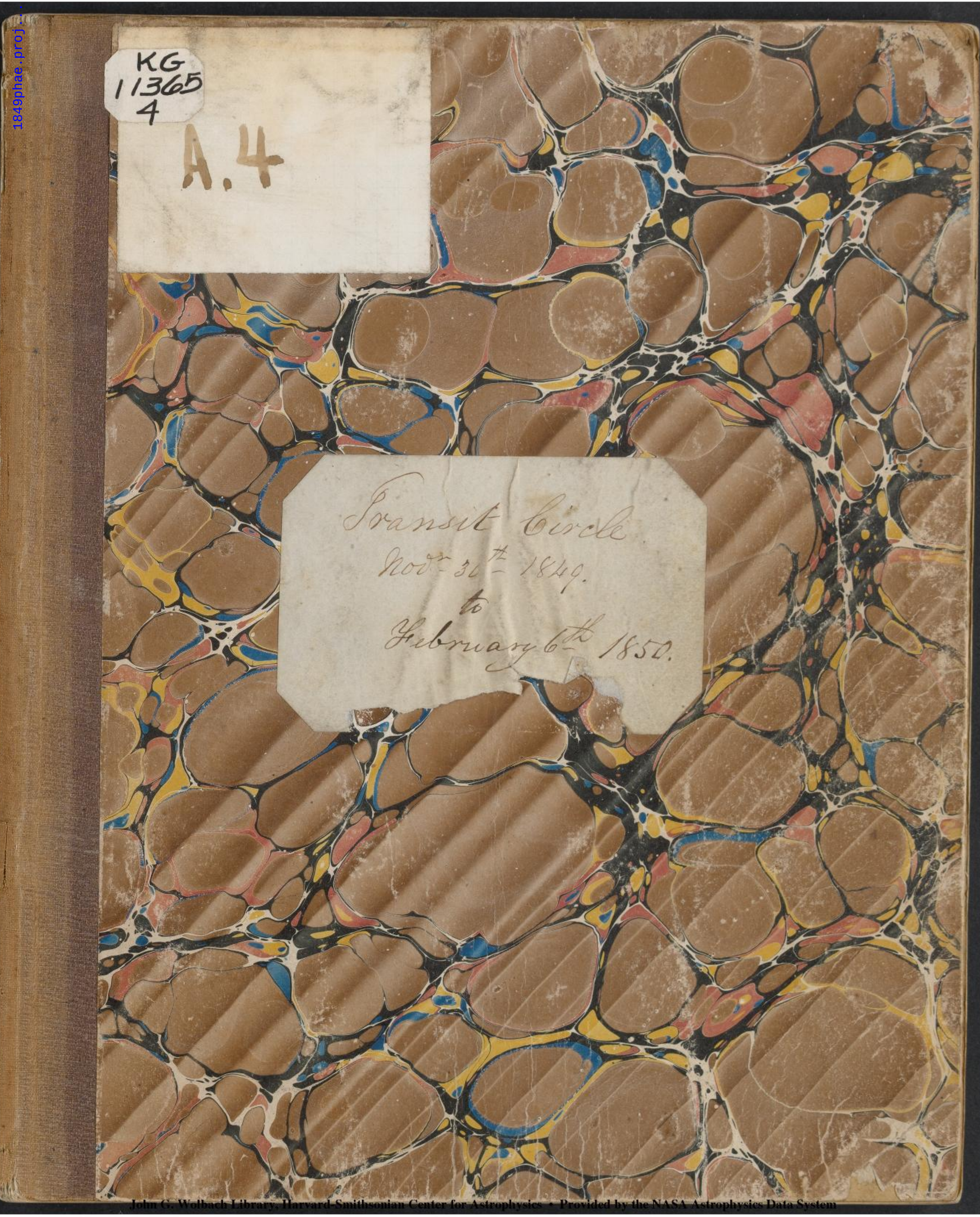
KG
11365
4

A.4



Transit Circle
Novr 30th 1849.
to
February 6th 1850.

KG11365.4

1850 Jan 23 * 78 Tauri
a '''

Height of Observatory above dry Dock in Charlestown

KG 11365.4

HARVARD
UNIVERSITY
LIBRARY
APR 28 1956

(89)

1849 December 3d Am. Int Ther 60 Ext. Snow [illegible]

1503 + 1..32.7

1491 – 13.15.20 — 13..18.28 — 13..21..26
1508 – 8..26..57 — 8..30..04.5 — 8..33..02

1503 – 8.35.20 — 8..36..20
1508 – 20 8.20.13.5 — 8..21..14

1503 – 8..39..0 —— 8..47..0 —— 8..50..0 —— 8..51..0
1502 – 13..05..33.2 2239 – 13..29..28 2227 – 13..27..20.5 2241 – 13..30..11.3

—— 8..52..0 —— 8..53..0 —— 8..54..0 —— 9..0..0
2167 – 13..37..33.3 2257 – 13..35..14.2 2207 – 13..35..23.7 2246 – 13..43..18.2 }

—— 8..55..0 —— 8..56..0 —— 8..57..0 —— 8..58..0
2248 – 13..39..54.8 2186 – 13..34..6.3 2222 – 13..36..41.7 2221 – 13..41..17.2

—— 8..59..0 —— 9..2..0 —— 9..3..0 —— 9..4..0
2245 – 13..40..52.3 1488 – 13..36..29 1505 – 13..47..37.8 6755 – 13..49..52.2

—— 9..5..0 —— 9..6..0 —— 9..8..0 —— 9..9..0
1522 – 13..55..46 2190 – 9..9..56.2 } 1506 – 13..52..44.7 222 – 13..50..53

—— 9..10..0 —— 9..11..0 —— 9..12..0 —— 9..13..0
310 – 13..5..12 439 – 8..33..36.3 1492 – 13..59..45.2 1519 – 13..54..39.3

—— 9..14..0 —— 9..15..0 —— 9..17..0
1510 – 13..51..33.8 1521 – 13..58..27 6701 – 14..09..23

8..53..0
1..32.7
8..51..27.3
4..44..32
13..35..59.3
35..14.2
45.1

1849. (3/4²) 1901 Ther 58

Dec 4th

1491 – 12 .. 09 . 0 — 12 .. 11 . 58 1503 – 7 .. 35 . 48 — 7 . 36 . 48
1503 – 7 .. 16 . 53 — 7 .. 19 .. 50.5 1508 – 7^19 .. 32 . 08.5 — 7 . 33 .. 09

1508 – 7^19 .. 36 .. 43 — 7 .. 37 .. 45 — 7 .. 38 . 44 — 7 .. 40 .. 47
2239 – 12 .. 22 .. 47 — 12 .. 23 .. 48.5 — 12 .. 24 . 47 2227 – 12 .. 21 . 40
— 7 .. 41 .. 46 } — 7 .. 43 . 14 — 7 .. 44 .. 14 — 7 .. 45 . 20
2227 – 12 .. 22 .. 38 } 2241 12 .. 25 . 56 — 12 .. 26 . 55.5 2167 12 .. 34 . 26.5
— 7 .. 46 . 20 — 7 .. 47 . 39 — 7 .. 48 . 39 } — 7 . 53 .. 7
2167 – 12 . 35 . 26 2257 – 12 .. 33 .. 25.5 — 12 . 34 .. 25 } 2207 – 12 . 37 . 59.5
— 7 .. 54 . 7 — 7 . 55 . 42 — 7 .. 56 . 43 — 7 . 57 . 52
2207 – 12 .. 38 . 59 2248 – 12 . 44 . 05 — 12 .. 45 .. 05.5 2186 – 12 .. 39 .. 22
— 7 .. 59 . 50 — 8 .. 01 . 45 — 8 .. 02 . 45 — 8 .. 04 .. 0
2186 12 .. 41 .. 19 2222 – 12 .. 44 .. 50 — 12 .. 45 .. 49.5 2224 – 12 .. 50 . 39
4 .. 41 .. 29 4 .. 43 .. 05
— 7 .. 05 .. 0 } — 8 20 .. 06 .. 25 — 7 .. 07 . 24 — 7 .. 9 . 0
2224 – 12 .. 51 .. 38.5 } 2245 – 12 .. 51 . 39 — 12 .. 52 .. 37.5 2246 – 12 .. 55 .. 38
— 7 . 10 . 0
2246 12 .. 56 .. 37.5

1503 – 8 .. 29 . 23 — 8 . 30 .. 23 — 8 . 31 .. 22
1508 – 8 .. 26 .. 10.5 — 8 .. 27 .. 11 — 8 .. 28 .. 10.5

1503 – 8 .. 40 .. 0
1506 – 13 .. 24 .. 45.5

8 .. 40 .. 0
1 .. 36.1
8 .. 38 .. 23.9
4 .. 44 .. 32.0
13 .. 22 .. 55.9
1506 13 .. 24 .. 45.5
Dec 4 Am +1 . 49 . 6
Nov 16 — +1 .. 8 . 5
18) 40.7 / 2.2
36
47

28
30
31
16 15
4.1 120
41) 135 / 1.4
41
440

1491 25t fast 55.76
29 – 57.36
1.61 10.4

Dal 4t Am 1491 fast. $59^s.36$

16..48..47.22
46.75
16.49..33.97

1491 – 12..9..00.00
36..8.00.64
16..49..33.97
19.18..26.67
–3..9.8
7.15.16.47
1503 – 7..16..53.00
1503 +1.36.13

(92)

1849

Dec 4/5 Am

β Leonis 11 .. 41 – 296 .. 58
γ Urs. maj. – 11 .. 45 –– 257 .. 51

1491 – 11 . 33 30 ——– 11 36 . 35
1503 – 6 .. 37 .. 34 1503 – 6 . 40 .. 38.5
the East 1491

δ Leonis very faint
1 . 40.7
1 . 54.0
2 . 8.0
2 . 22.0
2 . 36 .
2 .. 50.3
11 .. 43 .. 04.0
2/5.0
60
7)155
11 .. 42 .. 22.14
– 2
11 .. 42 . 20.14
11 .. 41 . 22.98
+ 57.16

1503 – 6 .. 58 .. 0 —— – 7 .. 0 . 0
2239 – 11 .. 40 . 25.3 2227 – 11 .. 37 .. 14.3
4 .. 42 .. 25.3 4 .. 37 .. 14.3
—— 7 .. 1 .. 0 —— 7 .. 2 . 0
2241 – 11 .. 40 .. 4.8 2167 – 11 . 47 . 33.8
4 .. 39 .. 04.8 4 .. 45 .. 33.8
—— 7 .. 03 . 0 —— – 7 .. 5 .. 0
2257 – 11 .. 45 . 14.2 2207 – 11 . 46 .. 22.8
4 .. 42 .. 14.2 4 .. 41 .. 22.8
—— 7 .. 7 . 0 —— 7 .. 8 . 0
2248 – 11 .. 57 .. 55.5 2186 . 11 . 46 . 0
4 .. 44 .. 55.5 4 .. 38 .. 00
—— 7 .. 9 . 0 38.6 —— 7 .. 10 . 0
2222 . 11 .. 48 . 58.6 2224 11 .. 53 . 14
4 .. 39 .. 58.6 4 .. 43 .. 14.0
—— 7 .. 11 . 0 —— 7 .. 12 . 0
2245 – 11 . 52 . 50.8 2246 – 11 . 55 . 15.5
4 .. 41 .. 50.8 4 .. 43 .. 15.5

1503 – 7 . 43 . 0 —— 7 . 45 .. 0
1505 – 12 . 27 . 37.5 1502 12 .. 11 24.1
4 .. 44 .. 37.5 4 .. 24 .. 24.1
1503 – 7 . 46 . 0
1519 – 12 . 27 . 36.4
4 .. 41 .. 36.4

Put the Twelve "Dent" Chronometers on board the Caledonia Capt Leitch for Liverpool.

Acc 5 Acc

57 2
1491 12..55..00.0
1503 12..54..02.8
7 58..50.7
12..54..02.8
16..52..43.77
20..01..19.03
3 16.8
7..58..02.23
7..58..50.7
48.47
30.62
1503 +1..19.09 of Borton

dec 4/5th

16..52..43.77
46.75
16.53..30.52

1491- 11..33..30.0
57.16
35.32.3284
16..53..3052
18.39.02.32
3..03.35
6.35.58.97
1503 - 6.37.34.00
+1.35.03
16
1..19.03

5th
1491-17 18..3 — 17..21..02 Ɑ — 17..25..22 – 17..28..25
1503 - 0..21..10.5 — 0..24..09 1503 — 12..28 17.5 – 0..31..20

Ɑ -- 17..31..0 — 17..32..0
1491 17..30..48.9 — 17..31..49.1

1503 — 3..16..0 — 3..57..0 — 3..52..0 — 3..53..0
2190 - 3..19..59.5 6755 - 8..36..47.5 1488 - 8..26..21.7 439 - 3..15..21.7
— 3..54..0 — 3..56..0 — 3..58..0 — 3..59..0
1522 8..44..54.8 1492 8..43..47.2 222 - 8..39..52.2 310 - 7..54..17
— 4..1..0 — 4..12..0 — 4..13..0
1570 - 8..38..28.5 6741 - 9..4..29.7 1521 - 8..56..29.5
1491 - 21..13..0 — 21..14..0 — 22..10..0 — 22..11..0
JJ - 21..19..27.45 424 - 9..14..43 2419 - 22..22..27.2 2440 - 22..01..46
1491 - 22..12..0 — 22..13..0 — 22..14..0
2557 - 22..14..55 B10 - 22..08..56.8 2492 22..21..58.6

22..10.00.0
57.1
22..9..02.9
~~22..22.27.2~~
2419 fast +13..24

849

194x

Decr 5th

α Cygni

19.0
38.2
57.7
17.0
36.5
55.7
20 .. 38 .. 15.0
2391
1591
1701
20 .. 37 .. 15.01

Mc East
1491

α Cephei

58.0
27.3
56.2
21 .. 17 .. 25.6

α Cygni - 20 .. 36 - 267 .. 38
61 Cygni - 21 .. 0 - 274 .. 22
ζ Cygni 21 .. 6 - 272 .. 56
α Cephei - 21 .. 15 - 250 .. 26
β Aquarii 21 .. 23 - 318 .. 36
β Cephei - 21 .. 27 - 242 .. 29
ε Pegasi - 21 .. 36 - 303 .. 12
α Aquarii - 21 .. 58 - 313 .. 26

Level

E W
79 - 84.5 +
+ 82 80
79 - 83 +
+ 82 - 80
79 - 83.5 +
+ 82 - 79
.6)483)100
80.55 81.7
80.5
1.2
0.60 W +
+ $0^{s}.04$

lev. + $0^{s}.04$

β Aquarii

37.2
57.4
5.0
21 .. 25 .. 19.0

β Cephei

27 .. 41.0
28 .. 21.3
29 .. 01.0
21 .. 29 .. 40.8

244
23
882
588
6762

809
23
2427
1618
~~[illegible]~~
1,8607

North		South	
.70.5	.295	.185	.815
.707	.293	.220	.780
.700	.300	.200	.800
.720	.280	.160	.840
.700	.300	.190	.810
.532		7955	
70.6	- .294	191	.809

ε Pegasi

5.4
19.4
33.2
47.1
1.0
14.8
21 .. 38 .. 29.0
1499
3299
47.13
21 .. 37 .. 45.13

Dec. 5th. In. East No 1491.

ζ Pegasi. 22..33 – 302..20
Fomalhaut 22..49 – 342..48
α Pegasi. 22..57 – 297..59

ζ Pegasi.
4 . 15.4
4 . 29.4
4 . 43.4
4 . 57.2
5 . 11.4
5 .. 25.5
22 .. 35 .. 39.3
2216
140
7)401.6
57.37
– 2
22 .. 34 .. 55.37
33 .. 57.98
+ 57.39

Fomalhaut
9 . 31.0
9 .. 47.0
0 . 3.0
0 .. 19.0
0 .. 35.0
0 .. 57.0
22 .. 51 .. 07.2
193.2
60
7)133
19.03
– 2
22 . 50 .. 17.03
49 .. 19.69
+ 57.34

α Pegasi
7 . 33.3
7 . 47.5
8 . 1.5
8 . 16.0
8 . 303
8 .. 44.3
22 .. 58 .. 58.2
231.1
120
7)111.1
15.87
– 2
22 .. 58 .. 13.87
57 .. 16.77
+ 57.10

(96)

Dec $\frac{6^{th}}{7}$ 1849

312..23
39..07
273..16

β Corvi 12..26 344..56
α Urs Maj. 10..54 – 249..50

312..23
10 13
302..10

α Can. Ven.	Spica
05.2	34.5
22.8	48.5
40.5	02.5
58.2	16.4
16.0	30.3
33.5	44.3
12 50 51.6	13 18 58.3
227.8	2348
107.8	1148
58.26	1640
12.. 49.. 56.26	13.. 18 ..14.40

12.. 48.. 58.21

+58.05

2

7/8 Am

α Urs. Maj.

23.6

10 .. 56 .. 53.5 last wire

Dec. 9 P.M. Arrival of the Europa

Brought out by Joseph
Sunday Evg. at 6 P.M.

24.

1491 — 12 .. 47 .. 20 — 12 .. 50 .. 5 — 12 .. 53 .. 03

1503 — 7 .. 33 .. 33 — 7 .. 36 .. 17.5 — 7 .. 39 .. 15

~~3 .. 470~~

1503 — 7 .. 41 .. 0 — 7 .. 42 .. 0 — 7 .. 43 .. 0 — 7 .. 44 .. 0

2901 — 12 .. 24 .. 19.2 230 — 12 .. 33 .. 6.5 250 12 .. 17 .. 37 258 — 12 .. 20 .. 1.7

4 .. 43 .. 19.2 4 .. 51 .. 06.5 4 .. 34 .. 37.0 4 .. 36 .. 01.7

— 7 .. 46 .. 0 — 7 .. 47 .. 0

227 — 12 .. 23 .. 47.4 1127 — 12 .. 38 .. 21

4 .. 37 .. 47.4 4 .. 49 .. 21.0

48

1491 — Fast — 57.9

1503 — " — 1 .. 38.4

1491 — 12 .. 47 .. 20.0
57.9
36 .. 46 .. 22.1
17 .. 13 .. 13.31
19 .. 33 .. 08.79
3 .. 12.2
7 .. 29 .. 56.57
1503. 7 ..

17 .. 12 .. 26.56
46.75
17 .. 13 .. 13.31

24 .. 47 .. 20.0
57.9
24 .. 46 .. 22.1
17 .. 13 .. 13.3
7 .. 33 .. 08.8
1 .. 14.2
7 .. 31 .. 54.6
1503. 7 .. 33 .. 33
+ 1 .. 38.4

Dec. 7t

1491 fast. 58.05

11t — " — 57.7

.3

Dec 10th 1849 Add

1491 + 59.4
1491 12.. 42.. 00.0
2492 12.. 50 20.3
17.. 13.. 13.31
19.. 28 .26.69
19.. 27 ..27.29
3..11.26
19.. 24 .16 .03
24..50..20.30
2492 +5 ..26 .04 .27 of Lamt
16
2492 +5.. 26 ..48.27 of Bodt.

17..12..26.56
46.75
17.. 13..13.31

12..42..0.0
59.4
12..41..00.6
2492 12..50.20.3
9.19.7

0..33..58
57.7
36..33..00.3
17..17..09.8
19..15..50.5
3..09.36
7..12..41.14
7..14..20.5
1503 +1..39.4

Decr 10th PM Ther 63

1491 – 21 9..41..23 — 21 9..44..15
1503 – 4..24..10.5 — 4..27..02

1503 – 4..29..0 — 4..31..0 — 4.33..0 — 4.35..0
6104 – 16..28..15.5 1127 – 9..19..24.8 227 – 9..10..47.4 2901 – 9..18..19.3

— 4..39..0 — 4..40..0 — 4..42..0
258 – 9..15..0 250 – 9..14..34.8 230 – 9..33..8.5

— 4..44..0
222 – 9..25..53.5

1491 fast – 57.7
1503 – " 1..39.4

10th A.m.

1491 – 12..17..0
2492 – 12..25..30.5
24..16..0.6
27..25..30.5
+9.299

17..16..23.11
4675
17..17..09.86

5th
7..58.6
10 8.20.3
5/21.7/4.3

29 – 7.44.2
5 – 7.58.6
6)14.4/2.4
12
24

26 – 7.21.5
29 – 7.44.2
3)23.7/7

22 – 6.55.2
26 – 7.21.5
4)26.3/6.6

9 PM Ther 56

11h Am

1491 – 12..24..30 – 1491 – 12..26..0
2901 – 11..48..13 2901 – 11..49..42.7
36..25..00
17..17..09.86
19..07..50.14
3..8
7..04..42.1
2901 – 11..49..42.7
4..45..00.6
– 16
4..44..44.6
1..25.7
diff 4..43..18.9
Comp diff – 4..43..19.0
.1

1491 – 0..33..58
1503 – 7..14..20.5
36..32..58
17..17..09.9
19..15..48.1
3..9.3
7..12..38.8
7..14..20.5
+1..41.7
16.7
1..25.7
Decr 5 Am 1..19.0
6)6.7(1.1

1503 – 7..19..0
2901 – 12..02..19
4..43..19.0
+1..39.1
4..44..58.1

1849

December 10/11 Am

Polaris S.P.

