

KG
11365
44

A.44

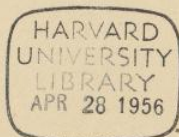
Meridian Circle
1863 May 26th to
Aug. 14

Sold by T. Groom & Co., Stationers, India Building, 82 State St., Boston.

KG-11365.44



KG 11365.44



1863 May 26th Ill. East
J.H.S.

1863 May 27th Ill. East
J.H.S.

Polaris

1 14 31.0

1 10 0.10
8 48.09

8 88° 34' 41" 16053

6 - 11° 30.9

Polaris s.p.

13 5 27.4

7 51.6

9 43.5

12 16.0

14 29.3

167.6

13 9 57.56

1 8 48.44

4 Mrs. Mini. P. s.p.

19 12 2.7

14 44.24

18 24.4

19 15 3.87

7 13 52.99

Lake Survey.
D.T.C. 6651.

18.0

22.0

26.7

30.2

34.6

131.5

19 20 26.30

Det 36.11

AR 1864.0

Eq. 19 19 17.190

- 2.152

Eq. + 0.050

1863.0 11.088

2.83

App AR 13.92

- 0

26.30

- 0.09

26.21

dt + 47.71

8 89° 16' 34" 7662

B. 6.6 - 3 17.8

C. 1.9 + 17.5

D. 3.1 + 3 0.4

1963 June 1st Ill. East.

T.H.3.

43 Cephei H. & Virginis

Polaris o.p.

12	48	33.2	41.2	13	3	40.7
	49	20.5	44.4		6	7.2
	49	56.1	48.4			
	50	45.0	51.1	10	33.6	
	51	27.4	55.0	12	47.6	
		182.2	240.1			

12	50	0.44	12	54	18.02	13	8	14.25
0	50	37.21				1	8	52.65

Decl. + 11°41'

Gub 64.0	24.40
	<u>72.988</u>
	21.412
μ_H	-0.07
ϵ_9	+0.05
181130	21.46
	<u>2.82</u>
α	24.28
μ	<u>0.11</u>
T_{sur}	<u>52.97</u>
$dt + w$	<u>36.37</u>

0 68° 36' 40" E. 1.6052

A	16.7	-430.9
B	17.0	-216.6
		E 12.57
D	11.7	+21.5
E	11.6	+430.9

1863 June 2 M. East
T.H.S.

19 Camelopardalis B	α Draconis	20 Ursa Min. B	α Bootis	57 Ursa Min. B	320
B 44 57.2	54.2	14 1 50.8	47.1	15 19 37.2	15
45 25.4	2.2	2 43.4	50.3		
45 58.7	11.4	3 42.3	54.4		
46 22.7	17.9	4 27.5	57.6	23 47.6	
46 55.6	26.3	5 26.1	1.4	25 20.8	
219.6	112.0	190.1	210.8		
B 45 55.92	14 0 10.40	14 3 38.02	14 8 54.16	15 22 28.93	10
		4 10.27	9 27.82	15 23 02.47	✓

δ 89° 5' 12" 34 16067 865

A 28.7 + 2 57.5

W 26.8 - 1 18.8
Z 29.3 - 2 57.5

323 Cephei B. - d.p. a Cor. Bor.

15	20	34.8	15.5
	21	16.6	19.1
	22	13.7	23.5
			26.6
			30.6
			114.3

15	21	21.70	15	28	22.86
3	28	55.74			56.49

Abertin	-0.10	-33.76
Alaroun	-0.10	-33.73
	14.49	33.745

86° 12' 20" 1.1793

B	2.49 - 5.21
C	21.12 + 4.52
D	21.50 + 46.70

1863 June 3rd Ill. 2.

T. H. 23.

(Examined them)

2 Boutin

a² Libra

24.6	44.0
28.3	47.6
33.0	51.4
36.0	54.4
40.1	58.1
162.0	255.5

14	38	32.40	14	42	51.10
		5.70		42	21.91

1863 June 4 Ill 2

T. H. 3.

Polaris s. p. 214 Camelops B.

			13	18	31.2
13	6	21.5		19	12.6
	8	18.3		19	59.3
	10	44.4		20	36.5
				21	21.9
					161.5

13	8	27.37	13	19	56.30
13	8	55.09	13	20	22.19

D 58° 34' 50" 2. 1.6052

B	27.8	-2	16.6
C	26.3	+	12.0
N	26.0	+	2 4.5

June 4 (continued)

Table 2³ throughout

B. Libra 723 Cephei B. Sp

8.3

12.6 15 20 43.0

16.6 21 24.0

19.4 22 22.8

23.1

81.0

30 15 9 16.20 15 21 29.94
 19 41.91 3 21 55.54

-15 -27.86

286°22'20" 1.1793

B 3.59 -57.21

C 28.52 +4.52

D 29.70 +46.70

1863 June 5th Ill. East.

T.H.S.

Lake Survey

Unc. Min. B a/p B.A.C 6651

4 Cygni

Lat. 37486

P. XIX 263

19	7	10.0	41.0	43.1	44.1	3 rd win?	35.1
	10	37.4	45.3	47.0	48.6		38.6
	13	12.7	50.0	52.0	54.2		43.0
			53.5	55.4	57.7		
			57.9	59.9	2.8		
			247.7	257.4	207.4		

19 13 36.66 19 18 49.54 19 20 51.48 19 35 53.48 19 38 34.59
 14 13 48.43

A 89° 14' 00" 1.7659

C 30.1 + 17.4

D 37.7 + 3.03

E 42.2 + 632.2

C 34.68

D 65

E 59

4507 Rad.

2 W. Min.

Pmm. 7985

74 Draconis

E Cygni

24.4 19 54 48.2

45.2

10.3

28.7 57 44.6

49.7

14.3

33.6 2nd wire too late

54.7

55.1

19.0

37.1 by 2nd rejected

58.3

11.1

22.2

42.0

2.9

34.0

26.8

165.8

210.8

92.6

19 50 33.16 20 0 37.70 20 12 54.16 20 36 52.75 20 40 18.52
 20 1 19.39 20 37 17.41

S 58°53'52" 1.7159 80 36 26.6 0.7875

A 37.7 + 5 49.5
 B [40.8] + 2 56.2

C 53.27 - 1.83

D 52.17 18.93

E 52.81 41.19

1863 June 5 *ell* East. (continued)

T.H.S

x		x		x	
2 Vulpec.	78 Drac.	61 Cygni' p.m.	61 Cygni' Jit.	61 Cygni'	
14.0	6.7	15.1	16.7	—	13
17.7	30.6	19.6	20.9	—	
21.9	58.4	24.6	25.9	45.1	
25.2	17.3	28.0	29.3	48.3	
29.3	44.2	32.5	34.0	52.5	
108.1	157.2	119.5	126.8		
	277.2				
20 48 21.62	20 51 55.44	21 00 23.96	21 00 25.36	21 6 44.75	13
46.10		24.66 <i>her.</i>		x 7.67	
		49.09			

32 Kelpier	20 49 +1.21	24.27	24.20 -07
61 Cygni	21 1 0.25	24.18	24.18 00
7 —	21 7 0.22	24.20	24.17 +07
	20 59	24.183	
		+0.123	
		0.104	
		0.114	

Pro R
July

C	44.76
D	44.74
E	44.76

1863 June 6 Ill East.

T.H. S

1863 June 11th Ill. East.

Polaris sp	214 Camelop. B.	214 Camelop. B.	S Virginis
13 4 19.5	2 nd bin 19 11.2	—	20.7
6 48.0	13 / 19 58.4	—	32.0
8 38.3	/ 20 33.4	—	35.9
11 9.2	/ 21 19.6	13 20 44.9	38.6
13 23.6	/	21 31.1	42.2
138.6			197.4
13 8 ~~51.72~~ ~~38.6~~	13 19 54.36	13 20 5.86	13 27 35.46
8 54.54	13 20 21.77	20 20.61	27 15.91

1328 -10.03

8 55'26" 1.1027

1855'26" 19"

Δ ~~54.54~~ +1 25.15
 Δ 14.13 + 12.93
 Δ 54.61 + 3.79
 Δ 54.26 + 39.14
 Δ 54.45 -1 25.15

Δ 5.76
 Δ 5.95

1863 June 16th Ill. East

T. H. S.

1863p1	Polaris	up	323	Cephei	P.B. 7 ^h
	—		15	13	28.0
13	0	21.4	wrong	14	28.0
	2	12.8			—
	4	44.5			—
	ill. g. bl.				—

