

KG

11366

2820

Almucantar

Reductions

Chronograph Sheet & Readings

1884 May 29 - 1884 Dec 3

i = 1,2500

May 29, 1884.

16 Camelopardalis W	2 Cephei	E.	11 Cephei	E.	X Urs. Major W.	B. Nov	W.	24 Cephei	E.
—	16 6 1.1	25.6	16 13 24.4	16 16 42.2	16 26 31.7	—	—	—	—
—	3.7	.5	28.4	—	38.2	—	—	—	—
—	5.9	.2	32.2	—	44.5	—	—	—	—
—	8.2	.9	36.3	—	50.6	—	—	—	—
—	11.7	5.3	40.0	50.4	57.0	—	—	—	—
16 1 51.3	17.0	2	—	54.3	27 9.2	16 39 15.2	7.4	—	—
2 2.0	19.4	.1	—	56.5	15.6	19.4	6.	—	—
12.5	22.4	3	—	58.4	22.0	23.7	7	—	—
23.3	25.7	7	—	17 0.2	28.1	27.3	3	—	—
33.3	28.2	—	—	2.1	34.2	31.7	—	—	—
44.0	30.7	14 6.5	—	4.5	40.3	35.9	—	—	—
54.0	33.4	10.6	—	6.4	47.0	39.7	—	—	—
3 15.2	38.9	—	—	10.4	58.6	47.8	—	—	—
25.6	41.6	—	—	12.2	28 5.6	51.9	—	—	—
35.9	44.6	—	—	14.2	11.6	56.0	—	—	—
46.5	47.3	—	—	16.5	18.0	59.8	—	—	—
57.0	50.2	—	—	18.4	24.2	40 4.0	—	—	—
12) 640.6	12) 430.0	12) 298.4	12) 42.830	12) 46.7	12) 46.7	12) 46.7	—	—	—
53.383	25.294	42.830	416.47	3.336	-4.62	17) 476.4	39.367	-11.773	—
16 2 22.77 ³	16 6 25.29	16 13 59.10	16 17 0.34	16 27 28.023	16 39 27.58	—	—	—	—
16 Draco W.	3 Draco W.	16 Aquilae E.	31 Cephei E.	17 Urs. Major W.	5 Cygni E.				
16 45 0.5	16 51 35.6	16 56 54.5	17 1 44.7	17 6 8.5	17 13 48.3				
4.0	38.6	56.7	48.6	10.7	50.0				
7.2	42.4	58.7	53.1	13.2	51.9				
11.3	45.8	57 0.5	57.6	15.5	53.4				
15.0	—	2.5	2 1.8	18.1	55.0				
22.5	55.6	6.4	10.8	22.7	58.6				
26.3	58.6	8.3	15.0	25.5	14 0.3				
30.0	52 2.0	10.3	19.4	27.8	1.9				
33.7	5.3	12.1	23.7	30.4	3.5				
37.7	8.6	14.1	28.0	32.5	5.4				
40.9	11.8	16.0	32.0	35.2	7.0				
44.6	15.2	18.0	36.4	37.5	8.7				
52.4	22.0	21.7	45.2	42.2	12.0				
55.8	24.9	23.8	49.4	44.6	13.9				
59.5	28.7	25.9	53.9	47.0	15.6				
46 3.0	31.7	27.7	58.0	49.6	17.3				
7.0	35.2	29.9	3 2.5	52.0	19.0				
57 1.1	15) 102.0	17) 20.1	17) 400.1	17) 3.0	17) 61.8				
16 45 33.62	6.37	12.18	23.54	30.18	3.64				
16 45 33.62	16 52 5.34	16 57 12.18	17 2 23.54	17 6 30.18	17 14 36.4				

May 29, 1884.

Aquila E. 30 Lepkhi E. 1. Cobbi E. 1. 18.52 W. 4 H. Draco.

17 18 12.4

15.3

17.6

200

226

274

300

325

35.2

377

405

430

—

—

—

—

12) 334.2

27.85

2.918
+ 3.648

+ 7.357

17 18 35.21

K Draco W. 1

17 49 53.4

57.3

50 1.1

4.8

8.5

16.0

19.9

23.2

27.3

31.0

34.5

38.5

46.0

49.9

53.6

57.5

51 1.5

12) 464.0

27.29

17 50 27.29

17

2

2

1

2

1

—

—

—

17 56 7.8

9.5

11.4

13.0

14.7

16.2

17.9

21.6

23.4

25.0

26.8

28.7

12) 216.0

18.000

17 56 12.94

May 29, 1884

18 0 7.9

10.13

12.4

14.7

16.8

18.6

20.8

25.2

27.3

29.6

—

34.0

11) 217.6

19.782

18 0 14.51

17 42 45.0

50.0

43 2.9

9.3

15.0

21.4

27.6

33.0

39.4

52.1

58.0

44 4.6

10.7

16.7

12) 445.7

31.84

13 45.4

97

17 43 21.38

24
14
1.714
2.1028.464
- 10.520

May 29, 1884.

α Aquilae	E.	β Cephei	E.	γ Cephei	E.	δ Ursa	W. 4 γ Draconis
17 18 12.4		17 22 57.7		17 28 49.5		—	—
15.3		23 04		52.4		—	—
17.6		—		55.4		—	—
20.0		55.4		—		34 8.7	17 42 45.0
22.6		—		29 1.5		21.0	50.0
27.4	2	—		8.0	1	25.8	43 2.9
30.0	2	—		11.0	1	32.0	9.3
32.5	1	—		14.5	4	37.8	15.0
35.2	2	—		17.0	0	44.0	21.4
37.7		—		20.3		49.5	27.6
40.5		—		23.3		55.5	33.0
43.0		—		26.2		—	39.4
—		—		32.3		35 7.5	52.1
—		—		35.6		12.6	58.0
—		—		38.7	6.1	18.4	44 4.6
—	2.918	46.0		41.7	3.25	24.7	10.7
—	+3.648	48.5		44.6	4.69	31.0	16.7
12) 334.2		492.6		492.0		668.5	445.7
27.85	47.357	23.15	—	18.250	-1.158	51.423	31.84-
17 18 35.21		17 23 27.74		17 29 17.09		17 34 37.97	17 43 21.26
		23.15					

κ Draco	W.	ι Pegasi	E.	α Scorp.	W.
17 49 53.4		—		—	
57.3		—		—	
50 1.1		—		—	
4.8		—		—	
8.5		—		—	
16.0		17 56 7.8		18 0 7.9	
19.9		9.5		10.3	
23.2		11.4		12.4	
27.3		13.0		14.7	
31.0		14.7		16.8	
34.5		16.2		18.6	
38.5		17.9		20.8	
46.0		21.6		25.2	
49.9		23.4		27.3	
53.6		25.0		29.6	
57.5		26.8		—	
51 1.5		28.7		34.0	
12) 464.0		216.0		217.6	
27.29	—	15.000	-5.064	19.782	-5.273
17 50 27.29	—	17 56 12.94		18 0 14.51	

May 30, 1884.

Leonis	W.	Gr. 1374	W.	Gr. 2640	E.	Obs. Maj.	W.	Gr. Dracon	E.	Obs. Maj.	W.
13 10 15.7		13 14 41.1		13 19 29.9		13 23 58.5		13 28 16.0		—	
17.5		45.7		32.2		24 1.3		20.0		—	
19.3		50.5		36.3		39		24.0?		—	
21.0		54.9		39.4		6.5		27.7		—	
22.7		59.6		42.5		9.5		31.8		—	
26.3		15 9.0		46.5		14.6		39.5		—	
28.0		13.5		51.7		17.0		43.8		—	
29.9		18.0		54.9		19.8		47.8		—	
31.5		22.6		57.9		22.6		51.4		—	
33.2		27.2		20 0.7		25.4		55.4		—	
35.2		31.9		37		27.8		59.1		—	
37.0		36.9		69		30.3		29 37		14 16 56.0	
40.5		45.9		13.1		35.9		11.1		57.8	
42.1		50.4		16.0		38.7		14.6		17 1.0	
44.0		55.3		19.1		41.2		19.0		4.6	
45.6		59.7		22.0		43.7		22.6		7.8	
47.5		16 4.7		25.4		46.7		26.5		11.1	
17) 537.0		17) 386.9		17) 981.2		383.4		574.0		13.3	
31.59		22.76		57.72		22.55		51.41		2.22	21.44

14 16 41.08

14 19 57.72

Virg.	E.	Obs. Maj.	W.	Gr. Serpens.	E.	Obs. Maj.	W.	Gr. N 64	W.	Obs. Maj.	E.
—		14 30 35.7		—		14 45 23.6		14 52 24.3		14 56 8.4	
—		38.6		—		27.7		28.3		10.0	
—		41.5		—		31.7		31.7		11.8	
—		44.4		14 38 35.6		35.4		35.7		13.4	
—		47.3		40.0		39.0		39.2		15.1	
—		52.9		49.3		46.6		46.7		18.8	
14 21 49.4		55.6		54.3		50.5		50.3		20.7	
22 12.8 + 33.37 - 1.37		58.7		58.4		54.1		53.9		22.3	
33.7		31 1.4		39 3.6		57.7		57.7		24.0	
58.6 - 33.59 - 37		4.6		—		46 1.6		53 1.0		25.7	
23 23.6 + 47.17 - 44		7.3		—		5.1		4.7		27.6	
—		10.4		—		8.8		8.3		29.4	
—		16.0		26.5		16.3		15.9		33.0	
—		18.8		30.7		20.1		19.5		34.8	
—		21.7		35.4		24.0		—		36.4	
—		24.6		40.6		27.7		26.9		38.5	
—		27.5		45.1		31.5		30.5		40.0	
—		29.0		11) 119.15		981.4		16) 894.6		409.9	
—		1.59		18.87		57.73		55.912		24.11	
14 22 34.88		14 31 1.59		14 39 3.29		14 45 57.73		14 52 57.51		14 56 24.11	

May 30, 1884.

73 Draco E.	176. Draco W.	Be. 2749 E.	V. M. Maj. W. Cephei E.
14 58 56.7	—	—	N 13 17.0
59 0.0	—	N 8 9.5	18.5
5.9	—	16.6	20.4
10.3	—	23.6	22.3
15.1	—	31.0	24.0
24.5	N 3 12.1	45.5	24.2
29.6	21.3	53.2	29.0
34.1	30.0	9 0.3	30.6
38.7	39.4	7.2	32.5
43.6	48.0	14.8	34.0
48.3	56.5	22.3	35.7
53.2	4 5.0	29.5	37.5
15 0 2.7	23.5	43.6	41.0
7.2	31.4	51.2	42.6
11.9	39.8	58.6	44.5
16.4	48.7	105.9	46.1
21.4	58.6	—	48.0
65.6	54.3	15 12.8	550.9
38.80	45.25	25.725	32.41-

72 oph. E.	Be 2777 E.	7 Cephei E.	B. legni E.	E. Virg. W.
N 21 5.4	N 27 46.0	N 34 31.5	N 37 4.4	N 41 50.6
—	52.4	34.3	5.4	52.0
53.7	58.0	37.0	5.8	53.9
55.5	28 4.1	39.5	5.2	55.7
—	—	42.4	55.2	57.7
59.5	22.0	47.8	58.2	42 1.4
22 1.5	27.4	50.3	59.9	3.2
3.5	33.4	53.0	38 1.3	5.2
5.2	39.1	55.7	3.4	7.0
7.5	45.1	58.5	4.9	8.9
9.5	50.8	35 1.0	6.8	11.0
11.5	56.9	4.0	8.1	12.9
15.4	29 8.5	9.4	11.4	16.9
17.2	14.5	12.0	13.3	18.8
19.2	20.3	14.6	15.2	20.6
21.3	26.1	17.2	16.4	22.3
23.5	32.1	20.0	18.5	24.5
47.40	10 65.6	17 54.2	12 77.6	17 122.0
18.857	41.645	55.777	5.175	7.177
15 22 5.439	15 28 39.209		15 38 3.256	

(continued on page 6.)

May 31, 1884

Ammini E β Auriga W γ Bootis E β Bootis E

9 51

9 51 - 10 20 56
 - 73
 - 93
 - 111
 52.2 131
 562 15.0
 52 0.4 17.1

8.7	209	10 29 55.8	10 34 -
12.6	229	59.0	33.0
16.9	246.	30 1.1	34.6.
21.1	265	27	36.7
25.4	28.1	4.1	38.6.
8) 73.5	12 201.5	5) 3.7	6) 143.0
9.19	16.80	0.74	35.75
			-9.225

9 51 47.96 -21.230 10 20 11.24 -55.5 10 29 48.56 -12.180 10 34 22.12 36.37

May 30, 1884 (continued from page 4.)

35 α Hec. Maj. W.	9 α Hec. Draco W.	30 α Hec. Camel. W.	2 Cephei E.	11 Cephei E.
15 54 42.5	15 57 23.9	—	16 5 58.7 23.4	16 13 23.2
460	28.6	—	6 2.9 48	26.7
496	34.7	—	5.5 4.7	30.5
534	39.8	—	7.6 4.1	34.7
571	45.2	—	10.0 3.7	38.8
55 4.0	55.7	16 1 54.6	16.4 4.6	46.0
7.7	58 11	2 5.2	18.8 4.3	50.0
11.5	6.1	15.0	21.0 3.7	53.8
15.5	11.5	25.6	24.0 4.0	57.5
18.8	16.7	36.0	27.4 4.7	14 1.5
22.5	21.6	45.7	29.8 4.3	5.0
26.5	27.6	56.9	32.3 4.1	8.9
—	38.0	3 18.0	38.0 4.3	16.5
—	43.3	28.3	40.6 4.1	20.6
—	48.7	38.1	43.1 3.9	24.6
—	54.2	49.0	46.0 4.1	28.2
—	59.8	59.8	49.0 4.3	32.0
12) 547	410.646	15) 572.2	30.610 oscillating	17) 577.5
4.558	11.560	51.017	rejet	57.560
15 55 15.204	—	16 2 25.41	—	—

18 α Aquilae E.	16 α Nor. W.	16 α Sagitte W.	24 Cephei E.	1 α Draco E.
16 23 39.0	—	16 33 17.4	16 38 49.8	16 45 1.0
44.0	—	19.2	53.6	46
42.8	16 26 51.9	20.9	57.7	8.0
—	57.7	22.8	39 1.6	11.6
—	—	24.5	5.9	15.6
46.6	27 10.1	27.8	13.8	22.8
48.6	17.1	29.5	18.2	26.6
50.4	23.1	31.5	22.1	30.1
52.5	29.0	33.0	26.1	34.0
54.2	35.3	34.7	30.3	37.8
56.2	41.9	36.6	34.2	41.6
58.1	48.3	38.3	38.2	45.0
24 2.0	28 0.2	41.8	46.3	52.5
3.8	7.2	43.3	50.4	56.0
5.9	12.8	45.1	54.3	59.5
7.9	19.0	46.8	58.4	46 3.5
9.8	25.5	48.6	40 2.3	7.1
15) 818.9	14) 557.1	15) 561.8	17) 443.2	17) 577.3
54.587	39.936	33.047	26.071	33.959
16 23 52.415	16 27 29.236	—	—	—

June 1, 1884

~~1st Min~~203 20 }
72 3 } 6.

9 Virg	E.	2 Leo.	W.	B. Herc.	E.	36 Draco	E.	1 Leonis	W.	11 Leonis	W.
—		12 51 56.5		12 55 56.5		12 58 53.0		—		13 10 14.6	
—		53.4		58.3		55.8		—		16.3	
—		55.2		56 0.0		58.8		—		18.2	
—		57.0		1.8		59 1.8		—		20.0	
12 42 39.3		59.0		3.5		5.0		—		21.7	
44.4		52 2.6		6.8		10.6		13 3 55.1		25.0	
46.7		4.5		8.5		13.5		58.4		26.8	
49.4		6.4		10.2		16.6		4 1.1		28.6	
52.3		8.4		11.9		19.6		4.2		30.3	
54.7		10.1		13.5		22.5		7.5		32.1	
57.2		11.9		15.3		25.4		10.5		34.0	
59.9		13.8		17.0		28.5		13.6		35.8	
43 5.1	30 13	17.6		20.7		34.2		20.0		39.2	
7.6	2.305	19.5		22.2		37.1		23.1		41.0	
10.3	2.865	21.3		23.9		40.0		26.1		42.8	
12.9		23.2		25.5		43.0		29.2		44.3	
N.V.		25.1		27.5		46.3				46.5	
13 55.6	5.1123	5.970	17 14.2	17 205.1	17 331.7	11.710	7.343	12 57.2			

12 42 52.151

12 52 8.265

12 56 11.947

12 59 19.512

13 4 4.367

13 10 30.424

21.2 17 }
70 11 } 5.73 II ~~1st Min~~

En. 13 74	W.	En. 26 40	E.	Other. Maj.	W.	1 Draco	E.	1 Leo.	W.	2 Mos. Min	E.
13 14 40.0		13 19 29.0		13 23 57.6		13 28 14.7		—		—	
44.6		32.0		24 0.5		18.7		—		—	
49.2		35.2		3.0		22.7		13 35 50.4		—	
54.2		38.2		5.6		26.5		52.5		—	
58.5		41.6		8.1		30.6		54.5		—	
15 7.7		47.5		13.6		38.2		58.8		—	
12.8		51.0		16.0		42.5		36 0.7		—	
17.0		53.7		18.8		46.0		3.0		13 39 17.4	40 25.8
21.9		56.8		21.5		—		5.2		40 23.4	23.4
26.2		59.8		23.9		53.8		7.5		41 30.0	21.6
30.6		20 2.8		26.7		57.6		9.3		42 40.1	23.3
35.7		5.8		29.5		29 1.8		11.6		—	
45.1		12.0		35.0		9.9		16.0		—	
49.3		15.0		37.5		13.5		18.2		—	
54.5		18.3		40.0		17.3		20.2		—	
58.6		21.0		42.5		21.2		—		—	
16 3.6		24.4		45.5		24.9		—		—	
17 36.5		17 96.4		17 365.3		16 799.9		13 67.9		43 330.9	41 22.725
13 15 21.735		13 19 56.712		13 24 21.488		13 28 49.994		13 36 5.222		13 40 23.52	

44.1
3.52

June 1, 1884.
~~4~~ *W. Min*

5.0 } 212 24
 78 18

<u>Dr. 2900</u>	E.	<u>S. Draco</u>	E.	<u>En. 1446</u>	W.	<u>L. Herc.</u>	E.	<u>S. Leo.</u>	W.
—		13 52 5.7		13 54 48.2	—	—		14 12 30.1	
—		9.0		52.6	14 7 5.0			32.0	
13 45 33.7		12.5		57.4	4.2			33.7	
39.9		15.5		55 1.6	14 7 2.5			35.5	
47.1		19.0		6.8	4.3			37.4	
46 0.4		25.6		16.1	7.9			40.8	
7.4		29.1		20.5	9.5			42.7	
14.0		32.5		25.1	11.5			44.4	
20.7		35.4		29.7	13.4			46.2	
27.7		38.8		33.8	15.1			47.9	
34.0		42.2		38.7	—			49.6	
41.3		45.6		43.0	18.8			51.5	
55.0		—		52.1	22.5			55.0	
47 1.4		—		57.1	24.2			56.9	
8.5		—		56 1.5	26.0			58.7	
—		—		6.4	27.8			13 0.6	
13) 271.1		12) 310.9		11.0	29.8			2.4	
		25.908		501.6	13) 218.3			12) 78.54	
					16.408				
13 46 20.854		13 52 35.585		13 55 29.506	14 7 13.347			14 12 46.200	

~~5~~ *W. Min*

4.7 } 216 59
 76 24

<u>5th Nov. May</u>	W.	<u>W. Virg.</u>	E.	<u>6th Nov. May</u>	W.	<u>K. Cephei</u>	E.	<u>W. Scap.</u>	E.
14 16 100	—	—		14 30 34.4	—	14 33 17.3		14 38 20.2	
13.5	—	—		37.1		23.6		25.0	
16.7	—	—		44.0		29.3		29.5	
20.0	—	—		43.0		34.7		34.3	
23.3	—	—		45.9		41.2		38.5	
30.0		14 21 28.8 + 6.12	35.9	51.6		51.8		—	
33.2		49.6 + 45.28	34.9	54.5		58.3		—	
36.5		22 12.2 + 23.22	35.4	57.2		34 3.8		—	
39.8		34.5 .00	34.5	31 0.3		9.4		39 2.3	
43.3		58.5 - 23.96	34.5	3.0		15.0		6.2	
46.5		23 20.5 - 46.66	31.8	5.8		21.0		—	
49.7		46.3 - 74.10	32.2	8.8		26.1		15.7	
56.5		—	—	—		37.9		20.6	
59.9		—	—	—		43.9		29.1	
17 3.2		—	—	—		49.4		34.5	
6.6		—	—	—		55.2		39.0	
9.8		—	—	—		35 0.8		44.0	
17) 678.5		—	—	12) 621.6		17) 158.7		13) 43.9	
				51.800 + 8.375				3.377	
14 16 39.912		14 22 34.17		14 32 0.175		14 34 9.335		14 39 1.950	

June 1, 1884,

~~By the Man~~

Only three
threads.

Reject.

~~$$\begin{array}{cc} 223 & 46 \\ 66 & 34 \end{array} \} 5.0$$~~

2 H US Min

June 1, 1884.

~~41 B Vrs Aris~~

~~6.0~~ { ~~225 23~~
~~66 32~~

t Virg. W.

—
—
—
15 47 16.5
19.1
24.5
27.3
28.6
32.2
34.9
37.6
40.0
45.4
48.0
50.5
53.2
55.9
14 51 47
36.764 -4.506

24
14
-1.7143
-2.143

15 47 32.258
✓

~~1 H Vrs Aris~~

~~5.3~~ { ~~228 12~~
~~67 57~~

June 2, 1884.

~~Urs Minor~~

230 15 72 24 } 3.0	W. θ Lyrae	E. γ Draconis	E. ι Draconis	W. ν Urs. Maj.	W. θ Cephei	E.
14 52 22.5	14 56 6.5	—	N 2 16.7	N 13 N.1	N 16 46.3	
26.1	8.3	—	26.6	16.9	49.1	
30.0	10.0	—	35.5	18.6	51.7	
34.1	11.8	—	43.4	20.3	54.6	
38.0	13.5	—	52.9	22.2	57.3	
44.6	17.3	—	3 10.6	25.5	17 2.8	
48.3	20.6	—	18.8	27.1	5.9	
52.1	22.6	—	24.4	28.8	8.5	
55.8	24.3	—	36.0	30.8	11.5	
59.4	26.2	—	45.3	32.3	14.3	
53 3.3	—	—	53.9	34.1	17.0	
6.9	—	—	4 3.1	35.7	19.6	
14.7	31.6	N 0 0.7	20.7	39.4	25.3	
18.2	33.0	5.0	29.5	40.7	28.0	
21.3	34.9	10.0	37.6	42.5	30.8	
25.0	36.5	N.0	47.2	44.4	33.8	
29.2	38.5	20.0	55.7	46.0	36.3	
17) 94.5	15) 33.5	5) 50.7	38) 100	17) 520.4	17) 192.8	
5	22.373	+0.118	10.140			
14 52 55.853	14 56 22.491	14 59 37.040	15 3 36.523	15 13 30.612	15 17 11.341	

~~Urs Minor~~

234 5 77 53 } 5.7	E. β Ursa Major	E. η Cephei	E. β Pegasus	E. ϵ Virgo	W. ϵ Virgo	W.
—	—	N 34 30.2	N 37 46.1	N 41 48.5	—	
—	—	32.7	48.1	50.2	—	
N 21 49.8	—	35.2	50.0	52.2	—	
52.0	—	38.3	51.6	54.1	—	
53.8	—	40.8	53.5	56.1	—	
57.5	N 28 20.8	46.1	56.7	42 0.0	N 47 23.6	
59.7	26.9	49.0	58.1	17	26.4	
22 1.6	32.1	51.5	38 0.0	3.7	29.1	
3.7	—	54.3	1.8	5.7	31.8	
5.7	44.3	57.2	3.1	7.5	34.2	
7.5	49.8	59.9	5.0	9.4	36.8	
9.6	—	35 21.3	6.9	11.3	39.6	
13.5	29 7.5	7.9	10.0	N.0	44.7	
15.8	12.5	10.4	11.7	17.0	47.4	
17.8	18.7	13.3	13.3	18.8	50.1	
19.5	24.6	16.0	N.1	20.8	—	
21.7	30.6	18.8	16.9	22.6	—	
15) 39.5	10) 56.5	17) 92.9	4) 27.9	17) 94.6	4) 36.7	
5.947	56.280	-18.800			26.370	4.732
15 22 3.693	15 28 37.980	15 34 54.347	15 38 1.641	15 42 5.565	15 47 31.638	

June 2, 1884.

