

1853phae.proj.145
KG
11365
145

G.2

Chronometers.
From July 1, 1853

KG 11365.145

KG 11365.145



July 1, 1853 Pm. July 2nd Pm.

6,, 37,, 48.12	6,, 41,, 44.68
<u>46.74</u>	<u>46.74</u>
6,, 38,, 34.86	6,, 42,, 31.42
1 <u>9.86</u>	1 <u>9.86</u>
7,, 38,, 44.72	7,, 42,, 41.28
<u>54.41</u>	<u>56.50</u>
7,, 39,, 39.13	7,, 43,, 37.78
<u>16</u>	<u>16</u>
7,, 39,, 23.13	7,, 43,, 21.78
<u>5</u> <u>82</u>	<u>5</u> <u>82</u>
7,, 34,, 22.31	7,, 38,, 20.96
35,, 22.46	39,, 21.11
36,, 22.61	40,, 21.26
37,, 22.76	41,, 21.41
38,, 22.91	42,, 21.56
39,, 23.13	43,, 21.78

5,, 36,, 00

5,, 35,, 03.7

5,, 34,, 48.1

15.6

July 2-

E.C. - 5,, 36,, 00

236 - 5,, 34,, 48.1

m.t.c. 22,, 57,, 50

236 - 5,, 40,, 30

m.t.c. - 23,, 00,, 45

236 - 5,, 43,, 25.5

15.6

~~5,, 44,, 41.1~~

6,, 37,, 48.12

46.74

6,, 38,, 34.86

5,, 43,, 41.1

6,, 38,, 34.86

23,, 05,, 06.24

3,, 46.91

23,, 01,, 19.33

23,, 00,, 45

34.33

16

50.33

July 6th P.M.

6,, 57,, 30.91

46.74

6,, 58,, 17.65

1 9.86

7,, 58,, 27.51

48.20

7,, 57,, 44.31

16

7,, 57,, 28.81

5 82

52,, 27.49

53,, 27.64

54,, 27.79

55,, 27.94

56,, 28.09

57,, 28.31

July 9 Pm.

7,, 09,, 20.58

46.74

7,, 10,, 07.32

1 9.86

8,, 10,, 17.28

45.85

8,, 09,, 31.43

16

8,, 09,, 15.43

5 82

8,, 04,, 14.61

5,, 14.76

6,, 14.91

7,, 15.06

8,, 15.21

9,, 31.43

July 14 Pm.

7,, 29,, 03.37

46.74

7,, 29,, 50.11

1 9.86

8,, 29,, 59.97

48.90

8,, 29,, 11.07

16

8,, 28,, 55.07

6 82

8,, 23,, 54.25

24 54.40

25,, 54.53

26,, 54.70

27,, 54.85

28,, 55.07

July 18 Pm.

7.44.49.60

46.74

7.45.36.34

1. 9.82

8.45.46.20

3.00

8.45.49.20

16

8.45.33.20

5 82

8.40.32.38

41.32.53

42.32.68

43.32.83

44.32.98

45.33.20

July 21 Pm

7.56.39.27

46.74

7.57.26.01

1 9.86

8.57.35.87

2.80

8.57.38.67

16

8.57.22.67

5 82

8.52.21.85

53 20.00

54.20.15

55.20.20

56.20.45

27.20.67

July 22 Pm

8.00.35.83

46.74

8.01.22.57

1 9.82

9.01.32.43

2.77

9.01.35.20

16

9.01.19.20

5 82

8.56.18.38

57.18.53

58.18.68

59.18.83

9.00.18.98

9.01.19.20

July 25 Pm.

8.12.25.60

46.74

8.13.12.24

1 9.82

9.13.22.10

2.10

9.13.24.20

16

9.13.08.20

5 82

9.08.07.38

9. 7.53

10. 7.68

11. 7.83

12 7.98

13 08.20

12.40.00

July 28 Pm.

8, 24, 15.17

46.74

8, 25, 01.91

1 9.86

9, 25, 11.77

1.4

9, 25, 13.17

16

9, 24, 57.17

5 82

9, 19, 56.35

20, 56.50

21, 56.65

22, 56.80

23, 56.95

24, 57.17

July 29 Pm.

8, 28, 11.72

46.74

8, 28, 58.46

1 9.86

9, 29, 08.32

1.20

9, 29, 09.52

16

9, 28, 53.52

5 82

9, 23, 52.70

24, 52.85

25, 53.00

26, 53.15

27, 53.30

9, 28, 53.52

Aug 1st P.M.

8, 40, 01.39

46.74

8, 40, 48.13

1 9.86

9, 40, 57.99

.73

9, 40, 58.72

16

9, 40, 42.72

5 82

9, 35, 41.90

36, 42.05

37, 42.20

38, 42.35

39, 42.50

40, 42.72

Aug. 9 Pm.

9, 11, 38.82

46.74

9, 11, 20.58

1 9.86

10, 11, 30.44

3.5

10, 11, 33.94

16

10, 11, 17.94

5 82

10, 06, 17.12

07, 17.27

8, 17.42

9, 17.57

10, 17.72

11, 17.94

August 10 Pm.

9, 15, 30.39

46.74

9, 16, 17.13

1 9.86

10, 16, 26.99

4.55

10, 16, 31.54

16

10, 16, 15.54

5 82

10, 11, 14.72

12, 14.87

13, 14.92

14, 15.07

15, 15.22

16, 15.54

9, 07, 37.28

46.74

9, 08, 24.02

1 9.86

10, 08, 33.88

2.70

10, 08, 33.18

16

10, 08, 17.18

5 82

10, 03, 16.36

4 16.51

5, 16.66

6, 16.81

7, 16.96

8, 17.18

Aug. 18 Pm.

9..27..20.06
 46.74
 9..28..06.80
 9.86
 10..28..16.66
 6.35
 10..28..23.01
 16
 10..28..07.01
 5 82
 10..23..06.19
 24..6.35
 25..06..50
 26..06.65
 27..06.80
 28..07.01

Aug. 22 Pm.

10..02..49.05
 46.74
 10..03..35.79
 9.86
 11..03..45.65
 15.1
 11..04..00.75
 16
 11..03..44.75
 5 82
 10..58..43.93
 59..44.08
 11..00..44.23
 1..44.38
 2..44.53
 3..44.75

Aug. 26 Pm.

10..18..35.27
 46.74
 10..19..22.01
 9.86
 11..19..31.57
 19.6
 11..19..51.47
 16
 11..19..35.47
 5 82
 11..14..34.65
 15..34.80
 16..34.95
 17..35.10
 18..35.35
 19..35.47

Aug. 27 Pm.

10..22..31.82
 46.74
 10..23..18.56
 9.86
 11..23..28.42
 20.30
 11..23..48.72
 16
 11..23..32.72
 5 82
 11..18..31.90
 19..32.05
 20..32.20
 21..32.35
 22..32.50
 23..32.72

Aug. 29

10..30..24.93
 46.74
 10..31..11.67
 9.86
 11..31..21.53
 21.72
 11..31..43.25
 16
 11..31..27.25
 5 82
 11..26..26.43
 27..26.58
 28..26.73
 29..26.88
 30..27.00
 31..27.25

Sept. 5/6 A.M.

10,, 58,, 00.81
 46.74
 10,, 58,, 47.55
 22,, 3,, 36.824
 Sid. Time $22-33$, 02,, 24.39
 9,, 02,, 24.39
 26.70
 9,, 02,, 57.09
 16
 9,, 02,, 35.09
 5 82
 8 57,, 34.27
 58,, 34.42
 59,, 34.57
 9,, 00,, 34.72
 1,, 34 89
 9,, 2,, 35.09

Sept. 8th P.m.

11,, 09,, 50.47
 46.74
 11,, 10,, 37.21
 1 9.86
 12,, 10,, 47.07
 29.3
 12,, 11,, 16.37
 16
 12,, 11,, 00.37
 5 82
 12,, 05 59.55
 6,, 59.70
 7,, 59 85
 8,, 00.00
 9,, 00.15
 10,, 00.20
 11,, 00.37

Sept. 8 P.m.

11,, 09,, 50.47
 46.74
 11,, 10,, 37.21
 5,, 00,, 49.28
 16,, 11,, 26.49
 29.4
 16,, 11,, 55.89
 16
 16,, 11,, 39.89
 5 82
 16,, 06 39.07
 7,, 39.22
 8,, 39.37
 9,, 39.52
 10,, 39.67
 11,, 39.89

11,, 10,, 37.21
 5,, 0,, 54.24
 16,, 11,, 30.42
 29.4
 16,, 12,, 00.82
 16
 16,, 12,, 44.82
 5 82
 7.4400
 8,, 44.15
 9,, 44.30
 10,, 44.45
 11,, 44.60
 12,, 44.82

Sept. 8 P.m.

11,, 09,, 50.47
 46.74
 11,, 10,, 37.21
 6,, 00,, 39.14
 17,, 11,, 36.35
 29.5
 17,, 12,, 05.85
 16
 17,, 11,, 49.85
 5 82
 17,, 06,, 49.03
 7,, 49.18
 8,, 49.33
 9,, 49.48
 10,, 49.63
 11,, 49.85

Sept. 9 Pm.

11.13. 47.02

46.74

11.14. 53.76

5.00. 49.28

16.15. 43.04

20.14

16.16. 13.44

16

16.15. 57.44

5. 82

16.10. 56.62

11. 55.77

12. 56.92

13. 57.07

14. 57.15

15. 57.44

E.C. Sept 7th - E. Geminorum last 28.36Sept 16th

E.C. = 15.37.0

236 = 15.38.40.7 m. 6.5 E.C. 15.38.00.

269 = 6.31.56.5

1854

March 27 P. M.

Sid. time at G. M. Noon $0^{\circ} 18' 21.56''$

Correction for Camb. M. Noon + 46.74

Sid. time at Camb. M. N. $0^{\circ} 19' 08.30''$ One hour of mean time = $1^{\circ} 0' 9.86''$ sid. timeSid. time at 1^h Mean time $1^{\circ} 19' 18.16''$ E. C. fast 7.10 E. C. at 1^h mean time $1^{\circ} 19' 25.26''$

dif. of long. between Camb. & Boston 16

E. C. at 1^h M. Time Boston $1^{\circ} 19' 09.26''$ $5 \quad 82$ E. C. at $0^{\circ} 55'$ Boston $1^{\circ} 14' 08.44''$.. 56 .. $15' 8.60$.. 57 .. $16' 8.76$.. 58 .. $17' 8.93$.. 59 .. $18' 9.10$.. $1^{\circ} 00$.. $19' 9.26$

March 28 P. M.

 $0^{\circ} 22' 18.11''$ 46.74 $0^{\circ} 23' 04.85''$ $1 \quad 9.86$ $1^{\circ} 23' 14.71''$ 7.4 $1^{\circ} 23' 22.11''$ 16 $1^{\circ} 23' 06.11''$ $5 \quad 82$ E. C. $1^{\circ} 18' 05.29''$ $19 \quad 5.46$ $20 \quad 5.61$ $21 \quad 5.77$ $22 \quad 5.94$ $23 \quad 6 \quad 11$

April 3 P.M.

0..45.57.43

46.74

0..46.44.17

1 9.86

1..46.54.03

8.00

1..47.02.03

16

1..46.46.03

5 82

1..41.45.21

42..45.37

43..45.54

44..45.70

45..45.86

46..46.02

~~46..~~

April 4 P.M.

0..49.53.98

46.74

0..50.40.72

1 9.86

1..50.50.58

8.00

1..50.58.68

16

1..50.42.68

5 82

1..45.41.86

46.42.02

47.42.18

48.42.34

49.42.50

50.42.68

April 5 P.M.

0..53.50.54

46.74

0..54.37.28

1 9.86

1..54.47.04

7.7

1..54.54.84

16

1..54.38.74

5 82

1..49.37.92

50.38.08

51.38.24

52.38.40

53.38.57

54.38.73

3.56.15

1854

April 7 Sun

1.. 1.. 43.64
 46.74
 1.. 02.30.38
 9.86
 2.. 02.40.24
 7.1
 2.. 02.47.34
 16
 2.. 02.31.34
 5 82
 1.. 57 30.52
 58 30.88
 59.. 30.84
 2.. 00.. 31.00
 1.. 31.16
 2.. 31.34

May 2nd P.M.

2.. 40.. 17.50
 46.74
 2.. 41.. 04.24
 9.86
 3.. 41.. 14.10
 2.83
 3.. 41.. 11.25
 16
 3.. 40.. 55.25
 6 82
 3.. 35.. 54.43
 36.. 54.59
 37.. 54.75
 38.. 54.91
 39.. 55.07
 3.. 40.. 55.25

1854. May ¹⁶ 17 Am

E.C. - 0..39..0.0 2C slow. 19.22 obs. . 0..39..19.22

236-0..39..13.6

$$\begin{array}{r} 0..39..13.6 \\ 235 - 5.62 \end{array}$$

M.T.C. 21..02..15 — 21..05..05

236- 0..40..34 — 0..43 24.5

2C - 0..39..0.0

19.22

0..39..19.22

236-0..39..13.6 dist. t. m. near 3. 35.29.29

236 slow - 5.62

46.73

0..40..34.02

3..36..16.02

0..40..39.62

3..36..16.02

21..04..23.60

- 3..27.14

21..00..56.46

m. t. c. - 21..02..15.00

To fast of larab - 1..18.54

16

To fast of Boston 1..02.54

18th Am -

2C - 1..7..0 2C + 19.04. Rate

1..07..19.04

236- 1..7..12

1..07..12

7.04

19th Am 2C - 1..5..0 Rate 18.5 M.T.C. 22..25..0

236- 1..5..10.5

236- 02..11..24

win.

3..43..22.40

1..5..18.7

26..11..32.20

46.73

1..5..10.5

3..44..09.13

346..09.13

- 8.2

22..27..23.07

21..56..23.75

26..55.58

22.94

07

22..23..42.34

22..25..00.0

+ 1..17.66

116

M.T.C. 13-1..01.66

May 20th Am

EC - 1..16..0

236-1..16..8.7

May 16th 236 Slow ^s 4.83

17 - - - - 5.62

18 - - - - 7.04

19 - - - - 8.20 mean rate of .16

19th - 8.20

3.48

-11.68

21st

22 - MTC 22..08..20 -

236 - 2..06..27 -

2..06..27

11.68

26..06..38.68

3..55..58.81

22..10..39.87

21..56..23.75

9..58.36

38.89

.87

22..07..01.87

TC 22..8..20.00

fast of Cam 1..18.13

16.01

of Boston 1..02.1

11..25

9..33.5

3..55..12.07

46.76

3..55..58.81

Ind. 236-1..59..50 -

Arden 293-14..39..06.5 -

39..16.5

1..59..50

11.68

26..00..01.68

3..55..58.81

22..04..02.87

21..56..23.75

3..59.84

1.99

87

20..00..25.95

4..44..30.5

14..44..56.45

293-14..39..06.5

slow 5.49.95 of Epoch

5.49.95

10..31..0.0

1.2.1

10..29..57.9

15..08..23.2

4..38..25.3

10..38..0.0

1.2.1

10..36..57.9

15..15..23.3

4..38..25.4

MTC, 22..31..0

293-15..08..23.2

10..31..0.0

1.2.1

10..29..57.9

4..44..16

15..14..13.9

293-15..08..23.2

-5.50.7

10..31..0.0

1.2.1

10..29..57.9

15..08..23.2

4..38..25.3

10..38..0.0

1.2.1

10..36..57.9

15..15..23.3

4..38..25.4

1854 22
 May 23
 EL-23..48..0
 236-23..48.63.6

Pro & Andromeda E.C. Flow. $\frac{16}{17}$ 19.22 $\frac{12.15}{10.95}$
 $\frac{23}{22}$ 12.15
 6) 7.07 + 1.18
 5.90
 10.95
 25.40 5.05

23
 May 24 AM E.C. Flow of Carr - 10.95
 EC-23..57..0 M.J.C-22..51..55 — 22..54..55.0 EC-4..8..0
 236-23..50..1.6 236-2..58..01.5 — 3..01..02.0 236-4..8..1.5
 23..57..0.0 M.J.C-0..08..10 — 4..8..0.0
 10.98 236-4..14..29 10.98
 23..51..10.98 4..14..29.00 4..8..10.98
 23..50..1.6 4..14..29.00 4..8..1.5
 236 - 9.38 9.38 - 9.38
 5.90 4..14..38.88 4..7..1.75
 15.28 4..07..48.49 46.74
 4..7..48.49 2..58..01.5
 0..06..49.49 9.9
 0..5..59.02 4..3..5.19 26.58..10.4
 48.86 46.74 4..03..57.9
 49 4..03..51.93 22..54..19.5
 0..06..48.37 21.56..23.75
 0..08..10 53..57.15
 1..21.63 18.95
 0..16 2
 1..05.63 22.50..35.05
 22.57..55
 1..21.95
 16
 5.

