

KG
11365
45

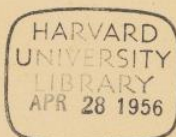
A. 45

Meridian Circle.
Aug. 14 1863
to Sept 22 1863.
Sold by T. Groom & Co., Stationers, India Building, 82 State St., Boston.

KG 11365.45



KG 11365.45



563 Aug 14 Ill. East T. H. Safford Jr.

+ Cygni		+ Cygni		γ Aquila		156 Camelopardalis		β Aquila		*
27.3		57.6		—		19	41 54.8		51.2	
32.7		2.9		4.2			42 35.2		54.5	
38.2		8.3		7.9			43 2.4		58.2	
42.3		12.4		10.6			43 39.5		0.8	
48.3		18.5		14.5			44 13.1		4.7	
188.8		99.7					145.0		169.4	
19 31	37.76	19 32	7.94	19 39	7.61	19 43	5.00	19 47	37.88	19
					48.75	43	40.98	48	39.07	

$$\delta 10^{\circ} 17' 2'' \text{ lat } (1 + \frac{1}{6.1})$$

$$\begin{aligned} A & 756 + 3.36 \\ C & 764 - 0.26 \\ D & 760 - 3.00 \\ E & 763 - 6.87 \end{aligned}$$

* +1° 13'	* +1° 17'	<i>γ Sagittae</i>	2 Hrs. Min.			* +1° 5.3'
38.6	3.5	—	19	54	32.0	32.3
41.9	6.8	—	19	57	25.6	35.7
45.7	10.5	2.7	20	0	33.0	39.5
48.0	13.2	5.6	20	2	51.0	42.0
51.9	17.2	9.8	20	6	10.0	45.9
46.1	51. ✓				151.0	48.4
19 50 18.22	19 51 10.24	19 52	20 0	18.32	20 4	39.08
			1	19.75		

f

X
 (Mistake
 Gm. pigeon x)

1863 Aug 14 Ill. East [continued]

Aquila		α^2 Capricorni		α^1 Capricorni		Cp 1418 s/p		ρ Capricorni			
	12.2		43.5		19.6	20	12	56.0			19.1
	15.7		47.0		23.1		13	46.1			22.5
	19.5		50.6		26.7		14	19.1			26.7
	22.1		53.3		29.3		15	5.8			29.1
	26.2		57.4		33.4		15	47.7			33.2
	9.57		251.8		132.1			174.7			130.2
20	7	19.14	20	9	50.36	20	14	22.94	20	20	26.04
			10	31.50	10	7.56			21	7.12	

N

✓

✓

Fr 74 Draconis see next page

+ Cephei			P. xx 257			ε Cygni			η Cephei			δ Ura. Meg' s. p.		
24.4					35.3			54.9			38.6			55.4
31.8					46.1			59.0			45.6			5.1
39.7					57.8			3.2			53.0			12.0
45.4					6.4			6.4			58.5			20.0
53.7					18.7			11.1			6.6			28.0
1950					164.3			134.6			202.3			120.5
					294.3									60.5
20. 26 39.00			20	29	56.86	20	40	2.92	20	41	52.46	20	44	12.80

V*

5 V*

61 Cygni fot.	5 Cygni	1 Brac. 14 ap.	119 Cephei B.
1.7	21.7	—	—
5.9	25.6	—	19.9
10.4	29.6	—	52.4
13.9	32.7	59.9	17.1
18.8	37.2	24.0	52.2
	146.8		
Diff			
(21 0) +1.48	21 6 29.36	21 16 36.46	21 23 50.24
	7 10.44	9 17 14.42	21 24 33.84

No mean of
wires by this thin-

81° 55' 19" 4. in 0.8522 83° 40' 53" 8. in 0.9584

A 36.52 = 47.48
 B 36.79 = 23.51
 C 50.05 - 2.35
 D 50.24 26.86
 E 50.77 61.43

1863 Aug. 15 M.E. T.H.S.

				For Ψ' Draconis de				me	
mu star +		Lone *		B Ghrnichi		p Herantia		Lone *	
Hannan Hunt	32.1	Hannan Hunt	17.6	0.7	22.7	57.4	17	31	38.58
	35.2		21.7						
	38.8		26.4						
	41.5		28.8						
	45.3		32.6						
	192.9		127.1	36.3	150.9	50.7			
17	31	38.58	17	32	25.44	17	36	7.26	17
							40	30.18	17
							41	8.92	17
							45	4.14	17

not leaf		Zone *		Zone *		Zone *		Zone *		Zone *	
Zone *		3 Draconis		2 Draconis		Zone *		70 Ophiuchi		Zone *	
4	1.6	20.8	38.5	6.6	50.4	—	—	—	—	—	—
6	5.1	27.0	44.0	10.0	—	54.0	—	—	—	—	—
1	8.5	33.6	49.9	13.7	57.3	—	—	—	—	—	—
8	11.2	38.5	54.1	16.1	—	0.4	—	—	—	—	—
8	15.2	45.5	0.2	20.2	3.7	—	—	—	—	—	—
7	41.6	165.4	186.7	66.6	—	—	—	—	—	—	—
17	48 8.32	17 50 33.08	17 52 49.34	17 54 13.32	17 57	53 28.25	—	—	—	—	—

Apr 15.

1863pha

Urs. Min			23 Camelopard. t. s. p. Lom x			51 Cephei t. s. p. B Lyra								
18	13	51.41			39.2	55.5	18	32	28.5	18.1				
	14	46.3			0.1	58.6		33	48.4	22.0				
	15	46.0			15.2	2.1		34	43.4	26.4				
	16	32.0			35.2	4.9		35	55.3	29.5				
	17	37.5			54.1	8.7		37	5.4	34.3				
		213.2			143.8	9.8			161.0	130.3				
					83.8									
18	15	42.64	18	22	16.76	18	26	1.96	18	34	48.20	18	44	26.06
	16	29.04							6	35	19.07		45	4.69

σ Sagittarii	δ Serpentis pnc	δ Serpentis fol	σ Draconis	α pnc & Aquile
5.0	43.3	44.9	43.5	17.5
8.6	46.7	48.1	56.2	21.0
12.5	50.2	51.8	10.7	24.7
15.8	52.9	54.2	20.5	27.5
20.0	56.8	58.3	36.1	31.5
61.9	249.9	257.3	167.0	122.2
			47.0	
18 46 12.38	18 48 49.98	18 48 51.46	18 50 09.40	18 52 24.44

1863 Aug 15 H. 2. (Cont.)

<i>ε</i> Aquila	<i>ε</i> Aquila	<i>π</i> Sagittarii	<i>γ</i> ' Drac. prec	<i>γ</i> ' Drac. fol
42.6	25.3	56.0	22.6	24.1
46.1	28.7	59.5	33.3	34.8
49.9	32.3	3.4	45.4	47.3
52.6	35.2	6.0	53.9	55.7
56.6	39.1	10.6	6.8	8.2
247.8	160.6	135.5	162.0	170.1
		15.5	222.0	230.1
18 52 49.56	18 58 32.12	19 1 3.10	17 43 44.40	17 43 46.02
	59 10.57			

μ Herulis	.46	-38.33	17 41	+38.23	-10
β Lyrae	.46	38.15	18 32	38.13	-02
ζ Aquilae	.62	37.96	18 59	38.08	+12
		38.147	18 24		
		0.114			
		0.129			
		0.122			

R+R

1863 Aug 17 JH. 2nd J.H.S.

3 Camelops H. 2.p.	51 Cephei H. 3.p.	110 Herculis	B Lync	σ Sagittarii
44.6	18 32 34.6	10.3	24.3	11.3
7.3	33 53.3	13.6	27.9	14.9
21.1	34 53.7	17.4	32.4	18.8
40.7	36 5.6	20.4	36.0	21.7
59.5	37 14.9	24.6	40.6	26.1
173.2	162.1	86.3	161.2	92.8
113.2				
18 22 22.64	18 34 50.42	18 39 17.26	18 44 32.24	18 46 18.56
	6 35 19.78		45 4.66	