2 U Urs. Min6.0 ~~234 33~~
~~69 20~~

35 H. Melaj. W. 9 H. Draco. W.	30 H. Cam. W.	2 Ceph. E.	11 Ceph. E.
15 54 40.7	15 57 21.5	16 55 7.8	16 13 21.6
44.1	27.1	6 0.8	25.9
47.7	32.3	3.7	29.5
51.6	37.2	6.0	33.7
55.0	43.0	8.9	37.5
55 2.5	52.7	14.7	45.1
5.7	58.8	17.3	49.1
9.5	58 44.1	19.0	52.7
13.4	9.1	22.8	56.1
17.0	14.0	25.3	14 0.3
20.2	19.8	28.1	4.5
24.2	25.5	31.0	7.9
—	36.3	34.7	15.7
—	41.4	37.1	19.5
—	46.6	42.0	23.2
—	51.7	44.8	27.0
—	57.2	47.7	30.8
(12) 331.6	(17) 158.3	(12) 385.7	(17) 960.3
2.633	+10.646	58.782	36.25
15 55 13.279	15 58 9.312	16 6 22.688	16 13 56.488

U Urs. Min4.3 ~~237 29~~
~~78 17~~

8 Sagitte E.	24 Ceph. E.	1 Draco. W.	3 Draco. W.	8 Aquilae E.
16 33 16.0	16 38 48.7	16 44 58.5	—	16 56 58.7
17.9	52.8	45 2.2	—	—
19.6	56.6	6.0	—	—
21.5	39 0.6	9.9	—	—
23.0	4.9	13.3	—	—
26.1	13.0	21.1	—	57 3.7
28.2	17.0	24.7	—	—
30.0	21.0	28.5	—	—
31.6	25.0	32.0	—	—
33.5	29.0	35.5	16 52 7.5	—
35.2	33.2	39.4	10.9	13.3
36.9	36.9	43.0	14.0	15.6
40.2	45.0	50.4	20.4	19.4
42.0	49.0	54.1	23.5	21.4
43.6	53.3	57.7	27.5	23.5
45.5	57.2	46 1.3	30.7	25.4
47.4	40 1.3	5.3	34.0	27.2
(17) 535.2	(17) 424.5	(17) 542.7	(8) 168.5	(17) 142.9
—	—	—	21.863	12.991
16 33 31.659	16 39 24.971	16 45 31.935	16 52 4.113	16 57 9.613

June 2, 1884.
~~3 U. Urs Min~~

~~242 16 } 6.0~~
~~77 13 } 6.0~~

Ceph. ϵ . η Serp. ϵ .

17 141.8 —
 45.6 —
 50.1 —
 54.5 —
 — —

2 7.5 178 29.7
 11.9 32.2
 16.4 36.4
 20.6 41.3
 25.0 46.0
 29.3 50.2
 33.7 54.5

42.2 —
 46.8 —
 51.0 —
 54.7 —

16) $\frac{350.6}{21.912}$ -1251 $\frac{2288.3}{21.912}$

17 2 20.561 17 8 41.186

~~243 52 } 6.0~~
~~76 17 } 6.0~~

~~19 U. Urs Min~~

June 4, 1884.
~~67 B hrs min~~

6.0 } ^{244 19}
 73 47

α Herc.	E. & Leo.	W. & Vir. Maj.	W. & Vir.	E. & Vir. Maj.	W.
—	14 12 29.9	14 16 9.6	—	14 30 34.2	—
—	31.5	13.1	—	36.9	—
—	33.2	17.0	—	39.5	—
14 7 1.0	35.1	20.0	—	42.7	—
2.8	37.0	23.2	—	45.7	—
6.0	40.4	30.3	—	51.2	—
8.0	42.0	33.2	—	54.0	—
9.8	43.7	36.5	14 22 2.5 + 13.2	57.0	—
11.7	45.6	40.0	26.6 0.0	31 0.0	—
13.6	47.7	43.1	48.5 - 23.6	2.6	—
15.2	49.3	46.7	23 10.8 - 48.66	5.5	—
17.3	51.4	50.1	35.5 - 74.10	8.4	—
20.7	54.0	56.7	—	20.3	—
22.5	56.5	17 0.2	—	24.06	—
24.5	58.2	3.5	—	—	—
26.2	13 0.0	6.6	—	—	—
28.0	2.0	9.9	—	—	—
14 20.7 3	17 777.5	17 67.7	—	14 67.7	—
14.807	3.122	—	—	51.475	—
14 7 11.685	14 12 45.737	14 16 39.982	14 22 24.06	14 30 59.849	—

~~74 B hrs min~~

K Cephei	E. & Scap.	E. & Vir. Maj.	W. & Vir. 1564	W. & Vir. 6.
14 33 14.4	—	14 45 22.5	14 55 13.6	—
20.4	—	26.3	52 14.7	—
26.6	—	30.1	—	—
31.6	—	34.5	—	—
38.0	—	39.0	—	—
49.8	14 38 35.5	45.3	27.0	—
55.0	50.0	49.2	30.7	—
34 0.8	54.5	52.6	34.2	—
6.3	59.1	56.3	—	14 56 21.3
12.3	39 3.3	46 0.2	—	23.0
18.3	8.5	3.8	—	24.8
23.4	13.4	7.8	—	26.7
34.9	—	15.6	Reject.	30.1
40.8	—	19.2	Only four	32.0
46.3	—	23.0	threads.	33.7
52.2	—	26.5	—	35.5
58.3	—	30.6	—	37.3
17 109.4	7 414.3	17 96.5	—	2 25.4
14 34 6.435	14 38 59.186	14 45 56.618	—	29.378
—	—	—	—	21.314

June 4, 1884.

~~5 U Uls Min~~

1884phae.pro

248 43 }
79 18 } 6.0

~~476 Uta Min~~

Draco	E.	16. Draco	W.	B. 2749	E.	U. No. Maj.	W.	0 Cephei	E.	72. Ophi.	E.
—	—	—	—	—	15 13 15.0	—	—	15 16 44.9	—	—	—
—	—	15 2 264	—	—	16.8	—	—	47.6	—	—	—
14 59 2.5	—	36.2	—	—	18.5	—	—	50.4	—	15 21 48.8	—
7.5	—	45.6	—	—	20.2	—	—	52.0	—	50.5	—
12.6	—	54.5	—	—	21.8	—	—	56.0	—	52.8	—
21.7	—	3 12.1	—	—	25.2	—	—	17 1.4	—	56.6	—
26.4	—	20.7	—	—	27.0	—	—	4.1	—	58.6	—
31.0	—	29.7	—	—	28.8	—	—	7.0	—	22 0.7	—
35.6	—	38.0	—	—	30.7	—	—	10.0	—	2.6	—
40.0	—	47.0	—	—	32.2	—	—	12.5	—	4.4	—
44.2	—	55.5	—	15 9 17.7	33.9	—	—	15.5	—	6.3	—
49.8	—	4 4.7	—	25.6	35.6	—	—	18.5	—	8.2	—
59.2	—	22.6	—	39.8	39.0	—	—	23.6	—	12.6	—
15 0 4.2	—	31.9	—	46.6	40.8	—	—	26.6	—	14.2	—
8.9	—	40.4	—	54.7	42.5	—	—	29.2	—	16.3	—
13.5	—	49.3	—	10 2.2	44.2	—	—	32.0	—	18.3	—
18.4	—	58.3	—	9.5	46.0	—	—	35.0	—	20.6	—
15 616.5	—	69.2	—	31.6	518.2	—	—	17 167.3	—	71.5	—
41.100	—	43.306	—	45.157	—	—	—	—	—	47.67	—
14 59 35.741	—	15 3 38.341	—	15 9 3.42	15 13 30.482	—	—	15 17 9.841	—	15 22 2.507	—

~~249 24~~
~~77 45~~ } 6.0~~5 U Uls Min~~

30 H. No. Maj.	W.	7 Cephei	E.	B. Lycop.	E.	E. Virg.	W.	U. Virg.	W.	35 H. No. Maj.	W.
—	—	15 34 57.2	—	15 37 45.2	—	15 41 48.4	—	—	—	15 54 40.3	—
—	—	31.4	—	47.0	—	50.0	—	15 47 10.6	—	44.0	—
—	—	34.2	—	48.8	—	52.2	—	13.4	—	47.5	—
—	—	37.0	—	50.3	—	54.0	—	16.0	—	51.4	—
—	—	39.7	—	52.1	—	56.0	—	18.6	—	55.5	—
—	—	45.0	—	55.2	—	59.7	—	23.9	—	—	—
—	—	47.7	—	57.0	—	42 1.8	—	26.3	—	—	—
—	—	50.5	—	58.6	—	3.5	—	28.9	—	—	—
15 29 26.0	—	53.0	—	38 0.5	—	5.5	—	31.7	—	—	—
29.1	—	55.6	—	2.1	—	7.3	—	34.2	—	—	—
32.5	—	58.3	—	3.8	—	9.3	—	36.9	—	—	—
36.0	—	35 0.8	—	5.5	—	11.0	—	39.5	—	—	—
42.1	—	6.5	—	9.0	—	15.0	—	44.7	—	—	—
45.0	—	9.0	—	10.5	—	16.8	—	47.7	—	—	—
48.0	—	11.7	—	12.1	—	18.8	—	—	—	—	—
51.4	—	14.5	—	13.8	—	20.5	—	—	—	—	—
54.3	—	17.0	—	15.5	—	22.6	—	—	—	—	—
9 36.44	—	20.7	—	17.0	—	24.4	—	—	—	—	—
40.489	—	23.5	—	19.0	—	26.4	—	—	—	—	—
15 29 26.139	—	15 24 52.984	—	15 38 0.412	—	15 42 5.437	—	15 47 31.679	—	—	—

June 4, 1884
~~E. Uss. Min~~

4.3 { 255 39
 82 17

Bleophei	E.	2 Ceph.	E.	11 Ceph	E.	10 Aquilae	E.	Br. 1508
—		16.5 57.0		16.1 22.0		16.23 34.6		—
—		59.5		—		36.5		—
—		6 2.5		36.0		38.2		—
—		5.0		16.13 32.0		40.3		—
—		7.9		36.0		44		—
16 2 2.8		13.3		43.6		44.0		—
6.3		16.0		44.0		46.0		—
10.4		18.8		51.5		48.0		—
14.0		21.4		55.2		49.8		16 27 24.3
17.4		24.1		58.7		51.9		33.8
21.1		26.8		14 2.5		53.5		—
25.5		29.6		6.4		55.5		46.0
32.5		35.0		14.0		59.4		58.5
36.4		37.6		17.7		24 1.1		28 4.6
39.6		40.3		21.5		3.2		11.2
43.6		43.4		25.8		5.2		17.0
47.5		46.3		29.5		7.1		23.5
17) 297.1		17) 364.5		17) 541.4		17) 817.3		17) 461.9
24.758				1.529		50.894		57.737
16 2 13.930		16 6 21.441		16 13 54.954		16 23 49.815		16 27 27.32

77 B Uss. Min

6.0 { 256 41
 75 31

γ Sagitte	E.	24 Ceph.	E.	λ Draco	W. 3 Draco	W. γ Aquilae	E.
16 33 14.8		16 38 47.0		16 44 58.9	16 51 34.4	—	—
16.6		51.6		45 2.7	37.5	—	—
18.5		55.0		6.0	40.5	16 56 54.4	—
20.2		59.5		9.9	44.3	56.5	—
21.9		39 3.0		13.6	47.3	58.5	—
25.1		11.3		21.2	54.1	57 2.5	—
26.9		15.5		24.7	57.5	4.3	—
28.4		19.7		28.4	52 1.2	6.4	—
30.5		23.8		32.0	4.4	8.3	—
32.0		27.8		35.8	7.0	10.2	—
33.7		31.5		39.5	10.6	12.0	—
35.5		35.4		42.8	13.8	13.9	—
39.1		43.9		50.5	20.6	18.1	—
40.8		47.2		54.1	23.7	20.0	—
42.5		52.0		58.0	27.0	21.8	—
44.3		55.8		46 1.7	30.4	24.0	—
46.2		40 0.0		5.4	33.7	26.0	—
17) 517.3		17) 400.0		17) 545.2	17) 68.0	17) 157.2	—
16 33 30.430		16 39 23.530		16 45 32.071	16 52 4.000	16 57 8.264	—

June 4, 1884.

~~262 59~~
80 16 } 6.0

~~6 11 11.10~~

1 heph.	E.	η Serp...	E.	ξ Cygni	E.
17 1 40.2	—	—	17 13 48.0	—	—
44.4	—	—	46.7	—	—
49.0	—	—	48.5	—	—
53.5	—	—	50.4	—	—
57.9	—	—	52.0	—	—
2 6.2	17 8 36.0	—	55.3	—	—
11.0	30.5	—	57.0	—	—
15.3	35.0	—	58.6	—	—
19.1	39.4	—	140.4	—	—
23.5	44.3	—	2.0	—	—
28.1	48.5	—	3.7	—	—
32.0	53.2	—	5.4	—	—
40.5	9 2.5	—	8.6	—	—
45.5	6.6	—	10.5	—	—
49.5	11.0	—	12.2	—	—
54.0	15.7	—	—	—	—
58.1	20.5	—	—	—	—
17 2 19.28	17 6 33.2	—	15 8 76.3	—	—
19.28	52.767	—	58.420	—	—
17 2 19.28	17 8 39.678	—	17 14 0.344	—	—
275 59	—	—	—	—	—
86 35	—	—	—	—	—

~~8 11.10~~

June 8, 1884

24 hrs Min6.0 ^{277 27}/_{86 58}

μ Virg.	E. h. Vir. Maj. W.	K Cephe.	E. d. Vir. Maj. W.	Gr. N 64 W.
—	14 30 30.6	—	14 45 18.21	14 52 19.1
—	33.3	—	21.7	22.4
—	36.0	—	25.7	26.5
—	39.2	—	29.5	30.0
—	42.0	—	33.2	33.6
—	47.9	14 33 51.7	40.5	40.7
14 21 52.8 + 45.28 = 38.1	50.6	57.3	44.7	44.5
22 16.0 + 23.2 = 39.2	53.5	34 2.9	48.5	48.2
38.5	56.4	8.7	52.0	51.8
23 2.8 - 23.96 = 38.8	59.0	14.5	55.6	55.5
26.0 - 48.66 = 37.3	31 2.0	19.5	59.6	59.4
—	5.0	26.0	46 3.5	53 2.9
—	—	37.3	11.0	10.1
—	—	43.0	14.6	13.9
—	—	48.7	18.3	17.6
—	—	54.4	22.0	21.1
—	—	35 0.2	26.0	25.0
—	12) 59.5 47.958	48.374	16.745	17) 882.3 7
14 22 38.38	14 30 56.332	14 34 8.605	14 45 52.035	14 52 51.900
73 Draco	E. 1 76. Draco W.	Bu. 2749	E. 8 Vir. Maj. W.	9 Cephe. E.
14 58 54.5	—	15 8 0.8	15 13 12.2	15 16 44.9
59.3	—	8.0	13.8	47.9
59 3.8	—	15.5	15.4	50.5
8.5	—	22.5	17.4	53.3
13.3	—	30.4	18.8	56.0
23.0	15 3 4.0	44.5	22.5	17 1.9
27.6	12.7	52.5	24.0	4.5
32.1	21.7	59.6	25.9	7.1
37.0	30.6	9 6.7	27.5	10.2
41.6	38.9	13.6	29.4	12.9
46.2	47.6	21.2	31.0	15.6
51.2	56.6	28.3	32.7	18.4
—	4 14.0	—	36.0	24.0
—	23.0	—	37.9	26.7
—	31.6	—	39.6	29.6
—	41.3	—	41.2	32.4
—	49.8	—	43.0	35.1
17) 278.1 23.175	113.793	12) 543.6 45.300	17) 468.3	17) 171.0
14 59 36.968	15 3 30.254	15 9 6.606	15 13 27.547	15 17 10.059

June 8, 1884.

2 ofc.	E.	30 H. No. Maj. W.	η Cephei	E.	β Lepigni	E.	ε Virg.	W.	ε Virg	W.
15 21 46.0		15 30 47.0	15 34 28.7		15 37 44.5		15 41 45.5			
48.0		57.7	31.3		46.1		47.5		15 47 7.7	
50.0		29 0.7	34.0		48.0		49.3		10.3	
52.0		37	36.5		49.3		51.3		13.0	
		7.0	39.3		51.0		53.2		15.6	
56.0		13.2	44.5		54.7		57.1		20.7	
58.0		16.2	47.4		56.4		59.1		23.5	
59.9		19.3	50.2		58.1		42 1.0.		26.0	
22 2.0		22.7	52.7		59.6		2.6		28.6	
4.0		25.5	55.3		38 1.4		4.7		31.1	
6.0		29.0	58.0		3.0		6.5		34.0	
8.0		32.0	35 0.8		4.7		8.5		36.5	
12.0		38.4	—		8.2		12.4		41.6	
13.8		41.1	—		10.0		14.0		44.3	
15.9		44.5	—		11.4		15.9		47.0	
18.0		47.9	—		13.1		17.9		49.7	
20.0		51.1	—		14.8		20.0		52.1	
10 49.6		10 49.6	12 538.7		12 1014.3		17 46.5		16 481.7	
3.100		24.375	44.892		59.665				30.106	
15 22 1.974		15 29 22.602	15 34 52.718		15 37 59.665		15 42 2.735		15 47 28.628	
✓		✓	✓		✓		✓		✓	
35 H. No. Maj. W.	β Cephei	E.	α Cephei	E.	11 Cephei	E.	X No. Maj. W.	W. Aquilae	E.	
15 4 36.8	16 1 41.5		16 5 56.9		16 13 20.9		16 16 37.1			
40.2	45.0		59.6		25.3		39.2			
43.9	49.0		6 2.3		29.0		41.5			
47.5	52.5		5.0		32.5		43.4			
51.2	56.1		7.9		36.7		45.6		16 23 39.5	
58.5	2 3.4		13.2		44.4		49.5		43.5	
55 2.2	7.5		16.0		48.3		51.3		45.5	
5.7	11.4		19.0		52.0		53.5		47.5	
9.2	15.1		21.5		55.6		55.5		49.3	
12.9	18.7		24.2		59.7		57.3		51.2	
16.5	22.4		27.0		14 3.1		59.4		53.0	
20.2	26.0		29.5		7.1		17 1.4		55.0	
27.1	33.1		35.2		—		5.5		57.3	
31.2	37.0		38.0		—		7.5		24 0.9	
35.0	40.7		40.8		—		9.5		27	
38.3	44.3		43.4		—		11.6		46	
42.1	48.3		46.0		—		13.3		6.5	
17 58.5	17 25.0		3 R 16 6 21.568		12 834.6		17 942.1		13 698.5	
			55 6 21.480		44.350				53.731	
			(R-L) 21.194		11.207				4.423	
			16 6 21.500		16 13 55.787		16 16 55.418		16 23 49.308	
15 55 9.324	16 2 14.824				✓		✓		✓	

June 8, 1884.

<u>Br. 1508</u>	W. γ Sagitte	E. 24 Cephei	E. λ Draco	W. ϵ Draco	W.
—	16 33 14.4	16 38 48.0	16 44 55.0	16 51 30.7	
—	16.3	52.0	58.6	33.8	
—	18.0	56.3	45 2.2	37.4	
—	19.5	39 0.3	5.8	40.3	
—	21.2	4.1	9.9	44.0	
—	24.5	12.2	16.6	50.4	
—	26.4	16.3	20.7	53.3	
—	28.4	20.4	24.3	56.8	
16 27 21.9	30.1	24.3	28.1	52 0.2	
28.0	31.8	28.3	31.8	3.6	
34.5	33.5	32.3	35.5	6.6	
41.0	35.0	36.2	38.9	10.0	
52.7	38.8	44.4	46.5	16.9	
59.5	40.5	48.4	50.1	20.1	
28 4.9	42.1	52.6	53.8	23.3	
11.3	43.8	56.7	57.9	27.0	
14.5	45.7	40 0.7	46 1.5	30.0	
7) 451.3	570.0	7) 413.5	7) 422.2	7) 4.4	
58.144	28.42				
16 27 21.72	16 33 30.000	16 39 24.324	16 45 28.071	16 52 0.259	
	✓	✓	✓	✓	
γ Aquilae	E. 31 Cephei	E. δ Ula. Maj	W. Anonymous	E. ϵ Cygni	E.
16 56 50.1	17 1 41.2	17 6 3.2	—	—	
52.2	45.7	5.7	—	—	
54.1	50.0	8.0	—	—	
56.0	54.5	10.5	—	—	
58.1	58.4	13.0	—	—	
57 2.0	2 7.3	18.0	—	17 13 54.5	
3.9	11.5	20.3	—	56.2	
5.8	16.1	22.7	—	57.8	
7.8	20.3	25.0	—	59.5	
9.7	24.7	27.4	—	14 1.4	
11.6	28.9	29.8	—	2.8	
13.6	33.1	32.3	179 50.8	4.5	
—	—	37.0	54.0	7.7	
—	—	39.5	55.6	9.5	
—	—	41.9	57.5	11.4	
—	—	44.1	59.4	13.1	
—	—	46.8	10 1.0	14.8	
12) 24.9	45.7	12) 91.7		12) 53.2	
2.675	7.642	7.642		4.433	4.956
16 57 7.787	17 2 20.25	17 6 25.012		17 13 59.481	
✓		✓		✓	

June 8, 1884.

