KG
11365
565

KG 11365.565

1903phae.proj..56GW

KG 11365.565

HARVARD
UNIVERSITY
LIBRARY
MAY 8 1956

Dec. 13. 1903. (Sunday.)

~~Aquarius~~

The object thought to perhaps Tercidina on ~~the~~ ~~##~~ Dec. 11th turns out to be a star. It is in same position to-night.

Star x (suspected variable) of Dec. 11, seems to be about a full magn fainter than the star near it, to right.

Will measure star x with +6° 171 x (6.0)

See next page for meas'ts.

over

Sunday Dec 13th 1903

(See note below)

Comp. Star = +6° 1714 Index to ~~right~~ left & below.

S.T.

125.5 ∟ C.S. dir.

13 25 20 202.4 76.9

313.6 64.1

17.7 141.0 + 0.75

133.3 + 0.80

193.3 60.0

305.5 75.8

21.~~8~~3 135.8 + 0.86

Index to ~~left~~ right & above. Mean = + 0.88

39.9

109.5 69.6

223.9 62.1

286.0 131.7 + 0.94

48.8 + 0.95

13 37 50 102.9 54.1

63 10 216.4 76.8

13 31 35 293.2 130.9 + 0.96

5 + 44

18 32 19 G.M.T.

6462.772

The above group is an observation of a star prec. +7° 1772 by 31.5s and 4'.2 north of it, and is suspected of variability.

Dec. 13. 1903.

Sid. Time 7 27
H. a. -0 03
Dec. +6.6°
P. a. 228.5
Sprocket -2.5 B
-1.5 C

Seeing very blurring, but observer took setting slowly and waited for images to grow steady before making final setting so observations are considered pretty good.
W's watch used for times, watch 44 sec slow.

L. P.

Dec. 14, 1903 (Monday)

Bond 236 Bond 39K
7 02 57.5 7 03 0.0
03 57.7 04 0.0
7 05 C's watch = $0^{m}.5$ slow.
χ Cygni W. Obs. Phot. T
19 45 +32.6
24 55
5 10 C's watch used
above
51.7 ⟨ Var dis
7 22.0 94.3 42.6
236.8 33.7
270.5 76.3 — 2.31
58.1 — 2.32
89.6 31.5
231.2 44.0
275.2 75.5 — 2.33
Below Mean = — 2.14
317.2
370.1 52.9
144.2 36.5
180.7 89.4 — 1.93
324.7
7 27.0 361.5 36.8 — 1.96
7 24.5 138.3 50.4
H^{12} 25.0 G.M.T. 188.7 87.2 — 1.99
6463

Dec. 14, 1903.

II

Below

319.2

728.6 368.2 — 4.90

145.9 — 35.1

181.0 — 84.1 — 2.08

326.3 — 2.07

362.6 — 36.3

140.0 — 48.4

188.4 — 84.7 — 2.06

Above — Mean = — 2.17

231.0

276.4 — 45.4

57.0 — 31.1

88.1 — 76.5 — 2.30

236.9 — 2.27

733.6 — 270.3 — 33.4

62.2 — 51.7 — 45.0

7 31.1 — 96.7 — 78.4 — 224

12 31.6 G.M.T.

6463.

H.A. = 5.37 West

P.A. = 245

S.T. 1:21

Dec = +32.8

Sp.Wl. = { −25 B
−15 C

Dec. 14, 1903 (Monday)

Bond 236 Bond 39K

7 02 57.5 7 03 0.0

03 57.7 04 0.0

7 05 C's watch = 0.5 slow.

χ Cygni W. Obs. Phot T.

19 45 +32.6

24 55

5 10 C's watch used

above

51.7 ⟨Var. dis

7 22.0 94.3 42.6"

236.8 33.7"

270.5 76.3" — 2.31"

58.1 — 2.32"

89.6 31.5"

231.2 44.0

275.2 75.5" — 2.33"

Below Mean = — 2.14"

317.2

370.1 52.9"

144.2 36.5"

180.7 89.4" — 1.93"

324.7

7 27.0 361.5 36.8" — 1.96"

7 24.5 138.3 50.4"

♃12 25.0 G.M.T. 188.7 87.2" — 1.99"

6463.

Dec. 14, 1903.

II

Below

319.2

728.6 368.2 490

145.9 351

181.0 841 — 208

326.3 — 207

362.6 363

140.0 484

188.4 847 — 2.06

Above Mean = — 2.17

251.0

270.4 454

57.0 311

88.1 765 — 2.30

236.9 — 227

733.6 240.3 334

62.2 51.7 450

7 31.1 96.7 784 — 224

12 31.6 G.M.T.

6463.

H.A. = 5.37 West

P.A. = 245

S.T. = 1:21

Dec. = +32.8

Sp.Wt. = { −25 B
−15 C

Dec 14, 1903.

U Z Cygni W Obs.
Phot T.

21 58 +44.0
26 ~~1~~2

4 14

Above
142.9 comp + dis
8 42 10 182.5 39.6
330.5 26.7
357.2 66.3 + 2.63
148.8
46 35 174.9 26.1 + 2.64
324.2 39.7
363.9 65.8 + 2.65
Below mean = + 2.58
52.4
57 33 93.3 40.9
240.2 26.6
266.8 67.5 + 2.59

59.1 + 2.52
8 55 12 85.7 26.6
195 30 231.4 44.7
8 48 52 276.1 71.3 + 2.46
5 − 15
13 48 37 RMT
6463.5754
6463.6739
−0.0985

Dec. 14, 1903.

II

Below

51.6

8 58 38 93.8 42.2

240.0 24.5

264.5 66.7 + 2.62

63.1

9 03 40 82.1 19.0 + 2.64

232.1 46.1

279.2 65.1 + 2.687

above Mean = + 2.73

325.2

9 09 18 361.5 36.3

149.8 25.3

175.1 61.6 + 2.80

331.4 + 2.82

9 12 44 354.4 23.0

24 20 143.2 37.3

9 06 05 180.5 60.3 + 2.85

5 −18

14 05 47 GMT

6463.6874

6363.6739

−0.0865

Dec 14 1903

(1)

Above
323.8
9 36 40 363.4 39.6
147.7 25.7
173.4 65.3 +2.67

+2.68

330.2
4 0 12 354.1 23.9
141.6 41.0
182.6 64.9 +2.68

Below Mean = +2.70
233.0
4 3 38 273.5 40.5
59.6 24.0
83.6 64.5 + 269

228.4 +2.72
9 47 48 273.8 25.4
8 18 154.9 37.2
9 42 04 92.1 62.6 + 2.76
5 -24
9
14 41 40.9 M.T. S.T. = ~~323.3~~ 3:36
646.3.6123 Pa = 323.3 Vn B
64636739 Ha = 5:43 West
+0.0616 Dec = +44.2 North
Spurl = { -0.5 a
-05 B
+01

Dec. 14/1903

Seeing a little poor, but not as bad as last night, air rather cold and sharp, sky clear. The meas. taken tonight are considered altho' the star is very faint being at minimum and observer is somewhat troubled by proximity of 9th magn star to var. as well as by the seeing. The last two groups are considered the better, as from the faintness of star and above
1000 mentioned conditions, it took a little time to work the eye up to its best condition. Meas. made with much slowness & great care.

7 32 +5.6
3 58

3 34
8 26

Teradina

10 34 star a fols (7.2) $+6^{\circ}.168$ by 49^{s} +$5.8'$ S of it.

10 35 star b fols a by 20.5^{s} + $0.8'$ S. of it

10 38 star c fols b by 11.2^{s} + 2.5 S of it.

Dec. 14, 1903.

10 40 star d fols c by 2^{s} & $2'.7$ S of it

10 42 star e fols a by $10^{s}.2$ & $8'.0$ S of it.

10 46 star f prec a by 30^{s} & $2'.8$ S of it.

10 50 star g fols b by $25^{s}.3$ & $5'.9$ N. of it.

10 52 star h fol g by 3^{s} & is $3'.9$ N of it

11 50 b fols. a $18^{s}.3$ and is $1'.4$ south of it.

11 55 b prec. c $14^{s}.7$ and is $2'.2$ north " "

~~This~~ Star b is Lucidina, the motion in R. A. and Dec. being in right direction.

12 0 Lucidina fols. the 7.2 magn. by $1^{m}\ 7^{s}$ and is $7'.5$ south of it.
(The 7.2 is +6° 16 B.D.)

Monday Dec. 14th 03

~~[illegible]~~

Star X with +6° 1714 Δo
Star X is the suspected variable of Dec. 11.

Index left and below.

312.2 ↑62! Comp. Star dis.
13 57 45 14.3
127.5 73.4
200.9 135.5 +0.87

304.0
24.5 79.5 +0.82
133.2 61.3
194.5 140.8 +0.76

Index right and above.

213.1 78.8
291.9
40.0 64.7
104.7 143.5 +0.70

222.1 65.2 +0.71
13 02 00 287.3
11 3 45 ~~34.0~~ 33.4 77.4
12 56 52 110.8 142.6 +0.72
5 +00
17 57 42.9 M.T

Mean +0.76

Sid Time 7 03
H.a. −0 28
Dec. ~~+5~~ +6.6
P.a 225.5 Var. a
Sprocket − 2.5
− 1.5

Dec. 14. 1903.

P.A reads a little different
to-night than last night.
To-night is a steady night.
Region thoroughly identified
both nights.
Ver. A was read both nights.
Probably there was a slight
error last night as Ver A
is a little misty and dim,
and magnifier was not used
in reading.

Same star observed both nights.
W's watch used for times to-night
watch 52 sec slow.

L.P.P.

Tues. Dec. 15, 1903.

B 236 — B. 394
7 05 377 — 7. 06 00
06 38.0 — 07 00

7 07 Co watch = 5s fast.

β Lyrae — W Obs.
Phot T.
18 45 +32.6
25 05
6 20 — 9.5" eop.
Shade No. 1.
L of A. — B. 236 used.
63.6
7 29 35 92.7 — 291
235.0 — 433
278.3 — 712.4 — 2.43
55.7 — — 2.40
32 00 97.8 — 421
240.8 — 322
273.0 — 743 — 2.37
R of B. — Mean = — 2.42
330.8
36 07 362.8 — 320
149.5 — 392
188.7 — 712 — — 2.47
325.9 — — 2.43
7 38 25 365.9 — 400
136 07 152.~~4~~4 — 337
7 34 02 186.1 — 737 — 239
5 +19
12 3~~4~~ ~~46~~ G.M.T. — 6464.524
19 — 62.332
+2.192

Dec. 15, 1903.

R A Below

331.1

7 41 00 362.3 31.2"

150.3 38.5

188.8 69.7 — 2.52"

327.1 — 2.52"

42 30 366.2 391"

153.1 309

184.0 70.0" — 2.51"

L.O.A. Mean = — 2.46"

235.7

46 25 277.4 41.7"

61.1 32.3"

93.4 75.0" — 2.35"

241.0 — 2.39"

7 48 55 273.2 32.2"

18 50 54.8 40.0"

7 44 42 94.8 72.2" — 2.43

5 +16

12 44 58

6464.531

62.332

+2.199

PA = 11.6 Var B

HA = 7:00 West

Decl = +33.2 North

S.T. = 1.43

Sp Wh { −7.5 B
−6.5 C

Dec. 15 1903

U Gem.

Wells Phot I.

7 48 24.0
2 48
5 00
7 00 Os watch used

*t Above

2304 { comp *ds
9 7.5 287.4

45.8	57.0	
101.4	55.6	
	112.6	+1.36
222.7		
276.8	54.1	+1.43
50.7	52.0	
102.7	106.1	+1.50

Mean = +1.38

*t Below

143.6		
193.5	49.9	
314.6	66.4	
421.0	116.3	+1.27
138.5		+1.33
201.5	63.0	
322.8	48.4	
371.2	111.4	+1.39

9 14.0
21.5
9 10.A
5 -.1
14 10.7 R.M.T. Second group omitted for U Cygni

P.a. 180.1 Var B Dec. +21.4

H.A. H. 41 East S.T. = 3:07

S.P.W. { -3.5 a
-2.5 B
-1.9 c

Dec. 15, 1903.

U Z Cygni W.C.B.

21 58 +44.0 phot.
27 08
5 10 B 236 used

Above

317.4 < Comp ✶ dim
9 35 00 19.9 625
1446 465
191.1 1090 +1.44

323.8
38 00 11.4 476 +1.42
136.0 631
199.1 110.7 +1.40

Below Mean = +1.41

234.2
41 30 281.9 477
45.6 661
111.7 113.8 +1.33

4
227.7
9 4~~1~~ 12 290.2 625 +1.40
155.6 454
15 8 42
9 39 40 101.0 107.9 +1.47
5 -4
10 39 36 G.M.T.
6464670.8
636739
+0.9369

Dec. 15, 1903.

Same Over

II

Below
232.5
9 46 40 281.2 48.7
45.7 64.3
110.0 113.0 + 1.35

226.4 + 1.38
49 55 289.1 62.7
53.8 47.4
101.2 110.1 + 1.42

Above Mean = + 1.36
135.0
54 10 199.7 64.7
323.0 48.8
371.8 113.5 + 1.34

143.0 + 1.35
9 56 48 191.0 48.0
205 33 315.3 64.3
9 51 23 379.6 112.3 + 1.36
5 - 6 71
14 51 17 M. P.a. = 321.8 Ver. B.
6 464,6189 H.a. = 6.00 West
636739 S.T. = 3:55
+0.9450 Dec = +44.3 North
Sfwkg -1.5 a
-0.5 B
+0.1 C

Dec. 15, 1903.

Tercidina WCB

7 32 +5.6
4 02
3 30
8 30

10 26 Tercidina fols +6.1689 by $24^s.5$ & is 2'.0 S. of it.

10 29 b fols a by $8^s.6$ & is 3'.3 S. of it.

10 32 b prec c by $10^s.5$ & is 4'.8 N. of it.

11 02 b fol a by $7^s.5$ & 9'.9 S of it.

11 04 b prec c by $11^s.5$ & 4'.4 N of it.

star b is Tercidina

11 07 Tercidina fols +6.1687 $\left(\frac{9.2}{7.2}\right)$ by $23^s.8$ & 7'.2 N. of it.

LOP

(Wednesday) Dec. 16, 1903.

B 236 B 394
7 04 24.6 7 05 00
05 24.8 06 00

C's watch = 04^m fast at 7:07

β Lyrae Wibz.

plot T
18 45 +32.6 " ~~[illegible]~~
25 05 9.5 cap used.
6 20 Shade no. 1.

Lta. Bond 236 used.

60.7 < rar dis.
7 31 30 91.1 30.4'
235.7 40.0'
275.7 70.4 — 2.49'
54.3 — 2.48
34 55 95.3 41.0'
239.1 30.1
269.2 71.1 — 2.47
R.f.B. mean = — 2.54'
327.7
38 30 363.0 35.3'
150.0 30.3'
180.3 65.6' — 2.66'
329.3
7 48 50 360.5 31.2' — 2.59'
25 45
7 36 26 146.5 6665.526 38.0'
62.332
5 +29 185.0 +3.194 69.7 — 2.52'
12 36 55 G.M.T.

Dec. 16, 1903

Same Over. II

R.&B.

326.3
7 43 35 364.7 38.4
150.0 30.9
180.9 69.3 — 25.3

329.9 — 25.6
46 18 361.5 31.6
147.8 36.2
184.0 67.8 — 25.8

L.&A. Mean — 25.3

235.2
50 00 274.8 39.6
60.2 30.5
90.7 70.1 — 25.0

239.4 — 25.0
7 53 00 27~~0.5~~ 1.3 31.9
54.6 38.0
92.0 69.9 — 25.1

32 53
7 48 13
5 +27
12 48 40

P.A. = 11.6 Var B
6665.534
S.T. = 1:52
6462 332
H.a. = 7:08 West
+3.202
Dec. = +33.2 ~~North~~
Sp.Wh. = { −7.5 B.
−6.5 C.

Dec. 16, 1903

B 236
8 07 36.1
08 36.3

B 394
8 08 00
09 00

In previous 2 groups on β Lyrae, somewhat troubled by divergent pencils and not being able to get hold of the light quite easily; but all possible care exercised.

Tercidina W Obs.

7 32 +5.6
3 17
4 15
7 45

9 36 50.0
37 05.0

9 36 35
36 18.8

9 36 25.8
36 40.8

9 37 Tercidina fols the (9.4) +6.1683 by 15.1s & is 0.1' N. of it.

9 39 Tercidina prec. star a by 8.4s & is ~~2.7~~ 1.8 N of it.

9 38 46.1
38 54.5
8.4

9 38 21.2
38 29.5

9 39 8.8
39 17.2

altho the seeing seems a little poorer tonight ~~than~~ last night, yet

Dec. 16, 1900.

having regard to this fact it would seem that Terradina was intrinsically a little fainter than last night.

~~We would~~ Observer would estimate the magn. of Terradina ~~as~~ (not eliminating effects of seeing) as between 12.5 and 13.0 - certainly as faint as 12.5, and apparently, waiting for moments of better seeing, fainter than 12.5

~~Sky~~ Once in while during evening a small amount of cloud drifted across the sky, the cloud being

10 05 of a loose somewhat filamentous & broken character. From this fact and also from the fact that the sky is now all cloudy it may that there has been a slight amount of cloud when sky seemed fairly clear. Nevertheless observer cannot help thinking that Terradina is really ~~some a little~~ somewhat fainter tonight than last night.

Ob. estimated Terradina last night as approx 12th magn or possibly slightly fainter.

Dec. 16, 1903.

1020 Sky thickly cloudy everywhere
and snowing at the present
time No chance for anything
further

L. P. P.

(Thursday) Dec. 17, 1903

B 236	B 394
7 03 53.0	7 05 00
04 53.5	06 00

7 07 C's watch = 0.4^m slow

7 17 Jup. a little hazy but clouds not yet thick in this region

α Lyrae invisible in cloud

Reap. Jup ~~IV~~ I   W.C.B.

Campbell Rec.

Time of Reap taken with ring micrometer eye-piece No I

7 18 clouds a little more pronounced near Jupiter, but ~~all the~~ 3 Sats visible in telescope —

7 21 clouds a little thicker around Jup. Satellites somewhat dimmer in ~~that~~ telescope —

7 23 28   7 22 25   seen   + 44
36   33   more strongly seen   52
45   42   still more strongly seen   + 61

Dec. 17, 1903.

