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528

1895phae.proj..529C

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July 25. 1895.

w ophiuchi: W: obs.

17	9	+1.4
16	30	
−0	39	
11	21	

Index to right and above.

8 32 10

247.9	l	
317.6	< run dis.	69.7 <
237.0	r	88.6 < 0.41 <
325.6		158.3 <

8 34 7

56.6	r	
145.0		88.4 <
65.6	l	79.4 < 0.35 <
139.0		161.8 <

8 35 52

67.8	~~64.8~~	l
	138.9	71.1 <
	56.2	r 92.0 < 0.32 <
	148.2	163.1 <

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July 25, 1895.

			57.1	~		
8	37	40	147.5		90.4 <	
					74.9 <	0.28 <
8	34	10 <	65.9	l	165.3 <	
			140.8			

8	39	8	57.9	l		
			139.9		82.0 <	
					89.0 <	0.17 <
			56.0	~	171.0 <	
			145.0			

			55.2	~		
8	40	45	145.6		90.4 <	
					73.3 <	0.31 <
			65.9	l	163.7 <	
			139.2			

			67.3	l		
8	42	2	139.8		72.5 <	
					88.9 <	0.30 <
			56.3	~	161.4 <	
			145.2			

			55.9	~		
8	43	36	146.0		90.1 <	
					74.8 <	0.29 <
8	40	36 <	66.0	l	164.9 <	
			140.8			

			67.1	l		
8	45	24	139.0		71.9 <	
					93.1 <	0.29 <
			53.9	~	165.0 <	
			147.0			

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1895phae.proj..5296

July 25, 1895.

		55.9	∩		
8	47.7	144.6		88.7 <	
		66.1 ~~66.4~~	l	74.5 <	0.32 <
		140.6		163.2 <	
		64.9	l		
49	16	136.3		71.4 <	
		56.6	∩	91.7 <	0.32 <
		148.3		163.1 <	
		57.2	∩		
8	50 38	146.9		89.7 <	
8	47 19 <	65.0	l	71.6 <	0.36 <
		136.6		161.3 <	
		65.4	l		
8	51 52	139.0		73.6 <	
		56.1	∩	90.1 <	0.31 <
		146.2		163.7 <	
		59.7	∩		
8	55 21	145.0		85.3 <	
		65.9	l	73.0 <	0.41 <
		138.3		158.3 <	
		62.2	l	75.8 <	
8	56 34	139.0		88.7 <	0.29 <
		56.3	∩	164.5 <	
		145.0			

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July 25, 1895.

		53.2	∩		
8	57	~~58~~ 59	145.7		92.5 <
			68.3	l	72.7 < 0.28 <
8	57	39 <	141.0		165.2 <
			66.0	l	
8	59	25	136.7		70.7 <
			54.6	∩	93.6 < 0.30 <
			148.2		164.3 <
			55.5	∩	
9	0	58	146.7		91.2 <
			67.3	l	70.7 < 0.34 <
			138.0		161.9 <
			66.6	l	
9	2	37	138.1		71.5 <
			56.5	∩	91.1 < 0.33 <
			147.6		162.6 <
			56.9	∩	
9	4	7	146.2		89.3 <
			59.6	l	70.4 < 0.39 <
9	0	59 <	130.0		159.7 <
			1		
		65.1	~~69.9~~	l	Stopped by increasing loadings
9	13	3	134.1		
			58.2	∩	69.0 <
			142.3		84.1 < 0.151 <
					153.1 <

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July 25, 1895.

			57.1	≳		
9	14	47	144.6		87.5 <	
			66.6	l	74.0 <	0.35 <
			140.6		161.5 <	
			66.3	l		
	17	58	138.8		72.5 <	
			60.2	≳	83.8 <	0.45 <
			144.0		156.3 <	
			62.3	≳		
9	19	26	142.2		79.9 <	
9	15	32 <	67.5	l	71.5 <	0.55 <
			139.0		151.4 <	
			67.3	l		
9	20	56	138.2		70.9 <	
			59.2	≳	83.6 <	0.49 <
			142.8		154.5 <	
			60.1	≳		
9	22	45	142.9		82.8 <	0.51 <
			68.8	l	70.5 <	
			139.3		153.3 <	
			65.0	l		
9	25	11	137.9		72.9 <	
			62.7	≳	77.2 <	0.57 <
			140.0		150.2 <	

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July 25, 1895.

			59.9	≈		
9	24	48	144.0		84.1 <	
9	23	8 <	67.9	l	67.7 <	0.54 <
			135.6		151.8 <	
			66.6	l		
9	28	18	137.0		70.4 <	
			58.0	≈	87.1 <	0.43 <
			145.1		157.5 <	
			57.9	≈		
9	29	49	143.0		85.1 <	
			66.0	l	73.8 ≈	0.40 <
			139.8		158.9 <	
			68.6	l		
9	31	17	137.5		68.9 <	
			57.9	≈	85.1 <	0.50 <
			143.0		154.0 <	
			58.1	≈		
9	32	50	144.1		86.0 <	
9	29	46 <	67.0	l	68.1 <	0.50 <
			135.1		154.1 <	
			67.3	l		
9	40	23	139.3		72.0 <	
			59.9	≈	80.2 <	0.53 <
			140.9		152.2 <	

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July 25, 1895.

		60.8	≷		
9	42 3	142.8		82.0 <	
		65.2	l	73.6 <	
		138.8		155.6 <	0.47 <
		66.2	l		
9	43 47	137.9		71.7 <	
		59.5	≷	81.5 <	
		141.0		153.2 <	0.51 <
		60.3	≷		
9	45 16	141.0		80.7 <	
9	42 5 <	67.2	l	69.4 <	
		136.6		150.1 <	0.57 <
		69.1	l		
9	46 42	136.0		66.9 <	
		61.0	≷	81.8 <	
		142.8		148.7 <	0.60 <
		58.4	≷		
9	48 10	142.4		84.0 <	
		68.3	l	68.9 <	
		137.2		152.9 <	0.52 <
		67.2	l		
9	49 50	138.2		71.0 <	
		61.4	≷	81.4 <	
		142.8		152.4 <	0.53 <

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1895phae.proj..529c

July 25, 1895.

		60.9	∩		
9	51	31	142.2		81.3 <	
9	48	16 <	68.0	l	68.0 <	0.59 <
			136.0		149.3 <	
			69.0	l		
9	57	3	136.3		67.3 <	
			57.6	∩	85.9 <	0.51 <
			143.5		153.2 <	
			60.8	∩		
9	58	42	139.8		79.0 <	
			67.6	l	69.3 <	0.61 <
			136.9		148.3 <	
			68.2	l		
10	0	0	138.0		69.8 <	
			60.1	∩	84.5 <	0.49 <
			144.6		154.3 <	
			62.3	∩		
10	0	53	142.5		80.2 <	
9	58	22 <	66.7	l	70.4 <	0.56 <
			137.1		150.6 <	

l

10 15 Stopped by clouds.

∩

Watch used above was 47 Sec. fast.

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1895phae.proj..529C

July 26. 1895.

ζ Herculis Phot. I. H. obs.
Comp. with Dm. + 1h° 3316 (9.3)

17	V−3	+1V.1
16	23	
−1	30	

Index above ∧

		88.1	l	
8	30	35	119.8	< var dis
			86.9	n
			119.8	
			85.2	n
8	32	35	119.7	
			87.9	l
			117.2	
			87.2	l
8	34	21	117.6	
			84.1	n
			119.9	
			86.1	n
8	36	23	119.0	
			86.4	l
			118.7	

31.7 <		2.69 <
32.9 <		
64.6 <		
	(−2.70)	
34.5 <		
29.3 <		2.72 <
63.8 <		
30.4 <		
35.8 <		2.64 <
66.2 <		
	(−2.66)	
32.9 <		
32.3 <		2.67 <
65.2 <		4 (2.72)
		2.68

1.

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July 26, 1895

					13	
8	37	58	86.7	l		
			119.5		32.8 <	
			85.2	ν	34.7 <	2.59 <
			119.9		67.5 <	
						(-2.78)
			85.1	ν		
8	39	45	120.3		35.2 <	8/8
			86.3	l	33.2 <	2.56 <
			119.5		68.4 <	
					4	
			89.5	l		
8	41	32	117.5		28.0 <	8
			83.8	ν	36.4 <	2.70 <
			120.2		64.4 <	
						-262
			83.9	ν		
8	43	07	120.4		36.5 <	8
			85.8	l	32.7 <	2.53 <
8	40	22 <	118.5		69.2 <	4238
						2.595
					2	260
			86.0	l	4	
8	46	58	120.0		32.0 <	8
			83.1	ν	37.9 <	2.51 <
			121.0		69.9 <	
						(-2.52)
			83.7	ν		
8	48	52	121.1		37.7 <	2.52 <
			87.5	l	31.8 <	8/8
			119.0		69.5 <	

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July 26. 1895

87.3 ~~8[illegible]~~ l B

8 50 24
119.0
84.2 r
120.8
31.7 <
36.6 < 2.56 <
68.3 <
(-2.60)

85.7 r
8 53 19
120.6
86.6 l
118.1
34.9 <
31.5 <
66.4 <
2.63 <
4 (222
2.0353
2.06
3

87.6 l B
8 54 ~~20~~
117.5
85.0 ∩
120.3
29.9 <
35.3 <
65.2 <
2.67 <
(-2.64)

85.5 r
8 56 16
120.5
86.8 l
118.4
35.0 <
31.6 <
66.6 <
2.62 <

87.0 l A
~~85.5~~
8 58 20
118.7
85.0 r
119.6
31.7 <
34.6 <
66.3 <
2.63 <
(-2.66)

87.2 r
9 0 13
119.9
86.9 l
118.8
32.7 <
31.9 <
64.6 <
2.69 <
4 (261
2.6502
4
8 57 ~~4~~ 5 <

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			87.4	A	l		
9	5	54	119.0			31.6 <	
			85.1		2	34.0 < 2.66 <	
			119.1			65.6 <	
							(-2.62)
	10	3	85.2		2		
9	2	45	119.6			34.4 <	9
			85.7		l	33.3 < 2.59 <	9
			119.0			67.7 <	
			86.8	B	l		
9	11	53	118.0			31.2 <	9
			87.0		2	31.8 < 2.75 <	
			118.8			63.0 <	
							(-2.67)
9	13	50	85.7		2		
			120.2			34.5 <	9
			85.3		l	33.0 < 2.59 <	
9	10	11	118.8			67.5 < 4(25.9	
		12.				5 2.65	
			86.7	B	l		
9	20	37	118.6			31.9 <	9
			87.1		2	32.2 < 2.71	
			119.3			64.1 <	
							(-2.64)
			84.8		2		
9	22	48	121.1			36.3 <	
			87.6		l	32.0 < 2.56 <	9
			119.6			68.3 <	

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		86.1	l		
9	24	10	119.8		33.7 <
			86.2	~	32.9 < 2.62 <
			119.1		66.6 <
					(-2.6K)
			87.0	~	
9	25	58	119.1		32.1 < 2.67 <
			85.7	l	33.0 <
9	23	7 <	118.7		65.1 < 4 (25.6
					2.64
				6	
		86.1	l		
9	30	1	118.0		31.9 <
			85.4	~	34.4 < 2.63 <
			119.8		66.3 <
					(2.66)
			85.6	~	
9	32	3	118.9		33.3 <
			86.0	l	31.1 < 2.70 <
			117.1		64.4 <
			87.2	l	
9	34	53	117.9		30.7 <
			85.9	~	33.9 < 2.69 <
			119.8		64.6 <
					(-2.73)
			86.3	~	32.2 <
9	36	18	118.5		30.2 < 2.77 <
9	33	5 <	87.0	l	62.4 < 4 (27.9 (22.9)
			117.02		2.698 =
				7	

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		85.9	l B			
9	41 43	117.0		31.1 <		9
		85.8	2	33.9 <	2.68 <	
		119.7		65.0 <		
					-2.76	
		87.0	2			
9	43 12	117.7		30.7 <		9
		87.2	l	29.6 <	2.85 <	
		116.8		60.3 <		
		86.4	l A			
9	45 5	117.0		30.6 <		10
		86.2	2	32.4 <	2.75 <	
		118.6		63.0 <		
		86.2	2		-2.77	
9	46 53	118.0		31.8 <		10
9	43 59 <	87.3	l	29.9 <	2.80 <	
		117.2		61.7 <	4(30 8	
			8		2.77	
		86.9	A l			
9	51 35	119.0		32.1 <		10
		86.0	2	34.1 <	2.64 <	
		120.1		66.2 <		
	53 57	86.4	2			
9		119.4		33.0 <		
		86.9	l	31.1 <	2.69 <	1
		118.6		64.1 <		

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	87.6	B	l		
9 56 51	118.9			31.3 <	
	86.8		2	32.0 <	2.74 <
	118.8			63.3 <	
	87.0		2		
9 59 16	118.9			31.9 <	
9 55 11 <	85.0		l	32.0 <	2.72 <
	117.0			63.9	4(27 9
			9		2.69 +
	86.9	B	l		2.70
10 5 52	118.0			31.1 <	
	85.9		2	33.5 <	2.69 <
	119.4			64.6 <	
	85.9		2		-2.71
10 7 54	118.0			32.1 <	
	86.8		l	31.5 <	2.73 <
	118.3			63.6 <	
	85.6	A	l		
10 10 42	119.1			33.5 <	
	86.0		2	32.1 <	2.166 <
	118.1			65.6 <	
	85.9		2	32.1 <	-2.64
10 13 5	118.0			32.0 <	
10 9 9 <	87.0		l	64.1 <	2.71 <
	119.0				4(27 9
			10		2.70

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Watch found to be 15 sec. fast at 10h 16m.

A

		86.7	l	
10	21	20	118.9	32.2 <
			86.0	∩ 33.4 < 2.66 <
			119.4	65.6 <
			86.1	∩
10	~~23~~	15	120.0	33.9 <
			86.5	l 32.3 < 2.64 <
			118.8	66.2 <

B

		86.8	l	
10	25	21	118.6	31.8 <
			86.5	∩ 33.1 < 2.68 <
			119.6	64.9 <
			87.0	∩
10	27	13	119.1	32.1 <
			86.5	l 32.9 < 2.68 <
10	24	1 <	119.4	65.0 < 4(266)
				2.66

B

		86.5	l	
10	32	~~43~~ 44	118.6	32.1 <
			86.1	∩ 34.7 < 2.61 <
			120.8	66.8 <

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		87.0	ν		−2.6
10	34	53	119.2		32.2 <	
			86.0	l	33.2 <	2.66 <
			119.2		65.4 <	
			86.8	l		
10	36	51	119.6		32.8 <	
			86.3	ν	32.9 <	2.61 <
			119.2		65.7 <	
						−2.62
			86.7	ν		
10	39	4	119.7		33.0 <	
10	35	37 <	85.2	l	34.2 <	2.60 <
			119.4		67.2 <	4(2.52
						2.63
			85.9	l		
10	41	7	121.6		35.7 <	
			86.2	ν	33.6 <	2.58 <
			119.8		69.3 <	
						−2.51
			86.0	ν		
10	43	17	120.5		34.5 <	
			84.8	l	36.1 <	2.49 <
			120.9		70.6 <	
			85.0	l		
10	45	11	121.2		36.2 <	
			86.0	ν	33.8 <	2.51 <
			119.8		70.0 <	
						−2.56

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			85.4	r	34.4 <		
10	46	58	119.8		32.7 <	2.60 <	
10	43	52 <	87.0	l	67.1 <	4 | 2.13	
			119.7			2.53	
					13 B		
			84.4	l			
10	58	0	122.0		37.6 <		
			85.8	r	35.5 <		
			121.3		73.1 <	2.41 <	
					7		
			85.4	r			
11	0	5	120.4		35.0 <		
			83.8	l	37.6 <	2.42 <	
			121.4		72.6 <		
					A		
			84.9	l			
11	1	53	123.1		38.2 <		
			85.1	r	35.1 <	2.40 <	
			120.2		73.3 <		
			86.2	r			
11	3	40	120.9		34.7 <		
11	0	36 <	85.8	l	35.3 <	2.51 <	
			121.1		70.0 <	4 | 1.74	
					14 A	2.44	
			84.0	l			
11	8	7	119.7		35.7 <	2.47 <	
			84.8	r	35.3 <		
			120.1		71.0 <		

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1895phae.proj..529C

July 26. 1895

			84.7	r			
11	10	25	120.6		35.9 <		-2.50
			85.0	l	33.8 <		2.52 <
			118.8		69.7 <		
				B			
			84.6	l			
11	12	39	119.0		34.4 <		
			85.1	r	34.5 <		2.54 <
			119.6		68.9 <		
							-2.52
			86.1	r	34.6 <		
11	14	31	120.7		35.6 <		2.50 <
11	11	9 <	85.1	l	70.2 <		4(203
			120.7				2.51
					15		
				B			
			83.7	l			
11	20	40	120.4		36.7 <		
			83.8	r	37.4 <		2.37 <
			121.2 ~~122.1~~		74.1 <		
							-2.36
			83.3	r			
11	23	2	121.4		38.1 <		2.36 <
			84.1	l	36.4 <		
			120.5		74.5 <		
				A			
			83.9	l			
11	25	8	121.3		37.4 <		2.43 <
			85.2	r	34.9 <		-2.3
			120.1		72.3 <		

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11 27 8
11 23 42<

83.7 r
123.0 39.3<
83.1 l 38.3<
121.4 77.6<

2.27<
4 | 1 4 9
2.36

83.5 l
11 32 43 121.0 37.5<
84.3 r 37.8< 2.34<
122.1 75.3<

reject: 83.8 r
~~11 49 56~~ doubt 121.2 ~~37.4~~ -2.36
cuts 84.6 l ~~38.8~~
off 120.4 ~~73.2~~

85.9 l r
11 38 ~~47~~ 42 119.4 33.5<
83.0 r l 40.2< 2.39<
123.2 73.7<

B

83.5 r l
11 40 43 120.6 37.1< 2.39<
83.6 l r 36.4<
120.0 73.5<

-2.36

85.2 l r
11 42 54 122.0 36.8<
11 38 28.7< 83.1 r l 39.1< 2.32<
122.2 75.9<
4 | 1 4 4
2.36

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B

			84.2	l		
11	48	55	123.2		39.0 <	
			82.9	2	39.1 <	2.25 <
			122.0		78.1 <	
						-2.32
			84.1	2		
11	50	55	122.5		38.4 <	
			85.0	l	35.6 <	2.38 <
			120.6		74.0 <	

A

			83.1	l		
11	52	45	124.0		40.9 <	
			84.5 ~~82.9~~	2	37.1 <	2.25 <
			121.6		78.0 <	
						-2.28
			83.1	2		
11	54	45	121.6		38.5 <	
			84.0	l	38.0 <	2.30 <
11	57	825	122.0		76.5 <	4/11 8

18

2.295
2.30

A

			82.6	l		
11	57	17	123.4		40.8 <	
			84.6	2	38.0 <	2.23 <
			122.6		78.8 <	
						-2.3[illegible]
			85.7	2		
11	#58	47	122.0		36.3 <	
			84.6	l	35.8 <	2.44 <
			120.4		72.1 <	

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July 26. 1895.

