

1898phase, Proj. 1154.

KG  
11366  
v. 350

















June 21, 1898.

Continued from Book 98.

Titan

Phot. 5.

H. Obs.

Index above Comp. Star =  $\alpha$ . = S.D.  $-19^{\circ} 43' 4'' (9.8)$ 

322.7 - Titan dis

12

12

4.0

 $\times 1.3^{\vee}$ 

321.9

 $\times 1.1^{\vee}$ 

3.0

 $\frac{2.2^{\vee}}{2.2^{\vee}}$  $-2.12^{\vee}$ 

322.5

4.2

 $\times 1.7^{\vee}$  $(-2.10)^{\vee}$ 

322.6

4.8

 $\times 2.2^{\vee}$  $\frac{2.2^{\vee}}{2.3^{\vee}}$  $-2.02^{\vee}$ 

Index below

57.4

 $33.8^{\vee}$ 

90.8

55.3

92.0

 $\frac{36.7^{\vee}}{70.1^{\vee}}$  $-2.50^{\vee}$ 

56.0

90.5

 $38.5^{\vee}$  $(-2.50)^{\vee}$ 

12

17

12

14

56.4

 $\frac{35.3^{\vee}}{69.2^{\vee}}$  $-2.51^{\vee}$ 

+ .7

91.7

17

14.7

mean  $-2.30^{\vee}$

June 21, 1898.

Same again.

$$\begin{array}{r}
 12 \quad 55.6 \quad 36.5^{\vee} \\
 18 \quad 92.1 \\
 \quad 56.8 \\
 \quad 92.8 \quad \frac{36.0^{\vee}}{72.5^{\vee}} \quad -2.43^{\vee}
 \end{array}$$

$$\begin{array}{r}
 55.0 \quad 37.2^{\vee} \\
 92.8 \\
 56.0 \quad \frac{37.2^{\vee}}{72.6^{\vee}} \quad -2.42^{\vee} \\
 90.8
 \end{array}
 \quad (-2.42^{\vee})$$

Index above.

$$\begin{array}{r}
 144.2 \quad 32.2^{\vee} \\
 183.0 \\
 142.3 \quad \frac{41.7^{\vee}}{40.5^{\vee}} \quad -2.12^{\vee} \\
 184.0
 \end{array}$$

$$\begin{array}{r}
 144.0 \quad 40.5^{\vee} \\
 184.5 \quad \vdots \quad (-2.20^{\vee})
 \end{array}$$

$$\begin{array}{r}
 12 \quad 24 \quad 184.5 \\
 12 \quad 21 \quad 144.9 \\
 \quad +.7 \quad 184.0 \quad \frac{32.9^{\vee}}{79.5^{\vee}} \quad -2.21^{\vee} \\
 17 \quad 21.7 \quad 183.8
 \end{array}$$

Mean  $-2.31^{\vee}$



June 22, 1898. (Wednesday!)

5 30 Hatch Correction = +53 sec. (Hatch is slow.)  
 $\beta$  Lyrae Phot. H. H. Obs.  
 18 46 +33.2  
 14 54 Telescope diaphragmed down to  
 3 52 9.5 inches.  
 Index above and left I

8 42 40 Clouds  $\beta$  dis.  
 9.4 20.4  
 349.1 18.1  
 7.2 38.5 3.85

44 40 349.3  
 8.7 19.0 (3.82)  
 348.7 20.6  
 9.3 39.6 3.79

Index right and below.

47 24 79.7  
 99.1 19.4  
 80.0 16.9  
 96.9 36.3 39.8

48 52 80.6  
 97.1 16.5 (3.99)  
 23 36 79.0  
 98.5 19.5  
 36.0 4.00

13 46 47.  
 4463.5742  
 4463.712  
 +3.862

Mean 3.90  
 Reject above group. Seeing extremely bad  
 and images very blurry.

June 22, 1898.

II

8	50	36	79.0		
			99.1	20.1	
			81.4	<u>16.4</u>	
			97.8	36.5	-397

			80.4		
52	04		97.6	17.2	(-3.94)
			79.0	<u>20.5</u>	
			99.5	37.7	-390

Index left and above.

			169.1		
54	08		189.1	20.0	
			169.0	<u>19.8</u>	
			188.8	39.8	-3.78

			169.0		
55	52		189.1	20.1	
12	40		168.5	<u>21.0</u>	
2	53	10.	189.5	41.1	-3.71
		+53.			

13	54	3.
4463.5794		
4459.712		
+3.867		

(-3.74) ✓

Mean -3.84 ✓



June 22, 1898.

III

8	57	16	168.8		
			189.3	20.5	
			169.0	<u>20.0</u>	
			189.0	40.5	-3.74

58	36		169.2		(-3.76)
			188.5	19.3	
			168.7	<u>20.5</u>	
			189.2	39.8	-3.78

Index right and below

9	01	04	259.2		
			279.1	19.9	
			<del>260.0</del>	<u>18.8</u>	
			259.7	38.7	-3.84
			278.5		

			259.9		(-3.84)
--	--	--	-------	--	---------

03	24		278.7	18.8	
240	20		259.8	<u>19.8</u>	
9	0	5	278.9	38.6	-3.85
5		+53			
14	0	58			

4463.5240	
4469.712	
+3.272	

Mean -3.80

June 22, 1898.

Comp. Stars for R. Corvi.

Phot. T.

H. Obs.

12	16	-18.8
<del>14</del>	29	
3	13	

18 g 4.5 h.

Star E compared with x  
Index above.

Wrong Star.

320.4

42.3

2.7

&lt; x dis.

42.5

319.3

84.8 + 2.06

1.8

324.0

39.0

(+2.16)

3.0

39.3

325.0

78.3 + 2.25

4.3

Index below

52.6

43.2

95.8

41.0

55.0

84.2 + 2.07

96.0

(+2.24)

56.0

~~54.4~~

36.4

92.4

37.0

54.5

73.4 + 2.40

91.5

Mean + 2.20



June 22, 1898.

Comp. Stars for R Leonis Minoris. Phot. T. H. Obs.

9 40 +34.8

16 02

6 22

Star

Index

151.9

Abandoned. Too Cloudy.

Japetus.

Phot. T.

H. Obs.

16 35 \* -20.0

16 43

0 08

16 35

17 17

0 42

16 35

17 21

46

June 22, 1898.

~~compared with~~

Index below.

315.6 <sup>brighter</sup> dis

11	12	9.1	50.5	
		316.0	<u>56.8</u>	
		12.8	107.3	1.48

315.4

10.0

54.6

(1.48)

316.9

52.8

9.7

107.4

1.48

Index above

49.0

97.8

48.8

46.749.1

47.1

97.9

1.71

96.2

47.7

(1.68)

97.4

49.7

46.5

51.0

97.5

100.7

1.64

11	16
11	14.0

Mean 1.58



June 22, 1898

Same again

#11	17	49.1		
		97.6	48.5	
		48.0	<u>50.0</u>	
		98.0	98.5	1.69

		48.3		(1.66)
		98.7	50.4	
		47.4	<u>49.0</u>	51.0
		98.4	99.4	101.4
				1.62

Index below

+32.

Clouds

135.8<sup>5</sup>

191.6

56.1

135.4

55.4

190.8

111.5

1.38

135.4

11	22	191.2	55.8	(1.36)
----	----	-------	------	--------

11	19.5	134.7	<u>57.3</u>	
----	------	-------	-------------	--

		192.0	113.1	1.35
--	--	-------	-------	------

Troubled in above measures by clouds.

Mean 1.41<sup>5</sup>

June 22, 1898.

Comp. Star (x) for Jupiter to night =  
 $\alpha^2 - 19^\circ 43' 7'' (9.2)$   
 Jupiter compared with x.  
 Index below.

117.0  $\times$  dis.

11	29	205.1	88.1	
		117.7	89.7	
		<del>208.4</del>	177.8	+ 0.04
		207.4		

+ 0.06

120.0

~~209.0~~

208.5

88.5

120.0

86.4

206.4

174.9

+ 0.09

Index above.

214.4

~~295.0~~

294.5

80.1

+ 0.41

11 354

214.6

78.4

+ 0.24

11 32

293.0

158.5

+ 0.41

11.22

11.26

16 33

4463.690

Troubled considerably by clouds. Had to wait at times for moments of considerably good seeing to measure. Jupiter faint and somewhat near Saturn so that observations had to be taken with Jupiter rather near lower edge of field, thus putting Saturn a little nearer edge of field. Comp. Star - star x of last night



June 23, 1898. (Thursday)

8 00 Hatch Correction = +1 sec. (Hatch is slow.)

$\beta$  Lyrae.

Photo. H.

H. Obs.

18 46 +33.2

14 36

4 10

7 50

Index right and below.

I

78.6

79.8  $\angle \beta$  diss

98.4

81.1

98.0

18.6'

16.9'

35.5' - 4.03'

81.6

17.0'

(-4.04)'

20 48

98.6

18.2'

80.2

35.2' - 4.04<sup>5</sup>'

98.4

Index left and above.

168.4

21.0'

23 04

189.4

20.0'

169.1

41.0' - 3.71'

189.4

(-3.66)'

168.1

22.2'

24 40

190.3

20.7'

168.1

42.9' - 3.61'

Mean - 3.85'

8 6 92

5 21 53

13 21 54

188.8

188.8

June 23, 1898.

Same again

II

		168.3	20.4'
5	28 24	188.7	<u>18.8'</u>
		169.2	39.2' - 3.81'
		188.0	

		168.0	21.2'	(-3.73)'
30	20	189.4 <sup>2</sup>	<u>20.9'</u>	
		168.4	42.1' - 3.65'	
		189.4 <sup>3</sup>		

Index right and below.

		259.6	17.8'
34	16	277.4	<u>21.1'</u>
		258.3	38.9' - 3.83'
		279.4	

		257.7	(-3.81)'
		<del>278.9</del>	

		278.9	21.2'
35	36	278.9	<u>18.5'</u>
		259.5	39.7' - 3.79'
8	32 09'	278.0	

Mean - 3.77'

5		+01
---	--	-----

13	32	10'	4464.5640'
			<u>4459.712</u>
			4.852



June 23, 1898.

Telescope diaphragmed down to 9.5 inches

Same again.

III

8	39	08	260.0	18.8'	
			278.8	<u>20.2'</u>	
			259.2	39.0' - 3.82'	
			279.4		

			259.1	19.1'	(-3.88)'
41	08		278.2	<u>17.9'</u>	
			260.2	37.0' - 3.94'	
			<del>274.8</del>		
			278.1		

Index left and above

			349.4	18.9'	
42	48		8.3	<u>21.6'</u>	
			349.5	40.5' - 3.74'	
			9.1		

			348.4	20.8'	(-3.74)'
--	--	--	-------	-------	----------

43	56		9.2	<u>19.9'</u>	
5	120		348.7	30.7' - 3.73'	
8	41	45"	8.86		

Mean - 3.81'

5		101	4464.571
13	41	46	4459.712
			4.859

June 23, 1898.

IV

Same again

8. 45 20	349.2	19.3'
	8.25	<u>19.1'</u>
	349.0	38.4' - 3.86'
	8.1	

47 00	348.9	20.0'	(-3.80)'
	8.9	<u>20.6'</u>	
	348.82	40.6' - 3.74'	
	8.88		

Index right and below.

48 56	80.1	17.9'
	98.0	<u>18.4'</u>
	79.8	36.3' - 3.98'
	98.82	

51 32	79.80	19.4'	(-3.92)'
	98.4	<u>18.8'</u>	
31 108	80.0	38.2' - 3.87'	
8 48 12	98.8		Mean - 3.86'
5 401			
13 48 13	44611.575		
	4459.712		
	<u>4.863</u>		



June 23, 1895.

Comp. Stars for R. Corvi. Phot. T. H. Obs.

12	16	-18.8
----	----	-------

15	19
----	----

3	03
---	----

Star E compared with  $\alpha$   
Index above

321.0  $\alpha$  dis.

325.4 Reject

351.0

323.6

37.1'

0.7

23.4'

325.6

60.5' + 2.54'

349.0

328.1

27.8'

(+2.76)'

355.9

34.0'

323.0

64.8' + 2.68'

0.0

Index Below

59.2

31.1'

90.3

26.9'

60.4

58.0' + 2.94'

87.3

June 23, 1898.

9	22	58.5	30.3'	(+2.88)'
		58.8	30.7'	
		57.3	61.0' + 2.82'	
		58.0		Mean + 2.82'

Observations very difficult. Stars low and faint sky hazy  
 Comp. Stars for P. Les. Min. Phot. T. H. O. G.

9	40	+34.8
15	54	
6	14	

Star K compared with m  
 Index left and below.

153.0	23.0'
176.0	21.0'
153.0	44.0' + 3.56'
174.0	

151.4	21.8'	(+3.65)'
173.2	18.7'	
154.4	40.5' + 3.74'	
173.1		

Index right and above.

242.5	22.8'
265.3	19.8'
243.4	42.6' + 3.63'
263.2	



June 23, 1898

(+3.78)

9 49 244.2  
261.3  
244.0  
264.0

17.1'  
20.0'  
37.1' + 3.93'

Mean + 3.72

Observation difficult. Stars low and faint

sky hazy

Comp. Stars for S Virginis. Phot. T. H. Obs

13 27 -5.00

16 29  
3 02

10 14 l 3.5 n

n 3.0

o 3.5 p

p 3.2

q 4.2

α 2.5 β

β 4 γ

10 23 γ 4.5 δ

June 23, 1898

Comp. Stars for S Virginis. Phot. T. H. Ols  
 Star 5 compared with L.  
 Index left and below.

10	30	148.0	l dis.	31.5'
		179.5		<u>33.5'</u>
		146.0		65.0' + 2.68'
		179.5		

147.0	32.4'	(+2.71)'
179.4	<u>30.9'</u>	
147.8	63.3' + 2.74'	
178.7		

Index right and above

239.8	29.4'
269.2	<u>27.5'</u>
242.1	56.9' + 2.98'
268.6	

10	36	241.0	28.0'	(+3.00)'
		269.0	<u>27.8'</u>	
		241.2	55.8' + 3.02'	
		269.0		Mean + 2.86'



June 23, 1898.

Star  $\gamma$  compared with  $\epsilon$ .  
Index above

		236.0	<del>37.5</del>	37.5'
10	40	273.5	<del>38.0</del>	36.0'
		236.0	<del>75.5</del>	73.5' + 2.39'
		272.0		

237.5	32.8'	(+2.50)'
270.3	<u>34.0'</u>	
236.0	66.8' + 2.61'	
270.0		

Index below.

324.0	41.4'
5.4	<u>41.3'</u>
324.0	82.7' + 2.12'
5.3	

		323.0	41.7'	(+2.08)'
10	47	4.7	<u>43.3'</u>	
		322.4	85.0' + 2.05'	
		5.7		

Mean 2.29'

June 23, 1898.

Star  $\alpha$  compared with  $\ell$   
Index left.

10 57 314.6  $\ell$  dis 58.4'  
 13.0 55.8'  
 315.2 114.2' +1.32'  
 11.0

314.1  
~~312.5~~ 56.3' (+1.33)'  
 10.4 57.0'  
 314.5 113.3' +1.34'  
 11.5

Index right

~~46.5~~  
 47.0 52.5'  
 99.5 48.9'  
 49.3 101.4' +1.62'  
 98.0

~~49.7~~  
 48.9 (+1.58)  
 100.1 50.8'

11 03 99.7 54.2'  
 46.0 105.0' +1.54'  
 100.2 Mean +1.46'



June 23, 1898

Jupiter

Phot. T.

H. Obs

16	35
<u>17</u>	<u>35</u>
1	00

-20.0

Star x compared with Comp Star of June 15, 1898  
Index above

226.7

11 40 280.2

229.0

Stopped by clouds

June 24, 1898. (Friday.)

Watch Correction = +11 sec (Watch is slow)

$\beta$  Lyrae

Phot. H.

H. Obs.

18 46 +33.2

15 06

3 40

8 20

Telescope diaphragm down to gain

I

Index left and above

262.0 23.8'

8 45 32 285.8 19.8'

263.4 43.6' -3.58'

283.2

263.6<sup>4</sup> 20.2' (\*-3.62)'

47 28 283.6 22.0'

262.7 42.2' -3.65'

284.7

Index right and below.

352.8 22.2'

50 12 15.0 20.4'

353.6 42.6' -3.63'

14.0

353.2 20.8' (-3.62)'

14.0 21.9'

8 52 28 100 352.5 42.7' -3.62'

5 48 55 +11

13 49 06

14.4 44.65.576'

44.59.712'

Mean -3.62'

June 24, 1898

II

8 54 00 352.6 22.2'  
 14.8 20.5'  
 353.5 42.7' - 3.62'  
 14.0

57 20 353.3 20.5' (-3.62)'  
 13.8 22.4'  
 352.4 42.9' - 3.61'  
 14.8

Index left and above.

9 00 20 81.9 23.8'  
 104.7 21.1'  
 84.0 44.9' - 3.51'  
 105.1

~~82.5~~  
 83.9 19.9' (-3.56)'  
 104 08 103.8 22.8'  
 36 48 81.4 42.7' - 3.62'

8 59 12 105.

5 +11 104.6

13 59 23

Mean - 3.59'

4465.583'

4459.712  
 5.871'



June 24, 1898.

Telescope diaphragmed down to 9.5 inches

		52.3	23.3'	
9	11	00	105.2 <sup>6</sup>	<u>22.2'</u>
		82.0	45.5' - 3.48'	
		Clouds		
		104.2		

III

		53.2 <sup>0</sup>	20.7'	(-3.53)'
15	16	103.7	<u>22.8'</u>	
		82.0	43.5' - 3.58'	
		104.8		

Index right and below.

		172.4	22.5'	
22	12	194.9	<u>19.4'</u>	
		173.4	41.9' - 3.67'	
		192.8		

		173.1	20.0'	(-3.70)'
24	00	193.1	<u>20.8'</u>	
<del>24</del>	<del>00</del>	172.9	40.8' - 3.72'	
32	28	193.7		Mean - 3.62'
9	18	07'		
5		+11		
14	18	18'	4465.596'	
			<u>4459.712</u>	
			5.884'	

June 24, 1898.

IV

9	26	36	172.3 <sup>6</sup>	21.1'	
			193.7	<u>19.1'</u>	
			173.7	40.2' - 3.76'	
			192.5		

			173.1	20.4'	(-3.72)'
28	32		193.5	<u>21.2'</u>	
			<del>170.6</del>	41.6' - 3.68'	
			173.0		
			194.2		

Index left and above.

			263.0	21.5'	
31	20		284.5	<u>20.4'</u>	
			263.0	41.9' - 3.67'	
			283.4		

			263.2 <sup>0</sup>	20.3'	(-3.64)'
33	32		283.3	<u>22.6'</u>	
38	120		262.3	42.9' - 3.61'	
9	30	00'	<del>285.1</del>		Mean - 3.68'
5		+11	284.9		
14	30	11'		4465.604'	
				<u>4459.712</u>	
				5.892'	

June 24, 1895.

Comp. Stars for S Virginis.

H. Obs

13	27	-8.0
16	09	
2	42	

l 3 n

9

47 n 3.50

o 4 p

p 3.5 q

q 3.5 x

x 3 β

β 3.5 γ

γ 4 δ

Lapetus

H. Obs

16	35	-20.0
16	20	
0	15	

10

1.0 Too Cloudy



June 29, 1895. (Wednesday)

8 00 Hatch Correction = +02 sec. (Hatch is slow)

A & D 958

8 28 11.5

29 11.5

Bond 394

8 28 00.0

29 00.0

Correction = -16 sec. (fast)

Re. Jupiter II. Phot. R. H. Obs. Frost. Recorder.  
Compared with 1st Sat. on following side - Sat. I.  
Limit of Visibility.

