KG
11365
6

A.6

Transit Circle
May 1st 1850.
to
October 20, 1850

[illegible]

KG 11365.6

All the moon Culminations
in this book, are reduced

Occultations

Oct. 14
" 13
Aug 30
" 27
" 08
Sept. 13
June 19
May 19

May 14th 2117
77 Leonis
19.4
33.5
46.8
1.2
14.9
28.9
N. 1 5. 42.4

KG 11365.6

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Mr Amos Abbott
Manchester
N.H.

Prof W. Brydone Jack
Kings College
Fredericton
New Brunswick.

May 1st / 2nd 1850 Ill. West (probably)

8d = 7in pend rod = 42in

8d = 7/42 rad. = 1/6 1d = 1/48

1d = 1°..12' = 72' 1 small div = 18'

72
36
108

EC 19..20..00.0
2557 22..02..06.6

α Aquarii
19.5
32.8
47.0
22 01.. 00.5
99.8
60.
159.8
39.95
cor - 20.61
19.34
22 01 17.34

One of the large divisions on the pendulum rod scale of E.C is = 1°..12' & the small divisions = 0°..18'

	direct	corr	
	EC 20..12..30	20..13..28.0	
	2557 22..54..45.3	22..55..43.5	

altered the weight of E.C. to 18 Pounds
vibration 1d/2 more

Fomalhaut
47.8
03.9
19.5
35.6
51.5
07.5
22 52.23.2
189.0
249.0
35.57
22..51..33.57
22..49..20.31
2..13.26
cor arc &c +06
2..13..32

22..55..43.5
2..13.32
22..53.30.18
2..37..00.56
20..16..29.62
3 19 29
20 13..10.33
20..13..28.00
May 2nd diff +17 67
Apr 25 diff +12.4
6) 5 3
.87

Rate of EC + 0s.87
from Apr 25th

21 .14 .20
23 .56 .45.5

2.36..13.82
46.74
2 37.00.56

This morning at 9 o'clock Richard took off the weight from EC & substituted a weight about 3 times as great. This caused the pendulum to vibrate in an arc of 1°..48' more than before

The effect of this was to make the clock lose 6s.5 daily
See 3rd inst.

May 2nd / 3rd Suspension Spring of E.C. altered.

312 23
30.. 25
342 48

Fomalhaut:

50.3
06.5
22.3
38.4
54.0
10.0
22.. 52.. 26.0
2075
2675
38,22
22 .. 51 ..36.22
22 .. 49 .. 20.34
2 .. 15.88
corr + 06
2. 15.94

EC 20.. 07.. 40
2557 22.. 53.. 59.5

20.. 10.. 20
22 56.. 40
2.. 15.94
22.. 54.. 24.06
2.. 40.. 57.11
20.. 13.. 26.95
3.. 18.79
20.. 10.. 08.16
20.. 10.. 20.00
+11.84
16.0
4.2

2..40.10.37
46.74
2. 40.. 57.11

EC lost 6½s on account of the alteration of the maintaining power

Finding the Clock losing the action of suspension spring was shortened 1 inch. leaving the pendulum of the same length

EC 20.. 23.. 00
1282 1.. 37.. 58.2
14.. 58.2

EC 20.. 23.. 30
1282 1.. 38.. 28.2
5.. 14 58.2

5.. 14.. 57.8
4.2
5.. 15.. 02.0

After alteration

Error of EC +12s.7

after alteration

2557 23.. 57.. 29.8
EC 21.. 11.. 00.0
2.. 16.05
23.. 55.. 13.75
2.. 40.. 57.11
21.. 14.. 16.64
3.. 28.76
21.. 10 47.88
21.. 11.. 00.0
+12.12 after alteration

vibrate

EC 20.. 29.. 00
1282 1 46.. 57.8

20.. 33.. 00
1282

3 12.. 23
29.. 36
282..46

312..22
6..14
318..36

Corr

16.6 18.. 39.. 00.0 EC 18 44..30
30.8 21..29..09.6 2557 21.. 34.. 40.5
44.7
58.3
12.0
26.0
21.. 26.. 39.8
228.2
180
408.2

β Aquarii

21 25 58.31

(290)

May $\frac{6^{th}}{7^{th}}$ 1850

Fomalhaut
40.0
56.0
12.0
27.9
43.8
59.9
22.. 51 .. 15.5
2551
1951
27.87
22.. 50 .. 25.87
Inst cor + 0.06
22.. 50 .. 25.93
22.. 49.. 20.43
2557 +1.. 05.50

com
19.. 52.. 00.0 ΣC
22.. 53.. 25.5 2557
1.. 05.50
22.. 52 .. 20.00
2.. 56.. 43.33
19.. 55 . 36.67
~~19.. 55.~~
3.. 15.87
19.. 52 .. 20.80
19.. 52.. 00.00
ΣC Slow − 29.80

direct
ΣC 53.. 00.0
2557 54 .. 25.7

2.. 55.. 56.59
46.74
2.. 56 .. 43.33

Rate from 2^{nd} to 6^{th} = $-8\overset{s}{.}1$

May 9th/10th 1850

29..37
312..23
282..46

01.5 EC 17..57..00.0 3..07..46.25
17.3 2557 2h 10..30.4 46.74
33.0 1..13.15 3 08..32.99
b Cygni 49.0 21..09..17.25
04.8 3..18..32.99
20.6 18..00..44.26
21 08..36.3 2..57.05
1625 17..57 47.21
180 57..00.0
3425 EC -47.2 slow
48.93
21..07..46.93
21..06..33.78
1..13.15

3)26.4
8.8

Rate from 6th to 9th $-8^s.8$

At $19^h..45^m$ Changed back the weights to the original wt

Clock advanced one minute making it fast $+12^s.8$

The effect of increasing the maintaining power three times has been to make the clock to lose $8^s.4$ daily instead of gaining $0^s.9$ as before with the original weight

The arc of vibration increased $1^o/_4 = 1^4/_2$

Richard thinks there must be a new suspension spring.

(292).

May 16th 1850 P.M. Ext. Temp. - 57°

Southern Mark	Northern Mark	Zero
$0^r.975$	0.373	0.005
.980	.368	.007
.973	.360	.008
.982	368	.004
30	29	.006
S $0^r.977$	0.367	
006	006	
0.971	N $0^r.361$	
2.9	2.9	
2919	1089	
1942	722	
2.2339	$0^r.8309$	

$c = -1.384 + \frac{n+s}{2}$

$az = -0.700 + \frac{s-n}{2}$

$(0.971)(2.285) = 2.218$

$(0.361)(2.285) = 0.825$

3.043 $1.521 - 1.384 = +0.137$

1.393 $0.697 - 0.700 = -0.003$

2.233 s

.830 n

$3.063 = n+s$

$1.403 = s-n$

$1.531 = \frac{n+s}{2}$

$0.701 = \frac{s-n}{2}$

$col = -1.384 + 1.531 = +0.148$

$az = -0.700 + .701 = +0.001$

$col = +0.147$

$az = +0.001$

May 14/15th

E.C. – 19..11..0
2557 – 22.43..41

22..43..41..0
1..24..89

22..42..16.11
3..28..15.77

19..14..00.34
3..09.05

19..10..51.29
19..11..00
+ 8.71

3..27..29.03
46.74

3..28..15.77

E.C. fast of Camb. 9.5
E.C. slow of B 16
− 6.5

E.C. – 19..20..0
3710 – 19..20.24.1

19..20..0
6.5

19..20..06.5
3710 – 19..20.24.1
3710 fast B + 17.6

15th Am
2557 – 23..16..0
333 – 23..16..6.3

Ill: Wert. (294)
2557.

1850
May - 16th

12 Can. Ven.
9 . 36.2
9 . 54.3
0 . 12.8
0 . 30.1
0 . 47.6
1 . 5.4
12 .. 51 .. 23.5
209.9
29.99
2
12 .. 50 .. 27.99
49 .. 01.28
+1 .. 26.71

EC. 9 .. 15 .. 0
2557 – 12 .. 54 .. 59.5

3 .. 35 .. 22.14
46.74
3 .. 36 .. 08.88
12 .. 54 .. 59.5
1 .. 26.71
12 .. 53 .. 32.79
3 .. 36 .. 08.88
9 .. 17 .. 23.91
1 .. 31.3
9 .. 15 .. 52.6
EC 9 .. 16 .. 00
+ 7.4
16
B – 8.6

12 Can Ven 12 .. 48 – 273 .. 16
Spica – 13 .. 17 – 302 .. 00

EC – 9 .. 52 .. 0
2557 – 13 .. 31 .. 5.3
13 . 31 . 5.3
1 . 26.7
13 . 29 .. 38.6
3 .. 36 .. 08.88
9 . 53 .. 29.72
1 .. 37.2
9 .. 51 . 52.5
9 .. 52 .. 00
C + 7.5
16
B – 8.5

cal +.28
az = 00
lev = 00
+28

17th
2557 – 6 .. 56 .. 0
333 – 6 .. 56 . 10

19th 2557 – 11 .. 09 .. 38.5
1 . 34.2
11 .. 08 .. 04.3
3 .. 47 .. 58 .. 55
7 .. 20 .. 05.75
1 . 12.2
7 . 18 .. 53.65
EC 7 .. 19 .. 00.00
Cam + 6.35
16.
Bm – 9.7

3 .. 47 .. 11.81
46.74
3 .. 47 . 58.55

* 21°
cal +0.15
az +0.00
lev –0.10
+0.05

1 .. 34.15
+05
1 .. 34.20
+10
1 .. 34.27

12 .. 13 .. 29
16 .. 13.30
11 .. 57 .. 15.70
3 .. 47 .. 58.55
8 .. 09 .. 17.15
1 .. 20. 14
8 .. 07 .. 57.01 Im G. P. B.

3 .. 47 .. 11.81
46.74
3 .. 47 .. 58.55

11 .. 58 .. 50.5
1 .. 34.27
11 .. 57 .. 16.23
3 .. 47 .. 58.55
8 .. 09 .. 17.68
1 .. 20.15
8 .. 7 .. 57.53 Im B.

Ms. ment. (295)
2557.

May 19th

α Urs. Maj 4 32.5 lost G.
4 2.5 F
4 32.0 E
+69° 6 2.0 D
6 31.7 C.
7 1.7 B
10 .. 57 .. 31.2 A
133.6
120
7) 13.6
10) 56 .. 01 . 94
−2
10 .. 55 .. 59 . 94
Inst. error = +28
10 .. 56 .. 00 . 22
10 .. 54 .. 25 . 53
~~Inst. errors~~ 1 .. 34 . 29

D's 1st Limb
1 . 19.2
1 . 33.4
1 .. 47.2
+7° 2 .. 1.8
2 .. 15.9
2 .. 30.0
11 .. 12 .. 44.0
191.5
180
7) 11.5
1.64
−2
11 .. 11 .. 59.64
Instr. errors = +.14
11 .. 11 .. 59.78
1 .. 34.70
11 .. 10 .. 25.48

Imm 77 Leonis W.C.B
2557 – 11 .. 58 .. 54. –7
3.5
11 .. 58 .. 50.5

δ Leonis
7 . 0.0
7 . 14.8
7 . 29.5
+21° 7 . 44.3
7 . 58.8
8 . 13.5
11 .. 08 .. 28.4
189.3
120.
7) 309.3
44.19
−2
11 .. 07 .. 42.19
11 .. 06 .. 08.04
1 .. 34.15
Instr. err. = +14
.29

77 Leonis
4 . 19.4
4 . 33.5
4 . 46.8
+7° 5 . 1.2
5 .. 14.9
5 .. 28.9
11 .. 15 .. 42.4
187.1
−180
7) 7.1
1.02
−2
11 . 14 .. 59.02
11 .. 13 .. 24.69
−1 .. 34.33
Inst. errors = +.14
1 .. 34.47

Immersion
2440 h m
R.F.B 11 .. 46 .. 39^{5}_{3} −6
11 . 46 . 36.0

α Urs. maj 10 .. 54 −249 .. 49
δ Leonis – 11 . 06 −291 .. 02

E.C. – 7 .. 19 .. 0
2557 – 11 . 09 . 38.5

G.P.B.
Immersion 77 Leonis. 2419
12 .. 13 .. 40 −22
.11
12 .. 13 .. 29

2557 W.C.B
Em 13h .. 13 .. 16.2 −8 −2h
4
13 .. 13 .. 12.2
1 .. 34.38
13 .. 11 .. 37.82
9 .. 47 .. 38.55
9 .. 23 .. 59.27
1 .. 52 . 36
9 .. 22 .. 06.91 Em

1 .. 34.17
+21
1 .. 34.38

2557 – 12 .. 02 .. 0
2440 – 11 .. 49 .. 45.9
12 .. 14.1

2557 – 12 .. 10 . 0
2419 – 12 .. 24 .. 39
14 .. 39

Im. of 77 Leonis May 19th 8h .. 07m .. 57s.53 W.C.B
8 .. 07 .. 57.0 G.P.B.
Em " 9 .. 22 .. 06.9 W.C.B.

May 21/22 ♃ Am

Fomalhaut
3 first lost
22 ..51 ..02.1 mid
18.2
34.0
22 ..51 ..49.8
104.1
26.02
cor = − 23.89
22 51 2.13
22 51 0.13

Ill. West

E.C. 19 ..1 .35
2557 – 23 ..2 ..07.
23..02..07
−1..39.2
23.00..27.8
3..55..51.67
19.04..36.13
3.07.5
19.01..28.6
EC 19.01..35
☾ +6.4
16
B −9.6

Fomalhaut 22..49 – 342..48
α Pegasi 22..57 – 297..59

3..55..04.92
46.75
3.55..51.67.

2557 – 0..33..0
333 – 0..32..56

23 ☽
2557 – 23..01..0
333 – 23..08.51.7

May 19th

	Sid. Time h m s	Tob. R s	
α Ursæ Majoris	10..54..25.91	25.93	−.02
δ Leonis	11..06..07.97	08.04	−.07
☾ 1st limb	11..10..25.41		
77 Leonis	11..13..24.64	24.69	−.05

Ile curt (297)

May 23/24th Am

2557

Therm° 45°

α Aquarii

10.1
24.0
38.0
51.6
5.1
18.6
22 .. 00 .. 32.

1794
18
3594
51.34
21.. 59.. 49.34
21.. 58.. 05.13
+1 .. 44.21

E.C. 17.53 .50
2557 22.02 10
1.. 44.21
22.. 00 .. 25.79
4.. 03.. 44.78
17.. 56 .. 41.01
2.. 56.40
15.. 53.. 44.62
15.. 53.. 50.00
EC +5.38
16.0
E.C. Slow −10.6 of Boston

4.. 02.. 58.03
46.75
4.. 03 44.78

EC 18.. 47. 0
CY 18 .. 46 .. 27.2

α Aquarii — 21.. 58 — 313.. 25 (h m ° ′)
α Pis. aus — 22. 49 — 342.. 48
α Pegasi — 22. 57 — 297.. 59

May 27/28th Am

α Aquarii

9 . 20.4
9 . 34.4
9 . 48.2
0 . 2.1
0 . 15.6
0 . 29.1
22 .. 00 .. 43.0
12.8
1.83
−2
21 .. 59 .. 59.83
21 .. 58 .. 5.25
1 .. 54.58
1 .. 44.21
4) 10 37 (+2.59

E.C. 18.. 32 .10
2557 22.. 56. 36
22.. 56.. 36
1.. 54.58
22.. 54.. 41.42
4.. 19.. 30.99
18.. 35.. 10.43
3.. 02.7
18.. 32.. 07.7
EC 18.. 32. 10.0
Cam +2.3
16
−13.7
EC Slow of B

4.. 18.. 44.25
46.74
4.. 19.. 30.99

1850

Ile west(298)
2557.

