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KG
11366
v. 396

Fundamental Stars.
Circle Readings
A2.1879.

Charles W. Sever, University Bookstore, Cambridge.

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1079phae.proj.1400k

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A21

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2

1879. Apr. ~~20~~ 19–20

Sun C = 46.747

52 31

+11 34

	m		m
.35 2	56.5	10 0	38.2
	-4.7		46.4
	+5.4		56.2
	10.4		53.6
	26 70		1944
	6.75		48.60

Both limbs in P + R.A. Seeing very fine, indeed

α Arietis

2 0 21

+22 53

	m	m	R	R
30 4	0.4	35 0 12.2	12.6	12.5
	6.6	20.1	20.1	20.3
	14.5	28.4	28.0	28.0
	14.8	27.3	28.0	27.8
	36.3	880	887	876
	9.07	22.00	22.17 O.K.	~~21.98~~ 22.15
			~~607~~	
			~~22.02~~	

β Orionis

5 8 43

– 8 21

	m	m	R	R
45 2	2,8	3 11.4	11.9	12.3
	10.7	18.8	19.5	18.8
	25.2	34.2	33.8	33.9
	17.8	27.4	28.0	27.7
	565	918	932	927
	14.12	22.95	23.30	23.17
		22.95	23.23	

β Tauri

5 18 39

+ 28 30

	m	m	R	R
55 2	4,6	3 16.7	17.3	17.2
	11.2	24.5	24.7	24.1
	22.1	34.3	31.4	34.3
	18.9	30.7	31.4	32.2
	568	1062	1078	1078
	14.20	26.55	26.95	26.95
		26.55	26.95	

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Lepti

2 55 57

-13 37

	m	m	R	R
45 4	59.5	50 1 15.4	14.8	14.7
	10.2	26.2	25.7	25.8
	8.6	27.1	26.2	27.2
	16.3	24.7	25.7	25.7
	26 46	93 4	92 4	93 4
	6.15	23.35	23.10	23.35
		23.35	23.22	

β Eridani

5 1 54

-5 15

	m	m	R	R
40 1	11.7	2 27.6	27.6	27.9
	19.3	35.3	35.2	35.0
	33.1	48.5	48.1	48.2
	27.0	42.4	42.7	42.3
	9 11	15 38	15 36	15 34
	22.78	38.45	38.40	38.35
		38.45	38.37	

δ Orionis

5 25 50

-0 23

	m	m
50 0	4.6	1 22.7
	13.2	31.8
	26.3	45.8
	20.7	38.9
	6 48	13 92
	16.20	34.80

ε Orionis

5 29 31

-5 59

	m	m	R	R.
25 1	0.2	2 17.0	16.7	16.6
	9.4	25.8	25.4	24.8
	23.1	39.5	38.9	38.7
	15.6	31.1	32.0	31.9
	4 83	11 34	11 30	11 20
	12.07	28.35	28.25	28.00
		28.35	28.12	

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1879 Apr. 20

ε Orionis

5 34 39

−2 0

	M	m	R	R
25 2	11.6	3 23.4	23.0	23.1
	20.9	32.4	32.9	32.9
	35.2	46.6	46.3	46.1
	28.6	38.7	38.8	39.3
	96.3	141.1	141.0	141.4
	24.07	35.27	35.25	35.35
		35.27	35.30	

κ Orionis

5 42 1

−9 43

	M	m	R	R
5 4	23.1	10 0 26.4	26.0	26.4
	30.6	34.3	34.2	34.2
	47.1	51.3	51.0	50.9
	39.3	42.7	42.3	42.0
	140.1	154.7	153.5	153.5
	35.02	38.67	38.38	38.38
		38.67	38.38	

μ Geminor

6 15 38

+22 34

	M	m	R	R
50 2	45.9	3 58.8	57.8	58.2
	52.7	6.2	5.6	5.7
	3.5	15.4	15.7	15.3
	3.2	15.8	15.0	15.0
	225.3	275.2	274.1	274.2
	56.32	68.80	68.52	68.55
		68.80	68.53	

γ Geminor.

6 30 43

+16 30

	M	m	R	R
55 2	6.5	3 15.4	15.8	15.8
	12.2	22.2	22.0	22.0
	22.4	87.4	36.2	36.3
	22.1	310	31.9	31.9
	63.2	106.0	105.9	106.0
	15.80	26.50	26.47	26.50
		26.50	26.48	

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α Orionis

5 48 37

+7 23

m	m	R	R
0 3 56.8	5' 0' 4'' 2	6.7	6.6
6.2	16.7	17.2	16.8
17.8	29.3	29.0	29.2
11.2	22.6	22.3	21.8
2720	758	752	744
8.00	18.95	18.80	18.60
	18.95	18.70	

δ Ursæ Min. L. b.

18 11 21

+93 24

m	m	m	m	m	m
5 1 8.1	4.8	0.4	0 54.3	49.6	41.1
11.4	8.2	3.4	57.4	53.3	43.2
23.7	20.7	15.7	9.9	5.0	55.5
20.5	17.1	11.7	6.3	0.8	52.2
637	508	312	19	2287	1920
15.92	12.70	7.80	1.98	57.18	48.00

β Cam. Min.

7 20 3

+8 32

m	m	R	R
55 0 5.2	1 22.2	21.8	21.9
12.8	29.6	29.9	29.8
25.8	43.6	43.4	43.2
19.2	36.6	37.0	36.9
630	1320	1321	1318
15.75	33.00	33.02	32.95
	33.00	32.98	

α Geminorum

7 26 52

+32 9

m	m	R	R
15 3 17.4	3 26.8	25.8	25.7
23.4	31.6	31.7	31.4
36.3	45.5	44.1	43.3
33.8	41.1	42.0	41.9
1109	1450	1436	1423
27.72	36.25	35.90	35.57
	36.25	35.73	

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1879. Apr. 20

2 Cam. Min.

7 32 58

+5 32

	m	m	R	R
50 4	51.9	55 1 46	4.5	4.7
	1.3	14.6	14.2	14.8
	11.9	26.2	25.2	26.1
	7.9	21.1	21.2	20.6
	25 30	665	651	662
	3.25	16.62	16.27	16.55
		16.62	16.41	

β Geminor.

7 37 55

+28 19

	m	m	R	R
5 3	18.4	4 32.6	33.1	33.3
	24.3	38.2	38.8	38.7
	35.2	49.4	49.8	49.5
	33.2	47.9	47.8	47.8
	11 11	1681	1695	1693
	27.78	42.02	42.38	42.32
		42.02	42.35	

ζ Hydrae

9 21 38

−8 8

	R	R
30 4	51.2	51.2
	59.1	58.6
	13.7	13.4
	8.6	8.1
	25 26	25 15
	3.15	2.87
	3.01	

α Leonis

9 38 59

+24 20

5 2	30.0	30.5
	36.9	37.0
	48.6	49.1
	46.1	46.2
	16 1'6	16 2 8
	40.40	40.70
	40.55	

Wm Chronometer in Circuit

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ε Draconis L.C.
19 46 34
+110 2

	m	m	m	m
25	3 1.8	2 41.5	22.5	12.1
	5.7	46.3	28.1	16.5
	15.4	55.2	36.4	24.7
	12.8	53.6	33.9	23.7
	35.7	196.6	120.9	77.0
	8.92	49.15	30.22	19.25

θ Cephei L.C.
20 27 33
+117 25

	m	m	m
5	2 20.6	1 36.5	11.2
	24.5	40.4	15.2
	30.7	47.2	22.0
	29.2	44.3	18.4
	105.0	84	66.8
	26.25	42.10	16.70

Shifted 1.5st 2m

α Leonis
10 1 56
+12 33

	R	R
50	3 45.0	45.1
	53.0	53.2
	5.4	5.7
	0.3	0.3
	2237	2243
	55.92	56.07
	55.99	

ζ Leonis
10 9 57
+24 1

	R
25	1 16.1
	23.2
	33.4
	31.9
	1046
	26.15

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8

Arnold 79
Leuschner
10 13 16
+120 27
R R

#10	0	9.1	88	
		17.2	17.6	
		29.0	28.3	
		24.8	24.6	
		8.01	7.93	
		20.02	19.82	
		19.92		

B Corvi
12 28 2
−22 44

m	m	R	R
5 4 46.6	10 0 43.7	44.0	43.2
56.2	53.2	53.0	52.8
10.1	7.6	7.4	7.2
2.8	0.5	0.7	0.2
23.57	22.50	22.51	22.34
58.92	56.25	56.27	55.85
	56.25	56.06	

Rej strokes preceding A+1

ε Virginis
12 56 9
+11 37

m	m	R	R
50 0 44.6	2 0.5	0.2	0.1
52.4	8.7	8.0	8.1
4.5	21.3	20.3	20.2
58.9	14.9	14.8	15.5
22.04	4.54	4.33	4.39
55.10	11.35	10.82	10.97
	11.35	10.89	

α Virginis
13 18 49
−10 32

m	m	R	R
55 3 23.7	4 39.7	39.0	39.4
31.8	47.1	47.1	47.0
48.3	3.1	2.2	1.9
38.7	54.9	55.2	55.2
14.25	20.48	20.35	20.35
35.62	51.20	50.88	50.88
	51.20	50.86	

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γ Virginis pr.
12 35 32
−0 47

m	m	R	R
10 4 3.7	15 0 22.5	22.2	22.2
11.8	32.1	31.9	32.3
25.1	45.7	44.6	44.2
19.2	38.1	38.7	38.9
59.8	138.4	137.4	137.6
14.95	34.60	34.35	34.40
	34.60	34.37	

δ Virginis
12 49 30
+4 3

m	m	R	R
20 3 43.0	25 0 1.5	1.2	1.2
53.1	11.7	11.5	11.2
2.1	22.2	20.9	21.2
58.9	17.7	17.4	17.0
21.71	5.31	5.10	5.06
54.27	13.27	12.75	12.65
	13.27	12.70	

Pr. #

β Cygni
19 25 50
+27 42

R	R
45 0 10.3	10.7
16.7	16.3
25.6	25.8
24.9	24.9
77.5	77.7
19.37	19.42
19.39	

γ Aquilae
19 40 30
+10 19

m	m	R	R
5 2 58.7	4 13.6	14.0	13.7
8.1	22.2	22.2	21.8
18.2	32.1	31.6	31.9
13.8	28.6	29.8	29.0
27.88	96.5	97.6	96.4
9.70	24.12	24.40	24.10
	24.12	24.25	

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10

1879. Apr. 20

δ Aquilae

9 44 53

+8 33

m	m
50 4 7.5	~~55 50~~ 23.2
16.3	~~23.2~~ 32.2
25.5	~~32.2~~ 43.9
20.3	39.2
6 96	1365
17.40	34.12

β Aquilae

19 49 22

+6 6

m	m	R	R
20 0 37.1	1 56.5	56.2	56.6
42.6	6.2	6.8	6.8
57.5	16.6	16.8	16.8
53.3	12.4	12.3	12.0
1905	2717	2721	2722
47.62	7.92	8.02	8.05
	7.92	8.03	

ϕ Cephei

20 27 33

+62 35

m	m	m	m
50 3 0.8	24.6	4 7.0	20.3
3.9	26.5	8.6	23.1
13.7	35.8	18.6	32.4
12.2	36.0	18.6	32.6
306	1229	528	1084
7.65	30.72	13.20	27.10

ζ Cygni

21 7 47

+29 44

m	m	R	R
40 3 42.7	4 57.5	58.9	58.6
49.7	57.5	56.8	56.8
57.9	51	4.9	4.7
56.3	4.5	4.0	4.2
66	2376	2366	2363
51.65	59.40	59.15	59.07
	59.40	59.11	

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θ Aquilae

20 5 4

~~20 5 4~~ −1 11

	M	m	R	R
35 2	29.9	3 44.4	44.4	44.3
	39.3	53.0	53.4	54.0
	51.6	6.0	5.4	5.0
	44.9	58.8	0.0	0.1
	16 57	22 32	22 37	22 34
	41.42	55.80	55.92	55.85
		55.80	55.88	

ζ 2 Capricorni

20 11 20

−12 55

	M	m	R	R
20 1	17.6	2 33.6	33.9	34.1
	28.3	44.1	44.0	43.9
	42.1	57.2	57.3	57.3
	33.4	49.6	50.0	49.1
	12 14	18 45	18 52	18 44
	30.35	46.12	46.30	46.10
		46.12	46.20	

β Aquarii

21 25 11

−6 6

	M	m	R	R
30 2	33.5	3 48.2	48.1	48.0
	42.1	57.1	57.3	57.1
	55.3	9.1	8.1	7.9
	47.8	2.9	3.9	4.0
	17 87	23 73	23 74	23 70
	44.67	59.32	59.35	59.25
		59.32	59.30	

ε Pegasi

21 38 14

	M	m	R	R
5 2	44.5	3 57.8	57.8	57.8
	53.3	6.4	5.8	5.9
	2.4	16.6	16.8	16.7
	57.9	11.7	11.9	12.2
	21 81	27 25	27 23	27 26
	54.52	8.12	8.08	8.15
		8.12	8.12	

Lost some of the wire of A

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12

1879. Apr. 20

ζ Aquarii

21 59 34

−0 54

	m	m	R	R
20	1 4,0	2 15,9	16,2	16,2
	13.3	25.4	25.6	25.2
	25.4	36.6	36.8	36.8
	18.9	31.2	31.7	32.2
	6 16	10 91	11 0.3	11 0 4
	15,40	27.27	27,58	27,60
		27.27	27.59	

ζ

ζ Andromedæ

0 2 8

+28 25

R	R
0 0 76	78
131	132
22.9	22.3
22,2	21,7
658	650
16,45	16,25
16,35	

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γ Pegasi

0 7 0

+14 36 R R

55 2368 3774

4448 4449

5688 5666

5110 5110

1894 1899

47.35 47.47

47.41

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1879. Apr. 20–21

Sun.

56 15

+11 54

	m		m
15	34.7	50 0	10.6
	42.7		17.9
	55.9		32.1
	51.9		26.6
	185 2		87 2
	46.30		21.80

α Arietis

2 0 21

+22 53

	m	m	R	R
30 3	50.7			
	58.1			
	7.5			
	7.2			
	3 5			
	0.87			

Both limbs in R.A. & Decⁿ very good.

γ Geminor.

6 30 43

+16 30

	m	m	R	R
55 2	10.2	3 16.8	16.7	16.9
	15.7	22.9	23.2	23.2
	31.5	39.4	39.3	39.1
	24.4	31.4	32.0	32.3
	8 18	11 05	11 12	11 15
	20.45	27.62	27.80	27.87
		27.62	27.83	

β Can. Min.

7 20 35

+8 32

	m	m	R	R
55 0	3.6	30.6	30.7	30.6
	11.4	38.0	37.9	37.9
	26.6	53.2	53.0	52.8
	18.3	45.1	45.8	45.1
	59.9	16 69	16 74	16 64
	14.97	41.72	41.85	41.60
		41.72	41.72	

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Mr 21 1879

K Orionis

5 42 1

-9 43

R	R
10.8	
17.3	
35.2	
27.2	
905	
22.62	

μ Geminor.

6 15 38

+22 34

m	m	R	R
50 2 45.4	4 2.5	2.4	2.3
52.1	10.2	9.7	9.7
4.1	21.3	21.2	21.2
0.3	17.6	17.7	17.6
2219	516	510	508
55.47	12.90	12.75	12.70
	12.90	12.72	

ζ Geminor.

7 26 52

+32 9

m	m	R	R
15 3 12.8	4 15.0	14.8	14.7
18.1	19.2	20.2	20.1
33.7	24.5	33.5	33.7
28.2	30.6	30.8	30.7
928	993	993	992
23.20	24.82	24.82	24.80
	24.82	24.81	

ζ Can. Min.

7 32 58

+5 32

m	m	R	R
50 4 52.8	55 1.6	6.6	6.7
2.1	16.0	15.7	15.6
15.6	29.8	29.1	28.7
8.1	22.9	22.9	22.9
2586	755	743	739
4.65	18.87	18.57	18.47
	18.87	18.52	

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1879. Apr. 21

β Geminor

37 55

+28 19

	m		m	R	R
5	3 17.0	4	33.2	33.7	33.7
	22.1		38.5	38.7	38.3
	35.4		51.7	51.2	51.3
	32.2		46.7	48.2	49.0
	10 67		17 01	17 18	17 23
	26.678		42.52	42.95	43.07
			42.52	43.01	

R Aphei L.C.

20 12 56

+102 39

	m		m	m	m
50	0 27.7	11.8	45	4 58.6	48.6
	31.6	16.1		1.4	52.7
	44.4	27.9		12.4	3.0
	39.8	24.6		10.4	0.8
	14 35	8 04		26 28	22 53
	35.88	20.10		5.70	56.32

Above Stroken for Cond-√

α Hydrae

9 21 38

−8 8

	m		m	R	R
30	4 41.1	35	0 57.3	57.7	57.2
	47.2		4.3	4.2	4.2
	49		23.2	22.6	22.8
	56.6		13.1	13.5	13.8
	209'8		27 79	27 80	27 80
	52.45		9.47	9.50	9.50
			9.47	9.50	

ε Leonis

9 38 59

+24 20

	m		m	R	R
5	2 30.0	3	43.4	43.2	43.2
	36.7		49.2	49.6	49.7
	50.1		3.2	2.4	2.6
	44.8		58.4	58.8	58.7
	16 16		21 42	21 40	21 42
	40.40		53.55	53.50	53.55
			53.55	53.52	

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1879phae.proj.1400R

o Ursa Maj.
8 20 12
+61 7

20	0	24.6	44.5	1 24.4	52.1
		26.5	45.4	25.8	53.1
		42.5	0.9	40.3	8.2
		37.6	56.8	35.6	3.8
		13 12	20 76	12 61	23 72
		32.80	51.90	31.52	59.30

θ Cephei L.G.
20 27 33
+117 25

5	1 44.2	23.3	7.2
	48.4	27.2	11.2
	57.2	35.8	20.4
	53.2	30.2	16.3
	30	11 65	5 51
	50.75	29.12	13.78

38 stars for 1st ✓

1st last ✓

ζ Leonis
10 1 56
+12 33

50	4 23.4	55	0 41	4.2	4.7
	31.3		11.7	12.4	12.2
	47.6		28.1	27.4	27.2
	38.4		19.6	20.2	20.4
	14 07		6 35	6 42	6 45
	35.17		15.87	16.05	16.12
			15.87	16.08	

ζ Leonis
10 9 57
+24 1

25	1 17.2	2	25.3	24.9
	24.1		32.3	32.6
	38.4		45.8	45.6
	32.8		40.1	41.2
	11 25		14 35	14 43
	28.12		35.88	36.07
			35.88	36.07

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1879phae.proj.1400R

1879 Apr. 21

Lewis pr.

10 13 18

+20 27

		m		m	R	R
6	0	11.2	1	25.2	25.6	25.8
		18.7		33.6	33.7	33.2
		32.5		47.9	47.0	46.7
		25.8		40.5	41.7	41.2
		88.2		147.2	148.0	146.9
		22.05		36.80	37.00	36.72
				36.80	36.86	

Pr. #

η Aquilae

19 40 30

+10 19

		m		m	R	R
5	2	59.7	4	12.1	11.8	11.8
		8.2		19.6	20.2	20.3
		20.7		32.9	32.1	31.7
		15.0		28.3	27.8	27.6
		283.6		932	919	916
		10.90		23.30	22.97	22.90
				23.30	29.93	

γ Aquilae

19 59 50

−5 4

			R	R
30	0	25.5	26.0	
		35.0	35.7	
		49.0	49.7	
		43.3	43.6	
~~1151~~		~~153~~1	1550	
~~37.02~~		~~38.27~~	38.75	
		38.51		

Lost A −1 1

δ Aquilae

19 44 53

+8 33

		m		m	R	R
50	3	59.2	55	0 140	12.7	13.8
		8.2		22.5	22.7	22.3
		20.1		35.7	35.1	35.2
		13.9		28.9	28.8	29.1
		2814		10 11	9 93	10 04
		10,35		25.27	24.82	25.10
				25.27	24.96	

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1879phae.proj.1400R

δ Draconis
19 12 31
+67 27

		m	m	m	m
0	1	32.7	45.1	2 24.5	51.5
		35.4	46.9	27.4	53.5
		46.4	57.6	36.9	3.1
		46.1	57.2	37.8	5.1
		1606	68	66	2332
		40.15	51.70	31.65	58.30

β Cygni
19 25 50
+27 42

		m	m	R	R
45	0	11.0	1 22.4	22.2	22.0
		17.4	28.1	29.1	28.7
		29.2	40.1	39.2	39.4
		26.4	36.8	37.0	37.2
		540	1274	1275	1273
		21.00	31.85	31.87	31.82
			31.85	31.84	

β Aquilae
19 49 22
+6 6

		m	m	R	R
20	0	46.4	1 57.8	58.0	57.8
		56.4	8.3	8.4	7.9
		7.6	19.9	20.1	19.5
		2.3	13.5	14.4	14.7
		2324	2795	2809	2799
		58.10	9.87	10.22	9.97
			9.87	10.09	

δ Aquilae
20 5 4
−1 11

		m	m	R	R
35	2	37.6			
		46.2			
		0.1			
		53.3			
		1972			
		49.30			

Sonda

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1879phae.proj.1400R

1879. Apr. 21

δ Cygni

21 7 47

+29 44

m	m	R	R
40 3 51.7	4 56.9	57.2	57.1
58.8	3.9	3.7	3.7
8.6	14.1	13.2	13.1
6.0	10.7	11.1	11.1
51	2656	2652	2650
1.27	6.40	6.30	6.25
	6.40	6.27	

β Aquarii

21 25 11

−6 6

m	m	R	R
30 2 36.6	3 50.4	51.2	50.9
45.9	59.2	59.4	59.2
59.4	13.1	12.8	12.6
52.2	6.3	7.7	6.9
1941	2490	2511	2496
48.52	2.25	2.77	2.40
	2.25	2.58	

α Androm.

0 2 8

+28 25

m	m	R	R
0 2 1.5	3 20.7	20.8	20.5
7.1	26.1	26.8	26.9
18.7	36.5	36.9	35.8
16.8	84.6	35.9	36.0
441	1179	1204	1192
11.02	29.47	30.10	29.80
	29.47	29.90	

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1879phae.proj.1400R

ε Pegasi
21 38 14
+9 19

m	m	R	R
5 2 48.4	4 2.1	2.3	2.3
57.5	11.2	10.9	10.9
8.9	22.9	22.1	21.9
4.6	17.7	17.3	17.8
2394	539	526	529
59.85	13.47	13.15	13.22
	13.47	13.18	

α Aquarii
21 59 34
−0 54

m	m	R	R
20 1 4.9	2 18.6	18.8	19.0
13.2	27.2	27.7	27.8
27.6	41.4	41.0	41.1
20.6	34.6	35.8	35.1
663	1218	1233	1230
16.57	30.45	30.82	3075
	30.45	30.78	

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1879phae.proj.1400R

1879 Apr. 21–22

Sun

59 59

+12 14

	m		m	
.55 2	24.0	25 35 4	41.5	
	32.7		48.5	
	48.4		3.7	
	41.6		58.2	
	14 67		21 19	
	36.67		52.97	

Both limbs in δ + R.A. Seeing rather bad.