B. 2 26.20 15 15 9.52
 1 7 5.18 21 21 58.18

The minute hand of E.C. has been disturbed. (last Sunday)
 Bad definition

$\delta 86^{\circ}34'39''$ a. 1.6051 $\delta 6^{\circ}12'12''$ 5 1.1791

B. 27.9 -2 16.6
 L. 24.8 + 12.0
 D. 23.9 +2 4.5 D [14.63] + 46.68
 E 9.52 + 1 41.52

1863 June 17th Ill. East
T.H.S.

64 Camelops B. p	B Draconis	α Ophiuchi.
17 10 20.8	21.5	40.5
11 4.0	26.7	44.0
11 35.2	33.1	47.7
12 20.9	37.6	50.6
13 0.8	43.6	54.2
81.7	162.5	237.0
17 11 40.34	17 20 32.50	17 21 47.40
15 18 26.02		28 39.10

17th June - 6 50.29

1863 June 23 Ill. E.

J. T. H. S.

Lake Survey Stars

XIX. 263.	L. 38094	Gr. 2984.	B 2618	Gr. 3215	
17.7	21.5	49.8	37.2	22.9	
21.8	25.9	54.0	41.5	27.2	
26.6	30.7	59.1	46.5	32.4	
30.2	34.3	2.7	50.1	36.1	
34.7	39.2	7.4	54.8	41.0	
131.0	151.6	173.0	230.1	159.6	

19	38	26.20	19	50	30.52	19	51	58.60	20	12	46.02	20	27	31.92	2.
----	----	-------	----	----	-------	----	----	-------	----	----	-------	----	----	-------	----

	x		x		x		x
	Gr. 3243	32 Vulpec.	P XX- 401	61 Cygni pri.	61 Cygni	Jul.	
9	28.9	6.0	27.8	7.3	8.9		
2	33.4	9.8	32.2	11.6	13.1		
4	38.5	14.0	37.6	16.3	17.9		
1	42.3	17.1	41.5	19.9	21.3		
0	47.2	21.0	46.5	24.6	26.0		
6	190.3	68.2	185.8	79.7	87.2		
				Net	Diff.		
20	32 38.06	20 47 13.64	20 50 37.16	21 0 16.69	21 0 +1.50		
		48 46.63		0 49.62			

June 23 M.E. (continued)

J.H.S.

Rad	5132	1 Drac. H. s.p	119 Ceph. B	* +45° 10'	ε Pegasi
5.8	21	15	57.4	39.3	50.9
10.6		16	23.9	44.2	54.2
16.3		16	43.0	49.8	58.1
20.2		17	9.2	53.5	0.9
25.6		17	33.2	58.9	4.6
78.5			166.7	208.7	168.7
21	5	15.70	9 16 45.34	21 23 55.37	21 28 49.14
			9 17 15.47	21 24 31.05	21 31 57.74
					37 30.66

32.44	0.64	-132.55	20.49	132.55	.10
61.44	0.69	132.44	21.1	132.53	+07
ε Pegasi	0.40	132.55	21.38	132.65	-09

$$\frac{132.55}{21.9}$$

$$\frac{R}{R}$$

+120

+116

Rate 114

$$183^{\circ} 10' 38'' 0.9561$$

C	55.89	-2.71
D	54.64	28.06
E	55.57	61.03

1963 June 25 I.A.E.

T.H.S.

June 27th I.A.E.

T.H.S.

Polaris s.p.

B. W. Min.

4 B. W. Min.

57 W. W. Min. B.

13 4 27.2

21.5

7.4

15 19 27.6

6 55.6

33.9

11.2

8 46.4

48.0

15.5

11 18.6

58.6

18.5

23 36.7

13 31.4

12.7

22.6

25 11.5

179.2

174.7

75.2

13 8 59.84
1 9 12.6714 50 46.94
51 10.6114 58 15.04 15 22 18.97
37.55 15 22 53.24

8 87° 20' 17" S 1.4070

A 192 +2 51.6

D 17.8 - 1 18.9
E 19.9 - 2 51.6

1863 June 27th 24.2

J.H.S.

23 Ceph. B. o.p.	a Cor. Bor.	γ Herenli's	β Herenli's	τ Scorpii	5
—	26.2	26.5	53.8	56.1	
15 20 58.6	30.1	30.0	57.3	59.9	
21 40.9	34.3	34.0	1.4	4.2	
22 35.3	37.4	37.1	4.4	7.3	
—	41.6	40.9	8.4	11.3	
	167.6	168.5	125.3	138.8	
			5.3	18.8	
15 21 46.27	15 28 33.92	16 15 33.70	16 24 1.06	16 27 3.76	
22 01.03	28 56.40				

D 86°12'15" 1.1791

A 46.11 - 57.19

C 45.62 + 4.52

D 45.28 + 46.68

	ζ Ophiuchi	P XV1-182	50 Cephei H. s.p.
1	12.0	29.0	—
9	15.3	46.7	13.5
2	19.2	7.3	31.0
3	22.0	—	55.2
3	25.0	—	16.4
8	9.3.5		
8			
76	16 29 18.70	16 33	16 34

ϕ Bootis	+0.44	- 22.07	14 59
α Corvina	+0.44	- 22.04	15 29
ζ Ophi		- 22.00	15 14 <i>examine</i>
Pro R	+0.115		

1863 June 28 M. East

F. H. S.

June 29 M. E.

x

x

a Persei

6.3

11.5

17.4

21.6

27.3

84.1

a Cephei

50.6

57.5

5.8

11.7

19.5

145.1

1 Draconis H.s.p. * +45° 10'

13.0

39.1

58.4

25.4

49.0

184.9

9.8

15.1

3 14 16.82

21 15 50.2
22.2021 17 0.98
15.10

21 29 5.45

D

5.38

E

5.52

	✓	✓	✓	✓	✓
0	79 Cysmi	Pim. 9 4 32	16 Pegasi	Gr. 36 44 (?)	L Cephei
	24.0	34.9	29.1	23.1	40.2
	28.0	39.2	32.6	30.7	46.4
	32.8	44.0	36.8	38.7	53.3
8	36.5	47.4	39.9	44.5	58.4
1	40.8	52.0	44.0	52.3	5.5
	162.1	217.5	182.4	189.3	203.8
5	21 37 32.42	21 37 43.50	21 46 36.48 53.15	21 54 37.86	22 6 52.76

16 Pegasi +0.43 -16.24

1863 June 29 Cont. H. E.

T. H. S.

June 30 Ill. E.

T. H. S.

✓

✓

Peltan 23902

* + 62° 37'

5 Cephei

O. H. 23902

Cp

36.8

42.2

39.2

42.2

48.9

44.5

48.2

55.9

50.6

52.3

1.1

55.7

58.3

21 52 4.1

8.0

1.1

237.8

156.1

191.1

22 14 47.56

21 51 49.43

22 6 55.22 22 14 50.22

	✓		✓		✓		✓
	Cpr. 3779	Cpr 3786	9 Lacerta	Ortiz. 24769	34 Cephei	H.	
2	52.2	11.2	23.2	54.6	22 46	54.8	
5	57.6	16.3	28.3	59.8	47	19.0	
6	3.5	22.5	34.5	5.1	47	48.5	
7	8.1	27.4	38.9	9.5	48	10.3	
1	13.9	32.9	44.7	15.0	48	36.7	
1	135.3	110.3	169.6	144.0		169.3	
22	22 22 3.06	22 23 22.06	22 31 33.92	22 45 48.0	22 47	45.86	
					48	1.50	

1863 June 30th Ill. E. (cont.)

x T.H.S.

1863 July 11 Ill. E.

T.H.S.

 α Pegasi

38.2

41.5

45.6

48.4

52.2

225.9

Cpr. 750 s.p.

