1899phae.proj.1359

KG
1/366
v.355

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1999plate.proj 1359.

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Feb. 10, 1899. Friday

Obeto:

2 12 - 3.6
5 20
3 08

336.5 Copied & Lodgered.
7 55.0 17.0 +0.5
336.5 39.3 -2.20
15.8 79.8

336.0 -2.15
17.5 +1.5
335.6 +1.9 -2.10
17.3 83.4

Right & Below

68.1
110.0 +1.9
67.0 +1.0 -2.11
108.0 82.9

-2.11

66.7 +0.3
7 56.0 107.0 +2.5 -2.11
66.5 82.8
109.0

7 53.5
5 +.3
12 53.8 G. M. Time.

Mean = -2.13

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2

Feb. 10, 1899

Same again

	66.3		Copied & Ledgered	
7	57.8	110.0	43.7	
		66.0	43.7	
		110.0	87.7	-4.98
		66.5		-2.02
		109.0	42.5	
		66.7	42.6	-2.05
		109.3	85.1	
			Left & Above.	
		157.2		
		197.7	40.5	
		157.2	40.1	-2.18
		197.1	80.6	
		156.4		-2.18
8	05.0	197.3	40.9	
	122.8	157.1	40.0	-2.17
8	1.7	197.1	80.9	
5	+0.3			
13	1.7	Gr. M. Time.		mean = -2.10

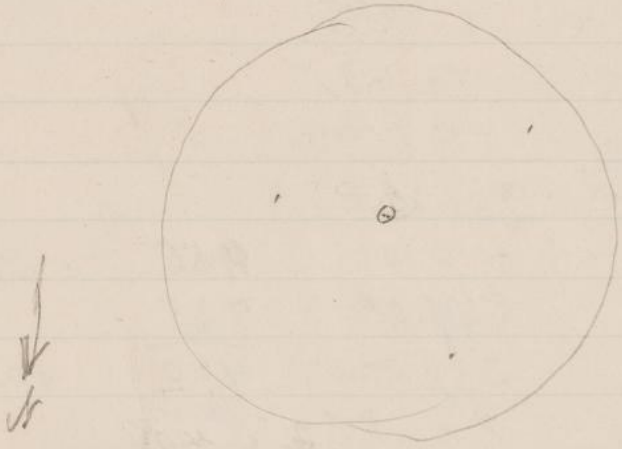
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Feb 10, 1899.

— Canis Minoris

7 39 T 4.5+
6 00
1 39
10 21



a 4 b
b 3.5 c
f 3.5 a c 4.5 d
d 3 e
e 4 f
f 3.5 g

Abandoned

Watch used on above was 19 sec. slow.

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Feb. 10 1899.

I Camera. Copied & Ledgered

8 35 +19.6
6 40
1 55
10 05
8 35
6 58
1 37
10 23

266.5
342.0 755
267.0 725
339.5 1480 +0.61
1480

267.6 -0.62
9 39 00 341.0 734
267.0 740 -0.63
341.0 1474
Right & Below

357.0
9 41 15 735 760
356.5 737 -0.58
702 1497

-0.58

9 43 30 710 745
158 37 357.0 755 -0.58
9 39 39 14 34 36 725 1500
5 - 5 -03 8 08 00
5 36 36
14 34 36 Gen Time * +0.2337 Mean = -0.60

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Feb. 10. 1899.

II.

Copied & Ledgered.

9 50.04	356.9		
	~~71.0~~ 69.5	72.6	
	357.4	72.6	-0.66⅔
	70.0	145.2	
			-0.65
9 51.40	358.1		
	71.5	73.4	
	358.0	73.5	-0.67
	71.5	146.9	
		Ldgd above	
~~10~~ 9 53	83.86		
~~10~~ 0.10	162.3	78.7	
	85.5	74.8	-0.51
	163	153.5	
			-0.54
9 55	87.5		
~~10~~ 9 52 30	162.1	74.6	
	86.2	76.0	-0.56
	162.2	150.6	
10 27			
9 52 36			
5 -5 -3			
14 47 33 Gr. M Twice.			
8 58 00			
5 49 33			
+0.2428			

Mean = -0.60

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Feb. 10 1899.

III

		86.8	Copied & Ledgered.	
10	01 03	160.0	73.2	
		87.0	73.0	−0.65
		160.0	146.2	
				−0.68
		~~88.0~~		
		88.8		
10	03 15	160.3	71.5	
		88.3	71.7	−0.71
		160.0	143.2	
			Right & Below.	
		178.0		
10	05 40	250.0	72.0	
		179.0	70.5	−0.72
		249.5	142.5	
				−0.75
		179.0		
10	07 03	249.0	70.0	
		179.0	69.5	−0.78
		248.5	139.5	

	17	1	
10	7	15	
5	−5	−3	
17	59	12	G.M.T.
8	58	00	
6	1	12	

+0.2508

Mean = −0.72

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Feb. 10 1899

	179.0		6 Spica Ledgered
10 09.00	249.6	70.6	
	179.2	69.3	-0.78
	248.5	139.9	
			-0.78
	180.0		
10 10 40	249.4	69.4	
	179.0	70.0	-0.79
	249.0	139.4	
		Left above	
	270.3		
10 14 10	339.8	69.5	
	269.2	70.0	-0.78
	339.2	139.5	
			-0.80
	269.0	68.6	
10 15 50	337.6	68.5	-0.83
	271.0	137.1	
	339.5		

Mean = -0.79

49 40

10 12 25

5 -5 -3

15 7 22 Gr M Time.

8 58 00

6 9 22

+0.2565

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1899phae.proj.1359.

Feb. 10, 1899

V

270.0 Copied & Lagrand

10	23	20	337.0	67.0	
			269.0	70.8	-0.82
			339.8	137.8	

-0.82

271.0

10	25	06	339.8	68.8	-083
			270.4	68.6	
			339.0	137.4	

Right + Bloco

358.5

10	27	20	69.5 ~~71.0~~	71.0	
			0.0	69.3	-0.77
			69.3	140.3	

-0.80

1.2

10	29	00	69.3	68.1	-0.84
	24	40	0.5	68.5	
10	26	10	69.0	136.6	
5	-5	-3			
15	21	7	Gr. M. Time.		
8	58	0			
6	23	7			

+0.2661

Mean = -0.81

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1899phae.proj.1359.

Feb.

VI

	90.0		
10 30 50	68.8	68.8	b preced & 2 subsequent
	0.0	69.1	-0.82
	69.1	137.9	
			-0.81
	359.4		
10 32 20	68.3	68.9	-0.80
	358.9	69.9	
	68.8	138.8	
		Left & above	
	89.0.8		
10 35 00	158.9	68.1	
	90.1	68.9	-0.83
	159.0	137.0	
			-0.83
	90.5		
10 37 30	159.10	68.5	
	90.0	68.7	-0.83
	158.7	137.2	

	15	40
10	33	55
5	-5	-3
15	28	52
8	58	00
6	30	52

G.M.T. mid.

Mean = -0.82

+0.2714

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1899phae.proj.1359.

Feb. 10 1899

VII

		89.0	Copied & Ledgered	
16	52 40	159.5	70.5	
		90.0	68.5	-0.79
		158.5	139.0	
				-0.82
		91.6		
10	54 25	159.3	68.3	
		89.2	68.4	-0.84
		157.6	136.7	
			Night & Below	
		180.84		
16	56 40	247.2	66.8	
		181.2	66.3	-0.91
		247.5	133.1	
				-0.93
		180.83		
16	58 15	247.5	67.2	
	22 0	181.1	67.7	-0.95
10	55 30	245.5	134.9	
5	-5 -3			
15	50 27	Gr. M. Time		
8	58 00			
6	52 27			
	+0.2865			

mean = -0.88

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1899phae.proj.1359.

Feb. 10. 1899

XIII

1822 Copied & Ledgered.

" 00 20	275.5	63.3	
	181.6	64.5	-1.03
	246.1	127.8	
			-1.02
	182.0		
" 01 40	246.3	64.3	
	181.5	64.5	-1.00
	246.0	128.8	

Left above

	274.1		
" 04 01	336.8	62.7	
	271.0	68.0	-0.96
	339.0	130.7	
			-0.97
	271.0		
" 06 35	337.0	66.0	
	272.0	64.0	-0.98
	336.5	130.0	

12 36

11 3 9

5 - 5 - 3

15 58 06 Gr. M. Time.

8 58 00

7 00 06

+0.2918

mean = - 1.00

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Feb. 10 1899

IX.

		270.7	Copied and Ledgered.	
11	09	00	336.8	64.6	
			271.6	64.6	-1.00
			336.52	129.2	
					-1.01
			272.8		
11	09	8.0	337.1	64.3	
			72.5	63.8	-1.02
			336.3	128.1	
				Left Right & Below.	
			3.0		
11	12	00	65.8	62.8	
			3.0	62.8	-1.07
			65.8	125.6	
					-1.08
			3.0		
11	14	00	65.3	62.3	
	43	30	2.6	62.4	-1.09
11	10	52	65.0	124.7	
5	-5	-3			
16	5	49	G.M.Time	Mean = -1.04	
8	58	00			
7	07	49			
	+0.2971				

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1899phae.proj.1359.

Feb. 10. 1899

X

Corrected and Adopted

		2.6		
11	17.00	65.0	62.4	
		2.7	62.8	-1.08
		65.5	125.2	
				-1.08
		2.7		
11	18 35	65.0	62.3	
		3.2	62.8	-1.08
		66.0	125.1	
			Left & Above	
		93.0		
11	21 30	154.0	61.0	
		92.8	62.2	-1.12
		155.0	123.2	
				-1.10
		92.0		
11	23 55	156.0	64.0	
	8 1 00	92.26	62.4	-1.07
		155.0	126.4	

11 20 15
5 -5 -3

16 15 12 G.M.T. time
8 58 00 Bliss & Creighton 5m Beef fast.

7 17 12

+0.8036

Mean = -1.09

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1899phae.proj.1359.

Feb. 14, 1899. (Tuesday)

R. Canis Majoris I.

7 15 -16.2
5 17
1 58
10 02

7 13 -16.2
5 30
1 43
10 17

Copied &
Ledgered.

Calc. 7 1/2 m. Preton Rt. Above

Randos. 23.0 22.0
45.0 22.9
22.4 44.9
45.3

7 50 30 -3.51

-3.48

21.7 23.7
45.5 22.5 -3.47
22.0 46.3
44.5

Left & Below

116.0 19.6
135.6 23.6 -3.60
113.4 43.2
136.0

-3.58

7 53 00

7 54 30

112.0
135.6 23.6
114.2 20.4 -3.56
134.6 44.0

7 56 00
14 00
7 53 30
5 -15
12 53 15 G.M.T. Tube

4700.5370
4700.3795
+ 1665

Mean = -3.53

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Feb 14, 1899

II.

	114.2		
7 57 20	137.2	20.0	
	113.0	22.0	-3.66
	135.0	42.0	
			-3.63
	113.0		
7 58 00	136.2	23.2	
	114.3	19.9	-3.60
	134.2	43.1	
	Right Above		
	202.0		
8 01 20	225.5	23.5	
	202.6	21.8	-3.49
	224.4	45.3	
			-3.50
	202.0	23.0	
8 02 30	225.0	22.0	-3.51
	202.5	45.0	
239 10	224.5		
7 59 48			
5 00 -15			
12 59 33 Gr. M Time.			Mean = -3.56

4700.5414
4700.3705
+0.1709

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1899phae.proj.1359.

Feb 14, 1899.

II

2027

8 04 20

225.4 22.7
202.4 22.8 - 3.48
225.2 45.5

~~-3.4~~
-3.50

202.0

8 06 00

225.4 23.4 - 3.51
203.4 21.5
224.9 44.9

Left + Below

294.4

8 08 50

315.3 20.9
294.1 22.9 - 3.57
317.0 43.8

-3.59

294.0

8 10 50

316.0 22.0 - 3.61
295.0 21.0
316.0 43.0

30 00

8 7 30

5 -15

13 7 15 Gr. M. Time

Mean - 3.54

4700.5467
4700.3705
+0.1762

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Feb. 14, 1899.

IV

8 12 20

293.8
315.7 21.6
293.9 21.1 -3.62
315.0 42.7

-3.62

8 13 40

294.5 21.0
316.0 21.5 -3.63
294.0 42.5
315.5

Right. & above.

8 16 30

23.0
47.0 21.0
22.5 22.5 -3.58
43.5
45.0

-3.57

8 17 40

22.0 21.5
44.5 22.4 -3.56
22.0 43.9
44.4

20 10

8 15 2.5
5 -15.0

13 14 47.5 G.M. Time.

Mean = -3.60

4700.5520
4700.3705
+0.1815

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Feb 14, 1899.

V.

		23.0		
8	19 30	44.3	21.3	
		22.0	22.5	-3.57
		44.5	43.8	
				-3.58
		22.2	22.4	
8	21 15	44.3	21.5	-3.58
		22.5	43.6	
		44.0		
		Left Mellow.		
		114.0		
8	23 30	134.6	20.6	
		112.7	22.3	-3.61
		135.0	42.9	
				-3.64
		113.3		
8	25 00	134.0	20.7	
	89 15	114.0	20.9	-3.68
8	22 18.8	134.9	41.6	
5	-15.0			
13	22 3.8 Gr. M. Time.		Mean = -3.61	

4700 5570
4700 3705
+0 1865

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Feb 14, 1899

VI

	115.5		
8 53 30	137.0	21.5	
	114.5	21.5	-3.61
	136.0	43.0	
			-3.61
	114.2	21.8	
8 54 45	136.0	21.1	-3.61
	113.9	42.9	
	135.0		
		Right of Above	
	202.7		
8 56 45	225.0	22.6	
		22.3	-3.51
	202.7	44.9	
	225.0		-3.50
	202.7	23.0	-3.48
	225.7	22.5	
	203.0	45.5	
	225.5		

8 58 10

23 10

8 55 47.5

5 -15.0

13 55 32.5 Gr. M Time.

4700.5803

4700.3705

+0.2098

Mean = -3.56

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1899phae.proj.1359.

Feb. 14, 1899

VII

			203.6		
8	59	15	225.2	21.6	
			202.4	23.0	-3.53
			225.4	44.6	
					-3.55
			203.0		
9	00	45	224.7	21.7	-3.57
			203.0	22.0	
			225.0	43.7	
			Left Elbow.		
9			293.7		
9	03	50	314.6	20.9	
			294.0	21.0	-3.67
			315.0	41.9	
					-3.64
			294.7		
9	05	38	316.0	21.3	-3.61
			295.0	21.7	
			316.7	43.0	
	249	28			
9	2	22			
5		-15			
14	2	07	Gr. M. Time.		mean = -3.60

4700.5848
4700.3705
+0.2143

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1899phae.proj.1359.

Feb. 14, 1899.

VIII.

	293.5		
9 07 40	315.0	21.5	
	294.2	22.2	-3.57
	316.4	43.7	
			-3.60
	294.8		
9 09 13	316.5	21.7	
	294.4	20.6	-3.64
	315.0	42.3	

Right of above.

	23.0		
9 12 00	45.0	22.0	
	23.1	22.0	-3.56
	45.1	44.0	
			-3.52
	23.5		
9 13 20	46.2	22.7	-3.48
42 13	22.2	22.8	
9 10 33	45.0	45.5	
5 15			
17 10 18 Gr. M. Time.		Mean = -3.56	

4700.5905
4700.3703
+0.2200

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1899phae.proj.1359.

Feb 14, 1899.

IX ~~VII~~

			22.2		
9	14	50	45.8	23.6	
			21.6	22.7	-3.44
			44.3	46.3	
					-3.46
			22.1	22.9	
9	16	32	45.0	22.8	-3.47
			22.7	45.7	
			45.5		
				Left of Below	
			114.2		
9	18	46	135.8	20.8	
			113.6	22.0	-3.62
			135.6	42.8	
					-3.55
			112.6		
9	20	10	135.8	23.2	
	70	18	113.4	22.7	-3.48
9	17	37.5	135.8	45.6	
5		-15.0		Mean	-3.50
14	17	19.5	Gr. M. Time		

4700.5953
4700.3705
+0.2248

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1899phae.proj.1359.

Feb 14, 1899

X

	114.0		
9 21 26	135.9	21.9	
	112,8	22.2	-3.55
	135.0	44.1	
			-3.56
	113.1		
9 22 35	135.0	21.9	-3.57
	113.0	21.8	
	134.8	43.7	
	Right. Above.		
	203,2		
9 24 50	225,2	22.0	
	203,5	22.3	-3.54
	225,8	44.3	
			-3.56
	208.5		
9 24 00	225,0	21.5	-3.57
17 51	203.0	22.2	
	225.2	43.7	
9 23 42.7			
5 -15.0			
14 23 27.7 Gr Mean		Mean = -3.56	
4700.5997			
4700.3705			
+0.2292			

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1899phae.proj.1359.

Feb. 14, 1899

XI

			202.2		
10	01	00	225.2	23.0	
			203.2	21.8	-3.52
			225.0	44.8	
					-3.57
			203.2	21.8	
96	02	10	225.0	22.0	-3.07
			203.0	43.8	
			225.0		
				Left + Below	
			293.2		
10	04	30	315.0	21.8	
			294.5	20.5	-3.64
			315.0	42.3	
					-3.68
			5.0		
			294.8	20.0	
10	06	30	315.0	20.8	-3.72
			294.0	40.8	
	14	10	314.8		
10	3	32.5		Mean = -3.61	
5		-15.0			
15	3	17.5			

4700.6273
4700.3705
+0.2568

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1899phae.proj.1359.

Oct. 14, 1899.

XII

10 07 35

2938
3150
2940
3152

21.2
21.2
42.4

-3.64

-3.64

10 08 53

294.0
3150
293.6
315.0

21.0
21.4
42.4

-3.64

Right, & above

10 10 35

22.6
45.5
23.0
45.7

22.9
22.7
45.6

-3.48

-3.50

10 11 40

23.8
46.0
23.0
45.6

22.2
22.6
44.8

-3.52

38 43

10 9 40.7
5 -15.0

10 9 25.7 Sid. M. Time

Mean = -3.57

4700.6315
4700.3705
0.2610

1899phae.proj.1359.

Feb. 14 1899

XIII

			23.2		
10	12	45	44.9	21.7	
			22.7	21.8	-3.58
			44.5	43.5	
					-3.55
			22.5		
10	13	30	44.3	22.0	-3.52
			22.2	22.7	
			44.9	44.7	
				Left Pillar	
			114.3		
10	17	35	135.2	20.9	-3.69
			114.9	20.6	
			135.5	41.5	
					-3.66
			113.8		
10	18	40	135.0	21.2	
	22	30	114.1	21.1	-3.64
10	15	37.5	135.2	42.3	
5		-15.0			
15	15	22.5 Hr M Time		Mean = -3.60	

4700.6357
4700.3705
+0.2652

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1999phae.proj.1359.

Feb 14, 1899

~~XIV~~

	115.2		
10 20 00	136.0	20.8	
	113.8	21.6	-3.64
	135.4	42.4	

-3.62

	113.9		
10 21.06	136.0	22.1	
	114.6	20.8	-3.61
	135.4	42.9	

August Observers

	203.4		
10 23 05	224.8	21.4	
	203.0	21.6	-3.61
	224.6	43.0	

-3.60

	202.3		
10 24 00	224.2	21.7	-3.58
	203.0	21.8	
8 11	224.8	43.5	

10 22 27
5 -16.0

15 21 57 Gr. M. Time.

Mean = -3.61

+700.6402
+700.3705

40.2697

1899phae.proj.1359.

