

KG  
11365  
147

G.4

*Sidereal and Mean Solar  
clocks. from  
January 1<sup>st</sup> 1856.  
to  
February 27<sup>th</sup> 1857.*

Sold by T. Groom & Co., Stationers, India Building, 82 State St., Boston.

KG-11365.147







KG-11365.147





56. Jan 1. <sup>82</sup> Am

No. 1. Low 5.46.5

|                |            |    |             |    |            |      |             |
|----------------|------------|----|-------------|----|------------|------|-------------|
| 1              | 2..20.30.0 | 1  | 2..25.0.0   | 1  | 2..34.00.0 | 1    | 2..39.0.0   |
| 2 <sup>a</sup> | 2..29.8.5  | 16 | 2..46.44.9  | 28 | 2..28.57.1 | 2434 | 2..46.26.6  |
|                | +8.38.5    |    | +21.44.9    |    | -5.02.9    |      | +7.26.6     |
|                | -5.46.5    |    | -5.46.5     |    | -5.46.5    |      | -5.46.5     |
|                | +2.52.0    |    | +15.58.4    |    | -10.49.4   |      | +1.40.1     |
| 1              | 2..21.0.0  | 1  | 2..25.30.0  | 1  | 2..34.30.0 | 1    | 2..38.0.0   |
| 3              | 1..55.43.8 | 18 | 2..00.2.1   | 29 | 2..23.27.2 | 2107 | 2..45.17.0  |
|                | -25.16.2   |    | -25.27.9    |    | -11.02.8   |      | +7.17.0     |
|                | -5.46.5    |    | 5.46.5      |    | -5.46.5    |      | -5.46.5     |
|                | -31.02.7   |    | 31.14.4     |    | -16.49.3   |      | +1.30.5     |
| 1              | 2..21.30.0 | 1  | 2..33.0.0   | 1  | 2..35.0.0  | 1    | 2..38.30.0  |
| 4              | 1..44.36.0 | 20 | 3..23.45.6  | 30 | 2..48.21.3 | 2076 | 2..42.2.5   |
|                | -36.54.0   |    | +50.45.6    |    | +13.21.3   |      | +3.32.5     |
|                | -5.46.5    |    | -5.46.5     |    | -5.46.5    |      | -5.46.5     |
|                | -42.40.5   |    | +44.59.1    |    | +7.34.8    |      | -2.14.0     |
| 1              | 2..22.0.0  | 1  | 2..26.0.0   | 1  | 2..35.30.0 | 1    | 2..46.0.0   |
| 8              | 2..01.22.8 | 21 | 2..38.25.0  | 31 | 0..48.17.4 | 12   | 15.24.13.0  |
|                | -20.37.2   |    | +12.25.0    |    | 1-47.12.6  |      | 13+38.13.0  |
|                | -5.46.5    |    | -5.46.5     |    | -5.46.5    |      | -5.46.5     |
|                | -26.23.7   |    | -06.38.5    |    | -1-52.59.1 |      | 13-32.26.5  |
| 1              | 2..22.30.0 | 1  | 2..37.30.0  | 1  | 2..36.0.0  | 1    | 2..46.30.0  |
| 16             | 2..23.9.4  | 26 | 10..07.42.0 | 36 | 2..37.28.2 | 4    | 16.34.4.9   |
|                | +39.4      |    | -4.29.48.0  |    | +1.28.2    |      | 13.48.34.9  |
|                | -5.46.5    |    | -5.46.5     | 1  | -5.46.5    |      | -5.46.5     |
|                | -5.07.1    |    | -4.35.34.5  |    | -4.18.3    |      | +13.42.48.4 |
| 1              | 2..23.0.0  | 1  | 2..26.30.0  | 37 | 2..36.30.0 | 1    | 2..47.30.0  |
| 14             | 2..20.17.9 | 23 | 2..25.7.4   | 37 | 2..30.27.5 | Y    | 18.25.44.8  |
|                | -2.42.1    |    | -1.22.6     |    | -6.02.5    |      | +15.38.14.8 |
|                | -5.46.5    |    | -5.46.5     |    | -5.46.5    |      | -5.46.5     |
|                | -8.28.6    |    | -7.09.1     |    | -11.49.0   |      | +15.32.28.3 |
| 1              | 2..23.30.0 | 1  | 2..27.0.0   | 1  | 2..37.0.0  |      |             |
| 15             | 2..25.23.6 | 24 | 2..45.53.3  | 39 | 2..57.57.8 |      |             |
|                | +1.53.6    |    | +18.53.3    |    | +14.57.8   |      |             |
|                | -5.46.5    |    | -5.46.5     |    | -5.46.5    |      |             |
|                | -3.52.9    |    | +13.06.8    |    | +9.11.3    |      |             |

E to fast.

86- 18.57.0.0  
 A- 18.58.55.0  
 - 3.05.0

M76 22.24.0.0  
 No1 2.05.10.3

86 18.59.0.0  
 A 18.55.55.0  
 - 3.05.0

86 19.2.0.0  
 D 19.26.35.2  
 + 24.35.2

1856

Jan <sup>4</sup>/<sub>4</sub>

MTC- 22- 4- 0

No 1- 14- 45- 14.15

12- 45- 14.15

4- 38- 45.20

10- 06- 28.95

10- 04- 00.00

2- 28.95

16

2- 44.95

31- 2- 41.29

4- 3.66

0.91

C. C. fast <sup>m</sup> 2. 38.7

26- 17- 12- 00

No 1- 14- 54- 27.0

17- 12- 00

2- 38.7

17- 09- 21.3

4- 09- 21.3

18- 50- 00.08

22- 19- 21.22

21- 56- 23.75

18- 56- 89

20.94

22

10- 15- 41.80

14- 54- 27.00

4- 38- 45.20

4- 44- 30.66

5- 45- 46

Jan- 4

34  
2  
1.02



1856 Jan 4<sup>th</sup>  
Saturday

No. 1. Nov. 2 5.45.12

|                |               |    |               |    |             |      |             |
|----------------|---------------|----|---------------|----|-------------|------|-------------|
| 1              | 2. 10. 0      | 1  | 2. 12. 30     | 1  | 2. 14. 30   | 1    | 2. 26. 0    |
| 2 <sup>a</sup> | 2. 18. 50.1   | 16 | 2. 34. 55.2   | 28 | 2. 09. 22.4 | 2434 | 2. 33. 34.0 |
|                | + 8. 50.1     |    | + 22. 25.2    |    | - 5. 07.6   |      | + 7. 34.0   |
|                | - 5. 45.1     |    | - 5. 45.1     |    | - 5. 45.1   |      | - 5. 45.1   |
|                | + 3. 05.0     |    | + 16. 40.1    |    | - 10. 52.7  |      | + 1. 48.9   |
| 1              | 2. 10. 30     | 1  | 2. 13. 0.0    | 1  | 2. 15. 30.0 | 1    | 2. 25. 30.0 |
| 3              | 1. 44. 55.6   | 18 | 1. 47. 10.5   | 29 | 2. 3. 50.3  | 2107 | 2. 32. 58.7 |
|                | 25. 34.4      |    | - 25. 49.5    |    | - 11. 39.7  |      | + 7. 28.7   |
|                | - 5. 45.1     |    | - 5. 45.1     |    | - 5. 45.1   |      | - 5. 45.1   |
|                | - 31. 19.5    |    | - 31. 34.6    |    | - 17. 24.8  |      | + 1. 43.6   |
| 1              | 2. 11. 0.0    | 1  | 2. 13. 30.0   | 1  | 2. 22. 30.0 | 1    | 2. 26. 30.0 |
| 4              | 1. 33. 28.9   | 20 | 3. 05. 48.0   | 30 | 2. 36. 5.7  | 2076 | 2. 29. 49.6 |
|                | - 37. 31.1    |    | + 52. 18.0    |    | + 23. 35.7  |      | + 3. 19.6   |
|                | - 5. 45.1     |    | 5. 45.1       |    | - 5. 45.1   |      | - 5. 45.1   |
|                | - 43. 16.2    |    | + 46. 32.9    |    | + 17. 50.6  |      | - 7. 25.5   |
| 1              |               | 1  | 2. 14. 0.0    | 1  | 2. 23. 0.0  | 1    | 2. 46. 0.0  |
| 8              | absent        | 21 | 2. 26. 41.9   | 31 | 0. 35. 48.7 | 11   |             |
|                |               |    | + 12. 41.9    |    | 1. 47. 11.3 |      |             |
|                |               |    | - 5. 45.1     |    | 5. 45.1     |      |             |
|                |               |    | + 6. 56.9     |    | 1. 52. 56.4 |      |             |
| 1              |               | 1  | 2. 25. 0.0    | 1  | 2. 23. 30.0 | 1    | 2. 46. 30.0 |
| 10             | absent        | 26 | 9. 55. 29.5   | 36 | 2. 25. 0.5  | X    |             |
|                |               |    | 4. 29. 30.5   |    | + 1. 30.5   |      |             |
|                |               |    | 5. 45.1       |    | - 5. 45.1   |      |             |
|                |               |    | - 4. 35. 15.6 |    | - 4. 14.6   |      |             |
| 1              | 2. 11. 30     | 1  |               | 1  | 2. 24. 0.0  | 1    | 2. 47. 30   |
| 14             | 1. 8. 44.5    | 23 | absent        | 37 | 2. 17. 44.8 | Y    |             |
|                | - 1. 02. 45.5 |    |               |    | - 6. 15.2   |      |             |
|                | - 5. 45.1     |    |               |    | - 5. 45.1   |      |             |
|                | - 1. 18. 30.6 |    |               |    | - 12. 00.3  |      |             |
| 1              | 2. 12. 0.0    | 1  | 2. 22. 0.0    | 1  | 2. 24. 30.0 | 1    | 2. 32. 0.0  |
| 15             | 2. 14. 0.4    | 24 | 2. 41. 26.0   | 39 | 2. 40. 1.2  | Z    | 8. 02. 49.9 |
|                | + 2. 0.4      |    | + 19. 26.0    |    | + 15. 31.2  |      |             |
|                | - 5. 45.1     |    | - 5. 45.1     |    | 5. 45.1     |      |             |
|                | - 3. 44.7     |    | + 13. 40.9    |    | 9. 46.1     |      |             |

The closet Thermos have been ranging from 60 to 49 since last comparison. latter part of the time - 53 average - 12. has been in high temperature.)

E.C. fast

EE  
A 16.59.30.0  
16.54.22.7  
- 3.07.3

MGC- 21.47.0.0  
No1 2.28.15.4

EE  
D 17.00.00.0  
17.25.41.25  
+ 25.41.2

EE-  
No1

Jan 7/8

MTC - 21.27.00

No 1 - 14.08.17.3

14.08.17.3

4.38.46.58

9.29.30.72

9.27.00

2.30.72

16

M.T.C. 2.46.72

4<sup>th</sup> 2.44.95

4) 1.77 / 0.44

EB - 16.49.50

No 1. 14.16.37

16.49.50

2.40.07

40.47.09.93

19.05.46.31

21.41.23.62

20.56.33.58

40.53.28

22.94

62

9.37.50.42

14.16.37.00

4.38.46.58

4.44.30.66

5.44.08

4<sup>h</sup> 5.45.46

4) 138 / 0.34

EB fact 2.40.07

16.52.50

14.19.86.5

19.04.59.57

46.74

19.05.46.31

EB-4<sup>th</sup> - 2.38.7

8. 2.44.08

4) 538 / 234

Jan 7/8 till Mar-2 +30.3

M.T.C. 19.8.0

2 5.34.1. Mar x 30.2

1856 Jan 8/9<sup>m</sup> at 4.30 Am. Newman St. - 5.5 below zero  
at 7 Am.

Std Standard - 10 below

57 - 10.5

53 - 10.0

50 - 10.0

Wood - 0.5 rejected

7 - 11.7

57 - 11

58 - 11

at 7.16 Am

Standard - 8

Bowditch = 0

Std Standard at 7.25

South side of old R. Room - 9.5 below

Newman Standard

North side of new R. Room - 8.5 ~ "

8/9 - 3.00 P.M.

Std Standard - 0.0

BOS 57 - 1.5

50 - 1.0

53 - 0.7

7 - 1.5

1 - 2.0

57 - 1.7

58 - 1.5

Jan 7. 10 - 7.30 Am at 4.30 Am St. W - 7.

8 - 4.8 below 0 at 7 Am - 5.5

57 - 5.0

50 - 5.0

53 - 4.5

7 - 6.3

57 - 5.3

58 - 5.5

1 - 7.0

1856.

Jan. <sup>10</sup>/<sub>11</sub>

E6 fact. 2.41.25

M.T.C. 20.33.0

E.C. — 16.16.50 E.C. 16.19.50

No.1 — 13.14.19.85

140/No.1 — 13.31.55 No.1 — 13.34.54.5

13.14.19.85

16.16.50.00

4.38.48.10

1 2.41.25

8.35.31.75

40.14.08.75

8.33.00.00

19.17.35.99

2.31.75

20.56.32.76

16

19.56.43.41

2.47.75

55.50.82

2.44.95

31.91

7.2.80

76

0.40

20.53.06.90

13.31.55.00

4.38.48.10

13

E6 fact. 2.41.28

Jan <sup>11</sup>/<sub>12</sub> 20.42.00 M.T.C.