♂ Aquila			25 Camelop. H. o. p			♂ Aquila			♀ Aquila			156 Camelop. B o. p.		
3			31.4		—			0.7			9.7	19	42	3.2
9			34.7	19	1	14.2		3.9			13.2		42	42.8
8			38.3		1	36.1		7.8			16.8		43	10.8
7			41.1			—		10.3			19.5		43	46.3
1			45.1		2	29.0		14.2			23.4		44	20.3
8			190.6					36.9			82.6			123.4
18	58	38.12	19	1	37.48	19	18	7.38	19	39	16.52	19	43	12.68
	59	10.49	7	2	6.86			39.42			48.74	7	43	41.35

♂ 82°39'50" S 0.8938

A 36.88 - 52.12

C 38.18 + 1.98

B 37.18 + 22.98

1863 Aug 17 Ill East J.H.S.

β Aquile	γ Sagitta	2 Urs. Min.	ρ Aquile	α^2 Capricorn
0.0	4.4	19 54 43.6	21.2	52.6
3.6	8.0	57 37.0	24.4	55.9
7.1	11.8	20 0 45.2	28.3	59.5
9.8	14.6	—	31.2	62.4
13.7	18.7	—	35.1	66.4
36.2	57.5		140.2	176.8
19 48 6.84	19 52 11.50	20 0 31.28	20 7 28.04	20 9 59.36
39.06		1 18.07		10 31.50

δ 58° 54' 16"

for 1.7185"

A 31.6 + 5 48.0

B 30.26 + 2 53.26

C 3.17 - 13.23

β Lyrae	-31.94	+0.48	18.45	+31.89	-05
ξ Aquilae	31.95	0.42	18.59	31.86	-09
δ Aquilae	31.63	0.41	19.19	31.82	+19
γ —	31.81	0.41	19.39	31.78	+03
β —	31.81	0.41	19.49	31.76	-05
α Capricorni	-31.71	+0.43	20.11	31.72	+01
	-31.808		19.27		
Pro R	+0.129				
John	0.120				
	0.124				

1863 Aug 18 Pl. East

ψ' Draconis <i>pro</i>			ψ' Draconis <i>fol</i>			ξ Draconis			γ Draconis			γ^0 <i>Phinepsi</i>		
		31.5			33.2			29.8			47.6			59.4
		42.7			44.7			35.9			52.7			— 3.0
		54.4			56.3			42.4			58.4			6.1
		3.0			4.8			47.4			3.0			— 9.3
		15.7			17.7			54.4			9.3			12.8
		147.3			156.7			209.9			171.0			—
		267.3			276.7									—
17	43	53.46	17	43	55.34	17	50	41.98	17	52	58.20	17	58	
										53	28.17			

1863phae.p

40 x 41 Draconis				p Aquila			
p Sagittarii		S Draconis		B Aquila		p Sagitta	
2.0	18	13	59.4	3.2	7.5		31.6
5.5		14	54.6	6.5	10.8		34.8
9.3		15	56.9	10.0	14.6		38.5
12.2		16	42.2	12.7	17.4		41.4
16.4		17	47.8	16.7	21.6		45.4
45.4			260.9	49.1	71.9		191.7
18	5	9.08	18	15	52.18	19	48
		38.54			16	28.12	
						9.82	39.06
						19	52
						14.38	20
							9
							38.34
							10
							7.56

1863 Aug. 18. 26. 8 (continued)

Capricorni			p Capricorni			t Cephei			Pxx 257			a Delphini		
		55.5			30.9			36.3			47.0			44.3
		58.9			34.4			43.6			57.9			47.9
		2.5			38.2			51.5			9.6			51.5
		51.2			40.9			57.1			17.9			54.2
		9.2			45.1			5.5			30.8			58.3
		131.3			189.5			194.0			163.2			256.2
								257.0			43.2			
20	10	2.26	20	20	37.90	20	29	50.80	20	29	8.64	20	32	51.24
		31.50		21	7.11									

α Cygni	γ Cephei	32 Vulpecula	76 Draconis	61 Cygni
10.9	50.4	10.3	—	see next page
15.4	57.5	14.3	28.5	
20.6	41.8	18.3	55.0	
24.2	10.3	21.3	14.3	
29.8	18.6	25.7	42.7	
110.9	141.6	89.9		
	21.6			
20 36 20.18	20 42 4.32	20 48 17.98	20 51	
49.61		48 47.31		

63 Aug 18 Ill East T.H.S (continued)

61 Cygni pri	61 Cygni sec	α Cephei	1 Draconis H. sp	119 Cephei B
—	—	39.2	21 15 59.0	—
—	—	46.2	16 27.6	33.2
20.5	22.3	53.9	16 46.2	3.9
24.2	25.7	59.6	17 11.6	28.5
29.1	30.8	7.8	17 35.5	3.7
		296.7	179.9	
Median	Differ			
21 0 21.24	21 0 +1.6x	21 14 53.34	21 16 17.98	21 24 2.21
50.41		15 22.94	9 17 14.42	24 33.76

S 35° 5' 1 0.1060

S 63° 40' 55" 0
Jan 0.9584

C 20.18 - 0.32 21.98
D 20.47 - 3.73 21.97
Σ 20.49 - 8.61 22.19

B 3.30 + 30.10
C 100 - 2.30
D 183 - 26.67
Σ 210 - 61.60

Comp	β Cephei	γ Draconis	δ Draconis	ρ Aquila	Comp β Cephei
	8.6	8.0	13.8	23.9	—
2	18.3	26.6	33.2	27.3	15.7
9	28.8	47.8	53.7	21.1	—
5	36.4	1.9	8.8	34.1	33.9
7	47.6	25.1	30.8	38.0	45.1
	139.7	109.4	140.3	154.4	
		229.4	260.3		
21	26 27.94	18 9 45.88	18 9 52.06	20 7 30.88	21 26
6	57.87				

α Sagittarii	18 6	+0.45	-29.01	+29.06	+0.05	
β Aquilae	19 49	0.41	28.83	28.87	+0.04	✓
α Capric.	20 10	0.43	28.79	28.83	+0.04	✓
α Capric	20 11	0.43	28.81	28.83	+0.02	✓
ρ —	20 21	0.46	28.77	28.81	+0.04	
α Cygni	20 37	0.56	28.67	28.78	-0.09	✓
32 Vulpec.	20 49	0.45	28.68	28.75	-0.13	
α Cygni	21 1	0.51	-28.69	28.73	+0.04	
	20 8		-28.831			
			+0.120			
			0.110			
			0.115			

1863 Aug. 19 Ill. East.

Polaris op.	δ Urr. Min.		Zone × +1° 5'	Zone × +1° 18'	Zone × +1° 45°	For
13 5 14.9	18 14	2.7	30.9	32.1	50.2	
7 52.5	* 14	57.9	34.2	35.7	53.3	
9 38.1	15	59.1	37.8	39.3	—	
12 0.1	16	44.0	40.2	42.0	59.6	
14 15.4	17	50.3	44.3	45.5	3.7	
121.0		214.0	187.4	194.6		
13 9 48.20	18 15	54.80	18 22 37.44	18 23 38.92	18 25	18
1 9 58.97	16	27.78				

* There are two
breaks at 18
18 15 3.4 nearly

56.80
56.61
—
56.66
56.92

+ 1° 48'			* + 1° 37'			* + 1° 22'			57 Cephei H.2.p	110 Herculis
	7.1			11.9			30.5		—	15.6
	10.3			15.1			33.9	18 34	2.0	19.2
	13.9			18.8			37.4	34	56.5	22.9
	16.6			21.5			40.3			25.9
	20.5			25.2			44.2	37	21.7	—
	18.4			92.5			186.3			
18 28	13.68		18 30	18.58		18 31	37.26	18 35	2.72	18 39
								6 35	20.54	