May 29th

η Urs. Majs
2 .. 34.7
2 .. 56.6
3 .. 18.2
3 .. 40.0
4 .. 0.5
4 .. 22.4
13 .. 44 .. 44.0
216.4
60
7)276
39.43
-2
13 .. 43 .. 37.43
41 .. 38.70
1 .. 58.73

η Bootis
8 .. 50.8
9 .. 6.0
9 .. 20.2
9 .. 34.3
9 .. 48.8
0 .. 4.0
13 .. 50 .. 18.3
1824
60
7)242.4
34.63
-2
13 .. 49 .. 32.63
7 .. 33.82
1 .. 58.81

Lamp went out, much troubled

α Virginis $13^h..17^m$ — 322..45
η Urs. Majs 13..41 — 262..19
η Bootis — 13..47 — 293..14
α Bootis — 14..09 — 292..25
ε Bootis — 14..38 — 284..41
α² Libræ — 14..42 — 327..48
β Urs. Min. 14..51 — 237..37
β Libræ — 15..08 — 321..12
E.C. — 9 .. 28 .. 0
2557 — 13 .. 58 .. 54.5

α Bootis
0 .. 7.5
0 .. 22.5
0 .. 37.2
0 .. 51.3
1 .. 5.9
1 .. 20.5
14 .. 11 .. 35.4
180.3
180
7)360.3
51.47
-2
14 .. 10 .. 49.47
8 .. 50.57
1 .. 58.90

ε Bootis
42.0
57.0
12.5
29.
44.0
59.3
14 .. 41 .. 15.0
258.8
60
19.8.8
28.40
14 40 26.40

α² Libræ
55.0
9.3
23.7
38.0
52.3
6.5
14 .. 45 .. 20.6
205.4
60
265.4
37.91
14 44 35.91

β Urs. Min.
.. 50 .. 38.7
51 .. 31.7
52 .. 23.7
53 .. 15.5
54 .. 08.0
54 .. 59.6
14 .. 55 .. 51.3
228.4
120
7)108.4
15.49

19 .. 13 .. 00
1 .. 58.90
13 .. 11 .. 01.10
13 .. 27 .. 91.5
16.90.40

29th Pole

2557 – 13..13..0 Set – 13..15..6

2419 – 13..27..31.5 2419 – 13..12..31.5

2..28.5

1..59.6

→29.5 2419 Slow

Polaris – 0.40 – 223..53

δ Ceti – 1..16 – 321..20

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29 EC – 19..11..55

30 Am 2557 – 23..44..27

23..44..27.0

1..59.8

23..42..27.2

4..27..24.1

19..15..03.1

3 09.3

19..11..53.8

EC 19..11..55

Corr + 1.2

16.0

B – 14.8

4..26..37.37

46.74

4..27..24.11

EC – 19..21..0

Cy – 19..20..19

19..21..0

1.2

19..20.58.8

19.20.19

Cy Corr – 39.8

19..21..14.8

19..20.19

– 55.8

June 1/2d Am

Polaris

2557 – 1^h..07^m..01^s mid wire

June 2/3

δ Pegasi

5 . 28.5
5 . 42.6
5 . 56.5
6 . 10.5
6 . 24.5
6 . 38.5
22 .. 36 .. 52.3

253.4
180.0
2)73.4
10.49
-2

22 .. 36 .. 08.49
22 .. 33 .. 59.58
2 .. 08.91

EC – 17 .. 51 .. 15
2557 – 22 .. 39 .. 31
22 .. 39 .. 31
2 .. 08.91
22 .. 37 .. 22.09
4 .. 43 .. 10.33
17 .. 54 .. 11.76
2 .. 56. 0
17 .. 51 .. 15.76
EC 17 .. 51 .. 15.00
slow of C 0.76
16
of Bos 16.76

δ Pegasi – 22 .. 33 – 302 .. 21
Fomal – 22 .. 49 – 342 .. 48
α Pegasi – 22 .. 57 – 298 .. 00

4 .. 42 .. 23 .. 59
46.74
4 .. 43 .. 10.33

76
4)1.96 f.s

6th Am
8
-1.5
EC - 2.3
3.5
-5.8 0.47 Comb.

4,5)10,2(2,27
9 0
1 20
90
300

Rate of 2557 + 2.27

Fomalhaut
44.2
0.5
16.5
32.3
48.2
4.0
22 . 52 .. 20.0
165.7
60.
225.7
32.24
22 51 30.24

June 7/8 1850

312..23
28..16
284..07

α Androm.
15.0
30.8
46.3
02.0
17.5
33.0
0.. 03 48.6
1932
.132
01.89
0.. 02..59.89
0.. 00..39.06
2557 +2..20.83

EC 18..58..00
2557 0..06..23.7
fast 2..20.8
0..04..02.9
5..02.53.13
19..01..09.77
3..06.95
18 58..02.82
EC 18..58..00.00
EC Slow −2.8

5..02..06.38
46.75
53.13

Rate of EC − 0.4s

312..23
−19..58
292..25

June 11th
Arcturus.
0.37.0
0.52.0
1..6.8
1.21.4
1.36.2
1..50.8
14..12 .05.3
209.5
60
144.5
21.36
−2
14..11..19.36
14..08..50.57
+02..28.85

E.C. 8.55.0
2557 14.18.38.5
14..18.38.5
−2..28.85
14..16..09.65
5..18.39.57
8.58.30.28
1..28.15
8.56..02.13

5.17..52.61
46.74
5.18..39.37

EC 9..5..0
2557 14.27.40
14.27.40
2.28.8
14..25..11.2
5..18.39.4
9..06.31.8
1..29.5
9..05..02.3
EC 9..05..00
−2.3

Ice event (302).
2557

June 11/12th

α Androm 2 ..24.2
2 .. 40.2
2 .. 56.0
3 .. 11.5
3 .. 27.2
3 .. 42.8
0 .. 03 .. 58.3
2602
180
1802
11.46
-2
0 .. 03 .. 09.46
0 .. 00 .. 39.18
+ 2 .. 30.28

γ Pegasi 20.9
7 .. 35.2
7 .. 49.8
8 .. 4
8 .. 18.0
8 .. 32.5
0 .08 .. 46.5
206.9
180
7/26
3. 84
-2
0 .. 08 .. 01.84
0 .. 05 .. 31.45
+ 2 .. 30.39

α Androm. 0 .. 0 — 284 .. 07
γ Pegasi - 0 .. 5 — 298 .. 02

E.C. - 18 .. 52 .. 40
2557 - 0 .. 16 .. 57.5

EC - 18 .. 55 .. 40
2557 - 0 .. 19 .. 58
24 .. 19 .. 58
- 2. 30.3
24 .. 17 .. 27.7
5 .. 18 .. 39.3
18 .. 58 .. 48.4
3 .. 06.6
18 .. 55 .. 41.8
18 .. 55 .. 40
- 1.8
16
17.8

5 .. 17 .. 52.61
46.74
5 .. 18 .. 39.35

EC - 19 .. 02 .. 0
Ħ 365 - 19 .. 01 .. 53.2
2 .. 17.8
1 .. 53.2
- 24.6

	12 Can Ven	Spica
	12 .. 51 .. 34.37	13 .. 19 .. 52.83
corrected R	12 .. 49 .. 01.00	13 .. 17 .. 19.14
	2 .. 33.37	2 .. 33.69

13th 6 PM
Level

E	W
58.5	50.0 × E
58.0	50.0 × E
× 50.8	55.0
× 50.0	54.0
173	90
54.32	52.25
52.25	
2.07	
1.03	

E too high +0.07 = Level error.
+0.07 ?

lev. -0.07

From the pencil mark × E I infer that it is probable that the Level readings E W should have been W E this makes a better agreement between 12 Can Ven & Spica by 0.16 & also with the probable level error at that date qu if +0.07

az +0.20
Col +0.10
Lev = 0.00

-10°
lev - 0.04
az + .07
col + .09
+ 20
+ 0.00
+ 0.10
+ 0.16
0.26

+ 39°
cor. lev - 0.12 for can ven
col + 0.12
+ 0.02
+ .02 error
+ 0.00
+ 0.13
+ 0.02
+ 0.15

Ill west (303S)

June 13th 2557

Azimuths Recd by Steamer α Leo - 10..0 - 299..41
12 Can Ven - 12..48 - 273..15
α Virginis 13..17 - 322..45
η Urs. Maj. 13..41 - 262..19
α Bootis 14..09 - 292..25

α Leonis 2 15.8
2 30.
2 44.2
2 58.2 —
3 12.6
3 26.3
10..03 ..40.2
217.5
180
7)397.5
~~10..02 56.78~~
~~10..00 -2.72~~
~~10..02..54.78~~
10..00..22.72
~~2..32.06~~

EC - 4..36..50
2557 - 10..6..43

2267
180
7)4067
58.10
56.10
10..02..56.10
10..00..22.72
2..33.38

EC - 4..39..0 — - 4..40..0
204 - 9..22..1.7 207 - 9..22..50.7
— 4..41..0 — 4..42..0
206 - 9..24..41.6 202 - 9..24..47.1

EC 4..59..00.0 — 4..59.30
204 9..43.01.7 207 9..42..20.7

EC 5..00..00 — 5..00.30
206 9..43.41.7 202 9..43..17.2

12 Can Ven 0 43.3
1 0.5
1 18.5
1 36.5 —
1 54.3
2 12.0
12..52..29.5
1974.6
60
7)2534.6
36.37
-2.
12..51..34.37
12..48..00.90
2..33.47
Cor lev col az + .15
2..33.62

Spica
9 12.6
9 27.0
9 41.0
9 55.0 -
0 09.0
0 22.7
13..20..36.5
203.8
180.
7)383.8
54.83
-2
13..19..52..80
13..17..19..08
2..33..75
+26
2..34.04

12th Cal Imm at 7..50 - 6 South

EC 7..53..05
2557 13..23..30.5

2557 - 14..19..0
Cy I - 8..47..58

D. Limb vis.

obs Imm of 82 Cancri - 6th mag
W.C.B 2557 - 14..14..26.8 - 5

2557 + 2m..33s.9
at 14h.14m

R.F.B Cy. 497 - 8h..43m..28s.4 - 12 B

Both observers noticed the star
slightly projected on the ☽'s limb
B 1 1/2 B 3 - 3s -

June 13th.
Imm Star 8th mag - 2' South of centre

2557 - 14,,27,,13.2 –5
2.5
14,, 27,, 10.7

10
1.4
40
16
140

2,,33.70
.14
2,,33.84

Imm Star of $\frac{10^{th}}{9}$ mag - 6 South of Centre
2557 – 14,,33,,59.5 –5 seemed to make double?

Star 10 mag - 2 North of centre

2557 – 14,,36,,42.0 –5

14,,27,,10.7
2,,33.84
14,,14,,36.86
5,,26,,32.46
8,,48,,04.40
1,,26.59
8,,46,,37.81 Im ✱ 8 mag.

14,,33,,59.5
2.5
14,,33,,57.0
2,,33.86
14,,31,,23.14
5,,26,,32.46
9,,04,,50.68
1,,29.24
9,,03,,21.44 Im ✱ 9.5 mag

2,,33.70
+16
2,,33.86

June 13/14th Therm' 67

EC. 18..48..0 —— 18..50..0 —— 6..52..0 — 6..53..0
1369 – 17..15..18.3 207 – 11..32..48.4 202 – 11..34..44.9 206 – 11..36..40

—— 18..55..0
204 – 11..39..01.2

D's 1st Limb 9..53 – 299..17
α Leonis 10..0 – 299..41

14th
E.C. – 4..17..22
2557 – 9..51..10.5

5..29..42.28
46.75
5..30..29.03

2557 – 9..57..10.5
2..35.7
9..48..34.8
5..30..29.0
4..18..05.8
42.3
4..17..23.5
EC. 4..17..22.0
– 1.5
16
17.5

Ile west – 2557 –

D's 1st Limb	α Leonis	12 Can Ven.
7.35.8	2..18.0	0.45.8
7.51.2	2..32.2	1..3.5
8.6.0	2..46.3	1.21.0
+17° 8.20.3	+13° 3..0.3	+39° 1..39.0
8.34.8	3..14.5	1.56.7
8..49.2	3..28.6	2.14.0
9..59.03.5	10..03..42.5	12..52..31.6
200.8	182.4	211.6
60	180	60
7)140.8	7)2.4	7)271.6
20.11	00.34	38.80
–2	–2	2
9..58..18.11	10..02..58.34	12..51..36.80
	10..00..22.71	12..49..00.89
	+ 2..35.63	+ 2..35.91
col. +.12	col +.11	col. +.12
az +.11	lev +.06	lev – .09
lev. –.06	az +.11	az +.05
9..58..18.34	2..35.79	2..35.99
2..35.74	2..35.75	2..36.04
9..55..42.60	.04	05

col 0.11
lev 0.11
az 11
33

In

11h..30m
2557 + 2m..36s.1

June 14

	Sid. Time	Tab. R
☾ 1 limb	9..55..42.60	
α Leonis	10..00..22.75	22.71
12 Can. Ven.	12..49..00.84	00.89

h m s
11.25 35..89

June 14th
Immersion α Leonis
B1 Gr Eq. Instanter
2557 11 .. 30 .. 37.5 – 14
– 7
11 .. 30 .. 30.5

Imm α Leo. 5 .. 55 0.37" South
Em ... 7 .. 08 – 1 .. 11 – " –

B3
$\overline{365}$ = 5, 56. 22.4 . 8 beats off
– 3.2
5 .. 56 .. 19.2

11 .. 30 .. 30.5
5 .. 56 .. 19.2
5 .. 34 .. 11.3
5 .. 34 .. 11.6
0.3

11 .. 30 .. 30.5
2 .. 36.1
11 .. 27 .. 54.4 Sid Time
~~5 .. 30 .. 29.03~~
5 .. 57 .. 25.37
0 .. 58.55
M.S.T. 5 .. 56 .. 26.82

GPB Imm 5ft Equa
2419 11 .. 28 .. 29.7 – 13 beats very fine
6.5
11 .. 28 . 23 2
Dif. 2557 & 2419 2 .. 07.1
GPB 2557 11 30 .. 30.3

4ft F.
2557 – 11 .. 33 .. 0
365 – 5 .. 58 .. 48
5 .. 34 .. 12

2257 – 11 .. 35 .. 0
365 – 6 .. 00 .. 47.

Occultation of Regulus

M.S.T. Ims. 5h .. 56m .. 26s.8 W.C.B. good
26.6 G.P.B.
Em 7 .. 08 .. 50.7 W.C.B. very good.
.. 52.2 GPB

B1 – 2557 – Instantin – val
Em 12 .. 43 .. 10.5 – 8
– 4
12 .. 43 .. 06.5
2 .. 36.34
Sid. Time 12 .. 40 .. 30.16
5 .. 30 .. 29.03
7 .. 10 .. 01.13
1 .. 10.45
7 .. 08 .. 50.66

2557 11 .. 46 .. 06
2419 11 .. 43 .. 52.90
2 .. 07.1

B3
Em $\overline{365}$ = 7.08.51.4 . 18 beats off
7.2 7.2
7.08 .. 43.2

beats together
2557 – 12 .. 55 .. 0
2419 – 12 .. 52 .. 53
2 .. 07

Emersion G.P.B
2419 5ft Equa.
12 .. 41 .. 10.0 – 18
9
12 .. 41 .. 01.0
2 .. 07.0
12 .. 43 .. 08.0
~~5 .. 30 .. 29.03~~
~~7 .. 09 .. 24.97~~

2557 – 12 .. 46 .. 0
365 – 7 .. 11 .. 36
5 .. 34 .. 24.0
6

June 18/19 Am

E.C. – 18 .. 12 .. 0
CY – 18 .. 11 .. 14.3
(Put forw^{d}. Cy 1^{m})

June 17
Immersion α Leonis

11 .. 30 .. 30.5
2 .. 35.7
11 .. 27 .. 54.8
5 .. 30 . 29.0
5 .. 56 .. 25.8
58.4
5 .. 55 .. 27.4
Cal. 5 .. 55 .. 54
+ 26.6
Em 12 .. 43 .. 06.5
2 .. 35.8
12 .. 40 . 30.7
5 .. 30 . 29.0
7 . 10 . 01.7
1 . 10.5
7 .. 08 .. 51 .2
8 .. 18
– 33 .2

June 19 P.M.

2557.
ε Boötis
0 .. 30.5
0 . 46.0
1 .. 1.5
1 . 17.0
1 . 32.3
1 . 48.0
14 .. 42 .. 03.7
179.0
60
7)119.0
17.0
– 2
14 .. 41 .. 15.0
14 .. 38 .. 27.52
2 .. 47.48

ε Boötis 14 .. 38 . – 284 .. 39
42 – 327 .. 48
α Serpentis 15 .. 36 – 305 .. 29

EC – 8 .. 52 55
2557 – 14 .. 47 . 22.5
14 .. 47 . 22.5
2 .. 47.5
14 . 44 . 35.0
5 .. 50 .. 15.8
8 .. 54 .. 19.2
7 .. 58 .. 41.36
53 .. 57.15
18.95
.20
7 .. 52 .. 51.66
7 .. 52 . 55 .. 0
+ 3 .34

5 .. 49 .. 29.06
46.74
5 .. 50 .. 15.80

June 19th
Pll
J.G set back
3^{m}

α Serpentis
8 . 2.8
. 17.0
9 . 31.0
9 . 45.0
9 .. 58.7
0 .. 12.3
15 .. 40 .. 26.5
1933
120
7)313.3
44.76
– 2
15 .. 39 .. 42.76
15 .. 36 .. 54.64
2 .48 .12

June 20
11 Am Therm^{o} – 92
noon – 94
2 P.M. – 95

June 21^st^ Int Therm° 78

E.C. 0..19..30 2557 6..22..0 2257 6..23..0 2557 6..24..0
2557 6..20..59 2419 6..20..6.7 2440 6..08..35.4 IG 6..21..59

2557 6..26..0 2557 6..27..0
2442 6..52..58.2 B10 6..19..16.8

E.C. 0..27..0 — 0..28..0 — 0..29..0 — 0..30..0
207 5..09..17.5 204 5..11..50.5 202 5..11..17.5 206 5..13..16

S	N	Zero	
1.04	0.250	0.005	2.0
1.05	257	990	19.8
1.05	~~200~~	.000	37.3
1.06	257	997	55.1
1.06	235	0.998	12.8
1.052	0,252		30.5
002	002	12^h^ 52^m^	48^s^.0
1.054	0.254		
23	23		
3162	762		
2108	508		
2.4242	5842		

az = −0.700 + 0.920 = +0.22
col = −1.384 + 1.504 = +0.12

N 0.584
S 2.424
S+N 3.008
S−N 1.840
1.504
.920

az = +0^s^.22 E. of S.
col = +0.12 E. of S W.W.

lev = 0.00 about by estimation

39..08 12^h..49
42..22
3..14

June 21st. P.M

G.P.B
12 Can. Venat.
2.0
19.8
37.3
55.1
12.8
30.5
12..52..48.0
2055
3855
55.07
12.. 51..53.07
12.. 49.. 00.77
2..52.30
14t - 2..35.91
7)16.39(2.34
14
2.39
24/25t.