7 24 00 7 22 58 seen altho clouds a little thicker

24 28 23 26 brightness of Sat ~~II~~ I stronger

25 16 24 14 sky moderately clear sat II now rather bright

Clouds, but not of very dense character especially in region of Jupiter coming from N.W. Jupiter was fairly well visible all the time to the naked eye and moderately bright during preceeding observations, varying a little in brightness according to the amount of clouds over it. The three uneclipsed Sats. also easily seen in telescope all the time during preceeding observations. It is thought by the observer from the general appearance of Sats as seen in the telescope that there was not very much delay in time of reappearance due to cloudiness. Seeing pretty good, images rather steady and round. Jup's limb rather sharply defined.

The intention was to omit eclipse and observe β Lyrae the first thing but as clouds completely hid both

Dec. 1/1903.

β θ α Lyrae, observed to Jup. to observe the eclipse. From lack of time it was not possible to put on photometer and adjust it, and also as the clouds seemed to be approaching Jupiter it was deemed best ~~d~~e on account of the absorption of the light by the photometer, to take the eclipse with the ordinary eye piece.

B 236	B 394
7 35 00.7	7 36 00
36 00.9	37 00

β Lyrae   Wells.

Phot T
18 45 +32.6   9.5" cap
25 45   Shade No 1.
7 00

Bond 236 used

over

Dec 17. 1903

β Lyrae

I

Above

~~24 3.3 var dis~~

~~8 12 33 26 9.4~~

Delayed by clouds

Above var dis

57.4

8. 12 58 95.5 β dim in finder

β gone again

Stopped by clouds at present.

8 15 α & β Lyrae invisible & clouds more or less over the whole sky

8 28 β seen in finder but comp star invisible.

8 30 β more dimmer in finder Comp * invisible

8 31 β now invisible in finder

8 34 β seen in large telescope but comp * invisible in large telescope at full brightness.

Dec. 17/1903.

8 37 β invisible in finder & dim to naked eye

8 38 " " " " " "

8 42 α Lyrae invisible to Naked eye. β invisible in finder. No chance for β Lyrae tonight -

9 00 Cloudy

Teraduina WCB

7 32 +5.6
3 00
4 32
7 28

9 25 Clouds here at present time Procyon rather dim

9 39 Clouds again, stars gone

Dec. 17, 1903.

9 44 23.6 45 11.2
44 31.0 45 19.0

~~45 27.5~~

~~45 52.8~~ clouds

~~46 34.5~~ clouds

47 37.0
44.2

clouds again.

945 Tercidina fols +6°1677 (8.7) by 7.6s
Tris

1010 Sky still cloudy; clouds everywhere,

1020 clouds everywhere and continuous all about western horizon from which the clouds are coming.

No stars visible anywhere but evidently no chance for Tercidina ~~tonight~~

(Friday) Dec. 18, 1903.

Bond 236 B 394
7 07 480 7 0 ~~8~~9 00
08 481 ~~9~~10 00
7 11 Co watch correct.

B Lyrae W Obs.
Plot T
9.5" cof
18 45 +32.6
25 15
6 30
Shade no. 1.

Bond 236 used

Above
121.3 ∠ var. dis!
7 30 35 152.1 30.8
295.0 40.7
335.7 71.5 — 2.46
114.6
33 00 157.7 43.1 — 2.40
300.3 31.9
332.2 75.0 — 2.35
Below
Mean = — 2.47
32.6
35 08 61.8 29.2
207.7 37.8
245.5 67.0 — 2.61
24.3
7 37 46 66.0 41.7 — 2.54
16 29 211.4 29.5
7 34 07 240.9 71.2 — 2.47
7
5 +1 7
12 35 14

Dec. 18, 1903.

II

Below
31.3
7 40 00 61.3 — 30.0 —
207.6 — 38.0 —
245.6 — 68.0 — 2.57

26.5 — 2.62
.44 00 63.9 — 37.4
212.1 — 27.7
239.8 — 65.1 — 2.67
Above — Mean = — 2.48
300.7
48 00 332.7 — 32.0
115.6 — 41.1
156.7 — 73.1 — 2.41

294.9 — 2.35
7 50 28 338.6 — 43.7
182 28 119.2 — 33.1
7 45 37 152.7 3 — 76.8 — 2.29
5 +1 5
12 46 42 R.A. = 11.5 Vir β
S.T. = 2:01
A 06 H.A. = 7:18 West
Dec = +33.2 North.
Spth = { 7.5 B.
6.5 C.

Dec. 18, 1903.

Bond 236
8 56 7.2
57 7.4

Bond 394
8 57 00
58 00

Tercidina 2 Obs.
Phot T.

7 32 +5.6
3 07
4 25
7 35

9 16 59.7 (94)
17 06.5 a

17 47.5
17 54.3

18 5.8
18 12.0

18 32.5
18 39.4

18 55.5
18 62.5

9 18 Star a fols the (9.4) +6.1673 by
6.7 and is practically in same Decl as
the (9.4)

Dec. 18, 1903.

9 20 05.5
20 09.0

20 24.0
20 27.2

20 39.0
20 32.2

20 53.2
20 57.8

21 14.3
21 18.0

43.0
46.8

1.0
0.9
0.8
0.9
0.9

38.5 / 14.0
52.5

2.2
16.5

25.0
38.9

~~56.~~

19.0
32.8

42.0
55.8

9 20 Star c fols ~~the~~ (9.4) by $3^{s}.5$ & $1'.8$ N of it

9 22 Star b prec c by $0^{s}.9$ & $0'.2$ N of ~~it~~ c.

9 29 Star a prec d by $1^{m}3^{s}.9$ & is ~~1'.7 [illegible]~~ $1'.7$ South of it.

Dec. 18, 1903.

9 50 8.8
15.5

25.0
1
3~~4~~.5

42.3
48.8

12.0
18.5

~~47~~
40.2
46.8

Mean 6.5

1.5
1.5
1.6
1.5
1.5 Mean 1.5

30.0
33.6

43.2
47.0

58.5
01.8

Mean 3.5

~~45~~
20.0
23.5

33.0
36.5

Bond 236 used on Teracidnia

Dec. 18, 1903

Comp. star = +6.°1665 (8.5)

I

Above < comp + dis

48.4
10 13 14 98.4 50.0
223.9 60.5
284.4 110.5 +1.41

47.6 54.3 +1.44
16 44 101.9
227.9 53.1
281.0 107.4 +148

Below

143.3
24 20 184.1 40.8
317.3 57.9
15.2 98.7 +1.69

136.6 53.2 +1.65
10 27 35 189.8
81 53 320.5 48.5
10 20 28 369.0 101.7 +1.61
4
5 +31 mean 1.54
15 ~~19~~ 20 ~~57~~ 07 G.M.T.
6467.

Dec. 18, 1903

II

Below
141.2
10 51 00 192.7 51.5 ✓
314.9 58.3 ✓
13.2 109.8 ✓ +1.42 ✓

134.4
54 04 196.4 62.0 ✓ +1.42 ✓
321.5 47.8 ✓
369.3 109.8 ✓ +1.42 ✓
Above
49.6
11 00 00 98.8 49.2 ✓
225.3 57.7 ✓
283.0 106.9 ✓ +1.49 ✓

45.1 57.1 ✓ +1.46 ✓
11 03 02 102.2
228 06 226.8 52.9 ✓
10 57 02 279.7 110.0 ✓ +1.42 ✓
5 +34 mean 1.44 ✓
15 57 36

Dec. 18, 1903

~~III~~

Above

49.2
10 07 38 100.7 51.5
224.9 59.3
284.2 110.8 +1.40

45.7 56.3 +1.44
11 00 102.0
228.4 51.5
279.9 107.8 +1.47

Below

320.7 49.7
15 32 10.4
135.3 59.3
194.6 109.0 +1.44

3144 59.7 +1.42
11 18 57 141
53 07 139.5 50.6
11 13 17 190.1 110.3 +1.41
5 + 32
16 13 49 G.M.T.

mean 1.43

Dec. 18, 1903

IV

Below

318.4
11 34 40 369.4 51.0 ✓
135.5 59.0 ✓
194.5 110.0 ✓ +1.42 ✓

317.4
38 55 12.2 54.8 ✓ +1.47 ✓
139.5 51.0 ✓
190.5 105.8 ✓ +1.52 ✓

Above

232.3
44 13 279.0 46.7 ✓
43.5 63.7 ✓
107.2 110.4 ✓ +1.41 ✓

224.6 61.2 ✓ +1.45 ✓
11 46 45 285.8
164 33 51.1
11 41. 08 96.9 45.8 ✓
5 + 27 107.0 ✓ +1.49 ✓
16 41 35 G.M.T. Mean 1.46 ✓

Dec ~~18~~, 1903

V

above

231.2
11 51 10 279.4 48.2
142.3 61.3
103.6 109.5 +1.43

221.6 65.1 +1.42
5 33 5 286.7
51.0 45.3
96.3 110.4 +1.41

Below
140.8
5 8 50 190.4 49.6
315.3 62.0
111.6 +1.38
17.3

+1.43

134.4 60.6
12 02 28 195.0
26 03 322.7 46.7 +1.44
11 56 31 369.4 107.3
mean 1.42
5 +25
16 56 56 G.M.T.

Dec. 18, 1903

VI.

Below

140.0
12 27 10 187.0 47.0✓
316.4 60.8✓
17.2 107.8✓ +1.47✓

134.7 60.7✓ +1.46✓
30 28 195.4
322.0 48.4✓
370.4 109.1✓ +1.44✓

Above

231.0 50.4✓
39 55 281.4
47.4 55.2✓
102.6 105.6✓ +1.52✓

224.1 61.4✓ +1.50✓
12 41 21 285.5
137 59 50.8 45.7✓
12 34 30 96.5 107.1✓ +1.49✓
5 19 mean 1.48✓
17 34 49

Dec. 18, 1903

~~VII~~

Above

232.0
12 44 08 280.2 48.2
46.6 54.6
101.2 102.8 +1.59

224.2
4 5 50 284.2 60.0 +1.54
48.9 47.4
96.3 107.4 +1.48

Below Mean = +

141.2
50 18 186.6 45.4
316.2 60.6
16.8 106.0 +1.51

132.2 62.1 +1.44
12 53 08 194.3
19 3 08 321.4 50.2
12 48 17 ~~34.~~ 112.3 +1.36
5 + 19 ~~369.~~ Mean +1.49
17 48 36 371.6

Dec. 18, 1903

VIII

Below
140.8
13 04 21 189.2 48.4 ✓
315.8 58.4 ✓
106.8 ✓ +1.49 ✓
14.2

133.9 62.9 ✓ +1.48 ✓
06 38 196.8
324.1 44.6 ✓
368.7 107.5 ✓ +1.48 ✓
Above mean = +
53.1
12 12 96.5 43.4 ✓
225.1 62.7 ✓
287.8 106.1 ✓ +1.51 ✓

45.3 +1.56 ✓
13 14 30 104.5 59.2 ✓
37 41 234.5 42.5 ✓
13 09 25 277.0 101.7 ✓ +1.61 ✓
5 13 mean +1.52 ✓
18 09 38

Dec. 18, 1903

IX

above

51.2
13 16 50 95.6 44.4 ✓

225.6 61.0 ✓
286.6 105.4 ✓ +1.53 ✓

46.6 57.0 ✓ +1.60 ✓
19 06 103.6
235.2 42.2 ✓
277.4 99.2 ✓ +1.68 ✓

Below Mean = +

321.4
24 22 368.8 47.4 ✓
134.2 60.0 ✓
194.2 107.4 ✓ +1.48 ✓

314.3 +1.52 ✓
13 27 08 14.0 59.7 ✓
87 26 144.0 44.5 ✓
13 21 52 188.5 104.2 ✓ +1.55 ✓
5 11 mean +1.56 ✓
18 22 03

Dec. 18, 1903

X

Below

	140.6		
13 39.22	189.9	49.3 ✓	
	316.9	57.4 ✓	
	14.3	106.7 ✓	+1.49 ✓
	136.0	56.8 ✓	+1.49 ✓
42 08	192.8		
	321.1	50.3 ✓	
	11.4	107.1 ✓	+1.49 ✓

Above

	46.8	50.5 ✓	
46 18	94.3		
	226.9	57.8 ✓	
	284.7	108.3 ✓	+1.46 ✓
	44.8	56.4 ✓	+1.50 ✓
13 49 06	101.2		
16 46	229.7	48.1 ✓	
13 44 12	277.8	104.5 ✓	+1.55 ✓
5 8			mean +1.50 ✓
18 44 20 G.M.T.			

Dec 18, 1903

~~XI~~

Above

~~#~~ . 51.2
13 52 03 ~~94.7~~ 96.6 45.4
229.9 51.2
281.1 96.6 +1.74

45.4 +1.66
55 18 102.2 56.2
232.2 46.7
248.9 103.5 +1.57

Below
320.5
58 25 10.5 50.0
134.5 61.3
195.8 111.3 +1.39

+1.44
314.8 60.4 ~~1.54~~
14 01 10 15.2
26 56 141.0 46.7
13 56 54 187.7 107.1 +1.49
5 +6
mean +1.55 ~~+1.60~~
18 56 00 ~~PA~~

. PA = 219.0 Ver B
1H 10 HA = +0.44 West
Dec = +57 North
St.T = 8:04
Spwl = -2.5 B
-1.5 C

Dec. 18, 1903

Night cold, seeing somewhat blurry especially in first of series and at intervals thro out series, but part of the time a little better. In general however the seeing is a little poor.

B. 236 B. 394
14 13 57.0 14 14 00

Star b was the Asteroid (Tercidinia). It steadily moved away from star c and in the right direction, during measurements. Star b (Tercidinia) was the object measured to night.

L.P.P.

(~~Saturday~~) Dec. 19, 1903

Bond 234
} 01 33.2
} 02 33.2 5

Bond 394
7 02 0.0
7 03 00
0

C's watch = 15s slow) :04

β Lyrae

W Obs
Plot T.
9.5 cap.
Shade No. I

~~8 45~~ + 33.2
~~13 10~~
~~5 35~~
~~6 20~~

18 45
25 15
6 30

Above
175.3 (vandis
7 21 10 210.8
346.3
33.3
168.4
23 07 215.9
354.4
27.9
Below
84.3
25 48 116.9
259.5
301.0
81.0
7: 28 20 123.4
18 20
7 24 39 265.7
5 +24 297.0
12 25 03 P.M.

35.5
47.0
82.5 — 2.12

— 2.14

47.5
33.5
81.0 — 2.17

326
415
741 — 2.37

— 2.38

424
31.3
73.7 — 2.39

Bond 236 used on β Lyrae

mean = — 2.26

Dec. 19, 1903

II

Below

86.0
7 30 08 116.4 30.4:
259.4 41.4:
300.8 71.8 — 2.45"

78.7 — 2.42"
31 55 122.0 43.3:
266.7 30.5:
297.2 73.8 — 2.38"

Above Mean = — 2.20"

351.7
35 37 29.1 37.4:
164.4 50.1
215.5 87.5 — 1.98"

346.0
7 38 22 386.7 50.7: — 1.98"
16 02 172.6 36.6
7 34 00 209.2 87.3 — 1.99"
5 + 22
12 34 22✓

P.a. = 11.5 Ver B
S.T. = 1:52
7 51 H.a. = 7:08 West
Dec = +33.2 North
Sp. Wh. = {−7.5 B, −6.5 C}

A little trouble experienced with [illegible] pencils but obs. considered good.

Dec. 19, 1903.

U Geminorum

7 48 +24.0
2 28
5 20
6 40

Webs.
Plcot T.

B 236
8 33 50.0
34 50.2

B 394
8 34.0.0
35 0.0

Cs watch used henceforth

Above <comp + dis'

249.8
9 17.4 270.6
65.0
90.3
244.9
242.8
67.7
88.3

208:
253.
461 + 3.45
279: + 3 40
20.6
48.5 + 3 34
Mean = + 3.38

Below
339.3
360.0
153.4
182.0
334.3
363.0
158.3
176.9

20.7:
28.6
49.3 + 3.30
287 + 3.35
18.6
47.3 + 3 40

9 25.0
42.4
9 21.2
5 +.2
14 21.4 G.m.t.

Dec. 19, 1903

II

Below

	338.9		
9 27.4	359.2	20.3	
	153.3	31.5	
	184.8	51.8	+ 3.19
	334.6		+ 3.23
	364.3	29.7	
	158.9	20.3	
	179.2	50.0	+ 3.27

Above — Mean = + 3.32

	249.2		
	269.3	20.1	
	63.4	27.3	
	90.7	47.4	+ 3.39
	245.3		+ 3.40
9 35.6	273.5	28.2	
63.0	69.1	18.9	
9 31.5	88.0	47.1	+ 3.40
14 31.7			
6468.			

Sky fairly clear in first group. Variable (~~altho~~ rather faint) and adjacent stars very well seen. In second group

Dec. 19, 1903

variable much more difficult settings progressively a little more uncertain, and adjacent stars much fainter

Last group 1/2 weight.

P.A. = 0.0 Ver B
S.T. = 3.47
H.A. = 3.59 East
9 45 Dec. = +21.4 North
Sp.Wh. = { −3.5 a
−2.5 B
−1.9 C

This increasing faintness in second group is probably due to haze.

Region throughly identified before beginning observations.

7 32 +5.6
3 52

3 40
8 . 20

Susp Var. of Dec. 11, 1903 Webb Phot T.

over

Dec. 19, 1903.

Susp Var. I

Above

40.0 <comp * dis

9 55.7 112.8 >28:

227.7 61.3

289.0 134.1 + 0.89

48.4

109.6 61.2: +084

220.3 78.0:

298.3 139.2 +079

Below Mean = +084

312.9

28.0 75.1:

137.3 60.6:

197.9 135.7 +086

320.0 +085

10 01.5 21.3 61.3:

117? 131.0 75.3

9 58.6 206.3 136.6 +084

5 + 2

14 58.8

Dec. 19, 1903

Below II

310.3
10 40 24.6 74.3 ✓
136.6 62.0 ✓
198.6 136.3 ✓ + 0.85 ✓

320.2 + 0.84 ✓
20.0 59.8 ✓
130.4 76.9 ✓
207.3 136.7 ✓ + 0.84 ✓

above Mean = + 0.83 ✓

220.1
293.7 73.6 ✓
44.0 63.9 ✓
107.9 137.5 ✓ + 0.82 ✓

228.0 + 0.82 ✓
10 10.4 291.1 63.1 ✓
10 7.2 40.4 74.5 ✓
5 +.2 115.2 137.6 ✓ + 0.82 ✓
15 7.4 G.M.T.