<i>Aquilae</i>	ϵ .	<i>30 Cephei</i>	ϵ .	<i>π Cephei</i>	ϵ .	<i>γ 1052</i>	η .	<i>11 Bootis</i>	η .	<i>76 Mr. Maj.</i>	η .
—		17 22 54.5		17 29 42.2		—		17 40 36.0		17 44 12.7	
17 18 10.9		57.2		47.0		—		37.6		15.2	
13.0		57.9		51.9		—		39.5		17.9	
15.6		23 2.7		56.7		—		41.1		20.9	
18.0		5.7		30 1.4		—		42.7		24.0	
23.2		11.1		11.0		17 34 13.7		46.0		29.5	
25.7		14.3		15.8		20.0		47.6		32.0	
28.2		16.9		20.7		25.3		49.4		35.3	
30.7		19.6		25.5		31.4		51.1		38.0	
33.4		22.4		30.0		36.9		52.8		40.8	
35.8		25.3		35.0		42.8		54.5		43.7	
38.3		28.2		39.6		48.7		56.3		46.7	
43.3		33.9		49.2		55 0.8		59.8		52.5	
46.0		36.5		53.7		6.7		41 1.3		55.1	
48.5		39.5		58.9		12.1		2.8		58.0	
51.4		42.2		31 3.5		18.2		4.6		45 0.9	
—		45.0		8.1		24.0		6.4		3.7	
15) 462.0		17 334.9		17 430.2		17 580.6	-17.004	17 869.5		17 646.9	
						48 38.3					
17 18 30.800		17 23 19.700		17 30 25.306		17 34 31.380		17 40 51.147		17 44 38.053	
✓		✓		✓		✓		✓		✓	

June 15, 1884

θ Hercules	E.	ζ Leonis	W.	δ Urs. Maj.	W.	κ Cephei	E.		
13 37 37.3		13 42 39.4		14 30 29.4		14 33 16.4			
39.0		41.0		32.5		17.0			
41.0		42.5		35.0		21.8			
42.8		44.4		37.8		28.0			
44.5		46.0		40.6		33.8			
47.7		49.3		46.8		45.3			
49.1		51.0		49.3		51.2			
51.5		52.6		52.5		56.5			
53.2		54.2		55.2		34 2.7			
55.0		56.1		58.1		8.5			
56.8		57.9		31 0.9		13.8			
58.5		59.5		38		19.7			
38 2.0		43 3.0		—		43 64.59 31.0			
3.8		4.6		—		37.0			
5.4		6.0		—		42.8			
7.0		7.9		—		48.5			
9.0		9.6		—		53.9			
17) 923.6		17) 925.0		12 561.9		17) 411.9			
				46.825		8.376			
13 37 53.153		13 42 54.412		14 30 55.201		14 34 2.465			
✓		✓		✓					
μ Serp.	E.	δ Urs. Maj.	W.	δ U. 1564	W.	θ Lyrae	E.	γ 3 Draco	E.
—		14 45 17.2		—				14 58 49.3	
—		21.4		14 52 21.7				53.0	
—		25.1		25.5				58.2	
—		29.0		29.2				59 3.3	
—		32.6		33.0				7.4	
14 38 40.0		40.1		40.5				16.9	
44.8		44.3		44.0				22.4	
49.5		47.8		47.4				26.7	
53.9		51.2		51.8				31.0	
58.8		54.9		54.9				36.1	
39 3.3		58.8		58.5				40.4	
8.3		46 2.6		53 2.0				45.1	
—		10.2		9.4				—	
—		14.0		13.4				—	
—		17.5		16.6				—	
—		21.6		20.4				—	
—		25.0		24.0				—	
17) 378.6		17) 673.3		16) 852.3				17) 209.8	
				53.270				17.483	
				20.60				113.794	
14 38 54.086		14 45 51.371		14 52 51.210				14 59 31.277	
✓		✓		✓				✓	

Lost on chronograph.

June 15, 1884
~~176 Cass~~~~343.42~~
~~56.15~~ } 6.0

76 Draco	E.	Bv. 2749	E.	Gr. 1586	W.	72 Oph.	E.	30 L. Mus. Maj	W.	7 Cephei	E.
15 20 5.0		15 7 54.0		15 14 49.3		—		15 28 53.0		—	
14 14.8		8 1.4		50.6		—		56.5		—	
23.6		8.6		58.0		—		59.5		—	
31.9		15.7		15 2.5		—		29 2.9		—	
41.5		23.5		7.0		—		6.0		—	
3 0.0		36.0		15.4		—		12.4		—	
9.1		45.5		20.1		—		15.3		—	
18.7		52.1		24.2		—		18.5		15 34 46.0	
27.0		59.8		28.6		15 21 58.0		21.5		48.3	
—		9 4.4		33.4		59.9		24.7		51.0	
45.7		14.0		37.2		22 1.8		27.5		53.8	
54.9		21.5		42.2		3.5		30.7		56.4	
4 12.8		36.2		51.0		7.7		37.0		35 1.9	
21.7		42.8		55.1		9.7		40.1		4.7	
31.5		50.6		59.8		11.6		43.6		7.2	
40.0		57.6		16 4.0		13.9		46.5		10.0	
49.8		10 5.5		8.6		15.7		49.8		12.6	
16) 428.0		17) 1014.2		17) 490.0		9) 61.8		17) 345.5		10) 391.9	
26.750						6.867				59.19	
15 3 27.318		15 8 59.666		15 15 28.824		15 21 57.784		15 29 21.500		15 34 48.458	

~~344.58~~
~~58.33~~ } 5.3~~176 Cass~~

E. Virg.	W.	20 Comae	W.	35 L. Mus. Maj	W.	B. Cephei	E.	L. Cephei	E.	X Mus. Maj	W.
15 41 43.8		15 48 10.8		15 54 36.1		—		16 5 52.6		—	
45.8		12.5		39.0		—		55.1		—	
47.7		14.1		42.9		—		57.5		—	
49.4		16.0		46.9		—		6 0.6		—	
51.5		17.4		50.3		—		3.4		—	
55.2		20.9		58.0		16 1 58.9		8.8		16 16 47.5	
57.1		22.6		55 1.1		2 2.5		11.8		49.6	
59.0		24.4		4.9		6.4		14.2		51.7	
42 0.9		26.1		8.7		9.7		17.0		53.5	
2.6		27.9		12.2		13.3		19.7		55.6	
4.7		29.4		15.7		17.4		22.4		57.6	
6.7		31.1		19.6		21.0		25.1		59.8	
10.4		34.6		26.6		28.2		30.6		—	
12.2		36.2		30.4		32.0		33.4		—	
14.3		38.0		34.0		35.6		36.0		—	
16.1		39.9		37.7		39.5		38.8		—	
18.1		41.6		41.4		42.8		41.9		—	
17) 15.5		17) 443.5		17) 145.5		12) 24.2		15) 255.9		375.3	
						20.608					
15 42 0.912		15 48 26.088		15 55 8.559		16 2 9.780		16 6 16.994		16 16 53.614	

June 15, 1884.
~~2~~ Cass

6.0 { 345 44
 58 28

ω Aquilae E. Gr. 1771 W.

—	—
16 23 30.1	—
31.6	—
33.6	—
35.4	—
39.1	—
41.0	—
43.1	16 27 11.5
45.0	14.4
46.9	17.6
48.7	20.5
50.7	23.5
54.7	29.7
56.5	32.5
58.5	35.6
24 0.5	38.6
2.4	41.9
16 23 45.034	16 27 14.515
46.112	26.580

-0.7037

5.00

-1.078

-12.065

~~2~~ 76 Cass

6.0 { 346 24
 56 17

June 17, 1884
4 Cass

Leo	W. β. Herc.	E. α. Herc.	E. γ Dra.	E. η Leo.	W. & Leo.	W.
12 51 45.5	12 55 49.1	13 0 18.4	13 5 56.4	—	—	—
47.3	50.8	20.1	58.8	13 10 10.3	—	—
49.2	52.4	22.2	6 0.7	12.2	—	—
51.0	54.0	24.1	2.7	14.0	—	—
52.9	55.9	26.1	4.8	15.5	—	—
56.9	59.4	29.9	11.3	19.1	—	—
58.5	56 1.0	32.0	13.4	20.8	—	—
52 0.3	2.6	33.7	15.4	22.6	—	—
2.1	4.4	35.7	17.6	24.4	—	—
4.1	6.0	37.6	—	26.1	13 12 57.1	—
6.0	7.8	—	—	28.0	59.0	—
7.8	9.5	—	—	29.8	13 0.6	—
11.8	12.9	45.4	25.9	33.4	3.8	—
13.7	14.5	47.2	28.1	35.0	5.5	—
15.5	16.3	49.2	30.1	36.8	7.4	—
17.3	18.0	51.1	32.2	38.4	9.2	—
19.2	19.8	53.0	34.5	40.2	10.9	—
39.1	17 14.4	55.7	35.047	40.6	25.412	—

12 52 2.300	12 56 4.376	13 0 35.892	13 6 15.431	13 10 24.419	13 12 55.486
350 40 } 5.0	✓	11 Cass			

ω Aquilae	ε	Gen. 1771	W. γ Sagittae	E. 24 Cephei	E. μ Scorp.	W. ε Ophiuchi	W.
16 23 27.4	16 26 46.2	16 33 9.5	16 38 42.5	—	—	—	—
29.6	49.2	11.5	46.9	—	—	—	—
31.3	52.0	13.0	57.0	—	—	—	—
33.1	54.8	15.0	54.7	—	—	—	—
35.2	58.2	16.7	59.1	16 43 56.9	—	—	—
39.1	27 3.8	20.1	39 7.1	44 57	—	—	—
41.1	7.1	21.9	11.2	11.0	—	—	—
43.0	10.1	23.5	15.4	14.9	16 49 9.2	49 16.6	—
44.8	13.1	25.3	19.1	19.8	16.4	16.4	—
46.6	15.8	27.3	23.4	24.3	24.1	16.7	—
48.5	18.9	29.0	27.2	29.0	31.7	16.9	—
50.7	22.2	30.7	31.4	33.9	39.0	16.8	—
54.5	28.2	34.0	39.4	—	54.1	17.1	—
56.1	31.0	35.8	43.4	—	50 0.6	16.2	—
58.0	34.0	37.5	47.2	—	8.6	16.8	—
24 0.2	37.0	39.2	51.3	—	15.4	16.2	—
2.3	40.0	41.0	55.8	—	23.2	16.6	—
17 161.5	17 22.4	17 431.0	17 326.1	8 135.5	16.937	10 46.23	—
44.794				16.937	12.897	46.230	—
16 23 44.794	16 27 13.024	16 33 25.353	16 39 19.182	16 44 19.834	16 49 16.63		

June 17, 1884
 Cass

354 49
 50 } 57 45

α Bootis	W.	31 Cephei	E.	Sagittae	E.	30 Cephei	E.	4 Cephei	E.
16 53 33.3		17 1 36.7		—		17 22 49.5		17 28 41.0	
35.1		40.8		17 18 6.0		52.5		44.0	
36.9		45.0		8.7		55.1		47.1	
38.7		49.4		11.5		58.1		50.2	
40.4		53.5		13.4		23 1.1		53.4	
43.9		2 2.5		18.7		6.8		59.7	
45.8		6.8		21.0		9.5		29 2.8	
47.5		11.1		23.8		12.4		6.0	
49.0		15.4		26.4		15.0		8.7	
50.9		19.5		28.7		18.0		12.0	
52.5		24.0		31.0		20.6		15.0	
54.2		28.2		33.4		23.5		18.1	
57.6		36.8		38.8		29.0		24.2	
59.5		41.1		41.4		31.5		27.0	
54 1.2		46.0		44.0		34.6		30.1	
3.0		49.8		46.5		37.5		33.6	
5.0		54.5		—		40.7		36.6	
17) 834.5		17) 261.1		17) 393.3		17) 255.4		17) 49.5	

16 53 49.088

17 2 15.359

17 18 26.220

17 23 15.024

17 29 8.794

Cass

355 16
 60 } 61 19

α Bootis	W.	30 Cephei	W.	76 Mus. Maj	W.	K Dra.	W.	8 Cephei	E.
17 33 37.7		—		17 44 9.7		17 49 45.1		17 55 44.2	
43.2		—		12.8		49.1		50.1	
49.1		17 38 59.0		15.6		53.0		56.1	
54.8		39 4.5		18.2		56.8		56 1.3	
34 0.9		11.0		21.2		50 0.5		7.4	
12.4		—		27.0		7.9		18.5	
18.0		30.4		30.0		11.8		23.5	
23.9		35.7		32.8		15.4		29.2	
29.5		41.8		35.4		19.1		34.4	
35.2		47.5		38.4		23.0		40.2	
41.3		54.1		41.1		26.8		45.4	
47.5		—		44.0		30.7		51.4	
58.6		12.7		49.7		38.1		57 2.4	
35 4.7		19.0		52.4		42.0		8.0	
10.5		25.0		55.7		45.8		13.7	
16.3		—		58.4		49.2		19.5	
22.1		—		45 1.2		53.1		24.6	
17) 505.7		17) 280.7		17) 603.6		17) 327.4		17) 589.9	
		25.518							

17 34 29.747

17 44 35.506

17 50 19.259

17 56 34.700

June 17, 1884

~~Cast~~

~~356 36 } 5.0~~
~~56 37 }~~

Draco W. 4 Cassiop. E. 10 Lacertae E. 9 Bootis W.

—	18 10 38.8	18 16 25.0	18 19 57.4
—	41.4	27.0	59.0
—	44.3	28.8	20 0.8
—	47.0	30.7	2.5
—	49.9	32.4	4.1
18 4 6.8	55.0	36.1	7.5
10.1	57.8	37.8	9.0
13.3	11 0.8	39.5	10.8
16.2	3.0	41.3	12.5
19.8	6.0	43.0	14.4
23.1	8.5	44.5	16.0
26.2	11.4	46.6	17.8
32.1	16.7	49.8	21.2
35.1	19.4	51.8	22.8
38.6	22.2	53.6	24.4
41.5	24.8	55.2	26.2
44.8	27.6	57.0	27.9
12) 307.6	17) 54.8	17) 200.3	17) 214.3
25.633	9.162		
18 4 16.471	18 11 3.225	18 16 41.194	18 20 12.606
359 16 } 6.0	✓	376 } 6.0	✓
54 49 }		Cast	

June 18, 1884
~~Cass~~

5.0 { ~~357 44~~
~~54 52~~

24 Cephei E.	μ Serp.	W. ε Ophiuchi W.	31 ophi	E. δ Mus. Maj W.
16 38 43.4	—	—	17 13 4.1	17 5 59.8
47.5	—	—	41.1	6 2.0
51.6	—	—	45.5	4.2
55.3	—	—	49.4	67
59.7	—	16 48 38.0	53.8	93
39 7.6	16 44 5.0	52.5	2 2.7	14.0
11.3	9.4	49 0.6	7.2	16.3
16.4	14.0	8.1	11.8	19.0
20.0	18.9	14.0	15.4	21.5
24.0	23.3	—	20.5	23.9
28.0	28.0	29.7	24.2	26.2
33.0	33.2	36.9	28.7	28.5
40.0	—	52.6	37.4	34.3
43.8	—	58.6	41.3	36.0
48.4	—	50 6.7	46.2	38.1
52.3	—	13.8	50.2	40.8
56.2	—	20.5	54.4	43.2
17 33 8.5	131.8			

16 39 19.912

16 44 18.829

9 Cass

6.0 { ~~359 0~~
~~61 24~~

ε Cygni E.	δ Aquilae E.	30 beph E.	ν Ceph. E.	δ. 1852 W.
17 13 39.9	—	17 22 49.5	17 28 41.4	17 33 36.5
41.4	—	52.9	44.2	41.4
43.2	—	55.6	47.7	47.5
45.0	—	58.1	50.4	53.4
46.7	17 18 13.5	23 0.9	53.7	59.0
50.1	18.4	6.7	29 0.0	34 10.2
51.9	21.0	9.3	3.0	16.5
53.4	23.4	12.4	6.1	22.5
55.0	26.3	15.1	9.0	27.9
56.9	28.9	18.0	12.3	34.9
58.6	31.3	20.8	15.2	40.1
14 0.2	34.7	23.7	18.2	45.9
3.5	38.9	29.1	24.1	57.4
5.2	41.1	32.0	27.5	35 3.0
7.0	43.7	35.7	30.4	9.0
8.6	46.1	37.8	34.7	14.7
10.3	49.0	40.7	36.9	20.0

June 18, 1884.
25 B Cass

359 12 } 6.0 60 35	W. 76 Mo. May	W. K Draco	W. γ Cephei	E. δ Draco	W. 4 Cass.	E.
—	—	17 49 44.0	17 55 44.7	—	18 10 39.0	—
—	—	48.2	50.8	—	41.9	—
—	—	52.0	57.0	18 3 53.0	44.4	—
—	17 44 17.4	55.2	56 2.4	56.4	47.4	—
—	20.0	59.0	7.8	59.8	49.8	—
17 39 22.0	26.1	50 6.6	19.2	4 6.0	55.3	—
28.0	28.1	10.7	24.6	9.2	57.8	—
35.0	31.4	14.4	30.3	12.3	11 0.7	—
40.4	34.1	17.7	36.7	15.6	3.5	—
46.4	37.0	22.0	41.4	18.2	6.0	—
52.8	40.0	25.7	47.0	21.7	8.5	—
58.7	43.2	29.4	52.4	24.8	11.5	—
—	—	37.0	57 3.7	30.9	17.0	—
—	57.7	40.3	9.1	33.8	19.6	—
—	54.2	44.7	14.8	36.9	22.1	—
—	57.8	48.1	20.1	40.0	25.0	—
—	45 0.2	52.0	25.8	43.3	27.6	—

359 32 } 6.0
62 18

10 Cass

10 Lacertae	E. β Bootis	W. α Bootis	W. β Delph.	E. δ Delphin	E. γ Draco	W.
—	18 19 56.4	—	—	—	—	—
—	58.2	—	—	—	—	—
18 16 28.8	20 0.0	—	—	—	—	—
30.7	1.8	—	—	—	—	—
32.2	3.5	—	—	—	—	—
35.8	6.6	—	—	—	—	—
37.5	8.3	—	—	—	—	—
39.4	10.1	—	—	—	—	—
41.1	11.8	—	—	—	—	—
43.0	13.5	—	—	—	—	—
44.5	15.1	—	—	—	—	—
46.3	16.8	—	—	—	—	—
50.1	20.4	—	—	—	—	—
52.0	21.8	—	—	—	—	—
53.8	23.6	—	—	—	—	—
55.4	25.4	—	—	—	—	—
57.1	27.1	—	—	—	—	—

June 19, 1884.

~~B~~ Cass2.3 { $\begin{smallmatrix} 0 & 9 \\ 58 & 16 \end{smallmatrix}$

2 Bootis W.	B. Delph.	E.	E. Delphin.	E.	K Draco	W.
-------------	-----------	----	-------------	----	---------	----

17 28 30.7	—		17 40 58.5		17 49 41.4	
32.5	—		41 0.1		45.2	
34.2	—		2.1		49.0	
35.9	—		4.0		52.9	
37.7	—		6.1		56.5	
41.2	17 31 9.3		10.0		4.1	
42.9	11.0		11.9		8.0	
44.4	12.5		13.8		11.4	
46.1	14.2		15.7		15.5	
48.0	16.2		17.4		19.1	
49.7	18.2		19.1		23.0	
51.7	20.1		21.1		26.9	
—	23.8		25.2		34.4	
—	25.5		27.2		38.0	
—	27.4		29.1		42.0	
—	29.4		31.3		45.8	
—	31.2		33.1		49.5	

~~4 U~~ Cass6.0 { $\begin{smallmatrix} 0 & 32 \\ 56 & 16 \end{smallmatrix}$

June 21, 1884.
~~12~~ Cass

40 } 6.0
 50 } 57 } 6.0

Protio	W. 31 Ceph.	E. S. Dec. Maj	W. 3 Cygni	E. S. Agulac	E. 6 Ceph.	E.
16 53 32.0	17 1 35.3	17 5 59.2	17 13 38.4	—	—	—
33.4	39.0	6 1.3	40.0	—	—	—
35.2	43.4	3.8	42.0	—	—	—
36.9	45.0	6.3	43.4	—	—	—
38.4	52.1	8.8	45.2	17 18 12.0	—	—
42.1	2 0.4	13.4	48.5	17.2	—	—
43.9	5.3	15.9	50.4	19.5	—	—
45.8	9.8	18.4	52.0	22.0	17 29 4.8	—
47.4	14.0	21.0	53.8	24.8	7.9	—
49.0	18.5	23.0	55.4	27.2	10.4	—
50.9	22.2	25.6	57.1	29.4	13.9	—
52.8	26.8	28.0	59.0	32.1	17.0	—
56.2	35.5	32.6	14 2.2	34.2	23.3	—
58.0	39.6	35.1	39	40.0	26.2	—
59.9	44.0	37.4	5.6	—	—	—
54 1.6	48.3	40.0	7.4	—	—	—
3.4	52.8	42.8	9.0	—	35.6	—

544 } 5.0
 53 } 38 } 5.0

A Cass

W. 18 52	W. 30 Ophiuchi	W. K Draco	W. 3 Ceph.	E. S. Draco	W. 4 Pers.	E.
17 33 35.4	—	17 49 43.4	17 55 43.4	—	18 10 34.4	—
41.0	—	44.3	49.3	—	40.3	—
44.0	—	51.0	54.9	—	43.1	—
52.4	—	54.8	56 0.5	—	45.8	—
—	—	58.4	6.4	—	48.6	—
—	17 39 22.3	50 6.0	22.6	18 4 5.3	54.0	—
—	27.8	10.0	—	6.5	56.8	—
—	34.2	13.6	—	—	59.6	—
—	40.0	17.3	—	—	11 2.1	—
—	44.0	21.1	—	—	4.6	—
34 38.9	53.0	25.0	—	—	7.3	—
45.9	59.5	28.6	—	—	10.1	—
56.4	—	36.0	57 1.5	—	15.5	—
35 2.8	—	39.9	7.3	33.8	18.2	—
8.4	—	44.0	13.0	36.8	20.9	—
14.2	—	47.5	18.1	40.0	23.7	—
20.4	—	51.4	23.8	42.9	26.4	—

June 21, 1884.
~~K~~ Cass

4.5 } 5 59
 62 3

10 Lacertae E.	p Bootis W.	69 H. Mo. Maj W.	Bv. 6	W. 8 Aquilae E.
18 16 23.9	—	18 26 17.5	—	—
26.0	—	20.0	—	—
27.5	—	22.4	—	—
29.2	—	25.3	—	18 37 28.7
31.0	—	27.9	—	32.0
34.5	18 20 6.2	33.0	—	39.0
36.3	7.6	35.7	—	42.4
38.0	9.3	38.3	—	—
39.8	11.0	41.1	—	—
41.6	12.7	43.6	59.0	—
43.4	14.4	46.1	4.4	—
45.1	16.2	48.9	9.9	—
49.0	19.4	54.1	20.5	38 6.8
50.3	21.1	56.9	26.0	9.9
52.1	23.0	59.3	31.1	13.3
54.0	24.5	27 1.9	36.4	17.0
55.8	26.5	5.0	41.6	20.3

5 H Cass

6.0 } 6 49
 53 17

X Bootis W.	Gv. 2001 W.	Gv. 2029 W.	21 Cassio. E.	Polans E.
—	18 49 8.8	18 58 13.6	19 4 10.5	19 5 57.6
18 42 29.0	—	17.9	15.0	9 54.6
30.9	18.0	21.8	19.9	10 48.6
32.5	22.0	25.8	24.8	11 41.2
34.1	26.4	30.0	29.2	12 36.3
37.5	—	38.0	38.4	14 26.3
39.2	39.0	42.0	43.1	15 19.7
40.9	43.6	46.0	47.9	—
42.4	47.5	50.0	52.5	—
44.2	52.0	53.9	57.3	—
46.0	56.5	58.0	5 1.8	—
47.9	50 0.8	59 2.0	6.6	—
51.1	9.3	10.2	15.9	—
52.8	13.9	14.1	20.5	—
54.3	17.8	18.0	25.1	—
56.0	22.4	22.3	29.8	—
57.8	26.3	27.0	34.5	—

June 21, 1884.
59 B Cass

~~6 51 } 6.0~~
~~9 27 } 6.0~~
H. Ceph. E.

—
—
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—

25.4

32.2

38.7

45.0

53.7

21 5.6

11.8

18.7

—

~~7 1 } 4.0~~
~~53 1 } 4.0~~

Y Cass

June 22, 1884.

