

KG
11365
35

A.35

Transit Circle.

1860 Nov. 29 — March 21, 1861.

KG 11365,35

New Wires

Dec 5 1860

El. 312. Comparison of Clock Rate (El 312) and Mean Temperature

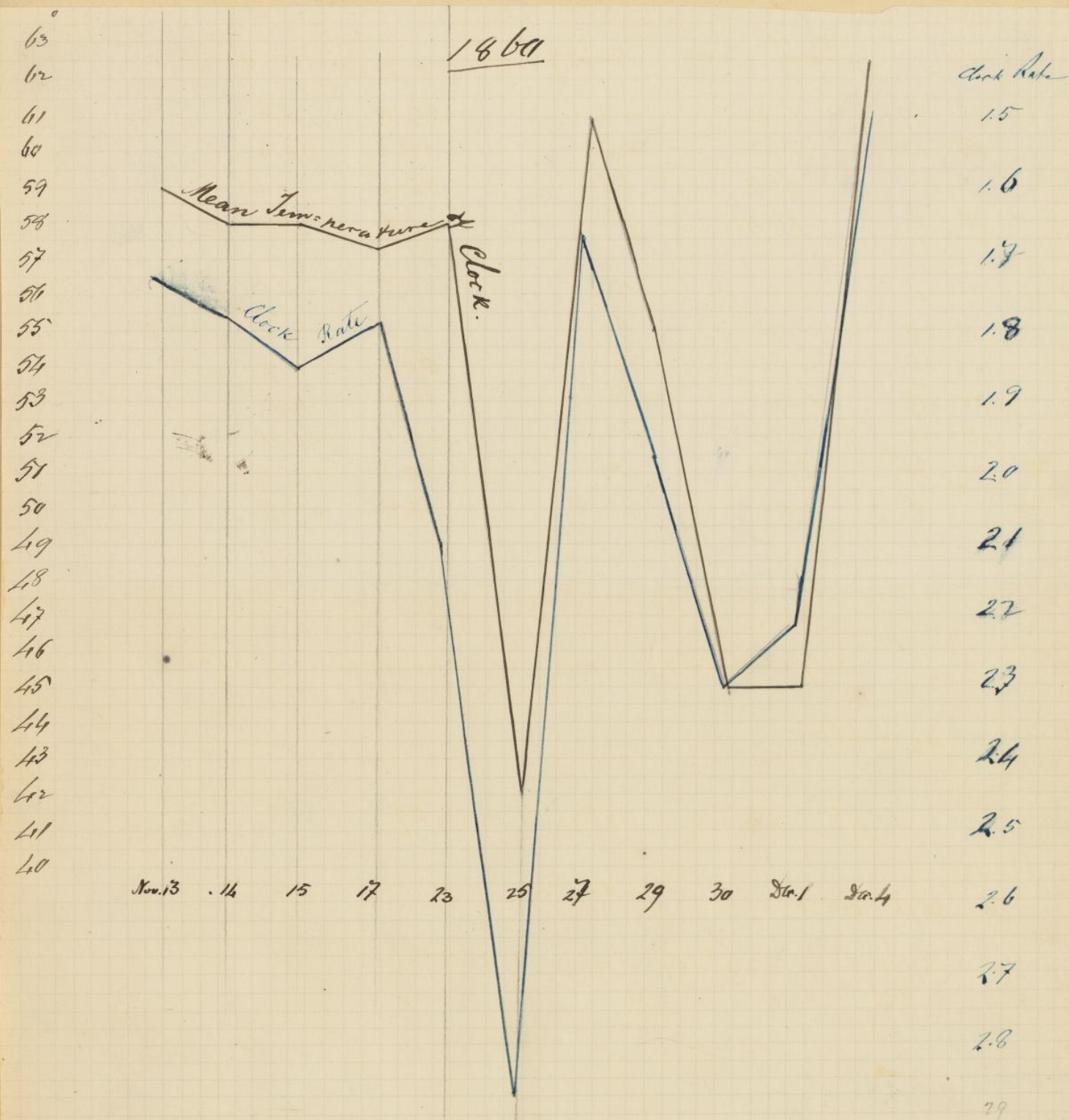
<u>1860</u>	Daily Rate	Temp. of Clock.	Comp. Temp.	C - 0	[of Clock.
Nov. 13-14	1.72	59. ⁰	59.0	0.0	0.0
14-15	1.77	58	58.2	+0.2	
15-16	1.85	58	58.8	-1.2	
16-19	1.79	57.4	57.4	0.0	
Nov 22-24	2.10	58.7	57.5	-5.5	
24-25	2.97	42.	39.5	-2.5	
25-28	1.66	61	60.1	-0.9	
28-29	1.97	55	54.3	-0.7	
29-30/31	2.30	45	49.1	+4.1	
Dec 30/31 - Dec. 2	2.22	45	50.5	+5.5	
Dec. 2-6	1.48	62.5	63.4	+0.9	

These temperatures can be expressed by the formula

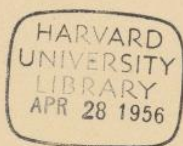
$$T = 88.06 - 16.92 r \pm 1.09$$

Or vice versa, the rate by the formula

$$r = [T - 88.06] 0.0591 \pm 0.123$$



KG 11365.35



Nov. 29, 1860

 $a = -0.40$
 $b = +0.20$
 $c = +0.02$

H.P.J.

M. Sart

Piscium		Sculptoris		Antigon		Tauri		Tauri	
	33.2		25.5		9.4		16.2		6.8
	36.8		29.4		14.5		20.4		10.6
	40.2		33.4		19.7		24.2		14.3
	43.5		37.3		24.1		28.3		17.8
23	33	23	42	5	7	5	18	5	30
	47.2		41.5		29.7		32.3		21.7
	200.9		169.1		97.8		121.4		71.2
23	33	23	42	5	7	5	18	5	30
	40.18		33.42		19.56		24.28		14.24

 $n = +0.41$ $c = +0.04$ $+0.42$ $+0.06$

5 7 20.04

6 28.31

51.73

57.88

 $+0.22$ $+0.05$

24.55

7 32.66

51.89

57.90

 $+0.16$ $+0.04$

14.64

29 22.53

51.91

57.91

Nov. 29,

U.P.Y.

M. Lane

Moon T.T.O.

 γ Geminor μ Geminor

$\delta = +25^{\circ} 33'$	52.0		15.7		19.5
$\delta' = +25^{\circ} 16'$	56.1		19.5		23.2
$\pi = 56' 46''$	0.1		23.2		27.0
	3.8		26.8		30.6
5- 59 7.9 6		7	30.7 6	15-	34.6
$\Delta\alpha = 7^{\circ} 31'$	119.9		115.9		134.9

5- 58 59.98 6		7	23.18 6	15-	26.98
		6	31.75	16-	35.13

μ_{20}	+0.17	+0.17
0.01	+0.04	+0.04
5 5.9 0.22	23.39	27.19
	+52.04	+52.06
51.96	51.98	52.01

For the Moon $\log \{ \rho \sin \pi \sin (\psi - \delta) \} = 8.1986$

A 9.9931	f.E + 7.931	59.931
B 0.0184	+ 3.904	60.004
Sec D 0.0447	- 0.035	60.065
F 0.0562	- 2.853	59.947
	- 7.947	59.953
		59.980

$$\Sigma \epsilon^2 = 0.0104$$

$$\text{Prob. Error of one line} = 0.034$$

$$\text{Mean of Five} = 0.015$$

Nov 29/30

A.U.

