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KG
11366
v.342

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May 5, 1897

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May 5 1897 (Wednesday)

S Cephei Phot T. W. Obs

21 37 + 78.3
34 36
12 59

Considerably cloudy

Index left and below

149.6 < var dis

7 53

218.6 69.0 <
148.1 73.9 < − 0.72 <
292.0 142.9 <

149.1 − (0.72)
292.9 73.8 <
151.0 69.4 < − 0.71
290.4 143.2 <

Index right and above

242.8
308.9 66.1 <
242.3 66.7 < − 0.92
309.0 132.8 <

242.2 − (0.90)

8 1

311.0 68.8 <
12 57 0 243.1 65.6 < − 0.89 M = − 0.81
308.7 134.4 <

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May 5 1897

242.4
308.1 65.7<
239.9 70.1< −0.86
310.0 135.8<

−(0.96)

243.6
308.2 64.6<
245.1 61.2< −1.07
306.3 125.8<

Index left and below

~~338.0~~
~~4.9~~
~~329.8~~
329.0
42.5 73.5<
332.4 64.5< −0.81
36.9 138.0<

334.5
40.2 65.4<
327.1 76.8< −0.73
43.9 142.2<

−(0.77)

M = −0.86

8 16
13 10 0

C C 3 var var = 2 d in finder
5 var = 6 in large telescope

All the above estimates and measurements made through some cloud

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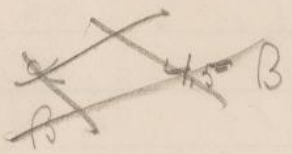
1897phae.proj.1346.

May 5th 1897

T. Virginis

W Obs.

11 5 8 − 5.0
11 44
14
11 46



m	4	n
n	4	α
α	5	β
β	4	β'
8 40 β'	4.5	γ
γ	5	δ
δ	4	ε
ε	4.5	ζ
ζ	4	η
η	3.5	κ
κ	4	λ

γ compared with m
Under right and above
253.9 ∠ comp dis
8 55 299.6 ζ 5.7 <
250.0 η 3.5 < 1.68 <
303.5 99.2 <

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May 5 1897

250.2 (1.68)
303.4 √3.2 <
253.1 4√5.9 < 1.68 <
299.0 99.1 <

Index left and below
340.2
~~30.4~~ 33.3 √3.1 <
340.0 √6.0 < 1.44 <
36.0 109.1 <

(1.0-2)
9 5 339.5
32.4 √2.9 <
342.8 4√9.1 < 1.61 < M = 1.60
31.4 102.0 <

B' compared with m
Index left and below
337.0
9 13 31.2 √4.2 <
334.9 62.1 < 1.27 <
37.0 116.3 <

(1.24) <
334.6
38.2 63.6 <
338.0 √5.0 < 1.22 <
~~32.1~~ 33.0 118.6 <

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May 5 1897.

Index right and above

~~0 7.6~~ 65.7

120.4			
61.9	63.2 <	1.24 <	
125.1	117.9 <		
63.0		(1.2 V)	
9 23	123.0	60.0 <	
65.9	V 6.9 <	1.26 <	M = 1.24
~~122.8~~	116.9 <		

B compared with ~~xx~~

Index right and above

63.0			
9 33	126.2	63.2 <	
61.2	67.3 <	0.97 <	
128.0	130.5 <		
58.3		(0.94) <	
129.0	69.7 <		
63.7	64.2 <	0.90 <	
127.9	133.9 <		

Index left and below

150.6		
217.9	67.3 <	
150.0	70.1 <	0.83 <
220.1	137.4 <	

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1897phae.proj.1346.

May 5 1897

150.8 (0.82)

9 45 221.1 70.8<
151.7 67.4< 0.81 M = 0.88
219.1 138.2<

8 compared with m
Index left
168.7

9 49 211.9 48.2<
161.4 45.2< 1.81<
207.1 93.9<

(1.76)

161.2
207.0 45.8< 1.72<
161.3 41.7< ~~1.48~~
Ao. 213.0 ~~223.0~~ 87.5<

Index to right
255.3
297.0 41.7<
256.5 40.8< 2.12<
297.3 82.5<

257.3 (2.21)

9 5-8 295.1 37.8<
257.3 38.6< 2.30<
295.9 76.4<

M = 1.98

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1897phae.proj.1346.

May 5 1897

α compared with m
Index to right.

239.7
10 9 313.4 73.7 <
238.9 73.3 < 0.63 <
312.2 147.0 <

238.9 (0.64) <
313.1 74.2 <
240.1 72.3 < 0.64 <
312.4 146.5 <

Index to left

330.0
38.1 68.1 <
327.0 75.1 < 0.71 <
42.1 143.2 <

326.0 (0.64) <
10 16 44.8 78.8 <
329.3 71.2 < 0.58 < M = 0.64 <
40.5 150.0 <

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May 5 1897

star q compared with star m

Index left and above

343.8

10 36 25.7 41.9<

343.9 41.6<

25.5 83.5< 2.09<

344.7 (2.10)<

~~star~~ q dis.

26.8 42.1<

344.5 40.4<

24.9 82.5< 2.12<

Index right and below

72.8

116.2 43.4<

71.9 44.5<

116.4 87.9< 1.97<

72.5 (1.97)<

10 42 117.1 * 44.6<

73.2 43.3<

116.5 87.9< 1.97< M = 2.04<

Preceding measurements made through some haze and light clouds

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May 5 1897

A + D.	q	r	a.	B.	39	G.	
10	42	19.0		10	42	0.0	
	49	19.0			49	0.0	

Reap of Jup. I Phot R W. Obs Terbia Rect compared with slightly nearer and brtr. of two Satellites on preceding side = Sat. III.

Limit of visibility

11	9	23*	11		9	10		335.3 —
		—19				18	16.5*	352.0
11	9	4*				25 —	15.1*	336.8
						39	15.8*	351.9

11	12	21*	11	12	40			recen.	
		25*			44			154.3	
		36*			53 —			176.0	
		41*		13	0			150.9	
		50*		13	59 probably.			180.3	
		56*			15 —			148.9	
13	02	} 07			22	} 26	156.0	{ 185.0	
	10				29			{ 187.0	
	16*				35 —			143.0	
	24*				43			188.0	

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May 5 1897

11	13	26	11	45	140.4
		31		50	192.0
		36		55	138.2
		46	14	5	196.0
		56		15	134.0
	14	01		20	196.0
		04		25	135.0
		09		28	196.2
		14		33	130.4
		20		39	195.8
		25		44	128.8
		31		50	198.0
		41	15	0	129.2
		45		4	199.8
		51		10	125.0
		57		16	200.2
	15	02		21	125.8
		10		29	200.0
		14		33	126.2
		20		39	200.0
		24		43	126.7
		31		50	203.2
				56	125.8
	16	07	16	8	75.9 201.7
	4	-19		12	77.9 123.1
	15	48		17	76.9 201.0
				26	124.2
				31	204.9

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May 5 1897

11 16 34	11	14	35	80.7 85.5 121,8
-19			45	83.1 201.3
11 16 15			51	122,5
17 04			57	80.2 203.0
-19		17	1	84.2 123,0
16 45			19	82.2 207,2
17 42			26	123,0
-19			35	81.1 204,1
17 23			50	79.8 123,2
			59	80.4 203.0
18 21		18	5	125,8
-19			19	77.2 203,0
18 02			26	83.1 123,8
			33	80.2 206,9
18 02			42	121,0
-19			46	81.8 202.8
18 33			53	82.0 122,0
		19	6	81.9 204.0
19 40			14 25	123,0
-19			39	82.2 205,2
19 21			45	80.4 123,8
			53	81.3 204,2
20 22		20	10	124,0
-19			17	81.0 205,0
20 03			26	84.0 123,0
			37	82.0 207,0
			46	123,0

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May 5 1897

11 21 00		11 20	53	A4.0	
-19		21	6	86.8	207.0
11 20 41			12	85.4	121.0 9
					207.8
			20		124.2
21 31			27	82.8	207.0
-19			35	77.9	124.2 10
21 12			43	80.4	202.1
		22	3		124.0
22 17			13	A2.0	206.0
-19			21	80.8	125.0 11
21 58			31	81.4	206.8

Seeing pretty good

A. + D. gr. A.			B. 394.		
11	37	19.1	11	37	0.0
	34	19.1		34	0.0

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1897phae.proj.1346.

May 6. 1897 (Thursday)

S. Casseri Phot T ?? Fba

8 36 +19.6
10 25
1 49
8 36
10 36
2 00

Index right and above
241.1 < Comp. Lis. Kep.
7 48 16 309.0 67.9 <
244.1
310.9 66.2 <
134.7 < 0.44 <

241.6 67.3 < (0.49) <
7 51 49 308.9 66.3 <
242.0 133.6 < 0.90 <
308.3

Index left and below
332.0. 62.9 <
7 54 0 40.9
329.1 73.3 <
142.2 < 0.73 <
42.4

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May 6 1897.

	326.9			
7 55 59	40.3	73.4 <		(0.72) <
	330.4	69.6 <		
4 (210. 4 <	40.0	143.0 <	0.71 <	mean + 0.20 <
12 52 31 <				
−20				
12 52 11				
	329.3			
7 57 56	89.8	70.5 <		
	327.7	73.2 <		
	40.9	143.7 <	0.70 <	
	328.5	71.6 <		(0.70) <
7 59 42	40.1	71.2 <		
	328.2	143.4 <	0.71 <	
	40.0	II		

Index right and above

	59.6			
4 3 40	130.9	71.3 <		
	56.6	71.5 <		
	134.1	142.8 <	0.60 <	
	~~56.1~~			
	58.0			(0.62) <
	132.5	74.5 <		
8 5. 19	57.9	72.4 <		
	130.3	146.9 <	0.64 <	
4 (6 37 <				mean + 0.66 <
13 1 39				
−20				
13 1 19				

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May 6 1897.

	58.8	7K.2 <		
8 7 17	133.0			
	56.0	77.1 <		
	183.1	1K1.3 <	0.KK <	
				(0.K6) <
	56.2	7K.7 <		
8 8 48	130.9	7K.9 <		
	58.2	1K9.6 <	0.K2 <	
	183.1	III		

Under left and below

	147.9			
8 12 7	221.2	73.3 <		
	145.1	2 0.3 <		
	225.4	1K3.6 <	0.K0 <	
				(0.K9) <
	144.5	20.0 <		
8 15 11	224.5			
4(43 23 <	147.2	7K.9 <		
13 10 K1 <	222.1	1K4.9 <	0.K2 <	
−20				mean +0.K2 <
13 10 31				
	148.1	77.1 <		
8 16 29	225.2			
	143.6	2K.0 <		
	227.6	161.1 <	0.36 <	

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May 6 1897.

	145.1	±1.9 <		(0.39)
8 18 8	227.0	76.3 <		
	147.1	1V 2.2 <	0.42 <	
	223.4	IV		

Index right and above

	234.0	76.0 <		
8 20 35	310.0			
	240.9	72.5 <		
	313.3	1V 2.5 <	0.61 <	

	239.0	75.3 <		(0.62) <
8 23 10	314.3			
	239.1	73.1 <		
13 19 37 <	312.2	1V 2.5 <	0.63 <	mean +0.50 <
−20				
13 19 17				

	239.3			
8 26 4	312.1	72.2 <		
	236.9	77.5 <		
	314.3	1V 0.2 <	0.57 <	

	236.8			(0.56) <
	313.2	76.4 <		
8 27 51	239.2	75.5 <		
	313.7	1V 0.9 <	0.56 <	
		V		

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May 6 1897.

Index left and below

8 30 22

329.4
45.1 77.1<

324.0 21.4< 0.41<
45.4 16 2.5<

(0.44)<
~~(0.34)~~

78.8<

326.0 ~~44.4~~
44.8

~~8~~ 33 7
4(11 7 24<
13 29 21<
-20
13 29 1

326.3 27.0< 0.46<
43.3 ~~16 1.4~~ ~~0.3~~ +0.50<
~~15 5.8~~ mean ~~+0.49~~

325.2 76.6<
40.8

8 34 53

325.3 29.5<
44.8 15 5.1< 0.42<

326.1 79.2< (0.46)<
45.9

8 35 52

326.7 26.2<
43.5 15 6.6< 0.45<

VI

Index right and above

56.6
133.0 76.4<

53.9 20.6<
134.5 15 7.0< 0.44<

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May 6 1897

8 40 16

13 54.6
52.2 ∠1.2 <
183.6 0.41 <
55.3 74.2 <
160.0 < 0.32 <
mean +0.44 <

∠(149 46 <
13 37 26 <
−20
13 37 6

57.3 7
8 43 28 ×6.9 <
134.2
53.5 ∠0.9 < 0.42 <
134.4 157.8 < ~~0.33~~
(0.41) <
~~(0.36)~~

54.6 79.7 <
8 45 2 134.3 79.3 <
54.7 ∠9.0 < 0.40 <
134.0 VII

Index ~~light~~ and above below
N

145.7
8 47 43 226.5 ∠0.4 <
142.0 ∠4.6 <
230.6 169.4 < 0.20 −

142.6 ∠6.4 < (0.20) <
8 49 57 229.9
144.0 ∠3.1 <
227.1 169.5 < 0.20 < +0.30
mean ~~+0.24~~

∠(26 4 <
13 46 31 <
−20
13 46 11

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May 6 1897.

	144.6			
4 52 8	225.4	23.2 <		
	144.1	22.4 <	0.20 <	
	229.5	169.2 <		
			(0.16) <	
	140.2	22.2 <		
5 53 57	229.0	22.1 <	0.11 <	
	142.6	173.9 <		
	227.7	VIII		

Order right and above

	237.3			
8 56 44	314.0	76.7 <		
	236.0	21.7 <	0.41 <	
	317.7	155.7 <		
			(0.38) <	
	235.8	20.1 <		
4 58 31	315.9			
4(21 20 <	234.0	21.6 <	0.35 <	M = +0.27 <
13 √ 20 <	316.1	161.7 <		
−20				
13 √ 0				

	235.0			
		21.2 <		
9 6 12	316.2			
	234.1	22.2 <	0.28 <	
	315.3	160.5 <		

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May 6 1897

(0.28)<

233.8 Δ1.6 <
315.4 Δ3.9 < 0.27 <
16 V.V <
233.3
317.2 X

Index left and below

9 12 14
321.8 Δ7.0 <
48.8
324.0 Δ1.3 < 0.22 <
45.3 16 Δ3 <

9 13 43
323.2 Δ3.1 < (0.20) –
46.3 0.19 <
4(40 10 <
14 10 2 < 321.2 Δ7.1 <
–20 48.3 17 0.2 <
649 42

M = + 0.2K <

9 15 33
320.9 Δ9.1 <
50.0
322.1 Δ3.2 < 0.14 <
45.3 17 2.3 <

(0.10–) <

9 17 2
323.0 Δ3.0 <
46.0 Δ4.6 < 0.16 <
319.3 17 1.6 <
47.9 X

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1897phae.proj.1346.

May 6 1897

Index right and above

	49.9		
	138.0	∠A.1 <	
9 20 10	51.7	∠7.1 <	0.09 <
	139.8	17 v. 2 <	
			(0.10) <
	51.0	∠6.3 <	
9 21 58	136.3		
4 7 4 43 < 163	49.1	∠A.3 <	0.10 < M = +0.12 <
14 18 41 <	137.4	17 F. 6 <	
−20			
14 18 21			
	49.9	∠A.9 <	
9 24 45	138.8		
	50.8	∠v.6 <	0.10 <
	136.4	17 F.v <	
			(0.10) <
	50.6	∠F.7 <	
9 26 28	135.3	∠9.A <	0.10 <
	49.1	17 F.v <	
	138.9	XI	

Index left and below

	136.2		
	285.0	9 ∠A <	
9 29 13	139.4	93.1 <	
	232.5	191.9 <	−0.22 <
		~~47 0 1~~	
		168.1 v	

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May 6 1897

	140.0	91.2	−(0.15)	
9 31 32	231.2			M = −0.002
4(111 58 23)	139.1	92.2	−0.08	
14 27 7.5	231.9	176.0		
14 28 0				
−20				
14 27 40				
	137.4	96.4		
9 34 16	233.8			
	141.5	47.9	−0.08	
	229.4	144.3		
		177.7		
	140.0	91.1	−(0.12)	
9 35 53	231.1	97.1		
	138.8	142.2	−0.16	~~M = −0.14~~
	235.9	177.2		
		XII		

Index right and above

	231.0	49.3		
9 38 53	320.3			
	234.4	43.6	+0.13	
	315.0	172.9		
			+(0.12)	
	280.9	47.6		
9 40 26	316.5			
4(149 28)	231.6	42.7	+0.11	M = 0.000
14 37 22	320.3	174.3		
−20				
14 37 2				

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1897phae.proj.1346.

May 6 1897

231.3
320.7 49.4 ✓
9 44 56
231.7 42.1 ✓ +0.06 <
318.8 176 ✓ ✓

+(0.09) <

233.3 44.4 ✓
9 47 13 317.7 42.2 ✓ +0.12 < ~~M = +0.10 <~~
231.2 173.6 ✓
320.4 XIII

Index left and below

318.6
9 49 40 52.7 94.1 ✓
320.2 90.3 ✓ −0.06 <
50.5 184.4 ✓
174.6 ✓

320.3
5 1 15 49 50.0 49.7 ✓ −(0.08) <
4(193 4 <
14 48 16 < 318.2 94.1 ✓
−20 52.3 143.2
14 47 56 176.2 ✓ −0.07 < M = 0.00 <

317.7
9 5 34 51.1 93.4 ✓
319.0 93.2 ✓
52.2 146.6 ✓ −0.13 <
173.4 ✓

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1897phae.proj.1346.

May 6 1897

−(0.12)

9 56 13	319.2	90.1 ✓		
	49.3	96.1 ✓		−0.12
	316.0	186.2 ✓		
	52.1	173.8 ✓		

Index right and above

9 58 1	46.5	92.6 ✓		
	142.1			
	50.0	90.7 ✓		−0.12
	140.7	186.3 ✓		
		173.7 ✓		

	49.0			−(0.13)
9 59 17	140.8	91.8 ✓		
4(2) 12	47.1	92.4 ✓		−0.14
14 56 48	142.5	184.2 ✓		M = −0.12
−20		172.8 ✓		
14 56 28				

	47.1	92.3 ✓		
10 8 43	142.4			
	48.4	92.9 ✓		
	141.3	184.2 ✓		−0.16
		171.8 ✓		

	49.4	92.6 ✓		−(0.14)
10 5 20	142.0	94.8 ✓		
	47.1	187.0 ✓		
	141.5	173.0 ✓		−0.13

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May 6 1897

Index left and below

	134.9	104.1		
10 7 58	239.0			
	136.6	96.7		
	233.3	200.8	−0.40	
		192		
	136.7	94.8	−(0.42)	
10 10 16	235.5	104.2		
4(2) 17	133.5	203.0	−0.44	M 2 −0.28
15 6 49	237.7	197.0		
−20				
15 6 29				
	131.4	106.4		
10 12 11	237.8			
	136.0	97.8		
	233.8	204.2	−0.46	
		195.8		
	136.0	97.8	−(0.44)	
10 13 52	233.8	104.1		
	134.6	201.9	−0.42	
	238.7	195.1		

Index right and above

	227.3		
10 16 48	321.6	94.3	
	229.7	92.3	
	322.0	186.6	−0.13
		173.4	

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229.9 92.6 — (0.16)

10 18 20 — 322.5

226.9 94.1 — 0.20

325.0 190.7

169.3

M = −0.30

(21 11

15 15 18

−20

15 14 58

226.5 94.4

10 20 12 — 324.9

220.1 92.4 — 0.21

322.9 191.2

168.8

229.8 90.7 — (0.18)

10 22 18 — 320.5 92.4

228.6 182.7 — 0.15

326.0 173.3

~~M = −0.19~~

Index left and below

1340 102.9

10 25 50 — 236.9

132.8 105.6

238.4 208.2

151.1

132.8 106.1 — (0.15)

10 27 52 — 238.9

(16 12

134.3 102.4

15 24 3 — 237.1 204.9 — 0.55

−20 151.1

15 23 43

M = −0.36

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134.5 99.7 ✓
10 30 52 234.2
130.1 109.0 ✓ −0.05 <
239.1 204.7 ✓
181.3 ✓
+3

−(0.03) <

132.0 104.3 ✓
10 32 19 236.3 102.6 ✓ −0.01 < M = −0.04
134.4 206.9 ✓
237.0 183.1 ✓
XVIII

Index right and above

~~9 X X 0~~
~~8 2 X X~~
10 35 8
228.3 96.2 ✓
10 41 3 324.5 102.4 ✓
~~327.0~~ 224.6 194.6 ✓ −0.35 <
327.0 161.4 ✓

223.9 104.0 ✓ −(0.38) <
10 44 38 327.9
~~XIX 2~~ 226.7 99.3 ✓ −0.41 < M = −0.46
~~IV 37 13~~ ~~324.0~~ 201.3 ✓
~~−20~~ 324.0 182.7 ✓
~~IV 36 V3~~

229.1 94.4 ✓
10 46 7 324.5 101.3 ✓
226.0 196.7 ✓ −0.32 <
327.3 163.3 ✓

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1897phae.proj.1346.