15 53 43.8

54 27.5

55 1.6

55 44.3

56 22.8

140.0

62 Ure. Min. B.

 δ Ophiuchi

22.2

25.5

29.2

32.0

35.8

144.7

22 57 45.18

59.41

15 55 4.00

54 42.67

15 58

4.49

57 54.33

16

7

28.94

13.66

22 58

-13.62

 δ 53° 21' 30" S. 093.68

C 7.62 -1.58

D 7.08 -26.72

E 7.78 -58.12

	+ 1 19.5		+ 1 22.0		+ 1 6		+ 1 6		α Scorpii	
	+ 50° 40' 10"		+ 1° 22' 0"		+ 1° 6'		2 9			
2	16.6	37.8	20.3	48.3	12.7					
5	20.0	41.2	23.7	51.7	16.5					
2	23.7	44.8	27.3	55.4	20.6					
0	26.5	47.7	30.1	58.2	23.8					
8	30.2	51.4	33.8	1.8	27.8					
7	117.0	122.9	135.2	215.4	101.4					
4	16 11 23.40	16 13 44.58	16 15 47.04	16 19 55.08	16 21 20.28					
6					5.03					

1863 July 11 J_u E continued
T.H.3

δ Herculis			ζ Ophiuchi			P XVI 182			ζ Herculis			η Herculis			9		
		31.1			49.3			5.8		17.8	~~17.8~~			21.5			
		34.6			52.8			23.5		24.6	~~24.6~~			25.8			
		38.7			56.5			43.6		26.1	~~26.1~~			30.7			
		41.7			59.2			58.3		29.2	~~29.2~~			34.3			
		45.7			3.1			18.2		32.7	~~32.7~~			39.0			
		191.8			220.9			149.4		128.4	~~128.4~~			151.3			
					280.9			209.4			25.68						
16	24	38.36	16	29	56.18	16	33	41.88	16	36	~~27.68~~	16	38	30.26	16		
											10.47						

g Camelopard. s. p.	12 Ophiuchi	2 Eusebia	2 Ur. Min.	2 Ophiuchi
29.5	23.1	13.5		43.9
38.5	26.4	17.3	16 59 57.4	47.3
45.6	30.3	21.9	17 0 25.6	51.2
54.8	33.1	25.1	17 0 45.8	54.2
3.2	36.9	29.3	17 1 13.4	58.0
171.6	149.8	107.1		254.6
231.6				
16 40 46.32	16 51 29.96 ~~14.68~~	16 55 21.42	17 0 23.08 0 10.12	17 2 57.92

8 82°15'36" 20 0.8707

B 22.57 +25.17
C 22.36 -2.22
D 22.86 -22.94
E 23.49 -49.91
23.08

1863 July 11 Ill. E. (continued)

J. H. S.

Heracles		64 Camel. B. s.p.		α Ophiuchi	
36.0	17	17	30.0	46.7	
39.4		18	13.2	50.0	
43.3		18	45.9	53.9	
46.2		19	29.5	56.7	
49.9		20	7.8	0.5	
214.8			126.4	207.8	
17	8	42.96	17	18	49.28
		27.66			29.48
				17	28
					53.56
					38.19

δ Ophiuchi	+0.40	15.68	16 8	-15.63	+05
α Scorpii	0.46	15.71	16 21	15.66	+05
ξ Heracles	0.46	15.67	16 36	15.69	-02
κ Ophiuchi	0.40	15.71	16 51	15.72	-01
λ Heracles	0.41	15.71	17 8	15.75	-04
μ Ophiuchi	0.40	15.77	17 29	15.79	-02
		15.708	16 46		
Pro R		+114			
John "		.121			
		.114			

1863 July 20 M. 2.

T.H.S.

323 Ceph. B. s.p.	37 Libra	1 Serpente	2 Serpente	2 Serpente
15 21 14.6	—	3.8	9.1	15 40 39.1
22 11.5	—	7.3	12.6	
22 52.8	26.7	11.3	16.2	
23 45.5	29.5	14.1	18.9	
24 36.4	33.4	18.2	22.7	15 40 39.1
160.8		54.7	49.5	
15 22 56.16	15 27	15 36 10.94	15 38 15.90	
5.46			37 34.56	

1863 July 20 Ill. East. (continued)

T. H. S.

W. Min	Cp. 750	s.p.	62 W. Min. B	Cp. 779	s.p.	2 Ophiuchi	A
9.4	15 54	10.2	—	30.4	48.5		
26.2	54	55.0	3.2	53.3	51.9		
43.3	55	27.5	34.6	9.9	55.3		
57.0	56	10.1	58.1	31.6	58.2		
15.2	56	50.5	30.8	52.1	1.9		
150.9		153.3		177.3	215.8		
				57.3			
15 49 42.18	15 55 30.66	15 58 32.00	16 4 11.46	16 7 55.16			
	54 42.67	57 52.83		13.69			
	4.15	2.17					
	2.83						
	0.51	0.31					
	0.32						

180° 21' 51" or 0.9368

A 31.77 + 28.57
 C 32.36 - 2.24
 D 31.54 - 25.56
 E 32.35 - 58.45

1863 July 21st 9^h. East

x T.H.S. x

Arg. 23902	Comp. δ Cephei	δ Cephei	γ Lacertae	L. 44750
39.7	41.2	42.3	22 32 23.8	55.0
45.3	47.6	48.6		0.2
50.8	54.1	55.7		5.4
55.0	59.4	0.5		9.6
1.4	6.5	7.4		15.4
192.2	208.8	153.5		85.6

22 15 50.44 22 24 53.76 22 24 54.70 22 32 34.44 22 46 5.12

1863 July 21 Hk. East (continued)

T.H.S.

✓

✓

✓

✓

4 Ceph H.			P.XXII 292	R. 11033	R. 11126	Ai 2105
			44.7	4.6	15.8	3.0
22	48	22.2	49.1	11.3	20.2	
	48	49.0	54.1	19.2	25.2	
	49	11.3	57.5	25.2	29.0	
	49	38.3	2.5	33.0	33.9	3.0
			207.9	93.3	124.1	
22	48	47.54 4.00	22 58 53.58	23 14 18.66	23 18 24.82	23 22 52.88

P 57° 25' 11" for 0.8602

B 47.27 +25.07

C 47.03 -1.97

D 48.56 -22.44 A * obs'd proceeds P.XXII 292 by 1° 40'

E 49.99 -51.31

α	α	α	α	α
L. 46 203	γ Androm.	η Cassio.	α Androm.	γ Pegasi
50.4	55.2	47.6	0.3	53.2
55.0	0.1	54.8	4.2	56.8
0.4	5.0	1.9	8.2	0.4
3.9	8.9	7.8	11.2	3.2
8.6	14.2	15.9	15.5	7.1
118.3	82.4	128.0	39.4	120.7
23 ²⁴ 29 59.66	23 40 4.68	23 58 1.60	0 2 7.88 1 22.75	0 7 0.14 6 14.50

Evening July 20th
 15 38 + 0.50 = 41.75
 16 7 0.40 = 41.87
 15 52 = 41.810
 Morning July 21st
 α Andro 01 + 0.41 = 46.04
 γ Pegasi 06 + 0.35 = 46.03
 04 = 46.035

1863 July 21 H. East (continued)

July 22 Ill-E.

J.A.S

M.B. Examined weight

Urs. Min. B & p.	B Libra	μ Serpenti	S Urs. Min	Ep
0 11 10.0	22.3	—		15
12 26.0	25.8	—	31.3	
13 21.0	29.4	—	49.2	
14 34.3	32.2	22.4	2.7	
15 43.1	36.0	26.2	21.2	
134.4	145.7			
0 13 26.88	15 10 29.14	15 43	15 49	15
12 33.52	9 41.67			

Cp. 750		s.p		62 Wm. Min. T _B		ε Uphiuchis		α Scorpii		η Draconis	
15	54	17.5	15	57	40.2		49.0		45.1		
3	55	2.5		58	9.5		52.3		48.7		
2	55	34.3		58	40.4		55.9		52.9		
7	56	17.2		59	4.0		58.7		55.8		
2	56	56.9		59	36.3		2.5		0.0		12.3
		128.4			130.4		218.4		207.5		
							278.4				
15	55	37.68	15	58	38.08						
3	54	45.46		57	52.69	16	11	55.68	16	21	52.50
											4.95

1863 July 22 Ill. East (cont.)

J. H. S.

β Herulis	ϵ Scorpis	ρ Xyl 182	50 Cephei H	η Herulis	90
3.6	6.0			53.9	
7.1	9.9		27.2	58.4	
11.0	13.9	14.5	44.3	3.0	
13.9	17.1	28.9	(Evamine) 7.5	6.6	
18.0	21.2	49.6	28.9	11.3	
53.6	68.1			133.2	
				13.2	
16 25 10.72	16 28 13.62				
16 25	16 28	16 34	16 35	16 39 2.64	1

Large proper motion
(See Vol. I Zones)

✓

9 Camelops. - S.p.	L	30.694	18 Ophiuchi	2 Urs. Minor	Arg. + 62°	2004	
2.7		49.3	55.6	17	0	4.9	38.6
12.0		52.8	58.9	Exam	~~20.2~~		45.8
19.1		56.5	2.7	inc	0	57.1	53.5
27.9		59.2	5.4				59.2
36.2		3.0	9.3		1	44.6	7.6
97.9		220.8	131.9				204.7
19.58							