1854 - May 25 -

2C - 2..14..0.0

236 - 2..14..0.3

2C - 4..52..0

236 - 4..52..0

$$\begin{array}{r} .65 \\ 26 \\ 0.85 \\ 10.04 \\ 2C - 9.19 \end{array}$$

4.52.0.0

4.52.09.19

4.52.00.00

236 - 9.19

25th

M.T.C - 23..43..40 — 46..35 3..49..30 0.53..34.0

236 - 3..53..57 — 56..46.5 3..59 41.5 02..45.5

27..53..51

27..54..00.19

4..07..48.49

23..46..11.70

22..56..13.92

45..52..46

10.97

.70

23..42..18.05

22..43..40.00

M.T.C + 1..21.95

16

25th 1..05.95

29th 1..08.63

4)2.68 / 0.67

Comparison of mean time chronometers from Boston

May 26-11 Am M.T.C. part of Boston 1..06.62 of Camb. ^m 1..22.6

M.T.C - 23..16..0 — 23..17..0 — 23..18..0 — 23..19..0

271 - 16..11..01.9 3792 - 15..56..46.2 289 - 16..05..27.7 258 - 16..21..59.8

Set them near Cambridge time — seconds not altered —

M.T.C - 23..55..0 M.T.C - 23..56..0

271 - 23..54..2 289 - 23..55..28.2

23..16..0.0

1..6.6

23..14..53.4

May ²⁵/₂₆

E.C. Slow 8.47

EC - 0..46..0

E.C. 0..47..0

26-EC-

236 - 0..45.58.65

235 - 1..18..40.5

235 -

40.5

$$\begin{array}{r}
 0..47..0 \\
 8.5 \\
 \hline
 0..47..08.5 \\
 1..18..40.5 \\
 \hline
 31.32
 \end{array}$$

gaining +4.2

May ²⁶/₂₇ Am

E.C. Slow 8-2

MTC. 21..09..50

EC - 1..42..0

EC - 2..13..0

236 - 2..18..0

236 - 1..27..27.5

236 - 1..41..57

235 - 2..44..45.7

235 - 2..49..48.7

MTC fast of Camb. - ^m 31.45.7

MTC - 9..12..0

— 9..13..0

— 9..14..0

— 9..15..0

258 - 9..11..0.6

289 - 9..12..41.4

271 - 9..13..6.5

3792 - 9..13..44

MTC - 9..18..0

333 18..7.8

236. Slow of Camb.

1..42..0

8.2

1..42..8.2

41.57.0

112

24 - 9..38

25 - 9..19

26 - 236 - 9..0

236 2..18..0.0

2..18..09.0

235 2..49..48.7

235. fast 31.39.7 of lid.

26. whole 31.37.5

10..28..30

31.37.5

9..56..52.5

4..15..41.6

5..41..10.9

4..59..10.85

40..53.28

9.97

9.0

Ring formed at Camb. 5..40..15.00

comp. time - 5..40..8.6

6.4

C.J. B's watch

M.T.C. - 7..15..0

watch 7..13..55

Time of formation of the Ring

by C.J. B's obs - 5..40..28

seen at the same time

by M.R.B.

M.R.B. blue & yellow shade

producing a neutral tint

C.J.B. a Red shade.

852 $\frac{2811}{\text{May } 29^{\text{th}} \text{ Am}}$

EC - 22.45.0

236 - 22.44.54.5

E.C. Slow 5.8 by rate of +1.22

EC - 22.50.0

235 - 23.21.56

EC - 22.51.0.0

235 - 23.22.55.8

M.T. 6 - 18.29.05.0 — 18.32.05.0

236 - 22.54.08.0 — 22.58.08.5

M.T. 6 - fast of Lamb. m.s. 6. 1.24.3 of 13 1.08.3

M.T. 6 - 18.34.00.0 — 18.35.0.0 — 18.36.0 — 18.37.0

258 - 18.33.02.6 289 - 18.35.10.3 379 - 18.34.39 — 271 - 18.36.16.7

EC by Rate flow 5.05

236 by Rate - $\frac{15.36}{10.33}$

EC flow by Spica

May 20th - 15.09

May 22 - 12.91

24 - $\frac{10.06}{12.87}$
1.43

& Lam. May

May 16th - EC flow - 19.13

19 - 16.90 + 1.11

23 - 12.35 + 1.14

24 - 10.56 + 1.39

$\frac{7}{8.54} / 1.22$

2

2.44

10.56

EC flow 26th - 8.12

at 3 PM

7th rate gaining

.35

8.47

22.50

18.34.00.0

1.08.3

18.32.51.7

258 - 18.33.02.6

+ 12.9

18.35.0.0

1.8.3

18.33.51.7

289 - 18.35.10.3

+ 1.18.6

18.36.0.0

1.8.3

18.34.51.7

379 - 18.34.39.0

- 12.7

18.37.0.0

1.8.3

18.35.51.7

271 - 18.36.16.7

+ 25.0

May 29⁺ PM. E.C. Slow ^s 3.30

EC - 8..20..0.0 MTC - 3..56..35.0 — 3..59..30.0
 236 - 8..19..54.0 236 - 8..23..11.0 — 8..26..06.5

EC - 8..43..0.0
 235 - 9..14..57.9

EC - 8..20..0.0

3.27

8..20..03.27

8..19..54.0

236 Slow 09.27

8..23..11.0

8..23..20.3

4..26..44.53

4..27..31.3

46.74

3..55..49.0

4.27..31.27

2..59..30.51

54..50.99

48.87

.00

3..55..10.37

MTC - 3..56..35.00

1..24.63

-16

M.T.C. fast of B-1 ..08.63

1.34

31st - Boston 1.09.97

Annular Eclipse of May 26 -

at 4 P.M. - Chron. No. 289 - fast of Camb. m.s.t. 0..54.6 gaining 15" Mr. Bate
 3792 - " " " " 0..08.7 - " - 1.8 Safford
 371 - " " " " 0..24.6 - " - 4.8 Flagg.
 258 - " " " " 0..23.9 - " - 6.0 de Hamel.
 Sid. Chron - 235 - fast of Camb. m.s.t. 31..32.2 - " - 6.0 Borden & Bond.

Records by W. B. Bond.

Chron. 235. Sid.
 4..31..40 9..20..0 First sight of the Sun after the Eclipse had commenced
 Mr de Hamel sees the border of the moon outside of the sun.
 5..28..36 10..16..50. Beautifully defined
 5..31..26 10..19..30 - The southern cusp is blunted, the northern quite sharp
 5..33..30 10..21..32 - signal from M. de Hamel?
 5..36..11 10..24..25 - do - do - do - ?
 5..36..44 10..25..50
 5..38..06 10..26..20 - The northern cusp is now blunted
 5..38..56 10..27..10 - Moons limbs well defined. I do not see any prominences,
 using the full aperture of three inches without
 a shade glass, ^{but with a power of 52 only} soon after the cusps become exceedingly
 attenuated. I saw distinctly the throat of light
 moving round the border of the Moon, which appeared
 * 5..40..06? 10..28..20 at this moment serrated, nothing could be better
 defined. I was momentarily expecting the formation
 of the Ring when Mr Borden, who was watching the
 progress of the Eclipse through a blue tinted shade glass at
 5..40..15.9 10..28..30 announced that the Ring was complete. I ^{instantly} turned to
 record the time for him and when I looked again
 the sun was totally obscured by clouds.
 10..34..45 The sun again visible, sharply defined cusps
 37..00 - fine views
 11..05..43 - Signal from M. de Hamel?

* this time was estimated by judging that it was ten seconds before Mr Borden spoke.

Remarks by W. C. B.

During the progress of the Eclipse, the sun appeared only at intervals, heavy, dark cumulo-stratus and cirro stratus clouds were moving from north to south rather sluggishly, above them there appeared to be a stratum of rather dense cirrus, which served in almost every instance to protect the eye, I have rarely experienced better, if so good, definition of the limbs of both sun and moon as I did near the ^{time of} formation of the Ring - From 5^h. 38^m. 56^s I had interrupted good views of the progress of the Eclipse, and estimated that the thread of light was moving round the limb of the moon ~~the~~ latter part of the time at the rate, in arc, of 15° in 5 seconds of time. we all had fitful views of the Eclipse about this time.

Mr Flagg - who used the 5^{ft} Equatorial in the west dome, reports that he saw the Ring formed, partially obscured by ^a clouds at 5^h. 40^m. 45^s by his Chronometer Hutton N^o 271 - this Chronometer by previous and subsequent comparison with the Astronomical Clocks was found to be fast of Cambridge mean solar time 24.6. this gives for his observed time of formation of the Ring - 5^h. 40^m. 20.4. - ~~which~~ as Mr Flagg thinks may be in error $\pm 10^s$.

Henry Safford, who was stationed in the west Balcony of the great dome with the Bowditch Comet Seeker. saw nothing but the Ring fully formed and went on counting seconds in the expectation of seeing the rupture of the annulus, clouds prevented this, and he lost the time, but he presumes that he saw the ring as late as 5^h. 42^m by his Chronometer N^o 3792. which by comparison was found to have been fast of Camb. m.s.t. 08.9 which gives 5^h. 41^m. 56.3 at which time Henry says he judged that it had progressed two thirds of its course.

Mr. Bate - first caught a glimpse of the Eclipse at 4^h. 37^m at 5^h. 37^m - he noticed a rough appearance of the moons lower limb at 5^h. 40.55. he "thought that he saw the Ring" - Mr Bate was stationed in the Prime Vertical Room and used the Merz Telescope.

Mr de Hamel - had the Houghton and Simons Bar. Transit in the west Porch, he very early declared that he saw the border of the moon off from the sun, and was confirmed in this

belief by several subsequent observations. he did not see the annular appearance at all.

Mr B of J B Two lady observers saw the formation of the ring at the same moment. The time by her watch was noted by C. J. B. which was compared with the clock before and after the observation, and gave the time - 5..40..28^{the} being less experienced observers. I must give the preference to Mr Borden's observation.

The time of formation of the Ring
 By Mr. Borden's observation - 5..40..15.9
 " " " " " " " " 5..40..20.4 ± 10
 " " " " " " " " 5..40..28.0
 " " " " " " " " 5..40..55.4

Neither of the observers knew the error of the chronometer used. The difference in the reports may be fairly attributed mainly to the parallax of the clouds, the observers being distributed

Mr Borden and myself who were at the same window agreed in seeing and losing sight of the sun at the same time. I was watching the rapid progress of the clouds toward insolation when he spoke, but did not see the ring completely formed, trusting to his good eye and correct judgment. I had knowing that he would not be far wrong. I turned to record his time and by that means lost the opportunity of seeing the ring.

It may be proper to note that of the five observers who were furnished with telescopes but two of them saw the ring formed - while all those who used simple tinted shade glasses did see it distinctly.

Meteorological Remarks.

It began to rain on the 25th about noon.

May 25 th	Bar. at M	Ext M	Wind	Clouds
9 P.M.	29.872-62	57	nearly calm	Rain
26 th 8 A.M.	29.730-61	57	West 1	bir str
9 A.M.	29.746-62	62	NNW 2	Rain.
3 P.M.	29.742-63	63	NNW-3	Cum str & cirrus & cir. stratus.
4.25		62.7		At 5 P.M. Hygrometer 75
4.55		62.3		wet bulb gave the same reading
5.55		60.3		as the dry bulb.
9 P.M.	29.860-62	56	NNW 3	Rain

May 31stE.C. Flow by Perseus + β Geminorum - 0.06 Rate gaining, +1.57

E.C. - 11..28..0.00
 Flow 0.02
 11..28..00.02
 236 - 11..27..50.65
 236 Flow 09.37
 236 - 11..31..17.50
 11..31..26.87
 4..35..24.39
 6..56..02.48
 5..59..01.02
 55..50.82
 1.99
 .48
 6..54..54.31
 6..56..20.00
 1..25.69
 16
 1..09.69

E.C. - 11..28.0 - 11..29..0.0
 236 - 11..27..50.7 - 11..28..50.65
 M.Y.C. - 6..56..20 - 6..59..15
 236 - 11..31..17.5 - 11..34..13

E.C.
 29th Flow 3.20
 31 - 0.06
 1.57

4..34..37.65
 46.74
 4..35..24.39

June 1st

M.Y.C. - 7..20..15.0
 236 - 23..57..14.5

E.C. - 0..0..0.0
 236 - 23..59..49.7

June 1st Am

M.Y.C. 21..33..00
 Brockbank 21..29..37.8

1852- June 1.