	84.7	l B			
12 0 17	124.0		39.3 <		
	83.2	2	38.8 <		
	122.0		78.1 <	2,25 <	
				-2.4	
	82.9	2			
12 1 55	122.5		39.6 <		
	83.1	l	39.3 <	2,23 <	
11 09 ~~132~~ 16	122.4		78.9 <	4|10	
				2,29	

B < Watch found to be 19 sec fast at 12 h

	82.9	l	18 sec fast at 12 h		
12 14 55	123.7		11 MM		
	84.0	2	40.8 <		
	123.1		39.1 <	2,20 <	
			79.9 <		
				-2.2	
	82.7	2			
12 16 43	123.0		40,3 <		
	84.6	l	38.5 <	2,23 <	
	123.1 ~~122.9~~		78.8 <		
		A			
	83.0	l			
12 18 47	122.5		39.5 <		
	82.0	2	41.3 <	2,17 <	
	123.3		80.8 <		
				-2.1	
	83.3	2			
12 20 13	123.0		39.7 <	2,20 <	
	83.2	l	40.1 <	4|8 0	
12 17 11 <	123.3		79.8 <	2,20	
			20		

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	82.3	l			
12 21 52	122.9		40.6 <		
	83.7	r	39.7 <		2.19 <
	123.4		80.3 <		
					-2.14
	83.0	r			
12 23 50	124.0		41.0 <		
	83.4	l	42.8 <		2.08 <
	126.2		83.8 <		
	B				
	81.2	l			
12 26 7	124.0		42.8 <		
	84.5	r	39.5 <		2.12 <
	124.3		82.6 <		
					-2.15
	84.1	r			
12 27 26	123.6		39.5 <		<
12 24 30 <	83.1	l	40.9 <		2.18
	124.0		80.4 <		4|0-7
			21		2.14
	B				
	81.6	l			
12 35 5	125.5		43.9 <		
	82.5	r	39.5 <		2.10 <
	122.0		83.4 <		
					-2.11
	83.0	r			
12 37 10	123.9		40.9 <		
	81.9	l	41.5 <		2.12 <
	123.4		82.4 <		

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A

	82.7	l			
12 39 30	123.7		41.0 <		
	83.0	~	40.4 <		2.15 <
	123.4		81.4 <		
					-2.06
	82.4	~			
12 41 45	124.4		42.0 <		
12 38 4 <	79.4	l	46.0 <		1.97 <
	125.4		88.0 <		4 | 8 3 4
			22		2.08 5 =

A

	82.3	l			
12 44 22	124.7		42.4 <		
	82.0	~	41.7 <		2.08 <
	123.7		84.1 <		
					-2.04
	82.5	~			
12 46 53	124.4		41.9 <		1.99 <
	79.8	l	45.2 <		2
	125.0		87.1 <		

B

80.0	~~83.1~~	l			
12 50 7	125.4		45.4 <		
	84.0	~	39.5 <		2.05 <
	123.5		84.9 <		
					-2.06
	84.0	~			
12 52 8	124.0		40.0 <		
12 48 4 <	81.1	l	43.9 <		2.08 <
	125.0		83.9 <		4 | 8 2 0
			25		2.05

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1895phae.proj.5200

July 26, 1895

B

	81.2	l		
12 54 8	124.0		42.8 <	
	83.9	r	39.4 <	2.13 <
	123.3		82.2 <	
				-2.02
	83.2	r		
12 56 0	124.6		41.4 <	
	81.4	l	44.6 <	2.02 <
	126.0		86.0 <	

A

	79.9	l		
12 57 34	125.6		45.7 <	
	81.6	r	43.2 <	1.94 <
	124.8		88.9 <	
				-1.9 ✓
	84.2	r	40.8 <	
	125.0			
12 59 17	78.4	l	47.6 <	1.96 <
12 56 26 <	126.0		88.4 <	4 | 80 5
			24	2.012

A

	80.6	l		
1 14 30	124.8		44.8 <	
	81.2	r	42.7 <	1.98 <
	123.9		87.5 <	
				-1.9 ✓
	79.9	r		
1 16 27	124.1		44.2 <	
	79.4	l	46.7 <	1.89 <
	126.1		90.9 <	

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1895phae.proj..529c

July 26. 1895

B

80.4 l

1 18 7

125.8 45.4 <
81.6 ~ 42.2 <
123.8 ~~121.9~~ 87.6 < 1.98 <

-1.97

80.6 ~

1 20 0

125.0 44.4 <
80.9 l 44.0 < 1.96 <
124.9 88.4 < 4 | 381
25 1.90

B

80.9 l

1 22 1

125.0 44.1 <
81.2 ~ 43.7 < 1.97 <
124.9 87.8 <

-1.94

82.9 ~

1 23 35

125.4 42.5 <
77.9 l 47.7 < -1.91 <
125.6 90.2 <

A

78.5 l

1 24 56

125.8 47.3 <
82.6 ~ 41.0 < 1.96 <
123.6 88.3 <

-1.97

82.8 ~

1 26 37

122.9 40.1 <
78.2 l 47.6 < 1.98 <
125.8 87.7 < 4 | 382
26 1.96

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1895phae.proj.529C

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A

		78.5	l		
1	31	58	127.0		48.5 <
			81.1	r	46.7 <
			127.8		95.2 <
					1.78 <
			80.9	r	
					-1.80
1	33	47	126.0		45.1 <
			79.0	l	48.0 <
			127.0		93.1 <
					1.83 <

B

		78.9	l		
1	35	15	125.9		47.0 <
			82.0	r	43.1 <
			125.1		90.1 <
					1.91 <
			82.0	r	
					-1.90
1	37	16	126.0		44.0 <
			78.4	l	47.3 <
			125.7		91.3 <
13	34	13 <			1.88 <
				27	4/340
					1.85
			79.8	B l	
1	38	45	126.4		46.6 <
			82.2	r	41.0 <
			123.2		87.6 <
					1.98 <
					-1.94
			82.0	r	
					1.89 <
1	40	~	123.2		41.2 <
			77.6	l	49.0 <
			127.2		90.8 <

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1895phae.proj..529c

July 26. 1895

A

		79.7	l			
1	41	42	127.4		47.7 <	
			81.7	~	43.7 <	1.88 <
			125.4		91.4 <	
						-1.84
			81.2	~		
1	43	45	125.0		43.8 <	
			77.1	l	50.0 <	1.81 <
13	40	42 <	127.1		93.8 <	4(35-6)
					28	1.89
			79.5	l	A	
1	48	~~32~~ ~~39~~	125.8		46.3 <	1.94 <
			81.7 ~~83.6~~	~	42.8 <	
			124.5		89.1 <	
						-1.90
			81.1	~		
1	50	44	125.0		43.9 <	
			79.6	l	48.1 <	1.86 <
			127.7		92.0 <	
					B	
			79.0	l		
1	52	11	126.2		47.2 <	
			80.5	~	43.9 <	1.88 <
			124.4		91.1 <	
						-1.88
			82.0	~		
1	53	36	123.3		41.3 <	1.88 <
			78.1	l	49.9 <	4(39 4
13	50	56 <	128.0		91.2 <	1.98
					29	4(35-6)
						1.89 <

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July 20. 1895

		78.7	l		
1	55	14	127.7		49.0 <	
		80.9 ~~83.6~~	r	44.0 <	1.83 <
			124.9	93.0 <	
			81.1	r	
1	57	30	123.6		42.5 <	1.85 <
			77.0	l	49.8 <	~~1.83~~
			126.8		92.3 <	
				A	
			79.8	l	
1	59	0	126.2		46.4 <	
			81.1	r	42.6 <	1.94 <
			123.7		89.0 <	
			81.3	r	
2	0	42	123.3		42.0 <	
13	07	44 <	78.8	l	47.8 <	1.92 <
			126.6		89.8 <	4(33-4)
				A	30	1.88 <
			78.6	l	
2	7	40	129.5		50.9 <	
			81.0	r	43.3 <	1.80 <
			124.3		94.2 <	
						-1.76
			77.5	r	
2	9	20	126.0		48.5 <	
			78.0	l	48.8 <	1.72 <
			126.8		97.3 <	

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1895phae.proj..529C

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B

	78.0	l		
2 10 53	127.7		49.7 <	
	82.0	~	42.0 <	1.87 <
	124.0		91.7 <	
				-1.89
	82.4	~		
2 12 30	122.9		40.5 <	
14 9 44 <	79.4	l	49.8 <	1.91 <
	129.2		90.3 <	
			31	4 (330)
		B		1.82
	79.9	l		
2 14 9	126.8		46.9 <	
	82.5	~	41.5 <	1.96 <
	124.0		88.4 <	
				-1.88
	82.1	~		
2 15 43	126.3		44.2 <	
	80.0	l	50.0 <	
	130.0		94.2 <	1.80 <
		A		
	82.7	l		
2 16 50	127.1		44.4 <	
	81.2	~	44.7 <	1.94 <
	125.9		89.1 <	
				-1.94
	80.9	~	42.3 <	
2 18 12	123.2			
14 15 52 <	77.7	l	47.1 <	1.93 <
	124.8		89.4 <	
			32	4 (363)
				1.91

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July 20. 1895

		80.0	l			
2	24 6	127.2		47.2 <		
		83.0	2	41.1 <	1.96 <	
		124.1		88.3 <		
						-1.9K
		82.0	2			
2	25 48	120.8		38.8 <		
		78.3	l	50.7 <		
		129.0 ~~130.8~~		89.5 <	1.93 <	
			B			
		75.8	l			
2	27 40	125.4 ~~128.7~~		49.6 <		
		81.5	2	43.7 <	1.83 <	
		125.2		93.3 <		
						-1.86
		81.3	2			
2	30 20	124.1		42.8 <		
		78.6	l	48.0 <	1.89 <	
14	26 38 <	124.6		90.8 <	4361	
					1.90	
				33		
		80.6	l B			
2	32 18	125.8		45.2 <		
		81.1	2	41.9 <	1.99 <	
		123.0		87.1 <		
						-1.96
		80.0	2			
2	34 5	125.3		45.3 <		
		81.1	l	44.0 <	1.93 <	
		125.1		89.3 <		

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A

	78.6	l			
2 36 14	128.0		49.4 <		
	81.4	r	43.6 <	1.83 <	
	125.0		93.0 <		
				-1.97	
	82.5	r			
2 38	121.2		38.7 <		
	81.8	l	~~46.1~~ 44.1 <	2.11 <	
14 34 ~~50~~ 49 <	125.9 ~~119.9~~		82.8 <	4786	
			54	1.96	

A

	80.2	l			
2 44 15	124.7		44.5 <		
	83.6	r	42.2 <	2.00 <	
	125.8		86.7 <		
	84.1	r			
2 46 32	125.9		41.8 <		
80.7 ~~79.1~~		l	44.8 <	2.01 <	
	125.5		86.6 <		

B

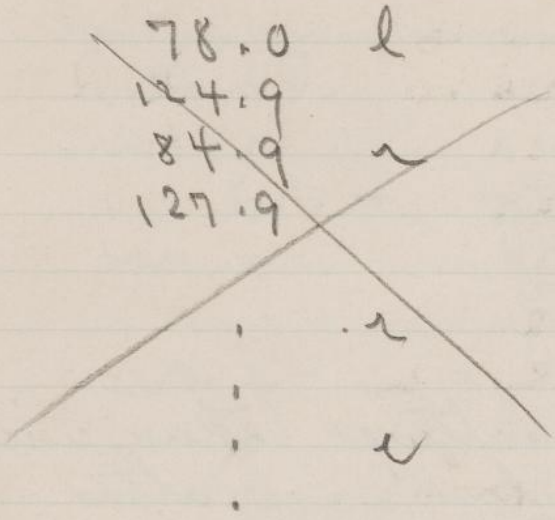
	81.9	l			
2 49 52	125.0		43.1 <		
	83.1	r	40.6 <	2.09 <	
	123.7		83.7 <		
	83.7	r			
2 52 11	124.9		41.2 <		
	79.6	l	44.2 <	2.04 <	
14 47 ~~50~~ 50 <	123.8		85.4 <	414	
			35	2.035 = 2.04	

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2 37 25



46.9
43.0
89.9

reject: previous set as deviations are too uncertain to retain

Ham underwood $5^h\ 40^m$
Decl. " " $+15°.1$

Watch found to be 22 sec fast at $3^h.4^m$

∴ Subtract 13 secs. to $9^h\ 0^m$
" 14 " " 10 0
" 16 " " 11 0
" 18 " " 12 0
" 19 " " 13 0
" 21 " " 14 0
" 22 " " 15 0
for watch correction.

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δ Cephei: Phot. R: W: obs.

22	25	+ 57.8
16	43	
−5	42	
6	18	

~~It~~ Settings taken with images above & below each other.

Index to right and above.

		292.9	< var dis.
8	8	25	326.9
			34.0 <
		293.2	33.9 < − 2.58 <
		327.1	67.9 <

Index to left and below.

		20.0	
8	12	28	60.3
			40.3 <
		17.0	44.0 < − 2.07 <
		61.0	84.3 <
		20.0	
8	14	16	61.5
			41.5 <
		21.0	38.5 < − 2.19 <
		59.5	80.0 <

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Index to right and above.

			113.0		
8	15	48	147.8	34.8 <	
			112.0	35.0 <	−2.51 <
			147.0	69.8 <	
			113.2		
8	17	10	147.3	34.1 <	
			112.2	33.8 <	−2.58 <
			146.0	67.9 <	

Index to left and below.

			200.1		
8	19	7	239.8	39.7 <	
			198.9	41.5 <	−2.16 <
			240.4	81.2 <	

8	14	32.3 <
13	14	32.3 <

Same again, on next page but with images right and left.

The following values are more accordant than those above but the mean of both ways only differs by ~~0~~ .01 magn

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Index to left and below.

			199.7		
8	21	28	240.0	40.3 <	
			202.0	36.0 <	2.31 <
			238.0	76.3 <	

Index to right and above.

			293.0		
8	23	~~15~~ 5	327.5 ~~326.0~~	34.5 <	
			291.9	39.2 <	2.39 <
			331.1	73.7 <	
			291.0		
8	24	15	329.9	38.9 <	
			293.0	34.0 <	2.41 <
			327.0	72.9 <	

Index to left and below.

			21.8		
8	25	42	57.0	35.2 <	
			20.0	42.0 <	2.28 <
			62.0	77.2 <	
			19.5		
8	26	55	60.0	40.5 <	
			22.8	35.5 <	2.32 <
			58.3	76.0 <	

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July 29, 1895.

Index to right and above.

112.9

8 28 28 147.7 34.8 <

108.4 40.6 < 2.33, <

149.0 75.4 <

x 45 Night rather poor;

M.P. 441 : PhotR: W: obs.

3 31 +62.8

17 31

−10 0

2 0

Var. is the brighter of the two.

Images very faint: night poor: much light cloud and haze.

Index to right and below

192.5 < var dis.

9 x 40 248.5 ~~247.1~~

190.9 56.0 < 1.32 <

249.0 58.1 <

114.1 <

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Index to left and above.

			280.9		
9	12	30	341.5	60.6 <	
			281.7	58.8 <	1.21 <
			340.5	119.4 <	
			281.5		
9	16	40	338.1	56.6 <	
			279.6	64.2 <	1.18 <
			343.8	120.8 <	

Index to right and below.

			11.1		
9	21	35	69.0	57.9 <	
			10.7	57.4 <	1.30 <
			68.1	115.3 <	
			11.0		
9	25	~~40~~ 50	70.0 ~~70.7~~	59.0 <	
			9.1	60.9 <	1.19 <
			70.0	119.9 <	

Index to left and above

			101.5		
9	29	10	162.0	60.5 <	
			100.2	61.8 <	1.14 <
9	19.2		162.0	122.3 <	

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1895phae.proj..529C

July 29, 1895.

Measurements difficult from faintness of images due to warmth of air and haze: measurements made with extreme care and thought to be good

Comp star = D.M +62° 594 which is the star always used

δ Androm:	Phot δ.	W: obs.
0	14	+26.1
18	35	
15	39	
6	21	

18^h 53^m $33^s.5$

54 $57^s.5$ $-4^s.0$ 1^m $23^s.0$

~~δ Are~~ Star a on next page follows δ. Androm. 1^m $23^s.0$ and is 1.'5 north of it: δ 2 a

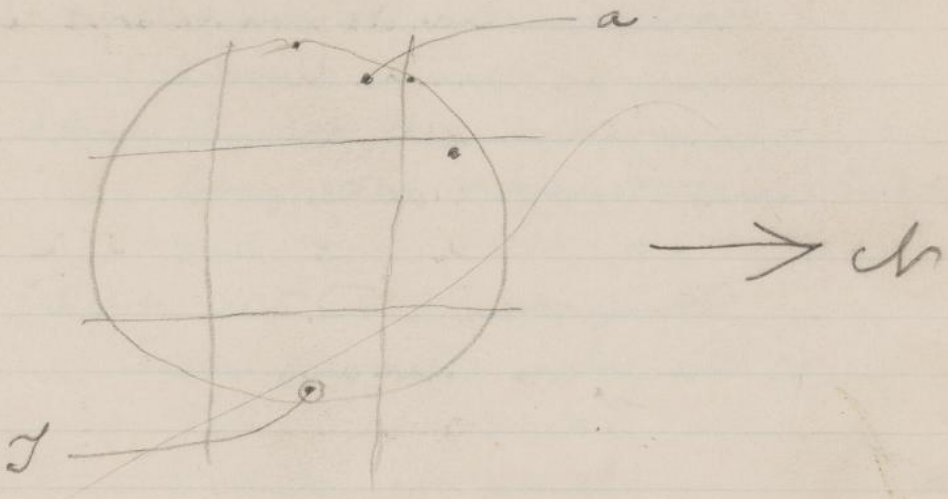
10 18

δ is pretty faint in the haze: judging from brighter stars δ would rank as faint as 10.5 ± magn.

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1895phae.proj..529c

July 29, 1895.



Index to right and below

168.1 < comp thru dis

10 30 25

215.6 47.5 <

191.2 44.5 < 1.86 <

215.7 92.0 <

Index to left and above

81.3

10 38 50

123.5 42.2 <

80.6 43.6 < 2.03 <

124.2 85.8 <

80.1

10 42 17

125.1 45.0 <

80.2 ~~81.7~~ 46.4 < 1.88 <

126.6 91.4 <

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1895phae.proj..529C

July 29. 1895.

Index to right and below.

	169.4		
10 ~~35~~ 43 31	216.0	46.6 <	
	168.9	46.2 <	1.84 <
10 38.8	215.1	92.8 <	
	168.7		
10 47 26	216.1	47.4 <	
	168.5	47.6 <	1.78 <
	216.1	95.0 <	
~~Index to left and above~~			
	168.0		
10 50 0	215.1	47.1 <	
	170.3	45.9 ~~46.4~~	1.83 <
	216.2 ~~216.7~~	93.0 <	

Index to left and above

	259.8		
10 55 30	306.8	47.0 <	1.94 <
	261.0	42.2 <	
	303.2	89.2 <	
	263.0		
10 59 2	303.8	40.8 <	
	260.2	46.0 <	2.00 <
10 53.0	306.2	86.8 <	

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1895phae.proj..529C

July 29. 1895

Measurements made with considerable difficulty, but than [illegible] to be good.

	Comp.	Var
D.M. =	26°	40 (7.5 K)

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1895phae.proj..529C

July 30.1895.

S Cassiop: Cramobs

1 9 +72.1

abandoned.
As Tr. was not well, started Mr. Crawford in observations with Phot. T.
T Andromedae

0 14 +26.1
17 47
-6 27
5 33

Exp. with Phot T.

Tried setting on various stars and tried running from one star to another in order to get used to the working of Phot. T: last of all tried setting on T. androm. and measuring it with comp star a: for star a see diagram on par 40 of this book

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1895phae.proj..529c

July 30, 1895.

Measurements of T. Andrews with comp star a. Cram obs

Index too light and below

	232.3		
11 30	338.6	106.3 <	
	226.4	112.6 <	0.75 <
	339.0	218.9 <	
		141.1	
	230.8		
	337.0	106.2 <	
	232.1	104.9 <	0.60 <
	337.0	211.1 <	
		148.9	
	234.9		
	338.6	103.7 <	
	234.0	96.6 <	0.39 <
12 0	330.6	200.3 <	
		105.7	
11 45.0	2.		

First two sets considered good, but last, poor as observer's eyes were very tired at time of observation.

The bright light necessary to read circles bothered observer continually, making it necessary to stop between each observation

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1895phae.proj..529C

July 31, 1895.

7 30 Considerably cloudy.

8 15 Still somewhat cloudy but will try

δ Cephei:	Phot R:	W. obs.
22	25	+57.8
17	16	
−5	9	
6	51	

Index to right and above.

8 30 47

149.2		
289.8	< comp. star dis.	
149.0	140.6 <	
290.2	141.2 <	−2.25 <
	281.8 <	
	> 8.2	

Index to left and below.

8 33 8

241.5		
17.1	135.6 <	
242.5	134.5 <	−1.92 <
17.0	270.1 <	
	89.9	

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1895phae.proj..529C

July 31, 1895.

		241.1			
8	24	58	17.1	136.0 <	
			240.7	137.3 <	− 2.00 <
			18.0	273.3 <	
				δ 6.7	

Index to right and above.

		330.8			
8	37	0	111.0	140.2 <	
			332.3	135.4 <	− 2.07 <
			107.7	275.6 <	
				δ 4.4	

		332.0			
8	39	12	108.3	136.3 <	
			330.9	138.3 <	− 2.04 <
			109.2	274.6 <	
				δ 5.4	

Index to left and below.

			63.0		
8	42	59	198.2	135.2 <	
8	36	19.66 <	63.0	134.2 <	− 1.90 <
13	06	19.66	197.2	269.4 <	
				δ 0.6	

Seeing a little hazy on account of somewhat cloudy conditions

Moon too bright for faint comp. stars for variable: sky too cloudy also.

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1895phae.proj.529C

July 31, 1895.

9 0 Still considerably cloudy but will try a Double.

≡ 2894 : P XXII 65

22 13 +37.2
18 5
-4 8
7 52

9 15 Sky all cloudy : Double not visible.
Abandoned too cloudy

T. Androm: Phot T: W: obs.

0 14 +26.1
19 0
-5 14
6 46

10 10 Clouds

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1895phae.proj..529c

July 31, 1895.

Index to right and below.

		169.8	< comp star 210	
10	43	42	218.6	48.8 <
			169.5	49.5 < 1.70 <
			219.0	98.3 <
			170.7	
10	45	40	217.7	47.0 <
			167.3	50.7 < 1.71 <
			218.0	97.7 <

Index to left and above

			260.7	
10	49	10	305.9	45.2 <
			259.8	45.8 < 1.69 <
			305.6	91.0 <
			259.7	
	51	35	307.2	47.5 <
			260.0 ~~258.7~~	44.4 < 1.86 <
10	47.5		304.4 ~~305.5~~ ~~308.0~~	91.9 <

Index to right and below

			349.3	
10	56	45	37.4	48.1 <
			347.1	50.8 < 1.68 <
			37.9	98.9 <

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1895phae.proj..529c

July 31, 1895

	346.6		
10 59 38	38.1	51.5 <	
	348.8	48.2 <	1.66 <
	37.0	99.7 <	

Index to ~~right~~ left, and above

	259.0		
11 3 45	308.8	49.8 <	
	262.0	43.2 <	1.83 <
	305.2	93.0 <	

	261.4		
11 7 0	306.0	44.6 <	
11 1.8	259.3	46.2 <	1.89 <
	305.5	90.8 <	

Greatly troubled by clouds throughout evening, but pretty clear while taking T. Andromeæ.

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1895phae.proj..529c

Aug 1. 1895.

S Cassiop: Cram obs

1	10	+72.1
17	15	
-7	55	
4	5	

8 0 Considerably cloudy

8 30 Worse

9 0 Somewhat clear but still too cloudy to see necessary comp. stars

9 30 Cloudy again

9 45 Clearer

10 0 ∧ 2 var : var 2 S : Cram obs.

T Androm : P hot T. Cram: obs -

0	14	+26.1
19	25	
-4	49	
7	11	

10 30 Too cloudy to see any stars of regim.

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1895phae.proj..529C

Aug 1. 1895.

10 45 Clouds thick: no chance for farther work.

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1895phae.proj..529C

Aug 5, 1895.