8 46 34 105.0

8 46 37 47 15 18.0 123.0

26 21.0 103.2

38 19.5 124.2

8 50 53 8 51 9 suspected  
51 12 28 seen

20 36 100.7

30 46 131.5

39 55 100.0

46 52 02 131.7

59 15 91.0

52 14 30 137.0

26 42 88.1

31 47 144.0

38 54 87.0

48 53 4 149.0

54 10 82.8

53 06 22 151.0

June 29, 1898.

8 53 14.8	53	30		82.0	
24		40		148.8	
32		48		79.2	
40		56		151.2	
49	54	05		77.0	
57		13		152.8	
54 12		28		78.0	
22		38		155.1	
		48		73.3	
		57	82.8	156.1	1
54 45	55	05	87.0	73.0	
		13	84.9	160.0	+
		25		76.5	
		33	83.6	160.1	2
55 20		40	80.2	75.8	
		48	81.4	156.0	
		56		75.0	
55 57	56	08	84.7	159.7	3
		18	80.8	75.0	
		29	82.8	155.8	3
		50		73.7	
57 00	57	01	88.1	161.8	4
		29	88.9	71.2	
		43	88.5	160.1	+

Refocused slightly on satellites.

June 29, 1898.

8 58 04	8	57	53	74.0	
		58	13	85.3	159.3
			28	81.1	75.9
			44	83.2	157.0
			57		74.8
59 03	59	12	81.0	155.8	6
		27	82.1	74.9	
		40	81.6	157.0	8
		51		78.0	
59 58 9	00	05	77.2	155.2	7
		24	79.2	76.8	
		36	78.2	156.0	7
	01	59		73.0	
9 02 11	.02	09		154.2	
		21	85.0	158.0	4
		36	80.0	74.0	
		53	82.5	157.0	8

Seeing pretty good.

A. and D. 958.

9	13	11.3
		11.3

Bond 394

9	13	00.0
	14	00.0



June 29, 1898.

γ Cygni.

Phot. T.

H. Obs.

20	48	+34.3	
16	08	Circle Readings =	7 <sup>h</sup> 39 <sup>m</sup> +34.1
4	40	Sidereal Time =	16 30
7	20		

Index right and above.

I

9	42	20	230.0	var. dis	47.6	✓
			277.6		46.9	✓
			231.4		94.5	✓ -1.80
			278.3			

		231.0	45.8	✓	(1.80)
43	36	276.5	48.2	✓	
		229.5	94.0	✓ -1.81	
		278.0			

Index left and below

		317.0	54.2	✓
46	12	11.2	49.8	✓
		318.3	104.0	✓ -1.56
		8.1		

		318.0	51.0	✓	(-1.54)
47	40	9.0	55.1	✓	
19	48	314.9	106.1	✓ -1.51	

4470.6146  
4469.4647  
+ 1.1499

9	44	58.5	57	14	44	57.5	✓
9	44	58.6	10.0	14	44	57.5	✓
14	44	57.0	10.6	14	44	57.5	✓

Mean -1.67

June 29, 1895.

II

$$\begin{array}{r} 314.7 \\ + 1.2 \\ \hline 316.2 \\ 9.0 \\ \hline 325.2 \end{array}$$

$$\begin{array}{r} 561 \\ 52.8 \\ \hline 613.8 \end{array}$$

9 49 00 10.5 561 144 ✓

$$\begin{array}{r} 316.0 \\ 10.25 \\ \hline 326.25 \\ 12.0 \\ \hline 338.25 \end{array}$$

$$\begin{array}{r} 545 \\ 55.7 \\ \hline 600.7 \end{array}$$

50 40 10.25 545 141 ✓

Index right and above

$$\begin{array}{r} 49.85 \\ 96.2 \\ 49.7 \\ 96.4 \\ \hline 195.75 \end{array}$$

$$\begin{array}{r} 46.7 \\ 46.7 \\ \hline 93.4 \end{array}$$

52 50 96.2 46.7 1.82 ✓

$$\begin{array}{r} 49.4 \\ 98.0 \\ 50.3 \\ \hline 197.7 \end{array}$$

54 36 98.0 50.3 (1.72) ✓

$$\begin{array}{r} 55.36 \\ 8.6 \\ 9.52 \\ 1.5 \\ 1.1 \\ 9.52 \\ 1.6 \\ \hline 76.98 \end{array}$$

$$\begin{array}{r} 486.7 \\ 50.2 \\ \hline 536.9 \end{array}$$

55 36 97.0 486.7 1.73 ✓

Mean - 1.60 ✓

$$\begin{array}{r} 4470.6195 \\ 4469.4647 \\ + 1.1548 \\ \hline 8940.1390 \end{array}$$

$$\begin{array}{r} 9.52 \\ + 6. \\ \hline 15.52 \\ 14.354 \\ \hline 29.874 \end{array}$$

14 34.4 17.6 29.874 = .0123

June 29, 1898.

III

9 57 12 48.8  
 97.0 48.2 ✓  
 49.9 47.1 ✓  
 97.0 95.3 ✓  
 1.77 ✓

59 00 50.0  
 98.2 48.2 ✓  
 49.9 47.1 ✓  
 97.0 95.3 ✓  
 1.77 ✓

(1.77) ✓

Index left and below.

10 01 20 137.0  
 191.0 54.0  
 137.5 54.91  
 191.6 108.1  
 1.46 ✓

03 36 136.7  
 190.7 54.0  
 9 241 8 137.0 54.1  
 10 0 17 191.1 108.1  
 1.46 ✓

(1.46) ✓

~~70 0 17.1~~  
~~15 60.3~~  
~~14 34.4~~

25.9  
 10 0 17.  
 15 0.8 23. ✓  
 18 38.8  
 + 0 26.0 = .0181

4470.6253  
 4469.4647  
 + 1.1606

mean -1.62 ✓



June 29, 1895.

IV

10	10	12	136.0 <sup>0</sup>		
			190.5 <sup>2</sup>	54.2	
			136.2	<u>52.8</u>	
			189.0	107.0	149 <sup>✓</sup>

11	56		137.0		
			191.3	54.3	
			137.2	<u>52.8</u>	
			190.0	107.1	149 <sup>✓</sup>

(149)

Index right and above.

14	48		231.0		
			<del>280.7</del>		
			279.7	48.7	
			229.8	<u>47.3</u>	
			277.1	96.0	176 <sup>✓</sup>

16	16		231.1		
13	12		278.0	46.9	
			229.7	<u>49.4</u>	
10	13	18 <sup>✓</sup>	279.4	96.3	175 <sup>✓</sup>
		+1			

(176)

~~14 13 18.1~~  
~~15~~

14 34.4

38.9

10	13	12	
		+6	
15	13.8	24	
14	34.4		
+0	39.0		.0271

4470.6343
4469.4647
+ 1.1696

mean -1.62<sup>✓</sup>

June 29, 1898.

V

		229.5		
10	18	20	280.0	50.5
			230.0	<u>49.1</u>
			279.1	99.6
				1.67

		230.0		
20	20	20	279.9	49.9
			229.0	<u>50.0</u>
			279.0	99.9
				1.66

(1.66)

Index left and below.

		316.6		
		+2.0		
2	3	20	11.5	54.9
			317.9	<u>50.7</u>
			8.6	105.6
				1.52

		318.1		
25	08	8.7	50.6	
7	8	316.0	<u>53.9</u>	
10	21	47	9.9	104.5
		+6		1.55
15	21	47		
14	34	4		
		47.4		

(1.54)

15	21.9	53	
1K	34.4		
+0	47.5		

$\therefore = .0330$

4470.6402
<u>4469.4647</u>
+1.1755

Mean -1.60

June 29, 1898.

VI

10	29	52	317.0	9.2	52.2	
			<del>315.3</del>		<u>52.6</u>	
			316.0		104.8	1.54
			8.36			

32	08		316.4	9.2	52.8	(1.53)
			316.5		<u>53.0</u>	
			9.5		105.8	1.52

Index right and above

34	28		48.2	98.2	50.0	
				50.1	<u>48.4</u>	
				49.8	98.4	1.70
				98.42		

36	24		48.2	98.0	48.8	(1.70)
132	52			48.57	<u>49.3</u>	
10	33	13		98.0	98.1	1.70
		+6				

~~15 33.2 13.1~~~~14 34.4~~~~58.8~~

10	33.3	19.
14	34.4	
+0	58.9	= 0409

4470.6481
4489.4647
+1.1834

Mean -1.62



June 29, 1898.

VII

10 39 28 48.0  
 97.0 49.0  
~~49.6~~ 47.4  
 97.0 96.4 1.75

41 48 49.2  
 97.3 48.1 (1.72)  
~~47.7~~ 50.3  
 98.0 98.4 1.70

Index left and below.

136.1  
 42 44 190.6 54.5  
 137.5 51.5  
 189.0 106.0 1.51

138.2  
 44 28 190.6 52.4 (1.52)  
 8 28 138.8 52.2  
 10 42 7 191.0 104.6 1.54  
 + 6.

~~15 42 7.1~~

~~44 34.4~~

~~1 4.7~~

15 42.2 13.

14 34.4

+1 7.4 = .0471

4470.6843  
 4469.4647  
 +1.1896

Mean -1.62

June 29, 1898.

VIII

		136.3		
10	49 00	189.8	53.5	
		137.4	52.6	
		190.0	106.1	1.51

		137.7		(1.54)
50	24	189.0	51.3	
		137.2	52.0	
		189.2	103.3	1.58

Index right and above

		231.2		
53	40	278.0	46.8	
		230.8	47.2	
		278.0	94.0	1.81

		231.2		
55	28	277.4	46.2	(1.82)
8	32	230.3	47.3	
10	52 56	278.	93.5	1.82
<del>15</del>	<del>52 18.1</del>	<del>277.6</del>		
<del>14</del>	<del>34.4</del>			
<del>1</del>	<del>17.7</del>			

Mean - 1.68

15	52.2 14.	
14	34.4	
+1	17.2	= .0541

4470.6612
4469.4647
+ 1.1965

June 29, 1898.

IX

10	59	12	230.0	47.0	
			277.0	<u>47.9</u>	
			230.2	94.9	1.79
			278.1		

11	00	40	232.7		(1.84)
			276.2 <sup>5</sup>	43.8	
			230.2 <sup>3</sup>	<u>47.4</u>	
			277.7	91.2	1.88

Index left and below.

03	44	317.7	9.0	51.3	
		319.1	<u>48.9</u>		
		8.0	100.2	1.65	

318.8	48.2	(-1.66)
-------	------	---------

05	00	7.0	51.0	
8	36	<u>317.3</u>	99.2	1.68

70	62	9.0	318.0	
11	27	16.0	9.0	

16	22	9.1
14	34.4	
1	27.8	

4490.6682
4469.4647
+ 1.2035

Mean -1.76<sup>5</sup>

16	22	15.0
14	34.4	
+1	27.8	= .0610



June 29, 1895.

X

		320.0		
11	14	24	8.1	48.1
			318.9	49.0
			7.9	97.1
				1.73

		319.4		
16	00	7.2	47.8	(1.69)
		317.0	57.3	
		9.3	100.1	1.65

Index right and above

		50.43		
19	00	95.6	45.3	
		50.0	45.1	
		95.1	90.4	1.90

		50.9		
20	32	96.1	45.2	(1.88)
69	56	50.0	46.5	
11	17	29	96.55	
		46	91.7	1.87

~~16 17.6 29.1~~
~~14 34.4~~
~~+ 43.1~~

16 17.6 32.

14 34.4

+1 43.2 = .0716

$$\begin{array}{r} 4470.6789 \\ 4469.4647 \\ + 1.2142 \end{array}$$

Mean - 1.78

June 29, 1895

XI

11 24 20 50.0  
 96.8<sup>4</sup> 464.  
 49.9 47.8  
 97.7 94.2 1.80

26 04 52.7  
~~95.6~~ (1.988)  
 94.7 420.  
~~48.9~~ 46.2  
 49.4 88.2 1.96  
 95.6

Index left and below

139.3  
 28 52 189.1 49.8  
 139.3 540.7  
 190.0 100.5 1.64

139.2<sup>5</sup> (1.65)  
 31 16 188.2 48.7  
 110 32 138.1 51.1  
 11 27 38.1 189.2 99.8 1.66  
~~16 27.6 38.1~~

~~14 34.4~~  
~~1 53.2~~

16 27.7 44.  
 14 34.4

+1 53.3 = .0787

4470.6859  
 4469.4647  
 +1.2212

Mean -1.76

June 29, 1898.

XII

	139.0		
11 34 32	159.3	50.3	
	140.53	48.7	
	159.0	99.0	1.68

	140.0		
36 00	158.27	48.7	(1.73)
	141.6	46.4	
	158.0	95.1	1.78

Index right and above

	232.3		
39 08	277.0	44.7	
	232.2	44.5	
	276.7	89.2	1.94

	232.1		
40 28	276.0	43.9	(1.94)
150 8	231.7	45.0	
11 37	276.57	88.9	1.94

~~16 37.5 32.5~~~~14 34.4~~~~2 3.1~~

16 37.6 32.5

14 32.4

+2 3.2  $r = .0855$ 

4470.6928
4469.4647
+ 1.2281

Mean - 1.84



June 29, 1898.

XIII

	233.0		
11 42 20	276.0	43.0	
	233.0	44.0	
	277.0	87.0	2.00

	232.6		
44 12	277.2	44.6	(1.95)
	231.0	46.0	
	<del>278.2</del>	90.6	1.90
	277.0		

Index left and below.

	329.5		
47 20	277	48.2	
	<del>330.0</del>	46.1	
	6.1	94.3	1.80

	329.0		
48 56	7.2	48.2	(1.77)
22 48	319.2	48.5	

11 45 42	5.0	96.7	1.74
+0.	7.7		

16 45.7 42.1
--------------

14 34.5
---------

2 11.3
--------

16 45.2 42.
-------------

14 34.4
---------

+2 11.3 = .0913
-----------------

4470.6980
4469.4647
+1.2338

Mean -1.86

June 29, 1898.

XIV

$$\begin{array}{r}
 11 \quad 53 \quad 00 \quad 320.3 \\
 \quad \quad \quad 7.0 \\
 \quad \quad \quad 319.4 \\
 \quad \quad \quad 6.2 \\
 \hline
 \quad \quad \quad 46.7 \\
 \quad \quad \quad 46.8 \\
 \hline
 \quad \quad \quad 93.5 - 1.82
 \end{array}$$

$$\begin{array}{r}
 54 \quad 20 \quad 321.2 \\
 \quad \quad \quad 7.2 \\
 \quad \quad \quad 319.4 \\
 \quad \quad \quad 8.0 \\
 \hline
 \quad \quad \quad 46.0 \\
 \quad \quad \quad 48.6 \\
 \hline
 \quad \quad \quad 94.6 - 1.79
 \end{array}
 \quad (-1.80)$$

Index right and above.

$$\begin{array}{r}
 56 \quad 48 \quad 51.8 \\
 \quad \quad \quad 94.7 \\
 \quad \quad \quad 51.1 \\
 \quad \quad \quad 95.0 \\
 \hline
 \quad \quad \quad 42.9 \\
 \quad \quad \quad 43.9 \\
 \hline
 \quad \quad \quad 86.8 - 2.00
 \end{array}$$

$$\begin{array}{r}
 58 \quad 28 \quad 51.7 \\
 22 \quad 36 \quad 95.4 \\
 11 \quad 55 \quad 39 \quad 51.0 \\
 \quad \quad \quad 96.4^2 \\
 \quad \quad \quad +6 \\
 \hline
 \quad \quad \quad 43.7 \\
 \quad \quad \quad 45.2 \\
 \hline
 \quad \quad \quad 88.9 - 1.94
 \end{array}
 \quad (-1.97)$$

Mean - 1.88

$$16 \quad 54 \quad 39.1$$

$$14 \quad 34.4$$

$$2 \quad 20.43$$

$$16 \quad 54.4 \quad \text{Kr.}$$

$$14 \quad 34.4$$

$$+2 \quad 21.5 = 0.982$$

$$\begin{array}{r}
 4470.7055 \\
 4469.4647 \\
 \hline
 + 1.2408
 \end{array}$$

June 29, 1898.

XV

12 07 00 50.0  
 94.7  
 51.0  
 94.5

08 40 52.2  
 94.75  
 51.4  
 94.8

Index left and below.

141.3  
~~187.0~~  
 13 32 186.7

12 15 Stopped by fog. Impossible to finish group

12 20 Watch Correction = +6 sec (Watch is slow)



June 30, 1898. (Thursday)

8 20 Watch correction = +21 sec. (Watch is slow)  
 $\beta$  Lyrae Phot. H. H. Obs.  
 18 46 +33.2  
 15 06  
 3 40 Telescope diaphragmed down to pin.  
 8 20

Index left and above

8 32 44 50.2  $\beta$ dis 23.4 ✓  
 73.6 20.1 ✓  
 52.0 43.5 -3.58 ✓  
 72.1

34 32 52.7 19.4 ✓ (-3.60) ✓  
 72.1 23.5 ✓  
 49.8 42.9 -3.61 ✓  
 73.3

Index right and below.

36 12 140.5 22.7 ✓  
 163.2 19.1 ✓  
 143.6 41.8 -3.67 ✓  
 161.7

142.8 19.1 ✓ (-3.71) ✓  
 37 32 161.9 21.3 ✓  
 21 0 40.4 -3.75 ✓  
 35 14  
 73 35 +21 162.7  
 4471.5664  
 4459.712  
 11.854 ✓

Mean -3.66 ✓

June 30, 1898.

5 39 44 141.1 21.6<sup>✓</sup> II  
 162.7 20.9<sup>✓</sup>  
 142.4 42.5 - 3.63<sup>✓</sup>  
 163.0

142.4 19.5<sup>✓</sup> (-3.66)<sup>✓</sup>  
 41 00 161.9 22.2<sup>✓</sup>  
 140.8 41.7 - 3.68<sup>✓</sup>  
 162.5

Index left and above.

231.6 21.6<sup>✓</sup>  
 43 08 253.2 19.6<sup>✓</sup>  
 232.0 41.2 - 3.70<sup>✓</sup>  
 251.76

232.4 18.9<sup>✓</sup> (-3.71)<sup>✓</sup>  
 44 52 251.3 22.0<sup>✓</sup>  
 230.8 40.9 - 3.72<sup>✓</sup>  
 252.8

44 52 251.3  
 230.8  
 252.8  
 13 42 32.  
 4471.5712<sup>✓</sup>  
 4459.712<sup>✓</sup>  
 11.259<sup>✓</sup>

Mean -3.68<sup>✓</sup>

June 30, 1895.

Telescope diaphragmed down to 9.5 in.

III

		33.2	
		<del>55.0</del>	21.6 ✓
8	51 28	54.5	<u>19.1</u> ✓
		34.7	40.7 - 3.73 ✓
		53.8	

		34.9	18.9 ✓	(-3.74) ✓
53	24	53.8	<u>21.5</u> ✓	
		33.6	40.4 - 3.75 ✓	
		55.1		

Index right and below.

		123.0	22.8 ✓
56	08	145.8	<u>20.7</u> ✓
		124.1	43.5 - 3.58 ✓
		144.8	

		125.3	18.7 ✓	(-3.70) ✓
58	08	148.0	<u>20.6</u> ✓	
19	A	124.3	39.3 - 3.81 ✓	
47.		145.1		
+21				

13	58	A.	144.9
4471.5200			
4479.712			
+11.262			

Mean - 3.72 ✓



June 30, 1895

IV

9 00 16 124.2 21.0 ✓  
 145.2 19.7 ✓  
 124.8 40.7 - 3.73 ✓  
 144.5

01 54 124.7 19.6 ✓ (-3.74) ✓  
~~01 20~~ 144.3 20.7 ✓  
 124.2 40.3 - 3.75 ✓  
 144.9

Index left and above.