E.C. 16.17.05

No.1 — 13.23.21.85

No.1 — 13.28.14

16.17.05.0

M.T.C. — 22.33.0

2.41.28

No.1 — 15.14.21.2

40.14.23.72

19.21.32.55

E.C. — 18.07.10

19.20.45.81

20.52.51.17

No.1 — 15.18.01

19.21.32.55

19.56.43.41

18.07.10

57.57.48

2.41.28

50.86

42.04.28.72

17

19.21.32.55

8.49.25.92

22.42.56.17

4.44.30.66

13.23.21

21.56.23.75

13.33.56.58

13.4.38.48.08

41.53.12

13.28.14.00

8.44.32.92

55.85

No.1 — 5.42.58

M.T.C. 8.42.00

17

8.49.25.92

2.32.92

10.39.12.89

13.28.14

16

4.44.30.66

4.38.48.08

M.T.C. — 2.48.92

15.23.43.55

15.18.01

No.1. Star 5.42.55

Jan 7. 11<sup>th</sup> - 2.30 PM - placed No 2434-2107 & 2076 in the store room

Ther 28.7

MTC-Slow. Jan. 2.32.0

MTC - 2.25.00 — 2.26.00 — 2.27.00  
 2434 - 7.14.5.9 2107 - 7.15.7.6 2076 - 7.11.21  
 4.49.5.9 4.49.07.6 4.44.21

Jan 11<sup>th</sup> - 10.15 AM Ther 29

MTC-Slow of Lamb. m.s.t 2.32.92

MTC - 22.9.0 MTC 22.10.0 MTC - 22.11.0  
 2434 - 14.58.9.8 2107 - 14.59.7.9 2076 - 14.55.16.5 2.48.92 Boston  
 4.49.9.8 4.49.07.9 4.44.16.5

Jan 12<sup>th</sup> / 13<sup>th</sup> AM Ther 30.5

MTC-Slow. 2.33.8

MTC - 26.26.0 MTC - 21.28.0 MTC - 21.29.0  
 2434 - 14.15.14.4 2107 - 14.16.7.5 2076 - 14.13.10.6  
 4.49.14.4 4.49.07.5 4.44.10.6

13/14 AM. Ther. 32.2

MTC-Slow 2.34.7

MTC - 23.8.00 MTC 23.9.8 MTC - 23.10.0  
 2434 - 15.59.17.7 2107 - 15.58.7 2076 - 15.54.4.2  
 4.49.17.7 4.49.7.0 4.44.04.2

14/15 AM. Ther 32.2

MTC-Slow 2.35.5

MTC - 21.12.0 MTC - 21.13.0 MTC - 21.14.0  
 2434 - 14.01.21.5 2107 - 14.02.6.3 2076 - 13.57.58.6  
 4.49.21.5 4.49.6.3 4.43.58.6

then taken from the store room and placed on the mantle piece Ther - 66 at 21.38 mtc  
 at 22.46. Ther - 72.5

14/15 MTC - 22.48.0.0 — 22.49.0.0 — 22.50.0  
 2434 - 21.5 2107 - 15.38.6.4 2076 - 15.33.58.5  
 MTC - 24.13.0 — 0.15.0.0 — 0.16.0.0  
 2434 5.02.21.6 2107 - 5.4.6.5 2076 4.59.58.3

Ther 78

MTC - 1.57.0 MTC - 1.58.0 — 1.59.0  
 2434 - 6.46.21.5 2107 - 6.6 2076 58.2

At 1.15 Ther 80

Ther 81

Ther 80 up 9.00

MTC - 9.56.0 MTC - 9.57.0 MTC - 9.58.0  
 2434 - 14.45.21.4 2107 - 14.46.7.2 2076 16.41.57.2 Ther 78 -

15/16 MTC - 22.57.0 MTC - 22.52.0 MTC - 22.53.0  
 2434 - 15.40.22.2 2107 - 15.41.9.3 2076 15.37.56.0 Ther - 58 to 62 in closet  
 then on mantle 80

1856

Jan. 11/12

No. 1. Nov. 5. 42.58

|                |             |    |             |    |                |   |              |              |
|----------------|-------------|----|-------------|----|----------------|---|--------------|--------------|
| 1              | 2..34..0    | 1  | 2..37..30.0 | 1  | 2..41..0.0     | 1 | 2..47..30    |              |
| 2 <sup>a</sup> | 2..43..11.1 | 20 | 3..32..32.2 | 31 | 0..53..52.0    | Y | 20..39..54.1 |              |
|                | + 9..11.1   |    | + 55..02.2  |    | -1..47..08.0   |   | 17..52..24.1 |              |
|                | - 5..42.6   |    | - 5..42.6   |    | - 5..42.6      |   |              |              |
|                | + 3..28.5   |    | + 49..19.6  |    | -1..52..50.6   |   |              |              |
| 1              | 2..34..30   | 1  | 2..38..0.0  | 1  | 2..41..30.0    | 1 | 2..44..0.0   |              |
| 3              | 1..08..24.1 | 21 | 2..57..10.8 | 36 | 2..43..4.8     | Z | 8..36..20.9  | Ther 56°-50° |
|                | 1..26..05.9 |    | + 13..10.8  |    | + 01..34.8     |   |              |              |
|                | 5..42.6     |    | - 5..42.6   |    | - 5..42.6      |   |              |              |
|                | 31..48.5    |    | + 7..28.2   |    | - 4..07.8      |   |              |              |
| 1              | 2..35..0    | 1  | 2..38..     | 1  | 2..42..0.0     |   |              |              |
| 4              | 2..56..22.8 | 23 | absent      | 37 | 2..35..21.5    |   |              |              |
|                | + 21..22.8  |    |             |    | - 06..38.5     |   |              |              |
|                | 5..42.6     |    |             |    | - 5..42.6      |   |              |              |
|                | + 15..39.2  |    |             |    | - 12..21.1     |   |              |              |
| 1              | 2..35..30   | 1  | 2..38..30.0 | 1  | 2..42..30.0    |   |              |              |
| 14             | 2..32..37.7 | 24 | 2..58..50.8 | 39 | 2..58..59.7    |   |              |              |
|                | - 2..52.3   |    | + 20..20.8  |    | + 16..29.7     |   |              |              |
|                | - 5..42.6   |    | - 5..42.6   |    | 5..42.6        |   |              |              |
|                | - 8..34.9   |    | + 14..38.2  |    | + 10..47.1     |   |              |              |
| 1              | 2..36..0.0  | 1  | 2..39..30.0 | 1  | 2..43..0.0     |   |              |              |
| 15             | 2..38..15.9 | 28 | 2..34..11.3 | 26 | 10..13..58.6   |   |              |              |
|                | + 2..15.9   |    | - 5..18.7   |    | -4..29..01.4   |   |              |              |
|                | - 5..42.6   |    | - 5..42.6   |    | - 5..42.6      |   |              |              |
|                | - 3..26.7   |    | - 11..01.3  |    | -4..34..44.0   |   |              |              |
| 1              | 2..36..30.0 | 1  | 2..40..0    | 1  | 2..46..0       |   |              |              |
| 16             | 3..00..7.0  | 29 | 2..27..18.1 | 22 | 17..36..11.4   |   |              |              |
|                | + 23..37.0  |    | - 12..41.9  |    | 14..50..11.4   |   |              |              |
|                | - 5..42.6   |    | - 5..42.6   |    | - 5..42.6      |   |              |              |
|                | + 17..54.4  |    | - 18..24.5  |    | + 14..44..28.8 |   |              |              |
| 1              | 2..37..0    | 1  | 2..40..30   | 1  | 2..46..30      |   |              |              |
| 18             | 2..10..31.2 | 30 | 2..54..33.1 | X  | 18..46..15.0   |   |              |              |
|                | - 26..28.8  |    | + 14..03.1  |    | 15..59..45.0   |   |              |              |
|                | - 5..42.5   |    | - 5..42.6   |    |                |   |              |              |
|                | - 32..11.3  |    | + 8..20.5   |    |                |   |              |              |

1856 Jan <sup>25</sup> 26. EE fastNo. 1 Show of gwt. <sup>m</sup> 5.26.1

|                |             |      |             |      |           |       |            |
|----------------|-------------|------|-------------|------|-----------|-------|------------|
| 1              | 1.23.30     | 1    | 1.29.00     | 1    | 1.34.30   | No. 1 | 20.56.0    |
| 2 <sup>a</sup> | 1.38.20.2   | 29   | 1.14.10.5   | 2076 | 1.36.16.2 | M.T.C | 13.37.41.0 |
|                | + 09.50.2   |      | - 14.49.5   |      | + 1.46.2  |       |            |
|                | - 5.26.1    |      | - 5.26.1    |      | - 5.26.1  |       |            |
|                | + 4.24.1    |      | - 20.15.6   |      | - 3.39.9  |       |            |
| 1              | 1.24.30     | 1    | 1.29.30     |      |           | EE    |            |
| 4              | 1.24.57.0   | 30   | 1.44.39.5   |      |           | No. 1 |            |
|                | + 00.21.0   |      | + 15.09.5   |      |           |       |            |
|                | - 5.26.1    |      | - 5.26.1    |      |           |       |            |
|                | - 5.05.1    |      | + 9.43.4    |      |           |       |            |
| 1              | 1.25.00     | 1    | 1.30.00     |      |           |       |            |
| 15             | 1.27.35.4   | 36   | 1.31.37.1   |      |           |       |            |
|                | + 2.35.4    |      | + 1.37.1    |      |           |       |            |
|                | - 5.26.1    |      | - 5.26.1    |      |           |       |            |
|                | - 2.50.7    |      | - 3.49.0    |      |           |       |            |
| 1              | 1.25.30     | 1    | 1.30.30     |      |           |       |            |
| 18             | 0.57.41.2   | 26   | 9.02.18.0   |      |           |       |            |
|                | - 27.48.8   |      | + 7.31.48.0 |      |           |       |            |
|                | - 5.26.1    |      | - 5.26.1    |      |           |       |            |
|                | - 33.14.9   |      | + 7.26.21.9 |      |           |       |            |
| 1              | 1.26.30     | 1    | 1.31.00     |      |           |       |            |
| 20             | 2.27.02.7   | 39   | 1.49.27.0   |      |           |       |            |
|                | + 1.00.31.7 |      | + 18.27.0   |      |           |       |            |
|                | - 5.26.1    |      | - 5.26.1    |      |           |       |            |
|                | + 55.05.6   |      | + 13.00.9   |      |           |       |            |
| 1              | 1.28.00     | 1    | 1.33.30     |      |           |       |            |
| 24             | 1.50.11.0   | 2434 | 1.41.21.3   |      |           |       |            |
|                | + 22.11.0   |      | + 07.51.3   |      |           |       |            |
|                | - 5.26.1    |      | - 5.26.1    |      |           |       |            |
|                | + 16.44.9   |      | + 2.25.2    |      |           |       |            |
| 1              | 1.28.30     | 1    | 1.34.00     |      |           |       |            |
| 28             | 1.22.53.3   | 2107 | 1.41.57.0   |      |           |       |            |
|                | - 5.36.7    |      | + 7.57.0    |      |           |       |            |
|                | - 5.26.1    |      | - 5.26.1    |      |           |       |            |
|                | - 11.02.8   |      | + 2.30.9    |      |           |       |            |

856

Jan <sup>15</sup>/<sub>16</sub> Trial of Cbro. No 14 (141)  
 141-2.55 Mercury in gauge stood at 18 inches Then 63.8  
 then pumped out to 26.9 Then 62.0  
 MTE - 22.41.0

14 - 15.19.28.1 ~~25.1~~  
 16<sup>th</sup> mercury in gauge 15.1 Then 63  
 then pumped out to 26.9 " 61

Jan. <sup>17</sup>/<sub>18</sub> E.C. 2.45.29  
 MTE - 20.16.0 EE - 16.13 " 30 - 16.16.30  
 No 1 - 12.57.29.7 No 1 - 13.01.7.0 - 13.04.06.5

12.57.29.7  
 4.38.52.97  
 8.18.34.73  
 8.16.00.00  
 2.34.73  
 16

16<sup>th</sup> 2.50.73  
 8<sup>th</sup> 2.46.72  
 10) 4.01

Daily Rate 0.40

16.13.30.00  
 2.45.29  
 16.10.44.71  
 19.45.11.90  
 20.25.32.81  
 19.56.43.41  
 24.35.90  
 31.91  
 81

20.22.12.03  
 13.01.07.00  
 4.38.54.97  
 4.44.30.66  
 5.35.69

19.44.25.16  
 46.74  
 19.45.11.90

11<sup>th</sup> E.C. + 2.41.25  
 18 " " 2.45.29  
 7) 4.04 / .58  
 28

Jan. 17<sup>16</sup> Am — Since last comparison the Ther has been, 1<sup>st</sup> 12<sup>th</sup> 78. last. 62.  
mTG flow 2.37.0

MTC- 21..10..0 MTC- 21..11..0 MTC- 21..12..0.0

2434- 13..59..23.8 2107- 14..00..11.5 2076- 13..55..52.7

4..49..23.8

4..49..11.5

4..43..52.7

at 0.45 Ther 80° 3 PM Ther 81.

17<sup>th</sup> PM

2.35.