EC fast ^s 2.85

$$EC - 2..39..0 \quad \text{---} \quad 2..43..0.0$$

$$286 - 2..38..47 \quad 2557 - 2..44..1.0$$

$$MTC - 10..26..5.0 \quad \text{---} \quad 10..29..0.5$$

$$286 - 3..07..30.0 \quad \text{---} \quad 3..10..30.5$$

$$\begin{array}{r} 1.57 \\ 4.71 \\ \hline 2.85 \\ 7.56 \end{array}$$

$$EC - 2..39..0$$

$$+ 2.85$$

$$2..38.57.15$$

$$286 - 2..38.47.0$$

$$286 \text{ slow } 10.15$$

$$286 - 3..07..30.0$$

$$27.07..40.15 = 4..38..34.21$$

$$4.39..20.95$$

$$22..28..29.20$$

$$\begin{array}{r} 46.74 \\ 4.39..20.95 \end{array}$$

$$21..56..23.75$$

$$27..55.47$$

$$18.95$$

$$20$$

$$20..24..30.37$$

$$10..26..05.0$$

$$1..26.69$$

$$16$$

$$1..10.69$$

June 2/3 Am

E.C. fast - 2.81

E.C. 2.02.00 E.C. 2.03.00 E.C. 2.04.00
 236 2.01.45.85 235-2.03.22.3 2557 2.05.2.3

4/5th Am

E.C. - 1.28.0 E.C. fast by rate of +1.57 = 7.56
 236 - 1.27.53

5th E.C. - 5.06.0

236-5.05.48.6

5.06.0
 5.56
 5.5.54.44
 5.5.43.6
 - 16.84

M.Y.C. - 0.20.10 — 0.23.10

236-5.13.42 — 5.16.42.5

5.13.42.0
 10.8
 5.13.52.8 4.54.20.44
 4.55.07.2 46.74
 0.18.45.4 4.55.07.18
 17.57.05
 44.88
 46
 0.18.42.33
 0.20.10
 1.27.67
 16

June 6th E.C. - 5.8.0

236-5.7.42.3

M.Y.C. - 13.1.11.67

M.Y.C. - 0.12.30 — 0.15.20

236-5.09.56.5 — 5.12.47

E.C. - 5.08.0
 7.8
 5.07.52.2
 5.07.42.3
 - 9.9

5.09.56.5 4.58.17.00
 5.10.06.4 46.74
 4.59.03.74 4.59.03.74
 0.11.02.66
 0.10.58.20
 1.99
 66
 0.11.00.85

M.Y.C. 0.12.30.00
 Cam. + 1-29.15
 16

B. 1.13.15
 May 31st

58
 1.77
 13.15
 14.31

$$\begin{array}{r}
 \text{June 9}^{\text{th}} \text{ Am. } \text{E.C. fast } 12.3 \\
 \text{EC} - 1.36.0 \quad \text{comb.} - 8.03.0.0 \\
 \quad \quad \quad - 12.3 \quad \quad \quad 12.6 \\
 25 \quad \quad \quad 1.35.47.7 \quad \quad \quad 8.02.47.4 \\
 2557 - 1.37.13.5 \quad \quad \quad 2557 - 8.04.13.7 \\
 \text{am} \quad \quad \quad +1.25.8 \quad \quad \quad +1.26.3
 \end{array}$$

$$\begin{array}{r}
 \text{9/10 Am.} \\
 2557 - 3.32.57.7 \\
 \quad \quad \quad - 1.26.6 \\
 27.31.25.7 \\
 \quad \quad \quad 5.10.53.41 \\
 22.20.32.29 \\
 21.56.23.75 \\
 \quad \quad \quad 19.56.72 \\
 \quad \quad \quad 31.41 \\
 \quad \quad \quad .29 \\
 10.16.52.67 \\
 15.02.00 \\
 4.45.07.33 \\
 4.44.30.30 \\
 \quad \quad \quad 37.03 \\
 \quad \quad \quad 16 \\
 \quad \quad \quad - 53.03
 \end{array}$$

$$\begin{array}{r}
 3.38.49.7 \\
 \quad \quad \quad 1.26.0 \\
 27.32.21.7 \\
 \quad \quad \quad 5.10.53.41 \\
 22.21.28.29 \\
 21.56.23.75 \\
 \quad \quad \quad 20.56.56 \\
 \quad \quad \quad 27.42 \\
 \quad \quad \quad 29 \\
 10.17.48.52 \\
 16.10.18.00.00 \\
 \quad \quad \quad 17.48 \\
 \quad \quad \quad 16 \\
 16 \text{ Nov} - 4.52.0/13
 \end{array}$$

Pa. L. No 2557.

June 2

$$\begin{array}{r}
 \text{EC } \overset{16}{\text{pt. fast}} \quad 12.20 \\
 16 \quad \dots \quad 21.52 \\
 \hline
 7 \quad 9.32 \quad / 1.33 \\
 \hline
 23
 \end{array}$$

$$\begin{array}{r}
 \text{June } \overset{16}{17} - \text{Am} \quad \text{EC. Fast } 22.1 \\
 \text{EC} - 0.13.0.0 \quad \text{EC} - 0.58.0.0 \\
 236 - 0.12.26.7 \quad 236 - 0.57.26.7 \\
 \hline
 0.13.0.0 \\
 \quad 21.1 \\
 \hline
 0.12.38.9 \\
 0.12.26.7 \\
 \hline
 236 \quad -12.9
 \end{array}$$

$$\begin{array}{r}
 \text{MTG } 18.37.10.0 \quad \text{MTG } 19.11.10.0 \\
 236 - 0.16.55.5 \quad 236 - 24.57.01.0
 \end{array}$$

$$\begin{array}{r}
 0.16.55.5 \\
 \quad 12.9 \\
 \hline
 24.17.08.4 \\
 5.38.29.32 \\
 \hline
 18.88.39.08
 \end{array}$$

$$\begin{array}{r}
 5.37.42.58 \\
 \quad 46.74 \\
 \hline
 5.38.29.32
 \end{array}$$

$$\begin{array}{r}
 19.37.03.07 \\
 87.53.77 \\
 \quad 38.89 \\
 \quad .08 \\
 \hline
 18.85.35.87 \\
 18.37.10.0 \\
 \hline
 1.34.13 \\
 \quad 16 \\
 \hline
 1.18.1
 \end{array}$$

$$\begin{array}{r}
 24.57.01.0 \\
 \quad 12.9 \\
 \hline
 24.51.13.9 \\
 5.38.29.32 \\
 \hline
 19.12.44.61 \\
 18.56.53.24 \\
 \hline
 11.58.03 \\
 \quad 43.88 \\
 \quad .60
 \end{array}$$

$$\begin{array}{r}
 19.09.35.75 \\
 19.17.10.00 \\
 \hline
 1.34.35 \\
 \quad 16 \\
 \hline
 +1.18.35
 \end{array}$$

$$\begin{array}{r}
 19 + 1.18.35 \\
 \hline
 16.2 \\
 \hline
 .31
 \end{array}$$

1854

June 24th P.M.

EC - 12..10..0.0

236 - 12..09..14.1

12..10..0.0

33.4

12 09..26.6

236 - 12..09..14.1

-12.5

MTC 6..01..45

236 - 12..10..54.5

12..10..54.5

12.5

12..11..07.00

6..10..01.79

6..01..05.21

5..59..01.02

59.84

4.96

.21

6..00..06.05

6..01..45.00

Cant + 1..38.95

16.0

13 - +1..22.95

17th 1..18.35

4.60

3

174.30 / 0.63

6..04..30

236 - 12..13..40.

6..09..15.05

46.74

6..10..01.79

June 25th Mm

EC - 2..34..0.0

236 - 2..33..11.2

2..34..0.00

36.08

Sid. 2..33..23.92

236 - 2..33..11.2

-12.72

MTC - 21..10..0

236 - 3..25..34.5

3..25..34.5

12.72

27..25..47.22

6..13..58.35

21..11..48.87

20..56..33.58

10..58.19

47.67

.87

21..08..20.51

21..10..0.

MTC Cant + 1..39.49

16

13 - 1..23.49

6..13..11.61

46.74

6..13..58.35

1852

June 28/29 Am

EC fast 41.16

236. slow 13.14

EC - 0.11.0

236 - 0.10.57

$$\begin{array}{r} 0.11.0 \\ 41.16 \\ \hline \end{array}$$

$$\begin{array}{r} 0.10.18.84 \\ \hline \end{array}$$

$$\begin{array}{r} 0.10.05.7 \\ \hline \end{array}$$

236 slow 13.14

M.T. 6.17.50.15

236 - 0.17.04.5

$$\begin{array}{r} 24.17.17.64 \\ \hline \end{array}$$

$$\begin{array}{r} 6.25.48.02 \\ \hline \end{array}$$

$$\begin{array}{r} 17.51.29.62 \\ \hline \end{array}$$

$$\begin{array}{r} 16.57.12.89 \\ \hline \end{array}$$

$$\begin{array}{r} 58.57.64 \\ \hline \end{array}$$

$$\begin{array}{r} 28.92 \\ \hline \end{array}$$

$$\begin{array}{r} .62 \\ \hline \end{array}$$

$$\begin{array}{r} 17.48.34.07 \\ \hline \end{array}$$

$$\begin{array}{r} 17.50.15.16 \\ \hline \end{array}$$

M.T. C + 1.40.93

$$\begin{array}{r} 16 \\ \hline \end{array}$$

$$\begin{array}{r} B - 1.24.93 \\ \hline \end{array}$$

17.53.15

0.20.05

$$\begin{array}{r} 6.25.01.28 \\ \hline \end{array}$$

$$\begin{array}{r} 46.74 \\ \hline \end{array}$$

$$\begin{array}{r} 6.25.48.02 \\ \hline \end{array}$$

$$26^{\text{th}} + 1.23.49$$

$$29 + 1.24.93$$

$$\begin{array}{r} 3/1.44 \\ \hline \end{array}$$

$$\begin{array}{r} .48 \\ \hline \end{array}$$

$$\begin{array}{r} 1.24.93 \\ \hline \end{array}$$

$$\begin{array}{r} 1.44 \\ \hline \end{array}$$

$$\begin{array}{r} 1.26.37 \\ \hline \end{array}$$

1854

July 3 Am

EC fast 48.14₆

EC - 0..43..0

M.C. - 18.. 3..00

6.. 6..00

236 - 0..41..57.5

236 - 0..45..34.5

0.. 48..35

0..43..0

4.. 9..0

236 - 0..51..35.5

D.. 45..34.50

14.36

$$\begin{array}{r} 48.14 \\ 0.42.11.86 \end{array}$$

$$\begin{array}{r} 0.41.57.5 \end{array}$$

236 slow - 14.36

24..45..48.86

6.. 40..47.57

$$\begin{array}{r} 6..41..34.25 \end{array}$$

46.74

$$\begin{array}{r} 18..04..14.61 \end{array}$$

$$\begin{array}{r} 6.41..34.25 \end{array}$$

17..57..03.07

3..54.34

13.96

.61

$$\begin{array}{r} 6..01..16.48 \end{array}$$

ml. 6..03..00.00

1..43.02

16

+1..27.02

1.27.02

1.24.53

4/209 / 0.52

1854 July 4th Am

EC - 5..17..00

236- 5..15..58.2

$$\begin{array}{r} 5..17..00 \\ -49.62 \\ \hline \end{array}$$

5..16..10.38

5..15..55.2

236- -15.18

E.C. fast.

MC-10..33..30 — 10..36..30

236- 5..20..44 236- 5..23..44.5

5..20..44

15.18

29..20..59.18

6..45..30.81

22..35..28.37

21..56..23.75

34..54.27

27.92

.37

10..31..46.31

MC-10..33..30.00

+1..43.69

16

1.27.69

6..44..44.07

46.74

6.45.30.81

July 4/5 Am

EC- 4..23..0

236- 4..21..53.5

4..23..0

50.6

4..22..09.4

236- 4..21..53.5

-15.9

E.C. fast. 50.6

MC-21..42..35 — 21..47..35

236- 4..35..36.5 — 4..38..37

4..35..36.5

15.9

28..35..52.4

6..48..40.63

6..49..27.37

46.74

21..46..25.03

6..49..27.37

20..56..33.58

45..52.46

24.93

.03

9..42..51.00

9..44..35

+1..44.00

16

1.28.00

27.02

28

2.98

-49-

July 5th PM

EC- 10..36..0

1678- 3..41..38.6

1.28.49

1854

July 7th Am

EC 0.09.0

236 0.07.48.4

0.09.0.00

0.08.06.10

0.07.48.4

-17.70

0.10.09.0

24.10.26.70

7.01.17.06

17.09.09.64

16.57.12.90

8.58.52

9.97

.64

15.06.21.03

5.8.05.0

1.43.97

16

+ 1.27.97

MC

ST

EC fast 53.90

MC 5.8.05

236 0.10.09

0.11.00

7.0.30.31

46.75

7.01.17.06

0.13.04.5

236 0.15.48.5

4.5

4.5

4.5

4.5

4.5

4.5

4.5

4.5

4.5

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4.5

4.5

June 29. 1.24.92

July 8. 1.17.97

9) 3.04 / 0.36

July 10th Am

EC 2.30.0

236 2.28.41.2

2.30.0.00

2.29.00.10

2.28.41.2

-18.9

18.9

18.9

18.9

18.9

18.9

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18.9

18.9

MC 7.12.50

236 2.30.00.0

2.30.00.0

2.30.00.0

2.30.00.0

2.30.00.0

2.30.00.0

2.30.00.0

2.30.00.0

2.30.00.0

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2.30.00.0

2.30.00.0

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2.30.00.0

2.30.00.0

2.30.00.0

2.30.00.0

2.30.00.0

2.30.00.0

7.18.40

236 2.36.57

2.36.57

2.36.57

2.36.57

2.36.57

2.36.57

2.36.57

2.36.57

2.36.57

2.36.57

2.36.57

2.36.57

2.36.57

2.36.57

2.36.57

2.36.57

2.36.57

2.36.57

2.36.57

2.36.57

2.36.57

2.36.57

2.36.57

2.36.57

2.36.57

2.36.57

2.36.57

2.36.57

MC 7.14.50

+ 2.43.31

16

+ 1.27.31

July 15 P.M.

E.C. 14.17.00

M.T.C. 6.46.00

236 14.15.34.8

236 14.17.54.3

July 17 P.M.

E.C. 15.5.0

M.C. 7.28.15

7.31.15

236-15.3.31.1

236-15.08.9.5

236-15.11.10

15.5.0

1.9.1

15.03.50.9

15.3.31.1

-19.8

~~15.03.31.1~~~~1.09.1~~~~15.02.22.0~~

15.08.9.5

19.8

15.08.29.30

7.40.42.62

7.27.46.68

6.58.51.19

26.55.58

45.00

.68

7.26.33.35

M.C. 7.28.15

C. +1.41.65

1.41.68

1.25.65

8th - 1.28.0

1.25.68

7.28.35.0.26

15..08..09.5

19.8

15..08..29.30

7..40..42.62

7..27..46.68

1..13.36

7..26..33.32

7..28..15.00

+1..41.68

16

NYC

+1..25.68

of Boston -

17th PM

1..27.3

11/12

4.5 / 1.6 (0.3

NYC

+1..25.5

17th / 18th = Ach

July 19th PM

E.C. - 14..24..0

M.C. 6..36..55

6..39..50

236-14..22..27.2

236-14..24..33.5

14..27..29

53phae.proj
8521.
July 19/20
88

$$\begin{array}{r} 226 - 2.43.0 \\ 236 - 2.41.26.3 \\ 2.43.00 \\ \hline 1.12.56 \\ 2.41.47.44 \\ 2.41.26.3 \\ \hline 236 - 2.1.14 \end{array}$$