Sd T. = 4:19
Pa = 40.1 VerB
1819 Ha = − 3:07 East
Dec. = + 6.3 North
Sprl. = { − 2.5 B
− 1.5 C

Dec 19, 1903

β Cassiop - with Phot

23 49 +56. 9″5 cap

28 34

4 45

Rt Above

55.5 < var dis

10 37.0 101.7 46.2

226.3 65.5

291.8 111.7 — 1.38

44.5

112.5 68.0 — 1.35

235.3 46.3

281.6 114.3 — 1.32

L of B mean = — 1.34

326.1

13.7 47.6

134.7 65.7

~~200.4~~ 200.4 113.3 — 1.34

314.7

10 43.0 21.3 66.6 — 1.34

10 40.0 144.2 47.0

15 40.2 191.2 113.6 — 1.34

Dec. 19, 1903

II

L.H.B.

	326.1		
10 45.0	343.0	46.9	
	134.7	68.4	
	203.1	115.3	— 1.30
	315.7		
	23.2	67.5	— 1.30
	143.8	48.0	
	191.8	115.5	— 1.29

Mean = * — 1.30

R.D.A.

	236.0		
	284.7	48.7	
	44.4	66.5	
	110.9	115.2	— 1.30
	224.9		— 1.30
10 51.4	293.0	68.1	
96.4	54.3	46.8	
10 48.2	~~100.~~ 101.1	114.9	— 1.31
5 +2			
15 48.4			

S.T. 4:59

P.a. 301.5 Ver B

18 5 8 H.a. + 5.11 West

Dec. + 57.3 North

S.J.W.h. ∓ 0.5 B ± 0.5 C

Dec. 21, 1903 (Monday)

V

7 00 C's watch 14s slow

7 10 Sky quite cloudy, scarcely any stars visible except a few of the brighter ones.

8 00 Clouds varying a little, sometimes thicker and then thinner, but sky generally pretty cloudy. At the present time however clouds are thick everywhere, and no celestial object visible except Jupiter which is rather faint.

ρ Cassiop WCB

23 49 +56.0 9.5" cap

26 49

3 00

C's watch used.

Clouds

Dec. 21, 1903

I

Left
142.2 < Var dia.
8 44.2 192.8 50.6
311.6 70.0
21.6 120.6 −1.18

132.2 −1.22
201.8 69.6
325.8 47.0
12.8 116.6 −1.27

Right clouds Mean = −1.25
55.0 8 stars gone
102.8 47.8
222.5 69.0
292.5 116.8 −1.26
clouds
44.9 −1.28
8 55.0 112.7 67.8
992 234.4 48.0
8 49.6 282.4 115.8 −1.29
5 +.2
13 49.8 GMT.
6470.

Dec - 24 1903.

Right II
54.6 clouds
9 01.0 104.2 clouds
226.3 stars gone
291.3
Clouds

~~with~~ Impossible to take a second group stopped by clouds. First group taken thro clouds sky a little clearer then more cloudy yet seeing & made

Left slowly & great care, watching images
P.A. = 301.8 Vel β closely. a part
Ha = 3:56 of time in some
9 30 Dec = 57.3 of the settings sky
S.T. = 3:43 moderately clear.
Sf. wh = −0.5 B. The general
+0.5 C agreement among the different sets as well as care exercised in making them renders it certain that group is good

9 35 Clouds everywhere and growing thicker no stars visible. Evidently the low barometer which is west of us is now making itself manifest ~~fast~~ % months largest barom. falling Evidently no chance for anything further tonight.

L.O.P.

Dec. 22, 1903 (Tuesday)

7 00 C's watch 6^s slow

Iris obs.

Plot T.

7 10 +16.8
2 20

4 50
7 10

~~8~~ 13.5 32.5 56.0
20.0 38.0 02.0
6.5 5.5 6.0

18.8 31.8
24.5 37.5
5.7 5.7

~~Star a prec Iris by~~

8 14 Iris fols, star a by 5.8^s
and is 4.1 North

51.3 0.0 18.5 35.8 51.0
57 3 6.0 24.5 42.0 57.0
6.0 6.0 6.0 6.2 6.0

8 17 Iris precs b by 6.0^s & 4.2' North

Dec 22, 1903

0 15.0
1 25.0

δ 19 Iris fols Dm + 18° 1593 by
$1^m 10^s$ and is 9'.7 N of it.

03.5 19.3 33.0
07.5 24.0 37.5
4.0 4.7 4.5

δ 42 Iris fols a by above amount ($4^s.4$)
& is 4'.0 N. of it

00.8 ~~3~~ 02.5 20.5
08.0 10.0 27.5
7.2 7.5 7.0

δ 44 Iris precs b by $7^s.2$ & is 4'.0 of it

Hence the star assumed as ~~the~~ ~~st~~ Iris tonight is Iris.

Dec. 22, 1903

Tercidina Wells, Phot T.

7 19 +8.6
3 09
4 10
7 50

~~8.0~~ ~~9.5~~ (8.6)
11.75 (9.2)
01.0 (9.0)

18.8 6.0
29.5 7.5

28.5 44.5 57.0 11.0
30.0 46.1 58.5 12.6

9 07 Ter. prec a by 1.5^s and is about 6'.0 N. of it.

14.5	40.5	01.0	23.0
27.0	53.0	13.8	35.2
12.5	12.5	12.8	12.2

9 09 45.6
58.0
12.6
Tercidina fols b by 12.5^s and is 4'.4 S. of it.

Dec. 22, 1903.

Bond 236
9 26 28.7
27 29.0

Bond 394
9 27 05
~~28 05~~

Bond 236 used on Tercidina

~~38.5~~
18.0 33.0 14.5 28.5
9 31 20.5 35.5 17.0 31.0

40.0
42.5

9 31 Tercidina precs. a by $2^{s}.5$ ~~.8~~ & is
5.9 N. of it.

26.2 46.5 9.6 28.0 54.8
37.5 57.5 21.0 39.0 06.0
11.2 11.0 11.4 11.0 11.2

9 34 Tercidina fols b by $11^{s}.2$ and is about
4'.3 S. of it.
The amount of motion of Tercidine
with reference to stars a & b
~~indicate that the object~~ assumed
for Tercidina is Tercidina.

Comp star = +6° 1656 (9.5)

Dec. 22, 1903.

I

Left

139.3 <Comp.* dis.
9 57 40 196.1 56.8✓
311.6 70.9✓
22.5 127.7✓ +1.03✓

128.8 +1.02✓
10 00 11 202.2 73.4✓
320.6 55.8✓
16.4 129.2✓ +1.00✓

Right

Mean = +1.07✓

46.2 67.6✓
03 51 113.8
232.3 56.3✓
288.6 123.9✓ +1.11✓

50.6 +1.12✓
10 06 15 102.9 52.3✓
7 57 222.0 70.8✓
10 01 59 292.8 123.1✓ +1.13✓
5 +26
15 02 25 G.M.T.

Mean +1.07✓

Dec. 22, 1903

II

Right
45.3
10 09 40 112.2 66.9 ✓
~~22~~229.7 56.6 ✓
286.3 123.5 ✓ +1.12 ✓

+1.06 ✓
50.2 57.6 ✓
13 53 107.8
221.7 71.6 ✓
293.3 129.2 ✓ +1.00 ✓

Left Mean = +1.02 ✓
311.4 71.6 ✓
19 52 23.0
141.0 57.3 ✓
198.3 128.9 ✓ +1.00 ✓

+0.98 ✓
321.3 58.7 ✓
10 23 55 20.0
66 00 132.6 72.2 ✓
10 16 30 204.8 130.9 ✓ +0.96 ✓
5 + 23
15 16 53

Dec. 22, 1903

III

Left
314.3
10 31 08 24.5 70.2 ✓
139.8 56.0 ✓
195.8 126.2 ✓ +1.06 ✓

319.3 58.0 ✓ +1.06 ✓
34 08 17.3
133.6 68.7 ✓
202.3 126.7 ✓ +1.05 ✓

Mean = +1.08 ✓

Right.
224.9
38 35 294.7 69.8 ✓
50.2 55.1 ✓
105.3 124.9 ✓ +1.09 ✓

+1.10 ✓

229.3
10 42 00 285.~~8~~ 8 56.5 ✓
25 63 44.1 68.0 ✓
10 36 26 112.1 124.5 ✓ +1.10 ✓
5 +20
15 36 46 G.M.T.

Dec. 22, 1903

IV

Right

222.0
10 58 05 293.6 71.6
49.7 55.3
105.0 126.9 +1.04

232.9 52.4 +1.14
11 01 40 285.3
45.5 65.7
111.2 118.1 +1.23

Left mean = +1.04

131.4
06 08 203.5 72.1
316.8 60.0
16.8 132.1 +0.94

137.1 61.1 +0.94
11 09 12 198.2
15 05 312.8 71.0
11 03 46 23.8 132.0 +0.94
5 16
16 04 02

Dec 22, 1903

V

Left

132.2
11 13 17 203.8 71.6✓
318.2
17.2 59.0✓
130.6✓ +0.97✓

139.6 62.3✓ +0.98✓
16 34 201.9
315.3 67.7✓
23.0 130.0✓ +0.98✓

Right

44.8 67.4✓
20 42 112.2 mean = +1.04✓
230.6 55.9✓
286.5 123.3✓ +1.12✓

50.8 56.4✓ +1.09✓
11 23 50 107.2
34 23 221.9 69.6✓
11 18 36 291.5 126.0✓ +1.06✓
5 13
16 18 49

Dec. 22, 1903.

VI

Right

44.8
11 27 52 109.7 64.9 ✓
228.0 61.4 ✓
289.4 126.3 ✓ +1.06 ✓

49.4
11 30 40 105.9 56.5 ✓ +1.04 ✓
222.1 72.1 ✓
294.2 128.6 ✓ +1.01 ✓
Left
Mean +1.01 ✓

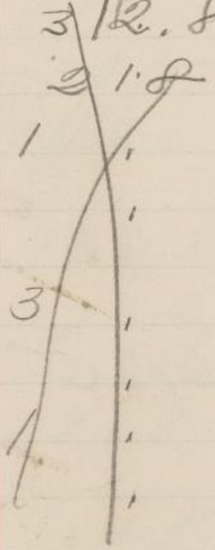
314.3 68.3 ✓
11 34 44 22.6
139.2 58.9 ✓
198.1 127.2 ✓ +1.04 ✓

316.4
11 38 52 17.0 60.6 ✓ +0.98 ✓
12 08 131.8
11 33 02 203.6 71.8 ✓
132.4 ✓ +0.93 ✓
5 11
16 33 13

Dec. 22, 1903.

~~VII~~

Left



312.8
~~12 01 32~~ 21.8

318.6
12 06 31 16.0 57.4
131.1
203.2 72.1
129.5 +0.99

312.2
09 22 24.6 72.4 +1.00
139.4
195.0 55.6
128.0 +1.02

Mean = +1.04

Right

230.0
12 14 34 287.6 57.6
44.6
114.8 70.2
127.8 +1.03

223.4 +1.08
12 17 00 292.7 69.3
47 27 52.0 53.3
12 11 52 105.3 122.6 +1.14
5 +5
17 11 57

Dec. 22, 1903.

VIII

Right

227.0
12 21 52 286.4 59.4 ✓

42.5 68.8 ✓
111.3 128.2 ✓ +1.02 ✓

224.3 70.2 ✓ +1.04 ✓
12 24 20 294.5

47.8 56.5 ✓
104.3 126.7 ✓ +1.05 ✓

Left

Mean = +1.00 ✓

131.8
12 28 12 204.4 72.6 ✓

316.7 59.7 ✓
16.4 132.3 ✓ +0.93 ✓

139.7 60.3 ✓ +0.96
12 30 10 200.0

312.4 68.5 ✓
24 34
12 26 08 20.9 128.8 ✓ +1.00 ✓
5 +2

17 26 10

Dec. 22, 1903

IX

Left

~~+ 37.5~~

~~12 33 00~~ ~~203.0~~

12 36 40 138.3 63.9 ✓
202.2
313.6 68.2 ✓
21.8 132.1 ✓ +0.94 ✓

134.5 67.5 ✓ +1.00 ✓
38 28 202.0
318.7 59.3 ✓
18.0 126.8 ✓ +1.05 ✓ Mean = +1.10 ✓

Right

51.4 52.6 ✓
42 34 104.0
223.8 69.4 ✓
293.2 122.0 ✓ +1.15

4451 63.1 ✓ +1.20 ✓
12 45 35 108.2
231.7 54.7 ✓
286.4 117.8 ✓ +1.24

16 3 17
12 40 49
5 40

17 40 49

Dec. 22, 1903

X

~~Left~~ Right

48.3
12 48 35 103.8 55.5 ✓
224.0 66.8 ✓
290.8 122.3 ✓ +1.14 ✓

46.9 62.8 ✓ +1.18 ✓
12 50 50 109.7
231.4 55.8 ✓
287.2 118.6 ✓ +1.22 ✓

~~Right~~ Left Mean = +1.11 ✓

132.2
13 15 40 ~~19~~ 200.9 68.7 ✓
318.9 57.0 ✓
15.9 125.7 ✓ +1.07 ✓

136.6 +1.04 ✓
13 18 40 196.4 59.8 ✓
253 45 313.4 68.8 ✓
~~12 58~~ 22.2 128.6 ✓ +1.01 ✓

13 03 26
5 - 4
18 03 22 G.M.T.

Dec. 22, 1903.

~~Right~~ Left

XI

313.3 68.0 ✓

133218 21.3

141.7 53.8 ✓

195.5 121.8 ✓ +1.15 ✓

319.2 57.9 ✓ +1.11 ✓

3842 17.1

134.0 67.7 ✓

201.7 125.6 ✓ +1.07 ✓

~~Left~~ Right

Mean = +1.12 ✓

46.8 63.0 ✓

3948 109.8

228.2 60.1 ✓

288.3 123.1 ✓ +1.13 ✓

50.7 56.2 ✓ +1.12 ✓

134200 106.9

2848 226.8 67.0 ✓

133712 293.8 123.2 ✓ +1.12 ✓

5 - 9

183703

Dec 22, 1903

~~XII~~

Right

46.7
13 44 12 110.5 63.8
228.3 61.0
289.3 124.8 +1.09

49.4
13 46 00 107.2 57.8 +1.10
224.6 65.6
290.2 123.4 +1.12

Left

Mean = +1.02

306.2
13 50 20 18.9 72.7
137.9 59.1
197.0 131.8 +0.94

317.6
13 53 08 16.5 58.9 +0.94
193 32 130.9 72.3
13 48 23 203.2 131.2 +0.95
5 -11
18 48 12

P.A. = 131.5 V er B
H.a. = +0:53 West
Dec. = +5.4 North
S.T. = 8:14
S'p. Wh = { -3.5 a
-2.5 B.
-1.8 C.

14 00

Dec 22, 1903

Seeing thro out a large portion of the observations somewhat blurry; not much wind, but somewhat cold and air a little sharp. Sky clear seeing improved not only with the increasing altitude but
1405 also from better atmospheric conditions, so that in last two or three groups it was pretty good.

Before beginning the asteroid was on ~~one~~ the following side of the line from a to b and at the end of observations it was on the preceding side of the line. It had moved very perceptibly and the right object was observed

B 236	B 394
14 08 14.2	14 08 00

L. P. P.

Dec. 23. 1903 (Wednesday)

25 52
18 45 +33.2
7 07

Region rather too low for β Lyrae

W. Obs.

χ Cygni

26 10
19 46 +32.6
6 24

Phot. T.

Dec. 23. 1903

Index left and above

231.1 < Var. dis.
~~8 56.4~~ ~~285.2~~
7 5~~3~~6.9 287.9 56.8″
~~61.3~~ 60.1 41.8′
101.9 98.6′ — 1.69

241.2
281.1 39.9″ — 1.78
~~53.1~~ 57.4 51.6″
109.0 91.5 — 1.67

Index right and below. Mean = —1.69

~~144.3~~ 141.1
201.5 60.4″
~~227.8~~ 329.2 43.0
12.2 103.4 — 1.57

149.8 — 1.60
8 9.8 ~~191.1~~ 192.5 42.7″
126.7 321.6 57.9
8 23.4 19.5 100.6 — 1.64
5
~~13~~ +.5
13 3.9 G.M.T.
6472.

Dec 23. 1903

Index right and below

144.2
8 11.6 ~~241.0~~ 200.4 56.2
329.1 41.7
10.8 97.9 — 1.71

149.9 — 1.66
193.9 44.0
~~323.0~~ 322.6 57.3
19.9 101.3 — 1.62

Index to left and above

55.0 Mean = -1.76
108.0 53.0
240.8 40.0
280.8 93.0 — 1.83

~~61.7~~ 60.7 — 1.87
8 18.8 103.2 42.5
10.4 ~~233.6~~ 238.0 47.7
8 15.2 ~~286.0~~ 285.7 90.2 — 1.91
13 15.7 G.M.T.
6472.

S.T. = 2 46
~~P.A. =~~
H.A. = 6 58 W
Dec. = +33.0
P.A. = 25°.5
Sprocket = -2.5 B, -1.5 C

Dec. 23. 1903

044068 – Camelop. W. Obs.

4 41 +68.0
3 05
1 36

9.5 inch Cop. Phot. T.

Index left + below.

314.5 < Comp. star disc.
22.~~2~~4
8 54.9 ~~129.8~~ ~~128.9~~ 67.9 ✓
213.0 83.2 ✓
151.1 ✓ +0.55 ✓

~~308.0~~ ~~315.4~~ 314.6 +0.5k ✓
~~21.0~~ 22.0 67.4 ✓
~~126.0~~ 129.2 84.8 ✓
214.0 152.2 ✓ +0.53 ✓

Index right + above

219.9 82.1 ✓
~~303.0~~ 302.0 64.2 ✓
48.8
113.0 146.3 ✓ +0.65 ✓

229.2 +0.62 ✓
~~9 09.7~~ ~~294.6~~ 295.2 66.0 ✓
124.6 ~~37.0~~ 38.0 83.8 ✓
9 02.3 ~~124.3~~ 121.8 149.8 ✓ +0.58 ✓
14 02.8 S.M.T. mean +0.58 ✓
6472.

Dec. 23. 1903.

S.T. = 3 4~~0~~1
H.a = − 1 02
Dec = +67.7
P.a. = 259.3 B.
Sprocket = − 1.5 B. − 0.5 C

o' Ceti.

W. Obs.
Phot W.

2	12	−3.6
2	4	−2.5
3	55	
1	51	

1903phae.proj..56GW

Dec. 23. 1903.

Index right - + below

72.8 < var. dis.