MTC- 9..8..0 MTC- 9..10..0 MTC- 9..11..0 Ther has been pretty steady

2434 13..57..23.5 2107- 13..59..12.2 2076- 13..56..50.3 - about 80 - for 12 hours

17/18 Am

2.34.7

MTC- 20..48..0 MTC- 20..49..0 MTC- 9..50..0 Ther, has been 80 to 72

2434- 13..37..24.5 2107- 13..38..13.8 2076- 13..33..48.8 during the last 12 hours

18/19 Am

MTC- 21..13..0 MTC- 21..14..0 MTC- 21..15..0 Ther 12<sup>th</sup> at 80

2434- 14..02..25.2 2107- 14..03..16.3 2076 13..58..45 16<sup>th</sup> at 70 6<sup>th</sup> 62.

Jan 21/22<sup>2</sup> Am

EC fast 2..47.18

EC- 16..21..00 MTC- 20..23..0

No. 12 52.53 No. 1- 13..04..35.6

16..21..00

2..47.18

20..0..11.39

40..18..12.82

46.74  
20..0..58.13

20..00..58.13

13..04..35.6

20..17..14.69

4..38..57.73

19..56..43.41

8..25..35.87

16..57.21

8..23..0

13.96

2..35.87

69

16

mTG flow 2.51.87

8..13..55.27

12..52..53.0

4..38..57.73

4..44..30.66

5..32.93

α Scorpii

16..22..37.3

2..52.7

3..7.3

3..22.8

3..37.9

3..53.3

16..22..07.8

16..23..22.66

- 72

16..23..21.46

16..20..33.76

22<sup>nd</sup> EC + 2.47.18

18 EC - 2.45.29

4) 189 / 472

1856  
Jan  $\frac{21}{22}$ No. 1. How  $m^s$  5.32.93

|                   |              |    |              |                   |             |  |  |
|-------------------|--------------|----|--------------|-------------------|-------------|--|--|
| 1                 | 2.. 1..30    | 1  | 2.. 4.. 0    | 1                 | 2.. 7..30   |  |  |
| 2a                | 2.. 11..39.0 | 26 | 9..35..34.5  | 24                | 2..29..9.5  |  |  |
|                   | + 10..09.0   |    | -4..28..25.5 |                   | + 21..39.5  |  |  |
|                   | - 5..32.9    |    | - 5..32.9    |                   | - 5..32.9   |  |  |
|                   | + 6..36.1    |    | ..33..58..4  |                   | + 16..06.6  |  |  |
| 1                 | 1.. 42..00   | 1  | 2.. 4.. 30   | 1                 | 2.. 9..30   |  |  |
| 4                 | 1.. 01..48.5 | 29 | 1..50..16.5  | 16                | 2..34..45.5 |  |  |
| alt <sup>ed</sup> | - 40..11.5   |    | - 14..11.5   | alt <sup>ed</sup> | + 25..15.5  |  |  |
| rate              | - 5..32.9    |    | - 5..32.9    | Rate              | - 5..32.9   |  |  |
|                   | 45..44.4     |    | - 19..47.4   |                   | + 19..42.6  |  |  |
| 1                 | 2.. 2.. 0    | 1  | 2.. 5.. 0    | 1                 | 2..46.. 0   |  |  |
| 4                 |              | 30 | 2..19..50.5  | 2434              |             |  |  |
|                   |              |    | + 14..50.5   |                   |             |  |  |
|                   |              |    | - 5..32.9    |                   |             |  |  |
|                   |              |    | + 9..17.6    |                   |             |  |  |
| 1                 | 2.. 10.. 0   | 1  | 2.. 5.. 30   | 1                 | 2..46..30   |  |  |
| 15                | 2.. 12..30   | 37 | 1..58..20.5  | 2107              |             |  |  |
|                   | + 2..30      |    | - 07..09.5   |                   |             |  |  |
|                   | - 5..32.9    |    | - 5..32.9    |                   |             |  |  |
|                   | - 3..02.9    |    | - 12..42.4   |                   |             |  |  |
| 1                 | 2.. 8.. 0    | 1  | 2.. 6.. 0    | 1                 | 2..47..30   |  |  |
| 21                | 2..21..54    | 36 | 2.. 7..36.5  | 2076              |             |  |  |
|                   | + 13..54     |    | + 1..36.5    |                   |             |  |  |
|                   | - 5..32.9    |    | - 5..32.9    |                   |             |  |  |
|                   | + 8..21.1    |    | - 9..56.4    |                   |             |  |  |
| 1                 | 2.. 8..30    | 1  | 2.. 6..30    |                   |             |  |  |
| 20                | 3.. 7..27.5  | 39 | 2..24..24.5  |                   |             |  |  |
|                   | + 58..57.5   |    | + 17..54.5   |                   |             |  |  |
|                   | - 5..32.9    |    | - 5..32.9    |                   |             |  |  |
|                   | + 53..24.6   |    | + 12..21.6   |                   |             |  |  |
| 1                 | 2.. 9.. 0    | 1  | 2.. 7.. 0.0  |                   |             |  |  |
| 18                | 1.. 41..33.5 | 28 | 2.. 1..29.0  |                   |             |  |  |
|                   | - 27..26.5   |    | - 5..31.0    |                   |             |  |  |
|                   | - 5..32.9    |    | - 5..32.9    |                   |             |  |  |
|                   | - 32..59.4   |    | - 11..03.9   |                   |             |  |  |



1956

Jan. 31 PM

EE - 2..26..0 - 2..27..0 MTE - 5..43..0

No 1 - 10..20..54.5 - 10..21..54.6 No 1 - 10..24..47.3

2..26..0

2..52.95 20.39..36.96

26..23..07.05 4674

20..40..23.70 20 40..23.70 10..24..47.3

5..42..43.35

4..59..10.85

41..53.12

42.86

35

5..41..47.20

10..20..54.5

4..39..07.30

4..44..30.66

- 5..23.36

No 1 - 5..29.08

6) 5.72 / .95  
54  
3

MTE

5..43..00

- 2..40.0

16

m.T.C

- 2..56.09 B

25th Jan Stone

2..54.5

6) 1.5 / .25

+ Arctis

2..1..11.9

1..26.7

1..42.1

1..56.8

2..11.4

2..26.3

2..2..40.8

216.0

180.0

7/396.0

2..01..56.57

- 40

2..01..56.17

1..59..03.22

+ 2..52.95

23 + 2..49.20

8/3.75 / 0.47

1856. Feb. 1<sup>st</sup> Am

No. 1 Slow - 5.22.8

|    |             |      |              |      |               |      |               |     |              |
|----|-------------|------|--------------|------|---------------|------|---------------|-----|--------------|
| 1  | 2..9..0.0   | 1    | 2..13..30    | 1    | 2..17..30     | EE   | 18..35..0.0   | hxc | 21..23..0.0  |
| 2a | 2..19..8.3  | 29   | 1..57..45.6  | 2076 | 2..18..55.5   | 2557 | 18..39..25.6  | 101 | 14..04..48.5 |
|    | +16..08.3   |      | -15..44.4    |      | +1..25.5      |      | +4..25.6      |     |              |
|    | -5..22.8    |      | -5..22.8     |      | -5..22.8      |      | -5..22.8      |     |              |
|    | +4..45.5    |      | -21..07.2    |      | -3..57.3      |      | -0..57.2      |     |              |
| 1  | 2..9..30.0  | 1    | 2..14..0     | 1    | 2..46..0      | EE   | 18..37..0.0   |     |              |
| 4  | 2..9..57.4  | 36   | 2..15..38.2  | u    | 9..35..59.5   | A    | 18..33..0.7.3 |     |              |
|    | +21.4       |      | +01..38.2    |      | +19..49..59.5 |      | -3..52.7      |     |              |
|    | -5..22.8    |      | -5..22.8     |      | -5..22.8      |      |               |     |              |
|    | -5..01.4    |      | -3..44.6     |      | +19..44..36.7 |      |               |     |              |
| 1  | 2..10..0    | 1    | 2..14..30.1  | 1    | 2..46..30     | EE   | 18..38..0.0   |     |              |
| 15 | 2..12..46.6 | 39   | 2..33..49.8  | X    | 10..46..30.5  | D    | 19..11..13.7  |     |              |
|    | +2..46.6    |      | +19..19.8    |      | +8..00..00.5  |      | +33..13.7     |     |              |
|    | -5..22.8    |      | -5..22.8     |      | -5..22.8      |      |               |     |              |
|    | -2..36.2    |      | +13..57.0    |      | +7..54..37.7  |      |               |     |              |
| 1  | 2..10..30   | 1    | 2..15..0     | 1    | 2..47..30     | A    | 18..35..0     |     |              |
| 18 | 1..42..7.4  | 30   | 2..30..33.2  | y    | 12..43..57.3  | D    | 19..12..6.6   |     |              |
|    | -27..22.6   |      | +15..33.2    |      | +9..56..21.3  |      |               |     |              |
|    | -5..22.8    |      | -5..22.8     |      | -5..22.8      |      |               |     |              |
|    | -32..45.4   |      | +10..10.4    |      | +9..50..58.5  |      |               |     |              |
| 1  | 2..11..30.0 | 1    | 2..15..30.0  | 1    | 2..53..0.0    | EE   | 18..46..0.0   |     |              |
| 20 | 3..14..25.7 | 26   | 9..47..41.5  | Z    | 9..24..53.8   | D    | 19..19..13.7  |     |              |
|    | +2..55.7    |      | -4..27..48.5 |      | +6..31..53.8  |      |               |     |              |
|    | -5..22.8    |      | 5..22.8      |      | -5..22.8      |      |               |     |              |
|    | 0 +57..32.9 |      | -4..33..11.3 |      | +6..26..31.0  |      |               |     |              |
| 1  | 2..12..0    | 1    | 2..16..30    |      |               |      |               |     |              |
| 28 | 2..6..15.2  | 2107 | 2..24..40.6  |      |               |      |               |     |              |
|    | -5..44.8    |      | +08..10.6    |      |               |      |               |     |              |
|    | -5..22.8    |      | -5..22.8     |      |               |      |               |     |              |
|    | -11..07.6   |      | +2..47.8     |      |               |      |               |     |              |
| 1  | 2..12..30.1 | 1    | 2..17..0     |      |               |      |               |     |              |
| 24 | 2..35..30.9 | 2234 | 2..24..52.3  |      |               |      |               |     |              |
|    | +23..00.9   |      | +07..52.3    |      |               |      |               |     |              |
|    | -5..22.8    |      | -5..22.8     |      |               |      |               |     |              |
|    | +17..38.1   |      | +2..29.5     |      |               |      |               |     |              |

1856.

Feb 1/2.

E C path. 2.53.44

M.T.C. 21.6.0 M.T.C. 21.07.0 M.T.C. 21.11.0

130-320 - 14.3.27.7 234 9.21.5.2 151 - 13.52.50

E.C. 18.09.0

D - 18.42.30.5

+ 33.30.5

noon

E.C. 21.4.0 M.T.C. 0.13.0

D - 311 - 21.37.32.7 D - 21.40.26.4

Feb 1/2.

α Scorpio

E.C. 16.22.42.5

2.57.5

3.13.7

3.28.5

3.43.9

3.57.9

16.24.13.8

258.1

- 60.0

2198.1

.28.30

- 72

16.23.27.58

NA - 16.20.34.14

E.C. + 2.53.44

Feb. <sup>5</sup>/<sub>6</sub>

M7E - 21.17.0 M7E 21.37.0 EE 18.48.15 EE - 18.54.15  
 No1 - 13.58.55.4 No1 - 14.18.55.5 No1 14.20.52 No1 - 14.26.57

13.58.55.4

4.39.13.5

9.19.41.9

4.17.00.0

Carn - 2.41.9

16

M7E slow 13.2.57.9

31 - 2.55.92

6) 1.98 / 0.33

18.48.15.0

2.56.2

42.45.18.8

21.00.06.46

21.45.12.32

20.56.33.54

44.52.63

11.97

32

9.41.38.50

4.44.30.66

14.26.09.16

No 14.20.52

No1 slow - 5.17.16

Feb. 1 - 5.22.8

55.64 / +1.13

6 + 2.56.20

2 = 2.53.44

4) 2.76 / 0.69

α Scorpio

EE - 16.22.45.2

3.00.4

16.3

31.3

46.5

1.4

16.24.16.5

158.0

60

7/218.0

31.14

-0.72

16.23.30.42

20.34.22

69  
 4.14  
 2.56.20  
 3.00.34

Feb. <sup>6</sup>/<sub>7</sub>

EE - 19.0.0.0 — 19.1.0.0 — 19.2.0.0 — 19.3.0.0  
 2557 - 19.4.40.3 424 - 18.57.59 A - 18.57.55.2 D - 19.37.54.7  
 - 4.04.8 + 34.54.7

EE - 19.9.0.0 46.6° EE - 19.11.0 EE - 19.15.0

X - 21.22.30.6 2419 - 19.8.15 2440 - 19.12.12.7

Feb. <sup>8</sup>/<sub>9</sub>

EE - 18.39.0.0 — 18.40.0.0 — 18.42.0.0 — 18.43.0.0  
 2557 - 18.43.45.8 424 - 18.36.57.7 A - 18.37.52.5 D - 19.18.29  
 - 4.07.5 + 35.29