May 6 1897

225.8 102.5 ✓ −(0.34)<

10 47 48 327.8 96.7 ✓ −0.37<
227.2 199.2 ✓
323.9 160.2 ✓
XIX

Index left and below

315.6 103.6 ✓
10 52 26 59.2
313.2 102.3 ✓ −0.50<
55.5 205.9 ✓
156.1 ✓

315.3 100.5 ✓ −(0.48)<
10 54 4 55.8 103.4 ✓
313.4 203.9 −0.46<
56.8 156.1 ✓

4|200 25<
15 50 6<
−20
15 49 46

MM = −0.41<

315.1 100.2 ✓
10 56 15 55.9
313.7 101.4 ✓
202.2 ✓ −0.42<
55.1 157.2 ✓

312.9 102.1 ✓ −(0.43)<
10 55 7 55.0 101.0 ✓
313.8 203.1 ✓ −0.44<
54.8 156.9 ✓
XX

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May 6 1897

Index right and above

11 0 30
41.6
146.5 104.9 ✓
41.5 106.1 ✓
147.6 211.0 ✓
149.0 ✓
−0.59 <

41.5 104.7 ✓
146.2
11 2 23 42.1 107.6 ✓
149.7 212.3 ✓
147.7 ✓
−(0.60) <
−0.62 <
M = −0.62 <

11 7 47
41.0 107.0 ✓
148.0
41.9 102.2 ✓
150.1 211.2 ✓
144.4 ✓
−0.68 <

41.0 107.1 ✓
11 9 20 148.1 107.6 ✓
39.5 214.7 ✓
147.1 ✓
−(0.68) <
−0.67 <

Index left and below

129.9
11 11 46 238.5 102.9 ✓
131.3 104.6 ✓
239.9 217.5 ✓
142.5 ✓
−0.72 <

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1897phae.proj.1346.

May 6 1897

~~239.9~~

11 13 8

4(K2 1 <

16 10 30 <

-20

16 10 10

131.8 109.9 ✓

241.7

129.8 108.3 ✓

238.1 21A.2 ✓

~~235.1~~ 1K1.8 ✓

-(0.73) <

-0.74 <

M = -0.70 <

134.0 109.7 ✓

11 17 52 243.7

132.1 108.7 ✓

240.8 21A.4 ✓

1K1.6 ✓

-0.74 <

130.9 112.1 ✓

11 19 40 243.0 106.0 ✓

132.0 21A.1 ✓

238.0 1K1.9 X XII

-(0.74) <

-0.74 <

~~M = -0.74~~

Index right and above

222.0

11 22 23 329.8 107.8 ✓

222.1 109.2 ✓

331.3 217.0 ✓

1K3.0 ✓

-0.71 <

222.0 106.7 ✓

11 23 57 328.7

4(83 ~~-2~~ <

16 20 ~~-8~~ <

-20

16 20 38

224.5 10A.~~5~~ ✓

333.0 21~~5~~.2 ✓

~~1K1.8~~ ✓

-(0.70) <

~~-07~~

-068 <

M = -0.72 <

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1897phae.proj.1346.

May 6 1897

220.4 112.5 ✓
11 25 43 332.9

223.0 106.1 ✓
329.1 216.6 ✓ −0.75 ✓
141.5 ✓

223.6 106.1 ✓ −(0.72) ✓
11 27 24 329.7 109.5 ✓
221.3 215 ✓ −0.68 ✓
330.7 ~~1X5~~ ✓

~~M = −0.71~~

Index left and below

309.8 110.2 ✓
11 30 2 60.0

310.5 104.5 ✓
58.9 216.6 ✓ −0.75 ✓
141.5 ✓

310.3 105.7 ✓ −(0.70) ✓
11 31 31 54.0

308.4 104.7 ✓
57.1 215.5 ✓ −0.66 ✓
105.6 ✓

M = −0.71 ✓

~~11 45 40 ✓~~ 140
16 28 40 ✓
−20
16 28 20 ✓

~~2 45.0~~
~~313.4~~

309.5 110.3 ✓
11 36 32 59.8

308.6 104.2 ✓
57.4 213.1 ✓ −0.76 ✓
140.9 ✓

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1897phae.proj.1346.

May 6 1897

311.5 104.9 ✓
56.4 163.5 ✓
300.9 218.4 ✓
54.4 141.6 ✓
XXIV

−(0.70)<

−0.74<

Index right and above

11 38 26

38.5 106.2 ✓
145.3
38.2 110.7 ✓
148.9 217 ✓
142. ✓

−0.72<

11 40 42

39.3 111.6 ✓
150.9 110.3 ✓
38.9 221.9 ✓
149.2 132.1 ✓

−(0.76)<

11 42 13

157 53 <113
16 39 28
20
16 39 8

−0.81<

III = −0.76<

38.8 109.7 ✓
148.5
39.8 110.2 ✓
150.6 220 ✓
139. ✓

−0.78<

11 44 21

38.0 ~~7~~
150.7 112.7 ✓
37.8 112.6 ✓
150.4 225.3 ✓
134.7 ✓

−(0.83)<

−0.88<

11 46 40

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1897phae.proj.1346.

May 6 1897

	132.2	107.6 ✓		
11 48 12	239.8			
	127.1	116.9 ✓	−0.87 <	
	244.0	22 ✓ ✓		
		13 ✓ ✓		
	130.5	112.1 ✓	−(0.88) <	
11 50 51	242.6			
4(190 4	129.5	113.1 ✓	−0.88 <	M = −0.86 <
16 47 31 <	242.6	22 ✓ 2 ✓		
−20		13 ✓ 2 ✓		
16 47 11 <				

Watch used in preceding measts. was 20 secs. fast.

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1897phae.proj.1346.

May 7 1897 (Friday)

δ Leonis. Phot T W Bk

21 37 +78.3.
30 3
13 26

Cloudy

Clouds

Index left and below
150.9 over dia
219.1 68.2
147.1 72.2
222.3 140.4 −0.71

147.9 76.4 (−0.69)
224.3
150.1 68.9
219.0 144.3 −0.67

Index right and above
244.9
307.8 62.9
241.5 68.7
310.2 131.6 −0.9

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1897phae.proj.1346.

May 7 1897

(−0.9K)

241.7
310.1
244.0 — 64.K — 64.1 / 132.v — −0.93
308.1

mean = −0.42

8 9
13 K 30

244.1
308.0
240.7 — 63.9 — 70.6 / 134.v — −0.49
311.3

8 12

(−0.42)

241.2
311.1
clouds — 69.9 — 64.9 / 134.2 — −0.42
244.4
309.3

clouds.
Index left and

333.4
35.9
327.2 — 62.v — 76.3 / 138.2 — −0.40
43.5

(−0.42)

326.1
clouds. 76.2
42.9
334.3 — 60.1 / 136.9 — −0.24
34.4

mean = −0.42

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1897phae.proj.1346.

May 7 1897

g 23± vc 3.5 var var 1.5 d in finder
vb 1 var var 2c in large telescope

T Origin's Phot T 9 W Str

11	58	-5.0
12	56	
	58	

m compared with g
Index left and above

	162.0		
10 m	209.7	47.7 v	
	161.1	47.7 v	
	208.8	93.4 v	1.42 v
	161.4	44.9 v	(1.46 v)
	206.3		
	163.9	47.1 v	
	209.0	90.0 v	1.91 v

Index right and below

	255.2		
	296.6	41.4 v	
	255.0	41.2 v	
	296.5	82.9 v	2.11 v

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1897phae.proj.1346.

May 7 1897

256.0
298.6 42.6 ✓
256.3 41.2 ✓
297.5 43.4 ✓ 2.0 A ✓ (2.10) ✓ Mean 1.9 A ✓ ~~1.93~~

10 9

Σ 1919 Phot R W Obs

15 7 +19.8
13 30
2 37
12
9 28

fog again

Σ 1268 Phot R W Obs

5 39 +29.2
13 37
4 2

Clouds!

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1897phae.proj.1346.

May 7. 1897.
Index left and below
326.2 L
ID 29 0.6
326.6
blue sticks

all fogging up again.

~~Index left and below~~
~~332.0 L~~
~~49.1~~
331.0

~~4 43~~

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1897phae.proj.1346.

May 8 1897

δ. Cephei Phot T W Obs

21 .87 +78.3

36 44

15 .07

Index left and below

332.0

9 43 40.1 68.1<

331.0 67.1< −0.87<

38.1 135.2<

330.9 −(0.86)<

38.6 67.7<

331.5 68.2< −0.86<

39.7 135.9<

Index right and above

~~60.8~~

~~130.9~~

60.3

130.9 70.6<

61.0 66.8< −0.83<

127.8 137.4<

~~X~~ −(0.80)<

61.0

9 52 129.5 68.5<

14 47 30 58.8 71.2< −0.77< MM = −0.83<

130.5 140.2<

1897phae.proj.1346.

May 8 1897

57.9
9 53 131.9 74.0<
60.1 68.7< −0.72<
128.8 142.7<

61.0 −(0.76)<
127.3 66.3<
58.0 73.0<
131.0 139.3< −0.79<

Index left and below
148.9
221.8 72.9<
149.7 69.8< −0.72<
219.5 142.7<

150.0 −(0.72)<
10 3 218.8 68.8<
14 58 0 147.4 73.7< −0.72< M = −0.74
221.1 142.5<

10 10 CC 3 var, var^2 d in finder
Cvars = b in large telescope

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1897phae.proj.1346.

May 8 1897

Showed Dr. Willson and his students the moon and Jupiter the first of the evening.

Comparison stars for

R Hydrae ~~Plot~~ Plot T 9h 0b 2s

1.3 22 - 22.5

13 0.2

30

Clouds

Clouds again.
α compared with ν Indep
319.0
48.2

10 49

Clouds thick
324.1
Clouds thick

Clouds so thick that impossible to continue

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1897phae.proj.1346.

May 8 1897

Σ 2166 Phot R W Obs

17 22 +11.5

14 22

3 0

9 0

Clouds thick in this region

Σ 2316 Phot R W Obs.

18 21 +0.1

Too cloudy

Σ 2166 W Obs.

17 22 +11.5

14 27

~~3 5~~

~~8 5 5~~

-2 √√

9 √

Clouds thick again.

11 30 Clouds all thick everywhere: no stars visible.

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May 11 1892 (Tuesday)

showed seniors the moon

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1897phae.proj.1346.

May 15th 1897 (Saturday)

S. bancri Phot^r nr Obs

8	36	+19.6
11	13	
2	87	
8	36	+19.0
11	23	
2	47	

8	36
11	28
2	52

8	34	15.7
11	82	
2	56	

7 30 cloudy and much twilight

7 45 S. bancri not visible in Phot clouds thick

8 0 clouds thicker; bright star gone

1897phae.proj.1346.

May 15 1897

continuously cloudy

8	36	
13	11	
4	3	0

9 25 clouds thick: no stars visible

8	86	
13	28	
4	52	

5	36	
13	37	
5	1	

clouds thicker still

cloudy everywhere. It is evidently
10 2 impossible to get S. Cancri or
anything else to-night.

10 10 Still cloudy

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1897phae.proj.1346.

May 17 1897 (Monday)

Jupiter

10 16 +12.3
11 −0
1 4

Mars

8 8 +21.9
11 54
3 46

Explained instruments to Travers student and showed them Jupiter + Mars.

δ Cephei Phot. ⊽ Obs

21 37 +78.3
36 15
14 38

Clouds

Index right and above
240.0 } var dia.
313.1 }
246.1 73.1 <
307.4 61.3 <
134.4 <
− 0.89 <

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1897phae.proj.1346.

May 17 1897

239.8 −(0.86)
311.9 72.1<
244.9 65.8< −0.82<
~~309.8~~ 310.7 137.9<
le lowds ~~thick~~.

Under left and below
330.8
Clouds ~~thick~~.
38.0 67.7<
331.0 66.6< −0.89<
37.6 134.3<

−(0.87)

329.2
39.1 69.9<
8 41 332.1 66.3< −0.85< M = −0.86
13 30 0 38.4 136.2<

332.6
8 42 ~~36.3~~ 37.4 64.8<
328.7 70.9< −0.86<
39.6 135.7<

331.1 −(0.87)
40.9 69.8<
~~33~~3.5 64.8< −0.88<
38.3 134.6<

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1897phae.proj.1346.

May 17 1897.

Index right and above

59.9
129.3 69.4<
57.9 73.4< −0.72<
131.3 142.8<

−(0.74)<

58.0
130.2 72.2<
60.1 68.5< −0.76<
129.2 140.7<

M = −0.080

8 50
13.46 0

cc 2.5 var, var. 2d in finder.
+ 58 c b 1 var, var 1c in large telescope

Sky somewhat cloudy, measurements and estimates not quite full weight

MP 441 Phot R. W Obs.

8 31 +62.8
13 4
9 33

Index above

49.1 L
103.0
104.7
5

9 15

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1897phae.proj.1346.

May 17 1897
Index above
48.8 < var dir.
9 18 102.7
blonde thick.
49.3 √3.9<
103.5 √0.2< −1.44<
109.1<

50.2 −(1.49)
103.4 √3.2<
51.6 √1.6< −1.54<
103.2 104.8<

Index below
140.3
192.2 √1.9<
141.0 √1.1< −1.58<
192.1 103.0<

140.3 −(1.58)
9 24 192.7 √2.4<
14 21 0 140.8 √0.8< −1.58< M = −1.54
191.6 103.2<

blonde getting thick

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1897phae.proj.1346.

May 17 1897.

	139.9		
8 36	188.0	48.1 <	
	141.6	50.9 <	−1.68 <
	192.5	99.0 <	
	141.8		−(1.66) <
	191.0	49.2 <	
	139.0	51.1 <	−1.65 <
	190.1	100.3 <	

Index left and above

~~231.1~~	231.0		
	281.3	50.3 <	
	280.9	50.1 <	−1.65 <
	281.0	100.4 <	
	230.5		−(1.60) <
9 44	282.5	51.7 <	
14 40 0 <	230.5	53.1 <	−1.54 < M = −1.63
	253.6	104.8 <	

All the observations made through more or less clouds

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May 17 1897.

□ 2308 Phot R N Obs.

18 9 +80,0

Too cloudy

□ 2280

18 3 +26,1

14 46

3 17

6 bonds thick.

□ 2437 Phot R N Obs

19 10 +35,9

15 09

4 10

12

7 50

6 bonds thick no stars visible.

10 7 6 bonds thick everywhere; no chance for anything farther.

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1897phae.proj.1346.

May 18, 1897. (Tuesday

δ. Leonis Phot. T. π Leonis

21	37	+ 78.3
38	31	
13	54	

21	37
30	47
14	10

Index right and above

63.8	var dis.	
127.4	63.6	
64.1	60.2	
124.9	123.8	−1.10

65.8	9.1	−1.12
124.9		
63.3	63.7	
127.0	122.2	−1.13

Index left and below

151.0		
220.2	69.2	
152.7	64.3	
217.0	133.5	−0.91

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May 18 1897

−0.20 v

157.3
217.0 — 6 v.7 — 2 — −0.6 v
146.8 — 6 v.9 — 6 v.6 — −0.6 v
~~Prob. 215.) 295.7 — 134.6 — −0.88~~ Mean = −0.96 v

8 7

147.5 — 76.v
224.0
153.6 — 67.9 — (xxx) v — −0.69 v
221.5

157.1 — 67.1 v — −0.64 v
218.2 — v
147.3 — 77.x — (14 v.v) v — −0.64 v
224.7

Index right and above
245.0 — 66.1 v
311.1
247.9 — v9.2 — 12 v.3 v — −1.02 v
307.1

245.5 — 62.2 v — −1.02 v
309.3
242.9 — 64.2 v — 131.6 v — −0.9 v v — Mean −0.92 v v
311.7

8 10

8 18 ve 3 var var 1.5 d in finder
vb 1 var var 1.5 c in large telescope

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May 18 1897.

Nova Aurigae W Obs

5	23	+ 32,0
12	27	
7	4	
5	23	
12	32	
7	9	
5	23	
12	40	
7	17	

Nova Auriga can not be obtained

Comparison stars for

χ Virginis W Obs

11	58	+ 9.4
13	7	
1	09	

g 5.5 h
h 5 k
k 4.5 l
l 4 m
m 3.5 n

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1897phae.proj.1346.

May 18 1897.

n	4.50
o	6 4 8
9 45	9 7 3 2

Went over into west dome and revised comparison stars for ψ Virginis and R Leonis Minoris with Mrs. Reed

Comparison stars for

ψ Virginis

9 Boo

12	81	1-8.6
14	44	
2	18	

12	31
14	50
2	29

Preliminary revision and extension made but moon now getting too bright for anything farther.

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1897phae.proj.1346.

May 19 1897. (Wednesday)

δ. Cephei Phot-T W. Obs.

21	37	+78.3
35	35	
13	58	
21	37	
35	49	
14	12	
21	37	
35	55	
14	18	
21	37	
36	3	
14	26	
21	37	
36	10	
14	33	

Index right and above

244.3	vanish	
308.2	63.9 ✓	
242.5	66.6 ✓	
309.1	130.5 ✓	−0.97 ✓
242.7	66.3 ✓	−0.94 ✓
309.0		
242.7	67 ✓	
310.2	133.7 ✓	−0.90 ✓

5 11

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1897phae.proj.1346.

May 19 1897.

Index left and below

331.0 65.9
36.9
330.3 66.9 / 132.8 −0.92
37.2

329.8 69.5 −0.89
39.3
331.1 66.5 / 136.0 −0.86
37.6

Mean = −0.92

8 17

333.0 62.7
35.7
332.3 65.7 / 128.4 −1.01
38.0

8 18

331.0 67.1 −0.94
38.1
332.3 64.1 / 131.2 −0.97
36.4

Index right and above

62.7 65.0
127.7
60.8 71.4 / 136.4 −0.47
132.2

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60.8 69.1 v. −0.4 v
$ 25 129.9
60.4 67 v
136.6 v −0.4 v
127.9 mean −0.9 v

J c 3 var; var 2d in finder
8 27 J b 1 var, var 1.c in large telescope

Went over to Goat Dome and revised J Hydrae with Inv. Read.