214.2<sup>4</sup> 20.6 ✓  
 05 52 235.0 20.6 ✓  
 214.2 41.2 - 3.70 ✓  
 234.8

214.1 20.5 ✓ (-3.70) ✓  
 08 28 234.6 20.6 ✓  
 16 30 214.3 41.1 - 3.71 ✓  
 9 4 2. +21 234.9  
 14 4 29 ✓

Mean - 3.72 ✓

4471.5264 ✓  
 4459.712 ✓  
 +11.874 ✓

June 30, 1895

V

214.0      20.8 ✓  
 9 21 08 234.8      19.8 ✓  
          214.7      40.6 —      3.74 ✓  
          234.4<sup>5</sup>

214.7      20.2 ✓      (3.74) ✓  
 22 40 234.9      20.5 ✓  
          214.4      40.7 — 3.73 ✓  
          234.9

Index right and below.

304.1      21.1 ✓  
 2512 325.2      19.0 ✓  
          305.1      40.1 ✓      3.76 ✓  
          324.1

304.8      20.0 ✓  
 27 20 324.8      21.2 ✓  
 16 20 304.2      41.2 — 3.70 ✓

9 24 5 ✓ 325.4  
      + 21 ✓  
 14 24 26 ✓

mean 3.74 ✓

4471.6003 ✓  
 4479.712 ✓  
 + 11.222 ✓

June 30, 1898.

γ Cygni.

Phot. T.

H. Obs.

20 48

+34.3

16 28

4 20

7 40

Index right and above

234.9

I

9. 42 40

273.4

35.5

235.8

37.4273.8<sup>2</sup>

75.9

2.32

235.7

(232)

44 56

272.0

36.3

234.1

39.5

273.6

75.8

2.32

Index left and below

32  
232.0

47 24

5.0

43.0

322.0

42.5

4.5

85.5

2.04

322.6

(2.06)

49 12

3.5

40.9

24 12

322.0

42.6

9 46

3.5

83.5

2.09

14 46.4

2.5

4471.6156

4469.4647

+ 2.1509

Mean 2.19



June 30, 1898.

II

322.5  
 9 51 44 53 42.8  
       3.5 40.3  
       324.4  
       3.8 83.1 2.10

322.7 (2.12)  
 53 16 4.0 42.3  
 323.0 40.9  
 3.9 82.2 2.13

Index right and above.

53.5  
 55 24 91.68 38.3  
       55.0 36.6  
       91.6 74.9 2.35

53.2  
 56 52 91.0 37.8 (2.34)  
 17 16 53.3 40.4  
 9 54 19 ✓ 93.7 78.2 2.25  
       +22 ✓  
 14 54 401

4471.6213  
 4469.4647  
 +2.1566

Mean 224<sup>6</sup>

June 30, 1898.

III

10 00 12 52.3  
 92.4 40.1  
~~54.1~~ 38.5  
 53.8 78.6 224  
 92.3

01 32 53.7 (2.23)  
 93.1 39.4  
 53.4 39.8  
 93.2 79.2 222

Index left and below

142.5  
 04 00 186.3 43.8  
 143.2 41.7  
 185.0 83.5 2.04  
 184.9

143.56 (2.06)

06 08 185.1 41.5  
 11 52 142.3 42.6  
 10 2 58 785.2 84.1 2.08  
 +22

~~15 2 79~~ 184.9  
~~80~~

15 3.3 20. 4471.6273  
 4469.4647  
 +2.1626

Mean 2.14

June 30, 1898.

IV

10	08	36	143.5		
			184.9	41.4	
			143.4	41.9	
			185.83	83.3	2.10

			144.0		(2.12)
11	24		184.6	40.6	
			143.7	41.1	
			184.8	81.7	2.14

Index right and above

			235.0		
15	00		274.3	39.3	
			236.0	38.5	
			274.5	77.8	226

			236.4		
18	00		274.4	38.0	(226)
53	00		234.3	39.7	
10	183	15	274.0	77.7	226
		+22			
15	13	387			

4471.6344  
 4469.4647  
 + 2.1697

Mean 2.19



June 30, 1898.

V

		234.0		
10	20	12	274.2	40.2
			235.7	<u>37.8</u>
			273.5	78.0    2.25

		234.6		
22	16		274.2	39.6
			233.6	<u>40.3</u>
			273.69	79.9    2.20

(2.22)

Index left and below

		323.5		
25	48		4.7	40.9
			324.3	<u>39.2</u>
			3.5	80.1    2.19

		323.4		
27	56		3.5	40.1
16	12		323.0	<u>41.1</u>
10	24	3	4.1	81.2    2.16
		+22		
15	24	245		

Mean 2.20

44716421  
44694647  
+ 2.1774

Troubled more or less by southern scud,  
which came progressively from the south  
in the line of the stars

10    50 Watch Correction = + 22 sec (Watch is slow)

June 30, 1898.

Saturn

H. Obs.

16 35 ~~12~~ -20.0

17 35

1 00

For notation of x and y see p. 57.  
Star x compared with star y.  
Index right and above

156.5 yds.

11 03 171.0 14.5

155.0 16.2

171.2 30.7 4.35

155.0

172.8 17.8

156.0 17.0

172.9 34.8 4.08

173.0

Index left and below

246.1

261.0 14.9

246.0 14.2

260.2 29.1 4.47

246.5

11 10 259.4 12.9

11 6.5 245.9 14.3

260.2 27.2 4.62

Mean 4.38

June 30, 1898.

Same again

245.4

11	12	267.0	16.6	
		247.8	<u>13.5</u>	
		261.3	30.1	4.40

247.3

261.0 13.7

247.1 15.1

267.2 28.8 4.49

(4.44)

Index right and above

335.8

352.6 16.8

335.6 16.7

352.3 33.5 4.16

335.3

11	17	352.0 <sup>3</sup>	17.0	(4.16)
----	----	--------------------	------	--------

11	14.5	335.7	<u>16.7</u>	
----	------	-------	-------------	--

352.4 33.7 4.15

Lunar 4.30

Moon bright and considerably troubled  
in above two groups by more or less dense  
fog.



June 30, 1898.

Selection of a star (call it  $x$ ) which is to be used as Comp. star for Daphetis for the next two or three nights. A six magnitude star (call it  $y$ ) precedes star  $x$  1 m 21 sec and 12' of arc south of it.

Saturn follows star  $x$  1 m 14 sec and is 2' of arc south of it.

$$\begin{aligned} 6 \text{ magn. star} &= \text{SD. } -19^\circ 43' 65'' (5.0) = \text{Star } y. \\ \text{Star } x &= \text{SD. } -19^\circ 43' 68'' (8.5) = \text{Star } x. \end{aligned}$$

July 1, 1898. (Friday)

30 Hatch Correction = +32 sec. (Hatch is slow)

$\beta$  Lyrae

Phot. H.

H. Obs

18 46

+33.2

15 36

Telescope diaphragmed down to 9.5 in

3 10

8 50

I

Index right and below.

119.7 28.2

147.9 25.3

121.7 53.5 - 3.12

147.0

122.8 24.6

(-3.12)

47 12 147.4 29.2

119.5 53.8 - 3.11

149.0

Index left and above.

210.9 26.9

49 00 237.8 27.7

210.3 54.6 - 3.07

238.0

211.0 27.7

(-3.06)

51 32 237.8 27.7

193 234 210.3 55.4 - 3.04

48 21 238.0 44.7 2.57 2.06

48 32 238.0 44.7 2.57 2.06

Mean - 3.09

July 1, 1895.

II

8	59	12	210.1 <sup>3</sup>	28.6	
			238.9	<u>28.8</u>	
			210.2	57.4	-2.96
			239.0		

9	01	20	211.1	27.2	(-3.02)
			238.3	<u>27.1</u>	
			200.9	54.3	-3.09
			238.0		

Index right and below.

			<del>299.</del>		
			300.0	28.7	
03	28		328.7	<u>27.1</u>	
			300.5	55.8	-3.02
			327.6		

			301.8	25.8	(-3.06)
05	56		327.6	<u>28.2</u>	
9	56		299.8	54.0	-3.10
			328.0		

Mean -3.04

14	3		29.
			+32.
			1.4472.5854
			4459.712
			12.873



July 1, 1898.

9 09 00  $300.8^2$  28.4  
 $328.6$  26.2  
 $301.1$  54.6 -3.07  
 $327.3$

III

11 00  $301.1$  26.8 (-3.07)  
 $327.9$  27.8  
 $300.4$  54.6 -3.07  
 $328.2$

Index left and above

12 52  $30.7$  27.9  
 $58.6$  27.8  
 $30.7$  55.7 -3.03  
 $58.5$

14 32  $30.8$  27.6 (-3.00)  
 $58.4$  29.7  
 $47$  24  $30.0$  57.3 -2.96  
9 11  $51.5$  59.7  
+32.

14 12 23  $44725920$   
 $4459712$   
12580

Mean -3.04

July 1, 1895

IV

9	26	42	30.3	27.7
			58.0	<u>27.3</u>
			<del>31.0</del>	55.0 - 3.06
			30.8	
			58.1	

(-3.07)

28	20	31.4	27.3
		58.57	<u>27.2</u>
		30.8	54.5 - 3.08
		58.0	

Index right and below

30	00	120.7	29.2
		149.9	<u>26.9</u>
		121.3	56.1 - 3.01
		148.0	

(-3.01)

32	16	120.8	27.6
		148.4	<u>28.6</u>
117	12	120.1	56.2 - 3.01
9	29	20.1	148.7
		<u>44726041</u>	
18	29	52.7	<u>4459.712</u>
			12.892

Mean - 3.04

July 1, 1898.

♂ Librae

Phot. E.

H. Obs

14 56 . -8.9

16 50 Telescope diaphragmed down to <sup>9.5</sup> inches

1 54 Comp. Star = S D - 70 3943 7.0

Index left and below.

247.4 var. dis

I

10 35 16

260.9 13.5

245.3 15.3

260.6 28.8 +449

246.4

(44.58)

37 00

260.7 14.3

247.0 12.3

259.3 26.6 +467

Index right and above

335.9

39 20

351.0 15.1

336.5 13.5

350.0 28.6 +451

336.0

349.8

(44.48)

41 00

350.2 14.2

152 36

335.6 15.0

10 38 9

357.0 29.2 +446

+34

350.6

15 38 43

4472.6519

4472.5605

8.0914

Mean +4.53



July 1, 1898.

II

		335.5		
10	42 40	357.1	15.6	
		336.3	<u>14.3</u>	
		350.6	29.9	+4.41

		335.9		
44	16	350.3	14.4	(+4.41)
		335.5	<u>15.5</u>	
		357.0	29.9	+4.41

Index left and below,

		65.4		
46	28	80.5	15.1	
		66.8	<u>13.3</u>	
		80.1	28.4	+4.52

		65.8		
47	56	80.2	14.4	(+4.48)
		66.8	<u>15.0</u>	
10	45 20	81.0	29.4	+4.45
	+34			
15	45 54			
		4472.6568		
		4472.5605		
		0.0963		

Mean +4.434

July 1, 1898.

III

10	49	32	66.0		
			80.1	14.1	
			66.2	<u>13.8</u>	
			80.0	27.9	+4.56

51	32		66.3		
			79.8	13.5	
			65.8	<u>14.2</u>	
			<del>79.8</del>	27.7	+4.58
			80.0		

(+4.57)

Index right and above.

			155.5		
54	56		170.9	15.4	
			156.0	<u>15.0</u>	
			171.0	30.4	+4.37

156.0

55	44		170.7	14.7	
211	44		155.5	<u>15.2</u>	
10	52	56			
		+34	170.7	29.9	+4.41
15	53	30			

44726622  
44725605  
0.1017

Mean +4.48

July 1, 1898.

IV

10	57	08	156.9		
			170.9	140	
			155.0	<u>16.3</u>	
			171.3	30.3	+4.38

11	00	48	156.3		
			171.0	147	(+4.40)
			156.5	<u>14.9</u>	
			171.4	29.6	+4.43

Index left and below.

			248.2		
04	08		261.8 <sup>5</sup>	13.3	
			248.0	<u>13.2</u>	
			261.2	26.5	4.43
					+4.67

			247.1		
05	48		261.0	13.9	(+4.67)
	7	52	247.4	<u>12.6</u>	
11	1	58	260.0	26.5	+4.67
		+34			
16	2	32			

4472.6685  
 4472.5605  
 0.1080

Mean +4.54



July 1, 1898.

V

		246.6		
11	08 16	261.6	15.0	
		246.9	<u>14.3</u>	
		261.2	29.3	+4.45

		247.0		(+4.52)
09	36	261.4	14.4	
		247.8	<u>13.2</u>	
		261.0	27.6	+4.59

Index right, and above

		336.0		
12	00	351.0	15.0	
		335.9	<u>14.8</u>	
		350.7	29.8	+4.42

336.0

13	16	351.2	15.2	(+4.40)
43	8	336.0	<u>18.1</u>	
11	10	47		
		+34	30.3	+4.38

16	11	21
		4472.6746
		4472.5605
		<u>0.1141</u>

Mean +4.46

July 1, 1895.

VII

		336.3		
11	14 48	350.8 <sup>5</sup>	14.2	
		336.1	14.9	
		351.0	29.1	+4.47

		336.5		(4.46)
16	40	351.1	14.6	
		336.3	14.6	
		350.9	29.2	+4.46

Index left and below.

		65.0		
18	28	80.0	15.0	
		65.6	14.4	
		80.0	29.4	+4.45

		66.2		
20	00	80.0	13.8	(+4.48)
69	56	66.0	14.6	
11	17 29	80.6	28.4	+4.52
	+34			
16	18 3			
		4472.6792		
		4472.5605		
		0.1187		

Mean +4.47

July 1, 1898

VII

11 22 12  
 67.0  
 79.7 12.7  
~~66.2~~ 13.0  
 79.0 25.7 +4.74

23 48  
 66.0  
 79.9 13.9 (+4.66)  
~~66.3~~ 13.6  
 79.9 27.5 +4.59

Index right and above.

156.5  
 25 44 170.1 13.6  
 156.4 14.6  
~~170.6~~ 28.2 +4.54  
 171.0

156.0

27 28 170.8 14.8 (+4.48)  
 11 19 12 155.7 14.8  
 24 48  
 +34  
 16 25 22 170.5 29.6 +4.43

4472.6848  
 4472.5605  
 0.1238

Mean +4.587

Comp. Star = S.D. - 7° 39' 40" (9.0) 14

11 30 Watch Correction = +34 sec (Watch is slow)



July 2, 1895. (Saturday)

30 Watch Correction = +38 sec. (Watch is slow)  
 ♀ Cygni. Phot. ♂. H. Obs.  
 28 48 +34.3 Full aperture.

14 48  
 6 00

Index right and above.

I

51.1, var. dis.  
 8 21 00 93.8 42.7  
 53.6  
 94.3  $\frac{40.7}{23.4} - 2.10$

53.3 40.2  
 22 56 93.85 (-2.12)  
 52.7  
~~94.0~~  $\frac{42.2}{22.2} - 2.13$   
 94.9

Index left and below

~~140.0~~ 46.2  
 25 48 188.2  
 140.6  
 188.1  $\frac{47.5}{95.7} - 1.76$

140.3 47.5  
 27 52 187.8 (-1.50)

17 36 141.2  
 8 24 ~~41.2~~ 187.0  $\frac{45.2}{93.3} - 1.53$   
 +38

13 25 19.5  
 2

$\checkmark = 4473.5 \checkmark 91 \checkmark$   
 $4473.603 \checkmark$   
 $-0.0443 \checkmark$

4473.5590  
 4472.4611  
 +1.0979

Mean. -1.96  $\checkmark$

July 2, 1898.

II

$\begin{array}{r} 139.5 \\ 8 \quad 31 \quad 20 \quad 188.2 \\ 140.3 \\ 188.9 \end{array}$ 
 $\begin{array}{r} 42.7 \\ \hline 97.3 \end{array}$ 
 $\begin{array}{r} 1.72 \end{array}$

$\begin{array}{r} 141.0 \\ 34 \quad 00 \quad 188.4 \\ 140.3 \\ 189.2 \end{array}$ 
 $\begin{array}{r} 47.4 \\ \hline 96.3 \end{array}$ 
 $\begin{array}{r} 1.75 \end{array}$ 
 $(1.74)$

Index right and above.

$\begin{array}{r} 232.0 \\ 37 \quad 16 \quad 276.7 \\ 232.3 \\ 275.9 \end{array}$ 
 $\begin{array}{r} 44.7 \\ \hline 11.3 \end{array}$ 
 $\begin{array}{r} 1.96 \end{array}$

$\begin{array}{r} 232.2 \\ 40 \quad 00 \quad 275.7 \\ 142 \quad 36 \quad 232.0 \\ 8 \quad 35 \quad 39 \quad 275.0 \\ 13 \quad 36 \quad 17 \quad 275.0 \end{array}$ 
 $\begin{array}{r} 43.5 \\ \hline 16.5 \end{array}$ 
 $\begin{array}{r} 2.01 \end{array}$ 
 $(1.95)$

$\begin{array}{r} 4473.5669 \\ 4473.6034 \\ - 0.0365 \\ \hline 4473.5669 \\ 4472.4611 \\ + 1.1058 \end{array}$ 
 $\begin{array}{r} \text{Mean } 1.86 \end{array}$

July 2, 1898.

III

8 44 56 231.6  
276.0  
231.6  
276.1

KK.4  
 $\frac{KK.5}{KK.9}$

1.94

46 56 232.7  
275.4  
230.7  
276.2

42.7  
 $\frac{45.5}{42.2}$

(1.95)  
1.96

Index left and below.

50 36 319.0  
7.0

42.0  
 $\frac{46.7}{96.7}$

1.79

52 12 318.4  
6.3

47.9  
(1.76)

---

8 194 40  
48 40  
+38

13 49 18

317.2  
318.7

7.4  
 $\frac{42.7}{96.6}$

1.74

KK73.5759  
KK73.603K  
-0.0275

4473.5759  
4472.4611  
+1.1148

Mean 1.86



July 2, 1898.

IV

8	55 00	319.3		
		7.2 <sup>3</sup>	480	
		320.4	46.1	
		6.2 <sup>5</sup>	94.1	1.81

		319.4		(1.77)
56	28	6.5	47.1	
		319.0	49.9	
		8.9	97.0	1.73

Index right and above.

		50.4		
9	00 56	97.1	46.7	
		50.8	44.2	
		95.0	90.9	1.59

		51.3		
	02 20	95.3	44.0	(1.90)
8	234 44	50.4	45.6	
	58 41			
	+38	96.0	89.6	1.92
13	59 19			

~~4473.502~~  
~~4473.6034~~  
 - 0.02066

4473.5028  
 4472.4611  
 + 1.1217

Mean 1.54<sup>v</sup>

July 2, 1895.

V

49.2  
~~95.9~~  
 9 05 56 96.2 47.0  
 50.7 45.3  
 96.0 92.3 1.55

52.0  
 06 48 96.1 44.1  
 51.2 44.9  
 96.1 89.0 1.94  
 (1.20)  
 (1.50)

Index left and below.

138.2  
~~189.1~~  
 10 20 188.8 50.6  
 139.7 49.5  
 189.2 100.1 1.65

138.1  
 11 40 188.8 50.7  
 34 44 140.9 48.0  
 9 8 41 188.9 98.7 1.69  
 38  
 14 9 19

4473.5898

4473.6034

-0.0136

4473.5898

4472.4611

+1.1287

Mean 1.745

July 2, 1895.

VI

			139.4		
9	15	20	188.7	49.3	
			137.5	53.1	
			190.6	102.4	1.60

			138.0		
18	08		190.9	52.9	(1.61)
			140.1	48.7	
			188.8	101.6	1.62

Index right and above.

			230.5		
20	40		276.0	45.5	
			230.8	48.2	
			279.0	93.7	1.52

			231.1		(1.75)
--	--	--	-------	--	--------

			22	48		279.1	48.0	
			76	56		229.7	48.7	
9	19	14 <sup>n</sup>				278.4	96.7	1.74
		+38						
14	19	52						

4473.5971
4473.6034
-0.0063

Mean 1.70<sup>r</sup>

4473.5971
4472.4611
+1.1360



July 2, 1895.