E 12 .57 ..46.0

D 13 ..06 ..37.0

C 13 ..15 ..24.0

1070

3567

13.. 06..33.67

ar mean - 58

13.. 06..33.09

384
192
576

015 sec δ

(Ill East)

Arcturus

9 .. 3.1

9 .18.0

9 .32.3

9 .47.0

0 . 2.7

0 .16.2

14 .10 ..30.8

1491

180

7/3291

47.01

- 2

14 ..09 ..45.01

8 .47.35

57.66

ε Bootis

lost

52.6

8.0

23.7

39.5

54.6

14 ..40 ..10.2

1784

3568

23.68

21.68

ar mean wires +03

14.. 39.. 21.71

.286
23
858
572
6578

752
23
2256
1504
17296

Dec 11h PM

U ~ 22..58.0

1491 - 22..57.39.4

h m ° ′

α Bootis 14..09 - 292..25

ε Bootis 14.38 - 284..40

Ill East

Ext Ther + 31°

Level

E W

82 - 88 +

+ 88.5 - 81.5

81.5 - 88 +

+ 88.5 81.5

82 88 +

+ 88.5 88.3

85,2 84.7

84.7

.5

lev. = -0.02 .25 = 0.02s E+

Snow on the ground and fine seeing

North South

.720 - 280 - 240 .760

.700 - 300 .220 .780

.710 - 290 .260 .740

.730 - 270 .270 .730

.710 - 290 .250 .750

1430 1260

286 752

1491 - 13.. 53. 43

57.7

17..16..23.11

46.75

17.17.09.86

37. 52 .45.3

17..17. 09.9

20 .35 .35.4

3..22.4

8 ..32 ..13.0

1503 - 8 33..52.5

+1..39.5

Decr 11th Am   Int Ther 61 -   min - 54
1491 - 13..53 ..43 — 13..56..45 1491 - 13.58.02 — 13..59.30
1503 - 8..33..52.5 — 8..36..54 1508 - 9.58.40 — 9.. 0..8.5

1491 - 14.. 1..0 — 14.02..0 — 14..42..0 — 14..43..0
J G - 14..16.12.5 - 14..17..12.6 B10 - 14..37.47.2 2419 - 14..55.31
1491 - 14..44..0 — 14..45..0 — 14.46..0 — 14..47..0
2557 - 14..47..1.8 2440 - 14..35..42.8 424 - 14..46..32.5 1492 14..55..32.6
1491 - 14..49..0 — 15..7..0 1503 - 9..50..0
333 - 14..48..59.4 2857 - 15..6..46.3 6104 - 9..43..45.5
r.a.
Ther. 63.5

1491 - 14.54..50 — 14..57..50 } 1491 - 15..01 03 — 15..2..34
1503 - 9..34..49.5 — 9..37..49 } 1508 - 11..02..02 1508 - 11.. 3..33.5
1508 - 11.. 5..2 — 11.. 6..2 { 1508 - 11.12 52 — 11.13..52
1503 - 9..44..0 — 9..44..59.5 } 230 - 14.42..55.5 — 14..43..55
1508 - 11..15..40 — 11..16..40 } — 11.. 18..27 — 11..19..26
250 - 14..29..05 — 14..30..04.5 } 258. 14.. 33..16 — 14..34..14.5
— 11..20..38 — 11..21..38 } — 11..24..17.5 — 11..24..17 — 11..25..16
222 - 14..41..21.5 — 14..42..21 } 227 - 14..39..53.0 — 14..40..52 — 14..41..50.5
1508 - 11..26.35 — 11..27..36 { — 11..30 02 — 11..31..4
1127 - 14..53..49.5 — 14..54..50 } 1522 - 15..0..07.5 — 15..1..9
— 11..33..02 — 11..33..1 } — 11..34..48 — 11..35..48 }
6755 - 14..57..16 — 14..58..14.5 } 1570 - 14..50..48 — 14..51..47.5 }
3 ..24..14.0   ..25..13.5
— 11..37..22 — 11..38..22 } — 11..40..24 — 11..41..24 — 2..24
6701 - 15..08..50 — 15..09..49.5 } 1521 - 15..02..46 — 15..03..45.5 — 4..45
— 11..43..29 — 11..44..29 { — 11..46..8 — 11..47..9 — 48..9
1492 - 15..10..02.5 — 15..11..02 } 310 - 14..20..13 — 14..21..13.5 — 22..13
— 11..49..35 — 11..50..30 } 1491 - 15..55..53 1491 - 15..59..9
ℒ 190 - 10..32..15 — 10..33..09.5 } 1508 - 11..57..10.5 1503 - 10..38..58
1491 - 15..52..52 — 15..54..24 { 1491 - 16..02..12 — 16..05..14 }
1508 - 11..54..8.5 — 11..55..41 } 1503 - 10..42..0.5 — 10..45..02 }
1503 - 10..47..0 — 10..48..0 — 10..50..0 — 10..51..0
1522 - 15..38..19.8 6755 - 15..33..29.9 1570 - 15..47..16.7 6701 - 15..43..45.8
4..45 29.9   4..52..45.8
1503 - 10..52..0 — 10..54..0 — 10..56..0 — 10..57..0
1521 - 15..35..41.7 1492 - 15..41..54.7 310 - 14..51..27.5 ℒ 190 - 11..01..4.3
— 10..58..0 — 10..59..0 } — 11..0..0 — 11..1..0
1127 - 15..46..27.5 227 - 15..36..46.4 } 222 15..41..53.2 258 - 15..36..57.5
4..48..27.5
— 11..3..0 — 11..4..0 — 11..6..0
250 - 15..37..32.2 230 - 15..55..9.5 439 - 10..27.46.3

(102)

M East

Dec 11th – P.M

1891 – β Aquarii
3 .56.9
4 .10.4
4 .24.4
4 .38.3
4 .52.1
5 .6.1
21 ..25 ..19.7
207.8
60
7)267.8
38.26
−2
21 ..24 ..36.26

β Cephei
~~lost~~
6 .21.5
7 .1.3
7 .41.5
8 .21.5
9 .1.3
21 ..29 ..41.5
871
1742
41.42
39.42+.023 sec δ = +0.07
21.. 27.. 39.49

β Aquarii	21.23 –	318.37
β Cephei	– 21.26 –	242..29
ε Pegasi	– 21. 36 –	303.12
α Aquarii	– 21..58 –	313. 26
ξ Pegasi	– 22..33 –	302..20
α Fomalhaut	– 22..49 –	342..47
α Pegasi	– 22..57 –	

α Pegasi ~~lost~~ unsteady & hurried
32.2
43.7
57.8
12.0
26.0
22..35 ..40

Fomalhaut
32.2
48.0
4.0
20.1
36.1
57.9
22 ,51 ..07.9
200 2
140 2
20.03
22 ..50 ..18.03

α Aquarii
49.8
3.3
17.0
31.0
21 ..59 ..44.7

(103)

(Del. Earth)

Dec - 11^t^

γ Ceti	α Ceti
lost	45.8
4.2	59.0
18.3	13.1
32.1	27.0
46.0	40.7
59.8	54.5
2 .. 37 .. 13.6	2 .. 56 . 08 . 2
1604	2483
3208	1883
2 36 .. 30.08	2690
cor. mean of wires +02	2 .. 55 .. 24.90
2 .. 36 30 . 10	

γ Ceti 2..35 — 309..48
α Ceti 2..54 — 308..54
α Persei 3..13 — 263..09

The worst possible seeing

11/12 Am Int Ther 45

Ext Ther +17

11/12 Am Polaris S.P.	Spica	arcturus.
	7 34.3	2.9
		17.5
E 12 .. 49.21 02.0	7 . 48.1	32.3
ε 12 . 57 .. 46.3	8 . 1.8	46.8
D 13 .. 06 .. 36.0	8 . 16.0	1.5
C 13 . 15 . 24.0	8 . 30.0	16.0
B 13 .. 24 .. 14.0	8 .. 44.0	14 .. 10 .. 30.8
1223	13 . 18 .. 58.0	1478
2446	2322	3278
3646	120	4683
34.46	7/112.2	14 .. 09 .. 44.83
cor. mean of wires −88	16.03	
13 .. 06 .. 33.58	−2	
	13 . 18 . 14.03	
	17 . 16.38	
	+57.65	

1849 at $8^h.30$ (104): . . . .) 84

Decr 12^h Am. min. Temp. 45 present $\overset{\text{increase}}{49}$ – $\overset{\text{room}}{55}$ + 17

1491 – 13 . 55 . 27 — 13 .. 58 . 35 – 14 . 01 . 35
1503 – 8 .. 31 .. 41.5 — 8 .. 34 .. 49 – 8 .. 37 .. 48.5

1491 – 14 . 15 . 05 – 14 .. 16 .. 37 — 14 . 18 .. 04 } 1503 – 8 . 55 .. 49 – 8 .. 56 .. 49
1508 – 10 . 23 . 50 – 10 . 25 .. 22.5 — 10 . 26 .. 50 } 1508 – 10 . 28 . 25 – 10 .. 29 .. 25.5
1 . 32 .. 36 1 .. 32 . 36.5

1503 – 9 . 21 .. 0 — 9 .. 22 . 0 — 9 .. 23 . 0 — 9 . 24 .. 0
1492 – 14 .. 08 .. 56 227 – 13 .. 59 . 46.2 222 – 14 .. 04 .. 53.2 258 – 13 .. 59 .. 54.9
4 .. 37 .. 46.2 4 .. 41 .. 53.2 4 .. 35 .. 54.9
— 9 . 25 .. 0 — 9 .. 26 .. 0 (— 9 .. 28 . 0
250 – 13 .. 59 .. 29.5 230 – 14 .. 17 .. 10.7 (1127 – 14 .. 16 .. 31.2)
4 .. 34 .. 29.5 4 .. 51 .. 10.7 4 .. 48 .. 31.2

The 5 Shepherd's and Fletcher No 1492. were removed to the Prime Vertical Room. at 9^h.. 30 Am
at 10 .. 30 – Ther + 27°.5

12 to 3h P.M. Ther 26 min Ther 25°
1491 – $8^{=20}$ .. 32 . 28 1503 – 3 .. 9 .. 0 1503 – 3 .. 10 . 0
1503 – 3 .. 07 .. 37.5 180 – 7 .. 49 . 10.3 1521 – 7 .. 53 .. 44.5
1503 – 3 .. 11 .. 0 — 3 .. 12 .. 0
1522 – 8 .. 02 .. 25.7 1510 – 7 .. 49 .. 15.2

13^{th} Am 9.30 Am Thermo 23° – Register Ther 23°) 84 – 19 at S.R.
1491 – 13 .. 33 .. 29
1503 – 8 .. 05 .. 52

1503 – 9 .. 22 .. 0 — 9 . 23 . 0 1503 – 9 .. 27 . 0 — 9 .. 28 .. 0
180 – 14 .. 02 .. 08.8.9 – 14 . 03 . 8.1 1510 – 14 .. 04 .. 9.3 1522 – 14 .. 19 .. 27
— 9 . 29 . 0 — 9 . 31 . 0 — 9 . 32 .. 0 — 9 .. 33 . 0
1521 – 14 . 12 .. 43 230 14 .. 22 . 9.8 250 – 14 .. 06 .. 24.5 258 – 14 . 08 . 52.6
— 9 . 34 . 0 — 9 .. 36 .. 0 — 9 .. 37 . 0 [1491 fast – 56.8 }
222 – 14 . 15 . 53.5 227 – 14 .. 13 . 44.4 1492 14 .. 24 . 58.6 [1503 – .. – 1 .. 40.5 }

Coincidence
Tl – 15 .. 12 . 0 1503 – 9 . 46 .. 49 — 9 .. 47 .. 48 — 9 .. 48 . 49
1491 – 15 .. 11 .. 35.0 1508 – 11 . 31 .. 47 — 11 .. 32 .. 46.5 — 11 . 33 .. 48
1491 – 15 .. 18 .. 10 — 15 .. 19 .. 42 – 15 . 21 .. 10
1508 – 11 . 35 . 15.5 — 11 .. 36 .. 48 – 11 .. 38 .. 16.5
~~1491~~ – 15 .. 24 .. 0
424 – 15 . 23 .. 9.8

Decr. 12th PM Ill East

ε Boötis 14.38 – 284..40
α² Libræ – 14..42 – 327..48
61 Cygni – 21..00 – 274..22
δ Cygni – 21..06 – 282..47

ζ Cygni
6..44.0
6..59.7
7..15.3
7..31.1
7..47.0
8..3.0
21..08..18.7
21 8 8
31,26
21. 07..29.26

284.40
27.42
312.22

11th/12th Am Spica
1491 – 13..55..27
57.65
37..54..29.35
17..21.06..42
20..33..22.93
3..22.05
8..30..00.88
8..31..41.5
1503.C – +1.40.62

17.20..19.67
46.75
17.21.06.42

12/13th Am Ill East
Polaris S.P.

	Polaris S.P.	Spica	Arcturus
F	12..48..54.2	7..33.3	9 2.4
E	12..57..44.5	7..47.4	9 17.0
D	13..06..36.0	8..1.3	9..31.6
BC	13..15..26.2	8 15.3	9 46.1
AB	13..24..14.0	8 29.5	0 0.8
		8 43.0	0 15.4
		13..18..57.1	14..10..30.0

174.9
34 98
32.98
ar Mean –88
13..06..32.10

Spica:
226.9
120
106.9
15.27
–2
13 18 13.27
7 16 41
56.86

Arcturus:
143.3
180
323.3
46.19
–2
14 9 44.19
8 47.40
56 74

Spica 13..17 — 322..45
Arctu 14..08 – 292..25
Ext Th +20

12th Ld
17..24..16.23
46.75
17.25 02.98

N		S	
712	.288	320	.680
700	.300	380	.620
705	.295	315	.685
.706		.338	

1491 – 13..33..29.00
00..56..82
37..32..32.18
17..25..02.98
20.07..29.20
3..17.75
8..04..11.45
1503 – 8..05..52.00
+1..40.55

.294
23
882
584
.6722

.662
23
1986
1324
15226

Decr 13/14th Ther 49° 48.5 70

1491–12.37.42 – 12..40..40 } 1503–8..54..45 — 8..55..44
1503–7..06..18.5 7..09..16 } 1508–10..51..13.5 – 10..52..13

1503–8..56..42 — 8..58..38 — 9..00..36
1508–10..53..11.5 — 10..55..08.5 – 10..57..07.5

1503 – 9..22..0 —– 9..24..0 —– 9..26..0 — 9..28..0
230–14..13..10.8 250 – 13..58..21.4 258– 14..01..49.4 222 14..09..53.4

— 9..29..00 } — 9..30..0 — 9..33..0 — 9..34..0
227–14..6..43 } 1492–14..18..0 1521– 14..16..44.2 1522–14..~~35~~ 25?..30.8

— 9..35..0 — 9..37..0 — 9..38..0 — 9..39..0
1510–14..12..4.8 180– 14..17..6.3 1127– 14..26..39.5 310– 13..34..35.1

— 9..40..0 — 9..42..0 —– 9..43..0 } —– 9..44..0
ℒ 140–9..44..10.2 439– 9..03..28.8 6701–14..35..58.2 } 6755–14..29..18.7

1491–15..19..10 — 15..22..10 } 1503–9..51..47– 9..52..44
1503– 9..47..20 — 9..50..19.5 } 1508–11..48..44–11..49..41.5

Ther 72
Ꞓ – 15..27..0 — 15..28..0
1491–15..26..33.2 — 15..27..33.2

1491–15..30..0 — 15..32..0 —– 15..34..0 —– 15..35..0
2857–15..29..48 JG– 15..47..27.9 B10 – 15..29..47 2557 – 15..38..8.7
— 15..36..0 — 15..37..0 —– 15..39..0 —– 15..40..0
2419–15..48..33.8 333. 15..36..40.2 2492– 15..47..47.4 2440– 15..30..45.2
— 15..41..0
424 – 15..39..48.3

1491. Fast – 0..56.3 }
1503 – " – 1..40.5 }

(107)

Dec 13/14 1849 (All East) Sid. 13 – 17..28..12.79
46.75
17.28..59.54

Polaris S.P. 1491

F – 12..48..58
E 12..57..45.5
D 13..06..35.
B 13..15 .26.2
1067
3557
33.57
cor. Mean – 58
13..06..33.00

Spica	Arcturus
33.0	1.7
47.0	16.6
1.0	31.2
15.0	45.8
24.0	0.5
42.9	15.2
13..18..57.0	14..10..30.0
2249	1410
12	18
7)1049	321.0
14.99	45.86
13..18..12.99	14..09..43.86
13..17..16.47	14..08..47.46
56.52	56.40

17..28..12.79
46.75
17.28..59.54

1491 – 12..37..42.00
56.52
36..36..45.48
17..28..59.54
19..07..45.94
3.08.0
7..04..37.94
7..06..18.5
1503, C. +1..40.6

384
32
768
1152
12288

15th Add 1491 +56.10
1491 13..11..00.0
1510 12..12..39.8
13..10..03.9
17..32..56.09
19..37..07.81
3..12..84
19..33..54.97
24..12..39.80
1510 +4..38..44.83
16.0
1500 +4..38..28.8 of Bond.

Dec 14/15 Add
Polaris S P
mid 13..06..38.5
36.5
cor Mean – 1.23
13..06..35.27

Spica
32.0
46.3
0.3
14.1
28.5
42.3
13..18..56.2
2197
12
997
13..1 14.24
13..19..12.24
13..17..16.50
1491 +55.74

1491 - Fast - 55.74 s
1503 -

Dec 14/15 Add 8h M S T 1849 Ther 52

1491 13..34..00 13..35..00 13..36..00 13..37..00
Fletch - 1492 0..46..32.8 Sh. 227 0..37..15.1 Sh. 222 0..42..25.7 Sh. 258 0..37 19.6

1491 13..38..00 13..39..00 1491 13..40..00
Sh. 250 0..36..50.7 Sh. 230 0..54 44.2 Hutton 180 0..44..36.9

1491 13..41..00 13..42..
Pl 1127 0..54..14.4 de Job. 310 0..02..01.2

16 Am Ther 55

Dec 17th noon Ther 60 (54 Am)

1491 - 18.44.50 — 18.. 47.52
1503 - 1..0..41.5 — 1.. 03..43
..44..08.5

1503 - 1 09..0 — 1.. 11..0 — 1.. 12..0 — 1.. 13..0
1492 - 5..57..0 227 - 5..48..42.4 222 - 5..53..54 258 - 5..48..43.5

— 1..14..0 — 1..15..0 — 1..16..0
250 5..48..11.7 230 - 6..06..16.3 250 - 5..50..11.7

— 1..54..0 — 1..56..0 — 1..57..0 — 1..58..0
180 - 6..34..2.7 1127 - 6..44..57. 310 - 5..52..28.3 1522 - 6..49..45.5 }

— 1..59..0 — 2..0..0 — 2..1..0
1521 - 6..42..52.8 6701 - 6..53..12 6755 - 6..46..7.7

1491 - 21..42..0 — 21..44..02
2457 - 2..24..1.3 — 2..26..03

1491 Fast - 0 m..55.5 s }
1503 - .. 1..42.6 }

Dec 16
17

Polaris S.p.
Mid. 1..06..37 about
Not seen ~~tie aft~~
Transit 5 or 6^s

17..40..02.46
46.75
17..40..59.21

55.5

1491 13..12..00.0
1503 19..28..46.2
13..11..04.5
17..40..59.21
19..30..15.3
3 11.7
19..27..03.6
19..28..46.2
+1..42.6
16
1503 +1..26.6 of Bond

Spica
32.3
46.0
00.0
14.1
28.0
41.9
13 18.. 56.0
218.3
12

98.3
14.04
13..18..12.04
13..17..16.54
+55.50

Dec 17 Alle
Int Thr 54
at winding of Chronometers

Returned from Boston
1491–18.. 19 ..25 —18 .22 .25
1141– 0.. 28 ..57.5 — 0 .31 ..57
18.. 19 .. 25.0
55.5
18 ..18 .29.5
17 .. 44 .. 45.8
0 .. 33 .43.7
5.5
0 .. 33 .38.2
1141 – 0 .. 28 ..57.5
Camb – 4 .40.7
16
Boston – 4 .56.7
10 .. 59 .. 16
11 .. 04 .12.7
J.G. 11 .. 04 .00
–12.7

17..43..59.01
46.75
17..44..45.76

1141– 0 .33 .. 0 1141– 0 .34 .. 0
190– 0 ..43 ..38.2 239– 0 ..38 .43
0 .. 33 .. 0
4 ..56.7
0 .37 .56.7
190 0 .. 43 .38.2
+5 .41 .5
190 8 .. 48 .. 53.2
B – 8 .43 .11.7
H – 8 .. 43 .. 0 .0
–11.7

1849

Dec^r 17^th Ill. East.