β Orionis

5 −14 43

−8 21

R	R
45 1 58.2	58.6
38	43
28.2	22.8
15.3	15.4
2805	2811
10.12	10.27
10.19	

ε Orionis

5 −4 37

+7

R 23	R
0 8 54.9	54.8
3.2	2.9
18.7	18.2
11.7	11.6
26 85	26 77
7.12	6.92
7.02	

μ Geminor

6 15 38

+22 34

m	m	R	R
50 2 42.0	3 59.7	59.7	0.0
49.9	7.1	6.3	6.6
2.1	19.2	19.6	18.8
5.7	14.3	15.1	15.0
21 17	28 03	28 07	4 04
52.92	10.07	10.17	10.10
	10.07	10.14	

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1879phae.proj.1400R

β Tauri
5 – 18 39
+28 30

	R	R
55 – 2	21	7.9
	134	13.0
	280	27.8
	22.4	22.7
	719	714
	17.97	17.85
	17.91	

γ Orionis
5 – 34 39
– 2 0

	R	R
25 2	32.0	32.3
	39.8	40.2
	56.4	56.4
	48.0	48.4
	1762	1773
	44.05	44.32
	44.18	

γ Geminor
6 30 43
+16 30

	m	m	R	R
55 2	2.4	3 15.9	16.0	16.0
	7.9	22.2	22.1	21.3
	25.2	39.4	39.9	39.4
	16.2	30.6	31.9	31.3
	517	1081	1099	1080
	12.92	27.02	27.47	27.00
		27.02	27.23	

β Can. Min.
7 20 35
+8 32

	m	m	R	R
55 0	7.4	1 21.0	21.3	21.3
	14.3	28.5	29.0	28.7
	30.7	45.3	45.0	45.2
	22.4	36.4	37.3	36.4
	748	1312	1326	1316
	18.70	32.80	33.15	32.90
		32.80	33.02	

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1879phae.proj.1400R

1879. Apr. 22

ζ Geminor

7 26 52
+32 9

m	m	R	R
15 3 16.9	4 17.1	16.4	16.8
23.3	21.3	21.8	21.7
39.8	37.4	37.0	36.8
33.9	32.3	32.9	33.0
11 59	10 81	10 81	10 83
28.97	27.02	27.02	27.07
	27.02	27.05	

ζ Can. Min.

7 32 58
+5 32

m	m	R	R
50 4 55.1	55 1 16.3	16.1	16.1
26	25.2	25.2	25.2
17.4	40.0	39.8	39.7
10.4	31.6	32.8	33.2
26 55	11 31	11 39	11 42
6.37	28.27	28.47	28.55
	28.27	28.51	

ε Leonis

9 38 59
+24 20

m	m	R	R
5 2 31.1	3 52.2	52.1	52.0
36.5	57.6	56.7	57.3
51.6	12.5	11.9	12.1
46.0	7.2	7.5	7.5
16 52	9 7	8 2	8 9
41.30	2.42	2.05	2.22
	2.42	2.13	

α Leonis

10 1 56
+12 33

m	m	R	R
50 3 44.8	4 52.9	53.3	53.7
52.1	0.2	0.1	0.2
7.8	17.1	16.1	16.0
8.6	8.9	8.2	8.8
22 53	25 91	25 77	25 87
56.32	4.77	4.42	4.67
	4.77	4.54	

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1879phae.proj.1400R

β Geminor
7 37 55
+28 19

m	m	R	R
5 3 17.8	4 31.3	31.3	31.1
22.2	36.4	36.0	35.6
37.2	50.5	49.7	49.9
32.6	45.6	46.0	47.0
1098	1638	1630	1636
27.45	40.95	40.75	40.90
	40.95	40.82	

α Hydrae
9 21 38
−8 8

m	m	R	R
30 4 41.7	35 0 58.7	58.4	58.7
48.4	5.5	5.1	5.1
6.2	24.9	24.5	24.2
56.1	13.7	15.2	14.8
21 44	28 23	28 32	28 28
53.60	10.57	10.80	10.70
	10.57	10.75	

ℊ Leonis
10 9 56
+24 1

m	m	R	R
25 1 18.7	2 28.4	28.3	
25.0	35.5	34.9	
40.1	49.3	49.7	
33.3	43.7	44.6	
1171	1569	1575	
29.27	39.22	39.37	
	39.22	39.37	

γ Leonis pr
10 13 18
+20 27

m	m	R	R
0 0 15.6	1 21.6	21.7	22.0
22.4	29.4	29.4	29.2
37.9	44.4	44.2	44.0
30.9	37.1	38.1	38.1
10.68	13 2.5	13 3.4	13 3.3
26.70	33.12	33.35	33.32
	33.12	33.33	

Reshops 5" telescope Foll. ~~#~~ pr. #

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1879phae.proj.1400R

1879 Apr. 22

Comparison star of (123)

10 41 19

+1 15

	m	m	R	R
10	2 59.3			
	8.1			
	22.9			
	16.1			
	28 64			
	11.60			

Prob. wrong #

δ Leonis

11 7 40

+21 11

	m	m	R	R
15	1 13.2	2 31.1	31.0	30.8
	19.9	37.9	36.1	37.9
	33.4	52.0	51.2	50.7
	27.6	46.6	47.2	47.7
	9 41	16 76	16 75	16 71
	23.52	41.90	41.87	41.77
		41.90	41.82	

γ Virginis ~~mean~~ foll.

12 35 32

−0 47

	m	m	R	R
10	4 15.7	150 22.3	22.2	21.8
	23.4	30.9	31.0	30.2
	39.1	48.1	47.2	47.2
	31.2	39.6	39.5	38.9
	10 94	14 09	13 99	13 81
	27.35	35.22	34.97	34.52
		35.22	34.75	

foll. #

ε Virginis

12 56 9

+11 37

	m	m	R	R
50	0 44.2	1 57.9	58.0	57.8
	52.3	65	6.0	4.5
	7.6	21.0	20.3	20.0
	0 2	12.8	14.0	13.5
	22 43	27 72	27 73	27 58
	56.07	9.30	9.32	8.95
		9.30	9.13	

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1879phae.proj.1400R

β Leonis

11 42 53
+15 15

	m	m	R	R
10 2	22.9	3 38.1	38.0	38.0
	29.9	44.1	43.7	43.9
	47.1	0.5	59.4	59.7
	37.8	52.8	53.2	53.2
	13 7 7	19 5 5	19 4 3	19 4 8
	34.42	48.87	48.57	48.70
		48.87	48.63	

ε Corvi

12 3 54
−21 57

	m	m	R	R
20 2	37.8	3 57.3	51.1	51.2
	46.4	0.2	59.9	59.8
	5.1	~~18.2~~	17.3	17.0
	53.7	6.4	8.3	7.9
	203 0	25~~6~~1	25 6 6	159
	50.75	~~4.02~~ 10.K	4.15	3.97
		~~2.77~~ 4.02	4.06	

2 Virginis

13 18 49
−10 32

	m	m	R	R
55 3	22.1	4 36.0	35.7	35.9
	28.9	43.1	42.2	42.2
	4 6	2.2	2.1	1.7
	37 6	52.1	52.2	52.2
	13 7 2	19 3 4	19 2 2	19 2 0
	34.30	48.35	48.05	48.00
		48.35	48.02	

False stroke after A 8

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1879phae.proj.1400R

1879 Apr. 22–23
Sun C = 46.747
2 3 45
+12 34

	m		m
	35 2 14.5	5 4	45.6
	22.7		52.8
	39.5		8.4
	31.4		0.7
	108.1		227.5
	27.052		56.87

Bright circular ⊙ ∴ R.A.
Seeing remarkably fine

Apr. 23
β Tauri
5 18 39
+28 30

	m	R	R
55 3	20.7	20.2	20.8
	26.4	25.7	26.0
	40.5	40.9	40.3
	32.8	34.7	35.0
	120.4	121.5	122.1
	30.10	30.37	30.52
	30.10	30.45	

A −1.5

R Orionis
5 42 1
−9 43

	m	m	R	R
5 4	13.2	10 0 26.0	25.7	26.0
	19.9	33.12	33.3	32.8
	39.1	54.6	53.7	53.7
	28.0	41.2	41.7	42.0
	10.02	155.0	154.4	154.5
	25.05	38.75	38.60	38.62
		38.75	38.61	

ζ Orionis
5 48 37
+7 23

	m	m	R	R
0 3	3.8	5 0 6.6	6.6	16.1
	2.1	15.4	15.3	14.8
	18.4	30.9	31.7	31.2
	8.5	22.2	22.1	22.0
	26.28	7.51	7.57	7.41
	5.70	18.77	18.92	18.52
		18.77	18.72	

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1879phae.proj.1400R

δ Orionis
5 25 50
−0 23

	m	m
50 0	18.6	15.6
	27.5	23.1
	45.2	41.5
	35.5	31.7
	1268	1019
	31.70	27.97

ζ Orionis
5 34 39
−2 0

	m	m	R	R
25 2	9.6	3 21.7	21.7	21.2
	17.5	29.9	30.1	30.0
	34.7	47.7	47.1	47.1
	22.9	36.3	36.7	37.1
	847	1356	1356	1354
	21.17	33.90	33.90	33.85
		33.90	33.87	

ζ Hydrae
9 21 38
−8 8

	m	m	R	R
30 4	44.7	35 0 59.9	0.1	59.8
	51.3	7.2	6.8	6.9
	10.2	26.4	26.2	26.1
	5.9	14.1	15.0	15.2
	2261	2876	4801	2880
	56.52	11.90	12.02	12.00
		11.90	12.01	

ε Leonis
9 38 59
+24 20

	m	m	R	R
5 2	34.9	3 46.2	46.2	46.5
	40.6	51.6	51.2	51.1
	55.2	5.7	5.7	5.5
	50.0	0.0	0.9	1.0
	1807	2235	2240	2241
	45.17	55.87	56.00	56.02
		55.87	56.01	

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1879phae.proj:1400R

30

1879 Apr. 23

α Leonis

0 1 56

+12 33

	m	m	R	R
50 3	46.2	4 58.4	58.7	58.6
	53.7	6.4	5.9	5.8
	9.1	21.9	21.8	21.7
	0.5	13.1	13.3	12.9
	22.95	27.98	27.97	27.90
	57.37	9.95	9.92	9.75
		9.95	9.83	

γ Leonis

10 9 57

+24 1

	m	R	R
25 2	19.1	18.8	18.8
	25.3	24.8	25.2
	40.1	38.9	39.1
	33.2	32.9	34.3
	11.77	11.54	11.74
	29.42	28.85	29.35
	29.42	29.10	

Ref as preceding

δ Leonis

11 7 40

+21 11

	m	m	R	R
15 1	17.6	2 24.6	24.4	24.9
	24.3	32.2	31.9	31.8
	38.0	45.6	44.3	45.0
	32.2	38.7	40.2	40.0
	11.21	14.11	14.08	14.17
	28.02	35.27	35.20	35.42
		35.27	35.31	

β Leonis

11 42 53

+15 15

	m	m	R	R
10 2	29.9	3 45.2	45.3	45.1
	37.2	52.7	51.5	51.8
	52.9	8.0	7.3	7.1
	43.6	58.5	59.2	59.1
	16.36	22.44	22.33	22.31
	40.90	56.10	55.82	55.77
		56.10	55.79	

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1879phae.proj.1400R

γ Leonis
10 13 18
+20 27

m	m	R	R
0 0 41.2	1 20.2	19.9	20.4
48.7	27.2	27.2	27.4
3.5	43.1	42.1	42.2
55.0	34.7	35.3	35.2
208.4	1262	1245	1252
52.10	31.55	31.12	31.30
	31.55	31.21	

Comparison star of (123)
10 41 19
+1 15

m	m	R	R
15 0 30.4			
40.2			
53.5			
47.2			
1733			
43.32			

Pr. #

A2+ foll.

γ Virginis pr.
12 35 32
−0 47

m	m	R	R
10 4 29	15 0 16.9	16.4	16.4
10.4	25.7	25.2	25.8
26.9	42.3	40.9	41.0
18.2	32.1	34.0	33.3
584	1170	1165	1165
14.60	29.25	29.12	29.12
	29.25	29.12	

ε Virginis
12 56 9
+11 37

m	m	R	R
50 0 51.1	2 1.9	1.5	1.3
58.6	9.9	9.2	9.1
13.9	24.6	23.9	24.0
4.5	15.6	16.0	16.4
2481	5210	5106	5108
2.02	13.00	12.65	12.70
	13.00	12.67	

pr. #.

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1879phae.proj.1400R

1879 Apr. 23

δ Virginis

12 18 49

−10 32

	m	m	R	R
55 3	23.9	4 38.8	38.6	37.9
	32.2	46.2	45.9	45.8
	50.9	4.7	3.0	3.2
	36.2	53.1	53.9	53.8
	14 52	20 28	20 14	20 07
	36.30	50.70	50.35	50.17
		50.70	50.26	

β Aquilae

19 40 3

+10 19

	R	R
5− 2	56.4	56.1
	42	45
	18.9	19.0
	12.8	12.0
	27 23	27 16
	8.07	7.90
	7.98	

θ Aquilae

20 5 4

−1 11

	R	R
35 2	37.0	37.1
	43 67.2	46.2
	0.8	0.2
	52.0	52.2
	19 60	19 57
	49.00	48.92
	48.96	

ζ2 Capricorni

20 11 20

−12 55

	R	R
20 2	100	98
	19.8	20.0
	35.3	34.9
	25.0	25.2
	901	899
	22.52	22.47
	22.49	

Seeing bad Right 3

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1879phae.proj.1400R

α Aquilae
1944.3
+8 33
R R

50 4 60 6.1
146 148
265 262
205 210
678 681
16.95 17.02
16.98

β Aquilae
1949.22
+6 9
R R

20 1 56.2 56.2
69 70
183 184
118 114
27 32 27 30
8.30 8.25
8.27

Rij A +1.3

θ Ophei
20 27 33
+62 35
R R R

— 56 50 4 11.8 11.2
73 12.7 12.8
199 25.2 24.9
177 23.2 23.2
507 724 721
12.67 18.10 18.02
18.06

γ Leonis
21.7.47
+20 44
R R

40 3 40.0 39.7
46.2 46.1
55.8 56.2
53.3 53.0
19 53 19 50
48.82 48.75
48.78

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1879phae.proj.1400R

Am 23 1879

β Aquarii

21 25 11

~~66~~ 6 6

R R

30 8 30.7 29.8

39.2 38.8

57.8 57.8

44.3 44.3

16 55 16 47

41.37 41.17

41.27

Pegasi

21 38 14

~~8~~ +9 19

R R

8 57.0 57.2

6.3 6.0

17.3 17.2

10.6 10.8

27 12 27 12

7.80 7.80

7.80

Rej 1st 3 w

Rej 1st 5

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1879phae.proj.1400R

ε Aquarii

21 55 34

−0 57

R R

20 3.7 3.9

13.0 12.2

27.1 26.1

19.2 19.1

630 613

15.75 15.32

15.53

ε Pegasi

22 54 44

+14 33

R R

50 3 496 49.5

579 577

10.2 10.2

3.0 3.0

2407 2404

0.17 0.10

0.13

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1879phae.proj.1400R

1879 Apr. 23 - 24

Sun C = 46.747

2 7 30

+12 54 m m

. 15 2 23.1 45 4 58.5

33.1 8.4

46.3 20.6

38.4 13.2

14 9 2807

35.17 10.17

Seeing very bad indeed

Both limbs in δ + R.A.

Apr. 24

β Orionis

5 8 43

−8 21 R R R

45 1 57.9 57.7 57.9

5.4 6.1 6.1

23.4 22.9 23.3

13.6 13.2 13.7

2803 2799 2810

10.07 9.97 10.25

10.10

ζ Orionis

5 34 39

−2° 0 0

m m R R

25 2 18.5 3 29.7 29.2 29.2

28.1 39.2 39.2 38.4

44.3 55.3 54.7 54.9

33.8 45.9 44.2 45.0

1247 1701 1673 1675

31.17 42.52 41.82 41.87

42.52 41.85

κ Orionis

5 42 1

−9 43

m m R R

5 4 38.0 10 0 30.2 30.6 30.1

45.4 38.1 38.2 38.2

36 57.6 57.3 57.4

8 21 46.1 46.2 45.7

1991 1720 1723 1714

49.77 43.00 43.07 42.85

43.00 42.96

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1879phae.proj.1400R

β Tauri

5 18 39
+28 30

R	R
55 2 14.7	15.0
21.8	21.8
35.2	35.0
29.5	30.0
10 12	10 18
25.30	~~52.95~~ 25.45
25.37	

δ Orionis

5 25 50
−0 23

m	m
50 0 17.4	1 15.2
26.7	23.5
43.3	40.6
32.7	31.4
1201	11 07
30.22	27.67

ζ Orionis

5 48 37
+7 23

m	m	R	R
0 3 53.7	5 0 7.7	7.8	7.7
3.5	19.2	17.7	17.0
18.3	32.6	32.3	32.3
9.8	23.0	23.0	22.2
26 53	8 05	8 08	7 92
6.32	20.12	20.20	19.80
	20.12	20.00	

μ Geminor.

6 15 38
+22 34

m	m	R	R
50 2 50.7	8 58.9	58.6	58.7
58.9	66	6.7	6.8
11.8	19.2	18.7	18.9
5.1	12.9	12.9	13.3
2265	2776	2769	2777
~~5~~ 4 62	9.40	9.22	9.42
1	9.40	9.32	

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1879phae.proj.1400R

1879. Apr. 24

ζ Geminor

6 30 46

+16 30

m	m	R	R
55 2 1.9	3 1.9	19.2	19.1
8.9	26.4	26.2	26.3
26.6	43.8	43.2	43.2
16.0	32.6	34.1	33.8
5 5.4	12.7	12.7	12.4
13.85	30.42	30.67	30.60
	30.42	30.63	

β Can. Min.

7 20 35

+8 32

m	m	R	R
55 0 8.5	1 21.1	21.3	21.7
16.4	30.1	29.2	29.7
31.3	45.7	45.3	45.3
22.9	34.9	35.3	35.8
7 9.1	13.8	13.11	13.25
19.77	32.95	32.77	33.12
	32.95	32.94	

ε Draconis L.C.

19 48 34

+110 2

m	m	m	m	m
25 3 27.2	8.5	2 42.4	26.7	13.1
31.4	12.4	46.1	31.2	15.7
43.5	24.2	57.6	42.8	27.6
38.6	18.6	52.4	36.9	22.4
1407	637	1985	1376	788
35.17	15.92	49.62	34.40	19.70

1 stk for last 5

ο Ursæ Maj.

8 20 12

+61 7

m	m	m	m
20 0 31.4	45.8	1 25.8	51.2
34.2	47.9	27.2	52.9
49.3	3.7	43.6	8.0
42.8	57.9	36.5	1.8
1577	2153	1331	2339
39.42	5382	33.27	58.47

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1879phae.proj.1400R

α Geminor.

7 26 52
+32 9

m		m		R	R
15 3 16.4	4	26.8		26.6	26.8
21.6		31.8		32.3	31.8
37.7		47.2		46.8	47.2
30.7		40.9		41.8	41.2
10 64		14 77		14 75	14 70
26.60		36.92		36.87	36.75
		36.92		36.81	

α Can. Min.

7 32 58
+5 32

m		m		R	R
50 4 56.4	55	1 11.8		11.9	11.2
5.3		21.4		21.8	21.1
18.5		35.2		34.8	35.0
10.9		27.4		27.2	27.1
27 11		9 58		9 57	9 44
7.77		23.95		23.92	23.60
		23.95		23.76	

α Hydrae

9 21 38
−8 8

m		m		R	R
30 4 42.1	35	1 0.2		0.8	0.8
49.1		7.5		8.1	8.9
6.3		26.8		26.2	26.0
56.8		15.3		15.7	15.9
21 43		49 8		50 8	51 6
~~42.86~~		12.45		12.70	12.90
53.57		12.45		12.80	

ε Leonis

9 38 59
+24 20

m		m		R	R
5 2 50.6	3	45.3		45.9	45.6
57.2		51.8		51.2	51.2
11.1		5.3		4.1	54.8
4.7		59.2		0.6	59.6
24 36		22 16		22 18	22 12
0.90		55.40		55.45	55.30
		55.40		55.37	

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1879phae.proj.1400R

40

1879. Apr. 24

ε Leonis

10 1 56

+12 33

m	m	R	R
50 3 47.3	55 0 3.7	3.7	3.6
55.9	11.9	11.7	11.8
11.1	27.6	27.8	27.2
1.6	18.1	18.8	18.6
2359	613	620	612
58.97	15.32	15.50	15.30
	15.32	15.40	

ζ Leonis

10 9 57

+24 1

m	m	R	R
25 1 17.8	2 31.5	31.4	31.3
25.5	38.1	38.2	37.9
38.4	51.8	51.3	51.2
31.9	45.1	45.7	45.8
11 3 6	16 6 5	1666	1662
28.40	41.62	41.65	41.55
	41.62	41.60	

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1879phae.proj.1400R

γ Leonis pr.
10 13 18
+20 27

m	m	R	R
0 0 15.2	1 25.4	25.9	26.1
23.2	33.D	33.9	34.1
37.2	48.1	48.2	47.5
29.1	41.9	40.8	40.1
10 47	14 91	14 88	14 78
26.17	37.27	37.20	36.95
	37.27	37.07	

Pr. H

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1879phae.proj.1400R

42

Mar 26 1879

ε Andron C=46.747

~~α~~ A 0 2 8

+28 25

R.A. only.

Δ 4 α C

Apr. 26–27

Sun, C=46740

2 18 49

+13 53

m	m
15.4 18.5	50 1 33.6
26.6	41.8
42.1	56.3
33.1	48.4
12.03	18.01
30.07	45.02

Both limbs in δ + R.A.
Seeing very bad indeed

ε Corvi

12 3 54

−21 57

m	R		
20 24 4.6	44.7		
53.4	53.6		
11.9	11.8		
1.8	2.9		
23 1.7	23 3.0		
57.92	58.25		

Lost A & + fold.

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1879phae.proj.1400R

α Leonis

10 1 06

+12 R 23 R

50 2 51,8 51,5

57,2 57,4

14,7 14,8

7,2 7,2

25 04 25 09

2,60 2,72

2,66

β Leonis

11 42 53

+15 15 R R

10 22 3,9 24,0

30,6 30,8

47,5 47,7

39,7 39,9

14 19 14 24

35,47 35,60

35,53

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1879phae.proj.1400R

1879 Apr. 28-29

Sun

2 26 24

+14 30

M

.40 1 39.3 40 2 13.8

45.4 19.8

40.1

31.2

1049

26.22

Lost A 2 A 2, Upper limb in S

Obs.? on account of clouds. R.A. pretty good.

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1879phae.proj.1400R

1879 Apr. 30

Hydrae C = 46.740

9 21 38

−8 8

	m	m
3.0	4 51.3	350 59.9
	57.4	6.8
	19.1	29.6
	10.2	18.8
	25.80	29.51
	4.50	13.77

δ Ursæ Maj.

