

KG
11365
42

A.42

Meridian Circle
1862 Dec. 10th —
— 1863 Feb. 16.

Sold by T. Groom & Co., Stationers, India Building, 92 State St., Boston.

KG 11365.42

200 200.0 + 20.0 +

M.

See sheet for first period

East.

			c	n		
29	Dec 10-11	0.349	0.045	0.304	9.4829	8.6532
"	12-16	0.279	0.012	0.267	9.4265	8.0792
"	20	0.184	0.012	0.169	9.2279	8.0792
"	24	0.382	0.012	0.370	9.5682	8.0792
"	27	0.266	0.012	0.254	9.4068	8.0792
"	28-Jan 2	0.245	0.012	0.233	9.3674	8.0792
+ 0.235 + 0.012 undr						

West 33

Jan 3-5	0.257	-0.042	0.257	9.4133	8.6232
17-19	0.257	-0.042	0.257	9.3997	8.6232
30-Feb 2	0.223	-0.042	0.265	9.4232	8.6232
Feb 7	0.262	-0.042	0.304	9.4829	8.6232
10-16	0.220	-0.042	0.262	9.4183	8.6232

	Jan 3-Feb 2	Feb 7	Feb 10-16
+45°	+0.200	+0.239	+0.197
40	0.154	0.187	0.157
30	0.096	0.119	0.094
20	0.046	0.060	+0.045
+10	+0.007	-0.008	0.000
0	-0.042	-0.042	-0.042
-10	0.087	0.094	0.086
20	0.135	0.149	0.133
30	0.192	0.215	0.189
-40	-0.264	-0.297	-0.261

KG 11365.42

 HARVARD
UNIVERSITY
LIBRARY
APR 28 1956
Reduction of the stars within 10° of the pole
 α " " $\frac{1}{2}$ " "
 $\frac{1}{2}$ " " " $\frac{1}{2}$ " " " " " "cos δ $\frac{1}{2}$ " " " " 15° " " " " 15° " " " " δ " " " " $15^\circ 30'$ " " " "
 $\frac{15^\circ}{2.3438}$ " " " "
 0.0023 " " " "tan δ > 6 .
 $> \frac{0.014}{0.00}$

In order

 20°
 $\frac{1}{6}$ " " " "

30	0.500	0.333
45	0.707	0.500
60	0.866	0.5

 $\sin \delta = \frac{\pi}{90^\circ}$ $\cos \delta = \frac{1}{90^\circ}$ $\tan \delta = \frac{1}{90^\circ}$ $\tan \delta = \frac{2}{\pi} = 0.639$ $\sin \delta = 0.779$ $\delta = 51^\circ 21'$
 $\sin \delta = 0.779$

45.8

On the supposition that the ^{quantity} reduction α is less than 0.5 an error of
 $30''$ in δ will produce an error less in α than $0.0012 \frac{1}{2} \delta$
 Again ~~an error of~~ ^{suppose the} star declination computed for every 3 months; the
 resulting error will be (interpolating without δ difference) always less than
 $4''$; Hence the above error will tend a $\frac{1}{2} \delta = \frac{100.0}{10.15} = 9.85$ to be equal to 0.01
 Suppose only 2 months be used.

At the same time in all reductions the place
 of Poyson for 1862 is to be corrected according to
 answers A.M. in 1873.

A correction for 1862 is in α -0.003 and therefore
 to be reflected.

1862 Dec 10 M.E.

continued on next page

2115

S Pinum

Bradley 74

y Capricorn

43 Capricorn

1.7

5.2

2.8

11.6

15.3

42.6

42 56.3

43 19.4

43 48.9

68.7

55.3

2.6

8.4

15.6

170.6

0 50 32.9

51 20.0

51 56.3

52 42.9

0 42 8.52

0 42 54.00

0 49 2.12

0 51 16.47

0 50 48.46

~~last corr.~~

Perk. corr.

+ 0.08

+ 2.83

+ 1.62

+ 4.46

C. corr

- 32.58

- 32.58

- 32.57

- 32.60

M. J. R.

0 41 36.02

0 42 24.25

0 48 30.15

0 50 48.33

Deviation from lat.

- 0.13

1036

- 15.15

L. Dec 8th

1862.15 0.9069

10. 0.9069

B 83.66 + 7.45

A 54.15 - 25.25

Z 13.99 - 54.91

B 16.35

C 16.17

D 16.88

E 16.69

1/2 Lr 10 continued M.E.

δ Pictoris	Lk Alpha H.	β Andromedae	Polaris	θ Lepi
17.3	31.7		1 5 21.8	37.8
20.8	52.6		7 40.1	41.7
24.4	11.8	38.8	10 6.2	46.9
27.3	26.9	42.2	12 1.4	47.8
31.9	45.2	46.6	14 28.2	51.6
120.7	171.2		97.7	223.4
θ 56 21.14	1 1 10.24	1 2 38.62	1 9 55.54	1 17 44.68
55 51.57			9 37.09	17 12.02
Hydromed + .09	+ 1.79	+ 0.98	+ 14.13	.00
C. Can. de + 32.66			[+ 32.54]	+ 32.66
C. Can. lin - 32.61	- 32.61	- 32.62	- 32.63	- 32.64
Hy. H. -	1 0 39.42	1 2 1.08	~~to~~ ~~to~~	
Duristin + 0.05			- 0.09	+ 0.02

0.7856 5 0.7067
 di 0.7168

1.6077

- 0.36

- 3.77

- 8.10

214 Lancelotti Bsp.			η Pictoris			δ Persei			ν Pictoris			ϵ Aps		
					36.4			1.4			45.6			9.3
1	20	3.1			40.0			5.4			49.1			13.1
	20	39.2			43.9			11.0			52.7			16.8
	21	25.2			46.8			15.1			55.6			19.8
					50.5			20.4			59.2			23.5
					217.6			52.3			162.2			82.2
1	20	42.50	1	24	43.52	1	30	10.46	1	34	52.44	1	38	16.46
	20	6.08		24	11.01						19.88			
		- 4.40			+ 13			+ 0.41			+ 07			- 05
		[+ 32.02]			+ 32.64						+ 32.13			
		- 32.65			- 32.66			- 32.66			- 32.67			- 32.68
						1	29	38.21				1	37	43.71
		- 0.63			- 0.02						- 0.04			

δ 85° 37' 58" η 1.1016
 δ 1.1020

δ 42.34 $\rightarrow$ 42.56
 δ 42.38 $\rightarrow$ 42.78
 δ 42.39 $\rightarrow$ 42.99

1862 Nov 10. continued M.E.

1862

Inner X Citi	X Citi	426 50 (Cloudy)	L. Arcturi	L. Main fol.
7.1	18.9	2 ^u 4.3	54.4	35.2
10.6	22.7	s. 26.0	58.1	28.5
14.4	26.0	h. 45.0	2.1	32.2
17.3	28.8	s. 5.9	8.2	35.1
20.9	32.5		9.1	38.7
70.3	128.5		128.9	159.7
1 43 14.06	1 43 25.70	1 53	2 0 1.78	1 55 31.94
-0.42	-0.42		1 59 29.33	
-0.02	-0.02		+18	+16
			+32.60	
			-32.72	-32.71
				1 54 59.29
			-0.12	
Citi				
Clor	-32.69	-32.69		
Mapp. 1 42 41.35	1 42 52.99			
Doc.				

Continued on next page

δ Loh	α Loh (China)	δ Loh	α Loh	δ Loh	α Loh
36.8	88.5	20.4	14.4	24.0	
40.2	87.0	23.9	35.9	27.4	
43.9	8.4	27.6	58.8	31.2	
46.8	3.4	30.4	17.2	34.1	
50.3	6.9	34.1	39.9	37.8	
216.0	121.2	136.4	166.2	154.5	
2 10 43.60	2 13 0.24	2 21 27.28	2 28 57.24	2 33 30.90	
10.78		20 54.55	28 21.84		
+ 01	+ 03	+ 09	+ 2.22	- 0.02	
+ 32.83		+ 32.82	[+ 32.62]		
- 32.74	- 32.74	- 32.76	- 32.77	- 32.78	
2 12 27.53		+ 0.06	- 0.15	2 32 58.10	
+ 0.09				~~2 32 58.10~~	

1862 Dec 10 continued P M?

15.