9 53.5 ~~144.0~~ 145.9

246.8

333.1

$$\begin{array}{r} 73.1 \\ 86.3 \\ \hline 159.4 \end{array}$$ − 0.39

65.4 − 0.38

152.7

~~254.2~~ 254.9

3~~4~~28.2

$$\begin{array}{r} 87.3 \\ 73.3 \\ \hline 160.6 \end{array}$$ − 0.37

Index left + above

340.8

57.8

160.5

~~245.2~~ 243.2

$$\begin{array}{r} 77.0 \\ 82.7 \\ \hline 159.7 \end{array}$$ − 0.39

Mean = − 0.42

$$\begin{array}{r} 9.19 \\ \hline 8.77 \end{array}$$

339.6 − 0.46

$$\begin{array}{r} 10\ \ 02.1 \\ \hline 11\,5.6 \end{array}$$ 58.9

163.4

9 57.4* ~~235.8~~ 236.0

$$\begin{array}{r} 79.3 \\ 72.6 \\ \hline 151.9 \end{array}$$ − 0.54

14 58.3* G.M.T.

6472.

Dec. 23. 1903.

Index left + above

344.0

10 4.5 57.0 73.0

155.7 88.2

243.9 161.2 - 0.36

336.5 - 0.39

~~61.9~~ 62.3 85.8

163.2 72.2

~~234.7~~ 235.4 158.0 - 0.42

Index right + below

Mean = - 0.42

3
~~1~~63.8 61.4

$ ~~3~~65.2 93.9 101.4

72.1 155.3 83.9

~~166.0~~ ~~167.2~~ 185.3

174.7 +

~~257.1~~ 255.7 90.2

10 18.4 3 ~~1~~45.9 68.0

22.9 86.0 156.2 - 0.45

10 11.4 ~~150.6~~ ~~154.0~~ ~~153.2~~ ~~152.8~~

15 11.9 3 d set above omitted, as one or more read-

6472. S.T. = 4 45 ings are surely wrong.

H.A. = 2 29

Dec = -3.0

Position angle not read as the adaptor into

Dec. 23. 1903.

which the Photometer slips has not yet been soldered. Region thoroughly identifyed by D.M. Chart before beginning observations.

ρ Cassiop. 9.5 inch cop.

~~56~~ 2 49 +56.0
4 48

W. Obs
Phot. T.

Index left & below

145.4 < var. dia.
10 40.1 194.7 49.3
315.8 69.3
25.1 118.6 −1.22

~~139.8~~ 139.0 63.2 −1.26
~~204.3~~ 202.2 51.5
~~324.2~~ ~~226.0~~ 114.7 −1.31
~~14.9~~ 15.7

Index right & above

60.0 Mean −1.40
42.0
~~100.2~~ 102.0 62.5
~~225.9~~ 228.3 104.5 −1.55
290.8 −1.54
48.1 62.9
10 49.4 111.0 42.9 −1.52
95 239.1 105.8
10 44.8 ~~283.8~~ 282.0
15 45.3 GMT

Dec. 23. 1903.

Index right and above.

58.0

10 51.4 ~~100.3~~ 101.0 43.0

~~227.9~~ 228.9 68.1

297.0 111.1 −1.39

~~50.4~~ ~~50.5~~ 49.3

~~111.0~~ ~~108.5~~ 111.0 61.7 (−1.44)

~~247.9~~ 237.0 45.1

~~236.8~~ ~~281.6~~ 282.1 106.8 −1.49

Index left and below

~~228.9~~ 227.2

14.0

15.1

139.5

~~203.0~~ 201.0

~~316.9~~ 317.2 62.5

~~18.9~~ 19.7

145.1 52.8

11 7.0 197.9 115.3 −1.30

11 8.4

10 59.2

15 59.7 G.M.T.

6472.

Dec. 23. 1903.

~~322.5~~ 324.9 (-1.30)
13.1
~~137.4~~ 138.1
~~205.8~~ 205.2

48.2
67.1
115.3 -1.30
mean -1.37
Gen. mean -1.34

S.T. 5 44
H-a. 5 52
Dec. +62.8
P.a. 121.2
Sprocket - -0.5 B. + 0.5 C

11 23 Ended

~~C.S.~~ E.T. Watch used to night - is 30^s slow of B394

L.P.P.

Dec. 24 1903 (Thursday)

ρ Cassiop — w. Obs. plot

23 49 — +5 ~~6~~ 7.4 9.5 cap
28 49
5 00

9 35 C's watch used = 1^m fast

Left
144.2 — var dis
10 22.5 — 199.6 — 55.4′
~~3~~ 15.4 — clds, stars gone — 67.5′
22.9 — 122.9 — −1.13′
133.8 — −1.14′
202.2 — 68.4′
324.1 — clouds — 53.5
17.6 — 121.9′ — −1.15′
Right — Mean = −1.34′
60.4 — clouds
103.1 — 42.7′
232.0 — 60.6′
292.6 — 103.5′ — −1.58′

51.9
10 33.0 — 11~~8~~0.5 — 58.6′ — −1.54′
55.5 — 236.8 — 47.3
10 27.8 — 284.1 — 105.9 — −1.51′
15 2 3 8.8 G.M.T.
647.5

Dec. 24, 1903

Clouds

II

Right

35.3 <clouds

10 43.0 103.0 47.7

226.1 64.3

290.4 112.0 — 1.37

48.1 — 1.40

112.0 63.9

237.9 45.1

283.0 109.0 — 1.44

Clouds

Mean = — 1.34

Left

324.8

16.3 51.5

139.9 62.1

202.0 113.6 — 1.34

316.3

10 54.4 23.9 67.6 — 1.29

97.4 145.5 stars gone 50.2

10 48.7 295.7 117.8 — 1.24

5 1.0

15 49.7 G.M.T. P.A. = 121.5 Ver B

6475 H.A. = 5.32 ~~West~~

Dec = +57.3 North

S.T. = 5.27

Sp. Wh. = { −0.5 B

+0.5 C

Dec. 24, 1903.

Troubled in both groups by clouds passing and varying somewhat, Settings however
11 05 very carefully and slowly made waiting for images to steady at equalizations and observations considered good as the results themselves seem to indicate

L. P. P.

Dec. 26, 1903 (Saturday)

β 236 > 01 00.2, 02 00.4

β 394 > 01 00, 02 00

β Pegasi ver Ob.
Plot T.
9.5 cap.
Shade No. I

18 45 +32.6
25 45
> 00

Bond 236 used.

Left Above
230.4 < var. dis.
7 15 25 272.4 42.0
44.8 53.9
98.7 95.9 − 1.76
224.9
19 28 280.1 55.2 − 1.71
48.8 44.7
93.5 99.9 − 1.66

R of β
Mean = − 1.72
140.7
22 20 183.1 42.4
312.3 56.0
368.3 98.4 − 1.70

1341 − 1.72
7 24 10 190.0 55.9
1 23 322.0 40.4
7 20 21 362.4 96.3 − 1.75
5 − 3
12 20 18 G.M.T.

6475.514
6475.248
0.266

Dec. 26, 1903

II

ROB.

140.6
7 26 00 183.8 43.2
318.2 47.4
365.6 90.6 −1.90

186.4 −1.88
27 40 184.6 51.2
322.7 40.8
363.5 92.0 −1.86

Mean = −1.77

Roa.
43.1
30 55 102.0 58.9
231.2 41.7
272.9 100.6 −1.64

49.3
7 33 00 92.8 43.5 −1.66
117 35 223.4 55.9
7 29 24 279.3 99.4 −1.67
5 − 5
12 29 19
6475.520
6475.248
+ 0.272

R.A. = 12.4 V en B Seeing rather poor and altitude rather low.
H.A. = 7:28 West
Dec = +33.2 North
S.T. = 2:16
Sp. Wh. = {−75 B
−65 C

Dec. 26, 1903

Iris. Plot T. Wells
7 10 +16.8
3 35

3 35
8 25

9 14 23.0
14 32.5
15 12.8

9 15 Iris fols +18 1571 (8.9) by ~~4.0~~ 40.6 secs & is 2.7 ~~North~~ of it.

9 16 58.5
17 12.5

26.9 (8.9)
07.5

Comp ✱ = +18 1576 (8.9)

9 25 C's watch used 10^s fast

(over)

Dec. 26, 1903

Iris

Above

I

134 < ~~Iris~~ Iris
9 30.0 82.3 68.9
191.1 70.3
261.4 139.2 — 0.79

124
89.3 76.9 — 0.76
200.4 64.9
265.3 141.8 — 0.74

Below Mean = — 0.77

290.0
354.4 64.4
103.3 77.5
180.8 141.9 — 0.74

283.0
9 37.0 360.0 77.0 — 0.82
112.6 57.4
9 33.5 172.0 134.4 — 0.89
5 - 2
14 33.3 G.M.T.
6475.

Dec. 26, 1903.

Below — II

293.2
9 39.0 351.9 — 58.7
104.1 — 75.5
179.6 — 134.2 — -0.89

281.9 — -0.90
358.4 — 76.5
112.0 — 56.5
171.5 — 133.0 — -0.92

Above — Mean = -0.86
201.3
261.3 6 — 60.0
12.4 — 74.9
87.5 — 134.9 — -0.88

192.3 — -0.83
9 45.0 274.0 — 81.7
8 40 22.0 — 58.2
9 42.0 80.2 — 139.9 — -0.78
5 -.2 — Final Mean -0.82
14 41.8 P.A. = 24.5 Ver B
6475 Ha = -2.52 East
Dec. = +17.8 North
S.T. = 4:24
Shift = { -1.5 B
-0.5 C

Dec. 26, 1903.

~~Remarks:~~

Seeing very bad, images large and very blurry most of the time during setting. The ~~[illegible]~~ result
10 07 thought to be very good, but individual setting cannot be made as satisfactorily as in better seeing. ~~[illegible]~~ Night cold and storm cleared suddenly about sunset.

ρ Cassiop Wilb
Phot
9.5 cap.

23 49 +57.4
28 42
4 53

~~[illegible]~~ Cs watch used

I

~~L of B.~~
296.7 ∠Nardis
10 15.0 346.0 49.3
108.7 61.5
170.2 110.8 — 1.40
292.2
352.0 59.8 — 1.42
116.8 49.0
165.8 108.8 — 1.45
R of B
206.9 Mean = — 1.42
255.2 48.3
21.5 61.0 — 1.43
82.5
200.8 109.3
10 21.5 263.2 — 1.41
25.9 62.4
10 18.2 75.0 49.1
5 — .2 111.5 — 1.39
15 18.0 M.T. 6475.

Dec. 26. 1903

II

Rθα

206.7

10 23.4 259.8 — 52.3

21.4 — 59.5

80.9 — 111.8 — 1.38

~~2~~

200.4 — 1.38

261.8 — 61.4

25.3 — 49.7

75.0 — 111.1 — 1.39

LθB — mean = 1.40

114.3

166.3 — 52.0

291.0 — 60.7

351.7 — 112.7 — 1.36

110.9 — 1.41

10 28.5 169.2 — 58.3

11.9 296.6 — 50.0

10 26.0 346.6 — 108.3 — 1.46

15 25.8 G.M.T.

6470.

PA = 121.4 Ver β

HA = 5.14 West

Dec = +57.4 North

S.T. = 5:07

Sp. wh = { −05 B.
{ +0.5 C.

Seeing somewhat blurry at times in obs. of above ~~star~~, and also at times seeing very good. Observer watched for intervals of good seeing and observations considered good; and region rechecked by adj stars.

Dec 26, 1903

Iris resumed

III

7 10 +16.8
5 10
2 00
10 00

Rt Above

21.2 < Iris obs

10 44.4 78.9 57.7
195.7 70.9
266.6 128.6 − 1.01
14.3
88.0 73.7 − 0.96
201.2 60.3
261.5 134.0 − 0.90

Lt Below Mean = − 1.01

295.4
348.7 53.3
105.7 70.9
176.6 124.2 − 1.10

284.9 1.06
10 50.0 354.2 72.3
10 47.2 112.7 55.8
15 47.0 168.~~4~~5 128.1 − 1.02
6475.

Dec 26, 1903

IV

Lt Below

291.8

10 52.0 349.4 57.6

104.2 72.6

146.8 130.2 − 0.97

286.8

356.8 70.0 −1.02

112.6 56.2

168.8 126.2 − 1.06

RDA Mean = − 1.02

204.7

259.9 55.2

13.8 72.9

86.7 128.1 − 1.02

195.9 − 1.02

11 01.0 267.0 71.1

22.6 56.4

10 56.5 49.0 127.5 − 1.03

15 56.7

6475.

P.A. 28.0 Ver B.

H.A. −1.34 East

Dec +18.1 North

S.T. = 5.34

Sp.Wh. { −1.5 B
−0.5 C

Seeing in general a little better than in first 2 groups on asteroid. ~~Asteroid~~ the object previously obs. for Iris the same as obs. in these 2 groups.

Dec. 26, 1903.

B 236			B 394		
11	13	39.0	11	13	00
	14	39.2		14	00

Double image prism readjusted after taking this the first time and before taking ρ Cassiop.

L. P. P.

Dec 28, 1903 (Monday)

B 236 B 394
7 06 55.0 7 07 00
07 55.2 08 00

7 09 C's watch = 5 sec slow

RR Lyrae W Obs
phot I

19 20 + 42.6
26 00
6 40
Left

144.4 [Var dis
~~Left~~ 188.8 44.4
7 37 45 318.2 58.0
1~~4~~6.2 102.4 − 1.60
135.4
39 35 194.5 59.1 − 1.64
324.8 40.2
365.0 99.3 − 1.67
Right Mean = −1.70
47.4
42 30 103.0
236.3 55.6
276.9 40.6
55.0 96.2 − 1.75
7 44 26 93.8 Ef. 2860 38.8 − 1.76
4 16 227.2 56.6
7 41 04 283.8 6477.5285 95.4 − 1.77
5 − 01 6477.5458
12 41 03 G.M.T. −.0173

Dec. 28, 1903.

II

Right

48.0

7 46 16 102.8 54.8

237.8 39.3

277.1 94.1 −1.81

56.5 −1.83

4 7 58 94.2 37.5

227.6 54.9

282.5 92.4 −185

Left Mean = −1.84

51

~~46~~ 10

326.3

363.7 37.4

139.2 55.1

194.3 92.5 −185

319.6

7 52 50 372.8 53.2 −1.86

198 14 146.7 38.7

7 49 34 185.4 91.9 −1.86

5 − 2

12 49 32

6477.5344

6477.5458

~~886~~

−0.0114

Dec 28, 1903.

III

Left

	326.0		
7 54 48	366.0	40.0	
	138.6	53.3	
	191.9	93.3	− 1.83
	320.4		− 1.89
57 20	371.1	50.7	
	146.8	38.1	
	184.9	88.8	− 1.95

Mean = − 1.88

Right

	233.2		
8 00 00	275.0	41.8	
	52.2	46.8	
	99.0	88.6	− 1.95
	231.1		− 1.88
8 01 48	281.1	50.0	
23 3 56	418.8	44.5	
7 58 29	93.3	94.5	− 1.80

5 − 4

12 58 25

6477.5406

6477.5458

−0.0052

Dec, 28, 1903.

IV

Right
237.9
8 03 38 275.0 37.1
54.5 44.9
99.4 82.0 — 202

231.0 — 212
05 27 280.0 49.0
59.2 30.1
89.3 79.1 — 222

Left
Mean = 212
149.0
08 30 184.1 35.1
322.0 47.0
369.0 82.1 — 213

143.7
8 10 48 190.2 46.5 — 212
24 23 327.9 36.0
8 07 06 363.9 82.5 — 212
5 — 5
13 07 01 G.M.T.
6477.5465
6477.5458
+0.0007

Dec. 28 1903

V

Left
150.6
8 13 12 182.7 32.1
323.4 45.4
368.8 77.5 − 2.28

144.1
16 20 190.0 45.9 − 2.24
328.2 34.1
362.3 80.0 − 2.19

mean = − 2.30

Right.
59.8
19 20 91.7 31.9
232.4 46.0
278.4 77.9 − 2.26

56.1 − 2.35
9 21 30 96.8 40.7
~~30~~ 22 241.7 31.3
9 17 36 ~~242.7~~ 72.0 − 2.44
5 − 7 273.0
13 17 29 G.M.T.

6477.5538
6477.5458
+ 0.0080
9 33

P.A. = 214.5 for β
H.A. = 7:48 West
Dec. = +43.3 North
S.T. = 3:11
Sp. wkg = −3.5 α
−2.5 β
−1.9 C

Seeing fairly good during above observations, but region rather low and obs. somewhat difficult and progressively more so, due to rather bright moonlight rather low alt. and faintness of comp. stars.

Dec. 28/1903.

Iris Plot T.
20 Obs.

7 10 +16.8
3 50

3 20
8 40

10 21 20.0 a
21 34.5 b
21 43.0 c
21 52.0 Iris

9 22 Iris fols a by 32^s & is 8.'4 South

9 22 Iris fols c by 9^s & is 3.'0 North.

9 27 Iris fols d by 1.^s5 & is 2.'3 North

Asteroid abandoned for the present for eclipse

B 236
9 29 18.3
30 18.5

B 39K
9 29 00
30 00

Dec. 28, 1903.

Dis. Jup. IV W. ~~Obs.~~
Campbell Rec.

9 46 47 9 47 8 Sat IV easily seen
47 36 57 " " " "
48 24 48 45 " " " " but very much fainter than Sat I near it.
49 39 50 00 Sat IV easily seen but fainter than at first.
50 48 51 10 Sat IV seen but very faint
51 20 42 Sat IV seen but fainter still
51 45 52 07 " " " by indirect vision but very faint.
52 03 25 Sat IV seen.
18 40 " " " but extremely faint.
43 53 05 " " " by indirect vision
53 02 24 Sat IV thought to be seen but extremely faint −773
53 20 42 Sat IV susp. −755
53 41 54 03 Sat IV not certainly seen −734
54 01 23 " " " " " −714
54 20 42 " " " " " −695
54 47 55 09 " " " " " −668
55 16 38 Sat IV not seen −639

Dec 28/1903

It was impossible on account of low altitude to take the Eclipse photometrically, especially as Sat I was quite near IV.

Eclipse taken with 1" positive eyepiece

The telescope in the last tips and in fact in nearly all the eclipse was about horizontal. Seeing fairly good but altitude very low.

B 236	B 394
10 00 23.0	10 00 0.0
01 23.2	01 0.0

Iris

Wells
plot T

7 10 +16.2
4 45
2 25
9 35

10 12 Iris now prec d by 1s this 2'.2 North of it

Hence object assumed as Iris is Iris.

