 2.68 ✓

Mean = − 2.64 ✓

Below
161.5
188.8
335.0
372.1

27.3 ✓
37.1 ✓
64.4 ✓ — 2.70 ✓

153.9
193.2
340.7
367.4

— 2.67 ✓

39.3 ✓
26.7 ✓
66.0 ✓ — 2.64 ✓

11 09.0
11 6.2
16 66.9 m.t.
6377.672 ×

PA. 186.7 VeB
AA. +2:37 West
Dec. +34.0 North

Sd. T. = 23:19
Spark = {2.5 a, 3.5 β, 4.1 C}

over

Sept. 19/1 2/3-

S/pocket reading may not be exactly the same as on previous nights, as pinions went a little hard up the track and ~~chain~~ links of chain skipped several pins at times in its progress.

11:20 Closed ~~up~~

L. P. P.