13.76
 13.61
 13.65
 13.66
13.72

887° 14' 25" 20 13743

A 3.45 - 2 14.25

C 1.75 + 5.25
 D 2.95 + 10.95

1863 Aug 19th Pl. East (cont.)

+ 2° 47'	+ 1° 14'	x 1° 35'	* + 1° 44'	* + 1° 44'	
0.6	3.1	42.6	5.8	11.8	
3.9	6.5	45.9	9.3	14.9	
7.6	10.2	49.5	12.6	18.5	
10.1	12.9	52.2	15.7	21.2	
13.9	16.7	56.1	19.2	25.1	
26.1	49.4	246.3	62.6	91.5	
18 43 7.22	18 44 9.88	18 45 49.26	18 47 12.52	18 47 18.30	

12.46

12.61

12.75

12.76

12.42

18.46

21

25

26

32

<i>♂ Serpenti pra</i>	<i>♂ Serpenti fol</i>	<i>50 Draconi</i>	<i>* pra & Aquila</i>	<i>♀ Aquila</i>
54.9	56.5	55.0	29.2	54.3
58.3	59.8	7.3	32.6	57.8
1.9	3.3	21.8	36.3	1.5
4.5	6.0	32.1	39.0	4.2
8.4	9.9	47.6	43.0	8.2
128.0	135.5	163.8	180.1	186.0
8.0	15.5	103.8		<u>120.0</u>
				6.0
18 49 1.60	18 49 3.10	18 50 20.76	18 52 36.02	18 53 25.20

1863 Aug. 19 Ill. East (cont.)

Zone *	6 Vulpecula	B Cygni	B Cygni fol	H ² Sagittarii	
58.5	30.0	41.2	43.4	52.7	
1.9	33.5	44.9	47.1	56.4	
5.8	37.6	48.9	51.2	0.4	
8.5	40.4	51.9	54.1	3.3	
12.2	44.8	56.5	58.5	7.7	
86.9	186.3	243.9	254.3	120.5	
18 56 5.38	19 22 37.26	19 24 48.68	19 24 50.86	19 28 0.10	19
				26.74	

δ Cygni	$+1^{\circ}18'?$	$+1^{\circ}16'?$	γ Cygni	158 Camclap. B
12.3	2.1	?	15.3	19 42 8.4
17.4	5.6	27.5	18.6	42 49.1
23.0	9.2	31.2	—	43 16.2
27.1	11.8	33.5	25.0	43 53.5
33.1	15.8	37.5	29.0	44 28.0
112.9	44.5			155.2

19 32 22.58 19 35 8.90 19 35 19 39 22.04 19 43 19.04
 48.72 41.64

8.76
 8.91
 8.95
 8.86
9.02

30.81 A 22.06 +6.76
 95 B 21.97 +3.37
 .58
 .72 D 22.02 +2.98
2 22.14 +6.89

863 Aug 19 JH. East (contin.)

β Aquila	2 Un. Min.	α^2 Capricorni
5.7	—	58.0
9.0	—	1.4
—	42.9	5.1
15.3	1.2	7.9
19.3	24.4	11.9
		86.3

19 48 12.39 29.03 20 10 4.86
 39.15 20 1 16.98 31.50

α^1 Sagittarii	+0.47	26.17	1928	+26.26	+09
γ Aquilae	0.41	26.27	1940	26.24	-03
δ —	0.41	26.25	1949	26.22	-03
α^2 Capricorni	0.43	26.21	2011	26.18	-03
		-26.225	1947		
		.110			
		.114			
		.112			

δ 88 54 169.44 1.7186

A 12.39 +6.69
 B 12.33 +3.33
 C 29.7 -13.2
 D 24.7 2 32.5
 E 12.48 -6.82
 F 29.7 5 54.7

1863 Aug 22 Ill. East

64 Camelop. B. sp			B Doconis			a Ophichthi			B Ophichthi			Z' Doconis prop		
—			52.5			12.2			20.2			—		
—			58.1			15.6			23.7			53.0		
—			4.0			19.3			27.3			5.2		
17	19	4.1	8.3			22.0			30.0			13.9		
	19	43.9	14.7			26.0			33.9			26.2		
			137.6			95.1			135.1					
17	18	25.54	17	27	25.2	17	28	19.02	17	36	27.02	17	44	
5	18	39.58			22.50			37.81						

25 1.0693

A 25.83 - 118.07

B 25.25 - 38.85

13 Aug 22

<i>'Draconis' fol</i>	<i>3 Draconis</i>	<i>70 Ophiuchi</i> <i>pmc fol</i>	<i>5 Aquilae</i>	<i>25 Camelopardalis</i>	<i>H. sp.</i>
—	40.7	10.1	45.0	19 0	59.2
55.1	46.5	—	48.5	—	—
6.7	53.3	17.0	52.1	—	—
15.5	58.1	—	54.9	2	18.4
28.2	5.4	23.6	59.0	2	44.3
	204.0		259.5		
	264.0				
17 44	17 50 52.80	17 58	18 58 57.90	19 1 52.31	
			59 10.44	2 7.59	

2 an. 0.6935

A 52.22 ± 52.08

M 52.48 ± 25.92

Σ 52.24 ± 53.04

4. Urs. Min. B. sp. ω Aquila

19 7 41.8

8.7

11.3

15.5

19 14 14.7 19 11 8.45

14 14.22

26.91

δ Ophiuchi	17 29	+0.42	-16.37	+18.29	-08
ξ Aquilae	18 59	0.42	18.12	18.13	+01
ω —	19 11	0.42	18.04	18.11	+07
	18 33		18.177		
for R			+0.106		
Proc.			0.112		
			0.110		

1. $89^{\circ} 0' 39''$
1.72130

8.49 -0.26

.31 -2.99

.59 -1.91

1863 Aug. 24 Ple. East.

Polaris	δ Usc. Aeg.	α Bootis	δ Ophiuchi	ϵ Usc. Aeg.	α
13 5 32.3	44.2	5.8	53.8		
8 9.4	49.8	9.3	57.1	16 59 22.4	
9 53.9	55.4	13.0	0.8		49.3
12 20.5	59.6	15.9	3.5	60 9.1	
14 35.3	5.6	20.1	7.3		37.9
91.4	216.6	64.1	122.5		
13 10 6.28	13 41 51.92	14 9 12.42	16 51 0.50	16 59 47.24	
2.76	42 9.20	26.81	14.17	17 0 13.53	

 δ 82° 15' 43" 5 0.8708

B 46.30 + 24.60

C 47.42 - 1.88

D 47.20 - 21.60

E 47.15 - 50.35

<i>a Hermitia</i>	<i>64 Camelo. B. o. p</i>			<i>74 Camelo. B. o. p</i>			<i>B. Dracoma</i>			<i>a Ophiurhi</i>				
6.7	17	17	11.4			53.8			57.6			17.3		
10.1		17	57.0			8.9			3.0			20.7		
13.6		18	28.6			19.1			8.9			24.4		
16.4		19	10.4			32.6			13.1			27.2		
20.5		19	50.2			45.8			19.5			31.1		
67.3			157.6			160.2			102.1			120.7		
						100.2			42.1					
17	8	13.46	17	18	3.52	17	21	20.04	17	27	8.42	17	28	24.14
		27.19		5	18	40.23								37.78