N 11#: 1 Pegasi: Phot R: Cram obs-

21	16	+19.3
17	16	
-4	0	
8	0	

abandoned: too near full moon: also impossible for observer to identify double as chart was missing: also had great difficulty in getting Phot. R into tail-piece and out again.

T. Androm.

0	14	+26.1
18	44	
-5	30	
6	30	

Index to left and above

315.6 ← comp star dec.

16.6 61.0

18.0

Started again

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1895phae.proj..529C

Aug 5, 1895.

Index to left and above

~~316.6~~
~~14.3 < comparison dis~~
57.7

Index to left and above

315.9
13.7 57.8 <
318.7 57.3 <
16.0 115.1 <

11 15 1.30 <

Index to right and below

50.6
100.6 50.0 <
53.2 51.2 <
104.4 101.2 <

11 28 1.63 ~~1.39~~

50.2
100.8 50.6 <
50.3 51.7 <
102.0 ~~102.3~~
102.3

11 36 1.60 ~~1.36~~

Index to left and above

135.7
196.0 ~~200.8~~ 60.3 <
135.6 61.7 <
197.3 122.0 <

11 ~~48~~ 1.15 <

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1895phae.proj..529c

Aug 5, 1895

		138.2		
11	56	197.0	~~200.6~~	~~62.4~~ 58.8 <
			136.5	61.5 < 1.19 <
			198.0	120.3 <

Index to right and below

			~~50~~	
			~~104~~ .5	
12	6		104.5	54.0 < 1.56 <
11	41.5		53.8	49.9 <
			103.7	103.9 <

Last three sets omitted last as observer's eyes were tired during last of observations: last three sets taken thro' some light cloud.

Observations somewhat difficult on account of full moon.

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1895phae.proj..529C

Aug 7, 1895.

δ Bootis : Cram: obs.

14 16 +54.6
17 45
3 29

8 55 l 2 var: var 2 m : Cram: obs.

T. Androm: Phot. T. Cram obs.

0 14 +26.1

9 20 Just after sweeping telescope and setting on region of T. Androm. it has clouded up very suddenly.

9 30 Somewhat clearer

9 40 Very thick again

9 50 no possible chance for farther work

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1895phae.proj..529C

Aug. 10, 1895.

S urs. maj : cram obs

12	34	+61.7
19	21	
6	47	

10 15 l 3 var : var 2 m cram obs

S urs. maj. cram obs

12	33	+60.4
19	57	
7	24	

11 11 var = gr

Observation difficult as var. is very faint and mm is bright : but thought to be tolerably accurate

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1895phae.proj..529C

Aug 10, 1895.

S. Androm : Phot S: Cam obs

0	14	+26.1
20	58	
-3	16	
8	44	

Index to left and above

	318.3		
	17.3	< comp stars obs	
11 42	318.0	59.0 <	
	16.2	58.2 <	1.25 <
		117.2 <	

Index to right and below

	46.4		
11 50	113.2	66.8 <	
	49.3	56.3 <	1.13 <
	105.6	123.1 <	

light clouds near region.

	51.8		
11 58	107.9	56.1 <	
	49.2	56.5 <	1.36 <
	105.7	112.6 <	

light clouds again near region.

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1895phae.proj..529C

Aug 10, 1895

Index to left and above.

		138.1		
12	15	197.7	59.6 <	
		138.0	57.3 <	1.26 <
		195.3	116.9 <	
		138.0		
12	26	198.2	60.2 <	
		139.0	58.7 <	1.22 <
		197.7	118.9 <	

Index to right and below

		45.6 ~~+++ 2~~		
12	45	106.2	60.6 <	
12	09.3	44.5	60.8 <	1.16 <
		105.3	121.4 <	

Observer bothered continually by clouds except in first two sets on this page: during last set, at times stars were entirely cut off.

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1895phae.proj..529c

Aug. 14, 1895

ζ Cassiop : Cram obs

0	18	+55.8
18	20	
−5	58	
6	2	

9 00 var = a Attwell Obs.

9 5 var = a Cram: obs.

9 30 Clouds.

R. Cassiop. Cram: obs.

23	45	+50.7
19	8	
−4	37	
7	23	

9 40 ~~b 2 var: var 3 c Cram: obs.~~

var = c

(no right or left as they are in vertical line)

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1895phae.proj..529C

Aug. 14. 1895

S. Androm: Phot S: Cramps

0 14 +26.1
20 5
14 9
7 51

10 30 6 bands

10 40 Clouds worse

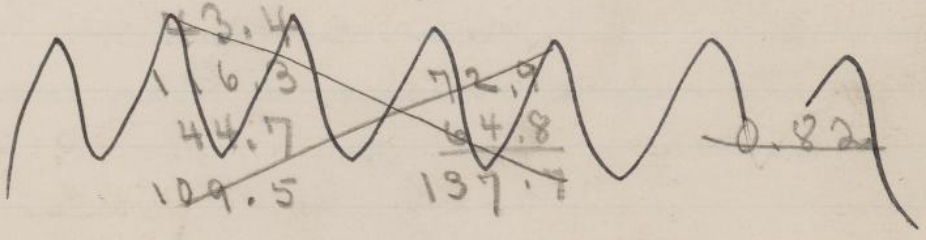
10 50 a little clearer

Index to left and above

318.3 < comp star dist
21.2
315.0 62.9 <
20.2 65.2 < 1.02 <
128.1 <

Index to right and below

11 19



Repeat above set as observer was in cramped position.

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1895phae.proj..529C

Aug. 14, 1895

		47.5		
11	01	107.7	60.2 <	
		44.2	63.8 <	1.11 <
		108.0	124.0 <	
		44.5		
11	39	108.7	64.2 <	
		46.0	62.0 <	1.06 <
		108.0	126.2 <	

Index to left and above

Done 136.8 probably cuts off

~~12~~ 13 ~~8~~ ~~minutes~~ 95.1 134.8 66.0

200.8 73.2

131.6 139.2

205.0

Regular

		137.2		
12	20	203.3	66.1 <	
		133.6	69.2 <	0.87 <
		202.8	135.3 <	

~~Index to right and below~~

		130.9		
12	28	201.2	70.3 <	
		133.4	70.3 <	0.76 <
		203.7	140.6 <	

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1895phae.proj..529C

Aug. 14, 1895.

Index to right and below

	224.1		
12 40	290.7	66.6 <	
	225.5	65.0 <	0.95 <
11 57.8	290.5	131.6 <	

Bothered very much indeed during last three sets by moonlight and increasing fog.

12 45 Fog very thick

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1895phae.proj..529C

Aug. 15, 1895.

R. Draconis. Cram obs.

16	26	+67.3
17	56	
1	30	

Immediately on ~~setting~~, Prof. Searle wished to see if the star supposed by Mr. Seagrave to have been invisible on Aug. 7. was visible to-night. The star on the chart of Mr. Seagraves corresponds to and undoubtedly is ~~exactly~~ star on chart of R Draconis used in the east dome. ~~+67°~~ ~~.3~~ in Decl. on said chart exactly +67°.0 and R.A 16h 32m.3 [epoch 1855.]

Star seen to-night by Prof. Searle and Cram.

Star is not given on chart in front of pamphlet on "Variable Stars of Long Period" being, probably, too faint.

8 40 Clouds

8 50 Clouds

9 0. Clouds

9 25 Clouds very much worse

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1895phae.proj..529C

Aug 15, 1895.

9 40 Completely clouded in.

9 50 no chance for further work

Position of suspected var. of Mr. Sea-
graves' given on previous page is
16h 32m3 R.A. and +69°.0 Dec. is
for bright chart of region.
Referring to faint chart of region. sus-
pected var is comp star — g!

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1895phae.proj..529C

Posted to here.

Aug. 16, 1895.

R. Draconis: Cram obs.

16	26	+67.3
17	49	
1	23	

8 15 m 2 var: var 1 0 Cram. obs.

8 35 p 2 S.V ; S.V 3 r Cram obs.
where S.V = suspected var. of Mr. Seagrave's mentioned and located on page 63 of this book

R Camelop: Cram obs

14	30	+84.5
18	53	
4	23	

9 30 var = f

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1895phae.proj..529C

Aug. 16, 1895.

5. andromi. Phot 5. W: obs

0	14	+26.1	
19	40		
-4	34		
7	26		

Index to left and above.

316.8 < comp. stars dis.

9	59	22.9	66.1 <
		316.4	67.1 < 0.91 <
		23.5	133.2 <

Index to right and below

		46.9	
10	11	105.3	58.4 <
		48.1	68.8 < 1.04 <
		116.9	127.2 <

		48.5	
10	23	107.7	59.2 <
		46.5	62.5 < 1.16 <
		109.0	121.7 <

Index to left and above

		316.1	
10	42	21.0	64.9 <
		314.0	67.3 < 0.93 <
		21.3	132.2 <

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1895phae.proj..529C

Aug. 16, 1895

	315.8		
11 5	20.4	64.6 <	
	315.0	67.6 <	0.93 <
	22.6	132.2 <	

Index to ~~left~~ right and below

	44.5		
11 29	107.8	63.3 <	
10 38.2	46.2	70.7 <	0.90 <
	116.9	134.0 <	

Observations considered good as sky was clear throughout.

This is first night that observer has not been continually bothered by fog, clouds, and moon, one and all!

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1895phae.proj..529c

Aug. 21, 1895.

S Lyncis: Cram: obs.

20	3	+57.3
18	2	
2	1	
9	59	

8 25 g 1 var:var 3 h Cram. obs.

T Cephei: Cram: obs.

21	6	+67.7
18	56	
3	10	
9	50	

8 40 Stopped to help Mr. Waite hold back Meridian circle shutters.

9
10 52 g 1 Var. Var. 2 h' Est, 8.0 Waite obs

10 0 Stopped to explain to a Ed. F. Bigelow Ed + Pub. of "The Observer" of Portland, Conn: the principle of obtaining var. with comp. stars.

Tried a few out-door comparisons: his observations agreed well with mine.

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1895phae.proj..529C

Aug. 21, 1895.

10 45 var = 9 Cram obs. < var. bright: observations somewhat difficult on this account and also because of reddish color.

	F. androm.	Phot. F.	W: obs.
	0	14	+26.1
	21	17	
	-2	57	
	9	3	

Index to left and above.

313.7
~~223.7~~ < comps. ~~star dis.~~ Reject
223.7
~~810.7~~ ~~70.0~~ 70.0
11 14 ~~23.8~~ ~~9.6~~ 80.4 0.57
~~303.4~~ 150.4
~~303.4~~
23.8

Index to right and below.

223.1
11 33 293.4 70.3 <
224.2 66.5 < 0.84 <
290.7 136.8 <

223.8
11 53 291.5 67.7 < 0.81 <
221.8 70.6 <
292.4 138.3 <

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1895phae.proj..529C

Aug. 21, 1895.

Index to left and above

		312.9		
12	19	25.9	73.0 <	
		308.1	75.8 <	0.60 <
		23.9	148.8 <	
		308.0		
12	38	23.5	75.5 <	
		312.4	74.5 <	0.58 <
		26.9	150.0 <	

Index to right and below

		223.8		
1.	2	294.9	71.1 <	
		223.0	69.5 <	0.76 <
		292.5	140.6 <	

Index to left and above

		314.8		
1	35	24.8	< lost setting when screw rand out	
		309.6	70.0 <	
12	30.0	23.4	73.8 <	0.70 <
			143.8 <	

* Sky clear throughout: observations considered good.

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1895phae.proj..529C

Aug. 21, 1895.

R. Aurigae: Cram obs.

5	3	+53.0
0	40	
−4	23	
1	37	

Bothers to find negative at first

3 5 b 1 var var 3 e Cram obs

R Lyncis: Cram obs

6	49	+55.0
1	55	
−4	54	
1	6	

3 30 Stopped by daylight without seeing var.

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1895phae.proj..529c

Aug. 22, 1895.

Stephei: Cram. obs.

21	16	+7 8.2
17	55	
-3	21	
8	39	

7 45 Haze and twilight still too strong to see stars.

8 15 Bothered by clouds.

9 0 Clear.

9 15 Clouds.

9 30 Seeing too bad to see necessary comp. stars: var. seen to be fainter than comp. star x of bright chart = comp. star b of faint chart

9 35 Clouds thick: Polaris and stars of Dipper barely visible: no stars visible in telescope.

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1895phae.proj..529C

Aug 23, 1895.

'S Ophei: Cram. obs.

21	16	+78.2
18	50	
-2	26	
9	34	

7	0	clouds thick
7	30	Clouds
8	0	clearer
8	15	All clear
8	30	Region obtained but cut off by clouds
8	45	Cloudy
9	0	cloudy
9	10	Clear at short intervals
9	12	l 2 var var 2 m Cram. obs
9	30	Too cloudy for farther work.

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1895phae.proj..529C

Aug. 27, 1895.

R. Urs. maj. ~~+t~~ Cram: obs.

~~+68°.8~~

10	32	+69.8
18	22	
-7	50	
~~+~~	~~+0~~	

7 45 clouds : moon rather bright.

8 0 b 1 var: var 2 c_2 Cram obs

R. Urs. min: Cram obs

16	34	+72.9
18	55	
2	21	

8 25 clouds

8 33 a 1 var var 2 b Cram obs.

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1895phae.proj..529C

Aug. 27, 1895.

T. Androm: Phot T. ~~W~~ Cram obs

4		
0	14	+26.1
19	28	
-4	46	
7	14	

9 0 Clouds

10 30 Still cloudy

12 0 Cloudy

12 5 Clearing

12 37 Reject clouds first seen until after set was taken.

Index to left and above

311.4 ∠ comp. eras dis

22.2 10.8

314.7 67.6 ~~0.81~~

22.3 138.4

Index to right and below

37.6

12 59

115.1	77.5	d. 48
38.8	77.6	
116.4	155.1	

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1895phae.proj..529c

Aug. 27, 1895

		37.6	
1	20	121.3	83.7

Clouds thick: stars invisible: last of above settings probably affected by clouds

1	30	cloudy
2	0	Worse
2	30	no stars visible.
3	0	Clearing
3	15	Too cloudy for any work.
4	0	Flickly cloudy again.

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1895phae.proj..529C

Tuesday, September 3, 1895.

	hrs		
Bond 236.	22	11	0.0
☿ 1327.	22	12	29.5
Bond 236.	0	1	29.5 Slow.

Bond 236.	22	13	0.0
☿ 1327.	22	14	30.0
Bond 236.	0	1	30.0 Slow.

Bond 236.	22	15	0.0
☿ 1327.	22	16	30.0
Bond 236.	0	1	30.0 Slow.

See pp. 103-4 for reduced times of occultations.

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1895phae.proj..529c

September 3, 1895.

	Time.			Mag.	Pos. Angle
	hrs	m	s		
	22	38	10.4	7.0	~~87°~~ 87°
*	22	56	49.5	7.0	80°

The above * confirmed in finder by Prof. Search.

~~Poor~~ poor	23	13	18.8	11.5	82°
A little uncertain	23	15	39.5	11.5	20°
				10.5	115°
Reject.	~~hrs~~	~~m~~	~~s~~	~~10.3~~	~~95°~~
	23	40	46.5	10.3	95°
Reject on Chron. → A little uncertain	23	44	33.0	10.5	8°
Reject	~~23~~	~~52~~	~~33.5~~	~~10.0~~	~~10°~~
	23	52	42.5	10.0	10
Good	23	59	9.0	8.~~7~~3	90°
	0	1	4.3	9.5	~~10~~ 8°
Reject.	~~0~~	~~10~~	~~56.5~~	~~11.0~~	~~6°~~
	0	10	38.9	11.0	6°
	0	26	44.0	8.5	55°
Lost				8.5	60°

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1895phae.proj..529C

September 3, 1895.

	Time	Magn	Pos. Ang.
Bond 236	1 hrs 47 m 30.0 s		
H 1327	1 47 1.0		
Bond 236.	0 hrs 1 31.0	Slow.	
236	1 46 30.0		
1327	1 48 1.0		
Bond 236.	0 hrs 1 . 31.0	Slow.	

Frodsham was 42.5 slow at midnight of Sept. 3.

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1895phae.proj..529c

Observed the extremities of spectrum of Phot. S. Ten. of Sept. 2nd, - Step back 2 films of short and also lengthening exposure with Clem, which was rather obscure on account of the

September 4, 1895

δ Aphei.

22	25
18	45
3	40
δ	20

Phot. R.A. W. obs.

Troubled experienced in setting Phot in Sel. so that a certain amount of sand-papering had to be done

Sid time

Left + Below

59.6 ← Comp. star disap

200.2	140.6 <		238.8	2.36 <
61.0	139.0 <	2.18 <	21.3	142.5 <
200.0	279.6 <		239.6	140.0 <
	80.4 <		22.6	285.5 <
				74.5
				2.36

Right + Above

147.0		
294.0	145.0 <	
149.1	142.7 <	2.43 <
291.8	287.7 <	
	72.3 <	

152.0

292.0	140.0 <	
146.9	146.9 <	2.41 <
293.8	286.9 <	
	73.1 <	

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1895phae.proj..529C

September 4, 1895

Left + Below

238.4

19 12 38	22.0	143.6 <	
	237.3	143.6 <	2.42 <
	20.9	287.2 <	
		72.8 <	

240.0

19 14 40.5	19.7	139.7 <	238.7	~~237.6~~
	239.1	139.6 <	20.0	141.3 <
	18.7	279.3 <	2.17 < 237.7	144.0
		80.7 <	21	285.3
				74.3

Right + Above

329.0

19 18 35	111.0	142.0 <	
19 11 32.8 =	328.0	144.8 <	2.40 <
8 hr 0 m 30 s mean time	112.8	286.8 <	
		73.2 <	

Seeing somewhat blurry alt. pretty high so that merger pencils gave some trouble sets 1 & 5 consequently re-taken.

Moon at full, so that double stars will have to be taken

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1895phae.proj..529c

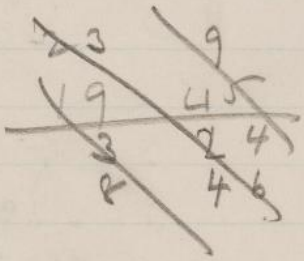
September 4, 1895.

Σ 12^II. ψ Aquarii −9 46

Phot R W abs

23	9
19	40
3	29
8	31

23	9
19	50
3	19
8	41



Pos ang = 300°
dist. 50"
Mag 4.5 + 8.6

Diffuse to left + above

123.7	← Brighter disap.	
19 5 6 10	137.5	13.8<
	124.2	11.8< 47.5<
	136.0	25.6<

Right + Below.

	215.3	
19 5 8 45	226.5	11.2<
	213.4	13.7< 4.81<
	227.1	24.9<

	210.7	
20 0 5 4	227.0	13.3<
	214.2	12.7< 4.72<
	226.9	26.0<

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1895phae.proj..529C

September 4, 1895

Index left + above

	304.0			
20 2 42	316.9	12.9 <		
	303.7	13.3 <	4.70 <	
	317.0	26.2 <		
	305.0			
20 4 46	316.8	11.8 <		
	304.9	11.1 <	4.99 <	
	316.0	22.9 <		

Right + Below

	345			
20 6 42	46.1	11.6 <		
6 | 120 9 59	33.2	13.8 <	4.77 <	
20 1 39.833 =	47.0	25.4 <		

8h 58m 29s mean time

4.75	4.81	
4.70	4.72	
4.99	4.77	
.244	.230	
4.81	4.74	
4.79		

94 Aquarii Σ 2998

20	12	−14 8
20	15	
2	57	
9	3	

Pos. ∠ = 340° dis = 15″ Mags 5.2 + 7.5

Index to Right

	21.0	← Brighter disap.	
20 32 34	59.8	38.8 <	
	16.0	4.80 <	2.00 <
	64.0	16.8 <	

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1895phae.proj..529c

0 32 34

September 4, 1895.

Index to left

109.2

20 35 1

151.9 42.7 <

110.1 41.8 < 2,06 <

151.9 84.5 <

111.0

20 37 42

150.0 39.0 <

107.0 45.0 < 2,08 <

152.0 84.0 <

Index to Right.

200.0

20 39 43

241.8 41.8 <

201.7 36.5 < 2,25 <

238.2 78.3 <

201.0

20 41 10

239.1 38.1 <

197.6 44.1 < 2,13 <

241.7 82.2 <

2.00	206
2.25	208
2.13	201
2.13	205
2.09	

Index to left

287.8

20 43 25

334.1 46.3 <

289.9 40.1 < 2,01 <

330.0 86.4 <

6 229 35

20h 38m 15.833+=

9h 28m 32s mean time

Dome faults cut off a little at the last.

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1895phae.proj..529C

September 4, 1895.

E 3' 37 Cats. Phot. R.

1 8 Dec. − 8 36

21 10

3 5-8

8 2

Pos. ∠ = 320° dist. = 50" Magn. = 5.0 + 7.2

Left + Above.

112.0 ← Brighter disap.

21 17 23 149.2 37.2 <

112.3 35.9 < ~~2.41 <~~

148.2 73.1 <

Right + Below.

202.8

21 19 57 238.2 35.4 <

202.1 35.9 < ~~2.46 <~~

238.0 71.3 <

202.5

21 21 53 238.8 36.3 <

203.2 33.9 < ~~2.50 <~~

237.1 70.2 <

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http://nrlsolar.nrl.navy.mil/cgi-bin/imagedb/display_image?year=1895&phae.proj..529c

17 23
19 57
21 53

September 4, 1895

2.41
2.46
2.50

Left + above.

293.1 ~~####~~
328.1 35.0 <
291.8 37.1 < 2,44 <
328.9 72.1 <

293.2
21 28 14 329.8 36.6 <
293.7 35.1 < 2,45 <
328.8 71.7 <

Right + Below

23.8
21 30 44 56.0 32.2 <
6 144 15 21.7 37.0 < 2,53 <
58.7 69.2 < 6 279
2.46 5

21 24 2.5 =
hrs m s
10 12 38,3 mean time

Σ 390 Comet 4 Herc.