EE - 18.44.0.0 — 18.45.0.0 — 18.48.0.0

2419 - 18.41.20.8 2440 18.42.30 X - 20.56.48.9 Ther 58

Feb.  $\frac{12}{13}$ EC fast by ratio  $\frac{m}{3.00.3}$ 

EC - 19..20..0 — <sup>cor</sup> 19..21..5 — 19..24..0 — 19..26..0  
 2575 19..24..52.6 424-19..17..57.7 2419- 19..21..30.3 2440- 19..24..3

EC - 19..27..0 — 19..28..0 — 19..30..0  
 A - 19..22..43 D - 20..44..35.5 Z - 9..31..6.0 Ther 42°  
 4..17.0 + 36..35.5

Feb.  $\frac{13}{14}$ 

mean temp - 37°

EC - 19..31..0 — 19..33..0 Ther 30 — 19..37..0  
 2575-19..35..53.6 Z - 9..32..35.5 2419- 19..34..32

EC - 19..49..0 — 19..50..0 — 19..52..0  
 2440-19..47..10.7 A - 19..45..40 D - 20..28..57.4

Feb.  $\frac{13}{14}$ 

E.b. fast. 3.00.85

$ME - 21.40.0 - 21.41.0 - 21.42.0 - 21.44.0$   
 $Nr1 - 14.22.10.8 \quad 20.15.31.17.5 \quad 28.14.18.20 \quad 30.14.42.40.7$

$9.42.0$   
 $2.46.3$

$9.44.46.3$   
 $4.44.30.7$

$14.29.17.0$   
 $18.20.0$

$10.57.0$

$\alpha$  Aquilae

$19.46.03.8$

$6.18.0$

$6.32.2$

$6.45.4$

$6.59.7$

$7.13.7$

$19.47.26.8$

$199.6$

$120$

$7.319.6$

$.46.45.64$

$-64$

$19.46.45.00$

$19.43.44.15$

$EE + 3.00.85$

$6\pi + 2.56.20$

$8/4.65/0.58$

$EE - 19.28.30$   
 $Nr1 - 14.29.39.5$   
 $19.28.30$

$3.00.85$

$21.30.52.18$

$43.25.29.15$

$46.74$

$21.31.38.92$

$21.31.38.92$

$21.53.50.23$

$20.56.33.58$

$Nr1 - 14.22.10.8$

$52.57.32$

$4.39.24.51$

$49.86$

$9.42.46.29$

$.23$

$ME 9.40.00.0$

$9.50.14.99$

$M.T.C. flow of 2.46.29$

$4.44.30.66$

$16$

$14.34.45.65$

$M.T.C. flow of 13-3.02.29$

$Nr1 - 14.29.39.5$

$2.57.9$

$Nr1 flow of Qr - 5.06.15$

$8)4.39/0.55$

$fast of Cambr 4.39.24.51$

Feb. 16<sup>+</sup> R.D. 1 B.M.

$EE - 22.55.0$

$EE - 22.56.0$

$A - 22.57.52$

$D - 22.57.57.5$

156

Feb. 20/21

MTC - 22.23.0 — 22.24.0 — 22.25.0 — 22.26.0  
 No 1 - 15.05.25 20-16.17.19.8 28-15.01.26.7 30-15.25.28.6  
 .42.25 10.26.0

MTC - 22.29.0 — 22.30.0 — 2.49.8  
 141- 13.13.39.3 280-10.00.26.7 10.28.49.8  
 4.44.30.7  
 15.13.20.5  
 15.25.28.6  
 12.08.1

MTC flow - 2.49.8

20/21

EC - 20.42.0 — 20.43.0 — 20.44.5 — 20.45.0  
 2557-20.46.1.5 424-20.39.41.4 2449 20.43.7 2419-20.42.47.2

EC - 20.47.0 — 20.48.0 — 20.49.0  
 A. 20.43.41.3 D - 20.51.10.7 Z - 22.36.26.3

21/22

M.T.C flow of Camb. 2.50.4

M.T.C. 21.55.0 — 21.57.0 — 22.11.0 — 22.12.0  
 No 1 - 14.37.27.7 20-15.50.45.5 28-14.47.28.7 30-15.11.36.2  
 10.12.50.4

No 1 - 14.46.0 — 14.46.30 — 14.47.30  
 U - 13.47.1.40 X 14.58.34.5 Y 17.59.53.5  
 10.14.50.4  
 4.44.30.7  
 14.59.21.1  
 15.11.36.2  
 12.15.1

MTC - 23.14.0 MTC - 23.15.0  
 141 - 12.58.38.8 280 - 9.45.27.

EC - 20.31.0 — 20.32.0 — 20.33.0 — 20.34.0  
 2557-20.36.30.6 2419-20.29.49.7 2440-20.32.15.7 424-20.30.39.3  
 5.3.6

EC - 20.36.0 — 20.37.0 — 20.49.0  
 A - 20.32.40.4 D - 20.40.28.4 Z - 22.34.03.5

Febr. 21<sup>st</sup> PM86 fast - 3<sup>m</sup> 05.45EC - 4<sup>m</sup> 1.40 — 4<sup>m</sup> 04 " 40 MSG - 5.57.0No 1 - 10<sup>m</sup> 34.1 1.0 — 10<sup>m</sup> 37 " 0.5No 1 - 10<sup>m</sup> 34.26

4 " 42 " 26

4<sup>m</sup> 1.4022<sup>m</sup> 03.24.623<sup>m</sup> 05.45

46.74

27<sup>m</sup> 58.34.5522<sup>m</sup> 4.11.3622<sup>m</sup> 04.11.365<sup>m</sup> 54.23.1910<sup>m</sup> 29.264<sup>m</sup> 59.10.85

4 40.35.9

53.57.15

5.58.50.1

22.94

56

19

2<sup>m</sup> 50.15<sup>m</sup> 53.25.13

16

4<sup>m</sup> 44.30.663<sup>m</sup> 06.110<sup>m</sup> 37.55.793<sup>m</sup> 02.2410<sup>m</sup> 34.01.

7/3.8 / 0.53

No 1 ~~from 1/2~~ 3.54.794<sup>m</sup> 40.35.8914<sup>m</sup> - 5<sup>m</sup> 6.154<sup>m</sup> 52.79

7) 11.36 / 1.62

23

8<sup>m</sup> Eridani

53 42.5

3 56.6

4 11.3

4 24.0

4 39.3

4 53.5

3<sup>m</sup> 55.06.8

234.0

- 60

7) 174.0

24.86

- 7

3<sup>m</sup> 54.24.163<sup>m</sup> 51.18.7586 fast 3<sup>m</sup> 05.453<sup>m</sup> 00.93

7) 4.52 / 0.64

Feb.  $\frac{24}{25}$ 

M.T.C. - 20... 8... 00

No 1 - 12... 50... 34.7

12... 50... 34.7

4... 39... 43.27

8... 10... 51.43

8... 8... 00.00

M.T.C. Flow of 6. 2... 51.43

16

M.T.C. Flow of Boston 3... 07.43

22<sup>0</sup> 3... 06.36

2) 1 07.53

E 6 - 18.44... 10

No 1 - 13... 2... 23.5

18... 44... 10

42... 41... 02.11

22... 15... 01.03

20... 26... 01.08

19... 56... 43.41

25... 55... 74

1.08

8... 22... 40.23

4... 44... 30.66

13... 07... 10.89

13... 2... 23.5

No 1 flow - 4... 47.39 of gwt

4... 44... 30.66

No 1. fast 4... 39.43.27 of Camb

E 6 fast 3... 07.89

B Lyral

18... 47... 3.7

7... 20.0

7... 37.1

7... 53.9

8... 9.2

8... 25.7

.48... 41.5

7/371.1

18.47... 53.01

-3

18.47... 52.71

44... 44.82

E.C. fast - 3... 07.89

24/25

22 - 19... 1... 0 - 19... 2... 0 - 19... 3... 0 - 19... 4... 0

2557 - 19... 6... 8.8 224 - 18... 58... 32.8 2419 - 19... 02... 56.6 2440 - 19... 3... 41

5... 8.8

22 - 19... 5... 0 - 19... 6... 0 - 19... 7... 0

A - 19... 1... 36.3 D - 19... 10... 18.7 Z - 20... 46... 0.2

Z mean time at 71°

Feb.  $\frac{26}{27}$ -

UCC-21..36..0      EE-20..13..15  
 No1-14..18..40.2      No1-14..23..25

Feb fast.  $\frac{26}{27}$ 

25/26

 $\alpha$  Lyrae.

18..34..18.3

4..36.0

4..52.5

5..11.3

5..28.8

5..46.4

36..03.2

78.5

18..35..11.21

18..35..10.<sup>3</sup>91

32.02.82

E.C. + 3.08.09

14<sup>th</sup> - 3.00.6513) 7.24 / 0.45  
 $\frac{68}{6}$ 

26-27-

EE-20..15..0 — 20..16..0 — 20..17..0 — 20..18..0

2557-20..20..13.2 424-20..12..29.3 2419-20..15..1.3 2440-20..17..59.2

5..13.2

EE-20..19..0 — 20..20..0 — 20..21..0      EE-20..31..30

A-20..15..34.1 5-20..24..54.6 Z-21..55..30.6      No1-14..41..37

Feb. 28<sup>th</sup> PM

E.C. fast 3.08.76

H.C. - 3.15.0

E.C. - 1.55.45

E.C. - 1.58.45.0

No 1 - 7.57.43.4

No 1 - 8.01.05

No 1 - 8.04.4.5

7.57.43.40

25.55.45.00

4.39.49.07

3.08.76

3.17.54.33

25.52.36.24

3.15.00.00

22.30.47.25

M.C. slow of C 2.54.33

3.21.48.99

16

2.59.30.57

28<sup>th</sup> 3.10.33

20.56.56

26<sup>th</sup> 3.07.43

47.87

4) 2.90

99

- 0.72

3.21.15.93

4.42.30.66

8.05.46.59

8.01.05.00

4.41.59

4.44.30.66

4.39.49.07

27/28. Id ment

Eagula

19.01.13.6

27.7

42.3

56.0

10.0

22.2

19.02.38.0

7/391.8

19.01.55.97

- 57

19.01.55.40

Eagula

19.46.12.1

25.9

40.4

53.7

7.7

21.7

19.47.34.8

7/376.3

19.46.53.76

- 57

19.46.53.19

March 1<sup>st</sup> Am.

E.C. - 20.11.0 — 20.12.0 E.C. 20.15.0

A - 20.7.36.45 D - 20.17.46.95 Z - 9.42.58.5

E.C. - 20.16.0

E.C. - 20.20.0

E.C. - 20.21.0

2557 - 20.21.19.2

424 - 20.16.24.1

2440 - 20.21.25.5

5.19.2

E.C. - 20.23.0

2419 - 20.21.09.3

March  $\frac{4}{5}$ 

MTC - 20..34..0 EC 19..39..0

No 1 - 13..16..58.7 No 1 - 13..21..54.2

13..16..58.7

19..39..0

4..39..59.5

3..11.27

22..49..43.28

4/5<sup>th</sup>  $\alpha$  Aquila $\alpha$  Aquila

8..36..59.2

43..35..48.73

46.74 19..41..52.0

19..46..14.7

8..34..00.0

22..50..30.02

22..50 30.02

42.08.0

28.5

2..59.2

20..45..18.71

22.5

43.0

16

19..56..43.41

36.0

56.4

3..15.2

44..52.63

49.9

10.3

28<sup>th</sup> - 3..10.0

17.95

03.7

24.2

6/5.2/0.87

71

19..43..17.2

19..47..37.6

8..41..54.70

7/257.3

7/394.7

4..44..30.66

19..42..35.90

19..46..56.38

13..26..25.36

-57

-57

13..21..54.2

19..62..35.33

19..46..55.81

4..31.16

39..23.98

3..44.61

4..39..59.50

EC for 3..11.35

3..11.20

EC - 20..3..0 — 20..4..0 — 20..5..0 — 20..6..0

+ - 14..59..23.4 D - 20..10..56.0 2557 - 20..10..25.5 424 - 20..02..13.5

5..25.5

EC - 20..7..0 — 20..8..0 — 20..13..0

2440 - 20..7..59.2 2419 - 20..6..18.5 Z - 21..33..8.6

MTC slow of 6 - 2..59.2

MTC - 21..15..0 — 21..17..0 — 21..18..0

No - 20 - 15..14..1.5 28 - 13..53..54.5 30 - 14..19..9.5

9..15..0

9..17..0

9..18..0

2..59.2

2..59.2

2..59.2

9..17..59.2

9..19..59.2

9..20..59.2

4..44..30.7

4..44..30.7

4..44..30.7

14..02..29.9

14..04..29.9

14..05..29.9

15..14..1.5

13..53..54.5

19..9.5

1..11..31.6

-10..35.4

13..39.6

March 8

M7C-18-49-0 — 18-50-0 — 18-52-0 — 18-54-0  
 No1-11-32-1.7 20-12-49-25.5 28-11-28-56.6 30-11-55-16.8  
 6-52-0 18-53-8 18-52-0 6-52-0  
 11-36-30.7 4-44-30.7 4-44-30.7 11-41-30.7  
 11-32-1.7 12-49-25.5 6-55-0 11-55-16.8  
 4-29-0 1-14-54.8 4-44-30.7 13-46-1  
 5-22.8  
 34/53.8/1.2  
 34  
 98

11-39-30.7  
 28-56.6  
 10-34-1  
 11-07-6  
 34/3 3.5/0.99  
 29

No1  
 28  
 30  
 200

March 10<sup>th</sup> P.M.