X Virginis Phot R Wolbach

11 5-8 +9.4
13 15-
1 17

9 24 q 4 h
h 4.5 k
k 6 l
l 4 m
m 4 n
n 4 o
o 5.5 4 q
q 4 4.5 q r

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2. ~~7~~ compared with 2
~~3~~ index above

35-4.9 ~~dec~~ comp dir

~~10~~ 9 55

12.8
356.6 17.9 ✓
11.0 14.4 ✓
32.3 ✓ +4.24 ✓

356.9 +4.2 ✓
11.5 14.6 ✓
355.4 17.4 ✓
12.8 32.0 ✓ +4.26 ✓

Index below

84.1
103.4 19.3 ✓
84.8 14.3 ✓
103.1 37.6 ✓ +3.91 ✓

85.5 +3.90
104.8 19.3 ✓
10 50
85.0 14.7 ✓
103.7 34.0 ✓ +3.44 ✓

mean +4.04 ✓
2.4 ✓
12.✓3 ✓

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~~2~~ compared with ℓ
Index above

	358.3	12.0 v	
9	59	10.3	
	359.2	10.9 v	
	10.1	22.9 v	+4.99 v
	359.0	10.6 v	+4.86 v
	9.6		
	357.0	14.9 v	
	11.9	25.5 v	+4.76 v

Index below

	86.5	14.4 v	
	100.9		
	86.2	14.5 v	
	100.7	28.9 v	+4.48 v
	86.0	14.8 v	+4.49 v
10	45 100.8		
	86.5	13.9 v	
	100.4	28.7 v	+4.70 v

Mean +4.68 v

8.40 v
13.13 v

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n compared with l
l under above and to left

352.4	350.1	24.6 ✓	
11.1	18.7		
350.0	353.6	22.9 ✓	
11.9	16.5	✓1.✓ ✓	+3.21 ✓

10 9

351.6	27.0 ✓	+3.28 ✓
18.6		
354.4	21.8 ✓	
15.8	✓8.8 ✓	+3.38 ✓

l under right and below

80.6		
106.5	27.9 ✓	
80.8	24.2 ✓	
109.0	✓6.1 ✓	+3.01 ✓

10 41

79.9	24.8 ✓	+3.03 ✓
108.3		
81.2	26.8 ✓	
108.0	✓✓.2 ✓	+3.0✓ ✓

mean = +3.16 ✓

8.8✓ ✓
11.61 ✓

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l compared with l
under above

349.8			
21.5	31.7 v		
10 14			
348.9	32.3 v		
21.2	64.0 v	+2.71 v	
349.4	31.4 v		+2.69 v
20.8			
347.6	33.9 v		
21.5	67.3 v	+2.67 v	

Under below

75.7	37.4 v		
113.1			
75.6	35.8 v		
111.4	73.2 v	+2.40 v	
76.2	36.1 v		+2.44 v
10 37 112.3			
77.0	34.3 v		
111.3	70.4 v	+2.49 v	

mean +2.46 v
2.40 v
11.01 v

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May 19 1897.

M compared with L

Index above

	* 350.9	29.6 v	
10 18	20.5		
	349.8	30.7 v	
	20.5	60.3 v	+2.4 v
	348.4	32.2 v	+2.43 v
~~10 18~~	20.6		
	350.0	29.1 v	
	19.1	61.3 v	+2.41 v

Index below

	79.2	31.1 v	
	110.7		
	78.1	33.1 v	
	110.2	64.6 v	+2.69 v
	76.9	33.1 v	+2.64 v
10 33	110.0		
	79.0	31.7 v	
	110.7	64.8 v	+2.64 v

Mean = +2.76 v

2.45 v

11.21 v

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May 19 1897

O compared with
Index right and above

35-2.7	24.1 v		
16.5			
354.4	22.6 v		
17.0	26.7 v	+3.42 v	
353.9	23.2 v		
17.1		+3.34 v	
352.0	24.0 v		
17.0	28.2 v	+3.3 v	

Index left and below

82.2			
107.7	24.5 v		
81.1			
107.6	26.5 v		
	22.0 v	+3.1	
80.9			
107.8	26.9 v	+3.14 v	
81.0			
108.2	27.2 v		
	24.1 v	+3.10	

Mean +3.26 v

8.45 v
11.71 v

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May 19 1897.

ζ Virginis
Selection of faint comp. stars
2r 8br

12 31 — 8.6
15 6
2 35

l	4	ι
α	4.5	β
β	2.5	γ
γ	4.5	δ
11 15 ~~ζ~~	3.5	ε
ε	4	9
9	5	η
η	2.5	θ
θ	4	κ

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May 20 1897 (Thursday)

δ. Cephei.

21	37	+78.3
36	25	
14	48	

Cloudy

growing more cloudy again. Evidently no chance for δ. Cephei. Pole star disappearing

Σ 1830 Plot R W. Obs.

14	17	+9.0
13	46	
	31	
17	29	
14	17	
13	52	
	25	
11	35	
14	17	
12	57	
1	20	
12		
10	40	

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May 20 1897

Pos. Ang 185° Dist 6"
Magn. 5.3 6.7

Index right and above

~~225.0~~
~~86.1~~

~~8 55~~

Images do not reverse well

Phot H

Index right and above.

8 59

352.7 ∠ btr dis
49.6 ∨6.9
354.0
44.2 ∨0.2
107.1 −1.49

353.3 ∨0.7 −1.44
44.0
351.0 60.1
51.1 110.2 −1.40

Mean = −1.51

Index left and below

83.4 ∨3.2
136.6
82.9 ∨2.5
135.4 10 ∨.7 −1.52

1.52

−1.63

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May 20 1897.

84.0
9 7 182.3 [illegible].3
81.0 [illegible]1.9
132.9 100.2 -1.65

Seeing very bad except at intervals high wind and approaching storm causing images to be very blurry.

Σ 1919 PhotR 2r Obs

15 7 +19.8
20: 13 27
2 40
12
9 20
15 7
13 [illegible]
1 [illegible]4
10. 26

Pos. Ang. 340° dia 25.1"
Magn 6.0 6.9

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1897phae.proj.1346.

May 20 1897
Index left and below
219.3 [illegible]

9	29	289.6	70.3	
		221.2	71.8	
		293.0	142.1	− 0.73
		220.2		− 0.78
		291.7	71.5	
		~~293~~ 221.3	65.9	
		287.2	137.4	− 0.83

Index right and above Mean = − 0.88

		314.2		
		15.7	61.5	
		312.3	60.7	
		15.0	127.2	− 1.04
		312.3		− 0.99
4	35	21.8	69.5	
		315.3	62.4	
		17.7	131.9	− 0.94

Σ 1962 Phot R W Obs

15	32	− 8.3	
13	53		
1	39		
12			
10	21		

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1897phae.proj.1346.

May 20 1897

Northern component thought to be slightly brighter.

Index right A.

26.7 < northern & brtr. dist.

9 48	123.7	97.0	
	29.5	87.5	
	~~117.0~~ 170	184.5	
		175.5	+ 0.08
	33.4		
	114.2	80.8	+0.06
	29.6	101.4	
	124.0	182.2	
		177.8	+ 0.04

Index to left - B Mean = 0.08

	117.2		
	217.0	99.8	
	124.4	84.9	
	209.3	184.7	
		175.3	+ 0.09
	123.2		
9 54	209.4	86.2	+0.10
	116.0	99.8	
	215.8	186.0	
		174.0	+ 0.11

Pos. Ang. 180° Dist 11"

Mags 6.3 6.4

Clouds now growing thick everywhere

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1897phae.proj.1346.

May 22 1897 (Saturday)

S. Cephei. Phot T W Obs

21 37 + 78.3

30 45

14 8

Index left and below.

157.8 < var dia

~~217.0~~ 217.0 6 v.2 v

155.4

214.3 v4.9 v

12K.1 v −1.10 v

~~153.9~~

153.9 60.1 v −(1.10)

214.0

~~152.4~~ 6K.6 v

217.0 (2K.7 v −1.09 v

Index right and above

245.3 60.7 v

306.0

248.2 v v.2 v

303.4 11v.9 v −1.2 v

248.8 v2.2 v −(1.3K)

301.6

247.9 v7.6 v

~~305.5~~ ~~110K~~ v

110.K v −1.K1 v

mean −1.22 v

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1897phae.proj.1346.

May 22 1897

	245.7			
	304.8	r 9.1		
t 7	247.8	r 6.1		
	303.9	11 r.2	− 1.30	
	246.2	r 7.9	−(1.2 r)	
	304.1			
	245.8	6 2.r		
	308.2	12 0.3	− 1.1 9	
	Index left and below			
	329.0			
	42.1	7 3.1		
	335.0	r 9.9		
	34.9	13 3.0	− 0.9 2	
	332.7	r 9.6	−(0.9 r)	
t 15	32.3			
	329.8	2 0.2		
	40.0	12 9.2	− 0.9 2	
			mean −1.10	

J C 8 var, var 1.5 d in finder
t 22 J var = b in large telescope

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May 22 1897

Nova Aurigae Phot T w Obs

5 ✕ 23 +32.0

12 49

7 26

Can do nothing with Nova Aurigae; region low and twilight.

ν Cephei Phot I w Obs.

0 30 +81.4

13 15

12 45

Index to left

326.6 var des.

9 3 30

39.3 72.7 ✓

319.8 A A K ✓

48.2 161.1 ✓ −0.36 ✓

317.3 93.7 ✓ −0.29 ✓

9 4 0

51.0 744 ✓

325.4 1641 ✓

39.8 I −0.22 ✓

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May 22 1897

Index to right

9 9 47	239.0	70.4		
	309.4			
	233.7	81.9		
	315.6	152.3		−0.13
	233.1	81.7		−0.16.
9 11 22	317.8	79.8		
~~9 11 22~~	238.5	159.3		
9 7 10. + 2.	313.8			−0.39 mean −0.32
9 8 2.				
~~16 8 2. 16.~~ = 17 17				
9 12 40	238.2	76.1		
	312.3			
	231.4	82.0		
	319.4	162.1		−0.34
	231.8	89.1		−0.27
9 14 22	320.9	80.1		
	232.9	169.2		−0.20
	313.0	II		

Index to left.

9 16 51	324.4	76.6		
	41.0			
	318.0	91.6		
	49.6	168.2		−0.22

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1897phae.proj.1346.

May 22 1897

1K 16 29.
1K 16.
- 39 17.

9 18 34
9 17 37.
+ 2.
9 16 29.
9
1K 16 29.
9 20 18

9 22 11

9 24 3

9 25 40
9 23 3.
+ 2.
9 23
1K 23
1
- 31 1.

316.8 91.
48.3 77.
324.0 169.0
41.5

322.8 99.8
42.6 97.7
343.3 179.
49.0

312.4 99.9
48.3 82.2
321.3 181.
43.5

Index to right
50.1 46.9
135.0
44.1 98.8
142.9 143.7
176.3

43.0 100.
143.5
49.0 46.9
135.9 147.8
172.6

- 0.2
- 0.21
mean - 0.2

- 0.04

- 0.06

- 0.03

+ 0.07

+ 0.10

+ 0.14
mean + 0.02

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May 22 1897

	51.1	46.2		
9 27 53	135.3			
	42.7	102.1		
	144.8	146.3	+0.12	
		173.7		
				+0.20
	42.3	102.7		
9 29 36	145.0	92.1		
	46.0	194.8	+0.28	
	138.1	169.2		
	Index to left			
	139.1	91.9		
9 32 17	231.0			
	134.0	104.8		
	238.8	196.7	+0.32	
		163.3		
	138.8	99.8		+0.24
9 34 20	238.3			
9 31 2.	138.0	93.6		
+2.	231.6	193.1	+0.2	mean +0.24
9 31		166.9		
9 31	137.1	95.9		
9 36 21	233.0			
	130.9	102.9		
	239.8	204.8	+0.4	
		167.2		

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	130.7	10A.3 ✓		+0.K6 ✓
9 38 8	239.0 ✓	9 v.K.		
	135.5 ✓	203.7 ✓	+0.Kv ✓	
	230.9	~~1v6.3~~		

~~229.0~~ Index to right

~~3 1 9.5~~

	227.9	9 K1 ✓		
9 44 52	322.0			
	221.0	107.v ✓		
	328.5	201.6 ✓	+0.K1 ✓	
		1vA.K ✓		

	220.3	10K.9 ✓		+0.K3 ✓
9 47 28	325.2			
9 K2 3K. ✓	226.0	9A.A ✓		
+v 2 ✓	324.8	203.7 ✓		mean +0.KK ✓
9 K3 26.		1v6.3 ✓	+0.Kv ✓	
2 v				
1K K3 26. ✓	227.1	93.v ✓		
1K vv K6. ✓				
1 2 20.0	320.6			
9 44 2	220.7	100.2 ✓		
	320.9	193.7 ✓		
		166.3 ✓	+0.26 ✓	

	220.3	10A.6 ✓		
9 51 35	328.9	9A.9 ✓		+0.K0 ✓
	225.2	207.v ✓		
	324.1	1v~~7.1~~ ✓	+0.v3 ✓	

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May 22 1897

Index to left

	312.11	100.1		
9 54 21	52.2			
	306.9	113.6		
	60.5	213.7		+0.6
		156.3		
	306.3	112.9		+0.6
	59.2			
9 56 38	312.9	100.1		
9 1 39.				
+2.	53.0	213.0		
9 2 31.		157.0		+0.63 mean +0.2
1 2 31.				
1 2 6.				
-3 1.				
	316.8			
10 3 56	50.7	93.9		
	305.8	112.2		
	60.0	206.1		+0.2
		151.9		
	306.4	112.6		+0.2
10 5 28	59.0	99.2		
	313.1	212.0		
	52.5	159.0		+0.61

Index to right

	40.4	101.9		
10 8 0	143.3			
	34.8	116.1		
	150.9	218.0		
		167.0		+0.73

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May 22 1897

33.9 116.K +0.76
10 9 45 150.3
10 6 K7. 40.2 103.7
+ 2.
10 7 39. 143.9 220.1
139.9 +0.7K. Mean +0.67
39.
K 46.
+11 3.
10 11 24 42.8 101.7
144.5
36.6 113.7
150.3 21K
14K.6 +0.6K
34.0 11.K
10 12 50 149.8 10K.7 +0.73
40.7 220.
145.4 139. +0.7K

Order to left

133.5
10 15 41 236.2 102.7
123.0 12K.6
247.6 227.3 +0.92
132
122.3 122.K
10 17 59 244.7 +0.90
10 1K 2K. 131.0 106.0
+2. 237.0 22K.K
10 1 20. 131.6 +0.9
1 1 20.
1K K 46.
+19 3K.

Mean +0.8K

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May 22 18

	133.0	103.0 ✓		
10 19 48	236.0			
	122.8	123.2 ✓		
	246.0	226.2 ✓	+0.90 ✓	
		133.4 ✓		
	123.9	121.5 ✓		+0.92 ✓
10 21 30	245.4	106.4 ✓		
	130.1	227.3 ✓		
	236.9	113.7 ✓	+0.9K ✓	

Index to right.

	225.7	100.K ✓		
10 24 12	326.1			
	218.2	110.7 ✓		
	328.9	211.1 ✓		
		142.9 ✓	+0.60 ✓	
	218.9	111.7 ✓		+0.61 ✓
10 25 51	330.6			
10 22 ✓0. ✓	223.7	100.2 ✓		
+✓2. ✓	324.5	212 ✓		
10 23 K2. ✓		117. ✓ ✓	+0.62 ✓	mean +0.76 ✓
	226.0	99.K ✓		
10 27 35	325.4			
	220.0	110.7 ✓		
	330.7	210.7 ✓		
		149.9 ✓	+0.✓4 ✓	

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May 22 1897

221.0 116.0 ✓
10 29 3 331.0 ✓ +0.✓2 ✓
224.1 99.✓ ✓
323.5 210.✓ ✓ +0.✓2 ✓
149.6 ✓ ~~+0.✓6~~ ✓

Index to left

313.0 100.✓ ✓
10 32 9 53.5
304.9 116.1 ✓ ✓
61.0 216.6 ✓ +0.71 ✓
153.✓ ✓

+0.71 ✓

306.7 111.✓2 ✓
10 34 23 60.9 102.6 ✓
10 30 ~~✓2~~ ✓ 311.5 216.2 ✓ +0.71 ✓
+✓2. 54.1 153.2 ✓ mean = +0.6✓ ✓
10 31 30 ✓ Watch used was ✓2✓ slow.
✓ ✓
1✓ 31 30. ✓ J. Virginis 9✓ Feb
1✓ ✓✓ ✓6. ✓
+3✓ ✓✓. ✓

12 - 7 = 5.7
1✓ 2✓
3 18

~~Index~~
3 43 1

11 29 Faint stars cannot be seen, require two low

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1897phae.proj.1346.

May 24. 1897. (Monday)

7 0 Cloudy

7 30 "

8 0 "

8 30 Thickly cloudy.

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1897phae.proj.1346.

May 25. 1897. (Tuesday)

L. bancri Phot T. W Obs

8 36 + 19.6
11 55
3 19

blowdy in this region twilight also very strong.

8 36
12 17
3 41

blowdy.

8 15 Still cloudy
Index left and below
36.9 < var. dis.

8 16 41
145.3 10.4 v
45.1
134.2 9.1 v
19.7 v v +0.33 v
16.2 v v
45.6
blowdy. 90.9 v (+0.30) v

8 17 53
136.5 104.0 v
19.9 v
39.0 16.1 v +0.24 v
143.0

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1897phae.proj.1346.

May 25 1897

Index right and above

δ 23 6	130.7	106.1 ✓		
	236.8			
	136.9	92.6 ✓		
	229.5	198.7 ✓		
		161.3 ✓	+0.36 ✓	
	136.7	91.1 ✓	(+0.33) ✓	
δ 24 55	227.8	104.6 ✓		
2 20 39 ✓	130.3	195.7 ✓		
+✓0. ✓	234.9	163 ✓	+0.30 ✓	mean +0.32 ✓
138 21 29. ✓				
9 30 41.				
1 09 12. ✓				
+3 ✓0 42 ✓				
(+0.160) ✓				
δ 26 31	131.5	104.5 ✓		
	236.0			
	135.0	97.9 ✓		
	232.9	202.4 ✓		
		157.6 ✓	+0.43 ✓	
	137.0	93.9 ✓		
δ 28 5	230.9	104.4 ✓	(+0.39 ✓)	
	129.0	194.3 ✓		
	233.4	161.7 ✓	+0.35 ✓	

Index left and below

	221.8	94.3 ✓	
δ 30 36	320.1		
	230.3	89.1 ✓	
	315.4	183.4 ✓	
		176.6 ✓	+0.06 ✓

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1897phae.proj.1346.