G.H.S. Spica Virginis
19 29
19 47.5
19 56.5
9 11
25
9 39
13 29 52.5
13 20 10.79
7 271.3
13..20..11.50
13..17..19.00
2..52.50

F.H.S. ds
G.P.B rec.
Antares
6. 49.8
7 04.3
18.7
33.8
7 48.4
8. 02.7
16 08..17.5
175.2
60
7/235.2
16.07.33.60

F.H.S. ds
G.P.B rec.
Antares 22.0
2. 37.4
2. 52.4
3..07.7
3..23.4
3..38.3
16..23 53.4
234.6
180
7/54.6
16.23.07.80
16..20..15.34
2.52.46

21st -
12. Can. ven. - 12^h..49^m..00^s.65
☽ 1st limb - 16..04..41.18
α Virginis - 13..17..19.08
Antares - 16..21..15.20

2557
21 - 2..52.30
9.36
1.17
26th Am 3..02.83
2.34
3.00.49

June 24/25
E.C. - 19..14..5.0
2557 - 1..30..4.5
1..30..4.50
3..02.83
25..27..01.67
2.34
25..27..04.01
6..09..54.60
19..17..09.41
18..56..53.24
16..57.21
8.97
41
19..13.59.83
E.C. 19.14.05.0
+5.17

6..09..07.85
46.75
6.09..54.60

25th
12 Can. ven.
5.8
23.0
41.2
12..52.58.0

June 25th
Arcturus

1..10.7
1..25.3
1..40.0
1..54.6
2..9.5
2..24.2
14..12..38.8
2031
180
7)383.1
54.73
-2
14..11..52.73
14.08..50.39
2557 - +3..02..34
19^{h}
2..47.48
6)14.86/2.48
12
28

E.C - 8..44.0
2557 - 15..02..13.5
15..02..13.5
3..02.3
14..59..11.2
6..13..51.1
8..45..20.1
7..58..41.36
44..52.63
19.94
.10
8..43..54.03
EC - 8..44..00
+05.97
16
-10.03

6..13..04.41
46.74
6..13..51.15

$25/26^{h}$ Am
EC - 18..14..0
365 - 18..13.38.2
18..14..0
10.
18.14.10
13.38.2
-31.8

25 P.M. +3.02.34
to 27 - - +4.96
3.07.30
+1.2
3.08.5

June $\frac{26}{27}$

E.C. 26th - 20 .. 44 .. 15   2557 - 30 .. 12 .. 0   2557 3 .. 13 . 0 - 3 .. 14 .. 0
2557 - 3 .. 08 .. 25.5   2419 - 3 .. 10 .. 16   dy - 3 .. 10 .. 53 2440 3 .. 59 .. 17.5

E.C - 20 .. 47 . 0   —— 20 .. 52 .. 0   —— 20 .. 53 .. 0   —— 20 .. 56 .. 0
1369 - 20 .. 38 .. 57.3   204 - 13 .. 35 .. 40.5   202 - 13 .. 34 .. 54.3   206 - 13 .. 38 .. 53.3

E.C - 20 .. 58 .. 0
2 07 - 13 .. 39 .. 51.1

28 Am
E C - 18 .. 44 .. 40
2557 - 1 .. 12 .. 29
25 .. 12 .. 29
3 .. 08.5
25 .. 09 .. 20.5
6 .. 21 .. 44.3
18 .. 47 .. 36.2
17 .. 57 .. 03.07
46 .. 52.30
35.90
.20
18 .. 44 .. 31.47
EC - 18 .. 44 .. 40.00
C + 8.53
16
B - 7.5

6 .. 20 .. 57.52
46.74
6 .. 21 .. 44.26

Saturday Evg - June

at EC $9^h .. 55^m .. 50^s$
Saw a very large meteor in the NNE - A thunder shower passing at the time in that direction - But it was not lighthing as it moved slow enough to be followed by the eye. It appeared to be a globe of 1/4 the size of the Moon with two or three fragments accompanying it - With a train following it. It was probably beyond the cloud as it looked misty - (the cloud was somewhat dense cirrus such as always extends above the heavy thunder clouds   course 5° as far as seen   ended in alt 12° az az 20° E of N   Commenced when seen in alt 16° az 23° E of N
duration 1^s

B

Jun 30 AM Ill west
July 1 2557

312..23
22..45
289..38

2557
α Arietis
1..16.8
1..32.0
1..46.8
2..01.8
2..16.6
2..31.5
2..02..46.3
7)11.8
1.70
-2
2..01..59.70
1..58..44.10
+3..15.60

EC 19..28..30
2557 2..08..21.5
2..08..21.5
3..15.6
26..05..05.9
6..33..33.9
19..31..32.0
18..56..53.24
30..54.76
31.91
19..28..19.91
EC 19..28..30
+10.1
16
-5.9

6..32..47.19
46.74
6..33..33.93

July 4th

α Bootis 1.34.0
1.48.2
2, 3.0
2.18.0
2.32.3
2..46.8
14..13..01.5
18.38
60
7/123.8
17.69
-.2
14..12..15.69
14..08..50.29
+3..25.40

E.C. 7..21..5
2557 – 14..14..49.5
14..14..49.5
3..25.4
14..11..24.1
6..49..20.2
7..22..03.9
6..58..51.19
21..56.39
2.99
90
7..20..51.47
EC 7.21.05
Cam + 13.53
16.00
B – 2.47

6..48..33.42
46.74
6..49..20.66

α Bootis 14..08 – 292..25
ε Bootis – 14..39 – 284..41

5 Adl
EC + 14.0
7h 15.1

July 4/5th Am

E.C. $\overset{7}{19}$..40..0 — 7..41..0 — 7..42..0 — 7..43..0
207 – 12..21..21.3 202 – 12..22..29.3 206 – 12..24..24 204 – 12..26..35.8

EC – 19..44..30
2557 – 2..40..17.5

July $\frac{7^{th}}{8^{th}}$ 1850

α Arietis
35.9
50.8
06.0
20.5
35.6
50.5
2.. 03.. 05.0
2043
1443
20.61
2.. 02.. 18.61
1.. 58.. 44.32
2557 + 3.. 34.29

7)18.7
+ 2.67 = Rate of 2557
7.. 0.. 23.09
46.74
7.. 1.. 09.83

807
4

εC 18.. 57.. 00
2557 2.. 04.. 35.7
2.. 04.. 35.7
3.. 34.3
26.. 01.. 01.4
7.. 01.. 09.83
18.. 59.. 51.57
17.. 57.. 03.07
58.. 50.33
50.86
.57
18.. 56.. 44.83
εC 18.. 57.. 00
+ 15.17 Cam
16
− .83 B

July 10th/11th

2557 + 3..42.4
EC 19..18..00
2557 2..37..33.3
~~19..14..17.6~~
~~7..12..59.5~~
2 ~~01..18.1~~
2..33..50.9
7..12..59.5
19..20..51.4
18..56..53.24
19..56.72
50.86
19..17..41.22
19..18..00.00
EC +18.8
(Error) of 2557 1.9
16.9

α Tauri
19.0
33.5
47.8
02.1
16.3
30.8
4..31..45.0
1945
1450
2.07
4..31..00.07
4..27..19.08
3..41.00

+16..12
312..22
296..10

EC 21..14..00
2557 4..33..52.35

July 12th at 11 Am

Charles W Tuttle came on trial as an assistant at the Observatory if found satisfactory he will expect 400 dollars a year inclusive of Board & lodging - or 300 dollars in addition to Board & lodging.

Put him to learn reading by verniers gave him the first lesson beginning at zero on the Bowditch Comet seeker.

(31.6)

July 12th

α Herculis 0 ..54.0
1 .. 8.6
1 . 23.0
1 ..37.3
1 .. 54.5
2 .. 5.6
17 ..12 ..19.6
199.6
66
7)259.6
37.09
-1/2
17 ..11 ..35.09
17 ..07 ..50.46
+ 3 ..44.63

Ill west
2557

ƐC 9 ..48 ..55
2557 17 ..14 ..49.5
17 ..14.. 49.5
3 .. 44.63
17 ..11 ..04.87
7 ..20 .. 52.62
9 ..50 ..12.25
8 .. 58.. 31.53
49 ..51.81
11.97
.25
9 ..48 .. 35.56
ƐC 9 ..48 ..55.00
C + 19.44
16
B + 3.44

7 ..20 ..05.88
46.74
7.20.52.62

δ Aquilæ 19 ..17 — 315 .. 12
γ — " — 19 ..39 — 302 .. 08
α Aquila 19 ..43 — 303 .. 55
β Aquila 19 ..47 — 306 .. 21

α Herculis 17 ..07 — 297 .. 49
β Draconis 17 ..27 — 259 .. 59
α Ophiuchi 17 ..27 — 299 .. 42

α Ophiuchi
1 .4.5
X .19.0
1 .33.0
1 .47.2
2 . 1.3
2 .15.4
17 ..32 ..29.5
149.9
180
7)329.9
47.13
-1/2
17 31 ..45.13
17 ..28 ..00.35
+3 ..44.78

July 14/15 Adl

7..27..58.99
46.75
7..28..45.74

312.23
2..35
309 48

α Persei $3^h..13^m$
312..23
49.19
263..04

α Aritis $1^h..58^m$
249°..38'

3..50.3
EC 19..06..00
2557 2..41..21.6
2..37..31.4
7..28..45.74
19..08..45.66
3..08.07
19..05..37.5
EC 19..06..00.0
EC fast +22.5
Cor. 2557 0.5
EC +23.0
16.0
EC +7.0 of Boston

α Persei 3rd wire Cloudy
13.'
3..17..10.5 3rd
13,8 sec 49°"20'=21 18
3..17..31.68
2
3..17 29.68
3..13 39.60
2557 +3..50.68

185
61

July 15th P.M. 1850

Meridian Marks

	North	South
	0.23	1.04
	0.25	1.04
	0.23	1.03
	0.23	1.04
	0.237	1.038
	0.992	0.992
Dist	0,245	1.046
	23	23
	735	3138
	490	2092
n	0.5635	s 2.4058 s
	2.383	0.563
	2)2.946	2)1.820
	1.473	0.910
	-1.384	-700
	0.089	0.21

2.4058 s
.5635 n
2.9693 = s+m
1.8423 = s−n
$1.4846 = \frac{s+n}{2}$
$.9211 = \frac{s-n}{2}$

Zero

0.99	1.05
1.00	1.10
0.98	1.09
1.00	1.04
0.992	

Level

W	E
× 48	39
× 48	39
43	44 ×
43	44 ×
45.5	41.5
41.5	
4.0	

2."0 = 0.s13

Lev. = +0.12

Coll. = +0.s09 E of S like W
az = +0.21 E of S
Lev = +0.13 W too high

July 16th -
E.C. – 19.. 03 .. 50
2559 – 2 .. 43 . 09

E.C. – 19.. 10.. 0
204 – 11.. 53 . 33.7

July 16th Att

Sent to Mr Walker by Mr 9 sheets of Manuscript Liverpool Comparisons of Chronometers for the Month of July 1849

July 17 P.M.

β Ceti

2 .. 13.3
2 .. 27.4
2 .. 41.3
2 .. 55.1
3 .. 9.0
3 .. 23.0
15 .. 13 .. 36.8

2059
1809

18th Am
~~EC~~ 6 . 04 , 00
18 365 = 6 . 03 . 38 . 8

7/385.9
55.13
−2
15 .. 12 .. 53.13
15 .. 08 .. 58.01
+ 3 .. 55 .12

EC – 7 .. 30 .. 35
2557 – 15 .. 15 .. 54

50
09

15 .. 15 .. 54
3 .. 55 .12
15 .. 11 .. 58.88
7 .. 40 .. 35.4
7 .. 31 .. 23.48
~~6~~ .. 58 .. 57.19
30 .. 54.92
22.94
48
7 .. 30 .. 09.53
35 00
EC + C   + 25.47
16
β   + 9.47

β Libræ 15 .. 09 .. 32 .. 12

7 .. 39 .. 48.66
46.74
7 .. 40 .. 35.40

E.C. 6 . 04 .. 0.0
26.0
6 .. 03 .. 34.0
365 – 6 .. 03 .. 38.8
+ 4.8
365 fast of Camb
July 18th 6 Am

18th Am
EC – 18 .. 19 .. 0
CY – 18 .. 18 .. 10.5

July 18th J. J. B No 333.
2557 – 12 .. 11 .. 0
333 – 12 .. 15 .. 39.2

2557 – 18 .. 14 .. 0
333 – 18 .. 18 .. 38.2

12 .. 11 . 0
3 .. 57.6
12 .. 07 .. 02.4
333 . 12 .. 15 . 39.2
+ 8 .. 36.8

July 18th - S.S.

South mark

North mark

α Lyrae . 18 h 31 m - 27° 3' 44

B r 1.108
1.080
1.085
1.085
1.090
5)448
1.0896

J 1.072
1.035
.040
.043
.055
5)265
1.530

July 19th - PM
E.C. 8 . 38 .. 00
365 - 8 .. 37 .. 35.7

2557 — 16 .. 36 .. 0
J.D.B. 333 - 16 .. 40 .. 33.3

20th Am
E.C. 19 .. 22 .. 0
2557 - 3 .. 17 .. 12

20th Am
2557 - 3 .. 16 .. 0
333 - 3 .. 20 .. 31.7

2557 m s
17th + 3 .. 55 . 12
12 + 3 .. 44 . 7
5)11 . 42 / 2.28

4th + 3 .. 25 . 40
12 + 3 . 44 . 70
8)19 . 30 / 2.41
16
33
69
+2 . 34 Rate of 2557

2557 fast 17th PM - 3 .. 55 . 12
1 . 17
18th Am 3 . 56 . 29
4 . 68
20th Am 4 .. 0 . 97

E.C. fast of Cam 28.1 s

20th Am Sed No 333
2557 - 3 .. 47 .. 0
333 - 3 .. 42 .. 29.8
3 .. 47 .. 00.0
4 .. 01
3 . 42 . 59 . 0
3 . 42 .. 29 . 8
333 — 29 . 2

)7.6 / .25

2557 - 3 .. 16 .. 0
- 4 .. 0 . 97
3 .. 11 .. 59 . 03
333 - 3 .. 20 .. 31 . 7
+ 8 . 32 . 67

(322) [illegible]

July 22/23^{d} Am

α Arietis
11.0
26.0
40.7
55.8
10.7
25.6
2 .03 .40.5
21.03
39.03
55.76
2.. 02.. 53.76
1.. 58. 44.80
4.. 08.95

ΣC 17.51 .30
2557 1 .58 .21.5
4.. 09.0
1.. 54 .. 12.5
8.. 00 .. 18.2
17 .. 53 .. 54.3
2.. 55. ~~6~~3
17 .. 50 .. 58.4
17.. 51.. 30.0
ΣC + 31.6
16
ΣC + 15.6 of Boston

3.. 38 +23.. 38
312.. 23
288.. 45
h m
α Arietis 1.. 58 – 289.. 38

2557 – 5.. 07.. 0
JG – 5.. 02.. 34.3
5.. 07.. 0.0
4. 8.9
5.02.. 51.1
JG 5.02.31.3
–19.8

July 23/24 1850

θ Persei
49.8
11.0
.31.9
53.0
14.2
35.3
3 18.. 56.0
2512
12
3712
53.03
3.. 17.. 51.03
3.. 13 .. 39.37
2557 +4 .. 11.66
5.4
26ᵗ 4 .. 17.06

EC 19.. 12.. 00
2557 3.. 23.. 03.4
4.. 11.7
3 .. 18 .. 51.7
8.. 04.. 13.7
19 .. 14 .. 38.0
3.. 09.2
19.. 11 .. 28.8
EC 19.. 12.. 00.0
+31.2
16.0
+15.2 of Boston

49.19
312.23
263°.04'
34.. 13'