9 20 +55 1
21 .40
55 40
6 20

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1895phae.proj..529C

September 4, 1895.

Σ 307 η Persei

2	41	+55 23
21	50	
4	51	
7	9	

Pos ∠ = 300° Dis = 28″ Magns. 4.0 & 8.7

Index to Right

21 49 48

33.1	←	Brighter disap.
47.2	14.1 <	
34.0	15.0 <	4.47 <
49.0	29.1 <	

Index to left

21 51 23

123.5		
138.0	14.5 <	
123.5	13.7 <	4.54 <
137.2	28.2 <	

21 52 40

124.5		
138.8	14.3 <	
124.2	14.4 <	4.50 <
138.6	28.7 <	

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1895mae.proj..529c

1 49 48
1 51 23
1 52 40

September 4, 1895.

4.47
4.54
4.50

Index to Right

213.8

21 54 0 227.0 13.2 <
21 5 .0 11.0 < 4.87 <
226.0 24.2 <

214.8

21 5 30 225.8 11.0 <
213.7 12.8 < 4.91 <
226.5 23.8 <

Index to left

303.2

21 56 57 317.5 14.3 <
6 320 18 303.9 13.1 < 4.60 <
21 53 23 = 317.0 27.4 < 6 389
10h 41m 54s mean time 4.64833

The above star ought to be retaken. Observer's eye was much inflamed and troublesome throughout evening so that he had to proceed somewhat slowly and with caution, this and probably may have caused the differences in above sets.

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1895phae.proj..529C

September 5, 1895.

J Andrew.		Phot. J.	W. obs.
0	14		+26.1
18	22		
-2	19	0	14
6	41	19	0
		-5	14
		6	46

Index left + above

	122.8	← Comp star disap.
8 5 0	208.4	85.6 <
	127.8	78.9 < 0.29 <
	206.7	164.5 <

Right + Below

	215.0	
8 9 8	296.3	81.3 <
	212.8	84.3 < 0.27 <
	297.1	165.6 <

	212.8	
8 10 30	297.4	84.6 <
	216.8	79.4 < 0.30 <
	296.2	164.0 <

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1895phae.proj..529c

5 0
9 8
10 30

September 5, 1895

Left + Above

0.29
0.27
0.30

8 13

3 15.4

~~+ 2 8~~ *

3 4.6 * 79.2 < 0.45 <

3 16.8 * 77.4 <

34.2 * 5 6.6 <

3 16.5

8 16

34.2 * 77.7 <

3 15.5 79.7 < 0.43 <

35.2 15 7.4 <

Index Right + Below

3 2 7

8 19

1 16.4 8 3.7 <

3 4.5 8 1.7 <

1 16.2 16 5.4 <

0.28 <

6 | 72 38

8 12 6.33

6 | 2 0 2

0.33666

Obs. W's eye is so swollen + inflamed + running ~~with~~ water so badly that it is hazardous + in fact impossible for him to continue.

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1895phae.proj..529C

September 10, 1895.

Z Herculis. Phot. J. W. obs.

17 53 +15.1
18 50
+0 57

Index above. A

Var Dip → 124.7 } 6 = L
8 2 20 156.4 } 31.7 <
125.0 } 3X8 < ~~2.75~~ 2.69
157.8 } R 6 + 4.5 <

-2.72

123.6
8 6 50 158.2 R 34.6 <
127.0 & 28.2 < 2.76 <
155.2 & 6 2.8 <

B

125.3
8 8 25 156.8 L 31.5 <
125.3 31.9 < 2.73 <
157.2 R 6 3.4 <

-2.76

125.3
8 9 40 157.0 R 31.7 <
8 4 33.5 ✓ 126.2 & 29.8 < 2.80 <
156.0 & 6 1.5 <

(1)

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1895phae.proj..529c

Sept. 10 1895

A

		126.0			
8	12 50	156.2	L	30.2 <	2.71 <
		123.4		33.8 <	~~2.77~~
		157.2	R	64.0 <	
					-2.81
		125.6			
8	14 0	156.4	R	30.6 <	
		125.6		28.2 <	2.91 <
		154.0	L	58.8 <	

A

		125.4			
8	15 13	155.0	L	29.6 <	
		124.9		34.1 <	2.73 <
		159.0	R	63.7 <	
					-2.74
		125.2			
8	16 38 <	157.2	R	32.0 <	
8	12 21.7	125.5		30.7 <	2.76 <
		156.2	L	62.7 <	

2 A

		126.0			
8	20 35	156.8	L	30.8 <	
		123.8		34.1 <	2.68 <
		157.9	R	64.9 <	

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1895phae.proj..529C

Sept 10, 1895

		124.3			-2.6
8	21 50	159.2	R	34.9 <	
		126.0		30.3 <	2.67 <
		156.8	L	65.2 <	
				4	
		127.3			
8	23 30	156.2	L	28.9 <	
		124.1		33.4 <	2.77 <
		157.5	R	62.3 <	
					-2.77
		125.4			
8	24 57	156.0	R	32.6 <	
8	20 24.5	127.0		29.8 <	2.77 <
		156.8	L	62.4 <	
				3	3
		127.2			
8	30 52	155.6	L	28.4 <	
		125.7		32.5 <	2.83 <
		158.2	R	60.9 <	
					-2.82
		124.8		*	
8	32 22	157.2	R	32.4 <	
		127.1		29.3 <	2.80 <
		156.4	L	61.7 <	
				4	
		125.8			
8	33 25	157.4	L	31.6 <	
		125.8		32.4 <	2.71 <
		158.2	R	64.0 <	

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1895phae.proj..529c

Sept 10, 1895

		126.5			-2.69
8 34 55		159.2	R	32.7 <	
8 30 37.0		125.8		32.4 <	2.67 <
		158.2	L	65.1 <	
			(4)	A	
		125.4			
8 36 34		159.0	L	33.6 <	
		127.2		32.4 <	2.64 <
		159.6	R	66.0 <	
					-2.70
		126.2			
8 37 52		158.8	R	32.6 <	
		127.0		29.8 <	2.71 <
		156.8	L	62.4 <	
				B	
		127.2			
8 40 30		157.8	L	30.6 <	
		126.5		31.4 <	2.69 <
		157.9	R	62.0 <	
					-2.75
		124.6			
8 41 55		156.8	R	32.2 <	
8 36 55.2		126.5		31.9 <	2.71 <
		158.4	L	64.1 <	
			(5)	B	
		127.0			
8 54 0		156.2	L	29.2 <	
		125.8		32.4 <	2.80 <
		158.2	R	61.6 <	

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1895phae.proj..529c

Sept 10, 1895.

			125.6			
8	56	0	157.8	R	32.2 <	-2.80
			128.2		29.4 < 2.80 <	
			157.6	L	61.6 <	
					A	
			126.4			
8	57	6	156.8	L	30.4 <	
			124.8		33.4 < 2.72 <	
			158.2	R	63.8 <	
						-2.72
			125.9			
8	58	25	161.0	R	35.1 <	
8	54	4.2	127.9		28.9 < 2.71 <	
			156.8	L	64.0 <	
				(6)	A	
			128.7			
8	59	22	156.2	L	27.5 <	
			127.4		32.8 < 2.85 <	
			160.2	R	60.3 <	
						-2.82
			125.6			
9	0	25	158.2	R	32.6 <	
			127.9		28.9 < 2.80 <	
			156.8	L	61.5 <	
					B	
			128.4			
9	1	40	157.2	L	28.8 < 2.87 <	
			127.2		31.0 <	
			158.2	R	59.8 <	

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1895phae.proj..529c

Sept 10 1895

9	3	2	127.2			−2.4
			158.2	R	31.0 <	
8	58	48.7	127.6		30.6 <	2.50
			158.2	R	61.6 <	
			(7)			

Bliss + Crei 9 14 18.5
Balloon 102 9 12 00
Bliss & Creighton Chr. = 2m 18.5 fast.

Bliss + Cre 9 15 18.5
Balloon 103 9 13 00
Chron = 2 18.5 fast

Bliss + Cre 9 16 18.5
Balloon 102 9 14 00
B Chron = 2 18.5 fast

			126.5			
9	19	0	157.8	L	30.3 <	
			125.2		32.1 <	2.77 <
			157.3	R	62.4 <	
						−2.76
			125.2			
9	20	22	157.2	R	32.0 <	
			125.2		30.6 <	2.76 <
			155.8	L	62.6 <	
				A		
			125.2			
9	21	36	155.2	L	30.0 <	
			124.2		34.0 <	2.71 <
			158.2	R	64.0 <	

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1895phae.proj..529C

Sept 10, 1895

	124.2				
9 22 52	157.2	R	33.0 <		-2.72
9 18 39.0	126.4		30.4 <	2.72 <	
	156.8	L	63.4 <		
	(8)		A		
	126.8				
9 24 0	156.7	L	29.9 <		
	124.8		34.8 <	2.69 <	
	159.0	R	64.7 <		
					-2.74
	125.8				
9 25 39	157.2	R	31.4 <		
	125.6		30.7 <	2.78 <	
	156.3	L	62.1 <		
			B		
	125.3				
9 27 0	155.2	L	29.9 <		
	124.7		32.7 <	2.77 <	
	157.2	R	62.4 <		
					-2.78
	125.6				
9 28 3	157.8	R	32.2 <		
9 23 57.2	125.2		29.9 <		
	155.1	L	62.1 <	2.78 <	
	(9)				
	125.2		B		-2.74
9 34 5	156.8	L	31.6 <		
	124.8		32.4 <	2.71 <	
	157.2	R	64.0 <		

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1895phae.proj..529c

Sept. 10, 1895

		125.2				
9	37 45	158.3	R	33.1 <		−2.68
		124.0		32.8 <	2.65 <	
		156.8	L	65.9 <		
			A			
		125.9				
9	46 58	157.2	L	31.3 <		
		125.0		33.2 <	2.69 <	
		158.2	R	64.5 <		
						−2.66
		124.0				
9	40 18	158.9	R	34.9 <		
		125.4		31.1 <	2.64 <	
		156.3	L	66.0 <		
		(10)	A			
		125.8				
10	24 42	158.2	L			
		126.0		32.4 <		
		157.4	R	31.4 <	2.72 <	
				63.8 <		
		125.4				−2.68
10	26 0	157.4	R	32.0 <		
		129.9		34.3 <	2.63 <	
		158.2	L	66.3 <		
			B			
		125.4				
10	27 24	157.5	L	32.2 <		
		124.9		31.9 <	2.71 <	
		156.8	R	64.1 <		

After above set became suddenly all cloudy Moon rose at 8:44

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1895phae.proj..5290

Sept. 10, 1895

	125.4			
10 28 49	158.5	R	3.31 <	-2.64
10 24 24.8	124.4		3 5.4 < 2.56 <	
	159.8	L	68.5 <	
		(11)	B	
	125.6			
10 29 37	158.3	L	3.27 <	
	124.9		34.3 < 2.61 <	
	159.2	R	67.0 <	
				-2.60
	124.2			
10 31 0	158.2	R	34.0 <	
	125.2		33.4 < 2.59 <	
	158.6	L	67.4 <	
			A	
	124.5			
10 32 5	157.7	L	33.2 <	
	126.3		33.1 < 2.63 <	
	159.4	R	66.3 <	
				-2.64
	126.4			
10 38 30	158.0	R	31.6 <	
10 29 19	125.2		33.6 < 2.67 <	
	158.8	L	65.2 <	
		(12)	A	
	125.3			
10 42 3	158.2	L	32.9 <	
	124.2		34.3 < 2.60 <	
	158.0	R	67.2 <	

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	126.1				-2.64
10 43 27	159.2	R	33.1 <		
	127.0		31.9 <	2.68 <	
	158.9	L	65.0 <		
			B		
	125.8				
10 44 55	159.2	L	33.4 <		
	125.0		35.4 <	2.55 <	
	160.4	R	68.8 <		
					-2.58
	124.9				
10 46 7	158.2	R	33.3 <		
10 41 49	124.2		33.6 <	2.61 <	
	157.8	L	66.9 <		
			13		
			B		
	124.8				
10 47 20	161.5	L	36.7 <		
	124.8		35.2 <	2.44 <	
	160.0	R	71.9 <		
					-2.54
	124.7				
10 48 48	158.8	R	34.1 <		
	125.9		32.1 <	2.64 <	
	158.0	L	66.2 <		
			A		
	126.4				
10 50 0	160.4	L	34.0 <		
	126.0		33.5 <	2.59 <	
	159.5	R	67.5 <		

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	126.6				−2.6
10 57 3	158.7	R	32.1 <		
10 46 57.5	126.3		32.1 <	2.71 <	
	158.4	L	64.2 <		
	(14)				
	126.5				
10 56 53	161.4	L	34.9 <		
	125.5		26.1 <	2.82	
	161.6	R	61.0 <		
	127.3				
10 57 58	158.5	R	31.2 <		
	125.4		33.5 <	2.69	
	158.9	L	64.7 <		
	125.8				
10 59 15	156.8	L	31.0 <		
	125.2		36.3 <	2.60	
	161.5	R	67.3 <		
	125.5				
11 0 20	159.8	R	34.3 <		
10 56 20	125.4		34.0 <	2.56	
	159.4	L	68.3 <		
	(15)				

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Sept 10, 1895

Images growing faint especially at last on account of rather low alt. Moonlight + haze, images too ft to proceed farther

	hrs	m	s
Bliss + Creight	11	21	19.0
Ballon 103	11	19	0.0
Bliss + Creighton Chr. =	0	2	19.0 fast

Bliss + Creight	11	22	19.0
Ballon 103	11	20	00
Bliss + ~~Ch~~ Creig. Chron =	0	2	19.0 fast

Bliss + Creight	11	23	19.0
Ballon 103	11	21	00
Chr.	2		19.0 fast

Became all cloudy again after stopping above.

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See pp. 77-2-9 of this book.

Reduction of Occultations in connection with Lunar Eclipse of Sept 3.

Times by Chron.	B. 236.	Corr. to reduce to 1327	Times by B 236. reduced to time of Fr. 1327.	Times of Occultations from Chronograph. in terms of Fr. 1327.
22h 34m	10.4	+1m 30.1	22h 39m 40.4	22h 39m 40.7
36	9.1		41	19.6
23 13	18.4		23 14 44.4	23 14 49.0
15	39.1		17	9.4
40	46.1		42	16.0
44	33.0		46	3.2
52	42.1		54	12.7
59	9.0		0 0 39.0	0 0 39.4
0 1	4.3		2	3 4.7
10	34.9		12	9.0
26	44.0		28	14.9

Correction to Fr. 1327 = + 42.1

Corr. Chronograph Times	Gr. M. Time of Occultations	Magn.	Contact.
22h 40m 23.2	16h 32m 42.4	7.0	47°
9 2.1	1 14.2	7.0	40
23 14 31.1	17 7 44.9	11.1	42
17 41.9	10 1.0	11.1	20
42 4.1	3 1 7.4	10.3	9
46 47.7	3 4 1.0	10.1	4
54 42.2	47 2.2	10.0	10
0 1 21.9	1 3 27.4	4.3	90
3 17.2	1 1 22.4	9.1	4
12 1.1	14 46 1.6	11.0	46
24 7.4	20 1 4.4	4.1	1 1

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1895 Sept. 3 A. S. Ks.

6 inch telescope. Power about 30.

12 31 ν near north point

12 53 3 about 500

} Two immersions during lunar eclipse.

12 5 40.5 Chrom. 73424

12 58 0.0 B 103

13 11 40.6 Chrom. 73424

12 0.0 B 103

12 58 40.6

59 0.0

13 0 40.6

1 0.0

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The Gr. mean Times of Occultations on preceding page, are those derived from the Chronograph sheet. and the ones finally adopted.

Prof. Edmunds observed the disappearance of one star with the 12 inch, directly on following limb of moon.

Time by chron. = $12^h\ 4^m\ 40^s.0$

Chr. cor. $-1\ \ 22\frac{1}{2}$

$12\ 3\ 18.5$ East. T.

Corr. Gr. mn. T. = $\frac{+5}{17\ 3\ 18.5}$

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Sept 12 1895

Z Herculis. Prin. Max.

17 53 + 15.1
19 5
+1 12

Bliss + Crei > 35 35.5
Ballon 103 > 38 0.0

Bliss + Creighton = 2m 35.5s < fast

Bliss + Crei > 36 35,5
Ballon 102 > 34 0.0

Index above. 2 35.5 <

126.8
> 42 35 155.6 L 28.8 < 2.7 <
125.3 3 3.7 <
159.0 R 62.5 <

124.0
> 43 54 158.6 R 34.6 <
127.2 28.2 < 2.76 <
155.4 L 62.8 <

128.2
7 45 2 154.8 L 26.6 <
125.0 35.2 < 2.79 <
160.2 R 61.8 <

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7 46 31	123.8				
	155.8	R	35.0 <		
	126.8		29.0 <	2.71 <	
7 41 54.5 <	155.8	L	64.0 <		
	(1)				
	126.8			~~2.66~~ 2.7	
7 47 38	154.2	L	27.4 <		
	124.3		34.7 <	2.28 <	
	159.0	R	62.1 <		
	123.2			2.72	
7 48 46	157.8	R	34.6 <		
	127.2		27.7 <	2.77 <	
	154.9	L	62.3 <		
	127.8				
7 50 4	155.6	L	27.8 <		
	124.0		35.4 <	2.74 <	
	159.4	R	63.2 <		
	124.0			2.76	
7 51 15	155.2	R	34.2 <		
	126.8		29.0 <	2.74 <	
7 46 49.8 <	155.8	L	63.2 <		
	(2)				

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Sept 12, 1895

			126.8			
8	0	20	157.2	L	30.4 <	
			123.4		35.0 <	2.66 <
			158.4	R	65.4 <	
			124.0			
8	1	35	157.8	R	33.8 <	
			126.2		29.2 <	2.75 <
			155.4	L	63.0 <	
			126.7			
8	2	47	158.8	L	32.1 <	
			124.9		33.4 <	2.66 <
			158.3	R	65.5 <	
			120.9			
8	4	38	158.9	R	35.0 <	
7	59	44 <	126.2		31.1 <	2.64 <
			157.3	L	66.1 <	
					(3)	
			126.3			
8	5	46	156.8	L	30.5 <	
			124.4		34.3 <	2.68 <
			158.7	R	64.8 <	
			124.9			
8	6	49	158.2	R	33.7 <	
			127.2		29.3 <	2.75 <
			156.5	L	63.0 <	

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Sept 12, 1895.

		128.0			
8	8	5	156.2	L	28.2 <
			125.2		33.8 < 2.79 <
			159.0	R	62.0 <
			125.6		
8	9	13	156.5	R	30.9 <
8	4	52.2 <	125.3		32.0 <
			157.2	L	62.9 < 2.75 <
			(4)		
			127.2		
8	18	8	157.4	L	30.2 <
			124.3		34.1 < 2.70
			158.4	R	64.3 <
			124.2		
8	19	11	158.0	R	33.8 <
			126.7		29.5 < 2.74
			156.2	L	63.3 <
			128.0		
8	20	36	156.4	L	28.4 <
			125.7		33.2 < 2.80
			158.9	R	61.6 <
			124.9		
8	21	45	157.8	R	32.9 <
8	17	21.5 <	127.2		29.0 < 2.79
			156.2	L	61.9 <
			(5)		

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Sept 12, 1895.

L
R
R
L
L
R
R
R
L

(6)

L
R
R
L

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Sept 12, 1895

W. Andromm.

0 14 +26.1

20 5

-4 9

12 0

7 5 1

R + B

191.4 ← Comp star diam

272.4 8 10 <

188.2 8 5 8 <

274.0 16 6.8 < 0.2 r <

L + Above

8 37 8 284

3592 7 28 <

2822 77.2 <

3594 15 0.0 < 0.r a <

8 41 0

286.5

8 42 44 355.1 6 a.6 <

288.41

353.3 70.2 <

13 a.a < 0.a0 <

R + B

1902

8 45 20 274.0 a 3.a <

1900 a 6.r <

276.5 17 0.3 < 0.1 a <

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1895phae.proj..529C

Sept 12, 1895

8 46 39

190.7		
273.0	79.3 <	
186.5		
271.4	44.9 <	
	164.2 <	0.30 <

L + a

294.4	61.4 <	
355.8		
295.6	63.4 <	
359.0	124.4 <	1.09 <

8 49 6

8 43 39.5

Z Herculis

17 53 +15.1

20 35

1 18

2 42

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1895phae.proj..529C

Sept 12 1895

			124.7				
9	13	14	159.2	L	34.5<		
			120.2		3 5 0 <		
			158.2	R	69.5<	2.52<	
			124.2				
9	4	27	158.6	R	34.4<		
			124.8		33.5<	2.58<	
			156.3	L	67.9<		
			124.9				
9	5	28	157.3	L	32.4<		
			124.9		35.5<	2.58<	
			159.4	R	67.9<		
			125.2				
9	6	25	158.9	R	33.7<		
9	2	17.5<	125.3		31.7<	2.6 5<	
			157.0	L	65.4<		
			(6)				
			126.2				
9	9	45	158.2	L	32.0<		
			124.0		33.7<	2.65<	
			157.7	R	65.7<		
			125.4				
9	10	52	160.7	R	35.3<		
			125.0		33.5<	2.55<	
			158.5	L	68.8<		

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1895phae.proj..529C

Sept 12, 1895.

	124.0			
9 11 48	157.8	L	33.8	
	123.7		34.9	2.55
	158.6	R	68.7	
	123.7			
9 12 53	159.4	R	35.7	
9 2 43	124.6		33.2	2.54
	157.8	L	68.9	
	(7)			
	127.6			
9 13 50	153.0	L	29.4	
	124.9		36.4	2.65
	161.3	R	65.8	
	123.4			
9 14 45	160.0	R	36.6	
	123.5		35.1	2.45
	158.6	L	71.7	
	125.2			
9 15 43	156.6	L	33.4	
	123.8		38.1	2.46
	161.9	R	71.5	
	124.8			
9 16 35	160.8	R	36.0	
9 12 37.2	124.7		33.1	2.54
	157.8	L	69.1	
	(8)			

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1895phae.proj..529C

Sept 12, 1895.