VII

231.8  
 9 30 24 277.5 45.7  
 230.9 46.4  
 277.3 92.1 1.56

231.1  
 32 36 278.2 47.1 (1.54)  
 230.0 47.0  
 277.0 94.1 1.51

Index left and below.

318.2  
 Clouds

37 08 6.9 48.7  
 319.1 48.9  
 8.0 97.6 1.72

317.3  
 40 00 9.0 51.7 (1.67)

140 8  
 9 35 2 318.0 49.9  
 +38 7.9 101.6 1.62  
 14 35 40

4473.6021  
 4473.6034  
 +0.0017

4473.6081  
 4472.4611  
 +1.1470

Mean 1.76

July 2, 1898

VIII

9 44 28 317.6  
 10.3 <sup>5</sup> 27.  
 317.0 52.5  
 9.5 105.2 1.53

46 00 317.4  
 9.7 <sup>4</sup> (1.54)  
 317.8 52.3  
 10.0 52.2  
 104.5 1.55

Index right and above.

48 00 49.0  
 98.1 49.1  
 48.6 49.4  
 98.0 98.5 1.69

49 28 49.2 (1.72)  
 97.49 48.7  
 27 56 49.3 47.1  
 9 46 59 96.4 95.8 1.76  
 38

14 47 37  
 4473.616K  
 KK73.6034  
 + 0.0130  
 4473.6164  
 4472.4611  
 + 1.1553

Mean 1.63

July 2, 1898.

IX

9 52 56 48.2  
 97.7 49.5  
 48.8 48.7  
 97.4<sup>5</sup>

55 00 49.7  
 100.0 50.3  
 50.4  
 clouds 46.6  
 97.0

Index left  
 Clouds thick Stars gone

Stopped by thick clouds



July 5, 1898. (Tuesday)

30 Watch correction = +40 sec. (Watch is slow)

Y Cygni.

Phot. T.

W. Obs.

20 48

+34.3

14 48

6 00

20 48

15 13

5 35

6 25

20 48

15 16

5 32

6 28

20 40

+33.4

15 19

5 21

6 39

Full aperture used.

July 5, 1898.

I

Index right and above

		233.5	40.3	
8	16	08	274.1	var. dis.
		233.0	41.0	
		274.0	81.3	-2.16

(-2.10)

		234.4	41.6	
18	56	276.0	44.0	
		232.0	85.6	-2.03
		276.0		

Index left and below

		319.1	47.6	
		7.	47.2	
21	44	6.7	94.8	-1.79
		318.2		
		5.4		

(-1.41)

		318.9	45.8	
		4.7	47.3	
23	00		93.1	-1.83
79	48	320.2		
8	19	57		
		+40		
13	20	37		
		7.5		
		4476.5860		
		4476.5997		
		-0.0437		

Mean -1.96

July 5, 1898.

II

8 25 16 319.0  
 7.3 48.3  
 320.5 45.0  
 5.5 93.3 -1.83

26 32 320.2 (-1.22)  
 5.3 45.1  
 318.9 48.8  
 7.7 93.9 -1.81

Index right and above.

51.2  
~~96.6~~  
 28 56 96.1 44.9  
 52.0 43.1  
 95.1 85.0 -1.97

52.0 (-1.94)  
 29 28 96.0 44.0  
 30 12 50.1 45.9  
 8 27 33 96.0 89.9 -1.92  
 +40  
 8 28 13

1/3  
 44765612  
 44765997  
 -0.0385

Mean 1.22



July 5, 1898.

III

		50.8		
8	33 16	95.0	44.2	
		52.3	<u>43.7</u>	
		96.0	87.9	-1.97

		51.0		
35	32	95.2	44.2	(-1.93)
		<u>48.2</u>	<u>46.8</u>	
		96.0	91.0	-1.89

Index left and below.

		138.7		
37	16	188.3	49.6	
		140.8 <sup>0</sup>	<u>47.5</u>	
		187.5	97.1	-1.73

		138.7		
	39 32	188.1	49.4	(-1.72)
	25 36	138.5	<u>48.5</u>	
8	36 24	187.0	97.9	-1.71
	+40			
13	37 4			

4476.6090  
 4476.56745  
 4476.5997  
 - 0.03232

Mean -1.72

July 5, 1898

IV

8 41 32 141.5  
 187.2 45.7  
 138.6 52.1  
 190.7 97.8 1.71

43 56 139.3  
 187.9 48.6 -1.73  
 140.4 47.6  
 188.0 96.2 1.75

Index right and above

231.6  
 46 32 276.9 45.3  
 231.8 44.4  
 276.2 89.7 1.92

231.3

48 28 278.4 47.1  
 8 20 28 230.7 46.5  
 45 4 277.2 93.6 1.82  
 13 45 47

4476.6182  
 4476.5785  
 4476.5997  
 -0.0262

Mean -1.20

July 5, 1895

		231.5		
8	53 12	275.0	46.2	
		231.6	<u>44.4</u>	
		276.0	90.6	1.90

~~V~~ ~~VI~~

		231.3		
55	00	276.3	45.0	-1.86
		230.0	<u>45.0</u>	
		275.0	93.0	1.83

Index left and below

		318.2		
56	52	9.7	51.8 <sup>5</sup>	
		319.8	<u>46.7</u>	
		6.5	98.2	1.70

		320.4		
59	00	7.4	47.0	-1.71
8	24	4	<u>50.3</u>	
	56	1	318.7	
		<u>44.0</u>		
13	56	41	9.0	97.3
				1.72

4476.5810  
 4476.5997  
 -0.0187

Mean -1.72



July 5, 1898

VII

9 03 56 319.7  
           8.9 49.2  
           319.8 45.6  
           8.4 97.8 1.71

05 40 319.7  
           7.3 47.6 (-1.72)  
           319.0 49.3  
           8.3 96.9 1.73

Index right and above

07 40 50.5  
           96.0 45.5  
           50.4 46.6  
           97.0 92.1 1.56

50.7  
~~50.4~~

09 00 96.3 45.6 (-1.74)  
 26 16 49.25 48.2  
 9 6 34 98.0 93.8 1.51  
       +40  
 14 7 14

4476.5883  
 4476.5997  
 -0.0114

Mean -1.74

July 5, 1898.

VII

9	19	24	49.2		
			97.0	47.8	
			49.5	48.6	
			98.1	96.4	1.75

21	00		50.4		
			97.8	47.4	
			48.2	49.1	
			97.0 <sup>3</sup>	96.5	1.74

(-1.74)

Index left and below

			137.5		
23	08		190.7	53.2	
			138.3	51.7	
			190.0	104.9	1.54

~~139.1~~  
138.5

(-1.56)

24	48		159.8	51.3	
8	20				
9	22	5	137.5	52.2	
		440	159.6	103.5	1.57

Mean -1.62

$$\begin{array}{r} 4476.5992 \\ 4476.5997 \\ \hline -0.0005 \end{array}$$

July 5, 1898.

VIII

9 27 28  

$$\begin{array}{r} 137.4 \\ 158.8 \\ 137.6 \\ 190.5 \end{array} \quad \begin{array}{r} 57.4 \\ 52.9 \\ 104.3 \end{array} \quad 1.55$$

29 08  

$$\begin{array}{r} 137.9 \\ 189.8 \\ 137.5 \\ 190.0 \\ 189.8 \end{array} \quad \begin{array}{r} 51.9 \\ 52.3 \\ 104.2 \end{array} \quad 1.55$$

(-1.55)

Index right and above

230.1 48.9  
 31 44 279.0 48.9  

$$\begin{array}{r} 229.8 \\ 278.7 \end{array} \quad 97.8 \quad 1.71$$

231.0 46.5

(-6.72)

33 08 278.5 49.4  
 9 121 28 229.8 95.9 1.73  
 30 22  
 140  
 14 31 2 279.2

Mean -1.6 K

4476.6049  
 4476.5997  
 + 0.0052



July 5, 1898

IX

9	38	25	231.4		
			277.75	46.1	
			229.5	48.9	
			278.4	95.0	1.75

40	40	230.3			
		279.4	49.1		
		230.4	49.3		
		279.7	98.4	1.70	

(-1.75)

Index left and below

		<del>317.9</del>			
		318.2			
43	20	9.5	51.3		
		318.7	50.2		
		8.49	101.5	1.62	

317.9

44	48	8.0	50.1		
7	16				
9	41	49	317.0	52.4	
		40	9.4	102.5	1.60
14	42	29			

4476.6129  
 4476.5997  
 + 0.0132

(-1.61)

Mean -1.62

July 5, 1895.

X

9 47 08 315.6  
 9.0 53.4  
 317.0 51.4  
 8.4 104.8 154

48 44 317.3 (-1.55)  
 9.2 51.9  
 317.4 52.2  
~~10.0~~ 104.1 156  
 9.6

Index right and above.

50 56 49.8  
 98.1 48.3  
~~48.0~~ 58.1  
 98.1 106.4 150

52 36 49.0 (-1.60)  
 199 24 98.0 49.0  
 9 49 51 48.7 48.7  
~~+40~~ 97.4 97.7 171  
 14 50 31

4476.6184  
 4476.5997  
 + 0.0187

Mean -1.52

July. 5, 1898.

XI

9 55 00      48.0  
              97.7      49.7  
              47.4      50.3  
              97.7      100.0      166

57 36      47.9  
              99.2      51.3  
              48.0      49.7  
              97.7      101.0      163      (-1.6K)

Index left and below

137.3  
 199.  
 10 00 00      189.5      52.5  
              137.0      52.5  
              189.5      105.3      153

137.8  
 102 32      190.3      52.5  
 235 8      137.0      52.7  
 9 58 47      189.7      105.2      153      (-1.53)  
              140  
 14 59 27  
 4476.6246  
 4476.5997  
 + 0.0249  
 Mean -1.52



July 5, 1898.

XII

10 07 36  
 137.8  
 190.1 52.3  
 136.6 53.3  
 189.9 105.6 152

09 20  
 137.2  
 189.5 52.3  
 137.9 53.1  
 191.0 105.4 153

-152

Index right and above

11 56  
 228.0  
 280.9<sup>6</sup> 52.6  
 229.0 51.7  
 228.5 104.3 155  
 280.2

229.0

(-154)

~~278.7~~

279.1 50.1

~~229.0~~ 52.2

228.1 102.3 160

280.3

Mean -1.55

13 148  
 2 480  
 10 10 40  
 +40  
 15 11 20

4476.6328  
 4476.5997  
 +0.0331

July 5, 1895.

XIII

		229.0		
		<u>28</u>		
10	22	279.7	50.7	
		227.0	<u>52.3</u>	
		279.3	103.0	1.58

		228.4		
24	16	250.2	51.8	(-1.52)
		229.4	<u>50.8</u>	
		250.2	102.6	1.59

Index left and below

		317.2		
27	05	10.0	52.8	
		316.4	<u>53.8</u>	
		10.2	106.6	1.50

		316.5		
28	48	8.9	52.1	(-1.52)
22	28	32		
10	25	423	316.4	529
		+40		
15	26	22	9.3	105.0
		23		1.54

10	22	32	✓
	25	38	✓
		+40	✓
15	26	18	✓

Mean -1.55

4476.6433  
4476.5997  
+ 0.0436

July 5, 1895.

XIV

10	35	48	316.7	10.6	53.9	
			317.6	<u>50.6</u>		
			8.2	104.5	1.55	

37	20		317.5			
			7.0	49.5		
			317.0	<u>53.3</u>		
			10.3	102.8	1.59	

(-1.57)

Index right and above.

			<del>47.4</del>			
			48.0			
39	36		98.0	50.0		
			48.5	<u>50.0</u>		
			98.5	100.0	1.66	

			49.7			
			97.4	47.9		
10	153	44	<del>47.4</del>	<u>48.6</u>		
	38	26				
		440	48.1	96.5	1.74	
15	39	6	96.7			

(-1.70)

Mean -1.64

4476.6522  
 4476.5997  
 + 0.0525



July 5, 1895.

XV

		49.2		
10	44 48	96.1	46.9	
		49.8	47.5	
		97.3	94.4	1.50

		50.0		
46	44	96.8	46.8	-1.79
		48.5	48.2	
		97.0	95.0	1.75

Index left and below

		138.3		
49	20	189.1	50.5	
		137.4	52.4	
		189.8	103.2	1.58

		51 20	138.6		
		52 00	190.9	52.3	
		192 52	140.5	48.5	
10	48	13			
		+40			
15	48	53	189.0	100.8	1.64

(-1.61)

4476.6589  
 4476.5997  
 +0.0592

Mean -1.70

July 5, 1895.

XVI

		139.0		
10	54 00	189.0	50.0	
		138.8	49.9	
		188.7	99.9	1.66

		137.8		
55	56	189.2	51.4	
		140.7	47.5	
		188.2	98.9	1.68

(-1.67)

Index right and above

		229.7		
58	00	277.6	47.9	
		230.0	47.4	
		277.4	95.3	1.77

230.0<sup>3</sup>

		59 32	276.9	46.6	
		27 28	230.6	47.8	
10	56 52	+4.0	278.4	94.4	1.80
15	57 32				

(-1.74)

Mean -1.72

4476.6650  
 4476.5997  
 + 0.0653

July 5, 1898.

XVII

		230.6	46.4	
11	01	52	277.0	<u>49.0</u>
			229.4	95.4 -1.77
			278.4	

		230.6	46.4	(-1.80) ✓
03	52	277.0	<u>46.4</u>	-
		231.7	92.8	-1.84
		278.4		

Index left and below.\*

		319.1	48.3	
06	16	7.4	<u>48.2</u>	
		318.0	96.5	-1.74
		6.2		

		319.5	46.2	(-1.78) ✓
	07	36	6.0	<u>47.0</u>
	19	36	319.3	93.2 -1.83
11	4	54	6.3	
		140		
16	5	34		

Mean -1.79 ✓

4476.6705
4476.5997
+0.0708



July 5, 1898.

XVII

11 15 00  

$$\begin{array}{r} 319.3 \\ +0.0 \\ \hline 318.6 \end{array}$$

$$\begin{array}{r} 9.5 \\ 48.7 \\ \hline 98.9 \end{array}$$

$$\begin{array}{r} 50.2 \\ 1.68 \end{array}$$

16 40  

$$\begin{array}{r} 319.0 \\ 6.4 \\ \hline 318.05 \end{array}$$

$$\begin{array}{r} 47.4 \\ 49.5 \\ \hline 96.9 \end{array}$$

$$\begin{array}{r} 1.73 \end{array}$$

(-1.70)

Index right and above

19 20  

$$\begin{array}{r} 51.2 \\ 97.0 \\ \hline 96.5 \end{array}$$

$$\begin{array}{r} 45.3 \\ 46.4 \\ \hline 91.7 \end{array}$$

$$\begin{array}{r} 1.87 \end{array}$$

20 20  

$$\begin{array}{r} 50.0 \\ 95.8 \\ \hline 51.2 \end{array}$$

$$\begin{array}{r} 45.8 \\ 45.3 \\ \hline 91.1 \end{array}$$

$$\begin{array}{r} 1.88 \end{array}$$

(-1.22)

11 17 50  

$$\begin{array}{r} 44766796 \\ 44765997 \\ +0.0799 \end{array}$$

Mean -1.79

July 5, 1898.

XIX

~~49.7~~  
 50.0  
 11 22 00 95.7 45.7  
 51.4 ~~44.0~~  
 95.4 89.7 1.92

51.0  
 23 36 95.6 44.6 -1.91  
 49.7 46.1  
 95.8 90.7 1.90

Index left and below.

140.7  
~~159.~~  
 25 44 188.8 48.1  
 138.9 49.1  
~~159.~~  
 188.0 97.2 1.73  
 188.2

139.0  
 28 28 189.6 50.6  
~~28~~ 138.8 50.2  
 11 19 48 ✓ 189.0 100.8 164  
 24 57 ✓  
 +40 ✓  
 16 25 37

(-1.62)

Mean -1.20

4476.6844  
 +476.5997  
 +0.0847

July 5, 1898.

XX

11	31	00	141.0		
			188.4	47.4	
			139.1	49.6	
			188.7	97.0	1.73

32	36		139.8		
			187.8	48.0	
			139.5	47.1	
			<del>188.3</del>	95.1	1.75
			186.6		

(-1.76)

Index right and above.

232.5

36	08		276.0	43.5	
			231.5	45.2	
			<del>277.0</del>	88.7	1.95
			276.7		

230.7

37	44		277.0	46.3	
14	28		233.6	42.8	
11	34	22	276.4	89.1	1.94
		+40			
16	35	2			

(-1.98)

4476.6910  
 4476.5997  
 + 0.0913

-1.25



July 5, 1895

XXI

	233.0		
	<del>276.0</del>		
11 40 00	275.7	42.7	
	231.6	<u>44.6</u>	
	276.2	87.3	1.99

	233.0		
41 08	277.4	44.4	
	232.4	<u>43.9</u>	
	276.3	88.3	1.96

(-1.92)

Index left and below.

	321.0		
43 00	7.1	46.1	
	321.2	<u>46.1</u>	
	7.5	92.2	1.86

	320.4		
	319.0		

(-1.46)

	46 00		
	10 8		
11 42 32	✓	319.7	<u>45.3</u>
	+40	5.0	92.3
16 43 12	✓		1.85

4476.6966  
4476.5997  
+ 0.0969

-1.92

11 55 Hatch Correction = +40 sec (Hatch is slow.)

July 6, 1898. (Wednesday)

30 Watch Correction = +44 sec. (Watch is slow)

$\beta$  Lyrae.

Phot. H.

H. Ob.

18

46

+33.2

15

11

Telescope diaphragmed down to 9.5 inches.

3

35

8

25

Index right and below.

I

124.4

var. dis.

20.4

144.8

18.8

124.9

39.2 - 3.81

143.7

125.0

19.1 -

(-3.80)

05

28

144.1

20.4

124.3

39.5 - 3.79

144.7

Index left and above.

214.7

19.3

07

40

234.0

19.0

215.0

38.3 - 3.86

234.0

214.9

19.3

(-3.82)

09

16

234.2

20.4

25

44

214.2

39.7 - 3.79

6

26

234.6

+44

13

7

10

44.77.5466

44.72.638

+4.919

Mean - 3.81

July 6, 1898.

II

		214.0	20.7	
8	12	08	234.7	20.4
		214.2	41.1	-3.71
		234.6		

(-3.73)

		<del>215.</del>		
		214.7	19.6	
15	32	234.3	20.8	
		214.1	40.4	-3.75
		234.9		

Index right and below.

		304.3	20.3	
18	36	324.6	19.3	
		304.8	39.6	-3.79
		324.1		

(-3.78)

		305.0	19.5	
		324.5	20.3	
8	68	56	304.3	39.8
	17	14		-3.78
		+44		
13	17	58	324.6	

Mean -3.76

4477.5542  
 4472.628  
 + 4.926



July 6, 1898.

III

8 24 48  
 304.9 19.7  
 324.6 19.5  
 304.9 39.2 - 3.81  
 324.4

28 16  
 304.9 19.1 (-3.80)  
 324.0 20.5  
 304.5 39.6 - 3.79  
 325.0

Index left and above.

31 56  
 35.0 19.0  
 54.0 19.7  
 35.0 38.7 - -3.84  
 34.8  
 54.5

(-3.79)

35 12  
 120 12  
 8 30 3  
 +44  
 13 30 47  
 34.75 20.0  
 54.5 20.6  
 34.5 40.6 - 3.74  
 55.1

Mean - 3.80

4477.8631  
 4472.628  
 + 4.935

July 6, 1898.