363 Aug 24 Ill. East Cont

<i>B. Phinchi</i>	<i>M. Herculis</i>	<i>ψ' Draconis pri</i>	<i>ψ' Draconis fol.</i>	<i>α δ + 1° 50'</i>
25.4	47.6	47.4	49.2	49.3
28.8	51.2	58.1	59.9	52.7
32.3	55.3	10.0	11.7	56.2
35.0	58.3	18.6	20.4	58.9
39.0	2.8	31.3	33.3	2.8
160.5	245.4	165.4	174.5	219.9
		45.4	52.5	279.9
17 36 32.10	17 40 55.08	17 44 9.08	17 44 10.90	17 56 55.98
	41 8.82			

+ 1° 55'

7.0 *Ophiuchus*

+ 1° 8'

5 *Urs. Min*23 *Camelop. H. s. p.*

25.8	15.2	—
29.1	—	18.9
32.9	22.1	—
35.4	—	25.1
39.2	28.6	—
162.4		

18	15	—
	15	10.1
	16	10.5
	16	54.6
	18	1.2

4.2
28.3
41.0
0.9
19.3
91.7
214.7

17 57 32.48 17 58

17 59

18	16	5.96
	16	25.91

18 22 42.34

J 28° 36' 32" 3 m. 1.2280

J	6.09	+55.99
C	6.22	-4.28
D	4.98	49.62
E	6.55	154.65

663 Aug 24 Ill. East (cont.)

1863pha

Cephei H. 2/p			+1° 36"		+1° 37'		50 Aquilae		25 Camelops. H. 2/p					
18	32	56.8		5.6		27.3		50.1		4.2				
	34	16.9		8.9		30.7		53.6		35.2				
	35	11.8		12.4		34.2		57.2		55.9				
	36	27.1		15.1		37.1		0.1		23.2				
	37	35.9		19.0		40.9		4.0		50.2				
		148.5		61.0		170.2		165.0		188.7				
18	35	1770	18	40	12.20	18	40	34.04	18	58	57.00	19	1	54.74
6	35	2290						59	10.49			2	7.92	

Aug 24

α Bootis	14.9	+0.43	-13.56	⁶¹ ~~13.0~~ +0.5
κ Ophiuchi	16.57	0.41	13.26	13.29 +0.3
ϵ Herenti	17.8	0.42	13.31	13.26 -0.5
ϵ Ophiuchi	17.28	0.42	13.22	13.22 -0.0
μ Herenti	17.41	0.46	13.28	13.20 -0.8
ζ Aquilae	18.59	0.42	12.99	13.04 +0.5
	<u>1703</u>		-13.270	
Ph. R			+0.106	
			<u>0.129</u>	
July	(AD)		+0.118	

✓ ✓ ✓ ✓ ✓
 1863 Aug. 30th Ill. East. T.H.S. Lake Survey Catalogue

R. 11262			ψ Androm.			R. 11637			R. 11881			α Androm.		
				16.2			57.5			38.0			21.6	
				20.8			1.3			41.7			25.2	
				26.4			5.5			45.8			29.2	
				29.9			8.3			48.9			32.1	
		56.6		35.5			12.4			53.2			36.7	
				125.8			85.0			227.6			144.8	
23	23	46.40	23	39	25.76	23	43	500	23	54	45.52	0	1	28.96
														23.17

γ Pegasi				5 Ann. Min. B. sp				B.A.C. 92				L. 620				L. 1633			
	14.0								9.6				24.9					31.4	
	17.8								15.7				29.2					35.0	
	21.4	0	12	33.8					22.0				33.4					39.2	
	24.2		13	46.5					26.7				36.4					42.3	
	28.3		14	54.1					33.4				41.0					46.4	
	105.7								107.4				164.9					194.0	
0	5 21.14	0	12	38.65	0	19	21.48	0	21	32.98	0	50	38.96						
	15.38	12	12	22.71															

$\delta 87^{\circ}11'40''$ to 1.3103

A 38.15 $\pm$ 2 15.95

B 38.83 1 7.67

C 38.97 + 2.17

1863 Aug 30 Jde 2 (cont) T.H.S.

Polaris	B.A.C. 382	R. 399	* A.Z. 1849	R. 422
1 5 25.7	24.0	25.7		0.7
—	31.5	31.2		6.6
—	39.1	37.4	40.0	12.9
11 53.1	45.2	42.2	44.7	17.4
14 30.4	53.4	48.5	52.0	24.2
	193.2	185.0		61.8
1 9 55.23	1 9 38.74	1 35 37.00	1 33	1 40 12.36
10 6.38				

S 88° 34' 49" 1.6060

A 54.4 + 4 28.7

D 54.6 - 1 58.5

E 56.7 - 4 33.7

x

x

B.A.C. 630 ?

B.A.C. 647

56.3

6.5

59.7

10.4

3.9

14.3

6.9

17.3

11.1

21.4

137.9

69.9

1 56 3.58

1 59 13.98

α Androm	0 1	+ 0.46	6.25
γ Pegasus	0 6	+ 0.42	6.18
	0 4		+ 6.215

1863 Aug. 31 Ill. 2 T.H.S. Lake Survey Car.

Run. 7176	R. 7219	R. 7276	Lat. 36568	R. 7592
57.4	15.8	32.7	22.4	—
3.9	22.3	39.1	27.7	—
10.6	29.0	46.4	33.6	—
15.6	34.2	51.5	37.9	12.0
22.8	41.5	58.3	44.1	16.6
110.3	142.8	228.0	165.7	

19 5 10.06 19 7 28.56 19 10 45.60 19 15 33.14 19 27 8.16

A Cygni

46.8
52.3
57.9
1.9
8.1
167.0

2 Cygni

22.1
26.3
31.7
35.2
—

2 Urr. Min.

—
—
20 1 14.0
—
20 6 57.4

19 32 57.40 20 17 31.03 20 0 58.94
1 7.14

Dec 49.91

A₉ 64.0 47.62

-1.61

+0.05

63.0 cor 46.06

0.09370

~~1.6277~~

52.61

0.09331

1.23938

19.17

1.42509

0.34017

58.24°

0.09032

1.46088

35.58

88.644

48.909

303.67

3.17

AppAR 49.23

T 57.40

+ 0.61

58.01

dt + w 57.22

A 30.77

8.67

B

.61

4.31

C

31.37

0.33

D

.38

8.87

E

δ 58° 54' 11" 85a 1.7181,

C 0.78 -13.22

Σ 57.10 -5 54.3

K

K

1863 Sept. 2 Ill. E L.H.S.

Lake Survey Cat.

2 Ophirchi		13 Ophirchi		4' Draconis pnc.		4' Grae. fol		R 6227	
45.6		53.8		14.8		16.7		23.4	
49.1		57.2		25.9		27.4		28.3	
52.7		0.7		37.6		39.4		33.7	
55.4		3.4		46.2		48.3		37.3	
59.5		7.4		59.0		0.7		43.1	
267.3		122.5		193.5		132.5		165.8	
		2.5				192.5			
17 28 52.46		17 37 0.50		17 44 36.70		17 44 38.50		18 0 33.16	
37.63									

R 6264	Cyr 2521	51 Cephei Hap	B Lyrae	R 7176
56.6	—	18 33 29.6	11.4	4.1
1.6	—	34 49.2	15.3	10.4
6.8 wires ?	4.2	35 45.3	19.7	17.1
10.6	7.9	37 0.1	22.9	21.8
16.2	13.2	38 9.8	27.4	29.1
91.8		254.0	96.7	82.5
18 3 6.36	18 5	18 35 50.80	18 45 19.34	19 5 16.50
		11 35 20.97	4.40	

✓ 63 Sept 2 Ill. E. Cont.