26ᵗ
EC – 19 .06 .. 40
2557 – 3.. 25 .38
3.. 25 .. 38
4.. 17.06
27 .. 21 .. 20.94
8.. 12.. 07.85
19 .. 09 .. 13.09
18.. 56.. 53.24
8.. 58.52
12.96
.09
– 19 .06 .04.81
19.. 06.. 40
+35.19
16
19.2

8.. 11.. 21.11
46.74
8 .12 .. 07.85

2.7
5.4

26 P.M.
2557 – 14.. 25.. 0
JJB-333 14 .. 20 .. 43

July 24/25 Adl

Ther 77°.5

EC 22..06..00.0
2557 6..21..29.8

July 26t. Evg. Ne West. 2557

α Lyrae
5..19.8
5..37.5
5..55.3
6..13.0
6..30.7
6..48.2
18..37..06.0
2105
120
7) 90.5
12.93
-2
18..36..10.93
18..31..53.82
4..17.11

EC -9..58..30
2557 18..20..55
18..20..55.00
4..17.11
18..16..37.89
8..16..04.40
10..00..33.49
9..58..21.70
32.919
9..58..55.10
30
+34.90

α Lyra 18..31 - 273..44
β Lyra 18..44 - 279..12

8..15..17.66
46.74
8..16..04.40

2 6

)7.85
1.30
3) 6.55
2.2

26/27 Am

EC 17..48..50
2557 2..11..32.5
2..11..32.5
4..18.3
26..07..14.2
8..16..04.4
17..51..09..8
16..57..12.90
50..57.64
8.97
80
17..48..14.31
EC 17..48..50
C +35.7
16
B +19.7

2557 - 2..18..0
333 - 2..13..43.2
2..18..0
4..18.3
2..13..41.7
2..13..43.2
333 +1.5

July 31st Rate of 2557 $+2^{s}.3$

23..38
312..23
288..45

27th AM 4..18.4
31 9.2
4..27.6

EC 19..30..00
2557 4..08..50.4
4..27.6
4..04..22.8
8..31..50.63
19..32..32.17
3..12..08
19 29..20..09
19..30..00..00
+39.91
16
EC +23.9 of Boston

August 1st 20h
J Gibson −6 beats = $2^{s}.5$
α Lyrae
17.0
34.5
57.6
9.6
27.0
44.5
18..32..02.0
1862
120
662
9.46
2.5
18..31..06..95
18..31..53.77
JG −46.82

EC − 9..56..0
JG − 18..35..53.3
46.82
18..36..40.12
8..39..43..74
9..56..56.38
1..37.80
9..55..18.58
9..56..00.0
EC + 41.4 1st 10h P.M.
0.5
41.9 2nd AM.
16
EC + 25.5 of Boston Aug 2nd AM

Rate of EC $+1^{s}.1$

33.3 clouds
50 2 mid
18..44..06.5

1850.

(326)

August 6/7th Ill. west
2557.
α orionis
h m beats s
T 5 .. 57 .. 10 − 10 = 5
1 . 20 − 12 = 14 − 9
1 . 31 − 4 = 29 − 15
1 . 50 − 6 = 47 − 18
2 .. 4 − 8 = 0 − 13
2 17 − 3 = 15.5 − 15.5
2 32 = 0 = 32 − 16.5
164 142.5
180
344
− 43
7/301
8th aug 4

β Piscis min 2557
D. 53 .. 19.5
4 .. 08.0
5 .. 04.0
5 .. 58.0
6 .. 49.5
7 .. 41.5
14 .. 08 . 34.0
mean 14 .. 55 .. 56.36
14 .. 51 .. 10.76
+ 4 .. 45.60

August 7/8 Ill. west

Aug st 8th T. 2557
α Coronæ 15 .. 32 .. 23 − 3 beats
39 − 4
55 − 5
08 . 0
25 − 3
40 − 4
15 .. 33 . 55 − 3
234.00
− 180
7/54.00
15 .. 33 .. 07.71
15 .. 28 .. 21.25
+ 4 .. 46.46

August 8th MCB - 23ft Refractor

Imm α Leonis quick Emersion
2557 9h 50m .. 10s = 6b _ 10h 20m 50s − 3 Instantly

at the Emersion there was no cloud perceptable the reappearance was quick and decided, very near the place where I was looking for it, the clock I had previously regulated

The star passed our meridian while under occultation.

August 8th
α Bootis

2 .. 54.9
3 .. 9.5
3 .. 24.6
3 .. 38.6
3 .. 53.3
4 .. 8.0
14 .. 14 .. 22.5
210.8
60
7)270.8
38.69
−2
14 .. 13 .. 36.69
14 .. 08 .. 49.81
+ 4 .. 46.88
July 26th − 4 .. 16.71
13/30.17/2.32
26
41
39
27

8th Evg
EC − 8 .. 59.30
2557 − 18 .. 12 .. 15.5
18 .. 12 .. 15.5
4 .. 47.28
18 .. 07 .. 28.22
9 .. 07 .. 19.62
9 .. 00 .. 08.60
8 .. 58 .. 31.53
7.98
.60
8 .. 58 .. 40.11
EC − 8 .. 59 .. 30.00
EC + 49.89
16
Brl 33.9

8th/9th Am
EC − 6 .. 48 .. 0
3710 − 6 .. 47 .. 33.2
6 .. 48 .. 33.9 34.4
7 .. 26.1
33.2

He west
2557.

Sid. m. m.
9 .. 6 .. 32 .. 88
46.74
9 .. 7 .. 19.62

4 .. 46.88
+ 32
4 .. 47 20

4
6.96
1.16
3½ − 8.12
46.88
12h 4 .. 55.00

α Bootis 14 .. 8 − 292° .. 25′

Immersion of α Leonis
9 .. 50 .. 10 − 6t
3
9 .. 50 .. 07.00
4 .. 46.48
9 .. 45 .. 20.52
9 .. 07 .. 19.62
0 .. 38 .. 00.90
0 .. 37 .. 53.77
90
0 .. 37 .. 54.67
R.T.P.'s Cal. 0 .. 38 .. 04.
9.33

Emersion
10 .. 20 .. 50 − 3t
−1.5
10 .. 20 .. 48.5
4 .. 46.51
10 .. 16 .. 01.99
−9 .. 07 .. 19.62
1 .. 08 .. 42.37
0 .. 59 .. 50.17
7 .. 58.69
41.88
.37
1 .. 08 .. 31.11
R.T.P.'s Cal 1 .. 06 .. 46.
1 .. 45.1
9.3
obs. duration 1 .. 54.4
+ cal − .. − 5

Im − 0 .. 37 .. 54.67
Em − 1 .. 08 .. 31.11
obs 30 .. 36.44
Cal − 28.42
1 .. 54.4

By another cal. correcting for inst. Errors
Im 0h 37m 54s.4
α Leonis Em 1h 08m 30s.8

Aug 9/10 Ill. west
a Orionis 2557
By. 5h 51m ..14s - 4 beats
1 28 - 3
1 41
1 55 - 2
2 8
2 23 - 2
5.. 52 .. 36
199.5
180
h 7)379.5
5.. 51.. 54.21
5.. 47.. 03.49
+4.. 50.72

7..58 - Smith. 13.37

Aug 12th Ill. west
a Serpentis 2557
By. 15h.. 41m.. 10s - 2 beats
1 ,, 24 - 3
1 ,, 38 - 3
1 ,, 52 - 3
2,, 6 - 3
2,, 20 - 3
15.. 42,, 34 - 3
174.0
+180
h 7)354.0
15.. 41.. 50.57
15.. 36.. 54.23
+ 4.. 56.34

August 11/12th Am

EC _ 18.. 28.. 0
2557 3.. 54.. 14.5
3.. 54.. 10.5
4.. 55.0
27.. 49.. 15.50
9.. 19.. 09.28
18.. 30.. 06.22
3.. 56.56
~~18.. 30.. 06.22~~
17.. 57.. 03.07
29.. 55.08
5.98
.22
18.. 27.. 04.35
EC - 18.. 28.04.00
+ 59.65
16
B +43.65

9.. 22.. 19.10
46.74
9.. 23.. 05.84
9.. 18.. 22.54
46.74
9.. 19.. 09.28

EC - 18.. 41.. 0
365 - 18.. 40.. 8.5
18.. 41.. 0
43.6
6.. 40.16.4
6.. 40.. 08.5
365 Slow 7.9

3.. 54.. 14.5
4.. 55.0
27.. 49.. 19.5
9.. 19.. 09.28
18.. 30.. 10.22
17.. 57.. 03.07
29.. 55.08
9.97
.22
18.. 27.. 08.34
EC - 18.. 28
EC + 51.66
16
+35.66

Aug. 14 Ill. west 5h S. M.

Arcturus 2557

T. 14h..13m..07.0s
3 22.0
3 36.5
3 51.0
4 05.5
4 20.0
14..14..35.0
1)177.0
180
7)357..0
14h.13..51.00
14. 8..49.86
+5..01.14

2557
8th 4..46.88
14 5..00 85
6) 13 9 7 (2.2
13
19
14th + 5..00.85
2.2
1.1
16th Am + 5.04.15

9..34..08.76
46.74
9.34.55.50

15th / 16th Am
2557 − 4..9..0
365 − 6..25.44.8
4..9..0.00
5..04.15
28..03..55.85
9..34..55.50
18.29..00.05
17..57..03.07
28..55.25
.05
6..25..58.37
365. 6..25..44.8
365 − 13.57
16

6
365 − 18.31.52.1
EC − 18..33..0
18..31.52.1
13.57
Cam 18.32.05.67
EC. 18.33..00
Caml + 54.33
1.6
B + 38.3

EC − 18..44..0
365 − 18..42..52
18..44..0
B 38.3
18..43.21.7
365. 18.42.52
− 29.7
16
− 45.7

Aug. 14 S. M.

T. E.C. 5..23..30.0
2557 − 14..59..29.5

14..59..29.5
+ 5..00.85
14..54..28.65
9..30..58.94
5..23..29.71
4..59..10.85
22..56.23
28.92
70
5..22..36.70
E.C. 5..23..30.00
E.C. + 53.30

9..30..12.20
46.74
9..30..58.94

(331) (Sic.

Jupiter's 4 Sat Elong.
Prof Coakley
of St James College
Maryland

Aug 15^{th}/16th A.m.
Aldebaran 2557
4^h.. 31^m.. 42^s
1 .. 56.5
2 .. 11
2 .. 25
2 .. 39.5
2 .. 54
4.. 33.. 8.5
236 5
−60
7)176.5
4..32..25. 21
4..27..20.04
+5.. 5.17

Aug. 16/17 A.M.
7. Aldebaran 2557
4^h..31.. 45
1 59.5
2 13.5
2 28
2 42.5
2 56.5
4..33.. 10.5
255.5
60.
7)195.5
4..32..27.93
4..27.20.12
+5..07.81

h m s
E.C. 21..40..30
2557 11.. 27..47

11..27.. 47
5.. 07.81
11..22..39.19
9..42..48.61
1..39 ..50.58
59 .. 50.17
38 .. 53.61
49.86
.57

1 ..39 ..34.21
E.C. 1 40 ..30.
+..55.79

9.. 42..01.87
+46.74
..42..48.61

Aug 18/19th A.M. Ill. west
β Orionis 2557
5^h.. 11..51
2.. 5
2..19
2..33
2..46
2 60
13..14.5
7)228.5
5.. 12..32.64
5.. 07..20.47
5.. 12.17

E.C. 23..14..30
2557 9..09..19

Aug. 19 P.M. Ill. west
Arcturus 2557
13..19.5
3.. 34.0
3..48.5
4.. 3.0
4..17.7
4..32.1
14..14..46.5
201.3
180.
7)21.3
14..14..03.04
14.08..49.65
+5..13.39

9..09..19.00
5..12.17
9..04..06.83
24
33..04..06.83
9..46..45.16
23..17..21.67
22..56..13.92
16..57.21
20.94
66
23..13..32.79
23..14..30.
E.C. +57.27

9..45..58.42
+46.74
9..46..45.16

9.. 53..57.53
46.74
9.54.38.27

β orionis

21^s Am 2557 + 5^m..17^s.65
2557 5..58..0
366 – 7..54..20
5..58..0
5..17.95
29..52..42.1
9..54.38
19..58.04
18..56..53.26
57..50.49
3.99
7..54..47.82
7..52.20
27.82
16
43.8

Aug. 21 S. M.

β Libræ 2557
15..13..34.5
3..48.5
4..2.5
4..16.5
4..30.5
4..44.
14..58.5
235.0
120.
7)115.0
15..14..16.43
15..08..57.62
5..18.81

Aug 22 S. M.
Spica 2557
13..21..57.5
2..12
2..25.5
2..39.5
2..53.5
3..7.5
13..23..21.5
217.0
60
7)277.0
13..22..39.56
13..17..18.36
+5..21.20

Aug: 21/22 A. M.

Sirius 2557
6..43..10
3..24
3..38.5
3..53
4..7
4..21.5
6..44..35.5
189.5
180.
7)369.5
6..43..52.78
6..38..32.54
5..20.24

E.C. 20..30..20
2557 6..36..37

6..36..37
5..20.24
6..31..16.76
24
30..31..16.76
9..58..34.82
20..32..41.94
19..56..43.40
31..54.75
40.88
.93
20 29 19.96
~~E.C. 20 30 20~~
E.C. +1..00.04

9..57..48.08
+46.74
9..58..34.82

Aug. 23 Meridian Marks
Ill West

Ill west
Coll = + 0.09 $0^{s}.12$
az = + 0.20 $0^{s}.15$
Level = + 0.11

South
1^{s}.018
.017
.025
.018
.040
023
/141
1,023
23
3069
2046
2,3529

North
0.282
.310
.290
.275
.275
.298
530
0,288
23
864
576
0.6624

$S = 2^{s}.353$
$n = 0.662$
3.015
1.691
$1.507 - 1^{s}.384$ = Col = $+0^{s}.12$
$0.846 - 0.700$ = az = + 0,15

1.023
.016
1,033
2.3
3099
2066
2.37593

.288
23
864
576
.6624 n
2,37598
3,0222 = s+n
1.5191

.288
.010
298
1.7135 = s−n
.8587 = $\frac{s-n}{2}$
1.5191 = $\frac{s+n}{2}$

.288
.010
.298
2.3
894
596
.6854 n
2.3759 s
3,0613 = s+n
1.5307 = $\frac{s+n}{2}$
1.6905 = s−n
.8452

B' Scorpii
16 .. 03 .. 55.0 last wire

δ Ophiuchi
1 .. 15.9
1 .. 29.5
1 .. 43.5
1 .. 57.2
2 .. 11.0
2 .. 24.7
16 .. 12 .. 38.4
220.2
180.0
7)400.2
57.17
−2
16 .. 11 .. 55.17
06 .. 30.65
+ 5 .. 24.52

Antares
24.5
41.0 mid
16 .. 25 .. 56.5

10 .. 05 .. 41.19
46.74
10 .. 6 .. 27.93

EC — 6 .. 15 .. 40
2557 — 16 .. 27 .. 32
16 .. 27 .. 32.00
5 .. 24.52
16 .. 22 .. 07.08
10 .. 06 .. 27.93
6 .. 15 .. 39.15
5 .. 59 .. 01.02
14 .. 57.54
38.89
15
6 .. 14 .. 37.60
6 .. 15 .. 40
EC. + 1 .. 02.40

239 — .8 Slow of E.C

August 25th/26 Am.

α Tauri ~ 4h..27m – 296..11

α Tauri
2..10.2
2..24.8
2..39.5
2..53.5
3..7.5
3..21.8
4..33..36.0
193.3
180
7/373.3
53.33
–2
4..32..51.33
+10
+11
4..32..51.54
4..27..20.42
+5..31.12
16/17 – 5..07.81
9/23 .31 /2.59 rate
18
53

EC – 18..13..00
2557 – 4..34..47.5
4..34..47.5
.51..31.12
28..29..16.38
10..14..21.03
18..14..55.35
17..57..03.07
13.57.71
54.84
.35
18..11.55.97
EC – 18..13..00
+1..04.03
16
B +48

10..13..34.29
46.74
10..14..21.03

EC – 7..12..0
365 – 7..10..25
7..12..0
48
7.11..12
365 7.10.25
–47

Aug 27

Im * br Limb
WCB
2557 – 22..00..36 – 6
22..00..33
5..35.32
21..54..57.68

2557 – 22..4..0
2419 – 22..4..2

2557 – 22..06..0
IG – 22..00..58.8
5..01.2
21..55..21
22..00..22.2

C.T.
IG – 21h..55m..21s

G.P.B.
2419 – 22..00..43.5 – 26
–10
22..00..33.5

Im of 73 Ceti Aug. 27d 11h..30m..50s.1 WCB
11..30..48.5 G.P.B.
Em " "

(336)

Augst. 27^{t} Emersion 79 X & Ceti

C T h m s
Dg — 23.. 2.. 5.0

2557. 23.. 11.. 0
Dg — 23.05.. 59
5.. 01

2557 — 23.. 20.. 0
2419 — 23. 20.. 2.1
2.1

23.. 2.5
5.01
23.07.06
23.07.04.0
2.1
23.07.01.9

g P B

2419 — 11.. 07.. 20 — 32
16
28.07.04

23.. 07.. 04
22.. 00.. 33.5
1.. 6.305
10.9
1.. 06.. 19.6
11.. 30.485
12.. 37 08.1

23.. 02.. 05.0
5.. 03.1
23.. 07.. 08.1

Ill. Event — 2557.