		126.4			
9	27	32	158.3	L	31.9 <
			124.2		37.1 < 2.54 <
			161.3	R	69.0 <
			123.4		
9	28	52	161.2	R	37.8 <
			125.0		33.3 < 2.47 <
			158.3	L	71.1 <
			124.9		
9	30	3	160.2	L	35.3 <
			122.8		36.6 < 2.44 <
			160.4	R	71.9 <
			124.3		
9	31	17	159.8	R	35.5 <
9	26	50.2 <	126.4		32.4 < 2.58 <
			158.8	L	67.9 <
			(9)		
			123.4		
9	36	47	159.4	L	36.0 <
			123.0		37.9 < 2.38 <
			160.9	R	73.9 <
			124.2		
9	38	20	160.8	R	36.6 <
			125.7		31.9 < 2.56 <
			157.6	L	68.5 <

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Sept 12, 1895

	124.7			
9 39 26	157.8	L	33.1 <	
	122.5		39.3 <	2.43 <
	161.8	R	72.4 <	
	123.5			
9 40 30	162.4	R	38.9 <	
9 35 59.8 <	125.1		35.2 <	2.37 <
	~~156.3~~ 160.3	L	74.1 <	
	(10)			
	124.2			
9 41 54	159.5	L	35.3 <	
	122.4		40.8 <	2.31 <
	163.2	R	76.1 <	
	124.3			
9 42 49	163.2	R	38.9 <	
	125.1		34.5 <	2.40 <
	159.6	L	73.4 <	
	124.9			
9 42 50	159.3	L	34.4 <	
	125.1		36.7 <	2.47 <
	161.8	R	71.1 <	
	123.6			
9 44 44	162.8	R	40.2 <	
9 40 43.2 <	123.0		36.3 <	2.30 <
	159.3	L	76.5 <	

(14)

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Sept 12, 1895.

	124.2				
9 57 12	161.0	L	36.7 <		
	121.2		40.8 <	2.27 <	
	162.0	R	77.5 <		
	120.2				
9 58 54	161.9	R	41.7 <		
	123.8		35.3 <	2.28 <	
	159.1	L	77.0 <		
	124.8				
10 0 31	160.0	L	36.6 <		
	124.0		37.9 <	2.36 <	
	161.9	R	74.5 <		
	121.9				
10 1 12	160.3	R	38.4 <		
9 56 50.2 <	123.4		37.1 <	2.33 <	
	160.5	L	75.5 <		
	(12)				
	123.9				
10 2 28	160.4	L	36.5 <		
	122.4		40.6 <	2.28 <	
	163.0	R	77.1 <		
	122.7				
10 3 29	161.8	R	39.1 <		
	123.4		35.4 <	2.36 <	
	158.8	L	74.5 <		

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Sept 12, 1895

	124.2				
10 4 28	160.7	L	36.5 <		
	122.0		40.5 <	2,28 <	
	162.5	R	77.0 <		
	121.7				
10 5 33	161.8	R	40.1 <		
10 1 22,5 <	124.4	L	36.0 <	2,01 <	
	160.4	L	76.1 <		
		(13)			
	125.0	L			
	158.3		33.3 <		
10 11 40	120.3		43.1 <	2,00 <	
	160.4	R	76.4 <		
	120.4				
10 12 48	154.3	R	33.9 <		
	122.0		37.0 <	2,42 <	
	159.0	L	70.9 <		
	121.4				
10 13 55	159.2	L	37.8 <	2,12 <	
	118.4		44.9 <		
	163.3	R	82.7 <		
	118.2				
10 15 13	164.3	R	46.1 <		
10 10 87 <	124.0		39.9 <	2,11 <	
	160.9	L	83.0 <		
		(14)			

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Sept 12, 1895.

		123.2			
10	16	15	162.4	L	39.2 <
			119.4		40.6 < 2.20 <
			160.0	R	79.8 <
			121.4		
10	17	13	161.9	R	40.5 <
			123.2		36.8 < 2.28 <
			160.0	L	77.3 <
			122.6		
10	18	12	160.4	L	37.8 <
F			121.7		40.2 < 2.25 <
			161.9	R	78.0 <
			121.7		
10	19	15	162.5	R	40.8 <
10	15	6.8 <	123.2		38.0 < 2.23 <
			161.2	L	78.8 <
			(15)		
			123.4		
10	33	28	161.4	L	38.0 <
			118.3		47.1 < 2.05 <
			165.4	R	85.1 <
			119.0		
10	34	53	162.4	R	43.4 <
			123.4		38.0 < 2.13 <
			161.4	L	81.4 <

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Sept 12, 1895.

	122.9				
10 36 15	164.4	L	41.5 <		
	117.6		45.4 <	2.00 <	
	163.0	R	86.9 <		
	118.4				
10 37 35	165.0	R	46.8 <		
10 32 37.8 <	123.2		39.5 <	2.01 <	
	162.7	L	86.3 <		
	(16)				
	121.8				
10 38 43	165.2	L	43.4 <	1.93 <	
	118.7		46.1 <		
	164.8	R	89.5 <		
	118.0				
10 40 0	164.6	R	46.6 <		
	122.4		41.0 <	1.98 <	
	163.4	L	87.6 <		
	123.2				
10 41 5	163.0	L	39.8 <		
	118.3		46.7 <	2.01 <	
	165.0	R	86.5 <		
	119.3				
10 42 10	164.2	R	44.9 <		
10 37 32.5 <	122.0		41.5 <	2.01 <	
	163.5	L	86.4 <		
	(17)				

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1895phae.proj..529C

Sept 12 1895

This reading was remembered to be 165.0 + is so assumed

		120.7			
10 57 30		~~165.0~~	L	~~443~~ <	01 <
		121.5		423 <	2.50
		163.8	R	86.6 <	
		121.4			
10 59 8		163.5	R	421 <	
		121.4		420 <	2.08 <
		163.4	L	84.1 <	
ho		121.0			
11 0 29		163.0	L	420 <	2.07 <
		121.6		424 <	
		164.0	R	844 <	
		119.9			
11 1 47		164.0	R	441 <	
10 57 6.5 <		121.6		398 <	2.08 <
		161.4	L	839 <	4 | 24
			(18)		2.06
		120.8			
11 3 2		161.8	L	410 <	
		121.4		410 <	2.14 <
		162.4	R	820 <	
		121.0			
11 4 7		164.7	R	437 <	
		121.5		413 <	2.05 <
		162.8	L	850 <	

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1895phae.proj..529C

Sept 12, 1895.

	121.4				
11 5 26	164.8	L	43.4 <		
	121.0		42.6 <		2.02 <
	163.6	R	86.0 <		
	120.8				
11 6 46	165.4	R	44.6 <		
11 2 13,2 <	120.5	L	43.8 <		1.96 <
	164.3	L	88.4 <		4|8.17
	(19)				2.04
	121.2				
11 20 11	163.0	L	41.8 <		
	121.2		43.6 <		2.04
	164.8	R	85.4 <		
	121.5				
11 21 36	164.8	R	43.3 <		
	122.5		40.7 <		2.08
	163.2	L	84.0 <		
	120.4				
11 22 42	162.4	L	42.0 <		2.06
	120.2		42.5 <		
	162.7	R	84.5 <		
	120.8				
11 24 27	165.2	R	44.4 <		
11 19 37 <	120.5		40.9 <		2.04
	161.4	L	85.3 <		4|22
	(20)				2.06

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1895phae.proj..529C

Sept 12, 1895.

		120.3			
11	25 42	162.0	L	41.7 <	
		121.9		43.9 <	2.03 <
		165.8	R	85.6 <	
		121.2			
11	26 47	164.6	R	43.4 <	
		120.0		44.6 <	1.97 <
		164.6	L	88.0 <	
		121.2			
11	28 3	162.4	L	41.2 <	
		121.7		42.8 <	2.08 <
		164.5-	R	84.0 <	
		121.7			
11	29 55	165.5-	R	43.8 <	
11	24 54.8 <	120.2		43.3 <	1.99 <
		165.5-	L	87.1 <	4)8.07
		(21)			2.02
		119.0			
11	34 45-	165.2	L	46.2 <	
		122.4		42.0 <	1.96 <
		164.4	R	88.2 <	
		120.3			
11	36 13	165.8	R	45.5 <	
		120.0		41.8 <	1.99 <
		162.4	L	87.3 <	

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Sept 12, 1895.

	122.5				
11 37 37	163.4	L	40.9 <		
	~~171.1~~ 171.89		41.3 <	2.13 <	
	163.2	R	42.2 <		
	121.5				
11 40 18	165.0	R	43.5 <		
11 34 36.2 <	120.7		41.5 <	2.05 <	
	162.2	L	85.0 <	4 | 8 1 3	
	(22)			2.03	
	118.5				
11 44 8	163.0	L	44.5 <		
	121.4		42.4 <	2.00 <	
	163.8	R	86.9 <		
	121.4				
11 45 18	163.5	R	42.1 <		
	~~120~~ 120.8		41.7 <	2.08 <	
	162.5	L	83.8 <		
	122.2				
11 46 48	163.5	L	41.3 <		
	120.7		44.7 <		
	165.4	R	86.0 <	2.02 <	
			6		
	121.2				
11 47 58	164.7	R	43.5 <		
11 43 26 <	119.2		46.0 <	1.93 <	
	160.2	L	89.5 <	4 | 8 0 3	
				2.01	

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Sept 12, 1895.

L
R

R
L

L
R

R
L

(24)

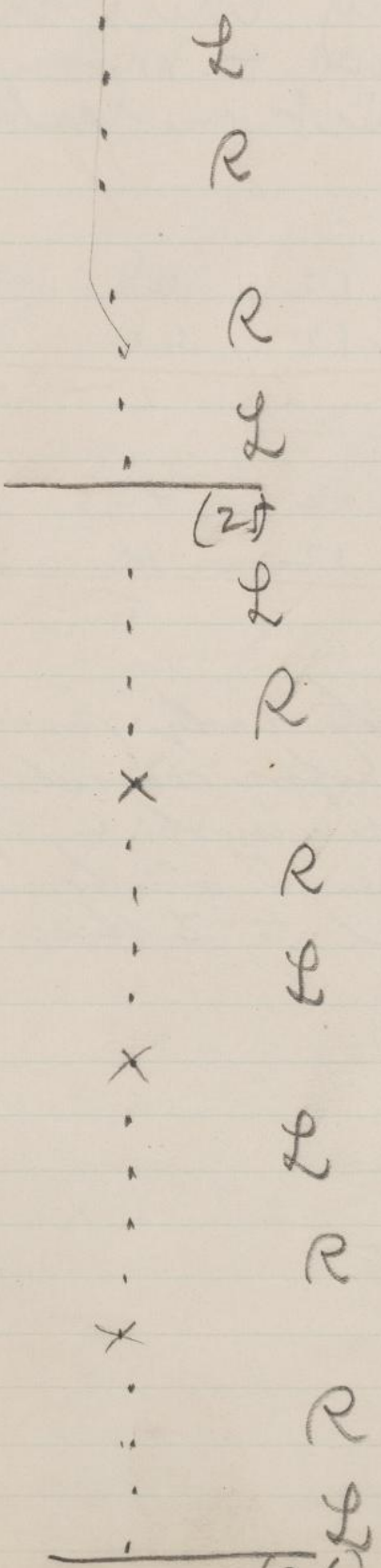
L
R

R
L

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1895phae.proj..529C

Sept 12, 1895 A.



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1895phae.proj..529c

Sept. 12. 1895.

12 36 Slit hazy by thick clds, alti., also very low + Moon up. Images faint in last settings

Bliss + Crei.	12	42	37.5
Ballon 103	12	40	00
Bliss + Creighton =		2m	37.5s fast.

Bliss + Crei	12	43	07.5
Ballon 103	12	41	00
		2m	37.5s

Stopped in the early part of the series, ~~obito~~ before variable had begun to diminish in light, in order to observe I Andromedae. Then returned to I Herculis again.

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Sept 13, 1895.

Bliss + Cri 7 15 43.0
Ballon 103 7 13 0.0

Bliss + Cri 7 16 43.0
Ballon 103 7 14 0.0

J. Andrau

0 14 +26.1 Phot J. W. obs.
19 10
— 5 4
6 56

Var comp with 7.5 mag. star

Var. comp. with 7.5 mag.

Right + Below

1928 < Comp star dist.
7 38 50 271.4 78.6 <
189.4 85.1 < 0.91 <
274.5 163.7 <

Left + Above

108.2
7 42 13 176.2 68.0 <
102.0 76.0 < 0.69 <
178.0 144.0 <

101.4
7 40 50 176.0 74.6 <
107.6 67.4 < 0.73 <
175.0 142.0 <

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1895phae.proj..529c

Sept 10 1895

Right + Below

	191.2		
7 46 33	275.5	843 <	
	190.3	827 <	0.25 <
	273.0	167.0 <	

	~~189.0~~ 190.2		
7 53 14	~~273.0~~ 275.4	852 <	
	193.0	824 <	0.24 <
	275.4	167.6 <	

Left + Above

~~7 55 16~~	~~284.0~~		
	~~355.2~~	~~31.2~~	
	~~296.0~~	66.2	
	~~2.2~~	~~137.4~~	

	284.0		
7 58 41	357.8	738 <	
	283.7	76.2 <	0.58 <
7 46 46	359.89	150.0 <	

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1895phae.proj..529C

Sept 13, 1895.

~~270.5~~ ~~Comp star disappears~~

8 18 53 15.0

~~270.6~~ ~~Var comp with 8.5 magn~~ Sta

Var. compared with ~~8.5~~ 8.1 magn.

R + 13

~~279.1~~ Comp star disappears

8 23 4 281.6

4.6 830 <

277.5 890 < 0,15 <

~~376.5~~ 1720 <

274.6

8 25 55 6.4 918 <

279.5 840 < 0,08 <

3.5 1758 <

280.0

8 27 25 3.6 836 <

274.2 930 < 0,06 <

7.2 1766 <

R + a

188.5 Comp star dis.

8 31 0 276.4 879 < 0,09 <

184.0 87.5 <

281.5 1754 <

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1895phae.proj..529C

Sept 13, 1895.

	184.2			
8 32 45	278.6	914 <		
	187.2	92.4 <		
	279.6	183.8 <	−0.07 <	
		176.2 <		
	186.0			
8 35 15	279.4	934 <		
	184.7	95.7 <	−0.17 <	
8 29 24	280.4	189.1 <		
		170.9 <		

~~7.5 mags compared with 8.5 mags.~~

	102.0 ←	7.5 mag star dist.	
8 44 5	182.4	80.4 <	7.5 mag comp with
	99.4	87.8 <	8.5 " star.
	187.2	168.2 <	0.22 <
	98.2		
8 45 45	184.2	86.0 <	
	103.5	78.4 <	0.30 <
	181.9	164.4 <	
	103.3		
8 46 56	182.0	76.7 <	
	97.2	886 <	0.28 <
	185.8	165.2 <	

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1895phae.proj..529C

Sept 13, 1895.

Index Below

	187.0			
8 50 27	273.4	86.4 <		
	191.4	78.8 <	0.28 <	
	270.2	165.2 <		
	190.4			
8 52 0	271.5	81.1 <		
	188.5	88.9 <	0.19 <	
	277.4	170.0 <		
	187.6			
8 53 30	273.0	89.4 <		
8 48 47.2	191.6	78.2 <	0.24 <	
	~~268.7~~	167.6 <		
	269.8			

Var comp with 7.5 mag star
12 + 13

	187.4			
9 4 20	277.0	89.6 <		
	190.0	84.4 <	0.11 <	
	274.4	174.0 <		
	191.2			
9 5 50	272.2	81.0 <		
	192.8	83.7 <	0.29 <	
	276.5	164.7 <		

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1895phae.proj..529c

Sept 13, 1895.

		190.7		
9	7	28	273.4	82.7 <
			188.2	86.2 < 0.21 <
			274.4	168.9 <

Index L + a

			102.3	
9	10	59	180.46	78.3 <
			105.2	75.8 < 0.50 <
			181.0	154.1 <

			105.7	
9	12	57	178.0	72.3 <
			101.6	77.8 < 0.57 <
			179.4	150.1 <

			103.6	
9	14	19	178.2	74.6 <
			104.48	72.4 < 0.63 <
9	9	18.8	176.2	147.0 <

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1895phae.proj..529C

Sept 13, 1895.

Left. Meas. of 7.5 mag. with 8.8 mag.

	187.6			
10 0 44	268.7	81.1 <		
	189.0	90.6 <	0.16 <	
	279.6	171.7 <		
	186.8			
10 2 22	289.9	96.1 <		
	182.5	100.9 <	−0.32 <	
	283.4	197.0 <		
		163.0 <		
	186.8			
10 4 7	275.2	88.4 <		
	182.6	95.0 <		
	277.9	183.4 <	−0.06 <	
		176.6 <		
	Right:			
	290.8			
10 9 0	351.4	57.6 <		
	292.2	60.3 <	1.24 <	
	352.5	117.9 <		
	286.5			
10 10 3	354.9	68.4 <		
	294.8	54.4 <	1.13 <	
	349.2	122.8 <		
	293.8			
10 10 51	347.8	54.0 <	1.26 <	
	290.6	62.8 <		
10 6 27.3	353.4	116.8 <		

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1895phae.proj..529c

Sept. 13, 1895.

(7.5m) 2.5m (8.1)
(7.5m) 5m (8.8)
(8.1) 3 Var
(7.5m) 6 Var
} On finder

10 23

As the result of the preceeding measurements & estimates W. thinks it is pretty certain that the 7.5m may is variable & he began to suspect same last night

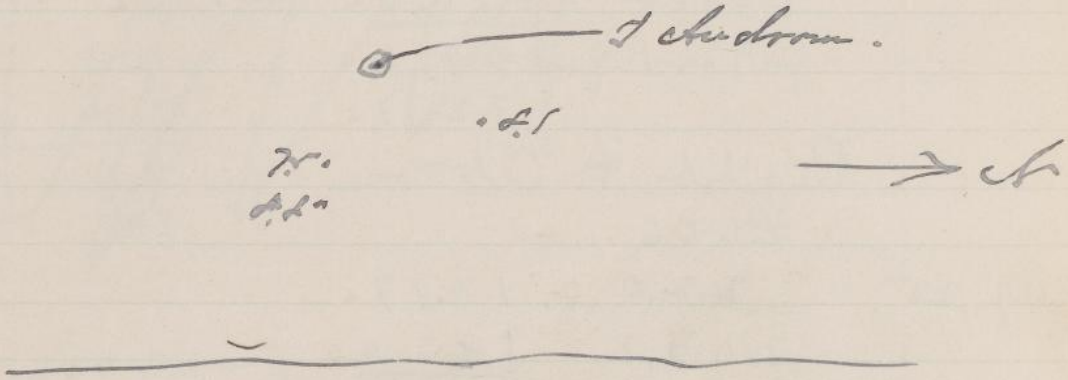
It seems that the 7.5 magn. star with which T Androm. has been compared. ~~is~~ must be variable. A radical change in its light was suspected ~~in~~ last night. It is now only about 5 or 6 grades brighter than the 8.8 magn. immediately preceding it. and

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1895phae.proj..529C

Sept. 13, 1895.

2 or 3 grades brtr. than the A.i would fol. It is certainly, also, fair. than it has been



In P 44.

3	31	+62.8
22	15	
— 5	16	
6	44	

Index to Right + Above

80.8 ← Comp. star diss.

10 41 15	203.7	122.9 <	
	80.8	120.2 <	
	201.0	243.1 <	— 1.26 <
		116.9 <	

Left + Below

	172.1		
10 40 49	292.2	120.1 <	
	171.8	120.1 <	— 1.20 <
	291.9	240.2 <	
		119.8 <	

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1895phae.proj..529C

0 41 15
0 43 43

Sept. 13, 1895

1.26
1.20

172.0

10 46 52 — 291.0 — 119.0<
173.8 — 118.3< — 1.13<
292.1 — 237.3<
122.7<

Right & Above

260.3

10 49 25 — 22.0 — 121.7<
260.3 — 123.0< — 1.30<
29.3 — 244.7<
115.3<

260.0

10 51 52 — 24.2 — 124.2<
259.8 — 122.4< — 1.34<
22.2 — 246.6<
113.4<

Left & Below

350.1

10 54 39 — 114.1 — 124.0<
6(28) 46 34 — 351.6 — +8
10 47 57.66 — ~~+12.9~~ — 122.6< — 1.34<
114.2 — 246.6<
113.4<

6(15") = 1.2616+

Van is the brighter of the two.

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1895phae.proj..529C

Sept 13, 1895

R. Asc. Sun.

16 34 +72.9
22 45
17 49
+5 49

Van in Ors Time

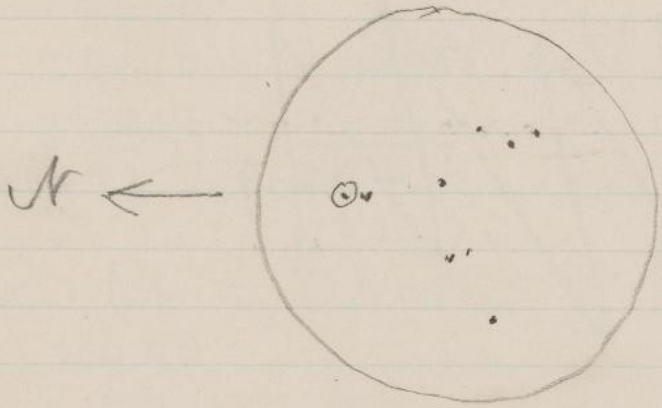
15 50 +78.2
22 55
16 55
+4 55
7 45

15 50
25 5
7 15

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1895phae.proj..529c

Sept 13, 1895.