May 25 1897

(+0.04)

228.7
313.6 ±4.9 +0.03
223.5 96.9 mean +0.22
320.4 101.4
174.2

8 82 38
±29 24
+0.
13 30.1
9 30 41.
+3 9 37
(+0.166)

222.8
320.2 97.4

8 36 32

230.3 ±3.3
313.6 100.7 +0.01
179.3

230.0 ±2.6 −0.07
312.6 90.4
326.0 173.0 −0.13
316.4

8 38 40

Index right and above

312.6
48.9 96.3
318.2 ±1.1 +0.03
43.3 101.4
174.6

8 43 25

316.7 ±6.1 +0.02
42.8 94.1
314.5 100.6
49.0 179.4 +0.01 mean −0.02

8 45 2
±40
+0.
13 41
9 30 41.
+4 11 4.
(+0.174)

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δ 46 45

312.1
49.4
316.1
41.2

97.3
41.1
138.4
179.6

+0.0

δ 50 0

317.0
42.3
314.2
48.1

41.3
93.9
135.2
179.2

+0.0

Order left and below

δ 51 53

46.5
139.4
48.9
134.5

92.9
41.6
134.5
176.

−0.03

δ 53 30

47.6
133.0
43.1
138.9

41.4
92.4
134.1
176.4

0.00
+0.0
mean +0.01

δ 54 34

44.1
136.9
49.7
132.2

92.4
42.5
134.9
175.3

−0.09

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49.8 ✓ 49.1 ✓ (−0.0 ✓)
9 01 5 134.9 ✓ 9 ✓.7 ✓
42.7 ✓ 140.2 ✓ +0.02 ✓
138.4 ✓ 179.2 ✓

Index right and above

134.8
9 2 26 229.7 94.9 ✓
138.5 ✓ 49.1 ✓
227.6 ✓ 144.0 ✓ +0.04 ✓
176.0 ✓

140.0 ✓ 42.2 ✓ (+0.04 ✓)
9 3 45 228.8
9 1 12 ✓ 133.3 ✓ 9 ✓.9 ✓
+✓0. ✓ 229.2 ✓ 144.7 ✓
2 2 ✓ +0.09 ✓ Mean +0.02 ✓
9 30 41. ✓ 179.3 ✓
= 28 39. ✓
+4 31 21. ✓ 136.0
(+0.1 44) ✓ 9 5 14 228.1 92.1 ✓
138.7 ✓ 47.1 ✓
223.8 ✓ 177.2 ✓ −0.0 ✓ ✓

141.0 ✓ 47.3 ✓ −0.0 ✓
9 6 42 226.3 93.9 ✓
134.9 ✓ 179.2 ✓ −0.0 ✓
228.8 VII

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May 25 - 1897

Index left and below

227.9			
317.4	89.5		
285.3	74.7		
310.0	164.2	−0.30	
236.4	76.2		(−0.30)
312.6			
227.6	164.4	−0.29	
316.2			mean −0.17

9 10 54
9 7 +9.
149 4 49
9 30 41.
−21 −2.
+4 34 4.
(+0.193)
9 13 12

227.3			
320.0	92.7		
235.4	~~74.6~~		
310.0	~~167.3~~	−0.24	
236.1	71.1		(−0.26)
311.2	89.7		
224.8	161.4	−0.29	
314.5	VII		

9 15 22

Index right and above

318.4			
40.9	82.5		
317.4	84.6		
43.0	168.1	−0.22	

8 17 53

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9 19 30

14 16 29. v
+v 0. v
14 17 19. v
9 30 41. v
+4 46 38. v
(+0.199)

9 23 0

319.8
41.0
321.3
44.0

41.2 v
42.7 v
163.9 v

(−0.26) v

−0.30 v

mean −0.26 v

321.6
40.9
316.0
42.6

79.3 v
46.6 v
165.9 v

−0.27 v

(−0.26 v)

9 24 47

316.4
40.3
320.1
43.4

43.9 v
43.3 v
167.2 v

−0.24 v

Index left and below

9 27 15

51.0
132.1
50.7
132.3

41.1 v
41.6 v
162.7 v

−0.33 v

(−0.24 v)

9 28 56

9 26 0. v
+v 0. v
14 26 v 0. v
9 30 41. v
+4 v 6 9. v
(+0.206)

50.0
134.9
50.3
132.6

44.9 v
42.3 v
167.2 v

−0.24 v

mean −0.27 v

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52.9
134.7
9 32 56 49.0 Δ 3.9 ✓
132.9 16 ✓.7 ✓ −0.27 ✓

48.8 Δ 3. ✓ (−0.24 ✓)
9 34 45 132.3 Δ ✓.3 ✓
49.6 16 Δ.6 ✓ −0.21 ✓
134.9 IX

Index right and above
137.9 Δ 7.1 ✓
9 38 8 225.0
141.5 Δ 4.6 ✓
226.1 171.7 ✓ −0.16 ✓

142.4 (−0.22 ✓)
blonde Δ 1.6 ✓
9 40 10 224.0 Δ 3.7 ✓
138.9 16 ✓.3 ✓ −0.24 ✓ mean −0.23 ✓
222.6

9 37 0. ✓
9 36 30. ✓
+✓0. ✓
149 37 20. ✓
9 30 41. ✓
+✓ 6 39. ✓
9 (+0.213) 44 20

140.3 Δ ✓.✓ ✓
225.8
138.0 Δ 4.6 ✓
222.6 170.1 ✓ −0.19 ✓

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(−0.2) ✓

9 45 4

139.4 ✓
223.1 ✓
142.0 ✓
219.9

A3.7 ✓
22.9 ✓
161.6 ✓

−0.3 ✓ ✓

Index left and below

~~9 49 27~~

~~232.2~~
~~305.1~~

9 58 17

51.4
131.5
49.0
129.1

A0.1 ✓
A0.1 ✓
160.2 ✓

−0.3A ✓

(−0.3A) ✓

10 03 13

52.1
132.0
50.1
130.0

79.9 ✓
79.9 ✓
159.8 ✓

−0.3A ✓ Mean −0.32 ✓

9 ✓2 1K. ✓
+✓0.

~~159~~ ✓3 K. ✓
9 30 K1. ✓
+✓ 22 23. ✓
(+0.22K)

10 2 18

48.1
132.2
49.3
130.0

AK1 ✓
A0.7 ✓
164.8 ✓

−0.2 9 ✓

(−0.3A) ✓

10 3 42

52.4
128.3
50.7
130.1

✓9 ✓
39.K ✓
✓✓.3 ✓
X1

−0.4 7 ✓

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May 25 - 1897

Index right and above

	140.2			
10 6 04	223.9	43.7		
	141.2	43.4		
	224.6	167.1	−0.24	

	144.5			(−0.30)
10 8 07	223.2	42.7		
10 − 1K.	141.8	42.3	−0.36	
+−0.	924.1	161.0		
10 6 K.				mean = −0.34
9 30 41.				
+ − 3 − 23.				

(+0.233)

	141.0			
10 9 40	224.6	43.6		
	142.7	42.4		
	225.1	166.0	−0.27	

	140.3			(−0.30)
	222.6	42.3		
10 11 26	140.5	40.2	+0.33	
	220.7	162.1		
		XII		

Index left and below

	235.4			
10 14 15	306.8	71.4		
	233.2	77.2		
	310.4	148.6	−0.60	

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May 25 1897

10 15 45

10 12 56
+0.
10 13 36.
9 30 41.
+ 42
(+0.234)

10 20 46

10 22 50

10 25 50

10 28 26

10 24 24
+0.
10 25 1.
9 30 41.
+ 37.
(+0.246)

235.2
309.7
233.5
309.0

7K.
7.
1 0.0
−0.24
(−0.9)
mean = −0.5K

237.3
311.0
238.8
308.8

13.7
10.0
1K3.7
−0.70

2340
307.9
235.4
309.5

13.9
7K.1
1K4.0
−0.61
(−0.66)
XIII

Index right and above

324.0
35.9
326.0
36.3

7K.9
10.3
1K7.2
−0.67

322.0
39.5
323.3
35.4

77.
7.1
1.2.6
−0.12
(−0.60)
mean = −0.63

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May 25 1897

10 34 2	321.1	76		
	35.7			
	323.4	73.2		
	36.6	147.6	−0.62	
	323.4	75.0		(−0.61)
10 36 1	38.4			
	325.4	73.2		
	39.2	148.2	−0.60	

Index left and below

10 39 0	237.2	70.2		
	307.4			
	237.3	66.7		
	304.0	136.9	−0.44	
	238.0	64.0		(−0.42)
10 41 42	306.0	70.7		
	236.0	134.7	−0.40	
	307.2			mean = −0.42

~~10 40 37 42.~~
+0. 37 42.
10 40 34 32.
9 30 41.
+6 7 1.
(+0.2)

Night poor throughout, settings made with some difficulty. Last group extremely difficult on account of very low alt, and haze

+2 26 − 3.

Watch used in preceding measts, was 0. secs. slow.

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May 25 1897

γ Virginis

12 26 -3,6

15 25

2 59

l 4. 5 α

α 5 β

β 3 γ

γ 4 δ

11 5 δ 4 ε

ε 4 5 ζ

ζ 5 η

η 2 θ

θ 5 K

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1897phae.proj.1346.

May 25 1897 (Friday)

7 30 Cloudy

8 00 cloudy

8 30 Still cloudy.

9 20 Still too cloudy

11 00 Somewhat clear will try for Reap. of Jup I Phot R ~~or~~ Obs.
becoming all cloudy again
Jup. invisible.

11 30 It is now past time for reappearance and Jup it still invisible. Sky thickly covered with clouds: no stars visible.

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May 29 1897 (Saturday)

δ. Cephei Phot T 2r 6b

21	37	+78.3
39	25-	
17	48	
21	37	
39	34	
17	5-7	
21	37	
36	43	
15	6	
21	37	
36	45-	
15	8	

21	8	+ 77.5-
36	53	
15-	47	

21	37
36	5-7
15-	20

Troubled in finding var. by strong twilight and also, on account of declination being wrong.

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May 29 1897

Index right and above

241.8 } ~~right and above~~
304.0 } val dis.

8 18

238.0 62.2 ✓
307.2 69.2 ✓
131.4 ✓ −0.9 ✓ −✓

237.6 69.✓ ✓ −(0.9 ✓)
307.1
240.0 6F.3 ✓
304.3 133.F ✓ −0.90 ✓

Index left and below

328.5 64.2 ✓
32.7
324.5]✓.1 ✓
39.6 139.3 ✓ −0.79 ✓

−(0.F2)

8 24

324.1]✓.3 ✓
39.4 60.9 ✓
331.1 136.2 ✓ −0.F✓ ✓ mean −0.F)
32.0

8 25

327.9 6✓.7 ✓
33.6
327.3 6F.1 ✓
35.4 133.F ✓ −0.90 ✓

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1897phae.proj.1346.

May 29 1897

328.0 37.8 69.8 ✓ −(0.82)
329.1 85.0 6 v.9 / 13 v.7 ✓ −0.86 ✓

Index right and above
58.3 125.0 66.7 ✓
56.3 125.2 6 2.9 / 13 v.6 ✓ −0.86 ✓

55.0 125.5 70.v ✓ −(0.2v)
8 31 58.7 124.8 66.1 / 13 6.6 ✓ −0.8K ✓ mean = 0.86

cc 4 var ; var 1 d in finder
A 40 c b 1 var ; var 1 c in large telescope

X Virginis Phot I. 97 Bb

11 58 + 9.0
13 43
1 45

11 58
13 50
1 52

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1897phae.proj.1346.

May 29 1897

L compared with L

Index above

164.5 < comp dir

9 25 200.3 3r.R ✓

163.9 32.r ✓

201.4 ——— 33 ✓ 2.40 ✓

163.1 37.r ✓ (2.36) ✓

200.6

163.4 34.1 ✓

201.5 ——— 37.6 ✓ 2.33 ✓

Index below

256.0

290.7 / 3K7 ✓

254.0 34.3 ✓

292.3 ——— 33.0 ✓ 2.41 ✓

254.4 37.1 ✓ (2.43) ✓

10 5 291.5

256.2 34.r ✓

290.7 ——— 71.6 ✓ 2.4r ✓ mean = 2.40 ✓

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1897phae.proj.1346.

May 29 1897

Index above

m compared with c

	165.8	33.3 ✓		
4 29	199.1			
	165.5	34.3 ✓		
	199.8	67.6 ✓	2.59 ✓	
	166.0	34.0 ✓		(2.58)
	200.0			
	165.3	34.1 ✓		
	199.4	68.1 ✓	2.57 ✓	

Index below

257.2	30.8 ✓		
288.0			
255.9	32.3 ✓		
288.2	63.1 ✓	2.74 ✓	
257.1	31.2 ✓		
10 10 288.3	~~37.2~~		(2.74)
256.7	32.2		
288.9	~~69.4~~		
	63.4	2.73 ✓	

Mean = 2.66 ✓

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May 29 1897.

Index right and above
0 compared with e

		169.4		
9	33	195.5	26.1	
		168.0	26.6	
		194.6	2.7	3.14
		169.1		
		195.1	26.2	(3.14)
		170.7	26.2	
		196.9	3.0	3.14

Index left and below

		259.5	26.2	
		285.7		
		260.3	2.3	
		285.6	1.5	3.21
		258.7	27.1	(3.16)
10	14	285.8		
		259.5	26.3	
		285.8	3.4	3.12

Mean 3.15

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May 29 1897

~~x~~ ~~7~~ ^ compared with e
Index left and above

	169.3	27 ✓		
9 37	196.8			
	169.2	27.4 ✓		
	197.0	√√.3 ✓	3.04 ✓	
	169.3	27.7 ✓		(3.04)
	197.0			
	168.9	27.9 ✓		
	196.8	√√.6 ✓	3.03 ✓	

Index right and below

	257.9	29.0 ✓		
~~9 59~~	286.9			
	256.8	24.3 ✓		
	285.1	√7.3 ✓	2.96 ✓	
	259.7	25.3 ✓		(3.04)
10 1	285.0			
	258.3	24.4 ✓		
	286.7	√3.7 ✓	3.11 ✓	

mean 3.04 ✓

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May 29 1897.

29 compared with the Index above

	174.9			
9 40	190.3	16.6 ✓		
	174.8			
	189.8	16.0 ✓		
		30.6 ✓	15.3 ✓	
	175.4	16.3 ✓		(15.3)
	189.7			
	175.0	16.1 ✓		
	191.1	30.4 ✓	15.3 ✓	

Index below

266.1	14.2 ✓		
280.3			
265.6	14.6 ✓		
280.2	28.8 ✓	14.49 ✓	
266.6	13.2 ✓		(14.7 ✓) ✓
9 55 279.8			
265.7	14.1 ✓		
279.8	27.3 ✓	14.61 ✓	

Mean 14.46 ✓

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May 29 1897

g ~~F~~ compared with e

Index above

173.4			
193.3	19.9 ✓		
174.3	17.5 ✓		
191.8	37.4 ✓	3.92 ✓	
			(3.49)
173.1	18.7 ✓		
191.8			
173.5	19.6 ✓		
193.1	38.3 ✓	3.46 ✓	

Index below

262.6	21.0 ✓		
283.6			
263.1	17.9 ✓		
281.0	38.9 ✓	3.43 ✓	
			(3.44)
263.9	18.1 ✓		
282.0			
262.8	20.5 ✓		
283.3	~~40.6~~ 38.6 ✓	3.45 ✓	

mean = 3.46 ✓

g 4 f
f 5 k
k 5 l
l 3 m

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May 29 1897

m 4 n
n 3.5 0
10 27 0 3 ~~0 p~~
~~p 0~~ 4 ~~p~~ q
q ~~p~~ 5 q n

γ Virginis. γ Boo.

12 24 -3.2
15 20
2 56

l 5 α
α 4 β
β 3.5 γ
γ 5 δ
10 39 δ 4.5 ε
ε 4 ζ
ζ 4 η
η 3 θ
θ 4 κ

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1897phae.proj.1346.

May 29 1897

Iapetus. Phot. ⊽. Gr. obs.

~~Iapetus follows Saturnus 4.5 sec.~~
~~under is 0.7' off~~ ~~south~~ of it

Mean. of Iapetus. Phot. ⊽. Gr. obs.

Iapetus precedes Saturn about
28.^{s} ~~46~~ and is 0.1' south of it.

Comp. Star = ⊽ D. −17° ⊬⊬13 (9.2)

Index left and above

327.5	comp dis.		
36.8	69.3 ✓		
330.8	60.9 ✓		
31.2	130.2 ✓	+0.97 ✓	
330.5	62.9 ✓		(+0.98) ✓
33.4			
327.4	67.2 ✓		
34.6	130.1 ✓	+0.98 ✓	

Index right and below

~~54.2~~			
~~45.2~~			
60.0	62.6 ✓		
122.6			
~~54.7~~	69.7 ✓		
124.4	132.3 ✓	+0.93 ✓	

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May 29 1897

		58.3			
		122.8	64.5 ✓		
11	57	58.3	64.1 ✓	+0.96 ✓	
	94	123.4	129.6 ✓	+0.99 ✓	mean +0.97 ✓
16	47.0				
		58.2	64.4 ✓		
11	53	122.6			
		57.0	71.4 ✓		
		128.8	136.2 ✓	+0.4 ✓	
		57.6	66.7 ✓	(+0.90) ✓	
		124.3			
		59.2	64.7 ✓		
		123.9	131.4 ✓	+0.9 ✓	

Index left and above

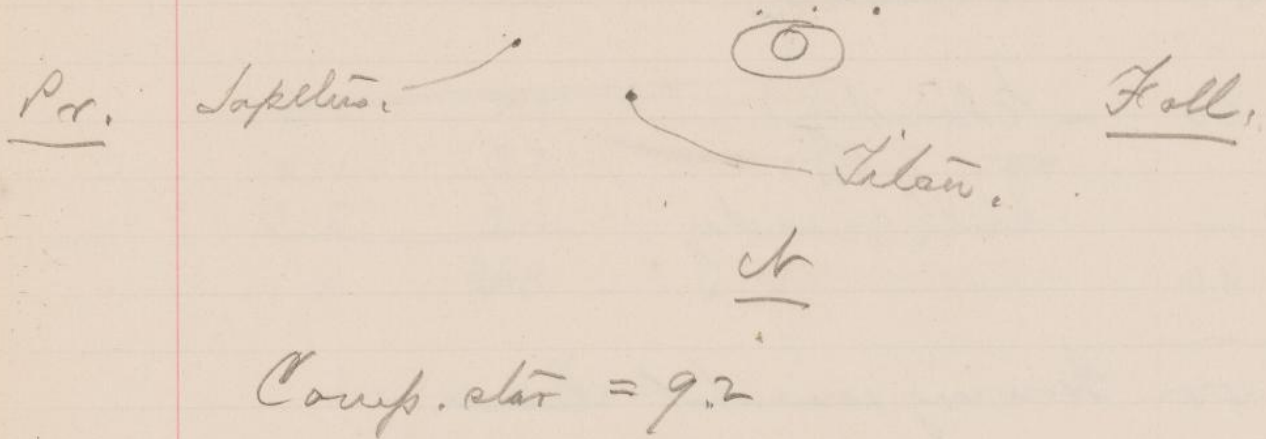
	150.4	62.4 ✓		
	213.2			
	148.5	67.9 ✓		
	216.4	130.7 ✓	+0.96 ✓	
	147.3			
12 1	217.8	70.5 ✓	+0.90 ✓	
11 114	145.2	66.1 ✓		
16 . 57.0	214.3	136.6 ✓	+0.4 ✓	mean +0.90 ✓

General mean = +0.9 ✓

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May 29. 1897.



Comp. star = 9.2

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May 31 1897 (Monday)

7 .00 Cloudy

7 .30 Cloudy

8 00 Still cloudy.

8 30 " "

9 ∨∨ Growing somewhat clearer.