R. 7219

22.2
28.9
35.5
40.8
47.9
175.3

R. 7276

—
46.2
52.7
58.2
5.2

L. 36568

30.4
35.2
—
—
50.6

Dor. 2460

21.0
25.2
29.6
33.0
37.9
146.7

+ Ggmi

53.6
58.5
4.2
8.5
14.3
139.1

19 7 35.06

19 10 52.45

19 15 40.46

19 19 29.34

19 33 3.82

52.43

.22
.18
-46

41.21

40.58

39.59

γ	γ	γ	γ	γ
Gr 2946	Gr 2961.	Rad. 4554	γ Cygni	α Cygni
44.9	20.6	24.0		55.3
50.9	24.7	29.2		59.7
58.0	29.7	34.8		5.0
2.0	32.8	39.4		8.6
9.5	37.5	45.6	46.3	14.3
165.3	145.3	173.0		162.9
19 44 57.06	19 48 29.06	19 56 34.60	20 17	20 37 4.58
				36 49.46

1863 Sept. 2 Ill. 2 (cont.)

61 Cygni pri.	61 Cygni fol
56.7	57.5
0.9	2.3
5.3	6.6
8.9	10.3
13.6	15.1
177.2	

Merlin

21 1 5.72
0 50.35

Biff
+1.28?

No mean of sun
to then 1 hr

α Plinidus	17 29	+0.42	+15.25	-15.28	-03
β Lyrae	18 45	0.48	15.42	15.46	+04
δ Cygni	20 37	0.56	15.68	15.72	-04
61 Cygni	21 1	0.51	15.88	15.77	+11

19 28

Pro Rate
Jelly

-15.558

+0.139

0.143

0.141

1863 Sept 4 1862 TH.3

 γ Draconis

Pm 6227

Pm 6264

Cpr 2521

BAC 6203
Known Star for 1862
Cpr 2533

38.1

3.5

43.4

8.4

6.3

41.5

49.2

13.4

11.3

47.1

53.5

45.0

17.0

14.8

51.2

58.8

50.1

22.7

20.0

56.9

263.0

65.0

60

17	53	18.7	18	0	40.50	18	3	13.00	18	5	10.60	18	11
		27.67											

-6.57

10.87

4.27

40.73

-0.35

75

9.27

40

-4.05

75

-9.35

65

✓
1863 Sept 4 Jle 2

S Cygni

1 Draconis Hop 119 Cephei B.

Lat 42153

P.A.C. 7530

24.8	21	16	52.9	—	—	20.0
28.8		17	19.9	23.0	—	26.0
32.6		17	39.5	53.5	17.0	31.8
35.9		18	3.4	19.2	20.6	
41.2		18	29.3	52.8	26.0	
163.3			145.0			

21	7	32.66	21	17	41.00	21	24	51.98	21	31	16.52	21	33	31.37
		10.39	9	17	15.63		24	32.71						

Lat

0.9587

H	53.12	+30.12			31.18
C	57.20	-2.30	16.64	16	31.56
D	52.57	-26.69	47		31.38
E	52.15	-11.65	45		

Cyr 3554	a Apsarii	c Pegasi	G Cephei	Lat. 43886
34.2	4.5	57.2	20.5	44.5
39.9	8.3	0.9	26.9	48.9
45.2	11.7	4.8	33.2	53.6
49.6	14.3	7.8	38.2	56.9
56.2	18.3	12.0	45.2	1.8
205.1	57.1	82.7	104.0	205.7

21 37 45.02	21 59 11.42	22 1 4.54	22 6 32.80	22 21 53.16
	58 49.12			

$$\begin{array}{r}
 21\ 7 + 0.68 \\
 21\ 59 + 0.41 \\
 \hline
 21\ 33
 \end{array}
 \begin{array}{r}
 22.75 \\
 22.71 \\
 \hline
 22.73
 \end{array}$$

✓ ✓ ✓
1863 Sept. 5 Dec. West

Run 6227	Run 6264	Cpr 2521	B/c 6203	Sur. Min.	23
36.0	7.5	5.5	43.2	—	
39.7	13.0	10.7	47.7	—	
44.9	18.3	15.9	50.9	18 16 46.8	
48.9	22.1	19.6	56.0	17 47.1	
54.0	26.8	24.1	0.6	18 43.7	
223.5	87.7	75.8	198.4		
18 0 44.70	18 3 17.54	18 5 15.16	18 11 57.68	18 16 57.89	18
				21.33	

$\delta 56^{\circ}36'40''$ $\alpha 1.228$

A 53.70 - 1 50.0

B 57.10 - 56.00

C 50.88 + 4.28

23 Camelops Hop	51 Cephei Hop	110 Hercules	13 Lyrae	2 Jot 13 Lyrae
41.7	18 33 32.2	8.0	22.1	24.1
0.1	34 40.9	12.1	26.7	28.7
20.7	35 56.6	14.8	29.9	31.9
35.6	36 48.7	18.8	34.3	36.2
56.7	38 9.6	22.2	38.3	40.2
154.8	188.0	75.9	157.3	161.1
21.8	35 49.60			
18.23 18.96	~~36 4.00~~ 28.46	18 40 15.18	18 45 30.26 4.33	18 45 32.22

863 Sept 5 Ill W cont

<i>Sagittarii</i>	<i>H Serpente pnc</i>	<i>H Serp. Jul</i>	<i>50 Draconis</i>	<i>+ pnc. & Argulus</i>	
9.2	47.3	48.8	46.9	21.5	
13.3	51.2	52.7	2.1	25.5	
16.4	54.0	55.4	12.9	28.2	
20.4	57.6	59.1	26.7	32.0	
24.2	0.8	2.4	40.2	35.3	
83.5	210.9	218.4	124.8	142.5	
	270.9	278.4	64.8		
18 47 16.70	18 49 54.18	18 49 55.64	18 51 13.76	18 53 28.50	18

✓		x	
2 Aprilae	5 Aprilae	Run 7176	Felt 3109 Run 7219
46.7	29.4	—	55.7
50.7	33.2	22.2	3.5
53.5	36.0	~~27.4~~	9.2
57.2	39.7	33.9	16.4
61.6	43.0	40.8	22.0
204.7	181.3		196.8
266.7			46.8
18 53 53.74	18 59 36.26	19 5 27.89	19 6 9.36
	10.22		99 7 46.42

27.72 ~~26.42~~
 27.88 ~~26.72~~
 27.67 ~~26.58~~
28.28 28.66

1863 Sept 5 cont. Ill. West.

Run	7276	Sal.	36568	Pr.	2460	Run	7538	Q Cygni
	50.6		39.5		31.7		14.1	4.5
	58.4		45.8		36.7		18.3	10.5
	8.3		50.3		39.9		21.3	14.7
	10.2		56.0		44.4		25.3	20.4
	15.9		1.3		48.5		29.2	25.5
	138.6		192.9		201.2		408.2	75.6
19 11	3.68	19 15	50.58	19 19	40.24	19 27	21.64	19 33 15.12

g *Argila*

Cpr 2946

Cpr 2961

Rad. 4554

2 *Uns* *Mem*

7.7

56.1

34.8

11.5

3.1

40.9

14.3

8.2

Not Obs

45.3

20

1

22.0

18.0

14.5

51.0

4

31.8

21.4

20.7

56.5

7

25.7

72.9

102.6

228.5

19 40 14.58

19 45 8.52

19 56 45.70

20

1

36.88

39 48.56

2.79

D 88° 54' 21" 1.71915

A 37.1 -5 48.6

B 38.3 -2 53.5

C 35.25 + 13.25

x

x

x

1863 Sept. 5 Ill. W. (cont)

Aug. 2.	20494	B.A.C. 7105	Rad. 4871	74 Draconi	76 Draconi	0
—	—	43.1	—	3.9	1.6	—
47.7	—	49.9	28.8	27.9	28.8	—
51.4	—	54.6	32.3	44.1	48.1	—
56.7	—	1.4	37.1	6.3	14.7	—
2.3	—	7.2	41.5	26.3	38.5	—
—	—	156.2	—	108.5	131.7	—
—	—	—	—	—	257.7	—
20 20 51.92	20 28 55.24	20 30 32.67	20 37 15.70	20 52 50.34	—	27
—	—	—	18.21	—	—	—

52.11
51.78
51.73
52.38

32.70
64
69
115

σ Cygni	1 Draconis H. 2/3	119 Cephei P. 0.	Arg +50° 338.2	79 Cygni
23.7	53.0		49.5	7.9
28.5	16.3	21 24 33.8	55.2	12.6
32.1	41.7	24 58.3	59.7	16.2
36.6	1.8	25 31.5	5.2	20.6
41.0	28.9	26 1.6	10.4	24.7
161.9	141.7		180.0	82.0
21 12 32.38	21 17 40.34	21 25 0.89	21 32 0.00	21 38 16.40
	9 17 15.73	21 24 22.63		

$\sin \delta$ 0.9587

d 1.08 -60.52
 B 21.38 +30.12
 C 0.60 +2.30
 b 0.49 +26.69
 f 0.165

✓
1863 Sept 5 Ill W. cont.