M. Par

 δ Leonis δ Hyd Coat- ν Leonis β Leonis γ Vir Maj

		28.0		9.1		35.6		43.4		10.3				
		31.8		12.8		39.1		47.1		16.4				
		35.5		16.3		42.5		50.6		22.3				
		39.1		19.8		45.9		54.1		28.1				
11	7	43.0	11	13	23.6	11	30	44.6	11	42	57.8	11	47	34.4
		177.4			81.6			212.6			253.0			111.5
11	7	35.48	11	13	16.32	11	30	42.54	11	42	50.60	11	47	22.30
Σ corr.		+ .04			- .22			.00			.00			+ .49
11	7	35.52	11	13	16.10	11			11	42	50.60	11	47	22.39
	6	43.29		12	23.94					41	58.35		46	30.53
		+ 52.23			+ 52.16						+ 52.21			+ 52.26

Nov. 30

El. 0.10

A 47.2 Upper

B 43.9 Mid.

C 46.5 Low.

Nov. 30/31.

A.S.

Booris

6.0

9.7

13.4

17.1

21.0

~~67.2~~

14 10 13.44

- 0.17

+ 0.24

+ 0.04

14 10 13.55

9 18.84

+ 54.71

At 14.93

47.7

43.9

43.7

Dec 1 11 P.M.

44

44

Dec 1/2 7 A.M.

50

48

Dec 2

42.5

42.5

Dec. 2/3

At 11.50 57.5

54.0

50.0

Sec. 1

J.H.

α Pictoris australis	α Pegasi	γ Pictoris	ϵ Pictoris	δ Sculptoris
46.6	39.2	46.9	37.5	29.7
50.8	43.0	50.5	41.2	33.9
54.6	46.4	54.0	44.6	37.46
58.4	49.9	57.4	48.0	41.7
2.6	53.6	1.0	51.7	45.9
213.0	232.1	209.8	223.0	189.0
22 50 54.60	22 58 46.42	23 10 53.96	23 33 44.60	23 42 37.80
- 0.46	- 0.20	- 0.26	- 0.25	- 0.45
+ 0.06	+ 0.15	+ 0.13	+ 0.14	+ 0.06
+ 0.04	+ 0.04	+ 0.04	+ 0.04	+ 0.04
22 50 54.24	22 58 46.41	23 10 53.87	23 33 44.53	23 42 37.45
22 49 58.52	22 57 50.93	23 9 58.34	23 32 49.00	23 41 41.97
55.72	55.48	55.53	55.53	55.48

Sec. 2

At. 14 50 71.6	At. 16 31 81.	At. 16 43 0 92.	236 - 22. = 2 44.48
" 62.4	71.	16 50 35 236	MC = 11 58 31
56.	61.8		

1860 Dec. 1

H.S.

w Piscium

2 Andromedae

r Pegasi

0.0

58.8

1.50

56.3

3.6

4.8

7.0

9.0

1.47

1.5

10.4

12.7

1.40

6.9

14.1

16.8

1.49

8.7

35.1

44.1

23 53 7.02

0 2

8.92

0 7

1.46

- 0.24

- 0.11

- 0.20

+ 0.14

+ 0.19

+ 0.16

+ 0.04

+ 0.04

+ 0.04

23 53 10.96

0 2

8.94

0 7

1.46

23 52 11.51

1

13.48

6

5.89

55.45

55.46

55.57

1860 Dec. 2

*Pisium

29.9

42.7

47.1

50.7

47.10

47.02

49.25

57.77

Dec. 3. at El. 344

Upper Sur.	45.8
Middle	44.6
Lower	59.2

The determination of time Dec.
3^d was made with the W. Transit.

Dec. $\frac{3}{4}$ at Ec. 1140 A 59.
B 57.5
C 53

Dec. 4^h at 140^m Lir. P. A 73.2
B 68.8
C 62.

New Wires

Dec 5 1860.

Dec. 4 at 12^h 45^m 11^s m.s. A = 73
C = 62

Dec. 4/5 at 12^h 45^m Sid. A. 55
B. 54
C. 52

New Times

Dec 1800

1860 Sa. 6

a -0.41
 b +0.14
 c +0.09
 mid-w

J.H.S.

J.H.S.

J.H.S.

J.H.S.

 α Andromedae γ Pion

Vol. 93 SP

 α Canis Major

9.4

22.5

11 27.2

30.9

12.9

6.0

36.5

17.2

9.5

15 25.8

42.8

20.9

12.9

17 39.7

49.4

24.3

16.3

19 42.7

54.9

16.94

47.2

244.50

a 2 16.94

a 7 9.46

42.90

-0.41

-0.30

+0.77

+0.15

+0.13

+0.24

+0.10

+0.09

+0.16

a 2 17.34

a 7 9.52

1 13.42

a 6 55.84

a 32 39.74

a
 b
 c
 mid-w

1100, 32.18

842835

7.69 17.09

7.00

9.50

A h C 0.831 6.78

12.05

42.95

3.95 16.85

3.60

9.60

B . C 0.142 3.48

6.19

43.69

17.20

9.50

D . C

43.80

7.58 16.92

6.72

9.58

E . C 0.513 6.50

11.56

43.86

17.01

9.54

mid-w

Bad seeing for large stars.

Dec 6, 1860

M. Ear

AU

 β Arietis" α Arietis

56.0

18.6

39.8

22.3

3.2

26.0

6.9

29.7

1 48

10.3

2

0

33.2

136.2

129.8

1 48

3.24

2

0

25.96

 Σ Cor

+1.09

1 48

3.30

2

0

26.05

1 46

39.62

1

55

22.32

1

3.71

1

3.73

Dec. 6

Y.C. P.T.

Ill. East

2 Aquilae

B Aquilae

19. 45	56 .4	19	49	25 .4
	59 .8			28 .9
46	3 .2			32 .3
	6 .4			35 .7
	9 .7			39 .6
	24 .10			32 .78
19 46	3 .10	19	49	32 .38

"not very good" (H.P.)

1860 Dec 10/11

Dec 11

Polaris minoris

α Lyrae

3.2

16.4

15.9

20.5

29.5

25.0

41.3

29.6

33.6

125.1

~~25.02~~

14 52

18 23

25.02

At 15 32. EL

Hyper Vm. 66.0
 down 33.3

1860 Dec. 11

T.H.S.

Dec 11 H. P. J.

α' Guinorum	α Guinorum	α Guinorum med:	α Can. Min	β Guinorum
50.9		51.07	7 33 ^m 10 ^s .3	7 37 56.6
59.3	55.6	55.43	14 .0	38 0 .4
		59.47	17 .4	4 .1
06.6	03.2	3.03	20 .9	8 .1
		6.77	24 .3	11 .8
		175.77	86 9	81 0
		~~175.77~~	17 3 5	18 .20
		7 26 59.15	7 33 17.38	7 38 4.26

But seeing.

In reducing to α Gem.
med. there was used
 $\alpha' - \alpha' = 0.34$

M 7 39 Et

Upper Lim. 69.2
Lower 58.4

1860 Dec. 13/14.
P.T.
θ Virginis

57.3
10.6
4.2
7.7
10.8
80.6

13 4 4.12

M. 2

$$\begin{aligned}
 \text{Mean} &= \frac{1}{2}(A+E) + \frac{1}{450}(E-A) \\
 &= \frac{1}{2}(B+D) - \frac{1}{630}(E-A) \\
 &= \frac{1}{2}C - \frac{1}{720}(E-A) \\
 &= \frac{1}{2}(A+C+E) + \frac{1}{1080}(E-A) \cdot \text{circa}
 \end{aligned}$$

By micrometer
1860 Dec. 17

$\frac{1}{587}$
 $\frac{1}{1070}$
 $\frac{1}{500}$

Mean circa

$\frac{1}{400}$
 $\frac{1}{500}$
 $\frac{1}{400}$

17th1860 Dec. ~~17th~~

J.H. 5.