16	41	19.58	16	46	57.16	16	52	2.39	17	0	54.26	21	52	52.94
						51	14.58				8.40			

$\delta 28^{\circ} 39' 03''$ 08/07

A 54.46 + 49.56

E 55.18 - 1.92

E 54.40 - 50.20

1863 July 22 Ill. East (continued)

X T.H.S

X

X

X

X

5 Cephri	Oct. 23 902	L. 43 886	9 Lacerta	L. 44750	P.
46.5	45.1	10.4	26.8	58.2	
52.6	50.2	14.4	32.2	3.0	
59.1	56.0	19.1	37.9	8.7	
4.3	0.3	22.6	42.2	12.6	
11.3	6.2	27.5	48.2	18.3	
173.8	157.8	94.0	187.3	40.8	
22 6 58.76	22 15 55.56	22 22 18.80	22 32 37.46	22 46 8.16	

P. XX11		2 Capricorn		Tbr. 3084		Run 11033		Run 11125	
292									
48.1		32.9		10.0		8.0		19.1	
52.2		39.3		15.2		15.4		23.3	
56.7		46.2		21.3		22.8		28.1	
0.6		51.3		25.8		28.3		32.0	
5.4		58.9		32.0		36.3		37.1	
163.0		228.6		104.3		110.8		139.6	
22.58	56.60	23	45.72	23	11	20.86	23	14	22.16
							23	18	27.92

1863 July 22 Ill E. (cont.)

r J.H. 3

r

Invert 34 Cephei H.

✓

r

L. 45976	L. 46203	4 Cephei	Rinn 11796	9 Capric.	a
46.1		10.1	19.9	50.3	
50.8		25.1	27.2	57.3	
56.2	Star faint. 3.9	41.0	34.1	51.5	
0.5	7.0	52.5	40.1	10.7	
6.7	13.0	9.4	47.6	18.3	
160.3		138.1	168.9	142.1	
		198.1			
23 22 56.06	23 29 3.46	23 33 39.62	23 51 33.78	23 58 4.42	0

3.56

3.03

3.01

a Androm.

γ Pegasi

5 Urs. Min. T3

6 Urs. Min. T3

34 Cephei H.

3.2

56.3

0

11

12.8

22

47

59.5

7.0

59.9

12

28.0

48

26.2

11.2

3.5

48

53.1

14.3

6.2

14

38.6

0

16

51.5

49

13.9

18.7

10.2

15

45.3

0

18

59.8

49

42.4

54.4

176.1

195.1

0 2 10.88
1 22.28

0 7 3.22
6 14.53

0 13 29.87
12 12 33.52

0 14 57.05
12 13 48.85

22 48 59.02
48 4.11

Evening

β Librae

0.39

441.4758 1510

α Scorpii

0.1

0.48 48.03 16.2

α Delphinii

0.39

48.19 16.58

48.033 16.2

Polaris

α Antares

0.41 49.01

γ Pegasi

0.39 49.08

49.055 0.4

Mean

+48.471 19.18

Rate

0.1255

β Librae - 17.94 - 06

α Scorpii 48.10 - 07

α Delphinii 48.16 + 03

α Antares 49.06 + 05

γ Pegasi 49.07 + 06

87 11 51.6 13108 88 27 23.8 1.5706

A 28.8 - 2 16.5 A 51.5 - 4 8.3

B 31.12 - 1 7.48 B 48.6 - 2 2.9

19 28.40 + 1 0.46

2 31.10 + 2 18.3

1863 July 23 M. East

T.H.S.

Mrs. Min.			23 Camelop. H. 2/2			51 Cephei H 2/2			B. Lyrae			σ Sagittarii			50
				4.8		18	33	48.6		47.9			34.2		
18	16	24.4		25.9			35	8.2		51.9			38.3		
	17	25.9		41.6			36	4.0		56.2			42.2		
	18	10.8		1.9			37	17.9		59.3			45.1		
	19	14.8		20.0			38	26.8		3.9			49.2		
				94.2				105.5		219.2			209.0		
				214.2											
14	17	20.79	18	23	42.84	18	36	9.10	18	45	55.84	18	47	41.80	19
	16	35.74					35	10.98			4.88				

88°36'24.8" 1.2278

13 20.22 +55.82

2 21.55 -4.38

13 20.86 -49.94

2 20.96 454.24

50 Draconis	ε Aquila	ζ Aquila	25 Camelopardalis	4 Urs. Min. B.
13.6	12.1	54.9	4.8	19 8 26.8
26.9	15.6	58.2	34.1	12 3.0
41.1	19.3	2.1	55.2	14 44.6
51.7	22.2	5.0	23.1	18 11.2
7.0	26.2	8.7	50.0	21 25.4
140.3	95.4	128.9	167.2	111.0
200.3				
18 51 40.06	18 54 19.08	19 0 1.78 18 59 10.59	19 2 57.44 3.83	19 14 58.20 13 49.69

1863 July 23 Ill. East.

1863 July 24 Ill. East

δ Aquila			70 Ophiuchi			M Sagittarii			40 Draconi			4.
		23.9			22.6			25.2			33.2	
		27.1			26.0			28.8			52.5	
		30.6			29.6			32.6			13.4	
		33.4			32.3			35.5			29.1	
		37.3			36.1			39.6			51.1	
		152.3			146.6			161.7			179.3	
											59.3	
19	19	30.46			29.32	18	6	32.34	18	11	11.86	1.
	18	39.44					5-	38.72				

β Hydræ +0.43 51.39 -51.43 -04 18 45
 δ Aquilæ 0.39 51.58 51.46 +12 18 59
 δ — 0.60 51.42 51.50 -08 19 19

Per R +51.463 19 1
 Yell +0.127
 +0.115
 +0.121

	41 Draconis	δ Sagittarii	δ Urr. Min.	α Lyrae	Run. 7011
2	39.8	4.2	18 15 31.6	—	33.4
5	58.6	8.0	16 28.4	—	38.6
4	20.1	12.1	17 28.8	15.4	44.2
1	35.5	15.2	18 14.7	19.0	48.4
1	57.5	19.7	19 19.0	23.9	54.4
3	211.5	59.2	122.5		219.0
3	91.5				
26	18 11 18.30	18 13 11.84	18 17 24.50 35.50	18 33 15.18 21.47	18 57 43.80

18 6 +0.46 54.08
 18 33 +0.45 54.16

 18 15 54.120

08 0.32
 24 3.76
 22 4.68

1863 July 24 Ill. East (continued)

x T.H.S.

9

H Lyrae

12 Cygni

Aug 1712

25.6

42.1

29.8

47.6

34.3

53.8

37.9

58.3

22.9

42.6

4.4

28.0

170.2

206.2

19 12 34.04 19 14 53.24 19 29 22.68

C
D

22.76

22.89

1863 July 28 Ill. East
T. H. S.

3 Ur. Min	4 Ur. Min. B.
15 38.1	19
16 33.8	12 29.4
17 36.6	
18 20.8	
	21 48.8

14 17 30.88	19 15 29.15
15 16 34.43	13 53.08

8636 26.12 to 1.2278 89° 0' 47" 0 sec. 1.7038

A 30.84 + 152.94 A 21.3 - 62.5

B 29.62 + 55.82

C 32.22 - 4.318

D 32.86 - 49.94 D 21.0 + 25.6

1863 July 29th M. E

T. H. S.

X

X

Camelop. H. sp.		a Lyrae		51 Cephei H. sp		110 Herminia		P. 7011		
	20.7		18.5	18			48.2		45.4	
	42.1		22.6	35	25.8		51.8		50.6	
	57.1		27.3	36	21.8		55.6		56.3	
	17.6		30.7	37	36.0		58.5		0.4	
	35.9		35.6	38	45.0		2.6		6.6	
	173.4		134.7				216.7		159.3	
	293.4						276.7			
18	23	58.68	18	33	26.94	18	36	27.00	18	40
			32	21.43	6	35	13.04		55.34	18
									57	55.86

 $\delta \ 57^{\circ}14'30''$
 1.3176
 $a \ 26.3 - 2'16.7$
 $b \ 27.31 - 1'5.59$
 $c \ 27.18 + 5.38$
 $d \ 27.22 + 1'1.42$

✓				✓				✓			
25	Camelop. H. sp	4	Wrs. Min. Bsp	1	Cygini	At.	1752	4	Cygini		
	—	19	8	49.0	13.4		26.5			44.8	
	—		12	28.5	18.8		32.3			50.1	
	11.8		15	6.2	24.6		38.6			55.7	
	40.4		—	—	29.0		43.3			0.1	
	5.8		—	—	35.2		50.0			5.9	
					121.0		190.7			156.6	
19	3	13.98	19	15	20.93	19	26	24.20	19	29	38.14
	2	4.53		13	53.73				19	33	55.32

α 82°39'33" 44 0.5926 δ 89° 0'46" 8 to 1.7638

A 13.97 -52.23 14
 B 14.57 -29.86 14
 C 13.63 +2.03 C 21.5 + 15.0
 D 20.1 +251.6
 E 21.5 +632.5

1863 July 29 M. E. (continued)

X T.H.S.

r

x

r

r

L 37486	P XIX 263	Gr. 2933	L 38094	L 38154
15.1	55.2	—	0.7	29.2
19.7	59.2	—	5.3	33.5
24.6	5.7	17.7	10.0	38.2
28.2	9.2	21.3	13.4	41.8
33.4	14.1	26.4	18.4	46.6
121.0	143.4		47.8	189.3

19 37 24.20 19 40 4.68 19 42 17.45 19 52 9.56 19 53 37.86

Some error in reading

off.