Feb. 14. 1899

W. Az.

XV

10	25	15	202.5		
			224.5	22.0	
			203.5	21.5	-3.58
			225.0	+3.5	
					-3.60
10	26	20	203.3		
			224.9	21.6	
			203.7	21.1	-3.62
			224.8	+27	
				Left + Below	
10	28	30	294.0		
			315.2	21.4	
			294.1	21.7	-3.60
			315.8	+3.1	
					-3.60
10	29	54	294.2		
			315.6	21.4	
			293.2	21.8	-3.60
			315.0	+3.2	
	29	59			
10	27	29.7			
5		-15.0			
15	27	14.7	Gr. M. Time.		Mean = -3.60

4700.6440
4700.8705
+0.2265

1899phae.proj.1359.

Feb. 14, 1899.

Nova Aurigae. W 62.

5 23 + 32.0
8 45
3 22

W 5 X
X 4.8 Y
Y 2.5 Z
Z 3 α
α 3 β
β 6 γ

~~B. & C. 1182~~ ~~Wm Bond.~~

B. & C. 1182 Wm Bond.
21 30 15 21 30 00

B. & C. 15 secs. fast.

Comps. made on a.m. of Feb. 15, 1899.

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1899phae.proj.1359.

(Feby. 15. 1899.) Wednesday

Dis Jup I Phot. R. Wobsr
Colson Rec.
Cram read cir.
Compared with nearest Sat. on
following side. = Sat. II.
Chron Correction = +4 secs.

→

15	57	02	15-	√6	√5	138.0
		15		√7	11	222.0
		33			29	149.6
		40			36	217.4
		48			44	145.5
		55			√1	219.4
	58	02			√5	149.5-
		06		√8	02	210.8
		12			08	15-3.3
		18			14	207.0
		24			20	15-5.4
		31			27	202.2
		38			34	161.4
		46			42	197.6
		54			√0	168.4
	59	01			√7	196.87
		10		√9	06	166.0
		19			15-	193.3

Not seen later

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Feby. 15, 1899.

~~32~~		~~162.4~~		
~~42~~		~~193.7~~		
49		168.3		
58	246"	193.23		Limit
16 00 04 + 16 00 07	220"	~~170.0~~		of Vis.
~~14~~	23.3"	~~190.6~~		
16 00 08 24		192.0		

B. & C. 1122

16.	15	56.2
	16	56.0

B. 394.

16	16	00
	17	00

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1899phae.proj.1359.

Feb. 20, 1899 (Monday.)

Obs etc. Phot N.

2 12 -3.6 N. Obs.
5 35
3 23 Cop. & Lodg.

Left above.

7 35.0

342.9
30.4 47.5
342 3 48.2
30.5 95.7 -1.76

342.3 -1.78
30.0 47.7
342.2 47.0
29.2 94.7 -1.79

Right & Below.

71.6
120.4 48.8
72.0 48.0
120.0 96.8 -1.77

72.4 -1.75
120.0 47.6
72.0 48.1
120.1 95.7 -1.76

7 41.7
76.7
7 39.3
5 +1
12 39.4 G.M.T. Time.

Means -1.76

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1899phae.proj.1359.

Feb. 20, 1899

Same again.

Left of Zero.

72.2
120.8 48.6
72.0 48.0 -1.74
120.0 96.6

73.0 -1.78
120.0 47.0
72.2 48.8
121.0 95.8 -1.76

Left of Above.

162.2
210.2 48.0
162.2 47.6
209.8 95.6 -1.77

-1.77

162.3
209.6 47.3
162.1 48.0 1.77
209.1 95.3

7 43.5

7 50.1

93.6

7/5 46.8

12 46.9 Mean time.

Path used on Q left 8 sec. slow.

mean = -1.76

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1899phae.proj.1359.

Feb. 20, 1899.

Phot. 7.

R. Canis Majoris W. obs.

7 1.5 -16.2

6 30.

45

Plus obs. copied & ledgered

0

11 15

Cake 9½ in used I.

22.4

8 21 12 Var. dies. > 45.2 22.8

22.0 24.0 -3.42

46.0 46.8

-3.41

21.9 24.3

8 22 45 46.2 22.8 -3.40

22.2 47.1

45.0

Left & Below.

113.8

8 25 20 134.6 20.8 -3.60

113.3 22.4

135.7 43.2

-3.60

114.2

8 28 15 136.0 21.8 -3.59

114.7 21.5

136.2 43.3

17 32

8 24 23

5 .43

13 23 40 G.M. Time Mean = -3.50

4706.5581

4706.0467

+0.5114

1899phae.proj.1359.

Feb. 20. 1899.

Left Below II

8 30 : 3.0

114.2
136.0 21.8
113.8 220 -3.57
135.8 +3.8

3.
-3.56

8 31 45

113.0
136.2 23.2
114.4 21.1 -3.54
135.5 44.3

Right Above.

8 34 20

203.0
225.2 22.2
201.7 23.5 -3.47
225.2 45.7

-3.46

8 36 25

201.8 23.6
225.4 22.7 -3.44
202.6 46.3
225.3

13 00
8 37 15
5 - 43
13 33 32 Gt M Time

Mean = -3.51

4706.5650
4706.0467
+0.5183

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1899phae.proj.1359.

20

Feb. 14. 1899.

III

		202.1		
8	40	10	225.8	23.7
			201.8	23.8
			225.6	47.5
			~~26~~	
			201.4	
8	41.	12	225.3	23.9
			202.7	22.5
			225.2	46.4

Left & Below

			292.5	
8	44	40	314.6	22.1
			293.0	22.5
			315.5	44.6

			293.2	22.8
8	46	36	316.0	22.8
			292.4	45.6
			315.2	

		12	38	
8		43	9.5	
5			43.0	
13		42	26.5	Sidereal Time.

-3.39		
-3.42		
-3.44		
-3.53		
-3.50		
-3.48		
Mean = -3.46		

4706.5711
4706.0467

+0.5244

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1899phae.proj.1359.

Sept 20, 1899

IV

8 48 20

292.5
315.1
293.0
315.8

22.6
22.8
45.4

- 3.49

- 3.53

8 49 40

293.4
315.0
292.8
314.8

21.6
22.0
43.6

- 3.57

Right of Above

8 58 00

23.0
45.5
22.6
45.8

22.5
23.2
45.7

- 3.47

- 3.44

8 54 30
205 30
8 51 22
5 -43

22.8
46.4
23.2
46.9

- 3.41

13 50 39 Gr M Time

mean = - 3.48

4706.5770
4706.0467
+0.5303

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1899phae.proj.1359.

Feb. 20 1899.

V

22.2
45.5 23.3
22.0 23.0 −3.44
45.0 46.3

−3.42

8 55 12

21.8
45.5 23.7
21.8 23.5 −3.40
45.3 47.2

8 57 40

Left Below

113.0
135.6 22.6
113.4 21.8 −3.37
135.2 44.4

8 00 40

−3.53

113.3
135.4 22.1
113.3 22.7 −3.52
136.0 44.8

8 02 18

235 50
8 58 57.5
5 43.0

13 58 14.5 G.M.Time.

4706.5820
4706.0467

+0.5353

mean = −3.48

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1899phae.proj.1359.

Feb. 20, 1899

VI

9 13 05	114.3			
	135.6	21.3		
	113.8	21.2	-3.63	
	135.0	42.5		
				-3.61
9 14 35	113.8	21.2		
	135.0	22.2	-3.59	
	114.0	43.4		
	136.2			
	Right Diaphragm above			
9 17 05	203.0			
	225.8	22.8		
	203.2	22.8	-3.48	
	226.0	45.6		
				-3.50
	203.2			
9 18 25	225.2	22.0		
	202.8	22.7	-3.52	
	225.5	44.7		

23 00

9 15 47.5

5 43.0

14 15 4.5 Gr. M. Time

Mean = -3.56

4706.5938

4706.0467

+0.5471

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1899phae.proj.1359.

Feb. 20 1899

VII

9 19 30

203.4
223.6 22.2
203.0 22.0 - 3.53
225.0 44.2

- 3.54

9 20 45

203.1
223.6 22.5
203.0 22.0 - 3.53
225.0 44.5

Left + Below

9 23 00

298.7
315.5 21.8
293.2 22.2 - 3.56
315.4 44.0

- 3.56

9 24 00

87 15

9 21 48.7
5 -43.0

14 21 5.7 Gr. M. Time

4706.5980
4706.0467

+0.5513

294.0
315.8 21.8
293.2 22.1 - 3.56
315.3 43.9

Mean = - 3.55

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1899phae.proj.1359.

Feb. 20, 1899.

VIII

293.5
315.6 22.1
293.8 21.5 − 3.58
315.3 43.6

− 3.58

2942 21.8
316.0 21.5 − 3.59
293.5 43.3
315.0

9 25 00

9 26 20

Right above.

23.2
45.7 22.5
22.8 23.2 − 3.47
46.0 45.7

− 3.47

22.5 23.5
46.0 − 3.43
23.0 23.0
46.0 46.5

9 28 00

9 29 10
28 30
9 27 7.5
5 43.0
14 26 24.5 G.M. Time

mean = −3.52

4706.6017
4706.0467
+0.5550

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1899phae.proj.1359.

Feb. 20, 1899.

IX.

			223.4		
9	30	40	46.2	22.8	
			22.7	23.3	-3.45
			46.0	46.1	
					-3.42
			22.3	23.8	
9	32	20	46.1	23.3	-3.40
			22.3	47.1	
			45.6		
			Left & Below.		
			114.8		
9	35	40	136.2	22.2	
			114.0	22.0	-3.55
			136.0	44.2	
					-3.55
			113.8		
			136.0	22.2	
			113.8	22.0	-3.55
			135.8	44.2	

9	36	40	
	15	20	
9	33	50	
5		43	
14	33	7	Gr. M. Time.

Mean = -3.48

4706.6063
4706.0467
+0.5596

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1899phae.proj.1359.

Feb. 20 1899

X

9 38 50

114.0
135.6 21.6
114.0 21.0 -3.63
135.0 42.6

-3.62

9 40 00

114.0
135,8 21.2
114.0 22.0 -3.60
136,0 43.2

Right as above.

9 41 35

203.0
226.5 23.5 3.44
203.0 22.8
225,8 46.3

-3.48

9. 42 50

2031
2257 22.6 -3.53
204.0 22.0
226,0 44.6

163 85
9 40 48.7
5 -43.0
14 40 5.7 Gr. M. Time.

Mean = -3.55

4706.6112
4706.0467
+0.5645

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1899phae.proj.1359.

Feb. 20 1899

Caps taken off Full apertures used

XI

202.2

9 46 40

225.7 23.5

202.8 23.5 -3.41

226.3 47.0

-3.46

203.2 22.7

9 47 45

225.6 22.6

203.0 45.0 -3.51

225.6

Lelo + Below

293.0

9 49 40

315.3 22.3

293.6 22.1 -3.54

315.7 44.4

-3.57

293.5

9 50 50

316.0 22.5

293.8 21.7 -3.55

315.5 44.2

194 55

9 48 43.7

5 43.0

14 48 0.7 Ga. Mean.

Mean = -3.50

4706.6167

4706.0467

+0.5700

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1899phae.proj.1359.

Feb 20, 1899.

XII.

292.8
315.8 — 23.0
293.4 — 22.0
315.4 — 45.0 — -3.51

-3.52

293.7
316.0 — 22.3
293.8 — 22.3
316.1 — 44.6 — -3.53

Right ascension

9 53 00

232
45.4 — 22.2
23.0 — 22.2
45.2 — 44.4 — -3.54

-3.52

9 54 20

22.5
45.2 — 22.7
22.5 — 22.5
45.0 — 45.2 — -3.50

9 57 00

20 10

9 55 2.5
5 43.0

14 57 29.5 Sp. M. Time.

Mean = -3.52

4706.6212
4706.0467
+0.5745

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1899phae.proj.1359.

Feb. 20, 1899

XIII

			23.5		
10	18	27	46.2	22.7	
			23.6	22.4	-3.50
			46.0	45.1	
					-3.48
			23.2		
10	19	45	46.0	22.8	
			22.8	23.0	-3.47
			45.8	45.8	
			Left D Before		
			114.0		
10	21	30	135.9	21.9	
			112.9	23.1	-3.51
			136.0	45.0	
					-3.53
			112.3		
10	23	10	134.3	22.0	-3.55
	82	52	113.2	22.1	
10	20	43	135.3	44.1	
15	20	00	Gr. M Trans.	Mean = -3.50	

4706.6389
4706.0467
+0.5922

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1899phae.proj.1359.

Feb. 20 1899

XIV

	113.2		
10 27 20	135.2	22.0	
	113.0	21.8	- 3.57
	134.8	43.8	

- 3.53

	112.3		
10 25 40	135.2	22.9	
	117	22.4	- 3.49
	136.1	45.3	

Right & above

	203.0		
10 27 50	225.7	22.7	
	203.2	22.2	- 3.52
	225.4	44.9	

- 3.50

	203.0		
	225.2	22.2	
	202.5	23.1	- 3.49
	2256	45.3	

10 28 55

26 45

10 26 41.

5 43

15 25 58. Gr. M. Time.

Mean = - 3.52

4706.6430

4706.0467

+0.5963

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1899phae.proj.1359.

Feb. 20 1899

XV

	203.3			
10 30 40	225.8	22.5		
	203.5	22.1	− 3.53	
	225.6	44.6		
				− 3.54
	203.2	22.0		
10 32 20	225.2	22.2	− 3.53	
	202.8	44.2		
	225.0			

Left of Below

	293.6			
10 34 25	315.6	22.0		
	294.0	21.8	− 3.57	
	315.8	43.8		
				− 3.56
	293.4			
10 35 45	315.4	22.0		
	293.3	22.1	− 3.55	
	315.4	44.1		

13 10

10 34 17.5

5 −43.0

15 33 34.5 G.M.T. mean

Mean = − 3.55

4706.6483

4706.0467

+0.6016

1899phae.proj.1359.

Feb. 20, 1899.

~~XXI~~.

10 37 00

293.5
314.7 21.2
293.0 22.3 - 3.5P
315.3 43.5

- 3.56

10 39 40

293.0
315.0 22.0
293.0 22.1 - 3.5~~5~~
315.1 44.1

Right to above.

10 41 50

23.0
45.0 22.0
22.0 22.2 - 3.5~~5~~
44.2 44.2

- 3.52

10 43 35

22.0
44.8 22.8
22.1 22.8 - 3.48
44.9 45.6

Mean = - 3.54

10 16 20 05
10 40 51
5 43
15 40 08 G.M.T. Time.
4706.6528
4706.0467
+0.6061

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1899phae.proj.1359.

Feb. 20, 1899.

XVII

10 45 10

10 46 35

10 48 30

10 49 30

29 45
10 47 26
5 43
15 40 43

4706.6581
4706.0467
+0.6114

23.7
46.0 24.7
22.6 23.2 −3.37
45.8 47.9

−3.46

23.0
45.3 22.3
23.1 22.1 −3.34
45.2 44.4

Left & Below.

113.0
135.4 22.4
113.1 21.9 −3.34
135.0 44.3

−3.52

113.3
135.6 223
114.0 22.6 −3.51
136.6 44.9

Mean = −3.49

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1999phae.proj.1359.

Feb 20 1899

XVIII

	114.1		
10 5 00	136.5	22.4	
	113.3	22.9	- 3.49
	136.2	45.3	
			- 3.53
	113.5		
10 5 15	135.8	22.3	
		21.7	- 3.47
	114.0	43.7	
	135.4		
		Right as above	
	203.0		
10 5 5 15	225.6	22.6	
	202.5	22.5	- 3.50
	225.0	45.1	
			- 3.50
	202.6		
	225.0	22.4	
10 5 6 10	202.8	22.9	- 3.49
	225.7	45.3	

	19	20
10	54	35
5		43
15	53	52 — Gr. Mt. time

Mean = - 3.52

4706.6624
4706.0467
+0.6157

1899phae.proj.1359.

Feb. 20 1899.

~~XXX~~

XXX

10 57 50

203.0
~~225.0~~ 22.0
203.0 22.0 - 3.56
~~225.0~~ ~~44.0~~

- 3.52

203.02
226.0 22.3
203.0 22.4 - 3.52
225.4 44.7

Left & Below

10 58 30

293.0
315.3 22.3
293.6 22.0 - 3.54
315.6 44.3

11 00 18

- 3.56

293.5
315.1 21.6
293.2 22.0 - 3.58
315.2 43.6

Mean - 3.55

11 01 22

238 00
10 59 50
5 43

15 59.7 G. M. Tuttle

4706.6661
4706.0467

+0.6194

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1899phae.proj.1359.

Feb. 20, 1899

XX

	292.8			
11 02 20	315.0	22.2		
	293.0	22.0		
	315.0	44.2	-3.55	
	292.8	22.4		-3.54
	313.2			
11 03 30	292.9	22.1	-3.53	
	315.0	44.5		
	Bright Arcs			
	23.1			
01 05 10	45.0	21.9		
	23.0	21.8	-3.57	
	44.8	43.7		
				-3.55
	23.0			
11 06 12	44.9	21.9	-3.53	
	23.4	22.6		
17 12	45.0	44.5		
11 04 18				
5 43		Mean =	-3.54	
16 03 35 Th m Tim e.				

seeing 8, 8, 7.

4706.6692
4706.0467
+0.6225

Bliss + Creighton (1182) 11 18 43

Rond 11 18 00

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1899phae.proj.1359.

9.

Wednesday Feby 22. 1899

Dis. Jup. I. Phot. R.

Compared with first set. } W. Obsr.
on following side = set. } Colson. Rec.
II. Seeing good. } Crum read cir.

Chron. Corr = − 45 secs.

17 42 35	17	42 23		139.0
−45		32	88.2	227.2
17 41 50		38	92.0	136.6
		47	90.1	228.6
		54		137.0
43 04	43	01	96.3	233.3
−45		07	98.6	140.0
42 19		15	97.4	238.6
		23		140.9
43 35		30	94.6	235.5
−45		40	88.9	140.5
42 50		46	91.8	229.4
		56		138.4
44 07	44	02	90.6	229.0
−40		10	82.9	141.5
43 27		19	86.8	224.4
		36		143.8
44 43		33	81.2	225.0
−40		~~40~~	86.6	
48 58		47	83.9	140.4

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Feby 22, 1899

	56		227.0
45′	03		141.1
40⁻ 10⁻	11	82.6⁻	223.7
-40⁻	20	79.7⁺	142.7
44 30⁺	27	81.2⁻	222.4
	34		141.8
40⁻ 44⁺	40	82.6⁻	224.4
-40⁻	47	83.0⁺	144.0
44 59⁺	54	82.8⁻	227.0
46 01			142.8
46 13⁺	09	79.6⁻	222.4
-40⁻	17	78.0⁺	143.4
40⁻ 28⁺	25⁻	78.8⁻	221.4
	33		145.4
46 44⁺	40	77.1⁻	222.5⁻
-40⁻	47	80.8⁺	141.9
40⁻ 59⁺	55⁻	81.4⁻	227.7
47 03			143.4
47 12⁺	09	82.1⁻	225.5⁻
-40⁻	16	79.6⁺	144.4
46 27⁺	21	80.8⁻	224.0
	32		146.0
47 44⁻	39	77.5⁻	223.5⁻
-40⁻	48	79.1⁺	145.3
46 59⁺	55⁻	78.3⁺	224.4
48 03			146.2
48 18⁻	11	77.2⁻	223.4
-43⁻	18	79.9⁺	141.9
47 33⁺	25⁻	78.6⁺	145.5⁻

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July 22. 1899

	33		225.4
48 05.4	41		146.5
-45	50	76.7	223.0
48 09	58	80.9	144.8
	49 05	78.8	225.7
			140.6
49 30	18		142.1
-45	26	80.5	222.6
48 45	33	79.6	145.4
	42	80.0	225.0
	49		145.9
50 00	57	78.7	224.6
-45	50 03	80.5	143.0
49 15	10	79.6	223.5
49 34	19		144.6
41	26		222.6
48	33		144.8
06	41		221.2
50 02	47		151.7
10	55		222.0
16	51 01		145.9
26	11		219.0
35	20		147.9
42	27		150.2
51	36		153.3
56	41		212.9
51 02	47		156.6
08	— 53		210.4
14	59		157.7
20	52 05		207.0

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Feby 22. 1899.