L. Triffin

41.9

45.5

49.2

53.0

56.4

246.0

2 0 49.20

1 59 22.25

Dec. 15/16

Th. in clock.

4 A.M.

A. 38.8

B. 37

C. 37

fire afterwards

Dec. 17.

9 P.M.

74.6

68.2

61.2

fire kept up
all night

Dec. 17/18

11 A.M.

62

53.4

54.8

Jan 18.
dlypi

59.4

4.1

8.8

13.7

18.0

44.0

20 38 8.80

20 38 40.58

Dec 18

$$a = -.51$$

$$b = +.14$$

$$c = +.05 \text{ assumed}$$

Al.		M. Ear-		Moon TO		β Piscium		γ Piscium	
γ Aquarii		δ Regani							
33.3		54.0		56.8		10.8		20.2	
-1° 0'		57.5	-3	0.0	+3	14.1	+ 3	23.5	
41.9		0.8		3.6		17.4		26.8	
45.3		4.2		7.0		20.8		30.3	
22 29 48.5	22 36 7.5	22 50 10.2	22 58 24.0	23 11 33.5					
209.4	124.0	77.6	87.1	134.3					
22 29 41.88	22 36 0.80	22 50 3.52	22 58 17.42	23 11 26.86					
- .37	- .27	- .36	- .34	- .34					
+ .10	+ .12	+ .10	+ .11	+ .11					
+ .05	+ .05	+ .05	+ .05	+ .05					
22 29 41.66	22 36 0.70	22 50 3.31	22 58 17.24	23 11 26.68					
22 28 13.09	22 34 32.05	22 56 48.83	23 9 58.16						
1 28.57	1 28.65	1 28.41	1 28.52						

del $n = +0.47$

nfs	- .01	+ 0.08	- 0.02	+ 0.02	+ 0.02
Col	+ .05	+ .05	+ .05	0.05	0.05
22 29 41.92	22 36 0.93	22 50 3.55	22 58 17.49	23 11 26.93	
22 28 13.09	22 34 32.05	1 28.83	22 56 48.83	23 9 58.16	
1 28.83	1 28.88	1 28.66	1 28.77		
1 28.81	1 28.82	1 28.83	1 28.84		
22 28 13.11	22 34 32.11	22 48 34.72	22 56 48.66	23 9 58.09	
C-0	+0.02	+ 0.06	- 0.17	- 0.07	

Dec. 18.
 1860phae.proj...35H
 Eridani

57.6

1.1

4.4

7.7

11.3

22.1

3 53 4.42

3 51 34.66

Dec. 18/19

At 3 Pm.

A (upper) 68.1

B (width) 61.5

C (lower) 54.4

At 9 Pm

58.5

57.0

55.0

At 7 AM.

51.0

50.0

46.8

At 9 AM

57.0

53.0

57.2 47.2

probably. (hrs)

fire out 2 AM.

Dec. 19.

Dec. 19/20

At 8 P.m.	At 8 A.m.
A (upper) 63.0	46.0
B (middle) 61.8	44.5
C (lower) 56.0	43.0

fire about out.

fire just made.

Dec. 20/21

At 10 A.m.	At 7 A.m.	At 10 A.m.
53.2	54.0	60.4
48.2	53.0	54.8
44.2	50.0	50.5

84

Dec. 21

Aquarii

9.2

12.4

15.8

19.1

22.3

78.8

15.76

Dec, 21

 $a = -0.52$
 $L = +0.08$
 $C = -0.02$

M. Ear

"

"

* Moon TO

M.		γ Pegasi		BAC 149		"		"	
α Andromedae									
	42.5		35.9		151		23.1		
	46.3		39.2	+12 27	185		26.7		
	50.2		42.9		220		30.4		
	54.0		46.3		255		33.8		
0	57.7	0	49.7	0	288	1	37.1		
	250.7		214.0		109.9		151.1		
0	50.14	0	42.80	0	30	20.98	3	30.22	
m = +0.44									
+ .24		+ 0.11		+ 0.10		+ 0.10			
- .02		- .02		- .02		- .02			
0	50.36	0	42.89	0	30	22.06	3	30.30	
0	13.22	0	5.67	0	28	44.75			
1	37.24	1	37.22	1	37.31				
1	37.18	1	37.18	1	37.24	1	37.30		
0	13.18	0	5.71	0	28	44.82	1	53.00	
C-0		+ 0.04		- 0.04		+ 0.07			

* quite cloudy
and obs rather
uncertain.

A.L.

Dec 24

γ Picinn	B Arietis	δ Arietis
25 48 .2	1 45 35 .3	2 1 0 .8
46 .3	41 .8	4 .2
50 .2	45 .6	8 .1
53 .5	49 .0	11 .8
56 .8	52 .4	15 .2
250 .0	22 7 .1	40 .1
1 25 50 .00	1 48 45 .42	2 1 8 .02
$a = -25$	$a = -19$	$a = -69$
$b = +03$	$b = +03$	$b = +03$
$c = -08$	$c = -08$	$c = -08$
1 25 49 .70	1 48 45 .18	2 1 7 .88
1 24 4 .25	1 46 59 .49	1 59 22 .20
ECF 1 45 .45	ECF 1 45 .59	ECF 1 45 .68

Dec 28

H.P.V.		A.U.		M. East	
α Cephei		ϵ Pegasi		α Aquarii	
	54.8		10.7		28.1
	1.8		14.0		31.5
	9.2		17.6		35.0
	16.4		20.9		38.3
21 17	23.2	21 39	24.2	22 0	41.5
	105.4		87.4		174.4
21 17	9.08	21 39	17.48	22 0	34.88

Clock Stopped

1861

Jan. 1

M.E.

$$m + 0.41 \quad c = -0.07$$

T.H.S.

12 Ceti

 δ Cassiopeiae α Cassiopeiae β Ceti δ Pictoris

33.9	46.9	9.4	13.7	5.6
37.2	52.2	15.4	17.2	9.9
40.7	57.9	21.7	20.9	12.5
44.3	3.4	27.7	24.5	15.9
47.4	8.9	33.4	27.8	19.1
203.5	169.3	107.6	104.1	62.2

0 20 40.70	0 26 57.86	0 30 21.52	0 34 20.82	0 39 12.44
0 22 57.64		0 32 39.13	36 37.56	

- 0.02

+ 0.04

18.92

44

10.39

- 2 16.96

+ 0.0

+ 0.4

16.80

1861 Jan. 1

M. E.

Assumed $n = +0.26$ $e = +0.07$

17.8

3 Hecili Cephei

0 Psoium

 α Ceti δ Arieti α Eridani

246 36.3

1.3

39.5

19.3

47.9

47 17.3

4.5

42.6

22.7

51.6

48 2.4

8.0

46.1

26.3

55.7

45.2

11.4

49.6

29.85

59.4

49 27.3

14.7

52.8

33.3

3.2

128.5

39.9

230.6

131.45

217.8

0 48 1.70

0 53 7.98

2 52 46.12

3 1 26.29

3 3 55.56

0 55 44.99

55 2.65

3 43.03

+ 4

+

0

+ 4

+

4

47

60

4.3
3.7
4.4
3.8
3.7

1861. Jan. 1 M.E.

H.S.

H.P.J.

H.P.T.