Comp. Stars for R Leonis Minoris. Phot. T. H. Obs.

$$\begin{array}{r} 9 \quad 40 \quad +34.8 \\ 16 \quad 06 \\ \hline 6 \quad 26 \end{array}$$

Star 2 compared with m  
Index left and below

$$151.5 \leftarrow m \text{ dis}$$

$$\begin{array}{r} 9 \quad 21 \quad 174.4 \quad 22.9 \\ 152.0 \quad 19.3 \\ 171.3 \quad \hline 422 \end{array} \quad 3.65$$

(3.70)

$$\begin{array}{r} 152.0 \quad 21.0 \\ 173.0 \\ 152.2 \quad 19.5 \\ 171.7 \quad \hline 40.5 \end{array} \quad 3.74$$

Index right and above.

$$\begin{array}{r} 245.0 \quad 19.2 \\ 264.2 \\ 242.0 \quad 22.5 \\ 264.5 \quad \hline 41.7 \end{array} \quad 3.65$$

(3.95)

$$\begin{array}{r} 9 \quad 25 \quad 243.7 \quad 16.3 \\ 260.0 \\ 245.5 \quad 16.2 \\ 262.0 \quad \hline 32.5 \end{array} \quad 3.42$$

3.42

July 6, 1895.

5 Librae.

Phot. T.

H. Obs.

14 56 -8.9

16 46 Telescope diaphragmed down to 9.5 in

1 50

Index right and above

337.0<sub>2</sub> var. dis.

9 49 12 350.6 13.6

336.6 14.1

350.7 27.7 4.58

336.5

(4.56)

50 28 350.5 14.0

336.5 14.3

350.8 28.3 4.53

Index left and below

67.0

52 28 80.4 13.4

66.3 123.2

79.5 26.6 4.67

66.8

54 32 79.04 13.4

(4.66)

66.4 13.5

79.9 26.9 4.64

54 32  
 6 40  
 9 51 40  
 + 44  
 14 52 24  
 4477.6197  
 4476.2157  
 + 1.4010

Mean 4.61



July 6, 1895.

II

		66.8		
		<del>80.7</del>		
9	56	56	79.9	13.1
			<del>66.7</del>	<u>13.5</u>
			80.2	26.6
				4.67

		67.0		
58	00	80.0	13.0	(4.67)
		66.4	<u>13.6</u>	
		80.0	26.6	4.67

Index right and above.

		156.9		
10	00	48	171.0	14.1
			156.6	<u>15.2</u>
			171.8	29.3
				4.45

		156.7		
		<del>171.1</del>		(4.45)

	02	20	170.8	14.1	
	238	4	157.0	<u>14.3</u>	
10	00	31	171.3	28.4	45.2
15	00	44			
		15			
	4477.6251				
	4476.2187				
	+1.4064				

Mean -45.5

July 6, 1898.

III

	156.2		
10 07 32	171.0	14.8	
	156.3	14.5	
	170.8	29.3	445

	156.4		
08 48	171.0	14.6	(4.46)
	156.4	14.6	
	171.0	29.2	4.46

Index left and below.

	246.8		
10 44	260.7	13.9	
	247.0	13.8	
	260.8	27.7	4.58

	246.7		
12 28	260.3	13.6	(4.56)
10 39 32	246.2	14.5	
9 53	260.7	28.1	4.55
15 10 37			

44776323  
44762187  
+ 1.4136

Mean 451

July 6, 1898.

IV

		246.5		
10	14	32	260.3	13.8
			<del>247.3</del>	<u>13.6</u>
			246.6	274
			260.2	4.60

		246.7		(4.61)
16	12		260.3	13.6
			246.7	<u>13.6</u>
			260.3	272
				4.62

Index right and above.

		336.4		
22	16		350.0	13.6
			336.0	<u>14.2</u>
			350.2	27.8
				4.57

		336.0		
24	50		350.7	14.7
			336.4	<u>13.6</u>
10	19		27.5	
			+44	
15	20		11.5	
			350.0	28.3
				4.53

4477.6390  
 4476.2187  
 + 1.4203

Mean 4.58



July 6, 1895.

V

		335.9		
10	27.36	350.3	14.4	
		336.0	<u>14.0</u>	
		350.0	28.4	4.52

		336.1		
29	00	350.0	13.9	(4.52)
		336.0	<u>14.6</u>	
		350.6	28.5	4.52

Index left and below.

		66.4		
32	12	80.2	13.8	
		66.2	<u>13.9</u>	
		80.1	27.7	4.58

66.4<sup>5</sup>

		33	56	80.2 <sup>2</sup>	13.7	(4.60)
		122	44	66.4	<u>13.6</u>	
10		30	41	80.0	27.3	4.61
			44			
15		31	25			

4477.6468  
 4476.2187  
 +1.4281

Mean 4.66

Comp. Star = S.D. - 7° 3940 (9.0) 14.

July 6, 1898

Iapetus.

Phot.  $\frac{76}{8}$ 

H. Obs.

16 35 -20.0

17 55 Comp. Star used tonight is star  $\alpha$  of  
1 20 June 30, see page 57 of this bookTelescope diaphragmed down to 9.5 inches  
Iapetus precedes star  $\alpha$  10 sec. and is 2' of  
arc north of it.Iapetus precedes Saturn 34 sec. and is 1.2  
of arc north of it.

Index left

Comp. Star =  $-19^{\circ} 43' 68'' (8.5)$ ~~113.6~~  $\times$  dis~~11 03 164.5~~113.7  $\times$  dis.

11 05 165.8 52.1

114.0 50.0

164.0 102.1 +161

116.0

163.7 47.7

+164

114.0 51.6

165.6 99.3 +167

Index right

205.2

255.0 49.8

207.0 44.0

251.0 93.8 +181

July 6, 1895.

		206.9		
11	11	253.0	461	
11	8.7	206.4	464	(+1.53)
16	8.7	252.38	925	+1.55

Mean +1.74

Same again

		207.0		
11	13	253.0	460	
		207.3	45.7	
		253.0	91.7	+1.57

		207.3		
		252.9	45.6	(+1.58)
		207.5	45.6	
		253.1	91.2	+1.58

Index left

		293.2		
		346.3	53.1	
		294.4	49.9	
		344.3	103.0	+1.58

		293.9		
11	20	344.5	50.9	(+1.58)
11	16.5	293.1	52.7	
16	17.2	345.8	103.6	+1.57

Mean +1.73



July 6, 1898.

Telescope diaphragmed down to 9.5 in.  
 Star  $\alpha$  compared with star  $\gamma$  (see page 57)  
 Index right and above.

11	29	154.8	$\gamma$ dis.	Star $\alpha = -19^\circ + 368' (8.5)$
		172.5	177	" $\gamma = -19^\circ + 365' (5.0)$
		156.0	<u>160</u>	
		172.0	337	+4.15

155.1			
171.2	161		(+4.12)
154.2	<u>18.6</u>		
172.5	347	+4.09	

Index left and below.

246.9		
261.4	145	
247.0	<u>13.2</u>	
260.2	277	+4.58

247.6		(+4.61)
-------	--	---------

11	36	260.5	12.9	
11	325	246.0	<u>140</u>	
	+7			
16	332	260.0	269	+4.64

Mean +4.36

July ~~30~~<sup>6</sup>, 1895.

Same again

11	38	247.0		
		261.2	14.2	
		247.3	<u>13.2</u>	
		260.5	27.4	+ 4.60

		246.7		
		260.0	13.3	+ 4.58
		246.4	<u>14.6</u>	
		261.0	27.9	+ 4.56

Index right and below.

		336.3		
		352.6	16.3	
		336.5	<u>15.2</u>	
		351.7	31.5	+ 4.30

		336.8		
11	44	351.47	14.9	+ 4.28
11	41	335.6	<u>17.3</u>	
	41.7	352.9	32.2	+ 4.25

Mean + 4.43

11 50 Watch Correction = + 46 sec (Watch is slow)  
Comp. star  $\alpha$  is ftr. than  $\gamma$ .

Posted to here

July 7, 1895. (Thursday)

7 30 Watch Correction = -6 sec. (Watch is fast.)  
 If bygnis. Phot. E. H. Obs.

20 40 +33.4

15 05 Full aperture used.

5 35

6 25

Index right and above.

I

8 17 00 55.0 var. dis.  
 92.3 37.3  
 56.0 35.6  
 91.6 72.9 -2.41

19 28 55.9 (-2.42)  
 98.1 35.2  
 54.8 37.2  
 92.0 72.4 -2.43

Index left and below.

142.3  
 22 00 185.5 43.2  
 142.1 43.9  
 186.0 87.1 -1.99

143.1

24 00 186.9 43.8 (-1.96)  
 82 28 141.4 45.4  
 20 37 186.8 89.2 -1.94

13 20 31 186.8 89.2  
 4478.5860  
 4478.4541  
 +0.1019

Mean -2.19



July 7, 1898.

II

8 28 40 142.3 44.8  
 187.1 44.0  
 142.6 88.8 - 1.95  
 186.6

~~144.0~~  
~~113.4~~

(-1.96)

31 08 143.8 42.4  
 186.2 46.0  
 141.8 88.8 - 1.96  
 187.8 4

Index right and above.

~~233.9~~

234.2 40.8  
 33 24 275.0 38.0  
 235.0 78.8 - 2.23  
 273.0

235.2

38.8

(-2.20)

34 56 274.0 41.6  
 2 2 234.0 80.4 - 2.18  
 2 2 275.6  
 13 31 56

mean - 2.08

4478.5638  
 +477.4541  
 +0.1097

July 7, 1895

III

8	38	48	234.8	40.2	
			275.0	37.6	
			236.0	77.8	-2.26
			273.6		

40	40	236.0	37.4	(-2.26)
		273.4	40.0	
		235.0	77.4	-2.27
		275.0		

Index left and below.

43	36	323.4	4.0	40.6
		322.2	4.0	41.8
		4.0	82.4	-2.12

45	00	324.0	4.0	40.0	(-2.14)
42	1	322.9	4.1	41.2	
	-6	4.1	81.2	-2.16	

13	41	55.1
4478.5707		
4478.4841		
+0.1166		

Mean -2.20

July 7, 1898.

IV

8 49 00 322.3  
6.2 43.9  
324.0 40.3  
4.3 84.2 -2.07

50 40 323.1  
3.7 40.6 (2.11)  
324.2 41.0  
5.2 81.6 -2.15

Index left and below  
Index right and above  
54.7

53 12 94.7 40.0  
54.4 38.0  
92.4 78.0 -2.25

55.3

55 16 92.0 36.7 (-227)  
2 2 54.0 40.1  
8 52 2. 94.1 76.8 -229  
-6.

13 51 56.  
4478.5869  
4478.5430  
4478.4541  
+0.0889  
4478.5777  
4478.4541  
+0.1236

Mean -2.19



July 7, 1895.

V

9	00	00	54.7		
			94.0	39.3	
			55.2	<u>37.3</u>	
			92.5	76.6	-2.30

01	56		55.9		
			91.8	35.9	(-2.35)
			55.2 <sup>2</sup>	<u>37.5</u>	
			92.7	73.4	-2.40

Index left and below.

			141.0		
05	32		184.2	43.2	
			143.6	<u>40.7</u>	
			14.3		
			185.1	83.9	-2.08

			144.2		
08	56		184.9	40.7	(-2.14)
16	24		146.3	<u>38.7</u>	
9	4	-6	185.0	79.4	-2.21

18	8	0.
4478.	5861	
4478.	4541	
	+0.1320	

Mean -2.24

July 7, 1895.

VII

~~144.0~~

145.0

~~185.3~~

9 15 08 184.8 39.8  
 143.1 42.1  
 185.2 81.9 -214

144.0

17 32 185.2 41.2 (-2.14)  
 144.8 40.4  
 185.2 81.6 -215

Index right and above.

236.0

20 12 273.0 37.0  
 235.3 39.4  
 274.7 76.4 -230

235.2

~~241.5~~

(-2.29)

22 32 274.2 39.0  
 9 75 24 235.3 38.0  
 12 51 -6. 273.3 77.0 -228

1K 1A. 4v.

4478.5964  
 4478.4841  
 +0.1423

Mean -2.22

July 7, 1898.

VII

$$\begin{array}{r}
 235.0 \\
 9 \quad 26 \quad 36 \quad 273.6 \\
 236.0 \\
 272.7 \\
 \hline
 38.6 \\
 36.7 \\
 \hline
 74.3 - 2.34 \\
 5
 \end{array}$$

$$\begin{array}{r}
 236.3 \\
 28 \quad 08 \quad 273.9 \\
 235.9 \\
 274.2 \\
 \hline
 37.6 \\
 38.3 \\
 \hline
 75.9 - 2.32
 \end{array}$$

(-2.3<sup>3</sup>~~X~~)

Index left and below.

$$\begin{array}{r}
 323.0 \\
 29 \quad 36 \quad 5.8' \\
 324.3 \\
 4.0 \\
 \hline
 42.1 \\
 39.7 \\
 \hline
 81.8 - 2.14
 \end{array}$$

325.1

38.8

(-2.16)

$$\begin{array}{r}
 31 \quad 56 \quad 3.9 \\
 116 \quad 16 \quad 323.0 \\
 9 \quad 29 \quad 4. \quad 4.3 \\
 -6. \quad -
 \end{array}$$

41.3

80.1 = 2.19

14 2A 5A

$$\begin{array}{r}
 4478.6085 \\
 + 478.6704 \\
 4478.6085 \\
 4478.4841 \\
 + 0.1494
 \end{array}$$

Mean - 2.2<sup>4</sup>~~X~~



July 7, 1898.

VIII

9 40 08 325.3  
4.5 39.2  
324.0 40.4  
4.4 79.6 - 2.21

41 12 324.6  
4.9 40.3 (2.16)  
323.3 42.2  
5.7<sup>5</sup> 82.5 - 2.12

Index right and above.

54.4  
44 20 93.0 38.6  
55.0 37.9  
92.9 76.5 - 2.30

55.9  
45 40 92.5 36.6 (2.32)  
11 20 93. 38.7  
9 42 50. 54.2 75.3 - 2.34  
-6.

18 42 44. 93.1  
4475.5852  
4475.4541  
+ 0.1311  
4475.6130  
4475.4541  
+ 0.1589

Mean - 2.24

July 7, 1895.

IX

53.0  
 9 48 00 92.0 39.0  
 55.8<sup>3</sup> 37.0  
 92.3 76.0 -2.32

56.0  
 49 36 93.7 37.7 (-2.34)  
 55.2 37.2  
 92.4 74.9 -2.35

Index left and below.

144.2

185.

52 48 184.7 40.5  
 143.0 41.4  
 184.4 81.9 -2.14

143.2

54 08 185.80 41.8 (-2.13)  
 20 32 144.8 40.9  
 9 51 2 185.7 82.7 -2.12  
 -6

14 51 2

4478.6187  
 4478.4541  
 +0.1646

Mean -2.24

July 7, 1898.

X

9	57	40	143.2 <sup>5</sup>	185.5	42.0	
			143.1		41.1	
			184.2		83.1	-2.10

59	08		143.7	185.0	41.3	(-2.12)
			143.9		40.9	
			184.8		82.2	-2.13

Index right and above

110	01	56	235.2	275.0	39.8	
			235.4		37.6	
			273.0		77.4	-2.27

			235.4			
03	48		274.1		38.7	(-2.27)
2	32		235.1		35.8	
10	0	36	273.9		77.5	-2.27
		-6				
15	0	32				

4478.6284  
4478.4541  
+0.1743

Mean -2.20



July 7, 1895.

XI

10 07 00 237.0  
 274.3 37.3  
 235.4 37.5  
 273.2 74.8 -235

10 12 235.8  
 274.3 38.5 (2.32)  
 238.2 37.9  
 273.1 76.4 -230

Index left and below.

323.3

5.1

12 36 4.7 41.4  
 324.0 39.0  
 3.0 80.4 -218

323.5

14 40 38 40.3 (-2.19)

44 24 324.3 39.4

10 11 7. 3.7 79.7 -220  
 -6.

15 11 1.

4478.6326

4478.4541

+0.1785

Mean -2.26

July 7, 1898

XII

10 16 00    323.2    41.5  
               4.7    40.7  
               323.0    82.2 - 2.13  
               3.7

18 00    323.7    40.6    (-2.12)  
               4.3    41.8  
               323.8    82.4 - 2.12  
               5.6

Index right and above

19 40    53.7    40.3  
               94.0    39.0  
               54.0    79.3 - 2.22  
               93.0

22 00    55.0    39.0    (-2.26)  
               94.0    37.2  
               75 40.    76.2 - 2.31  
               55.5  
 10 15 55.    92.7  
               -6.

15 10. 49.  
 4478.6381  
 4478.4841  
 +0.1540

Mean - 2.19

10 30 Hatch Correction - 6 sec (Hatch is fast.)

July 7, 1898

Comp. Stars for R Bootis

H. Obs.

14	39	+27.7
18	00	
3	21	

10 55 l 5 n

m 4.5 n

n 4.5, 0

u 5.5 u

Star t compared with h.  
Index left and above.

242.3 l d s.

11 15 264.5 22.5

243.5 19.6

263.4 42.1 +3.65

242.0

264.6<sup>3</sup> 22.3

243.5 20.5

264.0 42.8 +3.62

(+3.64)

Index right and below

332.4

356.0 23.6

332.9 23.6

356.5 47.2 +3.40



July 7, 1895.

		330.9		
11	33	356.8	259	(+3.36)
11	19	333.0	230	
16	18.9	356.0	48.9	+3.32

mean +3.50

Stars compared with h  
Index left, right and below

11	27	327.0	h dis	
		0.6	33.6	
		328.0	314	
		359.4	65.0	+2.68

		327.2		(+2.65)
		1.0	33.8	
		328.2	328	
		4.0	66.6	+2.62

Index left and above.

		58.2		
		58.0	29.5	
		59.2	29.6	
		58.8	59.4	+2.88

		59.2		(+2.91)
11	34	58.4	29.2	
11	30.5	60.0	28.8	
16	30.4	58.8	58.0	+2.94

mean +2.76

July 7, 1898.

Star  $\alpha$  compared with h.  
Index left and above54.4  $\frac{1}{2}$  h dis.

11	36	93.0	38.6	
		55.1	<u>36.7</u>	
		91.5	75.3	+234

54.5

92.5

38.0

54.9

36.6

91.5

74.6

+236

 $(+2.35)^{\circ}$ 

Index right and below

143.9

185.4

41.5

143.3

42.2

185.5

83.7

+2.09

143.7

 $(+2.12)^{\circ}$ 

11	55	183.0	39.3	
11	<u>48.8</u>			
	-1	141.0	<u>41.8</u>	
16	45.4	182.8	81.1	+216

mean +2.24

July 7, 1895.

Star p compared with h.  
Index left and above

233.6 (h dis.)

59 275.0 41.4

232.3 42.0

274.3 53.4 +2.10

234.1

274.8 40.7

232.2 41.7

273.9 52.4 +2.12

(+2.11)

Index right and below

320.2

7.0 46.8

320.2 46.7

6.9 93.5 +1.82

319.3

6.3 47.0

319.6 47.4

7.0 94.4 +1.80

(+1.81)

Mean +1.96



July 5, 1898. (Friday.)

8 00 Watch Correction = +8 sec. (Watch is slow)  
 Y bygni. Phot. C. H. Obs.

20 40 +33.4

15 15

5 25

6 35

Full Aperture used.

Index right and above

I

234.0 <sub>varies.</sub> 41.3

8 20 00 275.3 41.3

234.7 82.6 - 2.12

276.0

233.3

43.7

(-2.03)

22 00 277.0

45.4

232.0

89.1 - 1.94

277.4

Index left and below

318.4

52.8

25 32 11.2

48.0

320.0

100.8 - 1.64

8.0

320.7

46.7

(-1.70)

27 28

7.4

48.6

15 00

319.3

95.3 - 1.77

Mean - 1.56

8 23 45

7.9

13 23 53

4479.5882

4478.4868

+1.1014

Observing through more or less light cloud

July 5, 1895.

II

8	30	32	319.6	7.1	47.5	
			320.8		46.3	
			6.4		93.8	-1.51

31	56	321.0	7.0	46.0		
		319.3		49.7		
		9.0		95.7		
		+6.0				
		8.5				
						-1.76

Index right and above.