Dec 28, 1903.

Comp * = +18.1553 (8.7)

B 236 used on Iris

left

308.3 < Iris

10 25 40 23.3 75.0

134.7 61.0

195.7 136.0 − 0.86

316.0 − 0.85

28 00 13.4 57.4

127.2 79.1

206.3 136.5 − 0.84

Right Mean = − 0.96

219.0

31 40 291.0 72.0

51.4 53.8

105.2 125.8 − 1.07

228.6 − 1.06

10 33 20 284.6 56.0

11 8 40 39.9 70.8

10 29 40 110.7 126.8 − 1.05

5 − 28

15 29 12 G.M.T.

Dec. 28, 1903

II

Right

219.8
292.~~1~~5 727
10 35 0.0 ~~4~~8.2 56.0
104.2 128.7 — 1.00

228.2 — 1.00
37 00 284.7 56.5
39.1 72.9
112.0 129.4 — 0.99

Left Mean — 0.90
13~~4~~45
3940 196.7 622
306.8 755
22.3 137.7 — 0.82

125.8 — 0.80
10 4255 206.0 80.2
34 35 314.9 59.4
10 38 39 114.3 139.6 — 0.78
5 29
15 38 10

Dec. 28, 1903

III

~~Left~~

134.2
10 50 00 198.0 63.8
309.0 74.7
23.7 138.5 − 0.88

126.3
51 40 205.0 78.7 − 0.79
315.0 61.0
16.0 139.7 − 0.78

Right Mean = −0.86
227.1
57 00 285.8 58.7
39.2 75.0
114.2 133.7 − 0.90

217.6 − 0.92
10 59 10 ~~2~~. 292.3 74.7
17 50 49.2 57.2
10 54 28 106.4
5 −32 131.9 − 0.94
15 53 56

Pa = 325.2 Very P.
Ha. − 1:28 East
Dec = +17.8 North
ST = 5:44
Sprlg −0.5 +0.5 Br

In obs. of Jno seeing ~~[illegible]~~ somewhat blurry but all possible care exercised.

Dec. 30, 1903 (Wednesday)

B 236 | B 39K
7 00 0.0 | 7 ~~00 00~~
01 0.3 | 01 00

7 01 C's watch = 18s slow
clouds
Iris W Obs Phot T.

7 10 +16.8
2 33
4 37
7 73

13.5 12.0 46.5
48.5 53.5 54.0

0.5
8.0

8 16 (8.8) ~~Iris~~ prec a by 7.8s & is
5.8' South Not Iris but ~~the~~ (8.8)

13

19 51.5
21 45.5

Dec. 30, 1903.

Iris prec the (8.9) +18°.1556 by
8 22 1m 54s & 5.0 North

23 01.0
23.0

37.0 47.5 10.0 29.0 40.0
38.2 48.5 11.4 30.1 41.0

48.0
49.0

8 26 Iris prec the by 1s & 5'.5 North.
Clouds

Bond 236 used on Iris

Comp star = +18.1538 (8.1)

Clouds

Over

Dec. 30, 1903

Iris.

I

Right
~~RDA~~

301.0 < comp ✶ dis
9 24 30 33.6 92.6
127.5 74.1
201.6
166.7 + 0.25

309.6
27 10 22.6 73.0 + 0.23
117.9 95.8
213.7 168.8 + 0.21

Left Mean = +0.12

205.3
29 40 305.1 99.8
36.3 79.5
115.8 179.3 + 0.01

216.5 + 0.01
9 31 30 294.6 78.1
32 50 24.0 101.4
9 28 12 125.4 179.5 + 0.01
5 − 25
14 27 47

Dec. 30, 1903

II

Left
265.8
9 33 50 303.7 — 97.9″
34.6 — 78.7″
113.3 — 176.6 +0.06″

216.3 — +0.06″
36 15 293.8 — 77.5″
26.8 — 98.7″
125.5 — 176.2 + 0.07″

Right clouds — Mean = +0.11″
118.0
~~4H~~21 212.5 — 94.5″
306.5 — 76.1″
23.6 — 170.6″ +0.18″

+0.16″
125.5
9 47 08 202.3 — 76.8″
16 26 298.0 — 95.7″
9 40 22 ~~34.2~~ — 172.5″ +0.14″
5 −27 33.7
14 39 ~~55~~

P.A. 340.5 Var B
HA −2:28 East
Dec. +18.1 North
S.T. 4:42
Spent −5.5 a, −4.5 B, −3.9 C,
4:41 S.T. = 9:52 E.M.T.

Dec. 30, 1903.

ρ Cassiop — wells
Plott
9.5 cap

23 49 +57.4
28 49
5 00

Cs watch used on ρ Cassiop.

R. D. A.
I

52.0 < Var dis

10 4.8 100.3 48.3
229.0 51.9
280.9 100.2 − 1.65
52.2
101.6 49.4 1.59
228.7 4 55.8
283.2 105.2 − 1.53

L. D. B.
mean = −1.64

320.8
12.5 51.7
142.0 47.1
189.1 98.8 − 1.69

320.9 −1.70
10 100 369.9 49.0
10 7.4 140.6 48.8
5 +.3 189.4 97.8 −1.71
15 7.7 G. M. T.
6429.

Dec 30, 1903

Left 9 B   II

321.1

co 11.4   12.3   57.2
143.0   47.0
190.0   98.2   — 1.70

321.2   — 1.69
368.6
140.6   47.4
192.2   51.6
99.0   — 1.68

Rot a.   Mean = — 1.66

229.0
284.3   55.3
52.9   45.9
98.8   101.2   — 1.63

230.7   — 1.64
co 16.0   281.2   50.5
27.4   51.0   49.9
10 13.7   100.9   100.4   — 1.65
15 14.0 G.M.T.
6479.   PA 301.5 Vin B.
H a. 5:18 West
Dec +57.3 North
S.T. 5:08
Sp Wh — 0.5 B, +0.5 C

Dec 30, 1903

Iris Wells
Phot I.

III

7 10 +16.2
5 20
1 50
10 10

Bond 236 used now.

Right
<comp. ★ dis

~~10 39 53~~
~~117.0~~
~~213.4~~
~~296.7~~
~~36.2~~
~~116.8~~

~~96.4~~
~~99.5~~

~~11 20~~

Right
126.1 <comp ★dis
10 42 11
203.2
~~Left~~
296.6
34.1

77.1
97.5
174.6 + 0.10

116.2
43 52 215.8
305.7
23.2

99.6 + 0.08
77.5
177.1 + 0.05

Left
33.2

Mean = −0.02

47 55 118.0
204.9
305.9
25.0

84.8
101.0
185.8
174.8
∓ 0.11

10 49 48 125.5
23 46 212.3
10 45 56 298.0
15 45 18 32

6479

100.5 −0.12
85.7
186.2
173.8 −0.12

Dec. 30, 1903.

IV

Left

32.0

10 52 00 118.2 — 86.2 / 102.6 / 188.8 / 171.2 — 0.17

203.4

306.0

23.6

64 25 125.2 — 101.6 — 0.14

213.2 — 84.0

297.2 — 185.6 — 0.11

174.4

mean = −0.07

Right

305.6

5 9 00 26.0 — 80.4

114.9 — 98.9

213.8 — 179.3 + 0.01

296.9 — 0.00

16 00 30 34.5 — 100.6

25 55 124.3 — 80.0

10 56 29 204.3 — 180.6 — 0.01

5 − 39 — 179.4

15 55 50 G.M.T.

6479.

P.a. = 356.8 Ver B

Ha = −1:17 East

Dec = +17.9 ~~North~~

S.T. = 5.54

Sf. wh. = −5.5 a; −4.5 B; −3.9 C

Dec 30, 1903.

β 236			β 374		
11	11	42.0	11	11	0.0
	12	42.2		12	00

L P.P.

Dec. 31, 1903. ~~Sat~~ (Thursday)

B 236　　　　B 394
7 08 55.5　　　　7 09 00
09 55.5　　　　10 00

2! 08 S.T. = 7.15 E.M.

7 10 C's watch 34s slow.

Iris　　　　W Obs. phot. T+ II

7 10 +16.2
2 16
4 54
7 06

7 40 Clouds

36.5
05.0

Bond 236 used

Comp star = +18.1538 (8.1) = the same as last night.

cloud

over

Dec. 31, 1903.

8 02 Clouds I

R θ a.
347 < Iris dis.
8 11 45 121.1 86.4
205.0 101.3
306.3 187.7
172.3 +0.14

3
1~~8~~ 12 24.8
12~~4~~3.8 99.0 +0.14
211.6 88.4
300.0 187.4 +0.14
L θ B 172.6 mean = −0.08
307.3
16 20 23.5 76.2
~~#~~ 121.8 88.9
210.7 165.1 −0.28

303.3
8 18 43 30.4 87.1 −0.29
20 00 128.0 76.8
8 15 00 204.8 163.9 −0.30
5 -06
13 14 54 GMT
6480.

Dec. 31, 1903.

II

L D B

307.8
8 20 50 24.6 — 76.8
118.9 — 92.0
210.9 — 168.8 — 0.21

300.7 — 0.22
22 50 31.8 — 91.1
127.0 — 77.4
204.4 — 168.5 — 0.22

Mean = — 0.13

P D A.

213.8
25 30 297.8 — 84.0
27.6 — 94.3
121.9 — 178.3 — 0.03

208.7 — 0.04
29 30 304.82 — 95.5
18 40 34.3 — 82.5
8 24 40 116.8 — 178.0 — 0.04
5 - 8

13 24 32 The above observations considered
6480 good; in first group sky ~~perhaps~~
a little hazy from a bank of light cloud
in S.W. which from time to time
overspreads this region somewhat, however
in first mentioned group, whatever haze

Dec 31, 1903.

there may have been was quite uniformly distributed and no ~~particular~~ definite cloudiness noticed through the shutter.

In second group little wisp of floating cloud noticed once in a while, but this one also considered good, although first one is probably a little better.

RDA. III

214.0
8 59 30 299.2 85.2
25.3 98.9
124.2 184.1 + 0.08
175.9
206.7
9 01 48 305.8 99.1 +0.07
32.4 84.1
116.5 183.2 + 0.06
176.8
LDB. Mean = -0.07
127.2
9 05 32 202.9 75.7
301.3 90.5
31.8 166.2 - 0.26

117.0
9 08 40 217.1 - 0.21
95.1
9 15 30 307.0 76.5
9 03 52
5 -15 23.5 171.6 - 0.16
14 03 37

64.0

Dec. 31, 1903

In last group above, ~~sts~~ troubled more by feathery cloud and haze. Cloud is now more abundant
9 15 over whole sky altho the heavier parts and those which are somewhat flocculent and denser are to the south of this region. Settings considered pretty good altho not quite as satisfactory as in the preceding two groups. Setting during group progressively more difficult. Last setting quite difficult and the most so of all.

L of B.   IV

126.3
9 38 12 203.0   76.7
300.3   92.3
32.6   169.0   − 0.20
119.3
9 40 38 213.1   93.8   − 0.18
308.2   77.1
25.3   170.9   − 0.17
R of A.   Mean = −0.07
34.0
9 44 38 114.8   80.8
206.3   100.7
307.0   181.5
~~25~~   178.5   + 0.03

(over)

+ 0.64

Dec 31, 1903.

25.6
9 47 30 124.3 98.7
10 58 214.0 84.3
9 42 44 298.3 183.0 + 0.06
5 −21 177.0
14 42 23 G.M.T.
6480.

R D A. V

32.8
9 48 55 118.3 85.5
205.1 103.1
308.2 188.6
171.4 + 0.16
24.7
52 15 119.3 94.6
+ 0.11
212.3 88.4
300.7 183.0
177.0 + 0.06

L D B. Mean = − 0.04

307.6
55 40 24.6 77.0
117.5 93.1
210.6 170.1 − 0.19

300.2 − 0.20
9 59 15 29.2 89.0
16 05 124.6 79.4
9 54 01 204.0 168.4 − 0.22
5 −23
14 53 38 G.M.T. 6480.

1903phae.proj..56GW

Dec. 31, 1903.

In next to last group (no IV) sky pretty clear altho perhaps a little light cloud over region but if so not especially seen or much prejudicial. Images quite steady good and bright in that group.

Troubled some more in last group by feathery cloud. Cloud during
10 05 this group becoming somewhat denser and last ~~two~~ setting rather difficult. Setting after reversal of photometer in this group more difficult than in first half and progressively so. Group however considered pretty good.

P.A. = 196.2 Ver B
H.A. = −2:07 East
10 10 Dec = +18.0 North
S.T. = 5:03
Sp.Wh. = $\begin{cases} -5.5 & B \\ -4.5 & C \end{cases}$

Stopped by clouds; now becoming
10 20 abundant & dense. a more pronounced lower & denser stratus covering the

Dec 31, 12P.

whole sky.

B 236 B 394

10 24 27.5 10 24 00

L. P. P.

January 1, 1904 (Friday)

B 236
7 07 46.6
08 46.8

B 394
7 08 0.0
09 0.0

7 09 C's watch = 4^s fast.

Iris W Obs
+16.2

7 10
2 45
~~4 25~~
7 35

7 48 Sky still cloudy in this region

8 25 Quite cloudy.

9 12 abandoned too cloudy tonight for Iris.

ρ Cassiop. W Obs
slit I
9.5 cap

23 48 +57.4
28 10
4 22

C's watch used on ρ Cass.
(over)

January 1, 1904.

ρ Cassiop

I

Left

318.7 { var dis.
9 25.0 373.4 clouds 54.7✓
140.9 50.3✓
191.2 clouds 105.0✓ — 1.54✓

321.3 — 1.58✓
369.8 48.5✓
139.8 52.5✓
192.3 101.0✓ — 163✓

Right Mean = — 1.66✓
232.1
279.4 47.3✓
54.2 46.6✓
100.8 93.9✓ — 1.81✓

230.8 — 1.74✓
9 32.0 279.2 48.4✓
9 28.5 51.6 50.5✓
14 28.4 102.1 98.9✓ — 1.68✓

January 1, 1904

II

Right
231.6
9 34.0 281.7 50.1 ✓
53.0 48.1 ✓
101.1 98.2 ✓ — 1.70 ✓

232.0 — 1.72 ✓
280.0 48.0 ✓
52.2 48.3 ✓
100.5 96.3 ✓ — 1.75 ✓

Mean = −1.69 ✓

Left
141.7
191.7 50.0 ✓
319.4 48.6 ✓
368.0 98.6 ✓ — 1.69 ✓

140.9 — 1.66 ✓
9 39.0 191.3 50.4 ✓
9 36.5 321.1 50.3 ✓
14 36.4 371.4 100.7 ✓ — 1.64 ✓

Gen. Mean. −1.68

P.A = 121.5 Ver B
H.A. = +4:48
9 42 Dec. = +57.3
S.T. = 4:39
Spat. = { −0.5 B.
+0.5 C.

Troubled a little by clds. in previous obs. of β Cass. troubled rather more in 1st than in 2nd group but clouds were of a feathery nature and not very much

Jan 1, 1904

troublesome; obs considered good

μ Cephei   W.O.B.
Phot T

21 40 +58   9″5 cap.
29 05
7 25

10 10 Clouds rather thick in this region at present

10 15 Abandoned too cloudy

o Ceti   W.O.B.
Phot W

2 12 −3,6
5 13
3 01

2 4 −25
5 14
3 10

C's watch used

see next pages for the measurements ~~of~~ o Ceti

Jan. 1, 1904

o Ceti

I

Below

0

254.4 ∠ var dis

10 3~~4~~0 320.5 66.1″

68.8 73.2″

142.0 139.3″ — 0.79″

247.2 — 0.74″

322.6 75.4″

~~1~~72.1 68.4″

140.5 143.8″ — 0.70″

Above Mean = — 0.66″

9.19″

8.53″

161.7

230.8 69.1″

334.8 80.2″

55.0 149.3″ — 0.59″

160.8

10 38.0 234.6 73.8″ — 0.59″

10 340 333.0 75.5″

15 33.9 48.5 149.3″ — 0.59″

Jan. 1, 1904

II

Above
163.0
10 40.4 227.9 64.9
337.8 77.7
55.5 142.6 − 0.72

156.1 −0.60
234.4 78.3
342.8 76.0
58.8 154.3 − 0.49

Below Mean = −0.65
72.0 9.19
139.8 64.8 8.54
246.2 78.8
325.0 146.6 − 0.64

~~42.8~~ 68.1
10 49.4 142.4 74.3 −0.70
9.8 254.0 65.8
10 44.9 319.8 140.1 − 0.77
15 44.8 ~~[illegible]~~ Gen. Mean 8.54
~~P.A.~~
~~H.A.~~ 3:35 West
Dec. −3.3 South
Sl. T = 5:57

P.A. not read
as tail piece is
not yet soldered
but region thoroughly
identified and observed.

Jan. 2. 1904.

o Ceti a little difficult in observations last night, due to somewhat low altitude ~~and~~ bright moonlight, and slight haze in the air.

Extreme care exercised, however, and observations considered good.

L.P.P.

January 4, 1904 (Monday)

> 07 C's watch = 36^s fast

7:08 E.M.T. = 2:16 S.T.
C's watch used tonight

χ Cygni Wells Phot T

19 45 | +32.6
26 29
6 44

I

Above
41.0 < Var dis
> 33.5 110.0 69.0
227.8 55.4
283.2 124.4 −1.10
47.5
102.6 −106
55.1
220.2 73.2
293.4 128.3 −1.01
Below Mean = − 0.96
307.8
25.4 77.6
134.6 59.6
194.2 137.2 − 0.83
316.8
> 39.1 13.4 56.6 − 0.86
> 36.3 124.8 78.4
12 35.7 ✓ 203.2 135.0 − 0.88

January 4, 1904

II

Below
306.9
7 41.0 24.0 77.1
134.8 59.5
194.3 136.6 −0.84

317.2 −0.90
14.8 57.6
127.2 73.9
X 201.1 131.5 −0.95

Above Mean = −0.98
218.3
293.4 75.1
X 49.2 54.0
103.2 129.1 −1.00

229.2 −1.06
7 46.6 281.2 52.0
7.6 40.3 71.5
7 43.8 111.8 123.5 −1.12
12 43.2 G.M.T.

PA = 250 Ver B
HA = 7.13 West
Dec. = +32.8 North
ST = 3:00
Spith.y −2.5 B
−1.5 C

January 4, 1904.

μ Cephei - 20 obs

Phot T.