MC- 18.. 59.. 35
 736 2.. 49.. 15.5
 2.. 49.. 15.5
 21.1
26.. 49.. 36.6
 7.. 48.. 35.7
19.. 01.. 00.9
 18.. 56.. 53.24
 59.83
 .90
18.. 57.. 53.91
 18.. 59.. 35.00
1.. 41.. 03
 16
 1.. 25.. 03
 11.10
 1.. 23.. 93

$$\begin{array}{r} 7.47.49.00 \\ 46.74 \\ \hline 7.48.35.74 \end{array}$$

July 26 Pile

EC - 15.44.0

236 - 15.42.11.3

July 26/27

EC - 2.0.0

236 - 1.58.10.5

2.0.0

1.21.9

1.58.38.1

236 1.58.10.5

-27.6

M.C. 5.44.15.5

236 - 2.01.13.5

2.01.13.5

27.6

26.01.41.1

8.16.11.6

17.45.29.5

16.57.12.90

44.52.63

28.92

.50

5.42.34.95

5.44.15.0

M.C. C - 1.40.05

16

M.C. B + 1.24.05

8.15.24.96

46.74

8.16.11.64

July 30th Am -

EC 11.57.0

1.23.3

11.55.36.7

1678 11.55.29.6

-7.1

10.6.48.2

10.6.55.3

16.10.7.5

16 fast 4.7

1678 10.08.0.2

7.1

10.08.07.3

4.44.1.6

14.52.23.3

14.53.00.0

EC fast 36.7

July 30/31 - Am

EC - 3.15.0 M.C. 6.42.0

236 - 3.13.0.6 236 - 3.14.53

3.15.0

1.29.37

3.13.30.63

3.13.00.6

-30.60

3.14.53

30

27.15.23

8.31.57.87

18.43.25.13

17.57.03.07

42.52.95

24.93

.13

6.40.21.08

M.C. 6.42.00

+1.39.08

16

-1.23.1

8.31.11.13

46.74

11.57.87

852

Aug 3 - PM

EC - 13..59..0

236 - 13..57..53.6

$$\begin{array}{r} 13..59..0..0 \\ \hline 34..06 \end{array}$$

58.25.44

$$\begin{array}{r} 57..53..6 \\ - 32..34 \end{array}$$

MC - 5..13 45 — 5..16.45

236 - 14..00..10 — 14..03..10.5

14..00..10

- 32.34

8..26.57.35

14..00..42.34

46.74

8..47..44.09

8..47..44.09

5..12.58.25

4..59..10.85

11..58.03

57.84

.25

5..12..06.97

5..13..45.00

MC - + 1.38.03

16

B 236 - 1..22.03

Am 31 - 1..23.1

P. 3 - 1..22

11

3

99

104

Am 10/7 1..20.96

Aug 6
7 am

EC - 5..55..0

236 - 5..53..46.3

$$\begin{array}{r} 5..55..0 \\ \hline 39..74 \end{array}$$

5..54..20.26

5..53..46.3

236 - 33.96

MC - 8..56..5.0

236 - 8..56..53.5

5..56..53.5

33.96

8..58..47.02

29..57..27.46

46.74

8..59..33.76

8..59..33.76

20..57..53.70

19..56..43.41

56..50.66

52.85

.76

8..54..27.62

MC 8..56..05.0

C - + 1.37.38

16

B - 1..21.38

65 / 1.16
24

Aug 9/10

EC - 5.. 2.. 0

236 - 5.. 0.. 40.9

$$\begin{array}{r} 5.. 2.. 0 \\ \hline 44.7 \end{array}$$

5.. 1.. 15.3

5.. 0.. 40.9

236 - 34.4

ME - 5.. 02.. 0

236 - 5.. 14.. 29

5.. 14.. 29

34.4

29.. 15.. 03.4

9.. 11.. 23.43

20.. 03.. 39.97

14.. 56.. 43.41

2.. 59.57

38.89

.97

8.. 09.. 22.78

8.. 02.. 00

1.. 37.22

16

1.. 21.22

8.. 04.. 55.0

5.. 07.. 24.5

9.. 10.. 36.69

46.74

9.. 11.. 23.43

11th PM

EC - 16.. 1.. 0

236 - 15.. 59.. 38

16.. 1.. 0

46.65

16.. 0.. 13.35

15.. 59.. 38.00

- 35.35

ME - 7.. 11.. 35

236 - 16.. 29.. 50.5

16.. 29.. 50.5

35.35

16.. 30.. 25.85

9.. 19.. 16.54

8.. 11.. 09.31

6.. 58.. 57.19

10.. 55.20

8.97

31

7.. 09.. 58.67

7.. 11.. 35.0

ME + Cam. 1.. 36.33

16

.B 1.. 20.33

7.. 14.. 35

16.. 32.. 57

9.. 18.. 29.80

46.74

9.. 19.. 16.54

854
Aug. 16th
17

EC- 5.31.0

236- 5.29.27.7

5.31.0
56.1

5.30.03.9

236- 5.29.27.7

16 36.2

11th 35.3

9

MC- 20.07.0

236- 5.47.06.5

5.47.06.5
36.3

29.47.42.8

9.38.59.3

20.08.43.5

19.56.43.41

7.58.69

42.88

50

20.05.25.48

20.07.00

MC +1.34.52

16

MC-13 +1.18.5

9.38.12.58

46.74

9.38.59.32

E C Last 57.23

Aug 17th - Am. 10 Am. sent signal by Telegraph

mC - 22.7.0

EC - 7.57.0

MC - 22.08.35 - 22.11.35.0

239 - 22.5.41.3

236 - 7.49.26

236 - 7.52.58 - 7.55.58.5

22.7.0

7.57.0

7.52.58

1.18.1

57.23

36.77

9.42.09.13

22.5.41.9

7.50.02.77

31.53.34.77

46.74

236 - 22.5.41.3

236 - 7.49.26

9.42.55.87

9.42.55.87

-36.77

22.10.38.90

21.56.23.75

9.58.36

37.89

.90

22.07.00.90

M6 - 22.8.35.00

+1.34.10

16

M6B +1.18.1

236 - Star of Boston .6

854.

Aug¹⁴ - 14/15 skipped two pages. see 17th & 18th see back

EC - 4.49.0 MC. 19.20 40 MC

2557 - 4.53.22.5 2557 - 4.58.36.5 236

EC - 4.50.0 MC - 20.07.10.0 - 20.10.10

236 - 4.48.31.5 236 - 5.39.13.0 236 5.42.13.5

4.50.0

EC fast. 57.14

4.49.08.86

4.48.31.5

- 37.36

10th

- 34.4

5/2.96/0.59

EC - 5.48.0

236 - 5.46.31.5

5.39.13.00

37.36

25.39.50.36

9.31.06.21

20.08.44.15

19.56.43.41

9.58.69

43.88

.15

20.05.26.73

20.07.10.00

1.33.87

16

1.27.87

9.30.19.47

46.74

9.31.06.21

Aug ¹⁸/₁₉

EC - 7..15..0

236 - 7..13..24.5

7..15..0.0

EC fast 58.85

7..14..01.15

236 7..13..24.5

236 slow - 36.65

EC fast by B Geminorum 58.85

MC - 27.27..0 --- 21..29..30

236 - 7..15..12.5 --- 7..17..43

7..15..12.5

36.65

9..46..05.69

24 + 7..15..49.15

46-74

9..46..52.43

9..46..52.43

21..28..56.72

20..56..33.58

27..55.41

55.84

.72

21..25..25.55

21..27..00

MC.C - 1..34.45

MC.B 1..18.45

1854.

Aug ¹ 20
21. Am

E 6. 49. 16. 0

236 - 09. 14. 20. 1

$$\begin{array}{r} 9. 16. 0 \\ - 1. 1. 71 \\ \hline \end{array}$$

$$\begin{array}{r} 9. 14. 58. 29 \\ - 1. 1. 71 \\ \hline \end{array}$$

$$\begin{array}{r} 9. 14. 20. 1 \\ - 1. 1. 71 \\ \hline \end{array}$$

236 - 38. 19

E.C. fast. by Jauri and Capella

M.C. - 23. 20. 55

23. 23. 55

236 - 9. 17. 19

9. 20. 19. 5

$$\begin{array}{r} 9. 17. 19 \\ - 38. 19 \\ \hline \end{array}$$

$$\begin{array}{r} 33. 17. 57. 19 \\ - 38. 19 \\ \hline \end{array}$$

$$\begin{array}{r} 9. 54. 45. 54 \\ - 38. 19 \\ \hline \end{array}$$

23. 23. 11. 65

22. 56. 13. 92

22. 56. 23

10. 97

165

23. 19. 21. 77

23. 20. 55. 46

+ 1. 33. 23

16

M.C. - 13 + 1. 17. 23

17th Am + 1. 18. 5
$$\begin{array}{r} 4) 1. 27. 40. 32 \\ \hline \end{array}$$
17th - 1. 01. 71

56. 1

4/5. 6/4 + 1. 4

1. 01. 7

1. 02. 4

Aug⁹² - 21 P.M.

Aug ²³ - 24

EC - 9.6.0

236 - 9.4.15.85

EC fast ^{9.6.0}
1.6.44

9.4.53.56

9.4.15.85

236 slow - 37.71

EC fast ^{m d} 1.06.46 by α Aquilae of the 23.80 v.

M.C. - 22.58.30

236 - 9.06.39.5

9.06.39.5

37.71

33.07.17.21

10.6.35.20

23.00.42.01

22.56.13.92

41.88

.01

22.56.55.81

22.58.30.00

M.C. fast 1.34.19

16

M.C. of B - 1.18.19

Aug - ²⁴/₂₅.E.C. fast by α Orionis this morning - ^m1..07.40

EC - 6..7..0	ML. 20..6..5	20..9..0
236- 6..5..14.3	236- 6..17..42	6..20..38
6..7..0	6..17..42	10..09..45.01
<u>1..7.40</u>	<u>38.30</u>	<u>46.74</u>
6..5..52.60	30..18..20.30	10..10..31.75
6..5..14.3	10..10..31.75	
<u>-38.30</u>	<u>20.07..48.55</u>	
	14.56..43.41	
	6..58.85	
	47.87	
	<u>.55</u>	
	20..04..30.68	
	20..06..5	
	9m C.C. + 1.34.32	
	<u>16</u>	
	ml. B - 1..18.3	

Aug^h 23,

EC 11.16.0

239-01-08.25.1

11.16.0

1.5

11.14.55.0

10.06.35.20

1.08.19.80

0.59.50.17

7.58.69

18.95

80

1.08.08.51

239 - 1.08.25.10

of Camb + 16.59

16

fast of Boston 0.59

10.5.48.46

46.74

6.35.26

24) 1.4/

Aug 23 P.M.

EC fast 1.05.74

1.06.44

1854

Aug ²⁸ ~~25~~

E.C. fast - by - B Tauri - 1. 11. 98

E.C. - 6..51..0

236 - 6..49..10

6..51..0

1..11.98

6..49..48.02

6..49..10.00

236 slow 38.02

M.C. - 20..49..00 — 20..52..00

236 - 7..12..34.5 — 7..15..35

7..12..34.50

38.02

10..21..34.68

31..13..12.52

10..22..21.42

46.74

20..50..51.10

19..56..43.41

49..57.81

50.86

.10

8..47..26.18

8..49..00

M.C. fast Cam - 1..34.18

16

M.C. fast B - 1..18.18

1..16.4

31..17.1

28 1..11.98

2) 512/1.7

1854.

Aug $\frac{30}{31}$

E.C. fast 1.17.2

E.C. 6.42.0

236- 6.42.6.1

$$\begin{array}{r} 6.42.0 \\ 1.17.2 \\ \hline \end{array}$$

$$\begin{array}{r} 6.42.42.8 \\ 2.6.1 \\ \hline 36.7 \end{array}$$

MC- 20.13.00

236- 6.48.19

$$\begin{array}{r} 6.48.19 \\ 36.7 \\ \hline \end{array}$$

30.48.55.70

10.34.11.18

20.14.44.52

19.56.43.41

13.57.71

43.79

52

20.11.25.43

20.13.00.0

1.34.57

16

mc 1.18.57

10.33.24.34

46.74

10.34.11.18

Sept $\frac{9}{41}$

E.C. 5.54.0.0

236- 5.52.1.0

$$\begin{array}{r} 5.54.0.0 \\ 1.23.37 \\ \hline \end{array}$$

29.52.36.63

52.1.00

35.63

E.C. fast 1.23.37

MC- 19.05.30

236- 5.56.26

$$\begin{array}{r} 5.56.26 \\ 35.63 \\ \hline \end{array}$$

29.57.01.63

10.49.57.36

19.07.04.33

18.56.53.24

6.58.85

3.99

33

19.03.56.41

5.30.00

mc.c. 1.33.59

16

mc-13- 1.17.59

8.46.57.35

10.49.10.56

46.74

10.49.57.36

1854

Sept 5/6.

E.C. - fast ^{mm} 1.26.52

E.C. - 5.30.0

236 - 5.27.58

$$\begin{array}{r}
 5.30.0 \\
 1.26.52 \\
 \hline
 5.28.33.48 \\
 5.27.58 \\
 \hline
 35.48
 \end{array}$$

M.C. 18.36

236 - 5.35

$$\begin{array}{r}
 5.35.49.5 \\
 8.44.5 \\
 \hline
 5.35.49.5
 \end{array}$$

$$\begin{array}{r}
 5.35.49.5 \\
 35.48 \\
 \hline
 29.36.24.98
 \end{array}$$

$$\begin{array}{r}
 10.57.50.40 \\
 18.38.34.58 \\
 \hline
 17.57.03.07
 \end{array}$$

$$\begin{array}{r}
 10.57.50.40 \\
 18.38.34.58 \\
 \hline
 17.57.03.07
 \end{array}$$

$$\begin{array}{r}
 17.57.03.07 \\
 37.53.77 \\
 \hline
 33.41
 \end{array}$$

$$\begin{array}{r}
 33.41 \\
 1.56 \\
 \hline
 78.35.31.33
 \end{array}$$

$$\begin{array}{r}
 78.35.31.33 \\
 37.5-0 \\
 \hline
 1.33.67
 \end{array}$$

$$\begin{array}{r}
 1.33.67 \\
 16 \\
 \hline
 1.17.67
 \end{array}$$

$$\begin{array}{r}
 1.17.67 \\
 16 \\
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 1.17.67
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$$\begin{array}{r}
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 \end{array}$$

$$\begin{array}{r}
 1.17.67 \\
 16 \\
 \hline
 1.17.67
 \end{array}$$

$$\begin{array}{r}
 10.57.03.66 \\
 46.74 \\
 \hline
 10.57.50.40
 \end{array}$$

$$\begin{array}{r}
 10.57.50.40 \\
 18.38.34.58 \\
 \hline
 17.57.03.07
 \end{array}$$

$$\begin{array}{r}
 17.57.03.07 \\
 37.53.77 \\
 \hline
 33.41
 \end{array}$$

$$\begin{array}{r}
 33.41 \\
 1.56 \\
 \hline
 78.35.31.33
 \end{array}$$

$$\begin{array}{r}
 78.35.31.33 \\
 37.5-0 \\
 \hline
 1.33.67
 \end{array}$$

$$\begin{array}{r}
 1.33.67 \\
 16 \\
 \hline
 1.17.67
 \end{array}$$

$$\begin{array}{r}
 1.17.67 \\
 16 \\
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 1.17.67
 \end{array}$$

$$\begin{array}{r}
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 1.17.67
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 1.17.67
 \end{array}$$

$$\begin{array}{r}
 1.17.67 \\
 16 \\
 \hline
 1.17.67
 \end{array}$$

$$\begin{array}{r}
 1.17.67 \\
 16 \\
 \hline
 1.17.67
 \end{array}$$

$$\begin{array}{r}
 4 + 1.23.37 \\
 6 + 1.26.52 \\
 \hline
 2/3.15 \\
 1.57 \\
 1.24.35 \\
 3 \\
 1.5 \\
 \hline
 1.32.85
 \end{array}$$

Sept 8/9 [±] Am

E.C. - fast 1.32.85

E.C. - 5.53.0

236 - 5.50.52.1

$$\begin{array}{r}
 5.53.0 \\
 1.32.85 \\
 \hline
 5.51.27.15 \\
 5.50.52.1 \\
 \hline
 35.05
 \end{array}$$