27/28th Am.
α Tauri
15.0
29.7
44.0
58.2
12.4
26.7
4 .33 .41.0
227 0
180
7) 407.0
58.14
− 2
4 .. 32 .. 56.14
4 .. 27 .. 20.47
5 .. 35.67
35 — Ann Ins. errors
5.. 36.02
.70
5.. 35.32

EC — 17.. 58.. 25
2557 — 4.. 28.. 6.5
4.. 28.06.5
5.. 35.7
28.. 22.. 30.8
10.. 22.. 14.14
18.. 00.. 16.7
17.. 57.. 03.07
15.95
.70
17.. 57.. 19.72
EC 17.. 58 25
c + 1.05.3
16
B + 49.3

10.. 21.. 27.40
46.74
10.. 22.. 14.14

29^{t} Am
EC fast of Boston
49.^{s}8

28/29^{t} Am
EC — 20.. 52.. 0
1369 — 17.. 49.. 37.2

24) 2.59 (
.108 Ham rate 2557
6.5
540
648
.7020

(337)

August 30th – 10m Past noon.

occ. Aldebaran Immersion Br limb

hm m s
2557 – 10 .. 50 .. 01.8
5 .. 41 .84
10 .. 44 .. 19.96
10 .. 34 .. 03.80
10 .. 16.16
1.68
Im. 0h0 .. 10m .. 14.48

disappeared instantly
good observation

10 .. 33 .. 17.06
46.74
10 .. 34 03.80

10 .. 50 .. 01.8
5 .. 42.8
10 .. 44 .. 19.0
10 .. 34 .. 03.80
+ 10 .. 15.20
– 1.7
obs. M.S.T Im. α Tauri 10 .. 13.5
calculation 0 .. 9 .. 51
+ 22.5

Polaris S.P. Ile west 2557 –

12 .. 54 .. 06.5 – B

colimt. +0.15 lev
col. +0.18
az +0.01
+0.34

5 .. 42.28
+.34
5 .. 42.62
84
5 .. 41.78

.108 hour rate 2557
7.8
864
756
.8424

Im. α Tauri Aug. 30th 0h .. 10m .. 14s.5 7 8 C B good Disappeared instantly

August 30th. Ill west. No 2557.
α Lyra

β' 6 45.0
7 . 2.5
7 . 20.0
7 . 37.6
7 . 35.0
8 .. 12.8
18 .. 38 .. 30.3
263.2
60
7) 263.2
37/2 . 6.0
18 .. 37 .. 35.60
18 .. 31 .. 53 32
5 .. 42 .28

EC – 8.02 .. 0
2557 – 18.41 .. 58

α Lyra – 18 .. 32 – 273 .. 44
β Lyra – 18 .. 44 – 279 .. 12
ζ Aquila – 18 .. 58 – 298 .. 44
δ Aquila – 19 .. 17 – 309 .. 34
γ – .. — 19 .. 39 – 302 .. 08
α – .. — 19 .. 43 – 303 .. 54
β – .. — 19 .. 47 – 306 .. 21
α² Capricorni 20 .. 10 – 325 .. 23

30/31st 2557 Ill. west
α Tauri
2 . 22.4
2 . 37.2
2 . 57.5
3 .. 6.0
3 . 20.1
3 .. 34.0
4 .. 33 .. 48.4
219.6
180
7/ 39.6
5.66
2
4 .. 33 .. 03 .. 66
4 .. 27 .. 20 .. 55
+ 5 .. 43 .11
35
5 .. 43.46
+ 35
5 ,, 43 . 81
1 1.91
5 ,, 41. 90

EC – 18 .. 13 .. 35
2557 – 4 .. 55 .14
4 .. 55 .. 14.00
5 .. 43.11
28 .. 49 .. 30.89
10 .. 34 .. 03. 80
18 .. 15 .. 27.09
2 .. 59.5
18 .. 12 .. 27.6
18 .. 13 . 35.0
EC + 1 .. 07.4
16
+ 51.4

10 .. 33 .. 17.06
46.74
10 .. 34 .. 03.80

10 ,, 50, 01.8

ar .09
col .14
lev .11
+ .35

.108 hours var
17.8
804
756
108
1.9164

Septr 3

α Cygni

18.0
37.0
56.8
15.8
35.0
54.5
20..43..13.5
23 06
1106
15.80
20..42..13.80
36 21.72
5..52..08
4 days 9.6
7th 20h 6..01.7
7th 7 [illegible] 1.3
6..00.4

EC 9..49..0
2557 20..45..8.5
5..52.1

20..39..16.40
10..49..50.00
9..49..26.40

20..45.8.5
5.52.1
20.39.16.4
10.49.49.8
9.49.26.6
1.36.5
9.47.50.1
9.49.0
1.09.9
1.6
+ 53.9
4th Dn 54.4

α Cygni 20..36 267..39

10..49..03.07
46.74
49.81

30th 5..42.5
3 5..52.1
4) 9.6
2.40

Sept 6/7th Am

α Can. min. 6..38 -- 328..54

EC 19..47..00
2557 6..56..42.3
6..00.4
19..40..59.6
11..00..39.7
8..39..19.9
1..25.1
8..37..54.8

6..56..42.3
6..00.4
6..50..41.9
11..01..39.2
19..49..02.2
3 14.8
19..45..47.4
19..47..00.0
1..12.6
16

EC +56.6 of Boston

Sept 8/9th Am

Sirius
43 . 58.3
4 . 13.0
4 . 27.2
4 . 41.3 -
4 . 55.4
5 9.7
6 ..45 ..24
228.9
60.1
7)2889
6.. 44 ..41.27
6.. 38.. 32.98
6 ..08. 29
20
6.. 06. 29

EC - 10.. 17 ..40
2557 - 6.. 34 ..13

EC. 19.. 47.. 00
2557 7.. 04..38

7.. 04.. 38
− 6.. 08. 29
6.. 58.. 29. 71
11.. 09.. 32. 77
19 ..48.. 56. 94
18.. 56.. 53. 29
47.. 52. 19
53. 84
.99
19.. 45 ..42. 19
19.. 47 ..00. 00
EC + 1.. 17 .87 + 2.0 s
16
1 .01.9
2.0
EC 0..59.9 fast of Boston

11.. 08.. 46.03
+ 46.74
11..09.. 32. 77
~~18..56..53.23~~
~~3..06.26~~
~~3 46.47~~
19..48..56.94
3..14.78
19..45.42.16

1850 P.M. (341 [illegible])

Sept. 9 2557 a Cygni

C. W. T obs. G. P. B. recorded

1 31.3
1 50.8
2 09.9
2 29.3 –
2 48.8
3 07.8
20 „ 43 „ 27.4
7)205.3
20 „ 42 „ 29.33
20 „ 36 „ 21.67
6 „ 07.66

312.23
7 „ 22
305 „ 01

Sept 10 P.M. 2557 C. W. T.
Antares

5 38.0
5 53.5
6 9.0
6 24.5
6 39.5
6 55.0
16 „ 27 „ 10.0
229.5
60 „
7)169.5
16 „ 26 „ 24.21
16 „ 20 „ 14.52
+6 „ 09.69

1850. Sept 10th.

$\overline{207}$ = 8.37.00.
1.16.44.9

Sept 12 P.M. 2557 C. W. T
a Serpentis Ill west

27.5
41
54.5
8.5
22.5
36
50
240.0
180
7)60.0
15 „ 43 „ 08.57
15 „ 36 „ 59.78
+6 „ 14.79

Sept 12/13 Am
α orionis

2 41.3
2 55.3 140
3 9.2 13.9
3 23.1 13.9
3 37.2 14.1
3 51.0 13.8
5 .54 .04.7 13.7
221 .8
60
7)161 .8 (23.27
14
21
27
08
48
40

4,29
14
43

5 , 53 . 21 . 27
5 . 47 . 04 43
+6 .16 .84

5 .. 59 .. 29 , 11
5 .. 47 .. 04 , 49
06 .. 18 .68

312 .. 23
22 .. 15
7 .. 11 290 .. 08

5 .. 59 .. 29

13th

9 .. 28 .. 00.0
727 2 .. 09 .53.5 - Gleamed

Mr Lovat - 2557

E.C. 18 .25 .. 0
2557 - 5 .58 .13

5 , 54 , 13 :
6 , 17 , 25
5 , 51 , 55 , 75
11 , 25 , 18 , 58
18 , 26 , 36 , 77
3 , 1 . 3
18 , 23 , 35 , 47
18 , 25 , 00 .
+1 , 24 . 53
16
of Boston +1 , 08 , 53
2
1 , 06 , 53
59 , 9
6)6 , 63 (1.1

1 , 06 . 53
1 . 1
1 , 7 , 63

5 .. 59 .. 28.11
5 .. 47 .. 04 .40
6 .. 18.71
+29 cor for errors inst.
6 . 17 . 00

5 .. 47 - 305 . 01

11 , 24 , 32 . 24
46 . 74
11 , 25 , 18 , 98

6 .. 17 . 4
E2 19 .. 33 .. 00
2557 7 .. 06 .. 24.2
7 .. 00 .. 06.8
11 .. 25 .. 18 . 99
19 .. 34 .. 47 , 81
3 .. 12 . 46
19 .. 31 .. 35 . 35
19 .. 33 .. 00 00
1 .. 24 . 65
16
Sept 13th AM EC + . 1 .. 08 . 65
of Boston

cor for Lev + 0.09
" " col + 0.14
az + 0.06
+ 0.29

Friday Sept 13 A.M. 1850 Comparison of Chronometers

J. G. compared with 2557

2557 8..50..20
J. G. 8..43..38.56
6..41:44
2557 is fast 6..16:84
J. G. −24:60

Glover 10 comp. with 2557

10 5..26..00
2557 9..01..52.2
3..35..52.2
2557 is + 6..16 84
10 is − 3..29..35.36

2492 comp with 2557

2492..10..36..55
2557.10..04..01.0
..32..54 0
2557 is + 6..16.84
2492 is + 26..37.16

2557 10..13..40
2440 9..54..28.5
19..11.5
2557 is + 6..16.84
2440 is − 12..54.66

2419 comp with 2557

2419 10..20..30
2557 10..20..08
..22
2557 is + 6..16.84
2419 is + 6..38.84
10..20..30
10..13..51.16

6..07.66
5..52.08
6)..15.58
24)2.59(.10
2.4
19

Sept - 13th. 6098 B.A.C.

Immersion of B A C - 6098 - 13' South of D centre

2557 - 20.. 12.. 47.7 - 2 W.C B. G. Equa

6.. 18.81
1.15
6

1
20.. 12.. 46.7
6.. 18.35
20.. 06.. 28.40
11.. 29.. 15.54
8.. 37.. 12.86
1.. 24.. 73
8.. 35.. 48.13

6.20.15
1.83
1.85

11.. 28.. 28.80 6.. 19.. 00
+ 46.74 + 1.. 15
11.. 29.. 15.54 6.. 20.. 15

6542
8231

Imm. Star of 8th mag - north of D's South Limb - W.C. B. G. E
69.90
50
19.9

L 2557
20.. 23.. 25.5 - 2

Im 8h.. 35m.. 48s.14 W.C.B. G.R.

Sept 14th 1848 5.0.
(14/15th)?
a Orionis

2.45.8
3.00.0
3.13.8
3.27.9
3.41.5
3.55.0
5.54.09.0
7)193.0(27.57
14
53
49
40
35
50
2
25.57

.028
6
.168

5.47.04.29
0.17
5.47.04.46

5.53.25.57
5.47.04.46
+ 6.21.11
corrn + .30
6.. 21.41
rate - 3.08
6.. 18.33

5.53.25.57
5.47.04.46
+ 6.21.11
5.56.03.40
5.49.42.29
11.33.12.09
18.16.30.20
~~[illegible]~~ 3.00.60
18.13.29.60
18.15
+ 1.30.40
13 1.22.53
3)7.47(2.62
6
18

11.32.25.35
46.74
11.33.12.09
05.56 03.40
18.22.51.31
3.00.60
18.19.50.71
18.15.00
4.50.71

rate for 1 day 9s.42
1.4
22
28
28
3.08
for - 1d. 9h.7

24)9.7(.4

20.. 29.. 25.5 - 2
1
20.. 23.. 24.5
6.. 20.98
20.. 17.. 04.22
11.. 29.. 15.54
08.. 47.. 48.68
1.. 26.. 43
8.. 46.. 22.25 Im
1.85
M.S.T. 8.. 46 24.10
Star 8th mag.
Im x 8th

24)15(6
1.32

14/15th 6.. 21.. 11
12/13 6.. 16.. 71
7)4.. 40 ~~rate~~
+ 2.20 = Rate

2557

24)2.50
.105 hourly rate
11 hour
105
105
1.155

5.. 52.08
6.. 07.66
6)15.58
2.59 rate

(345).

Sept 16 P M Ill west

a Herculis 2557

G

3..31.5
3..46.0
4..00.5
+15 4..14.5
4..28.5
4..43.0
17..14..57.0

221.0
120.
7)101.0

17..14..14.43
17..07..49.86

+6..24.57
col. +.14
az. +.04
lev. +.11

6..24.86

6..24.86
6..25.18

12..50.04

2557 19^h..26..00 = 6..25.02

[illegible] hourly rate + .105

Sept: 16th

Ill west - 2557.

* (a^2?) Capricorni
9 .. 52 - 6 beats of 0.5
T 0 .. 5 - 4
0 . 20 - 5
-13° 0 .. 34 - 5 = 31.5
0 . 48 - 5
1 .. 02 - 5
20 .. 11 .. 15 - 3
176
60
236
16.5
7) 219.5
20 .. 10 .. 31.36
col + .14
az. + .08
lev. + .07
20 .. 10 .. 31.65
6 .. 25 92
20 .. 04 .. 05.73

β Aquarii
9 . 28 - 5   2.5
9 . 42 - 5   2.5
T 9 . 55 - 3   1.5
-6° 0 9 - 5   2.5
0 . 23 - 5   2.5
0 . 37 - 5   2.5
21 .. 30 .. 51 - 6   3
245
180
65
-17
7) 48
21 .. 30 .. 06 .. 85
col. + .14
az. + .07
lev. + .08
21 .. 30 .. 07.14
21 .. 23 .. 41.96
6 .. 25.18
6 .. 25.28

☽s 1st Limb
T 0 . 55 - 5   52.5
1 .. 10 - 5   7.5
1 . 25 - 7   21.55
-19° 1 . 40 - 7 = 36.5
1 .. 54 - 6   51.0
2 .. 9 - 6   6.0
20 .. 32 .. 24 - 6   21
217
60
277
21
7) 256
20 .. 31 .. 36.57
col + 14
az + .08
lev. + 06
20 .. 31 .. 36.85
6 .. 25.14
20 .. 25 .. 11.71

a^2 Capri 20 .. 09 - 325 .. 23
Moon 20 .. 25
β Aquarii 21 .. 23 - 318 .. 36
α Cephei 21 .. 14 - 250 .. 26

η Capri
1 . 39 - 6
1 . 53 - 6
T 2 . 9 - 9   4.5
8
-20° 2 . 22 - 6 = 19.0
2 . 36 - 5   2.5
2 . 57 - 5
21 . 03 .. 05 - 5
215
- 60
155
21
)134
21 . 02 .. 19.14
col. + .14
az. + .08
lev. + .06
21 .. 02 .. 19.42

21 .. 02 .. 19.42
6 .. 25.20
20 .. 55 .. 54.22
20 .. 55 .. 54.08
- .14

16/17 Am
EC - 19 .. 15 .. 0   EC - 19 .. 16 .. 40
206 - 11 .. 54 .. 12.5   2557 - 7 .. 05 .. 46.5

11 .. 40 .. 18.43
46.74
11 .. 41 .. 05.17

7 .. 05 .. 46.5
6 . 26.2
30 . 59 . 20.3
11 .. 41 .. 05.2
29 . 18 . 15.1
3 . 09.8
19 . 15 . 05.3
EC 19 . 16 . 40
C + 1 .. 34.7
16
+ 1 . 18.7

	Sid. Time	Tab. R
☾ 1st limb	20 .. 25 .. 11.71	
η Capri.	20 .. 55 .. 54.22	54.08 − .14
β Aquarii	21 .. 23 .. 41.92	41.96 + .04

(347) (833)

Sept 17th P.M
EC – 6..11..0
2312 – 6..09..39.2

α Herculis 2557 T.
3..36 – 3^{6}
3..57 – 5
–15° 4..4 – 3
4..19 – 4
4..33 – 4
4..47 – 4
19..15..01 – 3
191
–60
131
–13
2)118
19..14..16.86
17..07..49.58
2557 + 6..27.28
99
6..27.57

cal. +.14
az. +.04
lev +11

17/18th A.M
EC – 18..24..00
2557 – 6..16..54
6..16..54
6..28.6
30..10..25.4
11..45..01.7
18..25..23.7
–3..01.1
18..22..22.6
EC 18..24..00
+1..37.4
16
1..21.4

11..44..15.0
46.74
11..45..01.74

Sept 18 P.M.