γ Virginis N Obs

12 . 24 −3, 2

13 5− 5−

1 31

χ Virginis N Obs

11 58 +9. 5−

14 15−

2 17

0 2 0′ b

b 0′ 5− P ∨

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May 31 1897

δ Cephei

W Obs

~~2 2 2 5 + 5 7.8~~

21 37 +78.3

~~38 20~~

16 ~~04~~3

Index above

53.1 Lwardis.

9 35 120.1 67.0 ✓

49.8 ~~7~~ 7.6 ✓

125.4 ~~(K2.6~~ ✓ −0.7 ✓

51.5 ~~7~~ 7.7 ✓ (−0.76) ✓

124.2

53.6 ~~6~~ 6.7 ✓

120.3 ~~139.K~~ ✓ −0.79 ✓

Index below

139.9 ~~7~~ 7.6 ✓

215.5

141.2 ~~2~~ 0.7 ✓

211.9 ~~(K6.3~~ ✓ −0.6 ✓ ✓

140.0 ~~7~~ 3.4 ✓ (−0.6 K)

9 43 218.8

141.2 ~~2~~ 3.2 ✓

214.4 ~~(K7.0~~ −0.63 ✓

Mean −0.70 ✓

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May 31 1897

9 45

139.8
215.0 75.2 ✓
141.7 71.9 ✓
218.6 143.1 ✓ −0.63 ✓

142.7 69.2 ✓ (−0.67) ✓
212.5
139.2 73.3 ✓
212.5 143.1 ✓ −0.71 ✓

~~Order~~ above
233.4 70.1 ✓
303.5
235.1 67.5 ✓
302.6 137.6 ✓ −0.42 ✓

9 57

235.5 69.9 ✓ (−0.42) ✓
301.4
232.5 71.9 ✓
304.4 137.8 ✓ −0.42 ✓
mean −0.76 ✓

10 00 C c 3.5: var 1d in finder.
C b 1 var; var 1c in large telescope

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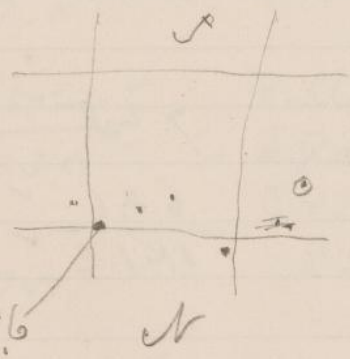
May 31 1897

Saturn

Object supposed to be Iapetus precedes Saturn 31ˢ and is 0.15' south of it: same precedes 9.2 mag. 48ˢ and is 13' north of it.

Sapelios foll. 9.6 mags. & f. recs. and is 3' south of it.

Selection of comp. stars for Sapelios.



Object taken on May 29 is probably the right one.

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June 1. 1897. (Tuesday)

Capella. Phot. I. Sr. obs.

21 37 +7 A.3
37 20
+1 V 43

Index right and above

233.7 ↳ 6 A.4 ✓
302.5
232.4 7 1.4 ✓
304.2 1 K 0.6 ✓ −0.76 ✓

232.8 7 2.9 ✓ (−0.76) ✓
305.7
234.0 6 A.1 ✓
302.1 1 K 1.0 ✓ −0.7 V ✓

Index left and below

323.6 6 A.3 ✓
31.9
321.0 7 2.9 ✓
33.9 1 K 1.2 ✓ −0.7 V ✓

319.2 7 K.1 ✓ (−0.7 K) ✓
33.3
322.9 6 A.1 ✓
31.0 1 K 2.2 ✓ −0.7 3 ✓

Mean −0.7 V ✓

8 46

7 52

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June 1 1897.

8 55

324.5
31.2 66.7 ✓
319.3
34.7 70.4 ✓ / 136.1 ✓ −0.73 ✓

(−0.73) ✓

319.6
33.9 70.3 ✓
322.9
30.7 67.4 ✓ / 136.1 ✓ −0.73 ✓

Index right and above

52.0
119.6 67.6 ✓
49.4
120.6 76.2 ✓ / 143.4 ✓ −0.70 ✓

(−0.69)

49.0
9 1 124.7 75.7 ✓
51.8
121.0 69.2 ✓ / 145.9 ✓ −0.64 ✓

Mean −0.71 ✓

9 9 C/C 4 var : var 1 d in finder
c/b. 1 var : var 1 c in large telescope

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1897phae.proj.1346.

June 1 1897.

~~June~~ Virginis Phot. on Ilford

12	10	−5.5
14	10	
2	0	
12	7	−5.3
14	10	
2	8	

b compared with a
Index to left

337.3	comp dist	
18.4	K1.1 ✓	
341.1		
13.5	32.K ✓	
	73.5 ✓	2.39 ✓

345.0	32.6 ✓	(2.K2) ✓
17.6		
340.9	34.9 ✓	
19.8	71.5 ✓	2.K6 ✓

Index to right.

65.8	34.5 ✓	
104.3		
64.8	K1.5 ✓	
106.3	A 0.0 ✓	2.69 ✓

67.2	37.4 ✓	(2.77) ✓
104.6		
67.4	37.K ✓	
104.8	74.A ✓	2.3K ✓

Mean 2.3K ✓

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June 1 1897
E compared with n
Index to right.

10 2

68.0
106.3 38.3 ✓
68.4 38.4 ✓
104.2 76.1 ✓ 2.37 ✓

70.0
105.6 35.6 ✓
68.9 43.4 ✓
107.3 79.0 ✓ 2.22 ✓

(2.30) ✓

Index to left.

159.0
200.6 41.6 ✓
156.9 37.6 ✓
194.5 79.2 ✓ 2.22 ✓

10 8

160.4
195.4 34.0 ✓
159.6 38.5 ✓
198.1 76.5 ✓ 2.30 ✓

(2.26) ✓

Mean = 2.26 ✓

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1897phae.proj.1346.

June 1 1897

γ Virginis Phot W Bk

12 24 -3.2
15 17
2 3
12 24
15 19
2 5 5
12 24
15 20
3 1

γ Virginis too low for measurements with Phot

χ Virginis W Bk

11 58 +9.5
15 35
3 37

0 3 0 0
10 45 0 0 5 0 0

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1897phae.proj.1346.

June 1 1897

R Virginis

12	36	+7.5
15	50	
3	14	

π	5-.5-	ζ
ζ	4	ε
ε	5-	β
β	5-	γ
γ	5-	δ
δ	4.5-	ε
ε	4	η

11 20

Saturn

11 30 Jupiter precedes Saturn 3 8 and is 1 1/2 north of it

1897phae.proj.1346.

June 2, 1897. Wednesday.

Stephei: Phot. T: W:obs.

+78.3

21
36
+2
9
1 5

37
48 37
0
11

Index to right and above.

239.3
298.6
237.7
300.0

59.3
62.3
121.6 −1.16

238.7
303.0
240.4 ~~240.7~~
302.4

64.3 −(1.11)
62.0
126.3 −1.06

Index to left and below.

326.2
27.6
323.8
31.4

61.4
~~4.6~~
67.6
129.0 −1.00

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1897phae.proj.1346.

June 2, 1897.

325.6 — (1.00")
30.8 — 65.2 ✓
327.4 — 63.7 ✓
~~30.1~~ — 128.9 ✓ — 1.00 ✓
31.1 — mean 1.06 ✓

8 18

Same again.

Index to left and below

326.5 —
31.3 — 64.8 ✓
325.5 — 66.7 ✓
32.2 — 131.5 ✓ — 0.9 ✓ ✓

D 24

325.4 — (0.94")
31.6 ~~29.9~~ — 66.2 ✓
326.9 — 65.7 ✓
32.6 ~~31.1~~ — 131.9 ✓ — 0.9 ✓

Index to right and above.

54.9 —
120.4 — 65.5 ✓
52.9 — ~~69.8~~ —
122.3 ~~+23.9~~ — 134.9 ✓ — 0.88 ✓

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1897phae.proj.1346.

June 2. 1897.

54.2 ~~51.9~~ 122.0 52.6 123.9

67.8 ✓ 71.3 ✓ 139.1 ✓ −0.79 ✓

Mean = 0.49

8 30 2 in finder.

8 39 c c 4 var : var 1 d } W: obs.

2 in 15 inch.

2 43 c b 1 var : var 1 c }

All the means and estimates made in strong twilight.

R. Virginis : W: obs

12 36 +4.5

13 50

1 14

9 05 ~~5~~ 4.5 4.5 3 4 3 3 } W: obs.

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1897phae.proj.1346.

June 2. 1897.

Star 6 comp. with star m.
Index to right and above.

78.9	< comp. stands.		
97.5		18.6 ✓	
77.0		20.4 ✓	
97.4		39.0 ✓	3.A2 ✓
76.9			(3.A2 ✓
98.4		21.8 ✓	
79.4		17.5 ✓	
96.9		39.3 ✓	3.A1 ✓

Index to left and below.

169.9			
188.9		19.0 ✓	
168.0		21.4 ✓	
189.4		40.4 ✓	3.7 ✓
168.1			(3.7 ✓
189.8		21.7 ✓	
169.4		18.6 ✓	
188.0		40.3 ✓	3.7 ✓

mean 3.7A ✓

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1897phae.proj.1346.

June 2. 1897.

Star comp. with star m

Index to left.

167.6		< comp. star dis.
190.7		
167.3	23.1 ✓	
191.1	23.8 ✓	
	46.9 ✓	3.45 ✓
168.4		(3.50)
190.1	21.7 ✓	
168.4	21.7 ✓	
190.1	43.4 ✓	3.59 ✓

Index to right.

258.5		
279.1	20.6 ✓	
259.4	21.7 ✓	
281.1	42.3 ✓	3.64 ✓
258.2		(3.62)
279.9	21.7 ✓	
259.0	21.2 ✓	
280.2	42.9 ✓	3.61 ✓

Mean 3.56 ✓

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1897phae.proj.1346.

June 2. 1897.

Star 5 comp. with star m.
Index to left and above.

162.6	← comp. star dis.	
195.7	33.1 ✓	
163.1	30.4 ✓	
193.5	63.5 ✓	2.73 ✓

163.3		(2.76 ✓)
193.0	29.7 ✓	
162.3	31.8 ✓	
194.1	61.5 ✓	2.80 ✓

Index to right and below.

255.3		
282.6	27.3 ✓	
256.1	28.6 ✓	
284.7	55.9 ✓	3.02 ✓

255.4		(3.02 ✓)
284.4	29.0 ✓	
255.4	26.7 ✓	
282.1	55.7 ✓	3.03 ✓

mean 2.89 ✓

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1897phae.proj.1346.

June 2. 1897.

Star p comp. with star m.

Index left and above.

		145.0	∠ comp. star dist.	
9	43	211.4		
146.4		~~147.7~~	66.4 ✓	
		208.8	62.1 ✓	
			128.8 ✓	1.00 ✓
		148.3		
		210.0	61.7 ✓	(0.99 ✓)
		145.0	68.2 ✓	
		213.2	129.9 ✓	0.94 ✓

Index right and below

		241.0		
298.4		~~299.4~~	~~0.4~~	
		240.4	57.4 ✓	
		300.1	59.4 ✓	
			116.4 ✓	1.2 ✓
		239.4		
9	48	299.4	60.3 ✓	(1.2 ✓)
		242.0	55.1 ✓	
		297.1	115.4 ✓	1.29 ✓

Mean 1.13

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1897phae.proj.1346.

June 2. 1897.

Star y comp. with star m.
Index to left and below.

343.1	< comp. star dis.	
15.5		
340.1	32.4 ✓	
17.3	37.2 ✓ ✓	
	69.6	2.v-2 ✓
340.3		(2.v-2 ✓)
15.6		
340.9	35.3 ✓	
14.9	34.0 ✓	
	69.3 ✓	2.v-3 ✓

Index to right and above

72.0		
105.4	33.4 ✓	
70.0	37.0 ✓	
107.0	70.4 ✓	2.v-9 ✓
68.3	36.7 ✓	(2.v-3 ✓)
105.0	31.8 ✓	
72.8	68.5 ✓	2.v-6 ✓
104.6		

Mean 2.v-2 ✓

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1897phae.proj.1346.

June 2. 1897.

Star B comp. with star m
Index to right and above.

69.0
106.4 < comp. star dia.

66.9 37.4 ✓
111.1 44.2 ✓
81.6 2.17

68.4
109.0 40.6 ✓ (2.22 ✓)
70.2 38.4 ✓
106.6 77.0 ✓ 2.28

Index to left and below.

157.9
201.1 43.2 ✓
159.1 38.7 ✓
197.8 81.9 ✓ 2.14

160.0
197.8 37.8 ✓ (2.10 ✓)
155.3 46.5 ✓
201.8 84.3 2.07

Mean 2.16 ✓

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1897phae.proj.1346.

June 2. 1897.

Star of comp with star m.
Index to left and below.

59.0	∠ comp. star dist.	
119.6		
64.6	60.6 ✓	
113.2	48.6 ✓	
	109.2 ✓	1.5K ✓
65.0		
113.2	48.2 ✓	(1.5K) ✓
59.9	55.9 ✓	
115.8	104.1 ✓	1.5K ✓

Index to right and above.

157.9		
206.0	54.1 ✓	
153.9	51.5 ✓	
205.4	105.6 ✓	1.5K ✓
152.9		(1.5K) ✓
207.1	54.2 ✓	
153.6	51.1 ✓	
204.7	105.3 ✓	1.5K ✓

Mean 1.5K ✓

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1897phae.proj.1346.

June 2, 1897.

γ Virginis: W: obs.

12 24 −3.2
15 44
3 20

10 52 W: obs.

03	4	α
5	5	β
3	4	γ
3	5	δ
4.5	5	ε
5.5	5	ζ
5.5	03	η
	5	θ
	5	ι
	5	κ
	5	λ

Went over to west dome and revised R Virginis with Asst. Reed.

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1897phae.proj.1346.

June 7. 1897 (Monday)

Stephei : Phot. T : W. obs.

21	37	+78.3
37		
~~13~~	00	
15	23	
3	28	

Strong twilight and some clouds.

8 30 Cloudy until this time.

Index to right and above.

128.0 < var dis.

8 35 230.6

Clouds thick : no stars visible

9 10 Thickly cloudy : no stars visible.

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1897phae.proj.1346.

Posted to here.

June 11 1897 (Friday)

ν. Cephei Phot

0	30	+81.7
13	45	
13	15	
0	30	
13	26	
0	38	+74.3
14	00	
1	22	

0	0	+60.1
14	2	
13	12	

0	30
14	05
13	35

Index to right

138.8 ∠ comp dec

219.4 −20.6

145.9 66.1

212.0 TC 6.7 +0.64

δ 36 56

1897phae.proj.1346.

June 11 1897.

δ 38 45

146.0 66.3 (+0.64)
212.3 76.4
141.7 143.1 +0.71
218.5

Order to left

δ 40 18

231.3 71.1
305.4 68.9
237.1 139.0 +0.79
302.0

(+0.80)

δ 41 34

236.1 63.2
299.3 72.3
232.4 136.5 +0.80 mean +0.75
307.7

δ 50 30

233.0 70.5
303.5 65.1
235.8 135.6 +0.46
300.9

(+0.45)

δ 51 55

236.9 66.6
301.3 72.5
233.3 139.1 +0.45
300.8

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1897phae.proj.1346.

June 11 1897

Index to right

8 54 13

325.6
31.0
321.2 — 7 5.2 / 1K 0.6 — +0.76
36.4

8 55 33

320.7 — 7 5.9 — (+0.7K)
36.6
324.0 — 6 6.5 / 1K 2.K — +0.73
30.5

13 13 3 3.
13 31 Kg.
+21 1K

mean +0.80

8 57 30

324.1 — 6 7.8
31.9
319.0 — 2 6.9 / 1K K.7 — +0.6K
35.9

(+0.7K)

8 59 0

321.0 — 7 3.3
34.3 — 6 5.6 / 13 K.9 — +10.80
325.0
30.6

Index to left

49.6
129.4 — 7 9.8
57.4 — 2 1.7 / 15 K 5 — +0.55
123.1

9 1 37

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1897phae.proj.1346.

June 11 1897

	54.5	67.9		(+0.60)
9 3 16	122.4			
9h 0 21.	46.3	7 A.K		
13 31 Kg.	1247	4K 6.3	+0.6v	mean +0.67
+2A 32.				
	49.0	7A.3		
9 5 13	127.3			
	56.1	6K.9		
	121.0	4K 3.2	+0.71	
	55.6	67.0		(+0.6v)
9 6 56	122.6			
	49.1	A2.3		
	131.4	4K 9.3	IV +0.v9	

Index to right.

	138.2			
	blonde	A1.0		
9 9 30	219.2			
	141.0	7 0.9		
	211.9	1v 1.9	+0.vK	
	145.3	71.K		(+0.v6)
9 11 26	216.7	7 A.v		
9h A IV.	141.0	4K 9.9	+0.vA	
13 31 Kg.	219.5			mean +0.60
+36 26.				

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1897phae.proj.1346.

June 11 1897

198.3 A1.7
9 15 35 220.0
143.3 20.6
213.9 (r 2.3 +0.r3

144.8 20.1 (+0.r7)!
9 17 10 214.9 22.9
140.5 (K A.0 +0.61
215.4

Index to left
230.2 2r.1
9 21 17 305.3
238.9 62.2
blonds 137.3 +0.A3
301.1

+0.A3

236.6 63.K
9 25 30 308.0
9 1K 19 r3. 280.8 23.9
13 31 K9. 304.7 137.3 +0.A3 mean +0.70
+KA K.

230.3 2r.1
9 27 40 305.4
236.5 6AA
305.3 (K3.9 +0.70

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1897phae.proj.1346.

June 11 1897

9 24 15

236.2 66.1 ✓ (+0.76) ✓
302.3 71.5 ✓
232.7 137.6 ✓ +0.42 ✓
304.7 VI

Index to right

9 31 44

3 = 32.3 61.7 ✓
34.0 ✓
324.9 66.5 ✓
31.4 120.2 +1.02 ✓

(+0.92) ✓

9 33 26

~~9 40~~ 30 32. ✓
13 31 49. ✓
+ 1 4 3. ✓

324.5 66.5 ✓
31.0 ✓
322.0 71.2 ✓
33.2 137.7 ✓ +0.42 ✓ Mean +0.44 ✓

9 35 15

320.7 72.K ✓
33.1 ✓
327.8 63.2 ✓
30.2 136.6 ✓ +0.46 ✓

(+0.42) ✓

9 36 46

325.9 64.1 ✓
30.8 ✓
319.4 76.1 ✓
35.5 140.2 ✓ +0.37 ✓
VII

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1897phae.proj.1346.

June 11 1897

47.9 41.6 ✓
9 38 0 129.5
51.6 24.1 ✓ +0.2 ✓
122.7 (2.3) ✓ ~~+0.2~~
X (+0.2) ✓

53.8 69.9 ✓
9 41 8 123.7
47.9 +0.3 ✓
7 37 44. ✓ 128.2 (+0.2) ✓ +0.2 ✓ Mean +0.6 ✓
13 31 49.
+1 +6 +9.

50.8 77.9 ✓
9 42 48 128.7
54.4 64.2 ✓
122.6 (46.1) ✓ +0.6 ✓

(+0.6) ✓

55.9 67.9 ✓
9 44 20 123.8
46.8 24.2 ✓
46.1 ✓ +0.6 ✓
125.0 VIII

Index to right

140.4 74.1 ✓
9 46 45 218.0
146.0 66.4 ✓
212.8 (44.9) ✓ +0.6 ✓

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1897phae.pfoj.1346.