M.C. 18.42.30

236 - 5.53.5.5

$$\begin{array}{r}
 5.53.5.5 \\
 35.05 \\
 \hline
 29.53.40.55
 \end{array}$$

$$\begin{array}{r}
 29.53.40.55 \\
 11.09.40.07 \\
 \hline
 18.44.00.48
 \end{array}$$

$$\begin{array}{r}
 18.44.00.48 \\
 17.57.03.07 \\
 \hline
 43.52.79
 \end{array}$$

$$\begin{array}{r}
 43.52.79 \\
 .48 \\
 \hline
 18.40.56.34
 \end{array}$$

$$\begin{array}{r}
 18.40.56.34 \\
 42.30.07 \\
 \hline
 2.33.66
 \end{array}$$

$$\begin{array}{r}
 2.33.66 \\
 16 \\
 \hline
 1.17.66
 \end{array}$$

$$\begin{array}{r}
 1.17.66 \\
 16 \\
 \hline
 1.17.66
 \end{array}$$

$$\begin{array}{r}
 1.17.66 \\
 16 \\
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 1.17.66
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$$\begin{array}{r}
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 1.17.66
 \end{array}$$

$$\begin{array}{r}
 1.17.66 \\
 16 \\
 \hline
 1.17.66
 \end{array}$$

$$\begin{array}{r}
 11.8.53.33 \\
 46.74 \\
 \hline
 11.9.40.07
 \end{array}$$

$$\begin{array}{r}
 11.9.40.07 \\
 18.44.00.48 \\
 \hline
 17.57.03.07
 \end{array}$$

$$\begin{array}{r}
 17.57.03.07 \\
 37.53.77 \\
 \hline
 33.41
 \end{array}$$

$$\begin{array}{r}
 33.41 \\
 1.56 \\
 \hline
 78.35.31.33
 \end{array}$$

$$\begin{array}{r}
 78.35.31.33 \\
 37.5-0 \\
 \hline
 1.33.67
 \end{array}$$

$$\begin{array}{r}
 1.33.67 \\
 16 \\
 \hline
 1.17.67
 \end{array}$$

$$\begin{array}{r}
 1.17.67 \\
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 1.17.67
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$$\begin{array}{r}
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 16 \\
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 1.17.67
 \end{array}$$

$$\begin{array}{r}
 1.17.67 \\
 16 \\
 \hline
 1.17.67
 \end{array}$$

Sept 19/11

E.C. 5.22.0

236 5.21.48.7

5.22.0

1.34.92

5.22.25.08

5.21.48.7

-36.38

E.C. Part 1.34.92

M.C. 18.22.00

236 5.40.26.5

5.40.26.5

36.38

29.11.02.88

11.17.33.17

18.23.29.71

17.57.03.07

22.56.23

28.92

71

18.20.28.83

22.00

1.31.07

16

1.15.17

11.16.46.43

46.74

11.17.33.17

Sept. 12/13

E.C. 6.42.00

236 6.39.45.3

M.C. 19.16.00

236 6.42.39.5

35.7

6.42.00

1.39

6.40.21.0

6.39.45.3

35.7

11.24.39.54

46.74

11.25.26.28

6.43.15.2

11.25.26.28

19.17.48.92

3.9.68

19.14.39.24

19.16.00

1.20.76 Fast

19.17.48.92

18.56.53.24

16.57.21

47.87

92

19.14.39.24

Sept. 14 P.M.

EC, 16, 47.00
236 16, 44.43.2

16, 47.00
1, 41.5
16, 45.18.5
16, 44.43.2
0, 35.3

M.B.C. 5, 16 10
236 16, 48 15.5

35.3
16, 48.50.8
11, 33.19.39
5, 15.31.41
51.7
5, 14.39.71
5, 16.10
1, 30.29
16
1, 14.29

EC, 17, 15.00 M.B.C. 5, 43.00
236 17, 12.43.2 236 17, 16.9.8

11, 32.32.65
46.74
11, 33.19.39

17, 15.00
1, 41.5
17, 13.18.5
17, 12.43.2
35.3

35.3
17, 15.45.1
11, 33.19.39
5, 42.25.71
56.1
5, 41.29.61
5, 43.00
1, 30.39

Sept 15/16 Am

E.C. Fleet 1, 44.57

EC 5, 44.0
236 - 5, 41.20.8-7

EC, 8, 14.00 M.B.C. 20, 36.20
236 8, 17.40.6 236 8, 14.54.0

11, 36.29.20
46.74
11, 37.15.94

8, 14.00

8, 15.28.83

1, 44.57

11, 37.16.94

8, 12.15.43

20, 38.12.89

8, 11.40.6

3, 22.83-

34.83

20, 34.50.04

20, 36.20

1, 29.96

16

1, 13.96

16 P.M.

EC - 15.26.0
236 - 15.23.40

15.26.0
+1, 44.57
1, 45.17
15.24.14.83
23.40
34.83

1.7

Let EC

and reduced the Rate

16 - EC - 15.31.00 — 15.32.0
(after 236 - 15.30.24.7 — 15.31.24.4
35.6 35.6

17/18 EC - 6.17.0
236 - 6.16.23.3
36.7

Sept 17/18^L

E.C. - 6. 21. 0

236 - 6. 20. 23.3

6. 21. 0

3.1

20. 56.9

23.3

-33.6

M.C. - 18. 37. 20

236 - 6. 23. 28.5

6. 23. 28.5

33.6

30. 24. 02.9

11. 45. 09.0

18. 38. 53.1

17. 57. 3.07

37. 53. 77

52.85

18. 35. 49.79

18. 37. 20

1. 30. 21

16

+ 1. 14. 21

11. 44. 22.81

46.74

11. 45. 09.05

Sept 17/18

H. No 236 Slow of C.O. Sid time 33.6 -
Reset E.C. and alter the pendulum.

E.C. - 8. 8. 0

M.C.

236 - 8. 7. 23.2

E.C. - 8. 19. 00.0 Before setting E.C.

236 - 8. 9. 23.2

E.C. - 8. 15. 0

M.C.

236 - 8. 14. 27.4

8. 14. 27.4

33.6

15. 01.0

15. 00.0

E.C. slow - 1

E.C. - 8. 16. 0

M.C.

236 - 8. 15. 27.4

After setting E.C.

Sept. 16. 34.53

18. 33.6

1.2

33.6

32.4

20. 236. 6. 57.00

421. 6. 57.36

6. 57.33

36

Sept. 20/21 Am

E & Slow. 1.37

E.C. - 7..43..0

M.C. - 7..45..20

7..51..30

236 - 7..42..28.6

236 - 7..43..30

7..49..41

11..56..11.97

7..43..0

7..43..30.0

7..49..41

46.71

E.C. Slow 1.37

32.77

32.77

11..56..58.71

7..43..00.37

31..44..02.97

31..50..13.97

7..42..28.6

11..56..58.71

11..56..58.71

236 Slow - 32.77

19..47..04.08

19..53..15.06

7..43..1.37

18..56..53.24

18..56..53.24

7..42..28.60

46..52..30

52..51..32

- 32.77

4.05

14.97

7..43..49.59

06.

7..45..20

7..49..59.59

m.e.c. + 1.30.41

7..51..30

1.30.41

m.e.B. + 1.14.41

16

+ 1.14.41

Sept. 22/23

6..38..

E.C. 8..06..00 M.L. 20..02..00

6..37..30

236 8..5..30.2

236 8..08..6.4

N.B. ! Pendulum of E.C. disturbed between 8 and 9 P.M. Saturday Evening September 23, 1854

854

Sept 24/25

EC - 6.47.0

236 - 6.46.31.6

$$\begin{array}{r} 6.47.0 \\ - 6.46.31.6 \\ \hline 2.64 \end{array}$$

6.47.02.64

$$\begin{array}{r} 236 - 6.46.31.6 \\ - 31.04 \\ \hline \end{array}$$

EC Slow - 2.64

MC - 19.28.5

236 - 7.41.59.5

$$\begin{array}{r} 7.41.59.5 \\ - 31.04 \\ \hline \end{array}$$

39.42.30.54

12.12.44.92

$$\begin{array}{r} 19.29.45.62 \\ - 18.56.53.24 \\ \hline \end{array}$$

18.56.53.24

28.55.25

44.88

.62

19.26.33.99

28.05.0

MC.B. +1.31.01

16

MC-B +1.15.01

12.11.58.18

46.74

12.12.44.92

Sept 27/28th

EC Slow

EC - 9.12.0

236 - 9.11.32.5

$$\begin{array}{r} 9.12.0 \\ - 9.11.32.5 \\ \hline 3.49 \end{array}$$

9.12.03.49

9.11.32.5

$$\begin{array}{r} 236 - 9.11.32.5 \\ - 30.99 \\ \hline \end{array}$$

MC - 8.47.40

236 - 9.13.38

$$\begin{array}{r} 9.13.38 \\ - 30.99 \\ \hline \end{array}$$

33.12.08.99

12.24.34.58

20.49.34.44

19.56.43.41

48.57.97

33.91

.41

20.46.09.70

20.47.40.00

Cam 1.30.30

16

B - 1.14.30

8.50.40

9.16.38.5

12.23.47.84

46.74

12.24.34.58

EC Slow

7/18# 1.30

20 - 1.37

25 - 2.53

27 - 3.49

Oct-1/2

E. C. Glow 6.19

EC - 7.6.00

MC - 18.35.30 — 18.38.30

236 - 7.5.38

236 - 7.16.54.5 — 7.18.55

7.06.00

+ 6.19

7.06.06.19

5.38

236 Glow 28.19

~~18.35.3~~

7.16.54.5

28.19

12.39.34.05

7.17.22.69

46.74

1240.20.79

12.40.20.79

18.37.01.90

3.2.99

18.33.58.91

18.35.30

1.31.09

16

N.B. - 1.16.09

12.39.34.05

46.74

Oct-5/6.

E. C. - 7.54.0 MC - 7.19.58.35 — MC - 19.01.25

236 - 7.53.44.9 = 45.1 — 7.55.52.5 236 - 7.58.43.0

12.56.20.27

7.54.0

9.33

7.54.09.33

236 7.53.45.1

- 24.23

7.58.43.0

24.23

12.56.07.01

31.59.07.23

12.56.07.01

19.03.00.22

18.56.53.24

2.59.57

22

18.59.52.97

19.01.25.05

Carr + 1.32.03

16

13 + 1.16.03

Oct. 7thE.C. Slow by α Lyrae.

E.C. - 18. 39. 0

236 - 18. 38. 47.55

Oct. 8th

E.C. - 9. 7. 0

236 - 9. 6. 50.2

M.C. 20. 03. 15 - 20. 04. 05

236 - 9. 12. 35 - 9. 12. 25

Oct. 9thE.C. Slow by α Leonis - 13. 12. losing 0.9

After the transit of α Leonis E.C. had its rate altered by turning the pendulum out $1\frac{1}{2}$ divisions forward.

Oct 10/11

EC - 8..4..0

236 - 8..3..52.1

8..4..13.0

8..3..52.1

20.9

13..15..03.03

46.74

13..15..49.77

EC - 8..29..0

236 - 8..28..52.1

8..29..13.0

8..28..52.1

- 20.9

EC - 8..6..0

1357 - 8..7..7.2

8..6..13.0

8..7..7.2

+ 54.2

MB - 18..54..00

236 - 8..11..02.5

8..11..02.5

20.9

32..11..23.4

13..15..49.77

18..55..33.63

17..57..03.07

54..50.99

32.91

.63

18..52..27.60

18..54..00

- 1.32.43- 1.61..16.4

MC - 18..55..50

236 - 8..14..8

8..14..08

54.2

32..13..13.8

13..15..49.77

18..57..24.03

17..57..03.07

56..50.66

23.99

- 0.3

18..54..27.69

18..55..50

+ 1.32.311.6+ 1..16.31Oct 13th

EC - 10..10..0

236 - 10..9..53.2

M.T.C. 20..46..30

236 10..11..45.5

Oct 15/16

2C 9..39..00
 236-9..38..55.0
 9..39..10.7
 9..38..55.0
 -15.7

E.C. Slow 10.7 - gaining 0.4

MC- 19..57..15 ~ 20..00..10
 236- 9..34..14 ~ 9..37..09.5

9..34..14
 15.7
 13..34..45.80
 46.74
 13..35..32.54

19..58..57.16

18..56..53.24

57..50..50

56.65

16

19..55..40.75

57..15.00

1.34.25

16

M.C. + 1.18.25

Oct 11- 1..16.4

5) 1.85 / 0.37 gaining

15.7
 10.3
 4) 5.4 / 1.35

16 - 10.7

19 - 9.7

3) 1 / .33

1854. Oct-20. PM EC - slow ^s 9.4

EC - 20..41..0

236- 20..40..59.1

20..41..9.4

20..40..59.1

239- -10.3

MG-6..49..5 — 6..52..5

236-20..43..42 — 20..46..42.5

20..43..42

20..43..52.30

13..55..15.31

6..48..36.99

5..59..1.02

47..52.14

36.89

6..47..30.05

6..49.05.

+1.35.60

-1.19.60

13..54..28.57

46.74

13..55..15.31

1854 Oct. 23²²⁰ AmEE - How 9.24⁵

+ deonis 9

EE - 12..13..0	MC - 22..10..50	22..13..55
236 - 12..13..1.15	236 - 12..15..54	12..18..59.5
12..13..9.29	12..15..54	
12..13..1.15	8.14	14..02..21.68
236 - -8.14	36..16..02.14	46.74
	14..03..08.42	14..03..08.42
	22..12..53.72	
	21..56..23.75	
	11..58.03	
	52.85	
	.72	
	22..09..15.35	
	22..10..50.	
	Cam + 1..34.65	
	16	
	B + 1..18.65	

1854 - Oct. 25²⁶

EE -

EE - 11..15..0	MC - 21..00..45	21..03..35
236 - 11..15..5.5	236 - 11..17..31.5	11..20..22

Oct 27
Oct 28

$$\begin{array}{r}
 EC - 9.36.0 \\
 236 - 9.36.9.1 \\
 \hline
 9.36.8.2 \\
 \hline
 9.1 \\
 \hline
 236 - +0.9
 \end{array}$$

EC. How. 8.2 Sid. E.

$$\begin{array}{r}
 MC - 19.13.45 \quad \sim 19.19.53.20 \\
 236 - 9.38.10.5 \quad 236 - 10.10.17.52 \\
 \hline
 9.38.10.5 \quad MC - 20.11.05 \\
 \hline
 9 \\
 33.38.09.6 \quad 236 - 10.38.40 \\
 \hline
 14.22.51.2 \\
 \hline
 19.15.18.4 \quad 14.22.4.46 \\
 \hline
 18.56.53.24 \quad 46.74 \\
 \hline
 14.57.54 \quad 14.22.51.20 \\
 \hline
 17.95 \\
 \hline
 40 \\
 19.12.09.73 \\
 \hline
 19.13.45.0 \\
 \hline
 1.35.87 \\
 \hline
 16 \\
 \hline
 1.29.87
 \end{array}$$

Oct 31
Nov. 1

$$\begin{array}{r}
 EC - 10.48.0 \\
 236 - 10.48.14 \\
 \hline
 10.48.0 \\
 \hline
 7.6 \\
 \hline
 10.48.07.6 \\
 \hline
 10.48.14.0 \\
 \hline
 +6.4
 \end{array}$$

EC. How. 7.6

$$\begin{array}{r}
 MC - 20.13.20 \quad \sim 20.16.20 \\
 236 - 10.53.46.5 \quad \sim 10.56.47.0 \\
 \hline
 10.53.46.5 \\
 \hline
 6.4 \\
 34.53.40.1 \quad 14.37.50.68 \\
 \hline
 14.38.37.42 \quad 46.74 \\
 \hline
 20.15.02.68 \quad 14.38.37.42 \\
 \hline
 19.56.43.41 \\
 \hline
 14.57.54 \\
 \hline
 1.99 \\
 \hline
 68 \\
 20.11.43.62 \\
 \hline
 20.13.20 \\
 \hline
 +1.36.38 \\
 \hline
 16 \\
 \hline
 +1.20.38
 \end{array}$$

Nov. 7/6

EC - 5.91

EC - 10 - 6.0

236 - 10 - 6.18.7

$$\begin{array}{r} 10. 6. 0 \\ 5.91 \\ \hline \end{array}$$

10 - 6.05.91

10 - 6.18.7

236 + 12.79

MC - 19.09.55.0

236 - 10.09.58.5

10.09.58.5

12.79

34.09.45.71

14.58.20.20

19.11.25.51

18.56.53.24

10.58.19

24.93

57

19.08.16.87

19.09.55.0

C - 1.38.13

16

13 + 1.22.13

19.12.55

10.12.59

14.57.33.46

46.74

58.20.20

Nov. 8/6

EC. Star by Leonis - 4.90

EC. 10 - 6.0

236 - 10 - 6.22.1

10.6.4.9

22.1

+ 17.2

MC 18.56.00

236 - 10.07.53.5

10.07.53.5

17.2

34.07.36.3

15.10.09.86

18.57.26.44

17.57.03.07

56.50.66

25.73

44

18.54.20.10

18.56.00

1.39.90

16

1.23.90

18.58.50

236 - 10.10.24

15.09.23.12

46.74

15.12.09.86

1854 Nov 18/5

EC - 10..33..0

236-10..33..29.8

10..33..40

10..33..29.8

239 +25.8

EC - Slow 4

MC - 19..02..40

236-10..38..19

10..38..19

25.8

34..37..53.2

15..33..49.20

19..04..04.00

18..56..53.24

3..59..57

3.99

19..00..56.74

2..40..