~~Cass~~ (over)7.52
55.39

24 Comae	W.	B. Mic. Maj.	W.	9 H. Draco	W.	B. Ceph.	E.	30 Oph.	E.
—		1549 43.9		—		—		—	
—		46.3		—		—		—	
—		48.6		—		—		—	
—		50.9		—		—		—	
1544 44.0		53.4		1557 11.0		—		—	
50.8		58.1		159	I	16 158.5		166 59.2	
52.4		50 0.5		21.3		2 2.6		7 5.1	
54.0		2.5		26.4		6.0		11.3	
55.8		5.3		32.1		9.6		18.0	
57.5		7.6		—		13.5		23.5	
59.3		10.0		43.4		16.9		30.4	
45 1.1		12.3		48.1		21.1		36.2	
4.5		17.0		53.0		28.1		49.1	
6.0		19.5		58.3	II	31.8		54.6	
7.9		21.7		58 3.5		35.5		8 0.9	
9.6		24.4		9.1		39.1		7.6	
11.4		26.5		14.4		43.0		13.9	
				12586.5					
				4304					

~~Cass~~6.0 { 8 17
49 38

X Mic. Maj.	W.	ω Aquilae	E.	Gr. 1471	W.	J. Sagittae	E.	24 Ceph.	E.
16 16 31.7		—		16 26 42.5		16 33 8.7		—	
33.8		16 23 28.4		45.6		10.5		16 38 41.3	
35.9		30.4		49.0		12.3		54.5	
37.7		32.1		51.7		14.0		—	
39.7		34.0		54.8		15.8		59.6	
43.8		37.9		27 0.8		19.1		39 7.1	
45.9		39.5		3.5		21.0		11.3	
47.5		41.7		6.8		22.6		15.5	
50.0		43.5		9.9		24.5		19.2	
51.9		45.4		12.7		26.2		23.0	
53.8		47.1		15.8		28.0		27.5	
56.0		49.5		18.8		29.5		31.4	
59.9		53.0		24.9		33.0		39.3	
17 1.8		55.0		27.8		34.8		43.3	
4.0		57.0		30.8		36.5		47.3	
5.9		59.1		33.9		38.1		51.6	
8.0		24 0.9		37.0		40.0		55.1	

June 22, 1884.

~~71~~ Cass

8 39 } 6.0
46 9 }

Serp.	W. o oph.	W. η Serp.	ε.	ξ Cygni	ε.	δ Aquilae	ε.	30 Cephei	ε.
—	—	—	1713 38.8	—	—	—	—	—	—
—	—	—	40.6	—	—	—	—	1722 52.1	—
—	—	—	42.1	—	—	1718 7.6	—	54.9	—
—	—	—	44.0	—	—	10.1	—	57.7	—
—	—	—	45.5	—	—	12.7	—	23 0.5	—
16 44 30	—	178 21.4	—	46.9	—	17.8	—	6.0	—
7.3	174 2.6	25.0	—	50.4	—	20.1	—	8.7	—
11.5	7.7	30.0	—	52.2	—	23.0	—	11.8	—
16.7	12.3	34.6	—	54.0	—	25.2	—	14.7	—
20.6	17.3	39.0	—	55.7	—	27.9	—	17.4	—
25.7	21.8	43.2	—	57.5	—	30.2	—	20.1	—
30.1	27.1	48.1	—	59.1	—	32.6	—	23.0	—
—	36.8	—	—	14 2.5	—	37.9	—	28.3	—
—	42.5	—	—	4.1	—	40.3	—	31.4	—
—	47.2	—	—	5.9	—	43.0	—	34.1	—
—	52.0	—	—	7.4	—	—	—	37.0	—
—	57.6	—	—	9.3	—	—	—	40.1	—

8 48 } 6.0
74 7 }

21 Cass

π Cephei	ε.	30 oph.	W. η Usc. Maj.	W. κ Draco	W. γ Cephei	ε.	16 Pegasi	ε.
—	—	—	—	1749 42.0	1755 44.7	—	186 32.1	—
—	—	—	1744 9.3	46.1	50.4	—	33.8	—
17 29 47.1	—	—	15.0	—	56.3	—	35.3	—
51.9	—	—	18.1	53.4	56 1.8	—	37.0	—
56.5	—	—	—	56.8	7.2	—	38.9	—
30 6.0	—	—	23.9	50 4.0	18.5	—	42.0	—
10.9	—	—	26.8	8.2	24.5	—	43.9	—
15.9	—	—	29.6	12.0	29.7	—	45.5	—
21.0	17 39 38.0	—	32.1	15.5	35.4	—	47.1	—
25.3	44.0	—	35.1	19.6	40.8	—	48.9	—
30.0	51.1	—	38.0	23.1	46.2	—	50.5	—
35.0	57.1	—	41.0	27.0	52.0	—	52.2	—
44.0	40 8.9	—	46.4	34.5	57 3.0	—	55.6	—
49.1	15.3	—	49.3	38.3	8.6	—	57.3	—
54.0	21.5	—	52.0	42.1	14.2	—	59.0	—
58.4	27.4	—	55.0	45.9	19.5	—	7 0.8	—
31 3.8	33.3	—	58.0	49.4	25.5	—	2.4	—

June 22, 1884.

36

~~6 H Cass~~6.0 { 8 54
46 59

§ U.S. Maj. W.

18 11 7.2

9.3

12.0

14.0

16.4

20.9

23.1

25.5

27.9

30.0

32.2

34.8

39.1

41.3

43.9

46.1

48.5

~~0 Cass~~5.0 { 8 57
47 24

July 10, 1884.

~~7th Cass~~

93 421 6.4	Aquila E. 30 Cephei E	π Cephei E.	Lh. 1852 W.	416 Dra. W.	K Dracon W.
—	17 22 42.1	—	17 33 25.0	17 42 5.8	17 49 34.3
—	45.6	—	31.5	11.8	38.3
—	48.0	—	37.1	18.1	42.1
—	51.2	—	43.3	24.3	45.6
—	54.0	—	48.9	30.0	49.8
—	59.5	—	34 0.6	42.0	57.2
—	23 2.5	—	6.5	48.7	50 1.2
—	5.0	—	11.9	54.4	4.6
—	7.8	—	17.8	43 1.4	8.2
—	10.7	—	23.8	6.7	12.0
—	13.2	17 30 23.3	29.5	13.1	16.0
—	16.1	28.2	35.5	19.4	19.6
17 18 29.8	22.1	38.0	47.0	32.0	27.2
32.4	24.5	42.5	53.0	38.2	31.2
35.0	27.5	47.6	59.2	44.1	35.3
37.8	30.0	52.6	35 4.6	50.2	38.9
40.2	33.1	57.0	10.5	56.3	42.7
175.2	132.9	222.2	305.7	16.5	144.2
35.04	176.5	41.314	27.370		

17 18 17.110

17 23 7.818

17 30 13.94

17 34 17.982

17 43 0.971

17 50 8.482

~~9.18~~
~~73 58.5~~ 6.4~~23 Cass~~

δ Cephei E.	δ Dracon W.	4 Cassiop. E.	10 Lacertae E.	ρ Bootis W.	69 K. Me. May W.
17 55 37.7	18 3 37.9	18 10 30.9	18 16 16.7	18 19 48.1	18 26 9.6
43.0	40.9	33.7	18.6	49.9	12.4
48.9	44.0	36.5	20.1	51.7	14.7
54.0	47.2	39.2	22.0	53.3	17.3
56 0.1	50.5	42.0	24.0	54.8	20.0
11.1	56.6	47.2	27.3	58.3	25.1
16.4	59.7	50.0	29.0	20 0.0	27.7
22.0	4 3.1	52.7	31.1	1.9	30.3
27.6	6.0	55.1	32.8	3.5	33.4
33.5	9.2	58.2	34.5	5.0	35.6
38.3	12.5	11 0.8	36.3	6.8	38.2
44.2	15.5	3.5	38.0	8.5	41.0
55.4	22.1	9.1	41.5	12.0	46.1
57 0.9	25.0	11.5	43.4	13.5	49.0
6.6	28.1	14.0	45.2	15.3	51.5
12.2	31.0	16.7	47.0	17.0	54.0
18.0	34.2	19.8	48.7	19.0	56.6
46.9	103.5	940.9	556.2	59.6	562.5

17 56 27.641

18 4 6.088

18 10 55.347

18 16 32.718

18 20 3.447

18 26 33.098

July 10, 1884.

38

~~Cast~~~~37 56 58~~

Br. 6	E. 8 Aquilae	E. 7 Bootis	W. En. 2001	W. En. 2029	W.
18 32 0.6	—	18 42 20.0	18 49 0.6	—	—
59	—	21.6	5.2	—	—
11.0	—	23.3	9.3	—	—
16.0	—	25.2	14.1	—	—
21.7	—	26.9	18.4	18 58 21.5	—
32.5	—	30.1	27.0	29.9	—
37.5	—	32.0	31.3	33.8	—
43.0	18 37 38.2	33.4	35.4	37.6	—
48.1	41.7	35.1	39.4	42.1	—
53.6	45.4	36.9	44.1	45.7	—
57.1	48.3	38.4	48.3	49.9	—
33 4.2	51.8	40.2	52.9	53.9	—
14.5	58.5	43.7	50.15	59.18	—
19.8	38 1.9	45.2	5.2	5.8	—
25.2	5.9	47.0	9.9	10.2	—
30.5	9.1	48.8	14.0	14.0	—
36.0	12.0	50.3	18.8	18.4	—
819.2	$\frac{10}{552.8}$	$\frac{40}{400}$ $\frac{10}{5000}$ 55.280	598.1	$\frac{13}{664.6}$ 51.122	—

18 32 48.188

18 37 41.570

18 42 35.182

18 49 39.729

~~Cast~~~~50 9 57~~

Polaris	E.	Reduced to middle
10R 19 9 1.8	19 17 10.5	12.9
10R 9 54.0	8.4	10.5
C. 10 51.2	11.3	13.2
10L 11 40.0	58	7.4
10L 12 35.0	6.5	7.8
14 27.7	106	11.4
15 25.0	136	14.2
16 23.0	172	17.6
C. 17 14.7	14.7	14.7
18 7.6	100	13.0
19 1.3	127	12.1
19 55.1	122	11.4
9L 21 40.7	9.2	7.9
9L 22 35.3	11.5	9.9
C 23 34.3	14.2	12.3
9R 24 29.2	148	12.7
9R 25 24.8	16.1	13.7

Mean of Centre Transits

" " 10 Right

" " 9 Right

" " 10 Left

" " 9 Left

$$C - 9\frac{1}{2} R = +0.87$$

$$C - 9\frac{1}{2} L = +5.17$$

$$9\frac{1}{2} R - 9\frac{1}{2} L = +4.30 = 19 \times$$

$$-43.65 + 0.226$$

$$-0.0052 = \pm 0.08$$

19 17 13.32

39

July 11, 1884.

~~876 Cass~~~~10 16 } 6.0
63 22 }~~

β Cephei E.	γ Aquilae E.	12 Can. Vew. W.	ξ Cygni E.	δ Aquilae E.	π Cephei E.
16 51 11.0	16 56 37.7	17 4 51.0	17 13 31.6	—	—
14.0	39.6	52.5	33.6	—	—
16.7	41.6	54.5	35.4	17 18 0.8	—
19.3	43.5	56.0	37.0	3.0	—
22.2	45.5	58.0	38.7	5.3	17 29 52.7
27.8	49.2	5 1.7	42.0	10.3	30 1.6
30.3	51.1	3.4	43.8	13.0	6.2
33.0	53.3	5.1	45.5	15.4	11.7
36.0	55.1	6.9	47.0	18.1	16.5
38.2	57.0	8.7	49.0	20.5	20.5
41.2	59.0	10.5	50.5	23.1	25.6
44.0	57 1.0	12.2	52.2	25.7	30.2
49.2	4.9	16.0	55.3	30.9	40.0
52.1	7.0	17.6	57.2	33.1	45.0
55.1	8.8	19.2	59.1	35.7	49.1
57.8	10.9	21.0	14 09	38.4	54.0
52 0.5	12.9	23.0	2.3	41.0	59.0
17 688.4	17 938.1	17 117.3	17 800.9	17 314.2 20.953	17 352.1 27.054

16 51 35.788 16 56 55.182 17 5 6.900 17 13 47.112 17 18 18.100 17 30 16.029

~~10 54 } 6.0
60 15 }~~~~18 H Cass~~

4.10. Draco W.	K Draco W.
—	17 49 32.2
—	36.0
—	39.8
—	43.6
—	47.5
17 42 38.7	55.0
45.1	58.7
50.9	50 2.2
57.2	6.1
43 3.0	9.9
9.1	13.5
16.2	17.5
—	24.7
34.4	29.1
40.4	33.0
46.8	36.6
52.9	40.3
11 154.7 14.064	17 55.7

17 42 59.22 17 50 6.218

July 12³, 1884.

40

~~Cast~~57 { 11 23
58 6

5 Un. May W.	10 Lacetoe E.	41 K. Ceph. E.	Br. 6	E. 7 Bootie W.
18 11 0.0	18 16 15.4	18 22 16.2	18 31 58.1	18 42 19.2
2.5	18.9	19.2	32 3.2	21.0
4.5	21.0	23.0	91	22.5
6.9	22.7	26.0	14.1	24.2
9.2	26.2	29.3	20.0	25.9
13.1	27.9	36.0	30.1	29.2
16.4	29.7	39.2	35.2	31.0
18.3	31.3	42.6	40.5	32.8
20.7	33.0	45.7	46.3	34.5
23.0	35.0	49.1	51.2	36.0
25.4	36.8	52.0	56.7	37.8
27.8	40.2	55.4	33 2.1	39.5
32.0	42.0	23 2.0	12.4	43.0
34.6	44.0	5.1	17.3	44.4
36.7	45.6	8.0	23.0	46.2
39.0	47.5	11.6	28.0	48.0
41.2		15.0	34.0	49.9

~~Cast~~20 { 11 46
59 51

Gr. 2001 W.	Gr. 2029 W.	21 Cass. E.	Polaris	E. 44 K. Ceph. E.
18 49 1.0	18 58 4.9	19 4 2.1	19 8 49.2	19 19 17.5
5.2	9.0	6.8	9 48.2	24.5
9.6	13.0	11.4	10 37.1	30.9
14.5	16.9	16.0	11 37.7	37.7
18.1	21.2	21.1	12 30.7	43.9
26.8	29.7	30.1	14 18.5	57.3
31.1	33.8	35.1	15 15.0	20 3.8
35.2	37.6	39.8	—	10.8
39.4	41.5	44.0	—	16.7
43.9	45.5	48.9	—	23.4
48.1	49.9	53.7	—	30.0
52.7	53.6	58.2	—	36.7
50 0.9	59 1.4	57.5	—	49.8
5.4	5.8	12.3	—	56.1
9.8	10.0	17.0	—	21 2.5
14.3	14.0	21.2	—	10.0
18.4	18.2	26.2	—	16.6

July 13¹³, 1884.

~~92~~ Cass

~~14 48 } 5.7~~
~~58 19 }~~

Mr. Bor. W. & Pegasi. E.

19 35 4.9 —
6.4 —
8.0 —
9.8 19 40 5.2.1
11.5 5.3.4

15.0 57.1
16.6 58.7
18.2 41 0.5
20.0 2.2
21.8 4.0
23.3 57
25.0 7.1

28.2 10.7
30.0 12.1
31.5 13.9
33.3 15.8
35.0 17.5

~~12 6 } 6.0~~
~~65 29 }~~

~~97 B~~ Cass

July 14, 1884.

42

~~W~~ Cast6.0 { 14 25
54 8

10 Lacertae E.	41 K. Ceph E.	69 K. Mus. Maj W.	Bv. 6	E. 0 Aquilae E.
18 16 15.6	18 22 16.8	18 26 8.0	18 31 59.1	—
17.5	19.8	10.2	32 4.5	—
19.2	23.3	13.0	9.6	—
21.0	27.0	15.9	15.1	—
23.0	30.0	18.3	20.2	—
26.2	36.7	23.7	30.9	—
28.1	39.9	26.2	36.0	—
30.0	43.2	28.8	41.7	—
31.6	46.7	31.4	46.8	18 37 40.3
33.4	49.9	34.0	52.0	43.4
35.4	52.9	37.0	57.1	46.9
37.0	—	39.4	33 2.4	50.4
40.4	23 2.6	44.5	13.5	57.2
42.1	6.1	47.0	18.4	38 0.5
44.0	9.3	50.1	23.9	4.0
45.7	12.7	52.5	29.1	7.4
47.6	15.9	54.5	34.8	11.0
7557.8	16) 737.8 45.800	40.114 17) 504.5		9) 501.678 55.678
18 16 31.635	18 22 46.414	18 26 31.442		18 37 40.857

31 Cast

6.0 { 14 58
67 55

V. Bootis W.	Gr. 2001	W. Gr. 2029	W. 21 Canis M.	E. Polaris E.
18 42 18.7	18 48 59.8	18 58 4.1	19 4 3.0	19 9 7.2
20.3	49 4.0	8.0	8.0	10 0.9
22.0	8.0	12.4	12.5	55.5
23.7	12.9	16.1	17.0	11 50.9
25.4	17.0	20.0	21.6	12 42.1
29.0	25.5	28.1	31.0	14 33.5
30.4	30.0	32.4	35.5	15 27.5
32.2	34.0	36.1	40.3	16 20.9
—	38.2	40.4	45.2	—
35.7	42.3	44.5	49.8	—
37.4	46.7	48.7	54.2	—
39.1	51.2	52.7	58.8	—
42.4	50 0.0	59 0.2	58.0	—
44.0	4.0	4.5	12.8	—
45.6	8.4	8.7	17.6	—
47.8	13.0	12.7	22.1	—
49.5	17.1	17.1	27.1	—
16) 545.2	652.1		764.5	
18 42 33.950	18 49 38.356		19 4 44.971	19 17 16.96 19 17 15.60

July 14, 1884.

~~F 384~~ Cast

15 17 } 5.7 63 21 } 5.7	No. Ceph.	E.	Br. 82	E.	E. Cor. Bor.	W. t. Pegasi	E.	4 Mrs. Min.	W.	B. Kene.	W.
19 19 19.9			19 30 34.3		19 35 4.1	—		19 44 22.9		19 50 3.0	
25.9			37.5		5.8	—		29.0		4.6	
32.5			40.4		7.6	19 40 50.5		35.2		6.3	
39.1			43.1		9.1	52.1		40.8		8.0	
45.8			46.0		11.0	54.0		44.2		9.8	
58.8			51.9		14.3	57.5		59.5		13.3	
20 6.0			54.7		16.0	59.0		45 6.0		14.9	
12.3			57.6		17.6	41 0.5		11.8		16.6	
18.6			31 0.5		19.2	2.6		17.5		18.3	
25.0			3.4		21.0	4.2		23.7		19.8	
32.1			6.2		22.6	6.0		29.8		21.8	
38.8			9.1		24.3	7.8	1.4167	36.1		23.4	
51.4			14.4		27.9	10.6		47.8		27.0	
58.0			17.6		29.4	12.5		54.1		28.6	
21 5.2			20.4		31.2	14.2		46 0.4		30.3	
11.6			23.5		33.0	16.0		6.3		32.1	
18.4			26.4		34.4	17.8		12.7		33.8	
319.4			7.3		17) 328.5	15) 65.3 4.353	1920	17300.8		311.6	

19 20 18.788	19 31 0.429	19 35 19.324	17 41 2.423	19 45 17.694	19 50 18.329
--------------	-------------	--------------	-------------	--------------	--------------

~~15 20 } 6.0~~
~~64 10 } 6.0~~

~~32~~ Cast

γ Cassiope	E.	2 L. M. Min.	W.	43 Carr.	E.
19 56 56.8		20 9 9.2		20 13 4.7	
57 0.3		12.6		8.3	
3.4		15.6		11.7	
6.9		19.0		15.1	
10.0		22.0		18.1	
16.6		28.3		25.0	
20.0		31.6		28.0	
23.3		34.9		31.7	
26.5		38.1		34.9	
30.0		41.0		38.1	
33.2		44.1		41.5	
36.8		47.6		44.9	
43.0		53.7		51.0	
46.6		56.8		54.5	
50.0		10 0.0		58.1	
53.4		3.2		14 1.1	
57.0		6.3		4.7	
				591.4	

20 13 34.788
✓

$\bar{c} = 1.2436 \dots .09468$ July 15, 1884.

44

~~Cass~~
 $\begin{matrix} 15 & 21 \\ 43 & - \\ \hline & 54 & 18 \end{matrix}$

Polaris	E.	B. 82	E.	E. Cor. 200.	N. v. Regani	E.	4. U. Min.	N.
—		19 30 36.7		19 35 2.6	—		19 44 17.3	
—		40.0		4.1	—		23.1	
—		42.0		6.0	—		29.4	
—		44.6		7.5	—		35.5	
—		48.0		9.1	19 40 55.0		41.5	
—		53.9		12.6	58.4		53.9	
—		56.2		14.2	41 0.0		59.8	
—		59.7		16.0	1.9		45.5	
—		31 2.7		17.6	3.5		11.7	
—		5.2		19.2	5.1		18.0	
—		8.0		21.0	6.9		23.4	
—		11.0		22.5	8.5		30.1	
19 23 21.9		16.7		26.0	—		41.9	
23 16.4		19.4		27.6	13.8		47.8	
24 11.0		22.2		29.4	15.3		54.2	
25 3.0		25.3		31.1	17.2		46 0.9	
58.7		28.2		32.7	19.0		6.4	

~~Cass~~
 $\begin{matrix} 17 & 31 \\ 50 & - \\ \hline & 57 & 23 \end{matrix}$

β . Herc.	N.	β . Cass.	E.	43 Cass.	E.	β . U. Min.	N.	50 Cass.	E.
19 50 1.3		—		—		20 19 48.4		—	
2.9		—		20 13 11.4		53.1		20 24 29.5	
4.6		—		14.6		58.2		33.7	
6.2		19 57 10.2		18.0		20 2.9		—	
8.1		13.1		21.1		7.5		—	
11.6		19.6		28.0		16.7		49.9	
13.1		22.9		31.6		21.4		53.7	
14.9		26.2		34.8		26.1		57.9	
16.6		29.8		37.9		30.8		25 2.0	
—		32.9		41.1		35.4		5.9	
—		36.2		44.6		40.4		9.6	
—		39.6		48.0		45.4		14.0	
25.0		46.2		54.4		54.6		22.0	
26.8		49.4		57.6		59.2		26.0	
28.5		53.0		14 0.9		21 4.1		30.2	
30.2		56.1		4.4		8.5		34.2	
32.0		59.6		7.4		13.7		38.2	
45 221.8				16 35.8					
15.843				39.738					
19 50 16.572				20 13 37.871					

July 15, 1884.
~~W~~ Cass.

~~18 40 } 5.0
 67 18 }~~

6. Dec. Min. W.	E. Cass.	E.	72. Oph.	W. Anonymous W.	8. Dec. Min. W.
29 19.9	20 33 59.8		20 37 21.0		20 45 18.7
23.5	34 2.7		23.1		23.0
26.7	5.5		25.1		26.9
30.1	8.2		27.1		31.0
33.3	11.3		29.1		35.3
40.1	16.8		33.0		43.5
43.3	19.5		35.0		47.5
46.7	22.5		37.0		51.7
50.2	—		39.1		—
53.1	—		41.0		—
56.7	—		43.0		46 4.1
59.8	—		44.9		5.0
30 6.9	—	+41 8	49.1		16.8
10.2	—	+5.125	51.1		20.7
—	—		53.0		24.8
—	—		55.0		28.8
—	—		57.0		33.0
	5) 86.2 10.788	+1.4430	57.0		
			5663.6		
	20 34 25.220		20 37 39.035		

Not read.

~~18 51 } 5.0
 59 24 }~~

~~S~~ Cass

July 20, 1884.