4 Ceti	41 Androm	9 Eridani	8 Androm	+ Ceti
40.0	22.6	11.9	58.4	35.2
42.5	26.5	15.4	54.1	38.5
47.2	30.8	19.2	58.0	42.2
50.0	33.9	22.0	1.1	44.9
53.6	38.0	25.7	5.0	48.8
234.3	157.8	94.2	168.6	209.6
2 36 46.86	2 42 30.36	2 50 18.86	2 57 57.72	2 55 41.92
14.15				9.20
+ .06	+ 0.21	- 0.01	+ 17	+ .07
C. Cor. 0				+ 32.79
C. Cor.	- 32.79	- 32.81	- 32.81	- 32.82
A. Rapp	2 41 57.78	2 49 46.02	2 51 25.08	
Dr.	- 0.02			- 0.03

Am. is an accident
break at 17.3

Elorri	1 Corvi	Curmin Ber	y Corin Ber	2 Corvi
32.6	17.5	12 10 14.5	32.6	14.3
36.0	17.1	12 18.5	36.6	17.8
39.9	20.6	14 32.2	40.6	21.5
43.1	23.7	16 18.8	43.9	24.4
47.0	27.5	18 29.5	48.1	28.3
198.4	102.4	113.5	201.8	111.3
12 3 39.68	12 9 20.48	12 14 22.30	12 20 40.36	12 23 21.26
5.67		14 1.24		
- 0.08	- .05	+ 12.86	+ 0.23	- .04
+ 33.23		[+ 34.32]		
- 33.91	- 33.92	- 33.93	- 33.94	- 33.95
	12 8 46.57		12 20 6.65	12 22 47.27
+ 0.02		+ 0.39		

18330

71.10

9.976

+ 1/2.86

1.172

88.27 5.8

1.5854

1.5856

1862 Dec 10th continued M.E.

95

y Cori

28.2
31.9
35.6
38.5
42.3
176.5

Blorri

38.9
42.6
46.6
49.7
53.7
231.5

L. lapropijae sp.

9.3
15.9
21.0
27.4
33.6
107.2

see below

L. Cepha H sp.

12 50 0.6
— 46.5
57 23.4
52 10.0
— 53.2
133.7

2 Virginia

48.6
52.6
55.8
58.7
2.3
217.8

12 25 35.30

12 27 46.30

12 33 21.44

12 51 26.74

12 55 55.56

- .04

- 0.08

- 0.53

- 4.46

+ .11

Ceph

+ 33.93

+ 33.85

[+ 33.98]

Cor

- 33.95

- 33.95

- 33.97

- 34.00

- 34.00

H. off

12 25 1.31

12 55 21.67

H. v.

- 0.02

- 0.12

= 0.05

~~23~~
~~12~~
J. Virginia

10.7

14.1

17.9

20.7

12 35 24.2

87.6

12 35 17.52

85° 31' 60" 5 1.1067_nSec. 1.1060_n

Polaris sp.	Δ Virgin	Δ Boot	β Ursa mi
13 5 52.8	26.0	26.0	10.6
8 17.9	29.6	29.9	23.9
10 12.0	33.3	34.0	37.7
12 40.8	36.2	37.2	48.5
14 57.4	39.9	41.2	2.3
120.9	165.0	166.3	123.0

13 10 24.14	13 18 32.00	14 39 33.66	4 51 36.60
3 9 36.68	17 58.97	38 59.74	3.81
- 14.18	- 0.01	+ 0.22	+ ~~1.28~~
+ 33.37	+ 34.02	+ 34.14	[+ 34.07]
- 34.04	- 34.07	- 34.28	- 34.30
- 0.67	- 0.05	- 0.04	- 0.23

Am	Clock Errors			
	of Prime	+ 32.66	- 32.61	+ 05
	of Celi	32.66	32.65	+ 01
	of Pinnaculum	32.64	32.66	- 02
	1 —	32.63	32.67	- 04
	of Arcturus	32.63	32.72	- 09
	of Celi	32.63	32.74	+ 09
	of Celi	32.62	32.75	+ 07
	1 —	32.77	32.78	- 01
	of —	32.79	32.82	- 03
	1 st 6 th	32.66	(21)	N. A.
	2 nd 26 th	32.77	(21)	wolfers
final	1 st 46 th	32.715	(4)	

Clock - Error

N.

0.58 + 32.66 - 32.61

1.24 32.64 - 32.

1.34 32.63

1.59 32.60

2.21 32.62

2.36 32.77

2.55 32.79

1.58 + 32.704

5.

1.17 + 32.66

2.10 32.83

2.41 + 32.62

1.48 + 32.745

Morning

N.

14.39 34.24

5.

12.3 32.93

12.27 33.93

13.18 34.02

12.36 33.953

0.543

0.544

0.115

0.099

0.107

1st 55th (CE) + 32.711

13.7 34.025

use

1862 Dec 11th M. E.

1862

A. Aquarii

Pepin

S. Appert

O. Appert

30 Cancri 11.

13.1

5.6

28.0

4.4

22 13 48.2

16.5

9.6

34.2

7.7

14 18.8

20.1

13.3

41.1

11.5

62.7

23.0

16.4

46.2

14.6

15 14.0

26.6

20.5

52.9

18.2

15 43.2

29.3

65.2

202.4

57.4

167.0

21 59 19.86

22 1 13.04

22 6 10.48

22 10 11.28

22 14 45.40

58 45.17

9 36.55

14 7.46

21 59 19.86

+0.04

.00

+10"

83 14 43.

continued on next page

	α Aquarii	γ Aquarii	η Pegasi	ξ Pegasi	β Cephei
14.	52.0	47.5	2.3	19.5	22 47 36.6
2	55.5	50.9	6.3	22.9	48 1.2
8	59.4	54.5	10.5	26.7	48 29.3
2	2.2	57.6	13.8	29.8	48 50.6
0	5.8	1.0	17.9	33.2	49 15.1
0	14.9	211.3	50.8	132.7	135.8
40	22 23 58.98	22 28 54.26	22 37 10.16	22 40 26.42	22 48 27.16
66		19.45			47 54.60
		+0.04			

-12"

82 26 3

1862 Dec 11th M.E. continued

Pirin austriaci		Blanca maj sp.		L. M. maj		L. T. maj		Blanca B. sp.	
32.2		57.6		36.8		24.9		10	42.6
34.0		4.2		44.9		28.2		12	55.5
40.4		9.1		50.9		32.0		14	37.3
43.7		15.9		58.9		35.7		16	56.6
47.9		21.9		6.1		38.7		19	1.4
200.2		108.7		197.5		158.9		191.4	
22	50	40.4	22	54	9.74	22	58	31.78	0
		5.01			15.13		57	57.05	14
		-13			-0.68		+13		1.67

+ 14th
88 27 8.6

continued on next page

?

β Pega	η Tauri	$343.18.1 + 1^h 7^m 3$	δ Persei	$349.52.1 + 1^h 50.0$
23.1	50.9	8.2		43.4
26.4	54.6	11.6		46.7
30.1	58.6	15.1	9.6	50.4
33.1	1.6	18.0	12.9	52.9
36.6	5.8	21.6	17.2	56.6
149.3	171.5	74.5		250.0
22 57 29.86	3 39 58.30	3 44 14.90	3 46 9.28	3 49 50.00
	23.08			
	+0.19			

A	14.92	A	50.12
B	99	B	09
C	80	C	10
D	71	D	19.81
E	86	E	88

862 Dec 11th continued

γ Eridani	γ 750	62 Wm. m. B. p.	δ 53.6 - 117.1	δ 55.0 + 1 22.7
8.8	54 8.6	3 57 52.0	4 50.8	52.0
12.2	49.2	58 17.2	52.2	55.6
16.0	55 33.1	58.5	57.8	57.3
19.0	56 6.2	59 17.8	5 0.7	2.1
22.6	49.2		5 4.2	5.4
78.6	146.3		16.77	174.2
3 52 15.72	3 55 29.26	3 58 19.35	4 7 57.54	4 9 58.84
51 40.38	54 57.95	15 57 40.05		
- .03				

$239^{\circ} 25'$
 $127^{\circ} 5'$ $G. 9020$
 $+12^{\circ} 5'$ 1.0977
 $85 \text{ } 11 \text{ } 25$
 $-12^{\circ} 4'$
 $583 \text{ } 21 \text{ } 12.5$ 0.9336
 A 19.71 -58.09
 B 19.21 -29.29
 C 19.78 $+2.58$
 D 18.71 $+26.71$

17.5
 17
 50
 61
 48

δ 958.5 + 147.2	γ Tauri	β_1 Tauri	ϵ Tauri	δ Tauri
34.5	30.5	42.6	7.8	34.3
57.9	24.0	16.2	11.3	37.7
1.6	37.9	50.0	15.3	41.8
4.4	40.9	53.1	18.2	44.7
8.0	44.6	54.8	22.0	48.3
126.4	187.9	248.7	74.6	204.8
4 " 1.28	4 12 37.58	4 16 49.74	4 21 44.92	4 28 41.36
			4 20 39.59	4 28 6.09
			+ 0.15	+ 0.13

1862 Dec 11

Work - sorry about

N. S.

22 58	+34.78	21 59	+34.73
337	35.41	22 11	34.73
4 21	35.48	22 28	34.85
4 28	35.60	22 50	34.90
		~~22 52~~	~~35.37~~
2 52	+35.218	23 28	+34.916

Mean α_{59} +35.067
 Per. R +0.002
 Jell. +0.087
 +0.094

Deviations	Check	Dev
α Aquarii	-34.78	-05 ✓
β Aquarii	-34.81	-08
γ —	-34.83	+02
α Pic. austr.	-34.86	+04 ✓
α Pegasus	-34.88	-10 ✓
η Tauri	-35.32	+09
γ Eridani	-35.34	+03
ϵ Tauri	-35.36	+10
α —	-35.40	00 ✓

Kohler Hert 12

30 March H sp.	r Aquarii	♂ Pegasi	♀ Pegasi	♂ Pegasi
22 13 50.0	56.9	8.4	4.6	21.5
14 20.7	57.8	11.9	8.5	26.9
46.3	1.5	15.6	12.7	28.8
15 15.8	4.3	18.4	16.0	31.7
15.2	8.0	22.1	20.0	35.4
176.4	125.9	76.4	61.8	142.3

22 14 47.28	22 24 1.18	22 35 15.28	22 37 12.36	22 40 28.46
14 7.67		34 38.32		
		+0.06		

+10"

83 14 43

1862 Sept 12 cont.

β Cephei H			α Pictoris			2 km mag. sp.			β Pictoris			α Pictoris		
47	38.0													
48	38				34.4			38.9		25.1				26.9
48	32.2				38.2			46.6		28.5				30.4
48	52.9				42.5			52.7		32.2				34.2
49	20.6				45.8			0.8		35.0				37.1
					47.9			7.9		38.6				40.9
	147.5				210.8			146.9		159.4				169.5
22	48	24.50	22	50	42.16	22	55	53.38	22	57	31.88	22	58	33.90
	47	54.43		50	4.99		55	15.69					57	37.02
myriad		+ 2.12			- 0.08			- 0.55		+ 0.06				+ 0.11
of		[+ 37.19]			+ 37.09			[+ 37.14]						+ 36.90

-12%

82 26 3.