Sum 9430

19.0

23.8

27.2

31.6

35.8

137.4

21 38 27.48

β Lrae	-0.39	25.54	18.44	25.54	-00
δ Aquilae	-0.40	25.61	18.59	25.57	+0.04
γ —	-0.40	25.62	19.40	25.66	-0.04
		25.59	19.4		
Per R		+0.132			
July		0.132			
		0.132			

✓ ✓ ✓ ✓
 1863 Sept. 7 Ill. W. cont.

Fed. 3109	Run 7219	Run 7276	Lal 86568	Pr 2460
2.1	39.8	56.7	45.4	38.3
9.5	47.0	4.3	52.4	42.8
14.6	52.4	9.1	56.4	46.0
21.5	59.0	16.1	2.5	50.7
27.5	5.2	22.9	8.0	54.8
75.2	203.4	109.1	164.7	232.6
19 5 15.04	19 6 52.68	19 10 9.82	19 14 56.94	19 18 46.52

✓ ✓ ✓ ✓ ✓
 1863 Sept 7 2h W cont

Run 7592	A Cygni	Gr. 2946	Gr. 2961	Rad. 4554	22
23.2	10.8	2.7	37.4	41.2	
27.9	16.8	9.5	42.5	47.4	19
31.6	21.1	14.4	45.5	51.6	20
36.2	26.6	20.7	50.3	57.5	20
40.4	31.7	26.7	54.6	2.9	20
159.3	107.0	74.0	230.3	200.6	
19 26 3.86	19 32 21.40	19 44 14.80	19 47 46.06	19 55 52.12	20

2 Ans. Min.				Arg. +40° 4093	γ Cygni	Rad 4871	α Cygni
2				48.2	45.9	29.4	12.3
4	19	58	17.4	52.9	50.9	35.0	17.9
6	20	00	34.6	56.5	54.4	38.5	21.5
5	20	3	39.2	1.4	58.9	43.2	26.6
9	20	6	39.2	5.8	3.4	[47.9]	31.2
6				16.8	213.5		109.5
2	20	0	47.32	20 11 56.96	20 16 54.70	20 29 38.74	20 36 21.90
		1	0.76				49.39

888° 54' 22.2 1.7192

A. 505-548.7

Q 45.7-253.5

L 47.9 + 13.3

D 15.2 + 233.8

36.42

38.90

38.66

38.79

[39.05]

1863 Sept 7 M.W. cont.

Draconis H. o. p			119 Cephei B.			Arg. + 50° 3382			Cyr 3554		
—			21	23	6.3	55.8			—		
—				23	41.0	1.9			51.3		
21	16	47.0		24	4.8	6.1			55.6		
	17	6.8		24	37.1	11.4			1.4		
	17	33.9		25	8.2	16.7			6.6		
			97.4			91.9					
21	16	45.59	21	24	7.48	21	32	6.38	21	36	55.99
	17	15.93			32.43						

20 36 +32.10

D₂₁ 0.5522

56.03

.01

.06

55.87

C 45.20 -1.80

D 45.92 20.88

Σ 45.66 18.24

100
100
100
100

1863 Sept. 9 24. 22. J.H.S.

Lat 673	B.A.C 120	Te Androm.	α Capriopue	γ Capriopue	La
49.9	45.7	10.4	18.2	0.1	
54.6	50.4	14.9	25.1	7.8	
57.8	53.6	18.3	29.9	13.1	
1.9	57.5	22.4	35.9	20.3	
5.9	2.2	26.4	42.0	26.9	
170.1	209.4	92.4	157.1	68.2	
0 20 58.02	0 23 53.88	0 29 18.44	0 32 30.22	0 48 13.64	0
			nr - 0.48		
			α (B7) 50.93		
			21.19		

	<i>Lalande 1633</i>	<i>ε Pscium</i>	<i>β Androm</i>	<i>Polaris</i>	<i>β AC 382</i>
1	—	27.2	40.3	1 5 28.5	0.5
8	—	31.0	45.0	8 2.9	7.2
1	—	33.8	48.4	—	13.9
3	—	37.2	52.6	12 15.6	21.7
6	20.2	40.5	56.8	14 28.2	28.3
2		169.7	243.1		71.6
4	0 50 12.61	0 55 3294 54.63	1 1 48.62	1 10 1.251 12.11	9 14.32

$\delta 88^{\circ} 34' 53''$ in 1.6063

A 59.0 - 4 28.9

M 1.8 - 2 13.8

D 1.5 + 1 58.6

E 2.4 + 4 33.9

✓ 69 Sept. 9 Jn W. (Cont.)

4 Ceti	214 Camelop. B	Pm 399	10 Arctus	BAC 637	11
47.4	1 18 9.6	55.2	30.0	12.6	
51.1	18 54.3	5.9	34.1	16.6	
54.1	19 36.4	10.5	37.2	20.1	
57.5	20 10.9	16.3	40.7	23.6	
1.0	21 1.2	22.2	44.7	27.5	
211.1	112.4	114.1	186.7	100.6	
1 16 54.22	1 19 36.48	1 35 10.82	1 55 37.34	1 56 20.08	1
17 14.61	13 19 58.65				

✓

11	Archie	20	20	Min Bsp	Cr	527	
	40.5						29.6
	44.5	2	2	20.4			52.8
	47.9		3	16.6			11.7
	51.3		3	59.3			33.1
	55.3		4	59.6			55.1
	239.8						182.3
1	58	47.94	2	9	12.33	2	28
			14	3	37.79		
							12.46
							21.83

A. Error

$$\begin{array}{r}
 0.56 - 0.41 - 20.90 \\
 \hline
 1.17 - 0.46 - 20.85 \\
 \hline
 1.6 \quad 20.875
 \end{array}$$

$$\begin{array}{r}
 \delta 86^{\circ} 24' 47'' \\
 \hline
 1.2032
 \end{array}$$

$$\begin{array}{r}
 B \quad 13.34 + 52.94 \\
 C \quad 12.37 - 4.23 \\
 D \quad 12.39 - 46.91 \\
 \hline
 E \quad 11.22 - 148.38
 \end{array}$$

1863 Sept 10 Ill W.

Polaris o.p.	δ Wrs Min			23 Camelopard. H. o.p.	51 Cepheus H. o.p.	110 Herculis	σ
—	18	14	11.1	59.0	18 32	48.5	24.5
13 7 30.0	15	16.7		17.3	33	59.8	28.5
9 54.2	15	58.0		37.8	35	15.5	31.3
11 40.5	17	0.8		52.6	36	8.5	35.2
14 21.3	17	58.8		14.0	37	30.9	38.7
		145.4		180.7		163.2	154.2
13 9 44.28	18 16	5.08	14 22	36.14	18 35	86.4	18 39 51.64
1 10 12.31	16	19.19				30.90	