β Aquarii	ε Pegasi
3 .. 54.2	7 .. 3.5
4 .. 7.9	7 .. 17.5
4 .. 21.7	7 31.4
4 . 35.5	7 45.4
4 . 49.5	7 . 59.5
5 . 3.2	8 .. 13.3
21 .. 25 .. 17.0	21 .. 38 .. 27.3
1890	197.9
60	120
7/249.0	7/317.9
35.57	45.41
−2	−2
21 .. 24 .. 33.57	21 .. 37 .. 43.41
21 .. 23 .. 37.91	36 .. 47.76
+ 55.66	+ 55.65

β Aquarii 21.23 — 318..36
ε Pegasi 21..36 — 303..12
α Aquarii 21..58 — 313..26

Level

	E	W	
	77 —	81	+
+	79.0 -	78.3	
	76.8 -	80.7	+
+	79.0 —	77.3	
	76.5 —	80.5	+
+	79.0 —	77.0	
	6/473	6/474.8	
	77.9	79.13	
		77.9	
		1.23	
		.61	W too high
		0.04	

mer marks

North		South	
.662	.338	.310	.690
.710	.290	260	.740
.720	.280	300	.700
2092		1870	
697		290	
0.303		0.710	
710		303	
1.013		.407	

1503 — 9 .. 33 .. 0
2451 — 14 .. 16 . 37.7

19 Am Spica Ill East

46.2
0.0
14.0
27.8
42.0
13 . 18 .. 56.0

See its proper place

0.710	0.303
23	23
2130	909
1420	606
1.6330	.6969

Copied thus far

(111) (.011)

Decr. 17/18th Am Ill East - Ther 54 Register 49
No. 1491

1503 – 6 .. 20 .. 0
2457 – 11 .. 03 .40

1491 – 13 .13 .56
1503 – 7 .. 26 .. 47

α Virginis 13 .. 17 – 322 .. 45
α Bootis 14 .. 08 – 292 .. 25
η Urs Maj – 13 .. 41 – 262 .. 15
η Bootis – 13 .. 47 – 293 .. 14
ε Bootis – 14 .. 38 – 284 .. 40

Polaris S.P.

mid 13 .. 06 .. 31.0
–2
13 .06 .. 29.0
5 .. 35.0
+ 54

29.0
ar Mean – 1.23
13 .. 06 .. 27.77

Spica
7 32.8
7 .46.5
8 . 0.3
8 . 14.1
8 . 28.2
8 . 42.0
13 .18 .. 56.0
2199
1261
7)99.9
14.27
–2
13 . 18 .. 12.27
7 .. 16.56
+ 55.71

η Urs. Mg.
1 .28
1 .. 50.0
2 . 11.2
2 . 32.7
2 . 54.2
3 .. 15.4
13 .. 43 .. 37.0
7)229.2
32.74
–2
13 . 42 .. 30.74
35.25
55.49

Level 54 Ther 28
Ɛ W
84 — 87.7 +
+ 86 — 85.3
84 — 87.7 +
+ 86 — 85
83.7 — 87.5 +
+ 86.0 — 84.5
0.67 West too high
lev. = +0.06
Mer. Marks too unsteady

η Bootis
7 . 44.9
7 .59.6
8 14.0
8 .28.6
8 . 43.2
8 .. 57.7
13 .. 49 .. 12.2
2602
60
7)2002
28.60
–2
13 . 48 .. 26.60
47 .. 30.94
+ 55.66

α Bootis
9 . 1.2
9 .15.8
9 30.5
9 . 45.1
9 . 59.7
0 .. 14.3
14 .. 10 .. 29.0
195.6
120
7)315.6
45.09
–2
14 . 09 .. 43.09
47.54
+ 55.55

ε Bootis
8 . 35.2
8 . 50.7
9 6.5
9 21.7
9 37.4
9 .. 52.5
14 .. 40 .. 8.5
2125
60
7)152.5
21.79
– 2
14 . 39 . 19.79
38 . 24 . 24
+ 55.55

17 .. 43 .. 59.01
46.75
17 . 44 . 45.76

1491 – 13 .. 13 .. 56.00
55.71
37 .. 13 . 00 .29
17 .. 44 . 45.76
19 .. 28 .. 14.53
3 .. 11 . 4
17 . 25 . 03 .10
7 26 .. 47
1503. C + 1 .. 43 .9

Dec 17/18 Am) Ill Ea Ther 61° – 56°

1491 – 14 .. 15 .. 39 — 14 .. 18 .. 40 1503 fast – 1 .. 43.9
1503 – 8 .. 28 .. 20 — 8 .. 31 .. 20.5

1503 8 .. 37 .. 0 — 8 .. 39 .. 0 — 8 .. 40 .. 0 — 8 .. 41 .. 0
1492 – 13 .. 24 .. 58.9 227 – 13 .. 16 .. 41.5 222 – 13 .. 21 .. 53.7 258 – 13 .. 16 .. 41

— 8 .. 43 .. 0 — 8 .. 44 .. 0 — 8 .. 48 .. 0 — 9 .. 1 .. 0
250 – 13 .. 17 .. 8.5 230 – 13 .. 35 .. 17 1522 – 13 .. 39 .. 48.2 1521 – 13 .. 44 .. 54.3

1503 – 8 .. 55 .. 20 — 8 .. 56 .. 20 — 8 .. 57 .. 20 — 8 .. 58 .. 20 — 8 .. 59 .. 20
1508 – 11 .. 39 .. 37 — 11 .. 40 .. 37.5 — 11 .. 41 .. 38 — 11 .. 42 .. 38.5 — 11 .. 43 .. 39

1503 – 9 .. 3 .. 0 — 9 .. 4 .. 0 — 9 .. 5 .. 0 — 9 .. 7 .. 0
6701 – 13 .. 56 .. 13.6 6755 – 13 .. 49 .. 7.3 180 – 13 .. 45 .. 1.3 1127 – 13 .. 55 .. 54.0
— 9 .. 9 .. 0 — 9 .. 10 .. 0 — 9 .. 11 .. 0 — 10 .. 7 .. 0
310 – 13 .. 4 .. 26.8 L190 – 9 .. 14 .. 14.3 439 – 8 .. 32 .. 2.5 1141 – 10 .. 0 .. 34

1491 – 15 .. 1 .. 0 — 20 1491 – 15 .. 43 .. 20
2857 – 15 .. 0 .. 50.5 2451 – .. 34 2451 – 2 .. 39 .. 27.5
1491 – 15 .. 45 .. 0 — 15 .. 46 .. 0 — 15 .. 47 .. 0
2557 – 15 .. 48 .. 18.7 333 – 15 .. 45 .. 17.8 2419 – 15 .. 59 .. 35.7
— 15 .. 48 .. 0 — 15 .. 49 .. 0 — 15 .. 50 .. 0
B10 – 15 .. 43 .. 57.6 2440 – 15 .. 39 .. 48.7 2492 15 .. 59 .. 15
— 15 .. 51 .. 0 — 15 .. 52 .. 0
424 – 15 .. 49 .. 11.3 Jg – 16 .. 07 .. 49.5

No 1491 – Fast 55.5
1503 — 1 .. 43.9

9 .. 07 .. 00
1 43 9
9 5 1 6 1
13 .. 55 .. 54 0
4 50 37 9

Dec – 17/18 morng.

1491 – 15 . 58 . 57 – 16 .. 00 . 19 – 16 .. 01 . 48
1508 – 12 .. 56 .. 10 – 12 .. 57 .. 38.5 – 12 .. 59 .. 08

1508 – 1 .. 1 .. 03 – 1 .. 2 .. 1 } 1508 – 1 . 3 . 38 – 1 .. 4 33
6701 – 3 .. 9 .. 19.5 – 15 .. 10 .. 17 } 6755 – 3 . 3 .. 41.5 – 3 .. 4 .. 41

1508 – 1 . 5 .. 33 } – 1 .. 7 .. 0 – 1 .. 8 .. 0
6755 – 3 .. 5 .. 40.5 } 310 – 2 .. 17 .. 26.5 – 2 .. 18 .. 26

1508 – 1 .. 9 .. 6 – 1 .. 10 .. 6 } – 1 .. 18 .. 28 – 1 . 19 .. 28 –
1127 – 3 . 12 .. 58.5 – 3 .. 13 .. 58 } L 190 – 10 .. 37 .. 36 – 10 . 38 .. 35.5 –
1508 – 1 .. 23 .. 34 – 1 .. 24 . 34 – 1 .. 25 .. 34 – 1 .. 26 .. 34
1503 – 10 .. 38 .. 25.5 – 10 .. 10 . 39 .. 25 – 10 .. 40 .. 24.5 – 10 .. 41 .. 24

No. 1503 – L 190 – 6755 – 6701 – 1127 – 310

1508 – 1 .. 41 .. 57 – 1 .. 42 .. 56 } 1491 – 16 . 48 .. 0 – 16 .. 49 . 30
1492 – 3 .. 44 .. 38.5 – 15 .. 45 .. 37 } 1508 – 1 . 45 .. 35.5 – 1 . 47 .. 06
2 .. 41.5 2 .. 41

1491 – 16 . 50 .. 55
1508 – 1 .. 48 .. 31.5

1491 – 14 .. 15 . 39
55.6
38 .. 14 . 43.4
17 .. 44 . 45.76
20 .. 29 . 57.64
3 . 21.5
8 .. 26 .. 36.1
1503 – 8 .. 28 . 20.0
+ 1 .. 43.9

17 .. 43 .. 59.01
46.75
17 .. 44 .. 45.76

Dec. 18th Ill East

γ aquilæ

} Lost

31.2

19.40.45.2 Last

1491.

α Aquilæ

3.42.0

3.56.0

4.10.1

4.23.8

4.38.0

4.57.8

19..45..05.5

2272

−66

7)167.2

..23.89

−2

19.44..21.89

25.95

+55.94

γ Aquila	19..39 –	302..08
α Aquilæ	– 19..43 –	303..56
β –	19..47 –	306..21
α Cygni	– 20..36 –	267..38

α Cygni 6.17.4

6.36.9

6.56.0

7.15.8

7.34.9

7.54.6

20.38..13.2

228.2

120

7/108.2

15.46

−2

20.37.13.46

17.53

55.93

18th/19th Decr Am   He East 1491

1191 fast 55.4

Spica

7 . 46.2
8 . 0.0
8 . 14.0
8 . 27.8
8 . 42.0
13 . 18 . 56.0
2177
120
7/97.7
13.96
-2
13 .. 18 .. 11.96   13 .. 08 .. 12.02
17 .. 16.59
+ 55.37

1300
2600
12.00
+ 02 corden

1491 - 13 .40 .. 20 — 13 .43 .. 20
1503 - 7 .49 .. 11.5 — 7 .52 .. 11

7.47.55.57
46.75
17.48.42.32

13 .. 40 .. 20.0
55.4
37 .39 .24.6
17 .. 48 .. 42.3
19 .. 50 .. 42.3
3 .. 15.1
7 .. 47 .. 27.2
1503 . 7 .. 49 .. 17.5
1503 . C – + 1 .. 44.3

1503 – 7 .. 59 .. 0 — 8 .. 0 .. 0   -1503 – 8 .. 2 .. 0 — 8 .. 3 .. 0
6755 – 12 .. 44 .. 06.0 — 12 .. 45 .5.9   6701 – 12 ., 55 ., 16.7 – 12 .. 56 .. 16.7
4 .. 45 .. 06.0   4 .. 45 .. 05.9   4 .. 53 .. 16.7   4 .. 58 .. 16.7
1503 – 8 .. 4 .. 0 — 8 .. 5 .. 0
1127 – 12 .. 52 .. 57.1 — 12 .. 53 .. 57.1
4 .. 48 .. 57.1   4 .. 48 .. 57.1

See Note next page
probably counted 6 beats

7 .. 59 . 0
1 .. 44.3
7 . 57 .. 15.7
4 . 44 . 32
12 . 41 . 47.7
6755 – 12 .. 44 . 06
+ 2 .. 18.3
6 . 09.4
3 . 51.1

1503 – 8 .. 4 . 0.0
1.44.3
8 .. 02 . 15.7
4 . 44 . 32
12 . 46 . 47.7
1127   12 .. 52 . 57.1
+ 6 . 09.4

8 .. 2 .. 0
1 .. 44.3
8 . 0 . 15.7
4 . 44 . 32
12 . 44 .. 47.7
6701 . 12 .. 55 .. 16.7
+ 10 . 29.0
6 .. 09.4
4 . 19.6

(Note Apr 1850 When was this taken)

Arcturus *
02.6
17.0   G.A.B.
31.7
46.2
00.8
15.5
14 .. 10 .. 30.2
1440
3240
46.29

Comparisons in Boston
1127 – 2 .. 14 .. 0   ~~1127~~ – 2 .. 15 .. 0
6701 – 2 .. 18 .. 19.7   6755 – 2 .. 11 .. 8.5
+ 4 .. 19.7   – 3 . 51.5
Camb. diff + 4 .. 19.6   Camb – 3 .. 51.1
Diff – 0.1   Diff 0.4

14 .. 09 .. 44 .. 29 – 1.00s

Decr 19th 6755 _ 6701 _ 1129?
Set on Board the "Europa"
Capt Lott.

~~Note~~
*when copied for Chro. Ex. – 6 beats
= 3s was subtracted.

Dec $\frac{18}{19}$ 1849 8 A.M. Min Ther. 46 Ther 50 Ext Ther + 18°
1503 fast 1.. 44.3

1491 14.. 32.. 00 ~~1503~~ 1503 8.. 42.. 00 1503 8.. 43.. 00
1503 8.. 40.. 43.0 1492 1.. 29.. 59.2 W.S 222 1.. 24.. 54.3

1503 8.. 44.. 00 1503 8.. 45.. 00 1503 8.. 46.. 00
W.S 227 1.. 21.. 41.4 Fr 1521 1.. 28.. 57.3 1522 1.. 37.. 53.2

1503 8.. 47.. 00 1503 8.. 48.. 00.0 1491 14.. 40.. 00.0
J. H. 180 1.. 27.. 00.3 J. Git. 14.. 55.. 12.8 J. G. 14.. 55.. 54.6
[Ther 60]
1503 - 0 .. 26 .. 0 — 0 .. 27 .. 0 — 0 .. 28 .. 0
230 - 5 .. 17 .. 19.4 250 - 5 .. 01 .. 4.8 258 - 5 .. 03 .. 39.2
The above changed to the P. V. Room. Ther 26°

Ab — 22 .. 25 .. 0 — 22 .. 26 .. 0 Beat together
1491 — 22 .. 24 .. 24.5 — 22 .. 25 .. 24.5

Dec $\frac{19}{20}$ at 8 A.M. Min Ther in P V Room on the Chro $\frac{1}{}$ = 26° Ther 32

Arcturus 14.. 32.. 00
56 40
14.. 31.. 03.60
17.. 48.. 42.32
20 .. 42 .. 21 .. 28 of 1503
3.. 23.. 53
20.. 38.. 57.75
8.. 40.. 43.00
By Arct. 1503 +1.. 45.25
By Spica 1503 +1.. 44.05

By Arct 1491 + 56.20 cor. pers. Eq
By Spica 1491 + 55.00 cor for pers. Eq

In the obs. of Arcturus on the other side of this leaf, there is an evident discrepancy of 1^s from that of Spica. ~~But~~ It is proved that the error was not in the going of 1491 because comparisons show that 1491 did not change.

After a good deal of perplexity I bethought myself of a circumstance which explains the difference to my satisfaction.

During Nov & Dec. when observing Mars with the Great Refractor I used to count 6 beats instead of 4 beats before reading the Chronometer so as to get more time for reading of the seconds hand. During this period when taking transits I was obliged to be on my guard against counting 6 beats instead of 4 = In the case before us I doubtless counted 6 beats

Decr 19/20

1491 – 12..38..38　1491 – 13.. 31 ..04
1141 – 18 ..37 ..10　1503 – 19.. 36 ..01.5
1491 – 13..36..35　1503 – 7..43..0
1141 – 19 ..34..57.5　1141 – 7.. 36..25.9
　　　　　　　　　　　– 6 .34.1

coin
1491　13..49..00　13..49 17
1503　7..53..54.6　7 54..11.5

1491 – 21... 52 .20
1141 – 3.. 49 ..20

1503 – 34, 58..0
1141 – 3 ..51..24.7

1503 + 1..45.0

Dec 20 [illegible]　Thr +33°　[illegible] 26

1503 8..44..00　8..44..30　8..45..00　8..45..30
1492 1.. 32..00.8 222 1.. 26 24.3　227 1..22 39.3　1521 1 29 26.6

1503　8..46 00　8..46..30　8 47　8 47..30
1522 1.. 37. 55.7　180 1..26 27.7　2.. 58..13.3　230 1.. 38.. 49.7

1503 8..48,　8..48..30
250 1..22 00.3　258 1..24..07.2

1849 Decr 20/21st Am   Id (118) East
1491.

2.3
.004
.0092

Spica
7 . 33
7 . 47
8 . 1.0
8 . 14.9
8 . 29.0
8 . 43.0
13 . 18 .. 57.0
2249
120
7/1049
14.99
– 2
13 . 18 . 12.99
17 . 16.66
+ 56.33

1491 – 13 .. 57 . 5
2451 – 12 .. 42 . 0

Arcturus
9 . 2.3
9 . 16.8
9 . 31.5
9 . 46.1
0 0.5
0 . 15.2
14 . 10 . 30.0
1422
180
7/322.4
46.06
– 2
14 . 09 . 44.06
8 . 47.61
+ 56.45

.296
~~300~~
23
~~.640~~
681

2
~~766~~
23
2298
1532
1.7618
1.752

Mean marks

North		South	
.685	.315	240	.760
.715	.285	220	.780
.700	.300	240	.760
.720	.280	240	.760
.700	.300	.250	.750
704		238	
~~300~~		~~766~~	
296		762	

apparent
~~& .004~~

1491 – 14 .. 25 .. 50.0
56.33
38 . 24 .. 53.67
17 .. 56 .. 35.44
20 .. 28 .. 18.23
3 .. 21.21
8 .. 24 . 57.02
8 .. 26 .. 43.50
1503 . ☉ — + 1 . 46.48

17 .. 55 . 48.69
46.75
17 . 56 . 35.44

Decr 20/21st Am

1491 – 14 .. 25 .. 50 — 14 .. 28 . 50 } 1508 – 11 . 52 .. 49 – 11 .. 53 . 50
1503 – 8 .. 26 .. 43.5 — 8 .. 29 .. 43 } 1503 – 8 .. 32 .. 50 – 8 .. 33 .. 50.5

Chros. from P. V. – Ther 36 min Ther 32°
Returned to Study

1503 – 9 .. 3 .. 0 — 9 .. 4 .. 0 — 9 .. 6 .. 0 — – 9 .. 7 .. 0
1492 – 13 .. 51 .. 0 222 – 13 .. 45 .. 54 227 – 13 .. 43 .. 36.3 1522 – 13 .. 58 .. 57.5

— – 9 .. 8 .. 0 — 9 .. 9 .. 0 — 9 .. 10 .. 0 — – 9 .. 12 .. 0
1521 – 13 .. 57 .. 56 . 180 – 13 .. 48 .. 53.9 — 13 .. 49 .. 54.1 230 . 14 .. 03 .. 19.8

— 9 .. 13 . 0 — 9 .. 14 . 0 — 9 . 25 . 0
250 – 13 .. 46 .. 54.2 258 – 13 .. 49 . 34 JG – 15 .. 40 .. 19.7

1491 – 15 .. 25 .. 0
J. G – 15 .. 41 .. 3.5

Dec 21st P.M.
1491 – 2 .. 53 .. 0
424 – 2 .. 50 .. 32.5

Dec 22 AM In doors
~~Min Ther [illegible]°~~ Max 69°
At 8 AM.

21/22 Am
1491 – 12 .. 28 .. 40 — 13 . 32 . 35
1503 – 6 .. 25 .. 57.5 — 7 . 29 .. 42

12 .. 28 .. 40
56.4
36 . 27 . 43 . 6
18 .. 00 .. 31 . 99
18 . 27 . 11 . 61
3 . 01 . 4
6 .. 24 .. 10 . 21
1503 – 6 . 25 . 57 . 5
+ 1 .. 46 . 29
16
1503 of Boston + 1 .. 30 . 3

– 17 .. 59 .. 45 . 24
46 . 75
18 00 . 31 . 99

S–R 23 Ext Ther – 25.5 Int 57
Int Min – 44 max 63
Fr L S –

6 .. 02 .. 42.5
6 .. 02 .. 53 0
10 . 5

Decr 23d Am.

Mc. Earth (120)
1491

Arcturus.
9 . 2.9
9 . 17.7
9 . 32.5
9 . 46.9
0 .. 1.4
0 . 16.3
14 . 10 .. 31.0

1487
1[illegible]
7)328.7
14 . 09 .. 46.96 44.96
8 . 47.69
+ 54.27
− 2
1491 fast + . 57.27

23 PM
1491 23 .. 39 .. 00
2557 23 .. 42 .. 30.3

Im of 35 Ceti
WCB 1491 23 .. 44 .. 2.5 − 6
3.0
23 .. 43 .. 59.5

GPB 2557 23 47 .. 40 − 19
Clouds 9 5
not good. 23 47 . 30.5
3 .. 30.3
GPB 23 44 30.2

1491 − 11 .. 54 .. 0
2557 − 11 .. 57 .. 30.3

Ther. S.R.
Ext. -

Dec. 23/24th Am.

Min 50° Max 56°

I & S
54

1491 _ 12..56..50
1503 _ 6..46..12
12..56..50
57.5
36..55..52.5
18..08..25.1
18..47..27.4
3..4.7
6..44..22.7
1503. 6..46..12
1503. C + 1..49.3
16
+1..33.3

1503 _ 7..29..0
1522 _ 12..21..09.9

18..07..38.36
46.75
18..08..25.11

Coin

1491 15..38..17 1491 15..39..00
1503 9..27..12.5 1503 9..27..55.3

1503 9..31..00   250 9..31..30   9..32..00   9..32..30
258 2..06..29.0   250 2..05..15.0   230 2..23..25.8   1492 2..20..29.4

1503 9..33..00   9..33..30   9..34..00   9..34..30
1521 2..17..04.2   180 2..13..20.6   222 2..15..54.2   227 2..12..05.4

(Dec^r. 24/25 A.M.

Ill. East
(1491)

Spica – 13..17 – 322..43
Arcturus 14..8 – 292..25

Spica
7 .35.6
7 .49.5
8 . 3.5
8 .17.5
8 .31.4
8 ..45.4
13 ..18 ..59.5
2424
120
7/1224
17.49
–12
13 . 18 ..15.49
17 ..16.78
+ 58.71

18..11..34.92 . 15..50..56
46.75 58.71
18.12..21.67 . 39 ..49..57.29
18..12..21.67
21 ..37..35.62
3..32.60
9 ..34..03.02
1003– 9. 35..54.00
+1..50.98

Ext Th. S.W. – 22°
att'' .. " – 53. W. 58

Dec^r 24/25 A.m.

Max Min
60 44.5

1491 – 15.50.56 — 15..53..58
1503 – 9..35..54 — 9..38..55.5

1503 – 9..49..0 —— 9..50..0 —— 9..51..0 —— 9..53..0
258 – 14..24..27.2 250 – 14..43..42.2 230 – 14..42..27.4 1492 – 14..40..58.5
—— 9..54..0 —— 9..55..0 —— 9..56..0 —— 9..57..0
1521 – 14..38..7 180 – 14..34..49.3 222 – 14..37..54 227 – 14..34..35
—— 9..59..0 —— 10..3..0 } —— 10..4..0
310 – 13..54..21 & 190 – 10..07..31 } 439 – 9..24.10.5

1508 – 14.08.33 — 14..9..33
1503 – 10..0..1.5 — 10..1..01

1491 – 16..21..0 —— 16..27..0 —— 16..28..0 —— 16..29..0
J.G. – 16..37..25.5 2857 16..26..52 424 16..24..28 2440 – 16..19..42.8
—— 16..30..0 —— 16..31..0 —— 16..32..0 —— 16..33..0
2557 – 16..33..34 2419 16..43..38.6 2497 16..41..54 B10 – 16..28..48.5
—— 16..34..0
333 – 16..32..54.5

1441 Fast – 0..58.7 }
1503 .. – 1..50.9 }

25^th – 4^h P.M. Exposed Ext Ther 13
1491 – 22..15..0 1491 22..16..20 — 22..19..20
2857 – 22..14..52.2 1503 – 4..0..15 — 4..3..14.5

1503 – 4..5..0 —— 4..6..0 —— 4..8..0 —— 4..9..0
222 – 8..46..54.1 227 – 8..43..35.3 180 – 8..47..49.2 1521 8..53..8

—— 4..13..0 —— 4..14..0 —— 4..15..0 —— 4..16..0
1492 – 9..00..59 258 – 8..49..27.2 250 – 8..48..41.8 230 – 9..07..28

1491 – 23..0..0
2557 – 23..3..35

Int.
6..15 – 53
7..45 . 57
9.0
11

4^h 30^m Ex. Ther 11°
6.15 – .. 9
– " – 8.5
– " –
– " – 5.0

Exposed to the open air on the East Balcony

Decr. 25/26 Am.