June 11 1897

	144.4	69.1		(+0.6K)
9 49 19	213.0			
~~9 44 Kr Ka.~~	138.3	74.7	+0.60	
13 31 Kg.	217.7	(K A.		mean +0.6K
+1 13 9.				
	139.5	79.2		
9 51 14	219.0			
	141.7	62.3	+0.6K	
	214.0	(K6.8		
				(+0.6K)
	144.4	69.9		
9 52 49	213.3	74.2	+0.63	
	138.5	(K7.K		
	218.0	IX		
	Index to left			
	231.4	74.1		
9 55 51	305.5			
	238.3	61.0		
	299.3	13 r. 1	+0.47	
	~~299.3~~			
				(+0.4K)
	237.8	62.2		
9. 52 42	300.3	74.2		
~~9 14 r3 9.~~	231.2	13 K.3	+0.41	
13 31 Kg.	307.0			mean +0.7K
+1 21 20.				

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1897phae.proj.1346.

June 11 1897

231.7
307.5
238.0
299.8

9 59 42

2 r.a ✓
61.2 ✓
(3) .6 ✓ +0.42 ✓

(+0.4K) ✓

238.3
299.8
231.2
305.0

10 1 50

61.5 ✓
73.2 ✓
(3 r.) ✓ +0.47 ✓

X

Index to right

320.4
37.0
322.9
32.0

10 2 56

76.2 ✓
69.1 ✓
(2 r.) ✓ +0.67 ✓

(+0.70) ✓

321.7
33.1
Index
322.0
~~319~~
32.3

10 4 18

~~10~~ 15 1 r9. ✓
13 31 r9. ✓
+1 30 10. ✓

71.2 ✓
70.3 ✓
(4 1.) ✓ +0.72 ✓

Mean +0.77 ✓

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1897phae.proj.1346.

June 11 1897

Iapetus

15 36 -17.0
16 8
32

Cloudy.

10 57 Too cloudy

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1897phae.proj.1346.

June 12 1897 (Saturday)

δ Leporis Phot T W Ote

21 3.7 +78.3
37 23
15 46
21 37
37 48
16 11

Clouds.

Index above
54.8 < variable
118.7 63.9 ✓
53.4 66.9 ✓
120.3 130.8 ✓ −0.96 ✓

δ 20

*
54.9
Clouds
123.0
Clouds
53.2 66.3 ✓
119.5
52.0 70.4 ✓
122.4 136.7 ✓ −0.45 ✓

(−0.90 ✓)

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1897phae.proj.1346.

June 12 1897

Sunset below

143.8
212.7 64.9 ✓

145.0
211.5 66.5 ✓ 13 R ✓ −0.47 ✓

(−0.44 ✓)

148.6
212.0 64.4 ✓

5 33
4 27.5

blonde 70.3 ✓ / 13 A.7 ✓ −0.40 ✓

142.2
212.5

Mean −0.47 ✓

140.7
212.6 71.9 ✓

5 35

141.5
210.3 64.4 ✓ / 0K 0.7 ✓ −0.76 ✓

(−0.7 ✓)

148.3
211.9 64.6 ✓

140.1
213.0 72.9 ✓ / 1K1.5 ✓ −0.74 ✓

Sunset above

233.6
308.1 69.5 ✓

237.1
301.2 64.1 ✓ / 133.6 ✓ −0.90 ✓

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1897phae.proj.1346.

June 12 1897

236.4
clouds
clouds thick 6K.9 (−0.90)

5 46
8 K0.Y−

301.3 66.2
clouds 133.1 −0.91
235.6 Mean −0.42
303.8

5 55 C 4 var var 1d in finder
var = C in large telescope

estimates considered rather poor on account of bright moon-light and cloud. Troubled in measurements also some by clouds

Iapetus W Obs

15 30 −17.0
14 39
51
12 40
11 9

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June 12 1897

Object taken for Iapetus
Preceeds Saturn 86 s about
3' north of it. The somewhat
brtr star preceeds Saturn about
24 s. 2' ½ north of it.
Comp star follows Saturn 53.0 s,
and 2.2 of arc south of it

Index above
318.4 comp dis
38.3 79.9 ✓
313.0 ∠3.9 ✓
36.9 163.8 ✓ +0.31 ✓

9 20

317.5 ⟩2.9 ✓ (+0.5 ✓)
36.4
321.0 ⟩0.3 ✓
31.3 159.2 ✓ +0.59 ✓

Index below
41.4 92.6 ✓
134.0
45.2 ∠9.9 ✓
135.1 182 ✓
177.5 −0.0 ✓

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June 12 1897

		41.3			−0.01
9	27	133.1	91.8		
		43.0	46.6		
		129.6	(7) 45.2	+0.03	mean +0.22
		41.7	44.7		
9	29	130.4			
		42.5	89.3		
		131.8	(7) 45.0	+0.04	
		45.5	43.1		+0.12
		128.6	87.7		
		45.4	(6) 40.6	+0.21	
		131.1			

blonds
Index above

10 4 Stopped by clouds

The object measured above was the one preceding Saturn 24s and 2½ north of it.

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(mon.) June 14, 1897.

δ Cephei: Phot. F: W.obs:

21 37 +78.3
+3 30
37
+51 53
3

Index to right and above.

24
+2
8

237.4 < var. dis.
300.5 63.1 ✓
238.2 62.6 ✓
300.9 125.7 ✓ −1.07

236.2 6v.7 ✓ (−1.03)
301.9
236.5 63.7 ✓
300.2 129.4 ✓ −0.99

Index to left and below.

324.2
33.0 ~~31.7~~ 64.4 ✓
321.9 69.2
31.1 130.0 ✓ −0.41

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June 14, 1897.

8 31

322.4 71.4 ✓
33.8
324.0 66.5 ✓
30.5 137.9 ✓ −0.42 (−0.42)

Mean −0.42 -8

Same again

Index to left and below.

8 33

325.3 67.5 ✓
30.7
322.3 72.3 ✓
34.6 137.7 ✓ −0.42

323.4 71.0 ✓ (−0.42)
34.4
323.6 66.6 ✓ 8
30.2 137.6 ✓ −0.42

Index to right and above.

55.4 64.3 ✓
119.7
49.4 73.5 ✓
122.9 137.8 ✓ −0.42

8 38

51.4 70.6 ✓ (−0.42) 9
122.0
53.0 66.6 ✓
119.6 137.2 ✓ −0.43

Mean −0.42

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1897phae.proj.1346.

June 14, 1897.

c 3.5 var. var. 1.5 d.
in finder: W. obs
b 1 var: var 1 c
in large telescope W obs

Sagittarius: Phot. J: W. obs.

14
15 30 −17.0
14 35
—— ——
0 55
11 5

8 57 Clouds.

h	m	s
14	46	27.5
	47	60.5
		33.0

Comp. Star = SD −16° #132 (9.2)
Star taken for Sagittarius precedes
9 02 Saturn 33 sec. and is 2.5 north
of plane of ring.
It would seem as if this must be
Sagittarius as there is no other star of about
the right brightness near it.

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June 14, 1897.

h	m	s
14	52	56.5
	53	21.5
0	0	25.0

9 09 Clouds.

h	m	s
14	57	49.0
	59	13.0
	1	24.0

9 14 Clouds thick.

h	m	s
15	02	31.5
		36.5
		05.0

h	m	s
15	12	14.5
	13	54.0
01		36.5

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June 14. 1897.

h m s
15

m	s
15	06.0
15	25.5
	19.5

h m s
15

m	s
15	51.0
16	32.0
00	41.0

h m s
15

m	s
17	24.5
18	01.0
00	36.5

Observations difficult.

Index above.

144.8 ✓ var. dis.
209.1
147.5 64.3 ✓ +1.08 ✓
208.4 60.9 ✓
125.2 ✓

9 37

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June 14, 1897.

149.9
206.4
150.0
207.6

56.5 ✓
57.6 ✓
114.1 ✓

+1.32 ✓
+1.20 ✓

Index below.

234.5
305.2
239.4
298.3 ~~296.3~~

70.7 ✓
58.9 ✓
129.6 ✓

+0.99 ✓

242.8
299.0
238.7
298.2

56.2 ✓
59.5 ✓
115.7 ✓

+1.29 ✓
+1.14 ✓
+1.17 ✓

9 | 44
14 | 40.5

Same again
Index below

241.7 ← var. dis.
300.4

9 | 47
9 | 48

clouds

248.3
301.6

58.7 ✓
53.3 ✓
112.0 ✓

+1.37 ✓

239.6 ~~240.2~~
299.5
237.3
300.6

59.9 ✓
63.3 ✓
123.2 ✓

+1.12 ✓
~~+1.30~~
+1.25 ✓

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1897phae.proj.1346.

June 14, 1897.

Index above.

323.2
28.8
326.7
28.6 ~~26.4~~

65.6 ✓
61.9 ✓
127.5 ✓

+1.03 ✓

327.7
26.1
326.9
27.0 ~~25.2~~

58.4 ✓
60.1 ✓
118.5 ✓

+1.23 ✓
+1.13 ✓
~~+1.22~~
Means +1.18 ✓

~~#9~~ 55
10 2
14 5.0

Measurements quite difficult on account of light mist: mm full

1897phae.proj.1346.

June 15 1897 (Tuesday)

δ Cephei Phot J 21r 0h

21	37	+78.3
37	40	
16	8	
21	37	
38	00	
16	23	

21	37
38	21
16	44

Index above

53.8	∠ Var. dis.	
122.8	69.0 ✓	
52.9	71.2 ✓	
124.1	140.2 ✓	−0.77 ✓

δ 33

52.9	72.5 ✓	(−0.75) ✓
125.4		
52.7	69.7 ✓	
122.4	142.2 ✓	−0.73 ✓

Index below

143.1		
215.0	71.9 ✓	
140.8		
216.0	142.7 ✓	−0.63 ✓

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1897phae.proj.1346.

June 15 1897

		141.4	74.0 ✓	(−0.66) ✓
8	38	215.4		
		143.6	70.4 ✓	
		214.0	144.4 ✓	−0.69 ✓
				mean −0.70 ✓

same again.

		144.4	69.4 ✓	
8	40	213.8		
		141.5	74.5 ✓	
		216.0	143.9 ✓	−0.70 ✓

(−0.70) ✓

		140.7	74.3 ✓	
		215.0		
		144.8	69.5 ✓	
		214.3	143.8 ✓	−0.70 ✓

Index above

		237.3	67.7 ✓	
		305.0		
		234.8	71.5 ✓	
		306.3	137.2 ✓	−0.83 ✓

		234.9	71.9 ✓	(−0.81)
8	46	306.8		
		237.0	67.2 ✓	
		304.2	139.1 ✓	−0.79 ✓
				mean −0.76 ✓

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1897phae.proj.1346.

June 15 1897

E 52 ✓ © 3 var. var 2d in finder
var = b in large telescope

Iapetus · Photo W Obs

15	30	-17.0
14	48	
	42	
11	18	

Comp. Star = SD -17° 4399 (9.2)
Object taken for Iapetus
precedes Saturn 31.5 s. and
is about 3' north of it.

Index to left

9 24

328.8
29.1
327.0
30.3
327.2

9 24

328.8	comp.	star dec.
29.1	60.3 ^	✓
327.0	63.3	✓
30.3	123.6	✓ +1.1 ✓

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1897phae.proj.1346.

June 15 1897.

327.2	63.2 ✓		(+1.11) ✓
31.0	60.1 ✓		
329.2	(23.9) ✓	+1.11 ✓	
29.3			

Index to right.

53.8	66.6 ✓		
120.4			
54.0	66.9 ✓		
120.9	133 ✓	+0.91 ✓	

	57.2	61.4 ✓	(+0.96) ✓
9 30	122.6		
	57.0	63 ✓ ✓	
14 27.0 hrs mx	120.5	126.9 ✓	+1.00 ✓ Mean +1.04 ✓

Same again

	56.6	62.4 ✓	
9 32	119.0		
	54.7	66.1 ✓	
	120.8	124 ✓ ✓	+1.01 ✓

	54.9	61.4 ✓	(+1.00) ✓
	120.3		
	57.0	64.7	
	121.7	~~126.1~~	
		130.1 ✓	+0.94 ✓

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1897phae.proj.1346.

June 15 1897

Added to left

149.2 61.7 ✓
210.9
146.0 66.5 ✓ ✓ +1.02 ✓
212.5 124.2

(+1.02) ✓

147.6 63.3 ✓
210.9
146.6 64.9 ✓ ✓ +1.02 ✓
211.5 124.2

9 41
79
14 36.5 Sq. mm

Mean +1.01 ✓

Measurements somewhat difficult on account of bright moonlight

Measurement of

Titan Plot W Sh

Added to left

129.0 comp. dis.
9 50 230.5 101.5 ✓
122.4 ✓
236.9 114.5 ✓ ✓
216.0 ✓ − 0.69 ✓
164.0 ✓

124.7
239.0 114.3 ✓ (−0.72) ✓
127.6 104.2 ✓ ✓
232.0 216.5 ✓
141.5 ✓ −0.74 ✓

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1897phae.proj.1346.

June 15 1897

Index to right

215.0
322.9 107.9 ✓

212.6 111.6 ✓
324.2 219.8 ✓
110.6 ✓ −0.76 ✓

213.5
327.0 103.5 ✓ (−0.74) ✓

9 57
14 ~~52.5~~

218.0
322.5 104.5 ✓
208.0 ✓
102.0 ✓ −0.73 ✓ Mean −0.73 ✓

Same again.

9 59

218.6
322.3 103.7 ✓

212.0 216.3 ✓
328.3 220.0 ✓
110.0 ✓ −0.77 ✓

211.7 114.5 ✓
326.2
217.1 106.5 ✓
221.0 ✓
328.6 139.0 ✓ −0.79 ✓

~~Mean −0.76~~

Index to left.

305.0
52.1 107.1 ✓

302.9 113.1 ✓
56.0 220.2 ✓
139.2 ✓ −0.74 ✓

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1897phae.proj.1346.

June 15 1897

301.1 11K.9 ✓ (−0.A3) ✓
56.0
304.7 110.1 ✓
54.8 22 r.0 ✓ −0.AR ✓ mean −0.A0 ✓
13 r.0 ✓

Σ 1615 Phot R. 2r Obs.

12 8 +33.5
16 10
4 2

Pos. Ang 80° dis 25" Mag. 6P 8.3

Index left ~~and above~~
230.2 L bttr dis
280.1 K9.9 ✓
232.2
276.3 KK.1 ✓
9K.0 ✓ 1.81

235.2 40.8 1.90
276.0.
231.5 46.5
278.0 87.3 1.9f

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1897phae.proj.1346.

June 15 1897

Index to right

818.8	51.8	
10.6		
321.3	50.7	
12.0	102.5	1.60
323.9	45.1	1.68
9.0		
319.0	50.2	
~~8.9~~	95.3	1.77
9.2		

Mean = 1.79

10	32
10	28

Σ 1627 Phot R W Obs

12	12	-3.2
16	30	
4	18	

Pos Ang 190° dis 20" Mags 5.8 6.8

Index right and below

30.3	brtht dis.	93.7
124.0		
37.2		74.3
111.5		168.0

10	42

-0.23

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1897phae.proj.1346.

June 15 1897

−0.23

~~38.0~~
~~29.0~~
~~118.0~~

−0.28

29.7 88.8
118.5

38.2 74.2
112.4 163.0 −0.34

Inside left and above

129.4 72.9 −0.30
202.8
122.6 88.7
211.3 161.6 −0.35

120.7 −0.32
·10 52 210.4 89.7
130.0 74.3
204.3 164.0 −0.30

Region rather low disc rather large

Σ 31' Phot R W Obs
(36; 37 ≡ R Herculis.)
16' 34 +4.4
16 50
+10 16

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1897phae.proj.1346.

June 15 1897

Pos. Ang. 220° dist 70" Mags 5.8 7.1

Index to left

	316.2		
II 3	13.1	56.9	
	314.2	65.3	
	19.5	122.2	− 1.14"
	311.6		− 1.10"
	18.4	66.8	
	316.0	59.7	
	15.7	126.5	− 1.05"

Index to right. Mean = − 1.10"

	40.7		
	106.5	65.8	
	45.8	57.1	
	102.9	122.9	− 1.13"
	47.4		− 1.09"
II 4	105.3	57.9	
	39.2	68.6	
	107.8	126.5	− 1.05"

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June 16 1897 (Wednesday)

W Cephei Phot T. H. Obs.

0	30	81.7
13	25	
12	55	
0	30	
13	45	
13	15	
0	30	
13	54	
13	24	
0	30	
14	2	
13	32	

Under right and above
143.8 Comp. dir.

8 20 14
221.2 77.4
144.7
215.8 71.1 +0.60
14 4.

143.0
218.0 71.0 +0.1
140.5 71.2
218.7 1 3.2

8 21 43

1897phae.proj.1346.

June 16 1897

Index left and below

δ 2344

232.2
305.0 72.4
230.1 69.1 +0.7K
304.2 141.9

(+0.7K)

δ 2446

235.7 64.3
300.0
280.8 76.7 +0.7 +0.6
307.5 141.0 mean ~~+0.66~~

δ 2658

233.0
305.4 72.4 +0.77
234.6 67.8
302.4 140.2

(+0.7)

δ 2721

287.5 67.6
305.1 74.7 +0.73
282.0 142.3
306.7

Index right and above

δ 2931

319.6
89.0 79.4
322.8 70.2 +0.58
33.0 149.6

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1897phae.proj.1346.

June 16 1897

(+.60)

324.5 69.3 +0.62

33.8 24.6

319.1 147.9

37.7

Mean +0.62

8 30 36

8 22 37

2 24 24

-55

8 27 29

8 31 58

322.4 77.6

38.0

326.7 66.6 +0.73

33.3 142.2

(+0.68)

325.4 67.6

8 33 15 33.0 74.9 +0.64

319.1 146

38.0

Under left and below

48.6 40.2

8 35 14 ~~+9.4~~ ~~124~~

50.8 69.5 +0.57

120.3 140.3

(+0.65)

~~8 37 11~~

~~56.1~~

~~122.0~~

57.5 61.3

8 39 54 118.8 +0.73

8 37 35 47.5 40.4

2 32 -55 128.3 142.1

8 34 10

Mean +0.66

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June 16 1897

		48.6		
δ	42 21	129.0	Δ 0.4	+0.71
		57.4	62.7	
		120.1	143.1	(0.68)
		55.6	67.4	
δ	43.37	123.0	70.7	+0.65
		49.5	196.1	
		128.2	IV	

Index right and above

		138.0		
δ	47 23	219.6	Δ 1.6	
		146.3	64.7	+0.57
		210.0	145 0.3	(+0.55)
		144.3		
δ	48 34	214.2	69.9	+0.53
~~δ~~	~~48 86~~	139.0	Δ 2.5	
δ	47 29	221.5	145 2.4	Mean +0.62
	-56			
δ	44 34			
		137.4	Δ 3.6	
δ	50 18	221.0		
		146.9	66.7	+0.57
		213.6	145 0.3	

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June 16 1897

	145.8	62.0	+0.57	
8 51 50	213.8	62.1		(+0.57)
	138.9	62.0		
	221.0			

Under left and below

	233.2			
8 54 9	307.9	74.7	+0.91	
	241.6	66.6		
	300.4	133.5		(+0.87)

	239.2	61.1		
8 56 29	300.3		+0.83	
~~8 53 26~~	232.0	76.2		
8 53 12 −55	308.2	137.3	Mean +0.72	
8 52 17				

	232.5			
8 58 9	307.1	74.6	+0.86	
	239.2	61.0		
	300.2	135.6		(+0.87)

	238.6	61.2		
8 59 28	299.8	73.5	+0.88	
	232.0	134.7		
	305.5			

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1897phae.proj.1346.