Mean C.E.

$22.54 + 36.995$
 Pro Rate $+0.087$
 J.H. - $+0.114$

Dec 12

\$ Repair	+ 37.02	22.35
whicard	37.09	50
Repair	<u>36.90</u>	<u>58</u>
	37.003	22.48

1862 Dec 15 - M.E.

Living bad. - No 3.

See Note-book of Times etc.

p. l. e. h.	8 Picinn	13 Lepus Her.	2 Picinn	Polaris
25.2	20	0 50 5.1	32.8	1 5 37.4
16.4	3.	19.1 [51.1]	36.0	7 51.8
32.3	4.	51 37.2	40.0	10 22.9
35.3	5	52 12.0	42.8	
39.1		58.3	46.5	14 42.7
160.3			198.1	
0 37 32.06	0 42 23.91	0 57 32.28	0 56 39.62	1 10 9.98
36 43.83		50 47.01	0 55 51.52	1 9 32.61
And. ar - 0.03	+ 0.07	+ 3.56	+ 0.07	+ 11.35
Ch ₂ + 48.23		[+ 48.83]	+ 48.17	[+ 48.72]

α 12 412
 $T + 265.17$ 9.9965w
 $\gamma_{\text{Sun}} - 14.7$ 1.1675w
 $(\text{Sun}) \mu 85^{\circ} 31' 37.26$
 α 12 412
 $\mu \mu 1.1067$
 $\mu \mu 1.1080$
 $+ 2.78$
 $+ 0.587$

$88.35 - 8.25$ 1.6074
 $\mu 1.6075$
 $+ 9.41$
 $+ 1.84$
 $9.7 + 4 32.3$
 $9.0 + 2 17.2$
 $10.8 - 12.1$
 $- 2 5.7$
 $10.4 - 4 32.3$

$[1 + \frac{1}{135}]$ 0.0031

A	—	A	31.31 +1 26.21
B	24.01 +3.41	B	[34.55] + 43.45
C	23.80 - 0.30	C	33.37 - 3.83
D	23.99 - 3.11	D	32.37 - 39.63
E	23.23 - 6.72	E	32.09 - 128.21

Continued on next page.

σ Loh	η Piscium	ω Persei	τ Loh	$\sin$ period $\times$ Loh
53.2	52.0		24.7	22.5
56.9	55.5		28.3	26.0
0.4	59.4		32.2	29.8
3.2	2.3	20.5	35.2	32.5
6.9	6.0	35.8	39.0	36.3
120.6	175.2		159.4	147.6
1 180 0.12	1 24 59.04	1 30 25.83	1 38 31.88	1 43 29.42
1 17 11.97	1 24 10.97			
+0.01	+0.11	+0.33	-0.02	0.00
+48.16	+48.18			*

$\sin$
 0.1739

$25.79 - 4.64$
 $21.15 10.03$

1862 Dec 16th M.E. continued

45

γ Ceti	β Arietis	Schirred $9\frac{1}{4}$ by mistake	γ Andromedae	δ Arietis
34.3	47.2			9.9
37.7	50.8			13.6
41.5	52.8	30.0		17.7
44.3	57.7	46.4	24.4	20.7
47.9	1.6	6.7	29.3	24.7
209.7	212.1			86.6
1 43 41.14	1 47 54.42	1 52	1 56 20.28	2 0 17.32
	1 47 6.43			1 59 29.29
0.10	+0.13		+0.27	+0.15
	+48.12			+48.18

*

and 0.1267

8 70.26 - 4.14

9 20.30 9.01

N^o 2

* for Jones - The positions at top are rough for 1855.0

45 th Grooms.	20	Not min B sp	2	$9^h 26^m 4.8 + 1^h 11.8$	0	Cat very faint	2	15.52.6	+ 1	12.4
2	1	17.1	~~4~~	~~33.7~~	53.0	8.8				2.3
		28.6			56.4	12.2				59.0.
		41.9	2	4	33.7	0.0				6.0
		57.5		5	32.6	2.8				9.3
2		4.3		6	26.5	6.5				12.6
		143.4				118.7				89.2
						78.1				

2	1	40.68	2	4	38.72	2	10	59.74	2	13	15.62	2	17	5.84
			14	3	45.50									
					-4.43									
					[+48.79]									

d 210.56

T₂ 103.31 9.9678

-14.4

y₁ +14.4 1.1518

(11.7) 1.18

d' 86.19.15 1.2022

1.2031

d 3.2 -1.47.3

B 38.50 - 34.10

C 38.47 + 4.77

next page

reject

2 25.57.6 + 1° 7.6	2 38 37.2 + 1 5.1	2 40 10.4 + 1 5.7	2 43 40.8 + 14.8
2 28 30.0	57.8	19.4	58.9
28 01.3	1.3	22.9	54.6
29 15.0	5.1	15.0	26.4
29 32.9	7.9	18.8	29.3
29 54.8	11.5	21.3	33.1
184.0	83.6	—	131.1
2 29 12.80	2 37 6.72	2 40 [14.66]	2 41 26.22
2 28 26.18			2 44 57.80
+ 1.73	* *		* *

37° 21'

289 42 9.9736

12.19 1.1478

80 52 3.25 0.7938

or 0.7993

14.70

14.71

14.58

57.62

57.79

1862 Dec 16th M.E. continued

15

$2 43 47.7 + 1^{\circ} 5.7$	$2 46 71 + 1 17.4$	$2 47 22.0 + 1 6.2$	η Eridani	ϵ Arietis
28.8	15.3	31.0	27.5	5.8
0.2	18.4	34.3	30.8	9.7
4.0	22.3	38.0	34.6	13.6
6.7	25.7	40.9	37.4	16.6
10.3	28.4	44.4	41.1	20.4
78.0	109.5	186.6	171.4	66.1

$2 45 3.60$ $2 47 21.90$ $2 48 37.72$ $2 50 34.28$ $2 52 13.22$
 * * * + 0.01

fmi

Perth, Lul 5578.-
 $\alpha + 20^\circ \pm \text{dev.}$

Lamp had
 3 Eridani

L Perri

6 Tauri

52.3
 55.9
 0.0
 3.2
 6.8
 118.2

54.2
 57.8
 [1.8]
 7.9

14.0
 19.1
 24.8
 29.4
 34.8
 122.1

17.2
 20.0
 23.7

2 55 59.64
 *

3 10 7.11
 + 0.01

[3 15] 24.42
 } 14 31.58
 + 0.34
 [+ 48.18]

[3 18] 16.89

CE A

0.56 + 46.17
 124 46.18
 147 46.12

1.59 46.18
 1.32 + 46.176

CE S

0.32 + 48.23
 1.17 + 48.16
 0.54 48.195

St.
 dev

Mean
 Prev. Rat
 Fall

1.27 + 48.181
 + 0.114
 + 0.111

B. G. H.
 C. H. C.
 O. C. H.
 H. C. H.
 P. A. H.
 x —
 E. C. H.

Check for Dev
 - 48.09 - 12
 - 48.12 + 0.05
 - 48.19 - 0.07
 - 48.17 + 0.04
 - 48.22 - 0.10
 - 48.25 - 0.06
 - 48.28 - 0.05

0.46" - 48.105 (2 N.A.)
 2.2 - 48.247 (2 N.A.: 17)

Sur [1 + 1/745] 0.0058 (1 + 1/89.5)

1.01 + 6.81 ~~4.80~~ + 6.80
 1.23 + 3.43 13 + 3.43
 [1.50] - 11.30 - 0.30 16.90
 - 3.13 - 3.13 16.87
 1.09 - 6.81 - 6.80 16.90

1862 Dec. 20th Sh E.~~Dec. book.~~

Piaetoe

Living my bad

34 Ceph. W

B. Thiam

L. P. Jari

~~Dec. book~~

R11033

Dec. wrong - vink
Mte - book

22 32 48.1

22 47 59.1
 48 24.9
 48 53.2
 49 16.6
 49 43.2
 197.0

46.7
 50.1
 53.6
 57.5
 0.2
 207.1
 46.5
 52.0
 55.9
 58.9
 2.9
 218.2

20.7
 28.1
 34.1
 42.2

22 48 51.40
 47 53.25
 +1.36
 [+59.51]

22 57 53.42
 +0.02

22 58 55.64
 57 56.94
 +0.06
 +58.76

23 13 27.70
 +0.34

up v. card
 C.E. obid

-11.9
 82 26 3.