Me East
(1491) Ext Ther 4°

Spica
7 . 35.4
7 . 49.5
8 . 3.5
8 . 17.5
8 . 31.5
8 . 45.3
13 .. 18 .. 59.5
242.2
120
7)122.2
13 .. 18 .. 17.46
− 2
13 .. 18 .. 15.46
17 .. 16.81
+ 58.65

1491 – 13 .. 32 . 25 –
1503 – 7 .. 13 . 50 –

321.12

Arcturus.
East
33.4
48.0
2.9
17.6
14.10 .. 32.2
1341
2682
282
00.82
cor to – 14.60 mean of wires
14 .. 09 .. 46.22

β Libræ
~
25.0
~ too faint & unsteady
55.3
9.8
24.2
~

1491 – 14 .. 54 .. 42
1503 – 8 .. 35 .. 53.5

1491 – 13 .. 32 .. 25.0
58.65
37 .. 31 .. 26.35
18 .. 16 .. 18.22
19 . 15 . 08 . 13
3 .. 09 . 25
7 .. 11 . 58 . 88
7 .. 13 .. 50
1503 . C – +1 .. 51 . 12

18 .. 15 .. 31.47
46.75
18 .. 16 .. 18.22

5 a Expt. Th. 4° Int. 60
9 Am 6 – 58.5

Decr. 25/26 Am

1491 – 14 . 54 . 42
1503 – 8 . 35 . 53.5
After exposure during 17hrs (Ther. ranging from 4° to 6° Fahrt. for
1491 – 15 . 29 . r . Am
2557 – 15 . 32 . 32.5

1503 – 9 . 31 . 0 — – 9 . 33 . 0 — 9 . 34 . 0 — – 9 . 35 . 0
230 – 14 . 22 . 27.5 250 – 14 . 06 . 37 258 – 14 . 09 . 25.1 180 – 14 . 14 . 44.7

— – 9 . 37 . 0 — – 9 . 38 . 0 — 9 . 40 . 0 — 9 . 41 . 0
1521 – 14 . 21 . 3.5 1492 – 14 . 26 . 0 227 – 14 . 17 . 34 222 – 14 . 22 . 57

— 9 . 42 . 0 1491 – 16 . 02 . 0 1491 – 16 . 3 . 0
2857 – 16 . 00 . 43.9 2857 – 16 . 01 . 44.8 2857 – 16 . 2 . 44.8

1491 – 16 . 4 . 50
1503 – 9 . 45 . 50 Taken in to be compared, and then placed in the P. V. Room windows open
Expt Ther +10 Int +11

1503 – 9 . 50 . 0 1503 – 9 . 52 . 0
J. R. A's – 9 . 57 . 30.3 Rice – 9 . 57 . 24
4 P. M. Th. Expt – 15°.5 Int – 14°.5

480
2/1080
540

Decr 26/27 A.M.

Tel. East (126)
(1491)
Int Th 60°

S.R. Eyt 18 Int O.D.Th. 22

Arcturus
9 . 5.3
9 . 20.0
9 . 34.6
9 .. 49.1
0 . 3.5
0 .. 18.2
14 .. 10 .. 33.0
1637
180
7)343.7
09 .. 49.1.0
− 2
14 .. 09 .. 47.10
8 .. 47.80
+ 59.30

ε Bootis md
54.3
10.0
25.5
41.3
56.3
14 . 40 .. 12.2
1678
37 56
14 39 .. 23.56
+ 02

α² Libræ
6.6
20.7
34.9
49.5
3.5
14 .. 44 .. 18.0
11 52
23 04
14 .. 43 .. 33.04 5 wires
+02 correction of wires
coin

59.2

19 .. 29 .. 50
5 .. 54 .. 18.0
19 .. 28 50.7
18 .. 24 11.34
1 .. 04 .. 39.36
10.59
1 .. 04 .. 28.77
5 .. 54 .. 18.00
1492 + 4 .. 49 .. 49.23
16
4 .. 49 .. 33.2

18 .. 23 .. 24.59
46.75
18 24 11.34

59.3
1492 17 .. 47 .. 00
1497 7 .. 22 .. 30.8
17 .. 46 .. 00.7
18 .. 24 .. 11.34
19 .. 22 .. 30.8
5 .. 47 .. 00
59.3
19 .. 21 .. 31.5
18 .. 24 .. 11.34
0 .. 57 . 20.16
9.4
0 .. 57 10.77
5 .. 47 .. 00.0
4 .. 49 .. 49 .. 23
~~16.0~~
~~4. 49 33 .2~~

1492 − 6 .. 12 .. 6
1521 − 6 .. 7 .. 58.7
18 . 12 .. 0
4 . 49 . 33.2
13 . 22 . 26.8
18 . 7 . 58.7
+ 4 . 45 . 31.9
16
4 . 45 . 47.9
4 . 44 . 32
+ 1 .. 15.9

4 .. 49 . 49.2
4 .. 44 . 32
+ 5 . 17.2
6 .. 12 .. 00.0
6 . 06 .. 22.8
1521 − 6 . 7 .. 58.7
+ 1 . 15.9
32.6
22)43.3 /2
21
5

1503 −
1521

9 .. 6 .. 51.7
1 . 51.7
9 .. 4 . 08.3
4 .. 44 . 32
13 .. 48 .. 40.3
13 .. 49 . 55.6
1521 + 1 .. 15.5 Good

P.V. — Ther. 9 Am +11 — 4 P.M 14 [illegible] 27 +22°   26th to 27 mean 15.8

Decr 27th Am.   Ther 22

Chronometers returned from trial in the P.V. Room

1491 – 15.. 16 .. 5 — 15.. 19 .. 10   1503 – 8 .. 57 .. 54 — 8 .. 58 .. 54
1503 – 8.. 53 .. 17 — 8.. 56 .. 21.5   1508 – 13 .. 29 .. 46.5 — 13 .. 30 .. 47

1503 – 9 .. 1 .. 0 — 9 .. 2 .. 0 — 9 .. 3 .. 0 — 9 .. 5 .. 0
236 – 13 .. 52 .. 26.3 250 – 13 .. 35 .. 26.3 258 – 13 .. 32 .. 44.3 180 – 13 .. 44 .. 39.5

1503 – 9 .. 6 .. 0 — 9 .. 8 .. 0 — 9 .. 12 .. 0 — 9 .. 13 .. 0
1521 – 13 .. 49 .. 55.8 1492 13 .. 55 .. 57.7 227 – 13 .. 49 .. 30.9 222 – 13 .. 54 .. 56.3

1491 – 15 .. 38 .. 0
2857 – 15 .. 37 .. 36.7

9 .. 6 .. 0
1 .. 57.7
9 .. 4 .. 08.3
13 .. 49 .. 55.8
4 .. 45 .. 47.5

Chron. in Study. Temp. 54 to 63

1503 – 9 .. 19 .. 0   1503 – 9 .. 21 .. 0 — 9 .. 22 .. 0 — 9 .. 23 .. 00
310 – 13 .. 14 .. 19.2 J. 2nd – 9 .. 20 .. 11.7 Rich – 9 .. 22 .. 8.2 439 – 8 .. 42 .. 56
set 12 up
1503 – 9 .. 28 .. 0
L 190 – 9 .. 32 .. 35.2

Sid
1491 – 15 .. 48 .. 0 — 15 .. 55 .. 0 — 15 .. 56 .. 0 — 15 .. 57 .. 0
J. G. – 16 .. 04 .. 36.8 2440 – 15 .. 45 .. 40.7 2419 – 16 .. 08 .. 38.8 2557 – 16 .. 0 .. 34.5

1491 – 16 .. 11 .. 0 — 16 .. 12 .. 0 — 16 .. 13 .. 0 — 16 .. 14 .. 0
333 – 16 .. 09 .. 39.7 2492 – 16 .. 22 .. 5 424 – 16 .. 09 .. 19.5 10B – 16 .. 09 .. 47.7

10 Am Ther. on Chros. 46°
10 3/4 — — — 48
4 P.M — — — 58
28th 6 1/4 Am — — — 48

18 .. 19 .. 28.03
46.75
18 .. 20 .. 14.78

1491 – 15 .. 16 .. 05.0
59.2
39 .. 15 .. 05.8
18 .. 20 .. 14.8
20 .. 54 .. 51.0
3 .. 25.6
8 .. 51 .. 25.4
1503 . 8 .. 53 .. 17.0
1503 + 1 .. 51.6

Dec 27/28th Am

Ill East (128)
1491

7.60
8.57
32.93
24.36

	Polaris S.P.	Spica	Arcturus.
G	12..39..48.0	7..36.2	9.4.9
F	12..48..47.0	7.50.0	9.19.5
E	12..57..35.5	8 4.0	9.34.2
D	13..06..28.0	8 17.9	9..48.8
C	13..15..23.0	8 31.8	0.3.3
B	13..24..06.0	8.46.0	0.18.0
A	13..32..57.0	13..19..0.0	14..10..32.6

Polaris S.P.:
45..04.5
6..26.36
-2
13..06..24.36
13..05..27.00
+0..57.36

Spica:
1859
601
7/125.9
17.99
-2
13..18..15.99
17..16.88
+59.11

Arcturus:
161.3
180
7/341.3
.48.76
2
14..09..46.76
8..47.83
+58.94

322..43
292..25

1491 - 14..42..26
1503 - 8..15..48.5

1491 - 14..45..26
1503 - 8..18..48

D to G 26..40.0
D to F 17..41.0
D to E 8..52.5
D to C 8..55 ~~4.0~~
D to B 17..38.0
D to A 26..29.0

Level.

	E	W	
	88	91.5	+
+	91.5	88.2	
	88.5	91.5	+
+	92.0	87.7	
	88.0	- 92.0	+
+	92.3	87.5	

6/540.3 6/538.4
90.05 89.73
89.73
2/32
0.012

= 0.01 lev. - 0.02

By N Mark
Zero Micron

midwire	0.99	.010
	1.00	.000
	1.00	.000
	.99	.010
	1.00	.000
	498	20
	0.996	-0.004
	0.004	

Mean Marks

N		S	
0.697	.303	280	.720
.710	.290	.320	.680
.695	.305	.250	.750
.705	.295	.270	.730
.700	.300	.262	.738
.702		382	

23
2115
1416
16 .245
23
885
590
0.6785

~~.276~~ 276
0.724
23
2172
1448
1.6652

(1295.

Ther 6 Am 48 -

at Comparison
: +61

Dec. 28 Am

1503 - 9..32..0   1503 - 9..34..58   9.36..00 - 9..36..59
1492 - 14..19..57   1508 - 14..19..5.5 - 14..20..08 - 14..21..7.5
1503 - 9..39..0   — - 9..40..0   — 9..42.0   — 9..43..0
230 - 14..30..27.5   250 - 14..13..23.5   258 - 14..11..21.8   227 - 14..20..30.5
— - 9..44..0   — - 10..45..0   — 11..29..6
222 - 14..25..56.4   180 - 15..24..38.9   258 - 15..58..21.7

1491 - 16..14..0   1491 - 16..16..0   — - 16..32.0 — 16..33..00
2857 - 16..13..37.2   2557 - 16..19..36   2440 - 16..22..39 - 2419 - 16..45..40.3

1503 - 9..55.0   1503 - 9..56..0   1503 - 9..58..0   1503 - 9..59..0
J.2 A - 9..55..2.2   Rich - 9..55..57.7   310 - 13..53..17.8   L190 - 10..03..36.2
set 12 up

1491 - 16.34..0
333 - 16..32..35

1491 - 16..38..00 — 16..41..0
1503 - 10..11..3.5 — 10..14..3

18..23..24.59
46.75
18..24..11.34

1491 - 16..38..0.0
59.0
40..37..01.0
18..24..11.34
22..12..49.70
3..38..20
10..09..11.5
1503 10..11..3.5
1503 fast +1..52.0 + 5

1503 - 0..24..0
258 - 4..53..21.6 -

29 th
1503 = 7.07.00
J.2.A = 7.07.18.5

Dec 29th Aft 1849 Ther +53

1491 14..54..00 14 56.. 56
1503 8..23..24 97 8..26.. 20.5

1503	8..30..00		8..30..30		8..31..00		8..31..30
180	1..09..38.5	1492	1..18..26.2	230	1 22..29.2	250	1.. 04.. 50.7
1503	8..32..00		8..32..30		8..33..00		8..33..30
227	1.. 09. 30.4	222	1.. 14.. 26.7	258	1.. 02.. 20.7	2857	3.. 03 43.8

1491 – Fast 1..0.1
1503 – " – 1..53.5

30 – 4 Am Ther on Chron. 45°

Ill. Sart (1519)
(1491)

Dec^r 29/30 Am)
Polaris S P
g 12 .39 . 57.3
F 12 ..48 .. 50.8
E 12 .. 57 .. 34.0
D WCB 13 .. 06 .. 27.0
C 13 .. 15 .. 14.0
B 13 .. 24 .. 10.0
A 13 .. 32 .. 53.0
2401
1801
25.73
13 .. 06 .. 23.73

Arcturus 6.1
9 .. 20.8
9 . 35.5
9 . 50.1
0 . 4.5
0 .. 19.2
14 . 10 .. 34.0
170.2
180
)350.2
50.03
2
14 .. 9 .. 48.03
8 47.89
+ 1 .. 0.14

Spica
8.59.5 7 .37.1
7 .. 57.0
8 .. 5.2
A 8 .19.2
8 .. 33.2
8 .. 47.0
13 .. 19 .. 0.9
193.6
60
7)1336
19.09
2
13 .. 18 .. 17.09
7 . 16.95
+1 .. 0 .14

1491 – 13 . 26 .. 58
1503 – 6 .. 52 .. 42

1491 – 13 .. 29 .. 57
1503 – 6 .. 55 .. 40.5

322.43
292 .. 25
D to G 26 .. 35.7
D to F 17 .. 36.2
D to E 8 .. 53.0
D to C 8 .. 47.0
D to B 17 .. 43.0
D to A 26 .. 26.0

18 .. 31 .. 17.70
46.75
18 . 32 . 04.45

1491 – 13 .. 26 .. 58.0
1 .. 0 . 1
37 .. 25 .. 57.9
18 .. 32 .. 04.45
18 .. 53 .. 53.45
3 .. 05.74
6 .. 50 .. 47.71
1503 . 6 .. 52 .. 42
+1 .. 54.3

win

Dec 31st 1849 Ther 48 1503 8.. 51.. 00 8.. 51 .30

2492 15.. 40.. 04.9 15.. 40 35

☞ Found Master W. handling No 2492 rather roughly

1491 15.. 15.. 00.0
1503 8.. 36.. 31.8

1503 8.. 45.. 00 8.. 45.. 30 8.. 46.. 00 8.. 46.. 30
258 1.. 14.. 18.4 2857 3.. 23.. 38.2 180 1.. 25.. 36.9 1492 1.. 34.. 23.8

1503 8.. 47.. 00 8.. 47.. 30 8.. 48.. 00 8.. 48.. 30
230 1.. 38.. 32.4 250 1.. 20.. 43.8 227 1.. 25.. 30.3 222 1.. 30.. 26.9

1491 - Fast 1.m 0.1s }
1503 - " - 1.. 55.2 }

1849-50
Decr 31st Jany 1st Am Ther 53
1491 - 15 .19 .51 — 15 .22 .47 1503 - 8 .. 46 .20 — 8 .. 47 .. 20
1503 - 8 .. 37 .. 26 — 8 .. 40 .. 21.5 1508 - 14 .. 17 .. 57.5 - 14 .. 18 .. 52

1503 - 9 .. 5 .. 0 — 9 .. 7 .. 0 — 9 .. 9 .. 0
250 - 13 .. 38 .. 11.6 227 - 13 .. 44 .. 31.4 258 - 13 .. 38 .. 18.3
— 9 .. 11 .. 0 — 9 .. 12 .. 0 — 9 .. 13 .. 0 } 1491 - 16 .. 59 .. 0
180 - 13 .. 50 .. 36.9 1492 - 13 .. 59 .. 53.6 230 - 14 .. 04 .. 34.9 } 2857 - 16 .. 58 .. 38.5
— 9 .. 15 .. 0 } 1491 - 16 .. 10 .. 0 — 16 .. 16 .. 0 — 16 .. 17 .. 00
222 13 .. 56 .. 58 } 2440 - 16 .. 0 .. 25.7.5 2557 - 16 .. 19 .. 47 2419 - 16 .. 29 .. 40.8
Ther 58
1503 - 9 .. 21 .. 0 — 9 .. 23 .. 0 } These to be returned immediately -
310 - 13 .. 16 .. 11.8 d190 - 9 .. 27 .. 46.8 }

It is intended that the following Chros. shall be reserved on Temp. trials. viz
Chros. 250 - 227 - 258 - 230 - 222. made by W Shepherd - Hartnup's Balance
180 - Hutton's Improved Compensation, by the compression of air.
1492. Fletcher's Improved Balance,
2440 - 257 - 2419 - excellent going Chronometers in moderate temperatures, made by Parkinson & Frodsham, with their old Balance
2857 - P & F. modern with rather lighter balance, by the usual form of compensation.
These were all placed in the P. V. Room Temp. +17° at 9.. 30 Am 1st of Jany 1850.

Dec – $31^{d}/32^{d}$ Am

Am Ther 49 – 53.

β Libra – 15..08 – 321..12
α Corona – 15..28 – 285..09
α Serpentis 15..36 – 305..29

β Libra

9 .. 43.0
9 .. 57.0
10 .. 10.7
10 .. 24.5
15 .. 10 .. 38.5

17 37
34 74
08.74
13.89
15 .. 09 .. 54.85

13.725 secs
−8.50
13.89

1.13752
00518
1.14270

Ext Ther.	P.O. Th
1^{h} – 3 P.M. – 25½	24½
" 7½ " – 21	24½

18 .. 43 .. 07.37
3 .. 56.56
18 .. 39 .. 10.81
46.75
18 .. 39 .. 57.56

Jany. 1st Am

15 .. 19 .. 51
1 .. 00.1
39 .. 18 .. 50.9
18 .. 39 .. 57.56
20 .. 38 .. 53.34
3 .. 22.86
8 .. 35 .. 30.48
1503 8 .. 37 .. 26.0
+ 1 .. 55.52

1491. Hart – 1^{m} .. 0.1^{s} }
1503 – " – 1 .. 55.5 }

Jan 2nd Ill 1850

Ill East (134)

1491

Arcturus .4?

7.37.3 W.C.B. 9 6.4
1491 7.51.3 9 21.0
8.05.3 9 35.6
Spica 8.19.5 9 50.1
8.33.4 clouds
G.P.B 8..47.4 10 18.2
13 19 01.4 14..10.. clouds

19 5 6
60
7/135.6
19.37
2
13..18..17.37
13..17..17.04
1491 +1..0..33

1313
26.26
36.26
cor. for clim +11.66
14..09..47.92

1491 – 14..14.50 – 14..17..50
1503 – 7.28..40 – 7..31..39.5

18..43..07.37
46.75
18.43.54.12

14..17..50
–1..00.3
38..16..49.7
18..43..54.1
19..32 55.6
3..12.2
7..29..43.4
7..31..39.5
+1..56.1

~~13.734~~ ~~1.13780~~
0.02692
~~1.16472~~ =14.61

41.100
27.462
13.715
82,277
– ~~13766~~
5)~~68511~~
~~13,702~~
~~037~~
~~+13.734 secδ = Cor for A, B, C, D & F~~
82.277
– 27.457
5)54.820
10,964 = 0.02692 secδ
1.04000
1.06692 = 11,66

1850 Jan 2nd Sch Chros. from P.V. Room. Box 20
were brought in compared & wound up & immediately returned.

1491 16..02..00 1491 16..03..00 1491. Fast - 1.. 0.3
1503 9..15..32.3 1503 9..16..32.2

1503 9..20..00 9..20..30 9..21..00 9..21..30
2857 16..06..01.5 222 2..02..27.2 258 1..50..16.0 227 1..58..59.9

1503 9..22..00 9..22..30 9..23..00 9..23..30
250 1..55 03.4 230 2..14..04.5 1492 2..10..54.8 180 2..03..04.4

1491 16..12..00 1491 16..12..30 1491 16..13..00
2419 16..24..38.0 2440 16..02..54.4 2557 16 16..47.0

1491 fast - 1..0.0
1503 — " — 1..55.8

Jan. 3rd Add 1859 Chros from P.O. Room Ther. 26°

1491. Fast – 1..0.7

1491 16..46..0.0 = 16..46..30
1503 9..55..29.9 = 9..55..59.8

1503 10..02..30 — 10..03..00 — 10..03..30 — 10..04..00
230 2..54..02.9 1492 2..57..55.4 180 2..43..14.3 258 2..33..12.8

1503 10..04..30 — 10..05..00 — ~~10..05..30~~ — 10..05..30
227 2..41..57.4 250 2..37..54.6 ~~2857~~ ~~2..47..28.0~~ 222 2..47..28.0

1491 17..00..00 17..00..30 17..01..00 1491 17..01..30
2419 17..12..37.5 2440 16..50..50.8 2857 17..04..46.7 2857 17..00..58.0

After the above comparisons the Chronometers were kept in the Study. Where the Thermometer during the day was about 55

18..47..03.93
46.75
18..47..50.68

16..46..0.0
1..0.7
40..44..59.3
18..47..50.68
21..57..08.62
3.35.78
9..53.32.84
9..55..29.9
+1..57.96

(137) ([illegible])

Am
Jan 4th 1850 Chron. in Study Ther 55° ± 3° since yesterday.

1491 - Hart 1m 01.0s
1503 — " — 1 .. 59.06

1491 15 .. 54 .. 00 15 .. 54 .. 30
1503 8 .. 59 .. 44.2 9 .. 00 .. 14.1

1503 9 .. 04 .. 30 — 9 .. 05 .. 00 — 9 .. 05 .. 30 — 9 .. 06 .. 00
258 1 .. 33 .. 39.4 227 1 .. 42 .. 25.0 250 1 .. 38 .. 19.8 222 1 .. 47 .. 55.8

1503 9 .. 06 .. 30 — 9 .. 07 .. 00 — 9 .. 07 .. 30
~~1503~~ 230 1 58 02.3 1492 1 .. 54 .. 52.6 180 1 .. 47 .. 11.2

1491 16 .. 04 .. 00 1491 16 .. 04 .. 30 1491 16 .. 05 00 1491 16 .. 05 .. 30
2859 16 .. 03 . 27.4 2557 16 .. 08 18.2 2419 16 .. 17 38.2 2440 15 .. 55 .. 49.5

Ȝ - 18 .. 57 .. 0.49
46.75
18 .. 51 .. 47.24

1491 - 15 .. 54 .. 0.0
1 .. 1
39 .. 52 .. 59.0
18 .. 57 . 47.24
21 .. 01 .. 11 .76
3 .. 26 . 62
280 .. 57 .. 45 .14
8 .. 59 .. 44.2
+ 1 . 59 . 06

Jany. 4th 50 Ill East (1491)

1491 — 2 .. 13 .. 35 — 2 .. 16 .. 36

1503 — 7 .. 16 .. 21.5 — 7 .. 19 .. 22

γ Ceti . 2 .. 35 — 309 .. 48

α Ceti 2 .. 54 — 308 .. 54

α Persei 3 .. 13 — 263 .. 04

7 . 2 1.6

22 . 0 2

2 .. 37 .. 25 . last

α Ceti	α Persei
	3' = 39.2
4 . 49.0	4 . 0.3
5 . 3.0	4 . 21.5
5 . 16.8	4 . 42.2
5 . 30.6	5 . 3.8
5 . 44.4	5 . 24.5
5 . 58.2	3 .. 15 .. 45.8
2 .. 56 .. 11.8	1973
7 / 213.8	120
30.54	7 / 297.3
- 2	42.47
2 .. 55 .. 28.54	2
2 .. 54 .. 26.74	3 .. 14 .. 40.47
1 .. 01.80	3 .. 13 .. 39.16
	1 .. 01.24

Cloudy . last vis.