June 16 1897

Index right and above

9 1 57	320.0			
	39.8	79.8 ✓		
	326.0	6 5 0 ✓		+0.68 ✓
	31.0	1K4.8 > ✓		
				(+0.70) ✓
	326.7	6K.3 ✓		
9 3 33	31.6			
9 0 47 ✓	320.1	74.9 ✓		+0.71 ✓
-55	39.0	1K3.2 > ✓		
8 59 52 ✓				Mean +0.78 ✓
	319.9	74.1 ✓		
9 4 56	38.0			+0.76 ✓
	327.9	62.6 ✓		
	30.5	1K0.7 > ✓		
				(+0.74) ✓
	327.0	6K.1 ✓		
9 6 16	31.1	74.5 ✓		+0.72 ✓
	320.0	1K2.6 > ✓		
	38.5	VII		

Index left and below

	50.9			
9 8 48	126.6	75.7 ✓		+0.91 ✓
	60 3	7 0.4 ✓		
	118.1	13 3.5 > ✓		

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1897phae.proj.1346.

June 16 1897

(+0.76)

51.1
123.5 72.4
52.3 73.9
126.2 196.3

+0.65

Mean ~~+0.75~~ +0.76

9 10 40
9 8 20
9 07 40
-55
9 06 45

53.3
125.0 71.7
53.5 70.5
124.0 192.2

9 12 13

+0.73

(+0.69)

54.4
123.7 69.3
51.9 77.1
~~176.8~~ 146.4

9 13 30

+0.65

~~56.9~~
129.0 VIII

Index right and above

140.4
218.8 78.4
144.2 71.1
215.3 189.5

9 16 10

+0.58

(+0.64)

149.0 69.1
217.1 142.3 73.7
218.0 215.8

9 17 33
9 14 52
-55
9 13 57

+0.70

Mean +0.66

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1897phae.proj.1346.

June 16 1897

	142.1	24.7 ✓	
9 19 8	~~219.4~~ 217.4		+0.65 ✓
	144.1	74.5 ✓	
	215.6	(46.2) ✓	
			(+0.61) ✓
	144.1	23.3 ✓	
9 20 57	217.4	26.9 ✓	+0.57 ✓
	142.5	(+0.2) ✓	
	~~360.8~~		
	219.4	IX	

Ended left and below

	236.0	62.0 ✓	
9 22 58	304.0		
	236.1	69.2 ✓	+0.82 ✓
	305.9	(37.2) ✓	
			(+0.82) ✓
	236.3	67.7 ✓	
9 24 16	304.0		
9 21 30 ✓	236.3	69.9 ✓	+0.82 ✓
−53	305.2	(37.6) ✓	Mean +0.72 ✓
9 20 53 ✓			
	236.2	62.9 ✓	
9 25 50	305.1	66.1 ✓	+0.88 ✓
	237.0	(37.0) ✓	
	303.1		

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1897phae.proj.1346.

June 16 1897

(+0.84)

	235.9	64.4	
9 27 14	304.3	69.6	+0.81
	283.6	(134.0)	
	303.2		

Under right and above

	322.9	33.1	
9 29 36	36.0		
	324.8	71.7	+0.68
	36.5	(104.8)	

(+0.70)

	322.7	32.1	
9 30 41	34.8	71.3	
	322.9	(103.4)	+0.71
	34.2		Mean +0.77

9 28 20.
-55
9 27 25

Iapetus

10	30	-17.0
15	39	
	9	

Comp. Star = S.D. -16° 4138 9.2

Object taken for Iapetus precedes Saturn 36.5 s and is about 3' north of it.

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1897phae.proj.1346.

June 16 1897

Order above

10 + C.S. dis. > 327.2 / 31.1 — 63.9 ✓

330.1 — 57.9 ✓

28.0 — (121.8) ✓ — +1.1 r ✓

330.5 — 57.9 ✓ — (+1.12) ✓

28.4

328.2 — 61.8 ✓

30.0 — (119.7) ✓ — +1.20 ✓

Order below

55.5 — 67.8 ✓

122.9

59.4 — 60.7 ✓

120.1 — (124.1) ✓ — +1.02 ✓

57.4 — 63.r ✓ — (+1.00) ✓

120.9

56.8 — 66.4 ✓

123.2 — (129.9) ✓ — +0.9 r ✓ — mean +1.09 ✓

10	11
10	07.5
	−.9
10	6.6

Same again

59.8

10 + 12 — 122.7 — 62.9 ✓

58.4

120.9 — (125.4) ✓ — +1.0 r ✓

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June 16 1897.

59.0 61.1 (+1.07)
120.1
56.8 6[illegible].2
122.0 126.3 +1.06

Index above
148.1 64.9
213.0
151.9 60.[illegible]
212.4 [illegible] +1.04

150.0 61.2 (+1.06)
211.8
149.0 64.2
213.8 [illegible] +1.0[illegible]
Mean +1.06

10	19
10	15.5
	.9
10	14.6

16 45 -1.14
16 23
22
11 38

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~~77 Gb2~~
77 Gb2

α Cephei Phot

0 30 +81.7
16 45
16 15

Index right and above
134.5 comp dia.
10 53 52 223.1 88.6 ✓
139.4
219.3 79.9 ✓ +0.22 ✓
16 Av >

(+0.25) ✓

140.5 77.7 ✓
10 54 15 218.2 87.4 ✓ +0.28 ✓
136.6 16 Av ✓
224.8

Index left and below
227.9 Av. >
10 56 52 313.4
230.8 77.1 > +0.33 ✓
307.9 162.6 >

(+0.25) ✓

229.1
~~307.3~~ 80.8 > +0.17 ✓
309.9
223.4 90.4 >
313.8 171.2 >

10 58 26
10 55 52 > ✓
-55
10 54 57 ✓

Mean +0.25 ✓

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		225.6		
		312.8	<47.2>	
11	00	1		
		229.1	<40.0>	+0.24
		309.1	167.2>	
				(+0.21)
		227.5	<41.2>	
11	1	8		
		309.3	<42.7>	+0.18
		224.0	170.5>	
		312.7	II	

Index right and above

		312.0		
		44.0	92.0>	
11	3	43		
		318.7	<40.5>	+0.14
		39.2	172.5>	
				(+0.08)
		315.0	<46.6>	
11	5	14		
		41.6		+0.03
		311.9	91.7>	
11	2	32>	43.6	174.3>
		-55		
11	1	37		Mean +0.14

		310.3	92.4>	
11	6	40		
		43.1		+0.09
		316.2	<42.2>	
		88.4	174.0>	

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June 16 1897

(+0.08)

	316.7		+0.07
11 8 16	39.4	92.7 >	~~0.26~~
	810.7	93.7 >	
	44.4	176.4 >	
		III	

Index left and below

	89.8		
11 10 47	137.1	97.3 >	
	42.4	97.4 >	−0.09
	129.8	194.7 >	
		175.3	

(~~+0.09~~)
(−0.09)

	40.4	97.6 >	
11 12 13	133.0		
	41.0	97.1 >	−0.09
11 9 29	138.1	194.7 >	
−53		175.3	Mean +0.00
11 8 34			

11 22 34	35.0	104.2 >	
	139.5		
	43.3	93.9 >	−0.36
	137.2	194.7 >	
		161.3	

(~~+0.32~~)
(+0.32)

	40.5	92.2 >	
11 2 40	133.3	102.6 >	
	37.4	194.8 >	
	140.0	164.6	−0.29
		IV	

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June 16 1897

Index right and above

	133.0	96.6 ✓	
11 26 58	229.6	105.7 ✓	−0.43 ✓
	127.9	202.3 ✓	
	233.6	~~169.7~~	(−0.40) ✓
		157.7 ✓	~~(+0.46)~~
	127.6	103.9 ✓	
11 24 24	231.5		
11 25 29 ✓	132.7	96.3 ✓	−0.38 ✓ ~~−0.36~~
−55 ✓		200.2 ✓	Mean ~~+0.36~~ −0.37 ✓
11 24 34	229.0	159.8 ✓	
	132.0	99.2 ✓	
11 29 43	231.2		
	127.5	106.4 ✓	−0.49 ✓
	233.9	205.6 ✓	
		154.4 ✓	
			~~(+0.52)~~
	125.0	110.9 ✓	(−0.52) ✓
11 30 53	235.9	98.3 ✓	
	131.8	209.2 ✓	−0.56 ✓
	230.1	~~150.8~~ 150.7	

Index left and below

	220.9	96.3 ✓	
11 32 57	317.2		
	215.3	109.8 ✓	−0.50 ✓
	325.1	206.1 ✓	
		153.9 ✓	

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June 16 1897

~~(+0.46)~~

(−0.46)

11 34 25	217.0	105.2	
~~11 31 39~~	322.2		
11 32 0.	220.9	97.4	−0.43
−55	318.3	202.6	Mean ~~+0.49~~
11 31 05		157.4	−0.49
	221.0	96.1	
11 36 3	317.1	104.1	
	217.7	200.2	−0.38
	321.8	159.8	
	~~21~~		(−0.46)
	216.7	108.3	
11 37 48	325.0	99.3	
	220.5	207.6	−0.53
	319.8	157.4	

Index right and above

11 39 55	308.5	99.4	
	48.3		
	302.6	163.7	
	55.3	212.9	−0.63
		147.1	
	303.3	108.9	(−0.58)
	52.2		
11 41 12	308.2	99.2	
11 38 47	47.4	208.1	−0.54
−0.5		151.9	
11 37 49			Mean = 0.52

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June 16 1897

	307.9	191.2	
	49.1		−0.59
11 42 54	303.7	109.7	
	53.4	200.9	(−0.60)
		179.1	
	302.0	102.2	−0.62
11 43 57	54.2	100.3	~~−0.24~~
	306.9	202.5	
	47.2	147.5	

Index left and below

	86.8	103.6	
11 46 58	140.4		
	32.1	102.6	
	144.7	206.2	−0.70
		153.8	
	32.3	111.1	(−0.68)
11 48 41	143.4		
	37.0	102.7	−0.65
11 45 38	139.7	213.8	Mean −0.64
−56		146.2	
11 44 43	35.5	105.5	
11 50 1	140.0		
	31.6	110.4	
	142.0	215.9	−0.69
		144.1	

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June 16 1897

(−0.74)

	32.0	113.6	
11 51 20	145.6	107.6	−0.80
	33.3	121.2	
	140.9	138.8	

Index right and above

	126.2	106.6	
11 53 42	232.8		
	119.6	118.3	
	237.9	224.9	
		135.1	−0.87
	119.2	118.5	(−0.90)
11 55 08	237.7		
~~11 51 16~~	125.0	109.1	
11 52 31	234.1	227.6	−0.93
−53		132.4	Mean −0.82
11 51 36	126.8	109.3	
11 56 42	236.1		
	120.5	105.9	−0.88
	236.4	225.2	
		134.8	(−0.90)
	122.4	113.4	
11 57 57	237.8	112.4	
	122.6	227.8	−0.93
	235.0	132.2	

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1897phae.proj.1346.

June 16 1897

Index left and below

	215.0	106.2 ✓	
12 0 11	321.2		
	211.0	116.4 ✓	−0.83 ✓
	327.4	222.6 ✓	
		137.4 ✓	
	212.6	113.4 ✓	(−0.81) ✓
12 1 42 ✓	326.0		
11 59 08	215.8	107.6 ✓	
−55	323.4	221.0 ✓	−0.79 ✓
11 58 13 ✓		139.0 ✓	Mean −0.86 ✓
	217.0	105.5 ✓	
12 3 42	322.5		
	212.0	115.5 ✓	
	327.5	221.0 ✓	−0.79 ✓
		139.0 ✓	
	210.5	105.9 ✓	(−0.83) ✓
12 5 10	326.7		
	216.3	108.7 ✓	
	325.0	224.6 ✓	−0.87 ✓
		135.4	

Index right and above

	304.1	107.8 ✓	
12 7 49	51.9		
	298.5	120.2 ✓	
	58.7	228.0 ✓	−0.94 ✓
		132.0	

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June 16 1897

(-0.95)

	298.4	118.6	
	57.0		
12 9 18	303.7	110.3	−0.96
12 6 30	54.0	228.9	
−55		131.1	Mean −0.89
12 05 35			

Watch used in preceding meas. was 2 secs. fast.

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1897phae.proj.1346.

Friday June 18, 1897.

S Cephei. Phot. T H. Obs.

21 37 +74.3°

~~+3~~ ~~40~~

37 40

+16 3

Index above

238.3 Var dis. ~~Comp. star~~ 63.8 ✓

8 25 302.1

237.8 64.3 ✓

302.1 128.1 ✓ −1.02 ✓

~~236.1~~

236.1 66.6 ✓

302.7 (−1.00) ✓

237.7 63.3 ✓

301.0 129.9 ✓ −0.98 ✓

Index below

325.9 64.1 ✓

30.0

325.1 67.9 ✓

33.0 132.0 ✓ −0.94 ✓

324.0 69.0 ✓

33.0 (−0.92) ✓

8 34 326.5 64.1 ✓

8 29.5 > 30.6 133.1 ✓ −0.91 ✓

Mean −0.96 ✓

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1897phae.proj.1346.

June 18, 1897.

Same again

	328.0	63.9 >	
8	36	31.9	
	326.7	67.6 >	
	34.3	131.5 >	−0.95 ✓
	324.5	69.0 >	(−0.94) ✓
	33.5		
	327.9	63.9 >	
	31.8	132.9 >	−0.92 ✓

Index above

	55.2	67.5 >	
	122.7		
	52.2	72.9 >	
	125.1	140.4 >	−0.77 ✓
	52.4	73.6 >	
8	44	126.0	(−0.74) ✓
	54.9	68.9 >	
8	40.0	123.8	142.5 ✓ −0.72 ✓

Mean −0.84 ✓

8 48 ~~C~~ 3 var, var. 2 ~~D~~ d in finder.
c Var equals ~~B~~ in large telescope

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1897phae.proj.1346.

June 18 1897

Phot. T. H. Obs.

Comparison Stars for R. Virginis

h.	m.	
12	36	+ 7.5°
15	23	
+ 2	47	

p 4.5 q

q 4 alpha, alpha 5 Beta,
Beta 3 Gamma, Gamma 4 Delta,
Delta 3 Epsilon, Epsilon ~~5~~ 3.5 Zeta,

Index

Continued on next page.

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June 18, 1897

Comps. Stars for R Virginis, Plate 5, Fr. obs.
Zeta Compared with Star m

Index to right.

260.1	17.2 ✓	
277.3		✓ +3.95 >
259.5	19.6 ✓	
279.1	36.8 ✓	
		(+4.03) >
261.2	18.0 ✓	
279.2		
260.8	16.2 ✓	
277.0	34.2 ✓	+4.11 >

Index to left

349.0	19.5 ✓	
8.5		
350.0	17.0 ✓	
7.0	36.5 ✓	+3.97 >
350.0	17.0 ✓	(+3.97) >
7.0		
348.2	19.2 ✓	+3.93 >
8.4	39.2 ✓	~~+3.99~~
		mean +3.99 >

9 50
9 46.07 >

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1897phae.proj.1346.

June 18, 1897

Epsilon compared with m.

Index to left

346.7	22.2 ✓	
9.9		
347.1	22.7 ✓	
9.8	~~34.9~~ 45.9 ✓	+3.46 ✓
347.1	22.1 ✓	(+3.50)?
9.2		
347.0	22.0 ✓	
9.0	44.1 ✓	+3.55 ✓

Index to right

76.0	23.4 ✓	
99.4		
75.7	22.6 ✓	
98.3	46.0 ✓	+3.46 ✓
75.5	22.2 ✓	(+3.53)?
97.7		
77.0	20.9 ✓	
97.9	43.1 ✓	+3.60 ✓

mean +3.52

9 53

10 22

10 07.5

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1897phae.proj.1346.

June 18, 1897

Delta compared w.

Index to left

	343.2	3 0.3 ~~29.3~~	
9 58	13.5		
	345.0	28.0	
	13.0	~~57.3~~ 57.3	+2.93
	345.0	28.0	(+2.94)
	13.0		
	343.0	29.5	
	12.5	57.5	+2.96

Index to right

	71.9	30.1	
	102.0		
	73.3	28.5	+2.91
	101.8	58.6	
	74.0	28.1	(+2.91)
10 17	102.1		
10 07.5	71.9	30.6	+2.91
	102.5	58.7	

mean +2.92

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June 18, 1897

Gamma compared with m

Index to left

339.9	34.4		
14.3			
342.0	33.0		
15.0	67.4	+2.59	
343.0	32.1		(+2.61)
15.1			
341.4	34.3		
15.7	66.4	+2.63	

Index to right

68.0	38.0		
106.0			
71.0	33.9		
104.9	71.9	+2.44	
69.5	35.1		(+2.36)
104.6			
71.0	40.8		
111.8	75.9	+2.32	

mean +2.40

10 05

10 11

10 08.07

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June 18, 1896

p compared with m.

Index to left

	143.2	69.0 ✓	
10 25	212.2		
	146.8	62.2 ✓	
	209.0	131.2 ✓	+0.93 ✓
	147.9	61.4 ✓	(+1.00)
	209.3		
	146.4	64.6 ✓	
	211.0	126.0 ✓	+1.06 ✓

Index to right

	237.7	62.5 ✓	
	300.2		
	239.4	59.6 ✓	
	299.0	122.1	+1.14 ✓
	241.2	59.2 ✓	(+1.16)
	300.4		
10 35	238.5	62.8 ✓	
10 30.0	301.3	122.0 ✓	+1.15 ✓

Mean +1.07

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June 18, 1897

Beta compared with m

Index to right and above

250.2	36.7	
286.9		
250.1	37.9	
288.0	74.6	+2.36

248.0	42.0	(+2.22)
290.0		
249.0	38.2	
287.2	80.2	+2.19

Index to left and below

340.7	36.3	
17.0		
337.9	39.1	
17.0	75.4	+2.33

~~339.9~~		
339.5	38.4	(+2.34)
17.9		
341.4	33.6	
15.0	72.0	+2.44

Mean +2.331

10 37

~~10 44~~

10 45

10 41.0

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1897phae.proj.1346.

June 18, 1897

α compared with m.

Index left and below.

	60.5	56.0 ✓	
10 57	116.5		
	64.0 ✓	46.4 ✓	
	110.4	102.4	+1.60
	64.2	47.8 ✓	(+1.60)
	111.0		
	60.1 ✓	55.1 ✓	
	115.2	102.9 ✓	+1.59 ✓

Index right and above

	149.3	58.6 ✓	
	205.9		
~~10 58~~	154.1 ✓	51.0 ✓	
	205.1	109.6 ✓	+1.43 ✓
	154.6	51.0 ✓	(+1.42)
	205.6		
10 59	152.0 ✓	54.0 ✓	
10 55.0	206.0	105.0 ✓	+1.54 ✓

mean +1.52

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1897phae.proj.1346.

June 18, 1897

Iapetus Phot. T. H. Obs.

15 30 −17.0
17 10
1 40

Comp. Star = ♂ −16° #129 (9.0)
Object taken for Iapetus precedes Saturn 26 sec. and is 3' north.

Index left and above

240.2 < Comp. star 57.8 ✓
11 31 298.0
240.0 57.0 ✓
297.0 114.8 ✓ +1.31 >.

239.4 56.9 ✓ (+1.33) ✓
296.3
241.5 56.1 ✓
297.6 113.0 ✓ +1.35 >.