11° 53' 0.3282

A
 B 27.92 +7.22
 C 27.46 -0.64
 D 27.12 -6.58
 E 27.09 -14.91

Continued on next page

R11262

P₁₁₂₆₂ 171

309 Ceph B

P. 422 [?]

referred.
y Andromeda

35.9

23

52 36.3

19.2

41.1

53 20.2

25.7

35.6

116.4

54 14.2

31.4

39.9

50.9

36.7

35.4

45.8

55.8

55 44.2

42.3

40.0

230.1

184.7

23 24 35.36

23 38 46.02

23

54 9.64

~~53 13.21~~

1 44 30.94

1 57

53 13.21

~~42.6~~

+ 0.21

+ 0.19

+ 2.56

+ 0.26

[+ 58.99]

18° 22' 0.1776

358° 18'

254 49 sin 9.9832

-13° 6' 1.1322

85 57 3.4 5 1.1500

sin 1.1571

A 11.49 + 35.19

B 8.07 + 47.67

C 9.97 - 4.23

D

E 9.07 - 1 35.19

35.71 - 0.45

15 - 4.65

18 - 10.12

1862 Dec 20th continued ME

45			41 Arctis			2 Loh			2 Arctis		
2	(1)	29 42.1	42.4	48.9	1.4	61.9					
	30	27	47.6	52.7	6.9	15.2					
		24.6	53.3	58.8	8.6	49.7					
		43.2	57.8	0.1	11.4	52.3					
	31	4.6	3.2	4.2	15.0	51.0					
		117.2	204.3	162.7	41.3	244.7					
2	29	23.44	2 35 52.86	2 42 54.54	2 56 8.26	3 46.94					
	28	26.22			55 9.17	3 50.15					
at ground		+ 1.12	+ 0.21	+ 0.10	+ 0.02	+ 0.07					
		[+ 58.34]	*		+ 59.11	+ 58.86					

— 12".8
 50° 52' 4"

f

Sentry No. 3.

J. h. d.

 α Persei

57 hours 13.

24.8

29.8

35.8

40.1

45.5

176.0

20 43.3

26 11.8

3 15 35.20

14 36.56

+ 0.22

+ 58.86

3 23 17.30

15 22 14.56

- 4.60

[+ 60.14]

Clock - Error obs'd.

c. cor

22 58 + 58.76 - 58.61 + .15 α Persei2 55 59.11 - 59.05 + .06 δ Ceti3 4 58.86 - 59.06 - .20 δ Aurigae3 15 58.86 α Persei1 39 58.910 excl. α Persei+ 2 3 58.898 including α Persei

Rev. Rate + 0.111

Fall. + 0.107

230° 29'

127 0

9.902

+ 11° 2'

1.049

87 44 56.0 15

1.4055u

2.7956u

1.4055u

14. 6.926u

A 20.6 - 2 51.2

B 18.0 - 1 26.3

1862 Dec 24th M.E

Secing No 2. Chondy.

fmin

W5

Polaris

214 Camlop. Ry. 9 Picuum

1	19	51.3	16.8
	20	42.1	20.6
	21	18.8	23.4
	22	6.0	27.3
	22	49.1	
		172.3	

1 10 30.3

1 10 18.17

1 9 26.74

y

21 22.46

20 9.38

y

25 20.29

24 10.89

 $n = 0.370$ $c = 0.012$ Polaris
Chondy
~~24~~ + 0.10
~~24~~ + 1 9.50

CE

1 24 + 1 9.50

Pro Rate	+ 0.107
M " "	+ 0.109

In-day observations are used only for rate.

+ 13.1
 85 27 49.5

A	+
B	20.30 + 3.50
C	20.29 - 0.31
D	20.21 - 3.19
E	20.35 - 6.95

1862 Dec 17 M.E.
 2145. Sany 101. Cloudy

Polaris	γ Pinus	β Arctis	δ Arctis
	30.3	16.3	
1 6 12.8	33.7	19.9	42.7
	37.4	24.0	46.8
	40.2	26.9	49.8
	43.8	30.7	53.8
	185.4	117.8	

1 8 30.17	1 33 37.08	1 46 23.56	1 58 46.46
9 24.09	34 19.74	47 6.14	59 29.20
afternoon +11.27	+0.03	+0.12	+0.13
CE ob [-42.65]	-42.63	-42.65	-42.61

CE.

1 34	-42.63
1 47	42.58
1 59	42.81
1 47	-42.607
Pre-Rab-	+0.109
Jan,	+0.109

Pre-Rab-
 Jan,

γ Pic	+42.63	.00
β Arctis	42.61	+03
γ Arctis	42.58	-03

δ 58°35' to 1.6077
 or 1.6076

B 217.77

46.40	+3.70
67	-0.33
52	-2.28
45	-7.35

Levy p. 1.

* Pis. ant.

120 31	351" 54"
79 0 in	260 22
1.112	1.114 ₂
♂ 81 52 24.6 5 0.8653 ₂	86 33 32.3 5 1.2209
do 0.8497 ₂	do 1.2212
A 17.65	+ 47.55
B .02	+ 23.98
C .22	+ 2.12

continued on next page

See note in dot-book

309 Ephn B	2 Leti	Antromidon	Pegm	l'um mi B3p.
23 51 41.6	56.9	31.9	25.0	0 9 36.8
52 31.6	0.5	35.7	28.4	
53 12.8	4.3	39.9	32.2	
54 2.6	7.3	43.1	36.3	15 51.1
	11.1	47.1	39.0	17 54.0
	50.1	157.7	159.9	
23 52 28.35	23 56 4.02	0 0 39.54	0 5 31.98	0 13 45.40
23 53 10.67		1 19.65	6 12.06	12 14 15.16
+ 5.28	-0.06	+ 0.14	+ 0.07	- 8.58
[-39.04]		-39.97	-40.01	[-38.39]

358°33'

267 2 9999n
-13°2 1.119n85 57 3.85 1.1500
in 1.1511

A 95.19

B 29.59 +47.99

C 27.37 -4.23

D 29.04 -43.76

E 27.41 -95.19

103 34

92 3 0.000
+13°2 1.12088 27 7.05 1.5782n
in 1.5786n

A 45.1 -4 8.9

B 45.7 -2 5.4

C

D +1 54.4

E 45.2 +4 8.9

1862 Dec 28th continued M.E.

Pin No. 2

5 MS min BSp	2 Thracians	12 Ceti	1 Crateri	202 Land B
0 11 8.7	0 18 42.8	17.1		11 20 38.2
		20.5		21 1.8
		24.2	26.0	21 27.4
0 13 22.6		27.0	28.9	21 48.3
0 14 31.5		30.6	32.6	22 13.3
		119.4		129.0
0 12 13.20		0 22 23.88	11 17 25.64	11 21 25.80
12 12 47.60		23 3.86		22 5.84
-4.73		-0.01	-0.06	+1.63
[-39.13]		-39.99		[-38.47]

87° 11' 26" 5 1.3091
20: 1.3096

+ 12.9
91 52 25

A 16.4 -2.171
M 13.1 -1.9.1
C + 6.1
D 11.7 +1.3.0
E +2.121

A +7.03
B +3.54
C -0.71 25.69
D -3.73 17
E -7.03 25.57

continued on next page

β Lepus sp.	γ Ursa major	β Leonis	β Virgin	γ Ursa major
11 25 19.7	0.4	19.9	49.7	47.2
26 22.5	5.7	22.4	53.0	53.2
x 27 9.9	11.0	27.1	56.6	59.5
28 8.4	15.6	30.1	59.4	4.3
29 5.4	21.0	34.0	3.1	10.5
65.9	58.5	134.5	221.8	174.7
11 27 13.18				
11 38 10.70		11 41 26.90	11 42 56.36	11 45 56.94
27 47.11		42 5.47	43 34.81	46 37.87
-3.86	+0.28	+0.08	+0.02	+0.35
[37.79]		-88.49	-28.43	[-38.58]

- 12.9
86 38 32.

continued on next page

δ Corvi η Corvi β Corvi ϵ Corvi maj 43 Cephei H sp.

2.5	16.7	27.3	8.9	12	48	12.3
6.1	20.2	30.9	15.1		49	29.1
9.9	22.9	34.9	21.9		50	6.0
12.8	26.8	38.1	26.9		50	52.7
16.5	30.6	42.0	33.3		51	36.2
47.8	116.2	173.2	106.1			166.3
12 23 9.56	12 24 23.64	12 26 34.64	12 47 21.22	12	50	9.26
		27 12.91		0	50	43.93
-0.05	-0.05	-0.08	+0.38			-2.97
		-38.35				[-37.64]

1862 Dec 28th continued

115		Air No 2		Air No 2	
Virginia		Virginia		214 Camel B.	
~~41.8~~	7.3	13	4 24.5	14.4	18 2.6
~~50.7~~	10.7		6 47.7	17.8	18 45.2
	14.3		8 44.9	21.6	19 31.1
46.8	17.1		11 15.7	24.4	20 7.3
50.7	20.7		13 28.3	28.0	
	20.1		161.1	106.2	
12 54 43.73	13 2 14.02	13 8 56.22	13 17 21.24	13 19 27.80	
	52.41	1 9 22.89	57.56	13 20 14.62	
+0.06	-0.01	-9.40	-0.03	+2.93	
	-38.40	[-38.07]	-38.35	[-39.89]	

D -3.16
 E -1.59

200° 3'
 108 32 9.977
 +12.5 1.097
 8527 18.9 5 1.1005
 w 1.1019
 A 27.60 +125.00
 B 28.05 +42.85
 C 27.34 - 376
 D 26.23 34.07
 E -125.00

Phin

5 Virginis

58.2
1.2
5.4
8.1
11.9
88.3

13

22 5.06
127 43.56
+ 0.01
- 38.49

Clock-Error

Evening

Morning

23 20 +0.5	-40.05	11 42 +15.5	-38.49	✓
0 1 28.3	39.97	11 46 +2.6	-38.43	✓
0 6 +14.4	40.01	12 3 -21.8	-38.41	
0 23 -4.7	39.99	12 27 -22.6	-38.35	
		13 3 -4.8	-38.40	

Tabular Red. d.