923

1846

42.46 + 0.03

3 .. 14 .. 40.49

1503 — 8 .. 13 .. 0

1219 — 11 .. 13 .. 35.8

1503 — 8 .. 22.0

TBC — 8 .. 21 .. 38

1491 — 2 .. 13 . 35.0

1.01.8

26 .. 12 . 33.2

18 .. 55 . 43.79

7 .. 16 .. 49.41

1 .. 11 .. 55

7 .. 15 .. 37.86

1503 — 7 .. 16 . 21.5

of Cam. +43.64

16.00

1503 — of Boston 27.6

18 .. 54 .. 57.04

46.75

18 . 55 .. 43.79

Ther on Chron. 56°

Ill East (139)

Jany- 4/5th (1491) Ther on Chron. 48. W. 54 Ext. 18°

Polaris S. P.
ζ 12 .. 39 .. 47.1
η 12 .. 48 .. 40.5
ε 12 .. 57 .. 34.3
δ 13 .. 06 25.0
C 13 .. 15 .. 11.0
β 13 .. 24 .. 01.5
α 13 .. 32 .. 45.2
7/44 .. 24.6
13 .. 06 .. 20.66
-2
13 .. 06 .. 18.66
13 .. 05 .. 20.48
+ 58.18

1491 - 14 .. 41 .. 2
1503 - 7 .. 41 .. 47
14 . 41 . 02
1 .. 01.3
38 . 40 . 00.7
18 . 55 .. 43.8
19 . 44 . 16.9
3 . 14
7 .. 41 . 02.9
7 . 41 . 47
1503. C. +44.1
16
" β +28.1

Spica
7 . 38.9
7 . 52.4
8 . 6.3
8 . 20.2
8 . 34.4
8 . 48.4
13 .. 19 .. 2.4
2030
60
7/1430
20.43
-2
13 .. 18 .. 18.43
17 17.14
1 .. 01 . 29

18 .. 54 .. 57.04
46.75
18 .. 55 .. 43.79

α Bootis
5.8
20.4
14 .. 10 .. 35.0

α Cor. Bor.
8 . 35.6
8 . 57.0
9 . 6.0
9 .. 22.0
9 . 37.3
9 . 53.0
15 .. 30 .. 8.6
2/35
60
7/153.5
21.93
-2
15 . 29 . 19.43
15 . 28 . 18.66
+1 .. 01.27

α Serpentis
7 . 13.2
7 . 27.0
7 . 40.9
7 . 54.5
8 . 8.4
8 . 22.4
15 . 38 . 36.3
202.7
180
7/3827
54.67
-2
15 . 37 . 52.67
15 . 36 . 51.44
+1 . 01.23

Spica - 13 .. 17 - 322 .. 43
Arcturus 14 . 8 - 292 .. 25
" α Cor. - 15 .. 28 - 285 .. 10
" lost α Serp. 15 .. 36 - 305 .. 29

D ζ	26 .. 37.9
D η	17 .. 44.5
D ε	8 .. 50.7
D C	8 .. 46.0
D β	17 .. 36.5
D α	26 .. 20.2

Level
E W

Jany. 4/5th Am   Ext Ther. 17 Int. 63½

1491 – 15 .. 57 .. 10 — 16 .. 0 .. 8 ε – 16 .. 4 .. 0 — 16 .. 5 .. 0
1503 – 8 .. 57 .. 42.5 — 9 .. 0 .. 40 1491 – 16 .. 3 .. 4 — 16 .. 4 .. 4.1

1491 – 16 .. 29 .. 0 — 16 .. 30 .. 0 — 16 .. 31 .. 0 — 16 .. 32 .. 0
2440 – 16 .. 19 .. 18.8 2557 – 16 .. 33 .. 50.2 2419 – 16 .. 43 .. 37.7 2857 – 16 .. 31 .. 28.2

1491 – 16 .. 38 .. 0 — 16 .. 39 .. 0 — 16 .. 40 .. 0 — 16 .. 41 .. 0
J G – 16 .. 55 .. 26.6 424 16 .. 38 .. 4.8 B 10 – 16 .. 35 .. 49.8 2492 16 .. 52 .. 2.7

1491 – 16 .. 42 .. 0
333 – 16 .. 40 .. 9.3

1503 – 9 .. 45 .. 20 — 9 .. 46 .. 20 1503 – 10 .. 48 .. 0 — 10 .. 50 .. 0
1508 – 4 .. 6 .. 24.5 — 16 .. 07 .. 25 222 – 14 .. 31 .. 11.8 310 – 13 .. 46 .. 20.6

— 9 .. 52 .. 0 — 9 .. 53 .. 0 — 9 .. 54 .. 0 — 9 .. 55 .. 0
439 – 9 .. 12 .. 7 L 190 – 9 .. 59 .. 8.2 180 – 14 .. 34 .. 56.3 1492 – 14 .. 44 .. 7.4
— 9 .. 56 .. 0 — 9 .. 58 .. 0 } — 10 .. 12 .. 0 — 10 .. 13 .. 0
230 – 14 .. 48 .. 50.3 250 – 14 .. 32 .. 3.7 } 227 – 14 .. 50 .. 41 258 – 14 .. 43 .. 24.3

Jany 6th Am Int Ther 60   Ext 12 to 14.5

5th Am 1491 fast – $\overset{m}{1}$.01.3 }
1503 – " – .44.0 }

Jany. 7th Am

1491 – 13..36 ..02 — 13 ..39 ..2
1503 – 6..29 ....7.5 – 6 ..32..7

19. 02. 50.16
46.75
19 .03 .36 .91

1491 – 13..39..2.0
1..1.8
37 .38 ..0 .20
19..03..36.91
18 .34 ..23 .29
3..02.6
6 ..31 ..21.69
1503 6..32..07.0
1503 faster +45.3
16
" 13 +29.3

Jany. 9th at Noon + 3/4 Ther 62 to 68

1491 — 20..10..10 — 20.. 13 ..10 1503 – 0..58..46 – 1.. 00 ..45
1503 – 0.. 54 ..20 — 0 .. 57 ..19.5 1508 – 20..9..16.5 – 20.. 11 ..16.5
19.10..30.5

1503 – 1 ..2..0 — 1.. 4..0
222 – 5..45..14.5 310 – 5.. 00..15.8
Pole – 3.30

1491 – Fast – $\overset{m}{1}$..$\overset{s}{0}$.7 }
1503 — " – 45.6 }

1503 – 3..18.0 —– 3..19..0 — 3..20..0 — 3..22..0
180 – 7..58..54 1492 – 8..08..5.3 230 8..13..0.1 250 – 7..55..55
— 3..23..0 — 3..24..0
227 – 8..01..42.3 258 – 7..54..23.4

1491 – 22..42..44 1491 – 22..45..0 — 22..46..0 — 22..47..0
1503 – 3..26..29 2557 – 22..49 2.7 2440. 22..36..10.5 2419 – 22..59 38.1

Dome

21 ft Equatorial Refractor
Eye and adapting pieces
2 Finders [illegible]
[illegible] [illegible] Board
Lamp & Chair, [illegible] Chair, [illegible]
Case of [illegible] - 3 [illegible] cushion
Case of Micrometer

Small Dome & house

Matting & bedstead, Stove - Covering for Gt Telescope
Equatorial Boxes - apparatus used in setting up the
Gt Telescope pier, 3 winding Ladders - green Baize
apparatus made for setting Transit piers -
Venetian blinds 1 pair & 2 half pairs

P. V. Room

4 ft Transit with Lamps
1 Do - Bag of books & Pamphlets
Lot of [illegible] Books
Lot of [illegible] manuscripts
Case of Manuscripts, Large Curve Book
Astrolabe etc, Board for [illegible] 1 [illegible] Case
3 Indian [illegible]

Rotunda

Large [illegible] of bound Books,
[illegible] old [illegible] Land [illegible]
3 cases of Family Pictures
[illegible] - Nautical Almanacs & Book of Tables

Porch

[illegible] two Telescopes & Tripod
4 Boxes [illegible]
[illegible] 42 [illegible]
[illegible] Chas [illegible]
1 [illegible]
1 Box [illegible]

Jany 14/15

Ther. S.r. 16.5°

14 .. 38 . 284.40

1503 – 7 .. 30 . 0
439 – 6 .. 48 .. 54

7 .. 30 .. 0
31.5
7 .. 29 .. 28.5
6 .. 48 . 54
– 40 .. 34.5

439

Moon &

H East
No 1491

H East 1491

ε Bootis

Jany. 14/15th Ap

~~Aldebaran~~ α Bootis

58.1

23.0
37.5
52.2
7.0
14 . 10 . 21.5

1412
2
2824
+24
14 . 00 . 52.24
14 . 08 .. 48 . 40
1 03 . 84
– 2
1 . 01 . 84

1412
2824
52.24
09 . 50.24

13.7

29.0

44.5

14 . 39 . 59 . 8

/205.1
2
410.2
– 12
29.02
/2
14 .. 39 .. 27.02
14 . 38 . 25.10
+ 1 .. 01 . 92

Jany 10th
α Lyrae Am
1 59.1
2 . 17.0
2 . 34.8
2 . 52.5
3 . 9.8
3 .. 27.3
18 .. 33 .. 45.0
245.5
120
7/3655
52.21
2
18 .. 32 .. 50.21
31 .. 49.59
+1 . 00.62

Ill East
1491 PM
α Tauri Ther 62
7 . 39.5
7 . 54.0
8 . 8.4
8 . 23.0
8 . 37.0
8 . 51.4
4 . 29 .. 5.7
2190
60
7/159.0
22.71
2
4 .. 28 .. 20.71
4 . 27 .. 19.64
1 .. 01 . 07

273 .. 44
296 .. 11

Level
E W
10th Am 1491 – 20 .. 09 .. 34.0
1 .. 00.3
20 .. 08 .. 33.7
19 .. 19 .. 23.1
0 .. 49 .. 10.6
8.1
0 .. 49 .. 02.5
1503 – 0 .. 49 .. 48.5
+ 46.0

10th 19 .. 18 .. 36.38
46.75
19 .. 19 .. 23.13

14

Charlestown, U.S. Navy-yard
is 1' North and 33" East of the
State-house hrs m s
Lon. Navy Yard 4 .. 44 .. 15.
Lat " " 42° .. 22'

1491 – 20 .. 09 .. 34
1 .. 00.84
20 . 08 . 33.16
19 .. 19 .. 23.11
0 .. 49 . 10.05
8.08
0 .. 49 . 01.97
1503 0 49 .. 48.5
+46.53
16
30.5
of Caml
of Boston

19 .. 18 .. 36.38
46.73
19 . 19 .. 23.11

1508
9th – 19 .. 10 .. 30
10 – 19 .. 22 .. 27 – 12.57
11 – 19 .. 34 .. 17 – 12.50

1503 — 0 .. 54 .. 44 — 0 .. 56 .. 44 — 0 .. 57 .. 44 — 0 .. 58 .. 44 4 PM Ther W 65
1508 — 20 .. 28 .. 59 — 20 .. 31 .. 00 — 20 .. 32 .. 00.5 — 20 .. 33 .. 1.0 Ang 56
34 . 16
48
22

19 .. 34 .. 17.0
19 .. 22 .. 27.5
11 .. 49.5

1491 - Fast - 7^{m}..0.3 (145)
1503 — " - 9..46.0
Jany. 10th Ther 62 — 63 — 61 Ext 23
1491—20..09..34 1503—0..51..33 — 0..52..33 — 0..53..33
1503—0..49..48.5 1508—20..13..57 — 20..14..57.5 — 20..15..58

1503—0..55..34 — 0..56..34 — 0..57..34 — 0..58..34
1508—20..18..00 — 20..19..0.5 — 20..20..1.0 — 20..21..01.5
19..22..27.5

1503— 3..13..0 — 3..14..0 — 3..15..0 — 3..17..0
180— 7..53..53.2 1492 8..03..4.5 230—8..08..2 250—7..50..57.6
— 3..18..0 — 3..19..0 — 3..21..0
227— 7..56..42.5 258— 7..49..23 222—8..04..15.2

1503—3..23..53 — 3..24..53 1491— 22..47..33
1508—22..47..33 — 22..48..33.5 1503— 3..27..21.5

1491— 22..49..0 — 22..50..0 — 22..51..0
2557— 22..53..4.4 2440—22..40..9.2 2419— 23..03..38.4
after comparison
Removed to the P.V. Room N.W. corner at 3.PM

Jany 11th near noon. Ther & PM 22 — 11th 9 Am — 21 Chros Exposed from the 10th noon to 11th 11 Am
1503— 9..9..0
444— 9..9..16.2

Mean Temperature 22°

Jany 11th All the Chros. returned to the Study,
1491—18..56..45 — 18..59..45 } compared and retained Temp W. 63
1503—11..33..15.5 — 11..36..15 } Chros—

1503—11..39..0 — 11..40..0 — 11..42..0 — 11..44..0
258—16..09..21.5 227—16..18..41.8 250—16..15..44.8 180—16..24..51
— 11..45..6 — 11..48..0 — 11..50..57 — 11..51..56
1492—16..34..5.9 230—16..41..2.5 1508—19..24..40.5 — 19..25..40
— 11..54..0
222— 16..37..15.6 1503 fast. $\overset{s}{46}$.53
1491—19..20..0 — 19..21..00 — 19..23..0 1491— 1..00.8
2557—19..24..3.4 2419—19..33..36.4 2440—19..13..8.5

1491—19..27..8 — 19..30..8 1503— 0..10..11 — 0..11..11
1503— 0..3..33.5 — 0..6..33 1508—19..44..4 — 19..45..4.5

1503— 0..38..36 — 0..39..36 — 1503—0..50..44 — 0..51..44 — 0..52..44
1508— 20..12..43 — 20..13..45.5 — 1508—20..24..57 — 20..25..57.5 — 20..26..58

Jan. Dec 12th Ill East No 1491.

α Tauri
7 . 40.5
7 . 54.5
8 . 9.0
8 . 23.2
8 . 37.5
8 . 52.0
4 .. 29 .. 6.3
223.0
- 60
7/163.0
23.29
- 2
4 .. 28 .. 21.29
27 .. 19.63
+ 1 .. 01.66

Capella
5 . 42.6 0?
6 . 2.1
6 . 22.0
6 . 41.9
7 . 1.5
7 . 21.2
5 . 7 .. 40.9
172.2
120
7/292.2
41.74
2
5 .. 6 .. 39.74
5 .. 5 . 37.97
+ 1 .. 01.77

α Tauri	4 .. 27	296 .. 11
Capella	5 . 05	266 .. 33
β Orionis	5 .. 07	320 .. 46
β Tauri	5 .. 17	283 .. 55
δ Orionis	5 .. 24	312 .. 48
α Leporis	5 .. 26	330 .. 18
ε Orionis	5 .. 28	313 .. 41
α Columbae	5 .. 34	346 .. 33
α Orionis	5 .. 47	305 .. 01
μ Geminorum	6 .. 13	289 .. 48

β Tauri
7 .. 6.5
7 . 22.0
7 . 38.0
7 . 53.0
8 .. 8.3
8 . 24.5
5 .. 18 .. 40.2
192.5
180
7/372.5
53.21
- 2
5 .. 17 .. 51.21
16 .. 49.55
+ 1 .. 1.66

δ Orionis
4 . 44.0
4 . 57.6
5 . 11.3
5 . 25.0
5 . 39.0
5 . 52.4
5 .. 26 .. 6.2
235.5
- 60
7/175.5
25.07
2
5 .. 25 .. 23.07
24 .. 21.44
5 .. 21 . 01.63

ε Orionis
9 .. 0.0
9 . 13.2
9 . 27.0
9 . 40.5
9 . 54.4
0 .. 8.0
5 .. 30 .. 22.0
165.1
120
7/285.1
40.73
2
5 . 29 .. 38.73
5 .. 28 . 36.91
+ 1 . 01.82

1491 – 5 .. 35 .. 45
1503 – 10 .. 06 .. 36

1503 – 10 .. 8 .. 0
444 – 10 .. 7 . 29

℞ – 5 .. 50 .. 0
1491 – 5 . 48 .. 53 Coincid

Jany. 14th – ½ hour Past noon   Ther 58   on Chron – 51

1491 – 20..16..32   1491 – Fast – $1^{m}..01.2^{s}$
1503 – 0..41..3.5   1503 – " – 47.7

1503 – 0..43..0 — 0..44..0 — 0..45..0 — 0..46..0
180 – 5..23..48.2 1492 – 5..33..4 230 – 5..38..8.2 250 – 5..19..36.6
— 0..47.0 — 0..48.0
227 – 5..25..40.8 258 – 5..18..18

1503 – 0..49..23 — 0..50..23 — 0..51..23 — 0..52..22
1508 – 20..59..28 — 20..00..28.5 — 20..01..29 — 20..02..28.5

1503 – 0..54..0 — 0..55 0 — 0..56.0 — 0..57..0
222 – 5..37..15.8 310 – 4..51..9.7 2190 1..02..13.5 439 – 0..15..59.2
1491 – 20..34 36 — 20..37..38
1503 – 0..59..4.5 — 1..2..06

1491 – 22..57..0 — 22..58..0 — 22..59..0
2557 – 23..01..9.8 2419 – 23..10..39.5 2440 – 22..49..10

1503 – 5..2..0 — 5..3..0 — 5..4..0 — 5..5..0
180 – 9..42..48.5 1492 9..52..04 230 – 9..57..8.7 250 – 9..38..36.2

— 5..6..0 — 5..7..0 — 5..8..0
227 – 9..44..41.3 258 – 9..37..18 222 – 9..51..16

1491 – 0..46..0 — 0..47..0 — 0..48..0
2557 – 0..50..9.8 2419 – 0..54..39 2440 – 0..38..9.8

Immediately after comparison the Chros were placed on the East Balcony of the Tower   Ther 20

1491 – 20..16..32.0
1..01.2
20..15..30.8
19..35..08.36
– 0..40..22.44
6.61
0..40..15.83
1503 0..41..3.5
+47.7

19..34..22.61
45.75
19..35..08.36

850-

(148)

Obs 14/15 some pages back

Jany - 15 AM

Thermo - Ext. 14th 20° - 19° - 17° - at day break 15° to 16.0

1491 - 15 .59 .27 — 16 .. 11 .30

1503 - 8 .20 .. 44.5 — 8 .32 .. 45.5 ~~46~~

Chronometers returned to the warm temperature W Th 65 - or 6 hrs -

1503 - 21 9 .. 22 .48 — 9 .23 .. 48
1508 - 5 .. 43 .. 0.5 — 5 .. 44 .. 01

1503 - 9 .. 25 .. 0
222 - 14 .. 08 .. 18.3
17 .. 9 .. 0
2419 - 17 .. 21 .. 35

1491 - 17 .. 6 .. 0 — 17 .. 8 .. 0
2557 - 17 .. 10 .. 8.8 2440 - 16 .. 58 .. 4.2

1503 - 9 .. 34 .. 0 — 9 . 35 .. 0 — 9 .. 36 .. 0
180 - 14 .. 14 .. 45.7 1492 14 .. 24 .. 5.4 230 - 14 .. 29 .. 9.4

— 9 .. 38 .. 0 — 9 .. 39 .. 0 — 9 .. 40 .. 0
250 - 14 .. 11 .. 30.7 227 - 14 .. 17 .. 40.2 258 - 14 .. 10 .. 15.5

1503 - 10 .. 3 .. 0 reg & det
444 - 10 .. 2 .. 23

3 PM Ther 65
on Chros - 62

1503 - 0 .. 54 .. 41 — 0 .. 0 . 55 .. 40 — 0 .. 56 .. 41
1508 - 9 .. 16 .. 38 — 9 - 9 .. 17 .. 37.5 — 9 .. 18 .. 39
8 .. 21 .. 58
8 .. 22 .. 16
18

15th Am -

1491 - 15 .. 59 .. 27
1 .. 1.8
39 .. 58 .. 25 .2
19 .. 35 .. 09 .3
20 .. 23 .. 15 .9
3 .. 20 .4
8 .. 19 .. 55 .5
1503 - 8 .. 20 .. 44 .5
c + 49
16
13 + 33
30
30 / .6

19 .. 34 .. 22 .61
46 .75
19 .. 35 .. 09 .36

15 .. 59 .. 27
1 .. 01 .1
39 .. 58 .. 25 .9
19 .. 35 .. 09 .36
20 .. 23 .. 16 .54
3 .. 20 .4
8 .. 19 .. 56 .14
1503 . 8 .. 20 .. 44 .5
+ 48 .36

1491 . fast - 1 .. 01 .10
1503 - " - 0 .. 48 .36

Jan 15th – Ev.g

See some pages back for 7/15

α Andromeda
54.8
10.3
26.0
41.6
57.3
12.6
0..02 ..28.5
2311
2911
41.59
0..01.. 39.59
0..00 37.80
1.. 01 79

α Andromedae 0..0.. 284.07
γ Pegasi – 0..5 – 297.32

Level
E W
84 – 87 +
+ 88 – 83
84 – 87 +
+ 87.5 – 83
4)235 4)20
85.62 85.0
85.62
0.31 East too high
= 0.02s

lev.– 0.04s

North mark
71

Chro Thr at winding 60°

Jany 16th Observed occultations.