17.37

17.46

17.52

R.	7985	Cpr.	1418	Cpr.	3215	Cpr.	3220	74 Draconis
	31.2	20	15	41.0	2.1		58.5	—
	38.6		16	31.4	6.8		1.0	4.2
	46.3		17	4.5	11.5		5.8	25.7
	51.9		17	50.0	14.6		9.5	42.9
	59.6		18	33.9	19.8		14.3	5.8
	227.6			160.8	54.8		87.1	
				400.8				
20	1 45.52	20	17	20.16	20	30	10.96	20 31 5.42
								20 38 24.42
								37 19.97

$2^{\circ} 36' 11''$ N. 0.7876

B 24.46 +20.28
C 24.11 -1.59
D 24.77 -18.13
E 24.34 -41.46

1863 July 29 St E. (continued)

x				x			
74 Draconis	61 Cygni	prec.	61 Cygni	feh	Rad.	5132	1 Draconis H ₂ p
—	46.9		45.6		45.9		34.7
—	51.3		52.9		50.6		1.8
22.2	55.9		57.4		55.9		21.4
39.1	59.3		0.9		0.0		—
2.4	4.0		5.8		5.3		—
	383.0		165.6		157.7		
	Medium		45.6				
20 40	21 1 56.30		21 1 9.12		21 6 55.54		21 18 22.96
	0 50.32						9 17 13.94

δ 51° 55' 25" 0.9523

A + 47.00

B +

C 23.24 + 1.84

b 22.84 - 21.04

s 22.81 - 1.84

[illegible]

28.85	0.35
29.13	4.17
26.72	9.63

39.49
39.49

1863 July 29 Ill. E. (continued)

T. H. S. J

r

x

r

16 Pegasi

 $\times +62^{\circ} 37' \text{ Arg. } +62^{\circ} = 2004$

Cpr 3644

 α Aquarii

52.4

56.2

47.2

48.2

56.2

3.6

54.3

51.6

0.0

11.3

2.0

55.1

3.1

17.2

7.8

57.9

7.3

25.5

16.0

1.8

119.0

113.8

127.3

214.6

21 47 59.80
46 53.77

21 54 10.76

21 56 1.46

21 59 54.92
21 58 48.81~~61 Arg.~~
61 Arg.

2 Arg.	18 32	+0.50	+66.01	-66.13	-12
61 Arg.	21 1	0.50	66.48	66.39	+09
16 Pegasi	21 47	0.64	66.47	66.47	.00
α Aquarii	21 59	0.60	66.51	66.49	+02
	20 50		+66.368		
Pro R			+ 0.100		
July.			+ 0.108		
			0.104		

1863 July 30 Ill. E.

1863 July 31st Ill. E.

7145

7145

E Urr. Min.

B Drawn

a Ophirchi

S Urr. Min

17 00 24.0
 00 49.2
 1 15.1
 1 35.3
 2 3.8
 127.4

17 1 13.48

17 28

17 29 48.76 18 17 37.64
 28 38.08 16 33.61

17 39.12 +88.62
 C 38.92 = 4.28
 17 38.06 -49.94
 E 38.96 -154.64

1863 July 31st Ill. E. - (continued)

1863pha

3 Cephei H.	57 Cephei H.	110 Herculis	B Lyrae	* Jol.	
26.0	18 34 12.4	53.3	7.7	9.3	
47.3	35 32.1	56.9	11.5	13.3	
2.8	36 29.0	0.8	15.8	17.8	
22.2	37 41.1	3.6	19.3	21.0	
41.3	38 51.6	7.5	23.7	25.5	
139.6	166.2	122.1	78.0	86.4	
19.6					
18 24 3.92	18 36 33.24	18 40 0.42	18 46 15.60	18 46 17.38	18
	35 13.72		45 4.94		

α Sagittarii	δ Serpentis	θ Serp	ϕ	δ Draconis	ϵ Aquile
—	32.8	34.2	—	—	32.1
—	36.1	37.5	—	46.6	35.5
2.0	39.6	41.0	—	0.2	39.2
5.1	42.5	43.8	—	11.2	42.1
9.3	46.1	47.7	—	25.8	46.1
	197.1	204.2			195.0

38 18 48 18 50 39.42 18 50 40.84 18 51. 18 54 39.00

1863 July 31st

Aquila			25 Camelopard. H. sp.			6 Vulpecula			B. Cygni mic.			B. Cygni fol.			α		
								7.6			19.6			21.1			
		18.2			56.1			11.3			22.7			24.8			
		21.8			16.9			15.2			26.7			28.9			
		24.7			—			18.1			29.7			31.9			
		28.5			—			22.3			34.0			36.2			
								74.5			132.7			142.9			
19	00	21.59	19	3	19.08	19	24	14.90	19	26	26.54	19	26	28.58			
18	59	10.59	7	2	4.74												

21.61
54
68
52

+2.41
-0.26
-3.02
-6.98

C
B₁

+2.03
23.14

*a Aquila**B. Aquila*

14.2

43.2

17.7

46.2

21.2

50.2

23.9

53.2

27.8

57.1

104.8

249.9

19 45 20.96

19 49 49.98

44 9.96

48 39.07

<i>L. Aquila</i>	17 29	+ 0.41	+ 11.09	- 11.14	- .05
<i>B. Aquila</i>	18 45	0.47	11.23	11.27	- .04
<i>S. Aquila</i>	18 59	0.41	11.41	11.30	+ .11
<i>L. —</i>	19 44	0.42	11.62	11.38	+ .24
<i>B. —</i>	19 49	+ 0.41	11.32	- 11.40	- .08

18 58

11.294

K. R.

+ 0.108

J. H.

+ 0.098

+ 1.103

1863 Aug 3 Ill. East

45

Σ Err. Min	η Ophiuchi	α Herculis	Aug. +1° = 3415	ξ Ophiuchi	
—	46.2	—	0.9	2.5	17
—	49.7	—	4.1	6.1	
24.3	53.4	45.6	7.7	10.0	
43.7	56.2	48.3	10.5	12.9	
12.4	0.2	52.3	14.1	16.9	
	205.7		37.3	48.4	
17 1 22.10	17 3 53.14	17 9 45.30	17 13 7.46	17 14 9.68	17
0 7.03		27.49			8

45.341 - 0.26
 45.27 - 3.03
45.29 - 7.01

D 82°15'41" S. 0.8708

C 22.38 - 1.92
 D 21.74 - 21.96
 E 22.19 - 50.24

45.29
 45.11
 45.25

64 Camelops B s.p.			74 Camelops B s.p.			α Ophiuchi			π Herculis			γ' Draconis prog.		
17	18	37.3	—	—	—	49.1	—	—	19.4	—	—	20.2	—	—
19	—	22.5	—	—	—	52.5	—	—	23.2	—	—	31.1	—	—
19	—	53.1	—	—	—	56.2	—	—	27.2	—	—	43.1	—	—
20	—	36.0	—	2.1	—	58.8	—	—	30.2	—	—	52.0	—	—
21	—	15.5	—	15.1	—	2.9	—	—	34.6	—	—	4.3	—	—
164.4			—			219.5			134.6			150.7		
												210.7		
17	19	56.88	17	21	—	17	29	55.90	17	42	26.92	17	45	42.14
5	18	34.43	—	—	—	—	28	38.05	—	41	9.14	—	—	—