38 Cass.

$$\begin{array}{r} 19.51 \\ 6.0 \{ 69.26 \end{array}$$

δ Aquilae	E.	π Cephe.	E.	4 γ Dra.	W.	K Draco	W.	1 Pegasi	E.
—		17 29 35.0		17 41 52.8		17 49 26.0		—	
—		40.1		58.6		29.7		—	
—		44.6		42.50		33.4		—	
—		49.5		11.2		37.5		—	
17 18 5.8		54.2		17.3		41.0		—	
10.9		30 3.8		30.0		48.3		—	
13.2		8.2		36.0		52.2		—	
15.7		13.3		42.1		56.0		—	
18.2		18.3		48.0		50 0.0		—	
20.6		23.2		54.2		4.0		17 55 57.1	
23.2		27.8		43 0.8		7.4		59.1	
25.9		32.3		6.8		11.0		56 0.8	
31.0		41.4		18.8		18.6		4.0	
33.5		46.8		25.0		22.4		6.0	
36.0		51.5		31.1		26.0		7.7	
38.2		56.4		37.0		29.8		9.4	
41.0		31 0.9		43.5		33.7		11.0	
13 313.2		17 30 5.6		17 41 8.2		17 49 17.2		13 35.1	
24.592		18.094		48.130				4.388	
17 18 18.311		17 30 18.094		17 42 48.130		17 49 59.821		17 55 55.534	

92 Cass

$$\begin{array}{r} 19.56 \\ 6.0 \{ 65.16 \end{array}$$

16 Pegasi	E.	41 γ Cephe	E.	69 γ Usc. Maj	W.	ψ Bootis	W.	En. 2001	W.
—		—		18 26 2.0		—		18 48 50.7	
—		—		4.6		18 42 15.8		55.1	
—		18 22 27.0		7.5		17.5		59.5	
—		—		9.9		19.3		49 4.1	
—		33.8		12.7		21.0		8.1	
18 6 34.5		40.1		18.0		24.2		16.5	
36.1		43.7		20.1		26.0		20.8	
37.8		46.9		23.0		27.5		25.2	
39.5		50.0		25.5		29.4		29.2	
41.1		53.3		28.0		31.1		33.5	
43.0		56.5		30.8		32.8		38.0	
44.7		59.7		33.5		34.2		42.0	
48.0		23 6.2		38.8		38.0		50.6	
49.6		9.6		41.2		39.5		55.1	
51.5		12.7		44.1		41.1		59.3	
53.0		16.0		46.5		42.8		50 3.7	
55.0		19.1		49.0		44.5		8.1	
13 533.8		17 41 5.6		17 45 2.2		17 45 7.7		17 49 5.5	
44.483		55.329		25.600		30.294		29.382	
18 6 39.591		18 22 52.829		18 26 25.600		18 42 29.347		18 49 29.382	

49

July 20, 1884.
X Cass

~~20 53~~
~~58 24~~ } 5.7

20 Cass.	E. Polaris	E. 44 K. Ceph	E. Br. 82	E. & Cor. 120.	W. & Regasi	E.
19 4 9.1	I. 19 10 31.0	—	19 30 37.5	19 34 59.9	19 40 48.1	
14.2	2 11 25.2	—	40.3	35 1.5	49.8	
18.6	3 12 21.6	—	43.4	3.2	51.3	
23.7		—	46.3	4.8	53.0	
27.9		—	49.1	6.8	54.6	
37.9	II. 17 41.0	—	55.1	10.0	58.1	
42.0		—	58.0	11.5	41 0.0	
46.7		—	31 0.5	13.2	1.5	
51.2		—	36	15.0	3.0	
56.3		19 20 35.0	6.7	16.6	5.0	
5 0.7		41.7	9.3	18.2	6.6	
5.6	I. 19 18 40.2	48.0	12.4	20.0	8.3	
	2 40.0					
14.4	3 41.5	21 0.8	18.0	23.3	11.8	
19.3		8.0	21.0	25.0	13.4	
23.8		14.3	23.7	26.9	15.0	
28.7		21.0	26.4	28.5	16.8	
33.8		27.7	29.4	30.0	18.5	
(7) 57.9		8) 16.5	17) 60.7	7) 254.4	17) 54.8	
51.406		2862	2386	14.965	3.224	

19 4 51.406	19 18 40.53	19 20 28.70	19 31 3.570	19 35 14.965	19 41 3.224
21 27.7					
72 13.3					
6.0					
4 Uro. Min.	W. B. Herc.	W. 4 Cass.	E. 26 Uro. Min	W. 43 Cass.	E. 3 Uro. Min
19 44 10.2	19 49 58.6	19 57 0.8	—	20 13 9.1	20 19 43.8
16.7	50 0.2	4.0	—	12.4	48.7
22.4	2.0	7.5	—	15.9	53.5
28.5	3.7	11.0	—	19.1	58.3
34.9	5.3	14.0	—	22.7	20 3.0
46.4	8.8	20.9	—	29.2	12.3
52.9	10.5	24.2	—	32.4	16.9
59.0	12.1	27.4	—	35.9	21.7
45 5.0	14.0	30.6	—	39.1	26.5
10.7	15.5	34.0	—	42.3	31.0
17.0	17.2	37.4	209 36.9	45.8	35.9
23.2	19.0	40.9	40.0	49.0	40.5
35.2	22.2	47.5	46.5	55.5	50.0
41.1	24.1	50.7	49.6	58.9	54.5
47.0	25.7	54.0	52.7	14 2.1	59.6
53.4	27.5	57.3	56.1	5.4	21 4.2
59.8	29.1	58 0.5	59.3	8.9	9.1
17) 83.4	17) 235.5	7) 522.7	7) 341.1	18.172 17) 663.7	7) 449.5
	1		48.730	39.041	
19 45 4.906	19 50 13.853	19 57 30.747	20 9 30.552	20 13 39.041	20 20 26.441

July 25, 1884

48

~~10 H Cass~~~~6.0 56 57 9~~

α Pegasi E 47m Min. W α Pegasi E α Herc pro W 43 Cass E

10 44 18.8	19	20 7 -	20
240		14.5	
303		16.4	
382		18.1	
426		20.2	
10 46 54.4	19 56 11.0	23.7	20 13 -
560	45 1.0	25.4	25.9
576	6.8	27.1	30.
594	12.7	29.1	-
41 12	18.8	31.0	36.4
28	25.0	32.6	-
45	31.1	34.5	42.8
10 47			
7.9	43.1	38.1	49.1
9.4	49.1	40.0	52.5
11.3	55.9	41.8	56.0
12.9	46 1.4 -0.700	43.6	59.3
14.8	7.3	45.4	14 2.8
(12) 52.2	16) 959.9	16) 481.5	4) 414.8
4.350	16.244	30.094	46.089
19 40 59.409	19 45 12.825	19 56 16.389	20 7 29.074
V	43		20 13 32.891

~~43 Cass~~~~6.0 56 57 14~~

β Min Min. W 50 Cass E μ Herc W γ Androm E

20 19 4.4	20 24 19.6	21 25 52.9	21 30 46.3
54.1	23.2	54.3	48.0
58.6	27.4	58.0	49.8
20 2.4	31.6	57.9	51.7
8.0	35.6	59.4	53.4
17.9	43.6	26 2.9	57.1
22.7	47.9	4.6	58.7
26.8	51.9	6.1	31 0.7
31.5	56.0	8.0	2.6
36.4	59.9	9.4	4.4
41.4	25 4.3	11.0	6.1
46.0	8.0	12.9	8.0
55.4	16.1	16.5	11.5
21 0.2	20.0	18.0	13.4
5.0	24.4	19.5	15.5
9.8	28.4	21.3	17.2
14.6	32.4	22.8	19.0
17) 541.2	9950.3	123.5	17) 43.4
20 20 31.837	20 24 55.900	21 26 7.853	21 31 2.553

July 26. 1884
42 Cass

~~22 39~~
~~69 48~~ } 6.0

✓ Bootie W Gr 2001 W 43 H Cph E

18 42 -

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21.5

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(13) 43.8.1

33.700

18 42 29.917

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E Cor Bar W

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19 40 43.7

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19 35 23.8

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27.060

19 35 15.279

W 2 Reg

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21.25 3

27.060

19 35 15.279

W 2 Reg

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19 35 15.279

W 2 Reg

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W 2 Reg

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12.7

14.6

19 35 23.8

25.4

27.0

28.7

30.4

21.25 3

27.060

19 35 15.279

W 2 Reg

19 40 43.7

45.7

E Cass

~~25 44~~
~~32 53~~

43 Cass	E	β Wm Wm	W	SD Cass	E
20 13 16		20 20 19.5		20 24 19.8	
—		25.8		23.4	
—		31.0		—	
—		36.1		—	
16.6		40.2		—	
—		20 20 —		43.7	
26.3		21.5		—	
29.4		25.8		—	
32.6		31.0		—	
35.9		36.1		59.9	
39.5		40.2		25 3.7	
42.6		45.0		—	
49.3	$-\frac{32}{12}$	54.5	$-\frac{32}{11} = -3.455$	24.4	$-\frac{7}{8}$
52.6	-2.750	59.5		28.0	-0.8750
55.8		21 3.9		24.4	
59.8	-3.420	8.8	-4.207	28.0	-1.0882
14 2.6		13.6		32.3	
12) 503.0		14) 119.9		3) 47.52	
41.917	-9.073	47.264	-16.2	59.400	-2.533
20 13 32.544		20 20 30.912		20 24 55.867	

W Cass

~~55.0~~ ~~5~~ ~~25~~ ~~54~~
~~2~~ ~~67~~ ~~54~~

July 30 1884.
F339 Cass

oph.	W.	E. Cor. Bor.	W.	U. Pegasi	E.	4 Ure. Min.	W.	B. Herc.	W.	L. Pegasi	E.
19 27 41.4	19 35 0.1	—	19 44 20.8	19 49 59.0	19 55 54.3	—	—	—	—	—	—
43.1	17	—	26.3	50 0.7	59.0	—	—	—	—	—	—
44.9	3.4	—	32.5	2.2	56 08	—	—	—	—	—	—
47.0	5.1	—	38.3	4.0	2.6	—	—	—	—	—	—
48.9	7.0	19 40 47.6	44.5	5.9	4.5	—	—	—	—	—	—
53.0	10.3	51.2	57.0	9.0	8.0	—	—	—	—	—	—
54.8	12.0	53.0	45 2.7	10.9	9.9	—	—	—	—	—	—
56.8	13.6	54.7	8.9	12.6	11.8	—	—	—	—	—	—
58.7	15.2	56.3	14.9	14.1	13.4	—	—	—	—	—	—
28 0.8	17.0	58.0	21.0	16.0	15.3	—	—	—	—	—	—
3.0	18.7	59.7	26.6	17.7	17.2	—	—	—	—	—	—
5.0	20.5	41 15	33.4	19.4	19.1	—	—	—	—	—	—
9.0	23.8	4.9	45.4	23.0	22.9	—	—	—	—	—	—
11.0	25.5	6.5	51.4	24.7	24.6	—	—	—	—	—	—
13.0	27.0	8.1	57.5	26.3	—	—	—	—	—	—	—
15.0	28.9	9.7	46 3.2	28.0	—	—	—	—	—	—	—
17.0	30.7	11.7	9.5	29.9	—	—	—	—	—	—	—
17 1000.4	17 260.5	13 2.9	17 253.9	17 243.4	17 146.4	—	—	—	—	—	—
19 27 58.847	19 35 15.324	19 40 58.312	19 45 14.935	19 50 14.318	19 58 13.560	—	—	—	—	—	—
27 14 } 4.7						—	—	—	—	—	—
70 28 }						—	—	—	—	—	—

A Cass

L. Hercules	W.	43 Gars.	E.	B. Ure. Min.	W.	50 Gars.	E.	176 Ure. Min.	W.	E. Cass.	E.
20 7 12.4	20 12 59.0	20 19 50.6	20 24 14.7	20 29 20.4	20 33 51.2	—	—	—	—	—	—
—	13 2.5	55.6	18.8	23.6	54.0	—	—	—	—	—	—
15.8	5.7	20 0.3	22.7	26.6	57.0	—	—	—	—	—	—
17.6	9.0	4.9	27.0	30.5	59.9	—	—	—	—	—	—
19.5	12.2	10.0	31.0	33.4	34 2.8	—	—	—	—	—	—
23.0	18.9	19.0	39.0	40.3	8.4	—	—	—	—	—	—
24.9	22.3	23.9	43.2	43.5	11.1	—	—	—	—	—	—
26.8	25.5	28.4	47.0	47.1	14.1	—	—	—	—	—	—
28.5	29.0	33.2	51.2	50.3	17.0	—	—	—	—	—	—
30.3	32.1	38.0	55.1	53.6	19.8	—	—	—	—	—	—
32.1	35.6	42.7	59.1	57.0	22.8	—	—	—	—	—	—
34.0	38.8	47.4	25 3.2	30 0.6	25.2	—	—	—	—	—	—
37.9	45.7	57.0	11.3	7.1	30.9	—	—	—	—	—	—
39.5	48.7	21 0.5	15.8	—	33.8	—	—	—	—	—	—
41.3	52.0	6.3	19.3	13.5	36.5	—	—	—	—	—	—
43.1	55.5	10.7	23.6	16.8	39.5	—	—	—	—	—	—
45.0	59.0	15.9	27.6	20.5	42.4	—	—	—	—	—	—
10 471.7	17 491.5	17 564.7	17 869.6	16 784.8	17 286.4	—	—	—	—	—	—
29.481				49.050		—	—	—	—	—	—
20 7 28.57	20 13 28.912	20 20 33.200	20 24 51.153	20 29 50.294	20 34 16.847	—	—	—	—	—	—

July 30, 1884
by ~~Cass~~

Belong at by. of
series

52

Yllis. Min W.	β Androm. E.	47 H. Ceph. E.	43 B. Ceph. E.	Polaris E.
20 45 19.9	20 54 11.1	—	—	19 8 30.7
—	13.0	—	—	9 29.8
28.0	14.7	—	—	10 24.0
32.3	16.6	—	18 57 19.3	11 18.2
36.5	18.2	—	36.0	12 9.1
44.9	21.8	21 8 25.9	52 7.6	—
48.6	23.4	32.0	25.3	14 54.0
53.0	25.0	38.5	41.3	15 47.5
57.1	26.8	45.3	57.3	16 42.9
46 1.0	28.5	52.5	59 13.8	17 36.6
5.1	30.4	58.5	30.3	18 32.2
9.5	32.0	9 5.0	47.0	19 25.1
17.5	35.6	—	19 0 19.6	21 12.8
22.0	37.1	—	35.8	22 11.8
26.0	38.8	—	—	23 4.0
30.2	40.6	—	—	57.8
34.2	42.5	—	—	24 49.0
16) 945.8	17) 456.1	7) 317.7	11) 633.3	—
59.112	—	—	—	—
20 45 57.052	20 54 26.830	21 8 45.386	18 58 57.573	19 16 42.45

50 ~~Cass~~
Polaris (E) bright done

10 L	2 L	6 R
I 1	—	19 8 30.7
2	19 9 29.8	—
3	10 24.0	—
4	11 18.2	—
5	—	12 9.1
II 1	19 10 24.0	19 10 19.9
2	19 14 54.0	—
3	15 47.5	—
4	16 42.9	—
5	17 36.6	—
6	18 32.2	—
7	(19 25.1)	—
III 1	19 16 42.60	—
2	—	—
3	19 22 11.8	19 22 11.8
4	23 4.0	23 4.0
5	23 57.8	23 57.8
6	—	—
7	24 49.0	—
IV 1	19 23 0.90	19 23 4.40
2	—	—
3	19 16 42.45	19 16 42.60
4	—	19 16 42.15
5	—	—

19 16 42.45

1884 Aug 1

~~49 Cass~~

α Serpentis	N.	16 Pegasi	E.	β Urs. Maj	N.	10 Lacertae	E.	41 K. Ceph.	E.	69 K. Urs. Maj	N.
17 59 35.3		18 6 17.0		18 10 54.1		18 16 9.5		18 22 10.4		—	
37.3		18.5		56.7		11.1		13.8		—	
39.4		20.4		58.7		13.0		17.0		18 26 8.0	
41.4		22.1		11 1.0		14.7		20.5		10.7	
43.0		23.9		3.2		16.7		23.9		13.3	
45.9		27.1		8.1		20.0		30.4		18.9	
48.0		29.0		11.1		21.8		33.6		21.0	
50.0		30.5		12.4		23.5		37.0		23.8	
52.2		32.2		14.9		25.3		40.0		26.5	
54.5		34.0		17.2		27.1		43.3		29.0	
56.5		35.6		19.4		28.9		46.5		31.3	
58.7		37.3		21.7		30.5		49.9		34.0	
18 0 3.0	-0.700	40.8		26.2		34.0		56.2		39.4	-1.410
5.0		42.3		28.5		36.0		59.6		42.0	
7.1		44.0		31.0		37.9		23 2.8		44.6	
9.5		45.6		33.2		39.7		6.2		47.2	
11.6		47.2		35.5		41.3		9.3		50.0	
16 55.4	-1.204	17 54.75		17 52.19		17 43.1		17 60.4		17 43.7	-2.452
53.463										29.313	
16 59 52.23		18 6 32.206		18 11 14.877		18 16 25.353		18 22 40.024		18 26 26.361	
27 45											
64 7	6.0										

52 Cass

α Androm.	E.	λ Aquilae	E.	β Serp.	N.	En. 2001	N.	21 Cass.	E.	Polaris	E.
18 30 41.6		—		18 43 45.2		18 48 54.8		19 3 57.2		19 8 51.6	
43.3		—		47.0		58.7		4 1.5		9 45.3	
45.1		—		48.7		49 3.3		6.4		10 39.2	
47.0		—		50.5		8.0		11.2		11 33.9	
49.0		—		52.3		12.0		16.0		12 29.4	
52.5		—		56.0		20.8		25.0		—	
54.0		18 38 38.8	39 9.1	57.8		24.9		29.5		—	
56.0		54.0	9.1	59.4		29.3		34.7		—	
57.8		39 8.5	8.5	44 1.1		33.5		39.0		—	
59.6		23.6	8.1	3.0		37.9		44.0		—	
31 1.4		38.8	7.7	4.9		42.0		48.6		—	
13.2		54.8	7.8	6.7		46.4		53.1		—	
7.0		—	7.8	10.2		55.1		5 2.3		—	
9.0		—	45.12	12.0		59.6		7.0		—	
10.8		—	30.22	13.8		50 3.7		11.5		—	
12.5		—	15.25	15.6		8.1		16.2		—	
14.4		—	0.	17.3		12.2		20.9		—	
17 58.2		—	15.46	17 21.5		570.3		17 664.1		—	
18 30 57.894		18 39 8.40	—	18 44 1.265		18 49 33.547		19 4 39.065		19 18 35.88	
										20 20.	
										19 17 0.08	

Aug 1, 1884.

~~53~~ Cass
$$\begin{array}{r} 27 \ 49 \\ 60 \} 63 \ 37 \end{array}$$

α Aquilae	M. Polaris	E.	E. Cor. Bor.	M. & Regasi	E.	β Oph.	M.
—	—	—	—	19 40 41.2	—	—	—
—	—	—	—	43.0	—	19 45 57.2	—
—	—	—	19 35 2.2	44.5	—	59.5	—
—	—	—	4.0	46.2	—	46 1.9	—
—	—	—	5.8	48.0	—	4.2	—
19 15 51.3	16 38.3	—	9.1	51.0	—	9.0	—
16 7.8	38.9	—	10.7	52.9	—	11.0	—
23.0	38.5	—	12.4	54.5	—	13.6	—
38.2	38.2	—	14.2	56.5	—	15.5	—
53.6	38.4	—	15.7	58.2	—	18.0	—
17 9.5	39.2	—	17.5	59.8	—	20.2	—
23.3	38.1	—	19.1	41 1.3	—	22.6	—
	5.6	—			—		—
Rise							
Set							
Aug 23							
+	4 40.2						
—	4 31.3						
—	4 15.43						
	4.25						
	30.29						
	45.12						
19 16 38.51	19 21 37.6		22.6	4.8		27.3	
	22 32.6		24.4	6.5		29.5	
	23 27.3		26.0	8.3		32.0	
	24 23.5		27.5	10.0		—	
	25 14.1		29.4	11.5		—	
	47 15.1		15 240.6	19 48 58.2		14 201.5	
	23 27.02		14 35 16.040	19 48 58.2		14 393	
	6 20.20						
	19 17 6.82		19 35 14.132	19 40 56.365		19 48 15.713	

~~55~~ Cass
$$\begin{array}{r} 27 \ 49 \\ 14 \} 2107 \end{array}$$

+ 1320

$$\begin{array}{r} 30 \ 30 \\ 60 \} 65 \ 46 \end{array}$$

67 oph. M.

18 51 57.5
59.8
52 2.3
5.1

Aug 20. 1884

~~Cass~~

1 Can	E	Polans	E	E Can	E	1 Reg	E	4 Min	W	13 Here	W	E
19 36 54.8		—		19 34 55.3		19 40 37.7		19 44 12.6		19 49 54.3		20
58.5		19 10 1.7		58.9		39.3		18.8		58.1		
4 4.2		10 53.0		58.6		41.1		24.9		58.0		
8.8		11 48.3		35 0.3		42.9		31.1		59.5		
13.4		12 42.9		1.9		44.5		37.0		50 1.2		
22.8		14 31.1		5.2		47.7		49.1		4.4		
27.3		15 24.7		6.9		49.6		55.4		6.3		
31.9		16 20.0		8.6		51.3		45 1.3		8.0		
36.7		17 14.7		10.3		53.0		7.5		9.7		
41.4		18 7.7		11.9		54.7		13.5		11.5		
46.1		19 3.2		13.7		56.4		19.8		13.1		
50.6		19 5.9		15.5		58.0		25.5		14.8		
5 0.1		21 47.0		18.8		41 1.4		37.7		18.2		
4.5		22 40.2		20.6		3.1		43.9		20.0		
9.5		23 35.4		22.2		4.8		49.8		21.7		
14.1		24 28.2		23.9		6.6		55.8		23.3		
18.4		—		25.6		8.3		46 2.0		25.1		
17) 624.1		108 36.0		17) 176.2		17) 900.5		17) 125.7		17) 165.2		17

19 4 36.712	19 17 14.40	19 35 10.365	19 40 52.971	19 45 7.394	19 50 9.718	20 3
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~~36 H Cass~~

2 Vega	E	2 Here	W	43 Can	E	13 Min	W	50 Can	E	1 H Min	W
19 58 53.7		20 7 7.6		20 12 56.7		20 19 44.0		20 24 13.6		20 29 13.8	
55.8		9.8		13 0.3		48.9		17.6		17.0	
57.0		11.3		35		53.3		21.6		20.8	
58.8		13.2		6.9		58.0		25.8		24.0	
56 0.8		15.0		10.2		20 2.8		29.6		27.3	
4.4		18.5		17.0		12.3		37.8		33.8	
6.2		20.4		20.2		17.0		41.8		36.9	
8.1		22.2		23.7		22.6		45.7		40.4	
9.9		24.0		26.7		26.6		50.0		44.0	
11.8		25.9		30.2		31.0		53.8		47.3	
13.6		27.6		33.6		35.8		57.9		50.5	
15.4		29.5		36.8		40.9		25 2.1		53.8	
18.9		33.1		43.4		50.2		10.2		30 0.8	
20.7		34.9		46.7		54.9		14.0		4.1	
22.6		36.7		49.9		58.9		18.2		7.3	
24.4		38.7		53.3		24 4.4		22.4		10.8	
26.1		40.4		56.6		9.5		26.4		14.2	
17) 167.7		17) 408.3		17) 455.7		17) 452.1		17) 548.5		17) 446.8	

19 56 9.865	20 7 24.018	20 13 26.806	20 20 26.595	20 24 49.912	20 29 43.930	
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~~37 H Cass~~43 41
47 73 47

ϵ Cass	ϵ	γ mm	η	β Androm	ϵ	47 HCN	ϵ
20 38 48.8		20 45 12.8		20 54 8.0		21 7 46.5	
51.9		174		9.7		53.0	
54.7		210		11.6		59.9	
57.3		25.9		13.3		8 5.4	
34 0.2		300		15.0		12.9	
6.0		38.1		18.5		25.9	
8.9		42.1		20.3		32.7	
11.4		46.3		21.8		38.6	
14.5		50.3		23.4		45.4	
17.2		54.5		25.3		51.6	
20.0		58.6		27.0		58.3	
22.9		46 2.8		28.9		9 5.0	
28.6		11.1		32.3		18.1	
31.3		15.1		34.1		24.7	
34.2		19.4		35.7		31.3	
37.0		23.6		37.6		38.1	
38.8		27.8		39.4		44.7	
17) 244.8		17) 856.8		17) 461.9		17) 772.9	