2 Jauzi

2 Orionis

2 Orionis

μ Geminorum

γ Geminorum

35.6

18.4

17.7

12.3

20.3

39.1

21.7

21.0

15.8

23.8

42.6

25.2

24.6

19.8

27.5

46.0

28.4

28.1

23.3

31.0

49.4

31.8

31.4

26.9

34.3

212.7

125.5

122.8

98.1

136.9

L 25-42.54

5 45 25.10

5 57 24.56

6 12 19.62

6 27 27.38

27 59.14

47 41.20

59 40.65

14 35.70

29 43.46

- 2 16.10

- 2 16.09

- 2 16.08

- 2 16.08

+ 0.00

+ 0.04

+ 0.11

+ 0.17

+ 0.12

+ 0.04

- 0.07

- 0.07

- 0.08

- 0.07

- 2 16.47

- 2 16.13

- 2 16.05

- 2 15.99

- 2 16.03

861 Jan. 1. M.E.

$$n = +0.30 \quad a = +0.04$$

(Hoodii) Aperi		α Canis majori		δ Geminorum		α Geminorum		α Canis minoris	
30	3.8		40.9		28.7		22.8		41.6
31	11.9		44.2		32.3		26.6		44.8
32	24.4		47.7		—		30.6		48.4
33	35.1		51.3		39.7		34.5		51.7
34	42.3		54.9		43.3		38.6		54.9
	117.15		239.0				153.1		241.4
6 32	23.42	6 36	47.80	7 9		7 23	30.62	7 29	48.28
6 34	46.64	39	3.76	11	51.81	25	46.46	32	3.77
		-2	15.96			-2	15.84		
		-11.12					+0.26		
		-0.07					-0.08		
		-2	16.15			-2	15.66		

cloudy.

1861 Jan 2

G. Cassiopeiae

L. Cassiopeiae

 β Ceti γ Piscium413 H₂ Cephei

50.0

13.0

16.9

8.9

0 46 40.6

55.2

18.8

20.4

12.3

47 21.1

0.9

25.1

24.1

15.8

48 7.0

6.7

31.0

27.6

19.2

48 49.1

12.2

36.7

30.9

22.4

49 30.9

125.0

124.6

119.9

74.6

148.7

0 27 1.00

0 30 24.92

0 34 23.98

0 39 15.72

0 48 5.74

1.13

0.98

0.79

861 No. 2.

ms.

α Ursa minoris A.	α Ursa minoris B.	α Cepi	α Fawri
~~42.7~~	~~44.8~~	42.7	
29.4	29.0	46.0	5.3
42.0	38.8	49.5	8.8
0.6	59.0	52.8	12.1
13.4	11.6	56.0	15.3
24.9	25.2	247.0	
<u>110.3</u>	<u>161.6</u>		
1 58.06	1 56.32	49.40	

+ 0.56

+ 0.74

- 2.61

A, by first & last contacts
 B, by bisection

Jan 4, 1861.

 $n = +0.35^-$
 $c = -0.05^-$

A. 26.

Ill. East

Moon TTD		B. A. C. 27 00		p Bortin		2 Bortin	
	23.5		11.15 4.2		38.0	Not recorded	
-17° 41'	27.0	-15° 39'	11.13 7.6	+30° 59'	41.8		
	30.8		11.05 11.1		53.5		
	34.4		11.29 14.7		46.0		
13 57	37.9	14 1	—	14 23	49.8		
	153.6				229.1		
13 57	30.72	14 1	11.16	14 23	45.82		
	+0.11		-0.10		+0.22		
	-0.05		-0.05		-0.05		
13 57	30.56	14 1	11.01	14 23	45.99		
		14 3	15.78	14 25	50.78		
2	4.78	-2	4.77	-2	4.79		
13 59	35.34	14 3	15.79	14 25	50.77		

Jan 8 Assumed n + 0.42
 c - 0.04

A.H.		"		H.P.J.		"		"		"	
2 Arctis		67 Ceti		X Leonis		d Leonis		d Hydr. of Gemin			
	22.2		5.4		54.8		45.9		27.6		
	25.9		8.9		58.1		49.9		31.1		
	29.7		12.2		1.5		53.5		34.4		
	33.3		15.7		5.4		57.2		37.9		
1 57	36.9	8	19.0		8.2		0.5		41.5		
	1480		61.2		128.0		207.0		172.5		
1 57	29.80	1 8	12.22	10 56	1.60	11 4	53.40	11 19	34.50		
only v					+ 0.06		+ 0.16		- 0.19		
cor S					- 0.06		- 0.04		- 0.04		
				10 56	1.62	11 4	53.52	11 10	34.35		
				57	52.58		44.64		12	25.26	
				- 1	50.96		- 1	51.12	- 1	50.89	

1860 Jan 8 $m = +0.42$ $\sigma = -0.04$

β Leonis	γ Leonis	ρ Leonis	Brigitis	γ Ursa maj.
52.9	52.6	1.9	31.5	29.1
57.5	55.7	5.5	36.7	35.3
1.0	59.3	8.6	38.0	41.0
4.0	3.3	12.2	41.4	47.4
7.5	6.9	15.7	44.7	52.5
11 28 122.9	177.8	43.9	190.3	205.3
11 28 8.78	11 38 59.56	11 40 8.78	11 41 38.06	11 44 41.06
0.00	+0.11	+0.11	-	+0.59
-0.04	-0.04	-0.04	-	-0.07
11 28 0.74	38 59.63	11 40 8.85	11 44 41.58	
29 51.59		41 59.66	46 32.44	
-1 50.85		-1 50.81	-1 50.86	

1860 Jan 8.
H.P.J.

o Virginis

2 Corvi

D Urrae maj.

(3 Corvi

X Virginis

11.6

18.1

30.0

9.2

38.6

14.9

21.8

35.9

12.4

11.7

18.2

25.8

42.6

16.2

15.3

21.8

29.5

48.8

19.9

18.7

24.9

33.1

55.3

23.5

21.8

91.4

128.3

212.6

81.2

76.1

11 56 18.28

11 59

25.66

12

6

42.52

12

25

16.24

12 30

15.22

- 0.18

- 0.04

25 16.02

27 6.62

- 1 50.60

60 Jan 8.
P.J.

γ Virginis med:		27 Comae	35 Comae	12 Canum	J.H.S. α Gmae
	41.1	45.4	30.2	33.6	14.2
	44.4	49.1	33.9	37.3	18.7
	47.7	52.6	37.7	41.8	22.5
	51.3	55.9	41.3	45.4	26.8
	54.2	59.5	44.7	50.1	31.0
	238.7	262.5	187.8	209.2	113.2
12 32	47.74 47.74 - 0.01 - 0.01	12 37 52.50	12 45 37.56	12 47 41.84 + 0.34 - 0.05	18 30 22.64
12 32	47.69			12 47 42.13	18
34	58.27			49 32 46	32

1860 Jan 10.
d Lyrae

30.1

34.2

38.4

18 30

air Reading
275° 33' 5"

1860 Jan 12.

Aechis

52.4

56.

56.1

0.0

3.6

7.0

119.1

1 58 59.82

1860 Jan 12. 7^uThe clock has gained some multiples of 2^s this evening.Adjusted Jan 13th.

1860 Jan 12.

H.S.

J. Lenoir

36.9

39.8

43.2

46.7

50.1

216.7

~~4~~

11 16 43.34

Jan 19. 1868.

XII.			Ill. E. and			T.H.S.			Polaris		
β Arietis			α Arietis			α Andromedae			γ Pegasi		
	57.8			20.4			10.7			1	33.1
	1.4			24.0			14.4		7.3	5	43.4
	5.1			27.7			18.6		10.9	8	4.2
	8.6			31.3			22.2		14.4	10	18.4
1	47	12.0	1	59	34.9		25.9		17.7	12	28.3
	84.9			138.3			91.6				127.4
1	47	4.98	1	59	27.66	0	1	18.32	1	6	1.48

-0.78

-0.58

-2.72

Upp. Ther. 64.0
 Mid " 61.0
 Low " 57.0

Jan 19. 1866. 2M E.

T.H.S.