9 24 45

+52 th 14

	m	m	R	R
10	4 1.7	150 9.5	8.9	9.1
	4.6	12.6	12.8	12.3
	22.8	30.9	29.7	29.9
	17.7	26.9	26.8	26.4
	4.68	7.99	7.82	7.74
	11.70	19.97	19.55	19.35
		19.97	19.45	

ζ Leonis

10 9 57

+24 1

	m	m	R	R
25	1 13.7	2 27.3	27.2	27.2
	20.1	33.4	33.2	33.1
	37.3	50.6	50.3	50.1
	32.6	46.1	45.7	45.2
	10.37	15.74	15.64	15.56
	25.92	39.35	39.10	38.90
		39.35	39.00	

γ Leonis

10 13 18

+20 27

	m	m	R	R
0	0 5.2	1 20.5	20.8	20.9
	12.2	27.6	27.4	27.2
	29.9	46.4	45.3	45.1
	23.7	38.1	39.8	40.0
	7.10	13.31	13.33	13.32
	17.75	33.27	33.32	33.30
		33.27	33.31	

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1879phae.proj.1400R

ε Leonis

9 38 59
+24 20

m	m	R	R
5 2 35.9	3 40.4	40.5	40.7
41.3	44.8	44.8	45.1
59.2	2.3	2.0	2.1
53.9	58.2	59.1	58.8
19.03	20.57	20.64	20.67
47.57	51.42	51.60	51.67
	51.42	51.63	

ζ Leonis

10 1 56
+12 33

m	m	R	R
50 3 49.7	4 56.7	56.6	56.9
56.6	3.2	2.9	3.0
16.5	21.7	21.7	21.3
7.9	14.0	14.9	14.8
25.07	27.56	27.61	27.60
2.67	8.90	9.02	9.00
	8.90	9.01	

β Ursae Maj.

10 54 32
+57 2

m	m
25 1 11.6	34.2
12.8	36.1
31.5	54.7
25.7	49.9
8.16	17.49
20.40	43.72

α Ursae Maj.

10 56 15
+62 24

m	m	R	R
0 3 49.6	4 57.9	57.9	58.2
49.4	58.4	57.9	57.8
7.2	16.8	15.2	15.6
4.9	13.6	14.1	13.8
23.11	26.67	26.51	26.54
57.77	6.67	6.27	6.35
	6.67	6.31	

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1879phae.proj.1400R

1879 Apr. 30

γ Ceti May

1 2 51

+45 9

		m		m	R	R
15	3	37.6	4	36.7	36.6	36.7
		40.3		39.2	39.0	39.7
		58.3		56.6	56.0	56.5
		53.7		52.4	53.6	53.7
		189 9		1849	1852	1866
		47.47		46.22	46.30	46.65
				46.22	46.47	

δ Leonis

11 7 40

+21 11

		m		m	R	R
15	1	13.5	2	35.1	34.9	34.8
		19.2		40.5	40.6	40.6
		37.1		57.9	56.2	56.1
		32.6		52.4	53.7	53.9
		1024		1859	1854	1854
		25.60		46.47	46.35	46.35
				46.47	46.35	

γ Pegasi C=46.740

0. 7 0

+14 31

		M	R	R
5.5	2	44.9	44.7	45.0
		52.5	52.6	52.4
		10.4	10.4	10.1
		2.1	3.7	3.9
		2299	2314	2314
		57.47	57.85	57.85
		57.47	57.85	

Lost 1st 8 wires

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1879phae.proj.1400R

β Leonis

11 42 53

+15 15

	m	m	R	R
10	27.9	3 38.6	38.3	38.4
	34.3	44.3	44.8	44.2
	54.6	38	3.2	3.0
	44.8	55.4	56.8	56.1
	1616	2021	2031	2017
	40.40	50.52	50.77	50.42
		50.52	50.59	

α Androm.

0 2 8

+28 25

	m	m	R	R
0	2 09	3 98	10.1	9.7
	5.9	14.5	14.9	15.1
	22.6	30.3	29.6	29.1
	17.1	27.1	27.8	28.1
	465	817	824	820
	11.62	20.42	20.60	20.50
		20.42	20.55	

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1879phae.proj.1400R

1879 May. 1 Sun

2 34 0 C = 46.740

+15 7

		m
5	0	22.9
		31.2
		51.4
		42.1
		14 76
		36.90

α Cephei L.6.

21 15 41 +117 56

	m	m	m	m
35 1	38.6	18.3	0 46.9	0 25.2
	42.1	22.3	49.8	29.6
	54.4	35.4	3.9	42.8
	47.3	28.6	57.6	35.2
	18 24	10 46	21 82	13.28
	45 60	26.15	54.55	33.20

1st limb in R.A. 2nd limb in R.A. A A+1 A1,2(3.?)

~~Upper limb in~~ N

ε Leonis

9 38 59

+24 20

		u	u	R	R
5	2	34.1	3 44.3	44.3	44.8
		39.0	46	49.0	48.2
		56.4	6.6	6.2	5.8
		51.3	0.8	2.1	1.7
		18 08	22 03	22 16	22 05
		45.20	55.07	55.40	55.12
			55.07	55.26	

α Leonis

10 1 56

+12 33

		m	m	R	R
50	3	46.4	4 60.0	59.5	59.8
		53.4	6.6	6.6	6.4
		12.9	24.8	24.8	24.9
		3.3	16.5	16.9	16.5
		23 60	28 79	28 78	28 76
		59.00	11.97	11.95	11.90
			11.97	11.92	

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1879phae.proj.1400R

ζ Hydrae

9 21 38
−8 8

M		M	
30 4 42.3		35.0	5 3.9
47.6		~~53.9~~	0.1
10.3		24.4	
0.4		12.2	
22.06		27.06	
55.15		7.65	

θ Ursa Maj

9 24 45
+52 14

M		M	R	R
10 4 3.9		15 0 10.4	9.9	10.0
6.4		13.2	12.7	12.7
24.9		31.5	30.1	30.9
18.7		26.2	26.3	26.7
53.9		8.13	7.90	8.03
13.47		20.32	19.75	20.07
		20.32	19.91	

ξ Leonis

10 9 57
+24 1

M		M	R	R
25 1 9.7		2 27.6	28.1	27.9
14.5		33.8	34.0	33.8
33.0		50.7	50.9	50.5
26.9		44.5	45.2	45.3
8 4 1		15 66	15 82	15 75
21.02		39.15	39.55	39.37
		39.15	39.46	

γ Leonis

10 13 18
+20 27

M		M
0 0 9.9		1 18.2
16.2		25.5
34.2		44.2
26.8		35.1
8 7 1		12 30
21.77		30.75

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1879phae.proj.1400R

1879 May 1

u Ursæ Maj.

10 15 7

+42 6

m	m	R	R
20.1 17.5	2 21.8	21.6	20.3
21.4	26.1	26.0	25.6
40.4	45.7	45.1	44.6
33.8	38.7	38.8	39.1
11 31	13 23	13 15	12 96
28.27	33.07	32.87	32.40
	33.07	32.63	

Comparison star of (123).

10 41 19

+1 15

m	m	R	R
10 4 45.7	15 0 56.5	56.2	56.4
53.8	4.9	4.9	4.6
11.4	23.1	22.7	20.2
3.2	15.3	16.7	16.8
23 41	27 48	28 05	~~28.00~~ 27.80
58.52	9.95	10.12	~~10.00~~ 9.50
	9.95	9.81	

ψ Ursæ Maj.

11 2 51

+45 9

m	m	R	R
15 3 26.0	4 47.2	46.6	46.8
29.6	49.4	49.3	49.2
46.4	6.1	5.3	5.9
40.2	2.1	2.9	3.1
14 22	22 48	22 41	22 50
35.55	56.20	56.02	56.25
	56.20	56.14	

δ Leonis

11 7 40

+21 11

m	m	R	R
15 1 8.4	2 24.4	23.8	24.0
15.4	30.5	30.6	30.8
31.5	47.2	46.3	46.4
26.5	42.1	42.1	42.2
8 18	14 42	14 28	14 34
20.45	36.05	35.70	35.85
	36.05	35.77	

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1879phae.proj.1400R

β Ursa Maj.

10 54 32
+57 2

m	m
25 1 15.9	1 29.3
18.4	31.4
35.9	49.6
29.7	42.9
999	1532
24.97	38.30

α Ursa Maj.

10 56 15
+62 24

m	m	R	R
0 3 57.7	4 50.8	50.8	50.9
58.4	51.4	50.7	50.8
15.4	8.1	7.3	7.0
11.9	4.2	5.7	5.2
2634	2345	2345	2339
5.85	58.62	58.62	58.47
	58.62	59.54	

β Leonis

11 42 53
+15 15

m	m	R	R
10 2 23.2	3 30.1	30.3	30.2
29.9	39.7	37.2	37.2
48.6	54.9	54.8	55.0
38.9	46.3	47.4	47.1
1406	1690	1697	1695
35.15	42.25	42.42	42.37
	42.25	42.39	

ε Corvi

12 3 54
−21 56

m	m	R	R
20 2 45.1	4 0.8	1.2	1.6
55.1	10.6	10.6	10.7
14.8	29.5	29.1	29.9
2.7	18.6	19.9	20.0
2377	595	608	622
59.42	14.87	15.20	15.55
	14.87	15.37	

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1879phae.proj.1400R

1879. May 1

γ Virginis pr.

2 35 31

−0 47

	M	m	R	R
10 4	0.6	15 0 15.2	14.7	14.8
	9.4	24.7	24.7	24.2
	27.4	43.1	42.2	42.2
	18.4	32.8	34.9	34.0
	55.8	1158	1165	1152
	13.95	28.95	29.12	28.80
		28.95	28.96	

Pr. #

ε Ves. May.

12 48 42

+56 37

	M	m	R	R
50 1	1.4	2 7.6	8.1	8.0
	3.4	10.2	10.1	10.0
	20.1	26.2	25.9	25.8
	13.9	20.3	21.8	20.8
	38.8	64.3	65.9	64.6
	9.70	16.07	16.47	16.15
		16.07	16.36	

α Aquilae

1944.3

+8 33

	R	R
#50 4	66	6.1
	14.2	14.7
	25.0	28.7
	25.3	24.8
	751	743
	18.77	18.57
	18.67	

β Aquilae

1949.22

+6 6

	R	R
20 1	566	569
	8.0	8.0
	21.6	21.9
	16.8	16.7
	2830	2835
	10.75	10.87
	10.81	

A A−1

Last some of the middle wires on A

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1879phae.proj.1400R

ε Virginis

12 56 9

+11 37

m	m	R	R
50 0 37.9	1 56.3	56.6	56.7
46.2	5.3	4.4	4.1
3.4	21.7	21.3	21.2
55.3	13.7	14.3	14.3
20 28	27 70	27 66	27 63
50.70	9.25	9.15	9.07
	9.25	9.11	

ζ Virginis

13 18 49

−10 32

m	m	R	R
55 3 24.4	4 42.0	42.2	41.7
33.4	49.6	48.5	49.2
53.9	9.4	8.3	9.1
41.6	58.7	59.3	59.1
15 33	21 97	21 83	21 91
38.32	54.92	54.57	54.77
	54.92	54.67	

δ Aquilae

20 5 4

−1 11

m	m	R	R
35 2 53.4	3 45.7	46.0	46.0
2.5	55.1	55.1	54.8
2.02	11.5	11.7	11.0
11.9	4.3	5.0	4.8
26 83	23 66	23 78	23 66
7.07	59.15	59.45	59.15
	59.15	59.30	

Seeing very bad
Can't get [illegible] and some of the wires
of A 3 strokes for last

ζ² Capricorni

20 11 20

−12 55

m	m	R
20 1 49.6	50.2	49.9
0.8	0.9	0.0
18.5	18.5	18.6
10.7	10.2	9.8
25 96	25 98	25 83
4.90	4.95	4.57
4.92		4.57

A₁ A₁₂ ~~3 4~~

S?

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1879phae.proj.1400R

1879 May 1

ε Cygni

20 37 18.

+44 51

m	m	R	R
35.1 57.1	3 12.1	11.8	11.3
2.1	17.3	16.8	16.2
17.7	30.4	30.9	30.8
14.6	25.7	29.5	29.0
27.15	8.88	8.90	8.73
7.87	22.20	22.25	21.82
	22.20	22.03	

ε Cygni

20 41 19

+33 31

m	m	R	R
55 1 45.6	2 51.2	51.3	51.3
50.8	56.2	56.0	56.7
6.7	11.7	11.7	11.9
4.2	9.2	9.6	10.1
22.73	24.83	24.86	25.00
56.82	2.07	2.15	2.50
	2.07	2.32	

β Aquarii

21 25 11

−6 6

m
30 2 31.4
40.5
56.6
49.9
17.84
44.60

ε Pegasi

21 38 14

+9 19

m	m ′ ″	R	R
5 2 40.7	4 0.2	0.7	0.2
50.2	9.1	9.1	9.1
3.6	22.3	21.9	22.0
58.9	17.8	18.1	17.9
21.34	4.94	4.98	4.92
53.60	12.35	12.45	12.30
35	12.35	12.37	

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1879phae.proj.1400R

ζ Cygni

21 7 47
+29 44

m	m	R	R
40 3 38.5	4 50.2	55.4	55.3
45.8	8.1	2.3	2.4
57.8	14.8	14.4	14.7
54.9	12.5	12.3	12.3
1970	26 56	26 44	26 47
49.25	6.40	6.10	6.17
	6.40	6.13	

Seeing better

ζ Cephei

21 15 41
+62 4

m	m	R	R
20 3 53.9	4 6.4	44.6	25 0 3.4 3.1
55.4	8.2	46.5	5.2 5.0
8.8	21.9	59.9	19.8 19.2
7.8	20.9	58.9	18.8 18.8
59	57.4	2099	46.7 46.1
1.47	14.35	52.47	11.67 11.52

Seeing good.

ζ Aquarii

21 59 34
−0 54

m	m	R	R
20 1 0.6	2 16.9	16.8	17.1
10.2	26.4	26.1	26.0
25.9	42.2	41.3	41.4
18.2	35.2	36.1	36.2
549	1207	1203	1207
13.72	30.17	30.07	30.17
	30.17	30.12	

ζ Androm.

0 2 8
+28 25

m	m	R	R
0 1 59.6	3 10.5	10.7	10.7
5.7	17.1	17.0	16.8
18.4	29.6	28.5	27.7
16.1	26.9	27.9	28.6
2798	841	841	838
19.95	21.02	21.02	20.95
	21.02	20.98	

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1879phae.proj.1400R

58 1879. May 1.

γ Pegasi

0 7 0

+14 31

m	m
55 1260	
35.5	
50.4	
43.4	
1553	
38.82	

1879 May 1–2

Sun. C = 46.740

2 37 50

+15 25

m	m
45 1 48.1	15 4 6.5
56.1	13.4
13.7	30.7
7.6	24.5
2455	751
1.37	18.77

Both limbs in 24 R.A.

Seeing moderately good.

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1879phae.proj.1400R

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1879phae.proj.1400R

60

1879 May 4–5

Sun C=46.740

2 49 21

+16 17

	M.	M
50	4.236	25 7.505
	30.2	56.7
	49.7	17.7
	43.2	12.0
	14 67	25 69
	36.67	4.252

Lost 1st wire 2nd limb.
Troubled with clouds. Both limbs in δ + R.A.

May 5

β Ursæ 5 8 43 – 8 21

	R	R
45	8 14.8	14.6
	18.8	18.7
	43.3	43.1
	37.0	37.2
	11 39	11 38.6
	28.47	28.25 40
	28.43	

α Ursæ. May'

9 24 45

+52 14

	M	M
10 4	31.1	59.2
	33.1	1.2
	53.5	20.9
	48.6	16.2
	16 63	27 75
	41.57	9.37

Lost 1st 3 wires

β Cephei L.6.

21 27 5

10 9 58

	M	M	M
30 1	54.4	35.8	22.7
	56.2	39.2	25.3
	13.3	55.2	41.5
	9.5	51.4	37.4
	25 34	18 16	12 69
	3.35	45.40	31.72

Lost 1st 6 wires 1st [illegible]

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1879phae.proj.1400R

α Cephei L.C

21 15 41

+117 56

m	m	m	m
35 1 36.7	19.5	0 31.5	15.6
45.5	24.2	37.3	20.6
57.0	39.5	51.7	34.5
50.9	32.4	45.2	28.4
19 01	11 56	16 57	9 91
47.52	28.90	41.42	24.77

α Hydrae

9 21 38

−8 8

		R	R
30 4 44.1	35 1 19	1.8	1.7
48.6	73	7.0	20.9
13.9	31	32.1	16.2
5.1	35	22.8	
23 17	6 58	6 37	
57.92	16.45	15.92	

11 Cephei L.C.

21 40 9

+10 9 15

m	m	m	m
15 1 4.1	0 46.1	9.7	10 4 49.7
6.4	48.9	13.7	49.7
23.2	5.3	29.9	52
18.7	1.2	26.5	23
52 4	22 15	7 98	22 49
13.10	55.37	19.95	56.22

α Leonis

10 1 56

+12 33

m	m	R	R
50 3 42.4	4 54.1	54.9	54.6
47.4	00	59.2	59.2
9.5	21.2	20.7	20.4
28	13.8	14.7	14.2
22 21	26 91	26 95	26 84
55.52	7.27	7.37	7.10
	7.27	7.23	

3 stops for last ∫

2 hand clothes-arms 3rd ∫ (for wires)

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1879phae.proj.1400R

1879 May 5

ζ Leonis

10 9 57

+24 1

	m	m	R	R
25 1	15.2	25.1	25.2	25.0
	19.8	30.1	29.8	29.9
	39.3	49.0	49.2	49.3
	39.9	45.0	45.2	45.2
	1142	1492	1494	1494
	28.55	37.30	37.35	37.35
		37.30	37.35	

γ Leonis

10 13 18

+20 27

	m	m
0 0	9.0	124.3
	15.4	31.5
	35.0	57.0
	28.9	44.8
	883	1516
	22.07	37.90

β Ursa. Maj.

10 54 32

+57. 2

	m	m
25 0	54.1	1 51.7
	55.4	3.6
	16.6	13.8
	10.1	8.2
	2562	2573
	4.05	4.32

end of B_3

α Ursa. Maj

10 56 15

+62 24

	m	m	R	R
0 3	56.5	4 39.1	39.5	39.8
	57.3	39.8	39.8	39.1
	16.8	59.1	57.6	58.0
	12.8	56.1	56.0	56.8
	2634	1941	1929	1937
	5.85	48.52	48.22	48.42
		48.52	48.32	

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1879phae.proj.1400R

μ Ursæ Maj.
10 15 7
+42 6

m	m	R	R
20 1 49.1	2 25.6	26.1	25.8
51.4	29.2	28.6	28.8
13.7	00.5	49.2	49.8
7.3	44.8	45.2	45.2
~~23~~ 15	15 03	1491	1496
24 ~~5.87~~	37.57	37.27	37.40
0.34	37.57	37.33	

Lost 1st & 2 wires

Comparison star g (123)
10 41 19
+1 15

m
15 0 47.1
54.3
15.2
8.2
24 48
1.20

A3 + c

ψ Ursæ Maj.
11 2 51
+45 9

m	m	R	R
15 3 27.1	4 35.8	36.0	35.7
29.4	38.4	38.2	37.9
49.5	57.6	56.7	56.8
44.6	53.2	54.2	54.3
1506	1850	1851	1847
37.65	46.25	46.27	46.17
	46.25	46.22	

δ Leonis
11 7 40
+21 11

m	m	R	R
15 1 13.0	2 30.5	30.8	30.2
18.5	36.3	36.1	36.2
37.2	54.6	53.2	53.6
32.6	50.2	51.2	51.1
1013	1716	1713	1711
25.32	42.90	42.82	42.77
	42.90	42.79	

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1879phae.proj.1400R

1879 May 5

β Leonis

11 42 53

+15 15

m	m	R	R
10 2 56.3	3 37.8	38.3	38.0
2.4	43.6	43.7	43.0
22.5	39	3.3	3.8
14.6	55.8	56.8	56.7
27.58	201.3	202.1	201.5
8.95	50.32	50.52	50.37
	50.32	50.44	

Lost 1st wire

ε Corvi

12 3 54

−21 57

m	m	R	R
20 2 43.4	4 00	0.0	0.0
51.3	7.5	7.2	7.2
13.8	29.2	28.9	28.9
3.7	19.4	20.2	20.6
23.22	5.61	5.63	5.67
58.05	14.02	14.07	14.17
	14.02	14.12	

ε Virginis

12 56 9

+11 37

m	m	R	R
50 0 40.2	1 55.2	55.6	55.7
47.1	1.4	1.8	1.0
7.4	22.1	21.9	21.8
0.1	14.5	15.6	14.9
21.48	27.32	27.49	27.34
53.70	8.30	8.72	8.35
	8.30	8.53	

α Virginis

13 18 49

−10 32

m	m	R	R
55 3 21.0	4 32.4	32.6	32.7
27.1	38.7	38.4	38.2
51.8	2.5	1.9	1.4
41.1	52.0	53.7	53.3
14.10	18.56	18.66	18.56
35.25	46.40	46.65	46.40
	46.40	46.52	

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1879phae.proj.1400R

γ Virginis fld.

12 35 31

−0 47

m	m	R	R
10 4 11.1	15 0 20.6	20.3	20.5
17.2	28.2	28.9	28.3
38.9	49.6	49.2	49.2
29.8	40.6	41.8	41.2
9 70	13 90	14 02	13 92
24.25	34.75	35.05	34.80
	34.75	34.92	

δ Virginis

12 49 30

+4 3

m	m	R	R
20 3 50.1	25 0 11.1	1.6	1.9
58.5	11.1	10.0	10.0
17.6	28.9	28.1	28.2
9.8	23.2	22.7	22.2
25 60	6 43	6 24	6 23
4.00	16.07	15.60	15.57
	16.07	15.58	

Foll. #

ε Coprarii

20.11 24

−12 55

R	R
20 1 14.7	14.5
23.2	23.3
46.8	46.3
36.0	36.7
12 07	12 03
30.17	30.07
30.12	

β Cygni

20 11 53

+39 52

R	R
30 0 42.0	42.1
45.9	45.9
5.2	5.2
2.7	2.2
21 58	21 54
53.95	53.85
53.90	

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1879phae.proj.1400R

1879, May 5

δ Cygni

20 37 18

+44 51

M	M	R	R
35 2 2.4	3 6.6	6.9	6.8
6.9	10.1	10.4	10.7
24.1	29.4	28.8	28.2
20.3	25.2	25.4	25.4
537	713	715	711
13.42	17.82	17.87	17.77
	17.82	1782	

ε Cygni

20 41 19

+33 31

m	m	R	R
55 1 35.8	2 50.1	49.9	50.1
40.4	53.8	53.8	53.8
0.4	14.4	13.9	13.7
55.4	9.2	10.2	10.0
1920	2475	2478	2476
48.00	1.87	1.95	1.90
	1.87	1.92	

β Aquarii

21 25 11

−6 6

m
30 2 49.0
55.8
17.1
8.6
2505
2.62

ε Pegasi

21 38 14

+9 19

m	m
35 2 41.6	4 2.4
48.6	9.4
7.4	2.7
1.5	2.5
2191	620
54.77	15.50

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1879phae.proj.1400R

ζ Cygni
21 7 47
+29 44

dd	uu	R	R
40 3 58.1	4.600	60.7	60.2
4.4	5.9	5.3	5.7
21.2	22.2	22.2	22.4
17.1	19.2	18.9	19.7
2808	2873	2871	2880
10.20	11.82	11.77	12.000
	11.82	11.88	

ζ Cephei
21 15 41
+62 4

m	m	m	m
20 3 54.7	4 8.5	56.8	25 0 7.8
55.4	8.6	57.4	8.5
13.5	27.6	16.0	27.4
10.3	25.2	13.9	25.1
2539	699	2541	691
3.47	17.47	3.52	17.27

3 stronger fundamentals
A123 A 845

ζ Aquarii C=46.740
21 59 34
−0 54

m	m	R	R
20 1 47.4	2 20.8	20.8	20.9
54.5	28.6	28.2	28.2
16.4	49.7	50.2	49.9
83	42.4	42.4	42.2
24 6.6	14 15	14 16	14 12
1.65	35.37	35.40	35.30
	35.37	35.35	

A3 ζ e

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1879phae.proj.1400R

1879 May 5-6

Sun C=46.760

2 53 12

+16 35

	m		m
35 2	29.8	5 4	48.5
	34.4		54.1
	58.2		17.3
	51.4		9.6
	1738		2495
	43.45		2.37

Both limbs in 8 + R.A. Seeing very bad.