20 34 14.403	20 45 50.400	20 54 23.644	21 8 45.462
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Aug 23. 1884

Cars	E	Polaris	E	? Aquila	W	Polaris	E	E Car	W	Regulus	E
19 4 —		19 9 0.8						19 34 55.4		19 40 37.5	
—		9 54.1						57.0		39.1	
4.0		10 51.0						58.8		40.9	
8.8		11 46.0						35 0.5		42.6	
—		12 40.2						2.0		44.2	

19 15 50.9 18 37.9
 16 6.9 38.0
 23 2 38.7
 38.0 38.0
 52.8 37.6
 17 7.8 37.5
 20.2 38.1

18 21 44.0
 22 38.4
 23 35.1
 24 29.1
 25 25.8
 15 52.4
 23 34.48
 6 20.64

5.4
 7.0
 8.8
 10.5
 12.1
 13.8
 15.5

41 1.1
 2.8
 4.8
 6.3
 8.0

50.1
 4.3
 9.0
 13.8
 18.3

503.9
 45.809

24 2.570
 24 6.72

12.1
 10 50.42
 6 20.64

19 4 36.59	19 17 11.06	19 16 37.97	19 17 13.84	19 35 10.488	19 40 52.735
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4 Un Min	W	2 Regulus	E	2 Hor.	W	43 Cars	E	13 Un Min.	W	50 Cars	E
19 44 13.6		19 55 53.2		20 7 —		20 12 56.8		20 19 43.7		20 24 13.2	
18.9		55.1		—		13 0.1.		48.8		17.1	
25.1		56.8		11.3		7.3		55.3		21.0	
31.1		58.8		13.1		6.4		58.0		25.1	
36.7		58.0.7		15.0		10.0		20 3.0		29.3	
49.7		4.3		18.7		16.9		12.6		37.5	
55.2		6.0		20.4		19.8		17.0		41.5	
45 1.0		7.8.		22.2		23.5		21.7		45.6	
7.2		9.7.		24.0		26.9.		26.6		49.7	
13.2		11.5		25.7		28.8		31.3		53.5	
19.2		13.2		27.7		33.0		35.9		57.5	
25.7		15.2		29.4		36.4		40.9		25 1.6	
3.6		18.9		33.2		43.1		50.2		8.9	
44.0		20.7		35.0		46.4		55.0		13.7	
49.7		22.6		36.7		49.6		59.5		17.8	
55.9		24.2.		38.7		53.1		21 4.1		21.9	
46 1.4		26.0		40.5		56.3		8.9		26.1	
17) 125.2		17) 164.7		15) 391.6		15) 450.2		12) 450.5		17) 842.0	
				26.107		-2.040					

19 45 7.365	19 56 9.688	20.7 24.067	20 13 26.482	20 20 26.500	20 24 49.530
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Aug 23 cont

v8

1 H Min rem per	W	E Can	E	γ Dra Min	W	β Androm	E	47 1-1002	E
20 29 -		20 34 44		20 45 -		20 54 8.1		21 7 46.3	
17.3		11.4		-		9.6		52.8	
20.4		17.1		-		11.4		59.3	
23.9		19.6		25.6		13.1		8 5.8	
27.8		22.9		29.9		14.8		12.4	
34.6		27.1		38.5		18.4		26.0	
37.8		29.1		42.3		20.0		32.3	
41.1		34 14.5		46.3		21.7		39.0	
44.1		14.4		50.4		23.4		45.3	
47.3		17.1		54.7		25.1		51.7	
51.2		19.9		58.7		27.0		58.4	
54.3		22.8		46 2.8	2.1322	28.6		9 4.6	
30 14	0.7000	28.4	40-4.00	11.3		32.0		17.6	
44		31.2	4.92	15.3		33.8		24.4	
7.3		34.2		19.5		35.7		30.6	
11.0		36.9		23.5		37.3		37.5	
14.1		39.8		27.7		39.0		44.0	
16) 708.0	1.882	16) 256.2	11.263	14) 806.5	7.1065	17) 399.0		17) 768.0	
46.125		25.620		57.607					
20 29 44.243		20 34 14.357		20 45 50.542		20 54 23.471		21 8 45.176	

5 Aquila	W	π Hae	W	γ Dra	W	γ Androm	E	19 Dra Min	W	θ Pegasi	E
21 16 -		21 20 56		21 26 41.6		21 30 39.8		21 45 39.4		21 54 44	
-		7.1		44.4		41.8		44.4		7.5	
24.0		8.9		47.1		43.5		49.2		19.2	
26.6		10.8		49.8		45.4		55.0		11.2	
29.3		12.7		52.3		47.3		46 0.4		13.6	
34.0		16.1		58.0		50.9		10.5		17.3	
36.7		17.7		27 0.5		52.8		15.7		19.6	
39.3		19.4		3.3		54.5		21.1		21.6	
41.6		21.3		6.0		56.3		26.4		23.4	
44.1		23.0		8.7		58.0		31.4		-	
46.6		24.8		11.6		59.9		36.8		-	
49.1		26.5		14.3		31 51.8		42.4		-	
-		30.1		19.9		5.5		52.6		33.6	
51		31.7		22.4		7.1		57.8		35.4	
59.2		33.6		25.0		9.1		47 3.0		37.7	
-		35.3		28.0		11.0		8.3		39.9	
-		37.1		30.5		12.8		13.6		41.8	
12) 487.6	1.244	17) 261.7		17) 102.5		17) 957.5		17) 448.0		13) 311.8	
40.633										23.985	
21 16 41.677		21 20 21.276		21 27 6.088		21 30 56.324		21 46 26.352		21 54 23.522	

Aug. 24, 1884.

4th. Min. W.	W.	β Herc.	W.	α Pegasi	E.	α Herc.	W.	43 Cass.	E.	β Urs. Min. W.
—		19 49 53.7		19 55 53.8		20 7 7.0		20 12 57.1		20 19 42.2
—		53.5		55.7		9.0		13 0.5		47.0
—		57.2		57.2		10.7		3.9		52.1
19 44 29.3		59.0		59.1		12.5		7.1		56.5
35.3		50 0.5		56 1.0		14.5		10.6		20 1.3
47.0		4.0		4.8		18.0		17.1		10.7
53.5		5.5		6.7		19.8		20.4		15.5
59.7		7.3		8.0		21.6		23.7		20.1
45 5.8		9.0		10.0		23.5		27.3		25.0
11.7		10.8		11.9		25.2		30.4		29.9
17.8		12.4		13.7		27.0		33.8		34.3
24.0		14.1		15.5		28.8		37.1		39.2
36.0		17.6		19.0		32.6		43.4		48.8
42.0		19.2		21.0		34.4		46.8		53.5
48.0		21.0		22.8		36.1		50.0		58.3
54.0		22.7		24.5		38.0		53.5		21 2.8
46 0.2		24.4		26.5		39.8		56.9		7.6
14 12 4.3		17) 153.9		17) 171.2		17) 398.5		17) 459.5		17) 424.8
116.02		102.88								
19 45 55.33		19 50 9.053		19 56 10.071		20 7 23.441		20 13 27.030		20 20 32.477
50 Cass.	E.	16. Urs. Min.	W.	ε Cass.	E.	γ Urs. Min.	W.	β Androm.	E.	
20 24 14.1		20 29 12.9		20 33 49.2		20 45 11.9		20 54 8.2		
17.9		16.2		52.0		16.3		10.0		
21.9		19.6		54.8		20.1		11.7		
26.0		23.0		57.7		24.2		13.4		
30.4		26.4		34 0.5		28.7		15.2		
38.3		33.0		6.2		37.0		18.4		
42.4		36.4		9.3		41.0		20.4		
46.2		39.9		11.9		45.5		22.0		
50.5		43.0		14.6		49.3		23.6		
54.7		46.4		17.4		53.1		25.7		
58.5		49.7		20.3		57.6		27.3		
25 2.6		53.1		23.0		46 1.7		29.0		
10.8		59.9		28.8		9.7		32.5		
14.8		30 3.0		31.7		14.0		34.2		
18.7		6.3		34.4		18.2		36.0		
22.7		10.0		37.3		22.2		37.7		
26.9		13.3		40.3		26.2		39.4		
17) 57.4		17) 72.1		17) 249.4		17) 836.7		17) 404.7		
20 24 50.435		20 29 43.065		20 34 14.671		20 45 49.218		20 54 23.806		

Aug 27, 1884.

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E. cor. 2a.	W.	U. Pegasi	E.	4 Mo. Min	W.	β Herc.	W.	2 Pegasi	E.
19 34 54.5		19 40 36.6		19 44 12.1		19 49 53.6		19 55 52.6	
56.0		38.3		18.3		55.2		54.0	
57.8		39.8		24.2		57.0		55.9	
59.6		41.7		30.3		58.7		57.8	
35 1.2		43.3		36.5		50 0.2		59.8	
4.6		46.7		48.3		4.0		56 3.3	Reject. as bad.
6.3		48.4		54.3		5.5		5.3	
8.0		50.0		45 0.2		7.2		7.0	
9.7		51.8		6.2		9.0		9.0	
11.3		53.6		12.7		10.6		10.8	
13.0		55.3		18.0		12.5		12.6	
14.8		57.0		24.7		14.1		14.5	
								62.5	8.93
18.0		41 0.5		36.8		17.5		18.0	
19.8		2.0		42.8		19.1		20.0	
21.6		3.6		48.6		21.0		21.7	
23.1		5.3		55.1		22.7		23.5	
25.0		7.2		46 1.5		24.4		25.3	
17) 164.3		17) 887.1		17) 110.6		17) 152.3		10) 82.6	8.360
19 35 9.665		19 40 51.830		19 45 6.506		19 50 8.959		19 58 8.850	
2 Herc.	W.	43 Cass.	E.	β Mo. Min	W.	50 Cass.	E.	16 Mo. Min	W.
20 7 9.0		20 12 56.1		20 19 42.7		20 24 12.6		20 29 13.0	
10.5		59.3		47.7		16.5		16.5	
12.3		13 2.9		53.0		20.5		19.8	
14.4		6.0		57.3		24.7		23.1	
		9.3		20 1.9		28.6		26.7	
17.7		16.3		11.3		36.8		33.1	
19.6		19.3		16.8		40.8		36.4	
21.5		22.5		21.0		44.8		39.9	
23.5		25.8		25.5		48.8		43.2	
25.0		29.0		30.8		52.9		46.7	
27.0		32.6		35.0		56.7		50.1	
28.8		35.5		40.0		25 1.0		53.5	
32.4		42.3		49.6		9.2		30 0.2	
34.4		45.4		54.2		13.5		3.4	
36.0		49.0		58.7		17.4		6.7	
37.9		52.5		21 3.5		21.4		9.8	
39.6		55.5		8.6		25.7		13.5	
16) 389.6		17) 439.3		437.6		17) 831.9		17) 935.6	
24.350	1.020								
20 7 23.330		20 13 25.841		20 20 25.741		20 24 48.935		20 29 43.271	

Aug 27, 1884

γ Cass.	E.	γ Urs. Min.	W.	γ B. Cep.	E.	γ Aquilae	E.	π Herc.	W.	η Draco	W.
20 33 48.2	—	—	21 7 45.8	—	—	21 20 4.7	—	21 26 41.0	—	—	—
51.0	—	—	52.2	—	—	6.4	—	43.8	—	—	—
53.6	—	—	58.7	—	—	8.2	—	46.8	—	—	—
56.4	—	—	8 5.4	21 16 26.0	—	10.0	—	49.3	—	—	—
59.4	—	—	11.6	28.4	—	12.0	—	51.8	—	—	—
34 5.0	20 45 36.6	—	24.7	33.3	—	15.5	—	57.5	—	—	—
7.9	41.6	—	31.5	35.9	—	17.0	—	27 0.0	—	—	—
10.6	45.4	—	37.8	38.6	—	18.8	—	2.7	—	—	—
13.5	50.0	—	44.5	41.0	—	20.5	—	5.4	—	—	—
16.2	53.8	—	51.4	43.5	—	22.3	—	8.2	—	—	—
19.0	57.8	—	57.8	46.0	—	24.0	—	10.9	—	—	—
22.0	46 19	—	9 3.6	48.4	—	25.9	—	13.6	—	—	—
27.4	10.5	3628	17.0	53.5	15.5	29.5	—	19.0	—	—	—
30.5	14.4	—	23.5	56.0	10	31.0	—	21.5	—	—	—
33.4	18.8	—	30.3	58.5	—	32.6	—	24.3	—	—	—
36.0	22.5	—	36.8	17 1.2	—	34.7	—	26.9	—	—	—
39.0	27.0	—	43.8	—	—	36.5	—	29.7	—	—	—
17) 219.1	17) 20.3	—	17) 756.4	13) 57.3	—	17) 349.6	—	17) 92.4	—	—	—
	1.692	—		48.869	—		—		—	—	—
20 34 13.476	20 45 49.690-1202	—	21 8 44.494	21 16 40.978	—	21 20 10.565	—	21 27 5.435	—	—	—
γ Androm.	E.	19 Urs. Min.	W.	δ Pegasi	E.	κ Cyg	E.				
21 30 39.0	—	—	21 54 4.7	22 4 47.0	—	—	—	—	—	—	—
40.9	—	—	6.4	5 1.0	—	—	—	—	—	—	—
42.6	—	—	8.6	17.0	—	—	—	—	—	—	—
44.4	—	—	10.4	31.5	—	—	—	—	—	—	—
46.4	—	—	12.5	46.4	—	—	—	—	—	—	—
50.2	21 46 10.0	—	16.6	6 17.3	—	—	—	—	—	—	—
51.8	14.5	—	18.7	32.0	—	—	—	—	—	—	—
53.8	20.5	—	20.6	47.3	—	—	—	—	—	—	—
55.5	25.4	—	22.6	7 2.6	—	—	—	—	—	—	—
57.4	30.9	—	24.6	16.7	—	—	—	—	—	—	—
59.2	36.3	—	26.5	32.0	—	—	—	—	—	—	—
31 1.0	41.1	—	28.5	47.5	—	—	—	—	—	—	—
4.6	51.5	—	32.6	8 16.5	—	—	—	—	—	—	—
6.5	56.9	—	34.6	32.6	—	—	—	—	—	—	—
8.3	47 2.1	3628	36.6	47.0	—	—	—	—	—	—	—
10.1	7.2	—	38.5	9 1.7	—	—	—	—	—	—	—
12.0	12.7	—	40.6	17.4	—	—	—	—	—	—	—
17) 943.7	17) 489.1	—	17) 389.6	17) 33.5	—	—	—	—	—	—	—
	40.758	15.189	22.565	—	—	—	—	—	—	—	—
21 30 55.512	21 48 25.569	—	21 54 22.565	22 7 1.970	—	—	—	—	—	—	—

Sept 20, 1884.

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36 H. Cass. E.	47 H. Cass. E.	8 Aquilae W.	π Herc. W.	η Drac. W.
20 ^h 56 ^m 54.4	20 7 48.2	—	21 20 1.8	21 26 37.5
58.6	55.1	—	3.7	39.7
57 2.4	8 1.4	—	5.5	42.6
6.9	7.8	—	7.3	45.4
*	14.8	—	8.9	48.1
14.9	28.0	21 16 [31.0]	12.3	53.5
19.0	34.5	33.7	14.0	56.0
23.2	40.7	35.8	15.7	58.7
27.6	47.6	38.0	17.5	27 1.4
31.8	53.9	40.6	19.4	4.3
35.9	9 1.0	43.5	21.1	7.0
40.0	7.2	46.0	22.8	9.7
48.2	19.9	50.7	26.3	15.0
52.3	26.6	53.0	28.1	17.8
56.3	33.2	55.9	29.8	20.5
58 0.7	39.9	58.3	31.7	23.3
4.8	46.7	—	33.5	26.0
16) 477.0	17) 86.5	17) 386.0	17) 299.4	17) 26.5
24.812 23.49	47.441	48.250 -100.65	17.612	
20 57 27.48	20 8 47.44	21 16 38.185	21 20 17.612	21 27 1.559
3.325			2.013	
8 Androm. E.	8n. 2347 W.	19 Urs. Min. W.	8 Pegasi E.	8n. 750 E.
21 30 38.4	21 37 39.2	21 45 32.6	21 54 4.0	
40.2	41.7	37.6	6.0	
42.1	44.0	43.0	8.2	
43.9	46.5	48.1	10.2	
45.7	49.0	53.7	12.0	
49.5	53.6	46 3.2	16.1	
51.3	55.9	9.6	18.0	
53.0	58.3	14.3	20.0	
54.9	38 0.6	19.8	22.1	
56.7	2.9	24.6	24.2	
58.6	5.5	30.1	26.2	
31 0.6	7.8	35.6	28.0	
4.0	12.6	45.9	32.0	
6.0	15.0	51.4	34.4	
7.9	17.4	56.6	36.3	
9.6	19.6	47 1.9	38.4	
11.4	22.0	7.0	40.5	
17) 933.8	17) 11.6	17) 335.0	17) 376.6	
21 30 54.936	21 38 0.682	21 46 19.706	21 54 22.153	

Some threads, reject. star ft.

September 20, 1884.

<u>22.716</u>	E. γ Lynae	W. γ 48	E. γ Dra (aust.) W.
22 20 20.8	22 51 58.7	22 56 29.7	23 8 11.8
23.8	52 0.4	34.5	16.0
26.6	2.1	39.8	20.0
29.5	3.9	44.7	24.0
32.2	5.6	49.8	28.0
38.0	9.0	59.9	36.5
40.7	10.7	57 5.3	40.7
43.3	12.5	10.5	44.7
46.5	14.1	15.4	48.8
49.0	15.8	20.5	52.9
51.9	17.6	25.5	57.0
54.9	19.3	30.6	9 1.0
21 0.4	22.6	40.4	9.2
3.0	24.4	46.0	13.6
5.9	26.1	51.0	17.6
8.7	27.9	56.0	21.6
11.5	29.4	58 1.4	25.8
17) 286.7	17) 240.1	17) 261.0	17) 829.2
22 20 46.771	22 52 14.124	22 57 15.353	23 8 48.776
✓	✓	✓	✓

September 26, 1884.

γ Mus. Min. W.	12 Ho. Drac. W.	36 Ho. Cass. E.	ν Cass. E.	47 Ho. Cep. E.
20 45 8.0	20 51 25.1	20 56 48.2	20 59 47.4	21 7 45.7
11.9	28.0	52.4	50.7	52.3
16.4	31.0	56.7	54.0	59.0
20.6	33.8	57 0.5	57.0	8 5.5
24.6	36.3	4.6	21 0 0.3	12.2
32.9	42.0	13.1	7.1	25.1
37.1	44.8	17.2	10.1	32.0
41.3	47.7	21.4	13.3	38.5
45.4	50.1	25.7	16.5	44.8
49.4	53.2	29.7	19.5	51.3
53.6	56.0	33.7	22.7	58.0
57.6	58.9	38.0	26.0	9 5.0
46 6.0	52 4.7	—	33.0	17.5
10.0	7.2	—	36.0	24.2
14.0	10.2	—	39.2	30.6
18.0	12.9	—	42.5	37.0
22.4	15.7	—	45.8	43.7
17) 769.2	17) 857.6	12) 761.2 13,434	17) 285.1	17) 762.4
20 45 45.247	20 51 50.447	20 57 25.557	21 0 16.535	21 8 44.847
		3325		
<u>Bv. 366</u> E.	π Hor. W.	η Drac. W.	γ Androm. E.	δ 2377 W.
21 14 15.0	21 20 1.7	21 26 37.4	21 30 37.1	21 37 39.5
18.2	3.5	40.2	38.9	41.4
21.5	5.2	43.0	40.8	44.0
24.9	6.9	45.2	42.6	46.3
28.3	8.7	48.0	44.4	49.0
34.6	12.1	53.6	48.0	53.5
38.3	13.7	56.3	50.0	56.0
41.5	15.7	59.0	51.9	58.4
44.9	17.3	27 1.6	53.7	38 0.7
48.0	19.2	4.3	55.3	2.9
51.3	20.9	7.2	57.0	5.3
54.5	22.6	9.6	59.0	8.0
15 1.0	26.3	15.2	31 2.5	12.6
4.4	27.7	18.0	4.5	14.8
7.8	29.7	20.6	6.4	17.3
11.0	31.4	23.5	8.2	19.7
14.5	33.1	26.0	10.1	22.0
17) 757.7	17) 295.7	17) 28.7	17) 910.4	17) 11.7
21 14 44.688	21 20 17.394	21 27 1.688	21 30 53.553	21 38 0.688

65 $\delta = 1,2500$

September 26, 1884.

~~1st~~ Camel

1st Min.	W.	2nd Min.	W.	110 Rec.	W.	Gr. 750	E.	2 16. Cam.	E.	Gr. 716	E.
21 45 33.7		21 52 3.0		22 0 48.4		22 4 50.4		22 14 33.6		22 20 19.7	
38.6		8.4		50.0		5 6.2		36.0		22.5	
44.0		13.6		51.9		20.6		38.6		25.3	
49.3		19.0		53.6		35.6		41.1		28.1	
54.0		23.8		55.3		50.2		43.6		30.7	
46 4.8		34.9		58.7		6 21.9		48.7		36.7	
10.0		39.6		1 0.3		36.0		51.1		39.4	
15.2		44.6		2.1		50.8		53.7		42.1	
20.6		49.5		3.7		7 5.7		56.4		45.0	
26.0		55.2		5.5		21.6		58.9		47.6	
31.3		53 0.2		7.3		35.5		15 1.2		50.5	
36.3		5.6		9.0		51.2		4.1		53.5	
46.8		16.0		12.5		—		8.9		58.9	
52.0		21.2		14.0		—		11.5		21 1.6	
57.5		26.3		15.9		—		14.1		4.6	
47 2.5		31.8		17.6		—		16.5		7.3	
7.6		36.7		19.3		—		19.1		10.2	
17) 350.2		17) 849.4		17) 105.1		12) 265.7		17) 957.1		17) 763.7	
						22.143					

21 46 20.600	21 52 49.965	22 1 3.830	22 7 6.13	22 14 56.300	22 20 44.928
49 2.5	✓	✓	✓	✓	✓
59 23	✓	✓	✓	✓	✓

E. Rec.	E.	2 Rec.	E.	3 Drac.	W.	E. Min.	W.	3 Drac.	W.	En. 848	E.
22 28 11.5		22 32 14.3		22 36 57.5		—		22 49 6.9		—	
13.6		16.5		59.8		—		10.5		—	
16.0		18.4		37 1.6		—		14.1		—	
19.9		20.5		38		22 40 200		—		—	
22.1		22.5		6.0		29.7		20.5		—	
24.2		26.6		10.2		48.5		27.5		—	
26.3		28.5		12.2		57.5		30.8		—	
28.5		30.5		14.3		41 6.0		34.4		—	
30.5		32.7		16.4		15.5		37.5		22 57 13.8	
32.6		34.6		18.6		25.0		40.9		18.6	
37.0		36.7		20.9		33.8		44.5		23.6	
39.0		38.6		(23.7) right		43.3		47.7		28.7	
41.1		42.9		27.2		42 2.3		54.7		38.9	
43.2		44.9		29.3		11.4		58.0		44.0	
45.4		46.9		31.2		20.5		50 1.5		49.0	
15) 430.9		48.8		33.4		30.2		4.8		54.1	
28.727		50.9		35.5		39.1		8.2		59.1	
17) 554.8		17) 281.6		16) 257.9		44.2.8		622.5		9) 329.8	
		16) 18.199		10.398		31.629		38.906		36.644	
22 28 24.75		22 32 32.635		22 37 16.555		22 41 15.758		22 49 37.027		22 57 13.394	
26.327		16.93		16.517		7.407		7.407		4.083	
121		121				1008					

September 26, 1884

66

$$\begin{array}{r} 49.18 \\ 58.19 \\ \hline \end{array}$$

V Arietis	E.	γ Draconis	W.	β Lyrae	W.	γ Draconis	W.	γ Draconis	W.
23 3 25.4		23 8 12.0		23 17 35.5		23 22 31.7		23 27 33.2	
26.9		16.0		37.3		34.7		38.4	
28.6		19.6		39.2		37.6		44.3	
30.3		24.3		41.0		40.5		49.7	
32.1		28.4		42.9		43.4		55.8	
35.7		36.6		46.7		49.4		28 7.0	
37.1		40.9		48.4		52.2		12.2	
38.9		44.7		50.3		55.0		17.7	
40.6		48.8		52.0		58.0		23.3	
42.4		52.9		54.0		23 1.0		28.8	
44.1		57.0		55.9		4.0		34.4	
45.7		9 1.4		57.9		7.0		39.8	
49.2		9.3		18 1.5		12.9		51.2	
51.0		13.5		3.3		15.7		56.7	
52.5		17.5		5.3		18.8		29 2.0	
54.3		21.5		7.3		21.8		8.0	
56.0		25.6		9.1		24.7		13.2	
17) 690.8		17) 830.0		17) 887.6		17) 988.4		17) 395.7	
23 3 40.635		23 8 48.824		23 17 52.212		23 22 58.142		23 28 23.276	
\checkmark		\checkmark		\checkmark		\checkmark		\checkmark	

$$\begin{array}{r} 49.27 \\ 54.54 \\ \hline \end{array}$$

α Delphini	W.	ϵ Persei	E.	γ Draconis	W.	ϵ Persei	E.
23 35 58.6		23 41 6.1		23 44 54.6		—	
36 0.4		7.8		58.5		—	
2.4		9.4		45 2.1		23 49 2.2	
4.2		11.2		6.2		7.0	
6.0		13.0		10.4		12.0	
9.5		16.3		15.0		21.8	
11.0		18.0		22.0		27.0	
12.7		20.0		25.7		31.4	
14.5		21.6		29.4		36.0	
16.4		23.4		34.0		40.8	
18.3		25.1		37.7		45.5	
20.1		26.9		41.4		50.7	
23.7		30.2		49.4		50 0.4	
25.5		32.0		53.2		5.0	
27.3		33.7		57.1		9.7	
29.1		35.5		46 1.1		14.6	
31.0		37.4		5.0		19.6	
17) 250.7		17) 367.6		1505.8		15) 623.7	
						41.580	5.448
23 36 14.747		23 41 21.624		23 45 29.753		23 49 36.080	3.881
\checkmark		\checkmark		\checkmark		\checkmark	

September 29, 1884.