		50.3				
35	20	95.2	44.9			
		52.7	41.6			
		94.3	86.5			-2.01

		52.5				
37	36	96.0	43.5			
15	24	51.1	43.0			
33	51					
	+18	94.1	86.5			-2.01

4479.5653
4478.463941
+1.11142

Mean - 1.90

July 5, 1895.

III

8	39	48	<sup>5</sup> 51.9	95.0	431	
			52.2	<u>42.8</u>		
			95.0	85.9		-2.03

			52.4			
			Clouds			(-2.01)
41	16		95.0	426		
			51.4	<u>44.5</u>		
			<del>96.1</del>	57.1		-1.99
			95.9			

Index left and below.

			139.5			
44	08		189.8	50.3		
			139.7	<u>49.6</u>		
			189.3	99.9		-1.66

			140.4			
46	00		187.69	47.5		(-1.70)
8	171	12	140.0	<u>49.5</u>		
	42	48	189.5	97.0		-1.73
		+8				
13	42	56				
			4479.5714			
			4478.453841			
			+1.1175			
			3			

Mean -1.56



July 5, 1895.

IV

8	50	12	139.5	50.8	
			190.3	47.9	
			140.6	95.7	-1.69
			188.5		

51	36	140.2	49.1	(-1.70)
		189.3	49.3	
		139.9	95.4	-1.70
		189.2		

Index right and above.

53	32	233.3	44.7	
		278.0	45.9	
		231.3	90.6	-1.90
		277.2		

55	20	232.1	46.4	(-1.86)
8	52	278.5	47.7	
		230.3	94.1	-1.81
		278.0		

4479.5784  
 4478.458741  
 + 1.1248  
 3

Mean -1.75

July 5, 1895.

Clouds

V

232.1

9 05 28 278.5 46.4  
 232.0 45.7  
 277.7 92.1 -1.86

231.7

07 24 277.8 46.1 (-1.85)  
 231.4 47.0  
 278.74 93.1 -1.83

Index left and below

319.0

10 00 9.0 50.0  
~~320~~ 48.7  
 319.7 98.7 -1.69  
 8.4

320.0

(-1.69)

11 24 7.4 47.4  
 34 16 317.6 541.4  
 9 8 34 9.0 98.8 -1.69  
 + 8

14 8 42  
 4479.5794  
 4478.4589 41  
 + 1.1358  
 3

Mean -1.757

July 5, 1898.

VI

9 18 00  
319.7 50.3  
10.0 49.2  
319.8 99.5 - 1.67  
9.0

19 32  
319.7 48.9 (-1.66)  
8.6 50.9  
318.0 99.8 - 1.66  
8.9

Index right and above

21 48  
51.0 45.5  
94.2 47.6  
96.5 93.1 - 1.83  
50.4  
98.0

(-1.77)

23 48  
53 8  
9 40 47  
14 40 50  
4479.6717  
4478.4539  
+1.1578  
9 20 47  
14 20 55  
4479.5978  
4478.4539 41  
+1.1439  
7

Mean - 1.72



July 8, 1898.

VII

9 31 28  $\begin{array}{r} 49.4 \\ 98.0 \\ 50.0 \\ 98.0 \end{array}$   $\begin{array}{r} 48.6 \\ 48.0 \\ 96.6 \end{array}$  -1.74

32 40  $\begin{array}{r} 49.0 \\ 97.5 \\ 50.2 \\ 97.8 \end{array}$   $\begin{array}{r} 48.5 \\ 47.6 \\ 96.1 \end{array}$  (-1.74) -1.75

Index left and below.

$\begin{array}{r} 137.4 \\ 140.0 \\ 35 16 \end{array}$   $\begin{array}{r} 189.5 \\ 139.5 \\ 190.9 \end{array}$   $\begin{array}{r} 52.4 \\ 57.4 \\ 103.8 \end{array}$  -1.56

$\begin{array}{r} 139.2 \\ 37 12 \\ 16 36 \\ 9 34 \\ 9 \\ 14 34 17 \end{array}$   $\begin{array}{r} 192.0 \\ 139.4 \\ 190.9 \end{array}$   $\begin{array}{r} 52.8 \\ 57.5 \\ 104.3 \end{array}$  (-1.56) -1.55

$\begin{array}{r} 4479.6071 \\ 4478.4839 \\ +1.1532 \\ 0 \end{array}$

Mean -1.65

July 5, 1898.

VIII

9 38 56 138.1  
 190.3 52.2  
 140.6 50.0  
 190.6 102.2 -1.60

40 56 138.7  
 190.2 51.5 (-1.56)  
 137.5 54.1  
 191.6 105.6 -1.52

Index right and above

229.4  
 43 40 280.0 50.3  
 230.4 49.6  
 280.0 99.9 -1.66

230.9  
 46 0.8 280.0 49.1 (-1.68)  
 9 40 230.3 49.1  
 9 42 25 +8 279.4 98.2 -1.70  
 14 42 33

4479.6131  
 4475.453941  
 +1.1592  
 0

Mean -1.62

July 5, 1895.

IX

		230.4	
9	49 00	280.2	49.8
		231.1	45.4
		279.5	98.2 - 1.70

		230.1	
51	36	279.4	49.3 (-1.70)
		230.6	49.4
		280.0	98.7 - 1.69

Index left and below

		318.	
		317.5	
54	32	11.0	53.2
		315.2	55.5
		11.0	109.0 - 1.44

		319.0	
56	36	10.3	51.3 (-1.50)
		319.0	52.3
9	52	11.3	103.6 - 1.57

14	53	4
		4479.6202
		4478.4539 41
		+1.1663

Mean - 1.60



July 5, 1895.

X

~~319.0~~~~10.0~~~~10 02 48~~~~9.7~~~~Clouds~~~~Stars gone~~~~318.5~~

10 05 24

8.7

Stars faint

317.5

11.0

317.2

Clouds thick

10.2

11 00

9.7

318.3

10.0

Stars gone

Index right and above.

July 5, 1895.  
Index right and above

X

10 30 00

~~51.0~~

~~99.1~~

~~49.4~~

~~98.9~~

~~50.0~~

~~51.1~~

~~98.9~~

~~50.4~~

~~99.5~~

Reflect

32 30

Index left and below.  
Clouds thick

X

10 49 12

139.5

191.0

51.5

139.3

50.1

189.4

101.6

-1.62

139.3

51 08

190.4

51.1

-1.61

138.0

51.2

189.2

102.3

-1.60

Index right and above

232.3

53 04

278.0

45.7

231.7

46.7

278.4

92.4

-1.545

July 8, 1895

230.7

~~250.0~~

-1.78

10 55 00

279.6

48.9

10 52 24

230.7

48.6

15 52 14

279.3

97.5

-1.72 mean -1.70

4472.6612

4475.4839 41

+1.2073

Stopped by clouds. Much troubled  
throughout the evening with clouds  
especially in last groups.



July 9, 1898. (Saturday)

30 Hatch Correction = +10 sec. (Hatch is slow)

$\beta$  Lyrae.

Phot. H.

H. Obs.

18 46

+33.2

15 07

Telescope diaphragmed down to 9.5 in.

3 39

8 21

Index left and above

I.

4.4

24.0

58 20 28.4

22.8

4.4

46.8 - 3.42

27.2

4.4

23.1

(3.42)

8 00 48 27.5

23.8

4.2

46.9 - 3.41

28.0

Index right and below

95.0

22.2

03 32 117.2

21.6

95.3

43.81 - 3.57

116.9

94.5

22.4

(-3.54)

0.6 04 116.9

22.7

8 44 94.2

45.1 - 3.50

8. 2 11 116.9

13 2 21

4480.5434

4472.625

+ 7.915

Mean -3.48

July 9, 1898.

II

		95.0	
		94.7	21.8
8	09 20	116.5	<u>22.7</u>
		94.4	44.5 - 3.53
		117.1	

		94.2	22.9	(-3.52)
11	00	117.1	<u>22.0</u>	
		95.0	44.9 - 3.51	
		94.8		
		116.8		

Index left and above.

		184.4	22.9
17	52	207.3	<u>22.9</u>
		184.3	45.8 - 3.47
		207.2	

		184.1	23.2	(-3.48)
		20.32 207.3	<u>22.4</u>	
		58 44 184.6	45.6 - 3.48	
8	14	+46		
13	14	51 207.0		

4480.5520  
4472.628  
+ 7.924

Mean - 3.50

July 9, 1895.

III

8 22 20 184.3 22.8  
 207.1 22.7  
 184.4 45.5 - 3.48  
 207.2'

24 32 184.2 22.8 (3.47)  
 207.0 23.1  
 183.9 45.9 - 3.47  
 207.0

Index right and below.

25 20 274.7 22.1  
 296.8 22.3  
 274.4 44.4 - 3.54  
 296.7

274.1 23.3 (-3.54)  
 297.4 21.0  
 274.8 43.3 - 3.54

13 26 32 295.5

4480.8601  
 4472.628  
 +7.932

Mean - 3.50



July 9, 1898.

Comp. Stars for S Virginis

Phot. T. H. Obs.

13	27	-8.0
16	17	
2	50	

Star  $\alpha$  compared with  $\alpha$   
Index above.

9 19 ~~117.6~~  
~~211.4~~  $\alpha$  dis.  
~~116.8~~  
~~211.0~~

~~115.0~~~~213.0~~~~119.2~~~~209.0~~

Reject

Index below

212.8  $\alpha$  dis.

296.7 83.9

209.8 84.4

297.2 171.3 - 0.16

210.3

9 27 299.7 89.4

212.0 84.7

296.7 174.1 - 0.14

(-0.14)

July 9, 1898.

Stars compared with  
Index above.

299.5	28.0	85.6	
25.1			
298.0		91.8	
29.8		177.4	- 0.05

Clouds

297.7			(-0.05)
26.3		88.6	
301.0		88.8	
29.8		177.4	- 0.05

Mean - 0.10

Star  $\beta$  compared with  $\alpha$   
Index left

300.0	28.0	88.0	
47			
302.0		86.0	
28.0		174.0	+ 0.11

301.0			
26.5		85.5	(+0.12)
299.4		88.0	
27.4		173.5	+ 0.12

July 9, 1898

Index right.

33.5		
113.1	79.6	
35.9	<u>77.9</u>	
113.0	156.7	+0.44

31.0

9	54114.0	530	(+0.39)
	35.50	<u>79.0</u>	
	114.0	162.0	+0.34

Mean +0.26

Troubled in previous measurements on  
comp. stars by clouds.



July 11, 1898. (Monday)

30 Hatch Correction = +13 sec. (Hatch is slow.)

$\beta$  Lyrae.

Phot. H<sub>2</sub>

W. Obs.

18 46

+33.2

15 26

Telescope diaphragmed down to 9.5 in.

3 20

8 40

18 46

+33.2

15 30

3 16

8 44

I

5 02 Stars gone  
Index below.

94.8 <sub>var. dis.</sub>

20.1

8 09 52

114.9

19.1

clouds thick

39.2 -3.81

96.1

115.2

~~96.3~~

(-3.80)

~~24 32 115.2~~

95.2

20.7

116.0

18.7

28 40

115.9

39.4 -3.80

96.2

114.9

July 11, 1898

Index above and left.

		185.2	19.9	
8	35 00	205.1	<u>20.8</u>	
		185.5	40.7	-3.73
		206.3		

		185.5	20.7	(-3.72)
8	37 20	206.2	<u>20.1</u>	

8	110 54.2	185.6	40.8	-3.72
	27 43			
	+13			
	56	205.7		

13 27  
4482.5610  
4472.628  
+9.933

Mean -3.76

		185.7	20.3	
8	46 24	206.0	<u>20.3</u>	
		186.0	40.6	-3.74
		206.3		

II

		186.0	19.7	(-3.76)
50	36	205.7	<u>20.0</u>	
		186.0	39.7	-3.79
		206.0		

Index below and right

		276.3	19.4	
54	48	295.7	<u>19.5</u>	
		276.0	38.9	-3.83
		295.5		

July 11, 1898.

		276.1	19.0	(-3.54)
8	57 36	295.1	19.6	
8	9 24	276.0	38.6	-3.55
	52 21	295.6		
	+13			
13	52 34			
	4482.5752			
	4472.628			
	+9.950			
				Mean - 3.50

		275.9	19.9	
9	08 36	295.8	19.3	
		276.2	39.2	-3.51
		295.5		

III

		276.2	18.9	(-3.56)
10	48	295.1	18.6	
		276.4	37.5	-3.91
		295.0		

Index left and above.

		5.1	20.4	
14	00	25.5	19.5	
		5.6	39.9	-3.77
		25.1		

		5.9	19.6	(-3.80)
16	00	25.5	19.5	
9	9 24	5.8	39.1	-3.82
9	12 21	25.3		
	+13			
14	12 34			
	4482.5921			
	4472.628			
	+9.964			
				Mean - 3.83

Troubled throughout all the settings on  $\beta$  Lyrae  
by clouds. Observations at times very difficult.



July 11, 1898.

Y Cygni.

Phot. C.

H. Obs.

20

40

+33.4

1700

3

40

8

20

9 40 Impossible to get Y Cygni or to do any  
thing farther. Sky all thick

July 14, 1898. (Thursday)

30 Hatch Correction = +29 sec. (Hatch is slow.)

$\beta$  Lyrae.

Phot. H.

H. Obs.

18 46

+33.2

15 26

Telescope diaphragmed down to 9.5 inches

3 20

8 40

Comp. Star = DM +33°32'24" (8.5)

Index right and below.

274.2

24.6

~~295.0~~  $\beta$  dis

27.0

297.8

51.6 - 3.20

272.7

299.7

(-3.21)

272.4

26.9

54 28 299.3

24.3

273.7

51.2 - 3.22

298.0

Index left and above

2.6

25.8

56 36 28.4

27.2

1.7

53.0 - 3.14

28.9

1.6

27.1

(-3.12)

59 48 28.7

4485.5389

27.0

22 4

4472.6281

54.1 - 3.10

7 55 31

+12.911

+29

12 56 00 28.4

Mean - 3.16

July 14, 1898.

II

5	02	36	1.8	26.6	
			28.4		
			2.0	<u>27.2</u>	
			<del>29.7</del>	53.8 - 3.11	

			1.8	27.7	(-3.08)
06	28		29.5	<u>27.5</u>	
			1.8	55.2 - 3.05	
			29.3		

Index right and below.

			92.3	25.7	
11	36		118.40	<u>27.5</u>	
			91.7	53.2 - 3.13	
			119.2		

			93.2	25.4	(-3.21)
15	00		118.6	<u>24.1</u>	
5	35	40	94.1	49.5 - 3.29	
	8	55			
		+29	117.9		
13	9	24	118.2		

4485.8482  
4472.628  
+12.920

Mean -3.14



July 14, 1898.

III

8	18	00	91.7	27.9	
			119.6	<u>24.3</u>	
			93.7	52.2	-3.17
			118.0		

			91.4	28.0	(-3.12)
20	20		119.4	<u>26.7</u>	
			92.0	54.7	-3.07
			118.7		

Index left and above.

			182.0	28.3	
23	08		210.3	<u>26.8</u>	
			182.2	55.1	-3.05
			209.0		

			<del>183.0</del>		
			182.6	26.4	(-3.08)

26	36		209.0	<u>27.2</u>	
8	22	4	182.4	53.6	-3.11
5	22	30	209.6		

Mean -3.10

4485.5573
4472.628
<u>12.929</u>

July 14, 1898.

Comp. Stars for S Virginis. Phot. T.

H. Obs.

13	27	-8.0
16	27	
3	00	

Star  $\gamma$  compared with  $\alpha$   
Index above.

	28.0	89.5
	<del>+21.4</del>	<del>87.2</del>
8	57	117.5
	30.0	176.7 + 0.06
	117.2	

(+0.04)

	32.5	87.2
	119.7	91.4
	28.0	178.6 + 0.03
	119.4	

Index below.

	115.0	96.0
	211.0	94.2
	116.8	190.2
	211.0	169.8 - 0.19

116.2

210.7

114.1

115.0

213.0

94.5

98.0

192.5

167.5 - 0.24

(-0.22)

Mean - 0.09

July 14, 1898.

Star  $\beta$  compared with  $\alpha$   
Index right.

$$\begin{array}{r}
 210.0 \\
 14 \quad 293.7 \\
 203.3 \\
 293.0
 \end{array}
 \begin{array}{r}
 \alpha \text{ dis.} \quad 83.7 \\
 \hline
 79.7 \\
 163.4 + 0.32
 \end{array}$$

$$\begin{array}{r}
 214.0 \\
 292.2 \\
 213.7 \\
 294.8
 \end{array}
 \begin{array}{r}
 78.2 \\
 \hline
 81.1 \\
 159.3 + 0.39
 \end{array}
 \quad (+0.36)$$

Index left.

$$\begin{array}{r}
 300.4 \\
 26.0 \\
 300.7 \\
 23.3
 \end{array}
 \begin{array}{r}
 85.6 \\
 \hline
 82.6 \\
 168.2 + 0.22
 \end{array}$$

$$\begin{array}{r}
 9 \quad 25 \quad 24.7 \\
 9 \quad 195 \quad 300.4 \\
 \quad + .5 \\
 14 \quad 20 \quad 26.4
 \end{array}
 \begin{array}{r}
 83.7 \\
 \hline
 86.0 \\
 169.7 + 0.20
 \end{array}
 \quad (+0.21)$$

Mean +0.28



July 14, 1898.

Comp. Stars for  $\rho$  Bootis Phot. T. H. Obs.

14	39	+27.7
17	25	
2	46	

Star s. compared with h.  
Index left and above

10	24	57.5	h. dis.	
		58.0		305
		59.0		28.1
		57.1		586
				2.91

		60.3		
		57.0	267	
		58.7	31.0	(2.93)
		60.0	57.7	2.95
		59.7		

Index right and below.

		146.0		
		181.5	35.5	
		146.3	34.9	
		181.2	70.4	249

		146.3		
10	30	180.2	33.9	
10	27	146.2	35.8	(2.50)
	+5			
15	27.5	182.0	69.7	2.52

Mean 2.71

July 14, 1895.

Star <sup>u</sup> compared with h.  
Index right

10	34	152.2 <sub>h dis</sub>		
		175.2	23.0	
		153.0	<u>23.6</u>	
		176.6	46.6	34.3

		151.9		
		176.2	24.3	(3.36)
		151.0	<u>25.1</u>	
		176.1	49.4	3.30

Index left

		243.8		
		<del>263.4</del>		
		264.0	20.2	
		242.7	<u>20.8</u>	
		263.5	41.0	3.71

		244.0		
10	39	264.4	20.4	(3.74)
10	36.5	243.9	<u>19.8</u>	
	+5			
15	37.0	263.7	40.2	3.76

Mean 3.55

July 14, 1898.

Star  $\epsilon$  compared with h  
Index left and above.

243.1 hdis

10	44	263.1	20.0	
		242.3	<u>22.7</u>	
		265.0	42.7	3.62

243.6

265.3 21.7 (3.62)

243.3 21.2

264.5 42.9 3.61

Index right and below

332.4

357.4 25.0

332.4 24.3

356.7 49.3 3.30

332.5

10	50	357.0	24.5	(3.32)
10	47	332.3	<u>23.7</u>	
	+5			
15	47.5	356.0	48.2	3.35

Mean 34.7



July 14, 1895.

Star w compared with h  
Index right and below.

10	53	335.4	183	
		353.7	<u>172</u>	
		335.8	35.5	4.03
		353.0		

		335.3		
		353.5	182	(4.02)
		336.7	<u>177</u>	
		354.4	35.9	4.01

Index left and above

		65.0		
		80.3	153	
		66.6	<u>148</u>	
		<del>52.1</del>	30.1	4.40
		81.4		

		66.0		
		<del>53.0</del>		(4.37)
10	<del>59</del> 59	81.8	158	

10	56.4	66.4	<u>151</u>	
	+ .5			
10	56.5	81.5	309	4.34

Mean 4.20

July 14, 1895

Stars compared with h  
Index left and above.