ζ Leonis

10 9 57

+24 1

m	m	R	R
25 1 23.0	2 24.5	25.2	25.0
27.8	28.9	29.2	29.2
46.7	50.2	49.7	49.7
41.9	44.4	45.7	45.0
1414	1480	1498	1489
35.35	37.00	37.45	37.22
	37.00	37.33	

β Ursa Maj.

10 54 32

+57 2

m
25 1 7.9
9.2
29.9
23.9
709
17.72

Lost A 4 A 2, 3, 4, 5, 8, 9, +1

α Ursa Maj.

10 56 15

+62 24

m	m	R	R
0 4 2.1	4 32.9	33.6	33.7
1.9	32.9	32.3	32.3
22.6	53.2	52.4	52.7
18.3	49.6	49.9	49.6
449	1686	1682	1683
11.22	42.15	42.05	42.07
	42.15	42.06	

Lost A 1 +1

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1879phae.proj.1400R

γ Leonis
10 13 18
+20 27

m		m	
0	0 43.1	1	27.4
	49.8		32.3
	10.7		54.1
	3.5		46.9
	22 7 1		16 0 7
	56.77		40.17

Lost 1st 3 m

μ Ursæ Maj.
10 15 4
+42 6

m		m		R	R
20	1 47.6	2	30.6	31.6	31.4
	50.3		33.3	33.2	32.8
	12.9		56.3	55.3	55.7
	~~16.5~~		49.4	50.4	50.9
	23 7 3		16 9 6	17 0 5	17 0 8
	59.32		42.40	42.62	42.70
			42.40	42.66	

Lost 1st 4 m

ψ Ursæ Maj
11 2 51
+45 9

m		m	
15	3 27.2	4	38.8
	29.9		40.9
	50.5		1.5
	45.4		56.6
	15 3 0		19 7 8
	38.25		49.45

β Leonis
11 42 53
+15 15

m		m		R	R
10	2 59.4	3	~~49.1~~	45.2	45.6
	5.6		50.2	50.9	51.2
	27.7		13.6	12.7	12.2
	18.6		3.9	4.0	4.7
	29 1 3		23 2 8	23 2 8	23 3 7
	12.82		58.20	58.20	58.42
			58.20	58.31	

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1879phae.proj.1400R

1879 May 6

Corvi

2 3 54
−21 57

	h	m
20	2	45.3
		54.7
		17.9
		6.2
		24.41
		1.02

Lost last 2 wires

γ Virginis pr.

12 35 31
−0 47

	h	m	m	R	R
10	4	5.9	150	20.0	20.3	20.5
		13.6		29.1	29.8	30.3
		34.7		51.2	50.3	50.6
		25.5		40.7	42.0	41.6
		7.97		14.16	14.24	14.30
		19.92		35.40	35.60	35.75
				35.40	35.67	

Pr. ✻

ε Virginis

13 18 49
−10 32

	h	m	m	R	R
55	3	19.0	4	40.4	41.0	40.7
		26.4		47.5	47.6	46.0
		51.0		12.2	11.2	11.2
		39.1		1.3	1.3	1.2
		13.55		22.14	22.11	22.11
		33.87		55.35	55.27	55.27
				55.35	55.27	

ε Capricorni

21 11

	h	m	R	R
21	2	40.2	40.6
		50.2	50.1
		12.0	12.0
		2.3	3.2

Lost A+1
1 shift

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1879phae.proj.1400R

ε Ursæ Majr

12 48 42

+56 37

	m	m	R	R
50	1 19.0	2 6.1	5.9	6.1
	20.9	7.9	7.6	7.8
	41.7	27.1	26.9	27.1
	35.8	22.2	22.8	22.6
	11 74	633	632	636
	29.35	15.82	15.80	15.90
			15.82	15.85

ε Virginis

12 56 9

+11 37

	m	m	R	R
50	1 25.2	1 58.2	57.8	57.6
	32.4	0 5.3	4.9	4.2
	53.4	25.3	25.1	24.6
	45.3	17.8	17.1	17.8
	1563	2866	2849	2842
	39.07	11.65	11.22	11.05
			11.65	11.13

Lost Pt. 2 wires

J Cygni

21 17 22 +39 52

	R	R
35	1 43.6	44.0
	49.0	48.8
	7.1	7.1
	4.2	4.0
	2239	2239
	55.97	55.97
	55.97	

A – 1 45 –

α Cygni

20 37 18

+44 51

	m	m	R	R
3				
35	2 38.3	3 16.2	16.6	16.3
	42.8	21.7	21.8	21.2
	08	39.7	39.2	39.1
	56.1	35.3	35.3	35.2
	80			

Ch. failed

Azure

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1879phae.proj.1400R

72

1879. May 6

ε Cygni

20 41 19

+33 31

m	m	R	R
55 1	45.3	2 49.2	49.8	49.7
	51.3	55.1	54.9	55.3
	10.1	14.9	14.6	14.0
	4.6	9.2	9.9	11.0

Ch. failed

ζ Cygni

21 7 47

+29 44

m	m	R	R
40 3	38.1	4 3.4	53.8	53.6
	45.2	1.1	1.4	0.9
	0.3	16.3	16.2	15.7
	55.9	12.2	12.1	11.9
	1995	2630	2635	2621
	49.87	5.75	5.87	5.52
		5.75	5.69	

ε Pegasi

21 38 14

+9 19

m	m
5 24	28.8	3 47.4
	51.9	56.9
	8.6	13.9
	2.6	7.1
	2259	2453
	56.47	1.32

2 Aquarii

21 59 34

−0 54

m	m	R	R
20 0	57.6	20 2	11.4	11.1	11.3
	7.4		19.9	20.6	19.9
	26.3		38.6	37.9	38.7
	18.3		30.9	32.3	32.1
	2896		1008	1019	1020
	12.40		25.20	25.47	~~54~~ 50
				25.20	25.48	25

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1879phae.proj.1400R

α Cephei

21 15 41
+62 4

m	m	m	m
20 48.8	24.6	41.8	25.0 11.2
11.6	27.0	43.7	13.6
27.4	44.6	59.6	30.2
25.2	40.2	57.9	28.1
7 30	13 64	20 30	8 31
18.26	34.10	50.75	20.77

Lost A1

β Cephei

21 27 5
+70 2

m	m	m	m	m
25 1 35.4	50.2	20.5	2 44.6	3 0.6
38.1	52.2	23.4	46.6	3.2
55.1	9.2	39.8	~~38~~	19.8
52.9	7.5	38.3	1.5	16.6
1815	2391	12 20	21 65	402
45.37	59.77	30.50	54.12	10.05

Fundstrecount, 15th fulcat-√

Regasi

22 56 44 +14 33

R	R
55 0	24 26
11.7	11.9
29.3	29.6
21.6	22.3
65 0	66 4
16.25	16.60
16.42	

Rej 1st

Hydrom

0 28 +28 25

R	R
0 2 23	26
9.8	10.0
24.8	24.6
22.2	22.2
59.1	59.4
14.77	14.85
14.81	

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74 May 6 1879

γ Pegasi

υ 7 0

+14 31

R	R
−55 2 20.7	20.9
30.4	30.3
48.2	48.0
41.3	41.3
1406	1405
35.15	35.12
35.14	

Hz e clouds

α Ursæ Minoris

h m s
2 0 21

+22 53

m	m	R	R
30 3 51.1	35 0 3.3	3.0	3.0
59.1	11.4	10.8	11.1
14.6	27.4	26.6	27.1
11.8	23.8	24.7	24.1
2566	659	651	653
4.15	16.47	16.27	16.32
	16.47	16.29	

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1879phae.proj.1400R

1879. May 6–7

Sun. δ C = 46.760

2 57 4

+16 51

m	m
49.8	20.6
57.2	28.5
18.5	48.9
10.9	41.3
25 64	1393
4.10	34.82

Both limbs in δ + R.A. Seeing moderately good.

May 7

α Cephei L.C

21 15 41

+117 56

m	m	m	m
35 1 43.6	16.9	0 43.2	22.9
49.4	23.2	49.3	28.5
3.7	36.6	3.5	41.9
57.4	30.6	57.7	35.2
2141	1073	2137	~~9.85~~ 12.85
53.52	26.82	53.42	~~24.62~~ 32.12

3 strokes for last δ

ζ Leonis

10 9 57

+24 1

m	m	R	R
25 1 14.6	2 25.2	25.8	25.8
21.0	31.6	32.1	31.9
38.6	5.04	49.9	50.1
54.3	45.2	45.7	44.9
~~9.85~~ ~~10.85~~	15 24	15 35	15 27
~~19.62~~ ~~27.12~~ O.K.	38.10	38.37	38.17
	38.10	38.27	

γ Leonis

10 13 18

+20 27

m	m
0 0 12.9 1	24.8
20.6	31.9
39.7	51.2
32.8	44.3
10 60	15 22
26.50	38.05

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1879phae.proj.1400R

α Hydrae

9 21 38

−8 8

m	m	R	
35 0 1.4	0 58.3	58.2	
8.4	5.1	4.7	
32.9	28.4	28.3	
21.5	18.2	18.9	
642	2903	2901	
16.05	12.57	12.52	

θ Ursa. Maj.

9 24 45

+52 14

m	m	R	R
10 4 4.8	15 0 7.6	7.2	7.4
8.3	12.1	11.6	11.1
27.2	31.2	29.8	29.6
21.5	26.1	25.9	26.2
618	770	745	743
15.45	19.25	18.62	18.57
	19.25	18.59	

μ Ursa. Maj

10 15 7

+42 6

m	m	R	R
20 1 57.8	2 22.6	21.9	22.2
1.5	26.4	26.3	26.3
21.6	46.9	46.5	46.4
15.8	40.5	41.1	41.1
2767	1364	1358	1360
9.17	34.10	33.95	34.00
	34.10	33.97	

λ Ursa. Maj

10 56 15

+62 24

m	m	R	R
0 4 51.2	5 0 2.3	2.2	2.2
51.4	4.0	4.0	3.5
9.2	23.7	23.0	23.4
6.2	18.7	19.0	18.9
2380	487	482	480
59.50	12.17	12.05	12.00
	12.17	12.03	

Lost 1st 2 wires

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1879phae.proj.1400R

1879. May 7

ψ Ceres. Maj.

1 2 51

+45 9

	M		m	R	R
15	3 28.7	4	46.5	47.1	47.2
	32.5		50.0	49.9	50.9
	50.6		7.9	8.2	8.0
	45.2		3.4	4.9	4.4
	1570		2278	2301	2305
	39.25		56.95	57.52	57.62
			56.95	57.57	

δ Leonis

11 7 40

+21 11

	M		m	R	R
15	1 14.6	2	29.4	29.3	29.8
	22.1		37.1	36.6	36.2
	39.5		53.6	52.9	53.3
	34.2		48.1	49.6	49.5
	1104		1682	1684	1688
	27.60		42.05	42.10	42.20
			42.05	42.15	

γ Virginis fall.

12 35 31

−0 47

	M		m	R	R
10	4 8.1	15	0 22.7	22.9	22.7
	16.3		32.3	32.1	32.2
	35.9		52.2	51.7	51.4
	27.6		42.6	43.2	43.7
	879		1498	1499	1510
	21.97		37.45	37.47	37.50
			37.45	37.48	

Fell. #

ε Ceres. Maj

12 48 42

+56 37

	M		m	R	R
50	1 58.9	2	14.5	14.7	15.3
	1.4		17.1	17.2	17.2
	19.9		34.8	34.6	34.8
	14.7		30.7	30.7	31.1
	2749		971	972	984
	8.72		24.27	24.36	24.60
			24.27	24.45	

Hse

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1879phae.proj.1400R

β Leonis

11 42 53
+15 15

	m	m	R	R
10 2	29.8	3 41.3	41.2	41.7
	37.3	46.6	48.1	47.8
	56.8	7.5	7.6	7.3
	47.2	59.2	59.8	0.2
	17 11	21 69	21 67	21 70
	42.77	54.22	54.17	54.25
		54.22	54.21	

ε Corvi

12 3 54
−21 57

	m	m	R	R
20 2	44.7	3 57.8	57.9	57.9
	55.5	8.4	8.2	7.8
	16.1	28.2	28.1	28.2
	3.9	16.9	17.9	18.1
	24 02	29 11	29 21	29 20
	0.05	12.77	13.02	13.00
		12.77	13.01	

ε Virginis

12 56 9
+11 37

	m	m	R	R
50 0	48.3	1 52.8	52.1	52.7
	56.4	1.1	0.8	0.6
	15.9	19.4	19.1	19.2
	7.3	11.7	11.7	11.3
	24 79	26 50	26 37	26 38
	1.97	6.25	5.92	5.95
		625	5.93	

α Virginis

13 18 4.9
−10 32

	m	m	R	R
55 3	24.8	4 34.6	34.7	34.7
	33.4	42.7	42.4	42.1
	55.4	4.7	4.2	3.8
	44.2	53.3	54.6	54.6
	15 78	19 53	19 59	19 52
	39.45	48.82	48.97	48.80
		48.82	48.88	

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1879phae.proj.1400R

80 May 7 1879

γ Pegasi
0 7 0
+14 31

m	m	R	R
55 2 22.1	2 42.1	42.2	41.9
31.8	50.4	50.1	50.3
49.5	7.8	8.0	7.5
41.9	0	1.6	2.0

Sch. Sawtell

γ Cassiop.
0 49 25
+60 4

m	m	m	m
20 4 19.1	49.9	25 0 24.4	43.2
21.6	52.1	27.1	46.1
38.6	8.3	44.4	3.9
34.6	5.4	41.3	59.8
11 39	23 57	13 72	21 30
28.47	58.92	34.30	53.25

1 Stroke for last S

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1879phae.proj.1400R

δ Cassiop

1 17 55

+59 36

	m		m	m
50	1 45.4	2	6.1	25.2
	47.9		8.1	27.1
	50		25.7	45.9
	1.1		22.8	41.5
	21 94		62 71	197
	54.85		15.67	~~37.42~~ 34.92

Lost A-1 4+5

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1879phae.proj.1400R

1879 May 8

ζ Hydrae C = 46.727

9 21 38

−8 8

		m	m
30	4	46.5	35 0 58.3
		51.4	3.5
		14.7	28.1
		6.6	17.2
		23 9.2	28 7.1
		59.80	11.77

θ Obs. Maj.

9 24 45

+52 14

		m	m
10	4	13.7	15 0 22.8
		16.4	25.8
		36.5	47.6
		30.9	39.7
		9.75	13.59
		24.37	33.97

Lost 2 wires of A.

ζ Leonis

10 9 57

+24. 1

		m	m	R	R
.25	1	17.6	2 22.9	22.6	22.7
		22.4	27.8	28.3	27.9
		42.4	46.9	47.2	46.9
		36.8	41.5	41.8	41.9
		11 9.2	13 9.1	13 9.9	13 9.4
		29.80	34.77	34.97	34.85
			34.77	35.91	

γ Leonis

10 13 18

+20 27

		m	m
0	0	15.8	1 26.5
		22.6	34.0
		42.3	53.1
		35.8	45.6
		11 6.5	15 9.2
		29.12	39.80

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1879phae.proj.1400R

ε Leonis

9 38 59
+24 20

m	m
5 2 39.6	3 48.8
42.5	53.6
2.6	12.6
58.9	7.9
2036	2429
50.90	0.72

ζ Leonis

10 1 56
+12 33

m	m	R	R
50 3 (56.5)	4 56.7	56.7	56.6
58.1	2.8	3.2	2.9
19.0	23.0	22.3	22.7
9.9	15.2	15.1	15.4
2635	2777	2773	2776
5.87	9.42	9.32	9.40
	9.42	9.36	

μ Ursa. Maj.

10 15 7
+42 6

m	m	m
20 1 39.8	2 20.8	20.4
43.2	24.5	25.5
4.3	46.3	45.5
59.2	4.0.0	39.2
2065	1316	1306
51.62	32.90	32.65

β Ursa. Maj.

10 54 32
+57 2

m
25 1 14.1
15.1
35.2
29.9
943
23.57

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1879 May 8.

~~2~~ Ursæ Maj.

10 56 15

+62 24

	m	m	R	R
0 4	10.4	4 51 3	51.8	51.6
	11.2	51 9	52.0	51.2
	29.7	10 3	9.6	9.4
	25.6	7 1	7.6	8.0
	769	2406	2410	2402
	9.22	0.15	0.25	0.05
		0.15	0.15	

ψ Ursæ Maj.

11 2 51

+45 9

	m	m	R	R
15 3	27.8	4 38 8	39.5	39.5
	31.2	41.7	42.0	41.5
	50.0	03	0.2	59.8
	45.6	56 2	57.2	57.2
	15 46	1970	1989	1980
	38.65	49.25	49.72	49.50
		49.25	49.61	

ε Corvi

12 3 54

−21 57

	m	m	R	R
20 2	45.2	3 52.7	52.8	53.0
	55.5	2.4	2.0	2.6
	17.6	23.1	23.0	22.8
	7.3	13.1	14.0	14.3
24	56	27 13	27 18	27 27
	1.40	7.82	7.95	8.17
		7.82	8.06	

γ Virginis pr.

12 35 32

−0 47

	m	m	R	R
10 4	0.3	15 0	20.0	20.4	20.2
	8.9		28.4	29.0	28.8
	28.6		49.6	49.0	49.2
	21.5		40.9	41.9	41.2
	593		1391	1403	1394
	14.82		34.77	35.07	34.85
			34.77	34.96	

pr. ✱

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1879phae.proj.1400R

δ Leonis

11 7 40

+21 11

	m	m	R	R
15 1	15.4	2 26.1	25.7	25.9
	21.3	32.1	31.8	32.2
	40.1	50.3	49.4	49.5
	35.5	45.2	46.6	46.1
	11 23	15 37	15 35	15 37
	28.07	38.42	38.37	38.42
		38.42	38.39	

β Leonis

11 42 53

+15 15

	m	m	R	R
10 2	28.4	3 35.9	36.7	36.0
	35.2	42.9	43.0	43.0
	56.4	2.6	1.9	2.2
	46.9	53.9	55.0	55.2
	16 69	19 53	19 66	19 64
	41.72	48.82	49.15	49.10
		48.82	49.12	

ε Ursæ Maj.

12 48 42

+56 37

	m	m	R	R
50 1	0.0	1 39.1	39.1	38.8
	1.5	40.2	40.4	40.6
	20.6	0.0	58.3	58.7
	16.2	55.6	55.7	56.0
	383	19 49	19 35	19 41
	9.57	48.72	48.37	48.52
		48.72	48.44	

ε Virginis

12 56 9

+11 37

5	m	m	R	R
50 0	42.7	1 56.9	56.9	56.6
	49.8	5.1	4.2	4.6
	9.6	23.4	23.1	22.2
	3.1	16.1	16.9	16.8
	22 52	28 15	28 11	28 02
	56.30	10.37	10.27	10.05
		10.37	10.16	

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1879phae.proj.1400R

1879 May 8

δ Cassiop. L.C

1 17 55

+120 24

	m	m	m	m
5 4	48.1	26.8	3 49.9	28.6
	57.2	31.9	53.0	32.3
	2.6	43.8	5.6	45.1
	59.2	39.5	1.7	40.4
	22 1	14 20	23 02	14 64
	55.27	35.50	57.55	36.60

γ Draconis

20 17 53

39 52

	R	R
35 0	38.4	38.5
	43.2	43.8
	1.2	0.8
	58.7	58.8
	20 15	20 19
	50.37 O.K.	50.47
	~~62~~	
	50.42	

ζ Draconis

ε Draconis

21 7 47

+29 44

	m	m	R	R
40 3	42.4	4 54.5	54.8	54.7
	49.2	1.7	2.1	1.9
	3.7	15.7	15.8	16.0
	1.0	14.2	13.2	13.0
	21 63	20 61	26 59	26 56
	54.07	6.52	6.47	6.40
		6.52	6.43	

α Cephei

21 15 41

+62 4

	m	m	m	m
20 3	52.1	4 6.1	36.8	25 0 11.4
	54.3	8.4	38.8	13.4
	10.4	23.7	54.4	30.0
	9.2	22.2	54.5	29.4
	24 60	60 4	18 45	8 42
	1.50	15.10	46.12	21.05

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1879phae.proj.1400R

ζ Cygni

20 37 18
+44 51

m	m	R	R
35 2 14.2	3 9.5	9.7	9.5
19.2	14.4	14.4	13.8
36.0	30.5	30.2	30.1
32.9	2 7.9	28.1	27.7
10 23	8' 23	8 24	8 11
25.57	20.57	20.60	20.27
	20.57	20.43	

ε Cygni

20 41 19
+33 31

m	m	R	R
55 1 37.5	2 48.2	48.4	48.8
42.5	53.2	53.8	53.1
0.6	12.1	11.0	10.8
56.5	8' 3	8.1	9.9
19 7 1	24 18	24 13	24 26
49.27	0.45	0.32	0.65
	0.45	0.48	

β Aquarii

21 25 11
−6 6

m	m	R	R
30 2 34.2	3 5 14	52.2	52.4
44.1	1.4	1.2	1.0
2.1	19.1	19.0	18.6
54.8	12.7	12.8	12.9
19 52	26 46	26 52	26 49
48.80	6.15	6.30	6.22
	6.15	6.26	

ε Pegasi

21 38 14
+9 19

m	m	R	R
5 2 43.6	3 55.7	55.3	56.1
52.4	4.8	5.0	4.7
8.2	20.3	20.2	20.1
2.6	14.9	14.7	14.8
22 6 8	27 57	27 52	27 57
56.70	8.92	8.80	8.92
	8.92	8.86	

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1879phae.proj.1400R

88 May 8 1879

2 Pegasi

22 58 44

+14 33

R R

−50	3	51.0	51.7
		0.3	0.2
		17.2	16.8
		11.1	11.1
		25 96	25 98
		4.90	4.95
		4.92	

γ Cassiop.

0 49 25

+60 4

m m m m

~~20~~	4	25.8	38.8	25	0	0.6	35.9
		27.8	41.2			3.3	39.1
		44.2	57.5			21.4	56.6
		41.7	55.2			16.5	63.5
		1395	1927			418	1951
		3487	48.17			1045 O.K. ~~20~~	48.77

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1879phae.proj.1400R

δ Cassiop.
1 17 55
59 36

m	m	m	m	m
50 1 32.2	49.1	2 23.2	44.2	57.3
34.4	51.2	25.2	46.1	59.2
51.7	8.9	41.8	2.8	16.5
48.7	6.1	38.9	0.4	13.9
1670	2353	1291	2135	2669
41.75	58.82	32.27	53.37	6.72

α Arietis
2 0 21
+22 53

m	m	R	R
30 3 56.5	35 0 8.6	8.8	8.8
4.2	16.0	15.7	15.2
18.4	31.9	31.2	31.2
17.7	29.1	29.9	29.7
2768	856	856	849
9.20	21.40	21.40	21.22
	21.40	21.31	

Lost last wire

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1879phae.proj.1400R

1879. May 8–9
Sun. C=46.727

3 4 49
+17 24

45	3	20.6	20	0	48.9
		28.8			55.9
		49.1			17.5
		43.7			
		~~36.7~~			11.2
		1422			2535
		35,55			3,37

Both limbs in P & R.A, Seeing moderately good

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1879phae.proj.1400R

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1879phae.proj.1400R

92

May 10

ζ Ursae Maj. C=46727

0 54 32

+57 2

m	m	R	R
25 1 8.8			
10.2			
29.4			
23.8			
7.22			
18.05			

Lost A −2

α Ursae Maj.