EC-4-38-0 — 4-40-0  
 2557-4-43-30.8 — 4-45-31.2

March 7<sup>th</sup>

$\Sigma C - 20.43.0 \quad \text{---} \quad 20.44.0 \quad \text{---} \quad 20.45.0 \quad \text{---} \quad 20.46.0$   
 $2557 - 20.48.31.3 \quad 224 - 20.40.6.8 \quad 2419 - 20.43.26.2 \quad 2440 - 20.47.27.3$   
 $5.31.3$

$\Sigma C - 20.47.0 \quad \text{---} \quad 20.48.0 \quad \text{---} \quad 20.49.0$   
 $A - 20.43.18.6 \quad D - 20.55.49.4 \quad Z - 10.02.50.7$

March 10<sup>th</sup> PM

$\Sigma C - 4.38.00 \quad 4.40.00 \quad - \quad MSC - 5.19.50.0$   
 $2557 \quad 4.43.30.8 \quad 4.45.31.2 \quad 2557 - 4.46.41.5$   
 $+ 5.30.8 \quad 4.40.00.00$

$3.14.23$   
 $4.36.45.77$   
 $4.45.31.20$   
 $08.45.43$   
 $4.46.41.50$   
 $4.37.56.07$   
 $23.14.09.34$   
 $5.23.46.73$   
 $4.59.10.85$   
 $22.56.23$   
 $45.87$   
 $73$   
 $5.22.53.68$   
 $5.19.50.00$   
 $3.03.68$   
 $16$

10<sup>th</sup>  
5<sup>th</sup>

3.19.68

3.15.20

5/4.48

Losing daily 0.89

 $\alpha$  Jauri

4.30.11.7

25.8

40.4

52.4

31.08.5

23.0

36.5

7/380.3

4.30.52.32

-5.7

4.30.53.75

4.27.39.52

CC closing 3.14.23

March  $\frac{11}{12}$ 

EC - 21.18.0 — 21.19.0 — 21.20.0 — 21.21.0  
 A - 21.14.7 D - 21.27.54.3 424 - 21.15.58.0 2419 - 21.19.32.4

EC - 21.22.0 — 21.23.0  
 2440 - 21.23.53.8 Z - 22.30.55.9

March 14<sup>th</sup>

EC - 23.32.0  
 2557 - 23.36.21.2

March 12 - Average Rate

EC - 20.11.0  
 2557 - 20.15.19.7

14<sup>th</sup> P.M.

EC - 5.18.0  
 2557 - 5.22.21.7  
 5.18.0  
 3.15.8  
 2.9.14.44.2  
 5.22.21.7  
 .07.37.5

E. b. Hart - 3.15.8

MTC - 6.04.10 23.29.8.81  
 2557 - 5.45.50 46.24  
 5.45.50 3.24.55.55  
 7.37.5  
 29.38.12.5  
 23.29.55.55  
 6.08.06.95  
 5.59.01.02  
 7.58.69  
 15.95  
 95  
 6.07.16.61  
 4.10.0  
 A.T.C. - 3.06.61  
 16  
 13 3.22.61  
 10<sup>th</sup> 3.19.64  
 4/2.43/0.73

March  $\frac{14}{15}$ 

$EC - 20..2..0 \quad \text{---} \quad 20..4..0 \quad \text{---} \quad 20..6..0 \quad \text{---} \quad 20..7..0$   
 $2557 - 20..6..22.6 \quad 424..19..59..48.5 \quad 2419..20..4..40.3 \quad 2440..20..9..27.2$

$EC \quad 20..08..0..0 \quad \text{---} \quad 20..10..0 \quad \text{---} \quad 20..11..0$   
 $A \quad 20..04..04.4 \quad D - 20..19..48. \quad L - 21..12..02$

March  $\frac{16}{17}$ 

E C fast 3.16.44

$EC - 20..15..0 \quad \text{---} \quad 20..16..0 \quad \text{---} \quad 20..17..0 \quad \text{---} \quad 20..18..0$   
 $2557 - 20..19..23.8 \quad 424..20..11..45.5 \quad 2419..20..15..45 \quad 2440..20..20..45.3$   
 $\quad \quad \quad 3..16.44$   
 $\quad \quad \quad 20..11..43.56$   
 $\quad \quad \quad 20..19..23.3$   
 $\quad \quad \quad + 7.39.74$

$EC - 20..19..0 \quad \text{---} \quad 20..20..0 \quad \text{---} \quad 20..21..00$   
 $A - 20..15..2.5 \quad D - 20..30..23.4 \quad L - 21..17..42.5$

25) 2.02/1.11  
0.00

$MTE - 20..38..30 \quad 23..37..01.92$   
 $2557 - 20..30..31 \quad 46.74$   
 $\quad \quad \quad 20..30..31 \quad 23..37..48.66$   
 $\quad \quad \quad 7..39.74$   
 $\quad \quad \quad 24..22..51.26$   
 $\quad \quad \quad 23..37..48.66$   
 $\quad \quad \quad 20..45..02.60$   
 $\quad \quad \quad 19..56..43.41$   
 $\quad \quad \quad 44..52.63$

$\quad \quad \quad 1.99$   
 $\quad \quad \quad .60$   
 $20..41..38.63$   
 $20..38..30..$

$MTE - 14^* Am - 3..22.41$   
 $17 - 3..24.63$   
 $3/2..22/1.74$

$MTE Slow - 3..08.63$   
 $\quad \quad \quad 16$   
 $\quad \quad \quad 3..24.63$

March  $\frac{20}{21}$ 

$EE - 20..34..0 \quad \text{---} \quad 20..35..0 \quad \text{---} \quad 20..36..0 \quad \text{---} \quad 20..37..0$   
 $2557 - 20..38..29.6 \quad 424 - 20..30..35.3 \quad 2419 - 20..34..54.7 \quad 2440 - 20..40..24.6$

$EE - 20..38..0 \quad \text{---} \quad 20..39..0 \quad \text{---} \quad 20..40..0$   
 $A - 20..34..0.6 \quad B - 20..50..39.2 \quad Z - 21..25..37.7$

March  $\frac{31}{22}$ 

$EE - 20..24..0 \quad M.X.E. - 20..23..50$

$2557 - 20..28..30.7 \quad 2517 - 20..35..45$

$20..24..00.00$

$20..35..45.00$

$3..17.43$

$7..48.13$

$20..20..42.57$

$20..27..56.87$

$20..28..30.70$

$23..57..31.43$

$7..48.13$

$20..30..25.44$

$19..56..43.41$

$29..55.08$

$24.93$

$44$

$20..27..03.86$

$20..23..50.00$

$3..13.86$

$16$

$M.E.C. flow of 13 \quad 3..29.86$

$16^{\text{th}} \quad 3..24.63$

$5 \quad 5.23$

$M.E.C. being \quad 1.04$

$E.C. fast - 3..17.43$

$23..56..44.69$

$46.74$

$23..57..31.43$

$\alpha \text{ Lyrae}$

$\beta \text{ Lyrae}$

$18..34..28.9$

$18..47..14.3$

$46.3$

$30.7$

$04.6$

$47.9$

$21.7$

$48..03.8$

$39.3$

$20.1$

$56.8$

$36.5$

$18..36..13.6$

$52.3$

$211.2$

$205.6$

$60$

$180$

$7 \quad 151.2$

$7 \quad 25.6$

$21.60$

$18..48..03.66$

$-57$

$-57.57$

$18..35..21.03$

$18..48..03.09$

$18..32..03.65$

$18..44..25.60$

$3..17.38$

$3..17.49$

$5.23$   
 $1.04$

March  $\frac{23}{24}$ 

EE - 21..13..0 — 21..14..0 — 21..15..0 — 21..16..0  
 2557-21..17..33.2 424-21..09..29.4 2419-21..13..57.3 2440-21..19..54.6

EE - 21..17..0 — 21..18..0 — 21..19..0  
 A - 21..12..58.7 D - 21..30..35.3 Z - 21..56..58.7

March 25<sup>th</sup> P.M.

EC fast 3..18..33

EE - 5..14..0 M.T.C - 21..56..20

2557-5..18..34.7 2557-5..21..37.5

5..14..00.00

3..18..33

5..10..41.67

5..18..34.70

7..53..03

0..12..30.90

46.74

0..13..17.64

5..21..37.50

7..53..03

5..13..44.47

0..13..17.64

5..00..26.83

4..59..10.85

25.93

83

4..59..37.61

4..56..20.00

M.T.C. Slow of Boston 3..17.61

16

3..29.86

52

3..30.38

25<sup>th</sup> " " bank 3..33.6122<sup>nd</sup> PM 3..30.38

3 3.23

1.07

 $\alpha$  Orionis

5..50..00.1

14.0

28.3

41.8

55.5

9.4

22.8

171.9

120

7 291.9

41.70

-57

5..50..41.13

5..47..22.67

3..18.46

 $\mu$  Perseus

6..16..49.5

04.3

19.7

34.2

49.0

3.7

18.1

178.5

60

7 238.5

34.07

.57

6..17..33.50

6..14..15.30

3..18..20

3..18.33

March  $\frac{25}{26}$ 

M.T.C. - 20..08..45 E.C.

2557 - 20..36..34.5 2557 -Mar  $\frac{25}{26}$ 

E.C. - 20..35..0 — 20..36..0 — 20..37..0 — 20..49..0

2557 - 20..39..36 236 - 20..31..57.4 D - 20..50..12.2 424 - 20..44..26.6  
4..36

E.C. - 20..50..0 — 20..51..0 — 20..52..0

2419 - 20..49..58.7 2440 - 25..55..13.5 2 - 21..24..37.4

March  $\frac{27}{28}$ 

$EE - 22.37.0 \quad \text{---} \quad 22.38.0 \quad \text{---} \quad 22.39.0 \quad \text{---} \quad 22.40.0$   
 $2557 - 22.41.38.5 \quad 2419 - 22.37.0.4 \quad 2440 - 22.43.34 \quad A - 2.35.55.4$   
 $4.38.5$

$EE - 22.41.0 \quad \text{---} \quad 22.42.0$   
 $B - 22.54.57.3 \quad Z - 23.09.8$

March  $\frac{30}{31}$   $EE - \text{fast} \quad 3.20.98$   
 $\frac{21}{22} - \text{---} \quad 3.17.43$   
 $9/3.55/10.4$

March  $\frac{31}{32}$ 

$EE - \text{fast} - \overset{m}{3.21.38}$

$2557 - \text{fast} \quad \frac{21}{32} - 7.48.13$   
 $\frac{3}{2} - 8.01.68$   
 $1/3.55$   
 $+1.35$

$EE - 21.16.0 \quad \text{---} \quad M.Y.E. - 20.33.35$

$2557 - 21.20.40.3$   
 $21.16.0.0$

$2557 - 21.25.20$   
 $21.25.20$

$0.36.10.22$

$3.21.38$

$8.01.68$

$46.74$

$21.12.38.62$

$21.17.18.32$

$0.36.56.96$

$21.20.40.3$

$0.36.56.96$

$2557 - \text{fast} \quad 8.01.68$

$20.40.21.36$

$19.56.43.41$

$39.53.45$

$20.94$

$36$

$20.36.58.16$

$M.Y.E. - 20.33.35$

$3.23.16$

$16$

$M.T.G. Slow$

$32.0$

$3.39.16$

$22.0$

$3.29.86$

$10/9.36 \text{ for } 0.93$

556

April 1<sup>st</sup>

86- 5.56.0 EC- 5.58.0 MRE- 5.12.05

2557- 6.00.40.7 2557- 6.02.40.7 2557- 6.05.16

April 2 P.M.

C.G. fast- 3.20.52

86- 5.57.0

MRE- 5.5.55

A236- 5.52.49.4

A236- 5.54.11

0.44.03.33

5.57.0

5.54.11

46.74

3.20.52

50.08

0.44.50.07

5.53.39.48

5.55.01.08

A

5.52.49.4

0.44.50.07

- 50.08

5.10.11.01

4.59.10.85

9.58.36

10.97

.01

5.09.20.19

5.05.55.

M.R.C. - 7 lanes 3.25.19

16

qB-

3.41.19

April 5th

C.C. fast 3.22.16

E.C. - 4.24.0  
 236 - 4.19.47.5  
 4.24.0.0  
 3.22.16  
 4.20.37.86  
 4.19.47.5  
 - 0.50.34

M.T.C. - 3.17.40  
 236 - 4.17.31  
 50.34  
 4.18.21.34  
 56.39.73  
 3.21.41.61  
 2.59.30.57  
 20.56.56  
 40.89  
 61  
 3.21.08.57  
 3.17.40.0  
 3.28.57  
 16

M.T.C. Slow. B - 3.44.57  
 2 Apr. Pk 3.41.19  
 3/3.38/1.12

0.55.52.99  
 46.74  
 56.39.73

3) 2.3/.87  
 1.54

85/7.58/0.