0 4 -39.99
12 14 -38.423

Mean	23 58	-40.005	13 17 -10.4	-38.35
Red R		+ .109	13 28 + 0.1	-38.49
Sole -		.128		
		.118		

Mean Northern Stars

1 Southern "

General mean

12 18 +6.1	-38.47	3 stars
12 42 -14.9	38.352	4 "
12 32 -5.9	-38.403	7 "

x <i>Arcturus</i>	+40.08	+03
x <i>Antares</i>	40.00	+03
y <i>Polaris</i>	39.99	-02
z <i>Aldebaran</i>	39.96	-03

1862 Dec 29th M East

45

α Pegasi			γ Pictoris			202 Land 10 sp.			39 Cephei 14.			γ Cephei		
12.1			20.0			23	20	12.5	23 ^h 25 ^m	12.5		37.2		
15.6			22.4			21	7.9		16	9.0		51.6		
19.4			27.1				27.9		27	10.0		8.1		
22.3			30.0				56.5		27	57.7		20.2		
26.0			33.5			22	17.6		28	58.4		36.3		
95.4			136.0				150.4			167.6		158.4		
22 57	19.08		23 9	26.80		23	21	30.00	23 27	5.52		23 33	6.68	
57	56.84		10	4.40		41	22	5.92	27	46.94				
alt-quad	+0.07			+0.12			-1.63			+3.86			+1.00	
Ch of	-37.69			-37.58			[-38.07]			[-37.56]				

170° 31'

49 0

9.9919

1.1123

81° 52' 24" 5 0.8453

sw. 0.8697

A 30.04 - 47.56

B 30.53 - 23.97

C 30.02 + 21.12

D 29.76 + 21.86

E 30.06 + 47.56

Leung 10.1

γ M4 mag sp	γ Pegani	b Wras B sp	5 Wras B sp	α Lajifaya
49.2		0 9 39.6		56.4
55.2		11 53.9		2.7
0.2	34.8		0 13 23.9	9.2
6.5	37.4	15 53.2	14 23.9	14.3
12.1	41.4	17 59.3		20.7
123.2				103.3
23 46 0.64	0 5 36.49	0 13 48.75	0 12 15.80	0 32 8.66
11 46 37.89	6 12.04	14 18.91	12 47.81	32 46.56
- 0.35	+ 0.07	- 8.58	- 4.73	+ 0.36
[37.60]	-37.68	[-38.74]	[-36.24]	-87.56

50.4

47.8

C 34.49 -0.31

D 51 -3.19 46.3

E 46. -4.94 46.5

14.8

16.2

1862 Dec 29
~~1862 May~~ M.E.
 MS

Run No. 2.

Elphidium sp.	43 Lepidocyclina	Polaris
98	0 48 36.8	1 4 1.8
17.1	49 20.6	6 19.3
22.3	50 9.2	
29.1	50 53.5	10 46.1
35.7	51 30.6	13 7.7
143.6	140.7	
0 47 22.72	0 50 4.4	1 8 36.25
	50 53.80	1 9 22.51
-0.38	+2.97	+9.40
	-36.69	-36.36

Clock Error

22.58 + 14.8 - 37.69
 23.10 + 2.5 - 37.58
 0.6 + 14.9 - 37.48
 23.25 + 10.5 - 37.583
 + 0.103
 Rate from Sec. 26.00
 July Rate 0.097
 0.100

2 Pyani	+37.63	-06
1 Piccin	37.61	+03
~~1 Andromeda~~	37.52	+04
1 Pyani		

8 88°35'10" 5 1.6076
 88 1.6077

A 34.3 + 4 32.5
 B 71.6 + 2 17.7
 C
 D 10.9 - 2 5.2
 E 25.2 - 4 32.5

1863 Jan. 1. M. East.

1865

x

Pegasi

7 Pegasi

341 Cephei 14

L. P. in austrini L. V. in maj. Sp.

56.7

22 46 28.1

26.4

32.1

0.6

46 53.6

30.3

39.9

4.8

47 21.5

36.6

46.1

8.0

47 43.3

37.9

54.0

14.3

12.2

48 10.5

42.0

1.5

82.3

157.0

171.2

179.6

22 34 7.47
34 38.12

22 36 4.46

22 47 19.40
47 51.3722 49 34.24
50 4.7422 54 46.72
55 17.21

β Perseus	δ Perseus	ϵ Aquarii	39 Cephei Rev.	R 11498
17.5	18.9	9.1		
20.8	22.4	12.7	23 26 16.1	22.3
24.3	26.4	16.5	27 15.4	29.9
17.3	29.3	19.7	28 3.3	38.9
30.8	33.1	23.5	29 4.0	43.2
120.7	130.1	81.5		
22 56 24.14	22 57 26.02	23 15 16.30	27 11.76	23 35 29.36
	57 56.81		27 46.02	

55° 53'

26° 49'

84.33 32.11 45 1.2210

84. 1.2218

13 12.58 +58.48

L 10.43 -4.97

15 11.60 57.50

E 12.23 157.72

29.27

28

56

37

finer

Wed Aug 16 1862.

β Andromedae	* for Comet 1862 III sp	214 Camel Rsp	2 Persei
26.7	18.5	19 4.6	56.9
30.9	37.6	39.4	2.2
35.3	52.2	20 27.5	7.7
38.8	10.5	21 9.8	11.9
43.2 ~~42.2~~	28.4		17.3
173.9	147.2		96.0
1 1 34.78	1 6 53.44	13 19 44.08	1 29 7.20
		13 20 11.48	

α Virgin	-0.13	-30.63
α Pegasi	+0.05	-30.76
22 ^h 56 ^m		30.685
		+0.106

200 3
 112.55 mi 9.9643
 +12^m 2 0.0850
 85.77 46.6 B 1.1005
 do. 1.1019
 A 46.80 - 125.00
 B 44.65 - 42.85
 C 43.18 - 3.78
 D 43.67 + 39.07

1863 Jan. 2. M.E.

H.5

r Cephei

R 11498.

R 11672

R 11796

r Andromedae

	18.6			43.9
	15.0	42.8	5.7	57.6
16.7	33.0	50.9	13.2	51.7
29.4	38.8	57.3	19.2	55.0
45.4	45.9	5.6	26.9	59.1
	161.3			257.3

23 33

23 35 32.26

23 43 50.42

23 50 12.76

 0 0 57.46
 1 19.58

22.63

31.97

32.38

44

.07

50.33

23

44

68

12.74

58

78

94

x Pyari

Gunn's Rep

Lat 620

R 210

Li 1620?

37.0

0

7 54.5

38.5

37.8

53.9

40.4

12 5.6

42.9

44.3

57.9

44.2

13 52.5

46.3

51.6

2.0

47.1

16 7.9

50.1

57.6

15.3

50.9

18 12.3

4.4

9.1

219.6

132.8

195.7

126.6

0 5 43.92

0 14 2.56

0 23 42.54

0 44 51.14

0 50 7.72

6 12.01

14 18.84

52.56

54

41

49

1863 Jan 2. 209.

v		Chic Jan 1.	Rigid 5 th to 10 th book	
3 Andromedae		+ for Canal 1862 III sp.	Polaris	214 Canal Bop.
29.4		20.9		
33.5		39.7		19 43.1
38.1		54.3		20 28.8
41.5		13.5	7 10 46.7	21 12.6
45.9		30.5	[13 23.3]	
188.4		158.9		
1	1	37.68	1	5 41.50
			1	9 19.62
				13 20 11.72

Jan Dec 29

Jan Jan 1

A	47.60	- 1 25.00
B	48.95	- 42.85
C	46.88	+ 3.78
D	-25.2	
E	-4 22.5	

Clock Error

<i>+ Andromeda</i>	<i>+ 0.14</i>	<i>- 27.98</i>
<i>+ Paris</i>	<i>+ 0.02</i>	<i>28.02</i>
<i>0^h 4^m</i>		<i>- 28.00</i>

167 Jan 3 M. W.

P 796

not very good
Antennae

y Repair

6 Wm min Box

BKL 920

23 50 22.0
50 28.9

50.0

53.6

57.6

1.3

39.2

42.8

45.6

49.7

53.1

230.6

0

9 52.8

11 56.7

14 12.6

15 56.2

18 13.0

191.3

36.7

41.0

46.6

48.7

52.7

223.5

23 50 14.95 0 0 53.72
1 19.570 5 46.12
11 11.990 14 2.26
12 14 19.64

0 23 44.70

A 52.11 -7.64
 B 75 -2.88
 14.96 C 94 +0.34
 14.94 D 57 +3.57

✓
d. Caspary

Q 210

7. *Aspergillus*

Two note in note-books

43 Lepus T4

B. Prodomidae

Fig. 8

49.6

1.6

46.9

571

355

ج. ۲۵

2.6

39.4

26.3

59.9

9. 9

43. 9

32.3

66

16.6

458

2457

1358

1986

0 32 20.30
32 46.42

0 44 53.14

. 0 48 3.16

LO 50 13.95-
50 42.64

1 1 39.72

A 20. - 11.96
B - 6.03

Vitz Land

A	14.29	- 126.21
B	14.4	- 13.46
C	13.43	+ 3.83

1862 Jan 3 211 W. Comb.

Polaris
I. Leli

214 Canab. B. 1/2

4 9.0
6 37.2
8 34.8
11 2.0
13 16.0
99.0

39.3
42.9
48.9
49.6
52.9
230.6

1 18 22.9
19 4.5
19 52.5
20 21.5
21 14.2
121.6

1 8 43.80
9 18.53

1 16 46.12
17 11.77

1 19 48.32
13 20 11.97

α Andra	+10	-25.75	+25.82	+07	0 1
γ Cyani	+02	25.85	25.82	-03	0 6
β Leli	-08	25.73	25.69	-04	112
		-25.777			0 28
Pro. R		+ 0.099			
2nd		0.05			
		0.102			

1863 Jan 5 MW ~~1863~~

7115.

next page.