16 kaph	E.	Br. 366	E.	π Herc.	W.	η Drae.	W.	γ Androm	E.	δ 2377	W.
21 7 47.3		21 14 15.6		21 20 1.0		21 26 36.4		21 30 37.3		21 37 38.5	
53.6		18.9		2.8		39.0		39.0		40.8	
59.9		22.1		4.6		41.8		41.0		43.2	
8 6.8		25.3		6.2		44.5		42.8		45.7	
133		28.7		8.1		47.1		44.6		48.1	
26.4		35.2		11.5		52.8		48.3		52.8	
32.8		38.3		13.3		55.5		50.0		55.0	
39.6		42.0		15.1		58.3		51.8		57.7	
45.9		45.2		16.7		27 0.6		53.7		38 0.0	
52.7		48.4		18.5		3.6		55.5		2.4	
59.0		51.8		20.3		6.4		57.4		4.6	
9 5.7		54.9		22.1		9.0		59.1		7.0	
18.3		15 1.6		25.7		14.5		31 2.8		11.6	
25.1		5.1		27.2		17.1		4.6		14.0	
—		8.4		29.1		19.8		6.5		16.5	
38.0		11.6		30.8		22.5		8.3		18.7	
44.4		14.8		32.7		25.3		10.3		21.3	
16 88.8		17 67.9				17 14.2		17 913.0		17 1017.9	
43.150											
21 8 45.915		21 14 45.170		21 20 16.806		21 27 0.835		21 30 53.706		21 37 59.877	
52 44											
66 42											
19 Mo. Min.	W.	η Mo. Min.	W.	110 Herc.	W.	δ 750	E.	δ 2373	W.	276. Camd.	E.
21 45 31.7		21 52 1.9		—		22 4 53.3		22 9 45.0		22 14 34.0	
37.0		7.0		—		5 8.5		49.5		36.4	
42.1		11.7		—		22.7		55.7		38.8	
47.3		17.5		—		37.8		10 1.8		41.4	
52.4		22.5		—		53.4		7.7		44.0	
46 3.2		33.1		—		6 23.4		19.4		49.1	
8.4		38.0		22 0 59.9		37.9		25.3		51.5	
13.8		43.6		1 1.4		53.3		31.0		54.0	
18.9		48.5		3.4		7 8.6		37.2		56.6	
24.0		53.6		5.0		24.0		42.9		59.2	
29.2		58.5		6.8		38.6		48.5		15 1.9	
34.6		53 3.9		8.5		53.6		54.6		4.3	
45.2		14.4		12.4		—		11 6.4		9.4	
50.1		19.8		13.7		—		12.5		11.8	
55.5		25.0		15.1		—		18.0		14.3	
47 1.0		30.2		16.7		—		24.0		17.0	
6.1		35.4		18.5		—		30.0		19.6	
17 320.5		17 824.6		25.0		12 295.1		17 529.5		17 963.3	
				4.167		24.592		87.03			
21 46 18.853		21 52 48.506		22 1 3.305		22 7 8.46		22 10 37.03		22 14 56.665	
✓				✓		✓		✓		✓	

September 29, 1884.

68

$$57 \left\{ \begin{array}{l} 53 \ 2 \\ 62 \ 50 \end{array} \right.$$

<u>Mr. 716</u>	E.	E. Pisc.	E.	Persei	E.	γ Draco.	W.	E. U. Min.	W.
22 20 20.3	—	—	—	—	—	—	22 39 56.8	—	—
22.9	—	—	—	—	—	—	40 0.2	—	—
25.6	—	—	—	—	—	—	9.1	—	—
28.6	22 28 13.8	—	22 32 20.7	—	—	—	18.0	—	—
31.1	16.0	—	22.8	—	—	—	26.7	—	—
36.8	20.1	—	26.7	22 37 9.7	—	—	46.5	—	—
39.4	22.3	—	28.8	11.7	—	—	54.9	—	—
42.4	24.3	—	31.0	13.8	—	—	41 4.0	—	—
45.3	26.4	—	33.0	15.8	—	—	13.6	—	—
48.0	28.5	—	34.8	18.0	—	—	22.5	—	—
50.8	30.7	—	36.7	20.0	—	—	32.0	—	—
53.5	32.8	—	39.0	22.2	—	—	41.0	—	—
59.2	37.0	—	43.1	26.5	—	—	42 0.0	—	—
21 2.0	39.0	—	45.1	28.4	—	—	9.1	—	—
4.8	41.4	—	47.0	30.2	—	—	18.0	—	—
7.6	43.5	—	49.0	32.6	—	—	27.4	—	—
10.5	45.6	—	51.5	35.0	—	—	36.6	—	—
	$\frac{14}{421.4}$	$\times 1.693$	$\frac{14}{509.2}$	$\frac{12}{21.992}$	6.15	$17 \frac{230.4}{30.100}$			
22 20 45.224	22 28 26.480	22 32 32.881	22 37 15.84	22 41 13.553					
V	V	V	V	V					

<u>γ Draco</u>	W.	<u>Mr. 848</u>	E.	γ Arctio	E.	γ Draco (aust.)	W.	<u>36 Draco</u>	W.
22 49 6.3	—	—	—	—	—	—	—	—	—
9.8	—	—	—	—	—	—	—	—	—
13.0	—	—	—	—	—	—	—	—	—
16.2	—	—	—	—	—	—	—	—	—
20.0	—	—	—	—	—	—	—	—	—
26.6	—	—	—	—	—	—	—	—	—
29.8	—	—	—	—	—	—	—	—	—
33.6	—	—	—	—	—	—	—	—	—
36.8	22 57 14.2	—	—	—	23 8 48.0	23 22 57.3	—	—	—
40.1	19.5	—	—	—	51.9	23 0.3	—	—	—
43.5	24.7	—	—	—	56.1	3.3	—	—	—
47.0	29.7	—	—	—	9 0.0	6.3	—	—	—
53.9	40.0	23 3 49.4	—	—	8.5	12.0	—	—	—
57.5	45.0	51.2	—	—	12.4	15.1	—	—	—
50 0.7	50.0	52.8	—	—	16.5	18.0	—	—	—
4.3	55.0	54.5	—	—	20.9	21.1	—	—	—
7.5	58 0.4	56.4	—	—	24.7	24.0	—	—	—
17) 626.6	9) 338.5	5) 264.3	23 18	5) 264.3	9) 59.0	9) 97.4	18.76	134.22	—
	37.61	52.86			6.555	10.82			
22 49 36.860	22 57 14.43	23 2 40.89	23 8 47.80	23 22 57.400					
V	V								

September 29, 1884.

53 24 }
70 50 } 4.3

Draco.	W.	§ Persei	♂.	♂ Draco	W.	§ 966	♂.
—	23 41 6.4	—	23 44 53.2	—	—	—	—
—	7.9	—	57.1	23 48 58.5	—	—	—
—	9.7	—	45 0.5	49 3.3	—	—	—
—	11.4	—	4.6	—	—	—	—
—	13.2	—	8.5	13.3	—	—	—
—	16.5	—	—	22.6	—	—	—
—	18.4	—	—	27.5	—	—	—
—	20.0	—	—	32.0	—	—	—
23 28 22.0	22.0	—	—	36.8	—	—	—
27.6	23.6	—	—	41.8	—	—	—
33.5	25.3	—	—	46.8	—	—	—
38.6	27.0	—	40.0	52.0	—	—	—
50.1	30.6	—	47.8	50 1.0	—	—	—
55.8	32.3	—	52.0	6.7	—	—	—
29 1.1	34.0	—	55.7	11.2	—	—	—
6.5	35.7	—	59.6	16.0	—	—	—
11.8	37.6	—	46 3.6	21.4	—	—	—
9) 427.0	17) 371.6	—	11) 322.6	15) 630.9	—	—	—
47.444	25.35	—	29.33	42.06	—	—	—
23 28 22.09.	23 41 21.86	—	23 45 28.26	23 49 37.22	—	—	—
53 44 } 65 1 } 5.0	✓	—	✓	✓	—	—	—

Oct. 5, 1884.

70.

12 No. Dra.	W.	36 No. Cass.	E.	υ Cass.	E.	47 No. Cep.	E.	Bv. 366	E.
20 51 23.5		20 56 47.0		20 59 46.1		21 7 45.1		21 14 17.0	
25.8		51.5		49.7		52.2		20.3	
28.8		55.7		53.0		58.8		23.7	
—		59.5		56.1		8 4.7		27.0	
34.3		57 3.7		59.0		11.6		33.7	
40.6		12.5		21 0 5.6		24.8		37.0	
—		16.6		9.0		31.4		40.3	
—		20.4		12.3		37.8		43.5	
—		24.6		15.6		44.3		46.7	
51.5		28.7		18.7		51.0		50.0	
54.1		33.2		21.7		57.3		53.0	
57.0		37.1		25.2		9 4.0		57	
52 2.7		—		31.6		17.4		15 0.2	
5.5		—		34.5		23.4		3.3	
8.3		—		38.0		30.0		6.6	
11.1		—		41.3		36.6		10.2	
13.8		—		44.6		48.2		13.3	
13) 657.0		13) 150.5		17) 262.0		17) 753.6		16) 725.8	
50.54	195	12.54	112.09					45.36	-1.854
20 51 48.59		20 57 24.63		21 0 15.41		21 8 44.33		21 14 42.56	
		✓		✓		✓			
π Herc.	W.	η Dracon.	W.	γ Androm.	E.	Kn. 2377	W.	A Dracon.	W.
21 20 0.0		21 26 35.5		21 30 35.8		—		—	
1.9		38.0		37.8		—		—	
3.6		40.6		39.6		—		—	
5.3		43.6		41.2		—		—	
7.0		46.0		43.2		—		—	
10.4		57.4		46.8		—		21 46 44.1	
12.3		54.5		48.8		—		47.6	
14.0		57.0		50.5		21 37 56.4		51.1	
15.7		27 0.0		52.3		59.0		54.7	
17.5		2.3		54.2		38 1.3		58.2	
19.2		5.0		56.0		3.6		47 2.0	
21.1		7.7		57.8		6.0		5.0	
24.5		13.3		31 1.5		10.9		12.0	
26.4		16.0		3.4		13.0		15.7	
28.2		18.7		5.1		15.3		19.4	
30.0		21.4		7.0		17.9		23.0	
31.7		24.2		8.9		20.1		26.5	
17) 268.8		17) 1015.2		17) 889.9		10) 82.5	9.50	12) 59.3	16.30
						8.35		4.94	
21 20 15.81		21 26 59.72		21 30 52.35		21 37 58.25		21 46 54.64	
✓		✓		✓		✓		✓	

Oct. 5, 1884.

3	η Urv. Min.	W.	110 Aero.	W.	Ln. 750	E.	Ln. 2373	W.	2 L. Camel.	E.	Ln. 716	E.
21	52 0.7		22 0 46.8		—		—		22 14 32.3		22 20 18.8	
	6.3		48.6		—		—		35.1		21.7	
	11.1		50.4		—		—		37.7		24.3	
	16.4		52.0		22 5 37.6		—		40.3		27.4	
	21.3		53.9		52.8		22 10 6.6		42.7		30.1	
	31.8		57.1		6 22.4		18.9		48.0		35.8	
	37.3		58.9		38.1		24.9		50.5		38.9	
	42.0		1 0.5		53.2		30.5		53.1		41.4	
23	47.3		2.2		7 7.4		37.0		55.7		44.2	
	52.6		4.0		22.6		41.7		58.1		46.8	
	57.9		5.8		38.3		48.3		15 0.2		49.8	
	53 3.3		7.6		52.1		53.8		3.0		52.5	
	13.4		10.9		—		11 5.1		8.1		58.0	
	18.6		12.5		—		11.3		10.7		21 0.8	
	24.1		14.3		—		17.3		13.4		3.7	
	29.2		16.0		—		22.9		15.9		6.5	
	34.0		17.7		—		29.0		18.3		9.2	
9	17) 807.3		17) 39.2		9) 444.5	18.31	13) 647.3	13.52	17) 943.1		17) 749.9	
					49.39		49.792					
23	21 52 47.49		22 1 23.1		22 7 7.70		22 10 36.338		22 14 55.48		22 20 44.11	
	✓		✓		✓				✓		✓	
4	ε Pices	E.	γ Draco.	W.	ε Urv. Min.	W.	ε Draco	W.	Ln. 848	E.	γ Draco (and) W.	
22	28 8.3		22 37 12.7		22 40 7.8		22 49 5.1		27 56 29.5		23 8 9.0	
	10.4		14.9		17.3		8.7		32.8		13.3	
	12.7		16.8		27.2		11.9		37.6		18.4	
	14.7		19.0		—		15.3		42.7		24.6	
	17		21.3		—		18.9		47.7		28.5	
	18.9		25.3		45.0		25.5		58.0		33.9	
	20.8		27.4		54.4		28.8		57 3.0		38.3	
	23.0		29.7		41 3.5		32.5		8.3		42.3	
	25.2		31.9		12.5		35.6		13.1		46.4	
	27.2		34.1		22.0		39.0		18.5		50.7	
	29.5		—		31.4		42.6		23.5		54.9	
	31.5		—		40.3		46.0		28.5		58.7	
	35.9		—		58.7		52.5		38.6		9 7.0	
	38.0		—		—		56.1		43.8		11.1	
	40.1		—		42 17.0		59.5		48.6		15.5	
	42.2		—		26.3		50 3.0		53.8		19.3	
	—		—		35.6		6.5		59.0		23.5	
	15) 378.4		10) 233.1		14) 279.0	726	17) 607.5		17) 227.0		12) 701.6	
	25.23	548	23.310	48.45	19.93						58.47	12.02
22	28 25.23		22 37 14.86		22 41 12.67		22 49 35.74		22 57 13.35		23 8 46.45	
	✓		31.76		✓		✓		✓			

See Records Book.
reculating 2

Oct 5, 1884.

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R	W.	36 Draco	W.	35 Draco	W.	2 Delphin.	W.	5 Persei.	E.
23 17 33.8	—	—	—	—	23 35 57.2	23 41 5.1			
35.5	—	—	—	—	59.0	6.7			
37.3	—	—	23 27 42.3	—	36 1.0	8.4			
39.2	—	—	47.7	—	2.7	10.2			
41.0	—	—	54.0	—	4.6	12.0			
45.0	23 22 47.9	—	28 4.8	—	8.0	15.5			
47.0	51.0	—	10.4	—	10.0	17.2			
48.7	53.8	—	16.2	—	11.6	19.0			
50.4	56.8	—	21.4	—	13.4	20.7			
52.3	59.7	—	27.0	—	15.3	22.5			
54.2	23 2.4	—	32.5	—	16.9	24.4			
56.1	5.6	—	37.9	—	18.8	26.2			
59.9	11.3	—	49.2	—	22.4	29.2			
18 1.8	14.2	—	54.7	—	24.1	31.0			
3.5	17.3	—	29 0.6	—	25.9	32.7			
5.6	20.3	—	6.0	—	27.7	34.4			
7.4	23.4	—	11.5	—	29.7	36.3			
17) 858.7	12) 863.7	8.595	15) 416.2	6.31	17) 228.3	17) 351.5			
	5.308		27.75						
23 17 50.51	23 22 56.713	—	23 28 21.44	—	23 36 13.43	23 41 20.68			
✓			✓		✓	✓			
W.	W.	Gr. 966	E.						
23 44 51.9	23 48 52.0	—	—						
56.4	56.7	—	—						
45 0.4	49 2.1	—	—						
3.7	6.7	—	—						
7.9	11.7	—	—						
15.6	21.5	—	—						
19.6	26.0	—	—						
23.6	30.8	—	—						
27.4	35.8	—	—						
31.3	40.9	—	—						
35.2	45.4	—	—						
39.3	50.2	—	—						
—	59.7	—	—						
—	50 4.8	—	—						
—	9.2	—	—						
—	14.5	—	—						
—	19.2	—	—						
17) 192.3	17) 607.2	—	—						
16.02	11.46	—	—						
23 45 27.49	23 49 35.72	—	—						
✓	✓	—	—						

Oct. 6, 1884.

1884P

W. Draco	W. 36 H. Leo	E. γ Cass.	E. 47 H. Cep.	E. Br. 366.	E. π Hor.	W.
—	—	—	—	—	21 20 0.1	—
—	—	20 59 49.5	—	—	2.0	—
—	—	52.6	—	—	3.5	—
—	—	55.2	21 8 4.0	—	5.1	—
—	—	58.4	10.9	—	7.0	—
—	—	21 0 5.5	23.9	21 14 33.0	10.6	—
—	—	8.3	30.4	36.6	12.2	—
—	—	11.6	36.6	40.0	14.0	—
—	20 57 23.9	15.2	43.9	43.5	15.8	—
—	28.0	18.1	50.0	46.5	17.6	—
—	32.0	21.2	56.3	50.0	19.3	—
—	36.5	24.6	9 3.0	53.3	21.0	—
20 52 2.6	44.7	31.0	16.1	59.6	24.6	—
5.6	49.0	34.2	22.3	15 3.0	26.3	—
8.2	52.9	37.5	28.7	6.5	28.1	—
11.2	57.1	40.6	35.8	9.9	29.8	—
13.9	58 1.3	43.9	42.4	13.0	31.5	—
	9) 385.4	16) 267.4	14) 764.3	13) 634.9	17) 268.5	—
	42.82	16.71	54.59	52.908	960	—
	20 59 23.94	21 0 14.89	21 8 43.40	21 14 43.31	21 20 15.80	—
			✓		✓	—

γ Urs. Min.	W. γ Androm	E. γ Androm	W. A. Draco	W. η Urs Min.	W.
21 23 8.0	21 30 35.8	21 37 37.6	—	21 52 1.7	—
14.4	37.7	40.0	—	6.6	—
20.2	39.7	42.4	—	12.2	—
26.4	41.3	44.8	—	17.6	—
32.4	43.2	47.2	—	22.3	—
44.6	46.7	52.0	—	32.8	—
50.3	48.6	54.3	21 46 44.0	38.0	—
56.5	50.5	56.6	48.0	43.1	—
24 2.5	52.3	59.0	51.5	48.4	—
8.7	54.0	38 1.0	54.8	53.5	—
14.8	56.0	4.0	58.5	58.7	—
20.8	57.8	6.2	47 2.3	53 3.8	—
33.1	31 1.4	11.0	12.6	14.3	—
39.6	3.2	13.3	16.3	19.2	—
45.4	5.1	15.8	19.8	24.6	—
51.4	6.9	18.1	23.6	29.8	—
57.4	8.8	20.5	26.0	35.2	—
17) 46.5	17) 889.0	17) 1003.8	18) 31.4	17) 821.8	—
			3.14	—	—
21 24 27.36	21 30 52.29	21 37 59.05	21 46 55.02	21 52 48.34	—
✓	✓	✓	✓	✓	—

Oct 9, 1884.