9.5 cap

21 40 +58.1
27 30
5 50

1

Above
142.2 Grandis.
8 30.0 190.1 47.9✓
327.8 36.5
364.3 84.4 – 207✓
146.1
185.4 39.3 – 2.02✓
322.0 49.0
371.0 88.3 – 1.96✓

Below mean = – 1.96✓
50.6
100.7 50.1
236.1 38.1
274.2 88.2 – 1.96✓

57.4
8 36.0 94.4 37.0 – 1.90✓
8 33.0 226.4 56.0
13 32.4 M.T. 282.4 93.0 – 1.83✓

January 4, 1904

II

Below

50.6

8 37.4 100.8 — 50.2′

236.1 — 39.3′

275.4 — 89.5 — 1.93″

56.4 — — 1.86″

95.0 — 38.6′

226.1 — 55.7

281.8 — 94.3′ — 1.80″

above — mean = −1.93″

325.2

11.3 — 46.1′

145.4 — 41.2′ — 1.99″

186.6 — 87.3′ — ~~2.01~~

2.00

327.6 — ~~2.02~~

8 43.0 365.7 — 38.1′

8 40.2 144.1 — 48.1

13 39.6 G.M.T. 189.2 — 86.2 — 2.02″

P.A. = 353.5 Ver B

H.A. = 6:16 West

Dec = +58.8 North

S.T. = 3:57

Sp Wh = { −6.5 B
−5.5 C

January 4 1904

ρ Cassiop - 20 Obs.
Phot T
9.5 cap

23 48 +57.4
28 28
440

+

K*a

230.7 <Var dis
9 24.0 281.8 51.1
47.6 58.1
105.7 109.2 −1.44
226.8
2838 57.0 −1.58
52.0 46.7
98.7 103.7 −1.57

L*B mean = −1.46

139.5
191.4 51.9
315.9 57.9
3738 109.8 −1.42

136.9
9 29.8 196.4 59.5 −1.41
13.8 320.4 51.1
9 26.9 371.5 110.6 −1.40
14 26.3
6484

January 4, 1904.

LOB

II

1.39.3
9 31.6 191.9 52.6
314.6 59.0
373.6 111.6 — 1.38

138.0
196.1 58.1 — 1.37
318.6 54.2
372.8 112.3 — 1.36

ROB

Mean = −1.44

53.7
101.3 47.6
225.9 57.2
283.1 104.8 — 1.54

48.8 — 1.52
9 37.4 103.6 54.8
230.0 51.9
9 34.5 281.9 106.7 — 1.49
14 33.9
6484.

PA = 301.5 Ver P
HA = 5:00 West
Dec = +56.9 North
S T = 4.50
Spwh = −0.5 B
+0.5 C

January 4, 190~~3~~4

λ Arietis — Wolf
Plot W

1 52 + 23.1
5 22
3 30

P.A. 45° Dist 35"
Magns. 4.9 – 7.7

Right
183.0 Lbr dis
10 19.0 211.3 28.3
358.6 38.6
37.2 66.9 – 2.61
174.7 – 2.56 5
215.6 40.9 ~~2.60~~
0.7 29.7
~~2.4~~ 30.4 70.6 – 2.49 – 2.56
Left
Reversed Mean = ~~2.58~~
91.8
121.8 30.0
264.0 39.2
306.2 69.2 – 2.53

86.6 – 2.56
10 27.0 126.1 39.5
10 23.0 277.1 27.7
15 22.4 304.8 67.2 – 2.60
6484

January 4, 1904

troubled somewhat by frost on eyepiece, but extreme care exercised and obs. considered good.

Seeing 3 Cl Obs

LP

(Tuesday) January 5, 1904

B 236 B 394
7 06 45.0 7 07 00

7:07 Cs watch 15^s fast

2:12 S.T. = 7:00 E.M.T.

Iris [illegible]
Plot T.

7 10 +16.2
3 10
4 00
8 00

8 10 47.0 b
11 00.5 c
-11 14.0 ~~a~~
11 19.0 d

15 54.0 b (9.4)
16 07.5 c (6.7)
16 24.5 d (8.6)
16 52.0 a (8.5) = 18°.1503

Comp ✶ = +18°.1496

Iris prec a 18°.1503 by 30^s + 2'.0 S.

January 5, 1904.

RAa. I

233.8 < Irisdis

8 29 30 | 277.0 43.2✓

49.5 53.3✓

102.8 96.5✓ — 1.74✓

2
2~~1~~7.2 — 1.69✓

31 06 | 285.1 57.9✓

53.0 42.9✓

95.9 100.8✓ — 1.64✓

Mean = — 1.66

LAa.

144.3

34 18 | 185.8 41.5✓

315.9 57.8✓

373.7 99.3✓ — 1.67✓

136.2

8 35 52 | 193.4 57.2✓ — 1.64✓

10 46 | 322.7 44.6✓

8 32 42 | 367.3 101.8✓ — 1.61✓

5 + 3

13 32 45 G.M.T.

6485.

Jan. 5, 1904

II

Lt Below

144.8
8 37 40 186.0 41.5
316.9 55.1
372.0 96.6 − 1.74

136.5 − 1.6~~7~~6
39 16 194.0 57.5
321.6 45.8
367.4 103.3 − 1.58

Rt A Mean = − 1.68
53.6
41 37 96.7 43.1
227.8 54.7
282.5 97.8 − 1.71

47.1 1.71
8 43 52 102.3 55.2 −
235.4 42.6
~~[illegible]~~ 97.8 − 1.71
278.0

2 25
8 40 39
5 + 2
13 40 41

Jan. 5, 1904.

ROA

III

55.1

9 22 20 94.4 39.3

229.0 53.2

282.2 92.5 − 1.85

49.3

24 07 ~~9~~ 100.1 50.8 − 1.86

236.4 41.4

277.8 92.2 − 1.86

LOB

Mean = 1.8 3

326.4

26 38 366.0 39.6

138.2 55.0

193.2 94.6 − 1.79

319.2

9 28 00 372.8 53.6 − 1.80

21 05

9 25 16 146.3 40.0

5 −7 186.3 93.6 − 1.82

14 25 09 G.M.T.

6085.

Jan 5, 1904

IV

Left

325.7

9 29 38 365.3 39.6

140.0 52.3

192.3 91.9 − 18~~7~~6

1

3~~8~~9.0

31 27 369.3 50.3 − 190

146.1 39.2

185.3 89.5 − 193

Right Mean = −191

237.8

33 35 275.7 37.9

51.6 49.1

100.7 87.0 − 200

230.0 − 192

9 35 20 284.4 54.4

55.8 38.4

~~93~~

194.2 92.8 − 184

10 00

9 32 30

5 − 8

14 32 22

6485.

Jan. 5, 1904

Right — V

235.7
9 56.00 276.5 — 40.8
49.8 — 49.2 — 1.91
99.0 — 90.0 — ~~1.89~~

229.0 — −1.86
9 57 50 283.7 — 54.7
56.0 — 38.7
94.7 — 93.4 — −1.82

Left — Mean = −1.88

147.2
10 00 35 185.2 — 38.0
318.7 — 52.5
371.2 — 90.5 — −1.90

138.2
10 02 35 192.2 — 54.0 — −1.89
237 00 326.9 — 37.3
9 59 15 364.2 — 91.3 — −1.88
5 −12

14 59 03
6 0835,

Jan. 5, 1904

VI

Left
146.0
10 05 13 183.1 37.1 ✓
319.4 49.8 ✓
369.2 86.9 ✓ — 200 ✓

138.4 — 1.95 ✓
10 07 13 191.6 53.2 ✓
327.2 37.2 ✓
364.4 90.4 — 190 ✓

Right Mean = — 1.90
56.2
10 10 50 93.3 37.1 ✓
230.8 53.4 ✓
284.2 90.5 ✓ — 190 ✓

46.9 — 1.86 ✓
10 12 50 101.0 54.1 ✓
36 06 237.6 39.4 ✓
10 09 02 277.0 93.5 ✓ — 1.82 ✓
5 -14
15 08 48 GMT

Jan. 5, 190~~4~~

VII

Right
56.5
10 34 00 95.5 40.0 ✓
231.3 51.2 ✓
282.5 91.2 — 1.88 ✓

49.8
10 36 08 100.3 50.5 ✓ — 1.90 ✓
237.5 39.2 ✓
276.7 89.7 — 1.92 ✓

Left Mean — 1.86 ✓
325.2
10 39 50 364.6 40.4 ✓
138.6 53.4 ✓
192.0 93.8 — 1.81 ✓

317.0
10 42 00 311.5 54.5 ✓ — 1.82 ✓
31 58 144.4 39.2
10 3~~7~~8 08 183.6 93.7 — 1.82 ✓
5 — 19
15 37 41 G.M.T.

Jan. 5, 1904

VIII

Left

324.1
10 43 42 365.9 41.8
138.7 53.3
192.0 95.1 −1.78

317.6 −1.78
45 51 372.3 54.7
145.1 40.6
185.7 95.3 −1.77

Mean = −1.83

Right
236.4
57 38 277.4 41.0
49.8 51.5
101.3 92.5 −1.85

229.9 −1.88
10 59 58 281.9 52.0
7 09 56.0 37.8
10 51 47 93.8 89.8 −1.92
5 −21
15 51 26 PA = 347.5
H.A. = 0:47 East
11 04 Dec. = +17.5 North.
S.T. = 6:18
Sp.wh. = −2.5 B; −1.5 C

Jan. 5 1904 F

B 236	B 394
11 10 240	11 10 00

L. P.

January 7, 1904 (Thursday)

B 236	B 394
7 09 23.2	7 08 0.0

C's watch = 33ˢ slow at 7:09

2:20 S.T. = 7:00 E.M.T.

Iris WWb
Phot T.

7 10 +16.2
2 37
4 33
~~7 27~~

7 30 25.7 a
31 44.7 Iris

7 30 Iris fols +17.1492 (7.) by 19ˢ & 12.5′ North of it.

31 27.5	44 03.0
31 41.8	45 14.5
	45 56.0
35 52.8	38 55.0
36 02.0	39 09.0
37 53.0	

January 7, 19~~04~~

Comp star tonight = +18°.1495 (9.2)

Above

47.8 < Iris dis I

7 55 00 100.0 52.2

234.8 43.1

277.9 95.3 — 1.77

53.0

7 56 34 96.2 43.2 — 1.72

228.7 56.5

285.2 99.7 — 1.66

Below 2 mean = — 1.68

317.1

7 59 00 13.6 56.5

144.6 43.2

187.8 99.7 — 1.66

322.3 — 1.64

8 01 08 367.9 45.6

31 42 136.9 55.8

7 57 56 192.7 101.4 — 1.62

5 - 1 - 26

12 56 30 G.M.T.

64 87.540

January 7, 1904

Below II

318.5

8 02 52 12.1 53.6

144.3 44.5

188.8 98.1 — 1.70

322.5 — 179

05 23 365.6 43.1

137.5 54.9

192.4 98.0 —1.71

Above Mean = —1.72

230.7

09 05 286.9 56.2

52.8 41.6

94.4 97.8 —1.71

234.7

8 11 05 275.8 41.1 —1.75

28 25 48.8 53.6

8 07 06 ~~8~~ 102.4 94.7 —1.79

5— 1 —26

13 05 40 G.M.T.

6487.546

Jan. 7. 1904

	Above		~~///~~
	229.4		
8 35 55	281.0	51.6 ✓	
	54.3	41.3 ✓	
	95.6	92.9 ✓	— 1.84
	234.8		
37 50	277.6	42.8 ✓	— 1.80
	47.6	53.3 ✓	
	100.9	96.1 ✓	— 1.75 ✓
	Below		Mean = — 1.76
	137.8		
41 14	193.2	55.4 ✓	
	325.1	41.8	
	366.9	97.2 ✓	— 1.73 ✓
	145.0		— 1.72 ✓
8 43 48	186.3	41.3 ✓	
38 47	317.8	56.5 ✓	
8 39 42	374.3	97.8	— 1.71 ✓
5–1 28			
13 38 14 G.M.T.			
6487.568			

Jan. 7, 1904.

IV

	Below		
	137.8		
8 46 12	192.6	54.8	
	324.5	43.8	
	368.3	98.6	−1.69
	144.0		−1.68
49 08	186.4	42.4	
	316.6	57.2	
	373.8	99.6	−1.67
	above	mean =	−1.76
	50.2		
52 00	101.2	57.0	
	236.4	39.2	
	245.6	90.2	−1.91
	54.9		1.84
8 53 55	94.9	40.0	
	228.0	55.0	
	283.0	95.0	−1.78

201 15
8 50 19
5 − 1 29
13 48 50
6487.576

Jan. 7, 1904

V

Above

229.6
9 19 10 282.4 52.8
54.6 41.2
95.8 94.0 −1.81

234.7
21 15 277.8 43.1 −1.76
46.7 54.5
101.2 97.6 −1.72

Mean = −1.73

Below.

138.6
25 20 192.7 54.1
323.4 43.8
367.2 97.9 −1.71

145.0
9 27 25 187.4 42.4 −1.70
14 10 317.4 56.4
9 23 32 373.8 98.8 −1.69
5− 1 31
14 22 01 G.M.T.
6487.599

Jan. 7, 1904

VI

Below
139.7
9 29 25 191.4 — 51.7
324.1 — 43.0
367.1 — 94.7 — 1.79

— 1.74
144.3
31 40 187.3 — 43.0
316.4 — 56.0
372.4 — 99.0 — 1.68
Above — mean = — 1.75
48.0
35 12 102.2 — 54.2
234.0 — 41.8
~~[illegible]~~ — 96.0 — 1.76
275.8
54.6 — 1.76
9 38 40 95.8 — 41.2
15 57 227.5 — 55.1
9 33 59 282.6 — 96.3 — 1.75
5 −1 31
14 32 28 G.M.T.
606
6487.~~564~~

Jan 7, 1904

VII

Above

48.2
9 58 20 102.7 — 54.5
233.7 — 44.3
278.0 — 98.8 — 1.69

54.4 — 1.68
10 01 10 96.3 — 41.9
227.0 — 57.2
284.2 — 99.1 — 1.68

Below

Mean = −1.64

143.3
07 11 187.8 — 44.5
316.3 — 58.0
374.3 — 102.5 — 1.60

137.7 — 1.60
10 09 33 193.8 — 56.1
~~74~~ 323.5 — 45.7
16 14 369.2 — 101.8 — 1.61

10 04 04
5 −1 33
15 02 31 G.M.T.
6487.627

Jan. 7, 1904.

VIII

Below
141.8
10 13 20 186.4 44.6
316.9 56.3
373.2 100.9 −1.63

135.7 −1.57
15 45 196.2 60.5
324.0 45.6
369.6 106.1 −1.51
Mean = −1.59

Above
53.4
19 48 96.2 42.5
226.9 58.0
284.9 100.5 −1.64

44.2 −1.61
10 22 30 103.2 59.0
31 23 233.6 44.2
10 17 51 277.8 103.2 −1.58
5 −1 34

15 16 17 Seeing rather more blurry in the
64 87.636 two preceding groups.

Jan 7, 1904

IX

Above

534

10 41 07 97.4 44.0

226.7 57.6 − 1.62

284.3 101.6

47.4 − 1.62

44 45 102.9 55.5

232.3 46.1

278.4 101.6 − 1.62

Below Mean = − 1.68

324.6

49 03 366.3 41.7

139.4 52.6

192.0 94.3 − 1.80

318.1

10 57 00 372.4 54.3 1.74

25 55 142.7 45.1

10 46 29 187.8 99.4 − 1.67

5 − 1 35

15 44 54 G.M.T.

6487.656

Jan: 7, 1904

Below — X

323.4
10 53 28 368.4 45.0 ✓
138.3 55.0 ✓
193.3 100.0 ✓ - 1.66 ✓

319.2 - 1.70 ✓
10 55 58 343.0 53.8 ✓
143.7 43.1 ✓
186.8 96.9 - 173 ✓

Above Mean = -171 ✓
233.9
11 00 00 276.1 42.2 ✓
46.8 55.5 ✓
102.3 97.7 - 1.71 ✓
228.2
11 02 10 281.2 53.0 ✓ - 172 ✓
231 36 53.1 43.9 ✓ - 173 ✓
10 57 54 97.0 96.9 - 1.73 ✓
5 - 1 36
15 56 18 Pa. = 85.0 Var B
6487.664 Ha = -0.35 East
Dec. = +17.4 North
S.T. = 6:25
Sp.Wh = { - 5.5 B
{ - 4.5 C

Jan. 7, 1904.

~~Seeing a little~~

In last two groups seeing a little blurry but not as much so as in ~~the~~ previous two.
No VII & VIII considerably the most blurry of the evening and seeing quite poor

B 236
11 15 370

B 394
11 14 00

Seeing 3 Clb.

L. P. P.

Jan. 15, 1904 (Friday)

7 07 C's watch = 58s fast
S.T. = 2:58 28 at 7:00 E.M.T.

B. 236
7 06 58.0
07 58.4

B 394
7 07 00
08 00

Double 23 54.4 +33 11 (1900)

23 52 +32.9
2 07 07
3 15

abandoned

Iris [illegible]

6 54 +18.0
3 44
3 10
8 50

8
57 18 +22 -5.8 South
40
59 11.0
11.5
21.8

Jan. 15, 1904

Iris fols (7.1)(+18.1423) by 22s f
5.8 ~~South~~

Comp ✶ = +18°.1419 (9.1)

~~Rest~~ B236

B 236 B.394
8 27 48.0 8 28 0.0
28 43.0 29 0 0

Above

46.8 < Iris dis

8 32 35 103.7 56.9 ✓
217.5 74.4 ✓
291.9 131.3 ✓ — 0.95 ✓
38.3

34 55 111.4 73.1 ✓ — 0.97 ✓
221.0 56.4 ✓
283.4 129.5 ✓ — 0.99 ✓

Mean = −1.00 ✓

Below
135.1
38 30 191.5 56.4 ✓
310.0 70.8 ✓
29.8 127.2 ✓ — 1.04 ✓
128.8

8 40 35 200.1 71.3 ✓ — 1.04 ✓
26 25 316.8 55.3 ✓
8 36 36 121 126.6 ✓ — 1.05 ✓
5 +16
13 36 52 G.M.T.