2 Pk. 5.20.52

5. - 3.22.16

2) 1.64/55

1856. April <sup>7</sup> 8

E.6. fast 3.24.35

$$\begin{array}{r} 17.2 \\ 2.1 \\ \hline 1.1 \end{array}$$

E.C. - 23.29.00

M.E.C. - 22. 18. 00

236 - 23.24.12.4

236 - 23. 28. 57.5

23.29.00

23. 28. 57.5

1.03.46.10

2. 3.20.52

3.24.35

53.25

46.74

7. 3.24.00 E.C.

23.25.35.65

23.29.44.75

.4.32.84

$$\begin{array}{r} 73.48 \\ \hline 1.69 \end{array}$$

23.24.42.4

1. 4. 32.84

- 53.25

$$\begin{array}{r} 22.25.11.91 \\ \hline \end{array}$$

21. 56. 23.75

24. 55.90

10.97

.91

22.21.31.53

22. 18

3.31.53

16.

3.47.53

$$\begin{array}{r} 2 \\ 5. 3. 22. 16 \end{array}$$

$$\begin{array}{r} 7/8 - 3. 24. 35 \end{array}$$

$$\begin{array}{r} 25) 219 / 0.8.8 \\ \hline 190 \end{array}$$

April 11<sup>th</sup>

E.C. - fact 3.. 23.78

$\Sigma C - 5..15..0$   
 $236 - 5..10..41.7$   
 $5..15..0.0$   
 $3..23.78$   
 $5..11..36.22$   
 $5..10..41.7$   
 $- 54.52$

$MTC - 3..32..50$   
 $236 - 4..56..26$   
 $4..56..26$   
 $54.52$   
 $4..57..20.52$   
 $1..20..19.06$   
 $3..37..01.46$   
 $2..59..30.57$   
 $36..53.94$   
 $1.45$   
 $3..36..25.90$   
 $3..32..50$   
 $- 3.35.90$   
 $16$   
 $3.51.90$   
 $3..44.57$   
 $6/7.33/1.22$

11/12 April.

$MTC - 20..34..25$   
 $A 236 - 22..00..49.5$   
 $22..27..0$   
 $A - 22..03..41.7$   
 $\Sigma C - 22..29..0$   
 $L - 22..19..36.5$   
 $22..29..33.6$   
 $22..31..0$   
 $2440 - 22..38..0.5$   
 $22..27..57.3$

April 15 PM - E.C. part of barnb -  $3..23.92$   
 " " - M.T.C. from J Boston -  $3..55.88$   
 15th " - " -  $3..51.90$   
 $4/3.98/0.995$

April  $\frac{16}{17}$ 

E.C. - fast. 3..24.28

E 6-- 19..59..0  
 A 236- 19..54..39.5  
 19..59..0  
 3..24.28

19..55..35.72

19..54..39.5

236. Flow 56.22

m.b. 6-18..12..45 mte-18..15..45

A 236-19..58..32.5 A-20..01..33

19..58..32.5

56.22

1..39..15.09

19..59..28.72

1..40..01.83

1..40..01.83

18..19..26.89

17..57..03.07

18..56.89

25.93

89

6..16..26.78

6..12..45

Lam- 3..41.78

m.t.c - 3..57.78  $15^{\frac{1}{2}} \cdot 3.55.88 \div 2, 1.90 = 0.95$ 

April 17/18

E.C. Fast- 3..24.52

April - 18 P.M.

E.C. - 8..41..00

m.t.c - 6..43..45

A - 8..36..38.7

A - 8..35..34

1..47..08.20

8..41..00

8..35..34

46.74

3..24.52

56.78

1..47..54.94

8..37..35.48

8..36..30.78

8..36..38.7

1..47..54.94

A - 56.78

6..48..35.84

5..59..01.02

47..52.13

34.91

84

6..47..28.90

6..43..45

3..43.90

16

18<sup>+</sup> P.M.

3..59.90

17. Am

3..57.78

3) 2.12 (.70)

 $\frac{1.40}{2}$  Daily rate of m.t.c.

1856 - April 19<sup>th</sup> - about noon

E. C. - was found stopped at <sup>h</sup> 1. 24.50 of its own time

Let - 55 seconds fast of A. No 236.

Mr. Lodge - offers

To sell his Telegraph line, from Posters  
to Boston - for

250 dollars

or The whole line from Posters to Boston.  
(Devonshire Street) with the privilege of  
putting his wires on the Pacts as far as the  
Cambridge crossing - for

200 - "

To allow us to put a loop on his wire  
extending to the Observatory, and paying  
him for any time we may use, the usual rates - for -

April <sup>22</sup>/<sub>23</sub> -

E C - 20. 44. 00

M C C - 18. 37 . 35

M C C

236 - 20. 43. 3.1

236 - 20. 47 . 11.5

of Lamb - 3. 48. 42

1856

April 23<sup>rd</sup>

$E_b - 4 \dots 37 \dots 00$   
 $236 - 6 \dots 48 \dots 15.5$

$E_b - 6 \dots 52 \dots 0$   
 $236 - 6 \dots 51 \dots 3.6$

April 25<sup>th</sup> P.M.

E.b. Slow - 0.79

 $E_b - 5 \dots 13 \dots 0$  $MTC - 3 \dots 39 \dots 40$  $m.t.c. 34 \dots 42 \dots 50$  $236 - 5 \dots 12 \dots 4.8$  $236 - 5 \dots 58 \dots 42.5$  $236 - 6 \dots 02 \dots 53$  $5 \dots 13 \dots 0.79$  $2 \dots 19 \dots 02.5$  $2 \dots 19 \dots 03$  $5 \dots 12 \dots 4.8$  $5 \dots 58 \dots 42.5$  $236 - \text{Slow} = 55.99$  $55.99$  $2 \dots 14 \dots 44.09$  $5 \dots 59 \dots 38.49$  $46.74$  $2 \dots 15 \dots 30.83$  $2 \dots 15 \dots 30.83$  $3 \dots 44 \dots 07.66$  $2 \dots 59 \dots 30.54$  $43 \dots 52.79$  $6.98$  $.66$  $3 \dots 43 \dots 30.94$  $3 \dots 39 \dots 40.00$  $3 \dots 50.94$  $16$  $25^{\text{th}} \text{ P.M.} - 4 \dots 06.94$  $18^{\text{th}} \text{ P.M.} - 3 \dots 59.90$ 

Rate

 $7/7.04 / 1.00$ Apl  $\frac{27}{28}$ 

$E_b$  - old and adjusted on heat, before this  
 comparison was made

1856.  
May 1<sup>st</sup> PM

E.C. fast 36.72

E.C. - 6..33..0.0

236- 6..31..29.0

6..33..0.0

36.72

6..32..23.28

6..31..29

-54.28

M.T.C - 3..46..0.0

236- 6..28..57.5

52.28

6..29..45.78

2..39..10.16

3..50..35.62

2..59..30.57

49..57.81

34.90

62

3..49..57.84

3..46..00

3..57.84

16

1<sup>st</sup> May - 4..13.84M.T.C - Apr 25 PM - 4..6.94 Rate  
6)6.90 (1.15May 2<sup>nd</sup> AM

E.C. - 22..33..0

424- 22..30..13.3

PM

E.C. 6..41..48.5

311- 6..31..48.5

6..50.0

236- 6..3..28.5

6..6.00

2..5..5..4.3

E.C. - 6..7..00

2419- 6..10..5.6

6..8.00

2440- 6..21..16.7

1856.

May. 5

C. b. Fast - 39.32

EE - 20..45..0  
236 A - 20..43..24

EE - 0..22..0 — 0..23..0 — 0..24..0  
D.311 - 0..50..57.3 2419 - 0..26..4 2440 - 0..37..50

M.T.C - 17..57..5 — 17..54..5

236 - 20..52..4.5 — 20..53..5

20..45..0

39.32

20..44..20.68

20..43..24

236 - 56.68

20..52..4.5

20..53..01.18

2..54..56.38

17..58..04.80

16..57..12.90

57..50.50

03.99

80

17..55..08.69

m.t.c. 17..57..05.05

4..03..24

16

m.t.c. slow. B. 4..29.21

20..55..5.0

EE - 236 - m.T.C

56.68

20..56..01.68

2..54..56.38

18 01..05.30

17..57..03.07

0 59.84

4.97

30

17..58..08.18

17..54..5

4..03.18

16

4..19.18

4..13.84

1<sup>st</sup> May. P.M. -

15.34 (-1.18 Rate of m.t.c)

+28  
Andromeda

0..50..49.10

4.85

21.10

36.00

57.80

7.10

2..22.30

192.25

+60

252.25

0..01..36.04

-10

-08

-17

0..01 35.69

56.86

39.33

+45  
Cygnus

20..36..13.25

32.50

52.80

11.20

30.70

50.40

38..8.65

199.10

-120

79.10

20..37..11.30

-14

+02

-20

37.10.98

31.67

39.31

May 1<sup>st</sup> P.M.

EE fast 36.72

3

2 Am 37.20

64 Am 39.32

EE - 4/2.32/.58

May 6<sup>th</sup> 10 Am

Put forward a H.T.C  
Four minutes

May 6<sup>th</sup> PM

E.C. - fast. 39.33

E.C. - 6..16..0

m.t.c. - 3..17..45

Capella

236 - 6..14..23.8

236 - 6..16..17.5

5..05..42.95

6..16..0

39.33

6..16..17.5 2..58..06.20

2.75

6..15..20.67

56.87

46.74

23.40

236 6..14..23.8

6..17..14.37 2..58..52.94

42.15

- 56.87

2..58..52.94

2.00

3..18..21.43

21.40

2..59..30.57

5..7..40.40

17..57.05

175.05

20.94

120.00

5..06..42.15

.43

295.05

- .14

3..17..48.93

+ 0.02

m.t.c. 3..17..45

- .20

03.93

5..06..41.83

16

5..06..02.50

M.T.C. Slow of Boston 19.93

E.C. fast 39.33

May 1<sup>st</sup> PM

13.84

5/6.09/1.22

856. May. 12<sup>+</sup>E.C. - fast 42.14<sup>s</sup>

E.C. - 7.44.0  
 A 236 - 7.42.23.5  
       7.44.0  
       42.14  
       7.43.17.86  
       7.42.23.5  
       - 54.36

M.C.C. - 4.23.45  
 236 - 7.46.16.5  
       54.36  
       7.47.10.86  
       3.22.32.28  
       4.24.38.58  
       3.59.20.68  
       23.56.07  
       37.86  
       58  
       2.22.55.19  
       4.23.45  
       - 10.19  
       16  
       12<sup>th</sup> P.M. 26.19  
       6<sup>th</sup> P.M. - 19.93  
       6) 6.26 (1.04<sup>s</sup>

$15^{\text{th}} - 10.1 - 42.94$ 

May 15

ee - 1..39..00  
 A 236 - 1..37..24.3  
 1..39..00

43.06

1 38 16.94

1..37..24.3  
 52.64

mte - 21..47..45

236 - 1..25..03.5

1..25..03.5

mte - 22..09..35

236 - 1..46..57

1..46..57

52.64

25..47..49.64

3..34..21.95

22..13..27.69

21..56..23.75

12..57.87

26.92

.69

22..09..49.23

mte - 22..09..35

- 14.23

16

16<sup>th</sup> Am - 30.23

12. Am - 25.67

4) 4.56 / 1.14

e e fast 43.06

21..50..55

1..28..13

mte 22..12..35

236 - 1..49..57.5

3..33..35.21

46.74

3..34..21.95

856- May-<sup>20</sup>/<sub>21</sub>21<sup>st</sup> P.M. - E.C. - 8..26..0236 - 8..24..25.7  
8..26..0

43.80

8..25..16.10

236 8..24..25.7

236, slow - 50.40

<sup>15</sup>  
16

- 52.64

5/2.24(+0.45)

E.C. fast - 43.88

May<sup>15</sup>/<sub>16</sub> -

43.06 + 5/82 (0.16)

M.T.C. - 4..23..45

236 - 8..21..56.5

8..21..56.50

50.40

8..22..46.90

3..58..01.30

4..24..45.60

3..59..20.68

23..56.07

44.88

60

4..24..02.23

4..23..45.00

17.23

16.00

M.T.C., slow 21<sup>st</sup> of B - 33.23

12 - 26.16

9/76.07 (0.786)  
77

3..53..18.00 3..57..14.56

46.74

46.74

3..54..04.74 3..58..01.30

May 26

E.C. - 0..54..0

236 - 0..52..26.4

0..54..0

45.37

0..53..14.63

0..52..26.4

236 - 48.23

21

50.40

$$\begin{array}{r} 6/2.17 \times 36 \\ 1.8 \\ \hline 37 \end{array}$$

E.G. fast - 45.37

m.t.e - 20..36..20 - 1..10..0

236 - 0..56..59 311-1 10 8.4

24..56..59

48.23

4..16..57.34

24..56..47.23

46.74

4..17..44.08

4..17..44.08

20..40..03.15

19..56..43.41

0..56..59

38..53.67

48.23

48.88

24..57..47.23

.15

4..17..44.08

20..36..24.05

20..40..03.15

20..36..20.00

19..56..43.41

39..53.45

2.99

15

20..36..40.00

m.t.e - 20..36..20

26/27 am - 20.00

16

20 36.00

21 33.23

6/277 / 0.46

May 29<sup>th</sup>

E.C. - 9..10..0

236 - 9..8..26.8

9..10..0.0

45.79

9..09..14.21

9..08..26.80

236 slow 47.41

E.C. - fast - 45.79

m.t.e - 4..35..00.0

236 - 9..04..53.0

9..04..53.0

47.41

9..05..40.41

4..29..33.76

4..36..06.65

3..59..20.68

35..54.10

5.98

65

4..35..21.41

m.t.e - 4..35..00.00

m.t.e - Comb 21.41

16

Barton

$$\begin{array}{r} 37.41 \\ 36.00 \\ \hline 31.41 \end{array} \quad 42 \quad 10.94$$

4..28..47.02

46.74

4..29..33.76

Hydra

9..20..35.65

48.95

2.75

16.65

30.00

44.40

9..21..58.15

236.55

120

116.55

9..21..16.65

Cor +

20..30.86

45.79

856. May <sup>29</sup>/<sub>30</sub> - first comp<sup>s</sup> of 141 + 280 after trial in the Air Pump, see Book No 7 -  
 Then 64" M J C Slow.