51 26		11	161.1
31		16	205.0
37		22	163.6
43		28	201.2
49		34	165.4
54		39	195.9
52 00		45	167.9
09		54	195.2
19	53	04	172.3
26		11	190.4
		19	168.0
42		27	171.4
51		36	191.8

Not seen later
Limit of visibility

54 06		50	174.6
45	54	00	166. 191.2
5321		11	18.1 173.9
		21	17.4 192.0

Seeing 2. 2. 7.

B. + C. 1142.

10	8	47.4	
	9	47.3	

B. 394.

10	8	0.0
	9	0.0

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1899phae.proj.1359.

Feb 23, 1899. (Thursday)

O. Ceti. Phot. R. (W. obs.)

2 12 -3.6

6 05

3 53

Copied & Ledgered. Right & Below

247.2

299.1 51.9

248.0 51.0 -1.59

299.0 102.9

248.0 -1.62

297.0 49.0

245.3 51.8 -1.64

297.1 100.8

Left & Above

339.1

27.1 48.2

337.5 51.4 -1.67

28.9 99.6

-1.65

337.0

27.2 50.2

338.5 50.7 -1.63

27.2 100.9

Mean = -1.64

7 435

7 47.5

11.0

7 485

5

12 405 Ph. M. Times.

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1899phae.proj.1359.

Feb. 23, 1899.

Same again.

Copied and Ledgered.

7 48.2		
336.4		
29.0	52.6	
336.1	52.7	-1.53
28.8	105.3	
		-1.61
336.8	50.0	
26.8	48.7	-1.69
339.5	98.7	
28.2		

Right & Below

71.5		
116.5	45.0	
66.8	46.0	-1.89
112.8	91.0	
		-1.78
66.5		
112.8	46.3	
65.5	53.0	-1.67
118.5	99.3	

Mean = -1.70

7 52.0

100.2

7 50.1

5

12 50.1 Grinnell Water used correction = 0.

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1899phae.proj.1359.

Feb. 23, 1899

Phot. T.

R. Cen. Magnis

7 1.5 -16.2
6 24 all these obs.
0 40 Projected and
11 20 Ledgered.

Full apr. used.

2020

8 08 30 225.1 23.1
2018 23.5 -3.48
225.3 46.6

-3.47

8 09 35 202.7
225.0 22.3 -3.51
202.5 22.6
225.1 44.9

Left Below

2938
8 11 45 316.0 22.2 -3.57
294.0 21.6
315.6 43.8

-3.60

294.0
8 12 50 315.5 21.5
41 40 294.1 21.1 -3.63
315.2 42.6

8 10 25 4709.5484
5 - 45 4709.4347
13 09 40 Gr. m Time 3.7

Mean = -3.54

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1899phae.proj.1359.

Feb. 23/1899

II

		293.0		
P	14 25	314.5	21.5	
		293.4	22.4	-3.56
		315.8	43.9	
				-3.58
		295.0		
8	15 40	316.4	21.4	-3.59
		294.0	22.0	
		316.0	43.4	
			~~Rej~~ Right + Above.	
		21.8		
P	17 40	44.9	23.1	
		22.0	23.1	-3.45
		45.1	46.2	
				-3.46
		22.0		
P	19 00	45.9 ~~45.9~~	23.9	
	26 45	23.0	21.8	-3.47
P	16 41	44.8	45.7	
5	-45			
	13 15 56 Gr. M. Time.		Mean = -3.52.	

4709.5527
4709.4347
+0.0980

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1899phae.proj.1359.

Feb 23, 1899

II

8 20 12

22.4
43.8 21.7
22.2 22.0
44.2 43.7 -3.59

8 21 33

22.0 -3.57
44.4 22.7
22.5 21.7 -3.53
44.2 44.1

Left & Below

8 23 30

114.4
135.6 21.2
114.0 21.7 -3.61
1357 42.9

-3.60

8 24 10

114.2
136.0 22.8
115.0 20.8 -3.58
135.8 43.6

9 55

8 22 29

5 -45

13 21 44 Gr. M. Time

Mean = -3.58

4709.5567
4709.4547
+0.1020

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1899phae.proj.1359.

Feb. 23, 1899

IV

		115.1		
P	27 30	135.2	20.1	
		113.8	22.0	- 3.65
		135.8	42.1	
		115.4		- 3.70
P	29 50	135.6	20.2	
		115.1	20.1	- 3.78
		135.2	40.3	

Result above.

		204.2		
P	31 30	225.9	21.7	
		204.1	21.2	
		225.3	42.9	- 3.61
		204.2		- 3.66
P	32 30	224.4	20.2	
	121 10	203.5	20.9	- 3.71
P	30 17	224.4	41.1	
5	-45			

13 29 32 G.M. Time

Mean = - 3.68

4709.5622

4709.4547

+0.1075

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1899phae.proj.1359.

Feb. 23, 1899.

V.

			203.5		
8	39	40	225.6	22.1	
			204.0	21.2	-3.59
			223.2	43.3	
					-3.62
			204.0		
8	41	05	223.1	21.1	
			204.0	21.0	-3.65
			225.0	42.1	
			Left 8° Below.		
			293.6		
8	43	00	317.5	20.9	
			293.8	21.7	-3.63
			315.5	42.6	
					-3.65
			294.4		
8	44	40	315.4	21.0	
			293.0	20.9	-3.67
			313.9	41.9	
	168	25			
8	42	06			
5		-45			
13	41	21	Gr. M. Time		

4709.6704
4709.4547
+0.1157

Mean = -3.64

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1899phae.proj.1359.

Feb. 23, 1899.

VI

		294.0		
8	47	08	314.8	20.8
			294.0	21.8 — 3.63
			315.8	42.6
			>	
			294.6	— 3.62
8	49	55	316.0	21.7
			298.3	21.7 — 3.60
			315.0	43.1

Rigel to Above.

		23.2		
8	52	05	44.8	21.6
			23.0	22.0 — 3.58
			45.0	43.6

		23.2		— 3.62
8	53	35	44.2	21.0
			23.1	21.0 — 3.66
			44.1	42.0

	202	43
8	50	41
5		— 45
13	49	56 Gr. M Time.

Mean = — 3.62

4709.5763
4709.4547
+0.1216

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1899phae.proj.1359.

Feb. 23, 1899

VII

8 56 00

23.1
42.6
22.5
44.2

21.5
21.7
43.2

-3.60

8 57 15

22.4
44.8
22.0
44.2

22.1
22.2
44.3

-3.57
-3.54

8 59 40

Left of Below

115.2
135.6
114.2
135.8

20.7
21.6
42.0

-3.66

9 00 50

233 45

8 58 26
5 -45

13 57 41 Gr. M. Time

1143
1358
1150
1357

21.5
20.7
42.2

-3.66
-3.65

Mean = -3.62

4709.5817
4709.4547
+0.1270

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1899phae.proj.1359.

Feb 23, 1899

VIII

9 04 30

115.0
136.0 21.0
114.5 21.5 − 3.63
136.0 42.5

− 3.64

9 05 45

114.0
135.3 21.3
115.0 21.0 − 3.64
136.0 42 3

Right above

9 07 25

203.8
225.3 21.5
203.2 21.8 − 3.59
225.0 43.3

− 3.62

9 08 50

203.8
225.0 21.2
204.0 21.0 − 3.63
225.0 42.2

Means = − 3.63

26	30	
9 5 6	32	
	45	
14 5	47	Yr. Means

Bessel 1182

Bond & Son.

9 13 45.0
9 14 45.3

9 13 00
9 14 00

4709.5874
4709.4547
+0.1327

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1899phae.proj.1359.

Feb. 23, 1899

~~IX.~~

9 29 10

203.0
224.2 21.2
203.3 21.9 -3.60
225.2 43.1

-3.58

9 30 45

203.4
225.1 21.7 -3.56
203.0 22.2
225.2 43.9

Left Below

9 32 40

293.0
314.0 21.0
292.8 22.2 -3.60
315.0 43.2

-3.56

9 35 00

292.5
315.5 23.0 -3.52
293.0 21.8
314.8 44.8

Mean = -3.07

127 35

9 31 54
5 -45

14 31 09 Gr. M. Time

4709.5050
4709.4547
+0.1503

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1899phae.proj.1359.

Feb 23, 1899.

X

9 37 00

29 35
31.4
29 3.8
31 5.0

21.3
21.2
42.5

- 3.63

- 3.63

9 38 40

29 3.6
31 5.8
29 4.7
31 5.0

22.2
20.3
42.5

- 3.63

Rigelt

9 40 50

23.0
44.5
23 2
44.6

21.5
21.7
42.9

- 3.61

- 3.59

22.5
44.2
22.5
44.6

21.7
22 1
43.8

- 3.57

Mean = - 3.61

9 42 20

158 50

9 39 42

- 42

14 39 00 Sa. M. Time

4709.6104
4709.4547
10-1557

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1899phae.proj.1359.

Feb. 23, 1899.

XI.

			23.0			
9	43	50	45.0	22.0		
			23.0	22.2	-3.55	
			45.2	44.2		
					-3.52	
			22.2			
9	421	50	45.3	23.1 *	-3.50	
			23.3	22.0		
			45.3	45.1		
			Left & Below.			
			114.2			
9	47	00	135.4	21.2		
			113.8	21.6	-3.62	
			135.4	42.8		
					-3.60	
			113.4			
9	48	20	135.5	22.1		
	24	00	114.0	21.2	-3.59	
9	46	00	135.2	43.3		
5		42				
14	45	18	Gr. M. Time		Mean = -3.56	

4709.6148
4709 4574
+0.1601

1899phae.proj.1359.

Feb. 23, 1899.

XII

		114.2		
9	57	45	136.0	21.8
			113.5	23.1
			136.6	44.9
				-3.51
		114.0		
				-3.55
9	53	20	136.3	22.3
			114.8	21.1
			135.9	43.4
				-3.59

Right Ascension

		203.3		
9	55	30	225.4	22.1
			204.0	21.3
			225.3	43.4
				-3.59
				-3.58
		204.0		21.4
9	56	33	225.4	21.2
			204.0	43.6
			225.2	
				-3.58

	17	10	
9	54	17	
5		40	
14	53	37	Gr. M. Time.

Mean = -3.56

4709.6205
4709.4547
0.1658

1899phae.proj.1359.

Feb. 23, 1899

XIII.

9	58	00	204.0		
			225.0	21.0	
			202.5	21.8	-3.62
			224.3	42.8	
					-3.64
9	59	04	203.0		
			224.4	21.4	-3.67
			203.8	20.5	
			224.3	41.9	
			Left & Below.		
10	01	15	293.8		
			314.3	20.5	
			293.4	22.1	-3.63
			315.5	42.6	
			293.2		-3.62
10	02	33	315.2	22.0	
			293.0	21.2	-3.60
			314.2	43.2	
	240	54			
10	00	13			
5		-40			
14	59	33	Yr. M.T. mine.	Mean = -3.63	

4709.6247
4709.4547
0.1700

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Feb. 23, 1899.

XIV

		293.85		
10	04 00	314.6	21.0	
		293.2	22.1	-3.60
		315.3	43.1	
		293.4		-3.62
10	05 25	314.7	21.3	
		293.0	21.0	-3.64
		314.0	42.3	
		Right & above		
		23.8		
10	07 50	45.3	21.4	
		23.0	22.3	-3.57
		45.3	43.7	
				-3.57
10	09 35	23.0		
	26 50	45.0	22.0	-3.57
10	4 42	22.5	21.8	
5	-40	45.3	43.8	
15	4 02 Sid. Time.			
4709.6278				
4709.4547				
0.1731				

Mean = -3.60

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1899phae.proj.1059

74

Feb. 23, 1899.

XV.

23.5

10	17	25	
		45.2	21.7
		23.2	22.3
		45.5	44.0

-3.56

10	12	50	
		23.1	
		44.8	21.7
		23.0	22.0
		45.0	43.7

-3.57

Left to Below.

10	15	20	
		114.0	
		135.8	21.8
		114.1	20.9
		135.0	42.7

-3.62

10	16	50	
		113.8	
		135.2	21.2
		115.0	21.0
		136.0	42.2

-3.64

-3.65

	16	25	
10	14	06	
5		-40	
15	13	26	Gr. M. Time.

Mean = -3.60

4709.6343
4709.4547
+0.1796

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1999phaer.proj.1350.

Feb 23, 1899.

XVII.

	114.0		
C O 19 50	136.0	22.0	
	114.0	21.4	- 3.59
	135.4	43.4	
			- 3.61
	113.5		
C O 21 40	133.0	21.5	
	114.0	21.0	- 3.63
	135.0	42.5	

Right to Above.

	203.8		
C O 23 45	225.3	21.5	
	204.0	21.2	- 3.62
	225.2	42.7	
			- 3.63
	204.0		
C O 25 00	225.0	21.0	- 3.64
9.0 15	204.0	21.3	
	225.3	42.3	

10 22 37
5 - 40

15 21 57 Gr. M Time.

Mean = - 3.62

4709.6402
4709.4547

40.1855

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1899phae.proj.1359

Feb. 23, 1899.

XVII.

10	27	00	208			
			225.0	21.2		
			204.1	21.2		
			225.3	42.4		-3.64
			204.3			-3.64
10	28	00	225.2	20.9		
			204.0	21.2		-3.65
			225.2	42.1		
			Left & Below.			
			293			
10	30	60	315.0	21.9		
			294.2	20.9		-3.62
			315.1	42.8		
						-3.62
			294.4	20.9		
10	31	07	315.3	21.6		-3.63
			293.2	42.5		
			314.8			
	116	07				
10	28	32				
5		-40				
15	28	52	G.M. Time			
			Mean = -3.63			

4709.6450
4709.4547
+0.1903

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1899phae.proj.1359.

Feb. 23, 1899

XVIII

			293.0		
10	33	35	315.0	22.0	
			294.0	21.2	-3.60
			315.2	43.2	
			293.5	21.5	-3.60
10	34	35	315.0		
			293.1	21.9	-3.59
			315.0	43.4	

Right above.

			23.0		
10	36	10	45.0	22.0	
			23.6	21.5	-3.58
			45.1	43.5	
			23.8	21.5	-3.60
10	37	10	45.3	21.5	-3.61
			23.6	43.0	
			45.1		

Mean = -3.60

	21	30
10	35	22
		40
13	34	42

Gr. M. Time.

4709.6491
4709.4547

+0.1944

1899phae.proj.1359

Feb. 23, 1899.

XIX

			23.80			
10	40	15	45.7	22.7		
			23.3	21.8	-3.53	
			45.1	44.5		
			23.0		-3.55	
10	41	10	45.0	22.0		
			23.2	21.8	-3.57	
			45.0	43.8		
			Left of Below.			
			113.8			
			136.0	22.2		
10	43	20	114.0	22.1	-3.54	
			136.1	44.3		
			114.0		-3.58	
10	45	10	135.0	21.0		
			114.5	21.7	-3.62	
			136.2	42.7		
	9	55				
10	42	29				
5		-40				
15	41	49	Sid. M. Time.		Mean = -3.56	

4709.6541
4709.4547
+0.1994

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1899phae.proj.1359.

Feb. 23 1899.

XX

	114.2		
10 48 35	136.2	22.0	
	113.3	22.2	- 3.55
	135.5	44.2	
			- 3.58
	117.0	21.7	
10 49 35	135.4	21.8	- 3.60
	114.2	43.2	
	136.0		

Right & Blow

	203.3		
10 52 10	225.2	21.9	
	203.0	22.1	- 3.56
	225.1	44.0	
			- 3.58
	203.5	21.6	
	225.1	21.5	- 3.60
	203.7	43.1	
	225.2		

10 53 30
203 50
10 50 52
5 - 40
15 00 12 Sr. M Tues a.

Mean = - 3.58

4709.6598 Bliss + 20 neighbors
4709.4547
+ 0.2051

11	05	40.0
11	06	39.5
11	07	39.0

Bond & Son.

11	05	00
11	06	00
11	07	00

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1899phae.proj.1359.

Feb. 24/1899 (Friday)
Phot 1
R. Can. Majoris (Wolf.)

7 15	7 15	-16.2	
6 05	6 00		I
1 10	1 15		
22 50	22 45	These obs. copied and ledgered.	

Full aperture

339.5		
4.3	24.8	
340.1	22.9	-3.38
3.0	47.7	
		-3.32
338.0		
2.6	24.6	-3.26
338.0	25.6	
3.6	50.2	

Left & Below

69.0		
94.0	25.0	
71.0	21.0	-3.46
92.0	46.0	
		-3.17
71.0		
92.5	21.5	
68.4	25.2	-3.42
93.6	46.7	

Mean = -3.38

7 39 30

7 40 33

7 42 15

7 43 15

16735

7 41 24

5 -29

12 40 55 Mn. Time

4710.5284
4709.4547

+1.0737

1899phae.proj.1359.

Feb. 24, 1899.

II

7 45 00

69.8
94.0 24.2
71.0 22.0
93.0 46.2 − 3.45

7 46 00

705 −3.47
92.0 21.5
69.2 23.8 − 3.49
930 45.3

Right & above.

7 47 35

159.1
183.2 27.1
160.0 22.6 − 3.42
182.6 46.7

−3.42

7 48 35

160.6
182.3 22.3 − 3.43
159.0 27.2
183.2 46.5

Mean = − 3.44

27 10

7 44 49

5 − .29

12 44 20 Sometimes

4710.5308
4709.4547

1.0761

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1899phae.proj.1359.

Feb. 24 1899

III

	158.6		
7 50 00	184.0	25.4	
	159.8	23.7	-3.31
	183.5	49.1	
	160.1		-3.34
7 51 00	183,0	22.9	
	159.0	25.0	-3.37
	184.0	47.9	
	249.6	Left of Below =	
7 52 30	274.0	24.4	
	251.0	22.0	-3.44
	273.0	46.4	
7 53 40	250.7		-3.46
7 10	271.4	20.7	
7 51 49	249.4	24.9	-3.48
5 -29	274.3	45.6	

12 50 20 Hr Mean

56

4710.5349

4709.4547

+1.0809

mean = -3.40

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1899phae.proj.1359.

Feb. 24, 1899

IV.

7 56 20

249.4
274.2 — 24.8
250.2 — 23.3 — -3.36
273.5 — 48.1

-3.36

7 37 40

250.8
273.8 — 23.0
249.0 — 25.1 — -3.36
274.1 — 48.1

Right + above

7 59 35

339.0
3.2 — 24.2
338.2 — 24.3 — -3.34
2.5 — 48.5

-3.34

8 00 35

237 10

339.5 — 23.8
3.3
338.3 — 24.9 — -3.33
3.2 — 48.6

7 58 32
5 -29

12 58 03 Sh. M. Time.

Mean = -3.35

4710.5404
4709.4327
1.0857

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1899phae.proj.1359.

Feb. 24, 1899

V

8 01 35

338.1
3.8 25.7
339.0 23.8 - 3.29
2.8 49.5

339.2 - 3.32
2.2 23.0
337.8 25.2 - 3.35
3.0 48.2

Left of Below.

8 05 00

70.4
95.1 24.7
70.6 22.9 - 3.39
93.5 47.6

- 3.40

8 06 10

71.2
94.0 22.8 - 3.41
70.0 24.2
94.2 47.0

15 25
8 3 51
5 -21

13 3 22 M. Time.