10 56 15

+62 24

m	m	m	″	″
0 3 44.4	4 22.4	50.0	5.0	8.7
46.3	23.7	50.4		10.0
3.9	42.5	8.2		2.8
0.9	38.1	6.3		2.0
21 5.5	12 6.7	23 4.9		7.25
53 8.7	31.67	58.72		18.12

β Leonis

11 42 53

+15 15

m	m	R	R
10 2 31.9	3 36.6	37.2	37.1
39.5	43.2	43.2	42.8
59.1	34	2.9	2.8
50.5	56	56.1	56.6
18 1.0	1.98	1.994	1.993
45.25	49.70 O.R.	49.85	49.82
	42.35	49.83	

γ Virginis pr.

12 35 31

−0 47

m	m	R	R
10 4 5.1	15 0 11.8	12.2	12.2
12.1	20.8	20.9	21.1
32.0	42.1	40.2	40.8
23.7	33.7	34.0	34.2
7 2.9	10 8.4	10 7.3	10 8.3
18.22	27.10	26.82 O.R.	27.07
		54.32	
		26.95	

Pr. #

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1879phae.proj.1400R

ψ Ursa Maj.

11 2 51
+45 9

m	m	R	R
15 3 30.7	4 30.4	30.6	31.1
34.1	35.1	35.3	35.3
51.7	52.9	52.7	52.5
47.7	49.6	50.2	50.2
1642	1680	1688	1691
41.05	42.00	42.20	42.27
		42.23	

δ Leonis

11 7 40
+21 11

m	m	R	R
15 1 15.9	2 27.2	27.7	27.0
23.1	33.9	34.1	33.9
39.9	(52.0)	50.3	50.4
35.9	47.9	48.3	48.2
1148		1604	1595
28.70		40.10	39.87
		39.98	

γ Cassiop. L.C.

0 49 25
+119 56

m	m	m
35 1 37.7	13.3	0 40.6
42.1	16.8	44.9
55.6	30.7	58.9
50.1	24.3	52.9
1855	851	1973
46.37	21.27	49.32

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1879phae.proj:1400R

94

1879. May 10 – 11

Sun C = 46.727

12 38

+17 55

M

15 2 12.4

20.2

37.1

32.1

10 18

25.45

Upper limb in D. fall limb in R.A.

Seeing pretty bad.

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1879phae.proj.1400R

1879. May 11–12

Sun.

3 16 33

+18 10

		m			m
0	2	11.4	30	4	37.4
		58.3			23.4
		17.2			42.3
		10.2			35.9
		277.1			139.0
		9.27			34.75

May 12

γ Leo. May

11 47 28

+54 22

A Rordy

Ref. S.

γ Virginis Foll.

12 35 31

−0 47

		m			m
10	4	34.1	15	0	48.8
		19.0			34.7
		41.7			57.1
		32.9			47.6
		127.7			188.2
		31.92			47.05

γ Cassiop. L.C.

0 49 25

+119 56

		m		m		m
35	2	13.2	1	42.8	1	0.11
		55.6		25.0		42.2
		11.3		40.5		57.8
		5.2		33.7		57.1
		265.3		142.0		211.1
		6.32		35.50		52.77

Foll. H

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1879phae.proj.1400R

96

1879 May. 12

ε Draginis

1.2 56 9

+11 37

	h	m		m
50	1 8.0	2	21.4	
	52.2		7.1	
	14.4		28.1	
	6.1		20.9	
	26 07		7 7 5	
	5.17		19.37	

δ Cassiopeiæ. L.C.

1 17 55

+120 24

	m	m	m		m	m
5'	4' 58.1	41.3	13.8	3'	53.1	42.4
	40.1	23.4	55.6		34.4	24.2
	54.7	39.5	10.0		50.4	39.4
	49.7	31.8	5.8		43.9	34.1
	20 26	13 40	26 52		18 18	14 01
	50.65	33.50	6.30		45.45	35.02

3 strokes for last δ

3

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1879phae.proj.1400R

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1879phae.proj.1400R

1879 May 12–13
Linn C = 46727
3 20 29
+18 25

	m		m
1 45 2	20.9	15 4	37.7
	5.2		21.1
	28.5		45.0
	22.9		39.1
	775		1429
	19.37		35.72

May 13
β Ursae Maj.
10 54 32
+57 2

	m
25 1	21.9
	2.2
	24.6
	17.8
	665
	16.62

Both limbs in 8 + R.A.
A 1st limb? Lost 1 or 2 wires, prob. A1
+1

δ Leonis
11 7 40
+21 11

	m	m	R	R
15 1	38.5	2 55.6	55.7	56.7
	22.4	39.8	40.2	40.2
	42.8	59.8	58.2	58.3
	36.3	54.0	55.0	55.0
	1400	2092	2091	2102
	35.00	52.30	52.27	52.55
		52.30	52.41	

β Leonis
11 42 53
+15 15

	m	m	R	R
10 2	50.1	4 57.4	6.6	6.3
	35.2	61.1	50.8	50.5
	57.3	13.7	13.4	13.0
	47.1	4.1	4.2	3.9
	1897	2543	2550	2537
	47.42	3.57	3.75	3.42
		3.57	3.58	

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1879phae.proj.1400R

α Ursa Maj.
10 58 15
+62 24

m	m	m	m
0 4 8.6	21.5	54.2	5 0 18.7
46.8	1.4	33.1	57.3
8.7	21.8	54.5	20.1
3.2	16.8	49.5	14.9
~~18~~ 73	615	1913	~~37~~ 10
24 ~~46~~.82	15.37	47.82	29 / 12 7.75

ψ Ursa Maj.
11 2 51
+45 9

m	m	R	R
15 3 48.2	20 ~~22~~.4	2.8	
30.2	44.3	44.1	
51.1	57	4.8	
44.9	0.1	0.8	
17 44	~~22~~ 19	23 25	
43.60	~~47.7~~ 57.9/7	58.12	

γ Ursa Maj.
11 47 28
+54 22

m	m	R	R
5 1 12.8	2 ~~20~~.6	20.9	21.0
53.8	2.4	2.7	2.1
16.1	23.8	23.7	24.4
8.9	18.1	17.0	17.4
27 16	649	643	649
7.90	16.22	16.07	16.22
	16.22	16.15	

γ Cassiop. L.6
0 49 25
+119 56

m	m	m	m
35 2 7.1	1 45.9	10.6	0 42.9
48.9	28.3	52.1	25.6
5.3	45.4	8.7	42.0
58.9	37.2	2.5	34.8
~~24~~ 10 2	15 ~~48~~ 6	25 39	14 53
~~23~~ ~~0.05~~ O.K.	~~38.70~~ 39.20	3.47	36.32
~~5.55~~			

3 strokes for last δ

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1879phae.proj.1400R

100

1879 May 13

ε Virginis

12 56 9

+11 37

m	m	R	R
50 1 3.1	2 19.6	19.9	19.7
48.4	4.7	4.8	5.1
11.7	27.8	27.1	26.8
3.3	19.9	20.0	20.2
2465	720	718	718
1.62	18.00	17.95	17.95
	18.00	17.95	

δ Cassiop. K. 6 C=46727

1 17 53

120 24

m	m	m	m
5 4 53.2	27.2		
5 4 47.8		8.2	3' 43.9
35.2	10.1	50.1	25.5
52.1	26.2	6.3	41.9
44.8	19.7	59.9	35.6
1853	832	2445	1469
46.32	20.80	1.12	36.72

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1879phae.proj.1400R

1879 June 13

Cassiopeia. C = 46,725

0 49 25

+60 4

	m	m		m
25	0 2.8	28.8	1	6.0
	2.4	28.5		6.2
	0.6	27.0		4.1
	4.4	30.1		7.2

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1879phae.proj.1400R

1879 May 13–14

Sun C = 46.775

3 24 25

+18 40

	m		m
30 2	45.6	0 4	58.5
	29.2		42.4
	54.4		6.2
	48.1		0.0
	177 3		2271
	44.32		56.77

Seeing moderately good. Both limbs in δ & R.A.

μ Ursæ Maj.

10 15 17

+42 6

May 14

A. R. only.

ν Ursæ Maj.

11 2 51

+45 9

	m	m	R
15 3	52.1	4 57.8	58.8
	34.2	39.9	38.6
	54.7	59.6	59.3
	48.7	54.7	54.4
	1897	2120	2111
	47.42	53.00	52.77

δ Leonis

11 7 40

+21 11

	m	m	R	R
15 2	49.9	3 2.1	2.8	3.0
	32.2	45.2	45.2	45.2
	54.2	5.7	5.4	5.0
	47.4	0.0	0.7	0.7
	1837	2333	2341	2339
	45.92	58.32	58.52	58.47
		58.32	58.49	

A5+ fold. 3 strokes for last δ

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1879phae.proj.1400R

β Ursa. Maj.
10 54 32
+57 2

α Ursa. Maj.
10 56 15
+62 24

	m	m
0	2	—
	46.7	
	7.9	
	3.6	

A. R. only.

β Leonis
11 42 53
+15 15

	m	m	R	R
10	2	46.1	3 59.1	59.4	58.8
		30.9	42.6	41.9	42.7
		54.7	6.6	5.8	6.1
		43.2	56.8	56.8	56.6
		17 49	22 51	22 39	22 42
		43.72	56.27	55.97	56.05
			56.27	56.01	

γ Ursa. Maj.
11 47 28
+54 22

		m	m	R	R
5	1	18.9	2 26.2	25.8	25.9
		58.2	5.3	5.3	6.2
		21.4	27.7	27.5	27.3
		13.7	20.8	22.0	22.2
		29 22	800	806	816
		13.85	20.00	20.15	20.40
			20.00	20.27	

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1879 May 14

γ Virginis

12 35 31

−0 47

	m	m	R	R
10	4 24.9	15 0 41.2	42.2	42.1
	9.9	26.9	27.1	27.2
	32.7	51.1	50.5	51.3
	23.7	41.2	42.1	42.3
	9 12	16 04	16 19	16 19
	22.80	40.10	40.47	40.~~47~~
		40.10	40.59	7/2

γ Cassiop. L.C.

0 49 25

+119 56

	m	m	m	m
35	2 8.0	1 46.6	4.9	0 47.3
	47.9	27.6	44.6	29.1
	5.0	45.3	2.1	46.4
	58.9	37.1	5 4.5	38.6
	23 9.8	15 6.6	22 6.4	16 1.4
	59.95	39.15	56.60	40.35

Long 1st

1 Shift Cart ✓

γ Cassiop.

0 49 25

+60 4

	m
20	4 53.3
	31.5
	52.2
	47.9
	18 49
	46 22

A +1 1 2 3

δ Cassiop.

1 17 55

+59 36

	m	m	m	m	m
50	2 4.0	23.6	45.2	3 8.6	19.2
	44.3	2.9	24.3	48.3	0.4
	5.1	24.1	45.3	9.1	21.4
	0.8	18.9	39.6	5.1	15.7
	23 42	6 9.5	15 4.4	25 7.1	25 6.7
	58.55	17.37	38.60	2.77	14.17

3 strokes fine Cart ✓

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1879phae.proj.1400R

~~* Second Book~~

ε Virginis

12 56 9

+11 37

	m	m	R	R
50 1	6.4	2 23.2	22.2	23.0
	60.3	7.1	6.7	6.8
	15.0	29.4	29.1	29.2
	5.1	21.3	21.7	21.1
	2568	810	797	801
	4.20	20.25	19.92	20.02
		20.25	19.97	

δ Cassiopeiæ L.L.

1 17 55

+120 24

	m	m	m	m	m
5' 2[1]	5'7	40.4	8.2	3 46.9	38.9
4	55.4	21.0	48.2	27.4	20.5
37	0.2	36.2	5.1	44.1	36.8
	52.7	30.4	59.1	37.6	30.0
	1916	1280	2406	1560	1262
	47.90	32.00	0.15	39.00	31.55

(1st-last $\sqrt{2}$.)

γ Andromedæ

1 56 28

+41 45

	m	m	R	R
40 3	11.6	4 12.1	12.2	12.8
	51.7	53.2	53.8	53.4
	16.9	17.2	10.4	17.1
	9.18	13.4	12.2	12.1

Ref.

May 14–15 Sun.

3 28 22

+18 54

	m		m
.. 15 3	22.9	50 0	27.6
	7.5		12.6
	30.7		36.9
	25.2		28.2
	863		10 53
	21.58		26.32

A +1 2nd limb 1 or 2 wires?

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1879phae.proj.1400R

1879 May 28–29
Sun C = 46733
4 24 33 +21 39

	m	m
	35	1
30 4	45.1	25.7
	51.5	31.1
	52.1	33.1
	62.3	34.1
	21 10	1240
	52.75	31.00

May 29
ζ Aurigae
5 7 45
+45 52

	m	m	m
35 0	55.1	2 6.7	7.1
	56.8	9.2	9.2
	1.5	13.5	13.6
	0.7	13.4	12.8
	23 41	428	427
	58.52	10.70	10.67
		10.68	

Look A,1 A,2 for better mip
seeing any bad wind

δ Virginis
12 49 30
+4 3

	m	m	R	R	m
20 4	22.7	25 0	36.0	35.9	36.0 36.4
	29.3		41.6	41.9	40.6 41.4
	34.1		46.7	46.6	46.7 47.0
	31.3		42.9	44.1	44.8 45.0
	11 7 4		167 4	85	81 98
	29.35		41.85	42.12	42.02 42.45
			42.15	42.07	

ζ Virginis
13 18 49
−10 32

	m	m	m	R	R
55 3	59.7	0 24.5	24.6	24.3	24.5
	28	25.1	25.8	26.2	25.3
	15 24	40.3	40.3	39.7	39.8
	8 0	32.1	32.7	33.2	33.4
	26 64	1218	1234	1234	1230
	6.60	30.45	30.85	30.85	30.75
		30.65		30.80	

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1879phae.proj.1400R

β Leonis
11 42 53
+15 15

m	m	R	R
10 3 33.3	4 22.6	23.4	23.3
38.1	28.9	27.7	27.7
45.2	34.6	34.6	34.2
38.8	28.8	30.2	29.2
15 54	114'9	1159	1144
38.85	28.72	28.97	28.60
	28.72	28.78	

γ Urs. Maj
11 47 28
+54 22

m	m	R	R
5 1 57.2	2 32.5	32.5	32.3
58.9	34.8	33.2	33.3
36	38.9	39.8	39.6
04	36.5	37.2	37.3
01	22.7	22.7	22.5
0.02	35.67	35.67	35.62
	35.67	35.65	

A 3 tc.

η Urs. Maj.
13 42 46
+49 55

m	m	R	R	m
30 3 22.4	4 32.3	31.6	31.5	31.7
20.4	28.6	28.7	29.0	29.9
28.9	37.5	37.0	36.6	37.0
27.1	35.6	36.1	35.8	35.3
188	1340	1334	1329	1339
24.70	33.50	33.35	33.22	33.47
	33.48	33.28		

η Bootis
13 48 55
+19 0

m	m	R	R	m
25 2 46.4	3 53.7	53.3	53.0	53.2
50.6	55.6	54.8	55.3	55.3
59.7	4.5	3.9	4.3	4.4
55.4	0.4	0.3	0.2	0.0
2141	2342	2323	2328	2329
53.52	58.55	58.07	58.20	58.22
	58.38	58.13		

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1879phae.proj.1400R

1879 May 29

T Virginis

13 55 29

+2 8

m	m	R	R	m
15 4 59.4	20 0 59.3	59.4	59.4	59.4
5.4	5.6	5.2	6.4	5.9
11.7	11.3	10.4	10.7	11.2
7.1	7.9	8.4	8.1	7.5
26 36	26 41	26 34	26 46	26 40
5.90	6.02	5.85	6.15	6.00
	6.01	6.00		

ζ Bootis

14 10 8

+19 49

m	m	R	R	m
35 4 57.7	0 27.9	28.0	28.2	28.3
55.6	31.0	30.8	30.7	31.2
2.8	38.7	38.7	38.7	39.2
58.3	35.5	35.7	35.0	35.3
22 84	13 31	13 32	13 26	13 40
57.10	33.27	33.30	33.15	33.50
	33.38	33.22		

δ Cassiop.

1 17 55

+59 36

m	m	m	m
15 2 17.2	57.3	3 24.2	33.7
16.5	57.0	24.3	33.1
21.4	0.6	27.8	37.5
20.1	0.6	27.4	36.8
7 52	23 55	23 7	21 1
18.80	58.87	25.92	35.27

3 Strokes for Last

ζ Arietis

2 0 21

+22 53

m	m	R	R	m
30 4 39.3	0 46.6	46.1	46.7	46.9
43.4	57.2	50.8	51.0	50.4
46.5	53.4	52.9	53.2	53.8
45.8	53.6	54.6	54.7	53.1
17 50	20 48	20 44	20 56	20 42
~~4.00~~	~~51.60~~	~~50.88~~	~~51.12~~	~~50.84~~
43.75	51.20	51.10	51.40	51.05
	51.12	51.25		

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1879phae.proj.1400R

ζ Pegasi

22 58 44

+14 30

m

50 4 24.8
29.7
36.4
42.5
13 34
33.35

11.58
63

γ Cassiop.

0 49 25

+60 14

R	R	R	R
20 4 5+7	5+2	5+5-	5+9
5'8	0.0	5'9	5'3
2'9	3'4	3'5.	2'9
2'2	2'9	2'3	2'8
26	58	52	49
0.65-	1.45-	1.30	1.23
11.58			

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1879phae.proj.1400R

1879 May 29–30

Sun $e = 46.750$

4 28 38 +

+21 48

m	m
20 4 40.4	55 2 17.9
45.3	22.8
48.4	25.6
47.5	26.0
216	918
45.40	22.95

Both limbs in R. A. Last 1st time in 2nd limb. Seeing very fine

May 30

Aurigae

5 7 45

+45 52

m	m	R	R	m
35 0 52.5	2 0.5	0.2	0.1	59.9
53.4	1.1	1.1	1.4	1.1
59.4	7.4	6.9	7.5	7.4
57.8	5.6	5.5	5.7	5.0
231	146	137	147	134
55.77	3.65	3.42	3.67	3.35
	3.58	3.55		

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1879phae.proj.1400R

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1879phae.proj.1400R

1879 May 31

γ Virginis C = 46.750

12 35 31

− 0 47

	m	m	R	R	m
15	0 21.5	0 53.5	53.8	54.2	53.9
	20.4	55.5	55.7	55.8	55.2
	35.8	8.4	7.8	9.0	8.5
	29.6	0.4	0.4	0.8	0.2
	11 03	23 78	2377	2398	2378
	27.57	59.45	59.42	59.95	59.45
		59.45	59.68		

Ph #

γ Cassiop. L.C.

0 49 25

+ 119 56

	m	m	m	m
35	2 2.5	1 34.3	10.2	0 53.6
	2.9	35.0	10.9	53.4
	8.8	41.3	16.6	58.7
	3.6	35.6	11.2	54.5
	17 8	1462	89	202
	4,45	36.55	12,22	55.05

η Bootis

13 48 55

+ 19 0

	m	m	R	R	m
25	2 54.8	3 54.7	54.5	54.8	54.4
	56.4	56.1	55.8	56.1	55.8
	7.1	7.5	6.8	7.4	7.3
	1.0	1.6	1.3	1.2	0.6
	23 93	23 99	2384	2395	2381
	59.82	59.98	59.60	59.87	59.52
		59.75	59.73		

T Virginis

13 55 27

+ 2 ° 8

	Pr	m	R	R	m
15	4 49.3	2° 1′ 0.4	0.2	0.2	0.4
	49.3	2.8	2.7	2.8	2.6
	59.5	13.5	12.9	13.3	14.0
	54.3	9.2	9.6	8.7	8.9
	21 04	25 9	254	250	~~254~~ 276
	52.60	6.47	6.35	6.25	~~4.47~~ 6.90
		6.47	6.30		

OK.

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1879phae.proj.1400R

δ Cassiop. L.b

1 17 55

+126 24

	m	m	m	m
10 0	4.7	5 4 28.6	3 52.2	39.8
	3.7	27.8	51.2	40.0
	8.1	32.3	55.4	44.1
	4.5	27.2	50.8	38.7
	21 0	11 59	96	16 26
	3 5.25	28.97	52.40	40.65

η Urs. Maj.

13 42 46

+49 55

	m	m	R	R	m
30 3	27.7	4 27.6	28.7	28.0	28.4
	24.7	24.4	24.8	25.4	25.1
	34.3	35.8	35.3	35.1	34.9
	30.4	31.3	32.2	31.6	30.7
	11 76	11 91	1210	1201	1191
	29.40	29.78	30.25	30.02	29.78
		29.78	30.13		

3 strokes for last δ

ζ Bootis

14 10 8

+19 49

	m	m	R	R	m
35 4	34.9	40 0 28.5	28.2	28.6	29.1
	25.2	30.0	30.0	30.6	29.4
	45.4	41.2	41.2	41.3	41.9
	42.1	34.0	34.8	34.2	34.1
	15 96	13 37	1342	1347	1355
	39.90	33.42	33.55	33.67	33.87
		33.52	33.61		

ν Bootis

14 27 12

+38 50

	m	m	R	R	m
35 3	21.3	4 11.4	11.3	11.2	11.2
	22.0	11.8	11.6	11.8	11.6
	31.7	21.8	21.8	21.8	21.8
	28.3	18.4	18.0	17.8	17.7
	~~+33~~	6 34	627	626	623
	10.33				
	~~23.32~~	15.85	15.68	15.65	15.58
	25.82	15.71	15.66		

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1879phae.proj.1400R

1879. May 31

ε Bootis

14 39 42

+27 35

m	m	R	R	m
50 3 11.4	4 16.8	16.3	17.1	16.9
12.0	17.6	17.4	17.2	19.7
21.2	26.4	26.4	27.0	27.1
16.9	21.8	22.2	22.0	22.4
6.5	8.26	8.23	8.33	~~8.31~~ 8.41
15.37	20.65	~~20.58~~	20.82	~~20.78~~ 21.02
	20.83	20.70		

Perhaps omitted one stroke for 8.3 mag? close comp. for. above.

ζ Androm.

0 2 8

+28 25

m	m	R	R	m
0 2 45.9	3 51.6	51.9	51.6	
45.1	52.4	51.2	51.8	
53.6	59.9	59.2	59.2	
50.9	56.4	56.4	56.3	
1955	2205	~~19.7~~ 21.87	18.9	
48.87	55.12	~~54.92~~ 54.67	54.72	

δ Cassiop.