1..43.26

16
1..27.26

19..5..45

236-10..41..24.5

15..33..02.46

46.74

15..33..49.26

Nov 19/20

EC - 11..21..0

236-11..21..35.65

11..21..1.3

35.65

+34.35

EC - 13..44..0

236-13..44..35.7

13..44..1.3

44..35.7

+34.4

EC - Slow 1.3

MC - 19..35..45

236-11..25..16.5

11..25..16.5

34.35

35..24..42.15

15..53..31.98

19..31..10.17

18..56..53.24

30..54.92

9.97

17

19..27.58..30

19..29.45..00

+1.46.70

16

1..30.70

15..52..45.24

46.74

15..53..31.98

MC - 21..43..20..46..20

236-13..39..13.5..22..14

13..39..13.5

34.4

37..38..39.10

15..53..31.98

21..45..07.12

3..33.98

27..41..33.14

21..43..20

MC EC 1..46.86

16

13 + 1..30.86

15..27.26

57.3.60/0.72

54.

Nov 24

$$\begin{array}{r}
 EC \quad 21..06..0 \\
 236 - 21..06..41.7 \\
 \hline
 21..06..0 \\
 \hline
 0.3 \\
 \hline
 21..05..59.7 \\
 21..06..41.7 \\
 \hline
 + 42.0
 \end{array}$$

EC - Hart - 0.3

$$\begin{array}{r}
 EC - 5..02..0 \\
 236 - 21..14..55.7 \\
 \hline
 21..14..55.7 \\
 \hline
 42 \\
 \hline
 21..14..13.7 \\
 16..13..14.77 \\
 \hline
 5..00..58.93 \\
 4..59..10.85 \\
 \hline
 57.84 \\
 \hline
 43 \\
 \hline
 5..00..09.62 \\
 5..02..00 \\
 \hline
 C + 1..50.38 \\
 \hline
 16 \\
 \hline
 B + 1..34.38
 \end{array}$$

$$\begin{array}{r}
 16..12..28.03 \\
 \hline
 46.74 \\
 \hline
 16..13..14.77
 \end{array}$$

$$\begin{array}{r}
 49.148 \\
 \hline
 161 \\
 \hline
 9.309 \\
 \hline
 5..00..58.93 \\
 \hline
 49.31 \\
 \hline
 5..00..09.62 \\
 \hline
 5..02..00.00 \\
 \hline
 1.50.38 \\
 \hline
 16 \\
 \hline
 1.34.38
 \end{array}$$

Nov

$$m_6 - 6 + 1..22.13$$

$$\begin{array}{l}
 9 + 1..23.90 + 0.59 \\
 15 + 1..27.26 + 0.56 \\
 20 + 1..30.70 + 0.67 \\
 24 + 1..34.08 + 0.84 \\
 29 + 1..37.06 + 0.60
 \end{array}$$

$$\begin{array}{l}
 Dec \quad 5 + 1..44.01 + 1.16 \\
 8 + 1..46.42 + 0.80 \\
 11 + 1..48.52 + 0.70 \\
 13 + 1..49.05 + \\
 18 + 1..53.05 + 0.79 \\
 19 + 1..54.27 + 1.22 \\
 21 + 1..55.77 + 0.71 \\
 26 + 1..58.85 + 0.62
 \end{array}$$

28
Nov. 29

E. b. fast. 1.3

$$\begin{array}{r} \text{EL} - 13..16..0 \\ 236 - 13..16..49 \\ \hline 13..16..0 \\ \quad 1.3 \\ \hline 13..15..58.7 \\ 13..16..49.0 \\ \hline + 50.3 \end{array}$$

$$\begin{array}{r} \text{M.S.C.} - 20..48..20 \quad 20.0 \\ 236 - 13..19..43 \quad 43.5 \\ \hline 23..19..43 \\ \quad 50.3 \\ \hline 37..18..52.7 \\ 16..29..01.0 \\ \hline 20..49..51.7 \\ 19..56..43.41 \\ \hline 48..51.93 \\ \quad 50.86 \end{array}$$

$$\begin{array}{r} 16..28..14.26 \\ \hline 46.74 \\ 16.29..01.00 \end{array}$$

$$\begin{array}{r} 20..46..26.94 \\ 20..48..20 \\ \hline 1..53.06 \\ \quad 16 \\ \hline 1.37.06 \end{array}$$

5/2.94 1.59

Dec. 4/5

E. b. fast 4.8

$$\begin{array}{r} \text{EL} - 15..14..0 \\ 236 - 15..14..56.2 \\ \hline 15..14..0 \\ \quad 4.8 \\ \hline 15..13..55.2 \\ 15..14..56.2 \\ \hline 236 + 1 01.0 \end{array}$$

$$\begin{array}{r} \text{M.C.} - 22..25..15 \quad 28..15 \\ 236 - 15..20..37 \quad 23..37.5 \\ \hline 15..20..37 \\ \quad 1 \\ \hline 39..19..36 \\ 16..52..40.35 \\ \hline 22..26..55.65 \\ 21..56..23.75 \\ \hline 25..55.74 \\ \quad 54.85 \\ \quad .65 \\ \hline 22..23..14.99 \\ 22..25..15 \\ \hline + 2.00.01 \\ \quad 16 \\ \hline + 1.44.01 \end{array}$$

$$\begin{array}{r} 16..57..53.61 \\ \hline 46.74 \\ 16.52..40.35 \end{array}$$

$$\begin{array}{r} 2..41 \\ \hline 80 \end{array}$$

6.95

11 452(?)
49

5/6 EL + 5.03

Dec ~ 7/8

EC - 12..17..0

236 - 12..17..59.6

$$\begin{array}{r} 12..17..0 \\ \hline 5.49 \end{array}$$

12..16..54.51

12..17..59.6

+1..05.09

EC - fast - 5.49

MC - 19..17..30 - 19..20..25

236 - 12..24..12.5 - 12..27..8

12..24..12.50

1..05.09

36..23..07.41

17..04..30.02

19..18..37.39

18..56..53.24

17..57.05

36.90

.39

19..15..27.58

19..17..30

2..02.42

16

1..46.42

17..3..43.28

46.74

17..04..30.02

Dec - 11th PM

EC - 22..47..0

236 - 22..48..08.8

$$\begin{array}{r} 22..47..0 \\ \hline 5.66 \end{array}$$

22..46..54.34

22..48..08.8

1..14.46

EC - 5.66 8 lyoni

MC - 5..33..15 - 5..36..15

236 - 22..53..35.5 - 22..56..36

22..53..35.50

1..14.46

22..52..21.04

17..20..16.26

5..32..04.76

4..59..10.65

31..54.76

3.99

78

5..31..10.38

5..33..15.

2..04.62

16

1..48.62

17..19..29.52

46.74

17..20..16.26

1.48.62

1.46.42

2.20

7

Dec-12-13-

Ec- 13..59..0
 236- 14..00..10.75
 13..59..0
5.2
 13..58..54.8
 14..00..10.75
 1..15.95

E.6 fast 5.2

Mb- 20..36..30 ~ 20..39..30
 236- 14..03..16.5 ~ 14..06..17
 14..03..16.5
1..15.95
 17..23..26.08
 38..02..00.55
46.74
 17..24..12.82
 20..37..47.73
 19..56..43.41
 36..53.94
 46.84
73
 20..34..24.95
 20..36..30.0
 2..05.05
16
 1..49.05

15.5.7
 13 5.2

Dec-17/18

Ec- 14..8..0
 236- 14..9..16.75
 14..8..0
6.6
 14..7..53.40
 14..9..16.75
 + 1..23.35

Ec- 15..16..0
 236- 15..17..16.75

Ec by Rate of 0.3 fast 6.1

Mb- 20..25..15 ~ 20..28..15 Ec- 14..27..0
 236- 14..12..26 ~ 14..14..46.5 236- 14..28..16.75
 14..12..46
1..23.35
 17..43..08.87 Me-
 38..11..22.65 46.74 236-
 17..43..55.61 17..43..55.61
 20..27..27.04
 19..56..43.41
 26..55.57
 26.53
04
 20..24..05.95
 26..15.0
 2..09.05
16
 1..53.05

Dec-19th P.M.

S.C. fast 7.01

EC - 22..43..0
 239 - 22..44..18.6
 EC - 1..58..0
 236 - 1..59..18.6
 1..58..0
 7.05
 1..57..52.95
 1..59..18.6
 + 1..25..65

MC - 6..25..0.0 — 6..28..0
 236 - 0..17..7.0 — 0..20..7.5
 0..17..7.0
 1..25..65
 17..57..01.99
 24..15..41.35
 46.74
 17..57..48.73
 17..51..48.73
 6..23..52.62
 5..59..01.02
 22..56..23
 51.86
 62
 6..22..49.73
 6..25..06
 C - 2..10..27
 16
 13 1..54.27

Dec-21st

S.C. fast 7.05

EC - 22..35..00
 236 - 22..36..20.5
 22..35..0
 7.05
 22..36..52.95
 22..36..20.5
 1..27..55

MC - 5..40..0 — 5..42..45
 236 - 22..39..43.5 — 22..42..29
 22..39..43.50
 1..27..55
 17..58..55.10
 46.74
 22..38..15.95
 17..59..41.86
 17..59..41.84
 4..38..34.09

21

22 - Am

S.C. fast 7.05

EC - 15..33..0
 236 - 15..34..21.5
 15..33..0
 7.05
 15..32..52.95
 15..34..21.5
 1..28.55

MC - 21..35..00

236 - 15..37..31
 15..37..31
 1..28.55
 17..58..55.16
 46.74
 17..59..41.84
 39..36..02.45
 17..59..41.84
 21..36..20.61
 20..56..33.58
 35..54..10
 19.94
 61
 21..32..48.23
 21..35..00
 2..11..77
 16
 1..55.77

Dec $\frac{26}{25}$

EC Part.

EC - 14.45.0 ~ 14.48.0 MC - 20.18.5 ~ 20.21.05
 236 - 14.46.26 ~ 14.49.26 236 14.32.15.5 ~ 14.35.16

Dec $\frac{25}{26}$

EC Part Est 7.7

EC - 14.34.0

236 - 14.35.27.3

$$\begin{array}{r} 14.34.0 \\ 7.7 \\ \hline \end{array}$$

14.33.52.3

14.35.27.3

1.35.0

MC - 20.27.25

236 - 14.45.34.5

$$\begin{array}{r} 14.45.34.5 \\ 1.35 \\ \hline \end{array}$$

38.43.59.5

18.15.28.08

20.28.31.42

19.56.43.41

27.55.41

30.91

2.2

20.25.10.15

27.25

2.14.85

16

1.58.85

18.14.41.34

46.74

18.15.28.08

1854 Dec $\frac{29}{30}$

E.C.

EC - 16..13..0 MC - 21..47..15 - 21..50..15

236 - 16..14..32.7 236 - 16..21..28 - 16..24..28.5

236-16..36..0 236-16..40..0 236-16..41..0 236-16..42..0

310-16..40..45.4 311-16..47..38 312-16..40..47.3 2557-16..46..38.8

236 has been in the cold. - 310-311-312-2557 - Then have been in the lower closet. Temp. 56°

1854 Dec $\frac{31}{32}$ 1855 Jan 1st

EC - 15..38..0

236 - 15..39..31.3 ?

15..38..8.04

15..37..51.96

15..39..31.3

239 + 1..39..34

EC 8.04 by 2 Bnoster

MC - 20..13..15 - 20..40..15 - 43..20

236 - 14..55..8 - 15..22..12.5 - 25..18

14..55..08

15..22..12.5

1..39..34

39..20..33.16 18..38..20.69

18..39..07.43 46.74

20..41..25.73 18..39..07.43

19..56..43.41

40..53..28

24.93

73

20..38..02.35

20..40..15

C - 2..12.65

1.6

B. 1..56.65

1855 Jan 2

EC - 17..0..0

MC 22..19..30 - 22..22..30

236 - 17..1..38.3

236 - 17..05..42 - 17..08..42.5

1855 Jan 3

Jan 3

EC - 17..38..0

236 - 17..39..40.3

1855 Jan 2

EC fast 8.4

Ther 63

EC - 15.45.0 - 15.46.0 MC - 20.45.45 - 48.45.0

236 - 15.46.42 - 15.47.42.1 236 - 15.39.38 - 42.38.5

236 - 16.28.0 - 16.29.0 - 16.30.0 - 16.32.0

310 - 16.30.13.5 311 - 16.37.14.5 312 - 16.29.52.9 2557 - 16.36.48

MC - 9 46.00 MG - 9 47.0 MG - 9 48.0

2848 - 9 46.12 1678 9 44.28 1681 - 9 47.42.4

Sept 4

EC - 14.55.0

236 - 14.56.43.7

14.55.0
7.8

14.54.52.2

14.56.43.7
1.51.5

EC fast 7.8

MC - 19.53.45 - 19.57.00

236 - 14.51.27.5 - 14.54.43

14.57.27.5

1 57.5

38.49.36.0

18.52.53.64

19.54.42.34

18.56.53.24

53.57.15

41.88

.34

19.57.26.61

19.53.45.00

2.18.39

16

-2.02.39

19.54.42.34

3.15.72

19.51.26.62

58

Jan 7/8

E.C. Feb by rate 7.6 - by Arcturus + 7.33

EC, 13..26..0 ~ 27..00 ME-18..26..20 ~ 18..19..15

236- 13..27..48.9 - 28..48.9 236- 13..35..42.5 ~ 13..38..38

13..26..0
7.6

13..25..52.4

13..27..48.9

1.56.5

1..57..5

3) 50

1.67

13..35..42.5

1..56.5

37..33..46.00

19..06..43.27

18..27..02.73

3.01.36

18..24..01.37

18..26..20.00

+ 2..18.63

16

2.02.63

19..6..47.21

3.94

19 06..43.27

Jan. 8th Am.