4710.5440
4709.4547
+1.0893

mean = - 3.36

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1899phae.proj.1359.

Feb. 24, 1899.

VI.

8 08 35

68.1
94.6 26.5
70.0 23.0 − 3.29
93.0 49.5

− 3.26

8 09 45

69.9
93.9 24.0
68.2 26.6 − 3.24
94.8 50.6

Right of above.

8 12 12

158.2
184.6 26.7
159.6 24.4 − 3.24
184.0 50.8

− 3.22

8 14 18

159.2
183.5 24.3
158.0 27.2 − 3.21
185.2 51.5

8 11 12
5 − 29

13 10 43 Gr. M. Time.

Mean = − 3.24

4710.5491
4709.4547
+1.0944

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1899phae.proj.1350

Feb. 24, 1899

VII.

	158.3		
8 16 40	185.1	26.8	
	158.7	24.7	- 3.21
	183.4	51.5	
	158.0		- 3.18
8 17 50	183.8	25.8	
	158.2	26.7	- 3.16
	184.9	52.5	

Left of Below.

	249.4		
8 19 50	275.3	25.9	
	250.0	25.0	- 3.24
	275.0	50.9	
	249.6		- 3.24
8 21 00	274.7	25.1	
	249.6	25.6	- 3.24
	275.2	50.7	

8 75 20
8 18 50
5 - 29

13 18 21 G. M. Time.

4710.5545
4709.4547
+1.0998

Mean = - 3.21

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1899phae.proj.1359.

Sept. 24, 1899.

VIII.

8	23	25	249.1	
			275.4	26.3
			249.6	24.7 — 3.23
			274.3	51.0
				— 3.18
8	24	50	249.2	
			275.2	26.0 — 3.17
			248.2	27.0
			275.2	53.0
			Right of Above.	
8	28	40	336.6	
			5.0	28.4
			337.0	27.3 — 3.03
			4.3	55.7
				— 3.08
8	30	10	337.6	
			4.0	26.4
			337.2	27.1 — 3.12
			4.3	53.5
	117	05		
8	29	16		
5		29		
13	28	47	Gr. M. Time.	

Mean = -3.13

4710.5617
4709.4347
+1.1270

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1899phae.proj.1359

88

Feb. 24, 1899.

IX.

8 32 30

8 33 35

8 35 30

8 37 30

19 25

8 34 51

5 -29

13 34 22 Gr. M. Time.

4710.5656

4709.4547

+1.1109

338.0
5.1 27.1
337.1 28.0 -3.06
5.1 55.1

-3.05

337.2
4.5 27.3
337.0 28.1 -3.04
5.1 55.4

Left & Below.

68.2
96.1 27.9
69.2 26.8 -3.07
96.0 54.7

-3.11

68.6
94.7 26.1
68.0 26.6 -3.15
94.6 52.7

Mean = -3.08

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1899phae.proj.1359.

Feb. 24, 1899.

X

8 42 10

68.5
95.3 26.8
69.0 26.6 − 3.12
95.6 53.4

68.8 − 3.12
95.0 26.2
67.7 27.3 − 3.12
95.0 53.5

Right & above.

8 43 50

8 46 00

157.5
185.2 27.7
157.1 28.1 − 3.02
185.2 55.8

− 3.00

157.3
185.9 28.6
157.6 28.0 − 2.99
185.6 56.6

8 47 45

19 45
8 44 06
5 −29

13 44 27

4710. 57 55
4709. 46 47

+1.1208

Mean = − 3.06

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1899phae.proj.1250

Feb. 24, 1899.

XI.

8 50 40

157.2
185.7 28.5
156.2 28.3 -2.98
185.5 56.8

8 52 00

157.2 -2.94
186.0 28.8
155.8 30.1 -2.90
185.9 58.9

Left of Below

8 55 00

248.1
275.3 27.2
248.1 27.5 -3.07
275.6 54.7

8 57 00

247.9 -3.06
244.4 26.5
246.5 28.8 -3.04
275.3 55.3

14 40
8 53 40
5 -.29
13 53 11. G. M. Time.

4710.5786
4709.4547
+1.1239

mean = -3.00

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1899phae.proj.1359.

Feb. 24 1899

XII.

8 59 40

247.1
275.3 28.2
248.2 27.8 -3.0
275.0 56.0

-3.01

8 01 35

247.8
275.2 27.4 -3.00
247.3 28.9
276.2 56.3

Right above

9 06 00

337.1
5.1 28.0
336.0 29.3 -2.96
5.3 57.3

-2.94

9 07 15

336.0
5.5 29.5 -2.93
336.8 28.6
5.4 58.1

Mean = -2.98

257 30
9 03 37
5 -29

17 03 06 G.M. Time.

4710.5855
4709.4547
+1.1308

1899phae.proj.1359.

Feb. 24, 1899.

XIII

336.8
5.8 29.0
336.8 29.2 -2.93
6.0 58.2

336.8 -2.96
28.6
5.4
28.4 -2.98
337.0 57.0
5.4

Left to Below

65.6
96.8 31.2
67.5 28.1 -2.89
95.6 59.3

67.6 -2.94
95.8 28.2
67.7 -3.00
95.9 28.2
56.4

mean = 2.95

9 10 10

9 11 35

9 14 05

9 15 40

11 30

9 12 52
5 -29

14 12 23 G. M. Time.

4710.5920
4710.5907

+0.0013

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1899phae.proj.1359.

Feb 22, 1899

XIX

9 16 50

6 58
96.0 30.2
67.5 28.2
95.7 58.4 −2.92

9 18 00

67.7 27.3 −2.94
93.0
67.0 29.8 −2.97
96.8 57.1

Right & above

9 19 25

155.4
183.7 30,3
156.0 29.8 −2.86
185.8 60.1

9 20 35

156.8 −2.92
185.6 28.8
157.2 28.3 −2.97
185.3 57.1

7 7 50

9 18 42
5 −29

14 18 13

Mean = −2.93

Yr. M. Time
Bliss + Boughton 1882
Bond & Son. (3,9 *)

4710.5959 9 40 28.7 9 40.00
4710.5907 9 41 28.5 9 41.00
+0.0052

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1899phae.proj.1359.

Feb. 24, 1899.

(S) Plate I.

ζ Cancri. Wbz.

8 38 19.4

8 30

0 8 These obs. copied and.

23 52 Ledgered.

54.8

10 11 08 var. 109.5 54.7

54.6 52.9 -1.47

107.5 107.6

55.0 -1.44

10 12 30 110.0 55.0

54.4 54.9 -1.42

109.2 109.9

Index. Below.

140.5

10 14 30 203.0 62.5

143.0 58.9 -1.16

202.8 121.4

143.5 -1.18

10 15 45 201.0 57.5

13 53 141.2 61.3 -1.22

10 14 28 202.5 118.8

5 -29

15 13 59 Gr. M. Time.

Mean = -1.34

4710.6347

4705.8528

+4.7819

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1899phae.proj.1359.

Feb. 27, 1899

N

II

	140.5		
10 17 10	203.3	62.8	
	143.1	57.4	-1.19
	200.5	120.2	
			-1.21
	143.0		
10 19 05	201.5	58.5	
	142.0	59.6	-1.23
	201.8	118.1	
		Above	
	232.2		
10 21 20	290.3	58.1	
	232.9	58.2	-1.27
	291.1	116.3	
			-1.27
	233.1	57.0	
10 22 50	290.1	59.7	-1.27
	230.3	116.7	
	290.0		

	P	O	25
10	20	06	
5		-29	
15	19	37	G. M. Time.

Mean = -1.24

4710.6386
+705.8528
+4.7858

1899phae.proj.1359.

Feb. 24 1899.

III.

	231.2		
10 25 00	289.9	58.7	
	232.8	56.2	
	289.0	114.9	-1.31
	232.0		
10 26 20	289.3	57.3	-1.30
	231.2	57.9	
	289.1	115.2	-1.30
	Below		
	322.0		
10 29 40	23.2	61.0	
	322.1	59.7	-1.18
	21.8	120.7	
			-1.18
	321.8		
10 31 20	22.0	60.2	-1.17
	321.0	61.0	
	22.0	121.2	

11.2 20

10 28 05

5 -29

15 27 36 Gr. M. Time.

Mean = -1.24

$\odot$ 710.6442

$\odot$ 705.8528

+4.7914

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1899phae.proj.1359.

Feb 24, 1899.

IV

	320 ~~47~~		
6 33 30	21.3	59.6	
	322.0	59.3	-1.22
	21.3	118.9	
			-1.18
	321.0		
6 35 00	22.0	61.0	
	321.0	60.8	-1.10
	~~22.0~~	121.8	
	21.8		
		Above	
	53.0		
6 37 10	109.5	56.5	
	53.~~8~~	56.0	-1.36
	109.6	112.5	
			-1.36
	53.4		
10 39 23	110.0	56.6	
	53.8	55.8	-1.36
	109.6	112.4	
25°20			
10 36 20			
5 - 29			
16 35 51 Gr M. Time.		Mean = - 1.27	
4710.6499			
4705.8528			
+4.7971			

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1899phae.proj.1359

Feb. 24, 1899

V

	53.1		
10 42 45	109.2	56.1	
	53.1	56.1	−1.37
	109.2	112 2	
			−1.36
	5⁻2.9	57.0	
10 44 30	109.9		−1.36
	153.8	55.5	
	109.3	112.5	
		Below	
	142.3		
10 47 30	201.8	59.5	
	143.1	58.3	−1.24
	201.4	117.8	
	143.0		−1.24
10 49 ~~30~~ 25	201.4	58.4	
	142.3	59.5	−1.24
	201.8	117.9	

24 10

10 46 02

5⁻ -.29

15⁻ 45 5⁻3 Sid. m. Time.

Seeing 7 7 7

mean = −1.30

4710.6568

4705. 8⁵-28

+4.8040

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1999phaer.proj.1350.

Feby. 24, 1899.

B. & C. 11½.			B. 39 E.		
11	57	26.5	11	57	0.0
	58	26.3		58	0.0

Dis. Jup. I Phot. R. M. Obsr

Compared with middle of three sets (3 after dis) on preceding side = Set II

Seeing fairly good. Jup. boiling some. Mist; some attitude. Cold.

12 12 03	11	47		47.0	
− 25		58	91.7	138.7	
12 11 38	12	09	88.7	49.0	
		19	90.2	137.7	0.0
12 44		28		47.0	
25		39	93.0	138.0	
12 19		49	93.1	47.0	
		58	92.6	137.1	−0.1
13 16	13	06		47.0	
25		15	92.0	137.0	
12 51		22	89.7	47.1	
		31	90.8	136.8	0.0
13 50		46		47.8	
−25		46	90.2	138.0	
13 25		53	89.5	48.1	
	14	02	89.8	137.6	0.0
14 25		11		46.0	
25		20	86.8	134.8	
14 00		31	88.8	48.0	+0.1
			87.8		

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1899phae.proj.1359.

Feby. 24, 1899.

	12	14	39		136.7
12 15 04 x			47		48.3
-23		~~15~~	58	88.0	136.3
12 14 39 x		15	10	90.3	45.7
			20	89.2	136.0 0.0
15 42 x			26		46.8
-23			37	88.2 x	135.0
15 19 x			47	88.4	47.3
			56	88.3 x	135.7 +0.1
16 20 x		16	08		48.3
-23			16	88.2 x	136.5
15 57 x			23	88.0	49.0
			31	88.1	137.0 +0.1
17 00 x			45		47.0
-23			56	92.2 x	139.2
16 37 x		17	04	89.7	50.0
			15	88.6 x	135.1 +0.1
			27		47.6
17 44 x			37	90.9 x	137.9
-23			51	86.0 x	48.8 x
17 19 x		18	01	88.4	134.8 +0.1
17 46 x			11		52.0 +0.2 x
55 x			20	84.0 x	136.0 Prob. 136.0
18 04 x			29	84.0 x	52.0 +0.2 x
12 x			37	79.0 x	131.0 +0.4 x
23 x			48	76.0 x	55.0 +0.0 x
28 x			53	80.0 x	135.0 +0.4 x
34 x			59	79.2 x	55.8 +0.4 x

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1899phae.proj.1359.

Feby 24, 1899.

18 19	40	19	05	72.2	128.0	+0.7
			~~10~~			
	07		16	70.0	58.0	+0.8
	08		23	68.0	126.0	+0.9
19	04		29	69.3	58.7	+0.9
	10		35	65.2	123.9	+1.0
	17		42	61.9	62.0	+1.1
	22		47	57.0	119.5	+1.3
	27		52	54.7	64.8	+1.4
	33		58	53.2	118.0	+1.5
	40	20	05	50.0	68.0	+1.7
	46		11	48.8	116.2	+1.7
	54		19	45.5	70.7	+1.9
	59		24	41.3	112.0	+2.1
20	04		29	33.2	78.8	+2.6
	11		36	31.2	110.0	+2.8
	34	~~24~~	59	27.2	82.8	+3.1
	44	21	08	22	104.0	+3.6

Not seen later
Limit of Visibility

21	42		27	81.0	
	-24		34	29.9	106.9
	21 18		46	23.7	83.0
			59	248	106.7 +3.3

B. + C. 1182. B. 394.

13	1	21.2	13	1	0.0
	2	21.1		2	0.0

Chron. Corr = -25 secs up to 12 2100 then 24 min -

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1899phae.proj.1359.

Feb. 25, 1899. (Saturday)

0 Leto: W obs. Phot. W.

2 12 -3.6
16 15
4 03

335.0
80.3
337.3
79.0

335.6
78.1
337.2

8 +48.5

Left & Below

Rejected. Doubt about reading circles.

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1899phae.proj.1359.

Feb. 25, 1899.

Same eye.

337.3		Crossed and	
28.4	51.1	Lengthened.	
338.2	50.7		-1.62
28.6	101.5		

-1.59

337.3		
27.8	50.5	
335.4	50.7	-1.56
28.8	101.2	

Right & Below.

67.0		
118.2	51.2	
68.0	49.3	-1.64
117.3	100.5	

-1.62

68.6		
118.1	50.0	
66.0	52.0	-1.61
118.0	102.0	

7 53.0

12 54.2 Sr. M Tmic.

mean = -1.60

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1899phae.proj.1559.

Feb. 25 1899.

Same again

Copied and Ledgered

66.6			
118.8	522		
67.5	50.3	-1.60	
117.8	102.5		
		-1.65	
68.0			
116.2	48.2		
68.0	50.2	-1.70	
118.2	98.4		

Left Above.

158.0			
207.4	49.4		
156.8	51.2	-1.64	
208.0	100.6		
		-1.62	
158.8			
207.5	50.7		
156.6	51.3	-1.61	
207.9	102.0		

Means -1.64

7 59.5

8 06.0

13 2.7 Grantham.

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1899phae.proj.1359.

Feb. 25, 1899

M.P. 4241. Phot. Q. W. obs.

3 33 +62.3

6 50

3 17

Copied and Ledgered.

239.1
300.8 61.7
235.5 66.5 -1.02
302.0 128.2

235.8 -0.96
304.0 68.2
236.5 66.0 -0.89
302.5 134.2

Right & Below

330.0
~~322.8~~ 62.8
327.0 65.0 -1.03
32.0 127.8

327.0 -0.96
34.2 67.2
326.4 66.9 -0.90
33.3 134.1

mean = -0.96

8 24.0 var. dia.

8 30.5

13 27.2 Gr. M. Tues.

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1899phae.proj.1501

Feb. 23, 1899.

Same again.

Objective and Ledgerd.

326.8		
33.5	66.7	
326.4	67.6	-0.89
34.0	134.3	

-0.91

326.0		
33.0	67.0	
326.8	65.2	-0.93
32.0	132.2	

Left of above

56.4		
124.0	67.6	
56.4	65.6	-0.93
122.0	133.2	

55.8		-0.90
123.5	67.7	
55.0	67.2	-0.88
122.2	134.9	

8 32.0

8 37.5

13 34.7 Ha. Mtns.

Bliss Observatory 1182 mean = -0.90 Bond & Son

8	57	23	8	57	00
8	58	23	8	58	00

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1899phae.proj.1359.

Feb. 25 1899.

R. Canis Majoris.

These obs. copied and Ledgered.

7 15 : −16.2
7 22
0 07

Full aperture used, in all the obs.

340.0
vars obs

9 02 60

3.3 23.3
340.1 22.9 − 3.45
3.0 46.2

− 3.48

340.2
2.2 22.0
339.3 22.9 − 3.51
2.2 44.9

Left & Below

9 03 35

70.6
91.8 21.2
69.5 22.3 − 3.58
91.8 43.5

9 05 25

70.0 − 3.58
92.0 22.0
71.2 21.6 − 3.58
92.8 43.6

9 07 00
18 20

9 4 35 +711.5862.
5 −23 +710.5908
14 4 12 Gr. M. Time.

Mean = − 3.053

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1899phae.proj.1259.

Feb. 25, 1899.

II.

9 08 45

71.0
92.3 21.3
70.3 21.7 - 3.61
92.0 43.0

- 3.58

9 10 00

70.1
92.8 22.7
71.8 21.2 - 3.56
93.0 43.9

Right to all stars

9 12 00

160.0
182.0 22.0
160.0 22.0 - 3.56
182.0 44.0

- 3.54

9 13 00

160.2
182.6 22.4
160.4 22.2 - 3.52
182.8 44.8

43 45
9 10 56
5 -.22

14 10 34 Gr. M. Time

Mean = -3.56

+711.5907
+710.5908
+0.9999

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1899phae.proj.1359.

Feb 25, 1899

~~III~~

9 14 50

160.5
182.5 22.0
160.5 21.5 - 3.58
182.0 43.5

-3.67

9 16 05

160.4
182.0 21.6
159.8 ~~160~~ 20.3 - 3.67
180.1 41.9

Left + Below

9 18 35

230.8
272.4 21.6
230.3 22.4 - 3.56
272.7 44.0

-3.59

9 20 08

69 50

9 17 42
5 - 21

14 17 21 G.M.T. ...

4711.5903
4710.5908
+1.0045

200.2
272.4 22.2
251.2 20.6 - 3.62
271.8 42.8

Mean = -3.60

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1899phae.proj.1501

Feb. 25 1899

IV.

9 21 35

250.6
271.3 20.7
250.2 22.3 -3.61
272.5 43.0

-3.66

9 23 10

251.2
271.8 20.6
251.5 20.7 -3.70
272.2 41.3

Rejected Above

9 25 25

341.0
2.5 21.5
341.1 22.0 -3.58
3.1 43.5

-3.58

9 27 00

341.5
2.0 20.5 -3.57
340.0 23.0
3.0 43.5

17 10

9 24 17
5 -20

14 23 57 Gr. M Time

Means -3.62

4711.5999
4711.5908

+1.0091

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1899phae.proj.1359.

Feb. 25 - 1899

V.

9 29 05

340.2
2.2 22.0
340.0 22.4 · 3.5-4
2.4 44.4

9 30 10

340.0 - 3.5-2
3.0 23.0
340.2 22.2 - 3.5-0
2.4 45.2

Left Below.

9 32 28

77.7
93.0 21.3
71.4 21.6 - 3.61
93.0 42.9

- 3.5-9

9 34 05

71.0
92.8 21.8
71.3 21.9 - 3.5-7
93.2 43.7

Mean = - 3.56

125 45
9 31 26
5 -19
14 31 7 Sidereal time

4711.6050
4710.5908
+1.0142

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1899phae.proj.1591

Feb. 25 1899

VII

9 38 15

71.0
92.5 21.5
70.2 22.7 -3.56
92.6 43.9

-3.59

9 39 15

71.0
92.7 21.7
71.6 21.0 -3.62
92.6 42.7

Right to Above

9 42 00

161.0
182.0 21.0
160.5 21.7 -3.62
182.2 42.7

-3.60

9 43 00

163 00

9 40 45
5 -17

14 40 28 Gr. M. Time.