Arcturus 2557 T.
4..37 – 5
4..52 – 4
+20° 5..05 – 2
5..21 – 5
5..36 – 5
5..50 – 5
14..16..05 – 5
206
60
146
15.5
7)190.5
14..15..18.64
14..08..49.26
6..29.38

cal +.14
az +.04
lev + 1?
–90
29 78
6..29.68

Sept. 17

	Sid Time ^{h} ^{m} ^{s}	Tab. R ^{s}	
η Capricorni	20..55..54.38	54.07	–.31
ν Aquarii	21..01..27.37	27.45	+.08
☾ I limb	21..15..36.55		
δ Capricorni	21..38..48.17	47.84	–.23
μ ..	21..45..09.36	09.31	–.05

Sept 17 P.M. M West

η Capricorni	ν Aquarii	Moon's bright limb	δ Capricorni	μ Capricorni
1 40-5 -2.5	7,,15-4 2	1 23-6 -3	3 35-4 -2	0 59-8.4
1 55-5 -2.5	7 30-6 3	1 38-7 -3.5	3 47-0 0	1 10-4 2
-20° 2 10-6 3.0	-11° 7 44-6 3	1 52-5 -2.5	4 2-1 0.5	1 25-4 2
2 25-6 3.	7 58-6 3	-16° 2 8-8 -4.0	-17 5 18-4 2.0	-14 1 40-5 2.0
2 39-5 2.5	8 12-5 2.5	2 22-4 -2.0	4 32-4 2	1 54-6 3.0
2 54-6 3-	8 25-4 2	2 35-2 -1.0	4 48-7 3.5	2 8-4 2
21,,03,,11-5 -2.5	21,,08,,40-5 2.5	21,,22,,50-3 -1.5	21,,45,,02-4 2	21,,52,,23-6 3
234	224	228	184	209
19	18	17.5	-12	60
215	206	210.5	172	279
60	180	180	60	185
7)155	7)386	7)30.5	7)112	7)260.5
21,,02,,22,14	21,,07,,55.14	21,,22,,04.35	21,,44,,16.00	2151,,35,28
col +.14	col +.14	col +.14	col +.14	col. +.14
az +.08	az +.07	az +.08	az +.08	az. +.08
lev. +.06	lev +.07	lev +.06	lev +.06	lev. +.06
21,,02,,22.42	21,,07,,55.42	21,,22,,04.69	21 45,16.28	21,,51,,37.49
6,,28.04	6,,28.05	6,,28.08	6 28.11	6,,28.13
20,,55,,54.38	21,,01,,27.37	21,,15,,36.55	21,,38,,48.17	21,,45,,09.30
20,,55,,54.07	21,,01,,27.45	21,,11	21,,38,,47.94	21,,45,,09.91
31	08		.23	.05

about 1 sec

Level

E.	W.
60	59
60	59
Reversed	
55	63
55	63
57.5	61

57.5
2)3.5
15)1.75
0.12

Marks

North	South	Zero
0r.32	0.990	0.99
30	0.990	98
30	1.000	98
31	1.010	99
0.31	1.000	1.00
5)0.154	5)4.990	5)394
0r.308	0.998	988
012	.012	-.012
0.320	1.010	
2.3	2.3	
960	3.030	
640	2020	
.7360	2.3230	

.05
Lev = +0.12
col = +0.14
az = +0.09

.736 n
2.323 s
3.059 = n+s
1.587 = s-n
$1.529 = \frac{n+s}{2}$
$0.793 = \frac{s-n}{2}$

$c = -1.384 + \frac{n+s}{2}$
$az = -0.700 + \frac{s-n}{2}$

$c = -1.384 + 1.529 = +0.145$
$az = -0.700 + 0.793 = +0.093$

Sept 19/20th Am

α Geminorum

B

9 . 46.0
0 . 1.3
0 . 16.2
0 . 31.0
0 . 45.7
1 . 1.0
6 .. 21 .. 15.9
157.1
60
7) 217.1
31.01
2
6 .. 20 .. 29.01
6 .. 13 .. 54.60
+ 6 .. 34.41

The watch. 2557

EC – 18 . 23 . 15
2557 – 6 .. 24 . 02

6 .. 24 . 02 . 0
6 . 34 . 4
30 .. 17 .. 27 .6
11 .. 52 .. 54 . 8
18 .. 24 . 32 . 8
3 . 00 . 9
18 .. 21 . 31 . 9
EC. 18 . 23 .. 15
1 .. 43 .1
16
1 .. 27 . 1

11 .. 52 .. 08 . 11
46 . 74
11 .. 52 .. 54 . 85

Friday Sept 19/20 A. M. Comparison of Chronometers

H. 202 Compared with E. C.

E. C. – 8 .. 16 .. 20
202 – 8 .. 15 .. 21.5
58.5

H 1508 Compared with E. C.

E. C. 8h .. 51 .. 40
1507 2 .. 55 .. 15.2
5 .. 56 .. 24.8

H. 207 Compared with E. C.

E C – 8 .. 32 .. 40
H. 207 – 1 .. 32 .. 24.5
7 .. 00 : 15.5

Sept. 19/20 AH Ill west

2557 ε Canis Majoris

8..34 - 5
8 49 - 3
9 5 - 4
9 20 - 3
9 36 - 2
9 51 - 2
6..00..07 - 2
202
60
142
10,5
7)131,5
6..59..18,78
6..52..44,62
+6..34,16

21^{8} Am
ε C - 19..47..0
207 - 12..46..43.2

ε C - 19..47.45
2557 7..52..43
7.52..43
6.36.6
31..46..06.4
11..56..51.4
19.49.15.0
3..14.8
19..46.00.2
ε C. 19..47.45
1.45.2
16
1..29.2

11..56..04.66
46.74
11.56.51.40

Sept. 18 – 1850
3.. 15 P. M. ~~Hor. Force~~
Declination Dist – 1 ft.
without
Temp. – 66°

155.5 – 155.90
156.3 – 155.85 – 155.87
155.4

Good specimens 1 ft. by 4 & 8 inch,

Trial of three peices of Clay-Slate
by the Declination Magnetometer
Force – Hor. Force

131.6 – 130.15
3 P. M. 128.7 – 130.10 – 130.12 – 130.12
131.5 – 130.15 – 130.12 – 130.16 – 130.14
128.8 – 130.25 – 130.20
131.7

with 3 peices

156.6 – 156.05
155.5 – 156.05 – 156.05 – 156.02
156.6 – 155.95 – 156.00 – 155.97
155.3 – 155.95 – 155.95
156.6

1 piece within 1 foot north and Edgewise

	two peices	three peices
129.2 – 130.10	132.5 – 130.45	132.3 – 130.55
132.0 – 130.60	128.7 – 130.45	128.8 – 130.55
129.2	132.2	132.3

Without

155.5 – 156.15
156.8 – 156.05 – 156.20 – 156.11 – 156.06 – 156.02
155.3 – 156.00 – 156.02 – 156.01 – 155.99
156.7 – 155.95 – 156.00 – 155.97
155.2 – 155.90 – 155.95
156.6

with Dec. Bar at $3^h.15^m$ – 155.87 – 355.95
" " " " 3.25 – 156.02

at 3.20 Dec Bar 156.00 3 pieces of Slate

Sept. 20
Mr Lefferts. Prest. of "Bains Chem. Tel. Co." called
Thinks we may connect with his Office in Boston
by way of the Lowell Line. (Prest. G. W. Benedict) at
an expense of eighty dollars per mile. this will
connect us with Buffalo and Portland. New York
and Washington. (Baines chemical line entire – 800 miles
at once)

* They have written to day at the rate of 800 letters per minute.

Sept. 20/21 A.M. — Sept 21/22 A.M.

δ Orionis 25.5.7	ε Orionis	α Orionis
	35-3	02-3
0..18.5	49-4	16-4
0..32.0	4-6	30-4
0..45.5	18-7	49-3
0..59.5	37-4	57-3
1..13.0	44-3	10-1
1..26.5	5..35..58-3	5..54..27-3
5..31..40.5	239-30	185-21
		174.5
235.5	224	120
	120	294.5
180	104	42.07
	14.86	
7)415.5		
5..30..59.35	5 35 14.86	5 53 42.07
5..24..22.91		
6..37.04		

Sept 21 P.M.

β Gemini	ε Ursa Major	Arcturus
1..60-2	12-4	45-3
2..12-4	33-3	60-4
2..32-3	55-4	14-3
2..48-4	15-2	29-4
3..03-3	38-5	45-6
3..19-2	60-6	58-3
7..43..35-4	13..49..21-5	14..16..13-2
209-22	234-29	264-25
198	219.5	251.5
120	120	60
318	99.5	191.5
45.43	14.21	27.36
7 42 45.43	13 48 14.21	14 15 27.36

(353)

Sept. 21 P.M. Ill. west 2557

ε Bootis	a Coronae	a Serpentis	β' Scorpii
19-3	14-4	52-3	40-2
35-3	30-4	5-2	55-3
50-2	45-4	19-2	9-2
6-3	60-2	33-2	24-3
22-4	15-2	47-2	39-3
37-3	30-2	01-3	53-3
14„45„53-4	15„35„47-4	15„44„15-3	16„04„08-4
222-22	241-22	172-17	228-20
211	230.	163.5	218
180	180	60	60
31.	410	223.5	158
14 45 4.43	15 34 58.57	15 43 31.93	16 3 22.57

δ Ophiuchi	Antares
29-4	8-3
42-2	24-3
55-1	40-6
10-3	54-3
23-2	9-2
37-3	25-4
16„13„51-2	16„27„40-4
247-17	200-25
238.5	180
180.	367.5
58.5	52.50
16 13 8.36	16 26 52.50

Sept 21st - Pole
EC - 7..0..0 EC - 7..1..0
207 - 12..59..43 2312 - 6..59..50

α² Gemin 7..25 - 280..11
α Can. Maj. 7..31 - 306..47
β Gemin 7..36 - 284..00

22/23 Am.

T.C. - 7..11..0
2557 - 7..11..40.2

Sept. 22/23 Am.

Procyon 2557
7..31 - 4
7..44 - 4
7..58 - 3
8..12 - 3
8..25 - 2
8..40 - 4
7..38..54 - 4
264
180
84
12
7)72
7..38..10.28
7..31..27.70
6..42.58

EC 19..46..00
2557 7..58..51.5

7..58..51.5
6..42.58
7..52..08.92
24
31..52..08.92
12..04..44.50
19..47..24.42
3 14.8
19..44..09.62
19 46..00.00
EC + 1..50.38

12..03..57.76
46.74
12..04..44.50

Sept. 23 P. M.
a Ophiuchi

4..3 – 4
4..17 – 4
4..30 – 2
4..44 – 3
4..59 – 3
5..13 – 3
17..35..27 – 3
193
120
313
11
7)302
17..34..43.14
17..27..59.40
+ 6..43.74

Sept 24 P M
a Ophiuchi
4..2.7
4 17.2
4..31.4
4 45.4 –
4 59.4
5 13.4
17..35..27.5
197.0
120.
7)317.0
17..34..45.28
17..27..59.98
+ 6..45.90

Sept 23/24 A. M.

a Hydrae 2557 Sll west
18 – 1
32 – 2
45 – 1
60 – 2
15 – 5
28 – 3
9..27..42 – 3

2~~4~~0 – 17
231.5
180
411.5

58.79
9 26 58.79

24th P M
ε e – 9..33..0
Fe g – 9..32..10.5

Sept. 24/25 A M Ill. west. very hazy

Castor 2557
1 4-4
1 20-4
1 36-2
1 52-2
2 9-4
2 25-3
7,,32,,41-3
187
180
367
11
7)356
7,, 31,, 50.85
7,, 25,, 02,50
6,,48,35

Procyon 2557
7 37-4
7 50-2
8 4-3
8 18-3
8 32-4
8,, 45-2
7,, 38,, 59-3
245-21
234.5
120
114.5
16.36
7 38 16.36

β Geminorum
28-4
43-3
59-4 5 wires
14-2
7,, 43,, 30-4
174-17
165.5
120
285.5
57.10
7 42 57.10

Au 17. 6.28.0
23. 6.43
6)15/2.5

E.C. 19,, 46,, 30
2557 8,, 07,, 15

12,,11,,50,87
46.74
12,,12,,37.61

8,, 07,, 15
6,, 48,, 35
8,, 00,, 26,,65
24
32,,00,,26.65
12,,12,,37.61
19,,47,,49.04
3,,14,60
19,,44,,34.44
19,,46,,30.00
E C +1,,55.56

27t Am
E C 19..49..0
360-12.. 31.. 35

Pile
E C 3..9..0
360-7..51.37.2

E C 3.10..0
Gray 3..7.46.3

P. M.
28. E C 19,,35,,55
360. 12,,18,,34,7

Sept. 27/28 A.M.

E.C. 20..45..40 by 3 comp
H.202 8..57..10.8

E C 20..58..00
H.207 1..57..31.1 by 4 comp

12..29..40.52
46.74
12..24.27.26

Sept. 27/28 A.M.

Regulus 2557
6..40-9
6..54-9
7.. 8-2
7..23-4
7..36-2
7..50-2
10..08..04-3
215
60
155
9.5
7)145.5
10..07..20.78
10..00..23.13
+6..57.65

E.C. 22..07..20
2557. 10..40..18.4

10..40..18.4
6..57.65
10..33..20.75
24..
34..33..20.75
12..24.27.26
22..08..53.49
3..37.83
22..05..15.66
22..07..20.00
E.C +2..04.34

(358)

Sept 28 P.M. Ill. west

β Librae 2557	α Coronae	α Serpentis
5..15-3	34-9	11-2
5..30-5	50-4	clouds —
5..43-9	05-4	39-9
5..57-9	20-2	" —
6..11-9	36-4	12-9
6..25-9	51-9	" —
15..16..39-4	15..36..07-4	15..44..35-9
220	203-24	97-11
180	191.0	91.5
400	60	22.88
12	131.0	cor. + 0.09
7)388	18.72	
15..15..55.4B	15 35 18.72	15 43 22.97
15..08..57.02		
2557 +6..58.41		

(359) : 2.

1850 Septr 24/30 Am

Sirius
4 .. 55.2
5 . 9.4
5 . 24.0
B 5 . 38.3
5 .. 52.3
−16° 6 7.0
6 .. 46 .. 21.2
207.4
16
7)267.4
38.20
22
6 .. 45 .. 36.20
6 .. 38 .. 33 .. 58.
7 .. 02 .42 X
25th Am 6 .. 48 . 25
5)14.17 (2,83

[illegible]
2557.

E.C. 18 07 .. 35
2557 − 6 .. 47 .. 47
6 .. 47 .. 47
7 . 02 . 42
30 40 .. 24 . 58
12 .. 32 .. 20 . 37
18 08 .. 24 . 21
EE − 2 .. 58 . 3
18 .. 05 .. 25 . 9
18 . 07 .. 35
+ 2 . 09 . 1
16
E.C. of B 1 .. 53 . 1

7 .. 02 .. 42
col +.17
az +.06
lev +.05
7 .. 02 . 70

α Can Maj 6 .. 38 − 328 .. 54
δ Gemm 7 . 11 − 250 .. 08
α² Gem − 7 .. 25 − 280 .. 11
α Can Min. 7 .. 31 − 306 .. 47

12 .. 31 .. 33.63
46.70
12 .. 32 . 20 . 37

δ Geminorum
7 .. 31.0
7 .. 46.0
+22° 7 .. 81.1
B 8 .. 16.1
8 .. 31.0
8 .. 45.7
7 .. 19 .. 0.7
171.6
160
7)11.6
7 .. 18 .. 15.94
−2 +18
7 .. 18 .. 13.94
col +.18
az +.03
lev +.10
7 .. 18 .. 14.25
7 .. 08 . 02
7 .. 11 .. 11,28
7 .. 11 .. 11,08
− 13

Procyon J
7 .. 51−3 1.5
8 05−3 1.5
+6° 8 19−4 2.
8 33−4 2
8 46−2 1
8 60−9 1.5
7 .. 39 .. 19−2 1
227
105
7)217.5
7 .. 38 .. 31.07
col +.17
az +.04
lev +.08
7 .. 38 .. 31.36
7 .. 31 .. 27,88
7 03 .48
7 .. 03 .. 06
−.42

β Gem g
2 26−4 −2
2 42−3 1.5
+282 58−4 2.
3 14−4 2
3 29−3 1.5
3 45−3 1.5
7 .. 44 .. 60−9 1.5
274
180
294
12
7)82
7 .. 43 11,71
col +.28
az +.02
lev +.12
7 .. 43 .. 12,03
7 .. 36 .. 09,05
7 .. 02 . 98
7 .. 03 . 07
+ .09

(360) P.C

Sept 29/30 A.M.