Immersion ✱, unk.
✱ 9-10 mag – 1 .34.03.8 – 4. 10' South of centre m
Em. 1,,52 about another star a little brighter and 3' south of the first — alt Em. 52m abt

1491
Emersion
1.. 24..23.4 – 23 beats

✱ 8 mag. 8' ~~North of centre~~ Immersion Inst
1 ..43..01.1 – 4

Imm ✱ 12 mag – 5 South
2,,27,,7. – 4

✱ 10-11 mag. near the centre
Immersion Inst
1 .55 ..07.5 – 4

Imm ✱ 10 mag – 8' South
2 ..41 ..15.5 – 4

Jany 16th

Eq [illegible]
α Tauri
7 .. 41.7
7 . 55.4
8 . 9.3
8 . 24.0
8 . 38.7
8 . 52.5
4 .. 29 ,, 6.8
228.4
60
168.4
24.06
− 2
4 . 28 ,, 22.06
7 ,, 19.60
+ 1 . 02.46

the Earth
1491

Capella
5 .. 43.0
6 .. 2.8
6 . 22.5
6 . 42.4
7 . 2.0
7 . 21.8
5 .. 07 ,, 41.8
196.3
120
7 / 296.3
,, 42.33
− 2
5 .. 06 ,, 40.33
5 ,, 05 ,, 37.94
+ 1 ,, 02.39

1 ,, 02. 5
1491 15 ,, 46 ,, 00.0
1503 ~~7 ,, 59 ,, 28.7~~
15 ,, 44 ,, 57.5
19 ,, 43 ,, 02.47
20 ,, 01 , 55.03
3 ,, 16 . 90
19 58 ,, 38.13
19 ,, 59 ,, 28.7
+ 50.6
16.0
34.6

19 ,, 54 ,, 05.39
46.75
19 . 54 ,, 52.14

23 .. 4. 0
1. 4.3
23 ,, 2 . 55.70
19 ,, 54 ,, 52.14
3 . 08 ,, 02.56
30.8
3 . 07 ,, 31.76
1503 3 ,, 8 27.27
+ 55 51

Jany. 18th Ther 63

1491 – 16 .. 31 .. 50 — 16 .. 34 .. 48
1503 – 8 .. 41 .. 16.5 — 8 .. 44 .. 14

19th
1503 – 8 .. 18 . 0
239 – 8 .. 17 . 22.5

36 8 . 18 .. 0
36
8 . 17 . 24
8 . 17 . 22.5
−1.5

Jany 19th afternoon Ther 62 Bar. 30.075 { 1491 – 1 .. 04 . 3 / 1503 – 0 .. 55 . 5

1491 – 23 .. 4 .. 0 1491 – 23 . 6 .. 47 — 23 .. 8 .. 17
1503 – 3 .. 8 .. 27 1508 – 12 .. 22 .. 04 — 12 .. 23 .. 34.5

1503 – 3 .. 16 .. 20 — 3 .. 18 .. 20 – 3 . 21 .. 20 – 3 .. 22 .. 20 — 3 .. 23 .. 20
1508 – 12 .. 27 . 13 — 12 .. 29 .. 14 – 12 .. 32 .. 15.5 – 12 .. 33 .. 16 – 12 .. 34 .. 16.5
1503 – 3 .. 24 .. 20 –
1508 – 24 .. 35 .. 17 –

1503 – 3 .. 28 .. 0 — 3 .. 29 .. 0 — 3 .. 30 .. 0 — 3 .. 32 . 0
250 – 8 .. 01 .. 16 227 – 8 .. 07 .. 38.7 258 – 8 .. 00 .. 3.7 180 – 8 .. 12 .. 40.5

1503 – 3 .. 33 .. 0 — 3 .. 34 .. 0 — 3 .. 35 . 0 —– 3 .. 47 .. 0
1492 – 8 .. 22 .. 0.3 230 – 8 .. 27 .. 15.7 222 – 8 .. 18 .. 18.5 310 – 7 .. 43 .. 0.3

1491 – 23 .. 33 .. 0 — 1491 – 23 .. 34 .. 0 — 23 .. 35 . 0 —– 23 . 37 .. 0
2570 – 23 .. 37 .. 16.5 — 2440 – 23 .. 23 .. 55 2419 – 23 .. 47 .. 34.5 Jh – 23 .. 55 .. 47.4
7? — 23 .. 38 . 0 — 23 . 39 .. 0 — 23 .. 40 .. 0 — 23 .. 41 .. 0
B 10 – 23 .. 33 .. 48 2492 23 .. 51 .. 27.7 333 – 23 .. 37 .. 10.6 424 – 23 .. 38 .. 16.8

1503 – 3 .. 48 .. 0
α – 190 – 3 . 54 .. 6.3

Jany. 19th

α Androm 0 .57.2
1 .13.0
1 ..28.5
1 ..44.2
1 .59.8
2 .15.3
0 ..02 ..30.9
248.9
60
7)308.9
44.13
- 2
0 .01 ..42.13
0.. 00 .. 37.74
+1 .04.39
1. 01.79
15 4) 2.6 (0.65

α Androm 0.0 284..07
γ Pegasi 0..5 297.32

Saturday Evg
Im Star 8th/9th S of ☾s centre
239 6h..15..40s - 24 beats

Time given by young Mr — Loring

1503 fast +0.. 54.20

1841 — 3..12..0
239 - 7..15..12

1503 - 7..17..0
239 - 7..16.. 26.2
M52 7.. 16.. 05.8
239 Rate 1h + 20.4
0.2
20.6
6.. 15.. 40 - 24 be
9.6
6.. 15 ..30 4
20.61
6.. 15.. 09.79

Im 6.. 15.. 09.79 M. S. T.
Immersion of Star of 8th 9th mag.
Observed by Mr Loring

21st Am Ther. ar Chron. 51° — W 64   noon. 65 & 56

Noon ½ past   1491 — fast — $\overset{m}{1}$..05.3

1491 — 20..31..14 — 20..34..13   1503 — " — 0..55.05

1503 — 0..28..14 — 0..31..12.5

1503 — 0..33..0 — 0..34..0 — 0..35..0 — 0..36..0

180 — 5..13..39 1492 — 5..23..58.6 230 — 5..28..19 250 — 5..09..9.3

— 0..37..0 — 0..38..0 — 0..39..0 — 0..42..0

227 — 5..15..38.5 258 — 5..08..2.2 222 — 5..22..19 & 190 — 0..48..6.7

— 0..43..0

310 — 4..38..56.6

1491 — 20..48..0 — 20..49..0 — 20..50..0

2557 — 20..52..18.7 2419 — 21..01..32.6 2440 — 20..39..50.4

1503 — 0..50..15 — 0..51..11 — 0..52..11 — 0..54..10

1508 — 10..23..47 — 22..24..43.5 — 22..25..44 — 22..27..44

1503 — 0..57..8 — 0..58..7

1508 — 22..30..43.5 — 22..31..43

21..33..35.5   21..33..36

1491 — 20..31..14.6   20..01..58.50

1..5.3   46.75

20..30..08.7   20..02..45.25

20..02..45.25

0..27..23.45

− 4.5

0..27..18.95

1503 0..28..14.

+ 55.05

Jan 22

Ther at winding 55°

Jan 22nd

11h.30 AM Ext Ther	+41.5
12..30	+38.0
1..00	37.5
1..30	36.0
1..50	34.0

1850 Jan 7. 23 Am.
α Serpentis

7 .. 19.4
7 . 33.2
7 . 47.0
8 . 0.8
8 . 14.6
8 .. 28.5
15 . 38 .. 42.4
185.9
180
59
0.84
−2
15 .. 37 .. 58.84
36 .. 51.96
+1 .. 06.88

α Lyrae
2 . 6.0
2 . 23.4
2 . 41.1
2 .. 58.5
3 .. 16.3
3 .. 33.8
18 .. 33 .. 57.4
230 5
180
7)410.5
58.64
−2
18 .. 32 .. 56.64
31 .. 49.80
1 .. 06.84

Ille East (1514)
(1491)

1491 — 16 . 22 .. 57 — 16 .. 25 .. 58
1503 — 8 .. 12 .. 47 — 8 .. 15 .. 47.5

16 . 22 .. 57
1 .. 06.9
40 . 21 . 50.1
20 .. 06 .. 41.8
20 . 15 .. 08.3
3 .. 19.1
8 .. 11 .. 49.2
1503 . 8 . 12 .. 47.0
+ 57.8
−16
B + 41.8

Ther 58

21.5) 74 (.0344
645
950
8600
60

17 .. 05
23 35
6.5
3 4
260
195
0.221

30. 29
20 .. 05 .. 55.06
46.75
20 . 06 .. 41.81
18 .. 32 — 273 .. 44

23 .. 35 .. 50.5
3.0
23 .. 35 .. 47.5
1491 +1 .. 06.78
23 .. 34 .. 40.72
20 .. 10 38.37
3 .. 24 .. 02.35
0 .. 33.43
MST. 3 .. 23 .. 28.92
Im. 7ª Tauri

2 .. 48 .. 50.0
2 .. 49 .. 19.8
29.8

1850

(155)
(No. 1491)

Cal. ou.
1391 - 5.24 - 5.56 N
α Im 7.14 - 6.31 N
Em 8.29 - 2.49 N

Jany. 23.d

Immersion of 78 Tauri

1491 ~ 23h .. 35m .. 50.5s - 6 beats The northern star was very faintly seen at intervals, and when I had mark'd the time of 78 and returned to the instt it was gone.

Im ~~M.S.T. 3.. 22.. 11.60~~ M.S.T. 3.. 23.. 29.04

Tob Cox

B.A.C. 1391

1 .. 38 .. 10 . - 21 beats
10.5
1 .. 37 .. 59.5
1 .. 07.58
1 .. 36 .. 51.92

Em. ~~Im~~ 5 .. 25 .. 20.14

Im Star 10th Cs centre
G.P.B - 2, 06 33.9 - 20 beats
Im ★ 10 mag. 5h .. 53m .. 39.83

Im Star 7th 9' S of Cs n limb

G.P.B

2 .. 08 .. 19.5 - 10 beats
5
2 .. 08 .. 14.5 ★ 7 mag. Im. 5 .. 55 .. 30.23 M.S.T.

2 .. 28 .. 02.5 - 30 .. Star 9th 0' 30" S of Cs n limb
in Same dec with α Tauri
precedes it by 150s = 2m .. 30s

Im ★ 9 mag. M.S.T. 6h .. 14m .. 59s.93

double star
Im a - 2 .. 48 .. 55 - 10 } ★ 10 mag. " a is south of b
b 2 .. 49 .. 22.3 - 5 } ★ 11 mag. 7' south of Aldebaran
no projection disd instantly 7or8 North of Centre

mic 47.17 Zero
50.27 + 150

Im 3 .. 01 .. 29.6 - 4 ★ 10 mag. 3' north of centre

Im 3 .. 20 .. 12.5 - 4 ★ 9-10 Mag. near the centre abt 7' south of α Tauri

Im α T. 3 .. 27 .. 39.2 - 6 disd inst. not the slightest disturbance

Im 3 .. 31 .. 57.4 - 4 ★ 10-9 Mag. folld α - abt 2' North of α

1491 - B5 .. 36 .. 0
Im D.L. 3 .. 44 .. 29.5 - 4 ★ 8th mag - 2' or 3' 2557 - 3 .. 40 .. 22.8
South of Ds centre

M.S.T. Im Star double
a 6h .. 35m .. 58s.93 = 10 mag
b 6 .. 36 .. 28.73 = 11 "

Im Star 10 mag
M.S.T. 6h .. 48m .. 34s.50

Im Star 9 mag
M.S.T. 7h .. 07m .. 14s.31

Im Star 9.5 mag
M.S.T. 7 .. 18 .. 57.31

Im Star 8 mag
M.S.T. 7 .. 31 .. 27.30

1850

Comparison of Chrot.

Jany. 23° Evg

1491 – 3..57..0   1491 – 3..54..0   1491 – 3..55..0
2419 – 4.03..32.9   2419 – 4..06..32.9   333 – 3..51..54.5
3 05.5

1491 – 3..57..0 – 3..58..30
424 – 3..54..16.5 – 3..55..46.3

1491 – 4..4.15 — 4.05..42
1508 – 5..53..8 — 5..54..35.5

1508 – 5..55 56 — 5..57..28 — 6.0.0 — 6.1..10
2419 – 4..19..35 — 4..21..06.5 333 – 4.07..59.5 424 – 4.9..31

1508 –   1491 – 4..14 30 — 4..16..0 — 4..17.30
2557 –   1508 – 6..3.26.5 — 6..4.57.0 – 6..6..27.5

Emersion of α Tauri

1491.
WCB 4..43 .8.5 – 17 hanging on the limb. very small at first
8.5
4 43 0.0

Imm. α Tauri ☽ D.L.

GPB - Chro 2419
3..40..24.0 - 30 beats
−15
3..40..09.0

Emersion of α
GPB.2419 - 4..55..47.5 - 30 beats
15
4..55..32.5
4..45..32.5

T.H.S. Chro 2557
Im 3ʰ..32ᵐ..0ˢ.0 - quick as a flash

Mr Homans
Imm 424 - 3..25..01.4 - 20 beats
8
3.24.53.4

Emersion Homans
424 - 4..40..27.6 - 30 beats
12.0
4.40.15.6
2.4

2557 Emersion
T.H.S. 4..47..37.0

Mr Stimpson
Immersion
333 - 3..24..30

Emersion
2440 - 4ʰ..32ᵐ..35ˢ.5

1491 - 5..13..0 —— 5..14..0 —— 5..15..6 —— 5..26..0
2557 - 5..17..23 2440 - 5..03..41.2 2419 - 5..27..33 424 - 5..23..16.4
+4..23 −10..18.8 +12..33 2..43.6

Jany - 23° -

β Tauri

12.5
28.0
44.0
59.2 out of Focus
15
30.5
46.2
2354
180
7)415.4
59.34
2
5 . 17 .. 57.34
3 16 . 49.48
1 . 07.86

μ Geminorum
4 .. 19.6
4 . 33.7
4 .. 48.5
5 . 3.4
5 . 18.5
5 . 33.2
6 .. 15 .. 48.0
204.3
180
7)24.3
3.47
- 2
6 . 15 . 01.47
6 . 13 .. 53.94
1 . 07.53

ε Orionis.

32.5
9 . 45.9
0 0.0
0 13.5
5 .. 30 .. 27.3

α Orionis
7 . 31.5
7 45.4
7 . 59.3
8 . 13.4
8 . 27.2
8 . 41.0
5 .. 48 .. 54.6
2724
180
7)924
13.20
2
5 . 48 .. 11.17
47 . 03.83
+1 .. 07.34

5 .. 28 - 346 .. 32
305 .. 01
289 .. 48

284..40

Jan $\frac{23}{24}$ Am

ε Bootis 8 .44.7
9 . 3.3
9 .. 19.7
9 . 35.6
9 .. 50.5
0 .. 5.7
14 ..40 ..22.0
7)1849
60
)244.9
34.99
2
14 ..39 ..32.99
38 ..25.40
+ 1 ..07.59
23 Am 1.. 06.86
+ .73
36
86
1..07.22
1..07. 34
1..07.53
No 1491)109
at obs of 1.07.36
α Tauri

1491 – 14..53.0
2557 – 14..57..23

1491 – 14..55..0
126 – 11..24..29.2

295
23
885
590
0.6785

0.75
23
225
150
1.725

25 PM

Men. Marks
N S
690 .310 245 .755
715 .285 270 .730
710 .290 235 .765
)115 3)150
705 = .295 250 = .750
.295 .765
750 .555
1.045

Level E & W 40
E W
81 – 83.5 +
84 80.0
81 – 83.5 +
84.3 80
81 — 83.2 +
84.3 80
)156)102
82.6 81.7
81.7
.9
.4 East too high
~~2.5 W too high~~
~~2.9 change~~

lev. $-\overset{s}{0}.04$

~~Jan 14~~

Micrometer measures

South mark
/49 Sept 20 - .893 M. E
/50 Jan 25 .750
.143

North mark
/49 Sept 19 - .300 M. E.
/50 Jan 25 .295
change 00.5

Sept 20 - 893 S.
300 N.
1.193

Jan 25 - 750 S
295 N
1.045
1.193
.158

1850.

Observed occultations Jany. 23° P.M. Clear and pleasant during all the observations, objects steady. Transits of Stars for Time, before, during and succeeding the Eclipses.

Expressed in Mean Solar time of Harvard Observy.

Immersion of 78 Tauri. D.L Inst. Gt. Equatorial & No. 1491.

B' 3^{h}.. 23^{m}.. ~~28.05~~ 29.0
P.s Cal. – 3.. 23.. 14.00
Cal. + 14.05
15.0

Immersion α Tauri
B' – 7.. 14.. 39.07
Ps Cal – 7.. 14.. 16.00
+ 23.07

Emersion α Tauri
B' obs – 8.. 29.. 50.49
Ps Cal – 8.. 29.. 23.00
Cal +27.49

obs. duration – 1^{h}.. 15^{m}.. 11^{s}.44
Cal. – .. — 1.. 15.. 07.00
obs. + Cal. 4.44

Emersion. B.A.C. No. 1391 at Br. Limb
B' – 5^{h}.. 25^{m}.. 20^{s}.36
Ps Cal. 5.. 24.. 56.00
Cal + obs. – 24.36

G. P. B. No 2419. and 42 Inch Fr. & Simms ~~5 feet~~ Equatorial.

Immersion α Tauri
7.. 14.. 38.95

Emersion α Tauri
8^{h}.. 29^{m}.. 49^{s}.99

T. R. S.

Immersion α Tauri
7^{h}.. 14^{m}.. 40^{s}.97

Emersion
8^{h}.. 39^{m}.. 04^{s}.44

occutations of the 23^{d} -

T. S. H. No 424 and 5 feet Equatorial.

obs. Immersion of α Tauri
$7^{h}.. 14^{m}.. 40^{s}.87$

Emersion
$8^{hm}.. 29^{m}.. 49^{s}.69$

Mr. Stimpson, Amherst.

Chro No 333 for the Imm – No. 2440. Em. – 4ft Equatorial.

Imm. α Tauri D. L.
$7.. 14.. 38.37$

Emersion Br. L.
$8^{h}.. 29^{m}.. 44^{s}.80$

Immersions obs. with the 23 feet Refractor.

* 7 mag. 9' South of ☽'s north limb
G. P. B – 5.. 55.. 30.4

* 9 mag. 0. 30" South of ☽'s North limb
in same Dec. as α Tauri, precedes it
by – 150^{s} – $2^{m}..30^{s}$
G. P. B – $6^{h}.. 15^{m}.. 0^{s}.2$

* 9-10 Mag. near ☽'s centre
about 7' South of α Tauri
B' $7^{h}.. 07^{m}.. 14^{s}.6$

* 9-10 mag. follg. α Tauri and 2' North of it.
B' 7.. 18.. 51.6

* 8^{th} mag. 2' or 3' South of ☽'s centre
B' 7.. 31.. 27.6

* 10^{th}. mag. near the ☽'s centre
5.. 53.. 40.1

a double star. a. b. – a south of b. 31"
b. South of α Tauri. 3" – a
* a. 10 mag – $6^{h}.. 35^{m}.. 59^{s}.2$ } B'
* b – 11. mag – 6.. 36.. 28.9 }

* 10^{th} mag. 3' North of ☽'s centre
6.. 48.. 34.9 – B'

The immersions were at the ☽'s dark limb.

(161)
Ill. East.

Jany. 25th
1491.

Polaris
1 ..23 ..58.0 – 2^s F
32 ..51.0 – 2 G

Polaris 1.. 5 ..223.53
θ Ceti 1..16 ..321.20
α Arietis 1..58 – 289.38
γ Ceti – 2..35 – 309.47

α Arietis
9 . 9.8
9 . 25.0
9 . 40.0
9 .. 54.7
0 .. 9.4
0 .. 24.5
2 .. 0 .. 39.5
2029
180
7/3829
54.70
2
1 .. 59 .. 52.70
1 .. 58 .. 43.30
+1 .. 09.40

1491 – 2 .. 10.0
2557 – 2 .. 14 .. 25.4
4 .. 25.4
1 .. 09.4
2557 + 5 .. 34.8

0..25.47.82
0..04.05
0..25..43.77
26.00.0
16.23
16.00
0.23

20..17..44.73
46.75
23.8 20.. 18 .. 31.48

20..49..53.6
5..34.3
20..44..19.3
20..18..31.48
00..25..47.82
00..20 04.22
0..25..43.60
0..26..00.00
16.64
Slow 16.00
Hm + 0.4

Mr Holcomb's obs. of Aldebaran, at Southwick Mass.
Im 7^h.. 5^m.. 02^s.63 Em 8^h..20^m..04^s.63
some uncertainty about the Immersion,

Lat. 42°.01′.48″.8
4^h..51^m.. 11.6

Dr. Whittemore's obs. occn of Aldebaran, at his house
near Brighton Unitarian Meeting house –
Immersion at ~ 7^h.. 14^m.. 44^s.0 good observation
Emersion – 8..30..23.0
Refract Telescope – 5 ft focus – 4¾ inches aperture
no appearance of lingering or projection at the Emersion.

Sidereal times of occultations of stars by the Moon on the 23d of January 1850 - Evening

	h m s		
78 Tauri –	23..34..40.22	Immersion	D.L
B.A.C. 1391 —	1..36..52.18	Emersion	Br. L
*. 7 Mag. unk. -	2..07..07.17	- 9' South of the ☽'s north Limb — Immersion.	D.L
* 9-Mag. " —	2..26..40.16	30" South of the ☽'s n. Limb. same declination	D.L
		as δ Tauri, precedes it 150s = 2m..30s	D.L
* a. 10 Mag. - " –	2..47..42.65 }	a Double star, a. is south of b. 31" – b. is south	D.L
* b. 11 Mag. - " –	2..48..11.45 }	of δ Tauri. 3" – Immersion	D.L
* 10 Mag. – " —	3..00..20.24	- 3' North of ☽'s centre. - Immersion	D.L.
* 9-10 Mag. - " –	3..19..03.14	- near the ☽'s centre. abt. 7' South of δ Tauri -	D.L
* 10			
* 9-10 Mag. — " —	3..30..42.04	- Foll.g α Tauri and 2' North of it . Imm –	D.L
* 8 Mag. — " —	3..43..20.14	- 2' or 3' South of ☽'s centre	D.L
*. 10 Mag. — " —	2..05..16.57	- near the moon's centre	D.L

Situation of observers

W.C.B. In the Dome.

T. H. Safford - Eastern Balcony for the Imm. Western Balcony for the Em.

G. P. B. at the East side of the Roundabout.

T. S. Homan. In the Roundabout.

Mr. Stimpson. In the Transit Circle Room.