Can too ft to measure with Phot. to-night.

Bliss + Cui	hrs 11	41	44.5
Balloon 103	11	39	0.0
Bliss & Creighton =	0 hrs	2 m	44.5 s fast.
Bliss + Cui	hrs 11	44	44.5
Balloon 103	11	42	0.0
B&C Chronometer =	hrs 0	2	44.5 s fast.

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1895phae.proj..529C

Posted to here.

Sept. 14, 1895.

Cloudy first of evening.

S. Andrew.

Phot. S. Wobs.

0 14 + 26.1
19 40
-4 34
7 26

Var comp with 7.5 mag
Left + Above

		102.0		
8	3	36	180.9	78.9 <
			104.3	74.9 < 0.50 <
			179.2	153.8 <
			103.4	
8	5	0	178.3	74.9 <
			101.2	83.0 < 0.42 <
			184.2	157.9 <
			102.2	
8	6	10	181.0	78.8 <
			103.6	76.6 < 0.47 <
			180.2	155.4 <

Variable is fr. than 7.5 mags.

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1895phae.proj..529C

Sept 14, 1895

Right + Below

10.0

8 9 0	98.4	88.4 <		
	7.4	88.0 <	0,07 <	
	95.4	176.4 <		
	7.3			
8 10 59	93.8	86.5 <		
	13.6	78.6 <	0,28 <	
	92.2	165.1 <		
	10.4			
8 12 10	92.8	824 <		
8 7 49.2	7.4	86.3 <	0,21 <	
	93.7	168.7 <		

Var comp with (8.1) mag

Right + Above

185.7 < Comp star dis.

8 18 10	280.3	94.6 <	
	183.4	97.5 <	— 0,23 <
	280.9 =	192.1 <	
	280.9	167.9 <	

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1895phae.proj..529C

Sept 14, 1895.

185.4

8 19 50 283.6 98.2 <
184.6 94.2 < — 0.24 <
278.8 192.4 <
167.6 <

8
8 21 8 187.2
277.8 90.6 <
185.4 90.9 < — 0.03 <
276.3 181.5 <
178.5 <

Left & Below

282.4

8 25 10 3.5 81.1 <
276.4 90.9 < 0.15 <
7.3 172.0 <

275.4

8 26 45 ~~8~~ 7.7 92.3 <
278.5 83.3 < 0.08 <
1.8 175.6 <

278.0

8 28 10 0.4 82.4 <
8 23 12.2 278.3 89.5 < 0.15 <
7.8 171.9 <

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1895phae.proj..529C

Sept 14, 1895.

(7.5)	3	(8.1)	
(8.1)	4	Var	
7h 38	6		= Im finder
(7.5)	5.5	Var	
(7.5)	4.5	(8.8)	

Z Herculis.

17 53
20 55
+2 42

+15.1

8 51 30

126,4 ← Var dis.
156 0
126.3
156.4

29.6 <
30.1 < − 2.87 <
59.7 <

1895phae.proj.5296

Sept 14, 1895

8 52 45	126.5			
	157.8	R	31,3 <‹	
	126.4		30.9 ‹‹	−2,78 ‹‹
	157.2	L	62,2 ‹‹	
8 54 10	125.4			
	158.2	L	329 ‹‹	
	127.4		30,4 ‹‹	−2,74 ‹‹
	157.8	R	63,3 ‹‹	
8 55 12	125.2			
	157.4	R	321 ‹‹	
	125.8		302 ‹‹	−2,77 ‹‹
	156.0	L	62,3 ‹‹	
				4(316
				2.79

8 50 37.2
4(13 37
8 53 24.25
− 2 50
8 50 34.2

8 57 55	125.8			
	157.8	L	320 ‹‹	
	125.8		338 ‹‹	−2,65 ‹‹
	159.6	R	65,8 ‹‹	
8 59 0	126.5			
	157.8	R	31,3 ‹‹	
	127.2		28,4 ‹‹	−2,87 ‹‹
	155.6	L	59,7 ‹‹	

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1895phae.proj..529C

Sept 14, 1895

9	0	27	128.2		
			155.6	L	27.4 <<<
			125.2		33.0 <<< −2.84 <<<
			158.2	R	60.4 <<<
9	1	25	125.8		
			157.6	R	31.8 <<<
			127.2		29.4 <<< −2.81 <<<
8	56	57.7	156.6	L	61.2 <<<
			(2)		

4 | 238 47 ✓
8 59 41.8
−2 50
8 56 51.8 ✓

4 | 31 7
2.79

9	8	05	126.4		
			157.6	L	31.2 <<<
			124.9		34.9 <<< −2.64 <<<
			159.8	R	66.1 <<<
9	10	7	125.6		
			158.0	R	32.4 <<<
			128.3		28.2 <<< −2.84 <<<
			156.5	L	60.6 <<<
9	11	15	127.6		
			156.8	L	29.2 <<<
			125.6		32.7 <<< −2.79 <<<
			158.3	R	61.9 <<<

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1895phae.proj..529C

Sept 14, 1895.

	126.8			
9 12 36	156.8	R	30.0 < <	
9 7 38.2	126.8		30.0 < <	-2.86 < <
4(42 33	156.8	L	60.0 < <	4(31 3
9 10 38.2	(2)			2.78
2 50				
9 7 38.2				

~~Blist~~

	127.2			
9 14 30	155.2	L	28.0 < <	
	128.2		30.6 < <	-2.91 < <
	158.8	R	58.6 < <	
	125.6			
9 15 45	157.8	R	32.2 < <	
	128.2		27.4 < <	-2.87 < <
	155.6	L	59.6 < <	
	128.3			
9 16 46	156.5	L	28.2 < <	-2.81 < <
	125.4		33.1 < <	
	158.5	R	61.3 < <	
	125.6			
9 17 44	157.8	R	32.2 < <	
9 13 19.7	126.8		29.6 < <	-2.79 < <
4(24 39	156.4	L	61.8 < <	4(33 8
9 16 9.8	(4)			2.845
-2 50				
9 13 19.8				

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1895phae.proj..529C

Sept 14, 1895

	hrs		
Bliss + Crei.	9	21	50.5
Ballou 103.	9	19	0.0
		− 2	50.5 = Chr. corr.

	hrs		
Bliss Crei	9	23	50,5
Ballou 103	9	21	0,0
~~Bliss + Crei~~ =		+ 2	50.5 = " "

		126.2		
9	29	50	157.8	L
			125.8	
			159.6	R

31.6 < <
33.8 < < 2.66 < <
65.4 < <

		125.8		
9	31	0	160.3	R
			127.4	
			156.4	L

34.5 < <
29.0 < < 2.733 < <
63.5 < <

		127.0		
9	32	0	156.8	L
			124.8	
			158.7	R

29.8 < <
32.4 < < 2.778 < <
62.2 < <

		124.7		
9	33	28	158.2	R
			127.8	
			158.3	L
9	28	43.5	(5)	

33.5 < <
30.5 < < 2.711 < <
64.0 < < 4(28.8 / 2.72)

4(12.6 18 / 9 31 34.5)

1895phae.proj..529C

Sept 14, 1895.

			127.0			
9	35	20	156.8	L	29.8 <<	
			125.4		33.9 <<	2,73 <<
			159.3	R	63.7 <<	
			124.7			
9	36	42	159.2	R	34,5 <<	
			127.2		29.6 <<	
			156.8	L	64.1 <<	2,71 <<
			126.2			
9	38	48	156.2	L	30.0 <<	
			126.0		33.2 <<	2,74 <<
			159.2	R	63.2 <<	
			123.4			
9	40	10	159.0	R	35.6 <<	
			127.8		28.9 <<	2,69 <<
			156.7	L	64,5 <<	4(287
			(6)			2.718
9	34	54				
	4(151	0				
9	37	45				
	-2	51				
9	34	54				
			126.4			
9	47	22	157.8	L	31,4 <<	
			124.8		33.0 <<	2,70 <<
			157.8	R	64.4 <<	

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1895phae.proj..529C

47 22

Sept 14, 1895.

270

		125.8			
9	49 30	156.0	R	322	
		126.4		31.8	2,71
		158.2	L	64.0	
		125.5			
9	51 0	158.0	L	325	
		125.6		33.8	2,63
		159.4	R	66.3	
		122.7			
9	52 3	157.2	R	335	
		127.2		30.1	2,73
		157.3	L	63.6	
9	47 7.8				4(277)
			(1)		2.692

4(199 55

9 49 55.8

-2 51

9 47 7.8

		125.8			
9	53 25	156.2	L	304	
		125.8		31.8	2,78
		157.6	R	62.2	
		124.0			
9	54 55	159.8	R	358	
		125.6		32.2	2,57
		157.8	L	68.0	

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1895phae.proj..529c

Sept 14, 1895.

9 56 0	125.4				
	156.8	R L	31.4 <<		
	125.0		31.8 <<	2.74 <<	
	156.8	L R	62.2 <<		
9 57 14	125.4				
	158.3	R	32.9 <<		
	126.5		32.2 <<	2.67 <<	
	158.7	L	65.1 <<	4(276	
		(8)		2.69	
9 52 30					
4(21 24					
9 55 21					
-2 50					
9 52 31					
10 7 7	126.4				
	157.2	L	30.8 <<		
	126.3		32.7 <<	2.73 <<	
	159.0	R	63.5 <<		
10 8 45	125.7				
	158.5	R	32.8 <<		
	126.5		29.9 <<	2.76 <<	
	156.4	L	62.7 <<		
10 11 0	125.4				
	157.8	L	32.4 <<		
	124.4		34.2 <<	2.62 <<	
	158.6	R	66.6 <<		

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1895phae.proj..529C

Sept 14, 1895.

10 12 2		127.4				
		158.2	R	30.9		
10 6 57.8		125.6		31.2		2.78
4(38 55		156.4	L	62.1		4(289
10 9 43.8		(9)				2.722
-2 52						
10 6 51.8						
		126.7				
10 13 40		159.0	L	32.3		
		126.8		31.1		2.73
		157.9	R	63.4		
		126.7				
10 15 0		158.2	R	31.5		
		125.3		32.5		2.71
		157.8	L	64.0		
		126.4				
10 15 52		160.3	L	33.9		
		125.2		34.0		2.58
		159.2	R	67.9		
		125.6				
10 16 58		157.8	R	32.2		
10 12 31.5		125.8		31.6		2.72
4(21 30		157.4	L	63.8		4(274
10 15 22.5		(10)				2.685
2. -0.71						
10 12 21.5						
1						

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1895phae.proj..529C

Sept 14, 1895

10 24 18	126.4 158.2 126.7 159.2	L R	31,8 << 32,5 << 64,3 <<<	2,70 <<<
10 25 38	125.2 158.6 127.2 156.7	R L	33,4 << 29,5 << 62,9 <<<	2,75 <<<
10 37 3	127.2 156.8 125.9 160.4	L R	29,6 << 34,5 << 64,1 <<<	2,71 <<<
10 38 15	124.9 158.7 127.4 155.9	R L	33,8 << 28,5 << 62,3 <<<	2,77 << 2,732
10 33 24,5				
4(25 14				
10 36 18,5				
-2 52,1				
10 33 24,5 <<<				
	(11)			
10 39 40	126.9 156.3 126.4 157.8	L R	29,4 << 31,4 <<< 60,8 <<<	2,83 <<<

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1895phae.proj..529C

Sept 14, 1895.

39 40

2.83

		125.6			
10	41	0	155.4 R	32.8 < <	
			126.7	30.3 < <	2.74 < <
			157.0 L	63.1 < <	
			126.8		
10	42	17	157.8 L	31.0 < <	
			127.0	32.2 < <	2.74 < <
			159.2 R	63.2 < <	
			124.8		
10	43	25	158.7 R	33.9 < <	
			127.2	29.3 < <	2.74 < <
			156.5 L	63.2 < <	
			12		

10 ~~44~~ 43 38 ~~44~~ 43

4 | 166 22

10 41 35 5

−2 52

10 38 43 5

4 | 30 5

2.762

		124.8			
10	45	45	157.7 L	32.9 < <	
			124.2	32.7 < <	2.66 < <
			156.9 R	65.6 < <	
			124.6		
10	47	0	159.0 R	34.4 < <	2.68 < <
			125.8	30.6 < <	
			156.4 L	65.0 < <	

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1895phae.proj..529C

Sept. 14, 1895.

10 4f 15

126.8
159.7 L
125.2
159.8 R

32,9 <<
34.6 << 2,59 <<
67.5 <<

10 49 8

10 44 4

4(30 8

10 47 32
-2 52
10 44 40

124.8
160.4 R
125.7
158.7 L
(13)

35.6 <<
33.0 << 2,55 <<
68.6 <<

4(248
2.62

10 50 40

125.8
158.0 L
124.4
158.5 R

32,2 <<
34.1 << 2,63 <<
66.3 <<

10 52 0

142.2
159.0 R
125.7
156.8 L

36,8 <<
31.1 << 2,58 <<
67.9 <<

10 53 0

126.0
158.8 L
125.2
158.2 R

32,8 <<
33.0 << 2,65 <<
65.8 <<

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1895phae.proj..529c

Sept. 14, 1895

10	54	10	125.6				
			157	R	31.9 <<		
10	49	44	125.6		32.8 <<	2.69 <<	
			158.6	L	64.7 <<	4(25 5-	
				(14)		2.638	

4(9 50
10 52 55

			125.4				
11	5-	0	157.2	L	31.8 <<		
			125.4		32.4 <<	2.71 <<	
			157.8	R	64.2 <<		

\# *

			124.2				
11	6	20	158.7	R	34.5- <<		
			124.7		32.5- <<	2.61 <<	
			157.2	L	67.0 <<		

			125.4				
11	7	56	157.0	L	* 31.6 <<		
			125.1		33.5- <<	2.67 <<	
			158.6	R	65.1 <<		

			125.8				
11	9	27	158.0	R	32.2 <<		
			126.4		32.3 <<	2.69 <<	
11	4	19.8	158.7	L	64.5- <<	4(268	
				(15)		2.67	

4(28 43
11 7 10 8
-2 52
11 4 18.8

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1895phae.proj..529C

Sept. 14, 1895

11 10 45	125.2			
	157.5	L	32,3 <<	
	123.8		33 8 <<	2,64 <<
	157.4	R	66.1 <<	
11 12 8	125.2			
	157.4	R	32,2 <<	
	125.8		31.6 <<	2,72 <<
	157.4	L	63.8 <<	
11 13 55	125.2			
	156.5	L	30,3 <<	
	125.7		31.7 <<	2,68 <<
	157.4	R	63.0 <<	
11 15 0	125.2			
	157.2	R	32,0 <<	
11 10 18	126.2		31.0 <<	2,75 <<
	157.2	L	63.0 <<	4(279
	(16)			2.698

4(11 28
11 12 52
- 2 52
11 10 0

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1895phae.proj..529c

Sept. 14, 1895

11 24 Fine low auroral arch in N with occasional faint streamers. Arch rather sharply defined. Summit of arch is a very little below γ Ursa Maj. which is nearly down to Sup. Culm.

At about hrs 10 : 30 went over into W. dome & looked at γ Androm. & adjacent stars also made estimates of them as follows.

(7.5) 3 (8.1)

(8.1) 3.5 Var

(7.5) 5.5 Var

(7.5) 6 (8.8)

Mr Attwill also made estimates which are recorded in W. equatorial book

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1895phae.proj..529C

Sept. 14, 1895.

	126,4			
11 34 30	159.2	L	32.8 < <	
	125.1		33.7 < <	2.62 < <
	158.8	R	66.5 < <	
	125.7			
11 36 55	159.8	R	34.1 < <	
	127.4		30.6 < <	2.69 < <
	158.0	L	64.7 < <	
	126.2			
38 6	157.7	L	31.5 < <	
	126.4		33.1 < <	2.69 < <
	159.5	R	64.6 < <	
	126.2			
39 23	160.3	R	34.1 < <	
11 34 22.5	126.5		30.4 < <	2.69 < <
	156.9	L	64.5 < <	
	(17)			4(29
4(28 54				2.672
11 37 13.0				
2 52				
11 34 21.5				
	124.2			
11 40 30	157.2	L		
	126.2		33.0 < <	
	161.0	R	32.5 < < 2.66 < <	
	158.7		65.5 < <	

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1895phae.proj..529C

40 30

Sept 14, 1891

	125.8			2.66
11 42 30	159.8	R	34.0	
	127.2	L	30.2	
	157.4	L	64.2	2.71
	125.2			
11 43 45	157.0	L	31.8	
	126.5		31.7	2.70
	158.2	R	63.5	
	126.0			
11 45 12	158.6	R	32.6	
11 40 8.5	127.2		30.2	2.75
4(11 58	157.5	L	62.9	4(28.5
11 42 59.0	(18)			2.712
-2 52.0				
11 40 7.0				
	125.2			
11 49 50	157.8	L	32.6	
	125.0		33.0	2.66
	158.0	R	65.6	
	126.2			
11 50 0	158.2	R	32.0	
	124.8		34.7	2.62
	159.5	L	66.7	

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1895phae.proj..529C

Sept 14, 1895

11 51 15	124.8	L	32,7 <<		
	153.5				
	127.0		30.8 <<	2.735 <<	
	157.8	R	63.5 <<		
11 52 30	127.0	R	30.8 <<		
	157.8				
11 50 18	126.2	L	32.1 <<	2.75 <<	
	158.3		62.9 <<	4(276	
4(2033				2.69	
11 50 53.8 <<					
−2 52					
11 48 1.8					
	(19)				
11 53 45	125.5	L	32.9 <<	2,66 <<	
	158.4				
	125.7		32.6 <<		
	158.3	R	65.5 <<		
11 55 2	125.6	R	32.3 <<		
	157.9				
	127.4		30.8 <<	2.74 <<	
	158.2	L	63.1 <<		
11 56 18	124.8	L	32.0 <<		
	156.8				
	127.2		30.4 <<	2.77 <<	
	157.6	R	62.4 <<		

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1895phae.proj..529c

Sept. 14, 1895.

	126.3			
11 57 48	158.0	R	31.7 <<	
11 52 57.2	126.1		31.9 <<	273 <<
4(22 53	158.0	L	63.6 <<	4(290
11 55 43.2				2.725
−2 52	(20)			
11 52 51.2				
	125.6			
12 16 40	158.0	L	32.4 <<	
	125.4		32.8 <<	267 <<
	158.2	R	65.2 <<	
	125.4			
12 18 15	158.0	R	32.6 <<	
	125.2		32.0 <<	269 <<
	157.2	L	64.6 <<	
	125.2			
12 19 25	157.8	L	32.6 <<	
	126.2		32.3 <<	268 <<
	158.5	R	64.9 <<	
	127.2			
12 21 0	157.4	R	30.2 <<	
12 15 58.0	125.4		32.0 <<	278 <<
4(75 20	157.4	L	62.2 <<	4(282
12 19 50				2.705
−2 02	(21)			
12 15 48				

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1895phae.proj..529C

Sept. 14, 1895.

	125.8			
12 23 0	158.8	L	33.0	
	126.0		32.9	2.67
	158.3	R	65.3	
	125.0			
12 24 25	157.7	R	32.7	
	126.5		31.3	2.71
	157.8	L	64.0	
	125.0			
12 25 45	158.2	L	33.2	
	125.9		32.1	2.67
	157.4	R	65.3	
	126.8			
12 27 10	159.4	R	32.6	
	127.1		31.1	2.73
12 22 13	158.2	L	63.7	4(2)8
4(20 20	(22)			2.69
12 20 0				
− 2 +2.0				
12 22 13.0				
	124.3			
12 35 50	159.8	L	35.5	
	127.2		31.8	2.60
	159.0	R	67.3	

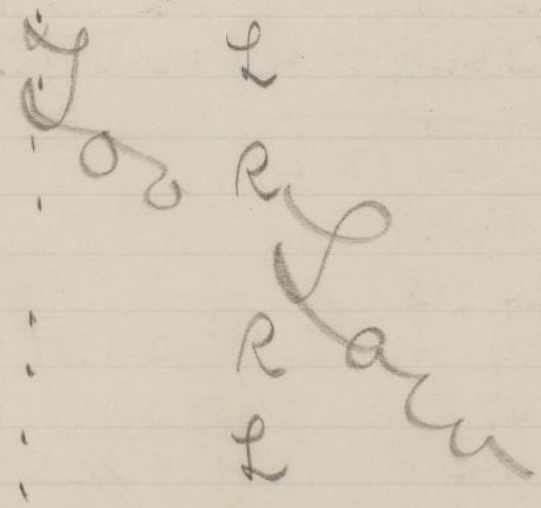
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1895phae.proj..529C

Sept. 14, 1895.

	125.0			
12 37 45	157.8	R	32.8	
	123.9	L	34.9	2.59
	158.8		67.7	
	126.2			
12 39 0	160.8	L	34.6	
	126.2	R	34.7	2.53
	160.9		69.3	
	127.0			
12 40 15	158.2	R	31.2	
12 35 20.5	126.0	L	32.0	2.74
	158.0		63.2	4(246
	(23)			2.615

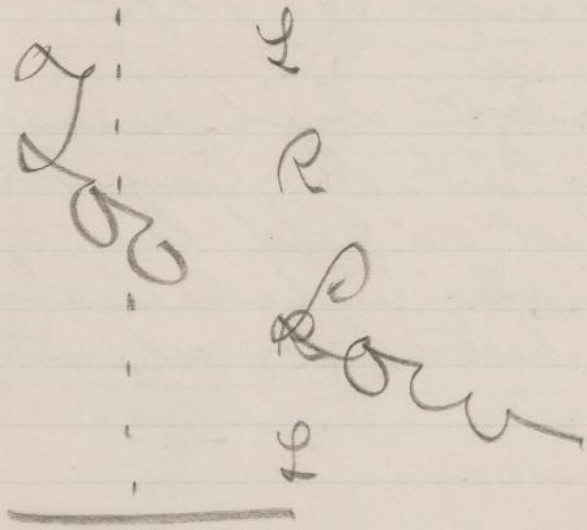
4(1.52 .50
12 38 12.5
−2 .52.0
12 35 20.5



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1895phae.proj..529C

Sept 14, 1895.