1863 Aug 3 S.M.E. (continued)

V

Drac.	for	Drac.	Drac.	Arg. + 1° = 3578	70 Ophiuchus' proj	μ
21.9		17.7	35.4	57.4	46.8	
32.9		24.0	41.0	0.8	50.1	
44.7		30.5	46.4	4.3	53.9	
53.7		35.2	50.8	7.1	56.5	
5.9		42.4	57.1	10.9	0.3	
159.1		149.8	230.7	80.5	207.6	
219.1					267.6	
17 45 43.82	17 52 29.96	17 54 46.14	17 59 4.10	17 59 53.52		
		53 28.52				

	μ Sagittarii	δ Sagittarii	δ Mrs. Min.	23 Camelops. H	51 Cephei H. p.
8	49.3	28.2	18 15 51.3	32.3	—
1	52.9	32.1	16 48.3	54.6	18 35 39.3
9	56.8	36.3	17 49.2	—	36 34.2
3	59.6	39.3	18 32.6	29.2	37 50.0
6	3.8	43.7	19 39.8	48.9	38 58.7
6	222.4	179.6	221.2		
2	18 6 56.48	18:13 35.92	16 17 46.24	18 24	18 36 40.40
	5 38.64		16 32.83		35 14.58

$A 60.00 - 218.77$
 $B 41.38 - 18.69$
 $C 39.88 + 538$
 $D 40.72 + 11.42$

1863 Aug 3 Pl. E. (continued)

R. 7011

4 Cor. Min. B.

Al. 1752

4 Cygni

L 37 ~~59~~

486?

57.7

38.7

57.0

27.2

2.7

19

12

42.4

44.4

2.2

31.8

8.5

15

19.1

50.8

7.8

36.6

12.5

18

47.8

55.4

11.9

40.5

18.5

1.9

17.9

45.6

99.9

191.2

96.8

181.7

18 58 7.98

19

15

36.83

19

29

50.74

19

34

7.36

19

37

36.34

7

13

57.33

D 89° 0' 45" 17638

B 36.4 + 311.4

C 34.1 + 15.0

D 34.0 + 251.6

	Gr 2933	20 Cygni	Rad. 4507	2 Vir. Min.	R. 7985
2	20.8	—	7.8	—	44.0
8	24.9	27.6	11.9	19 59	32.1
6	29.9	—	16.6	—	58.1
5	33.5	37.7	20.2	20 4	58.4
6	38.5	44.0	[2] 25.2	20 8	20.4
2	147.6	—	51.7	—	166.7
4	19 42 29.52	19 48 22.92	19 52 16.34	20 2 25.27 1 25.67	20 00 57.74

δ 58°54' 11" α 1.7180

B 33.06

D 24.7 +2 52.6

D 32.86

D 24.0 -2 34.4

E 32.88

E 27.1 -5 53.3

1863 Aug 3 (continued)

α^1 Capricorni			α^2 Capricorni			Cpr 3220			Cpr 3243			P XX			401	61
		18.7			42.6			8.7							19.7	
		22.1			46.0			13.1			25.4				24.4	
		25.8			49.7			18.0			30.2				29.3	
		28.5			52.4			21.6			33.6				32.9	
		32.6			56.5			26.8			38.8				38.5	
		127.7			267.2			88.2							144.8	
20	11	25.54	20	11	49.44	20	30	17.64	20	34	29.75	20	52	28.96		
		7.54			31.48											

B
 C
 D
 E

2988
 .86
 .63
 .62

47

	61 Cygni' p.m.	61 Cygni' fol.
7	59.1	0.6
4	3.6	5.0
3	8.0	9.6
9	11.5	13.1
5	16.1	17.9
8	98.3	16.2
	med:	Diff
21	2 5.65	21 2
0	50.36	+1.58

α Herculis	+0.61	+18.22	17 9	-18.19	+0.03
γ Optimus	0.68	18.26	29	18.23	+0.03
μ Herculis	0.65	18.23	21	18.25	-0.02
μ Septent.	0.63	18.23	18 6	18.29	-0.06
δ Capri	0.61	18.41	20 11	18.49	-0.08
α —	0.61	18.37	20 12	18.49	-0.12
61 Cygni	+0.50	18.79	21 1	18.58	+0.21
		+18.359	18 50		
Pr. R		0.097			
		0.095			
		+0.096			

863 Aug 4 Ill EastAug 4th Ill. West

745.

Polaris

3 Ursa Minoris

51 Cephei's p.

R 70 11

13 6 49.8

18 16 4.8

18 35 —

1.0

9 26.8

17 9.7

35 17.8

6.8

11 3.1

17 57.1

36 34.3

11.1

13 38.4

18 55.8

37 25.4

16.5

15 47.9

19 53.2

38 48.3

21.7

168.0

160.6

57.1

172.4

13 11 21.60

18 0.12

18 36 26.46

18 58 11.42

9 47.61

16 32.58

35 14.87

88794285 13176

$\Sigma 26.43 + 68.63$
 $\Sigma 28.92 - 5.38$
 $\Sigma 23.98 - 11.42$
 $\Sigma 27.73 - 229.57$

Ill. West.

$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$
θ Lyrae	θ Cygni	2 Cygni	θ 1752	θ Cygni
52.8	—	28.9	42.2	—
58.1	—	35.2	48.9	—
1.4	20.4	39.6	54.1	10.6
5.7	26.6	45.2	0.2	16.0
10.0	31.8	50.6	5.6	21.1
128.0		199.5	151.0	
19 13 1.60	19 15 20.87	19 27 39.90	19 29 54.20	19 34 10.87

$\checkmark$
 ϕ
 A 20.71
 B 21.08
 C 20.82

A 10.76 - 10.34
 B .85 - 5.15
 C 11.00 + 0.40

1963 Aug 4 Ill. West. (continued)

1863phae.pr

XIX	2.63	Gen	2933	L	37753	L	38094	R	7985	a					
	12.4		23.9		52.3		16.4		47.3						
	17.7		29.1		57.5		21.3		55.5						
	20.9		32.7		0.9		24.9		1.4						
	25.4		37.1		5.4		29.7		8.9						
	29.5		41.7		9.7		33.9		15.7						
	105.9		169.5		126.0		126.2		128.4						
19	40	21.18	19	42	32.90	19	44	1.20	19	52	25.24	20	1	1.76	'20

α^1 Capricorni	α^2 Capricorni	ϵ 3220	ϵ 3243	Radcl. 5132
21.8	45.6	12.0	not	1.1
25.8	49.6	17.1	very	7.0
28.6	52.4	20.8	good	11.1
32.2	56.1	25.3		16.3
35.6	59.5	29.9	"	21.0
144.0	263.2	105.1		56.5
20 11 28.80	20 11 52.64	20 30 21.02	20 34 33.30	21 7 11.30
10 7.54	10 31.48			

A 33.29 - 9.01

C 24 + 0.34

D 17 + 5.92

E 48 + 9.16

1863 Aug 4 Ill. West (continued)

Obs 7501

PCygni ?

Aug + 45° 3584

L 42153

Cpr 3523

Cpr 3554

41684

—

20.4

23.5

27.5

31.0

—

—

35.3

40.4

45.2

6.2

11.5

15.3

20.4

25.2

78.4

—

—

—

36.4

42.2

34.0

40.0

44.3

50.0

55.4

223.7

21 20 23.70

21 29 35.70

21 32 15.68

21 34 30.93

21 38 44.74

A 2354 + 7.56

35.76 - 9.44

31.02 11.18

B 79 + 3.71

.69 - 0.71

30.84 5.16

C 78 + 0.28

.68 + 0.36

D 69 + 3.29

20	10	-0.45	+1	20.41
20	11	-0.45		<u>20.71</u>
20	10		1	20.760

1863 Aug. 6th 3rd West

45.	x	x	x	x	x
R 11033	Al. 2105	R 11262	R XXIII 171	24 Androm.	
46.3	24.3		8.2	36.8	
54.8	30.0		13.6	42.3	
0.9	34.2		17.8	46.1	
9.1	39.5		22.8	51.1	
—	44.6	17.2	27.1	55.9	
	172.6		89.5	232.2	

23 15 1.40 23 23 34.52 23 25 7.18 23 39 17.90 23 40 46.44 23

1.88 7.22
 1.45 0.55
 1.20 1.40
 1.08 14.78

x		x		x		x		x	
R	11637	L	47105	9	Cyriop.	a	Androm.	7	Pegasi
	17.6		58.1		29.5		41.8		
	22.0	Winn?	2.6		37.5		46.3		38.5
	25.0		5.8		43.2		49.3		41.3
	29.0		9.6		50.5		53.1		44.9
	32.7	??	13.3		57.6		57.0		48.3
	126.3		87.4		218.3		247.5		
			588						
23	44	25.26	23	58	5.98	23	58	13.66	0
							2	49.50	0
							1	22.69	
								7	41.50
								6	14.90

$$\begin{array}{rcl}
 01 & -0.47 & +126.34 \\
 06 & -0.49 & 26.16 \\
 \hline
 04 & & 26.25
 \end{array}$$

5.79 7.51
 87 3.73
 608 0.28
 591 3.71
 576 7.66

A 41.41 -6.89
 M 41.49 -3.41
 C 41.57 +0.27
 D 41.55 +3.05
 E +6.98

1869 Aug 6 34 W. (continued)

x

x

x

2nd Min. B up	B. A.C.	92	L. 613	R. 210	γ Caprip	B. v
—	—	30.3		36.5	46.2	
0 12 37.6		37.3		44.1	54.2	
13 52.9		41.9		49.2	59.4	
14 47.1		48.4		56.5	6.5	
16 6.1		54.6		3.1	13.1	
		212.5		189.4	178.4	
0 13 46.81	0 20 42.50			0 46 49.88	0 49 59.68	1
12 28.52						

87° 11' 42" 13106.