54.3 ~~left and above~~

11	10	92.5	38.5	
		55.0	<u>36.3</u>	
		91.3	74.8	2.35

		57.2		
		91.7	34.5	(2.38)
		54.7	<u>38.5</u>	
		93.5	73.3	2.40

Index right and below.

		142.5		
		185.0	42.5	
		143.0	<u>42.5</u>	
		185.5	85.0	2.05

		141.5		
11	18	183.5	42.0	(2.10)
11	14	142.5	43.3	
	+5			
16	14.5	185.8	81.3	2.16

Mean 2.24

July 14, 1895.

Star p compared with h.  
Index left and above.

235.0

~~274.5~~  $\leftarrow$  h. dis

11	23	275.1	40.1	
		234.4	<u>40.5</u>	
		275.2	80.9	2.17

233.3

275.6 423 (2.12)

233.2 423

275.5 84.6 2.06

Index right and below

321.3

~~6.3~~

7.3

46.0

319.5

47.6

7.4

93.6

1.82

319.3

6.3

47.0

(1.82)

11 30

11 26.5 320.0

+ .5

46.0

16 27.0 6.0

93.0

1.83

Mean 1.97



July 14, 1898

Saturn

H. Obs

16	20	-19.6
<u>19</u>	<u>20</u>	
3	00	

Iapetus precedes Saturn 36.5 sec. and 2.2 of arc north of it.

Too cloudy and becoming worse.

July 15, 1898 (Friday)

30 Hatch Correction = +42 sec. (Hatch is slow.)

$\beta$  Lyrae.

Phot. H.

H. Obs.

18 46 +33.2

15 32 Telescope diaphragmed down to 9.5 inches

3 14

8 46 Comp. Star = DM +33° 32' 24" (8.5)

Index right and below.

271.4 46 dis. 28.2

299.6 27.9

271.3 56.1 - 3.01

299.2

271.5

27.4

(-3.04)

52 08 299.2

27.5

271.7

54.9 - 3.07

299.2

Index left and above.

1.6

27.8

54 20 29.4

28.5

1.4

56.3 - 3.00

29.9

1.3

27.9

(-3.01)

56 32 29.2

28.0

12 56 1.2

55.9 - 3.02

53 14 29.2

7 12 53 56 +42

4486.5374  
4486.544  
+0.993

Mean - 3.02

July 15, 1898.

II

7 57 56  
 1.5 27.7  
 29.2 27.9  
 1.3 55.6 - 3.03  
 29.2

59 16  
 1.2 28.6 (-3.00)  
 29.8 28.2  
 1.4 56.8 - 2.98  
 29.6

Index right and below.

8 01 16  
 91.8 27.2  
 119.0 28.8  
 90.4 56.0 - 3.02  
 119.2

02 56  
 1 824  
 8 00 28 92.7 53.9 - 3.11  
 +42  
 13 1 3 118.9 (-3.06)

4486.5424  
 4485.544  
 +0.998

Mean - 3.03



July 15, 1898.

III

8	07	44	92.0	26.9	
			118.9	<u>27.7</u>	
			91.3	54.6	-3.07
			119.0		

			91.0	28.6	(-3.06)
10	48		119.6	<u>26.7</u>	
			92.5 <sup>0</sup>	55.3	-3.04
			118.7		

Index left and above.

			182.1	26.8	
14	20		208.9	<u>27.5</u>	
			181.9	54.3	-3.09
			209.4		

			181.4	28.0	(-3.06)
--	--	--	-------	------	---------

17	40		209.4	<u>27.3</u>	
10	32		181.7	55.3	-3.04
8	12	38	209.0		
		+42			
13	13	20			

4486.5509
<u>4485.544</u>
+1.007

Mean -3.06

July 15, 1898.

Comp. Stars for Virgo

St. Obs.

13 18 -3.0

16 48

3 30

k 5 l

08 l 4.5 n

n 4.5 m

~~k 5 l~~

m 4.5 o

o 5 p

p 3.5 q

q 5 r

r 4 s

s 5 t

t 4.5 u

u 6 w

53 Region getting low w is the faintest star that can be seen tonight.

July 15, 1895.

Comp. Stars for R. Bootis Phot. T. H. Os

$$\begin{array}{r}
 14 \quad 39 \quad +27.7 \\
 \hline
 17 \quad 47 \\
 3 \quad 08
 \end{array}$$

Star w. compared with h  
Index left and above

$$\begin{array}{r}
 246.7 \text{ hdis} \quad 12.5 \\
 10 \quad 09 \quad 262.2 \quad \underline{13.0} \quad +4.52 \\
 247.0 \quad 28.5 \quad +4.76 \\
 260.0
 \end{array}$$

$$\begin{array}{r}
 248.8^0 \quad 13.1 \\
 261.1 \quad \underline{13.5} \\
 247.7 \quad 26.6 \quad +4.67 \\
 261.2
 \end{array}$$

$$\begin{array}{r}
 (+24.60) \\
 \hline
 (+11.72)
 \end{array}$$

Index right and below

$$\begin{array}{r}
 335.6 \quad 17.7 \\
 353.3 \quad \underline{18.4} \\
 335.0 \quad 36.1 \quad +4.00 \\
 353.4
 \end{array}$$

$$\begin{array}{r}
 335.5 \quad 16.7 \quad (+4.02)
 \end{array}$$

$$\begin{array}{r}
 10 \quad 17 \quad 352.2 \quad \underline{18.7} \\
 10 \quad 13 \quad 334.9 \quad 35.4 \quad +4.04 \\
 \hline
 15 \quad 13.7 \quad 353.6
 \end{array}$$

Mean +4.33



July 15, 1895

Star u compared with h.  
Index right and below.

332.0<sub>h</sub> 24.0

356.30 22.2

332.5 46.2 + 3.45

354.37

331.5 23.6 (+3.44)

355.4 23.0

333.7 46.6 + 3.43

~~354.9~~

355.4

Index left and above.

64.7 20.5

85.2 21.3

64.0 41.8 + 3.67

63.0

84.3

64.0 20.0 (+3.70)

84.0 20.5

64.20 40.5 + 3.74

84.5

Mean + 3.57

10 29  
10 25  
15 25.7

July 15, 1898.

Iapetus.

Phot. I.

H. Obs.

16	20	-19.6
<u>18</u>	<u>30</u>	
2	10	

Iapetus precedes Saturn 35.3 sec. and is 2.7 of arc north of it.

Index above

10	52	231.0	Comp. dis		
		279.36		45.6	
		<u>231.0</u>		<u>45.7</u>	
		276.7		94.3	+1.50

		232.50			+1.80
		279.0		47.0	
		<u>231.4</u>		<u>47.4</u>	
		278.68		94.4	+1.80

Index below

		315.7			
		14.85		58.8	
		<u>317.3</u>		<u>52.2</u>	
		9.5		111.0	+1.39

		318.0			
11	00	11.0		530	+1.44
10	<u>16</u>	<u>316.5</u>		<u>54.5</u>	
	+7				
15	56.7	11.0		107.5	+1.48

Mean 1.62



July 15, 1898.

Same again

316.0

11	02	11.4	55.4	
		317.9	<u>51.1</u>	
		9.0	106.5	1.50

317.7

10.0

52.3

(+1.48)

315.8

35.3

11.1

107.6

1.47

Index above

49.5

96.4

46.9

50.6

47.1

98.7

94.0

1.81

49.7

98.2

48.5

(+1.77)

49.3

48.8

97.9

97.1

1.73

11	10
11	6
	+7
16	6.7

Mean +1.62

Comp. Star same as the last night

Comp. Star =  $\delta$ -19° 4368 (5.5)



July 15, 1895.

Titan  
Index above

Phot. T.

H. Ol

23.6, comp. dis.

11	12	124.0	100.4
		29.40	87.4
		116.4	187.8
			172.2

- 0.15

	31.3	
	115.0	83.7
	23.5	101.7
	<del>126.0</del>	185.4
	125.2	174.6

(-0.12)

- 0.10

Index below

	112.4	
	216.5	104.1
	117.2	91.4
	208.6	195.5
		164.5

- 0.29

11	18	208.4	92.4
11	15	111.5	105.5
	+7		
16	15.7	217.0	197.9
			162.1

(-0.32)

- 0.34

Mean - 0.22

July 15, 1895

Same again

111.5

11	20	214.5	102.7
		116.3	<u>92.4</u>
		205.7	195.1
			1649

- 0.29

115.6

208.5 5 899

108.1 108.1

(- 0.32) ✓

216.2 198.0

162.0

- 0.34

Index above

205.3

302.0 96.7 ✓

214.0 82.0 ✓

296.0 178.7 ✓

+ 0.02

~~181.3~~

214.7

(0.00) ✓

11	25	295.69	81.2
----	----	--------	------

11	22.5	204.5	<u>99.5</u>
----	------	-------	-------------

	+7		
16	23.2	304.0	180.7

- 0.01

179.3

Mean - 0.16 ✓

Observations a little difficult on acct  
of proximity to Saturn

July 16, 1898 (Saturday)

30 Watch Correction = -11 sec (Watch is fast.)

$\beta$  Lyrae

Phot. H.

H. Obs

15 46

+33.2

15 38

Telescope diaphragmed down to 9.5 in.

3 08

8 52

Comp Star = DM +33° 322418.5

Index right and below

7  
51 28 94.9  $\beta$  dis.  
115.9  
94.4  
116.8

21.0

22.4

43.4 - 3.59

I

52 48 94.0  
116.3

22.3

21.1

43.4 - 3.59

(-3.59)

94.5

115.6

Index left and above

55 16 184.3  
206.85  
184.4  
206.2

22.2

21.8

44.0 - 3.56

(-3.56)

184.3

21.9

22.1

44.0 - 3.56

57 36 206.2  
17 8 184.1  
7 54 17 206.2  
12 54 7

4487.5376  
4485.544  
+1.994

Mean - 3.58



July 16, 1898.

II

8 00 08 184.1 22.1  
206.2 21.7  
184.5 43.8 - 3.57  
206.2

04 48 184.4 21.8 (-3.54)  
206.2 23.0  
183.7 44.8 - 3.52  
206.6

Index right and below.

14 08 273.8 23.0  
296.8 19.9  
275.4 42.9 - 3.61  
295.3

275.4 19.9 (-3.62)  
16 16 295.3 22.4  
8 35 10 274.2 42.3 - 3.64  
8 47.5  
13 8 36.5 296.6  
4487.5476  
4488.544  
+ 2.004

Mean -3.58

July 16, 1895.

III

8 18 56  
 274.8<sup>2</sup>  
 296.7  
 275.0  
 295.4<sup>6</sup>

22.5  
20.6  
 43.1 - 3.60

22 28  
 275.0  
 295.9  
 274.6  
 296.3

20.9  
21.7  
 42.6 - 3.63

(-3.62)

Index left and above.

25 16  
 3.7  
 26.3  
 4.7  
 26.3

22.6  
21.6  
 44.2 - 3.55

27 40 26.3  
 14 20 4.1  
 8 23 35 26.3  
 13 23 24

4.5  
 21.8  
22.2  
 44.0 - 3.56

(-3.56)

4487.5579  
 4485.544  
 + 2.014

Mean - 3.59

July 16, 1898.

Comp. Stars for  $\sqrt{\text{Virginis}}$ 

H. Ols.

13	18
16	32
3	144

8

54 k 5 l  
 l 4.5 n  
 n 4 m  
 m 3.5 o  
 o 4.5 p  
 p 4 q  
 q 5 r  
 r 3.5 s  
 s 5 t  
 t 3.5 u  
 u 5 v

9

07 u 6 w



July 16, 1898.

Comp. Stars for U Virginis. Phot. T. H. Ok

Star  $t$  compared with  $k$ .  
Index left and below.154.0  $\angle k$  dis.

9	20	175.2	21.2	
		153.8	<u>22.1</u>	
		<del>177.0</del>	43.3	+3.59
		175.9		

154.0

173.9

153.7

175.3

19.9

21.6

41.5

+3.69

(43.64)

Index right and above.

243.0

266.0

243.5

266.3

23.0

22.8

45.8

+3.47

243.3

266.4

244.6

265.6

23.1

21.0

44.1

+3.55

(43.51)

9	28
9	<u>24.2</u>
14	23.8

Mean +3.58

July 16, 1898.

Stars compared with R.  
Index right and above  
244.4  $\leftarrow$  R. dis.

9	38	267.4	260	
		242.0	<u>260</u>	
		268.0	520	+ 318

		242.7		
		268.3	256	(+3.17)
		242.0	<u>270</u>	
		269.0	526	+ 316

Index left and below.

		330.5		
		<del>329.4</del>		
		0.0	295	
		329.0	<u>320</u>	
		1.0	61.5	+ 280

331.3

9	45	0.6	293	(+2.84)
	41.5	330.0	<u>300</u>	
	<u>2</u>			
14	41.3	0.0	593	+ 289

Mean +3.00

July 16, 1898

Star  $g$  compared with  $k$ .  
Index left and below

326.1  $\angle k$   $dw$

9	50	2.3	362	
		325.4	<u>371</u>	
		2.5	733	+240

326.6

3.0

364

(+2.42)

326.1

357

1.48

721

+244

Index right and above.

57.6

89.3

3167

56.0

339

89.9

65.6

+2.66

56.0

89.9

339

(+2.63)

56.5

332

89.7

67.1

+2.60

9	58
9	54
	<u>2</u>
14	538

Mean +2.52



July 16, 1895.

Star  $\alpha$  compared with  $k$ .  
Index above

10      06      231.0  $\leftarrow k$  dis  
278.2      472  
232.3      46.7  
279.0      93.9      +1.81

231.0  
278.0      470      (+1.81)  
231.5      46.8  
278.3      93.8      +1.81

Index below.

~~319.0~~  
318.7  
9.0      50.3  
316.6      52.7  
9.3      103.0      +1.58

318.6  
10      14      10.6      52.0      (+1.58)

10      10.2      318.3      51.5  
15      9.8      9.58      103.5      +1.57

Mean +1.69

July 16, 1898.

Comp. Stars for  $\delta$  Librae.

st. Obs

15	09	-20.5
18	20	
3	11	

15	01	-19.0
18	28	
3	27	

10

145 l 4 m  
m 5 n  
n 2 o  
o 4.5 p  
p 4 q  
q 5 r

Japetus.

Phot. T.

st. Obs

16	20	-19.6
19	05	
2	45	

Japetus precedes Saturn 34 sec. and is 2.8 north of it.

Same Comp Star as last night

July 16, 1895.

Lapetus.

Phot. T.

7. obs.

Comp. Star = S.D.  $-19^{\circ}$  4368 (8.5)

Index above

230.6

Comp. dis.

279.3

48.4

232.0

44.5

276.5

92.9

+1.84

231.4

276.3

44.9

(41.85)

231.2

47.2

279.

92.1

+1.86

278.4

Index below.

316.7

12.4

11.7

55.0

317.7

50.9

8.6

105.9

+1.51

317.0

8.0

29

9.0

52.0

11

25

317.3

53.2

16

248

11.0

105.2

+1.53

10.5

Mean +1.68



July 16, 1898

Same again

316.3

11

30

12.1

55.8

318.0

52.3

10.3

108.1

+1.46

318.5

10.6

52.1

(+1.48)

316.3

54.4

10.7

106.5

+1.50

Index above

52.2

97.4

45.2

51.4

44.4

95.5

89.6

+1.92

57.7

96.5

44.8

(+1.90)

50.9

46.1

97.0

90.9

+1.89

11

37

11

333

2

16

333

Mean +1.69

July 16, 1895.

Titan  
Index above

Phot. T

HOL

117.7 Titanides

213.6

95.9

40

123.7

81.0

204.7

176.9

-0.06

122.7

203.5

50.8

(-0.04)

115.0

97.7

212.7

178.5

-0.03

Index below

209.05

298.6

89.1

215.1

81.4

296.5

170.5

-0.18

217.5

289.5

290.0

72.2

(-0.29)

211.3

86.6

297.9

158.8

-0.40

Mean -0.16

July 16, 1895

Same again

11	46	212.0		
		296.5	54.5	
		215.9	<u>77.1</u>	
		293.0	161.6	-0.35

		217.0		
		291.8	74.8	
		211.2	<u>55.8</u>	
		297.0	160.6	-0.37

(-0.36)

Index above

		300.0		
		<del>29.4</del>		
		28.6	58.6	
		302.0	<u>51.0</u>	
		23.0	169.6	-0.20

		302.7		
		<del>24.4</del>		
		25.2	52.7	

(-0.19)

11	53	25.2	52.7	
11	49.5	300.4	<u>57.6</u>	
	<u>2</u>			
16	49.3	28.0	170.3	-0.18

Mean - 0.25



July 20, 1895. (Wednesday)

30 Watch Correction = - 27 sec. (Watch is fast.)  
Comp. Stars for V Virginis. Phot. T. H. Obs.

13 18 - 3.0

16 28

3 10

49 R 4.5 l

l 4 m

m 4.5 m

m 4.0

o 5 p

p 4 q

q 4 r

r 4 s

s 4.5 t

t 4 u

u 6 v

13 18 - 3.0

17 18

4 00

July 20, 1898.

Comp Stars for U Virginis. Phot. T. St. Cl.

Star ~~no~~ compared with k.  
Index right.

50.2 k dis.

94.7 47.5  
49.7 47.8  
97.5 95.3 +1.77

49.6

99.7 50.1

51.5 47.7

99.2 97.8 +1.71

(+1.74)

Index left

131.9

192.3 60.4

134.0 56.3.5

187.5 113.9 +1.33

135.0

190.0 55.0

135.7 57.9

194.3 112.9 +1.35

196.6

(+1.34)

Mean +1.54

July 20, 1898.

Star  $\alpha$  compared with  $k$ .  
Index below.137.0  $\pm$  k. dis

9	41	191.8 <sup>0</sup>	54.0	
		137.4	52.9	
		<del>159.8</del>	106.9	+1.49
		190.3		

		137.3		(+1.50)
		191.7	54.4	
		139.0	51.4	
		190.4	105.8	+1.52

Index above

		230.3		
		277.7	47.4	
		231.0	45.3	
		276.3	92.7	+1.84

		231.8 <sup>4</sup>		(+1.85)
--	--	--------------------	--	---------

9	47	275.0	43.6	
9	44	230.9	46.1	+1.92
	<del>4</del>	<del>277.0</del>	<del>59.7</del>	2.20
14	43.6			

Mean +1.69



July 20, 1898.

Comp. Stars for  $\delta$  Librae

H. Obs

15	09	-20.5
18	07	
2	58	

15	04	-19.0
18	07	
3	03	

$l$  4.5  $m$

$m$  4.5  $n$

$n$  2  $\sigma$

$\sigma$  4  $\mu$

$\mu$  4.5  $q$

$q$  5  $r$

July 20, 1898.

Comp. Stars for  $\tau$  Scorpii

H. Obs

16	10	-23.0
18	34	
2	24	

10

33

~~q 3.5~~  
 q 2.5 ✓  
 r 4.5 ✓  
 s 3 t  
 t 5 u  
 u 5 w  
 w 3.5 x  
 x 3.5 y

Region low. y is the faintest star  
 that can be selected with certainty  
 tonight

Japetus

Phot. T.

H. Obs

19

15	34.5
18	31.0
2	56.5

July 20, 1898.

~~Comp. Star of tonight precedes 5.0 magn~~  
~~2<sup>m</sup> 56.5 and is 7' of asc north of it. Magn 9.2~~

Index above

11	21	54.80		
		94.0	40.0	
		51.0	417	
		92.7	51.7	2.14

		50.3		
		95.0	44.37	(2.07)
		53.2	420	
		96	56.7	2.00
		95.2		

Index below

		136.1		
		189.4		
		190.6	54.5	
		137.2	53.5	
		191.0	108.3	1.46

		136.4		
11	29	189.9	53.5	(1.45)
11	25	137.9	524	
	4	190.3	1059	1.57
16	24.6			Mean 1.78



July 20, 1895.