(24)

Var. now very near horizon; too ft. to follow farther last measurements somewhat uncertain

	hrs		
Bliss & Crei.	12	50	52.0
Ballon 103	12	48	0.0
B & C		+2	520

	hrs		
Bliss & Crei	12	52	52,0
Ballon 103	12	50	0,0

	hrs		
Bliss & Crei	13	0	52,0
Ballon 103	12	58	0.0

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1895phae.proj..529c

September 16. 1895.

Examined the steel prism and eye piece of Plot. R. – Considerable grease and dust on field lens of eye piece – steel also needed cleaning, and its position bettered by adjusting it.

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1895phae.proj..529C

Sept. 17, 1895.

	hr	m	s
Bliss + Crew	7	28	10.0
Ballon 103	7	25	0.0
B+C Chron =	0	3	10.0 fast

	hr	m	s
Bliss + Crew	7	29	10.0
Ballon 103	7	26	0.0
B+C chron =	0	3	10.0 fast

γ Andromedæ

0	14
19	40
4	34
7	26

+26 1

Var. comp. with γ Andr. (eye steps on)

Right + Below

217.9 ← Comp star dis.

301.2 833

220.3 81.1 0.30

301.4 169.4

7 49 10

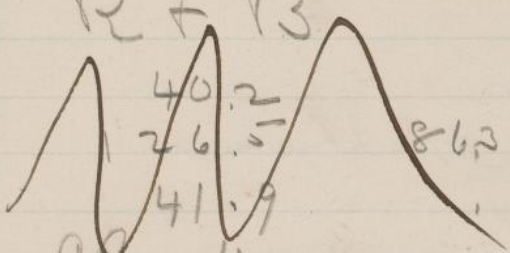
1895phae.proj..529C

Sept 17 1895

L + a

	315.3			
7 52 15	29.2	#73.9		
	315.0	76.2	0.57	
	31.2	15 0.1		
	315.4			
7 54 9	30.9	75.5		
	313.8	76.0	0.55	
	29.8	15 1.5		

R + B



	40.2			
7 58 39	126.5	86.2		
	41.9			

Clouds

	42.0			
8 4 40	124.0	82.0		
	1.0			
	40.8	84.6	0.25	
	125.6	166.6		

Clouds.

	39.0			
8 7 44	122.9	83.9		
	40.3	84.7	0.22	
	125.0	168.6		

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1895phae.proj..529C

Sept. 17, 1895.

Left + Above.

	134.6		
8 11 30	208.8	74.1	
	137.8	68.6	
	206.4	142.7 ✓	0.7
	137.4		0.7
8 20 15	206.5	69.1	
7 59 37.1	135.5	72.1	
	207.6	141.2	0.7

Var. comp. with 7.5 mag: eye-piece removed.

	132.8	
8 22 40	201.7	
	Clouds	

8 55 0 Clouds.

So cloudy that it is impossible
9 5 0 to do anything.

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1895phae.proj..529c

Sept 19, 1895.

	hm		
Balloon 103.	7	26	0.0
B + C 1182.	7	29	25.5

	hm		
Balloon 103	7	27	0.0
B + C 1182	7	30	25.5

Cloudy at beginning of evening

J Anderson

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1895phae.proj..529C

Sept. 20, 1895

J Anderson

0 14 +26.1
19 30

4 44
7 16

Balloon 103 ⟩ hrs 28 0.0
B+C 1182 ⟩ 31 33.5
B+C 1182 = 0 3 33.5 fast

Balloon 103 ⟩ 29 0.0
B+C 1182 ⟩ 32 30.5
3 33.5

Var comp with ζ + a (7.5) mags (eye-steps on)

131.4 < Comp star dis.
7 36 12 210.8 79.4 <
102.7 74.2 < 0.51 <
106.9 153.4 <

1895phae.proj..529c

Sept. 20, 1895

R + B

218.2

7 28 15 301.4 83.2<

217.0 87.2< 0.18<

304.2 170.4<

217.2

7 29 30 302.8 85.6<

216.9 84.3<

301.2 169.9< 0.19<

L + Ba

314.5

7 42 2 30.2 75.7<

311.6 79.1<

30.7 154.8< 0.48<

313.0

7 43 15 32.5 79.2<

312.4 75.3< 0.49<

27.7 154.5<

R + B

40.0

7 45 20 125.2 85.2<

7 37 12 39.6 84.4<

124.0 169.6< 0.20<

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1895phae.proj..529C

Sept 20, 1895

Var. comp. with the (7.5) mag. (eye - stop off)

R + Belem

37.2

7 50 44 122.7 85.5<

39.7 83.3 < 0.21 <

123.0 168.8 <

41.0

7 51 46 122.5 81.5<

38.3 84.1 < 0.27 <

122.4 165.6 <

38.7

7 52 42 124.4 85.7 < 0.14 <

37.0 86.6 < 0.14

123.6 172.3 <

7

L + a

1328

7 54 59 209.4 76.6 <

133.8 75.2 < 0.54 <

209.0 151.8 <

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1895phae.proj..529c

Sept. 20, 1895.

		132.6		
7	56 31	210.0	77.4 <	
		133.2	73.8 <	0.1 5 <
		207.0	151.2 <	
		135.9		
7	57 35	207.2	71.3 <	
7	50 19	132.4	76.1 <	0.6 2 <
		208.5	147.4 <	

(7.5) ~~+0 +1.1~~ Var

(8.1) 3.0 Var

Var 2 (8.8)

(7.5) 2.5 (8.1)

(7.5) 6 (8.8)

All the above estimates in finder, stars rather dim in finder on account of fog.

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1895phae.proj..529C

Sept. 20, 1895.

Var comp with (8.1)

R + a

	209.7	Comp star obs.	
8 10 55	308.5	98.8 <	
	213.2	90.3 <	
	305.5	189.1 <	− 0.17 <
		170.9 <	

L + B

	210.3		
8 13 50	308.7	98.4 <	
8	212.4	92.2 <	− 0.20 <
	304.6	190.6 <	
		169.4 <	

	209.2		
8 15 55	304.2	95.0 <	
	209.4	99.6 <	
	309.0	194.6 <	− 0.28 <
		165.4 <	

R + a

	213.0		
8 19 30	306.0	93.0 <	
	212.4	94.4 <	
	306.8	187.4 <	− 0.14 <
		172.6 <	

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1895phae.proj..529c

Sept. 20, 1895.

			210.3		
8	20	43	307.2	96.9 <	
			214.8	87.9 <	− 0.09 <
			302.7	184.8 <	
				175.2 <	

L + B

			209.0		
8	23	40	310.2	101.2 <	
8	13	47.6	211.1	94.7 <	− 0.30 <
			305.8	195.9 <	
				164.1 <	

(7.5) Comp with (8.1). (eye-plate on.)

Index Below

			218.9 <	7.5 dis.	
8	32	48	298.7	79.8 <	
			214.9	84.2 <	0.28 <
			304.4	165.3 <	

Index Above

			309.7		
8	36	53	29.7	80.0 <	0.49 <
			310.0	74.3 <	
			2).315.3 <		

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Sept. 20, 1895.

		311.7		
8	38	37	29.4	77.7 <
			308.0	81.8 < 0,39 <
			29.8	159.5 <

Index Below

			35.8	
8	41	20	125.0	89.2 <
			41.6	77.7 < 0,25 <
			119.3	166.9 <

			39.9	
8	42	30	117.8	77.9 <
			35.9	86.9 < 0,29 <
			122.8	164.8 <

Index Above

			127.8	
8	44	50	208.7	80.9 <
			130.4	75.0 < 0,46 <
8	30	50.76	208.4	155.8
				5.9 <

The 7.5 mags. is reddish to sight in photometer, Same for .

1895phae.proj..529C

Sept 20, 1895.

9 20

(A.1) 3.v- Var.
(7.v) 3 (A.1)
(7.v) v Var.
(Var) 2.v- (A.2)
(7.v) 7 (A.2)

} W. obs.

All the above estimates made by W. with Great Equatorial.

The 7.v is comp. star f.
" A.1 " " " e.
" A.2 " " " d

} See Prest. Eq. Book.

2 Hercules

17 52 +15.1
21 45
3 52

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Sept. 29 1895.

Abandoned: rather too late as respects minimum: stars ft.: fog.

o Celi

2 4 −2.5 Phot R
22 0
4 4
7 5.6

Stars faint in Phot. on account of fog.

Index below

27 ~~6 6~~ 5.0 prec diss
10 22 20 6,8 ~~7.1~~ ~~9 0.9~~ 9 0.2 < 0.0 0 <
27 6.2 ~~8 9.8~~ <
6.0 1 8 0.0 <

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1895phae.proj..529c

Sept. 20, 1895

Index Above

4.8

10 27 42 98.1 93.3<
4.0 97.0< + 0.20<
101.0 190.3<
169 7<

3.0

10 30 11 101.9 98.9<
5.0 94.0<
99.0 192.9< + 0.24<
167.1<

Below

99.0

10 32 42 185.0 86.0<
93.9 94.9<
188.8 180.9< + 0.02<
179.1<

96.9

10 36 30 187.0 90.1<
97.0 90.8<
187.8 180.9< + 0.02<
179.1<

Above

183.5

10 39 9 275.1 91.6<
183.0 95.9<
~~10 27 57.8~~ 278.9 187.5< + 0.14<
10 31 25.8 172.5<

6 | 62
0.1033

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1895phae.proj..529C

Sept. 20, 1895.

Observations difficult on account of fog.

C. S. Var.

(foll star) 1* . (prec star): With

10 46 No. 1 ring micrometer eye-piece

Too foggy for any farther work.

	hrs	m	s	
Ballon 102	11	0	0.0	
B+C 1182	11	3	34.0	
B+C 1182 =	0 hrs	3 m	34.0 s	fast

	hrs.	m	s	
Ballon 102	11	5	0.0	
B+C 1182	11	8	34.0	
B+C 1182 =	0 hrs	3 m	34.0 s	fast

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1895phae.proj..529c

September 21, 1895.

L. Andromeda. Phot. & Obs.

8 14 +26.1
19 55
4 29
7 41

Var comp with (7.5) mag

L + a

312.4 ← comp. stars dis.
7 50 52 311.3 78.9 ✓
312.0 78.2 ✓ 0.44 ✓
30.2 157.1 ✓

R + B

303.0
7 52 55 38.2 95.2 ✓
301.0 100.8 ✓
41.8 196.0 ✓ − 0.30 ✓
164.0 ✓

298.2
7 55 15 42.8 104.6 ✓
299.7 102.1 ✓ − 0.51 ✓
41.8 206.7 ✓
153.3

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1895phae.proj..529C

Sept. 21, 1895.

L + a

309.9

7 59 33 32.0 82.1 ✓

314.2 74.2 ✓ 0,45 ✓

28.4 156.3 ✓

314.3

8 0 56 26.4 72.1 ✓

312.4 78.0 ✓ 0,57 ✓

30.4 150.1 ✓

R + B

35.8

8 3 20 123.0 87.2 ✓

7 57 180 38.2 83.7 ✓ 0,17 ✓

121.9 170.9 ✓

Concluded to reject above and retake series. as photometer gave trouble.

Var comp with 7.5 mag.
This series taken with extreme care.

R + B

39.2 ← Comp star dis.

8 9-30 122.5 83.3 ✓

37.9 84.0 ✓ 0.24 ✓

121.9 167.3 ✓

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1895phae.proj..529c

Sept. 21, 1895

L + Q

129.5

8 12 8 207.2 77.7 ✓
132.0 72.9 ✓ 0,5-6 ✓
204.9 150.6 ✓

134.3

8 13 50 204.3 70,0 ✓
130,7 77.3 ✓ 0,63 ✓
208.0 147,3 ✓

R + B

211.4

8 16 22 302,5 91.1 ✓
~~218.2~~ +8 0,06 ✓
~~218.2~~ 85.7 ✓
303.9 176.8 ✓

216,2

8 18 32 300,3 84,1 ✓
215.4 86.7 ✓ 0,17 ✓
302.1 170.8

L + a

311.4

8 21 27 31,0 79,6 ✓
~~8 14 3~~ 76,3 ✓
8 15 18.2 313,6 155.9 ✓ 0,46 ✓
29.9

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1895phae.proj...529C

Sept. 21, 1895.

Var comp with (8.1) mag.

R + a.

	215.2	Comp star this		
8 31 15	300.8	85.6 ✓		
	210.7	983 ✓	−0.07 ✓	
	309.0	1839 ✓		
		1761 ✓		

L + B

	131.8			
8 40 40	208.2	764 ✓		
	123.8	879 ✓	0.30 ✓	
	211.7	1643 ✓		

	120.2			
8 42 21	210.8	856 ✓		
	134.8	769 ✓	0.33 ✓	
	208.7	1625 ✓		

R + a

	215.8			
8 45 0	303.0	872 ✓		
	210.9	978 ✓	−0.09 ✓	
	308.7	1850 ✓		
		1750 ✓		

	210.2			
8 46 24	309.2	990 ✓		
	215.8	881 ✓	−0.06 ✓	
	304.9	1871 ✓		

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1895phae.proj..529c

Sept. 21, 1895.

	L + B		
	310.2		
8 49 26	34.2	84.0 ✓	
8 42 31	306.2	88.3 ✓	0.14 ✓
	34.5	172.3 ✓	

Var comp with (8.1) mag
This series taken with extreme care.

	L + B			
	~~129.8~~			
8 58 30	212.1	R	82.3 ✓	
	125.6		87.4 ✓	0.20 ✓
	212.0	R L	169.7 ✓	
	125.6			
8 59 58	211.7	L	86.1 ✓	
	129.8		80.3 ✓	0.26 ✓
	210.1	R	166.4 ✓	
	131.2			
9 2 16	207.7	R	76.5 ✓	
	124.4		89.6 ✓	0.26 ✓
	214.0	L	166.1 ✓	

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1895phae.proj..529C

Sept. 21, 1895

R + a

		218.2			
9 5 0		303.5	R	85.3 ✓	
		210.3		97.9 ✓	
		308.2	L	183.2 ✓	− 0,06 ✓
				176.8 ✓	
		210.8			
9 6 20		306.0	L	95.2 ✓	
		216.2		86.8 ✓	
		303.0	R	182.0 ✓	− 0,04 ✓
				178.0 ✓	
		218.7			
9 7 35		301.2	R	82,5 ✓	
9 3 16,5		211.1		96.8 ✓	
		307.9	L	179.3 ✓	0.01 ✓

Var (7.5) mag comp with (8.1) mag

~~Var comp with (7.5) mag~~

~~R + a~~

~~9 15 10~~

~~[illegible]~~

Above R (7.5 mag) star dis.

		310.8			
9 19 0		31.2	L	80.4 ✓	
		309.0		83.4 ✓	0,31 ✓
		32.4	R	163.8 ✓	

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1895phae.proj..529C

Sept. 21, 1895

		308.0			
9	20	7	31.7	R	83.7 ✓
			311.7		78.3 ✓ 0.04 ✓
			30.0	L	162.0 ✓
			312.7		
9	21	25	28.2	L	75.5 ✓
			309.8		83.4 ✓ 0.40 ✓
			33.2	R	158.9 ✓
			Below		
			35.3		
9	23	40	124.3	R	89.0 ✓
			42.4		78.4 ✓ 0.24 ✓
			120.8	L	167.4 ✓
			40.0		
9	24	59	120.5	L	80.5 ✓
			36.1		88.1 ✓ 0.22 ✓
			124.2	R	168.6 ✓
			37.4		
9	26	40	121.8	R	84.4 ✓
			41.6		78.2 ✓ 0.03 ✓
9	22	38.0	119.8	L	162.6 ✓

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1895phae.proj..529C

Sept. 21, 1895.

9 35 ♌

(8.1)	2.5	Var
(7.5)	(2.5)	(8.1)
(7.5)	4.5	Var
Var	2.5	(8.8)
(7.5)	6	(8.8)

= in finder W. obs.

9 45 ♌

(8.1)	2.5	Var
(7.5)	2.5	(8.1)
(7.5)	4.5	Var
Var	2.5	(8.8)
(8.1)	4	(8.8)
(7.5)	6	(8.8)

= in 6 inch. W. obs.

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1895phae.proj..529C

Sept. 21, 1895.

o Ceti.

2	4	−2.5
22	25	
3	39	
8	21	

2	12	−3.7
22	35	
3	37	
8	23	

10 23 0c (9.5) 1.5 Var. in Large tetes.

10 23 15 (9.5) 1.5 Var. in finder.

Index Below

	190.5	Comp star dis	
10 27 32	271.9	81.4	
	185.0	91.0	0.14
	276.0	172.4	

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1895phae.proj..529C

Sept. 21, 1895.

Index Above

276.0

10 29 52. 8.2 92.2 ✓

275.0 93.9 ✓ −0.11 ✓

8.9 186.1 ✓

173.9 ✓

276.8

10 31 58 7.9 91.1 ✓

276.8 90.2 ✓

7.0 181.3 ✓ −0.02 ✓

178.7 ✓

Index Below

6.0

10 35 15 96.7 90.7 ✓

10.2 83.1 ✓ 0.12 ✓

93.3 173.8 ✓

9.8

10 38 9 93.0 83.2 ✓

7.7 88.3 ✓ 0.16 ✓

96.0 171.5 ✓

Index Above

96.2

10 40 54 185.4 89.2 ✓

10 33 50.7 98.2 88.80 ✓ 0,11 ✓

185.8 ~~174.2~~

3 2 4

174.2

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1895phae.proj..529c

Sept. 21, 1895.

Nova Aurigae.

√	23	+ 32 0
23	√	
6	18	
√	42	

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1895phae.proj..529C

Sept. 23, 1895

No recorder first of the evening.

J Hudson. Sh. obs.

0	1K	+26.5	
20	20		
-3	V K		
12			
4	6	V as comp with (7.5) mag.	

L + a

119.9	← Comp star dists		
196.4		76.5 <	
122.2		67.7 <	
189.9		144.2 <	0.69 <

R + B

206.5			
288.9		82.4 <	
206.9		81.7 <	0.30 <
288.6		164.1 <	

207.4			
288.2		79.9 <	
206.2		82.1 <	0.34 <
288.3		162.0 <	

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1895phae.proj..529C

Sept. 23, 1895.

L + a

301.4

8 30 4 16.2 748 <

304.2 720 < 0,64 <

16.2 146.8 <

303.4

8 31 24 14.8 71,4 <

303.2 71.8 < 0.71 <

15.0 143.2 <

R + B

29.4

8 33 20 110.0 806 <

8 28 48 28.3 806 < 0.36 <

108.9 1612 <

Var comp with (8.1) maj.

R + a

204.4 comp elev dec

8 39 24 291.0 R 86,6 <

198.7 98.1 < −0.09 <

296 8 L 184.7 <

175.3 <

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1895phae.proj..529C

Sept. 20, 1895.

	201.0			
8 41 10	295.8	L	94.8 <	
	205.4		87.8 <	−0.05 <
	293.2	R	182.6 <	
			177.4 <	
	202.7			
8 42 24	291.9	R	89.2 <	
	200.9		~~93.7~~ 94.5 <	
	294.4	L	183.7 <	−0.07 <
			176.3 <	
	L + B			
	298.2			
8 47 27	17.9	R	79.7 <	
	292.9	L	89.3 <	0.21 <
	22.2		169.0 <	
	294.9			
8 48 48	22.6	L	87.7 <	
	297.1		81.8 <	0.20 <
	18.9	R	169.5 <	
	297.1			
8 50 15	18.5	R	81.4 <	
8 44 57	294.2		86.7 <	0.22 <
	20.9	L	168.1 <	

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1895phae.proj..529c

Sept. 29, 1895.

(7.5) mag comp with (8.1) mag

Below

25.8 ← (7.5) dis

8 58 45 108.2

24.2 82.4 < 0.18 <

112.3 88.1 <

170.5 <

25.8

9 0 25 110.8 85.0 <

29.8 27.8 < 0.33 <

107.6 162.4 <

~~28.6~~
~~30.8~~

9 3 20 106.4 77.8 <

23.7 87.2 < 0.29 <

118.49 165.0 <

Above

119.0

9 5 45 198.8 79.8 <

119.8 74.9 < 0.48 <

194.7 154.7 <

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1895phae.proj..529c

Sept. 23, 1895.

	1			
	120.0			
9 7 16	195.8	74.0 <		
7 16	115.8	83.2 <	0.43 <	
	199.0	157.2 <		
	116.7			
9 9 58	~~200.0~~	198.7	82.0 <	
9 4 18.8	120.7		75.7 <	0.43 <
	196.4		157.7 <	

9 24 0

(8.1)	~~3~~	$\sqrt{a_1}$
(7.5)	4.5	$\sqrt{a_2}$
(7.5)	20	(8.1)
(7.5)	6	(8.8)
$\sqrt{a_2}$	2	(8.8)

} in finder. W. obs.

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1895phae.proj..529C

Sept. 23, 1895.

9 38 { (8.1) 2.5 9 Aur
(7.5) 2.5 √(8.1)
(7.5) 4.5 9 Aur
(7.5) 6 (8.8)
9 Aur 2.5 (8.8) } in W. equatorial. W. obs.

2

Nova Aurigae

5 20 +32 0
22 15
8
74. 52

Abandoned for present.

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1895phae.proj..529C

Sept. 23. 1895.

Expts with wheel Phot.