2557 ℨ

Moon

6 .. 13-2
6 28-2
+19° 6 43-2
6 58-2
7 13-2
7 28-3
8 .. 07 .. 43-3
226
8
218
180
7)398
8 .. 06 .. 56.85
col. +.18
az. +.03
lv. +.10
8 .. 06 .. 57.86
7 .. 03.10
8 .. 59 54 06

Sept. 30 P. M.

a Serpentis ℨ

9 17-3
9 31-3
+7° 9 45-3
9 59-3
4 .. 13-4
4 .. 27-5
15 .. 44 .. 39-1
291
180
411
11
7)400
15 .. 43 .. 57.14
15 .. 36 .. 53.41
7 .. 03,73
col +.17
az +.04
lev

a coronae ℨ

4 39-3
4 55-3
+27 5 10-3
5 26-3
5 41-3
5 57-4
15 .. 36 .. 12-3
240
60
180
11
7)169
15 .. 35 .. 24 .. 14
15 .. 28 .. 20 . 30
7 .. 03 . 84

30 PM

2557 – 19 .. 43 .. 0
2419 – 19 .. 43 .. 27.5
Put back 2419
2557 – 19 .. 46 .. 0
2419 – 19 .. 39 .. 27.3

Oct 1st A.M.

εC 20 .. 08 .. 00
2312 20 .. 08 .. 48.2

εC 20 .. 09 .. 00.0
2557 8 .. 53 .. 27.7
7 .. 05.0
8 .. 46 .. 22,7
12 .. 36 .. 16.9
20 .. 10 .. 05.8
3 .. 18.2
20 .. 06 .. 47.6
20 .. 09 .. 00.0
2 .. 12.4
16
1 .. 56.4

col +.17
az +.07
lv +.10

29th δ Geminorum – 7 .. 11 .. 11.23
β Geminorum – 7 .. 36 .. 08.96
☽, 8 .. 59 .. 54.06

7 .. 43 .. 12.03
7 .. 03.07
7 . 36 ~~.08~~ .96
Tab 7 . 36 .09.05
-09

Sept. 30/31 A.M. Ill West

Meridian Marks

Level readings

N	S.	Zero	E	W.
0.34	1.01	99	−64	73
.32	.99	99	−64	73
33	1.00	97	70	67
33	99	98	70	67
.32	99	1.00	4)268	4)280
1.328	0.996	.986	67.0	70.0
0.014 Zero cor	0.014	0.014 = Cor. for Zero		67.0
$0^{r}.342$	$1^{r}.010$			3.0
2.3	2.3	$1^{r} = 2^{s}.30$		1.5 = 0.10
1026	3030			
684	2020			
0.7866	2.323			

lev. = $+0^{s}.11$

North mark ~~West~~ of mid. wire $0^{s}.787 = n$

South " West " $2.323 = s$

$3.110 \quad s+n$

$1.536 \quad s-n$

$1.555 = \frac{n+s}{2}$

$0.768 = \frac{n-s}{2}$

$c = -1^{s}.384 + \frac{n+s}{2}$

$az = -0.700 + \frac{s-n}{2}$

$c = -1^{s}.384 + 1^{s}.555 = +0^{s}.171$

$az = -0.700 + 0.768 = +0.068$

Sept. 31 P.M.

a Serpentis 2557 Ill. west

$c = +0^{s}.17$

$az = +0.07$

$lev = +0.10$

20 − 4
94 − 4
47 − 2
01 − 3
15 − 3
4 " 29 − 9
15 " 44 " 42 − 2
188
240
428
10.5
7)417.5
15 " 49 " 59.64
15 " 96 " 53.39
7 " 06 " 25

15 "

(362)

Sept. 31 S.M.

δ Aquilae 2557 J

4..25-4
4..38-9
4..53-5
5..06-4
5..20-5
5..33-4
19..25..48-5
229
180
43
15
7)28
19..25..04..00
19..17..57..69
7..06..31

ε 6 20..40..30
2557 9..28..59
1

9..28..59
7..06.31
9..21..52,69
24
33..21..52,69
12..40..13,47
20..41..39,22
3..23.40
20..38..15,82
20..40..30,00
+2..14,18

a Aquilae 2557 J
57-5
10-4
25-6
38-4
52-4
6-4
19..51..20-5
208-32
192
60
252
36.00
19 50 36.00

12..39..26,73
46,74
12..40..13.47

Oct 22d
22 5..24..00,0
690 - 23..59.2

Oct. 2/3 A.M.

So

Eb 19,,20,,30
2557 8,,12,,42

8,,12,,42
7,,09,,35
8,,05,,32,,65
24,,
32,,05,,32,,65
12,,44,,10,,02
20,,21,,22,,63
3,,20,,1
20,,19,,02.53
19,,

12,,43,,23,28
46,74
12.44,,10,02

ε Hydrae

5 22-3
5 36-7
5 50-4
6 07-3
6 17-2
6 31-2
8,,46,,45-3
204
180
24
10
7)14
8,,46,,02.00
8,,38,,50,69
7,,11,31

Oct 2/3 A.M.

Eb. 19,,29,,00
2557 8,,21,,13.4

8,,21,,13.4
7,,09,35
8,,14,,04,05
24
32,,14,,04,05
12,,44,,10,02
19,,29,,54,03
3,,11,6
19,,26,,42,43
19,,29,,00,00
+2,,17,17

Eb. 20,,02,,50
8,,55,,09

8,,55,,09
7,,11.31
8,,47,,57,69
24
32,,47,,57.69
12,,44,,10,02
20,,03,,47,67
3,,17.4
20,,00,,30,27
20 02,,50,00
+2,,19.73

(364) (E[illegible])

Oct. 2/3 A.M.

E. C. 20„ 31„ 50
690 31„ 51

Oct. 4 P.M.

a Serpentis 2557
3„ 28 - 2
3„ 42 - 3
3„ 55 - 2
4„ 10 - 4
4 24 - 4
4„ 37 - 2
15„ 44„ 51 - 3
248
180
67
10
7)57
15„ 44„ 08. 14
15„ 36„ 53. 36
„ 07„ 14. 78

Oct. 3 A.M.

α Herculis 20 - 2
35 - 3
49 - 3
03 - 3
18 - 4
32 - 3
17„ 15„ 46 - 3 Cloudy
203 - 21
1.92.5
1 8 0
12.5
17 15 1.79 57 - 3
10 - 3
24 - 3

Octr 4/5th Am

Oct 4/5 A.M.

D Regulus 2557

60-5
13-2
27-9
41-2
56-5
10-4
10..08..29-2
230
60
290
11.5
7)2785
10..07..39.78
10..00..29.13
+7..16.65

E.C. 19..58..0
G - 19..48..3

EC - 19..57 25
2557 - 8..57.35.5

8..57.35.5
7.16.3
32..50.19.2
12..52.03.1
19..58..16.1
3.16.3
19..54 59.8
EC 19..57 25
+2..25.2
16
B 2..09.2

12..51..16.39
46.74
12..52.03.13

5B + 2.25.2
7h + 2.32.34
2)7.14(3.57
6
11
10
14

Oct. 5th

[illegible] (366 [illegible])
2557

γ Aquila
5 . 47 . 5
6 .. 1 . 5
6 . 15 . 2
β 6 . 29 . 3
6 . 42 . 8
6 .. 57 . 0
19 .. 47 .. 11 . 0
7)204 . 3
29 . 19
-1/2
19 .. 46 .. 27 . 19

Σ C – 6 .. 57 .. 5
2557 - 19 .. 59 . 3 . 5

γ 19 . 39 302 .. 08
α 19 . 43 303 .. 54
β 19 .. 48 306 .. 21

α Aquila
0 .. 7 . 7
0 .. 22 . 0
0 .. 36 . 0
0 .. 49 . 8
1 .. 3 . 2
1 .. 17 . 3
19 .. 51 .. 31 . 2
167 . 2
180
347 . 2

β Aquilae
37 . 0
57 . 0
4 . 6
18 . 5
32 . 5
46 . 4
19 .. 56 .. 0 . 3
190 . 3
60
130 . 3

19 50 49.60 19 55 18.62

2557 – 20 .. 13 .. 0
365 – 7 .. 8 .. 42 . 3

Σ C – 7 .. 12 .. 0
365 – 7 .. 09 .. 42 . 8

at Boston
16 5 .. 43 . 6
365 – 5 .. 42 .. 49 . 9

Oct. 6/7 A.M.
2557 ε Hydra
5 .. 33 – 2
5 .. 47 – 2
5 .. 60 – 1
6 .. 15 – 3
6 .. 28 – 1
6 .. 42 – 2
7. 8 .. 46 .. 56 – 2
1281
180
101
6 . 5
7)94 . 5
8 .. 46 .. 13 . 50
8 .. 38 .. 50 . 79
+ 7 .. 22 . 71

E. C. 19 .. 49 .. 00
2557. 8 .. 57 .. 01 . 5

8 .. 57 .. 01 . 5
7 .. 22 . 71
8 .. 49 .. 38 . 79
24
32 .. 49 .. 38 . 79
12 .. 59 .. 56 . 23
19 .. 49 .. 42 . 56
3 .. 14 . 9
19 .. 46 .. 27 . 66
19 .. 49 .. 00 .
+ 2 .. 32 . 34

12 .. 59 .. 09 . 49
46 . 74
12 .. 59 .. 56 . 23

Oct. 7th 1850

Sent to Mr. S. C. Walker by Mr. Gibson

21	Papers	Liverpool	Transits
64	do	Harvard	"
18	do	"	"
209	do	Liverpool	Coincidences

2 Books of Cambridge Transit reductions, comparisons & computations. In shape & size like the present.

Comprising the results of the Chronometric Expedition between July 1849 & Feb. 1850

☞ No copy was sent from the book containing the computed Longitudes.

Oct~ 9th P.M. 2557 set back 7 minutes, leaving it + 28^s

Oct. 9/10 A.M.
2557 Ill. west
Regulus had

0 .. 11
0 25.0
0 39.5
0 59
1 07
01 .. 21.5
10 .. 01 .. 35.
191.0
180.
7)371.0
10 .. 00 .. 53.00
10 .. 00 .. 23.38
+ 29.62

Oct 10th P.M.
61 Cygni Chr. T. obs. G.P.B. records

No reduction

~~6~~ .. 56.4
7 13.5
7 30.8
7 .48.5
8 .06.0
8 .23.7
20 .. 58 .. 40.6
219 0
120
7)339 0
20 .. 57 .. 48.43
0 12.81
2 .. 23.38

EC 21 .. 04 .. 30
2557 10 .. 17 .. 31

13 .. 14 .. 55.70
46.74
15 .42 .44

7th 2.30 .. 34
11h - 45.10
4)12.76 | 3.2
12

H Am
EC - 19 .. 55 .00
2557 - 9 .11 .45.5
9 .. 11 .. 45.5
+ 32.3
33 .. 11 .. 13.2
13 .. 15 .. 42.4
19 55 .30.8
3 .15.9
7 .. 52 .. 14.9
SC 7 .55 .00
+ 2 .45.1
16
SC. B - 2 .. 29.1

1850

Trial (369) of some pieces of Clay Slate
Oct. 11th of the same Quarry as that for the Foundation
of the west wing

Hor. Force (free

12..30

156.6
156.5 —156.55
156.6 156.55
156.4 – 156.50
156.6 —156.50
52

Slate 2 ft

156.2
156.5 —156.35
156.1 – 156.30
156.6 – 156.35
.33

The worst specimens

reversed

156.6
156.3 – 156.45
156.4 – 156.35
156.2 – 156.30
32

free

declination

12..40

135.0
134.8 – 134.90
134.7 – 134.75 – 134.82
135.0 – 134.85 – 134.80

137.0
134.8 – 135.90
136.8 – 133.80
135.0 135.90

Slate 2 ft. X up

134.5 – 135.65
136.8 – 135.70
134.6 – 135.65
136.7 – 135.70
134.7

X down

134.8 – 135.55
136.3 – 135.65
135.0 – 135.65
136.8 – 135.90

(370) 92

Declination — wad specimen
1 foot by 8 inches

Free

135.0 — 135.75
136.5 — 136.10
135.7 — 135.95
136.2

Same
horizonta

136.5 — 135.75
135.0 — 135.85
136.7 — 135.75
134.8

another piece

free

12.46 — 135.7
136.2
135.8
136.3

136.2
135.0
136.0
134.7

2 piece
× hor

× up

134.7
136.0
134.6
136.3

12.52
134.5
136.2
134.4
136.0

× down

134.5
136.0
134.7
136.3

(371)

Oct. 11th State of The Kind engag'd. Best Kind

Dec. Mag.

~~free~~

134.2 – 135.15
136.1 – 135.20
134.3 – 135.20
136.1

135.18

x up

136.0 – 135.15
134.3 – 135.05
135.8 – 135.00
134.2

135.07

1.4

136.0 – 135.10
134.2 – 135.00
135.8 – 135.00
134.2

135.03

135.10

x down

136.1 – 135.20
134.3 – 135.05
135.8 – 135.05
134.3

135.10

.17

.08

Oct. 11/pr ill west
2557
Regulus

15.5
29.5
43.3
57.4
11.5
25.5
10,, 01,, 39.0
221.7
180,
7)401,7.
10,,00,,57.38
10,,00,,23.40
33.98

E.C. 20,,54,,50
10,,15,,41

10,,15,,41
33.98
10,,15,,07.02
24
34,,15,,07.02
13,,19,,39,00
20,,55,,28,02
3,,25,71
20,,52,,02,31
20 54,,50,00
2,,47,,69

13,,18,,52.26
46.74
13,,19,,39.00

1850

(373)

Oct. 13th Immersion of

companion 9th mag 2' S same AR

W. C. B. Im. 7 Capricorni

Im. comp. 22.. 33.. 39.7 – 6   22.. 35.. 21.1 – 7
–3.5
17.6

C.. 22.. 35.. 17.6
38.62
13.. 26.. 45.36   22.. 34.. 39.98
46.74   13.. 27.. 32.10
13.. 27.. 32.10   9.. 07.. 07.88
1.. 29.65
9.. 05.. 38.28 W. C. B.

2557 – 22.. 24.. 0
2419 – 22.. 24.. 33.3

G P B

2419 22.. 35^{m}.. 59^{s} – 20
–10
5.. 49
33.4
22.. 35.. 15.6

2557 + 39.17
cor. rate .90
38.27
Interval 35
38.62

2557 – 22. 37.. 0
2419 – 22. 37.. 33.4

22.. 35.. 49.0
1.. 12.02
22.. 34.. 36.98
13.. 27.. 32.10
9.. 07.. 04.88
1.. 29.62
9.. 05.. 35.26 G. P. B.

22.. 35.. 47
1.. 12.02
22.. 34.. 34.98
13.. 27.. 32.10
9.. 07.. 02.88
1.. 29.62
9.. 05.. 33.26 G. P. B.

22. 35.. 55 – 16
8
35.. 47
33.4
35.. 13.6

cannot explain the differences

22.. 33.. 36.7
38.62
22.. 32.. 58.08
13.. 27.. 32.10
9.. 05.. 25.98
1.. 29.4
comp 9.. 03.. 56.58 W. C. B.