1 Caplan

R 11881

6400 m. Bsp

Lal 613

P Loh

9.3
22.5
37.6
53.4

7.8
12.0
14.9
19.0
22.8
76.5

0 9.59.3
12 4.2
16 5.8
21.36

50.3
53.6
56.1
2.1

16.9
19.8
22.7
26.7
30.2
115.4

23 33

23 54

15.30

0 14 9.73
12 14 21.36

0 20 56.02

0 36 23.08
- 43.47

183°35'

102 16 in 9.9899
+13°0 1.1134

36 27 7.0 1.56832
10. 1.56862

A 8.2 +4 8.7
B 2.6 +2 5.4

D 11.4 -1 54.4

53.99
96
54.16
108

563 mas 5 MW ant

145

f

x

S. Prain

R210

r. Lepus

43 Lepus

Polaris

8.2	44.8	54.8		1	4 14.0
11.9	52.1	2.2			6 40.1
14.7	57.7	7.8	50	13.7	
18.5	5.1	15.1	51	3.1	11 6.0
22.0	11.9	21.9	51	45.6	13 21.0
75.3	171.6	107.8			

0 41 15.06	0 44 58.32	0 47 8.36	0 50 18.85	1 8 47.22
		*	50 42.10	9 17.12

S 88° 35' 11.0"

Dir. 1.60784

19.39	-1 26.21	A	58.4	-4 32.6
19.64	- 43.46	B	48.6	-2 17.4
17.53	+ 3.83			
18.85				
		D	45.3	+2 5.2
		E	46.6	+4 32.6

δ	α Persei	α Tauri	323 Cep B	δ Persei	δ Eridani
0	5.5	1.6	3 20 13.4	43.4	16.0
1	10.8	5.1	21 8.2	48.6	19.6
1	15.2	7.9	50.8	53.1	22.6
0	20.8	11.6	22 46.8	58.3	26.3
0	25.9	15.1	23 38.9	3.4	29.3
	78.2	41.3	158.1	206.8	114.2
2	β_{14} 75.64	3 17 8.26	β_{21} 55.62	3 32 53.36	3 36 22.84
1	36.39		22 18.57		

1862 Jan 5 M.W. continued

7 Jauri		5 Perani		1 Eridani		fr. 750.		62 Wm. B. & P.	
	58.2		5.7		13.2	3	53 12.6		
	59.2		9.9		16.9		53 56.0		
	2.3		13.3		19.7		54 29.5	3	57 25.8
	6.3		17.6		23.6		55 14.0		57 50.3
	10.0		21.5		26.9		55 53.9		58 21.9
	133.0		68.0		100.3		166.0		
3	39 2.60	3	45 13.60	3	57 20.06	3	54 33.20	3	57 23.55
	23.03				40.28		54 55.86	15	57 41.97

239° 25'
 158 8 in 9.57
 +495 0.694
 83 21 00 4. 0.9334
 di. 0.9364

C 23.22 -2.58
 D 22.61 -26.69
 E 23.53 -58.07

Continued on next page

o' Eridani		γ Tauri		δ Tauri		β Tauri		ε Tauri	
	15.9		35.0		37.2		47.1		12.0
	49.4		38.8		40.8		50.8		16.0
	52.3		41.6		46.0		53.8		18.9
	56.0		45.4		47.8		57.7		22.7
	59.3		48.9		51.3		1.2		26.4
	262.9		209.7		222.1		210.6		96.0
4	L ₁ 52.58	4	11 41.94	4	14 44.42	4	15 52.12	4	20 19.20
5	12.81								39.66

1867 Jan 5 MW. continued

45 x

1 Tauri

34.8
 42.6
 48.4
 49.3
 52.8
 228.9

4 28 15.78
 28 8.15

0.139 - 0.042

β Ceti	0 37	+13	20.62	20.69	+0.07
η Tauri	3 39	+0.7	20.36	20.40	+0.04
γ Eridani	3 52	-10	20.32	20.38	+0.06
δ Eridani	4 5	-0.7	20.30	20.35	+0.05
ϵ Tauri	4 21	+0.4	20.42	20.33	-0.09
α Tauri	4 28	+0.8	20.34	20.32	-0.02

3 30
 α Ceti
 - 20.418 393
 + 0.105
0.088
 + 0.096

1863 Mass. M.W.

M.S.

L. Lyman

11.5

21.1

26.6

29.1

33.8

125.1

18 32 25.02

17.72

+ 0.15

1863 Jan 17 MW

45

 α Pegasi γ Cephei α Andromedae γ Pegasi β Ceti

58.2

27.5

20.2

13.6

65.3

1.8

38.5

24.1

17.2

58.8

1.8

50.3

29.5

20.0

52.0

8.6

6.6

31.8

23.9

55.7

12.1

21.9

35.6

27.4

59.6

85.5

139.6

139.2

102.1

261.4

22 58

5.70

27

33

57.96

0

1

27.84

0

6

20.42

0

36

52.28

59

56.67

~~19.22~~

19.38

11.83

63.41

+0.02

+0.09

+0.02

-0.13

8.66

8.56

8.62

7.26

Leiny No. 2.

43 Cepheus

49 19.4
 50 5.1
 51 42.5
 52 26.5
 53 12.8
 108.3

50 45.66
 38.96

α Pegasi	22 58	+02	+8.45	-8.49	-04
α Andromeda	0 1	+09	8.55	8.60	-05
γ Pegasi	0 6	+02	8.61	8.61	00
β Ceti	0 37	-13	8.74	8.66	+08
	23 55		8.588		
Pro R.			+ 0.088		
Zohy			0.109		
			+ 0.098		

1863 Jan 19th. M W.

1863

2 Picium

Lib Cephei H.

3 Andromeda

Polaris

Dir. + 1° 18'

Zone Star

38.4	13.8	11.3	1	4	38.0	57.0
20	32.3	15.5		7	5.5	0.5
5.0	47.3	18.9		11	2.4	3.3
8.4	6.5	23.4		11	27.4	7.0
10.9	24.4	27.6				10.4
55.7	124.3	96.8				78.2

0	56	5.14	1	0	48.86	1	2	19.34	1	9	11.48	3	47	53.64
	55	57.13							1	9	5.15			

xhadr-2323

58° 35' 11" 3 1.6077

Dir. 1.6079

10.0 - 2 17.4

14.5 + 12.1

10.8 + 2 5.3

10.6 + 4 32.6

next page

<i>S. U. Mac. m. m. m.</i>	<i>Y. Eridani</i>	<i>Sp. 750</i>	<i>62 m. m. m. B.</i>	<i>† Dracconi sp.</i>
60.0	47.6	3 53 45.2		~~45.2~~
55.8	47.3	54 28.8		~~45.2~~
13.7	54.2	55 20.0		33.6
27.5	58.0	55 46.1	3 58 27.1	39.2
45.0	1.6	56 25.8	58 59.0	46.3
182.0	212.7	148.9		
3 49 32.40	3 51 56.54	3 55 51.78	3 58 0.68	3 59 32.97
	40.15	54 53.72	15 57 43.86	

85° 11' 60" 5 1.0753 83° 21' 02" 0.9334N
 40 1.0768 0.9363N

Q 0.41 -26.69
 E 0.95 -58.05

1863 Jan 19th MW

+ Dec. + 1° 14' - front

+ for Zones

0' Eridani

γ Tauri

δ Tauri

5 777

4.2	20.4	29.8	9.7	11.7
25.6	24.0	33.2	13.3	15.6
43.7	26.8	36.1	16.2	18.6
5.3	30.5	39.7	20.0	22.4
25.8	34.0	43.2	23.6	26.0
104.6	135.7	182.0	82.8	94.3

L 2 44.92	L 5 27.14	L 7 36.40	L 12 16.56	L 15 18.86
	12.69			

64 Tauri		ε Tauri		η Draconis		δ Tauri		53 Eridani	
	21.6		46.8		7.6		13.3		3.9
	25.4		50.5		14.7		17.1		7.7
	28.6		53.5		22.3		20.6		10.5
	32.1		57.4		28.5		23.9		14.4
	35.8		0.9		36.3		27.4		17.9
	143.3		209.1		109.4		101.7		54.4
16	28.66	4	20 53.82	4	22 21.88	4	28 20.24	4	32 10.88
			39.55				6.07		

1863 Jan 19 MW.

HS.

35.5 + 1° 10.0

n. Eridani

9 (α) Cameloquarshi

h 42 57.8 + 1° 16.6

L 44 51.8 + 1 16.2

40.7

46.9

29.1

34.2

17.2

44.5

52.6

38.0

37.6

20.6

47.8

55.5

45.3

40.7

23.7

51.0

59.1

54.2

44.2

27.2

54.1

2.5

2.7

47.7

30.7

238.3

218.6

169.3

204.4

119.4

L 35 47.66

L 38 58.72

L 40 48.86

L 43 40.88

L 45 28.88

$\frac{1}{2}$ 45 51.4 + 1 17.2

1 Tauri

E Gamma minor.