	θ Ceti	γ Phoen	δ Persi	ρ Phoen	τ Ceti
1	4.6	2.7	24.5	12.2	36.7
4	7.9	6.1	30.0	15.4	40.2
2	11.5	9.8	35.2	19.0	43.8
4	14.9	13.3	40.2	22.3	47.3
3	18.1	16.6	45.0	25.6	50.6
4	57.0	48.5	174.9	94.5	218.6
18	1 17 11.40	1 24 4.70	1 29 34.98	1 34 18.90	1 37 43.72

Jan 19. 1860 M E.

<i>PH</i>	<i>Alt.</i>	<i>J.H.S.</i>	<i>Alt.</i>	<i>M.H.</i>
<i>cti</i>	<i>β Pictoris</i>	<i>α Piscium</i>	<i>α Pictoris</i>	<i>δ W. Min. S.P.</i>
45.8		54.8		
49.1		55.1		
52.6		58.6		16 55.2
56.0		1.9		17 53.1
59.4		5.2		18 48.0
262.9		172.6		
1 42 52.58		1 54 58.52		6

Major sequens

Jan 19. 1860 211. E.

T. H. J.

γ Geminorum	ϵ Geminorum	δ Canis majoris
43.0	24.5	3.2
46.3	28.2	6.7
50.0	31.9	10.3
53.4	35.7	13.8
57.1	39.3	17.0
249.8	159.6	51.0

6 29 49.96 6 35 31.92 6 39 10.20

Condensed
up.

Major praecedens.

Minor on
Lyopiere
Frank's Doubtful.

Mean between lines
observed separately

5.0

8.5

12.0

15.4

Jan. 20. 1861

H.P. 7.

A.H.

Ear
M. Westc = -0.05
n = +0.35

Arietis

41 Arietis

Σ Arietis

Moon TO

17 Jani

59	24.3 2	41	52.1 2	51	20.4 3	8	49.1 3	36	41.8
	28.1		55.8		23.8		52.4		45.5
	31.8 +26°	41	0.0 +20°	47	27.6 +22°	35	56.3 +23°	40	49.4
	35.4		3.5		31.2		0.1		82.9
	38.9		7.2		34.6		3.8		86.7
	158.5		118.6		137.6		161.7		246.3

59	31.70 2	41	59.72 2	51	27.52 3	8	56.34 3	36	49.26
			-0.05		-0.05		-0.05		-0.05
			+0.18		+0.12		+0.14		+0.15
2	41	59.85 2	51	27.60 3	8	56.43 3	36	49.36	
2	41	50.20 2	51	17.83			3	36	39.69
		+9.65		+9.77					+9.67
		9.68		9.68		9.68		9.68	

2	41	50.17 2	51	17.92 3	8	46.75 3	36	39.68
---	----	---------	----	---------	---	---------	----	-------

9.68 at 3^h 12^m

Jan 20. 1861 20/21

AU.

J.H.S.

 γ Tauri α Hydræ α Apulæ

3	39	17.8	16.2	5.5
3		21.4	20.6	8.6
4	+23° 40'	24.9	25.1	12.1
9		28.9	29.2	15.5
7		32.5	32.6	18.9
3		125.5	126.7	60.6
6	39	25.10	26.94	12.12
		-0.05		
		+0.18		
6	39	25.20		
9	39	13.56	13.05	59.78
7		+9.64		
3		9.68		
3	39	15.52		

Jan. 21. 1861.

 $c = -0.05$
 $n = +0.35$

M. West.

All.

5 Ariels		17 Tauri		27 Tauri		Moon TO		ε Tauri	
	2.8		45.6		21.7		59.4		38.8
+20	32	6.3	49.2	+23	40	25.2	+24	54	42.2
	10.0		53.0		29.1		06.7		45.9
	13.6		56.5		32.6		10.7		49.4
3	7	17.0	0.2	3	39	36.1	4	14.5	52.8
	49.7		204.5		144.7		94.5		229.1
3	7	9.94	52.90	3	39	28.94	4	6.90	45.82
	-0.05		-0.05		-0.05		-0.05		-0.05
	+0.14		+0.15		+0.15		+0.16		+0.12
3	7	10.03	53.00	3	39	29.04	4	7.01	45.89
3	6	56.69	39.67	3	39	15.56	4	20	32.36
	+13.34		+13.33		+13.48				+13.53
	13.36		13.42		13.43		13.50		13.53
3	6	56.67	39.58	3	39	15.61	4	53.51	32.36

13.46 at 3^h 51^m

Jan 21. 1861.

1860phae.proj.

A.H.				J.H.S.															
α Tauri				γ Aurigae				ϵ Tauri				δ Aurigae				β Orion			
			5.5				4.9				55.9				32.6				0.7
+16	14		8.8				8.7				59.5				37.5				3.9
			12.4				12.8				3.3				42.2				7.3
			16.3				17.0				6.9				46.9				10.9
4	28		19.7				20.8				10.4				51.7				14.0
			62.7				64.2				136.0				210.9				36.8
82	4	28	12.54	4	48		12.84.	4	55	3.20		5	6		42.18	5	8		7.32
05			-0.05				+0.22								+0.35				-0.05
12			+0.10				-0.14								-0.19				-0.13
9	4	28	12.59				12.92								42.34				7.14
6	4	27	59.04				59.33								28.64				53.63
3			+13.35																
3			13.34																
36	4	27	59.05																

The stars from α Aurigae - δ Orion
 minor, and also α Cris majoris are
 observed with the smallest aperture of
 the diaphragm.

Jan. 21. 1861

1861

 α Orionis

0.7
4.1
7.5
11.0
14.2
37.5

 μ Tauri

39.0
42.7
~~44.7~~
50.4
54.3

 β Leporis

26.3
29.8
33.5
36.9
40.5
167.0

 δ Orionis

3.7
7.0
10.5
13.9
17.3
52.4

 ϵ Leporis

45.2
48.4
52.1
55.6
59.1
260.4

5 11 7.50 5 17 46.62 5 22 33.40 5 25 10.48 5 26 52.08

Jan. 21. 1861
H.S.

ϵ Orionis	δ Columbae	ν Orionis	η Geminorum	κ Columbae
19.1	45.3	47.8	38.4	45.0
22.3	49.3	51.1	41.9	48.5
25.9	53.4	54.6	46.1	53.2
29.2	57.7	58.0	49.2	57.6
32.3	1.6	1.5	52.9	1.1
128.8	207.3	213.0	228.5	205.5
25				
5 29.25.76	5 34 53.46	5 59 54.60	6 45.70	6 11 53.10

Jan 21. 1861

Ulae minoris	γ Geminorum	51 Cephei	Hertli	α Canis māj:
16 4.7	50.2	32 37.3		10.5
16 4.7	53.7	33 45.3		16.0
17 1.1	57.4	34 58.6		17.7
18 0.4	0.8	36 7.9		21.2
18 57.3	4.2	37 15.3		24.5
	166.3	164.4		87.9
6 29 57.26	6 34 56.88	6 39 17.58		
	43.57	47.49		
	13.69	+ 9.39		

N.A.

In observing stars near the pole I is concluded that if
 3 breaks are made for each wire, ~~that~~ the oblique is $\frac{(1)+(3)}{2} + \frac{(2)}{2}$
 but if any other the mathematical mean is the correct.

Jan. 22. 1861

 $n = +0.34$
 $c = -0.03$

J.H.S.