The evening was beautifully clear without any cloud or haze and the objects steady.

Jany. 26t

Ill East (1163?) 47
1491.

α andromedæ
very faint 1 ..20.0
1 ..35.7
B 1 .50.7
2 . 6.3
2 ..22.0
0 .. 02 ..37.6
1768
180
7)356.8
50.97
2
0 .. 01 ..48.97
0 .. 37.65
1 ..11.32

Polaris - G.P.B
A 0.. 39.. 53.
B 48" 36.
C 57" 28.5
D 06" 16.5
E 15" 09.5
F 24" 04. 3 or 4 late
G 32" 52.5
7)44 ..20.0
1 ..06 .. 20.0
2
1 . 06 .18.0
1 .. 05 ..02.4
1 ..15.6 - 0.5

	h	
α Andromedæ	0..0 –	284.07
γ Pegasi –	0..5 –	298.02
α Cassiopeiæ –	0..32 –	256..40
γ Ceti — —	2..35 –	309.47
α Ceti —	2..54 –	308.53
α Tauri ~	4..27 –	296.11
α Aurigæ –	5..05 –	266..33

AD	26..23.5
BD	17"40.5
CD	8"48.0
ED	8"53.0
FD	7"44.0
GD	26..36.0

α Arietis
Clouds 9 .12.0
9 . 26.5
9 . 41.6
B. 9 .56.0
0 .11.3
0 ..26.6
2 ..0 ..41.7
215.7
180
7)395.7
56.53
2
1 .. 59 ..54.53
1 .. 58 ..43.39
+1 ..11.14

γ Ceti
6 - 3.9
6 .17.5
6 .31.5
faint 6 .45.0
6 .58.5
7 ..12.5
2 ..37 ..26.6
1955
120
7)3155
45.07
-2
2 ..36 ..43.07
2 .. 35 ..31.70
+1 .11.37

α Tauri
7 ..49.8
8 .03.9
8 ..18.5
8 .32.7
8 ..47.0
9 . 1.3
4 .29 ..15.7
1689
60
7)2289
32.70
-2
4 ..28 ..30.70
4 ..27 ..19.50
+1 ..11.20

Capella
5 .52.0
6 .12.0
6 .31.2
6 .37.0
7 ..11.1
7 .30.7
5 .07 ..50.2
2380
120
7)3580
51.14
2
5 .06 ..49.14
5 5 ..37.83
1 ..11.31

Received the D (1164) Chronometer (11) by the Niagara
Capt. Ryrie.

Jany 26th P.M. Ther 65

1491 – 0 .. 10 .. 9 – 0 .. 13 .. 07 1491 – 0 .. 9 .. 0
1503 – 3 .. 46 .. 56 – 3 .. 49 .. 53.5 2557 – 0 .. 13 .. 26.1

1503 – 3 .. 52 .. 0 —— – 3 .. 53 .. 0 —— – 3 .. 54 .. 0
D 2167 – 8 .. 39 .. 26.3 E 2257 – 8 .. 38 .. 29.2 F 2207 – 8 .. 36 .. 0
4 .. 47 .. 26.3 4 .. 45 .. 29.2 4 .. 42 .. 00.0
1503 – 3 .. 55 .. 0 —— 3 .. 56 .. 0 G – 3 .. 57 .. 0
B 2227 – 8 .. 29 .. 37.2 A 2239 – 8 .. 38 .. 2.7 2248 – 8 .. 43 .. 28
4 .. 34 .. 37.2 4 .. 42 .. 02.7 4 .. 46 .. 28.0
1503 – 4 .. 0 .. 0 —— 4 .. 2 .. 0 —— – 4 .. 3 .. 0
H 2186 – 8 .. 36 .. 0.5 I 2222 – 8 .. 40 .. 49.2 K 2224 – 8 .. 46 .. 22.5
4 .. 36 .. 00.5 4 .. 38 .. 49.2 4 .. 43 .. 22.5
1503 – 4 .. 04 .. 0 } —— 4 .. 05 .. 0
L 2245 – 8 .. 46 .. 23.8 } O 2246 – 8 .. 47 .. 52.1
4 .. 42 .. 23.8 4 .. 42 .. 52.1

1491 fast – 1 .. 10 .. 9 }
1503 – " – 1 .. 03 .. 3 }

1503 – 4 .. 07 .. 47 – 4 .. 08 .. 47 – 4 .. 9 .. 46
1508 – 14 .. 42 .. 45 – 14 .. 43 .. 45.5 – 14 .. 44 .. 45

1508 – 14 .. 49 .. 44 —— 14 .. 50 .. 43 —— – 14 .. 52 .. 36 —— 14 .. 53 .. 34
2248 – 9 .. 01 .. 10.4 – 9 .. 2 .. 09 2186 – 8 .. 53 .. 33.5 – 8 .. 54 .. 31

1508 – 14 .. 56 .. 0 —— 14 .. 56 .. 59 —— 14 .. 59 .. 35 – 15 .. 00 .. 35
2222 – 8 .. 59 .. 44.5 —— 8 .. 00 .. 43 2224 – 9 .. 07 .. 51 – 9 .. 08 .. 50.5

1508 – 15 .. 2 .. 1 – 15 .. 03 .. 0 } —— 15 .. 04 .. 42 – 15 .. 5 .. 40
2245 – 9 .. 9 .. 17 – 9 .. 10 .. 15.5 } 2246 – 9 .. 12 .. 25 – 9 .. 13 .. 22.5
—— 15 .. 6 .. 54 – 15 .. 07 .. 54 —— 15 .. 8 .. 48 – 15 .. 9 .. 46
2239 – 9 .. 13 .. 46.5 – 9 .. 14 .. 46 2227 – 9 .. 8 .. 14 – 9 .. 9 .. 11.5
—— 15 .. 11 .. 05 – 15 .. 12 .. 05 —— 15 .. 13 .. 35 – 15 .. 14 .. 33 }
2167 – 9 .. 23 .. 19 – 9 .. 24 .. 18.5 2257 – 9 .. 23 .. 50.5 – 9 .. 24 .. 48 }
—— 15 .. 15 .. 16 – 15 .. 16 .. 15
2207 – 9 .. 22 .. 1.5 – 9 .. 23 .. 0

1503 – 4 .. 42 .. 49 – 4 .. 43 .. 49 1491 – 1 .. 9 .. 45 – 1 .. 11 .. 10
1508 – 15 .. 18 .. 05 – 15 .. 19 .. 5.5 1508 – 15 .. 21 .. 40 – 15 .. 23 .. 5.5

1491 – 1 .. 17 .. 8 – 1 .. 20 .. 10 Ther 65
1503 – 4 .. 53 .. 44 – 4 .. 56 .. 45.5 B.T. 745

1850.

Ill. East (16.5)

1491.

Jany. 26^{d}

β Tauri	δ orionis	ε orionis
7.16.0	4.53.5	9.9.2
7.31.5	5.7.2	9 23.0
7.47.0	5.21.0	9.36.7
8.3.0	5..34.6	9.50.5
8..18.6	5..48.4	0.4.3
8.34.5	6.2.0	0.16.0
5..18..50.0	5..26..16.0	5.30..31.8
2004	182.7	1735
180	60	180
7/204	7/242.7	7/3535
2.91	34.67	50.50
2	-2	2
5.18.00.91	5.25..32.67	5.29..48.50
5.16..49.46	5..24..21.36	5.28..36.83
1.11.45	1..11.31	1..11.67

β Tauri 5..16 – 283..55

δ Orionis 5. 24 – 312..48

ε Orionis – 5..28 – 313..41

8 Am 27^{d} Am Th N		61
	G –	56
2..30 PM		70
		63
Expd Ther	–	46

29. 8 Am Th N – 59 Ch. 53

1850 Jany. 29th

Ill. East (166)
(1491)

(28/29)

R 2nd afternoon 29th

28/29

α Lyrae	α Aquilae
2 .12.4	3 .59.8
2 .29.5	4 .13.5
2 .47.4	4 .27.4
3 . 4.6	4 .41.3
3 .. 22.5	4 .. 55.1
3 .. 39.9	5 .. 9.0
18 .. 33 .. 57.5	19 .. 45 .. 23.0
213.6	.229 0
180	60
133	289.0
4.80	41.29
−2	−2
18 .. 33 .. 02.80	19 .. 44 .. 39.29
31 .. 49.92	43 .26.25
+1 .. 12.88	1 .. 13.04

16..20 − 338..28
16.21 − 250..32
α Lyrae − 18.31 − 273..44
β Lyrae − 18.44 − 279..11
19..43 − 303..55

It is not unlikely that the level error should have been E end too high instead of W end

Level

	E	W	
	82.3	88.	+
+	86	84.5	
	82.5	87.5	+
+	86	84.3	
	84.2	86.1	
		84.2	
		1.9	

lev. = +0.08s

W + 0.9 = 0.06s

Snow drift, high N.W. wind.
Fine seeing steady

Mer Mark

Dmed ur		N		S	
.995	.005	.740	.260	210	.790
.990	.010	750	.250	195	.805
1.003	− .003	730	.270	180	.820
2988		1120		3/585	
.996		740		195	
		.260		.805	
		.805		.260	
		Sum 1.065		.545 diff	

.26
23
78
52
598

.805
23
2415
1610
1.8515

Jany. 28th (Sat?) - Near noon.   N Ther 66   Ch. T 67

1491 — 20 .. 04 .. 0 — 20 .. 7 .. 1 — 20 .. 10 .. 4   1491 fast - 1 .. 12.0
1503 — 11 .. 33 .. 36.5 — 11 .. 36 .. 37 — 11 .. 39 .. 39.5   1503 - " - 1 .. 5.7

1503 — 11 .. 42 .. 0 — 11 .. 43 . 0 — 11 .. 44 .. 0 — 11 .. 45 . 0
222 — 16 .. 25 .. 18 250 — 16 .. 15 .. 46.6 227 — 16 .. 22 .. 36.2 258 — 16 .. 14 .. 54.7
— 11 .. 46 .. 0 — 11 .. 47 .. 0 — 11 .. 48 . 0 — 11 .. 49 .. 0
180 — 16 .. 26 .. 34.5 1492 — 16 .. 35 .. 50.3 230 — 16 .. 41 .. 30.2 310 — 15 .. 44 .. 42.8

1503 — 11 .. 50 .. 53 — 11 .. 51 .. 52 } — 11 .. 55 .. 54 — 11 . 56 .. 54
1508 — 22 .. 47 .. 40 — 22 .. 48 .. 39.5 } — 22 .. 52 .. 43.5 — 22 . 53 .. 44

1503 — 0 .. 8 .. 0 — 0 .. 10 .. 0 — 0 .. 11 .. 0 — 0 .. 12 .. 0
2239 — 4 .. 49 .. 59 2227 4 .. 44 .. 34.5 2167 — 4 .. 58 .. 30.3 2257 — 4 .. 57 .. 26.5
— 0 .. 13 .. 0 — 0 .. 14 .. 0 — 0 .. 15 .. 0 — 0 .. 16 .. 0 }
2207 — 4 .. 54 .. 58.7 2248 — 5 .. 00 .. 29.4 2186 — 4 .. 50 .. 54.7 2222 — 4 .. 54 .. 46 }
— 0 .. 17 .. 0 — 0 .. 18 .. 0 — 0 .. 19 .. 0
2224 — 5 .. 00 .. 20.3 2245 — 5 .. 00 .. 23.2 2246 — 5 .. 01 .. 49.4

1503 — 1 (13) .. 0 .. 6 — 1 .. 1 .. 5
1508 — 23 .. 57 .. 27.5 — 11 .. 58 .. 27

Jan. 29th Am   Ther. 65   1491 fall $1^{m}..12^{s}.8$

1491 – 19.. 05 ..20 — 19 ..08 ..14   1503 fall – 1..07.24

1503 – 10.. 31 . .11.5 — 10 ..34 ..05

1503 – 10.. 40.. 0 — 10.. 41.. 0 — 10.. 42.. 0 — 10.. 43.. 0

2239 – 15.. 21.. 56.5 2227 – 15.. 15.. 32.2 2167 – 15.. 29.. 31.8 2257 – 15.. 28.. 25.5

— 10.. 44.. 0 — 10.. 45.. 0 — 10.. 46.. 0 — 10.. 47.. 0

2207 – 15.. 25.. 58.4 2248 – 15.. 31.. 29.5 2186 – 15.. 21.. 57.1 2222 – 15.. 25.. 43.8

— 10.. 48.. 0 — 10.. 49.. 0 } — 10.. 50.. 0

2224 – 15.. 31.. 19 2245 – 15.. 31.. 22.7 } 2246 – 15.. 32.. 47.7

1503 – 10.. 54.. 0 — 10.. 55.. 0 — 10.. 56.. 0 — 10.. 57.. 0

180 – 15.. 34.. 33.9 1492 – 15.. 43.. 49.5 230 – 15.. 49.. 31.5 250 – 15.. 29.. 43.4

— 10.. 58.. 0 — 10.. 59.. 0 — 11.. 02.. 0 — 11.. 3.. 0

227 – 15.. 36.. 35.9 258 – 15.. 28.. 53.5 222 – 15.. 44.. 18 310 – 14.. 58.. 40.7

— 11.. 4.. 0 }

L190 – 11.. 10.. 12.5 }

1499 = 20.. 10.. 0 — 20.. 11.. 0 — 20.. 12.. 0

2419 – 20.. 22.. 32.9 2440 – 20.. 00.. 22.2 2557 – 20.. 16.. 29.3

1491 – 20.. 13.. 0 — 20.. 14.. 0 — 20.. 15.. 0 — 20.. 16.. 0

333 – 20.. 9.. 46 fly – 20.. 33.. 33 B10 – 20.. 11.. 6.5 2492 – 20.. 29.. 26

— 20.. 17.. 0   26 — 20.. 20.. 0 — 20.. 20.. 30

424 – 20.. 14.. 33.5   1491 – 20.. 18.. 37.6 — 20.. 19.. 07.6

1503 – 0.. 53.. 46 — 0.. 55.. 46 — ..46 — 0.. 59.. 46 – 1.. 0.. 45

1508 – 24.. 3.. 03 — 24.. 5.. 04 — 24.. 7.. 05 — 24.. 9.. 06 – 24.. 10.. 5.5

1503 – 1.. 01.. 45

1508 – 24.. 11.. 06   1491 – 22.. 10.. 0   22.. 10.. 0

1141 – 6.. 19.. 23.3   1.. 12.9

22.. 08.. 47.1

20.. 33.. 30.95   20.. 34.. 17.7

46.75   1.. 34.. 29.4

20.. 34.. 17.70   15.4

19.. 05.. 20   20.. 29.. 34.39   1.. 34.. 14.0

1.. 12.8   46.75   ~~20.. 33.. 30.95~~

43.. 04.. 07.2   20.. 30.. 21.14   1 13   1141 – 6.. 19.. 23.3

20.. 30.. 21.14   22.. 10.. 00   + 4.. 45.. 09.3

22.. 33.. 46.06   22.. 08.. 47   16

3.. 41.8   4.. 44.. 53.3

10.. 30.. 04.26

1503 – 10.. 31.. 11.5

+ 1.. 07.24

Jan 30 1850, 13.6

1491 16..08..00 20..33..30.95
1141 12..14..25.3 46.75
16..06..46.4 20 34 17.70
20..34 17.7
19 32..28.7
3 12 08
19..29..16.62
24..14..25.30
+4..45..08.68
16
1141 $+4^{h}..44^{m}..52^{s}.68$ Fast of Boston.

Se 11..34..00
1141 16..18..52.8
4..44..52.8
4..44..53.5
Se +0.7

16..18..52.8
4..44..53.5
11..33..59.3
Se 11..34..00.0
Se fast +0.7

Jany. 30th - 8 Am Ther 62

1491 -- 16..46...40 — 16.. 49..40 1491 fast - 1^{m}..14^{s}.2
1503 - 8..08..58.5 — 8.. 11..58

1503 - 8..14..0 — 8..15..0 — 8..17..0 — 8..19..0
180 - 12..54..33 1492 13.03..48.5 230 - 13..10..32.5 250 - 12..51..40.3
— 8..20..6 — 8..21..0 — 8..24..0 — 8..25..0
227 - 12..58..35.2 258 - 12..50..52 222 - 13..07..17.1 310 - 12..20..38.8
— 8..27..0
α 190 - 8..33..14.2 1503 fast - 1^{m}..08^{s}.68

1491 - 17..08..0 — 17..09..0 — 17..10..0
2440 - 16..57..21.8 2557 - 17..13..30.5 2419 - 17..22..32.5

1503 - 8..35..0 — 8..36..0 — 8..37..0 — 8..39..0
2239 - 13..16..54 2227 - 13..10..29.6 2167 - 13..24..33 2257 - 13..24..24.7
4..41..54.0 4..34..29.6 4..47..33.0 4..45..24.7
— 8..40..0 — 8..42..0 — 8..43..0 — 8 45..0
2207 - 13..21..58 2248 - 13..28..29.5 2186 - 13..18..47.6 2222 - 13..23..41.5
4..41..58.0 4..46..29.5 4..35..47.6 4..38..41.5
— 8..46..0 — 8..47..0 ? — 8..48..0
2224 - 13..29..17.5 2245 - 13..29..22.1 } 2246 - 13..30..46.3
4..43..17.5 4..42..22.1 4..42..46.3

1491 - 17..28..54 — 17..31..52
1503 - 8..51..05.5 — 9..54..03

Œ -- 17..39..0 — 17..40..0
1491 - 17..37..37.5 — 17..38..37.5

at 9 Am this day.
No. 180 - 1492 - 230 - 250 - 227 - 258 - 222 - 310 - 190 - 2239 - 2227 - 2167 - 2257 - 2207 - 2248 - 2186 - 2222 - 2224 - 2245 - 2246 - Mean Solar and - 2440 - 2557 - 2419 Sidereal - exposed on the North Balcony of the Dome
Tempe at 9 Am - 17°-

258 brought down for comp
1503 - 4..5..0 — 4..6..0
258 - 8..34..50.8 — 8..35..50.75

Ex Ther
at 8..30 Pm +17°
10..40 .. +13
1 Am - +11

Ill. East (171)
(1491.)

E. + 17°.

Jany. 30th Am. T.

α Lyræ
2 .. 13.5
2 .. 31.0
2 .. 48.5
3 .. 6.4
3 .. 22.0
3 .. 41.5

18 .. 33 .. 58.8
223.7
180
43.7
6.24
− 2
18 .. 33 .. 04.24
31 .. 49.92
+ 1 .. 14.47

1491 – 18 . 35 . 45 — 18 .. 38 .. 47
1503 – 9 .. 57 .. 45.5 — 19 .. 00 .. 47

18 . 35 .. 45
1 .. 14.2
42 .. 34 .. 30.8
20 .. 34 .. 17.7
22 .. 00 .. 13.1
−3 . 36.28
9 .. 56 .. 36.82
1503 – 9 .. 57 . 45.5
+ 1 . 08 . 64

20 .. 33 . 30.95
46.75
20 .. 34 .. 17.70

Ill. East
Level

	E	W	
	89.0	90.7	+
+	91.3	88.7	
	89.3	90.5	+
+	91.3	88.5	
	89.0	90.5	+
+	91.7	88.0	
	6)541.6	6)536.9	
	90.27	89.48	
		56.27	
		4)79	

Ill E E end too high 0″.39
W E " 0.05
2)0.66
Ill pivot too small 0″.33

lev. − 0ˢ.04 E + 0ˢ.03 = .39 E

Mer. Marks

N.		S.	
.685	.315	200	.800
.710	.290	205	.795
.732	.268	270	.730
.732	.268	250	.750
.725	.275	245	.755
84		170	
.717		234	
006		006	
.289		.772	

Measured Jany. 30th 1850.

From Messrs Sandeau & Stimpson

Height of the East Window of the Dining Room (top of sandstone at the lower part of the outside window frame) above the last sleeper of the Harvard Branch Rail Road = 46.62 feet

Height of East stone of the front of the main entrance of the Observatory (the upper face of the stone on a level with the upper stone step) = 52.12 feet Dif = 5½ feet.

(From Prof. Guyot)	ft
Barometer Cistern above the R. Road Depot. (last sleeper)	48.75
R R above top of Dry Dock (Charlestown	13.09
Barom. above dry Dock	61.84
Top of Dry Dock above Mean Sea Level	9.50
Barom. Cistern above Mean Sea Level	71.34

Jany 30th North mark Reversed Ill West (172)

Microm

Zero. mid wire

Zero. mid wire	N mark
0.000	.453
.010	.445
.013	.440
.000	.430
.015	.440
0. 008	.442

coin. .008

Ill W 0.438

E 0.289

0.147 col = 0.074

South mark

South mark	Zero
.970	1.000
.950	.010
.860	.012
.950	.005
.920	0.992
.930	19
.930	0.004
210	0.008
930	

coin. .006 Mean 0.006

0.924 Ill W

0.772 Ill E

0.152

0.076 col.

Level

N	E	
88.0	92.3	+
+ 90	89.3	−
87.5	92	+
+ 89.5	89.0	
86.0	92	+
+ 90.0	89	
6/5310	6/5436	
88.50	90.60	

88.50

2.10

15) 1.05 E .06

1 15

.0

90

90

Mean col $0^r.075 \times 2^s.3 = 0^s.17$

Ill East Col of mid wire $0^s.17$ West

cor. mean of wires 0.03

Ill East Col. mean of wires $0^s.20$ West

lev $0^s.07$ East +

lev. + 0.08 Reversed, Ill. East again.