+711.6115
+710.5908
+1.0207

161.4
182.3 21.9
160.4 21.9 -3.57
182.3 43.8

Mean = -3.60

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1899phae.proj.1359.

Feb 23 - 1899

VII

9 43 00

161.0
181.35 20.5
160.0 21.8 - 3.64
181.8 42.3

- 3.59

9 46 30

160.0
181.9 21.9
159.6 22.4 - 3.54
182.0 44.3

Left of Below

9 49 50

250.0
271.0 21.0
250.5 20.7 - 3.68
271.2 41.7

- 3.66

9 52 15

251.1
272.0 20.9 - 3.65
251.0 21.2
272.2 42.1

193 35
9 48 27
5 - 16
14 48 8 Gr M Time

4711.6168
4710.5908
+1.0260

Mean = - 3.62

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1899phae.proj.13501

Feb. 25, 1899

VIII

		251.0		
9	58	20	271.2	20.2
			251.2	20.5 -3.73
			271.7	40.7
			251.7	-3.70
10	00	20	271.7	20.6
			251.0	21.1 -3.68
			272.1	41.7
			Rigels above.	
			341.2	
10	02	15	2.2	21.0
			340.8	22.2 -3.60
			3.0	43.2
			340.8	-3.57
10	03	40	2.4	21.6
			340.2	22.8 -3.54
			3.0	44.4
	24	35		
10	1	9		
5		-14		
15	00	55	Gr. Mean Time	Mean = -3.64

4711.6256
4710.5908
+1.0348

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1899phae.proj.1359.

Feb. 23, 1899.

IX

3740.0		
3.7	23.4	
3702	22.8	-3.45
3.0	46.2	
		-3.47
3740.3		
28	22.5	
3740.0	22.9	-3.49
2.9	45.4	

Left & Below.

71.01		
93.2	22.1	
71.0	21.9	-3.56
92.9	44.0	
		-3.53
70.4		
93.8	22.6	
71.5	21.7	-3.54
92.2	44.3	

Means -3.51

10	06	10
10	07	30
10	10	30
10	13	00
	37	10
10	9	17
5		-13
15	9	4 Yr. M. Time.

47 11.635
47 10.5908
71.0407

1899phae.proj.1359

Feb. 25 1899

X.

10	14	30	71.2 93.0 70.6 94.0	21.8 23.4 45.2	-3.50
					-3.53
10	15	50	71.0 93.0 70.8 92.7	22.0 21.9 43.9	-3.56
			Right & above		
10	18	00	160.6 182.2 160.3 182.5	21.6 22.2 43.8	-3.57
					-3.56
10	19	05	160.0 182.5 160.5 182.1	22.5 21.6 44.1	-3.55
	27	25			
10	16	21			
5		-12			
15	16	9	Gr. M. Time		Mean - 3.54

+711.6362
+710.5908
+1.0454

1899phae.proj.1359.

Feb. 23 1899

XI

160.
159.8
182.2
160.0
182.5

22.4
22.5
44.9

- 3.54

C0 22 00

160.1
182.3
160.6
182.3

22.2
21.7
43.9

- 3.56

C0 23 10

Left & Below

251.0
272.2
251.2
272.8

21.2
21.6
42.8

- 3.62

C0 26 00

- 3.59

250.8
272.5
250.0
272.2

21.7
22.2
43.9

- 3.56

C0 27 40

18 50

10 24 42
5 -11

15 24 31 Fr. M Tuve.

Mean = - 3.56

2711.6421
+710.5908

+1.0513

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1899phae.proj.1259.

Feb. 25, 1899

XII

10	30 00		
		251.0	
		272.5	21.5
		250.4	22.2 -3.57
		272.6	43.7
			-3.58
10	32 00	250.5	22.0
		272.5	21.2 -3.60
		250.8	43.2
		272.0	
		Right of above	
10	37 00	340.2	
		3.0	22.8
		340.4	22.8 -3.48
		3.2	45.6
		340.0	-3.46
10	38 30	3.0	23.0
		340.0	23.1 -3.45
		3.1	46.1
	17 30		
10	34 20		
5	-1.0		
15	34 10	Sometime	

Mean = -3.52

+711.6487
+710.5908
+1.0579

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1899phae.proj.1359.

Feb. 25, 1899

~~XIII.~~

32/0.0		
2.6	22.6	
339.1	23.8	-3.44
2.8	46.4	
		-3.44

340.0		
3.0	23.0	
340.0	23.2	-3.46
	46.2	

3.2 Left & Below.

70.0		
93.3	23.3	
70.0	24.0	-3.40
97.0	47.3	

70.0		-3.43
93.0	23.0	
70.3	23.0	-3.46
93.3	46.0	

Mean: 3.44

C0 37 9 3 5

C0 36 41 10

C0 38 43 30

C0 43 10

169 45

10 42 26

5 - 8

15 42 18 Mt. Time.

4761.6544

4210.5908

71.0636

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1899phae.proj.1359.

Feb. 25, 1899.

XIV.

			70.0		
10	49	40	93.0	23.0	
			70.0	23.1	- 3.45
			93.1	46.1	
					- 3.46
			70.0		
10	51	35	92.5	22.5	- 3.47
			70.1	23.2	
			93.3	45.7	
			Right above		
			159.0		
10	56	00	183.4	24.4	
			159.4	24.5	- 3.32
			183.9	48.9	
					- 8.34
			160.0		
10	58	40	183.2	23.2	
			159.2	24.8	- 3.36
			184.0	48.0	

	21	55	
10	53	59	
5		7	
15	53	52	M.M. Time

Mean = - 3.40

H 11. 6624
H 10.5908
+ 1.0716

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1899phae.proj.1359.

Feb. 25 1899

XV

159.2
183.3 24.1
159.4 23.6 -3.38
183.0 47.7

-3.37

159.3
183.7 24.4
159.4 23.6 -3.36
183.0 48.0

Left of Below.

250.0
273.3 23.3
249.8 23.0 -3.44
272.8 46.3

-3.39

249.2
273.4 24.2
249.2 24.2 -3.34
273.4 48.4

Mean = -3.38

11 00 25

~~10~~ 02 25

~~11~~ ~~10~~ 04 10

~~11~~ ~~10~~ 05 25

12 25

11 3 06

5 - 5

16 3 1 Mt. Hamilton.

4711.6689
4710.5908
+1.0781

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1899phae.proj.1359.

Feb. 25, 1899.

XVI.

			249.7		
11	07	00	273.5	23.8	
			249.3	24.1	-3.37
			273.4	47.9	
					-3.38
			249.1		
			273.4	24.3	
11	09	00	249.7	23.3	-3.38
			273.0	47.6	
				Right & above	
			339.7		
11	11	50	3.5	24.6	
			339.0	24.6	-3.31
			3.6	49.2	
					-3.29
			339.0		
11	13	25	3.8	24.8	
			338.8	25.2	-3.27
	41	15	4.0	50.0	
11	10	14		mean = -3.34	
5		4			
16	10	10	Bliss & Irregular 1182		Bond & Son
4711.6737			11 28 01.5		11 28 00
+710.5908			11 29 01.0		11 29 00
+1.0829					

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1899phae.proj.1359.

Feb. 27, 1899. Monday

(Phot. W.)

These obs. Copied and Ledgered.

			(W obs)
0	Ceti		
2	12		-3.6
6	06		
3	54		

Right & Below

65.2		
119.1	53.9	
65.5	55.0	-1.47
120.3	108.9	
		-1.42
66.0		
120.0	54.0	
64.2	56.8	-1.40
121.0	110.8	

Left & above

155.2		
210.6	55.4	
156.0	54.5	-1.42
210.5	109.9	
		-1.42
156.6		
210.6	54.0	
155.0	56.2	-1.41
211.2	110.2	

Mean = -1.42

7 43.6

7 48.5

12 46.0
-1.4
12 44.6 G.M.Time.
4713.53

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1899phae.proj.1359.

Feb. 27 1899

Sun Again

Left & above

156.0

7 50.0 210.0 54.0

150.0 54.0 -1.46

210.0 108.0

-1.47

155.6

209.0 53.4

155.5 54.1 -1.48

209.6 107.5

Right & Below.

247.0

301.0 54.0

246.6 53.4 -1.48

300.0 107.4

-1.48

247.0

299.3 52.3

245.0 54.6 -1.49

299.6 106.9

Mean = -1.48

7 54.5

12 52.2

-1.4

12 50.8 Sidereal time

4713.535

1899phae.proj.1359.

Feb-27 1899

(W obs.)

Selection of Comp Stars for N. Puppis.

h m
7 49 -12 2
7.00
49
11 11

Sid. Time	East. Time			
13 47.9	8 46.0	a	4	a'
13 38.9	8 37.0	b	5	a
13 33.9	8 33.0	c	3	b
13 42.9	8 44.0	d	6	c
13 46.5	8 47.6	e	4 5	d.
13 46.9	8 48.0	f	5	e

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1899phae.proj.1359.

Feb. 27 1899.
N. Rutgers.

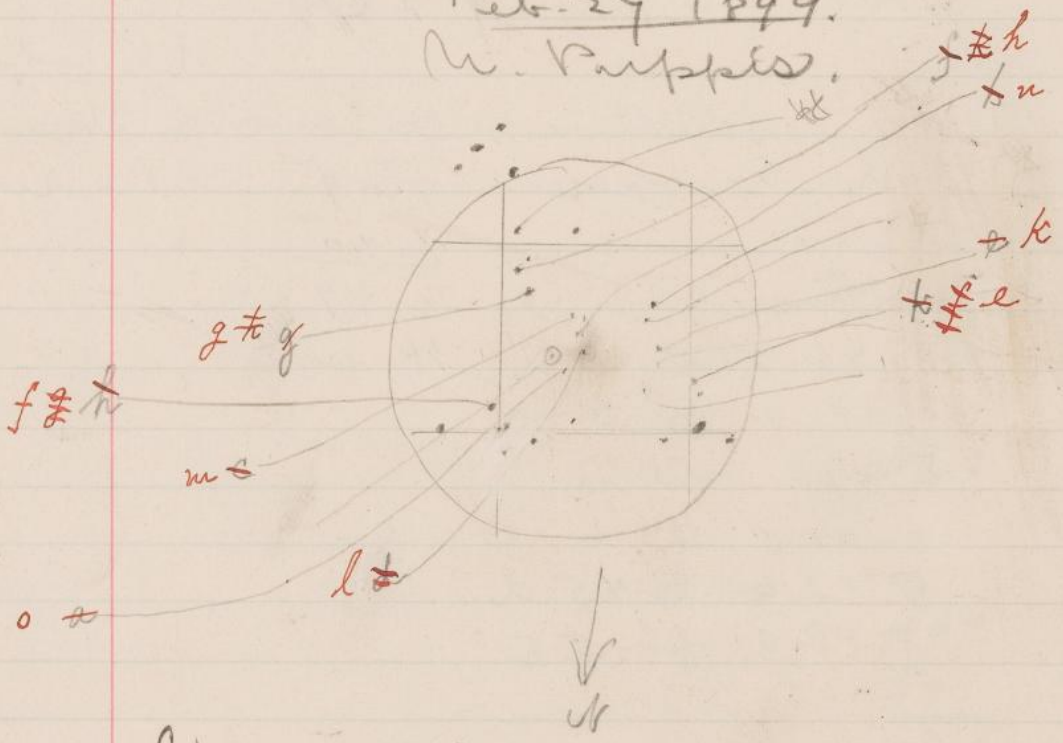


Chart made.

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1899phae.proj.1359.

Feb. 27 1899.
N. Pupin.

(W of 3)

Star b counts with SD. -12° 2283 (8.8)

Comp Star

70.0		
92.3	22.5	
72.0	20.0	+ 3.63
92.0	42.5	

9 10.02

+ 3.70

72.0		
91.2	19.2	
72.5	20.7	+ 3.77
93.2	39.9	

Left & Below,

159.0		
180.7	21.7	
162.0	19.8	+ 3.69
181.8	41.5	

+ 3.72

162.4		
181.2	18.8	
160.7	21.3	+ 3.76
182.0	40.1	

Mean + 3.71

9 12.5

9	12.2	
5	- 1.4	
14	10.8	Sid. Time.

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1899phae.proj.1359.

Feb. 27, 1899.
N. Purpis.

(N. Obs.)

Star d comp with SD. -12° 2283 (8.8)
Left & below

158.2

9 23.5 comp dies 186.0 27.8
154.5 33
188.0 61.3 +2.81

156.0 +2.87
186.2 30.2
157.0 28.9 +2.93
185.0 58.2

Right & above.

247.2
274.1 26.9
247.7 25.9 +3.15
273.3 52.8

+3.10

246.1
273.0 26.9
246.5 28.1 +3.06
274.6 55.0

9 30.0

9 26.7
5 -1.7
14 25.3 Sid. Time.

Mean +2.98

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1899phae.proj.1359.

Feb. 27, 1899
H. Pupin

(W 064)

Star ε comp with star SD. −12° 2283

(8.8)

Night & above

9 33.0

	246.0	
comp div →	247.7	28.7
	246.3	27.0 +3.04
	273.3	55.7

+3.04

247.0		
273.5	26.5	
275.3	29.0	+3.04
274.3	55.5	

Left & Below.

337.0		
6.8	29.8	
337.5	27.1	+2.98
4.6	56.9	

+2.98

337.0		
4.2	27.2	
336.3	29.9	+2.97
6.2	57.1	

Mean = +3.01

9 39.5

14 36.2

14 37.8 G.M.T. mean

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1899phae.proj.1359.

Feb. 27 1899.

R. Canis Majoris

7 15 -16.2

These obs. Copied and Ledgered. 8 50

1 35 I.

Full aperture used on these obs.

339.2
2.7 23.5
340.6 22.2 -3.47
2.8 45.7

-3.50

10 16 00

339.9
2.6 22.7 -3.54
340.6 21.6
2.2 44.3

Left Below.

10 17 05

71.4
91.2 19.8
71.0 20.7 -3.74
91.7 40.5

-3.72

10 20 30

70.6
91.4 20.8 -3.69
71.4 20.7
92.6 41.5

	62	45	
10	15	41	
5	-1	-03	
15	14	38	Gum Diam

Mean = -3.61

4713.6351
4712.8621
+0.7730

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1899phae.proj.1359.

Feb 27, 1899.

II

	71.6		
	91.5	19.9	
	70.1	21.5	-3.69
	91.6	41.7	
			-3.68
	70.2		
	91.8	21.6	
	70.8	20.2	-3.67
	91.0	41.8	
		pig was down	
	160.6		
	182.0	21.7	
	160.4	21.9	-3.59
	182.3	43.3	
			-3.55
	160.2		
	182.8	22.6	
	160.0	22.7	-3.51
	182.4	45.0	

Mean = -3.62

C0	23	15	
C0	24	40	
C0	26	30	
C0	28	00	
	22	25	
C0	25	44	
5	-1	-03	
15°	24	41	Gr. M. Time.

4413.6422
4412.8624
+0.7794

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1899phae.proj.1359.

Feb. 27, 1899.

III.

	160		
10 31 25	182.0	21.6	
	160.0	22.3	-3.56
	182.3	43.9	
	160.0		-3.52
10 32 30	182.9	22.9	
	160.2	22.6	-3.48
	182.8	45.5	
	Left & Below		
	251.0		
10 35 15	271.4	20.4	
	251.5	21.5	-3.67
	273.0	41.9	
			-3.68
	251.2		
10 36 40	272.8	21.6	
	251.5	20.1	-3.68
	271.6	41.7	

15 50

10 33 57
5 -1 -03

15 32 34 Greenwich time.

Mean = -3.60

4713.6476
4712.8624
+0.7852
45

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1899phae.proj.1359.

Feb 27, 1899.

IV.

10 38 40

10 40 33

10 43 30

10 44 50

167 35

10 41 54

5 -1 -03

15 40 51 Harmonics.

4713.6534

4712.8624

40.791 06

251.1

271.5 20.4

251.0 21.8 -3.65

272.8 42.2

-3.64

251.0

272.8 21.8

251.4 20.8 -3.63

272.2 42.6

Right Above

341.0

3.1 22.1

340.8 22.2 -3.54

3.0 44.3

340.4 -3.52

2.9 22.5

340.5 22.6 -3.50

3.2 45.1

Mean = -3.58

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1899phae.proj.1359.

Feb. 27. 1899

V.

	46 45		
10	~~57 45~~		
		340.7	
		2.2	21.5
		340.5	22.1
		2.6	43.6
			-3.58
			-3.56
	48 00	340.6	
10	~~X~~	2.5	21.9
		340.4	22.4
		2.8	44.3
			-3.54

Left of Below.

		71.5	
10	50 10	91.9	20.4
		70.5	21.8
		92.3	42.2
			-3.65
			-3.63
		70.8	
10	52 00	92.0	21.2
		71.0	21.8
		92.8	43.0
			-3.61
	196 55		
10	49 14		
5	-1.03		
15	48.11 Gr. Mean.		
	4713.6584		
	4712.8621		
	+0.7963		
	57		

Mean = -3.60

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1899phae.proj.1359.

Feb. 27. 1899

VI.

			71.8		
10	55	00	92.9	21.1	
			71.8	21.2	-3.64
			93.0	42.3	
					-3.64
			71.6		
10	56	40	92.5	21.9	
			71.6	20.4	-3.67
			92.0	42.3	
			Right & Wlove		
			161.2		
10	58	40	182.8	21.6	
			160.9	21.9	-3.58
			182.8	43.5	
					-3.56
			160.0		
11	00	40	182.0	22.0	
			160.1	22.1	-3.53
	231	00	182.2	44.1	mean = -3.60
10	57	45			
5	-1	-08	Arnold Plant. 958		
15	56	42	Groom Trans.		
+7	13.66	11	14	03.5	
+7	12.86	11	15	03.4	
	+0.80				

Bond & Son

11 13 00

11 14 00

17 Watch used on ♀ Ceti. 11. Puppis comp stars

1m 24sec fast

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1899phae.proj.1359.

Feb 28 1899. (Tuesday)

Eros.

(W obs)

1 30 47.2.
5 30
4 00

Cloudy.
Clouds to thick to go on to Eros.

0 Ceti.

2 12 -3.6
5 50
3 38
2 12
6 0P
3 56

To Cloudy.

R. Canis Majoris

7 15 -16.2
6 14
1 01
10 59
7 03 -16.0
6 21
42
11 18

Impossible to go on.

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1899phae.proj.1359.

~~Feb~~ March 1, 1899 (Wednesday)

Eros.

(W obs.)

Star B comp with Star A.

2.2
2.4
6 55.0 2.2 2.3
2.4
2.3

Star B. comp with Star A.

2.0
~~1.6~~
1.9
7 27.0 2.0 5|9.9.0 2.0
2.0 1.98
2.0

Star C comp with Star D.

20.0
7 37.0 19.5
20.0 ~~18.~~ 19.5
19.5
18.5

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1899phae.proj.1359.

March 1, 1899.

Eros continued

19.5
19.7
19.8 19.6
19.7
19.6

7 50.0

Star C and d were comp in the above

Eros not found: sky rather hazy in this region.

W Puppis.

7	49	−12.2
6	55	
0	54	

a' 3 a'' Copied from a paper
a² 4 a on Mar. 2, 1899.
a³ 3 a²
b 5 a³
c 5 b

d abandoned.

e 5 c
f 5 e Nis the same as
g 3.5 f S on Mr. Reed's chart.
h b g

8 50.0

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1899phae.proj.1359.

Mar. 11 1899.