α Cygni	δ Cygni	α Andromedae	γ Pegasi	α Camiopesiae
46.5	42.4	21.5		
51.2	46.0	25.0		
56.2	50.1	29.0	21.8	
0.8	54.3	33.2	25.0	36.8
55	58.3	36.4	28.5	41.7
180.2	251.1	145.1		

20	36	56.04	20	40	50.22	0	1	29.02	0	6	0	29
		40.39						+0.88				
								-0.03				
							1	29.17				
								12.81				

faint

faint

Jan 22. 1861

α Canis major	β Ceti	α Pictoris	β Andromedae	Polaris
42.5	46.9	54.3	6.4	1 5 41.3
44.2	50.4	57.7	10.3	8 55.2
54.5	54.0	1.2	14.5	10 14.0
0.4	57.4	4.5	18.6	12 29.5
6.3	0.9	7.8	22.5	12 39.8
151.9	209.6	125.5	72.3	179.8
α 32 54.38	α 36 53.92	α 56 1.10	1 2 14.46	1 8 11.96
+ 0.90	- 0.12	+ 0.06		8.04
- 0.05	- 0.03	- 0.03		
54.83	53.77	1.11		
38.56	37.30	44.75		

Jan 22 1861
JMS.

θ Ceti	η Perseus	ϵ Perseus	ν Perseus	τ Ceti
15.2		35.6	22.9	47.3
18.6		40.6	26.1	50.8
22.2		45.6	29.7	54.4
25.6	23.8	50.8	33.2	57.9
28.9	27.3	55.6	36.3	1.3
110.5		228.2	148.2	211.7
⁷ 1 17 2210	1 24	1 28 15.64	1 34 29.64	1 37 54.34

wires dark.

lamps put in.

Jan. 22 1861.

45.

Pro. X Ceti

X Ceti

β Aneti

α Pircum

α Aneti

51.5
55.0

50.4
59.7
x3.3
6.7
10.0
136.1

8.6
11.9
15.4
19.2
22.7
77.6

2.4
6.0
9.4
12.6
15.9
46.3

31.1
34.5
38.3
42.0
45.6
191.5

1 42

1 43 3.22

1 47 15.52

1 55 9.26

1 59 38.30

1' 4" South
y X Ceti

Jan 22. 1861

$$Q = -0.05$$

$$n = +0.35$$

M. East

J.M.

A.U.			J.M.			J.M.			J.M.		
S' Tauri			E' Tauri			Moon TO			α Aurigae		
		7.2			42.0			23.0		35.5	77
17	13	10.5	18	52	45.6 + 25	54		27.0		40.2	147
		14.3			49.0			30.9		45.4	10.7
		17.8			52.9			34.7		50.2	14.1
4	15	21.2	4	20	56.1 5	2		38.3		54.9	17.5
		71.0			245.6			153.9		226.2	
4	15	14.20	4	20	49.12 5	2		30.98	5 C	45.24	10.70
		-0.05			-0.05			-0.05		+0.47	-05
		+0.11			+0.12			+0.17		-0.09	-05
4	15	14.26	4	20	49.19 5	2		30.90		45.66	10.60
4	14	57.41	4	20	32.35					28.67	53.71
		+16.85			+16.84						
		16.80			16.80			16.87			
4	14	57.46	4	20	32.395	2		14.03			

+16.85 at 4 51

Jan 22, 1861.

A.H.

β Tauri

5 Tauri

MS. Ill. Ear

Lumin. Orion

Numinorum

		42.2			32.4			18.9		1.9
28	29	45.8	21	3	36.0	17.0		22.6		5.6
		49.8			39.6	20.7		25.9		9.2
		53.7			43.3	24.2		29.7		12.8
5	17	57.4	5	29	46.9	27.7		33.0		16.2
		248.9			198.2			129.9		45.7
5	17	49.78	5	29	39.64	6.79		25.98	7	12 9.14
		-0.05			-0.05					
		+0.19			+0.14					
5	17	49.92	5	29	39.73					
5	17	33.02	5	29	22.94					
		+16.90			+16.79					
		16.90			16.91					
5	17	33.02	5	29	22.82					

Jan. 22. 1861

J.H.S.

α Gemin	α Gemin.	δ Gemin minoris	Star foll. α Gemin.	β Geminorum
55.7	(~~57.4~~)	14.5	57.2	0.8
59.4	(~~57.4~~)	17.9	0.3	4.7
	3.9	21.3	4.0	8.5
	7.8	24.6	7.4	12.5
11.4	(~~47.7~~)	28.0	10.5	16.0
		106.3	14.4	42.5
7 26	7 26	7 32 21.26	7 33 3.88	7 37 8.50

Jan 22 1861

Jan 23

* mu. ξ Lavis		ξ Lavis	α Argelae
23.8			12.0
27.5		43.0	15.6
31.3		47.0	19.0
35.1		50.4	22.3
38.5		54.0	25.5
156.2			94.4
7 43	31.24	7 43	19 44 18.88

Jan 23. 1861.

J.H.S.

α Andromedae	δ Cassiopeiae	β Ceti	γ Cassiopeiae	Polaris
24.6	49.6	50.0	26.7	1 3 45.8
26.4	51.7	53.6	33.4	5 56.7
32.3	57.8	57.2	40.3	8 15.0
36.1	3.6	0.8	47.2	10 32.0
39.9	9.5	4.2	53.4	12 44.0
164.3	168.2	165.8	201.0	73.5

0 1 32.26	0 32 57.64	0 36 57.16	0 48 40.20	1 4 14.70
+ 0.18	+ 0.49	- 0.11		
- 0.02	- 0.05	- 0.03		
32.41	58.08	57.02		
1286	38.50	37.29		

Jan. 23. 1861.

$a = -0.05$

$n = +0.31$

Mt. East

A.U.		" 5 Tauri		" Moon TO		" 71 Geminoi		" 71 Geminoi	
β Tauri		5 Tauri		Moon TO		71 Geminoi		71 Geminoi	
45.9		36.0		0.2		45.0		—	
28 29	49.4	21 3	39.4	25 25	4.0	22 33	48.5	22 35	—
	53.4		43.1		7.8		52.2		56.3
	57.0		50.2		11.5		53.8		59.9
5 18	0.8	5 29	46.7	6 3	15.5	6 6	59.4	6 15	3.2
	206.5		215.4		39.0		260.9		
5 17	53.30	5 29	43.08	6 3	7.80	6 6	52.18	6 15	56.16
	-0.05		-0.05		-0.05		-0.05		-0.05
	+0.19		+0.14		+0.17		+0.14		+0.14
5 17	53.44	5 29	43.17	6 3	7.92	6 6	52.27	6 15	56.25
5 17	33.01	5 29	22.94			6 6	31.92	6 14	35.78
	+20.43		+20.23				+20.35		+20.47
	20.31		20.32		20.40		20.40		20.43
5 17	33.13	5 29	22.85	6 2	47.52	6 6	31.87	6 14	35.82

20.37 at 5 48

ther. at close of obs.

Up. 59.6
 Mid. 58.3
 Low. 54.0

Jan 27 1861

J.H.S.

β Andromedae	Polaris		θ Ceti	η Piscium	ν Piscium	
26.0	1	3	58.6	32.7	31.1	40.5
27.9		6	8.4	36.1	36.4	43.9
32.2		8	27.9	39.7	36.0	47.3
36.9		10	43.3	43.1	41.7	50.7
40.1		12	55.4	46.4	45.0	53.9
169.5			196.0	196.0	190.2	236.3
1 2 32.10	1	8	26.60	1 17 39.60	1 24 38.04	1 34 47.26
		8	<u>31.69</u> <u>31.40</u>	<u>5.50</u>		

Good seeing

• Inc. at $0^h 55^m$ E.L.

70° } Shad had been
 64 } off.
 55 $\frac{1}{2}$ }

Jan 27. 1861

T.S.