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Polaris E.	110 Kerc. W.	Dr. 450. E.	Dr. 2373 W.	E. Draco. W.
—	—	22 5 6.5	—	—
—	—	21.2	—	—
—	—	35.6	—	—
—	—	50.7	—	—
—	—	6 7.0	—	—
—	22 0 55.4	35.9	22 10 12.3	—
—	57.1	51.2	19.2	—
19 17 18.0	58.9	7 6.4	24.2	—
18 13.3	1 0.5	21.6	30.6	—
19 3.0	2.3	36.7	36.1	22 28 4.2
19 56.2	4.0	51.5	42.1	6.8
20 54.2	5.6	8 6.6	47.8	10.4
22 38.6	9.0	—	59.5	16.1
23 42.8	10.9	—	11 5.8	19.5
24 36.2	12.5	—	11.4	22.6
25 21.4	14.3	—	17.4	25.9
26 21.7	16.0	—	23.2	28.8
10) 218 54	12) 66.5	6 37.56	12) 519.6	8) 134.3
21 48.54	5.54	44387	47.47	16.79
—	—	—	17.13	—
19 18 9 83	22 1 0.53	22 7 21.43	22 10 30.34	22 28 0.87
α Persei. E.	γ H. Camel E.	β Draco. W.	ω Draco W.	γ Arietis E.
22 32 14.8	22 39 39.2	22 49 1.4	22 55 22.3	23 3 25.6
16.8	42.0	4.6	25.6	27.0
18.8	44.6	8.5	29.3	28.8
20.8	47.1	11.6	32.8	30.4
23.1	50.0	15.0	36.2	32.2
27.0	55.0	22.0	43.3	35.8
29.0	57.8	25.5	46.4	37.2
31.0	40 0.4	27.8	50.2	39.0
33.3	—	32.3	53.5	40.8
35.4	5.4	36.0	57.2	42.4
37.1	8.3	39.1	56 0.7	44.4
39.2	10.9	42.5	4.1	45.8
43.4	15.9	49.4	11.2	49.2
45.2	18.6	52.9	14.6	51.0
47.3	21.3	56.0	18.2	52.7
49.3	24.0	59.6	21.6	54.4
51.5	26.8	50 3.0	25.2	56.3
17) 563.0	16) 47.3	17) 547.2	17) 912.4	17) 693.0
22 32 33.12	22 40 2.96	22 49 32.19	22 55 53.67	23 3 40.76

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Draco (auct.) W.	9 Camel.	E.	35 Draco	W.	2 Delph.	W.	3 Pucci.	E.	Dr. 2640	W.
23 8 5.5	23 24 15.1		23 27 25.2		23 35 55.2		—		23 47 4.2	
9.5	18.1		30.3		57.1		—		7.0	
13.6	21.1		36.5		59.0		—		—	
18.0	24.3		41.6		36 0.8		—		13.5	
21.9	27.7		47.7		2.6		—		16.6	
30.0	34.0		58.7		6.1		23 41 16.8		22.9	
34.1	37.2		28 4.0		8.0		18.6		26.5	
38.3	40.3		9.6		9.7		20.2		28.7	
42.5	43.3		15.1		11.3		22.0		31.8	
46.7	46.4		20.2		13.1		23.5		34.7	
50.8	49.7		26.2		15.1		25.4		37.6	
54.6	53.0		32.0		16.9		27.2		40.7	
9 3.0	—		42.8		20.4		30.7		47.0	
7.3	—		48.5		22.1		32.2		49.9	
11.3	—		53.5		24.0		34.1		53.2	
15.6	—		59.5		25.8		36.0		56.3	
19.6	—		29 5.0		27.6		37.6		59.4	
17) 72.3	12) 410.2 34.18	79.16	17) 256.7		17) 194.8		12) 324.3 27.025	50.53	14) 569.0 33.66	1337
13 8 42.49	23 24 43.34 V		23 28 15.10 V		23 36 11.46 V		23 41 21.97 V		23 47 31.73	
4										
8 Ure. Min.	W.	V Draco.	W.	E Aurigae	E.	L Aurigae	E.	V Cygni	W.	36 Camel.
23 57 33.23 34.33	—	—	0 23 2.0	—	0 32 20.1	—	—	0 36 59.5	—	—
54.5	—	—	—	—	22.2	—	—	34 1.3	—	—
58 15.7	—	—	5.6	—	24.5	—	—	3.7	—	—
37.1	0 18 9.4	—	7.6	—	26.3	—	—	5.6	—	—
59.1	13.3	—	9.5	—	28.3	—	—	8.0	—	—
59 39.2	21.0	—	13.1	—	32.1	—	—	12.1	—	—
24 0 1.1	24.9	—	15.0	—	34.0	—	—	14.1	—	—
24.7	—	—	17.0	—	36.0	—	—	16.2	0 44 5.9	—
45.0	32.3	—	—	—	38.0	—	—	18.1	9.0	—
1 6.7	36.6	—	20.8	—	39.8	—	—	20.5	11.8	—
25.33	40.6	—	22.6	—	41.8	—	—	22.8	15.0	—
26.6	44.6	—	24.4	—	43.8	—	—	24.9	17.9	—
47.0	—	—	—	—	—	—	—	—	—	—
28.92	52.6	—	28.2	—	47.6	—	—	29.1	24.2	—
29.7	56.3	—	30.0	—	49.5	—	—	31.2	27.4	—
52.0	19 0.0	—	31.9	—	51.3	—	—	33.3	30.2	—
3 12.8	4.0	—	33.9	—	53.3	—	—	35.9	33.8	—
33.7	8.0	—	35.9	—	55.0	—	—	37.7	36.8	—
53.9	—	—	—	—	—	—	—	—	—	—
2	12) 523.7 40.29	751	15) 297.5 19.83	21.00	17) 643.6		17) 314.0 17		12) 212.0 21.200	1237
0 18 32.77			0 23 18.83 V		0 32 37.86 V		0 37 18.47 V		0 44 8.83	

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π Dra (auct)	W. 19 R. Camel	E.	π Dra	W. 2 Delph.	W. 3 Persei	E.
—	23 20 18.3		23 27 24.1	23 35 55.1	23 41 6.3	
—	25.9		29.8	57.0	—	
23 8 13.0	31.7		34.3	58.9	—	
23 25.0	38.5		40.6	36 0.6	11.7	
21.0	45.0		46.7	2.4	13.2	
29.9	58.4		58.2	5.6	16.7	
33.5	21 5.0		28 3.6	7.6	18.2	
38.3	11.7		8.9	9.5	20.0	
42.2	18.6		14.8	11.4	22.0	
46.2	25.1		19.9	13.0	23.6	
50.2	31.7		25.4	14.7	25.4	
54.8	37.7		31.1	16.5	27.2	
9 2.9	57.6		42.0	20.0	30.6	
6.9	57.3		47.3	22.0	32.5	
11.2	22 4.8		53.0	24.0	34.2	
15.4	11.1		58.3	25.6	35.9	
19.6	17.8		29 4.1	27.3	37.7	
14) 685.1	17) 310.2		243.1	17) 191.2	17) 355.2	1.73
48.94					23.68	
23 8 44.17	23 21 18.25		23 28 14.20	23 36 11.25	23 41 21.95	
	✓		✓	✓		
π Dra 264.0	W. 19 R. Min	W.	π Dra 265	W. 2 Delph.	W. 3 Persei	E.
23 47 4.1	23 57 33.0		0 9 53	0 17 57.6	0 23 12.8	
7.0	52.3		—5.3	18 1.6	14.7	
10.0	58 14.1		—	5.4	16.5	
13.0	36.1		17.3	9.1	18.5	
16.4	58.4		23.2	13.1	20.4	
—	59 41.0		34.3	20.8	22.2	
25.6	0 0 1.5		40.3	25.0	24.0	
28.7	20.9		46.4	28.5	27.8	
31.3	24.0		51.7	32.5	29.8	
34.5	41.6		57.6	36.5	31.5	
37.6	27.4		10 3.2	40.4	33.5	
40.6	47.0		9.1	44.5	35.4	
46.8	2 25.0		21.0	52.3	287.1	
50.0	27.3		26.8	56.4	23.92	5.45
53.0	51.2		32.2	59.9	1847	
56.0	3 11.3		38.0	19 4.0	✓	
59.3	31.5		43.7	7.7		
16) 513.9	53.0		15) 870.1	17) 555.3		
32.12	54		58.05	616		
23 47 31.55			0 9 58.5	0 18 32.66		
			✓	✓		

Oct 10, 1884.

α Aurigae	E.	γ Cygni	W.	36 Camel.	E.	51 κ Cephei	E.
0 32 20.0		0 36 59.3		0 43 41.0		—	
22.2		37 1.5		44.2		—	
24.0		3.6		47.1		—	
26.0		5.9		50.3		—	
27.9		7.9		53.4		—	
31.9		12.0		59.6	0 47 46.4		
33.8		14.2		44 2.7	48 11.1		
35.5		16.2		5.6	37.3		
37.5		18.5		8.9	49 2.6		
39.4		20.4		12.0	29.6		
41.4		22.8		14.9	53.3		
43.4		24.9		18.3	50 20.5		
47.3		29.1		24.2	—		
49.1		31.2		27.5	—		
50.8		33.5		30.3	—		
52.9		35.8		33.4	—		
54.9		37.8		36.8	—		
17) 638.0		17) 314.6		17) 150.2	20.8		
0 32 37.530		0 37 18.51-		0 44 8.84-	0 49 2.97		
✓		✓		✓	✓		

Oct. 20, 1884.

78

W. Draco	W. V. Arctic	E. X. Draco	W. 19 Camel	E. 35 Draco	W.
—	23 3 23.0	23 7 58.8	—	23 27 17.7	
—	25.0	8 2.7	23 20 27.5	23.6	
22 55 23.5	27.0	7.0	33.6	29.0	
26.8	28.7	11.1	40.7	34.2	
30.4	30.1	15.5	46.7	39.9	
37.5	33.8	23.5	21 0.5	50.8	
41.0	35.4	27.7	7.0	56.5	
44.2	37.1	32.0	13.8	28 2.1	
48.0	38.8	35.7	19.8	7.5	
51.4	40.6	40.0	26.7	13.0	
54.7	42.2	44.3	33.0	18.1	
58.3	44.0	48.3	40.0	24.1	
56 5.5	47.3	56.6	52.8	35.0	
8.8	49.0	9 0.7	59.8	40.7	
12.2	50.8	4.8	22 6.1	46.3	
15.7	52.7	8.8	12.9	51.8	
19.1	54.4	13.0	19.5	57.4	
17 17.1	55.9	610.5	16) 350.4	372 17) 127.7	
31.81	38.82		23.77		
22 55 47.85	23 3 38.82	23 8 35.91	23 21 20.05	23 28 7.51	
V	V	V	V	V	
2. Delph.	W. E. Persei	E. Gr. 2640	W. S. U. Min	W. Gr. 2655	W.
23 35 56.1	23 41 4.5	—	—	—	
53.0	6.2	—	—	—	
54.7	8.0	—	—	—	
56.3	9.7	—	23 58 17.9	—	
58.3	11.4	—	40.9	0 89 15.9	
36 1.7	15.1	—	59 22.5	27.0	
33	16.5	23 47 20.1	43.0	32.8	
32	18.4	—	0 0 32 1/2	38.7	
70	20.2	26.2	25.6	43.9	
8.9	21.9	29.3	46.0	49.9	
10.7	23.8	32.1	1 6.9	56.2	
12.5	25.5	35.2	28.2	10 1.6	
16.0	29.0	41.3	2 10.8	13.4	
17.8	30.8	44.3	32.1	18.9	
19.7	32.3	47.4	52.3	24.6	
21.5	34.0	50.4	3 14.4	30.4	
23.1	35.8	53.5	35.5	36.9	
120 8	17) 343.1	10) 379.8	14) 20.3	13) 750.2	
		37.98	1.45	57.71	1000
23 36 7.11	23 41 20.18	23 47 26.06	0 0 25.22	0 9 44.38	
	V		V		

Oct. 20, 1884.

Draco.	N. ϵ Aurigae	E. δ Aurigae	E. χ Cygni	N. 36 Camel	E. 516 Cep. E.
0 17 51.5	0 23 0.0	0 32 18.7	0 36 54.7	0 43 40.2	—
55.5	2.0	20.6	57.0	43.5	—
59.2	3.7	22.4	59.1	46.6	—
18 3.0	5.6	24.2	37 1.2	49.8	—
7.1	7.5	26.4	3.3	53.0	—
15.0	11.1	30.2	7.9	59.1	0 48 3.1
18.9	13.0	32.0	9.8	44 2.0	28.5
22.8	15.1	34.0	12.0	5.2	54.3
26.7	17.0	36.0	14.0	8.0	49 18.7
30.5	18.8	37.8	16.0	11.2	44.2
34.4	20.5	39.8	18.1	14.2	50 9.2
38.2	22.4	41.8	20.4	17.3	35.3
46.4	26.4	45.6	—	23.8	51 27.1
50.0	28.1	47.4	27.0	27.0	53.8
54.1	30.0	49.4	29.0	30.3	52 18.8
58.0	31.9	51.3	31.1	33.1	45.4
19 1.9	33.8	53.2	33.3	36.3	53 10.0
17) 453.2	17) 286.9	17) 610.8	16) 213.9	17) 140.6	12) 468.4
			13.37	10.67	34.02
0 18 26.66	0 23 16.88-	0 32 35.93	0 37 14.04	0 44 8.27	0 49 19.20
✓	✓	✓	✓	✓	✓

Oct. 23

Nov. 8. #

" 9

" 10

" 24

Chronograph sheets read.
See other Book.

Nov. 29. 1884.

ν Persei.	E.	ν Cass.	E.	γ Pegasi.	E.	δ Aquilae	W.	π Herc.	W.	ϵ Urs. Min.	W.
20 53 0.7		21 2 38.1		—		—		21 22 47.4		—	
2.4		41.2		—		21 19 3.4		49.2		—	
4.7		44.6		—		6.4		51.1		—	
6.8		48.0		—		8.9		53.0		—	
8.6		51.0		—		11.2		54.5		—	
12.8		57.5		21 7 17.2		16.3		58.0		21 26 26.9	
14.8	3	1.0		19.8		18.8		59.7		33.0	
17.0		3.8		20.8		21.2		23 1.4		39.1	
18.8		7.0		22.8		24.0		3.3		45.0	
20.8		10.5		24.5		26.3		5.0		50.9	
22.8		13.8		26.5		28.7		6.9		57.3	
24.7		16.9		28.5		31.5		8.5		27 3.0	
28.7		23.1		31.7		36.2	7016	12.0		15.4	3.6350
30.8		26.5		33.5	3.6350	38.8	2.013	13.7		22.0	
32.6		29.8		35.4	1.456	41.2		15.4		27.6	1.892
34.5		33.0		37.2		43.8		17.2		34.0	
36.6		36.0		39.0		46.4		19.0		40.0	
17 318.4		17 221.8		17 336.4		16 403.1		17 35.3		17 34.2	
				28.032	-5.792	25.194	-1.42			2.850	17.783
20 53 18.730		21 3 7.165		21 7 22.740		21 19 23.782		21 23 3.253		21 26 45.067	
V		V		V		V		V		V	
θ Aquilae	W.	K Pirciuno	E.	109 Herc.	W.	A Draco.	W.	δ Triang.	E.	110 Herc.	W.
—		—		21 46 4.2		21 49 8.2		21 56 43.4		22 3 34.2	
—		—		5.8		11.5		45.1		36.0	
—		—		7.6		15.1		47.0		37.7	
21 30 58.7		—		9.0		18.7		48.5		39.2	
31 3.2		—		10.7		22.1		50.4		41.0	
102		—		140		29.2		53.8		44.4	
13.7		—		15.9		32.7		55.3		46.2	
17.2		—		17.7		36.3		57.1		48.0	
20.5		21 39 27.2		19.4		39.9		58.7		49.8	
23.9		30.1		21.0		43.4		59 0.5		51.5	
27.4		33.0		22.7		46.8		2.0		53.1	
31.0		35.8		24.5		50.2		3.7		54.9	
37.8		41.9	5.677	28.0		57.6		7.2		58.3	
41.3		45.0		29.5		50 1.0		8.9		4 0.0	
44.7		47.9	2.322	31.2		4.7		10.5		1.8	
48.0		50.9		33.0		8.2		12.4		3.5	
51.6		53.9		34.8		11.8		14.2		5.1	
17 370.4		17 368.6		17 329.0		17 37.4		17 998.7		17 344.7	
25.456		40.822	13.189	19.353							
21 31 21.597		21 39 27.433		21 46 19.353		21 49 39.847		21 56 58.747		21 3 49.688	
Obs. n. poor Parking car				V		V		V		V	

Nov. 29, 1884.

Dr. 450 x 450		E. 2 H. Camel.	W. γ Aquilae	M. β Arietis	E. α Persei	E.
22 7 57.5		—	22 22 40.2	—	22 35 4.5	
8 12.1	Centre	—	42.3	—	6.5	
26.9		—	44.2	22 26 31.1	43.14	8.5
42.0		—	46.0	32.9	.22	10.7
59.0		—	48.0	34.5	.10	12.7
9 29.0	7 Right	—	52.0	38.1	26	16.5
43.7		—	54.0	39.9	34	18.7
—		—	56.0	41.3	02	20.8
10 12.9	11 Left	—	57.9	43.4	40	22.8
28.1		22 17 49.6	59.3	45.2	48	24.7
44.2	7 Right	52.5	23 1.7	47.0	56	26.8
58.9		54.9	3.7	48.3	16	28.8
11 28.4	Centre	—	7.4	51.8	20	33.0
43.1		—	9.5	53.5	18	35.1
58.1		18 5.1	11.5	55.2	16	37.1
12 13.2		7.3	13.6	57.0	24	39.2
28.7		10.0	15.4	58.8	32	41.2
10 10th Centre III	22 10 12.90	6) 359.4	17 980.7		17 387.6	
4 " 7 Right	22 10 13.95	59.90				
2 " 11 Left	22 10 13.00					
22 10 13.10		22 17 47.218	22 22 57.806	22 26 43.21	22 35 22.800	
* v. W.; obs. poor		✓	✓	5 left	✓	
E. the Min.		W. f. Draco.	W. γ 848	E. γ Sagittae	W. R. Lynae	W.
22 42 27.0	Centre	22 51 49.7	22 59 22.7	—	—	
35.7		52.9	27.7	—	—	
45.0		56.4	32.8	23 12 6.0	23 20 24.2	
54.0		59.9	38.0	7.9	26.2	
43 3.5		52 3.2	43.2	9.5	28.0	
22.5	7 Right	10.3	53.2	13.0	32.1	
31.2		13.7	58.5	14.9	33.9	
40.4		17.0	23 0 3.7	16.7	35.9	
—	11 Left	20.3	8.9	18.1	37.4	
59.8		23.7	13.9	19.7	39.2	
44 8.0		27.1	18.6	21.7	41.3	
18.0		30.5	24.0	23.2	43.1	
36.3	Centre	37.5	34.2	26.8	47.0	
45.7		40.8	39.3	28.5	48.9	
54.1		44.5	44.2	30.0	50.8	
45 3.7		47.7	49.5	31.9	52.5	
13.0		51.2	54.9	33.7	54.3	
10 10th Centre	22 43 49.82	17 346.4	17 147.3	17 301.6	17 594.8	
3 " 7 Right	49.83			20.107	39.653	
3 " 11 Left	50.13			-1964		
22 43 49.87		22 52 20.377	23 0 8.665	23 12 18.143	23 20 37.539	
✓		✓	✓	✓	✓	

3.
 Nov. 29. 4th sheet } See other Book. Nov. 29, 1884.

1884 B. Camel.	E.	α Aquarii	η Aquarii	ν
21 23 10.5	—	—	—	—
16.4	—	—	—	—
23.3	—	—	—	—
30.0	—	—	—	—
37.0	—	—	—	—
49.9	—	—	—	—
56.7	23 28 34.9	—	—	—
24 3.5	38.1	23 32 55.1	—	—
10.0	41.9	59.0	—	—
16.5	45.1	33 3.0	—	—
23.1	48.5	6.6	4.985	—
30.0	51.6	11.0	—	—
43.1	59.0	18.0	—	—
49.7	29 1.8	21.9	—	—
56.3	5.0	25.8	—	—
25 2.6	8.4	29.2	3.035	—
9.4	11.9	33.0	—	—
17) 168.0	11) 58.63	10) 142.7	—	—
	53.308	14.270	—	—
	11.448	—	—	—
21 24 9.883	23 28 41.85	23 32 59.86	—	—
✓	810	—	—	—

December 3, 1884.

84

109 Herc.	W.	A. Draco	W.	110 Herc.	W.	Kn. 450	E.	Kn. 2373	W.
21 46 3.3.		—		22 3 337-		22 8 3.2		22 42	
50		—		354		188			
6.8-		21 46 136		371		235			
8.5		17.3		388.		489			
10.1		21.1.		405		9 39			
135		28.1		439		336		23 12 59.3	
153		31.6		457		490		13 43	
170		350		473.		10 40		10.3	
186.		384		491		199		164	
20.3		420		508		350		220	
220		456		524		493		28.8	
238		490		542		11 4.5	3.6350	340	3.6350
272									
272		560		564				45.7	
290		595		594.				516	
308		50 3.1		4 1.0.				572	
324		67		29-				14 3.2	
342		10.3-		4.5.				9.3.	
17) 317.45		15) 317.3		17) 834.45		17) 423.6		12) 401.45	
		42487				35.300		33.454	17) 135
21 46 18.674		21 46 384.85		22 3 49.085		22 10 19.160		23 13 16.319	
✓		✓		✓		✓			
216 Camel.	E.	γ Aquilae	W.	β Arietis	E.	α Persei	E.	E. U. Min.	W.
22 17 25.1-		12 22 39.8		—		22 35 53		22 42 23.1	
27.8.		418		—		73		323	
304		437		22 26 31.9		95		421	
328-		456-		326-		116		510	
353		476.		253-		13.6-		43 0.0	
485		575		386		175.		18.6	
481		585		404		195-		282	
487-		554		422		215		375	
480		573		442		236		473.	
508		591		460		256.		55.4-	
532		23 09		473-		27.6		44 4.6.	
556		30		489		298		14.6-	
18 1.0		70		525		340		327	
34		89		542		357.		420	
59		108		561		375-		51.3	
84		127-		579		400		45 0.7	
112-		149		595		420		45 10.0	
17) 818.05		17) 973.45		15) 688.45		17) 402.0		17) 791.4	
				45.897					
22 17 48.121		22 22 57.262		22 26 43.947		22 35 23.647		22 43 46.553	
✓		✓		✓		✓		✓	

Dec. 3, 1884.

Draco.	W.	Dr. 48	E.	Auric.	E.	Sagittar.	W.	B. Lyrae	W.	19 B. Cam.	E.
22 51 48.3		22 59 24.8		23 6 15.8		23 12 20				23 23 13.8	
51.9		30.3		17.5		35.				20.1	
55.2		35.1		19.2		5.3				27.3	
58.5		40.3		20.8		7.0				33.7	
52 20		45.6		22.5		8.9				39.9	
8.8		55.5		25.8		12.1				53.3	
12.3		0 0.5		27.5		13.8				24 0.1	
15.4		6.0		29.4		15.5				6.5	
18.9		10.8		31.2		17.4				13.0	
22.2		16.0		33.0		19.4				19.9	
25.9		21.4		34.8		20.9				26.2	
29.4		25.9		36.4		22.5				32.6	
36.2		36.6		39.5		26.4				46.3	
39.5		41.5		41.4		28.1				52.9	
42.9		46.6		43.0		29.6				59.2	
46.2		51.8		45.0		31.2				25 6.2	
49.8		57.0		46.5		33.0				12.6	
17) 323.35		17) 185.7		17) 529.45		17) 296.65				17) 223.7	
22 52 19.021		23 0 10.924		23 6 31.144		23 12 17.450				23 24 13.159	
✓		✓		✓		✓				✓	
♈ Aquarii	W.	♈ Aquarii	W.	♈ Delphinii	W.	♈ Persei	E.	♈ Aquarii	W.	♈ Uta. Min.	W.
23 28 10.8		23 32 —		23 38 44.4		23 43 —		23 59 —		0 —	
14.0		27.1		45.8		—		—		—	
17.2		31.1		47.5		—		—		—	
20.6		34.7		49.3		—		—		—	
23.7		38.7		51.2		—		—		—	
30.8		46.7		54.8		7.5		—		—	
33.9		49.9		56.5		9.2		46.5		—	
37.4		53.9		58.3		11.1		50.0		0 2 51.0	
40.6		57.3		39 0.1		12.8		53.1		3 11.3	
43.8		33 1.0		1.8		14.5		56.4		33.3	
47.1		5.1		3.7		16.3		59.7		54.9	
50.4		9.0		5.5		18.0		0 0 3.0		4 14.7	
58.8		16.1		9.2		21.4		9.4		58.8	
29 0.3		20.4		10.8		23.2		12.4		5 18.6	
3.8		23.9		12.7		24.9		15.9		40.3	
7.3		27.7		14.6		26.6		19.3		6 1.6	
7.8		31.8		16.5		28.5		22.6		22.4	
17) 444.4		16) 454.35		17) 2.9		12) 214.1		11) 348.25		10) 366.95	
26 61.8		59.646				17 242		4.386		366.95	
23 28 40.516		23 22 57.516		23 39 0.171		23 43 12.789		23 59 53.136		0 3 12.29	
✓		✓		✓		✓		✓		✓	

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| 00111 |

| 01111 |

| 1111 |

$$1.25 \times \frac{9}{16} =$$

0.7037

$$10 \times \frac{17}{15}$$

1.4167

$$11 \times \frac{24}{14}$$

2.1429

$$1 \times \frac{30}{13}$$

2.8846

$$1 \times \frac{35}{12}$$

3.6459

$$\underline{\underline{C = 1.2462}}$$

| 0000 |

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| 00111 |

| 01111 |

| 1111 |

$$1.2462 \times \frac{9}{16} = 0.7016$$

$$10 \times \frac{17}{15} = 1.4125$$

$$11 \times \frac{24}{14} = 2.1365$$

$$1 \times \frac{30}{13} = 2.8731$$

$$1 \times \frac{35}{12} = 3.6250$$

1689phae.proj.1674