δ 88° 34' 55" 3.20 1.6063

δ 28

A +4 28.9

B 42.8 +2 13.8

C 44.0 — 10.2

D 41.9 — 1 58.6

E 47.4 — 4 33.9

	α Sagittarii	δ Serpentis	θ Serpentis	ϵ Draconis	ϵ Aquilae	ϵ Ag.
5	25.6	3.8	5.2	3.0		38.0
5	30.0	7.7	9.2	18.4		41.9
3	32.8	10.3	11.8	28.9		44.6
2	36.7	14.0	15.5	43.3		48.5
7	40.6	17.3	18.7	56.4		51.9
2	165.7	53.1	60.4	150.0		224.9
4	18 46 33.14	18. 49 10.62	18 49 12.08	18 50 30.0	18 52 44.94	

1963 Sept. 10 cont.

✓

5. Aquila			25 Camelopard. H. sp.			4 Ursa. Min. B. sp.			10 Arctis			B.A.C. 637		
45.7	19	0	58.6	19	7	38.0			41.3					
49.7		1	25.1		10	51.5			45.1					
52.5		1	53.2		14	20.7			48.8					
56.2		.2	14.1		16	50.8								
59.6		2	44.1											
263.7			195.7											
18	58	52.74	19	1	51.02	19	14	3.45	~~19~~	55	48.74			
	59	10.17	7	2	10.85			37.35						

 $\delta 89^{\circ} 0' 35.7''$ 1.7625

A 3.3 +6 25.3
 B 3.5 +3 11.7
 C 6.1 + 14.6
 D 0.9 -2 49.7

x

11 Arietis	0 Ceti	3 ² Ceti	Cap 527	supra leaf 2 Aquila
Arietis	6.3	33.6	34.2	3.3
	10.3	37.5	56.8	7.3
	13.1	40.3	15.9	10.0
	16.4	43.8	36.8	13.8
	19.9	47.2	57.8	17.1
	66.0	202.4	201.5	51.5
2 12 13.20	2 20 40.48	2 28 16.30	18 53 10.30	
	56.78	31.83		

$$\begin{array}{rcl}
 18.59 & -0.40 & -17.83 \\
 \hline
 2.21 & -0.41 & 16.71 \\
 \hline
 22.40 & & 17.07
 \end{array}$$

1863 Sept 11 Ill. West

Polaris 2.3

13 5 21.2

7 37.5

9 59.0

11 49.5

14 26.0

193.2

13 9 50.64

10 12.67

1863 Sept 14 M. East.

51 Cephei H. sp	4 MS min B sp	R 7592	Rail. 4821	L. Lygen'
18 33 19.8	19 8 36.9	46.5	52.9	1st inst.
34 39.2	12 18.2	50.6	57.5	40.3
35 34.2	14 55.0	55.3	2.2	45.4
36 50.1	18 24.1	58.8	5.7	49.1
38 80.0	21 34.1	4.2	11.4	54.6
• 143.3	168.3	215.4	129.7	

18 35 40.66	19 15 9.66	19 26 55.08	19 30 1.94	20 36 45.00
6 35 32.94	7 14 42.17			49.27

44.97 + 4.67
 115.06 - 0.36
 144.96 - 4.14
 41.01 - 79.55

✓
1863 Sept 14 2M East continued
begin

31.6

35.6

39.9

43.2

47.7

196.0

20 40 39.60

Sept 14

20 37 +0.66 -3.61

✓
1863 Sept. 15th M. East
1175

51 Aphel. Hsp	β Lyrae	δ Serpentis m.	δ Serpentis foll.	ξ Aquilae
18 33 22.0	54.9	20.2	21.7	2.0
34 42.3	58.9	23.5	24.9	5.5
35 35.9	3.0	27.1	28.6	9.2
36 52.7	6.4	29.8	31.3	12.0
38 1.3	10.9	33.6	35.2	15.9
155.2	134.1	134.2	141.7	44.6
18 35 43.04	18 45 2.82	18 53 26.84	18 53 28.34	18 59 8.92
6 35 33.39	4.11			10.09

363 Sept 15th III East

Un mi B sp	R 7568	Un mi B	α' Capri:	α'' Capri:
9 8 36.5	Int	19 54 32.9	59.6	29.3
12 22.5	2nd	57 31.0	2.9	26.8
14 51.4	54.8	20 0 40.9	6.6	30.5
14 21.9	57.6	2 58.7	9.3	33.3
21 32.0	2.0	6 20.8	13.2	37.3
165.2		164.3	71.6	157.4
19 15 9.04	19 26 56.83	20 0 24.86	20 10 63.2	20 10 30.28
17 14 43.38		20 0 52.85	7.34	31.28

55.09

54.86

74.49

x

32 Vulpeculae

2st.

42.4

46.4

49.4

53.7

20 48 46.10

47.09

6 Lyrae	+0.52	-0.85	+0.80	18 64	-05
5 Aquila	0.43	0.74	0.72	18 59	+03
21 Capri	0.38	0.64	0.62	20 10	-02
21 Capri	0.38	0.62	0.62	20 10	.00
32 Vulpec.	+0.50	0.49	0.54	20 49	+05

Pro R

July

-0.668	19 46
+0.125	
0.123	
0.124	

46.14 +3.74
 .11 -0.29
 .09 3.31
 .05 7.65

1863 Sept 16th M East

74.5

 α Trianguli

10 Arietis

BH 637

 α Arietis

16.5

53.1

35.5

27.5

20.4

56.9

39.3

31.1

24.1

0.7

43.2

34.9

27.2

3.6

46.3

37.7

31.9

8.0

50.5

41.8

120.1

122.3

214.8

173.0

1 45 24.02

1 56 0.46

1 56 42.96

1 59 34.60

32.07

$$20 \quad 0.47 \quad +3.06$$

1863 Sept 17th 20 East

7145

74 Draconis		ε Cygni		η Cephei		6 Ursae maj.		32 Vulpeculae	
36	39.2		40.7		24.1		43.6		not
	59.8		44.8		31.0		52.6		48.3
37	21.3		48.9		38.3		59.2		52.3
	38.1		52.2		43.9		7.7		55.4
38	1.7		56.8		51.9		15.6		not
	160.1		243.4		189.2		188.7		
							298.7		
20 37	20.02	20 40	48.68	20 42	37.84	20 44	59.78	20 48	52.05
20 37	16.97								47.08

1863 Sept 17th M East
 1845
 5^h 5^m

α Cephei

Dirac
 18^h 40^m 17^s sp.

β Aquarii

+ prec β Cephei

7.6	12.9			23.4	39.4
11.4	20.1			26.8	49.3
15.5	27.2	21	17	30.4	59.7
18.6	33.3			33.1	7.5
23.0	41.4		18	37.0	18.8
76.1	134.9			150.7	174.7

21	7	15.22	21	15	24.98	21	17	25.86	21	24	30.14	21	26	58.94
		10.27				9	17	16.90			24.96			

δ 51° 55' 14" $\tan$ 0.85209

A 25.85 - 47.35
 h 25.44 - 23.56
 c 26.30 + 1.90

continued on next page

X			X		
B Cephni			Y Capricorni		
Gr 1564 sh			E Pegasi		
			D Aquarii		
4	41.8	17.0	32.6	30.1	25.4
3	51.7	27.9	36.1	33.5	28.9
2	2.0	35.9	39.7	36.9	32.6
5	10.0	46.0	42.6	39.8	35.6
8	21.2	55.5	46.6	43.7	39.5
7	126.7	142.3	197.6	184.0	162.0
7					
94	21 27 1.34	21 30 36.46	21 32 39.52	21 37 36.60 31.61	22 47 32.40

863 Sept 17th Continued ME

2 H.S

34 Cygni H

lost

lost

9.1

31.3

59.7

 β UMa majoris

28.4

lost

lost

2.1

lost

lost

 α UMa majoris

28.6

15.2

58.7

21.6

29.2

36.6

110.7

 α Pegasi

59.1

7.6

6.2

9.0

13.0

89.9

22 48 8.13

22 53

22 48 5.98

22 55 22.14

22 58 5.98

0.71

32 Kelp	20 49	+0.50	+5.67	-5.46	+01
5 Cygni	21 7	0.51	5.46	5.50	-04
β Aquarii	21 24	0.38	5.56	5.54	+02
ϵ Pegasi	21 38	0.41	5.60	5.56	+04
δ —	22 58	0.43	5.70	5.74	-04
	21 35		+5.558		
Pro R			+0.127		
Tolly			0.138		
			+0.132		

 δ 82° 26' 24" 0.86050

δ + 50.55
 η - 25.16
 ζ 7.14 = 1.92
 δ 9.01 - 22.29
 η 8.21 - 51.49

1862 Sept 19 MZ

Sept 20th 2Sept 21st MZ.