J Aurigae

64 Camel. B

27.1

4.3

4 59 24.7

42.2

5

17

39.4

8.0

59 48.0

47.4

18

22.1

33.4

11.2

5 0 10.2

51.4

18

55.9

57.2

10.1

0 36.7

58.6

19

38.1

40.7

18.7

1 3.6

1-51

20

18.1

57.3

128.2

199.1

173.6

 $\frac{1}{4}$ 46 33.83

 $\frac{1}{4}$ 55 11.46

5 0 13.64

5 6 51.82

5

18

58.72

16 59 57.39

57.72

18

47.30

 $\delta = 15^{\circ} 5'$ 5 0.8664

 $\delta = 0.8703$
 $\delta = 7^{\circ} 09'$ 5 0.0685

 $\delta = 0.0701$

563 Feb 19 M W. continuous

Jm

745

Up v 597

Up v 787

45.9	57.2
49.4	56.0
52.6	58.8
56.4	2.4
59.5	5.8
262.8	175.2

5	24	52.76	5	31	59.04
---	----	-------	---	----	-------

Check Errors

Eridani	0 56	-01	+14.00	-13.97	+03
v Eridani	3 52	-11	14.28	14.27	+01
o Eridani	4 5	-07	14.38	14.29	+09
E Tau	4 21	+04	14.31	14.32	-01
x Tau	4 28	+03	14.30	14.23	-03
x Androm	5 7	+21	14.31	14.40	-09
	3 48		+14.263		
Pro R			+0.109		
20 kg			0.096		
			+0.102		

1843 Jan 30 M.W.

745

d Arcti

d Leonis

Gr 527

1.0

5.4

16.8

4.9

13.5

40.5

7.9

22.2

57.8

12.0

29.1

21.3

15.6

37.4

42.4

41.4

107.6

178.8

2 0 8.28

2 1 21.82

2 28 59.76

1 59 28.76

~~28~~ 21.82

20 +0.06 39.58

for 1/2 red sun
Feb. 2.

1863 Jan 31 M/Met

31.2

Munae micri

 α Aurigae β Orionis γ Orionis δ Orionis

41 59 52.5
 5 0 17.4
 0 34.8
 1 5.4
 1 32.4
 152.5

9.9
 15.0
 19.2
 24.4
 29.2
 97.7

34.8
 38.3
 41.5
 45.1
 48.5
 206.8

35.0
 38.4
 41.5
 45.2
 48.6
 206.7

5 0 42.50
 16 59 58.81

5 7 19.54
 6 37.57

5 8 41.76
 7 59.43

5 11 41.74

Capella +.21 + 42.18
 Rigel -.08 42.41
 5th yr + 42.30

finis

1863 Feb 2.

2.2

-0.5

1.7

35 Cassiopeia H.

41 527

eleh

1 Cen

41 Androm

31.7 2 28 24.2

37.7 53.6

36.4

43.3 28 46.6

41.3 57.4

40.3

52.8

44.3 0.3

43.7

4.6 29 27.8

48.0 4.0

47.8

15.9 29 49.4

51.4 7.3

57.5

148.3

222.7 122.6

219.2

2 25 41.66 2 29 6.50

2 30 44.54

2 37 0.52

2 42 43.94

2 28 21.47

36 13.69

37 5

239 16 9.549

- 1.7 0.833

50 52 10.1 5 0.7939

50 0.7994

A 7.24 - 42.36

B 1.14 - 21.36

C + 1.98

D 6.07 + 19.47

E 1.56 +

continued on next page

β Wma main	α Ceti	β Orion	64 Canisop B	74 Canisop B
29.5	48.9	39.7	5 18 10.6	5 21 52.9
42.4	52.4	63.3	18 52.5	22 6.6
58.1	55.3	46.1	19 26.4	22 17.8
7.4	58.9	49.9	20 10.1	22 31.9
20.7	2.5	53.3	20 49.6	22 44.7
156.1	216.0	232.3	149.2	153.9
2 51 55.22	2 55 55.60	5 8 46.46	5 19 29.84	5 22 18.78
51 7.73	8.72	7 59.40	18 45.17	

55.0 x 8

863 Feb 2 continued

Vid note

e Orionis

δ Orionis

α Leporis

κ Orionis

ψ' Draconis pr.

53.1

23.6

1

58.1

44.9

46.8

27.3

1.8

56.1

49.6

30.2

[6.0]

4.8

5.1

52.2

34.2

8.4

8.4

17.3

56.5

37.7

11.8

11.9

29.3

249.2

153.0

85.0

155.7

5 25 49.84
2.775 27 30.60
42.435 30 5.15
29 18.00

5 42 5.00

5 45 7.14

11
05.09
-5.01

next page

	δ' Braconis foll.	δ' Minin	δ' Arripe	η Gennusium	δ' Mosan min
9	46.7	28.2		19.0	
1	58.2	31.2		22.9	6 15 59.6
1	10.0	34.6		26.0	17 1.9
3	19.2	36.2	17.1	29.8	17 49.3
3	31.1	41.8	21.2	33.7	18 57.4
7	165.2	174.5		131.4	
14	5 45 9.04	5 48 34.90 17 47.79	5 51 12.80	6 7 26.28	18 16 57.22 18 16 6.05

89 36 1.75 1.2262
 11 1.2270

B 56.77 + 57.17
 C 1686 - 5.03
 D 57.18 - 52.12
 E 1805 - 1 57.35

363 Feb 2 continued

α Gemmae	γ Gemmae	23 Lanchp H	γ Gemmae	57 Lanchp H	α
18.4	32.4	6.0	30.6	6 34 8.6	
	36.2	26.8	34.3	35 24.8	
35.3	39.2	42.3	37.3	36 22.8	
	43.0	3.1	41.2		
42.6	46.7	21.5	44.7		
	49.5	99.7	188.1		
ϕ 21 35.54	ϕ 21 39.50	ϕ 23 43.94	6 30 37.62	h 36 28.93	
			29 50.54	h 35 47.21	

$98^{\circ} 57'$
 $41^{\circ} 8'$ 9.8185
 $+12.3$ 1.1024
 $87^{\circ} 14' 57.45$ 1.3181
 12.1 1.3186

C 28.03 + 6.23
 D 28.16 + 0.26
 E 28.60 + 2.00

p.m.

α Cassio major	δ pr α Cassio maj	α Cassio major
49.3	6.9	28.4
53.0	11.1	29.5
58.9	14.3	32.7
59.7	18.6	37.3
3.4	22.8	41.4
221.3	73.7	166.3

6 39 56.26	6 45 14.74	6 45 33.26
8.99		

Clock Errors

γ Ceti	-03	46.80	2 ^h 36 ^m	46.75	+05	
α —	-03	46.85	2 55	46.78	+07	✓
Rigel	-08	46.98	5 8	47.01	-03	✓
δ Orion	-04	47.03	5 25	47.04	-01	
α Leporis	-11	47.06	5 28	47.04	+02	
ϵ Orion	-05	47.00	5 29	47.05	-05	
α Orion	-01	47.10	5 48	47.07	+03	✓
γ Gemini	+03	47.11	6 30	47.15	-04	
Sirius	-12	47.15	6 39	47.17	-02	✓

Pre Rate
Zoll

+47.009 5 6
+0.098
1.118
+ 0.104

1862 Feb 7 MW.

5th wire bad

Note not in book

MS.

α Ceti		$\frac{1}{2}$ W m m B		β Lynx		156 Camlup B		α W m m B
2.2		7 8 59.9		51.4		7 43 46.6		
5.9		12 25.8		55.6		44 25.7		7 57.53.3
8.6		15 17.6		58.7		44 54.1		
17.3		18 41.6		2.9		45 31.9		~~2nd in m m m m~~
15.8		22 4.5		6.7		46 6.5		[8 6 29.7]
44.8		149.4		175.3		164.8		
2 56	8.96	7 16 29.88	(44 probability)	7 37 59.06	7 44 56.96	8 0 49.90		
55	8.65	15 42.56		56 18.78	43 58.54	19 59 37.01		

108.23
 51.59 9.896
 +16.5 1.218
 89 1 5.6 5 1.7661
 or 1.7661

115.15
 58.51 9.932 243.30 9.9518
 +18.0 1.259 -18.8 1.2740
 84 26 29.65 1.0118 88 53 56.8 1.7163
 or 1.0139 or 1.7163

B +2 56.4 2.2665
 E -549.9 2.5440

not rep

	χ Gemini	α Tauri	β Cancri	α Mon. maj
57.4	1.9	38.7	59.5	10.0
55.6	5.9	42.4	3.1	47.6
58.8	9.2	45.6	?	53.5
29	12.1	49.6	?	1.1
6.7	17.2	53.4	13.1	7.9
	47.3	229.7		158.1
7	56 9.46	8 2 45.94	8 10 6.24	8 19 52.02
	55 9.08	1 45.22		

36376 7 continued NW
MS.