7.3

236- 15..32..0 ~ 15..33..0 ~ 15..34..0 ~ 15..35..00

311- 15..40..47.2 312- 15..32..58.1 310- 15..36..19.7 257- 15..39..57

8.47.2

Jan 9th Am

EC- 16..13..0

236- 16..14..57.3

1855 Jan 10 P.M.

E.C. Fast 7.06

M.T.C. 4..53..05

E.C. 0..12..00

236 0..12..8.0

236 0..13..53.8

2..0.86

0..10..07.14

0..12..00

19..18..36.89

19..18..33.00

7.06

3.89

4 51..34.14

0..11..52.94

19..18..33.00

47.76

10..13..53.8

2..00.86

4..50..46.38

4..53..15

2 18.62

16

2.. 2.62

Jan $\frac{12}{13}^h$

E.C.

E.C. - 16..37..0

M.C. - 21..13..15 - 21..16..15

236 - 16..38..57.7

236 - 16..42..55 - 16..45..55.5

E.C. - 19..9..0

M.C. - 22..33..00 - 22..39..00

236 - 19..10..57.85

236 - 19..3..3 19..09..4

185

Jan $\frac{14}{15}$ EC + $\frac{5}{7.3}$ δ ophiuchi

$$\begin{array}{rcl}
 EC - 16..53..0 & \sim & 236 - 16..14..0 \sim 18..16..0 \sim 18..37..0 \\
 236 - 16..55..0 & & 310 - 18..16..58 \quad 312 - 18..16..9.8 \quad 311 - 18..48..48.5 \\
 & & \quad \quad \quad 18..44..0 \\
 & & \quad \quad \quad 311 - 18..53..48.5
 \end{array}$$

$$\begin{array}{r}
 236 - 18..19..0 \\
 2557 - 18..24..13
 \end{array}$$

$$\begin{array}{r}
 EC - 16..53..0 \\
 \quad \quad \quad 7.3 \\
 \hline
 16..52..52.7 \\
 16..55..00 \\
 \hline
 + 2.07.3
 \end{array}$$

$$\begin{array}{r}
 \text{Sun } 30^h \quad 3/2 \\
 \quad \quad \quad - 12.7 - \\
 3 - 7.1 + 1.1 \\
 8 - 1.9 + 1.0 \\
 15 + 9.8 + 1.7
 \end{array}$$

Jan $\frac{15}{16}$ EC by Rata. $\frac{5}{7.3}$

$$\begin{array}{r}
 EC - 15..19..0 \\
 236 - 15..21..1.3 \\
 \quad \quad \quad 15..19..0 \\
 \quad \quad \quad \quad \quad 7.3 \\
 \hline
 15 - 18..52.7 \\
 15 - 21..1.3 \\
 \hline
 2..08.6
 \end{array}$$

$$\begin{array}{r}
 MC - 19..34..40 \\
 236 - 15..15..57 \quad 19..37..29.06 \\
 \quad \quad \quad 15..15..57 \quad \quad \quad 46.74 \\
 \quad \quad \quad \quad \quad 2..8.6 \quad 19.38..15.92 \\
 \hline
 39..13..48.4 \\
 19..38..15.80 \\
 \hline
 19..35..32.60 \\
 18..56..53.24 \\
 \hline
 34..54..26 \\
 \quad \quad \quad 32.91 \\
 \quad \quad \quad 60 \\
 \hline
 19..32..21.01 \\
 19..34..40 \\
 \hline
 2..18.99 \\
 \quad \quad \quad 16 \\
 \hline
 2..02.99
 \end{array}$$

Mean time clock cleaned by R.F. Bond.

Jan ¹⁹/₂₀

E.C. fast. 8.32.

EC- 16..21..0	MC 20..21..05	g-5C.m.m. 19..53..15.30
236 16..23..7.7	236- 16..20..46	<u>46.74</u>
16..21..0.0	16..20..46	19..54..02.04
<u>8.32</u>	<u>2..16.02</u>	
16..20..51.68	40..18..29.98	
16..23..07.7	19..54..02.04	
+ 2..16.02	<u>20..24..27.94</u>	
15/16 2.08.6	19..56..43.41	
4/7.40/1.85	23..56.07	
14/15 2.07.3	26.92	
20 2..16.02	<u>.94</u>	
5/9.72/1.94	20..21..07.34	
	<u>20..21..05</u>	
	Slow of Camb + 2.34	
	<u>16</u>	
	Slow of Boston 18.34	

Jan ²²/₂₃

EC - 8.9

EC- 15..40..0	MC- 19..38	15..41..15 ^m	20..05..04.97
236-15..42..11.6	236-15..49..49	52..49.0	<u>46.74</u>
15..40..0	15..49..49		20..05..51.71
<u>8.9</u>	<u>2..20.5</u>		
15..39..51.1	39..47..28.5		
15..42..11.6	20..05..57.71		
<u>2.20.5</u>	<u>19..41..36.79</u>		
19/20 2..16.02	18..56..53.24		
4.48/1.49	40..53.28		
	35.90		
	<u>.79</u>		
	19..38..23.21		
	38..15.		
	<u>- 8.21</u>		
	<u>16</u>		
	slow 24.2		

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

EC - 17..0..0 MC 20..47..50 — 20..50..50
 236 - 17..0..13.1 236 - 17..01..35 — 17..04..35.5

17..00..00
 8.8

16, 59, 51.2

17..0..13.0

20..09..52.15 + 0.21.9

20..09..48.3

17..01..35

21.9

17..01..13.1

20..9..48.3

20..51..24.8

3..24.99

20..47..49.81

20..47..50

M.C. Fast of Camb. + 0.19

16

Slow of B 15.84

20..57..24.80

3..25.00

20..47..59.80

20..47..50

- 9.81

- 16

- 25.8

3)7(2

8.3

9.8

1.4

1.2

Jan 26^t P.M. —

E.C. fast 9.7

by last night's obs. + 0.2

EC - 3..38..0

236 - 3..38..16.1

EC - 3..47..0

236 - 3..47..16.1

3..47..0

9.7

3..46..50.3

3..47..16.1

+ 25.8

MC - 7..19..15

236 - 7..42..43.5

3..42..43.5

28.8

27..42..17.7

20..21..37.94

7..20..39.76

6..58..57.19

19..56.72

38.90

.76

7..19..27.57

7..19..15

Camb. - 12.57

16

Boston - 28.57

7..22..10

3..45..39

20..20..57.20

46.74

20..21..37.94

2.8

5

11.1

9.7

1.4

EC + 0.47

-15.6

Jan 30th Pull

EC - Jan 2 + 11.6

EC - 3.54 - 0

236 - 3.54 - 20.5

3.54 - 0.0

11.6

3.53 - 48.4

3.54 - 20.5

236 + 32.1

23/24

21.9

6) 10.2 / 1.73

236 20th + ?

MC - 7.16 - 05

236 - 3.55 - 39.5

3.55 - 39.5

32.1

23.55 - 07.4

20.37 - 24.66

7.17 - 43.24

6.58 - 58.19

16.57 - 21

42.88

24

7.16 - 31.52

16 15 - 60

M.T.C.C - 13.48

16

13 - 29.48

7.19 - 15

236 - 3.58 - 40

20.32 - 40.87

46.74

20.33 - 27.61

3.56 - 55

37.24.16

20.36 - 37.42

46.74

37.24.16

losing .0.25

4/9/25

1855 d.

Feb 7-2

EC - Last $13.16^5 +$

$$EC - 1..26..0 \quad EC - 1..27..0 \quad EC - 1..29..0 \quad EC - 1..30..00$$

$$236 - 1..26..23.6 \quad 312 - 1..27..53.8 \quad 312 - 1..29..53.6 = 236 - 1..30..23.6$$

$$EC - 1..33..0 \quad MC - 5..4..35.0 \quad MC - 5..10..35$$

$$312 - 1..33..53.7 \quad 236 - 1..55..35.0 \quad 236 - 1..5..35.5$$

(236)

$$EC - 1..26..0$$

$$EC \text{ fast } 13.16$$

$$1..25..56.86$$

$$1..26..23.60$$

$$236 \text{ fast of Camb } 36.74$$

$$30 \text{ km. " " } 32.1$$

$$3/4.64 / 1.55 \text{ rate}$$

(312)

$$EC - 1..33..0$$

$$13.16$$

$$1..32..46.86$$

$$312 - 1..33..53.76$$

$$312 \text{ fast } 1..06.84$$

$$\text{Jan 23 " } 1..08.00$$

$$10) 1.16 / -0.11$$

Before Telygraph operations with
Frederickton N Brunswick.

Comparisons by coincidences with mean time clock
were used on account of the long interval of star observations,
namely, from Feb. $\frac{1}{2}$ to $\frac{2}{3}$ Am - clouds preventing transit observation
during the interval.

Feb. 2

EC - 18..14..0

236 - 18..14..24.6

$$\begin{array}{r}
 18..14..00 \\
 14.02 \\
 18..13..45.98 \\
 18..14..24.6 \\
 \hline
 38.72
 \end{array}$$

E.C. Fast 14.02

EC - 18..16..0

312 - 18..16..52.9

MC - 21..57..15

236 - 18..51..03.5 - 18..54..10.4

$$\begin{array}{r}
 18..51..03.5 \\
 38.72 \\
 18..50..24.78 \\
 20..49..13.83 \\
 \hline
 22..01..10.95 \\
 3..30.44 \\
 21..57..34.51 \\
 21..57..15 \\
 \hline
 19.51 \\
 16 \\
 \hline
 -35.51
 \end{array}$$

$$\begin{array}{r}
 20..48..27.09 \\
 46.74 \\
 \hline
 49.13.83
 \end{array}$$

Feb. 5th

EC - 18..58..0

236 - 18..58..26.4

$$\begin{array}{r}
 18..58..00 \\
 14.80 \\
 18..57..45.2 \\
 18..58..26.4 \\
 \hline
 41.2
 \end{array}$$

E.C. Fast 14.80

MC - 22..04..10

236 - 19..05..57

22..07..10

19..08..57.5

$$\begin{array}{r}
 19..05..57.0 \\
 41.2 \\
 19..05..15.8 \\
 20..57..6.94 \\
 \hline
 22..8..8.86 \\
 3..37.59 \\
 22..04..31.27 \\
 22..4..10 \\
 21.27 \\
 16 \\
 \hline
 -37.27
 \end{array}$$

$$\begin{array}{r}
 20..56..20.20 \\
 46.74 \\
 20..57..06.94
 \end{array}$$

$$\begin{array}{r}
 21..56..23.75 \\
 7..58..69 \\
 7.98 \\
 86 \\
 \hline
 22..04..31.18 \\
 22..04..10.00 \\
 21.18 \\
 16 \\
 \hline
 -37.18
 \end{array}$$

1855

Feb. 6th

E.C. fact 15.5

EC - 23..20..0

MC - 2..16..00

MC - 2..19..15

236 - 23..20..27.2

236 - 23..22..27.5

236 - 23..25..43

EC - 0..8..0

MC - 2..50..0

21..04..13.31

236 - 0..8..27.3

236 - 23..56..33

46.74

21..05..00.05

23..20..0

23..56..33

15.5

42.7

23..19..44.5

23..55..50.3

236 23..20..27.2

21..05..00.0

+ 42.7

2..50..50.3

5th

+ 41.2

1..59..40.34

+ 1.5 Rate

49..57.87

49.86

30

2..50..22.31

2..50..00.0

22.31

16.

M.C. Slow of Pos - 38.31

Feb. 9/10 -

E.C. fact 18.0

EC - 19..27..0

MC - 23..10..40

MC - 0..02..10

0..5..0

236 - 19..27..29.5

236 - 20..32..29

236 - 21..24..7.5

21..26..58

20..32..29

21..24..7.5

EC - 21..32..00

20..32..29

47.7

47.7

21..16..02.98

236 - 21..32..29.7

20..31..41.3

21..23..19.80

46.74

21..32..00

21..16..49.72

21..20..46.28

21..16..49.72

18

23..14..51.58

0..02..33.52

21..19..59.54

21..31..42

22..56..13.92

0..1..59.67

46.74

21..32..29.7

13..57..71

32.91

21..20..46.28

47.7

50.86

52

6th

41

23..10..03.07

2..33..10

expensive cold weather.