1 17 55

+59 36

m	m	m	m	R	R	m
50 2 12.9	34.8	3 8.9	32.7	32.6	32.2	32.8
12.3	34.5	8.4½	31.6	31.7	31.8	32.4
17.4	39.6	(N) 9.5½	37.6	37.6	37.5	37.9
14.8	36.1	11.6	35.1	34.6	34.7	34.1
17.4	27.0		17.0	16.5	16.2	17.2
14.35	36.75		34.25	34.12	34.05	34.30
			35.27	34.08		

α Aurigae

5 7 45

+45 52

m	m	R	R	m
35 0 56.4	2 0.8	0.7	1.1	0.8
57.1	2.0	1.5	2.5	2.2
4.9	10.0	9.3	9.7	10.1
0.2	5.4	5.4	5.0	4.6
23.86	18.2	16.9	18.3	17.7
59.65	4.55	4.22	4.57	4.42

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1879phae.proj.1400R

γ Pegasi

0 7 0

+14 31

m	m	m	R	R	m
55 1 58.0	3 10.7	10.2	10.2	10.4	
04	13.7	12.2	12.6	13.2	
9.6	22.8	22.2	22.7	23.0	
2.4	15.9	15.7	15.2	15.2	
2504	631	603	607	618	
2.60	15.77	15.07	15.17	15.45	
	15.61	15.12			

γ Cassiop

0 49 25

+60 4

m	m	m	R	R	m
20 4 49.6	25 0 25.2	14.9	4.2	4.3	4.8
46.1	20.8	0.8	59.8	0.8	0.5
55.6	29.7	9.6	8.7	9.2	9.6
52.2	27.6	7.4	6.7	6.7	5.9
35	233	227	194	210	208
50.87	25.82	5.67	4.85	5.25	5.20
		5.43	5.05		

L Orionis

5 48 37

+7 23

m	m	R	R	m
30 4 38.3	30 0 50.0	49.7	49.4	49.2
44.1	54.9	55.0	55.1	54.8
47.9	58.2	58.2	58.3	58.9
46.2	55.4	55.1	54.6	54.2

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1879phae.proj.1400R

1879 May 31 – June 1

Sun C = 46.750

4 36 48

+22 5

m	m
35 2 44.4	35 4 51.4
48.4	55.5
53.4	1.3
51.3	57.8
1975	2260 16.60
49.37	O.K. 56.50 4.15

α Aurigæ

5 7 45

+45 52

m	m	R	R	m
35 0 56.4	2 0.8	0.7	1.1	0.8
57.1	2.0	1.5	2.5	2.2
4.9	10.0	9.3	9.7	10.1
0.2	5.4	5.4	5.0	4.6
2386	182	169	183	177
59.65	4.55	4.22	4.57	4.42
	4.48	4.39		

Seeing pretty fair. Both limbs in 24 F. of

γ Ursæ Maj.

11 47 28

+54 22

m	m	m	R	R	m
5 1 30.3	2 55.4	2 29.7	30.1	30.1	30.5
31.1	55.6	29.7	29.6	30.6	29.9
37.2	3.4	36.8	36.7	37.8	37.5
33.4	59.4	33.3	32.6	32.5	32.5
120	2338	1295	1290	110	1304
33.00	58.45	32.37	32.25	32.75	32.60
		32.48	32.50		

γ Virginis Foll.

12 35 31

−0 47

m	m	R	R	m
10 4 47.2	0 57.8	58.2	57.9	58.1
57.8	2.1	2.6	2.7	2.5
57.9	11.1	11.2	11.2	11.3
53.9	5.6	5.2	4.7	4.8
2128	2566	2572	2565	2567
53.20	4.15	4.30	4.12	4.17
	4.16	4.21		

Foll. #

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1879phae.proj.1400R

α Virginis

5 48 37
+7 23

m	m	R	R	m
30 4 38.3	35 0 50.0	49.7	49.4	49.2
44.1	54.9	55.0	55.1	54.8
47.9	58.2	58.2	58.3	58.9
46.2	55.4	55.1	54.6	54.2
1765	185	180	174	171
44.12	54.62	54.50	54.35	54.27
	54.45	54.42		

β Leonis

11 42 53
+15 15

m	m	R	
10 3 24.5	4 12.2	13.1	
27.8	16.1	16.1	
35.9	23.9	23.0	
29.0	17.3	17.1	
1172	695	693	
29.30	17.37	17.32	

γ Virginis

12 49 30
+4 3

m	m	R	R	m
20 4 24.3	0 46.4	45.7	46.4	46.6
30.1	50.6	50.4	50.8	50.6
36.5	57.4	57.2	57.2	57.4
31.4	53.5	53.7	52.7	53.3
23	79	70	71	79
30.57	51.97	51.75	51.78	51.97
	51.97	51.76	52	

o.k

ε Virginis

12 56 9
+11 37

m	m	R	R	m
50 1 29.1	2 31.3	31.0	32.0	31.5
31.8	34.2	33.4	34.2	34.2
40.8	43.5	42.3	42.7	42.6
35.4	37.3	37.0	36.8	36.5
1371	1463	1437	257	250
34.27	36.57	35.92	36.42	36.25
	16.613			
	41.57			
	36.41	36.17		

o.k

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1879phae.proj-1400R

1879 June 1
ζ Virginis
13 18 49
−10 32

m	m	R	R	m
55 4 3.0	6 21.3	21.3	21.5	21.4
7.3	24.4	24.7	24.9	24.8
18.5	36.6	36.6	37.2	37.3
10.0	29.7	29.3	29.0	28.1
388	1120	1119	1126	1116
9.70	28.00	27.97	28.15	27.90
	27.95	28.06		

η Ursæ Majoris
13 42 46
+49 55

m	m	R	R	m
30 3 19.4	4 26.4	25.8	26.2	25.8
18.1	25.2	25.0	23.2	23.2
25.5	31.9	31.6	31.6	31.9
22.9	29.6	29.2	28.8	28.7
859	1131	1116	1098	1096
21.47	28.27	27.90	27.45	27.40
	27.83	27.67		

α Pegasi
22 57 19
+29 35

R	R	R	R
50 2 40.2	40.2	40.2	40.2
39.7	40.1	39.8	39.8
46.2	46.2	45.9	46.1
45.6	45.2	44.2	44.8
1717	1717	1701	1709
42.92	42.92	42.52	42.78
42.77			

ε Pegasi
22 58 44
+14 33

R	R	R	R
50 4 28.0	28.8	28.9	29.0
30.3	29.6	29.7	30.1
39.0	39.2	39.2	39.1
33.0	33.0	33.1	33.1
1308	1316	1309	1313
32.70	32.90	32.72	32.82
32.72	.65		

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1879phae.proj.1400R

η Bootis

13 48 55
+19 0

m	m	R	R	m
25 2 37.4	3 56.0	56.2	56.6	56.1
39.2	58.4	57.8	57.8	58.7
48.3	7.1	6.7	7.0	7.1
43.4	1.9	2.2	1.8	1.0
1683	34	29	32	29
42.07	0.85	0.72	0.80	0.72
	0.78	0.76		

T Virginis

13 55 29
+2 8

m	m	R	R	m
15 4 52.4	20 1 10.5	9.6	9.6	10.0
55.6	12.7	11.5	11.8	13.2
3.1	20.9	20.7	20.8	20.9
58.6	17.4	16.9	17.2	16.8
2297	615	587	594	609
57.42	15.37	14.67	14.85	15.22
	15.29	14.76		

γ Cassiopeiæ

0 49 25
+60 4

m	m	m	R	R	m
20 4 57.9	25 0 33.4	1 9.4	8.9	9.1	9.6
53.4	27.4	4.3	3.6	3.8	4.2
1.4	36.3	12.7	12.2	12.0	13.2
0.9	35.5	11.6	11.2	11.3	10.3
2336	126	380	359	3.6 / 382	373
58.40	33.15	9.50	8.97	9.05	
		9.41	9.01		

δ Cassiopeiæ

1 17 55
+59 36

m	m	m	m	R	R	m
50 2 19.9	36.4	3' 6.4"	28.5	28.6	29.6	28.5
14.9	30.8	0.8	24.4	24.5	24.3	24.2
24.0	40.7	10.1	32.7	31.9	32.2	32.8
21.5	38.8	7.7	29.9	30.6	31.2	30.5
803	1467	250	1155	1156	1173	1163
9.32	20.07	36.67	6.25	28.87	28.90	29.32	29.07
				28.97	29.11	

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1879phae.proj.1400R

120

1879 June 1

Arietis C = 46.789

α 2 0 21

δ +22 53

m

30 4 33.6

34.7

40.8

38.9

1480

37.00

~~39 75~~

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1879phae.proj.1400R

1879 June 2
Sun C = 46.789
4 40 53
+22 13
m
55 4 51.2
52.3
59.2
0.5
22 32
55.80

Clouds
1st limb in R.A. ~~Sp~~ lower limb δ
2nd limb in R.A. A.3,4,5,6 (A 2,3,4,5)

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1879phae.proj.1400R

1879 June 4

Cassiop. L.6. C = 46.789

0 49 25

+119 56

	m	m	m
35	2 20.1	1 44.3	17.4
	20.1	45.5	17.1
	15.9	41.1	13.1
	19.1	44.0	16.3
	752	149	239
	18.80	43.72	15.97

ε Virginis

12 56 9

+11 37

	m	m	R	R	m
50	1 15.6	2 28.1	27.8	27.7	28.3
	19.1	31.4	30.9	31.2	31.6
	21.9	33.7	33.7	33.8	33.6
	28.3	35.4	34.8	33.9	34.0
	799	1286	1272	66	1275
	19.97	32.15	31.80	31.65	31.87
		30.01	31.72		

η Bootis

13 48 55

+19 0

	m	m	R	R	m
25	2 40.6	3 5.9	58.1	58.0	57.6
	42.1	2.1	0.9	1.0	2.1
	44.0	3.6	3.6	3.3	3.9
	44.8	5.0	4.6	4.8	4.1
	115	86	72	71	77
	42.87	2.19	1.80	1.78	1.92
		2.03	1.79		

T Virginis

13 55 29

+2 8

	m	m	=	R	R	m
15	4 55.2	20 1	7.3	6.9	7.0	7.4
	599		12.2	13.3	12.8	12.7
	56.6		13.1	12.9	13.2	13.2
	1.0		15.6	15.8	16.1	15.8
	2359		82	89	91	91
	58.97		12.05	12.22	12.27	12.27
			12.16	12.25		

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1879phae.proj.1400R

δ Cassiopeiae. L.C.

1 17 55
+120 24

	m	m	m	m
5 4	55.5	24.0	2.4	3 50.6
	55.9	23.8	2.8	50.3
	53.6	20.4	58.6	46.9
	54.5	22.5	1.8	49.2
	195	107	56	197.0
	54.87	22.67	1.40	49.25

η Ursae Maj.

13 42 46
+49 55

	m	m	R	R	m
30 3	44.1	43.4	36.7	36.3	35.9
	41.4	34.1	34.1	34.6	34.9
	42.6	36.6	36.3	35.8	35.8
	46.3	39.8	39.8	39.8	39.5
	144	269	269	265	261
	43.60	36.72	36.72	36.62	36.52
	~~1885~~ ~~47.20~~	36.62	36.67		

3 Stunden fehlt!

ι Bootis

14 10 8
+19 49

	m	m	R	R	m
35 4	17.8	40 0	29.7	29.3	29.6	30.1
	220	33.1	33.5	33.3	34.1
	23.5	35.0	34.8	34.4	35.1
	23.9	37.3	37.2	37.2	36.9
	7.2	15.1	14.8	14.5	16.2
	21.80	33.77	33.70	33.62	34.05
		33.91	33.66		

γ Bootis

14 27 12
+38 50

	m	m	R	R	m
35 3	0.8	4 10.2	10.0	9.9	9.5
	2.5	12.2	12.0	12.3	12.5
	3.3	12.4	12.5	12.3	12.8
	6.8	16.0	16.2	16.1	16.0
	13.4	10.8	~~10.7~~ ~~52.7~~	50.6	50.8
	3.35	12.70	~~12.67~~ ~~13.17~~	12.65	12.70
		12.70	12.64		

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1879phae.proj.1400R

879 June 4

ε Bootis

14 39 42

+27 35

m	m	R	R	m
50 2'59.4	4 9.6	10.0	9.7	9.6
1.9	11.5	11.7	12.2	12.1
2.0	12.6	12.5	11.8	12.3
5.2	15.6	15.9	15.2	14.6
85	93	101	89	86
2.12	12.32	12.52	12.22	12.15
	12.24	12.37		

Bless. Min.

14 51 4

+74 39

m	m	m	m	m
50 0 0.1	15.3	37.6	58.3	14.1
7.8	12.1	34.5	55.2	11.1
58.1	13.6	35.9	57.9	11.9
5.3	20.6	42.5	4.0	18.3
113	616	1505	2344	154
2.82	15.40	37.62	58.60	13.85

γ Cassiop.

0 49 25

+60 4

m	m	m	Sec
20 4 54.4	25 0 19.1	12.9	21.5
53.2	17.2	11.9	19.1
54.7	16.5	12.4	19.6
58.1	21.8	—	23.6
204			38
55.10			2095

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1879phae.proj.1400R

β Bootis
14 57 23
+40 52

M	M	R	R	M
35-1 46.6	2 25.1	25.0	25.0	25.4
47.1	25.2	25.8	25.6	26.1
49.6	28.2	28.0	28.2	28.6
53.4	31.8	31.4	31.6	31.3
1967	11 03	11 02	11 04	11 14
49.17	27.57	27.55	27.60	27.85
	27.71	27.57		

Lost A +1

β Librae
15 10 30
-8 56

M	M	R	R	M
20 3 19.8	4 36.4	37.2	36.2	36.4
24.5	41.8	41.8	41.9	41.8
29.8	46.4	46.4	45.7	46.3
27.1	44.6	44.8	43.9	43.9
212	92	102	77	79
25.30	42.30	42.55	41.92	41.97
	42.13	42.23		

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1879phae.proj.1400R

1879. June 4-5

1 53 13
+22 34 C=46.736
Sun

	m		m
35 3	17.6	10 0	41.5
	22.1		44.9
	21.7		46.0
	25.5		51.1
	6 9		18 35
	21.72		45.87

June 5
γ Virginis
12 35 31
−0 47

	m	m	"	R	R	M
10 4	54.6	15 1	19	2.3	2.2	1.9
	59.4		7.2	7.0	8.2	8.1
	38		11.8	12.1	12.2	12.1
	1.4		9.3	10.0	9.8	9.7
	23 9 2		30 2	31 4	32 4	31 8
	59.80		7.55	7.85	8.10	7.95
			7.75	7.97		

Seeing very good. Both limbs in ☌ + R.D.

☌ Cassiopeiæ. L.L.
1 17 55
+120 24

	m	m	m	R	R	M
10 0						
4	6.9	4 33.3	5 8.1	58.8	58.2	57.5
	8.6	34.9	08	0.3	59.8	0.2
	3.6	32.1	56.1	56.1	56.2	55.9
	5.3	31.8	57.5	57.0	57.8	56.9
	24 4	12 1	23 2 2	23 2 2	32 0	23 0 5
	6.10	33.02	58.05	58.05	58.00	57.62
			57.83	58.02		

γ Leon. Maj.
13 42 46
+49 55

	m	m	R	R	M
30					
30	3 22.1	4 26.9	26.8	26.8	26.4
	19.5	24.8	24.2	24.9	25.1
	22.7	28.1	27.9	26.9	27.9
	24.9	29.8	30.0	30.0	29.7
	9 2	29 6	10 8 9	10 8 6	29 1
	22.30	27.40	27.22	27.15	27.27
		27.33	27.18		

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1879phae.proj.1400R

γ Cassiop. L.C.

0 49 25

+119 56

m	m	m	R	R	m
35 2 16.9	1 38.4	0 58.6	59.1	58.8	59.2
18.5	39.7	59.8	59.9	60.2	60.4
16.5	38.1	57.4	57.4	57.1	59.1
17.4	38.8	59.6	59.0	59.2	58.7
29 3	350	354	354	253	2354
17.32	38.75	58.85	58.85	58.82	58.85
		58.85	58.84		

ε Virginis

12 56 9

+11 37

m	m	R	R
50 1 17.3	2 31.1	30.8	30.3
21.2	34.2	34.8	35.7
25.2	38.7	38.2	38.2
24.3	37.7	38.0	37.8
80	217	218	220
22.00	35.42	35.45	35.50
	35.42	35.47	

η Bootis

13 48 55

+19 0

m	m	R	R	m
25 2 47.0	3 50.2	49.8	49.8	49.7
49.0	53.2	52.2	52.8	53.2
53.4	57.2	56.4	56.7	56.4
52.9	56.7	56.8	56.2	56.2
23	173	152	155	155
54.57	54.32	53.89	53.87	53.88
	54.10	53.83		

T Virginis

13 55 29

+2 8

m	m	R	R	m
15 4 46.5	9 0 59.0	59.2	58.6	58.6
50.9	3.1	3.5	4.1	4.0
54.8	6.6	6.0	6.0	6.3
53.6	6.7	7.6	7.2	6.6
5.8	154	163	159	157
51.45	3.85	4.07	3.97	3.92
	3.88	4.02		

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1879phae.proj.1400R

1879 June 5

α Bootis

14 10 38

+19 49

	m	m	R	R	m
35 4	13.7	40 0 25.5	25.0	25.1	25.3
	17.1	28.6	28.7	28.8	28.4
	20.8	32.0	30.7	31.0	31.6
	19.7	31.3	31.6	31.2	30.9
	7.13	11 7.4	11.60	11.61	11.62
	17.82	29.35	29.00	29.02	29.05
		29.20	29.01		

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1879phae.proj.1400R

1879. June 7

δ Cassiop. C=46.723

1 17 55

+59 36

m	m	m	R	R	M
50 2 19.8	57.7	3 32.3	32.0	31.8	32.1
18.1	56.1	31.1	30.8	30.8	31.0
16.5	54.4	29.3	30.2	28.8	29.1
21.8	59.2	32.6	33.2	33.1	32.9
36.2	27.4	+53 (12)	62	45	51
19.05	56.85	~~33.82~~ 31.32	31.55	31.12	31.27
		31.29	31.33		

γ Androm.

1 56 28

+41 45

m	m	R	R
40 3 23.4	4 22.9	22.8	23.1
24.0	24.2	23.8	24.9
23.6	23.5	23.2	23.0
27.5	26.7	27.7	27.6
185	173	175	186
24.62	24.32	24.37	24.65
	24.32	24.51	

Saw. Comp. plainly

ζ Arietis

2 0 21

+22 53

m	m	R	R	M
30 4 44.5	35.0	37.9	38.0	38.0
46.6	38.4	40.8	40.8	40.1
43.8	41.0	37.0	36.7	37.2
48.4	37.4	43.8	42.8	42.7
~~23.3~~ 18.33	~~43.4 02~~ ~~15.18~~	15.95	15.83	15.83
0.K ~~45.82~~ ~~48.32~~	40.05 ~~37.95~~	0.K 39.87	39.57	39.57
	39.81	39.72		

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1879phae.proj.1400R

1879 June 7–8

Sun C=46.723

5 5. 35

+22 50

	m		m
20 0	22.2	50 2	32.6
	24.5		36.2
	23.1		34.7
	29.6		39.3
	19 4		22 8
	24.85		35.70

Seeing pretty fair. Both limbs in δ + R.A.

June 8

ζ Aurigae

5 7 45

+45 52

m	m	R	R	m
35 1 38.1	3 6 7	6.7	6.8	6.9
38.2	8.1	7.9	7.8	7.3
38.6	6.6	6.8	6.8	7.0
43.9	11 8	11.1	10.8	10.8
15 8 8	33 2	32 5	32 2	32 0
39.70	8,30	8,12	8,05	8,00
	8,15	8.08		

A607 LC

γ Cassiop. L. b.

0 49 25

+119 56

m	m	m	m
35 2 12.7	1 51.4	20.9	58.2
15.4	53.1	23.0	1.4
8.7	47.1	16 8	55 3
11.5	50.1	19.6	58.2
8 3	20 1 7	0 3	23 41
12 0.7	50,42	20.07	58.52

35 turns for last ∫

ε Virginis

12 56 9

+11 37

m	m	R	R	m
50 1 17.8	2 30.5	30.3	30.1	30.0
22.2	34.1	33.8	34.2	34.1
21.9	35.1	34.9	34.3	34.7
23.9	35.8	35.3	35.7	35.2
5 8	15 5	14 3	14 3	+49
21.45	33.87	33.57	33.57	~~33.72~~ 33.50
	33.68	33.57		

+340

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1879phae.proj.1400R

α Orionis
5 48 87
+7 23

	m	R	R	M
0 4 42.1	50 47.1	47.2	47.2	47.1
	53.8	53.8	54.7	54.0
Rij'	55.2	54.4	54.7	54.7
	56.2	56.6	56.2	55.8
	123	120	~~126~~	116
	53.07	53.00	~~53.15~~	52.90
			2128	
			53.20	
	52.98	53.10		

Rij, slr ∫

γ Virginis
12 35 31
−0 47

	m	m	R	R	M
10 4 50.1	15.1	15	2.0	1.9	1.4
	55.1	6.7	5.2	5.7	6.5
	56.4	7.5	7.5	7.3	7.1
	55.3	7.2	7.8	7.5	6.8
	169	229	225	224	218
	54.22	5.72	5.62	5.60	5.45
		5.58	5.61		

Pr. ✕

δ Cassiop. L.B.
1 17 55
+120 24

	m	m	R	R	M
10 ◎	3.4	5 4 17.2	17.4	17.2	16.7
	4.4	19.0	18.8	18.8	19.1
	58.6	12.1	12.9	13.4	12.5
	1.4	14.1	14.8	14.6	13.4
	78	224	239	240	217
	1.95	15.60	15.97	16.00	15.42
		15.51	15.98		

η Ursa Maj.
13 42 46
+49 55

	m	m	R	R	M
30 3	27.8	4 37.5	38.2	37.4	36.8
	27.2	37.8	37.4	37.8	37.4
	26.1	35.9	35.4	35.3	36.4
	29.3	39.5	39.9	39.3	38.6
	30.4	30.7	30.9	29.8	29.2
	27.60	37.67	37.72	37.45	37.30
		37.48	37.58		

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1879phae.proj.1400R

1879 June 8

η Bootis

13 48 55

+19 0

m	m	R	R	M
25 2 47.9	3 58.6	58.6	58.3	58.0
53.4	3.9	3.2	3.7	3.9
51.9	2.5	1.9	2.3	2.9
52.8	3.2	3.2	3.2	2.8
60	84	69	75	76
57.50	2.10	1.72	1.87	1.90
	2.00	1.79		

T Virginis

13 55 29

+2 8

m	m	R	R	M
15 4 52.8	30 1 4.1	36	3.8	3.6
59.6	10.1	9.7	10.1	10.2
58.6	8.2	7.9	7.8	8.8
58.3	10.6	11.1	11.0	9.9
29.3	33.0	32.3	32.7	32.5
57.32	8.25	8.07	8.17	8.12
	8.18	8.12	~~42.7~~ ~~10.6~~ 2	

ε Bootis

14 39 42

+27 35

m	m	R	R	m
50 3 9.0	4 14.5	14.9	14.7	13.9
13.4	18.1	18.2	18.9	18.4
10.1	15.9	15.4	14.8	15.4
12.4	18.4	18.3	18.0	17.4
44.9	26.9	26.8	26.4	25.1
11.22	16.72	16.70	16.60	16.27
	16.47	16.65		

β Ursa. Min.