1862phae

<i>A Wane maj</i>	<i>u Caneri</i>	<i>e Cephur</i>	<i>74 Bracoini²</i>	<i>74 Bepha²</i>
1.8 4.8	43.2	0.6	26.0	27.9
15.7 13.4	46.9	7.9	46.5	31.3
22.5 20.5	50.0	16.3	8.6	34.2
31.4 29.4	53.9	22.5	26.4	37.9
39.4 37.4	57.5	30.4	38.7	41.3
<u>Add 2nd thing!</u> 145.8	257.5	77.7	156.2	172.6
8 23 23.16	8 25 50.30	8 28 15.54	8 38 7.24	8 40 34.52
			8 37 5.11	8 33.92

709 16

252 52

9.980_n

-20.0 1.302_n

50 36 39.95 0.7816_n

or. 0.7824_n

continued on next page

	η Cephei	δ Urtae maj	ϵ Urtae maj	γ Draconis	δ Urtae maj
9	13.1	39.3	42.6	δ 52 21.3	5.1
3	21.9	48.0	46.0	δ 52 45.3	14.8
2	29.7	54.8	52.3	δ 53 11.7	22.3
7	35.4	3.4	57.9	δ 53 32.8	31.9
3	42.7	11.5	3.0	δ 53 58.4	40.6
6	144.8	157.0	203.8	167.5	114.7
52	δ 43 28.96	δ 45 53.40	δ 50 52.76	δ 53 9.90	δ 59 22.94
92		3	49 52.57		

1862 Feb 7th continued

MS.

S. Myers

S. Linn

S. Hydrac

S. Linn

S. Linn

52.4

15.9

16.3

3.3

57.2

19.6

14.2

20.1

10.2

29

22.5

17.3

23.1

18.2

6.1

26.3

21.0

26.9

24.3

29.6

24.2

30.4

31.9

113.9

116.8

87.9

S

9

3 1.44

S

1

22.78

9

8 17.49

9

12 22.36

9

16 17.58

11 22.76

21

15 16.59

1 Draconis Hvelin	119 Ephri B	B Ephri	Gr 1564	o. Lionis
G 17 38.9	9 24 44.6	31.3	13.6	46.7
18 4.8	25 18.2	41.0	24.4	50.3
18 26.2	25 43.8	52.1	32.5	52.4
18 51.7	26 16.9	0.2	42.4	57.0
19 18.3		11.3	53.1	0.3
135.9		135.9	167.0	207.7
G 18 7.18	25 15.61	G 27 51.18	G 31 33.40	G 34 53.54
17 28.80	21 24 11.86	21 26 47.73		

		1 ^m +		
xleti 255	-03	60.28	-0.05	+0.23
Blaunov 737	+11	60.39	-0.49	-0.12
X 755	+11	60.49	-0.52	-0.03
i Navis 82	-18	60.54	-0.53	+0.01
Ethydra 840	-01	60.59	-0.59	0.00
83 Cancri 911	+05	60.65	-0.64	+0.01
4 33		60.285		
Pro. R		.110		
Full.		.080		
Mean		+ .095		

139 22	9.997	321° 3'
Gr 58	9.997	264 39
420.8	1.320	-20° 9'
51 55 27.2	0.8480	83 40 47.15
dr. 0.8524		dr. 0.9583

B	15.39	+30.79
C	15.48	-2.72
D	15.73	28.07
E	15.341	61.06

1863 Feb 10: MW

finis

775.

vis note

x Arctis

1 Capricorn

57 min B

6 Camelopard H.

26.9

30.9

34.0

38.0

41.7

171.5

57.9

3

22 21.0

23. 56.1

[25 9.2]

26 38.9

~~21.0~~

11.2

19.2

25.7

33.4

40.9

130.4

2 0 34.30

2 18 56.21

3 23 47.89

3 31 26.08

1 59 28.59

15 22 37.61

x Arctis

1 59

+0.6

1 57.7

230° 39'

174.26 sin 8.967

+2"1 0.327

87° 44' 47" 0 1.6045

for 1.6048

B 47.08 +126.08

C 46.50 - 7.60

E 48.10 - 250.8

1862 Hardy SW

continued on next page

745

 η Tauri ζ Persei ζ Urs. min γ Eridani

750 Gr.

29.8

40.0

47.4

3 55 22.5

33.4

44.2

56.3

51.2

55.56.0

36.6

47.7

75.9

54.1

40.5

51.9

30.0

57.9

56 40.4

44.5

55.8

47.8

1.2

57 20.4

144.4

239.6

211.8

3 40 36.96
39 22.50

3 46 47.92

3 50

3 52 54.36
51 39.753 55 59.48
3 54 47.3558 hr
255+1^h285 11 36.7 4 1.0815
do 1.0829

A 59.04 - 81.36

B 59.38 - 41.02

C 59.62 + 3.62

D 59.90 + 37.60

1863 Feb 14th continued

2000 m 13 m			40 779			Eridani		
3	58	7.8	4	0.8			20.0	
		56.6		23.3			23.7	
	59	7.7		40.5			26.6	
		32.8	5	2.6			30.2	
4	0	4.0		23.2			33.7	
		88.9		90.4			134.2	
3	59	5.78	4	4	42.08	4	6	26.84
15	57	48.44				5		12.33

γ Tauri	3 39	+06	14.52	14.51
γ Eridani	3 52	-11	14.50	14.49
α Eridani	4 5	-07	14.44	14.47
	3 52		14.487	
Rev R			+0.089	
			+0.078	

239 27

163 40

-1.5

83 20 58.55 0.9333.

do 0.9363.

1863 Feb 16th MN

continued on next page

2145

Polaris			β Arietis			γ Andromedae			γ Capricorni			γ Ceti		
1	5	20.6			16.9			40.6			52.1			28.3
	7	44.6			20.8			48.5			1.3			29.2
	9	41.3			23.9			49.3			8.3			32.0
	12	10.5			27.7			54.2			17.6			35.4
	14	25.5			31.2			58.8			26.4			38.8
		142.5			120.5			248.4			108.7			160.7
1	9	52.50	1	44	24.10	1	56	49.68	2	19	9.14	2	37	32.14
	8	43.10		47	5.65								36	13.41

88° 35' 8" 1.6075
 to 1.6076

1862 Feb. 10. inst. M.W.

MS.

41 Arietis			β Orion minoris			α Leri			β Persi			δ Arietis		
		7.9						20.6						0.9
		12.1						24.0						4.8
		15.3						27.1			33.7			7.7
		19.3			40.2			30.6			40.4			11.6
		23.2			54.0			33.9			48.0			15.2
		27.8						36.1						40.2
2	43	15.56	2	52		2	56	27.22	3	0	36.07	3	5	8.04
			14	51	8.96		55	8.50				3		49.67

next page

323 Cephei B	of Uranus and B	3 Perse	3 km m	3 Eridani
3 21 40.8		44.2	46.2	51.7
22 36.2		48.5	2.5	55.4
23 18.5		51.8	20.8	58.2
24 14.0		56.2	35.0	76 + 2.0
25 3.6	3 26 54.2	0.0	52.7	55
113.1		200.7	157.2	172.8
3 23 22.62	3 24 3.20	3 46 52.14	3 50 19.44	3 52 58.56
3 22 6.77	3 22 40.68			3 57 39.72

50° 32' 230° 40'
 35h 59 6.942m 175 7 8.930
 -2"06 + 2"0 +
 36 12 46.25 1.1792 87 46 46.9 B 1.6050
 or 1.1802 or 1.6054m
 2 -2.2510

Star Feb 16 mid. SW

115.

fin

Cloudy

51 750

62 un m B

51 Ceph A

Alani minor

[Alani minor]

54 42.8

3 58 11.8

6 34 38.1

22.8

55 26.6

58 41.0

35 53.2

26.3

56 0.0

59 13.4

38 8.7

29.1

59 37.5

38 8.7

32.8

4 0 7.7

39 18.3

36.2

111.4

146.9

3 56 3.35

3 59 10.28

6 36 58.02

7 33 29.38

3 54 47.27

15 57 16.80

6 35 13.67

32 [10.4]

E

58° 42'

3 9

8.740

+1'3 0.112

85 11 38.8 4 1.0754

to 1.0769

239° 27'

183 54

8.833_n-1'6 0.205_n83 20 58.4 5 0.9333_nto 0.9363_n

98° 56'

13 23

9.837

+16'2 1.209

87 14 55.3 5 1.3182

to 1.3187

A 58.20 -2 20.1

B 58.12 -1 10.58

C 3.57 + 3.57

D 3.43 + 3.43

E 3.04 + 3.04

D 57.58 +1 4.38

E 58.20 +2 20.1

1863

β Arietis	1 47	+ 0.06	+78.51	-78.94	-03
γ Ari	2 36	- 0.03	78.70	78.61	+09
δ Cepi	2 55	- 0.03	78.69	78.64	+05
ϵ Arietis	3 4	+ 0.04	78.61	78.66	-05
ρ Eridani	3 52	- 0.10	78.74	78.72	+02
δ Canis m	7 32	- 0.02	78.95	79.04	-09
	336		78.740		
Pur. R.			0.088		

	Atm.	Regain	Relat.	Relat.	Elm.	Relat.	Relat.	Relat.	Relat.	Relat.	Relat.	Relat.
15												
1862 Sept 23	-10	-02										
29	-04	-08										
Nov 10		-09	+05	+04								
Dec 8				+04	+02			+03	-08	-01		
1863 Jan 1												
1862 Dec 10					+05	+01	-02	-04		-12	+09	+04
16				+14	+05	-01	+01		-10	-06		-05
27								.00	+03	-03		
28	+03	-02	-03									
29	+04											
1863 Jan 3	+02	-03					-04					
5				-03								
17	-05	.00		+08								
19					+03							
Jan 16									-03			
23									+13			