α Ceti	δ so. proc. α Ceti	α Ceti	γ Antri (S)	β Antri
5.0	2.2	14.1	22.6	26.1
8.4	5.7	17.3	26.2	29.7
12.0	9.2	20.9	29.8	33.4
15.6		24.3	33.5	36.8
18.8		27.7	36.7	40.2
54.8		104.3	148.8	166.2
1 34 11.96	1 43	20.86	1 46 29.76	1 47 33.24

Duplisis major, }
australis }

Jan 27, 1861

HTF 2 Micron	HTF 12 Cannon coral	HTF 7 Micron majoris	a white min. S.P.		
20.1	0.6	30.7	13	3	30.7
23.3	4.9	36.0			
26.9	9.3	41.2	13	7	45.9
30.2	13.7	46.5			
33.5	17.6	51.1			
136.0	46.1	203.5			

1 55 26.80 12 50 9.22 13 42 41.10

major
regions

2-2-0

Jan 28. 1861.

w. p. m. of Tauri

w. Tauri

27 Tauri

5 Persei

o'ridam

36.2

46.2

26.6

56.0

38.1

41.8

49.8

30.0

0.2

41.6

53.7

33.9

4.3

45.1

57.3

37.8

8.0

46.4

0.7

41.3

11.8

57.7

207.7

169.6

80.3

226.7

3 39

3 39 53.54

3 41 33.92

3 46 4.06 21 5 44.94

1867 Jan 28.
J.H.

δ^1 Tauri	δ^2 Tauri	ϵ Tauri	α Tauri	μ Gemin
26.3	38.2	3.3	30.2	6.8
31.9	41.7	6.8	33.5	10.0
35.4	45.5	10.4	37.1	13.7
38.9	49.0	14.0	40.6	16.9
42.4	52.3	17.4	44.0	20.2
176.9	226.7	51.9	185.4	67.6
4 15 35.38	4 16 45.34	4 21 10.38	4 28 37.08	4 39 13.52
		- 0.27	- 0.27	
		4 21 10.11	4 28 36.81	
		4 20 32.28	27 58.97	
		+ 37.83	+ 37.84	

1461 Jan 28.

$$n = +0.27 \quad c = -0.03$$

α Aurigae	δ Aurigae	β Min	γ Min	β Tauri
29.2	56.9	25.0	25.4	3.6
33.2	1.6	28.4	28.6	7.5
37.2	6.6	31.8	32.1	11.3
41.6	11.3	35.4	35.5	15.2
45.2	16.0	38.7	38.7	18.9
146.2	92.4	159.3	160.3	56.5

h 48 37.24	5 7 6.48	5 8 31.86	5 11 32.06	5 18 11.30
	+0.28	-0.4		+ .15
	-0.04	-0.3		- 9.3
	6.82	31.79		11.42
	28.60	53.66		33.04

<i>R Orionis</i>	<i>L Orionis</i>	<i>D U. Min. S.P.</i>	<i>51 (Hes/Cephei)</i>	<i>α Comin majoris</i>
43.8	12.9	15 34.6	33 2.6	35.6
47.3	16.2	16 28.2	34 8.6	38.6
50.7	19.6	17 24.2	<u>36</u> 32.2	42.3
54.0	23.0	18 22.9	37 38.9	45.9
57.5	26.2	19 19.8		49.3
253.3	97.9	129.9		211.5
5 41 50.66	5 40 19.58	6 17 25.98	6 35	6 39 42.30
	+0.03			-0.07
	-0.05			-0.03
	49.58			3.68
	41.27			

Tremulous.

Jan 28.

$$a = -0.06$$

$$n = +0.35$$

H.U.

M East

Sextantis			e Leonis			Moon TTD			s Leonis			e Leonis		
		26.2			31.7			9.7			17.2			47.7
+7	6	29.7	+11	17	35.1	+2	20	13.0	+21°	17	20.6	-2	14	51.0
		33.2			38.6			16.8			24.5			54.2
		36.5			42.1			20.1			28.2			57.8
10	39	40.0	10	42	45.4	10	57	23.5	11	7	31.5	11	24	1.1
		165.6			192.9			43.1			122.0			211.8
10	39	33.12	10	42	38.58	10	57	16.62	11	7	24.40	11	23	54.36
		-0.06			-0.06			-0.06			-0.06			-0.06
		+0.04			+0.07			+0.01			+0.13			-0.01
10	39	33.10	10	42	38.59	10	57	16.57	11	7	24.47	11	23	54.29
10	38	53.95	10	41	59.38				11	6	45.20	11	23	14.97
		+39.15			+39.21						+39.27			+39.32
		39.18			39.19			39.23			39.25			39.30
10	38	53.92	10	41	59.40	10	56	37.34	11	6	45.22	11	23	14.99

$$39.25^{\circ} \text{ at } 11^{\text{h}} 05^{\text{m}}$$

Jan 28

A.U.

v Leonis

7			24.9
0	-0	3	28.1
2			31.5
8			34.7
1	11	30	38.3
8			157.5
6	11	30	31.50
6			- 0.06
1			0.00
9	11	30	31.44
7	11	29	32.15
2			+ 39.29
			39.31
9	11	29	32.13

Jan 29/30 1861

48

185.

<i>Lyrae</i>	<i>Antares</i>	<i>Cygni</i>
48.6	27.5	15.0
52.8	40.8	19.8
57.5	44.2	24.7
1.6	47.8	29.4
5.9	51.1	33.9
166.4	221.4	122.8
(18 32) 57.28	44.28	24.56

Jan 30. 1861

MS.

β Andromedae		δ Ursa minoris		η Perseus		τ Ceti					
36.8		4	1.9		42.1		16.0				
39.0		6	13.3		45.5		19.4				
43.3		8	32.8		49.1		23.1				
47.3		10	43.4		52.6		26.7				
51.3		12	58.8		55.8		30.0				
215.7			150.2		245.1		115.3				
1	2	43.14	1	8	30.04	1	24	49.02	1	38	23.06

MS
d

145. Jan 31 / Feb. 1 1861.

α Lyrae

α Aquilae

56.7

65.3

0.6

69.7

5.2

52.1

9.5

55.6

13.7

58.9

85.9

260.6

18 33 5.18

19 44 52.12

44 0.0

Feb. 14. 1861.

Marsae minoris SP.

st. Nov/Cephæi

Alans majoris

16	40.0	6	33	56.0	35.2
17	37.3		35	5.1	38.8
18	28.6		36	17.1	42.4
19	28.0		37	26.5	45.8
20	23.6		38	34.7	49.3
157.5			139.4		211.5

18	31.50	6	36	15.88	6	40	42.30
						39	3.6

Feb. 18

Feb 19.

M Ear

A.H.

Capella

A.H.		Moon TO		2 Anijae			
		11.3			37.7		44.8
		14.8			41.6		49.5
		19.0			41.7		54.7
		22.5			53.7		59.4
4	37	26.5	4	49	49.8	5	6
		94.1			228.5		212.4
4	37	18.82	4	49	45.90	5	5
							54.48

1860
19.1861
A.H.

All Ear

1860phae.p

α Tami			β Tami			S Tami			Moon 1			X' Orionis		
*	17.1		51.6			42.0			6.8			31.0		
	20.6		55.3			45.5			10.4			34.3		
	24.3		3.1			49.3			14.6			38.0		
	27.9		6.8			52.8			18.3			41.7		
5	10	31.5	5	17		5	28	56.4	5	33	22.0	5	45	45.1
		121.4			176.1		28	246.0			72.1			190.1
5	10	24.28	5	16	59.22	5	28	49.20	5	33	14.42	5	45	38.02

* Minute doubtful. Spring Gov. breaking up

76.19.1861
A.H.

J.H.S.