14 51 4

+74 39

m	m	m	m	m
45 4 46.6	57.4	50 0 19.3	50.8	2
46.6	58.2	18.7	49.5	
44.2	55.8	15.9	47.4	
49.1	0.1	22.0	53.4	
26.5	23.5	7.59	11	
46.62	57.87	18.97	50.27	

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1879phae.proj.1400R

α Bootis

14 10 8
+19 49

m	m	R	R	M
35 4 18.1	46 32.4	31.8	32.2	32.1
21.9	35.4	36.0	35.6	35.4
22.6	35.6	35.7	35.3	36.0
22.8	37.1	37.9	36.9	36.5
54	20.5	21.4	20.0	20.0
21.35	35.12	35.35	35.00	35.00
	35.06	35.17		

γ Bootis

14 27 12
+38 50

m	m	R	R	M
35 3 13.8	4 15.0	14.8	14.2	14.0
15.7	17.1	16.8	16.8	17.0
14.8	16.2	16.0	15.5	15.8
17.8	18.6	19.1	19.1	18.1
22.1	26.9	26.7	25.6	24.9
15.52	16.72	16.67	16.40	16.22
	16.47	16.53		

	R	R
13.1	13.3	13.5
13.1	12.8	13.7
10.4	9.9	9.3
15.9	16.4	16.2
12.5	52.4	52.7
13.12	13.10	13.17
13.12	13.13	

β Bootis

14 57 23
+40 52

m	m	R	R	M
35 1 18.7	2 31.1	31.2	31.2	30.9
21.3	33.2	33.4	33.8	33.2
20.3	32.7	31.8	31.6	32.5
23.2	35.7	35.2	35.0	34.9
35	127	116	116	115
20.87	33.17	32.90	32.90	32.87
	33.02	32.90		

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1879phae.proj.1400R

1879 June 8
β Librae
15 10 30
− 8 56

	m	m	R	R	m
20 3	30.4	4 33.6	34.1	34.2	33.9
	35.5	39.9	39.7	39.8	40.0
	38.0	41.1	40.6	40.2	41.0
	35.9	39.2	38.8	38.9	38.9
	19.8	15.38	15.32	15.31	15.38
	34.95	38.45	38.30	38.27	38.45
		38.45	38.28		

ε Aquilæ
22 58 44
+14 23

	R	R	R	R
55 0	41.9	41.6	41.9	42.0
	47.0	47.3	47.8	48.8
	44.8	44.9	45.5	45.7
	47.3	47.2	47.1	46.5
	21.0	21.2	22.3	~~23.3~~
	45.25	45.30	45.57	~~45.82~~ 18.27 45.67
	45.45			

179

γ Androm.
1 56 28
41 45

	m	m	R
40 3	18.6	4 31.6	31.9
	20.2	34.9	34.3
	17.6	31.9	32.2
	21.6	35.3	35.2
	7.80	1.37	1.36
	19.50	33.42	33.40

ζ Arietis
2 0 21
+22 53

	m	m	R	R	M
30 4	29.4	35.0	43.8	43.8	44.0
	35.6	48.8	49.5	49.9	49.5
	29.5	42.8	42.9	43.0	43.4
	33.8	47.8	47.2	47.2	47.2
	12.83	23.2	23.4	23.9	24.1
	32.07	45.80	45.85	45.97	46.02
		45.91	45.91		

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1879phae.proj.1400R

γ Pegasi C = 46.723

0 7 0

+14 31

	m	m	R	R	m
55	17.7	3160	162	162	159
	14.2	22.2	21.9	23.2	22.2
	10.8	19.6	19.7	19.0	20.0
	11.5	20.1	21.0	20.6	19.8
	14.2	19.9	19.8	19.0 O.K.	17.9
	13.55	19.47	19.70	19.75	19.47
		19.47	19.73	1775	

δ Cassiop. C = 46.735

1 17 55

+59 36

	m	m	m	m	m
50	2 8.7	23.8	53.8	3 14.8	28.1
	10.2	25.4	55.1	16.0	28.9
	5.5	21.1	49.8	11.9	24.7
	11.6	26.3	56.7	16.3	30.4
	360	166	154	190	1121
	9.00	24.15	53.85	14.75	28.02

3 strokes for 1st δ

β Was. Min. L.C.

14 51 4

+105 21

	m	m	m	m	m
10	0 22.1	3.4	5 4 46.4	26.3	3 4.0
	23.1	4.1	47.6	27.4	6.1
	16.9	58.1	41.7	20.8	59.0
	23.6	4.4	47.1	28.1	5.4
	57	100	228	226	145
	21.42	2.50	45.70	25.65	3.62

A t_{+1} 2 3

1

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1879phae.proj.1400R

1879 June 8–9

β Boötis

14 57 23

+40 52

	m	m	R	R	M
35 1	14.4	2 29.8	29.2	29.2	29.5
	15.9	30.2	30.2	31.0	30.6
	16.1	30.9	30.8	30.7	31.2
	18.2	33.3	32.2	32.7	32.2
	24 6	42	24	36	37
	16.15	31.05	30.60	30.90	30.92
		30.98	30.75		

Rej. 5 & 8

Wash. Mm. C=46.735

14 51 4

+74 39

	m	m	m	m
50 0	8.0	35.3	49.1	1 4.5
	7.2	34.1	47.0	2.9
	4.8	33.3	46.3	1.8
	10.3	37.9	51.6	7.8
	30 3	20 6	34 0	17 0
	7.57	35.15	48.50	4.25

α Serpentis

15 38 18

+6 48

	m	m	R	R	M
35 4	21.9	40 0	29.8	29.6	29.9	29.8
	29.5		35.4	36.0	35.6	36.0
	27.7		34.8	34.6	34.9	34.9
	27.2		34.6	34.5	34.5	33.9
	26 3		146	147	149	1346
	26.57		33.65	33.67	33.72	~~33.65~~ O.K. ~~33.65~~

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1879phae.proj:1400R

β Librae

15 10 30

−8 56

	m	m	R	R	m
20 3	22.9	43.1	38.6	38.6	37.8
	26.8	42.6	42.0	41.9	41.4
	31.1	45.8	45.6	45.1	46.2
	28.2	43.1	43.2	43.1	42.6
	10 90	96	94	87	80
	27.25	42.40	42.35	42.17	42.00
		42.20	42.26		

α Cor. Bor.

15 29 34

+27 7

	m	m	R	R	m
20 0	1.3	2 0.4	0.2	0.4	0.2
	5.8	5.1	5.2	4.4	3.6
	1.8	1.6	1.0	1.0	1.1
	4.0	4.4	3.3	3.1	2.9
	129	115	97	89	78
	3.22	2.87	2.42	2.22	1.95
		2.41	2.32		

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1879phae.proj.1400R

138

1879 June 9-10

Sun

13 51

+23 2

m m

.10 0 32.8 40 2 43.3

37.6 49.2

34.9 45.4

39.2 50.3

245 1882

36.12 47.05

Seeing steady except for haze.
Both limbs in δ & R.A. 2m.9 δ perhaps
6 strokes obs.? Prism eye-piece

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1879phae.proj.1400R

1879. June 12.

γ Cassiop. C = 46.725

0 49 25

+60 4

	m	m	m
25 0	2,8	28,8	1 6.0
	2,4	28,5	6.2
	0,6	27.0	4.1
	4,4	30.1	7.2
	10 2	1144	23 5
	2.55	28.60	5.87

δ Cassiop.

1 17 55

+59 36

	m	m	m	m	m
50 2	12.8	38.7	3 9.6	2,4	38,2
	14.6	39.1	11.0	24.4	39.6
	11.7	37.9	8.9	28.4	37.9
	14.6	42.4	12,3	292	41.3
	137	1581	418	314	1570
	13.42	39.52	10.45	27,85	39.25

2 strokes for last δ.

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1879phae.proj.1400R

140

1879. June 13

Sun C = 46.725

$\bar{\delta}$ 26 17

+23 14

	m		m
55 4	41.1	30 0	52.7
	46.3		52.8
	44.7		56.3
	48.8		59.9
	209		217
	4 5.22		54.42

Both limbs in δ + R.A. Seeing very fair.

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1879phae.proj.1400R

1879. June 16

α Androm. C = 46.708

δ 2 8

+28 25

	M	M	R	R	M
0 2	35.5	35.6	58.2	58.0	57.6
	40.1	2.4	1.9	2.7	3.2
	35.7	57.1	56.9	56.7	57.5
	39.6	2.1	2.0	2.0	1.1
	15 11	23 94	23 90	23 94	23 96
	37.77	59.80	59.75	~~59.65~~ 59.84	59.90
		59.87	59.80		

γ Cassiop.

0 49 25

+60 4

	M	M	M	R	R
20 4	58.5	25 0	40.6	1 7.3	7.7	7.3
	59.1		40.0	8.1	7.8	8.0
	56.1		37.1	3.8	3.8	3.7
	58.8		42.2	8.8	9.0	8.9
	32 5		15 99	28.0	28.3	27 9
	58.12		39.97	7.00	7.07	6.97
				7.00	7.02	

δ Cassiop.

1 17 54

+59 36

	M	M	M
50 2	31.4	58.6	30.5
	31.9	0.1	31.4
	28.7	56.1	27.8
	33.6	0.6	32.1
	12 56	23 54	12 18
	31.40	58.85	30.45

ε Arietis

2 0 21 +22 53

	R	R	R
30 4	26.8	26.3	26.3
	31.8	32.0	32.7
	25.8	25.7	25.6
	30.8	32.2	31.4
	11 52	11 62	11 60
	28.80	29.05	29.00
	28.95		

2.665

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1879phae.proj.1400R

142

1879 June 16

β Hero. Min, L.C.

14 51 4

+10 5 21

	m	m	m	m	m	m		m	m	R	R	m
10	0	25.5	0.8	5	4	48.3	24.9	13.4	5.4	0 2	39.6	3 49.2	49.7	49.6	49.4
		27.2	2.5			51.2	27.1	15.4	8.6		39.7	49.4	50.0	50.8	51.0
		19.1	55.3			42.8	19.1	7.9	0.2		36.5	46.5	46.1	45.9	45.8
		25.3	2.4			49.1	25.8	14.4	7.1		40.8	47.4	50.8	51.1	50.4
		971	10			1914	969	511	243		1566	1965	1966	1974	1966
		24.27	0.25			47.85	24.22	12.78	5.32		39.15	49.12	49.15	49.35	49.15
												49.13	49.25		

2 stars on last ✓
2 after #1

Rej 2nd ✓
Rej 3rd ✓

45 3 25.4
32.4
28.8
30.1

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1879phae.proj.1400R

1879 July 17

Sun C = 46708

5 4 24 55 ^

+23 24

m

45 3 25.4

32.4

28.8

30.1

11 6 7

29.17

Next page

m

20 0 45.7

49.0

46.6

49.6

1st ☉ limb in R.A. = A_1 ΔA

Seeing very fine ~~Δ ″ ″~~ 2nd ☉ limb R.A. = A_{-1}

δ = lower limb

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1879phae.proj.1400R

16.

1879 June 17

Sun $c = 46.708$

5 42 55

+23 24

	m
45 3	25.4
	32.4
	28.8
	30.1
	11 67
	29.17

Seeing very fine. 1st limb in R.A. = A, A+A'. 2nd limb R.A. = A, δ = ~~lower limb~~ −1, ~~upper limb~~ +1

ζ Cassiopeiæ

1 17 55

+59 36

	m	m	m
50 2	20.9	59.5	3 31.6
	22.9	1.1	33.3
	17.9	56.4	28.9
	23.4	1.3	32.9
	51	23 83	67
	21.27	59.57	31.67

ζ Cor. Bor.

15 29 34

+27 7

	m	m	R	R	m
20 0	45.7	~~14 58.8~~	56.1	56.2	55.8
	49.0	0.1	0.3	0.2	59.9
	46.6	57.1	56.0	56.4	56.4
	49.6	59.9	0.1	59.7	59.2
	30 9	23 29	2325	2325	313
	47.72	58.22	58.12	58.12	57.82

58.02 58.12

ζ Arietis

2021

7 12 53

	R	R	R
30 4	32.7	32.8	32.6
	39.3	36.3	38.8
	31.3	31.2	32.0
	39.6	36.8	36.3
	209	191	192
	35.22	34.77	34.80

34.93

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1879phae.proj.1400R

ζ Serpentis

15 38 18 C = 46.708
+6 48

m	M		R	R	M
35 4 21.5	40 03	41.1	33.6	33.7	33.5
28.2		40.2	39.4	39.9	40.5
26.3		38.2	37.6	37.7	38.5
26.4		38.0	38.7	38.7	38.1
22.4		1505	293	300	1506
25.60		37.62	37.32	37.50	37.65
		37.63	37.41		

γ Cassiopeiae

0 49 25 C = 46.705
+60 4

m	M		m	R	R m
20 4 58.6	25 0	(162)	0 19.5	19.8	19.9 19.4
58.8		32.2	19.0	19.7	19.9 19.8
56.6		30.0	16.2	15.6	15.7 16.8
58.8		35.7	20.1	19.9	19.7 19.9
32.8		81	7.48	3.50	3.52 3.59
58.20			18.70	18.75	18.80 18.97
			18.83	18.77	

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1879phae.proj.1400R

1879, June 18

γ Cassiop. L.C. C = 46.705

0 49 25

+119 57

m	m	m	R	R
35 2 23.4	1 55.3	9.9	9.9	9.9
25.7	56.3	18.0	12.6	12.7
17.9	50.7	5.1	4.0	4.2
21.0	52.1	6.8	6.0	5.9
80	164	348	325	327
22.00	54.10	8.70	~~8.7~~ 8.12	8.17
		8.70	8.15	

ε Virginis

12 56 9

+11 37

m	m	R	R	m
50 1 19.2	2 35.6	35.6	35.0	35.5
24.2	40.6	40.3	40.7	41.4
23.0	39.5	39.3	39.3	39.9
23.6	39.6	39.7	39.2	39.0
900	1553	1549	1542	1558
22.50	38.82	38.72	38.55	38.95
		38.88	38.63	

η Bootis

13 48 55

+19 0

m	m	R	R
25 2 49.9	3 50.9	50.9	51.3
55.1	56.4	56.2	57.9
53.6	55.5	55.2	54.8
54.9	55.7	55.2	54.2
~~115~~	185	175	182
~~53.62~~ 2135	54.62	54.37	54.55
53.37	54.62	54.46	

τ Virginis

13 55 29

+2 8

m	m	R	R	m
15 4 47.9	2 ~~0.3~~	0.0	0.0	0.2
55.7	~~78~~	7.3	7.2	8.2
54.3	~~43~~	3.9	3.9	4.8
53.8	54	5.3	5.4	5.3
2117	178	165	165	185
52.92	4.45	4.12	4.12	4.62
	4.53	4.12		

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1879phae.proj.1400R

δ Cassiop. L.C

1 17 55

+120 24

	m	m	m
10 0	18.6	5 4 40.7	—
	22.4	44.3	—
	13.4	36.4	—
	15.3	37.6	—
	697	1590	
	17.42	39.75	

Rej last

η Ursa Maj.

13 42 46

+49 55

	m	m	R	R	M
30 3	29.2	4 42.2	42.0	41.8	41.8
	30.4	44.1	43.0	42.8	43.4
	27.8	41.1	39.9	39.9	40.1
	30.8	44.1	42.8	42.7	42.1
	1182	115	77	72	74
	29.55	42.87	41.92	41.80	41.85
		42.36	41.86		

α Bootis

14 10 8

+19 49

	m	m	R	R	M
35 4	20.6	40 29.4	29.2	29.2	29.0
	26.1	34.7	34.2	34.7	35.0
	24.1	32.6	32.4	32.2	33.1
	24.6	34.1	33.2	33.0	32.6
	154	1308	90	91	97
	23.85	32.70	32.25	32.27	3242
		32.56	32.26		

γ Bootis

14 27 12

+38 50

	m	M	R	R	M
35 2	55.8	4 11.2	11.0	10.1	10.6
	59.7	13.8	15.1	15.2	15.1
	58.3	11.8	11.7	11.4	13.2
	58.1	14.9	14.0	14.1	13.9
	~~29.9~~	11.7	11.8	10.8	11.8
	~~57.47~~ O.K.	12.92	12.95	12.70	12.95
	~~22.69~~ ~~56.72~~	12.93	12.82		

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1879phae.proj.1400R

1879 June 18

ε Bootis

14 39 42

+27 35

m	m	R	R	M
50 2 57.4	4 13.0	12.3	12.6	12.4
2.6	17.1	16.7	17.0	17.1
58.5	13.7	13.1	13.2	13.5
2.2	16.3	15.2	14.9	14.8
2407	20.1	17.3	17.7	17.8
0.17	15.02	14.32	14.42	14.45
	14.78	14.37		

Comp. not obs'd. Sun clear

β Ursæ Min.

14 51 4

+74 39

m	m	m	m	m
45 4 49.8	50 0 2.4	31.2	50.9	6.4
50.8	2.4	30.9	50.0	7.4
46.2	59.9	28.3	47.2	2.4
51.9	5.1	33.9	53.0	9.6
1987	98	43	11'	258
49.67	2.45	31.07	50.27	6.45

ζ Cor. Bor.

15 29 34

+27 7

m	m	R	R	M
20 0 43.2	1 59.9	0.2	0.2	0.1
48.1	4.9	5.1	5.8	5.6
44.0	0.8	59.9	0.3	0.5
47.5	3.9	3.2	2.9	3.1
228	95	84	92	93
45.70	2.37	2.10	~~3.55~~ 2.30	2.32
	2.33	2.20		

α Serpentis

15 38 18

+6 48

m	m	R	R	M
35 4 14.2	40 0 31.4	30.8	31.0	31.3
22.2	38.4	38.2	39.2	39.5
18.6	35.4	34.9	35.0	35.3
18.9	34.9	34.7	34.8	35.3
739	201	186	200	214
18.47	35.02	34.65	35.00	35.35
	35.18	34.82		

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1879phae.proj.1400R

β Bootis

14 57 23
+40 52

m	m	R	R	m
35 1 12.9	2 24.2	24.1	23.8	23.8
16.9	27.3	28.0	28.0	27.6
14.2	25.4	25.0	25.0	25.5
16.6	27.8	27.3	26.8	26.6
20.6	24.7	24.4	23.6	23.5
15.15	26.17	26.10	25.90	25.87
	26.02	26.00		

δ Bootis

15 10 37
+33 46

m	m	R	R	m
40 2 13.7	3 22.0	22.1	21.8	21.6
17.4	26.2	26.3	25.4	25.2
14.7	23.0	22.9	22.6	22.4
17.9	25.6	25.1	24.8	24.7
23.7	16.8	16.4	14.6	13.9
15.92	24.20	24.~~12~~ OR	23.65	23.48
	23.84	23.87		

λ Androm.

0 2 8
+28 25

m	m	R	R
0 2 42.8	3 54.5	54.1	55.1
48.2	0.1	59.6	59.9
41.4	53.3	52.9	52.9
44.5	56.8	56.2	56.2
16.9	22.47	~~22.8~~	24.1
44.22	56.17	~~55.70~~ 2228 5570	56.02
	56.17	55.86	

γ Pegasi

0 7 0
+14 31

m	m	R	R	m
55 2 2.3	55 3 15.4	15.2	15.2	15.5
10.5	23.4	23.0	22.6	23.1
5.4	18.8	18.7	18.8	19.1
4.3	17.7	17.8	16.9	16.6
22.5	75.3	74.7	73.5	74.3
5.62	18.82	18.67	18.~~52~~ 37	18.57
	18.69	18.52		

3 shown for last

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1879phae.proj.1400R

1879. June 18

α Arietis

2 0 21

+22 53

		R	R	R
30	4	26.1	26.3	26.5
		32.8	32.2	32.9
		26.0	25.1	25.0
		29.1	29.7	29.2
		11 40	1133	1136
		28.50	28.32	28.40
		28.41		

α Persei

3 15 41

+49 26

		M	M	R	R	M
0	2	58.9	50.2	50.2	50.1	50.5
		57.5	49.3	49.2	49.4	50.1
		56.2	47.7	46.5	46.0	47.2
		0.2	52.0	52.2	51.6	50.9
		2328	1992	1981	1971	1987
		58.20	49.80	49.52	49.27	49.67
			49.73	49.39		

Rej 1st 3 used 2nd 3rd

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1879phae.proj.1400R

1879 June 19

Sun $C = 46.702$

5	57	14			
+23		26			
		m			m
45	0	56.4	15	3	25.1
		3.5			30.2
		58.1			25.7
		2.4			29.7
		24 04			11 07
		0.10			27.67

Both limbs in P & R A.

Seeing moderately good

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1879phae.proj.1400R

1879. June 19
Sun. C=46.702
5 51 14
+23 26

m	m
45 0 56.4	15 3 25.1
3.5	30.2
58.1	25.7
2.4	29.7
2404	1107
0.10	27.67

Both limbs in δ + R.A.
Seeing moderately good.

γ Cassiop. L.L.
0 49 25
+119 56

m	m
35 2 25.9	1 43.2
31.3	48.2
22.6	40.3
23.9	41.6
10 37	133
25.92	43.32

γ Bootis
14 27 12
+38 50

m	m	R	R	m
35 3 1.5	4 9.3	8.8	9.1	9.1
5.1	12.9	12.9	13.6	13.1
2.0	9.9	9.9	9.3	9.9
6.1	14.0	13.5	13.2	13.2
14.7	461	451	452	453
3.67	11.52	11.27	11.30	11.32
	11.42	11.28		

ε Bootis
14 39 42
+27 35

m	m	R	R	m
50 3 3.0	4 14.2	14.3	14.7	14.0
9.3	20.0	19.9	19.8	19.6
4.2	15.2	14.8	14.8	14.9
8.1	18.1	17.8	17.8	17.5
24.6	675	268	271	260
6.15	1687	16.70	16.78	16.50
	16.68	16.74		

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1879phae.proj.1400R

δ Cassiop. L.C.

1 17 55

+120 24

m	m	m
10 0 21.9	5 4 29.7	59.6
23.5	32.6	3.1
16.1	24.9	54.8
19.1	~~26.9~~	56.2
80		233 7
20.1		58.42

ζ Bootis

14 10 8

+19 49

m	m	R	R	m
35 4 16.7	40 0 33.4	33.8	33.3	33.4
22.2	38.2	38.1	38.0	38.0
20.7	34.0	37.8	36.8	37.2
22.4	38.9	39.2	39.0	38.4
20	27.5	28.9	27.1	27.3
20.50	36.87	37.22	36.78	36.82
	36.85	37.00		

β Wes. Min.

14 51 4

+74 39

m	m	m	m	m
50 0 4.4	30.0	46.2	59.2	15.6
5.6	30.8	47.1	59.2	16.5
0.8	27.6	43.4	56.0	12.8
6.7	33.1	49.2	2.1	18.9
17 5	15	259	2365	238
4.38	30.37	46.48	59.12	15.95

β Bootis

14 57 23

+40 52

m	m	R	R	m
35 1 14.6	2 26.1	26.3	26.2	25.7
18.7	30.0	29.8	29.2	28.6
15.2	27.3	27.1	27.2	27.7
18.6	30.6	30.0	29.6	29.8
27 1	11 35	11 32	32.2	31.8
16.78	28.37	28.30	28.05	27.95
	28.16	28.17		

3 strokes for last δ.

~~False~~ strokes for last δ.

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1879phae.proj.1400R

1879. June 19

β Librae

15 10 30

−8 56

	m	m	R	R	m
20 3	26.6	4 32.6	32.9	32.3	32.4
	34.1	40.0	39.9	39.8	39.3
	34.6	40.1	39.6	39.5	40.1
	32.5	37.8	37.2	37.2	37.0
	12 7 8	15 05	296	288	1488
	31.95	37.62	37.40	37.20	37.20
		37.41	37.30		

α Cor. Bor.

15 29 34.