Index right and below

325.5 66.9 ✓
32.4
330.0 56.6 ✓
26.6 123.5 ✓ +1.12 >.

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1897phae.proj.1346.

June 18, 1897

	331.2	57.8 ✓	(+1.16) ✓
11 38	29.0		
11 34.5 ✓	325.5	62.3 ✓	
	27.8	120.1 ✓	+1.19 >
			Mean +1.24 ✓

Same again.

	326.8	64.3 ✓	
11.40	30.3		
	330.0	57.8 ✓	
	27.8	122.1	+1.18 >
	329.0	58.5 ✓	(+1.16) ✓
	27.5	✓	
	327.5	61.5 ✓	
	29.0	120.0	+1.19 >

Index left and above

	59.7	61.3 ✓	
	121.0		
	56.4	61.4 ✓ ✓	
	117.8	122.7	+1.13 >
	59.8	56.1 ✓	
11 46	115.9		(+1.16) ✓
~~11 48~~	56.8	64.4 ✓ ✓	
11 43.0 ✓	121.2	120.5	+1.18 >
			Mean +1.16 ✓

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1897phae.proj.1346.

June 18, 1897

Same again

	56.0	61.0 ✓	
11 48	117.0		
	56.2	62.3 ✓	
	118.5	123.3 ✓	+1.12 >
	58.0	59.8 ✓	
	~~120.0~~		(+1.16) ✓
	117.8		
	57.5	60.2 ✓	
	117.7	120.0 ✓	+1.19 >

Index right and below.

	144.8	68.0 ✓	
	212.8		
	149.2	61.4 ✓	
	210.6	129.4 ✓	+0.99 >
	146.7	63.3 ✓	(+0.99) ✓
11 54	210.0		
11 51.0 ✓	145.0	66.1 ✓	
	211.1	129.4	+0.99 >

Mean +1.08 ✓

Troubled somewhat throughout observations by light clouds.

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1897phae.proj.1346.

June 19, 1897. (Saturday.)

S. Cephei. Phot. T. H. Obs.

21 37 +78.3
14 15
[illegible]
16 38

21 37
[illegible] 27
16 50

8 26 Clouds thick

Σ 1904 Phot. R. H. Obs.

14 58 +6.0°
[illegible] [illegible]
[illegible] 50

8 49 Clouds thick

Southern component thought to be slightly the brighter.
Pos. Ang. 350° Dist. 9"
Magn. 7.0 and 7.1

8 55 Clouds thick

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1897phae.proj.1346.

June 19, 1897.

9 08 Clouds too thick.

Σ 19 62 Phot R. H. Obs.

15 32 −8.3

9 13 Clouds thick.

9 16 Clouds too thick everywhere to do anything and steadily growing worse

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1897phae.proj.1346.

Mon. June 21. 1897.

Stephei:	Phot. J:	W: obs.
21	37	+78.3.
14	10	
16	33	
4	33	

Index to right and above.

240.0	< var. dis	
298.0		
240.8	58.0›	
296.5	55.7›	-1.33 ✓
	113.7›	

Twilight strong.

239.1		
299.0	59.9›	-1.19 ✓
240.0	60.0›	(-1.26)
300.0 ~~299.0~~	119.9›	

Index to left and below

330.7		
24.4	57.0›	-1.30 ✓
329.1	58.2›	
27.3	115.2›	

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1897phae.proj.1346.

June 21, 1897.

327.0
29.2 62.2 −1.13
327.4 60.7 −1.22
28.1 122.9 −1.24

8 21
8 17.0
+2.
19.

Same again.
Index to left and below.

328.0
26.9 58.9 −1.14
326.0 63.7
30.3 122.6

8 22

328.4
29.1 60.7 −1.14
324.1 61.4 −1.14
28.5 122.1

Index to right and down.

54.5
121.2 66.7 −0.90
54.4 67.2
121.9 133.9

55.9
120.9 67.0 −0.93
55.9 65.3 −0.92
121.2 132.3 −1.03

8 28
8 25.0
+2.
27.

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1897phae.proj.1346.

June 21, 1897.

8 44 e e 2 var: var 3 d
e in finder
var = b
in large telescope

W: obs.

Sapetus. Phot S: W. obs

15 30 -17.0
15 15
11 45

Comp. Star = SD. -16° K12 = (9.0)
Object taken for Sapetus precedes Saturn 19ˢ.5 and is about 3'.3 north of it.

Index above.

62.2
114.4 ← comp. star dis.
56.6 52.2 ✓
119.4 63.1 ✓
115.3 +1.30"

57.5 61.6 ✓ (+1.24")
119.1 55.2 ✓
60.8 116.8 +1.26"
116.0

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1897phae.proj.1346.

June 21.1897.

Index below.

151.0	56.0 ✓	
207.0 ~~206.4~~	62.0 ✓	+1.2 ✓
147.4	118.0 ✓	~~+2.4.0~~
209.4		
		(+1.2 ✓)
147.8	60.4 ✓	
208.2	54.8 ✓	
151.8	115.2 ✓	+1.30 ✓
206.6		mean +1.2 ✓

9	21
9	18.0 ✓
	+2.5 ✓
9	20.5 ✓
5	
14	20.5 ✓

Same again
Index below.

151.1	56.3 ✓	
207.4 ~~206.9~~	60.0 ✓	
148.9	116.3 ✓	+1.27 ✓
208.9		
		(+1.30 ✓)
149.0	58.1 ✓	
207.1	56.0 ✓	
150.1	114.1 ✓	+1.32 ✓
206.1		

9 22

Index above.

244.8	50.7 ✓	
295.5	57.1	
242.0	107.8 ✓	+1.47 ✓
299.1		

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June 21, 1897.

240.8 56.2 ✓
294.0
248.4 52.5 ✓
295.9 295.3 10 2.7 ✓ ±1.5 ✓ ~~±1.5~~ (±1.6) ✓
mean ±1.3 ✓

9 29
9 25.5 ✓
+2.5
9 28.0 ✓
3
14 28.0 ✓

u Virginis : W. obs.

12
13 12 47 +4.2
5 5
0 7

W. obs.

9 50

0 6
B 2 0 4
3.5
2.5
B 2 0 ✓

u Cephei

0 30 +81.7
16 15
15 3.0
3 30

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June 21, 1897

Index to right and above

142.2 ~ comp. star dis.

10 05 20 — 215.6

144.4 — 73.4 ✓

214.7 — 70.3 ✓

143.7 ✓ +0.70 ✓

144.3 — 69.4 ✓

10 06 47 — 213.7 — (+0.70) ✓

142.3 — 74.7 ✓

217.0 — 144.1 ✓ +0.69 ✓

I

Index to left and below

232.3 — 71.9 ✓

10 08 32 — 304.2

236.9 — 63.8 ✓

300.7 — 135.7 ✓ +0.86 ✓

236.7 — 64.5 ✓

10 09 35 — 301.2 ✓ (+0.88) ✓

10 07 34. ✓ — 234.4 — 70.0 ✓

+02 28. ✓ — 304.4 — 134.5 ✓ +0.89 ✓

10 10 02. ✓ — Mean +0.79 ✓

5

15 10 02. ✓

234.6 — 70.1 ✓

10 10 55 — 304.7

237.2 — 66.2 ✓

303.4 — 136.3 ✓ +0.85 ✓

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June 21, 1897.

	235.4	67.0 ✓	
10 12 12	302.4		(+0.82)
	231.5	72.6 ✓	
	304.1	139.6 ✓	+0.78 ✓

II Index to right and above.

	320.2	78.0 ✓	
10 14 01	38.2		
	323.6	69.6 ✓	
	33.2	147.6 ✓	+0.62 ✓

	320.1	71.9 ✓	
10 15 22 ✓	32.0		(+0.60) ✓
10 13 08	317.1	77.6 ✓	
+02 28.	34.7	149.5 ✓	+0.58 ✓
10 15 36. ✓		Mean +0.71 ✓	
5			
15 15 36.			

	319.0	76.6 ✓	
10 16 34	35.6		
	321.5	70.5 ✓	
	32.0	147.1 ✓	+0.63 ✓

	323.1	69.9 ✓	
10 14 55	33.0		(+0.59) ✓
	316.1	81.4 ✓	
	37.5	151.3 ✓	+0.55 ✓

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June 21, 1897.

III Index to left and below

		48.2	78.7 ✓
10	20	03	126.9
			51.2 73.0 ✓
			124.2 151.7 ✓ +0.54 ✓
			53.4 72.0 ✓
10	21	23	125.4 (+0.52) ✓
10	18	59. ✓	47.3 81.7 ✓
	+02	28. ✓	129.0 153.7 ✓ +0.50 ✓
10	21	27. ✓	Mean +0.56 ✓
5			
15	21	27. ✓	

		47.5	78.5 ✓
10	22	51	126.0
			54.0 68.9 ✓
			122.9 147.4 ✓ +0.63 ✓
			48.8 75.9 ✓
10	24	05	124.7 (+0.54) ✓
			48.4 79.9 ✓
			128.3 155.8 ✓ +0.46 ✓

IV Index to right and above.

		134.5	89.1 ✓
10	25	44	223.6
			139.9 79.4 ✓
			219.3 168.5 ✓ +0.22 ✓

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June 21, 1897.

	137.1		(+0.16)
10 26 55	220.4	83.3	
10 24 54.	131.8	91.0	
+02 28.	222.8	174.3	+0.11
10 27 22.		Mean	+0.35
5			
15 27 22.			

	135.1		
10 28 18	220.7	85.6	
	138.2	80.7	
	219.4	166.3	+0.26

	137.9		(+0.18)
10 29 31	219.8	81.9	
	133.4	92.3	
	225.7	174.2	+0.11

Index to lift and below

~~128.1~~	~~225.7~~	225.4	
10 34 27	~~23316~~	~~122.4~~	313.2	87.8
~~10 32 20~~		228.5		78.2
		306.7		166.0
				+0.27

	232.2	73.2	
10 35 38	305.4		(+0.32)
10 31 58.	225.7	87.0	
+02 28.	312.7	160.2	+0.38
10 34 26.		Mean	+0.25
5			
15 34 26.			

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1897phae.proj.1346.

June 21, 1897.

223.2 89.9 ✓

10 37 03

313.1

229.5 79.0 ✓

304.5 168.9 ✓ +0.21 ✓

231.9 (+0.24)

10 38 13

308.8 76.9 >

225.0 89.1 >

314.1 166.0 > +0.27 ✓

VI Index to right and above

307.9

10 41 09

44.9 97.0 >

318.8 82.2 >

40.7 179.2 > +0.02 ✓

317.1 83.3 ✓

40.4 (+0.04) ✓

10 42 21 ✓

10 39 42 ✓

+02 28 ✓

10 42 10 ✓

5 ✓

15 42 10

314.5 93.5 ✓

45.0 176.8 ✓ +0.06 ✓

Mean +0.14 ✓

307.7 96.9 ✓

10 43 46

44.6

315.4 84.8 ✓

40.2 181.7 ✓

178.3 ✓ −0.03 ✓

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June 21, 1897

(−0.07)

	313.1		
	40.3	87.2 >	
10 44 55	308.5	98.7 >	
	47.2	185.9 >	
		174.1	−0.11

VII Index to left and Index.

	89.6		
10 46 50	134.4	94.8 >	
	43.8	89.6 >	
	133.4	184.4 >	
		175.6	−0.08

	45.7	(−0.06)	
10 48 10	132.1	86.4 >	
10 45 55	39.6	95.2 >	
+02 46	134.8	181.6 >	
10 48 23		178.4	−0.03
5			
15 48 23			

Mean −0.06

	37.7		
10 49 28	136.0	98.3 >	
	46.3	83.5 >	
	129.8	181.8 >	
		178.2	−0.03

	43.8		
10 50 38	130.4	86.6 >	(−0.08)
	36.4	100.0 >	
	136.4	186.6 >	
		173.4	−0.13

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1897phae.proj.1346.

June 21, 1897.

VIII Index to right and above

	128.4	
10 52 35	230.2	101.8
	133.0	93.4
	226.4	195.2
		164.8 -0.29
	131.1	94.1
	225.2	(-0.34)
10 53 53	124.8	106.2
10 37 38.	231.0	200.3
+02 28.		159.7 -0.39
10 54 06.	Mean -0.21	
5		
16 54 06.		
	125.9	
10 55 03	232.0	106.1
	132.0	94.0
	226.0	200.1
		159.9 -0.38
	132.8	95.6
	228.4	(-0.38)
10 56 17	127.2	104.1
	231.3	199.7
		160.3 -0.38

IX Index to left and below.

	216.7	102.9
	319.6	92.2
10 59 10	222.9	195.1
	315.1	164.9 -0.29

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1897phae.proj.1346.

June 21, 1897.

222.8	91.6 ✓		
314.4	101.1 ✓	(−0.26) ✓	
218.3	192.7 ✓		
319.4	167.3 ✓	−0.24 ✓	
		Mean −0.32 ✓	

11 00 26
10 57 44. ✓
+02 28.
11 00 12. ✓
5
16 00 12. ✓

11
10 02 10

219.4	100.6 ✓		
320.0	94.7 ✓		
223.0	195.3 ✓		
317.7	164.7 ✓	−0.29 ✓	

223.2	93.6 ✓		
316.8	102.5 ✓	(−0.30) ✓	
219.6	196.1 ✓		
320.1	163.9 ✓	−0.30 ✓	

11 05 00

I Index to right and above.

305.3	104.6 ✓		
49.9	101.6 ✓		
307.8	206.2 ✓		
49.4	153.8 ✓	−0.50 ✓	

11 04 48

306.4	101.9 ✓		
48.6	109.9 ✓	(−0.56) ✓	
302.0	211.8 ✓		
51.9	148.2 ✓	−0.61 ✓	
		Mean −0.43 ✓	

11 09 29
11 06 07. ✓
+02 28.
11 08 35. ✓
5
16 08 35. ✓

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1897phae.proj.1346.

June 21, 1897.

W's watch. #394 Bond.

h	m	s		h	m	s
11	15	31.5	-	11	13	00.0

W's watch used to-night for Eastern time.

Correction to same = + 2 28.5

Nova Examination of same

16	45	-11.5
17	45	
1	60	

16	45
+ 1	60

Region identified.
There is a star following S. D. -12° 4629. 38 sec.

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June 22. 1897. (Tuesday.)

S Cephei.

21 37 +72.3
3A 7
+16 30

Index below.

Var. dis. 32V.0 66.1 ✓
31.1 68.7 ✓
32V.3 134.8 ✓ −*0.88 ✓
3K.0

32K.7 67.1 ✓ (+0.90) ✓
31.A 65.6 ✓
32V.K 132.7 ✓ −*0.92 ✓
31.0

Index above.

2K0.1 63.6 ✓
303.7 62.1 ✓
23A.9 125.7 ✓ −*1.07 ✓
301.0

237.A 64.5 ✓ (+1.04) ✓
302.3 63.8 ✓
23A.K 128.3 ✓ −*1.01 ✓
302.2

Mean +0.97 ✓

A 2K
8 19.5
5
13 19.5

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1897phae.proj.1346.

June 22. 1897.

Same again.

Index above.

	2K0.0	64.3 ✓
A 26	30K.3	64.1 ✓
	2K0.9	128.4 ✓ −*1.01 ✓
	30V.0	

✓

	23A.K	65.3 ✓ (+1.00)
	3037	64.2 ✓
	23A.2	129.5 ✓ −*0.99 ✓
	303.0	

Index below

	32K.1	68.6 ✓
	32.7	70.2 ✓
	32V.0	138.8 ✓ −*0.80 ✓
	3V.2	

✓

	32K.V−	67.6 ✓ (+0.84)
	32.1	67.1 ✓
	32K.A	134.7 ✓ −*0.88 ✓
	31.9	

Mean +0.92 ✓

A	37
8	31.5
3−	
13	31.5

A 43 ♂ C 3 Var., Var. 2 d in finder.
♂ Var. = b in Lar. tel.

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1897phae.proj.1346.

June 22. 1897.

U Virginis. Sh. obs.

12	K2	+K.2
1V	1R	
+2	30	

0 V b
b 3.V a
a 3 B
B 3.V y
y K d
d 3 E
E K.V Z

9 2b

R Virginis.

12	33	+7.V
16	0	
+3	27	

b V g
g V a
a K B
B K y
y V d
d K E
E K.V Z

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1897phae.proj.1346.

June 22. 1897.

Iapetus Phot. T. W. Obs.

~~15 30~~
~~17.0~~
0

15 30 −17.0
16 40
1 10

Object taken for Iapetus precedes Saturn 17 sec. and is about 3.2 mm north of it.

Comp. Star = S 3. −16° #122 (9.0)
Index right and above

243.4 52.5 ✓
295.9 55.5 ✓
241.7 108.0 ✓ +1.46 ✓
297.2

241.8 53.7 ✓ (+1.50) ✓
295.5 50.7 ✓
244.1 104.4 ✓ +1.55 ✓
294.8

10 40

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1897phae.proj.1346.

June 22, 1897.

Index left and below.

333.1 50.9 ✓
24.0 55.0 ✓
331.5 105.9 ✓ +1.51 ✓
26.5

(+1.48) ✓

333.0 53.3 ✓
26.3 55.3 ✓
331.2 108.6 ✓ +1.45 ✓
26.5 Mean +1.49 ✓

~~11~~
10 48
10 44.0
5
15 44.0

Same again

333.9 ∠ Comp. str. dis.
23.5 49.6 ✓
330.4 57.6 ✓
28.0 107.2 ✓ +1.48 ✓

331.9 54.5 ✓ (+1.48) ✓
26.4 52.3 ✓
332.8 106.8 ✓ +1.49 ✓
25.1

Index right and above

61.0 54.5 ✓
115.5 56.1 ✓
59.0 110.6 ✓ +1.40 ✓
115.1

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1897phae.proj.1346.

June 22, 1897.

59.4 55.8 (+1.39)

115.2 55.7

59.4 111.5 +1.38

115.1 Mean +1.44

10	59
10	54.5
5	
15	54.3

Same comp. star. used as June 21, 1897

U. Virginis Phot. R. H. Obs.

12 48 +4.2

17 30

4 42

Abandoned too low.

MP 441 Phot. R. H. Obs.

3. 31 +62.8

17 45

14 14

2 14

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June 22, 1897

Index right and below

322.4	Vardis
10.5	48.1'
321.5	47.5'
9.0	95.6' - ★1.77'

323.0	47.4'	(★1.74)'
10.4	50.8'	
320.0	98.2'	- ★1.70'
~~10.8~~	10.8	

Index left and above

~~10.8~~

48.9	52.1'
101.0	47.0'
37.9	99.1' - ★1.68'
98.9	

52.5	47.0'	(★1.67)'
99.5	52.9'	
49.5	99.9' - ★1.66'	
102.4		

Mean ★1.70'

11 38

11 44

11 41.0

5

16 41.0

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1897phae.proj.1346.

June 22, 1897

Same again

	49.5	52.5'
11	102.0	49.9'
	51.0	102.4' − #1.60'
	100.9	

	50.9	47.6' (− #1.65)'
	98.5	50.7'
	51.0	98.3' − #1.70'
	101.7	

Index right and below

	141.8	50.0'
	191.8	48.5'
	141.8	98.5' − #1.69'
	190.3	

	142.8	47.1' (− #1.66)'
	189.9	53.6'
	139.9	100.7' − #1.64'
	193.5	

Mean − #1.66'

11	51
11	48.0
3	
16	48.0

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1897phae..pr.67..134G.

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