Im 7 Capricorni
M. S. T.
Im. 9^{h}.. 05^{m}.. $38^{s}.3$ W. C. B
" 35.3 G. P. B

22.. 37.. 00
38.62
22.. 36.. 21.38
22.. 37.. 33.4
1.. 12.02

Im. Companion Star 9th mag ~~et~~ 2' S same AR
Im 9^{h}.. 03^{m}.. $56^{s}.6$ W. C. B. Great Refractor

Oct. 13/14 Am

2557
Ill west (374 L.)

B^2 Geminorum
6 . 3 . 3
6 . 19 . 7
6 . 35 . 4
6 .. 50 . 5
7 . 6 . 3
7 . 22 . 0
7 .. 37 .. 37 . 5
1747
180
7)3547
50 . 67
−2
7 . 36 .. 48 . 67
7 .. 36 .. 09 . 50
+ 39 . 17

E. C − 18 .. 15 .. 35
2557 − 7 .. 43 .. 52 . 5

EC − 18 .. 24 .. 30
2557 − 7 .. 52 .. 49 . 5
7 .. 52 . 49 . 5

EC − 18 .. .30
2557 − 8 .. 50 . 5

EC − 18 .. 18 35
2557 − 7 .. 46 .. 33

13 .. 26 .. 45 . 36
46 . 74
13 .. 27 .. 32 . 10

EC − 18 .. 30 .. 30
2557 − 7 .. 58 .. 50 . 0

EC − 18 .. 34 .. 20
2557 − 8 .. 02 .. 41
8 .. 02 .. 41
39 . 17
32 .. 02 .. 01 83
13 .. 27 . 32 . 10
18 .. 34 .. 29 . 7
3 . 02 . 6
18 .. 31 .. 27 . 1
EC. 18 .. 34 .. 20
C + 2 . 52 . 9
16
B + 2 . 36 . 9

Oct. 14 PM

2557 a Ophiuchi
8 ,, 13 − 4 beats
8 ,, 27 − 4
8 ,, 41 − 4 −
8 ,, 55 − 4
17 ,, 28 ,, 09 − 2
145
9
136
60
5)196
17 ,, 28 .. 39 . 20
17 .. 27 ,, 59 , 07
+ 40 . 13

2557 a Lyrae
1 41 − 3 beats
1 59 − 3
2 17 − 4
2 34 − 3 —
2 52 − 4
3 09 − 2
18 ,, 33 ,, 27 − 3
7)239
11
7)228 ,
18 ,, 32 ,, 32 , 57
18 ,, 31 ,, 52 , 20
40 , 37
+ , 35
40 , 72

col + .20
az . 005
br 15
+ , 355

Oct 14th P.M. 1850

Stars to be determined
Sept 19/4
Sept 20/21

E.C. 4..29..00
Mr. Colby's Watch 4..32..52

Oct 14 P.M.
2557 β Lyrae

4..24
4..41
+39° 4..57
5..13,5
5..30
5..46..
18..46..02
213,5
120
7)93.5
18..45..13.35
18..44 col. +20
az. +01
lev. +14
18.45..13.71
18..44..33,31
40,40

rate of 2537 + 2.56s daily

+40.17
20
40.37

13..30..41.91
46.74
13..31..28.65

rate .10 hourly 2557
2
.20

20..37..17.6
40.37
20..36..37.23
13..31..28.65
7..05..08.58
1..09..65
7..03..58.93
35
7..03..58,58

Oct 14th

	Sid. Time	tab. R
Inst. α² Capricorni	20..09..45.62	45.46 −16
L. ☾ I limb.	20..56..18.65	
az. ν Aquarii	21..01..27.21	27.10 −11

Col. 20
+.35

5.85

.50

20..10..26.38
40.76
20..09..45.62
20..09..45,21
16

40.99
.20
19
40.66

(376)

Oct. 14th Immersion Capricorni

2557 WCB

20 .. 37 .. 19.6 − 4
2
20 .. 37 .. 17.6

2557 − 20 .. 41 .. 0
2419 − 20 .. 41 .. 33.6

T.
2419
20 .. 37 .. 60 − 12
− 6
20 .. 37 .. 54
33.6
20 .. 37 .. 20.4

G.P.B 2440 State Eq.
20 .. 23 .. 30.0 − 20 beats
− 10.0
20 .. 23 .. 20.0

Cannot explain these differences

Oct 14th/15th 2557 11 .. 19 .. 00
2440 11 .. 04 .. 59.7

Glass of 2557 broken after obs.
2557 − 20 .. 54 .. 0
2419 − 20 .. 54 .. 33.6

Im 23 Capricorni Oct. 14
M.S.T. ~~7 .. 03 .. 58.53 B'~~
~~7 .. 03 .. 59.98 B²~~
~~7 .. 04 .. 01.68 T.~~

(errors
Im. 23. Capricorni cor. inst.
7 .. 03 .. 58.58 B'
7 .. 03 .. 59.63 B'
7 .. 04 .. 01.33 T.

Oct 14 P.M.

a² Capricorni
2557
~~45 − 4~~
1 60 − 4
−13° 0 14 − 4
0 28 − 4
0 42 − 5
20 .. 10 .. 56 − 4
~~10.5~~ (clouds)
200 60)257.8
60 7)157.8
148 28.26
9.5
5)190.5
20 .. 10 26.10 26.26
− 40.00
20 .. 10 .. 26.10
20 .. 09 col. + 17
az. + 04
lev. + 07

Moon's bright limb
2557
6 .. 18 − 7 3.5
6 .. 32 − 4 2
−17° 6 .. 47 − 6 3
6 .. 02 − 6 3
7 .. 16 − 3 1.5
7 .. 31 − 4 2.
20 .. 57 .. 45 − 9 1.5
251
180
431
16.5
7)414.5
20 .. 56 .. 59.21
col. + .17
az. + .04
lev. + .06
20 .. 56 .. 59.48
40 87

ν Aquarii
2557
1 .. 27 − 3 1.5
1 .. 41 − 3 1.5
−12° 1 .. 55 − 3 1.5
2 .. 10 − 4 2.0
2 .. 24 − 4 2.0
2 .. 38 − 4 2.0
21 .. 02 .. 52 − 4 2.0
247
180
67
12.5
7)54.5
21 .. 02 .. 07.78
col. + .17
az. + .04
lev. + .07
21 .. 01 .. 27.21
21 .. 01 .. 27.10
−10 21 .. 02 .. 08.06
40 85

Oct. 14/15 A. M.
2557 Regulus

0„23.0
0„37.0
+13° 0„51.1
1„05.2
1„19.9
1„33.2
10„01„47.1
215.9
180.
7)35.9
10„01„05.13
10 00„23.47
+41.66
col. +.17
az. +.02
lev. +.11
41.96
E. C. 20„39„00
2557 10„11„38

10„11„38
41.66
10„10„56.34
24
34„10„56.34
13„31„28.65
20„39„27.69
3„23.10
20„36„04.59
20„39„00.00
+2„55.41
16
2„39.4

Oct. 15 P.M. 2557
a Ophiuchi 02-5
8.15-9
8 29-2
+13° 8 43-2 = 42
8 58-4
9„12-2
17 29„25-2
184
120
304
10
7)294
17„28„42.00
17„27„59.06
+.42.94
col. +.17
az. +.02
lev. +.11
43.24
41.96
2)85.20
2557 - 13h„45m„00 = +42.60
1.75 rate 7h
43.35

13„30„41.91
46.74
13„31„28.65

Oct. 15

	Sid. Time	tab. R	
ν Aquarii	21„01„26.90	21„01„27.09	+.19
ι Capricor.	21„13„55.00	21„13„55.37	+.37
☾ I limb	21„46„00.84		
θ Aquarii	22„08„56.94	22„08„57.16	+.22

2419 20„47„30.00
2557 20„46„56.00
42 43.35
20„46„12.65
20„47„30
2419 fast 1„17.35

daily rate of 2557 = +2s.61 hourly .10
daily rate of 2419 = +4.03 " .17

(378) [illegible]

October 15 P M Meridian Marks Temp 57°

Level		North	South	Zero
		0r35	0r98	1.00
E.	W.	0 33	0 99	1.00
69	67	0 34	1 00	1.00
69	67	0 35	1 02	99
Reversed		0 34	1 00	1.00
63	72	0.34.5	0.998	0.998
63	72	0.002	0.002	0.002
4)264	4)278	0.347	1r.000	
66	69.5	2.3	2.3	Lev = + 0.12
	66	1041	3990	Col = + 0.17
	2)3.5	694	2220	az = + 0.05
	1.75 ÷ 15 = 0.117	0.7981	2.3000	

lev. = $+\overset{s}{0}.12$

$c = -1.384 + \frac{n+s}{2}$

$az = -6.700 + \frac{s-n}{2}$

north Mark west of mill [illegible] 0.798 = n

South " " " " " 2.300 = s

3.098 = n+s

1.502 = s−n

1.549 = $\frac{n+s}{2}$

0.751 = $\frac{s-n}{2}$

$c = -1.384 + 1.549 = +0.165 =$ col

$az = -6.700 + 0.751 = 0.051$ az

Oct. 15 P. M.

7h

	2419 ν Aquarii		ι Capricorni		Moon		θ Aquarii
	2..05−6 3		4..30−2 1		6 36−5 2.5		9 34−3 1.5
	2 17−2 1		4 45−3 1.5		6 50−2 1		9 49−5 2.5
−12°	2 31−3 1.5	−17°	4 60−4 2.0	−15	7 8−8 4	−9°	0 03−5 2.5
	2 45−2 −1		5 14−4 −2.0		7 20−3 −1.5		0 15−2 −1
	2 60−4 2		5 29−5 2.5		7 35−6 3.0		0 30−3 1.5
	3 14−4 2		5 43−4 2.0		7 50−7 3.5		0 44−4 2.
	21..03..28−3 1.5		21..15..57−4 20		21..48..05−6 3.0		22..10..57−3 1.5
	1200		278		204		232
	120		180		60		120
	920		98		144		112
	12		13		18.5		12.5
	7)308		7)85		7)126.5		7)99.5
	21..02..44..00		21..15..12.14		21..47..18.07		22..10..14.21
	col +.17		col +.17		col +.17		col +.17
	az +.04		az. +.04		az. +.04		az. +.04
.10	lev +.07		lev. +.06		lev. +.06		lev. +.08
.17	21..02..44.28		21..15..12.41		21..47..18.34		22..10..14.50
	1..17.38		1..17.41		1..17.50		1..17.56
	21..						08 56.94

(379) C [illegible]

October 15/16 A. M.
2419
Polaris
12,, 41,, 11-5 lect A = 08.5
50,, 05-6 B 02.
58,, 58-7 C 54.5
07,, 44-2 D 43.
16,, 35-4 E 33
25,, 20-0 F 20
13,, 34,, 17-5 G = 14.5
13 7 42.21

Oct. 16 P M
2419 α Lyrae
2 21-3
2 39-3
+39° 2 57-4
3 14-3 –
3 32-4
3 50-4
18,, 34,, 07-3
220
120
100
11
7)89
18,, 33,, 12.71
18,, 31,, 52.16
2419 +1,, 20.55
col +20
az +.00
lev +.15
1,, 20.90

Oct. 16 P M
2557
β Lyrae
6,, 31-4
6 47-2
+33° 7 04-4
7 20-2
7 37-4
7 53-3
18 48,, 08-2
201
60
141
105
7)1305
18,, 47,, 18.64
col +.20
az +.01
lev +.14
18,, 47,, 18.99
18,, 44,, 33.30
2 ,, 45.69

h
E C 5 ,, 11,, 40
2557 18 ,, 51,, 39

Oct. 16

	Sid. Time	Tab. R	
ι Aquarii	21,, 58,, 21.96	22.05	+.09
θ Aquarii	22,, 08,, 57.10	57.15	+.05
☾ I limb	22,, 33,, 48.80		
λ Aquarii	22,, 44,, 49.57	49.55	–.02

Oct. 16 P M
Neptune 2419
7,, 33-4
–11 7,, 47-3
8,, 02-5
8,, 15-3
22,, 28,, 29-3 5 wires
126
9
117
180
5)297
22,, 27 ,, 59.40
col. +.17
az. +.04
lev. +.10
22,, 27,, 59.71
1,, 21, 67
22,, 26,, 38.04

(380) : [illegible]

October 16 P. M. Ile West

2419

ι Aquarii

1 03-6 3
1 17-4 2
−15° 1 30-2 1
1 45-3 1.5
1 60-5 2.5
0 14-4 2
22,,00,,28-4 2

197
120
317
14
7)303
21,,59,,43.28
col +.17
az +.04
lev +.06
21,,59,,43.55
1,,21.59
21,,58,,21.96
21,,58,,22.05
−.09

θ Aquarii

9 39-5 2.5
9 53-5 2.5
−9° 0 07-4 2
0 20-3 1.5
0 34-3 1.5
0 48-4 2
22,,11,,02-4 2

203
60
143
14
7)129
22,,10,,18.43
col +.17
az. +.04
lev. +.08
22,,10,,18.72
1 21.62
22,,08,,57.10
22,,08,,57.15
+5

Moon

4 30-5 2.5
4 44-5 2.5
−12° 4 58-4 2
5 12-4 2
5 26-3 1.5
5 40-2 1
22,,36,,55-4 2

265
180
85
13.5
7)71.5
22,,35,,10.21
col +.17
az. +.04
lev. +.07
22,,35,,10.49
1,,21.69
22,,33,,48.80
22,,

λ Aquarii

5,,30-2 1
5,,45-3 1.5
−8° 5 59-4 2
6 13-4 2
6 27-4 2
6 41-4 2
22,,46,,55-5 2.5

270
180
90
13
7)77
22,,46,,11.00
col.+.17
az.+.04
lev.+.08
22,,46,,11.29
1,,21.72
22,,44,,49.57
22,,44,,49.55
−.02

October 17 P M

2419 α Herculis

8,,32-2
8 46-2
8 60-2
9 14-1
9 29-3
9 43-3
17,,09,,57-2

281
180
101
7.5
7)93.5
17,,09,,13.35
17,,07,,49.06
1,,24.29

E C 3,,32,,20
2419 17,,14,,36

17,,14,,36
1,,24.29
17,,13,,11.71
13,,43,,18.31
3,,29,,53.40
34.38
3,,29,,19.02
3,,32,,20.00
3,,00.98
16
E C 2 44.98
2.5
B 2.47.48

13,,42,,31.57
46.74
13,,43,,18.31

2419 α Ophiuchi

8 43-4
8 57-3
9 10-1
9 25-3
9 39-3
9 53-3
17,,30,,06-1

233
060
173
9
7)164
17,,29,,23.43
17,,27,,58.98
1,,24.45

October 17 P. M.
2419 a Lyrae
2 25-3
2 43-3
2 60-3
3 18-3-
3 35-2
18..34..58-3
18..34..11-3
245
120
125
10
7/115
18..33..16.43
18..31..52.11
1..24.32

October 17/18
E C 20..35..00
2419 10..20..05.3

13..42..31.57
46.74
13..43..18.31

10..20..05.3
1..26.56
10..18..38.74
24
34..18..38.74
13..43..18.31
20..35..20.43
3..22.4
20..31..58.03
20..35..00.00
3..01.97

October 17/18 A M

E C 20..22..00
202 9..04..20.3

E. C. 20..25..20
207 1..24..24

Octr. 17/18th Am

EC – 18.. 43.. 0
196 – 18.. 40.. 16.6

Oct 19 PM
E C 3,, 27,, 00
2419 17,, 17,, 12,9

2557 17,, 22,, 00
2419 17,, 20,, 39,5

October 19 P.M.

2419 a Herculis
8 40 – 2
8 54 – 1
9 9 – 2
9 23 – 2 –
9 37 – 2
9 51 – 1
17,, 10,, 05 – 1
219
60
159
5,5
7)159,5
17,, 09,, 21.93
17,, 07,, 49,00
1,, 32,93

2419 a Ophiuchi
8 51 – 3
9 05 – 2
9 19 – 3
9 32 – 2 –
9 47 – 2
0 02 – 4
17,, 30,, 15 – 2
171
60
231
9
7)222
17,, 29,, 31,71
17,, 27,, 58,94
1,, 32,77

October 20/21 A.M.

E C 19,, 20,, 00
2419 9,, 16,, 49,5

Oct. 20/21 A.M.
2419 ~~a~~ Regulus
11 – 4
1,, 22 – 2
1,, 36 – 1
1,, 50 – 1
2,, 04 – 2
2,, 19 – 3
2,, 32 – 1
10,, 02,, 47 – 3
10 210
180
30
6,5
)23,5
10,, 02,, 03,35
10,, 00,, 23,62
+ 1,, 39,73

(383)

1850,
October 20/21 A.M.

ε b 20„ 21„ 20
2419 10„ 18„ 19.5

10„ 18„ 19.5
1„ 39.73
10„ 16„ 39.77
24
34„ 16„ 39.77
13„ 55„ 07.97
20„ 21„ 31.80
3„ 20.1
20„ 18„ 11.70
20„ 21„ 20.00
+ 03„ 08.30

October 21 P.M.
2419 a Cygni
7 03.8
7 23.0
7 41.9
8 01.3
8 21.2
8 40.7
20„ 38„ 59.8
191.7
180.
7)11.7
20„ 38„ 01.67
20„ 36„ 20.65
+ 1„ 41.02

Oct. 21 PM

2419 20„ 54„ 30
2440 20„ 39„ 28

2557 20„ 58„ 30
2419. 20„ 57„ 12.5

ε Pegasi
2419
53-4
07-4
2 30-2
34-3
48-2
01-1
21„ 39„ 15-1
178-17
169.5
60
229.5
21 38 32.79

21 38 32.79

October 21 PM
2419 β Aquarii
44-4
58-4
11-3
25-4
39-4
53-4
21„ 26„ 06-3
236_26
223
60
163
23.29

21 25 23.29

2.1

4 4) 16.7
4.20

21/22 Adl

EC 19..15..00
2419 9 15..46.5
1..43.2
9..14..03 3
13..59..64.54
19..14..58.76
3 09 20
19..11 49.56
19..15 00
EC + 3..10.4
16
of Boston 2..54.4
Oct 22nd Adl