B 45.16 + 67.56

C 47.60 - 530

D 46.66 60.44

E 47.83 218.27

B.A.C. 382

Polaris

214 Camel Bsp

44.6 1 6 59.2

1 17 44.3

53.4 9 32.4

18 26.1

59.9 —

19 10.3

7.1 —

19 44.2

14.4 —

20 33.4

179.4.

158.3

1 10 59.88 1 11 31.70

1 19 7.66

9 50.25

13 20 4.63

88°36'43" S. 1.6055

D 31.6 + 1 59.2

E 31.8 + 1 32.6

563 Aug 10 Ill. West.

unc Min			2 Ophiuchi	5 Herculis	4 Ophiuchi	64 Camel. B		
16	58	25.9	—	19.1	40.9	17	16	21.1
	58	54.9	40.6	23.9	45.2		16	59.9
	59	14.3	44.6	27.2	48.1		17	42.3
	59	40.9	46.9	31.8	52.0		18	13.8
17	0	5.5	50.4	35.9	55.8		18	58.8
		141.5		127.9	242.0			195.9

16	59	16.30	17	1	17	9	27.58	17	12	48.40	17	17	39.18	
17	0	5.90							13	40.19		5	18	36.29

α Ophiuchi	β Ophiuchi	μ Herculis	γ Draconis	γ Draconis
39.1	47.3	min ? 13.9	11.2	12.8
43.2	51.2	✓ 16.9	23.9	25.5
45.8	52.7	✓ 21.0	32.6	34.3
49.6	57.5	✓ 24.7	44.4	46.2
52.9	0.8	✓	55.2	56.8
230.2	209.5		167.3	175.6
	269.5			
17 27 46.04	17 35 53.90	17 40 17.21	17 43 33.46	17 43 35.12
28 37.97		41 9.05		

d.d

0.0533

A 17.16 - 7.54
 n 17.26 - 3.74
 c 17.19 + 0.29
 D 17.24 + 3.34

1863 Aug 10 Ill W. (continued)

3 Draconis	2 Urs. Min	23 Camelopard. H	51 Cephei H 2 nd	Arg +26° 4694	R.
8.1	—	20.3	18 31 57.8	—	—
15.3	—	38.6	33 6.0	—	—
20.1	—	59.0	—	35.0	—
26.8	18 16 41.1	13.8	—	39.0	—
32.7	17 37.4	35.6	—	42.8	—
103.0	—	167.3	—	—	—
17 50 20.60	18 15 44.92	247.3	18 34 15.56	23 41 35.30	25
—	18 16 30.71	57.46	6 35 17.09	—	—

S 8h 26 29.5 sec. 1.2279

A 44.60 - 1 52.8

B 45.25 55.85

S 8h 16 27.9 1.3175

A 16.5 +2 18.7

B 11.63 +1 8.63

32.33

29

28

4	R	11637	L	47105	2	Pigari	5	2nd Main	75 th	BAC	92				
		59.9		40.5		16.8	0	9	11.4		12.7				
		4.3		44.9		20.8		10	19.7		19.4				
5.0		7.3		48.0		23.8		11	32.3		24.4				
9.0		11.2		52.0		27.2		12	27.7		30.6				
2.8		15.1		55.8		30.7		13	46.6		36.6				
		97.8		261.2		119.3			137.7		123.7				
30	23	42	756	23	53	48.24	0	5	23.86	0	11	27.54	0	18	24.74
								6	15.00		12	12	27.13		

~~10~~ 17.7 + 1 59.2
Σ 18.66 + 4 32.66

B.7C 382

R 399

R 422

27.8

3.4

34.0

10.2

38.8

14.9

45.1

21.0

50.5

26.5

196.2

76.0

1 34 39.24

1 39 15.20

O. Oplimbi

-0.50

52.29

17 14

+52.96

+52.29

d

-0.44

52.37

29

52.36

u. Hornuli

-0.47

52.31

41

52.31

52.34

y. Repari

-0.44

51.58

0 0

51.13

-52.138

19 36

-51.975

20 48

.108 hours

1863 Aug 12 9^h 11^m

✓ Ophiuchi			✓ μ Herculis			ψ' Drac. <i>pro</i>			ψ' Drac. <i>fol</i>			ξ Drac.			7		
		44.3			14.5			16.2			17.9			—			
		48.2			18.9			29.1			30.9			20.3			
		50.9			22.0			37.6			39.4			24.0			
		54.6			25.9			49.6			51.2			31.7			
		58.0			29.8			0.2			2.0			37.8			
		256.0			111.5			132.7			141.4						
								192.7			201.4						
17	27	51.20	17	40	22.30	17	43	38.52	17	43	40.28	17	50				
	28	37.95		41	9.02												

✓		✓							
2	Drac	70	Opheidi per	in Sagittarii	5	Urs. Min	23	Camelopard	Harp
	31.8		42.1	44.7	18	13 54.2		25.6	
3	37.0		46.0	48.7		15 0.0		43.9	
0	41.2		48.5	51.8		15 44.3		4.2	
7	47.0		52.3	55.6		16 45.1		19.0	
8	52.2		55.6	59.0		17 42.1		41.4	
	209.2		244.5	259.8		185.7		134.1	
								14.1	
17	52 41.54	17	57 48.90	18	4 51.96	18	15 49.14	18	22 2.82
	53 28.33				5 38.60		16 30.02		

1863 Aug 12 Ill M (cont.)

1863phae. p

Cephei H'sp.			B Lyrae			* for B Lyrae			L Aquila			π Sagittarii			42
18	32	5.6			10.0			12.0			17.0			47.6	1
	33	13.0			14.4			16.5			20.9			51.8	
	34	27.7			17.8			19.8			23.6			54.5	
	35	21.3			21.9			24.0			27.4			58.4	
	36	42.9			26.0			28.1			30.7			2.1	
	110.5				90.1			100.4			119.6			214.4	
														274.4	
18	34	22.10	18	44	18.02	18	44	20.08	18	58	23.92	19	0	54.84	1
	35	17.94		45	4.73					59	10.53				

x

x

1863pha

4 Urs. Min. Bsp.	156 Camelop. B. sp	B. Aquila	Rad	4507	2 Urs. Min
19 6 30.2	19 41 41.8	45.7	3.2	19 55 1.2	
	42 15.3	49.6	8.2	58 22.9	
13 10.1	42 53.2	52.2	11.8	20 00 38.0	
15 39.2	43 20.2	55.9	16.3	3 43.5	
19 30.3	44 0.3	59.3	20.7	6 43.1	
	130.8	262.7	40.2	148.7	
19 12 53.72	19 42 50.16	19 47 52.54	19 50 12.04	20 0 53.74	
7 14 4.88	7 43 40.68	28 39.07		1 21.06	