M J C - 22..36..0 — 22..39..0 — 22..40..0  
 1345-141 - 22..36..45.5 280-22..40..40.5 239-22..40..27.6  
                     45.5                      1..40.5                      27.6

Comparators

M J C - 22..48..0 — 22..49..0 — 22..50..0  
 1507 M - 10..08..47.7 1508-X - 13..21..13.5 Y - 13..42..6.3  
                     D..20..47.7                      + 32..13.5                      + 2..52..06.3  
                     - 39..12.3

June <sup>3</sup>/<sub>4</sub>

M J C - 20..11..00 M J C - 20..12..0 — 20..14..0  
 141 - 20..11..57.6 280 - 20..13..41.4 239 - 20..14..19.5  
                     + 57.6                      + 1..41.4

June <sup>8</sup>/<sub>9</sub>

M J C - 20..0..0 M J C - 19..59..0 — 20..3..0 — 20..4..0  
 741 - 20..01..0.7 280 - 20..00..44.7 239 - 20..3..1.3 3710 - 20..4..54.8  
                                             01..44.7

M J C - 20..10..00 — 20..11..0 — 20..12..0  
 M - 9..29..58.3 X - 10..42..27.5 Y - 1..05..26.0  
                     + 1..19..58.3                      2..31..27.5                      5..53..26.0

9/10 Am 21..14..0

M J C - 21..14..0 M J C - 21..15..0 — 21..16..0 — 21..17..0  
 280 - 21..15..44.7 141 - 21..16..2.5 239 - 21..15..58 3710 - 21..17..54.1  
                     1..44.7                      1..2.5

1886

June 3-

E.C. - 10..7..0

M 7 C 5..18..20

E.C. fast - 44.70

m 9 c - 5..21..15

236-10..5..29

236-10..8..07.5

236-10..11..3

10..07..0

10..8..07.50

x Leonis. 300 west

44.70

46.30

4..48..29.81

10..00..45.5

10..06..15.30

10..8..53.80

46.74

59.7

10..05..29.00

4..49..16.55

4..49..16.55

14.3

-46.30

5..19..37.25

27.8

29<sup>th</sup> -47.41

4..59..10.85

42.0

5) 1.1146.22

18..56.89

55.9

36.90

02..9..6

22

254.85

5..18..44.86

-60

5..18..20

7/194.85

C- 24.86

10..01..27.84

16

-a-b-c. -50

June 3-B- 40.86

10..01..27.30

may-29<sup>th</sup> - 37.41

0..42.60

5/3.45 +0.69

E.C. +44.70

29<sup>th</sup> +45.79

5) 1.09 (0.22)

June 9<sup>th</sup> - PM

$$\begin{array}{r}
 EC - 11.55.00 - 11.56.00 \\
 236 - 11.53.31.8 - 11.54.31.8 \\
 \quad - 11.55.00 \\
 \quad + 44.88 \\
 - 11.54.15.12 \\
 + 11.53.31.8 \\
 \quad - 43.32 \\
 3^p - 46.30 \\
 \quad 6/2.98 / 0.49
 \end{array}$$

$$\begin{array}{r}
 EC - 9^{\text{th}} + 44.88 \\
 3 - 43.70 \\
 \quad 6/118 / 0.19
 \end{array}$$

E.C. - fast 44.88<sup>s</sup>  
June 3 44.70

$$\begin{array}{r}
 MC - 6.42.00 - 6.45.00 \\
 236 - 11.55.46.5 - 11.58.47.0 \\
 \quad 11.55.46.5 \\
 \quad 43.32 \quad 5.12.09.16 \\
 11.56.29.82 \quad 46.74 \\
 \quad 5.12.55.90 \quad 5.12.55.90 \\
 \quad 6.43.33.92 \\
 \quad 5.59.01.02 \\
 \quad 42.52.95 \\
 \quad 33.00 \\
 \quad .92 \\
 \quad 6.42.27.89 \\
 \quad 6.42.00.00 \\
 \quad 27.89 \\
 \quad 16 \\
 9^{\text{th}} MC slow 43.89 of Boston \\
 3 - " - 40.86 \\
 \quad 6/303 / 0.50
 \end{array}$$

June 15  
June 16 Am

$\mu$  — 20..10..0 — 20..11..0 — 20..12..0  
 $\mu$  — 22..54..20.8 X — 24..06..49.7 Y — 26..31..21  
 $\frac{8}{9}$  — 2..44..20.8 3..55..49.7 6..19..21  
 $\frac{8}{9}$  — 1..19..58.3 2..31..27.5 4..53..26  
 $\frac{8}{9}$  — 7/84..22.5 (12..03.2) 7/84..22.2 (12..03.2) 7/85..55 (12..16.4)  
 $\mu$  — 20..17..0 — 20..18..0 — 20..19..0 — 20..21..0  
 $\mu$  — 20..18..13.3 250. 20..19..43 239- 20..19..57.8 3710- 13..06..17.1

$\mu$  — 20..24..50 — 20..27..50  $\mu$  — 2..13..00 — 2..14..0  
 $236$  — 2..04..37 — 2..07..37.5  $236$  — 2..11..34 — 2..12..34.3  
 $2$ ..04..37  $2$ ..13..00  
 $40.77$   $5..35..48.51$   $45.23$   
 $26$ ..05..17.77  $46.74$   $2$ ..12..14.77  
 $5..36..35.25$   $5..36..35.25$   $2$ ..11..34  
 $20$ ..28..42.52  $-40.77$   
 $19$ ..56..43.41  $8\ell \frac{5}{16} - 45.23$   
 $27$ ..55.41  $8\ell - 9^{\frac{5}{16}} - 46.88$   
 $41.89$   $65/35 \div 0.05$   
 $52$   
 $20$ ..25..21.23  
 $20$ ..24..50  
 $31.23$   
 $16$   
 $\mu$  C. Slow of 13-Am  $47.23$   
 $9^{\frac{5}{16}} \mu$   $43.89$  Rate of  $\mu$  C  
 $6.5) 3.34 (.52$

June 21<sup>st</sup>

E.L. - 10..28..0

236 - 10..26..34.4

10..28..0

46.37

10..27..13.63

10..26..34.4

fast - 236 - 39.23

Ther 85 to 99° E.L. fast 46.37

M.T.E. - 4..35..50.0

236 - 10..36..44.0

10..36..44

39.23

10..37..23.23

6..00..14.60

4..37..08.63

3..59..20.68

36..53.94

7.98

63

4..36..23.23

4..35..50.00

33.23

16

m.C. Slow. 49.23

16.. - 47.53

+ 1.70 10.34

5..59..27.86

46.74

6..00..14.60

46.37

44.80

12) 157 / .13

.20

M.C. - 5..43..0

3710 - 5..43..40.6

5..43..49.23

5..43..40.6

3710 Slow of Boston - 8.6

46.7

47.5

2

June 22<sup>nd</sup>

E.L. - 5..14..0

236 - 5..12..33.3

5..14..0

47.1

5..13..12.9

236 - 5..12..33.3

- 39.60

E.L. fast slow 47.1

M.T.E. - 11..24..25

236 - 5..31..50

M.C. - 11..35..25

236 - 5..42..53

07..28

6..3..24.42

46.74

6..4..11.16

5..42..53

39.60

29..43..32.60

6..04..11.16

23 39..21.44

22..56..13.92

38..53.61

20.94

.44

11..35..28.91

35..25.00

Slow of Camb - 3.91

by Rate 46.57

M.T.C. run down 22 at night. 6<sup>h</sup>

1856 June 22

M.C. - 11..38..0

M.C. - 11..40..0

M.C. - 11..41..0

141 - 11..38..54.5  
54.5

280 - 11..41..12.3  
1..12.3

239 - 11..40..53.7

23 - noon

E.C. fast 47.1

M.C. - 0..39..25

E.C. - 6..46..0

236 - 6..47..03.5

236 - 6..44..33.35

6..46..00.

6..07..20.98

6..47..03.5

47.1

46.74

39.55

6..45..12.9

6..08..07.72

6..47..43.05

6..44..33.35

6..08..07.72

39.55

0 - 39..35.33

0..38..53.61

34.90

33

0..39..28.84

M.T.C. 0..39..25.

M.T.C. flow of Camb - 3.84

16

flow of Boston - 19.85

24<sup>th</sup>

E.C. - 10..39..0

M.T.C. - 4..27..35

E.C. fast 47.38

236 - 10..37..33

236 - 10..39..48

10..39..00

10..39..48

6..11..17.54

+ 47.38

39.62

46.74

10..38..12.62

10..49..27.62

6..12..04.28

10..37..33

6..12..04.28

- 39.62

4..28..13.34

3..59..20.68

28..55.48

12.96

34

4..28..39.38

35

4.39

16

M.T.C. flow of Boston 20.39

July 1<sup>st</sup>

P. 6. fast - 46.38

EC - 12.20 - 0

236 - 12.18.36.3

EC - 13.39.00

236 - 13.37.36.3

13.39.00

46.38

13.38.13.62

236 - 13.37.36.3

- 37.32

M.T.C. - 5.41.55

236 - 12.22.01.5

12.22.01.5

37.32

12.22.38.82

6.39.40.19

5.42.58.63

4.59.10.85

41.53.12

57.84

.63

5.42.02.44

5.41.55.00

6.44

16

M.T.C. Slow - 22.44

24<sup>+</sup> - 20.39

7/205/-0.29

M.T.C. - 5.44.50

236 - 12.24.57

6.38.53.45

- 46.74

6.39.40.19

July  $\frac{1}{2}$  Am

EC - 4..20..0.0      MTC - 21..39..00  
 236 - 4..18..36.4      236 - 4..21..44.5

July  $\frac{1}{2}$ 

MTC - 21..41..0      — 21..42..0  
 141 - 21..42..4.3      280 - 21..43..7.1

July 7 Am

MTC - 20..59..0      — 21..0..0  
 141 - 21..00..7.6      280 - 21..01..5.4  
          1..7.6                              1..5.4

July  $\frac{6}{7}$ 

EC - 3..33..0.0      MTC - 20..24..10      — 20..27..15  
 236 - 3..31..40.6      236 - 3..26..31.5      236 - 3..29..37

July - 11<sup>th</sup> Am

MTC

By some wholly unaccountable, mysterious, cause  
 M C. lost five minutes - perhaps some one touched  
 the hands - The arc of vibration of the pendulum was  
 unaltered.

1856. July 8<sup>th</sup>

E.C. part - 45.83

E.C. - 11.58.00

236-11.56.41.5

11.58.00

45.83

11.57.14.17

11.56.41.57

236 slow 32.67

O.C. - 4.48.50.00

236-12.00.55.5

12.00.55.5

32.67

12.01.28.17

7.07.16.10

4.54.12.07

3.59.20.68

53.57.15

11.97

4.53.23.87

4.48.50

M.C. - 4.51.00

236-12.03.1.57

7.06.29.36

46.74

7.07.16.10

4.53.23.87

4.48.50

-5.18.87

E.C. - 14.28.00 - 14.29.00

236-14.26.41.6 - 14.27.41.6

14.28.00

45.83

14.27.14.17

26.41.6

32.57

M.C. - 8.47.00 - M.C. - 8.48.00

236-16.00.29.8 236-16.1.30

16.00.29.8

32.57

16.01.02.37

7.07.16.10

8.53.46.27

8.58.41.36

52.57.32

45.87

8.52.18.82

8.47.00

5.18.82

16

5.34.82

July 8<sup>th</sup> P.M.

M.C. - 9.18.00 - 9.20.00

141-9.24.16.2 280-9.26.12.2

.06.16.2

6.12.2

July 8

EE - fast 45.8

EE - 1. 40.00

236 - 1. 38.41.9

1. 40.00

45.8

1. 39.16.2

1. 38.41.9

-32.3

ME - 18. 20.45

236 - 1. 35.49.5

1. 35.32.3

25. 36.21.8

7. 07.16.1

18. 29.05.7

17. 57.3.07

28. 55.25

4.49

70

18. 26.04.01

20. 45.00

5. 19.01

16

5. 35.01

July 9<sup>th</sup> Am

MTC - 9. 43.00

EE - 9. 44.00

141 - 9. 49.16.7

280 - 9. 50.11.7

10<sup>th</sup> Am

MTC - 19. 55.00

141 - 20. 01.17.3

July 11<sup>th</sup> Am Set forward EE - 5<sup>m</sup> Set forward ME - Five minutes

MTC 20. 45.00 — 20. 47.00

141 - 20. 46.17.8 280 - 20. 48.11.2

July 11<sup>th</sup> P.M.