(Wolbach)

Comp. stars for ν Puppis.

B counts with SD. -12° 2283 (B.B)

	72.0		
9 09.0	91.0	19.0	
	71.0	21.0	+3.77
	92.0	40.0	
	71,8		
	92,2	20.4	+3.78
	72.5	19.1	+3.79
	91.6	39.5	

Left & Below.

	1622		
	180.8	18.6	
	160.0	21.2	-3.78
	182.2	39.8	
	161,5		-3.78
	181,6	20.1	
9 14.5	164.2	18.6	-3.79
14 11.8 J. M. Trine.	184.8	39.7	

Mean = -3.78

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1899phae.proj.1359.

Mar. 1, 1899.

I Cancri.

8 38 -19.4
8 25
13
23 47

These observations Ledgered and Office Right & above. I.

46.1
9 39 05 116.0 69.9
49.0 66.5 -0.85
115.5 136.4

48.6 -0.86
9 40 40 116.0 69.4
48.4 67.6 -0.88
116.0 135.0
Left & Below

137.0
9 43 20 208.2 71.2
138.6 65.9 -0.83
204.5 137.1

139.2 -0.84
9 46 16 203.6 64.4
169 15 136.0 72.0 -0.85
9 42 18 4715.6119 208.0 136.4
5 - 1 - 12 4715.3383
+0.2736
14 41 6 Sm. Time.

Mean = -0.85

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1899phae.proj.1359.

Mar. 1, 1899.

Left of above / Below

9 48 00	136.8		
	209.1	72.3	
	138.5	65.5	-0.82
	204.0	137.8	
			-0.80
	137.6		
9 50 25	206.0	68.4	
	134.6	71.8	-0.77
	206.4	140.2	
		Right of Below above.	
	227.5		
9 52 50	296.0	68.5	
	229.0	62.4	-0.96
	291.4	130.9	
			-~~0.9~~
	230.5		
9 54 30	292.0	61.5	-1.00
	229.1	66.0	-1.03
	295.1	127.5	
205 45			

Mean = -0.90

9 51 26
0 -1 -12
12 50 14 G.M.T.

47 15.6182
47 13.3383
+0.2799

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1899phae.proj.1359.

Mar 1, 1899

III

9	58	00	225.6	R.A.
			295.3	69.7
			230.3	
			292.3	62.0 -0.94
				131.7
			230.0	
			229.6	-0.98
9	59	35	292.2	62.2
			226.0	66.3 -1.01
			292.3	128.5
				Left Below
			316.0	
10	02	35	25.0	69.0
			330.0	64.2 -0.91
			24.2	133.2
			321.0	-0.94
10	04	35	23.6	62.6
			378.2	68.3 -0.96
			26.5	130.9
	244	45		
10	1	12		
5	-1	-12		
10	0	00	G.M.Time	mean -0.96

47 15.6250
+ 15.3383

+0.2867

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1899phae.proj.1359.

March 1, 1899.

IV

L & B.

	319.0		
10 09 06	25.5	66.5	
	320.2	62.0	−1.01
	22.2	128.5	
			−1.08
	321.5		
10 18 30	20.0	58.5	
	317.3	63.4	−1.15
	20.7	121.9	

Right ascension

	47.4		
14 30	124.6	67.2	
	49.4	62.0	−1.00
	111.4	129.2	
			−1.04
	50.2		
10 16 00	113.6	63.4	
	50.1	62.0	−1.08
	112.1	125.4	

Mean = −1.06

50 00

10 12 50

5 1 12

15 11 38 Gr. M. Time.

4715.6330

4715.3389

+0.2941

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1899phae.proj.1359.

Mar. 1, 1899.

V.

10	18 15	50.3		
		112.1	61.8	
		49.0	64.0	-1.07
		113.0	125.8	
		48.6		-1.04
10	19 45	113.7	64.3	
		49.0	64.7	-1.00
		113.7	129.0	
			Left Below.	
		138.6		
10	22 20	205.6	66.7	
		139.5	64.8	-0.95
		204.3	131.2	
		139.8		-0.98
10	23 55	203.0	63.2	
		139.5	65.5	-1.00
		205.0	128.7	

84 15

10 21 4

5 1 12

15 19 52 G.M.T. nine.

Mean = -1.01

4715.6388

4715.8383

+0.2005

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1999phae.proj.1359.

Mar. 1, 1899.

VII

	140.0		
	205.8	64.8	
	141.2	62.1	-1.04
	203.3	126.9	
			-1.06
	140.0		
	203.0	63.0	
	140.5	62.7	-1.07
	203.2	125.7	
		Right D Above.	
	229.0		
	292.0	63.0	
	232.0	58.5	-1.16
	290.5	121.5	
			-1.14
	231.4		
	292.4	61.0	
	230.4	62.4	-1.12
	292.8	123.4	

Mean = -1.10

10 26 15

10 27 45

10 31 58

10 34 00

11 9 50

10 29 57

5 1 12

15 28 45 Gr. M. Time.

4715.6450

4715.3883

+0.2567

1899phae.proj.1050.

Mar. 1, 1899.

	231.0	R.9a	VII
10 37 30	29R6.	606	
	232.3	601	-1.18
	292.4	120.7	
	232.6		-1.18
10 40 00	292.5	58.9	
	230.3	621	-1.17
	292.4	121.0	
		Left of Below	
	317.0		
10 43 10	23.5	66.5	
	321.0	60.0	-1.05
	21.0	126.5	
	322.0		-1.10
10 45 00	21.3	59.3	
	320.4	62.5	-1.15
	22.9	121.8	

Mean = -1.14

165 40

10 41 25

5 1 12

15 40 13 G.M.T. mine.

47 15.6529

47 15.6383

+0.0146

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1999phae.proj.1359.

Mar 1, 1899

VIII

L + B.

10 49 00	321.0		
	29.5	62.5	
	320.5	60.3	-1.13
	20.8	122.8	
			-1.16
10 51 30	320.0		
	20.7	58.7	
	321.5	60.9	-1.20
	22.4	119.6	
	Right ascension above.		
	50.2		
10 55 25	115.2	65.0	
	50.1	61.9	-1.04
	112.0	126.9	
			-1.11
	52.0		
10 58 00	111.4	59.4	-1.18
	52.0	61.0	
	113.0	120.4	
213 55			
10 53 39			
5 1 12			
15 52 27 Greenwich.		Mean = -1.14	

4715.6615

4715.3383

+0.3232

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Mar. 1, 1899

R.A. IX.

	150.5		
11 02 20	110.6	60.1	
	52.2	59.0	-1.21
	113.2	119.1	
	52.1		-1.21
11 04 00	112.5	60.4	
	51.2	58.8	-1.21
	110.0	119.2	
		L. & B.	
	140.2		
11 07 06	205.1	64.9	
	141.2	60.6	-1.08
	201.8	125.5	
	142.2		-1.13
11 09 06	202.8	60.6	
		59.6	
2220	143.0	120.2	-1.19
11 5 35	202.6		
5 1 12			
16 4 23 Sidereal time			Mean = -1.17

47 15.6697
47 15.3383
+0.3314

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Mar. 1, 1899

X.

	142.0	L & B.	
11 10 40	203.2	61.2	
	143.2	59.3	-1.18
	202.5	120.5	
			-1.20
11 12 40	203.4	59.4	
	142.0	59.2	-1.22
	201.2	118.6	
		R. A.	
	236.0		
11 15 30	290.0	58.5	
	233.0	56.7	-1.31
	289.4	114.9	
			-1.32
	233.0	57.8	
11 17 05	290.8	56.5	-1.32
	231.5	114.3	
	288.0	4	

	16	55
11	13	59
5	1	12
16	12	47

G.M. Time.

47 10.6749
47 10.3383
+0.3366

Mean = -1.256

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1899phae.proj.1359.

March 1, 1899.

XI.

232.0 RA.

297.6	59.6	
234.0	56.8	-1.27
290.8	116.4	

233.0		-1.28
291.8	58.8	
232.6	56.3	-1.30
288.9	115.1	

L.B.

321.0		
2.4	60.4	
323.0	56.3	-1.27
19.3	116.7	

322.0		-1.26
21.0	59.0	
322.0	58.6	-1.25
20.6	117.6	

Mean = -1.27

11 23 15

11 24 35

11 27 05

11 30.00

10555

11 26 29

5 1 12

16 25 17 Gr. M. Time.

47 15.6842

47 15.3383

+0.3459

1899phae.proj.1359.

Mar. 1, 1899

XII

11 34 30

Cℓ 36 40

~~11 32 20~~

11 41 00

~~40~~

11 42 00

	154	10	
11	38	32	
5	1	12	
16	37	20	Gr. M. Time.

+7 15° 6926

47 15° 3383

+0.3543

319.5			
23 0		6.35	
322.6		55.4	-1.22
18.0		1189	
323.3			-1.25
18.5		55.2	
320.3		60.9	-1.28
21.2		1161	

R + a.

53.3	51.0		
1100	140.0	56.7	
51.2	42.6	60.8	-1.25
112.0	140.6	117.5	
			-1.29
54.6	51.0	56.4	
111.0		57.6	-1.33
53.4		1140	
111.0			

mean = -1.27

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Mar 1, 1899

XIII

R.A.

11 44 25	51.1		
	110.3	59.2	
	52.6	58.7	-1.25
	111.0	117.6	
			-1.31
	54.0		
11 45 30	110.6	56.6	
	53.5	55.5	-1.37
	109.0	112.1	
		L & B	
11 48 35	145.2		
	1988	53.6	
	142.0	61.0	-1.31
	203.0	114.6	
			-1.26
	143.2		
11 50 06	202.9	59.7	-1.22
	143.0	59.0	
	202.0	118.7	

188 30
11 47 8
0 1 12
16 45 56 Gr. M. Time

Mean = -1.28

+715.6985
+715.3383
+ 0.3602

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1899phae.proj.1359.

Mar 1, 1899.

XIV

	14.8		
11 51 30	200.5	55.2	
	142.3	58.7	-1.33
	201.0	113.9	
	142.0		-1.32
11 53 30	200.7	58.7	
	144.0	56.4	-1.30
	200.4	115.1	

Right & Above.

11 56 00	235.7		
	288.0	52.3	
	232.0	58.0	-1.41
	290.0	110.3	
	231.6		-1.38
	289.2	57.6	
	234.2	54.9	-1.36
	289.1	112.5	

Seeing 8, 7, 7,

Mean = -1.35

Bond & Son

11 57 30		12 10 00	
18 30		12 10 00	
11 54 38			
5 1 12			
16 55 26			
4715.7038			
4715.3383	12 11 17.7		
40.3655	12 11 11.9		

Harold Hart.

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1899phae.proj.1359.

March 6 1899 Monday

Eros.

1 46 +18.6
5 56
7 10

B fol a 32.2 secs. and is 0.5 N of it.

32.0
32.5
32.0

b +4.0

c fols a 6.9 secs and is 1.5 S of it

7.0
7.0
6.6

b +7.0

d fol a 14.0 secs and is 3' S of it

14.0
14.0

b +9.0

e fols. a 18.5 secs and is 7.2 S of it.

18.5
18.5

b 53.0

b' prec. a' 21.5 secs. and is 4' S of it.

21.5
21.5

Y 00.0

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1899phae.proj.1359.

Mar 6 1899.

c' fol a' 0.6 secs and is 2' S of it.

0.8
0.5
0.5

7 10.0

12.0
12.0

7 28.0

O Cole

2 1 2 -3.6
7 34
5 22

Region to low.

Puppis

7 55 -12.4
7 39
16
23 44

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1899phae.proj.1359.

Mar. 6 1899

U - Puppis

b + a
c 3.5 b
d + c
e 5.5 d
f 5.5 e
g 3 f
h 3 g
k 3h

Copied

k is S on Mr. Reed's chart.

Comp. Star in Mean, below is

~~SD -12° 2291 (9.0) K~~

S.D. -12° 2291 (9.0K)

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1899phae.proj.1359.

Mar 6 1899

Comp Stars for U Puppis
Plate I.

Copied.

Star ⊕ b comp with (R.O.) W. 062

253.2

10 02.0

269.0 15.8

252.0 15.0 +4.35

267.0 30.8

+4.32

251.5

267.6 16.1

23[illegible].4 15.6 +4.28

269.0 31.7

Left ⊕ Below

343.0 345.1

0.1 357.5 17.1

342.2 [illegible] 18.2 +4.04

0.4 35.3

+4.10

3424

10 12.0 0.5 18.1

10 07.0 Gr. M. Time 345.0 15.6 +4.15

0.6 33.7

Mean = +4.21

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1899phae.proj.1359.

Nov 6, 1899.

Star compared with (9.0)

Copied

	343.5		
10	1.6	18.1	
15.0	343.1	18.3	+3.98
	1.4	36.7	

+3.92

	343.0		
	1.3	18.3	
	342.0	19.9	+3.87
	1.9	38.2	

Right Above

	74.0		
	92.1	18.1	
	72.3	19.3	+3.92
	91.6	37.4	

+3.86

	71.8		
	92.2	20.4	
	73.0	18.8	+3.81
	91.8	39.2	

10	23.0		
	38.0		
10	19.0	Sa. M. Time.	

Mean = +3.89

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1899phae.proj.1359.

Mar. 6, 1899.

Star d comes with (9.0)

Copied.

10 31.0

72.1
94.0 21.9
72.2 20.6 +3.63
92.8 +2.5

+3.62

70.0
92.8 22.8
71.8 20.7 +3.60
92.2 +3.2

Left. Below.

161.3
180.2 18.9
161.5 21.5 +3.75
182.0 40.4

+3.68

160.5
182.0 21.5
161.0 21.2 +3.62
182.2 42.7

10 39.0
10 35.0 Gr. M. Time

Mean = +3.65

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1899phae.proj.1359.

Mar. 6, 1899

Star E compared with (g.0)

Copied

	159.5		
10 43.0	183.6	24.1	
	158.6	25.5	+ 3.29
	184.1	49.6	
			+ 3.23
	158.4		
	184.8	26.4	
	158.0	26.0	+ 3.17
	184.0	52.4	

Right of above

	249.2		
	272.5	23.3	
	249.0	23.1	+ 3.44
	272.1	46.4	
			+ 3.42
	248.2		
	271.6	23.4	
	248.0	24.1	+ 3.39
	272.1	47.5	

Mean = + 3.32

10 49.0

10 46.0 Gr. M. Time.

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1899phae.proj.1359.

Mar 6 1899

Star comp with (9.0)

10 52.0

218.0
271.6
248.0
274.0

279.0
273.3
246.6
274.0

Left & Below:

338.0
3.6
33.

Reject above 82 - on this star
wrong star used

10 5

33.

33.

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1899phae.proj.1359.

Mar 8/1899 Wednesday

Phot R -

Obets. W. obs.

2 12 -3.6
6 43
4 31

2 5 -3.0
6 50
4 45

Copied & Ledgered

147.2
211.5 64.3
144.6 65.4 -0.99
210.0 129.7

-1.04

148.1
209.5 61.4
147.2 63.8 -1.08
211.0 125.2

~~Left~~ Right Below

235.4
300.0 64.6
237.2 61.8 -1.05
299.0 126.4

-1.08

238.0
300.0 62.0
237.0 62.4 -1.10
299.4 124.4

Mean = -1.06

7 30.0

7 34.5

12 32.2 Gr. M. Time

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1899phae.proj.1359.

Mar. 8, 1899.

Same Again.

238.2	Copied ~~& Ledgered~~	
299.2	61.0	
238.0	60.6	-1.16
298.6	121.6	

		-1.13
239.0		
300.2	61.2	
237.3	630	-1.10
300.3	124.2	

Left above

327.0		
27.0	60.0	
328.2	60.8	-1.18
29.0	120.8	

		-1.16
327.0		
29.1	621	
327.4	60.9	-1.13
28.3	1230	

7 35.5

7 40.0

7 37.2 Gr. M Time

12 37.2

Mean = -1.14

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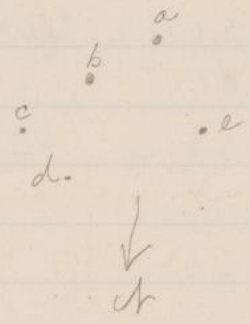
1899phae.proj.1359.

Mar. 8, 1899

W 662.

N. Puppis.

7 55 -12.4
7 15
40
23 20



d fol. c 2.0 secs, and is 1.0 N.
b fol c 3.0 secs, and is 1.0 S
a fol c 6.0 secs, and is 2.0 S
e fol c 8.8 secs. and is 0.2 N.

b 3.5 a
c 2 b
d 3.5 c
e 4 d
f 6 e
g 5 f
h 2 g
k 3.5 h

8 20.0

Old notation used see diag. page 126.

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1899phae.proj.1359.

March 8, 1899.

Comp Stars for K. Puppis. W. to

Star & comp with (9.0) lapsed

8 35.0

73.2
91.8 18.6
74.5 16.5 +4.06
91.0 35.1

+4.76

73.2
89.2 16.0
73.8 15.8 +4.27
89.6 31.8

Left & Below.

164.7
180.6 16.2
163.8 17.0 +4.18
180.8 33.2

+4.14

164.0
180.9 16.9
163.2 17.4 +4.11
180.6 34.3

8 46.0

8 81.0
8 40.5
13 40.5 Gr. Mt mine.

Mean = +4.15

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1899phae.proj.1359.

Mar 8, 1899.

Star c comp with (9.0)

		161.4		Copied
8	54.0	180.6	19.2	
		163.0	18.0	+3.93
		180.0	37.2	
				+3.96
		163.0		
A		180.6	17.6	
		162.5	18.4	+4.00
		180.9	36.0	

Right & Above

		252.0		
		269.5	17.5	
		252.6	17.4	+4.08
		270.0	34.9	
				+4.08
		258.5		
9	03.0	270.8	17.3	
	117.0	252.2	17.4	+4.09
8	58.5	269.6	34.7	
13	58.5	270		

Gr. M. Time.

Mean = +4.02

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1899phae.proj.1359.

Mar. 8, 1899.

Star d comp with (9.0)

9 07.0

252.5 Copied.
269.8 17.3
250.3 19.2 + 3.97
269.5 36.5

+ 3.92

250.4
270.1 19.7
250.6 18.6 + 3.86
269.2 38.3

Left

340.5
0.5 20.0
341.0 20.3 + 3.75
1.3 40.3

+ 3.72

340.2
1.5 21.3
341.4 20.1 + 3.69
1.5 41.4

Mean + 3.82

9 14.0
14 10.5 Gr. M Time.

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1899phae.proj.1359.

Mar. 8, 1899.

Star ℓ comp with (9.0)

339.2
4.0 27.8
339.5 24.8 +3.29
4.3 49.6

9 43.0

+3.31

340.2 24.3
4.5 24.5 +3.33
340.3 48.8
4.8

Right Above.

69.2
93.6 24.4
70.1 25.0 +3.30
49.4
95.1

+3.32

69.5
94.2 24.7
70.0 23.8 +3.34
93.8 48.5

9 59.0
14 46.5 Gr. M. Time

Mean = +3.32

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1899phae.proj.1359.

Mar. 8, 1899.

Star E comp with (2.0)

9 53.0

64.8
98.6 33.8
65.1 34.5 +2.56
99.6 68.3

+2.55

64.4
99.1 34.7
63.7 34.3 +2.54
98.0 69.0

Left & Below.

+
153.4
189.6 36.2
154.5 35.5 +2.45
190.0 71.7

+2.40

+
153.7
193.0 39.3
154.6 35.4 +2.36
190.0 74.7

9 59.5
14 56.2 Gr Mt Time.

Mean = + 2.48

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1899phae.proj.1359.

Mar. 8. 1899

Dis. Jup. II. Phot. R. (N.) obsr. Colson recorder

Compared with other Sat. on preceding side = Sat. I.