Mer Marks

North

.735	.265
.730	.270
.730	.270
.740	.260
.720	.280

155

.731

.006

0.275 Ill E

0.436 W

0.161

0.080

South

.250	.750	Ill E
.150	.850	Red. mean wires
.250	.750	
.210	.790	
.220	.780	

5/80

216 − 54 Red Mean of wires

.006

0.790 Ill E

0.924 Ill W

0.134

0.062

N Ill E	S	Ill W N	S
.289	.772		
275	790		
.282	.781	.436	.924
123	123	23	23
846	2343	1308	2.772
564	1562	872	1848
6486	1.796	1.003	2.125
0.649	1.796	1.003	2.125
032	.032	.032	032
E 0.617	1.764	1.035	2.157
W 1.035	2.157		
0.418	0.393		

c = 0.20

Jany. 30 - Pll

Ill. East
(1491)

α Cassiopeæ
29.0
53.0
17.4
41.9
.34 ..06.3
0 ..34 ..30.9
1476
29.52
17.52
0.. 33 ..15.52
correction for wire +03
.55

1491 - 1..36..0
1503 - 4..56..57.4

Polaris
A 0..39..52.5
B 0..48..42.3
C 0..57..31.5
D 1..06..20.7
E 1..15..12.5
F 1..24..00.0
G - 1..32..53.0
7/44..32.5
1..06..21.78
1.. 06 19.78
1.. 04..59.03
1.20.77

		321.20
x α Cassiopeæ	0..32	256..40
x α Urs min	0..39	223.53
x α Arietis	1..58	289..38
x γ Ceti	2..35	309..47
x β Urs. min	14..57	207..10
x α Persei	3..13	263..04
x η Tauri	3..38	288..45
x γ' Eridani	3..57	326..19
x α Tauri	4..27	296..11
x Capella	5..05	266..33
x β Tauri	5..16	283..55
x α Leporis	5..26	330..19
α Columbæ	5..34	346..32
x α Orionis	5..47	305..01

α Arietis
15.4
30.5
45.3
0.0
15.0
29.7
2 ..0 ..44.5
1804
00.06
1..59..58.06
1..58..43.22
1..14.84

γ Ceti
7.3
21.0
34.8
48.6
2.3
16.1
2..37..30
1601
180.1
340.1
48.57
2..36..46.57
2..35..31.63
1..15.04

β Urs min. S.P.
49 ..49.4
50 ..41.8
51 ..34.0
52 ..26.5
53 ..19.0
54 ..11.2
2 ..55 ..03.6
55.5
2650
2.. 52 ..24.50
14.. 51 .. 10.35
1.. 14.15

51 Cephei
6.. 15.. 52.0
20.. 34.7
25.. 23.2
30.. 11.7
34 57.5
39.. 46.0
44.. 29.5
2746
10.66
6.. 30.. 08.66
6.. 28.. 52.66
1..16.00

G.P.B.

Bad seeing
wires out of focus

Ill. East (17.4)
(1491.)

4)3.5
0.9

Jany 30th

α Persei	η Tauri	γ¹ Eridani	α Tauri	Capella
3 .52,3	9 .6.3	1 .36.4	7 .53.5	5 ..55 3
4 ..13.7	9 ..21.6	1 .50.6	8 , 7.5	6 .15.0
4 .34.3	9 ..37.0	2 , 5.0	8 .22.1	6 .34.8
4 , 55.7	9 ., 57.5	2 .19.0	8 ,36.4	6 , 54.5
5 , 17.0	0 ., 6.2	2 ,33.0	8 ..50.6	7 ,14,2
5 ..38.0	0 ..21.6	2 ..47.2	9 .. 5.0	7 .34.0
3 ..15 ..59.0	3 ..40 ..39.0	3 ..53 ..01.3	4 ..29 ..19.2	5 ..07 ..58.6
2700	181 2	192 5	194.3	261.4
120	180	60	60	120
7)3900	7)361.2	7)132.5	7)254 3	7)381.4
55.70	51.60	18.93	36.33	54.49
-2	2	-2	2	-2
3 ..14 ..53.70	3 ..39 ..49.60	3 ..52 ..16.93	4 ..28 ..34.33	5 ..06 ..52.49
		3.. 51.. 02.01		
		1 ..14.42		

3

β Tauri	α Leporis	Unk.	α Orionis
,, 19.7	41.5	45	39.5
7 ..35.0	56.0	2.2	53.0
7 ,, 50.3	10.0	18.8	7.2
8 , 6.0	24.5	35.2	21.0
8 .22.0	39.1	51.5	34.7
8 ..37.7	53.5	7.5	48.5
5 ..18 ,,53.0	5 .28 .08.0	5 ..36 ..24	5 ..49 ..02.4
223.7	2326		2063
180	172.6		~~4126~~
7)43.7	24.66		1463
6.24	5.. 27.. 22.66		20.90
-2	5.. 26.. 07.60		5 ..48 ..18.90
5 .18 ..04.24	1 ..15.06		

3.5 2.7
6.2 2.6
8.8 1.9
10.7 1.9
12.4 1.6
14.0 2.0
16.0

29.6
45.7
unk. 2.2
18.7
35.1
54 ..57.2
5 ..55 ..8.0

48.1
49.7
52.2
54.2
56.0
57.0
60.0

g(175)

Ill East

After obs on prec. page Jan 30th P.M

Antares 16..20..338..28

× W	E
95.3	96.0
× 95.0	95.9
× 9~~4~~.8	95.9
95.03	95.93
92.0	96.4 ×
91.0	97.0 ×
90.0	97.1 ×
91.0	96.8
93.01	96,37
	93.01
	3 36

E + 1.68 = 0.11 lev. _0.15

1491

30/31st Am

Jan 30/31 Ast

Antares

0 44
0 .54.5
1 14.5
30.0
1 ..44.8
2 .00.5
16.. 22.. 15.8
7)2091
29.87
16 ..21 ..29.87
20 ..12.13
1 .15.74

α Lyrae

2 .14.6
2 .32.0
2 .50.0
3 . 7.0
3 .24.7
3 .42.3
18 ..34 .. 0
1706
120
150
7.23
18..33 ..05.23
18 .31 .49.94
+1 .15.29
-.4
1 .14.89

20.. 37..27.50
46.75
20..38..14.25

17.. 26..45
1..14.9
41 ..25 ..30.10
20..38..14.25
20 ..47 ..15.85
-3.24.34
8 .43.51.51
1503 - 8..45..01.0
+1..09.49

18..36..14
1..14.9
42 ..34..59.1
20..38..14.25
21 .56 ..44.85
3.35.72
9..53.09.13
1503 - 9..54.18.5
+1.09.37

Jany. 31st - Am (1765) 1503 fast $\overset{m}{1}$..$\overset{s}{09}$.49

1491 fast $\overset{m}{1}$..$\overset{s}{14}$.9 Then at S.r.+5°½

1491 - 17 .26 ..45 - 17 ..29 ..43
1503 - 8 ..45 ..01 - 8 .. 47 .. 58.5

Returnd the Trial Chros. to the Library Where they will remain Ther 60-

1503 - 8..53..0 — 8..55..0 — 8..56..0 — 8..59..0
250 - 13..25..29.5 227 - 13..33 .32.6 258 - 13 ..25 ..48.5 180 - 13..39.. 28.6
— 9..0..0 — 9..2..0 — 9..4..0 — 9..5..0
1492 - 13..48 .49.1 230 - 13..55..32 310 - 12..59..34.3 222 - 13 ..48 ..18.9
— 9..7..0
190 - 9..13..4.2

1491 - 17..51..0 — 17..54..0 — 17..55..0
2557 - 17..55..26.8 2440 - 17..42 ..17.5 2219 18 .07..26.1

1503 - 9 ..16 ..0 — 9..18..0 — 9..19..0 — 9..20..0
2239 - 13 ..57 ..47 2227 - 13.. 52.. 19.8 2167 - 14..06 ..27 2257 - 14 ..05 ..29.4
— 9..22..0 — 9.. 23..0 — 9.. 25..0 — 9..26..0
2207 - 14..03..52.3 2248 - 14..09 ..25.4 2186 - 14..00..38.3 2222 14..04 ..25.8
— 9.. 27..0 — 9..28..0 — 9..30..0
2224 - 14..10..5.8 2245 - 14..16..16.3 2246 - 14..12..36.3

1503 - 9..36..0
1141 - 14..29..58.7

1503 fast $\overset{m}{1}$..$\overset{s}{09}$.37

1491 - 18..36..44 — 18..39..12
1503 - 9..54..18.5 — 9..57..16

1850 Jan 7.31 +

Ill Ear (1477)
(1491)

Polaris

T.H.S

m s
a
48.. 33 b
57.. 20 c
1 ..06.. 10 d
15.. 02 e
23.. 53 f
g

118
236
11.60
1.. 06..09.60
[illegible] +88
1.. 06..10.48

Feb 1st Add

45.4
00.5
15.9
Antares 31.3
46.7
01.8
16 22.. 17.5
2194
31,34
16.. 21.. 29,34
16.. 20.. 12,16
1491 +1.. 17.18

Ill. East (178)
1491

Feby. 1st

α Arietis.

9 . 18.0
9 . 33.0
9 . 47.8
0 . 2.7
0 . 17.6
0 .. 32.5
2 .. 0 .. 47.5

1997
186
7)19
02.73
−2

2 .. 0 .. 00.73
1 .. 58 .. 43.19
+1 .. 17.54

Saturday Feb. 1st/2nd AM 1850

1491 16.. 54..00.0 1491 16 46..55..00.0
1503 8.. 04..29.7 1503 8.. 8..05..29.5

1503 8..09..00 1503 8.. 11..00.0 1503 8.. 12..00.0
230 1.. 02..33.4 258 12.. 38..40.2 227 12..50.. 30.7

1503 8..10..00.
258 12..42..20.2

1503 8..15..00 8..15..30 8..16..00
2239 12 56 42.7 2227 12 49..43.8 2167 13.. 03.. 28.5

1503 8..16..30 8..17..00
2257 1.. 01..58.4 2207 12..58..51.4

PM
1503 4..07..00 1491 - 1 .. 20..0 1491 - 4..38..0
222 8..50 16.9 194 - 1.. 20..12.5 rr 194 - 4..38..15

Feb 3/4 Mond. m'g 1850 (180)

1491 15..02..00 | 15..03..00.0
01,8 1503 6..04..55.7 | 6..05..55.4

β Ur. Min
40.7
14..52 33.2
23.7

14..52..30.9
14..51..10.7
1..20 2

312..23
27..42
284..41
15..25
327 46
74..46
237..37

g. P. β
α² Librae
15.3
29.3
43.6
58.0
12,1
26.3
~~14..44..40.7~~
225.3
18
405.3
14..43..57.90
14..43..55.90
14..42..35.13
1491 1..20.77

α Lyrae 18..31 – 273..44

α Lyrae
β 2 .19.5
2 .37.3
2 .55.0
3 .12.6
3 .30.4
3 ..47.8
18 ..34 ..5.3
207.5
12.07
71879
12.56
–2
18 ..33 ..10.56
31 ..50.03
1 ..20.53

1850

Expt Ther s.r. +7°

Feby 3/4 Am

Ther 50° — 60°

1491 — 17 .. 38 .. 51 — 17 .. 41 .. 50
1503 — 8 .. 41 .. 21 — 8 .. 44 .. 19.5

1491 — 1 .. 20.6
1503 — 1 .. 14.8

1503 — 8 .. 46 .. 0 — 8 .. 48 .. 0 — 8 .. 49 .. 0 — 8 .. 50 .. 0 ?
2239 — 13 .. 27 .. 42.3 2227 — 13 .. 22 .. 9.5 2167 — 13 .. 36 .. 32.1 2257 — 13 .. 35 .. 28.4
— 8 .. 51 .. 0 — 8 .. 52 .. 0 — 8 .. 53 .. 0 — 8 .. 54 .. 0
2207 — 13 .. 32 .. 57.8 2248 .. 13 .. 38 .. 27 2186 — 13 .. 28 .. 24.8 2222 13 .. 32 .. 18.5
— 8 .. 55 .. 0 — 8 .. 56 .. 0 } — 8 .. 59 .. 0 ?57
2224 — 13 .. 38 .. 1 2245 — 13 .. 38 .. 16.9 } 2246 — 13 .. 39 .. 30.2
— 8 .. 59 .. 0 — 9 .. 1 .. 0 — 9 .. 2 .. 0
180 — 13 .. 39 .. 25.2 1492 — 13 .. 49 .. 44.3 230 — 13 .. 55 .. 37.7
— 9 .. 4 .. 0 — 9 .. 5 .. 0 — 9 .. 6 .. 0 — 9 .. 8 .. 0
250 — 13 .. 36 .. 13.6 227 — 13 .. 43 .. 32.1 258 — 13 .. 33 .. 39.3 222 — 13 .. 51 .. 17.7
— 9 .. 9 .. 0
310 — 13 .. 4 .. 27.6

1491 — 18 .. 9 .. 0 — 18 .. 10 .. 0 — 18 .. 11 .. 0
2557 — 18 .. 13 .. 27.9 2440 17 .. 59 .. 10 2419 — 18 .. 23 .. 25
— 18 .. 14 .. 0
194 — 18 .. 14 .. 13.8

The above were immediately after comparison removed to the North Balcony of the Dome Expt Ther +11° —
at 9h .. 45m Am — +13.5

1491 — 17 .. 38 .. 51 — 20 .. 53 .. 13.72
1 . 20.6
41 .. 37 .. 30.4
20 .. 54 .. 00.5
20 .. 43 .. 29.9
3 .. 23.7
8 .. 40 .. 06.2
8 .. 41 .. 21.0
+1 .. 14.8

46.75
20 .. 54 .. 00.47

3 PM — +19
Sun set — +15
8.15 PM — +12 —
10 — " — +11
11 — +10
5th s.r — — +8
at return of Chro 8.30 +9
Am 10 — +8
10.30 +7.7
11 — +8.5
11.12 +7.7
0.20 +9.5
0.40 +8.5
0.55 +9.0
Sun set — +5.0
8 — +2.5
12 1/2 — −0.5

at 4 PM
on Chros. 7°.2

Standard on n.g. Ch before & at Sun rise } −3.0 −3.5
Newman −2.5
Balcony Ther & times −3.0
9 Ahr Standard — +1.0
Balcony — 0.0
Newman +1 —

Feby. $\overset{4}{5}$th Am

1491 – 16 .44 ..0
1503 – 7 ..42 ..42.5

1503 – 7 ..46 ..0
1141 – 12 .29 ..43.7

16 .. 44 .. 21.7
1 .. 21.7
40 .. 42 .38 9
20 .. 57 .. 57.0
19 .44 .41 9
3 . 14 .1
9 .41 .27 .8
7 .42 ..42.5
+1 . 14.7
.16
B 59.3

1503 – 7 .. 46 .. 6
59.3
7 .. 45 .00.7
1141 12 .. 29 .. 43.7
4 .44 .43 0

1491 – 16 .. 51 .15
1141 – 12 .. 33 ..40

20 .. 57 .. 10.26
46.75
20 .57 .. 57.03

16 .57 .15
1 . 21.7
40 .49 ..53 .3
20 .. 57 .. 57 .0
19 .51 .56 .3
3 .15 3
7 .. 48 .41 0
12 .. 33 .. 40
4 .44 .59
16
4 44 ..43.0

7 .. 46 .00
59 3
7 45 00 7
12 .. 29 43.7
+4 .. 44 43.0 = 1141
of Bost

In East m s
1491. fast +1 .. 21.15
1503 – +1 .. 14.7

α Lyræ
2 .21.0
2 .38.1
2 .55.6
3 .13.1
3 .30.7
3 ..48.1
18 .. 34 .. 6.0
2126
120
21926
13.23
– 2
18 .. 33 .. 11.23
31 .. 50.08
+1 .. 21.15

1491 – 17 .. 29 .30
1503 – 8 .. 28 ..05

1503 8 . 30 .6 — 8 .. 31 ..0 — 8 . 33 .0 — 8 .. 34 ..0
180 – 13 .. 10 .. 21 1492 13 .. 19 .. 45.5 230 – 13 .. 26 .. 37.7 250 – 13 .. 06 .. 3

— 8 . 35 . 0 — 8 .. 37 .0 — 8 .. 40 .. 0 — 8 . 42 . 0
227 – 13 . 13 .. 30.5 258 – 13 .. 04 .. 38.5 222 – 13 .. 23 .. 20.3 310 – 12 .. 37 .. 23.5

1491 – 17 .. 45 .. 0 — 17 .. 46 .. 0 — 17 .. 47 .. 0
2557 – 17 .. 49 .. 25.2 2440 17 .. 35 .. 4.8 2419 – 17 .. 59 .. 19

1503 – 8 .. 50 0 — 8 . 51 .. 0 } — 8 . 52 .. 0 — 8 .. 53 .. 0
2239 – 13 .. 31 .. 36.3 2227 – 13 .. 25 .. 0.7 } 2167 – 13 .. 39 .. 28 2257 . 13 .. 38 .. 31.8

— 8 .. 54 .. 6 — 8 . 55 .. 0 — 8 .. 57 . 0 — 8 . 58 .. 0
2207 – 13 .. 35 . 48.2 2248 13 .. 41 .. 23.2 2186 – 13 .. 32 .. 17.8 2222 – 13 .. 36 .. 5.7

— 9 .. 0 .. 0 — 9 .. 2 .. 0 — 9 .. 4 .. 0
2224 – 13 .. 42 .. 52.8 2245 – 13 .. 44 .. 13.8 2246 – 13 .. 46 .. 25

The above when compared were immediately returned to the North Balcony Temp – 9° –

1503 – 9 .. 12 .0 ∠ — 9 .. 14 .0 — 9 .. 15 .. 50 — 9 .. 16 .. 50
1035 – 13 .. 53 . 34.8 190 – 9 . 20 . 6.6 1508 – 9 .. 47 .. 01 — 9 .. 48 .. 01.5

1491 – 18 . 20 . 0 — 18 .. 24 . 0 — 18 .. 25 .. 0 — 18 . 26 .. 0 — 18 .. 27 . 0
194 – 18 . 20 . 12.9 B10 – 18 . 20 . 11.8 333 – 18 . 21 .. 19.7 424 – 18 .. 22 .. 55 249 – 18 . 41 .. 1.4
— 18 . 28 . 0
19 – 18 . 48 .. 3.2

Feby. 5th - near Noon -

1491 - 20.. 37 ..20
186 - 16.. 20 ..54.5

20 : 37 .. 20
1 .. 21.1
44 .. 35 .. 58.9
20 .. 57 .. 57.0
23 .. 38 .. 01.9
3 .. 52.3
11 .. 34 .. 09.6
16 .. 20 .. 54.5
East of Camb + 4 .. 46 .. 44.9
-16
" of Boston 4 .. 46 .. 28.9
15 .. 24 .. 27.3
10 .. 37 .. 58.4
16 - 10 .. 38 .. 00
+ 1.6

1491 - 20.. 40 ..30
1141 - 16.. 22 ..44.5

20 .. 40 .. 30
1 .. 21.1
44 .. 39 .. 08.9
20 .. 57 .. 57.0
23 .. 41 .. 11.9
3 .. 52.8
11 .. 37 .. 19.1
16 .. 22 .. 44.5
4 .. 45 .. 25.4
-16
4 .. 45 .. 09.4
14 .. 32 .. 8.4
9 .. 46 .. 59
16 - 9 .. 47 .. 00
+ 1

20 .. 57 .. 10.28
46.75
20 .. 57 .. 57.03

1 21.2
1491 20.. 57.. 00
1141 4.. 39.. 11.7
20.. 55 38.8
20.. 57.. 57.63
23.. 57 41.17
3 55.53
23.. 53 45.64
28.. 39.. 11.7
4.. 45 ..26.1
16.0
4.. 45.. 10.1
14.. 32.. 08.4
9.. 46.. 58.3
9.. 47.. 00.0
Δe +1.7

1503 - 1.. 01 0 - 1 .. 01 .. 59
1508 - 1.. 34.. 3 - 1.. 35.. 02.5

Feby 5/6th Am
Ill East
1491.
α Ophiuchi
8 .. 37.7
8 .. 51.8
9 .. 6.0
9 .. 20.0
9 .. 33.8
9 .. 48.0
17 .. 30 .. 02.2
1995
60
7)1395
19.93
- 2
17 .. 29 .. 17.93
27 .. 57.25
+1 .. 20.68

* very fluttering

Ther in the Library
at Day-break. 32°.
α Lyrae
2 .. 20.0
2 .. 37.8
2 .. 55.0
3 .. 12.8
3 .. 30.5
3 .. 47.9
18 .. 34 .. 05.6
2096
120
7)896
12.80
2
18 .. 33 .. 10.80
31 .. 50.08
+1 .. 20.72

Feby 5th Grd
21.. 01.. 06.83
46.75
21 .. 01 .. 53.58

1491 - 18 .. 45 .. 5.0
1 .. 20.7
42 .. 43 .. 44.3
21 .. 01 .. 53.6
21 .. 41 .. 50.7
-3 .. 33.3
9 .. 38 .. 17.4
1503 - 9 .. 39 .. 31.5
+ 1 .. 14.1

(184)

5/ Feby 6th Am Ext. Zero. Table 55° — on Glass Balcony — 3 at 9h.15
Chros + 22.5
at 10 + 29.3
Chros brought in from North balcony at 8h..30m Am 10.20 + 31.0
Ext Ther

1491 — 17..41..30 — 18..17..45
1503 — 8..36..07 — 9..12..16

1503 — 9.17..0 — 9..19..0 — 9..20.6 — 9..23.0
180 — 13..57..13 1492 14..7..47 230 — 14..13..36 310 — 13..18..20.5

1491 fast — 1m..20s.7
1503 — " — 1..14.1

— 9..25..0
222 — 14..08..23

1491 — 18..36..0 — 18..40..0 — 18..42..0
2557 — 18..40..20.8 2440 — 18..29..0.5 2419 — 18..54..12.3

1491 — 18..45..5 — 18..48..2
1503 — 9..39..31.5 — 9..42..28

1503 — 9..54..0 — 9..56..0 — 9..57..0 — 9..58..0
2239 — 14..35..26.2 2227 — 14..29..51.4 2167 — 14..44..20.7 2257 — 14..43..42

— 10..0..0 — 10..2..0 — 10..4..0 — 10..5..0
2207 — 14..41..40.3 } 2248 — 14..48..20.5 2186 — 14..39..9.6 2222 — 14..42..40 — 39.8

— 10..7..0 — 10..8.0 — 10..10.0 — 10..12..0
2224 — 14..49..38.2 2245 — 14..50..6.4 2246 — 14..52..23.2 2245 14..54..6.3

The oil is hard as Tallow

— 10..15..0 — 10..20..0
250 — 14..46..46.6 227 — 14..58..28.7 258 stop'd at 14h..45m..56
oil hard / oil hard & bad motion reduced ½ / on examination found that the Detent did not unlock.

The above retained in the Library

1503 — 10..41..0
1035 — 15..22..35

1503 — 11..48..0
2222 — 16..25..39

1503 = 12.56.00
225-7 = 5.41.42.7

altered the Escapement springs
Fresh oil to the Balance Pivots

1503 — 3..7..0
258 — 7..50..53.7

Placed on the North Balcony
Thermo. +12°

Thermometer
6th
at s.r — 3°
9 Am ± 0
11..30 — +5
3 — 12
8 Pm — +8
9 " 7

P D α Lyra

[illegible] 20..28..46 [illegible] 16..34..51 alt 67°..32′