Comp of α aquilae in wheel with θ aquilae outside wheel

~~Comp of α aquilae & θ aquilae~~

Readings $6\frac{3}{4} = 6,8$
$6\frac{3}{4} = 6,8$ } Poor. Slow start.
4. ✓

11. 0	+1.3	−0.6 ✓
11. 5	−0.8	−0.1 ✓
9.3	−3.0	−2.3 ✓
12,8	+0.✓	+1.2 ✓
9,9	−2.✓	−1,7 ✓
13.0	+0.7	+1.✓ ✓
9,1	−3.2	−2.✓ ✓
14.2	+1.9	+2.6 ✓
11,0	−1.3	−0.6 ✓
10.2	−2.1	−1.✓ ✓
9.1	−3.2	−2.✓ ✓
13,8	+1.✓	+2.2 ✓
11,8	−0.✓	+0.2 ✓
14,8	+2.✓	+3.2 ✓
14.6	+2.3	+3.0 ✓
14.2	+1.9	+2.6 ✓
14.7	+2.✓	+3.1 ✓
12.6	+0.3	+1.0 ✓
15.✓	+3.✓	+✓.2 ✓
~~19 233.4~~	~~+17.✓~~	
~~12.2 d = 17.6~~		

~~Prob. Error 0.30 div.~~

Corr. are not kept.

10 30

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1895phae.proj..529c

Sept. 20, 1895.

Con. from previous page.

233.4	
11.2	−0.4 ✓
8.0	−3.6 ✓
10.6	−1.0 ✓
9.5	−2.1 ✓
8.5	−3.1 ✓
10.4	−1.2 ✓
10.5	−1.1 ✓
9.8	−1.8 ✓
27 | 311.9 ✓	+24.7 ✓
11.5 ✓ ✓ +	−26.0 ✓
	1 ✓ 0.7

Prob. Error. 0.33 dev.

27 \| ✓ 0.7 (1.89 dev = Av. Dev.

2 7
2 3 7
2 1 6
2 1 8

Comp of α Lyrae in wheel with γ Lyrae outside wheel.

5.5	−0.9 ✓
6.1	−0.3 ✓
7.5	+1.1 ✓
5.5	−0.9 ✓
7.2	+0.8 ✓
6.1	−0.3 ✓
5.9	−0.5
7.4	+1.0
7.4	+1.0
5.8	−0.6
10 | 64.4 ✓	7.4
6.4 ✓ = mean.	

0.7 = Av. Dev.

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1895phae.proj.529C

Sept. 23, 1895.

Nova Aurigae

5	23		+0 2.0
23	25		
5	5 8.		
6	2		

R + a.

	180.8	Southern image dis.	
(1 20 25.	277.2	964 <	
	185.0	926 <	+0.17
	277.6	189.0 <	
		171.0 <	
	186.0		
11 22 0	276.3	903 <	
	185.2	946 <	+0.09
	279.8	1849 <	
		1751 <	
	182.4		
11 23 00	282.7	100.3 <	
	183.4	95.8 <	+0.30
	279.2	196.1 <	
		163.9 <	

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1895phae.proj..529C

Sept. 20, 1895.

L + B

2741

11 25 39 10.2 96.1 <

271.7 1029.6 < +0.36

~~9.6~~ 198.7 <

14.3 161.3 <

2702

11 27 12 11.4 1012 <

273.8 96.0 < +0.33

9.8 197.2 <

162.8 <

2744

11 28 50 9.2 94.8 <

11 24 36 272.8 98.2 < +0.25

11.1 193.1 <

166.9 <

Comp. Her S.

11 33 0 (N fall star) 2 S prec star

1895phae.proj..529C

Sept. 24, 1895.

J Andrews Phot Wobs

0 14 +26.1
19 45
4 29
7 31

Var comp with 7.5 mag.

Left + Above
121.3 comp star dis
7 27 45 191.3 70.0
119.4 74.4 0.69
190.8 144.4

R + B
205.0
7 29 50 288.8 83.8 0.25
205.9 83.1 0.~~05~~
289.0 ~~176.9~~
~~16~~
166.9

205.7
7 31 40 288.8 82.3
204.8 81.7 0.30
286.5 164.0

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1895phae.proj..529C

Sept. 24, 1895.

L & a

299.7

7 34 35 16.7 77.0 ✓ 0.62
301.4 70.9 ✓ ~~0.76~~
12.3 147.9 ✓

305.0

7 36 48 12.5⁻ 67.5⁻ ✓
301.3 73.8⁻ 0.75⁻ ✓
154.8 141.0 ✓

R & B

23.8

7 39 43 110.2 86.5⁻ ✓
7 33 23.5⁻ 27.8 81.8 ✓ 0.22 ✓
109.6 168.3

Var comp with (8.1) mag
Right & above.

205.4

7 47 0 ~~288.0~~ R 82.6 ✓
198.8 97.2 ✓ 0.00 ✓
296.0 L 179.8 ✓

199.7

7 49 45 297.2 L 97.5⁻ ✓
206.2 72.8 0.18
~~288.5~~ R 170.3
29.0

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1895phae.proj...529c

Sept. 24, 1895.

8		206.3			
8 57 57.2		290.8	R	84.5 ✓	
		198.7		96.4	
		295.1	L	180.9 ✓	− 0.02 ✓
				179.1 ✓	
		Lt B			
		294.5			
8 14 30		23.7	R	89.2 ✓	
		296.2		85.8 ✓	0.09 ✓
		22.0	L	174.0 ✓	
		295.8			
8 16 17		21.4	L	85.6 ✓	
		298.9		29.0 ✓	0.29 ✓
		17.9	R	164.6	
		298.0			
8 17 56		17.8	R	79.8 ✓	
8 2 56.16		293.5		86.2 ✓	0.27 ✓
		19.7	L	166.0 ✓	

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1895phae.proj..529c

Sept. 24, 1895

Below (7.0) comp with (8.1)

	~~28.8~~			
8 25 7	109.2	80.4 ✓		
	20.6	89.8 ✓	0.19 ✓	
	113.4	170.2 ✓		
	22.8			
8 26 45	112.4	89.6 ✓		
	28.2	81.8 ✓	0.16 ✓	
	110.0 ~~8.5~~	171.4 ✓		
	27.8			
8 28 45	108.6	80.8 ✓		
	22.7	89.2 ✓	0.19 ✓	
	111.9	170.0 ✓		

Above

	118.4		
8 31 30	196.0	79.6	
	295.3	64.8	
	199.8		
	300.0		
8			

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1895phae.proj.:5290

Sept. 24, 1895.

Above

	298.9			
δ 33 45	18.7	79.8 ✓		
	298.4	81.8 ✓	0.35 ✓	
	20.2	161.6 ✓		
	297.4			
δ 35 10	17.2	79.8 ✓		
	300.4	25.8 ✓	0.47 ✓	
	17.6	155.6 ✓		
	300.4			
δ 36 30	16.4	760 ✓		
δ 31 0.33	296.9	820 ✓	0.42 ✓	
	18.9	~~+8.0~~		
		1580		

δ 43

(7.5)	2.5	(8.1)
(8.1)	2.5	Var
(7.5)	5	Var
(7.5)	6.5	(8.8)
Var	2	(8.8)

} = in finder. C. obs.

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Sept. 24, 1895.

(8.1)	3	$\sqrt{\text{an}}$
(7.5)	25	(8.1)
(7.5)	5	$\sqrt{\text{an}}$
$\sqrt{\text{an}}$	2	(8.6)
(7.5)	6	(8.6)

& $\sqrt{2}$ } in W equatorial. W. obs.

222
16.7
30.6
34.2
24.0

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2 Herculis.

17 53 +15.1
21 35
3 42

Index abov.

~~320.0~~
140.0
9 20 47 176.2 L 36.2 ✓
140.4 34.4 ✓ 2.49 ✓
174.8 R 70.6 ✓

141.0
9 22 5 175.1 R 34.1 ✓
140.0 36.9 ✓ 2.47 ✓
176.9 L 71.0 ✓

139.0
9 23 5 176.2 L 37.2 ✓
142.6 32.6 ✓ 2.51 ✓
175.2 R 69.8 ✓

141.1
9 24 5 175.6 R 34.5 ✓
9 22 30. ✓ 140.0 36.2 ✓ 2.46 ✓
-2.
14 18 23. 176.2 L 70.7 ✓ (1)

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			141.9				
9	25	17	177.0	L	35.1 ✓		
			141.4		33.8 ✓	2.54 ✓	
			175.2	R	68.9 ✓		
			141.4				
9	26	28	175.4	R	34.0 ✓		
			141.1		34.7 ✓	2.55 ✓	
			175.8	L	68.7 ✓		
			140.6				
9	27	40	176.8	L	36.2 ✓		
			141.2		33.9 ✓	2.50 ✓	
			175.1	R	70.1 ✓		
			141.0				
9	28	47	176.7	R	35.7 ✓		
9	27	3. ✓	141.5		35.3 ✓	2.47 ✓	(2)
	4	7.	176.8	L	71.0 ✓		
14	22	56.					
			141.9				
9	30	0	176.8	L	34.9 ✓		
			139.5		37.0 ✓	2.44 ✓	
			176.5	R	71.9 ✓		
			140.9				
9	31	0	177.0	R	36.1 ✓		
			141.4		34.4 ✓	2.49 ✓	
			175.8	L	70.5 ✓		

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Sept 24, 1895.

	140.7				
9 31 55	176.2	L	35.5 ✓		
	141.5		34.0 ✓	2.52 ✓	
	175.5	R	69.5 ✓		
	139.6				
9 33 30	175.0	R	35.4 ✓		
9 31 36. ✓	139.8	L	36.0 ✓	2.46 ✓	(3)
−K 2.	175.8	L	71.4 ✓		
1K 29 29.					
	138.6				
9 42 0	177.2	L	38.6 ✓		
	139.5		36.0 ✓	2.36 ✓	
	175.5	R	74.6 ✓		
	139.8				
9 43 15	177.0	LR	37.2 ✓		
	140.4		35.4 ✓	2.42 ✓	
	175.6	RL	72.6 ✓		
	140.~~4~~6				
9 44 27	173.8	L	33.2 ✓		
	138.2		40 0 ✓	2.40 ✓	
	178.2	R	73.2 ✓		
	139.4				
9 45 38	177.8	R	38.4 ✓	2.33	
9 K3 ~~V0~~ ✓	139.6		37.2 ✓	~~2.42~~	
−K 2.	176.8	L	75.6 ✓		(4)
1K 39 K3.					

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Sept. 24, 1895.

	140.2			
9 47)	176.8	L	36.6 ✓	
	139.4		37.1 ✓	2.39 ✓
	176.5	R	73.7 ✓	
	139.8			
9 48 22	176.8	R	37.0 ✓	
	139.0		37.8 ✓	2.35 ✓
	176.8	L	74.8 ✓	
	138.2			
9 50 15	176.4	L	38.2 ✓	
	139.2		38.0 ✓	2.01 ✓
	177.2	R	76.2 ✓	
	139.8			
9 51 28	176.8	R	37.0 ✓	
9 49 14.	139.0		36.8 ✓	2.08 ✓
-K 7.	175.8	L	73.8 ✓	(5)
K K 11.				
	139.8			
9 53 23	178.2	L	38.4 ✓	
	139.0		37.5 ✓	2.02
	176.5	R	75.9 ✓	
	140.3			
9 54 55	176.1	LR	36.4 ✓	
	132.8		39.6 ✓	2.32 ✓
	177.4	L	76.0 ✓	

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Febr. 24, 1895.

		137.8			
9	55 50	176.8	L	39.0 ✓	
		140.0		36.2 ✓	2,34 ✓
		176.2	R	75.2 ✓	
		139.8			
9	57 15	176.2	R	36.4 ✓	
9	59 21.	137.8		40.0 ✓	2,30 ✓
	-4 7.	177.8	L	76.4 ✓	(6)
14	51 14.				
		138.2			
10	10 35	178.2	L	40.0 ✓	
		139.8		37.4 ✓	
		177.2	R	77.4 ✓	2,27 ✓
		139.8			
10	12 0	176.2	R	36.4 ✓	
		137.4		39.4 ✓	
		176.8	L	75.8 ✓	2,32 ✓
		138.0			
10	14 16	176.2	L	38.2 ✓	
		138.0		38.8 ✓	2,28 ✓
		176.8	R	77.0 ✓	
		137.9			
10	15 48	177.8	R	39.9 ✓	
10	13 10.	138.6		39.2 ✓	2,22 ✓
	-4 7.	177.8	L	79.1 ✓	(7)
15	9 3.				

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Sept. 24, 1895.

	138.2				
10 17 15	178.6	L	40.4 ✓		
	137.2		41.6 ✓	2.14 ✓	
	178.8	R	82.0 ✓		
	137.5				
10 18 26	177.4	R	39.9 ✓		
	137.3		42.3 ✓	2.13 ✓	
	179.6	L	82.2 ✓		
	137.4				
10 19 30	176.8	L	39.4 ✓		
	138.4		38.1 ✓	2.27 ✓	
	176.5	R	77.5 ✓		
	136.9				
10 20 40	177.8	R	40.9 ✓	2.17 ✓	
	137.8		40.0 ✓		
	177.8	L	80.9 ✓	(8)	

Ballon 103 10 22 0.0
B+C 1182 10 26 7.5

Ballon 103 10 23 0.0
B+C 1182 10 27 7.5

∴ Ballon 1182 is 7.5 feet.

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Sept. 24, 1895.

	137.8			
10 30 5	179.8	L	42.0 ✓	
	137.8		40.8 ✓	2.11 ✓
	178.6	R	82.8 ✓	
	138.8			
10 31 30	177.8	R	39.0 ✓	
	138.4		40.0 ✓	2.22 ✓
	178.4	L	79.0 ✓	
	137.5			
10 32 45	177.6	L	40.1 ✓	2.21 ✓
	138.3		39.3 ✓	
	177.6	R	79.4 ✓	
	137.8			
10 34 13	180.3	R	42.5 ✓	
10 32 0.	137.4		41.8 ✓	2.07 ✓
−4 2.	179.2	L	84.3 ✓	(9)
10 28 0.				
	138.2			
10 35 38	177.8	L	39.6 ✓	
	137.4		40.9 ✓	2.18 ✓
	178.3	R	80.5 ✓	
	137.4			
10 37 14	179.0	R	41.6 ✓	
	137.2		41.6 ✓	2.10 ✓
	178.8	L	83.2 ✓	

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1895phae.proj..529C

Sept 24, 1895

	137.6			
10 39 28	174.2	L	40.6 ✓	
	137.2		40.6 ✓	2.15 ✓
	177.8	R	81.2 ✓	
	137.6			
10 40 56	177.8	R	40.2 ✓	
10 39 19.	136.5		43.5 ✓	2.09 ✓
-4 2.	180.0	L	83.7 ✓	
10 34 11.				(10)
	137.4			
10 50 34	181.4	L	44.0 ✓	
	139.8		40.0 ✓	2.08 ✓
	179.8	R	84.0 ✓	
	139.0			
10 52 20	180.0	R	41.0 ✓	
	137.8		42.8 ✓	2.08 ✓
	180.6	L	83.8 ✓	
	138.2			
10 53 42	180.2	L	42.0 ✓	
	137.8		42.0 ✓	2.08 ✓
	179.8	R	84.0 ✓	
	139.0			
10 54 56	178.4	R	39.4 ✓	
10 52 53.	136.2		43.6 ✓	2.11 ✓
-4 2.	179.8	L	83.0 ✓	
10 48 51.				(11)

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1895phae.proj..529C

Sept 24, 1895.

			137.8			
10	56	14	179.8	L	42.0 ✓	
			136.4		42.4 ✓	
			178.8	R	84.4 ✓	2.07 ✓
			136.4			
10	57	10	179.2	R	42.8 ✓	
			137.4		41.4 ✓	
			178.8	L	84.2 ✓	2.07 ✓
			136.2			
10	58	43	178.8	L	42.6 ✓	
			137.8		40.4 ✓	2.11 ✓
			178.2	R	83.0 ✓	
			136.9			
11	0	0	177.2	R	40.3 ✓	
			136.4		42.2 ✓	2.12 ✓
10	58	2.	178.6	L	82.5 ✓	(12)
		-4 2.				
1✓	✓3	✓4.				
			135.2			
11	4	10	181.5	L	46.3 ✓	
			138.4		40.1 ✓	
			178.5	R	86.4 ✓	2.01 ✓
			138.5			
11	5	30	177.4	R	38.9 ✓	
			136.4		44.8 ✓	
			181.2	L	83.7 ✓	2.09 ✓

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1895phae.proj..529C

Sept. 24, 1895.

	137.2			
11 6 43	179.8	L	42.6 ✓	
	139.4		37.0 ✓	
	176.4	R	79.6 ✓	2.21 ✓
	138.2			
11 7 45	178.2	R	40.0 ✓	
11 6 2.	137.8		41.4 ✓	
-4 4.	179.2	L	81.4 ✓	2.15 ✓
16 1 ✓4.				(13)
	136.9			
11 9 0	179.4	L	42.5 ✓	
	137.8		40.0 ✓	
	177.8	R	82.5 ✓	2.12 ✓
	136.2			
11 10 35	178.0	R	41.8 ✓	
	137.2		42.6 ✓	
	179.8	L	84.4 ✓	2.07 ✓
	136.7			
11 11 48	179.2	L	42.5 ✓	
	137.2		42.2 ✓	
	179.4	R	84.7 ✓	2.06 ✓
	137.5			
11 12 53	179.4	R	41.9 ✓	
11 11 4.	138.6		42.0 ✓	
-4 4.	180.6	L	83.9 ✓	2.08 ✓
16 6 ✓6.				(14)

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1895phae.proj..529C

Sept. 24, 1895.

	137.4				
11 24 15	181.6	L	44.2 ✓	2.07	
	139.4		40.0 ✓	~~2.18~~	
	179.4	R	~~84.2~~ ✓		
	136.8				
11 26 12	177.2	R	40.4 ✓		
	135.4		43.8 ✓	2.07 ✓	
	179.2	L	84.2 ✓		
	137.4				
11 27 35	180.5	L	43.1 ✓		
	140.4		37.6 ✓	2.17 ✓	
	178.0	R	80.7 ✓		
	139.8				
11 29 7	177.8	R	38.0 ✓		
11 26 47	139.5		40.5 ✓	2.24 ✓	
-4 6	180.0	L	78.5 ✓		(15)
16 22 39					
	137.8				
11 31 27	181.9	L	44.1 ✓		
	138.4		40.2 ✓		
	178.6	R	84.3 ✓	2.07 ✓	
	139.2				
11 32 49	181.5	R	42.3 ✓		
	137.0		43.7 ✓	2.02 ✓	
	180.7	L	86.0 ✓		

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1895phae.proj..529C

Sept. 24, 1895.

	136.2			
11 34 46	180.9	L	44.7 ✓	
	138.2		40.0 ✓	2.06 ✓
	178.2	R	84.7 ✓	
	140.4			
11 36 20	179.2	R	38.8 ✓	
11 33 ✓0.	137.6		41.8 ✓	2.18 ✓
-4 ✓.	179.4	L	80.6 ✓	4 | 33 2.082 (16)
16 29 ✓2.				
	135.8			
11 48 57	177.8	L	42.0 ✓	
	137.2		41.6 ✓	2.09 ✓
	178.8	R	83.6 ✓	
	136.8			
11 50 0	178.4	R	41.6 ✓	
	135.2		44.0 ✓	
	179.2	L	85.6 ✓	2.03 ✓
	136.8			
11 57 38	179.8	L	43.0 ✓	
	137.2		41.8 ✓	
	179.0	R	84.8 ✓	2.06 ✓
	137.2			
11 53 27	179.2	R	42.0 ✓	
11 ✓0 ~~40~~ 20.3	136.3		42.2 ✓	
-4 ✓.	178.5	L	84.2 ✓	2.07 ✓ (17)
16 46 ✓0.				

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1895phae.proj..529C

Sept. 24, 1895.

	135.3			
11 54 45	176.8	L	41.5 ✓	
	138.8		39.8 ✓	
	178.6	R	81.3 ✓	2.16 ✓
	138.8			
11 56 20	175.6	R	36.8 ✓	
	135.0		42.8 ✓	
	177.8	L	79.6 ✓	2.21 ✓
	138.0			
11 57 58	179.8	L	41.8 ✓	
	137.4		41.4 ✓	
	178.8	R	83.2 ✓	2.10 ✓
	135.9			
12 0 0	177.8	R	41.9 ✓	
11 57 16.4	136.4		41.4 ✓	2.10 ✓
−4 2.4	177.8	L	83.3 ✓	(18)
16 53 2.4				

Star can not be followed longer; star close to horizon telescope horizontal.

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1895phae.proj..529C

Sept. 24. 1895

Expts. with Wheel Photometer.

ε Lyrae in wheel compared with γ Lyrae outside wheel. Gr. obs.

6.7	+2.7
2.1	−2.7
7.6	+3.0
4.2	−0.4
2.9	−1.7
4.3	−0.3
4.2	−0.4
4.2	−0.4
4.6	0.0
4.8	+0.2
	+5.7
10 | 47.6	−5.7

4.76 = Mean, in scale divisions.

Prob. Error. 0.32 divisions.

10/1.1 4

1.1 4 = Av. Dev.

Ballou 10 3 12 15 0.0

B+C 1182 12 22 8.0

Ballou 10 3 12 24 0.0

B+C 1182 12 28 8.0

∴ B+C. 1182 is 4m 8.0 fast.

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1895phae.proj..529C

Sept. 27, 1895.

7h 15m Cloudy.
7 30 "
8 0 "
8 30 "
8 50 "

Tried Phot. T. in order to see what effect fracture in one of the achromatic prisms had on ζ and γ Lyrae. There seems to be a secondary image when the star is in the left lower part of the field, but which disappears when the principal image is in center of field.

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Pasted to Here.

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