~~Corr~~ Corrn Corr. = − 40 secs.

	13	28	50		42.3
13	29 15	29	06	84.5	126.5
	−40		27	84.0	44.0
13	28 35		38	84.2	128.0 +0.2
			54		4N.0
	30 18	30	07	82.7	127.7
	−40		31	80.4	46.8
	29 38		41	81.6	127.2 +0.3
			52		44.9
	31 06	31	03	81.5	126.4
	−40		11	80.1	44.1
	30 26		20	80.8	124.2 +0.4
	31 47		27		44.2
	−40		39	81.8	126.0
	31 07		56	82.0	44.0
		32	0N	81.9	126.0 +0.3
	33 04		51		4N.3
	−40	33	00	79.7	12N.0
	32 24		08	79.0	4N.9 +0.4
				79.4	

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1999phae.proj.1359.

Mar. 8. 1899

		19		124.9
		25-		44.4
33 39		33	79.8	124.2
-40		45-	81.9	45.1
32 59		53	80.8	127.0 +0.4
	34	01		46.1
34 13		12	78.9	126.0
-40		20	76.7	47.3
3333		28	77.8	124.0 +0.3
		40		47.0
34 31		46	76.8	123.8
-40		54	77.1	49.0
34 11	35-	04	77.0	126.1 +0.3
		10		47.1
35 24		18	77.2	124.9
-40		29	80.0	45.0
34 44		37	78.6	125.0 +0.4
		45-		44.6
35 38		55-	80.3-	125.1
40	36	02	77.0	46.0
35 18		10	78.8	123.0 +0.4
		16		44.9
36 30		25-	79.4	124.3
-40		35-	76.3	47.0
35 50		43	77.8	123.3 +0.3
		55-		47.1
37 08	37	04	76.7	123.8
-40		12	74.3	48.0
36 28		20	70.6	122.5- +0.6

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1899phae.proj.1359.

Mar. 5. 1899

		27		51.3	
37	38	34	70.7	122.0	
	-40	42	73.3	49.7	
36	58	51	72.0	123.0	+0.7
37	19	59	66.9	53.1	+0.9
	28	38 04	68.5	120.0	+0.8
	35	14	67.5	52.0	+0.9
	43	23	67.2	119.0	+0.9
	01	31	63.2	51.5	+1.1
	59	39	59.7	116.0	+1.2
38	06	46	62.0	55.0	+1.1
	13	53	59.1	117.3	+1.2
	22	39 02	56.6	58.2	+1.3
	32	12	52.8	114.8	+1.0
	44	24	48.0	62.0	+1.8
	53	33	49.5	110.0	+1.7
	58	38	48.2	60.5	+1.7
39	04	44	46.2	108.7	+1.9
	08	48	48.5	62.4	+1.7
	15	54	47.0	101.0	+1.8
	22	40 02	41.5	64.0	+2.1
	28	08	38.2	105.5	+2.3
	39	19	36.7	67.3	+2.4
	48	28	31.8	104.0	+2.7
	58	38	28.6	72.2	+3.0
40	03	43	27.8	100.8	+3.0
	12	52	27.0	73.0	+3.1
	18	58	24.0	100.0	+3.4
	28	41 08	21.8	76.0	+3.6

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1899phae.proj.1359.

March 5, 1899

×0 38 41 15 97.5

Not seen later

Sunset of visibility —

		40		77.0	
41 02 ×		48	18.2 ×	95.2	
-40		56	19.5 ×	76.4 —	
41 12 ×	42	04 —	18.8	96.0	+39 ×

Seeing fairly good.

A. +2 952.			B. 394.		
13	52	40,0	13	52	0,0
	53	40,0		53	0,0

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1899phae.proj.1359.

Mar. 10, 1899. Friday

Phot 1.

S Coronæ Wolf

8 36 +19.6

5 55

2 41

9 19

I

all these observations copied, Phot, Ledg

6 31 00

234.5

Var disappears 289.0 54.5

59.9

230.1 114.4 -1.3²

290.0

Left + above -1.28

230.0

6 32 30

290.0 60.0

231.3 57.7 -1.24

289.0 117.7

322.0

6 35 40

20.5 58.5

318.8 62.2 -1.18

21.0 120.7

Right + Below

318.1 -1.18

6 37 15

22.0 63.9

322.1 56.5 -1.18

18.6 120.4

Epoch = 21213

6 16 25 4724.4816

4715.3888

6 34 6.0 +9.1428

5 38.5

1 33 27.5 Gr M Time.

Mean -1.23

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1899phae.proj.1359.

Mar. 10, 1899

II.

6 40 00 Right & Above

321.6		
207	59.1	
319.5	62.5	-1.16
22.0	121.6	

-1.19

6 41 05

32.00		
21.0	61.0	
322.2	57.6	-1.22
19.8	118.6	

6 43 35

52.5		
111.6	59.1	
53.1	57.6	-1.27
110.7	116.7	

-1.29

6 45 20 Left & Below

37.2		
112.4	58.2	
53.6	56.6	-1.31
110.2	114.8	

10 00

6 44 50.0
5 38.5
11 44 11.5 Gr M Time

Mean = -1.24

.4890
.3288
9.1502

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1899phae.proj.1359.

Mar. 10, 1899

III

53.2

6 47 15 110.2 59.0

52.3 57.9 -1.31

Left + Above 110.2 114.9

58.8 -1.34

6 48 30 110.1 56.3

54.3 56.1 -1.36

110.4 112.4

143.2

6 51 10 200.1 56.9

141.4 61.0 -1.24

202.4 117.9

Right + Below 141.8 -1.24

6 53 35 202.8 61.0 -1.23

200 30 143.0 57.2

6 50 7.5 200.2 118.2

5 3 8 5

11 49 29.0 Yr. M. Time. Mean = -1.29

.4927

.3388

9.1539

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1899phae.proj.1359.

Mar. 10 1899

IV

6 57 45

Right of Below

124.0		
200.4	56.4	
140.3	60.7	-1.23
201.0	117.1	
	7	-1.21

6 58 50

142.0		
202.5	60.5	
143.0	59.4	-1.19
202.4	119.9	

7 01 50

Left of Above

232.8		
289.3	56.7	
231.3	60.0	-1.27
291.3	116.7	

231.5		-1.26
292.3	60.8	
235.5	56.5	-1.25
290.0	117.3	

7 03 15

24140

7 00 40

5 38.5

12 00 1.5 Gr. M. Time.

Mean = -1.24

5000

.3388

9.1612.

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1899phae.proj.1359.

March 19 1899

V.

233.0

7 09 45 289.0 56.0

233.5 58.5 −1.31

292.0 114.5

Left & Above

231.3 −1.23

7 09 50 293.2 61.9

231.8 60.0 −1.15

291.8 121.9

322.5

7 12 20 21.2 59.7

322.5 59.4 −1.21

21.9 119.1

Right & Below

318.5 −1.16

7 15 25 212.8 62.3

45 20 321.8 59.4 −1.11

7 11 20 21.2 123.7

5 38.5

1210 41.5 Mt Time

.5074

.3388

49.1686

Mean = −1.20

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1899phae.proj.1359.

March 10, 1899

VI

7 19 10 Right & above

326.0
22.0 61.0
320.0 62.8 -1.1.1
22.8 123 8

319.3 -1.10
22.3 63.0
320.0 62.4 -1.08
22.4 125 4

7 24 20

49.8
110.6 62.8
48.4 64.9 -1.07
113.3 125.7

Left & Below.

~~43.3~~ -1.10
49.8 62.5
112.3
53.0 59.8 -1.14
112.8 122.3

7 27 00
9 30

7 22 52.5
5 38.5

12 22 14.0 Gr. M Time.

Mean = -1.10

.5154
.3385
+9.1766

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1899phae.proj.1359.

March 10, 1899

VI

~~Nickel removed~~

Nickel removed and Foucault put on.

7 33 00 Left of Above

72.3
135.9 63.6
73.0 60.2 -1.11
133.2 123.8

7 34 45

74.2 61.8 -1.12
130.0
74.3 62.1 -1.13
136.4 123.9
2.9

7 39 00 Right of Bdow

165.1
227.0 61.9
162.2 63.6 -1.07
225.8 125.5

-1.06

7 40 25

162.5
226.0 63.5 -1.04
163.0 63.8
226.8 127.3

147 10

7 36 47.5
5 38.5

12 36 9.0 G.M. Time.

.5251
.3358
+ 9.1863

Mean -1.09

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1899phae.proj.1359.

March 10, 1899

VIII

7 4815 Right of Below

163.0
228.8 65.8
163.0 65.8 -0.95
228.8 131.6

7 5000

163.0 -0.98
226.3 63.3
163.8 64.7 -1.02
228.5 128.0

7 5325

252.8
315.0 62.2
252.3 63.8 -1.06
316.1 126.0

Left of Above

7 6300

232.2 -1.04
317.0 64.8
253.3 62.7 -1.03
316.0 127.5

20640
7 5140
5 385
12 51 1.5 Gr. M Trin.

Mean = -1.01

.5354
.1338F
9.1966

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1899phae.proj.1359.

March 10, 1899

IX

252.5

8 02 25 317.6 65.1

253.5 63.5 -1.01

Left & Above 317.0 128.6

-1.00

25 2.12

8 04 25 317.2 65.0

253.1 63.9 -1.00

317.0 128.9

344.8

8 07 50 46.0 64.2

343.2 65.4 -0.99

Right & Below 48.6 129.6

-0.98

Done interfers, altered 343.8

48.8 67.0

8 13 45 323.0 63.0 -0.98

46.0 130.0

38 25

8 9 36.0 Nickel bolt fouls and tried used throughout

5 38.5 balance of observations during evening.

13 8 57.5 Gr. M. Time.

Mean = -0.99

.5479

.3388

9.2091

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1899phae.proj.1359.

Mar 10, 1899

X

276.6
338.5 62.4
273.8 66.2 -1.01
340.0 128.6

8 16 50

Right & Below

2738 -0.98
340.2 66.4
274.6 65.4 -0.97
340.0 131.8

8 18 05

3.0
68.8 65.8
2.6 66.4 -0.93
69.0 132.2

22 00

Left & Above

7.0 -0.98
68.8 64.8
5.2 63.2 -1.02
68.4 128.0

8 23 30

8 0 25

8 20 6.
5 38.5

13 19 27.5 Gr. M. Time

Mean = -0.98

.5555
.3385

9.2165

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1899phae.proj.1359.

March 10, 1899.

~~XII~~
XI

		5.0		
8	28 30	70.2	65.2	
	Left & above	3.8	65.4	-0.97
		69.2	130.6	
		4.8		-0.96
8	29 35	70.8	66.0	
		5.0	64.7	-0.96
		4.8	130.7	
		69.5		
		93.0		
8	32 40	161.2	68.2	
		94.0	68.2	-0.85
	Right & Below	162.2	136.4	
				-0.86
		93.8		
8	34 30	161.0	67.2	
	125 15	92.0	68.5	-0.86
8	31 18.5	160.5	135.7	
5	38.5			

13 30 .400 Gr. M. Time.
.5630
.3388
9.2242
2

Mean = -0.91

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1899phae.proj.1359.

Mar. 10, 1899

XII.

		92.3		
δ 37 00		162.0	69.7	
		93.3	68.7	-0.81
	Right & Below	162.0	138.4	
				-0.81
		92.0		
δ 38 45		162.1	70.1	-0.81
		92.8	68.3	
		161.1	138.4	
		183.8		
δ 42 10		254.0	70.2	
		184.0	66.0	-0.85
		250.0	136.2	
	Left & Above			-0.85
		184.6		
δ 45 00		252.8	68.2	
		184.8	68.2	-0.85
		253.0	136.4	

~~δ~~ 16 25

δ 40 43.5

5 38.5

13 40 50 Gr. M. Time.

.5900

.3385

~~9.2682~~

9.2312

Mean = -0.83

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1899phae.proj.1359.

Mar 10 1899

XIII.

8 49 10

Left of Sun

184.1
252.2 68.1 -0.87
184.8 67.2
252.0 135.3 -0.86

8 50 40

183.3
253.0 69.7
184.8 66.8 -0.84
255 1.6 136.5

8 53 00

273.8
341.7 67.9
274.0 68.6 -0.84
342.6 136.5

8 53 00

Right of Sun

275.0 -0.84
342.2 67.2
273.5 69.1 -0.85
342.6 136.3

8 207 50
8 51 57.5
38.5

13 51 19.0 G.M.T. time.

Mean = -0.85

.5766
.8388
9.2378

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1899phae.proj.1359.

Mar 10, 1899.

XIV

8 58 00

271.0
342.8 71.8
273.2 69.8 −0.74
343.0 141.6

Right & Below

−0.76

8 59 20

2730
344 71.2
273.0 69.1 −0.77
342.1 140.3

9 02 15

4.0
69.0 67.0
71.0 69.3 −0.85
4.2 136.3
73.5

Left & above

−0.82

9 04 00

3.0
72.0 69.0
2.2 69.6 −0.80
71.8 138.6

243 35
9 00 53.7
5 38.5
17 00 15.2 Mr. McTurna.
.5835
.3388
9.2427

Mean = −0.79

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1899phae.proj.1359.

Mar, 10, 1899.

XV

9 06 15 — Left & Above

3.5			
72.0	68.5		
3.6	69.6		
72.2	138.1	-0.8	1
	8.1		
2.0		-0.8	2
71.0	69.0		
3.5	68.7	-0.8	2
72.2	137.7		

9 08 20 →

9 15 30 — Right & Below

91.0			
165.4	74.4		
91.5	73.6	-0.6	3
164.1	147.0		
	7		
		-0.6	4
90.8			
163.6	72.8	-0.64	
90.0	74.0		
164.0	146.8		

9 17 30 — Light clouds

47 35

9 11 57.7

5 38.5

14 4 19.2 G. M. Time

.5912

.3388

9.2524

Mean = -0.7 3

1899phae.proj.1359.

Mar 10 1899

~~XII~~

Clouds
Stars gone

9 0.1

9 21 40	Right ~~Below~~	165.0	74.9
		90.5	73.8
	clouds thicks	164.3	148.7

-0.60

-0.60

		90.0	
9 23 30		164.0	74.0
		89.8	74.8
		164.6	148.8

-0.60

		181.0	
9 27 30		255.0	74.0
	tip and above	181.0	72.3
		253.3	146.3

-0.65

		181.2	
9 31 00		255.0	71.8
		180.2	73.8
		254.0	145.6

-0.66

-0.66

Mean -0.63

10 3 40
25 55.0
38.5
14 25 16.5 Gr. M. Time
.0009
.3385
9.2621

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Mar. 10 1899

XVII.

Clouds

Stars gone

		195.6	86.0	
10	49 10	Left of above	25.	169.5
			18.	8.
			22	16.
			17	
			25	

Cloudy again reject above

		83.6		
10	54 45	Left of above	172.0	88.4
			83.0	86.4	−0.10
			169.4	174.8	
			83.0	88.0	−0.10
10	56 05		171.0	86.4	−0.11
			84.2		
			170.6	174.4	
11	00 00				
10	5		174.0		
			259.5	85.5	
			174.8	86.2	−0.16
			260.0	171.7	
		Right of above.	176.3		−0.20 −0.10
11	03 20		259.0	82.7	
	234 10		175.2	84.6	−0.24 −0.05
10	58 32.5		259.8	167.3	−0.15
5	385		6		mean = −0.10
15	57 54.0				

.6652
.3388
9.3264

Very light blue through clouds stars very faint.

Mean Time.

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March 10, 1899

~~Results Above~~

	Arnold & Stent 9.5-8		Bond & Son.
22	49	38.5	22 49 00
22	50	38.3	22 50 00
22	51	38.3	22 51 00

~~Left Below~~

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Mar. 12, 1899. (Sunday)

Sagittarius

New Star in ~~Ercolanus~~. N. obs.

12	V 1	−13.0	Phot. I.
14	3 V		Ledgered Copied
−4	16		Nova and 9.0 mag.
7	44		9.0 mags. = S 8 −13° V 200 (9.0)

For spectrum, see end.

Left and above.

		192.8	< 9.0 dis.
16	15.3−	241.1	48.3
		192.0	49.0 +1.72
		241.0	97.3
			6
			1.60
		189.5−	
	16.7	243.9	54.4
		190.0	47.8 +1.60
		241.8	102.2

Right and below.

		280.8	
	19.8	333.0	52.2
		278.4	56.4 +1.75
		334.7	108.6
			+1.41
		277.5−	
	21.6	337.2	59.7
		278.8	52.1 +1.38
		330.9−	111.8
16	7.3.6		
16	18.4		
5			
21	18.4 Gr. M. Time		Mean = +1.54

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1899phae.proj.1359.

Sear. 12. 1899.

Same again.

Right + below.

282.0		
330.3	48.3	
276.0	58.0	+1.50
~~338.7~~	106.3	
334.0		
		+1.48
278.8		
~~337.2~~	~~59.9~~	
336.7	50.1	+1.46
282.4	108.0	
332.5		

16 25.5

Index to left - and above

11.1		
61.0	49.9	
06.0	57.2	+1.49
63.2	107.1	
		+1.53
8.3		
62.7	54.4	
11.9	49.0	+1.57
~~59.9~~	103.4	
60.9		

27.5

16 26.5

5

21 26.5 Gr. M. Time

Mean = +1.50.

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1899phae.proj.1359.

Jan. 12, 1899.

Index to right + above

9.0 magn. and 7.5 magn. Ledgered

7.5 magn. = SD −12° or 2v9. (7.5)

34.2	197.1		
	238.2	41.1	
	201.0	33.0	+2.37
	234.0	74.1	
	200.1		+2.38
	233.2	33.1	
	197.0	40.3	2.40
	237.3	73.4	

Index to left + below

	291.0		
	224.7	33.7	
	283.2	44.8	+2.24
	325.0	78.5	
			+2.30
	286.2		
	327.1	40.9	
	289.2	34.1	+2.35
	324.3	75.0	
41.2			
75.4			
16 37.7			
5			
21 37.7/Gr. McTyre	Same again.	Mean = +2.34	
	Left and below.		
	288.7	34.8	
42.8	324.5	42.7	
	284.3	77.5	
	327.9		+2.27

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1899phae.proj.1359.

Mar. 12. 1899.

	256.1	Ledgered	
44.7	328.0	42.1	+2.28
	289.8	34.7	+2.29
	324.1	76.8	

Right + above.

	15.2		
47.8	√4.9	36.7	
	~~15.8~~	40.4	+2.28
	16.0	77.1	
	√6.4		

+2.30

	16.2		
48.7	√6.8	40.6	
23.5	16.9	35.2	2.32
16 45.9	√4.1	75.8	
5			
21 45.9			

Mean = +2.29

Gr. Nebula

Spectrum shows a point or small knot of light with apparently a faint continuous ~~spe~~ spectrum through it. as below.

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Mar. 12. 1899.

Pos. Zero. 27 2.3
4 V. 0
3 23.3

Transits of Nova, 7.2 magn., and 8.9 magn.

16h [36]	01.3	Nova	North half.
	16.8	7.2 ~~F. F.~~	South "
	31.2	Nova	North "
	50.0	8.9 ~~F. F.~~	~~South.~~ North half.
	03.8	7.2 ~~F. F.~~	South half.
37	19.1	8.9 F. F.	North "
	—		
	—		
[38]	47.7	Nova	
	01.6	7.2 mag.	
39	16.0	Nova	
	30.0	8.9 "	
	48.9	7.2 "	
40	04.3 —	8.9 "	
[40]	20.8	Nova	
	30.0	7.2 magn.	
	49.6	Nova	
41	08.0	8.9 "	
	22.0	7.2 "	
	37.8	8.9 "	

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1899phae.proj.1359.