Jan 15, 1904

II

Below

139.2
8 42 28 192.5 53.3 ✓
306.8 74.4 ✓
212 127.7 ✓ — 1.03 ✓

130.6
44 00 200.2 69.6 ✓ — 1.05 ✓
315.4 56.0 ✓
11.4 125.6 ✓ — 1.07 ✓
Above Mean = — 1.02 ✓

38.9
46 30 109.9 71.0 ✓
226.~~4~~5 57.0 ✓
283.5 128.0 ✓ — 1.02 ✓

46.8
8 48 38 102.6 55.8 ✓ — 1.00 ✓
21 36 219.0 73.5 ✓
8 45.24 292.5 129.3 ✓ — 0.99 ✓
5 +14 Gen. mean = — 1.01 ✓
1 39.45 38 P.A. = 337.2 Vr B
64~~8~~5. S.T. = 4.45
H.A. = 2:06 East
Dec = +17.4
Spwh = { — 3.5 A
— 2.5 B
— 2.0 C

Jan. 15, 1904.

Double = 23h 54.4m + 33°11′ (1900)

23 52 +329
28 55
5 03

Seeing too blurry combined with closeness of components to take double tonight.

– μ ζ Cygni walls plott.

~~23~~ 21 58 +44.0
29 06
7 08

B 236 used

Below
~~9 23 2~~ 242.2 < comp ✱ dis
266.2
9 25 30 49.8
98.8
227.6
29 18 ~~28~~ 220.1
61.5
88.3
Above

Reject.

Jan. 15, 1904

above (cont.)

1

1~~5~~4 9.5

1

~~9 37~~

Impossible to finish group

Region low & seeing blurry

1

1

Cass.

C's Watch used now to M. ~~Plot T.~~ wrote

23 49 +57.4 9.5 cap

29 40

5 51

above

230.3 < var. dis.

9 58.0 280.3

51.3

99.3

500

480

98.0 — 1.71

229.4

288.4

59.0 — 1.58

49.8

100.0

50.2

— 1.44

Below

109.2 mean = —1.53

140.0

190.8

315.8

508

11.2

554

138.8

106.2 — 1.51

10 04.0

194.2

10 01.0

318.3

554 — 1.48

526

15 00.5 G.M.T. 101.9

108.0 — 1.46

6445

Jan. 15, 1904.

Below — II

138.6

1005.8 194.8 56.2

313.8 56.2

10.0 112.4 — 1.36

136.9 — 1.34

193.4 56.5

314.5 57.2

11.7 113.7 — 1.33

Above Mean = −1.47

50.5

96.4 46.3

229.6 53.2

282.8 99.5 — 1.67

1.60

~~40~~.6 — ~~1.59~~

1011.2 96.4 55.8

1008.5 230.6 49.7

~~15~~ 9 08.0 280.~~7~~ 3 ~~105.9~~ — 1.57

64.5 105.5 Final M. = −1.50

PA = 301.5 V a B

ST = 6:08

Ha. = 6:21

Dec. = 57.4

Spwh = −0.5 a.

+0.5 B.

+1.1 C.

Jan. 15 1904.

10 30 Seeing est. = 2 C. Obs.

Camelop W Obs

044068

Eliot T.

9" cap

4 40 +67.4
6 35
1 5 5

Above

223.0 <comp × dis

10 53.0 285.5 62.5

35.3 78.6

113.9 141.1 + 0.75

216.3

296.0 79.7 + 0.74

43.1 62.1

105.2 141.8 + 0.74

Below Mean = +0.70

134.8

198.4 63.6

302.9 83.0

25.9 146.6 + 0.64

126.6 + 0.66

11 01.4 206.7 80.1

10 57.2 311.5 65.3

15 56.7 16.8 145.4 + 0.67

~~Dec~~ Jan. 15 1904

Below   II

135.1
11 03.5 195.7   60.6
306.0   78.8
24.8   139.4 + 0.79

126.3   + 0.75
204.8   78.5
312.8   64.6
17.4   143.1 + 0.71

Above   Mean = + 0.7~~7~~6
45.5
104.9   59.4
213.2   81.0
294.2   140.4 + 0.77

35.1   + 0.7~~7~~6
11 11.0 113.0   77.9
14.5 222.6   63.1
11 07.2 285.7   141.0 + 0.75
16 06.7   Gen. mean = + 0.73

P.A. = 79.8 Ver. B
Ha = ~~7:07~~ + 2:21 West.
Dec. = + 68.1 North
11 18 S.T. = 7:07
Spath = { − 1.5 B.
− 0.5 C.

Jan. 15, 1904

B.236
11 25 11.1
26 11.2

B.394
11 25 00
26 00

L.P.D.

(Monday) Jan. 18, 1904

7 06 C's watch 9s slow

B 236 B 394
7 07 19.0 7 07 00
08 19.1 08 00

3:04 S.T. at 7:00 E.m.t.

Iris W Obs Phot T.

6 54 +18.0
3 24

~~30~~

3 30
A 30

32 47
36 12

34 56.5
35 32.8 36.3
36 04.5 68.0
37 09.8 133.3

7 37 Iris precedes +17°1447 (7.0) by $1^{m}5^{s}$ & is 1.4° N of it.

Jan. 18. 1904.

Iris cont.

Comp * = DM + 18. 1391 (9.4)

Right & Below

55.1

7 57 55 94.1 < Iris dis

230.8 39.0

280.6 49.8

50.8 88.8 — 1.95

8 00 20 99.3 48.5 −1.96

234.8 39.5

274.3 88.0 −1.97

Left & above Mean = −1.99

325.2

8 04 37 362.6 37.4

141.5 47.3

188.8 84.7 −2.06

318.2

8 07 53 366.9 48.7 − 2.02

10 45 145.0 39.0

8 02 41 184.0 87.7 −1.98

5 . 28

13 02 13

Jan. 18, 1904.

II

LDA.

325.1
8 16 03 362.9 37.8
141.6 47.1
188.7 84.9 −2.05

321.0 −2.08
12 07 368.7 47.7
148.3 35.4
183.7 83.1 −2.10

RDB Mean = −2.04

228.8
15 00 278.0 49.2
56.3 37.5
93.8 86.7 −2.00

235.7
8 16 55 273.8 38.1 −1.99
14 05 50.2 49.4
8 13 31 99.6 87.5 −1.98
5 − 30
13 13 01 M.T.
6498. R.A. 308.3 Ver B.
H.A. − 2:22 East
Dec. +17.3
S.T. 4.27
Sp. wh. ς −4.5 a
−3.5 b
−2.9 c

Jan 18, 1904

Seeing extremely bad on account of high barometer cold snap and wind. There are moments however of fairly good definition and these moments were watched and waited for to make the
A 28 equalizations. On account of these conditions and slow progress in making equalizations it is not considered best to continue further the observations of Iris tonight. In settings made extreme care exercised and observations considered pretty good.

C's watch used now

[illegible]

ρ Cassiop [illegible]

Plott

23 49 +57.4 95 cap
29 15
5 26

Jan. 18, 1904

I

Rt Above

52.3 < Vardis

9 20.0 99.3 46.8''

223.7 60.3''

284.0 107.1 — 1.49''

47.1 — 1.50

106.5 59.4''

231.6 46.1''

277.7 105.5 — 1.52

Lt Below Mean = — 1.46

319.1

368.2 49.1''

134.4 61.0''

195.4 110.1 — 1.42

313.5 — 1.42

9 25.0 374.5 61.0''

9 22.5 140.7 49.2''

5 + .2 189.9 110.2 — 1.41

14 22.7 G.M.T.

6498.

January 18, 1904

II

ft Below

318.8

9 26.6 368.2 49.4

137.2 58.4

195.6 107.8 − 1.47

311.8

373.8 62.0 − 1.38

138.4 54.1

192.5 116.1 − 128

KDQ. Mean = − 1.52

232.7

~~21~~ 280.2 47.5

45.6 53.8

199.4 101.3 − 1.62

231.5

9 32.4 281.4 49.9 − 166

9 29.5 500 47.0

14 29.7 G.M.T. 97.0 96.9 − 173

6498.

Pa. 301.3 V on B

Ha. + 5 50 West

Dec. + 57.4 North

S.T. 5.41

Sp. Ch. { − 0.5 B
+ 0.5 C

Jan. 18, 1904.

B 236 9 41 45.0

B. 394 9 41 0.0

Seeing better in general than in observations on Iris and in general fairly good, but a little blurry. Observations considered good

o Ceti w Obs. Phot W.

2 4 -2.5
6 4
24 00

1° 05 Seeing = 1 Obs 5' telescope
Below
248.5 < Vardis
10 10.0 299.2 40.7 -
175.9 47.8 -
123.7 88.3 -1.95
251.1
302.6 51.5 -1.94
83.0 38.2
121.2 89.7 -1.92
above
170.0 mean -1.94
209.9 9.19
345.4 39.9
337.5 48.1 7.25
165.8 88.0 -1.97
10 17.0 216.0 49.8 -1.94
1° 13.5 350.0 40.8
15 13.7 30.0 90.6 -1.90
6498.

Jan. 18, 1904.

II

above
169.8
10 19.0 210.2 40.4
346.0 49.4
35.4 89.8 — 192

166.9
215.3 48.4 — 192
349.5 41.4
30.9 89.8 — 192

Below
Mean = — 196
9.19
7.23
80.4
121.4 41.0
256.2 47.7
303.9 88.7 — 195

76.4 — 2.00
10 27.0 123.1 46.7
10 23.0. 264.2 38.5
15 23.2 299.7 85.2 — 205
6498.

~~P.a.~~
H.A. — 4:22 West
Dec = — 3:03 South
S.T. = 6:38
P.a. not read as P.a. arrangement not yet adjusted, but region thoroughly identified

Jan 18, 1904

— Camelop. W.G.
Phot T.
4 40 +68.0 9.5 cap
6 40
2 00

above
224.1
10 49.0 285.7 < comp * dis 61.6
36.1 76.2
112.3 137.8 + 0.82
216.0
293.6 + 0.82
43.4 77.6
60.5
103.9 138.1 + 0.81
Below
133.0 mean = + 0.76
197.7 64.7
303.2 81.2
24.4 145.9 + 0.66

125.4 + 0.69
10 55.2 205.0 79.6
10 52.1 313.6 62.9
15 52.3 16.5 142.5 + 0.72
6 eqP.

Jan. 18, 1904

II

Below

134.0

10 57.0 197.0 63.0

304.0 80.5

24.5 143.5 + 0.70

126.2 + 0.70

204.4 78.2

310.9 65.4

16.3 143.6 + 0.70

Above

mean = + 0.75

46.8

105.2 58.4

215.6 78.4

294.0 136.8 + 0.84

34.7

11 03 4 113.3

11 00.2 223.3 78.6 + 0.80

16 00.4 284.9 61.6

6498. 140.2 + 0.77

P.a 80.0 Var 3

H.a 2:27 West

Dec. 68.2 North

S.T. 7:10

11 1.0 S/p Wld — 1.5 B

— 0.5 C

L. P.

(Tuesday) January 19, 1904

♄ 6 54 Cs watch 7m fast.

♄ ^{6} 54	53.2	♄ ^{6} 55	00
55	53.5	56	00
56	53.7	57	00

3:08 S.T. = 7:00 E.M.T.

Iris w Ofs Plot t.

6 54 +17.3
3 14
3 40
8 20

B236 used

7 15 05.8
20.8
43.0

Iris fols DM+17.1435 (9.2) by 15s & is 7.3N of it.

18 58
~~19~~ 20 36

Iris about same Dec as +17.1447 (7.0)

Comp * = DM+18° 1391 (9.4)

Jan. 19/1904

Iris

R.A.

232.5 ∠ Orisdis.

7 31 35 274.7 — 42.2
48.6 — 52.3
100.3 — 94.5 — 1.80

227.8
33 12 280.8 — 53.0 — 1.85
54.2 — 39.7
93.9 — 90.7 — 1.90

Mean = — 1.82

L&B
144.5
36 06 186.5 — 42.0
317.4 — 51.5
368.9 — 93.5 — 1.82

137.6
7 37 45 191.0 — 53.4 — 180
18 38 322.2 — 41.4
7 34 40 363.6 — 94.8 — 179
5 00

12 34.00 G.M.T.
6499.524

Jan. 19, 1904.

II

LDB

144.1

7 39 35 184.5 — 40.4

316.5 — 52.3

368.8 — 92.7 — 1.84

137.7

41 15 191.3 — 53.6 — 1.84

323.3 — 38.8

362.1 — 92.4 — 1.85

Mean = —1.82

RWR.

54.1

44 23 95.3 — 41.2

227.8 — 54.5

282.8 — 95.7 — 1.76

48.0

7 46 00 100.0 — 52.0 — 1.79

11 13 233.8 — 41.7

7 42 48 245.5 — 93.7 — 1.82

5 — 1

12 42 45

6499.530

Jan. 19, 1904.

III

	R.A.		
	53.8		
8 02 35	94.5	40.7	
	227.5	53.0	
	280.5	93.7	−182
	47.7		−184
04 54	98.6	50.9	
	235.7	40.7	
	276.4	91.6	−187
	[illegible]	mean = −1.80	
	324.6		
08 10	364.4	39.8	
	136.8	53.3	
	190.1	93.1	−1.83
	316.3		
8 09 55	371.6	55.3	−1.77
25 24	143.3	42.5	
8 06 21	185.8	97.8	−1.71
5 − 4			
13 06 17			
.546			

Jan. 19, 1904

LOVB IV

323.2
8 11 30 364.1 40.9
137.2 54.3
191.5 95.2 — 1.78

315.4 — 1.78
13 25 370.1 54.7
144.8 40.6
185.4 95.3 — 1.77

ROA mean = — 1.82

233.5
16 3K 275.5 42.0
48.2 49.8
~~98.0~~ 91.8 — 1.87
228.7
8 1900 281.1 524 — 1.86
20 29 54.6 39.6
8 15 07 ~~93.6~~ 92.0 — 1.86
5 — 6 94.2
13 15 01
552

Jan. 19, 1904.

V

R of a.
235.4
8 48 30 274.8 39.4
49.4 48.3
97.7 87.7 — 1.98

230.9
50 36 279.5 48.4 — 201
54.8 37.1
91.9 85.5 — 204

L of B. mean = — 196
144.6
54 24 185.1 40.5
316.9 50.1
367.0 90.6 — 190

141.2 — 192
8 56 28 190.1 48.9
322.2 40.0
9 58 362.2 88.9 — 194

8 52 30
5 — 12
13 52 18
578

Jan. 19, 1904

~~VI~~

LOB.

145.5
8 58 20 184.2 38.7
317.2 51.6
368.8 90.4 — 1.90

138.7 — 1.88
9 00 14 190.7 52.0
323.6 39.8
363.4 91.8 — 187

Mean = — 1.97

RtQ.
56.7
0 3 46 92.7 36.0
229.6 49.3
278.9 85.3 — 2.04

50.8 — 2.06
9.06 20 97.0 46.2
8 40 236.8 37.6
9 02 10 274.4 83.8 — 2.08
5 - 13
14 01 57
585

Jan. 19, 1904.

KOB

VIII

57.0
9 24 50 91.8
229.7
280.3

34.8
50.6
85.4 — 2.04

50.3
26 48 98.5
236.1
274.7

— 2.02

48.2
38.6
86.8 — 2.00

Mean = −2.01

POB

30 28 324.0
363.3
138.3
189.1

39.3
50.8
90.1 — 1.91

318.5
9 32 32 366.1
145.8
182.1

2.00

47.6
36.3
83.9 = 2.08

34 38
9 28 40
5 −17
14 28 23

.603

Jan. 19, 1904.

~~ROB~~ ~~VIII~~

3254
9 3606 363.9 38.5
140.0 48.4
188.~~1~~4 86.9 — 2.00

317.6 — 1.99
3748 368.4 50.8
145.3 36.8
182.1 87.6 — 1.98

ROa — Mean = — 2.08
236.4
4108 273.4 37.0
50.9 45.7
96.6 82.7 — 2.12

231.1 — 2.16
9 43 28 276.8 45.7
38 38 56.3 34.1
9 39 38 ~~77.2~~ 79.8 — 2.20
5 — 19 90.4
14 39 19
610

Jan. 19, 1904

IX

Right
234.8
9 59 00 273.4 38.6
52.9 42.0
94.9 80.6 - 218
- 2.16

231.4
10 02 00 275.6 haze rather thick 44.2
54.5 37.8
82.0 - 2.14
92.3 haze thick stars very dim
Left stars practically gone mean = - 2.03
142.4 haze thinner
10 12 15 185.7 43.3
318.1 50.0
368.1 93.3 - 1.83

139.2 - 1.90
10 15 26 188.5 49.3
268 41 324.6 39.1
10 07 10 363.7 haze again 88.4 - 196
stars dim
5 - 24
15 06 46
.630

Jan 19/1904

~~X~~

~~Left~~

~~742.4~~

~~102014~~ ~~18~~ , haze. 41.0

323.8 star gone 52.0

93.0 —

103208 364.8

139.3

191.3 star dim —

~~2~~ ~~1~~

47.4

320.3 38.7

40 25 367.7 86.1 —

142.7

181.4

Reject this half.

~~mean~~ —

Right

236.8

45 20 273.4 366

57.3 47.0

98.3 83.6 — 2.09

230.7 — 2.10

10 47 40 276.4 55.7

55.8 26.9

92.7 82.6 — 2.12

~~Left~~ ~~mean~~ = — 1.96

143.1

10 54 30 183.9 40.8

319.2 50.6

369.8 91.4 — 1.88

(over) — 1.83

Jan. 19, 1904

136.7
10 57 15 190.1 53.4
204 45 322.7 41.6
10 51 11 364.3 95.0 — 178
5 -30
15 50 41

.660 P.a. = ~~168.0~~ 167.5 Ver B
H.a. = 0:21 West
11 01 Dec. = 17.4
S.T. = 7: 09
Sp. wh. = −1.5 B + 0.5 C

Stopped by light haze & cloud.

11 05 Much troubled by haze & cloud in IX th group. Not troubled so much in first part of same as in last part. Last part quite difficult & a ~~some~~ a little ~~what~~ uncertain.

Sky ~~some~~ fairly clear in 10th group & obs. in same considered fairly good.

B 236 B 394
11 09 330 11 09 00

Jan. 19. 1904.

Supplementary Note. (Summary)

First half of 9th group fairly clear. In last half cloud and haze rather thick part of the time, ~~and~~. Observations rather difficult and some of the settings a little uncertain, as regards the final limit of accuracy.

In 10th group, sky much clearer and this group considered pretty good.

It seems pretty evident that Iris was decreasing in brightness at end of series.

Sky rather too hazy to continue observations and make them as critical as is desired.

In first eight groups, sky clear.

Telescope was not reversed during series. but Iris a little west of the meridian at end of series.

L. P. P.

Jan. 24. 1904. (Sunday). ~~Wednes~~

Iris, W. obs.

Location of Iris with reference to 7.5 mag. star mentioned below.