since the 6th

4/6.7/1.67

23..10..40

2..10

23.07

-23.10

16

13 -39.1

39.07

Feb. 12

2C - 16..55..0

M.C. 19..28..20

236-16..55..32

236-17..01..27

16..55..00

17..01..27

21..27..52.65

19

57

46.74

16..54..41

41..00..36.00

21..28..39.39

16..55..32

21..28..39.39

19..31..56.61

9/236 fast + 51

18..56..53.24

10 + 47.7

30..54..92

33/1.1

55.85

61

19..28..44.62

19..28..20.00

M.C. Slow 16 24.62

16

B - 40.62

3) 1.65/.55

Feb 18th Sunday PM

2C = 5.19. =

236 = 5.19.39.45

5..19..00.0

19.75

5..18..40.25

5..19..39.75

+ 59.50

E.C. fast - 19.75

M.C. 4.27.10.0

236 5.22.10.0

5..22..10.0

59.50

20..21..10.50

21..52..18.72

9..28..51.78

6..58..51.19

27..55..41

50.86

.78

7..27..38.24

10

Garn 28.24

16

B 44.24

21..57..31.98

46.74

21..52..18.72

36.071

1855 Feb 20/21 Am

E.C. fast - 20.38

E.C. 18.42..00 M.T.C. 20.39..30

236 18.42..43.2 236 18.44..38.5

$$\begin{array}{r} 18.42..00 \\ 20.38 \\ \hline \end{array}$$

$$\begin{array}{r} 18.41..39.62 \\ 18.42..43.20 \\ \hline \end{array}$$

$$\begin{array}{r} 18.42..43.20 \\ 1..03.58 \\ \hline \end{array}$$

$$\begin{array}{r} 1..03.58 \\ 51. \\ \hline \end{array}$$

12/13

$$\begin{array}{r} 51. \\ 8) 12.58/1.57 \\ \hline \end{array}$$

$$\begin{array}{r} 45 \\ 40 \\ \hline 55 \end{array}$$

$$\begin{array}{r} 18.44..38.5 \\ 1..03.58 \\ \hline \end{array}$$

$$\begin{array}{r} 42.43..34.92 \\ 22.04..08.38 \\ \hline \end{array}$$

$$\begin{array}{r} 20.39..26.54 \\ 19.56..43.41 \\ \hline \end{array}$$

$$\begin{array}{r} 19.56..43.41 \\ 38.53.61 \\ \hline \end{array}$$

$$\begin{array}{r} 20.39..26.54 \\ 19.56..43.41 \\ \hline \end{array}$$

$$\begin{array}{r} 20.39..26.54 \\ 19.56..43.41 \\ \hline \end{array}$$

$$\begin{array}{r} 20.39..26.54 \\ 19.56..43.41 \\ \hline \end{array}$$

$$\begin{array}{r} 20.39..26.54 \\ 19.56..43.41 \\ \hline \end{array}$$

$$\begin{array}{r} 20.39..26.54 \\ 19.56..43.41 \\ \hline \end{array}$$

$$\begin{array}{r} 20.39..26.54 \\ 19.56..43.41 \\ \hline \end{array}$$

$$\begin{array}{r} 20.39..26.54 \\ 19.56..43.41 \\ \hline \end{array}$$

$$\begin{array}{r} 20.39..26.54 \\ 19.56..43.41 \\ \hline \end{array}$$

$$\begin{array}{r} 20.39..26.54 \\ 19.56..43.41 \\ \hline \end{array}$$

$$\begin{array}{r} 20.39..26.54 \\ 19.56..43.41 \\ \hline \end{array}$$

$$\begin{array}{r} 20.39..26.54 \\ 19.56..43.41 \\ \hline \end{array}$$

$$\begin{array}{r} 20.39..26.54 \\ 19.56..43.41 \\ \hline \end{array}$$

$$\begin{array}{r} 20.39..26.54 \\ 19.56..43.41 \\ \hline \end{array}$$

$$\begin{array}{r} 20.39..26.54 \\ 19.56..43.41 \\ \hline \end{array}$$

$$\begin{array}{r} 20.39..26.54 \\ 19.56..43.41 \\ \hline \end{array}$$

$$\begin{array}{r} 20.39..26.54 \\ 19.56..43.41 \\ \hline \end{array}$$

$$\begin{array}{r} 20.39..26.54 \\ 19.56..43.41 \\ \hline \end{array}$$

$$\begin{array}{r} 20.39..26.54 \\ 19.56..43.41 \\ \hline \end{array}$$

$$\begin{array}{r} 20.39..26.54 \\ 19.56..43.41 \\ \hline \end{array}$$

$$\begin{array}{r} 20.39..26.54 \\ 19.56..43.41 \\ \hline \end{array}$$

$$\begin{array}{r} 20.39..26.54 \\ 19.56..43.41 \\ \hline \end{array}$$

$$\begin{array}{r} 20.39..26.54 \\ 19.56..43.41 \\ \hline \end{array}$$

$$\begin{array}{r} 20.39..26.54 \\ 19.56..43.41 \\ \hline \end{array}$$

$$\begin{array}{r} 20.39..26.54 \\ 19.56..43.41 \\ \hline \end{array}$$

$$\begin{array}{r} 20.39..26.54 \\ 19.56..43.41 \\ \hline \end{array}$$

$$\begin{array}{r} 20.39..26.54 \\ 19.56..43.41 \\ \hline \end{array}$$

$$\begin{array}{r} 20.39..26.54 \\ 19.56..43.41 \\ \hline \end{array}$$

$$\begin{array}{r} 20.39..26.54 \\ 19.56..43.41 \\ \hline \end{array}$$

$$\begin{array}{r} 20.39..26.54 \\ 19.56..43.41 \\ \hline \end{array}$$

$$\begin{array}{r} 20.39..26.54 \\ 19.56..43.41 \\ \hline \end{array}$$

$$\begin{array}{r} 20.39..26.54 \\ 19.56..43.41 \\ \hline \end{array}$$

$$\begin{array}{r} 20.39..26.54 \\ 19.56..43.41 \\ \hline \end{array}$$

$$\begin{array}{r} 20.39..26.54 \\ 19.56..43.41 \\ \hline \end{array}$$

$$\begin{array}{r} 20.39..26.54 \\ 19.56..43.41 \\ \hline \end{array}$$

$$\begin{array}{r} 20.39..26.54 \\ 19.56..43.41 \\ \hline \end{array}$$

$$\begin{array}{r} 20.39..26.54 \\ 19.56..43.41 \\ \hline \end{array}$$

$$\begin{array}{r} 20.39..26.54 \\ 19.56..43.41 \\ \hline \end{array}$$

$$\begin{array}{r} 20.39..26.54 \\ 19.56..43.41 \\ \hline \end{array}$$

$$\begin{array}{r} 20.39..26.54 \\ 19.56..43.41 \\ \hline \end{array}$$

$$\begin{array}{r} 20.39..26.54 \\ 19.56..43.41 \\ \hline \end{array}$$

$$\begin{array}{r} 20.39..26.54 \\ 19.56..43.41 \\ \hline \end{array}$$

22.03..21.64

46.74

$$\begin{array}{r} 22.04..08.38 \\ 46.74 \\ \hline \end{array}$$

21.59..25.09

46.74

22.00..11.83

42.43..34.92

20.43..23.09

19.56..43.41

42.52.95

22.94

.09

20.39..59.39

26.39..30.30

- 29.09

16

45.09

18' slow 44.24

3/85

1855 Feb. 23/24 A. M.

E.C. fast. 20.7

E.C. 19.21..00	M.T.C. 21..10..15	
236 19..21..47.3	236 19..27..24.5	22..11..14.75
19..21..00.0	19..27..24.50	46.74
20.7	1..08.0	22..12..01.49
19..20..39.3	19..26..16.50	
19..21..47.3	22..12..01.49	
236 fast 1..08.0	21..14..15.01	21..14..15.01
20	3..28.76	20..56..33.58
21 - 1..03.58	21..10..46.25	13..57.71
3/4.42/1.47	21..10..15.00	14.96
	- 31.25	.01
	16	21..10..46.26
	47.25	21..10..15.00
	21 st - 45.09	- 31.26
	3/2.16/-0.72	16
	M. T. C. slow B. 47.26	

3.28.8
 04
 184

Feb. 25/26 A.M.

E.C. fast 21.5

E.C. 17.39.00

M.T.C. 19. 17. 15

236 17.39.49.4

236 17. 42. 2.0

17.39.00
21.5

17. 42. 2.0

22. 19. 07.86

17.38.38.51.10.946.74

17.39.49.4

41.40.51.1

22. 19. 54.60

236 + 1.10.9

22. 19. 54.6024th Am 1. 8. 019.20.56.5012.9 ^s 1.418.56.53.24

19. 56. 72

55.85

50

19. 17. 46.36

19. 17. 15

31.31

16

M.C. Slow B 47.31

March 1st A.M.

E.C. fast. 21.91

E.C. 19..18..00

MSB 20 42..50

236 19..18..53.6

236 19..19..46.5

22..30..57.30

19..18..00-0

19..19..46.5

46.74

21.91

1..15.57

22 31.44.04

19..17..38.09

19..18..30.99

236 19..18..53.60

22..31..44.04

+1..15.51

20..46..46.95

26

+1..10.9

19..56..43.41

3/5.61/1.87

45..52.46

45.87

.95

20..43..22.69

20..42..50

- 32.69

16

- 48.69

26

- 47.31

3/1.38/.46

853

March $\frac{6}{7}^h$

E.C. 23.01 ?

mar 1. 21.91

6 23.01

1.10/di2

E.C. 17.58.00

M.C. 19.03.50

236-17.59.3.0

236-18.04.24.5

17.58.00

18.04.24.50

23.01

1.26.11

22.54.36.84

17.57.36.89

42.02.58.39

46.76

17.59.03.0

22.55.23.58

22.55.23.58

+1.26.11

19.07.34.81

1.15.57

18.56.53.24

6) 10.66 (1.77)

6.58.85

33.91

.81

19.04.26.81

19.3.50

.36.81

16

M.C. Glow

52.81

1st min

48.64

1) 4.11 (0.68)

March $\frac{19}{20}$

E.C. fast 25.71

E.C. 21.2.0

M.J.C. 21.13.00

236-21.3.24.5

236-21.05.45.0

21.2.0

21.05.45.0

23.45.52.04

25.71

1.50.21

46.74

21.01.34.29

45.03.54.79

23.46.38.78

21.03.24.50

23.46.38.78

1.50.21

21.17.16.01

16/17

1.44.7

20.56.33.58

3/5.5/1.83

16.57.21

15.95

.01

21.13.46.75

21.13.00.00

46.75

16

- 1.02.75

- 1.00.06

3) 2.69 (0.897)

March 12 P.M.

26. April 24.88

86 - 4..53..00 MC - 5..36..30 — 5.. 39 ..30
 236 - 4..54..11.6 236 - 4..58 45 — 5.. 01 ..45.5

4..53..00

24.88

4..52..35.12

4..54..11.60

+1..36.48

6/7th PM 1..26.88

5/9.60/1.92

4..58..45

1..36.48

28.57..08.52

23..19..02.91

5..38..05.61

4..59..10.85

37..53.77

4.98

61

5..37..10.21

5..36.30

.40.21

16

56.21

53.14

573.07/0.61

23..18..16.17

46.74

23..19..02.91

March 16/17

86 - 20..03..0

236 - 20..04..19.6

20..03..0

25.1

20..02..34.9

20..04..19.6

1..44.7

1..35.5

5/9.2/1.84

11/12th

86 - +25.1

MC - 20..26..35

236 - 20..07..14.5

20..07..14.5

1..44.7

44..05..29.8

23..34..49.12

20..30..40.68

19..56..43.41

29..55.08

39.89

.68

20..27..09.06

20..26..35

.44.06

16

60.06

56.01

5/4.05/0.81

20.. 29.. 35

20.. 10 ..15

23..34..02.38

46.74

23..34..49.12

855

March 23rd P.M.

EC - 5.20.0

236 - 5.21.30.6

5.20.0.0

25.79

5.19.34.21

5.21.30.60

236 + 1.56.39

EC + 25.79

MC - 5.18.35

236 - 5.24.38.5

5.24.38.5

1.56.39

5.22.42.17

0.2.24.99

5.20.17.12

4.59.10.85

19.56.72

16.95

12

5.19.24.64

5.18.35

- 49.64

- 16

23 P.M. 65.64

4

" Am 65.24

17 - " 60.06

6) 5.18 (0.86

0.1.38.25

46.74

0.2.24.99

24.35

30.39.5

1.8

1.6

64

17

47

March 27-28

EC - 23.53.0

236 - 23.54.37.7

23.53.0.00

27.91

23.52.32.09

23.54.37.70

236 + 2.05.61

23 1.56.22

5) 13.38 (2.6)

17⁺ 236 + 1.44.70

28 " - 2.05.61

11) 20.91 (1.90)

99

EC + 27.91

MC - 23.32.15

236 - 23.57.17

23.57.17.0

2.56.1

23.55.11.39

0.18.11.21

23.37.00.18

3.52.14

23.33.08.04

23.22.15

- 53.04

1.6

69.04

65.47

5) 3.57 (71

0.17.24.47

46.74

0.18.11.21

EC 17.25.10

28.27.91

1) 28.11.25

22

6

April $\frac{3}{4}$

EC - 19.34.0

236 - 19.35.57.2

$$\begin{array}{r} 19.34.0 \\ \hline 28.05 \end{array}$$

$$\begin{array}{r} 19.33.31.95 \\ \hline \end{array}$$

$$\begin{array}{r} 19.35.57.2 \\ \hline \end{array}$$

$$+ 2.19.25$$

$$28 \quad + 2.05.61$$

$$\begin{array}{r} 7) 13.64 / 1.95 \\ \hline 9 \\ 46 \\ 36 \end{array}$$

E.C. Last. 28.05

MC - 19.2.58 - 19.05.55

236 - 19.55.07 - 19.58.7.5

$$\begin{array}{r} 19.55.07 \\ \hline 2.19.25 \end{array}$$

$$\begin{array}{r} 19.52.47.75 \\ \hline \end{array}$$

$$\begin{array}{r} 0.45.47.08 \\ \hline \end{array}$$

$$\begin{array}{r} 19.07.00.67 \\ \hline \end{array}$$

$$\begin{array}{r} 18.58.53.24 \\ \hline \end{array}$$

$$\begin{array}{r} 6.58.85 \\ \hline \end{array}$$

$$\begin{array}{r} 67 \\ \hline \end{array}$$

$$\begin{array}{r} 19.03.52.76 \\ \hline \end{array}$$

$$\begin{array}{r} 19.02.55 \\ \hline \end{array}$$

$$\begin{array}{r} - 57.76 \\ \hline \end{array}$$

$$\begin{array}{r} 16 \\ \hline \end{array}$$

$$\begin{array}{r} 1.13.76 \\ \hline \end{array}$$

$$\begin{array}{r} 1.09.04 \\ \hline \end{array}$$

$$\begin{array}{r} 7) 4.22 / 6.67 \\ \hline \end{array}$$

$$\begin{array}{r} 0.45.00.34 \\ \hline \end{array}$$

$$\begin{array}{r} 46.74 \\ \hline \end{array}$$

$$\begin{array}{r} 0.45.47.08 \\ \hline \end{array}$$

EG 28 + 27.91

" 4 + 28.05

$$\begin{array}{r} 7) 14.02 \\ \hline \end{array}$$

Apr 6th

EC - 4.23.0

236 - 4.24.55.6

EC -

MC - 3.35.55 -

236 - 4.37.31 -

3.38.50

4.40.26.5

E. b. Inst 28.3

1855

April 7th

E. b. - 5..31..0

M. b. - 4..29..30

4..32..30

236 - 5..32..58.0

236 - 5..35..14.5

5..38..15

$$\begin{array}{r} 5..31..0 \\ 28.3 \\ \hline \end{array}$$

$$\begin{array}{r} 5..35..14.5 \\ 2..26.3 \\ \hline \end{array}$$

1..0..46.56

5..30..31.7

5..32..44.2

46.74

5..32..58

1..01..33.30

1..01..33.30

+ 2..26.3

4..31..14.90

3..59..20.68

30..54.92

13.96

90

4..30..30.46

4..29..30

60.46

16

B - 76.46

- 1.16.46

73.76

1.6

72.70

0.38 1.18.06

- 0.78

P. M. 9th

8/9 Am.

E. b.

E. b. 19..18.0

19..58.0

M. b. 18..51..15

18..54..15

236 20..00..1.4

20..01..1.4

236 20..03..22.5

20..06..23

April ¹⁰/₁₂

$$\begin{array}{r} \text{EC} - 19.57.0 \\ 236.19.59.6.0 \end{array}$$

$$\begin{array}{r} 19.57.0.0 \\ 27.6 \\ \hline 19.56.32.2 \\ 19.59.6.0 \\ \hline 2 \quad 33.6 \end{array}$$

E6 Fast - 27.8

$$\begin{array}{r} \text{MC} 18.57.50 - 19.11.00.50 \\ 239.20.17.58 - 20.20.58.5 \end{array}$$

$$\begin{array}{r} 20.17.58 \\ 2.33.8 \\ \hline 20.15.24.20 \\ 1.13.22.96 \\ \hline 19.02.01.24 \\ 18.56.53.24 \\ 1.19.67 \\ 20.94 \\ 24 \\ \hline 18.58.54.09 \\ 18.57.50.00 \\ \hline 1.04.09 \\ 16 \\ \hline 1.20.09 \\ 1.13.76 \\ \hline 7/6.33/0.90 \end{array}$$
Apr - 13th

$$\begin{array}{r} - 5.20.0 \\ 236.5.22.11.7 \end{array}$$

E.6. fast

$$\begin{array}{r} \text{MC} - 3.57.25 - 4.00.25.0 \\ 236.5.27.25 - 5.30.03.0 \\ 1.29.37.5 \end{array}$$

855
April 17/18

EC. fast 25.58

EC - 19.30.0 MFC - 18.09.40 — 18.12.40
 236 - 19.29.32 239 - 19.54.48 — 19.15.48.5

19.30.0
 25.58

19.29.34.42

239 19.29.32.00
 slow — 2.42

19.54.48.0
 2.42

19.54.50.42

1.40.58.84

18.13.51.58

17.57.03.07

12.57.87

50.86

58

18.10.52.38

18.09.40.00

1.12.38

1.6

1.28.38

11^h 1.20.09

7/8.29/-1.18

7.2

1.40.12.10

46.74

1.40.58.84

April 21^h 1855

EC	0.	28	29.2	0 ^h	17	00	00	29.1
236	1 ^h	13	00	0 ^h	16	30	80	
MFC	22 ^h	27	00	0 ^h	26	00	00	22, 30 00
236	0	24	42.00	22 ^h	28	17	20	27 42.5
EC								
MFC								