2143

Polaris sp.

13 6 12.9
 8 48.1
 10 77.5
 12 59.2
 15 15.9
 173.6

Regulus (& Lening)

16.8
 20.3
 23.8
 26.5
 30.4
 117.8

Polaris sp.

test. circuit weak

13 9 5.0
 10 50.1
 13 16.7
 15 29.7

x3 10 46.72
 1 10 16.35

10 1 23.56
 6.49

13 11 1.84
 10 17.14

C. minor

10 1 + 17.51

δ 88°34'57"3 1.6067

A 0.6 - 4 29.1

B 2.8 - 2 13.9

C 0.25 + 10.15

D 3.7 + 1 58.7

Set 21 ME mt.

863
45

Stephan H sp	P Zyrac	25 Lania H sp	4 mm mv Bop	B Zyrac	
18 33 19.8	14.2	19 1 43.2	19 9 13.0	25.7	
35 8.6	18.1	2 14.4	12 56.3	29.5	
36 2.9	22.4	2 34.3			
37 17.3	25.7	3 2.1			
38 27.7	30.4	3 29.0	22 12.0	41.0	
106.3	110.8	123.0			
18 36 9.26	18 45 22.16	19 2 36.60	19 15 46.07	19 25	
6 35 36.71	3.99	7 2 13.00	7 14 52.02		

S 89° 05' 2" - 8.23771

A 41.91 - 6.25.09

S 46.25 - 2 49.75

Z 48.25 - 6 32.25

β Lyra Comp	α Cygn	156 Camel B	β Lyra	Alm in B
27.9 ⁴⁴	53.0	3.8	50.6	19 54 40.7
31.7 ⁴³	57.8	43.9	—	ml
35.7	2.9	10.5	57.4	ml
—	6.7	47.6	0.2	ml
—	12.1	23.5	4.1	ml
	132.5	129.3		
	12.5			
19 25	19 41 2.50	19 43 13.86	19 48 57.24	20 a 29.71
		7 43 48.45	38.69	~~24 54~~ 39.85
				20 0

Clock Error

18 45	0.63	18.80
19 49	0.42	18.97
19 12		18.885
Per R		+ 0.140

8 8656.256 8.28062

57.29	+6.69	1	+549.01
	+3.33		
15	-0.25		
25	-2.95		
28	+6.82		

1863 phase	Polaris 4	51 Ephra H. sp.	25 Candor H.	4 Grae	1846 6651
13	6 32.1	Int.	19	1 48.3	52.9 27.6
	9 7.7	18 35 13.3		2 17.9	57.0 31.4
	10 55.4	36 8.5		2 39.1	1.6 36.2
	13 22.2	37 21.8		3 7.1	4.9 39.7
	15 35.2	ink faint		3 33.2	9.8 44.2
	152.6			145.6	126.2 139.1
13	11 6.52	18 36 13.67	19	2 41.12	19 12 1.24 19 19 35.62
1	10 17.33	6 35 37.37	7	2 13.20	

$\delta 87^{\circ} 14' 20''$ in 1.31721

B	13.04	-	1 8.26
C	13.75	+	5.25
A	14.23	+	1 0.93

✓			✓			✓			✓		
R 7588			S Lygni			α Spilae			20 Lygni		
10.0			59.9			not.			24.6	19	54 44.6
13.4			8.7			not.			30.3		57 46.3
16.0			10.6			31.4			36.1	20	0 48.2
20.8			14.9			34.7			40.6		not.
25.1			20.6			38.6			46.7		not.
87.3			~~110.6~~						179.3		
19 27 17.46	19	33 10.12	19	44	31.68	19	47	35.66	20	0	36.18
					9.54						44.82

S 88° 34' 43" sec. 1.7, 960

33.6 +5 49.0

40.0 +2 53.7

34.94 - 13.26

31.55

31.74

31.75

in hand on next page
~~180~~

β Cephei H			α Perseus			β Pegasus			γ Pegasus			δ Pegasus		
22	67	35.3			24.4			27.7			24.3			15.3
	68	0.9			28.4			31.7			27.7			18.6
	69	27.0			32.1			35.3			31.3			22.1
	68	44.9			35.4			38.9			34.3			25.1
	69	16.6			39.9			43.0			37.9			28.6
		124.7			160.2			176.6			155.5			109.7
22	68	25.74	22	50	32.04	22	57	35.32	23	10	31.10	23	20	21.96
		5.75			9.08						8.74			57.00

1863 Sept 22 MS cont

P.N.S.

102 Lampy. Rep.

39 Capm H

1 Praim

109 Lampy. B.

23	26	37.4	15.1	23	52	12.0
	27	35.5	18.3		53	1.9
23.8	28	31.2	22.0		53	50.1
57.6	29	19.4	24.7		54	29.8
12.4	30	19.7	28.6		55	25.1
		143.2	106.7			118.9

23	22	25.02	23	28	28.64	23	33	21.74	23	53	47.75
11	21	57.05			15.08			58.76			33.95

Δ Aquila	+0.43	22.57	19 44	-22.74	-17
Δ Capri	0.35	22.70	20 11	22.84	-11
Δ Lyra	0.79	22.98	20 38	22.88	+10
Δ Pici ant	0.31	23.27	22 50	23.24	+06
γ Praim	0.60	23.26	23 10	23.26	+10
* —	0.39	23.33	23 20	23.29	+14
L —	0.41	+23.39	23 33	23.32	+07
		+23.071	24.54		

Proc R

Jelly

A.D.

+0.155

+0.144

0.150

51.524624 0.54972

A 25.31 - 47.09

B 24.17 - 23.63

C 25.57 + 1.79

	5 Her.	4 Opim	4 Her.	8 Opim	4 Opim	4 Her.	4 Opim	4 Her.	4 Opim	4 Her.	4 Opim	4 Her.	4 Opim
1863 July 11	-.02	-.01	-.04	-.02									
22		+.03											
23													
29													
31				-.05									
Aug 3			+.03	+.03	-.02	-.06							
12				+.01	-.04	+.01							
14						+.08							
15					-.10								
17													
18													
22				-.08									
24		+.03	-.05	.00	-.08								
Sept 2				-.03									
5													
15													
23													
30					-.06								

B. H. H. 1867

	<i>h. light</i>	<i>h. dark</i>	<i>h. light</i>	<i>h. dark</i>	<i>h. light</i>	<i>h. dark</i>	<i>h. light</i>	<i>h. dark</i>	<i>h. light</i>	<i>h. dark</i>	<i>h. light</i>	<i>h. dark</i>
1867 June 5												
23												
July 29												
31												
Aug 3												
12												
14	+05	+01										
17		-03										
18												
19	+09	-03										
Sept 2												
5		-04										
15												
17												
22												
23												
24												
28												
29												
30												
Oct 28												
28												
29												
Nov 2												
3												
19												
25												
26												
Dec 1												
9												
10												

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Handwritten marks, possibly a large 'V' or 'U' shape, in the upper right corner.

γ Dra

260 55

- 4.0

.135

015