6 29 +16.5
4 57
+2 24

6 29 +16.5
9 02
2 33

13 12 Iris follows D M +18°1362 (7.5) by 8.5^{s} and ~~[illegible]~~ is about 17.7' South of it.

Region thoroughly identified. Seeing fairly good. ~~This~~ The object assumed for Iris is undoubtedly such as there no ~~such~~ star of this brightness in the D M ~~in~~ in this position. It is evidently slowing its motion in ~~R.A~~ R. A as it should do, since its approaching the stationary point.

Jan. 25. 1904. (Monday).

	B. 236				B. 394	
√	30	23.9		√	30	0.0
	31	24.0			31	0.0

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

Compared with sat on following side = Sat III

Limit of Visibility

	5	49	49		156.0	
5 00 08		51	02	34.0	190.0	
			19	33.2	155.8	
−28						
5 00 30	5	51	42	33.6	± 189.0	2.6

5 57 39	5	58	08	Suspected
49	5	58	18	Seen

58 20	5	58	49	72.0	140.0	0.7 √
30			59	73.0	212.0	0.7 √
41		59	10	74.0	139.0	0.6 √
51			20	77.9	213.0	0.5 √
5 59 00			29	76.9	135.1	0.5 √
18			47	77.5	212.0	0.5 √
28			57	2.36	134.5	0.2 √

Jan 25, 1904.

5 59 37	6	00	06	89.6	218.1	0.0
47			16	93.5	128.5	-0.1
			~~95~~		~~570.5~~	
6 00 06			35	92.0	222.0	-0.1
19			48	88.5	130.0	+0.1
29			58	90.5	218.5	0.0
48	6	01	17	94.0	128.0	-0.2
58			27	99.9	222.0	-0.4
01 09			38	96.1	122.1	-0.2
19			48		218.2	
6 02 23	6	02	03		127.0	
-29			16	93.0	~~218.~~ 220.0	
6 01 54			31	91.0	127.0	1
			43	92.0	218.0	-0.1
			58		128.0	
6 03 14	6	03	08	92.0	220.0	
-29			21	95.9	124.0	2
6 02 45			31	94.0	219.9	-0.2
			43		126.0	
6 03 57			53	93.0	219.0	
-29	6	04	02	95.0	126.0	3
6 03 28			11	94.0	221.0	-0.2
			21		125.5	
6 04 34			27	94.7	220.2	-0.1
-29			40	93.0	126.0	4
6 04 05			50	93.8	219.0	
6 05 23		05	03		126.5	
-30			18	92.0	218.5	-0.1
6 04 53			29	92.7	128.8	5
				92.4		

Jan, 25, 1904.

	6	05	42		220.5	
			54		125.0	
6 06 07		06	04	94.5	219.5	6
-30			12	93.0	125.5	-0.1
05 37			19	93.8	218.5	
			28		125.2	
6 06 43			37	94.5	219.7	7
30			50	93.9	125.1	
6 06 13			58	94.2	219.0	-0.2
		07				
6 08 27	6	08	11		126.0	8
30			21	92.5	218.5	
6 07 57			32	93.4	126.0	-0.1
		08	43	93.0	219.4	

Seeing rather poor and images blurry, especially during variation in light and at time of reappearance. Observer also delayed a little at time of reappearance from the fact that the comp. did not reappear quite in predicted place, as well as from the fact that the photometer gave some trouble in adjustment.

B. 236.			B 394.		
6	16	30.0	6	16	0.0
	17	30.2		17	0.0

over.

Jan. 25. 1904.

Double

1 32 −30.4
2 43
+1 17

Too much cloud and too bad seeing to measure double to right.

B. 236		B. 392	
7 06	38.5	7 06	∞
07	38.6	07	∞

7 08 C's watch = 3s fast

Iris WCB.
Plot T.

6 29 +16.5
3 43
2 46
9 16

24 14.5 06.0
24 26.0 16.5
24 28.5

26 1~~7.0~~ 0.5
26 26.0

January 25, 1904.

27 40.6
28 21.0

7 28. Iris prec. the (8.3) +17°1409) by 40.$\overset{2}{4}$
& is 5'.2 N. of it.

29	55.0	04.5	25.5
30	30.0	06.0	35.5

00.5
14.0

Comp * = +17.1404 (9.0)

over

January 25, 1904

~~Left~~ Below I

328
7 52 55 115.0 < [illegible] dis.
217.1
289.9

82.2
71.8
154.0 − 0.50

39.2
7 55 10 110.0
211.3
296.9

− 0.48
70.8
85.6
156.4 − 0.45

~~Right~~ above

Mean = − 0.52

302.1
7 58 18 25.7
129.2
195.9

83.6
66.7
150.3 − 0.57

310.2
8 00 08 17.7
226 31 120.8
7 56 38 205.2
5 − 46
12 55 52

− 0.56
67.5
84.4
151.9 − 0.54

.539
.483
.056

January 25 1904

II

above
~~Right~~
303.3
8 02 00 24.5 81.2
130.0 67.0
197.0 148.2 — 0.61

310.5 — 0.61
04 26 17.8 67.3
123.0 80.9
203.9 148.2 — 0.61
Below Mean = −0.56
212.3
08 35 295.7 83.4
39.0 69.3
108.3 152.7 — 0.52

219.9 — 0.50
8 10 50 288.9 69.0
25 51 31.2 85.8
8 06 28 117.0 154.8 −0.48
5 −48
13 05 40
.566
.483
.083

Jan. 25/1904.

III

Below

214.4
8 25 27 293.8 79.4
39.4 68.8
108.2 148.2 −0.61

219.4 −0.58
24 38 289.2 69.8
33.7 81.1
114.8 150.9 −0.56

Above Mean = −0.59
123.0
32 00 204.0 81.0
310.8 67.2
18.0 148.2 −0.61

129.4 −0.60
8 34 40 197.8 68.4
11 9 45 304.1 80.7
8 29 56 24.8 149.1 −0.59
5 −52
13 29 04
.562
.483
.079

Jan 25, 1904.

IV

Above

122.7

8 37 14 203.9 81.2

311.2 68.0

19.2 149.2 — 0.59

130.3 — 0.61

39 30 ~~1~~ 197.8 67.5

305.2 79.6

24.8 147.1 — 0.63

Mean — 0.60

Below

33.2

42 40 114.8 81.8

221.2 65.7

~~286.9~~ 147.5 — 0.62

40.7

8 45 05 108.8 68.1 — 0.59

4 24 212.4 82.5

8 41 06 294.9 150.6 — 0.56

5 53

3 40 13

.569

483

.086

Jan. 25, 1904.

V

Below
214.8
8 58 53 294.5 79.7
39.9 67.9
107.8 147.6 − 0.62

220.6
9 01 14 288.9 68.3 − 0.60
33.5 81.1
114.6 149.4 − 0.59

Above Mean = − 0.58
121.6
9 04 30 206.4 84.8
311.6 65.3
16.9 150.1 − 0.57

127.3 − 0.56
9 06 30 197.5 70.2
11 07 303.2 81.1
9 02 47 24.3 151.3 − 0.55
5 57
14 01 50
.585
.483
.102

Jan 25, 1904

VI

Above

122.4
9 08 28 204.0 — 81.6
311.4 — 64.8
16.2 — 146.4 — 0.65

128.6 — 0.61
10 33 198.6 — 70.0
304.8 — 80.2
25.0 — 150.2 — 0.57

Below — Mean = — 0.56

213.2
11 24 294.2 — 84.0
39.2 — 70.8
100.0 — 154.8 — 0.44

219.0 — 0.50
9 16 36 289.2 — 70.2
10 01 34.0 — 82.0
9 02 30 116.0 — 152.2 — 0.53
5 58
14 11 32

.592
.483
.109

Jan. 25, 1904

VII

Lt Below
213.2
9 34 52 296.2 83.0
38.8 71.2
110.0 154.2 — 0.49

— 0.48
218.2
37 33 290.5 72.3
32.4 83.0
115.4 155.3 — 0.47
Rt Above
mean = — 0.44
120.7
43 17 207.3 86.7
307.5 72.8
20.3 159.5 — 0.39

127.2
✓
9 45 45 199.9 72.7 — 0.40
1 27 300.0 86.3
9 40 22 26.3 159.0 — 0.40
5 — 1 03
14 39 19
610
.483
.127

Jan. 25, 1904

VIII

Right Elbow

120.0

9 48 30 207.2 87.2

308.5 71.3

19.8 158.5 − 0.41

125.1 − 0.38

50 50 200.8 75.7

300.0 86.3

26.3 162.0 − 0.34

Left Elbow Mean = − 0.37

31.4

5 4 26 117.4 86.0

216.8 75.2

292.0 161.2 − 0 36

36.5 − 0.36

9 57 14 110.3 73.8

11 00 40.6 87.3

9 52 45 297.9 161.1 − 0 36

5 − 1 04

14 51 41

.619

.483

.136

Jan. 25 1904

IX

Left
32.5
10 13 30 113.6
215.8
293.2

81.1
77.4
158.5 − 0.41

35.2
16 08 110.9
207.3
297.6

75.7 − 0.34
90.6
166.3 − 0.26

Right
297.0
19 05 28.7
124.8
203.4

Mean = − 0.28

91.7
78.6
170.3 − 0.18

305.9
10 21 10 27.5
29 45 119.7
10 17 26 209.2
5 − 1 08
15 16 18
.636
.483
.153

76.6 − 0.22
89.5
166.1 − 0.26

Jan. 25/1904

X

Right

~~2~~299.2
10 24 20 28.6
125.0
203.3

89.4
78.3
167.7 — 0.23

306.3 — 0.26
2708 20.2
1~~4~~9.0
210.3

73.9
91.3
165.2 — 0.28

Left

mean = −0.34

215.6
3250 290.6
30.3
114.4

75.0
84.1
159.1 — 0.40

210.3 — 0.42
10 35 06 296.4
37.5
119 24 108.2

86.1
70.7
156.8 — 0.44

10 29 51
5 −1 10
15 28 41
645
.483
.162

Jan. 25, 1904

XI

Left
217.2
10 41 34 289.8 72.6
30.7 87.9
118.6 160.5 — 0.37

210.9 —0.38
43 38 297.7 86.8
35.7 72.9
108.6 159.7 — 0.39

Right Mean = —0.38
119.7
47 00 207.9 87.3
308.4 72.5
28.9 159.8 — 0.38
120.0
10 49 28 201.4 71.4 —0.39
21 40 300.3 87.8
28.1 159.2 0.40

10 45 25
5 −1 13
15 44 12
.656
.483
.173

1903phae.proj..56G

Jan. 25, 1906

XII

Right
120.4
18 51 38 205.9
306.6
20.8

85.5
74.2
159.7 −0.39

125.9
53 50 201.7
302.4
25.4

−0.40
75.8
83.0
158.8 −0.40

Left
37.1
18 57 28 108.7
210.7
295.1

Mean = −0.46

71.6
84.4
156.0 −0.46

33.5
19 59 30 113.7
22 26 219.2
10 55 36 288.9
5 −1 14
15 54 22

−0.52
80.2
69.7
149.9 −0.58

.662
.483
.179

Pa 1980 Var B.
S.T. = 7.34
Ha. 0.48 West
Dec. +17.2 ~~North~~
Spwh. −2.5 a −0.5 ~~B~~ −0.9

Jan 25/1904

B.236
11 11 17.0
12 17.2

B 394
11 10 00
11 00

L.P.

Jan. 27, 1904 (Wednesday)

B 236 B 394
7 10 00 7 09 57.5

7 10 C's watch = 2s fast

S.T. = 3:40 at 7:00

Iris. W.Obs.
6 29 +16.5
3 55
2 24
9 36

7 23 Moon too bright and too near with somewhat blurry seeing ~~at the~~ present to observe Iris. ~~Field milky faint stars invisible in photometer~~ and considerable glare on prisms

Double. W.Obs.
1 31.6 −30 25 Phot

~~13~~
1 32 −30.4
4 07
2 35

7 37 Double thought to be ~~with~~ certainly found but seeing is so bad, combined with low altitude that it is impossible to measure it tonight. convenient image of stars

January 27, 1904.

pear-shaped continually with no interval of separation at all and image very blurry at this ~~altitude~~

Double W.Obs.

2 31.2 +12 1

2 29 +11.8
4 40
2 11

2 37 +9.5
4 47
2 10

8h 20 Tried double with both high & low power on photometer but duplicity not certainly seen with ~~either~~ power owing partly ~~perhaps~~ to blurry seeing, as probable closeness of components.

Region identified

o Ceti W.Obs. Phot ~~R~~ w

2 12 -3.6
3 02
2 50

2 4 -2.5
5 4
3 00

C2 watch used tonight

January 27, 1904.

Below
245.7
8 31.0 266.8 21.1 ✓
63.0 27.4 ✓
90.4 48.5 ✓ — 3.34 ✓

242.4 — 3.34 ✓
269.6 27.2 ✓
65.9 21.3 ✓
87.2 48.5 ✓ — 3.34 ✓

above mean = — 3.41 ✓
156.3 9.19
176.0 19.7 ✓ 5.78
333.7 24.8 ✓
358.5 44.5 ✓ — 3.53 ✓

154.5 — 3.48 ✓
8 39.0 178.2 23.7 ✓
8 33.0 333.0 23.0 ✓
15 350 356.0 46.7 ✓ — 3.42 ✓
650%

January 27, 1904

II

Above

A
D 41.6

156.6
176.7 20.1
3340 22.9
3569 43.0 — 3.61

153.8
178.0 24.2 — 3.61
337.8 18.8
356.6 43.0 — 361

Below

Mean = — 3.49
9.19

67.0
87.1 20.1
242.8 28.4
271.2 48.5 — 3.34

62.7 3.37

δ 50.4 ~~8~~90.2 27.5
A 46.0 247.0 19.8
B 46.0 266.8 47.3 — 3.60

Jan 27, 1904

Below — III

66.3
8 55.6 86.5 20.2✓
243.5 26.1✓
269.6 46.3✓ — 3.44✓

64.0 — 3.47✓
89.2 25.2✓
246.8 20.0✓
266.8 45.2✓ — 3.50✓

Above Mean = −3.53✓
337.8 9.19
356.7 18.9✓ 6.66
154.7 24.5✓
179.2 43.4✓ — 3.59✓

333.8 — 3.59✓
9 02.0 359.2 25.4✓
117.6 157.4 17.9✓
8 58.8 ~~146.1~~ 43.3✓ — 3.59✓
13 58.8 175.3

Weighted mean = −3.49✓

HA +3:31 West
Dec −3.1 South
S.T. = 5.45
Ob. a little difficult especially in first group on account of

January 27, 1904.

Blurry seeing. Seeing in last two groups some better than in first group. First group
9 08 1/2 weight. Moon past the first quarter and in this general region of sky. Region thoroughly identified.

ρ Cassiop W Obs
23 49 +57.4 Phot I
30 07 9.5 cap
6 18

Left
318.4 < vardis.
9 36.8 369.9 51.5✓
137.7 53.3✓
191.0 104.8✓ − 1.54✓
316.8
364.8 51.0✓ −1.57✓
137.8 51.4✓
189.2 102.4✓ −1.60✓
Right Mean = −1.62✓
228.4
280.0 51.6✓
49.2 48.8✓
98.0 100.4✓ − 1.65✓

9 43.0 229.0
79.8 278.5 49.5✓ − 1.68✓
9,4 39.9 149.3 48.8✓
39.9 98.1 98.3✓ − 1.70✓

January 27, 1904

II

Right

229.6

278.7

945.0 49.2

98.6

229.8

277.4

49.7

97.7

Left

138.8

190.9

317.4

366.6

138.2

9 51.0 190.4

317.4

9 48.0 370.6

14 48.0

49.1 ✓

49.4 ✓

98.5 ✓ — 169 ✓

47.6 ✓ — 1.73 ✓

48.0 ✓

95.6 ✓ — 177 ✓

Mean = — 1.66 ✓

52.1 ✓

49.2 ✓

101.3 ✓ — 1.62 ✓

— 1.58 ✓

52.2 ✓

53.2 ✓

105.4 ✓ — 1.53 ✓

Final mean = — 1.64

P.A. = 121.5 Ver P3

H.A. = 6:42 West

Dec. = + 57.2 North

S.T. = 6:35

Sp. Wh. = { −0.5 a; +0.5 b; +1.0 c

Gen. mean = — 1.64

January 27, 1904.

μ Cephei 20 Obs.

21 40 +58.4 Phot T.

30 5 3 9″5 cap.

9 13

Left ⟨Nor dis.

141.2

10 18.0 184.7 43.5 ✓

322.0 43.2 ✓

365.2 86.7 ✓ − 2.00 ✓

141.2 −2.00 ✓

185.7 44.5 ✓

327.1 42.2 ✓

364.3 86.4 ✓ − 2.00 ✓

Right mean = − 2.03 ✓

52.5

94.2 41.7 ✓

232.3 43.3 ✓

275.6 85.0 ✓ −205 ✓

52.1

10 24.4 93.6 41.5 ✓ −206 ✓

10 21.2 232.6 42.7 ✓

15 21.2 275.3 84.2 ✓ −2.07 ✓

January 27, 1904

II

Right

52.9
10 26.0 93.6
233.8
274.6

53.1
93.2
233.7
275.6

Left

323.5
364.8
142.6
184.4

322.9
10 34.0 365.3
139.5
10 30.0 183.9
15 30.0

40.7 ✓
40.8 ✓
81.5 ✓ — 2.15 ✓

40.1 ✓ — 2.14 ✓
41.9 ✓
82.0 ✓ — 2.14 ✓

Mean = — 2.10 ✓

41.3 ✓
41.8 ✓
83.1 ✓ — 2.10 ✓

42.4 ✓
44.4 ✓ — 2.05 ✓
86.8 ✓ — 2.00 ✓

~~Gen. Mean =~~

Jan. 27, 1904

III

Left

323.5
10 38.6 364.3 40.8
140.7 46.3
187.0 87.1 — 1.99

321.7
364.5 42.8 — 1.98
139.8 44.9
184.7 87.7 — 1.98

Mean = − 2.07

Right
231.4
243.8 42.4
54.0 39.6
93.6 82.0 — 2.14

233.0
10 44.0 274.3 41.3 — 2.16
82.6 54.2 39.3
10 41.3 93.25 80.6 — 2.18
15 41.3

Gen. mean = −2.07

P.A. = 174.0 Ver B
HA = 9.46
Dec = 0 7.8
S.T. = 7 27
Sp Wh = 6.5 B
−5.5 C

see next book (43) for continuation of tonights records.
L.P.R.