+27 7

	m	m	R	R	m
20 0	55.5	2 2.5	2.5	2.5	2.5
	2.6	9.3	8.9	9.0	8.9
	56.4	3.6	3.3	3.1	3.5
	0.4	7.0	6.9	7.0	6.6
	23 49	22 4	216	216	215
	58.72	5.60	5.40	5.40	5.38
		5.49	5.40		

γ Cassiop.

0 49 25

+60 4

	m	m	R	R	R
20 4	55.4	25 0 59.3	1 17.9	18.2	18.3
	57.4	0.4	19.2	19.8	18.8
	51.4	55.1	14.1	13.6	13.2
	54.9	0.6	18.9	18.6	18.1
	19 1	23 54	3 01	3 02	28 4
	54.78	58.85	17.52	17.55 O.K.	17.10
			17.52	~~16.05~~ 17.02	17.32

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1879phae.proj.1400R

α Serpentis

15 38 18
+6 48

	m	m	R	R	m
35 4	20.1	46 6	28	29.0	29.2	29.1
	29.5		37.0	36.8	37.2	37.8
	25.4		33.9	33.4	33.7	34.1
	25.5		34.9	34.3	34.6	34.2
	20.5		13 46	13 35	13 47	13 47
	25.12		33.65	33.38	33.67	33.67
			33.66	33.52		

γ Pegasi

0 7 0
+14 31

	m	m	R	R	m
55 1	0.0	3 16.9	16.7	16.9	16.2
	7.7	24.3	23.8	24.0	24.2
	3.0	20.3	20.2	20.3	20.9
	4.1	20.6	21.0	20.6	19.9
	1.48	8 21	8 17	8 18	8 12
	3.70	20.52	20.42	20.45	20.30
		20.41	20.44		

δ Cassiop.

1 & 17 55
+59 36

	m	m	m
58 2	25.5	3 7.8	39.2
	27.9	10.8	42.1
	20.6	3.8	35.9
	25.9	8.7	40.1
	19.9	3 11	15 73
	24.97	7.78	39.32

α Arietis

2 0 21
+22 53

	R	R	R	
50 2	24.8	24.8	24.6	2.
	31.8	32.7	32.0	
	23.8	24.0	23.4	
	29.0	28.6	28.7	
	10 94	11 01	10 91	
	27.35	27.52	27.27	
	27.38			

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1879phae.proj.1400R

1879. June 19

β Leon. Min. L.C

14 51 4

+10 5 21

m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
10	0	32.3	18.1	2.6	5	4	46.9	26.4	14.6	7.9	0	2	33.1	3	52.0	51.6	51.5	51.2	
		35.1	20.2	6.2			50.0	29.9	17.8	11.8			35.1		54.8	54.7	54.8	54.9	
		26.2	11.9	56.8			41.3	20.3	8.7	2.0			30.1		48.2	48.2	48.2	48.1	
		33.1	18.5	3.2			47.5	27.3	15.9	9.1			34.8		53.1	53.1	53.8	52.7	
12	6	7	6	87	88		1857	239	570	308			131		81	76	83	69	
31	6	7	17	17	2.20		4642	25.97	14.25	7.70			33.27		52.02	51.90	52.07	51.72	
															51.87	51.98			

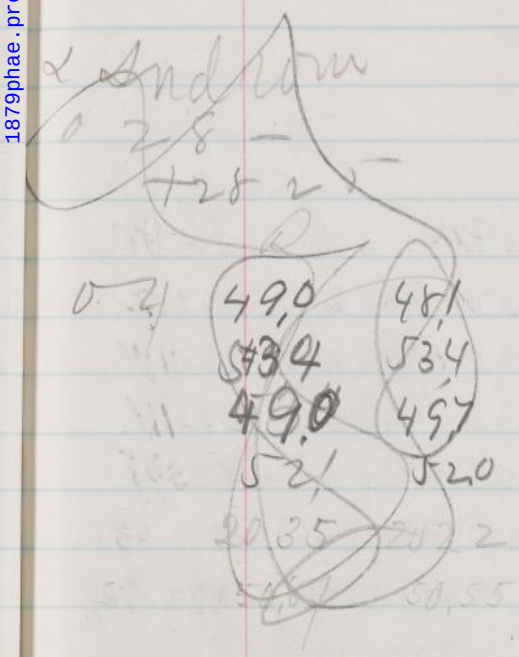
ℓ Persei

3 15 41

+49 26

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1879phae.proj.1400R



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158

1879. June 20

Sun. C=46702

5 55 23

+23 27

m	m
.450	20.9
	28.0
	21.8
	24.9
	156
	23.90

m	m
15 2	36.9
	43.2
	37.1
	41.9
	1591
	39.78

Seeing pretty good.
Both limbs of R.A.

γ Virginis

12 35 31

−0 47

m	m	R	R	m
10 4 52.7	15 1	4.6	4.9	4.7 4.2
	0.1	12.0	12.0	11.8 11.9
	58.5	11.1	10.6	10.2 11.1
	56.8	8.1	8.8	8.2 7.5
	2281	358	363	349 347
	57.02	8.95	9.07	8.72 8.67
		8.81	8.84	

Foll. #

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1979phae.proj.14008

ε Virginis

12 56 9

+11 37

		m	m	R	R	W
50	1	15.5	2	32.4	32.2	31.9	32.4
		21.4		37.9	37.9	37.0	37.9
		19.6		36.9	36.6	36.2	36.9
		20.1		36.9	36.4	35.8	36.6
		7.66		24.1	23.1	20.9	23.4
		19.15		36.02	35.78	35.22	35.85
				35.93	35.50		

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1879phae.proj.1400R

1879 June 21

η Ursæ Maj. C = 46.702

13 42 46

+49 55

	m	m	R	R	W
30 3	19.3	4 34.2	33.7	33.8	33.9
	20.9	35.5	35.0	35.1	36.1
	18.7	33.1	32.8	32.2	32.6
	20.1	34.8	34.6	33.8	33.9
	7.90	17.6	16.1	14.9	16.5
	19.75	34.40	34.02	33.72	34.12
		34.16	33.87		

η Bootis

13 48 55

+19 0

	m	m	R	R	W
25 2	41.6	3 58.2	58.5	58.8	58.4
	46.2	4.1	4.2	4.0	3.8
	46.1	3.2	3.0	2.9	3.5
	46.3	2.1	2.0	1.8	1.9
	20.2	7.6	7.7	7.5	7.6
	45.05	1.90	1.92	1.87	1.90
		1.90	1.89		

γ Bootis

14 27 12

+38 50

	m	m	R	R	W
35 3	2.5	4 11.2	11.1	11.2	11.2
	7.5	17.0	16.6	16.0	16.9
	5.0	14.2	13.7	13.3	13.7
	7.0	15.1	15.2	15.2	14.7
	22.0	17.5	16.6	15.7	16.5
	5.50	14.37	14.15	13.92	14.12
		14.25	14.03		

ε Bootis

14 39 42

+27 35

	m	m	R	R	W
50 2	57.2	4 14.3	14.1	14.0	14.1
	3.0	20.1	20.5	18.8	18.7
	59.2	16.5	16.1	16.1	16.0
	1.2	17.3	17.2	16.2	17.0
	0.6	6.82	6.79	2.51	2.58
	0.15	17.05	16.97	16.27	16.45
		16.75	16.62		

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1079phae.proj.1400R

T Virginis

13 55 29
+2 8

	m	m	R	R	m
15 4	52.9	1 7.9	7.7	7.8	8.1
	1.1	15.4	15.0	14.0	13.8
	58.7	13.1	12.3	12.3	13.2
	59.5	13.8	13.3	13.2	13.1
	2322	502	83	73	82
	58.05	12.55	12.07	11.82	12.05
		12.30	11.95		

ζ Bootis

14 10 8
+19 49

	m	m	R	R	m
35 4	16.9	0 42.6	42.0	42.2	42.5
	22.8	47.3	47.1	46.9	47.3
	22.0	47.1	46.6	47.0	47.3
	22.0	46.6	47.0	46.3	46.7
	37	236	227	224	236
	20.92	45.90	45.67	45.60	45.90
		45.90	45.63		

β Ursae Min.

14 51 4
+74 39

	m	m	m	m	m
50 0	1.1	22.9	43.9	56.1	8.8
	1.5	22.8	43.6	56.0	9.2
	0.5	20.8	42.1	53.9	6.9
	3.1	25.2	46.6	59.1	11.1
	62	117	162	251	360
	1.55	22.92	44.05	56.27	9.00

β Bootis

14 57 23
+40 52

	m	m	m	R	R	m
15.0	35 1	11.7	2	29.7	29.2	29.3	28.9
15.2		15.0		32.2	32.7	32.6	31.9
13.9		14.0		31.8	31.6	31.3	31.9
16.9		14.9		32.5	32.0	32.0	32.1
21.0		15.6		62	55	52	48
15.25		13.90		31.55	31.37	31.30	31.20
				31.37	31.34		

35 shutters for Lau

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1879 June 21

δ Bootis

15 10 37

+33 46

m	m	R	R	m
40 2 12.5	3 31.8	32.0	32.1	32.6
16.4	36.1	36.6	36.0	36.5
15.0	34.7	34.0	34.3	34.4
16.1	35.9	35.8	35.2	35.0
20.0	18.5	18.4	17.6	18.5
15.00	34.62	34.60	34.40	34.62
	34.62	34.50		

α Bor. Bor.

15 29 34

+27 7

m	m	R	R	m
20 0 46.7	1 59.5	59.2	59.0	59.1
51.6	4.7	4.4	4.6	4.0
47.7	0.9	0.2	0.1	0.5
50.4	2.2	2.2	2.1	1.8
19.64	73	60	58	54
49.10	1.82	1.50	1.45	1.35
	1.58	1.47		

δ Cassiop.

1 17 55

+59 36

m	m	m	R	R
50 2 12.1	3 10.9	30.2	29.8	29.9
13.9	12.1	31.1	30.8	30.8
10.9	8.1	27.9	27.7	27.1
13.6	11.2	30.5	30.3	30.2
10.5	23	11.97	11.86	11.780
12.62	10.57	29.92	29.65	29.45 O.K. ~~50~~
		29.92	29.55	

γ Androm

1 56 28

+41 45

m	m	R
40 2 15.4	4 29.7	29.6
19.0	32.5	33.0
18.8	32.2	32.0
18.3	32.8	33.3
30.5	75	79
17.62	31.87	31.97

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α Serpentis
15 38 18
+6 48

m	m	R	R	M
35 4 21.8	40 0 35.4	35.5	35.3	36.0
30.0	42.9	42.9	42.9	43.1
27.8	40.7	40.9	40.8	41.1
25.9	40.1	40.1	39.9	40.0
10 55	159	159	158	02
26.37	39.78	39.85	39.72	40.05
	39.91	39.78		

γ Cassiop.
0 49 25
+60 4

m	m	R	R	M
20 4 56.5	25 05.9	52.8	52.8	53.2
57.4	53.3	53.1	53.8	53.2
55.3	51.0	51.0	50.8	51.9
56.7	53.9	53.2	53.2	53.0
25.9	11.1	10.1	10.6	11.3
56.47	52.78	52.52	52.65	52.82
	52.80	52.58		

Fabricius m. 1st J

α Arietis
2 0 21
+22 53

m	m	R	R	M
30 4 30.6	35 0 34.2	34.1	34.7	34.2
36.8	40.1	39.3	39.4	39.4
32.6	35.1	34.9	35.0	36.1
35.2	39.4	39.0	39.0	39.5
152	588	273	281	288
33.80	14 ~~39.70~~ 37.20	36.82	37.02	37.20
	37.20	36.92		

40

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1879phae.proj.1400R

1879 June 22

Sun C=46702

6 3 43

+23 27

m		m	
45	0 16.6	15 2	40.0
	22.1		45.9
	20.1		43.1
	22.9		46.1
	8 17		151
	20.42		43.78

Lost 1st & wire 2nd limb

Seeing very good. Both limbs in δ & R.A.

ζ Virginis

13 18 49

−10 32

m	m	R	R	m
55 4	11.1	0 0 20.5	20.6	21.0 21.1
	16.5	25.8	25.8	25.8 25.5
	~~20.2~~	30.8	30.2	30.0 30.6
	16.0	26.6	26.7	26.3 25.9
	~~4 36~~	10 37	10 33	10 31 10 31
	~~12 38~~			
	~~15.5~~	25.92	25.82	25.78 25.78
	~~31.90~~			
		25.90	25.75	

ζ Bootis

14 10 8

+19 49

m	m		R	R	m
35 4	15.1	~~40.0~~	27.0	26.9	27.3
	20.9	(27.1	32.2	32.2	32.6
	21.1	32.5	31.8	31.2	31.9
	19.3	32.4	31.2	31.4	31.1
	7 64	32.1 41	22	17	29
	0.K 19.10	31.02	30.55	30.42	30.72
	~~35.10~~				

γ Bootis

14 27 12

+38 50

m	m		R	R	m
35 2	56.1	4 15.0	14.9	14.9	15.0
	59.3	18.7	18.2	18.7	18.6
	58.3	17.3	17.0	16.8	17.2
	59.5	19.1	18.7	18.2	19.8
	33 2	30 1	28 8	28 6	28 6
	58.30	17.52	17.20	17.15	17.15
	~~80~~				
		17.33	17.17		

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1879phae.proj.1400R

η Ursae Maj.

13 42 46
+49 55

M	R	R	M
30 4 28.1	28.3	28.4	27.9
29.3	29.0	28.7	29.1
28.4	27.6	27.4	28.0
30.1	29.2	28.6	28.5
1159	341	331	335
28.97	28.52	28.27	28.38
28.67	28.39		

η Bootis

13 48 55
+19 0

m	m	R	R	M
25 2 41.9 3	55.2	55.8	55.4	55.2
47.2	1.4	0.9	0.6	1.5
46.9	0.9	0.8	0.0	1.1
46.9	0.1	0.0	59.1	59.1
229	2376	2375	2351	2369
45.72	59.40	~~59.38~~ 59.37	58.78 ~~59.7~~	59.22
	59.31	59.08		

β Ursae Min.

14 51 4
+74 39

m	m	m	m	m
45 4 46.5	50 0 5.8	39.4	58.8	1 12.6
48.1	6.3	38.3	58.6	12.4
46.2	3.7	37.3	56.6	11.4
48.9	8.5	41.6	12	15.3
297	243	1566	2352	117
47.42	6.07	39.15	58.80	12.92

β Bootis

14 57 23
+40 52

m	m	R	R	M
35 1 9.5 2	21.4	20.9	21.0	20.9
12.1	24.1	23.7	23.7	23.9
12.1	23.5	23.1	23.0	23.5
14.1	25.1	24.1	24.0	24.1
78	141	118	117	127
11.95	23.52	22.95	22.92	23.18
	23.35	22.94		

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1879phae.proj.1400R

166

1879 June 22

δ Bootis

15 10 37

+33 46

m	m	R	R	m
40 2 8.7	3 20.6	20.7	20.4	20.5
11.4	23.4	23.1	23.1	23.4
11.6	22.8	23.2	22.9	23.4
13.5	24.9	24.1	23.8	23.3
42 5	118	111 9	102	106
11.05 30	22.95	22.75 22.77	22.55	22.65
	22.80	22.66		

α Androm C = 46.702

0 2 8

+28 25

R	R
0 4 49.0	48.1
53.4	53.4
49.0	49.7
52.1	52.0
20.35	20.22
50.87	50.55

Ch. failed

A -1 2 3 4 5

α Andromedæ

1 57 28

+11 45

R	R
3 40 3 32.3	32.6
34.4	34.3
33.9	34.4
36.3	36.1
169	174 137 40.K.
34.22	34.35
34.28	

α Arietis

2 0 21

+22 53

R	R	R
35 0 6.4	7.0	7.2
11.1	12.2	11.6
7.8	7.1	7.2
11.1	11.6	10.6
364	379	368
9.10	9.48	9.20
9.26		

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1879phae.proj.1400R

γ Cassiop. C=46719

0 49 25

+60 4

	m	m	m
25	0 0.1	45.5	2 20.8
	59.1	45.0	19.9
	58.5	44.1	19.2
	59.1	46.2	20.6
	2368	208	05
	59 20 (0.2)	45.20	20.12
	~~44.20~~		

δ Cassiop.

1 17 55

+59 36

	m	m
50	2 12.1	17.9
	12.6	18.9
	11.1	16.0
	12.4	19.5
	82	323
	12.05	18.07

β Hor. Min. LC.

14 51 4

+105 21

	m	m	m	m	m
10	0 17.3	57.7	5 4 38.1	14.8	4.1
	20.9	0.9	41.9	18.1	8.3
	15.6	55.4	36.5	12.8	1.5
	19.1	59.6	40.5	16.9	5.1
	729	2336	1570 (0.2)	221	190
	18.22	58.40	39.25 ~~.57~~	15.52	4.75

ζ Persei

3 15 41

+49 26

	m	m	R	R
0	2 36.1	321.1	20.7	20.5
	37.1	21.8	21.8	21.8
	35.1	20.1	19.5	19.0
	37.2	21.6	22.0	21.8
	255	46	40	31
	36.37	21.15	21.00	20.78
		21.15	21.89	

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1879phae.proj.1400R

1879. June 23

Sun C = 46.719

6 7 52

+23 27

	m	m
45 0	43.2	15 2 53.3
	47.5	58.6
	46.2	56.5
	49.7	59.6
	~~216~~	~~280~~
	1866	2280
	~~45.32~~	~~55.60~~
	46.55	57.00

Seeing perfectly horrible.
Both limbs in 8 + R.A.

α Virginis

13 18 49

−10 32

	m	m	R	R	M
55 4	5.1	00 16.9	17.1	17.3	17.1
	11.9	22.9	22.8	20.6	21.9
	17.7	28.9	28.8	28.9	28.8
	13.2	25.0	25.6	24.9	24.3
	49	937	943	917	931
	11.97	23.42	23.57	22.92	23.27
		23.35	23.25		

τ Virginis

13 55 29

+2 8

	m	m	R	R	M
15 4	48.0	20 1 2.4	2.4	2.9	3.2
	55.9	9.9	9.3	9.8	9.1
	56.2	10.7	9.8	10.0	10.5
	54.9	9.8	10.2	9.2	8.9
	2150	328	317	319	317
	53.75	8.20	7.92	7.97	7.92
		8.06	7.95		

ε Bootis

14 39 42

+27 35

	m	m	R	R	M
50 3	1.1	4 24.1	25.0	24.2	23.8
	6.3	28.9	29.0	28.1	28.9
	5.1	28.9	27.7	28.1	28.2
	5.1	27.9	28.6	28.0	27.1
	17.6	29.8	30.3	28.4	28.0
	4.40	27.45	27.57	27.10	27.00
		27.23	27.33		

In observations of this star the Comp. is neglected

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1879phae.proj.1400R

η Ursa Maj.

13 4 2 46
+49 55

m	m	R	R	R
30 3 17.0	4 34.4	33.9	34.0	~~33.5~~ 33.9
18.2	35.1	34.2	35.0	34.4
18.1	36.1	34.9	35.1	35.8
18.4	36.5	36.3	36.0	34.9
317	221	193	281 ~~+41~~	190
17.92	35.52	34.82	35.02 ~~3507~~	34.75
	35.13	34.92		

η Bootis

13 48 55
+19 0

m	m	R	R	m
25 2 38.4	43.0	3.2	3.4	3.2
43.3	9.1	9.2	8.8	9.1
45.9	10.5	10.1	10.3	11.1
45.1	8.2	8.0	8.4	8.0
127	~~25~~ 308	305	309	314
43.17	~~7.70~~ 308	7.62	7.72	7.85
	~~7.70~~ 7.70 ✓			
	7.77	7.67		

β Ursa Min

14 51 4
+74 89

m	m	m	m	m	m
45 4 57.1	50 0 9.9	30.8	42.8	56.8	1 11 8.2
1.1	10.1	31.0	43.5	57.5	9.1
0.1	11.1	32.7	44.5	58.2	9.9
0.5	12.5	34.1	45.9	59.2	10.8
2388	436	86	167	317	380
59.70	10.90	32.15	44.17	57.92	9.50

β Bootis

14 57 23
+40 52

m	m	R	R	m
35 1 4.1	2 21.4	21.8	21.6	21.6
10.9	24.1	23.8	23.3	23.9
12.6	26.9	26.0	25.8	26.9
13.1	26.5	25.8	26.1	25.5
407	189	174	168	179
10.17	24.72	24.35	24.20	24.48
	24.60	24.27		

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1879phae.proj.1400R

1879 June 23

β Librae

15 10 30

−8 56

m	m	R	R	m
20.3 24.6	4 39.9	39.7	40.4	396
30.9	46.1	46.1	46.0	46.1
25.9	50.8	50.8	50.8	51.0
31.7	45.9	46.1	46.2	45.2
31	1827	1827	1834	1819
30.78	45.67	45.68	45.85	45.48
	45.57	45.76		

α Cor. Bor.

15 29 34

+27 7

m	m	R	R	m
20 0 48.8	53.4	53.2	53.1	53.1
54.1	58.9	58.0	58.2	58.6
52.8	58.0	57.1	57.3	57.8
54.5	58.2	57.8	57.9	58.0
103	285	261	265	277
52.58	57.12	56.52	56.62	56.92
	57.02	56.57		

~~β Reguli~~ α Arietis

~~0 7 0~~ 2021

~~+14 51~~ +22 5 3

N S

Chf.

β Ursa. Min. L.C.

14 51 4

+105 21

m	m	m
5 4 41.1	17.5	8.0
44.1	20.1	11.0
39.9	15.9	6.1
42.9	18.5	9.7
80	720	348
42.00	18.00	8.70

2 strokes for 1st wire. Lost 1 or 2 of the first wires.

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1879phae.proj.1400R

α Serpentis

15 38 18
+6 48

m	m	R	R	m
35 4 19.3	40 0 30.9	30.9	31.2	31.3
27.8	38.3	38.1	38.0	38.7
27.9	39.3	38.8	38.8	39.1
24.9	36.5	36.4	36.9	35.9
999	250	242	249	250
24.98	36.25	36.05	36.22	36.25
	36.25	36.13		

α Andromedae

~~2 0 8~~
~~2 56 28~~
~~+28 27~~
+41 45

R	R
40 3 16.0	15.7
17.7	18.4
18.9	18.7
19.2	19.0
318	318
17.95	17.95
17.95	

α Persei

3 15 41
+49 26

m	m	R	R	m
0 2 37.0	4 50.9	50.3	50.3	50.1
37.2	51.1	51.0	50.8	52.0
36.0	50.4	50.0	50.2	50.9
39.1	52.2	52.2	51.8	52.0
313	46	35	31	50
17.82	51.15	50.88	50.78	51.25
	51.20	50.83		

α Tauri

4 28 59
+16 16

m	m	R	R	m
10 1 57.8	3 59	5.3	5.2	5.0
3.2	11.1	11.2	11.1	11.3
5.1	12.9	12.7	12.4	12.9
2.1	10.1	10.7	10.0	9.9
8 2	00	399	387	391
2.05	10.00	9.98	9.67	9.78
	9.89	9.82		

Long- A +1 2 3 4 5

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α Aurigae

5 7 45

+45 52

	m	m	R	R	M
35 0	51.1	2 63	6.3	6.3	6.4
	54.8	10.0	10.1	9.8	9.3
	55.5	10.7	9.9	9.9	10.9
	56.0	10.1	10.2	9.9	9.2
	16.4	371	365	359	358
	54.10	9.28	9.12	8.98	8.95
		9.11	9.03		

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The means of all the Separate circle readings have been checked in this book.

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