Same again

		136.5		
11	31	190.7	54.2	
		134.6	<u>55.2</u>	
		189.5	109.4	1.43
		136.4		
		191.7	55.3	
		136.3	<u>53.5</u>	(1.44)
		189.5	108.8	1.45

Index above

		232.2		
		275.7	43.5	
		229.0	<u>48.5</u>	
		277.5	92.0	1.86
		230.0		
11	36	276.65	46.5	(1.84)
11	34	232.0	<u>46.6</u>	
	-4			
16	33.6	278.6	93.1	1.83

Mean 1.64

Same comp star used on previous night  
= S D -19° 43' 68" (5.5)

July 20. 1892

Region low throughout observations. Sky not quite clear low down. Setting difficult throughout and extremely so in last group.

July 22, 1898. (Friday)

7 30 Watch Correction = -23 sec. (Watch is fast.)  
 4 Cygni. Phot. T. H. Obs.  
 20 40 +33.4  
 16 00 Full aperture used.  
 4 30  
 7 30 Comp. Star - DM + 33° 32' 24" (8.5)

Comp. Stars for  $\delta$  Librae H. Obs.  
 15 09 -20.5  
 18 00  
 2 51

9 55 l 4m  
 m 5n  
 n 2.5o  
 o 5p  
 p 4q  
 q 4.5r

15 09 -20.5  
 18 16

3 07

So cloudy in this region, impossible to make  
 Photometric measures



July 22, 1895.

Comp. Stars for  $\tau$  Scorpii

H. Ol.

16	10	-23.0
----	----	-------

18	26	
----	----	--

2	16	
---	----	--

10

<sup>2</sup>  
~~38~~ g 2 n

r 4 n

s 3 t

t 5.5 u

u 6 w

w 2.5 x

x 3.5 y

y 5.5 z

10

<sup>37</sup>  
 z 4 a

July 22, 1898.

Comp. Stars for  $\tau$  Scorpii. Phot. T. H. ObsStars compared with  $\gamma$ .  
Index left and above.

10	46	59.0		
		87.0	280	
		60.6	262	
		86.8	54.2	+3.09

60.2			
86.5	263		(+3.14)
61.0	255		
87.0	51.8	+3.19	
86.5			

Index right and below.

147.2		
180.0	325	
148.0	333	
147.5	66.1	+2.64
180.8		

148.0		(+2.68)
-------	--	---------

10	52	179.4	31.4
10	49	147.3	325
10	486	179.8	63.9 +2.72

Mean +2.91

July 22, 1895.

Star  $t$  compared with  $g$ .  
Index right and below.

145.7  $\angle g$  dis

11	13	180.7	350	
		148.1	31.7	
		179.8	66.7	+262

148.2

178.0

298

(+2.71)

148.4

31.9

180.3

61.7

+280

Index left and above.

239.5

269.0

295

239.5

308

270.3

60.3

+285

238.7

11

19

269.0

303

(+2.84)

11

16

239.7

305

16

15.6

270.2

60.8

+283

Mean +2.78



July 22, 1898.

Star  $\nu$  compared with  $\gamma$   
Index left and above.

11	26	232.9	$\gamma$ dw.		
		275.4		425	
		233.0		<u>390</u>	
		272.0		815	+2.15

		232.4			
		272.6		402	(+2.18)
		234.0		<u>390</u>	
		273.0		792	+2.22

Index right and below

		321.5			
		8.2		467	
		318.8		<u>460</u>	
		4.8		927	+1.84

		321.5			
11	33	3.0		415	(+1.92)
11	29.5				
	-4	320.7		<u>449</u>	
16	29.1	5.6		864	+2.01

Mean + 2.05

July 22, 1898.

Japetus. Phot. T. H. Obs.  
 Comp. Star precedes Saturn  $2^m 03^s$  and is  
 9' of arc south of it. = S.D.  $19^\circ 43' 62''$  (18.6)

Index right and above.

11	47	142.0	Comp. dis	452	
		187.2			
		141.2		43.4	
		184.6		88.6	+1.95

		141.2			
		185.2		44.0	
		142.40		44.8	
		186.8		88.8	+1.95

(+1.95)

Index left and below

		230.8			
		273.8		43.0	
		234.0		39.5	
		273.5		82.5	+2.12

		233.2			
11	53	274.8		41.6	
11	50	232.0		43.4	
	4				
16	49.6	275.4		85.0	+2.05

(+2.08)

Mean + 2.02

July 22, 1898.

Same again

232.0

11	55	274.6	42.6	
		230.0	<u>45.3</u>	
		275.3	87.9	+1.927

233.8

275.2	41.4	(+2.00)
231.3	<u>44.7</u>	
276.0	86.1	+2.02

Index right and below above

323.0

5.0	42.0	
318.7	<u>48.6</u>	
7.3	90.6	1.90

321.0

12	01	6.4	45.4	(+1.90)
11	52.5	320.7	<u>45.2</u>	
16	57.6	5.9	90.6	1.90

Mean +1.95

Saturn low and observations very difficult especially in last group in which images when equalized were extremely faint.



Posted to here.

July 29, 1898 (Friday)

Explained to Prof. Snyder, Meyers, & Sabers  
method of using various photometers, with which  
they also obtained measurements as below.  
Index left and above. <sup>Two stars taken at random.</sup> Prof Snyder Obs.

10	03	323.2		
		7.8	44.6	
		327.5	<u>34.5</u>	
		2.0	79.1	222

		329.3		
		354.0	24.7	(2.38)
		318.5	<u>44.0</u>	
		2.5	68.7	255

Index right and below.

		65.1		
		85.7	20.6	
		63.5	<u>25.4</u>	
		58.9	46.0	346

		<del>63.9</del>		
10	26	<del>56.2</del>		
		57.5		(3.37)
10	30	86.7	29.2	
		63.3	<u>20.7</u>	
		84.0	49.9	328

Mean 2.88

July 29, 1898.

Same again

65.0

10

344

83.1

18.1

59.6

316

91.2

49.7

3.25

59.7

85.2

<sup>5</sup>  
285

(3.36)

62.0

207

82.7

47.2  
6

3.45

Index left and above.

59.5

83.3

23.8

62.0

201

82.1

43.9

3.56

65.1

10

50

84.5

19.4

(3.52)

59.7

263

86.0

45.7

3.47

Mean

3.44

July 29, 1895

Prof. DuBois. Obs.

Same again.

10  
#

56.4		
55 84.2	27.8	
45.8	<u>42.4</u>	
88.2	70.2	250

56.0		
85.0	29.0	(285)
64.2	<u>21.4</u>	
85.6	50.4	325

Index right and below.

234.4		
<u>216.</u>		
264.6	30.2	
225.2	<u>47.1</u>	
272.3	77.8	225

<u>266.</u>		
238.9		
<u>272.3</u>		(267)

11	25271.6	327	
	<u>243.4</u>	<u>223</u>	
	265.7	55.0	306

Mean 278



July 30, 1898.

Cloudy first part of the evening clearing later  
showed Prof. Meyers and Bailey the use of  
Phot. I. on Equatorial. The former starting a  
series of measures which were stopped by clouds.

Posted to here.

Aug 3, 1895. (Wednesday)

$\Sigma 1850.$

14	23	+28.8
17	35	
<hr/> 3	12	

$\Sigma 2010$

13	19	+55.6
18	10	
<hr/> +5	K1	

# Showed Profs. Snyder, Myers & Dubois the use of Phot. R. on Equatorial. also method of reversal of prism to bring pencils together. - they experimenting with the photometer on equatorial and also familiarizing themselves with its use, throughout evening.

Also showed them the use of the West. Eq. in variable star work.

*Booklet to have*



Sept 2 1895 (Friday)

7 0 Cloudy.

7 30 Still Cloudy. No stars visible.

8 0 Still Cloudy. No stars visible.

Apparently shower coming  
No chance for any work.

Sept 3, 1895 (Saturday)

Variable discovered by Muller & Kempf  
equals B D + 20° 4200

Comp. Star = A W. + 20° 4204 (9.2)

19<sup>h</sup> 28<sup>m</sup> + 19.5

18 43

45 C

Index Right

327.5

02.5

320.5 326.2

2.8

34.0<sup>v</sup>

36.6<sup>v</sup>

71.6<sup>v</sup> - 2.4<sup>v</sup>

326.2

4.2

4.2

327.8

2.1

2

36.0<sup>v</sup>

(2.44<sup>v</sup>)

34.3<sup>v</sup>

72.3<sup>v</sup>

2.43<sup>v</sup>

Index Left

60.5

89.1

58.9

91.8

24.6<sup>v</sup>

32.9<sup>v</sup>

61.5<sup>v</sup>

- 2.20<sup>v</sup>

60.1

91.5

60.0

89.6

31.4<sup>v</sup>

29.5<sup>v</sup>

60.9<sup>v</sup>

(-2.22<sup>v</sup>)

- 2.23<sup>v</sup>

263<sup>v</sup>

8 36 40  
8 90 47  
8 22 52  
15 22 52

Sept 3, 1895

$$\begin{array}{r}
 A \ 33 \ 10 \\
 61.0 \\
 89.9 \\
 59.1 \\
 91.2 \\
 \hline
 32.1 \\
 61.0
 \end{array}
 \begin{array}{l}
 22.9^{\vee} \\
 \\
 \\
 \\
 -2.22^{\vee}
 \end{array}$$

$$\begin{array}{r}
 A \ 34 \ 30 \\
 \cancel{58.6} \\
 60.0 \\
 90.0 \\
 59.9 \\
 89.3 \\
 \cancel{89.3}
 \end{array}
 \begin{array}{l}
 30.0^{\vee} \\
 \\
 29.4^{\vee} \\
 59.4^{\vee} \\
 -2.22^{\vee}
 \end{array}
 \quad (2.21^{\vee})$$

$$\begin{array}{r}
 A \ 42 \ 20 \\
 \text{Index Right} \\
 148.3 \\
 181.3 \\
 146.9 \\
 182.3
 \end{array}
 \begin{array}{l}
 33.0^{\vee} \\
 \\
 35.8^{\vee} \\
 64.8^{\vee} \\
 -2.56^{\vee}
 \end{array}$$

$$\begin{array}{r}
 A \ 45 \ 20 \\
 155 \ 20 \\
 8 \ 38 \ 50 \\
 13 \ 35 \ 50
 \end{array}
 \begin{array}{l}
 146.6 \\
 182.2 \\
 148.0 \\
 181.9
 \end{array}
 \begin{array}{l}
 35.6^{\vee} \\
 \\
 33.9^{\vee} \\
 69.5^{\vee} \\
 -2.52^{\vee}
 \end{array}
 \quad (-2.58^{\vee})$$

Mean  $-2.70^{\vee}$



Sept 3, 1895

8 48 30

1470- 34.7 ✓  
182.2  
148.3

Clouds thick, Stars gone

182.1  $\frac{33.2}{62.5}$  ✓ - 2.56 ✓  
+1

146.5

(-2.56")

8 58 20

1470 = 34.4 ✓  
181.4  $\frac{34.1}{62.5}$  ✓  
147.51 ✓  
181.2

-2.56"

Sundys Left

241.6 29.6 ✓  
271.2  $\frac{30.4}{60.0}$  ✓  
241.22

-2.26"

Clouds thick

271.6

9 5 00  
~~114 25~~  
~~28 36~~  
~~25 36~~  
234 25  
52 36  
13 58 36

241.5 29.3 ✓  
270.8  
240.6  $\frac{29.7}{59.0}$  ✓  
270.2

-2.90"

mean -2.72"

(-2.26")

Sept 3, 1895

9 8 5

$$\begin{array}{r}
 241.0 \\
 270.5 \\
 241.2 \\
 271.0 \\
 \hline
 29.2 \\
 59.3
 \end{array}
 \begin{array}{l}
 \checkmark \\
 \checkmark \\
 \checkmark \\
 \checkmark \\
 \checkmark
 \end{array}
 \begin{array}{l}
 29.5 \\
 - 2.49
 \end{array}
 \checkmark$$

(2.47)

9 11 30

$$\begin{array}{r}
 241.5 \\
 271.0 \\
 240.0 \\
 270.8 \\
 \hline
 30.0 \\
 60.3
 \end{array}
 \begin{array}{l}
 \checkmark \\
 \checkmark \\
 \checkmark \\
 \checkmark \\
 \checkmark
 \end{array}
 \begin{array}{l}
 29.5 \\
 - 2.47
 \end{array}
 \checkmark$$

Index Right

9 16 40

$$\begin{array}{r}
 327.0 \\
 01.9 \\
 326.1 \\
 2.8 \\
 \hline
 36.2 \\
 71.1
 \end{array}
 \begin{array}{l}
 \checkmark \\
 \checkmark \\
 \checkmark \\
 \checkmark \\
 \checkmark
 \end{array}
 \begin{array}{l}
 34.9 \\
 - 2.47
 \end{array}
 \checkmark$$

9 21 30

$$\begin{array}{r}
 327.0 \\
 2.2 \\
 326.0 \\
 2.1 \\
 \hline
 36.1 \\
 71.3
 \end{array}
 \begin{array}{l}
 \checkmark \\
 \checkmark \\
 \checkmark \\
 \checkmark \\
 \checkmark
 \end{array}
 \begin{array}{l}
 35.2 \\
 - 2.46
 \end{array}
 \checkmark$$

(2.46)

57 45

9 14 26

14 14 26

mean 2-2.66

Sept. 3, 1895

9 31 45

327.0

~~4.4~~

35.3 ✓

2.3

327.0

2.2

$\frac{35.2}{70.5}$  ✓

-2.49 ✓

9 34 00

326.5

2.0

35.5 ✓

(-2.49 ✓)

327.0

2.2

$\frac{35.1}{70.6}$  ✓

-2.49 ✓

Index Luff  
Clouds thick

~~58.9~~ 60.9

70.3

59.3

32.2 ✓

9 45 00

91.5

61.5

90.1

$\frac{24.6}{60.4}$  ✓

-2.43 ✓

9 47 5

60.0

31.0 ✓

(-2.42 ✓)

9 47 5

91.0

60.3

90.5

$\frac{30.2}{61.2}$  ✓

-2.41 ✓

157 50

9 39 28

14 39 28

mean -2.66 ✓



Sept. 3, 1895

Variable discovered by Muller & Kempf  
 = D.M. + 28° 3460

$$\begin{array}{r} \text{RA } 19^{\text{h}} \quad 39^{\text{m}} \quad + 28.9 \\ \hline 21 \quad 15 \\ 1 \quad 36 \end{array}$$

All Cloudy No chance for more work  
 Troubled by clouds throughout  
 the evening

Sept. 5, 1895. (Monday)

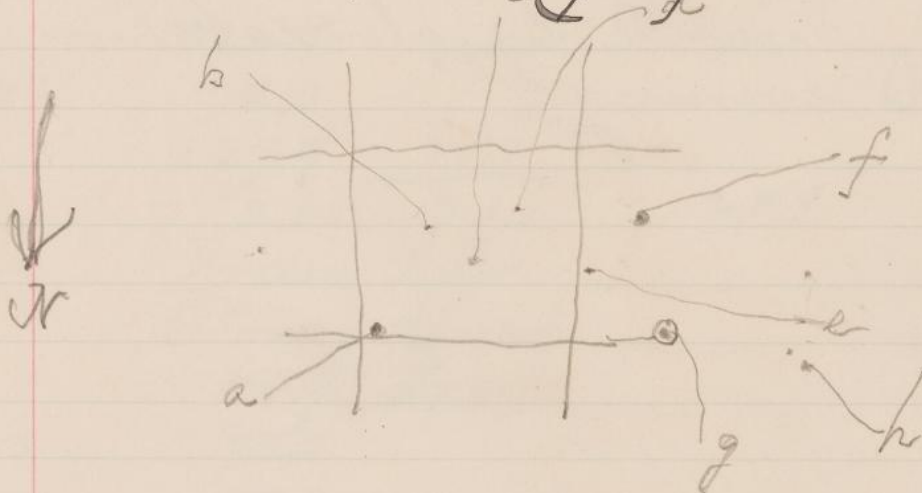
Minor Planet.

R.A.  $20^h 44^m - 6.1$

T  $18^h 55^m$

1 49

Comp. star for foll. light measure. =  
 $\alpha^2 - 6^\circ 56' 26'' (9.2)$



$\alpha^2$  4<sup>m</sup> {  $\begin{array}{l} \text{a to b} \\ 12.5 \\ 12.5 \quad 12.3 \\ 12.0 \end{array}$

$\alpha^2$  {  $\begin{array}{l} \text{a to e} \\ 41.0 \\ 41.1 \quad 41.0 \\ 41.0 \end{array}$

Sept. 5, 1895

e to f

A.0

P 12

A.0 A.1

A.2

a to b

12.3

A 15

12.2 12.2

12.0

b to f

37.1

P 19

37.3 37.1

37.0

a to c

19.5

P 22

19.5 19.5

19.5

c to f

29.9

P 27

30.0 30.0

30.0



Sept. 5, 1895

A 30

a to d

2A.3

2A.2 2A.2

2A.0

d to f

21.2

A 33

21.0 21.1

21.2

f to g

v.1

A 39

v.3 v.2

v.1

~~f to g~~ g to h

21.5

A 42

21.6 21.5

21.5

A 15

a to b 12.2

A 19

b to f 37.1

A 22

a to c 19.5

A 27

c to f 30.0

A 30

a to d 2A.2

A 33

d to f 21.1

Sept. 5, 1895

A	D	a to e	41.0
A	12	e to f	4.1
A	39	f to g	5.2
A	K <sub>2</sub>	g to h	21.5
g	0	h to g	4.3
g	3	g to h	22.7
g	23	h to g	3.5
g	25	g to h	24.0
		<u>f to g</u>	
		4.4	

g	0	K <sub>3</sub>	K <sub>3</sub>
		K <sub>2</sub>	

		<u>g to h</u>	
		22.2	
g	3	22.5	22.7
		22.7	

		3.5-
g	23	3.5
		3.5

		24.0
g	25	24.0
		24.0

Sept 5, 1895.  
Index Left Plant 2 A. Phot. J.

9x 53 0  
327.0  
359.1  
327.5  
359.1  
32.1  
31.6  
63.7 +2.73

9 55 0  
324.8  
0.2  
325.2  
1.5  
35.4  
36.3  
71.7 +2.59  
+2.45

Index Right

10 6 30  
58.1  
28.1  
58.1  
29.2  
30.0  
31.1  
61.1 +2.82

10 9 5  
58.1  
28.3  
60.1  
88.7  
340.2  
28.6  
55.8 +2.86  
+2.91

10 3 35  
10 0 53  
15 10 54  
128 35  
9 30 54  
14 30 54  
4535.6048  
3 35  
10 0 56  
15 0 56  
4535.6256

Mean +2.72



Sept. 5, 1895.

10 12 0      58.5  
               90.1      31.6  
               58.9      31.3  
               90.2      62.9 +2.75

10 15 25      58.5  
               90.3      31.8 +2.74  
               58.9      31.3  
               90.2      63.1 +2.74

Index Left.

~~146.0~~

146.5

10 21 00

184.0

37.5

142.8

40.0

183.8

78.5 +2.24

~~183.8~~

10 23 30

147.0

71.5

183.8

36.5

+2.32

10 17 59

147.1

36.9

15 17 59

184.0

73.7

+2.39

4538.6373

4538.6375

Mean +2.53  
 Comp. Star = 5.2 - 6.26 (9.2)

Sept. 5, 1895.

g proc. f.

10 v6

2.0

2.0

2.0

2.0

g ~~for~~ proc. h.

29.0

10 v6

29.0

29.9

29.9

Posted to here.





16980hrs. 1903, 1954.





1898phase.proj.1354.



1899, p. 103, 1284.