I Gemino		B.H. 9326		h Gemino		δ Gemino		α ² Gemino	
	2.1	2	44.6		50.6		33.4		27.3
	5.7	3	10.7		54.0		37.0		31.3
	9.5	3	37.4		57.8		40.7		35.3
	13.1	4	4.1		1.2		44.4		39.4
5 55	16.6	4	30.3		4.5		47.9		43.3
	47.0		127.1		168.1		203.4		176.6
5 55	9.40	7 3	37.42	7 11	57.62	7 13	40.68	7 27	35.32

71-1861 Feb. 19

Canis minoris

46.1

49.5

53.1

58.4

59.7

214.8

β Geminorum

32.5

36.2

40.3

44.0

47.6

200.6

7 32 52.96

7 34 40.12

Feb. 20

H.P. 7

Ill. Ear

 α Leonis β Leonis

37.1

45.1

40.3

48.4

43.8

52.0

47.3

55.3

11

31

50.6

11

43

58.8

Feb. 21. 1861

M. East

A.M.

e Geminor		s Geminor		Moon TO *		k Geminor		q Geminor	
	10.3		39.9		51.1		19.8		50.5
	13.9		43.3		54.7		23.2	First rise	54.6
	17.8		47.1		58.6		30.9	last	58.3
	21.5		50.4		2.2		27.2	7 47	2.0
6	37	25.1 6	57	54.1 7	38	6.0 7	35	34.4	
	88.6		234.8		172.6		155.5		
6	37	17.72 6	57	46.96 7	37	58.52 7	35	31.10	

* Moon and k Geminor are interchanged

Feb. 24, 1861

H. P. T.

α Leonis	D I limb	D II limb	δ Leonis	π^5 Leonis
$10^h 2^m 54^s.0$	$10^h 29^m 9^s.9$	$10^h 31^m 27^s.9$	28.3	34.6
57.2	12.9	31.4	31.7	37.9
3 0.8	16.3	34.7	35.1	41.4
3.9	19.8	39.3	38.2	44.9
7.4	23.2	41.7	41.9	48.0
123.3	82.1	176.0	175.3	206.6
10 3 0.66	10 29 16.42	10 31 34.80	10 55 36.06	11 8 41.36
10 1 0.86				
1 59.60				

The atmosphere was very unsteady.

H. P. T.

y
Feb. 25th 1861.

y Campylopus

d. Mrae minoris

AK
ε Tauri" "
α Tauri

				25.2			52.1	
1	7	10.3		28.6			55.5	
	9	34.7		32.3			59.1	
	11	50.7		36.0			2.6	
	13	54.64	22	39.4	4	30	6.1	
				161.5			175.4	
			4	22	32.38	4	29	59.08

This observation was taken by
Chr. 236 in the
usual way of making
chronographic obs.
i.e. Pape's method
At. Jan. 1861-66

Reduced to El. 24
comp. of obs. in 5
El - Chr. + 1 45.1

4125 Feb. 26. 1867

α Leonis	χ Ursae minoris	π Virginis	ϵ Corvi	γ Corvi
49.0	38.3	44.1	57.5	38.5
52.2	42.9	47.2	0.9	41.8
55.7	48.3	50.7	4.8	45.5
59.1	53.3	54.0	8.3	49.0
62.5	58.4	57.4	11.9	52.3
218.5	241.2	253.4	83.4	227.1

11 31 55.70 11 40 48.24 11 55 50.68 12 5 4.68 12 10 45.42

Feb 26. 1867.		March II.		March 27.		March 28.	
9 Virginis	Alcorae	Alcorae	Alcorae	Alcorae	Alcorae	9 Virginis	Alcorae
46.7	58.6	13.1	0.3	30.3			
49.9	2.1	16.3	3.5	36.4			
53.4	6.0	20.0	0.3	42.0			
56.9	9.9	23.5	3.7	45.4			
0.1	13.6	26.7	7.2	46.7			
207.0	90.0	99.6		209.8			
12 14 53.40	12 22 6.00	12 24 19.92	12 27	12 28 41.96			

Feb. 26. 1881
H. P. J.

28 Virgin	2 Ursa major	E Virgin	Q Virgin	43 Comae Ber.
65.4	68.4	14.2	44.2	21.1
48.5	54.2	17.5	47.5	24.6
52.0	0.7	21.1	51.1	28.8
55.4	6.6	24.6	54.4	32.5
58.9	12.7	28.0	57.6	36.3
260.2	122.6	105.4	254.8	143.3

12 36 52.04 12 50 0.52 12 57 21.08 13 450.96 13 7 28.66

7
Feb 26 1881

γ Centauri	α Virginis	δ Virginis	η Ursae majoris	η Bootis
68.6	57.4	35.7	58.6	2.3
49.4	52.6	38.8	3.8	5.7
53.7	58.2	42.2	9.4	9.4
57.8	1.4	45.7	14.3	12.8
2.0	4.7	49.0	19.6	16.3
208.5	170.3	271.4	108.7	46.5
13 14 53.70	13 19 58.06	13 29 42.28	13 44 9.14	13 50 9.30

Feb. 28

AZ

2 Geminor

55.5

59.1

2.9

6.3

6 82 9.7

133.9

6 32 2.78

Probably 10^3 way

Mar. 2. 1861.

α Bootis	ϵ Bootis
25.2	55.8
28.8	59.4
32.6	3.5
36.1	7.3
39.5	11.0
182.2	• 137.0

14 11 32.44 14 28 3.40

Mar 4

A 11

 γ Geminor

" Can Maj

50.4

10.5

53.8

13.5

57.5

17.5

1.0

21.1

6 32 4.3 6

41

24.3

167.0

87.4

6 31 57.40 6

41

17.48

Mar 8.

All East

A.U.

Tauri

14.4

17.9

21.6

25.2

4 30 28.4

107.5

4 30 21.50

March 16

A.U.

H. P. 7.

 α Aurigae β Tauri

6 Cancri

15 Argus

54.0

0.8

30.4

9.2

58.7

4.7

33.9

12.7

3.9

8.6

37.8

16.6

—

12.5

41.9

20.3

5 9 13.3

5 20

16.1

7

57

45.68

4

23.8

42.7

189.6

82.6

5 20

8.547

57

37.924

4

16.52

March 20th

α Cami majoris	α Geminorum	α Cami minoris	β Geminorum	γ Camelopardalis	Bode
13.3	21.5	40.2	26.6		54.3
17.1	25.3	43.5	30.2		26.2
21.1	29.4	47.0	34.3		4.3
25.0	33.3	50.3	38.1		38.1
28.7	37.3	53.6	41.7		12.4
105.2	146.8	234.6	170.9		135.3

7	21	21.04	7	28	29.36	7	34	46.92	7	39	34.18	7	46	3.06
m		- 0.37			- 0.37			- 0.37			- 0.37			
wtg v		+ 0.20			+ 0.03			+ 0.17			+ 0.17			
cond		- .01			- .01			- .01			- .01			
		25 46.24			32 3.59			36 50.95						
		2 42.94			2 42.98			2 43.02						

Rate ± 1.68

2

3

1

4

3

16

Mean Place for 1860.0 of Sirius

Computed as directed in the American Ephemeris for

1860 "Construction etc." p. 1 it would be

$6^h 38^m 58.595^s$ 58.595 1)

58.67 58.670 2)

The place given by the Tabulae Rudolphi is

The Nautical Almanac (British) has
Correction to N.A. in 1858 (Greenwich Observations) $\left. \begin{array}{l} 1857 \} -0.19 \\ 1858 \} -0.25 \end{array} \right\}$ 58.832 58.612 3)

The American Ephemeris

58.860

mean

58.626

- 1) assumes that the motions of α Orionis β Orionis and Procyon is uniform
- 2) " " " α Orionis β Orionis (incl. Procyon) " "
- 3) that the "Nautical Almanac" British represents the motion of Sirius between 1857.8 and 1860 perfectly.

Have the correction of Sirius R. as given in the A.E. ^{1860.0} to reduce it to what seems a probable value is -0.234 .

To reduce it to a correct deduction from the formula by which it is said to be computed -0.265

1)

2)

3)