Mar. 12, 1899.

[42]	6.8[3]	Nova
	20.7	7.8 magn.
	35T2	Nova
	53.5-	A.9 "
	07.0	7.8 "
43	23.5-	A.9 "
	50.5-	Nova
[44]	4.5-	7.8 "
	19.5-	Nova
	38.1	A.9 "
	51.8	7.8 "
[45]	7.9	A.9 "
	35.8	Nova
	49.8	7.8 "
[46]	4.8	Nova
	22.5-	A.9 "
	36.82	7.8 "
46	52.2	A.9 "

B 236 used in transits.

7.2 magn. = N.S. -13° 51' 19" (7.8)

A.9 " = " -13° 51' 19" (A.9)

Last two sets pretty difficult. Daylight coming.

B. 236.			B. 394.		
17	16	37.2	17	37	0.0
	17	37.4		38	0.0

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1899phae.proj.1359.

Mar. 16. 1899. (Thursday)

☉ Cti Plat. R. ☆ Z. obs.

2 12 −3.6
6. 48
4 36

Plotted

Ledgered.

7 02.0 var. dis. → 232.5
299.6 67.1
228.2 74.8 −0.74
303.0 141.9

Left Below
Right Above

233.0 −0.78
302.5 69.5
233.1 67.9 −0.83
301.0 137.4

322.9
30.5 67.6
Left Above 321.6 68.5 −0.85
30.1 136.1

−0.79

320.3
33.0 72.7
7 07.5 321.4 69.4 −0.73
12 3.8 Gr. M. Time. 30.8 142.1

Mean = −0.78

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1899phae.proj.1359.

March 16, 1899

Same again.

Plotted.

322.1		
30.4	70.3	Ledgered.
322.0	69.2	-0.78
31.2	139.5	

7 09.8

Left of Above -0.79

322.8		
31.7	68.9	
322.8	69.9	-0.80
31.7	138.8	

51.8		
120.8	69.0	
53.0	67.0	-0.86
120.0	136.0	

-0.83

7 19.0 Right of Below.

12 13.4 G.M. Time.

52.0		
122.3	70.3	
50.2 (52.8)	68.6	-0.80
121.4	138.9	

Mean = -0.81

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Mar. 16, 1899

M. Puppis.

7 49 −12.2
7 30

19

11 41
7 49
7 43

6

11 54

b 4 a
c 2 b
d 3 c
e 4.5 d
f 6 e
g 4.5 f
h 2 g
k 3 h

Copied

8 00.0

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1899phae.proj.1359.

March 16, 1899.

Comp stars for M. Pupkis.

Stars ~~5~~ comps with (9.0)

~~160~~

178 copied

8 10.0 Comp star dist 54.1 36.3

18.2 36.6 +2.41

54.8 72.9

Above

~~Right~~ Below +2.42

18.8

55.3 36.3 +2.42

18.3 36.5

54.8 72.8

108.0

146.3 38.3 +2.32

108.5 37.5

146.0 75.8 +2.32

Below

~~Left~~ Above

107.6

8 18.0 146.0 38.4 +2.36

~~105.5~~ ~~37.7~~

~~+0.2~~ ~~7.8~~

13 130 Gr. M. Time. 146.5 ~~78.7~~ 76.1

Mean = +2.37

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Mar. 16. 1899.

Selection of faint comp. stars for V Cam. Mrs. Hk.

7 0 +9.1
ℓ 3v
+1 3v

a 5 b
b 6 c
c 2 d
d 5 e
e 3 5 f
f 4 g
g 4 h
h 3 k
k 2 l
l 3 5 m

Copied.

9 58.0

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Mar. 16, 1899.

Comp. of stars for V. Cam. Mun.
W. 062

	stars used with	Copied		
10 0f. 5	206.0			
	226.0	20.0		
	205.8	22.5	+ 3.63	
	228.3	42.5		
				+ 3.70
Right	207.0			
	227.2	20.2		
	207.3	19.9	+ 3.76	
	227.2	40.1		
	296.8			
	318.8	22.0		
	295.8	22.7	+ 3.52	
Left.	318.5	44.7		
	297.1			+ 3.57
10 17.0	318.8	21.7		
15 11.7 ½ Mt. Time	295.8	21.1	+ 3.62	
	316.9	42.8		

Mean = + 3.64

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16

March 7, 1899.

Comp Stars for ν Can. Minoris.

Star by Comp with Speed

		293.4		
10	25.0	319.8	26.4	
		292.5	26.9	+ 3.13
	Left	319.4	53.3	
				+ 3.10
		292.2		
		319.4	27.2	
		292.0	27.7	+ 3.07
		319.7	54.9	
		24.0		
49.3		~~319.3~~	25.3	
		23.2	25.9	+ 3.22
		~~49~~ 49.1	51.2	
	Right			+ 3.22
		24.0		
		49.5	25.5	
10	35.0	24.0	25.6	+ 3.23
15	30.5 Gr. M. Time.	49.6	51.1	

Mean = + 3.16

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Mar. 16, 1899

Phot. R. W. obs.

Nova Aurigae

5 23 +32.0
10 33
5 10

Ledgered.

331.5
22.4 50.9
335.0 +3.2 +1.81
18.2 94.1

~~Left~~ Below

+1.90

334.1
18.3 44.2 / 42.6 +2.00
335.4 86.8
18.0

65.5
107.0 41.5
63.8 41.8 +2.10
105.6 83.3

+2.08

63.0
106.3 43.3
65.7 41.6 +2.05
107.3 84.9

10 50.5

10 58.0
15 53.2 Gr. M. Time.

~~Right~~ above

Mean = +1.99

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March 16. 1899

Comp star – star S. = 11.0
Same again

Copied Plotted
Ledgered

63.3
107.5 44.2
66.8 40.4 +2.06
107.2 84.6

10 59.0

Above

+2.03

64.2
108.0 43.8
65.2 42.9 +2.00
108.1 86.7

155.7
201.0 45.3
155.0 42.8 +1.96
197.8 88.1

Below

+2.00

155.0
197.8 42.8
154.7 42.3 +2.05
197.0 85.1

11 07.0

16 2.0 Hr. M. Time.

Mean +2.02

Spectrum monochromatic,
Watch used 1 ~~minute~~ minute fast.

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1899phae.proj.1359.

March 17. 1899 (Friday)

Eros.

2 24 +21,5
6 53
4 29

~~Star~~ Eros prec. the A.V mag.
10.5
10.3
10.2
10.1
9.9

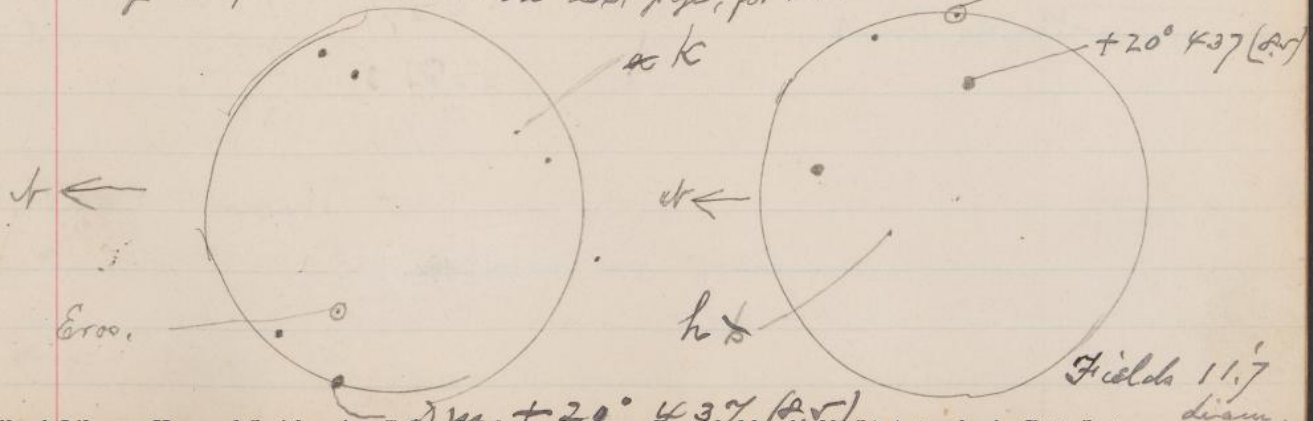
Field 49.5 secs.
asteroid precedes, 5.5 magn. 9.5 secs same decl. at ~~7.85~~ 7h 35m.

7 ~~38.0~~
7 30.0

9.3
9.5
9.0
9.1
9.0
} Eros and A.V again.

7 ~~38.0~~
7 38.-

Location of Comp. Stars used on next page, for estimates.



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March 17, 1899

Comp. Star used in following photometric groups on Eros with Phot. Y. = 2 Hr. + 20° 4436 (8.8)

Eros Continued.

h ~~b~~ 4 Eros

Eros 2.5 a k

Comp. Star =

Compstardis)

8 00.0

	295.8		
	314.8	19.0	
	297.8	21.3	+3.78
Left & Above b	316.1	40.3	

+3.90

	297.1		
	314.1	17.0	
	297.1	18.2	+4.05
	315.3	35.2	

	27.8		
	47.0	19.2	
	26.4	19.6	+3.84
Right & Below a	46.0	38.8	

+3.86

8 08.0

13 04.0 Gr. M. Time.

	28.0		
	47.0	19.0	
	29.5	19.0	+3.88
	~~49.8~~	38.0	
	48.5		

Mean = +3.88

Eros preceds 85 magn 4 secs. slightly N. at 8.16 o'clock. much troubled by clouds in early part of group. Group ½ cut. Clouds prevented 2 ½ groups.

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March 17, 1899.

V Canis Minoris

7	0	+9.1
9	1	
2	1	

Confirmed

a 4.5 b
b 6 c
c 1.5 d
d 4.5 e
e 3 f
f 4 g
g 3 h
h 3 k
k 2 l
l 3 m

9 12

14 12 Gr M. Trans.

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March 17, 1899

V Can. Min.

Copied

Star & comp with
24.4
46.0 21.6
26.5 18.9 +3.74
45.4 40.5

+3.79

Right & Above

26.8
46.0 19.2
25.7 19.3 +3.54
45.2 38.7

115.5
139.1 23.6
116.0 22.0 +3.48
138.0 45.6

Left & Below +3.54

116.0
138.0 22.0
117.0 21.2 +3.60
138.2 43.2

Mean = +3.66

9 20 +8

9 28.0
14 24.0 Gr. M. Time.

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1899phae.proj.1359.

March 17, 1899.

Star & comp wills

	114.0	Copied	
9 30.0	~~141.4~~		
	141.4	27.4	
	116.0	22.4	+3.24
	138.4	50.8	
Left			+3.36
	116.8		
	138.4	22.6	+3.47
	115.2	23.1	
	138.3	45.7	
	205.4		
	228.2	22.8	+3.49
	206.0	22.6	
Right	228.6	45.4	
			+3.56
	206.6		
	229.0	22.4	
	206.0	20.2	+3.63
	226.2	42.6	

9 38.0

1H 34.0 Gr. M. Time

Mean = +3.46

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March 17, 1899.

Stark counts with

			dopied	
		205.0		
9	39.0	230.0	25.0	
		204.6	25.4	+ 3.25
		230.0	50.4	
				+ 3.30
	Right	205.5		
		229.6	24.1	
		204.6	24.4	+ 3.34
		229.0	48.5	
		292.3		
		320.4	28.1	
		294.0	26.5	+ 3.07
		320.5	54.6	
				+ 3.11
	Left	294.0	26.2	
		320.2	26.5	+ 3.15
		294.0	52.7	
		320.5		
9	50.0			
14	44.5 Gr. M. Time.		Mean = + 3.20	

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1899phae.proj.1359.

March 17, 1899.

Star g comp w

Copied.

	293.5		
10 02.0	320.4	27.4	
	292.0	28.0	+ 3.04
	320.0	55.4	

+ 3.04

Left & above

	293.0		
	320.2	27.2	
	293.8	28.0	+ 3.05
	321.8	55.2	

	24.0		
	49.0	25.0	
	23.0	26.0	+ 3.23
	49.0	51.0	

Right & Below

+ 3.15

40

10 09.0

~~10~~	~~23.0~~		
	23.3	25.9	
	49.2	27.5	+ 3.12
	22.0	53.4	
15 05.5 G.M.T. Time.	49.5		

Mean = + 3.11

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1899phae.proj.1359.

Mar. 17, 1899

Star & comp with

		20.2	Copied	
10	12.0	52.6 ~~52.6~~	32.4	
		21.3	30.9	+ 2.74
		Right of star 52.2	63.3	
				+ 2.73
		21.0		
		52.0	31.0	
		19.4	32.8	+ 2.72
		52.2	63.8	
		1098		
		1432	34.1	
		1085	35.3	+ 2.53
		1438	69.4	
		Left of Below		+ 2.52
		1092		
		1445	35.3	
10	22.0		34.2	+ 2.52
15	17.0 Gr M Time	1098	69.5	
		1440		

Mean = + 2.62

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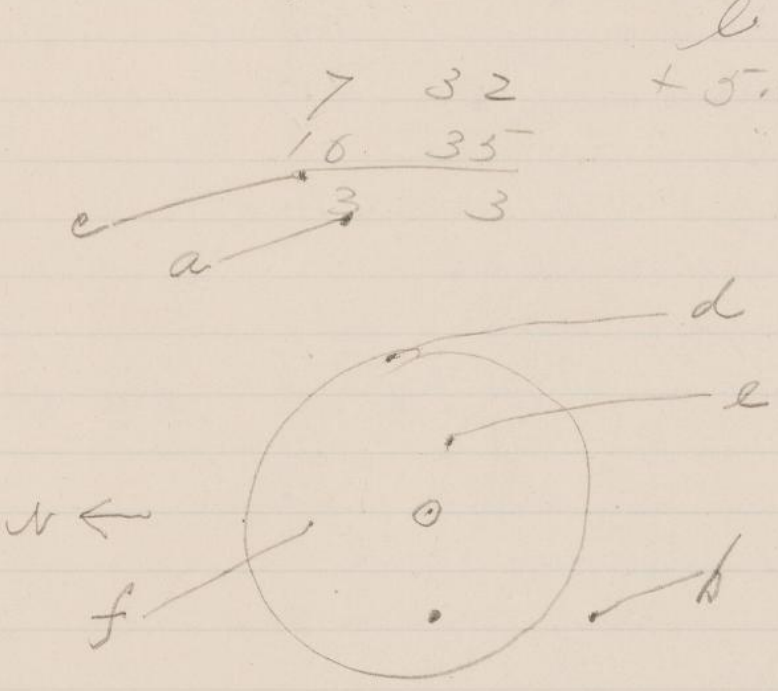
1899phae.proj.1359.

Mar. 17. 1899.

— Canis Minoris. H. 66.

Selection of Comp. Stars.

		l
7	32	+5.6
10	35	
3	3	



Abandoned

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March 20, 1899 Monday

Eros.

2	31	+ 21.3
7	08	
4	37	

		11.0
7	20	10.5
		10.5
		10.5
		10.6

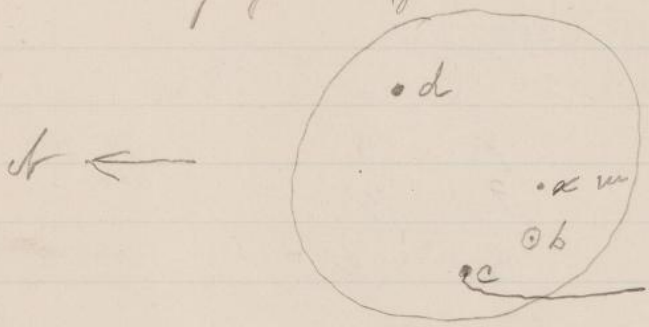
		3.7
7	23	3.6
		3.6
		3.5
		3.0

		4.0
		3.8
7	33	4.0
		4.0
		3.8
		3.8

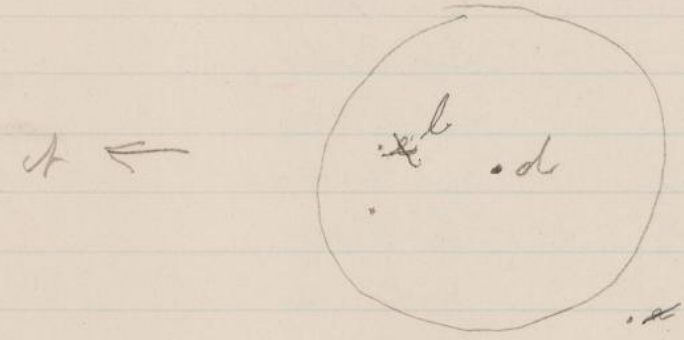
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1899phae.proj.1359.

March, 20, 1899.
1 in eye piece, power 270. Field 11.7'.



= δ Ur. +21° 376 (9.v)



= δ Ur. +21° 376 (9.v)

8 20 l 6 eros, eros + m

To faint and low for photometric measurements. Moon also very bright.

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1899phae.proj.1359.

Mar. 20, 1899.

V. Canis Majoris
Red. est. on Comp. Stars.

7 0 +9.1
9 4
2 4

Copied

a 5 b
b 5.5 c
c 2 d
d 5 e
e 4 f
f 5 g
g 2 h
h 3 k
k 2.5 l
l 3 m

9 05

S Cancri. Phot. T. W. obs.
8 38 +19.4
9 17
0 39
~~3 21~~

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1899phae.proj.1359.

Nov. 20 1899.

δ Cancri.

Ledgereds I

	5		
	18 5 5		
9 26 00	250.0	64.5	
	185,5	63.7	-1.02
Above.	249.2	128.2	
			-1.06
	18 5 8		
9 27 30	247.2	61.4	
	183.7	62.8	-1.10
	248.5	124.2	
	271,3		
9 30 15	340.0	68.7	
	274.5	63.8	-0.93
	338.3	132.5	
			~~-0.8~~
Below.			-0.90
	275 8		
9 32 45	339.5	63.7	
	270.0	72.0	-0.86
	342.0	135.7	

116 30

9 29 7.5

5 -15.0

14 28 52.5 Sgr. M. Trans.

Mean = -0.95

4734.6034

4734.3082

+0.2952

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1899phae.proj.1359.

March 20, 1899

Ledgred II

9	37	20.	271.8	
			340.2	68.4
			274.7	64.9 — 0.91
			339.6	133.3
				— 0.90
		Below	274.4	
9	38	30	338.6	64.2
			271.0	70.2 — 0.89
			341.2	134.4
9	41	05	5.1	
			68.7	63.6
			7.0	58.1
			65.1	121.7 — 1.16
				— 1.15
		Above.	7.0	
9	42	40	68.2	61.2
			5.6	61.4 — 1.14
			67.0	122.6
	159	35		
9	39	52		Mean = — 1.02
5		— 15		
14	39	37	Gr. M. Time.	

4734.6108
4734.3082
+ 0.3026

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1899phae.proj.1359.

March 20, 1899

III.
Ledgered

9 45 15

Above

	5.0		
	67.5	62.5	
6.8	7.2	59.0	-1.16
	65.8	121.5	
			-1.15
			~~+.05~~

9 46 40

	6.0	59.4	
	65.4	62.8	-1.14
	5.4		~~+.00~~
	68.2	121.2	

9 50 15

	94.4		
	161.8	67.4	
	94.6	64.4	-0.94
	161.0	131.8	
			-0.96

Below.

	97.7		
	160.0	62.3	
	94.0	67.8	-0.98
	161.8	130.1	

9 52 00

19 4 10

9 48 32

5 -15

14 48 17 Gr M-Time.

Mean = -1.06
~~+.02~~

4734.6769

4734.3082

+0.3687

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