A 57.2 - 6270

C 57.2 - 18.4

D 57.8 251.6

E 18.2 632.1

563 Aug 12 St. W. (cont.)

x

x

x

x

x

'Capricorni

 α^2 Capricorni

Per. 2618

Epr 3215

 α Cygni

3.2

14.0

38.1

24.4

53.6

18.0

42.1

29.3

15.4

58.9

20.8

44.7

33.2

19.8

3.0

24.6

48.5

37.7

23.8

8.0

27.9

51.9

42.0

28.1

12.5

105.3

225.3

166.6

136.0

20 9 21.06
10 7.5620 9 45.06
10 31.50

20 12 33.32

20 27 19.57

20 36 3.20
36 49.63

19.31

20 14

19.38

19.22

$\times$	$\times$	$\times$	$\times$	
32 Vulpec.	61 Cygni prae	61 Cygni fol.	α Cephei	1 Drac. H. ap.
—	54.9	56.5	22.3	—
57.7	55.8	1.2	30.6	0.9
0.7	3.1	4.7	36.5	26.1
4.7	7.7	9.3	44.1	45.2
8.4	12.0	13.5	51.2	13.9
	137.5	88.2	184.7	
	medium	diff		
20 4.8 0.96	21 0 4.22	(21 0) +1.54	21 14 36.95	21 16 24.65
47.31	50.41		15 22.95	17 14.31

2 81°55'20"6.5m 0.8523

0.89 - 7.51
 0.97 - 3.73
 0.98 + 0.28
 1.01 + 3.01

B 24.41 + 23.57
 C 25 - 1.85
 D 16 - 21.04
 E 25.78 - 48.12

563 Aug 12 M. M. (cont.)

2807 Massey

1222462

~~Arg. +50°~~

Arg. +50° 3382

Lpr 3533

79 Cigni at end of series

Rmn. 9430

15.2	27.3	36.9	—	6.1
23.9	32.8	43.0	—	11.1
27.7	36.7	47.1	52.0	14.4
32.7	41.8	52.6	57.3	19.1
37.5	46.4	—	2.7	23.3
140.0	15	—	—	74.0

21 27 2800 21 28 37.00 • 21 31 4736 21 33 52.10 21 37 14.80

47.40 - 5.20

50 + 0.40

61 4.61

46.95 10.05

51.95 10.75

95 40.35

52.41 0.91

✓			✓			✓			✓			✓		
16 Pegasi			Arg 62° 2004			Cpr 3644			A.Z. 23902			Z 43886		
	0.0			4.3			55.8			8.7			35.8	
	4.4			12.8			4.0			14.9			41.0	
	7.6			18.7			9.6			19.2			44.3	
	11.4			26.5			17.3			25.0			48.9	
	15.1			33.8			24.4			30.2			53.3	
	38.5			96.1			111.1			98.0			227.3	
21	46	7.70	21	51	19.22	21	54	10.22	22	14	19.60	22	20	14.66
		53.93												

1863 Aug 12 H₂W Cont

x		x		x		x		x	
29	Cygni	8	Cephei	9	Cephei	9	Laurentia	L.	44750
55.2		10.4		11.3		—		24.2	
0.1		17.7		18.6		58.7		29.6	
3.7		22.6		23.9		3.2		33.8	
8.1		29.2		30.5		8.5		39.1	
12.1		35.5		36.5		13.9		44.2	
79.2		115.4		120.8				170.9	

21 37 3.84 22 23 23.08 22 23 24.16 22 31 3.39 22 44 34.18

3.36
26
60
35

R 11125

34 Cephei H.

Cpr 4052

39 Cephei H.

22 46 31.0

44.9

23 25 39.2

46 59.9

50.0

26 44.0

47 21.0

53.4

27 29.3

47 47.6

58.1

28 27.5

48 13.4

2.5

29 22.0

172.9

208.9

162.0

47 22.58

23 16 53.78

23 27 32.40

α Ophiuchi	-0.44	47.19	17 29	47.20	+01	✓
μ Hercules	-0.47	47.19	17 41	47.15	-04	
μ Erythraei	-0.48	47.19	18 6	47.13	+01	
β Cyrae	-0.49	47.20	18 45	47.06	-14	
ξ Aquilae	-0.44	47.05	18 59	47.03	-02	
ρ —	-0.43	46.96	19 49	46.94	-02	✓
α Capri	-0.45	46.95	20 10	46.90	-05	✓
ν —	-0.45	46.89	20 10	46.90	+01	✓
β Vulpec	-0.47	46.82	20 49	46.83	+01	
δ Lyrae	-0.52	46.66	21 1	46.41	+15	
16 Cygni	-0.46	46.69	21 47	46.72	+07	

μ R
 Jolly
 -46.97 19 31
 +0.108
 +0.112
 0.110

1863 Aug. 14 Ill. East

Camelopard. B.	74 Camelopard. B.	24' Draconis pro.	24' Draconis fol.	3 Draconis	7
17 16 43.2	—	—	—	18.5	
17 27.0 very faint	—	30.3	—	24.2	
17 58.1	—	42.7	44.3	31.1	
18 41.3	4.2	51.6	53.2	36.7	
19 20.1	18.3	4.2	5.8	42.9	
159.7				153.4	
17 18 81.94	17 20	17 43	17 43	17 50 30.68	17
18 37.49					

γ Draconis	μ Sagittarii	ζ Aquila	σ Sagittarii	42m. Min. P.B. up
	50.2	22.4	53.1	19 7 15.4
	53.7	25.9	56.6	10 57.8
	57.7	29.6	0.5	13 33.5
	<u> </u>	32.2	3.3	17 0.6
57.3	4.4	36.3	7.5	20 13.7
		146.4	1.9	121.0

17 52	18 4 57.29	18 58 29.28	19 1 0.20	19 13 48.20
	5 36.58	59 10.51		7 14 6.77

D-2154 hr. 0.03M

A .35 +7.15

B .24 +3.54

C .62 =0.28

E .15 -7.25

1843 Aug 14 Ill. East (cont.)

6 Vulpec.	B Cygni	* fol. B Cygni	h ² Sagittarii
15.4	26.7	28.9	—
19.7	30.4	32.6	—
23.0	34.6	36.7	45.9
25.9	37.6	39.6	48.8
30.2	41.8	44.1	53.1
113.6	171.1	181.9	

19 22 22.72 19 24 34.22 19 24 36.38 19 27 45.59
28 26.76

Lumpool

		+			
μ Sagitt	18 6	0.45	-40.84	+40.72	+0.08
γ Aquila	18 59	0.52	40.81	40.82	+0.01
h ² Sagitt	19 28	0.46	40.71	40.76	+0.05
γ Aquila	19 40	0.41	40.78	40.74	+0.04
β —	19 49	0.61	40.78	40.72	-0.06
α Capricorn	20 10	0.63	40.71	40.67	-0.04
α' —	20 11	0.63	40.71	40.67	-0.04
ρ —	20 21	0.64	40.64	40.65	+0.01
32 Vulpec	20 49	0.45	40.62	40.59	-0.03
δ Cygni	21 1	0.57	40.50	40.57	+0.07
ξ —	21 7	0.46	40.62	40.56	-0.06
	19 58		-40.697		+0.130
	δ-25 10.7		0.0434		0.114
					0.122

C 45.61 - 0.29
S 45.53 - 3.27
Z 45.69 - 7.47

β Cygni	α Sagittarii
28.9	—
32.6	—
36.7	45.9
39.6	48.8
44.1	53.1
181.9	

24	36.38	19	27	45.59
			28	26.76

Luncheon

		+			
μ Sagitt	18.6	0.45	-40.84	+40.92	+0.08
γ Aquila	18.59	0.52	40.81	40.82	+0.01
δ Sagitt	19.28	0.46	40.74	40.76	+0.02
η Aquila	19.40	0.41	40.78	40.79	+0.01
β —	19.49	0.41	40.78	40.72	-0.06
θ Capric	20.10	0.43	40.71	40.67	-0.04
ϵ —	20.11	0.43	40.71	40.67	-0.04
ρ —	20.21	0.44	40.64	40.65	+0.01
32 Vulpec	20.49	0.45	40.62	40.59	-0.03
δ Cygni	21.1	0.55	40.50	40.57	+0.07
ζ —	21.7	0.46	40.62	40.56	-0.06
	19.58		-40.697		+0.130
	$\delta - 25$	0.7	0.0434		0.114
					0.122

C 15.61	-0.29
X 15.53	-3.27
Z 15.63	-7.47

	β Ursae	β Virginis	ϵ Ursa	α Virginis	β Ursa	γ Virginis	δ Ursa	α Virginis	ϵ Ursa	γ Virginis	δ Ursa
1863.1.16 th	-.06	-.03									
Apr 9	-.04	+.05							-.04		
22									+.02		
May 19											
" 25									+.01		
July 11											
22											
Aug 24											

32 Vulp - .07
 61 gpi 00
 3 - +.07

Scorpii α Bootis ρ Bootis ϵ Bootis δ Librae γ Librae η Bootis β Librae α Librae ϵ Sagittae δ Scorpii ζ Sagittae α Scorpii

+.07

-.14

+.10

+.05

+.05

-.06

+.05

-.07