EE - fast - 46.04

EE - 12. 39.00 MTC - 5. 13.25 — 5. 16.25

236 12. 37.43.8 236 12. 33.11.5 — 12. 36.12

12. 39.00

12. 33.11.5

12. 38.13.96

30.16

12. 37.43.8

12. 33.41.67

7. 19.05.78

236 Shows 30.16

5. 14.35.88

8<sup>th</sup> - 32.67

4. 59.10.85

3/251/0.84

13. 57.71

34.90

88

5. 13.44.34

25

19.34

July 11<sup>th</sup> 5 P.M. M.T.C. Show - 19.34

16.

MTC Show of B - 35.34

7. 18.19.04

46.74

7. 19.05.78

July 15  
 EC - Fast - 44.80

EC - 2..13..0

MC - 18.35..50

236 - 2..11..47.8

236 - 2..13..38

7..34..05.27

2..13..0

2..13..38

46.74

44.80

27.40

7..34..52.01

2..12..15.20

26..14..05.40

2..11..47.8

7..34..52.01

236 Slow - 27.40

18..39..13.39

17..57..03.07

38..53.61

12.96

39

18..36..10.03

18..35.50

20.03

16

July 16 Am. H. C. Slow - 13 - 36.03

15/16 -

MT - 20..16..0

MC - 20..17..0

141 - 20..17..19.3

280 - 20..18..9.2

MT - 20..21..0 — 20..23..15.0 — 20..29..10

1507 - 5..06..34.5 1508 - 6..20..16.0 1107 - 20..56..15.5

..45..34.5

July 21<sup>st</sup> PM

$2E - 14..49..0$   
 $236 - 14..47..49.8$   
 $14..49..0$   
 $43.67$   
 $14..48..16.33$   
 $14..47..49.8$   
 $236 - 26.53$

 $2E + 43.67$ 

$26 - 6..50..45$   
 $236 - 14..50..21$   
 $14..50..21$   
 $26.53$   
 $14..50..47.53$   
 $7..58..31.36$   
 $6..52..16.17$   
 $5..59..01.02$   
 $51..51.48$   
 $15.46$   
 $17$   
 $6..51..08.63$   
 $6..50..45$   
 $23.63$   
 $16$   
 $55/39.63/0.6$   
 $3803$   
 $1360/0.55$

$7..57..44.62$   
 $46.74$   
 $7.58.31.36$

July 26 PM  $2E$  fast  $43.01$ 

$2E - 13..17..0$   
 $236 - 13..15..53.5$   
 $13..17..0$   
 $43.01$   
 $13..16..16.99$   
 $13..15..53.5$   
 $236 - 26 slow - 23.49$   
 $21 - 11 - 26.53$   
 $5/306/0.61$

$2E - 4..59..35$   
 $236 - 13..18..42$   
 $13..18..42$   
 $23.49$   
 $13..19..05.49$   
 $8..18..14.13$   
 $5..00..51.36$   
 $49.15$   
 $00..02.24$   
 $14$   
 $5..00..02.10$   
 $4..59..35$   
 $27.10$   
 $16$   
 $5/43.11/$   
 $39.63$   
 $5/3.47/0.69$

July 25 AM  $2E$  fast  $43.03$ 

$5..21..35$   
 $13..21..42.5$   
 $am.al.$   
 $8..18..18.01$   
 $-3.85$   
 $8..18..14.13$

1856  
July 29th

E.C. fast. 40.6

E.C. - 9. 06.0

M.T.C. - 3. 35.0

$$\begin{array}{r} 236 - 9. 04. 54.3 \\ \hline 1. 05. 7 \end{array}$$

$$236 - 12. 05. 45.5$$

E.C. - 12. 10. 00

$$\begin{array}{r} 236 - 12. 08. 54.5 \\ \hline 1. 05. 5 \end{array}$$

July 28. E.C. fast

E Bootis - 41.20

α<sup>2</sup> Librae - 41.07

B Urs. min.

α Cor Boon - 41.22

3.49

41.16

26 - 43.05

3)187/0.62

26. 1. 6. 5

29. 1. 5. 5

1.

August 2 - PM

E.C. has been disturbed in putting on the Boston circuit.

E.C. - 13. 36. 0

E.C. - 13. 41. 0

$$\left. \begin{array}{l} 236 - 13. 34. 52.8 \\ \hline 1. 7. 2 \end{array} \right\} \text{Result } 236 - 13. 39. 55$$

Aug. 10/11

γ Ceti

α Ceti

4 Persei

2. 36. 29.0

2. 55. 23.6

3. 14. 38.2

32.5

27.2

43.4

36.0

30.7

49.0

39.5

34.1

52.4

43.2

37.8

00.0

180.2

153.4

245.0

2. 36. 36.04

2. 55. 30.67

3. 12. 49.0

35. 52.29

54. 46.96

2

43.75

43.71

3. 14. 44.20

14.05.47

43.73



Aug<sup>13</sup> P.M.

E.C. - 16.22.0

236 - 16.20.58.7

M.C. 6.54.0

236 - 16.24.44

13/14 Am

E.C. fast. 44.72

E.C. - 3.55.0

236 - 3.53.58.5

3.55.0

44.72

3.54.15.28

236 - 3.53.58.50

Slow - 16.78

M.C. - 18.15.20

236 - 3.47.56.5

3.47.56.5

16.78

27.48.13.28

9.29.12.16

18.19.01.12

17.57.03.07

18.56.72

1.12

18.16.00.91

M.C. - 18.15.20.00

40.91

16.

M.C. Slow 14 Am - 56.91

11<sup>th</sup> Am Slow - 55.06

3/185/0.62

M.C. - 18.18.20

236 - 3.50.57.

9.28.25.42

46.74

9.29.12.16

Aug<sup>16</sup>

E.C. 45.31

E.C. - 16.26.0

236 - 6.24.58.5

16.26.00

45.31

16.25.14.69

236 - 16.24.58.5

16.19

M.C. - 6.44.40

236 - 16.27.15

16.27.15

16.19

16.27.31.19

9.41.01.83

6.46.29.36

5.59.01.02

25.52.46

28.92

.36

6.45.22.76

M.C. 6.44.40.

42.76

16.27.31.19

14 am - 56.91

25/1.85/10.74

9.40.15.09

46.74

9.41.01.83

1856. August 18/19<sup>th</sup>. 15<sup>th</sup> E.C. fast - 45.54  
 16 45.31  
 2) 23 (1.11

45.60  
 57  
 57  
 57  
 214  
 45.54

Aug<sup>c</sup> 19<sup>th</sup>

EC - 14.. 59.. 0  
 236 - 14.. 57.. 59.0  
 14.. 59.. 0  
 45.54

14.. 58.. 14.46

14.. 57.. 59.00

15.46

16<sup>th</sup> - 18.19

3/73.24

MC - 5.. 08.. 25

236 - 15.. 02.. 36

15.. 02.. 36.00

15.46

15.. 02.. 51.46

9.. 52.. 51.49

5.. 09.. 59.97

4.. 59.. 10.85

8.. 58.52

58.84

97

5.. 09.. 09.18

5.. 08.. 25.00

44.18

16.00

60.18

58.76

3) 142 (0.47

MC - 5.. 10.. 0

280 - 5.. 10.. 6.7

MC - 5.. 14.. 0

239 - 5.. 13.. 27.5

9.. 52.. 04.75

46.74

9.. 52.. 51.49

5.. 14.. 0

44.18

5.. 14.. 44.18

239 - 5.. 13.. 27.5

1.. 16.68

5.. 10.. 0

44.18

5.. 10.. 44.18

5.. 10.. 06.7

38.11

MC

Aug<sup>c</sup> 19<sup>th</sup>

16<sup>th</sup>

Cambridge 5<sup>th</sup> mean solar

EC - 19<sup>th</sup> at 15 Sid. time fast. 45.66 Rate + 0.12

236 - " " " " " " Slow - 15.46 6 " + 0.24

239 - " " " " " " Slow - 76.68 " "

MC - " " " " " " Slow - 44.18 " " - 0.47

280 - " " " " " " Slow - 38.11

MC - 2.. 40.. 0

43.95

2.. 40.. 43.95

41.. 07.2

+ 23.3

Em - 2.. 32.. 00

23

2.. 31.37

Im 9  
 Im. 1.. 41.25

23.5

1.. 41.02.5

1.. 43.40

23.5

1.. 43.16.5

PM. 19<sup>th</sup>

MC - 9.. 18.. 0

280 - 9.. 19.. 6.5

1856. August 22-

E.C. East - 46.88

E.C. - 14.57.00  
 236 - 14.56.00.0  
 E.C. - 15.18.00  
 236 - 15.17.00  
 15.18.00  
 46.88  
 15.17.13.12  
 236 - 15.17.00  
 Slow 13.12

M.C. 4.53.25    M.C. 4.56.30  
 236 - 14.59.24.5    236 - 15.02.30  
 14.59.24.5  
 13.12    10.03.52.42  
 14.59.37.62    46.74  
 10.04.41.16    10.04.41.16  
 4.54.56.46  
 3.59.20.68  
 53.57.15  
 23.85  
 46  
 4.54.08.14  
 4.53.25.00  
 - 43.14  
 16  
 59.14

August 23-

E.C. East - 47.08

E.C. - 11.23.00 — 11.24.00    M.C. - 1.51.30 — 1.54.25  
 236 - 11.22.00.5 — 11.23.00.5    236 - 12.00.57 — 12.03.52.5  
 11.23.00  
 47.08    12.00.59.0  
 11.22.12.92    12.42    10.07.50.98  
 11.22.00.5    12.01.09.42    46.74  
 236. Slow - 12.42    10.08.37.72  
 10.08.37.72  
 1.52.31.70  
 59.50.17  
 57.57.48  
 30.91  
 70  
 1.52.13.26  
 1.51.30.  
 43.26  
 16  
 M.C. Slow - 59.26

Aug<sup>26</sup>/<sub>25</sub>

E.C. fact. 47.56.

E.C. - 8..02..00.0

236 - 8..01..01.0

8..02..00.0

47.56

8..01..12.44

8..01..01

236 flow - 11.44

M.C. - 21..47..10 — 21..50..10

236 - 8..03..57 236 - 8..06..57.5

8..03..57

11.44

10..11..47.53

32..04..02.44

46.74

10..12..34.27

10..12..34.27

21..51..28.17

20..56..33.58

50..57.64

27.92

17

21..47..53.31

10.00

43.31

16.00

59.31

August 26<sup>th</sup>

E.C. - 48.48

E.C. - 15..14..0

236 - 15..13..1.2

15..14..0

48.48

15..13..11.52

15..13..1.2

- 10.32

25 Am - 11.44

) 112 / 37<sub>2</sub>

Rate gain .74

M.C. - 4..54..15

236 - 15..16..03.5

15..16..03.5

10.32

15..16..13.82

10..20..27.38

4..55..46.44

3..59..20.68

54..50.99

45.87

.44

4..54..57.98

54..15

42.98

16

M.C. flow of B - 58.98

E.C. 25 Am 47.56

26 Am 48.48

3) 92 / 31

Rate gain .62

56  
August 28<sup>th</sup>

EL - 14.. 18.. 0

236 - 14.. 17.. 01.4

14.. 18.. 0

49.65

14.. 17.. 10.35

17.. 01.. 4

- 8.95

26 - 10.32

2) 137 / .68

ME - 3.. 52.. 50 — 3.. 55.. 50

236 - 14.. 22.. 23 — 14.. 25.. 28.5

14.. 22.. 23

10.. 27.. 33.75

8.95

46.74

14.. 22.. 31.95

10.. 28.. 20.49

10.. 28.. 20.49

3.. 54.. 11.46

2.. 59.. 30.51

53.. 57.. 15

10.97

.46

3.. 53.. 33.09

3.. 52.. 50

43.09

16

59.09

EL fast 49.65

Aug 31<sup>st</sup> Sept 1<sup>st</sup>

EE fast 57.83

hourly rate 0.02

EL 7.. 52.. 0

ME 21.. 23.. 15

236 - 7.. 57.. 2.5

236 - 8.. 07.. 33.5

Pull EL - 14.. 47.. 0

ME - 0.. 7.. 50

10.. 43.. 19.97

236 14.. 46.. 2.5

236 - 10.. 52.. 35.5

46.74

14.. 47.. 0.1

10.. 52.. 35.5

10.. 44.. 06.71

57.90

5.6

14.. 46.. 08.10

10.. 52.. 41.1

Aug 31<sup>st</sup> - 2.5

10.. 44.. 06.71

236 slow - 5.6

0.. 08.. 34.39

28<sup>th</sup> - 8.95

0.. 7.. 58.69

4) 3.35 / 0.84

33.91

39

8.. 32.. 99

7.. 50

42.99

16

Sept 1<sup>st</sup> 58.99

28<sup>th</sup> 59.09

4) 10 / 0.02

1856

Sept 2<sup>o</sup> -

E 6 fast - 52.54

E 2 - 15.02.0

M 2 - 6. 3. 15

M 2 - 6. 6. 15

236 - 15. 01. 2.7

236 - 16. 52. 56.5

236 - 16. 55. 57

Sept 4<sup>th</sup>

E 2 fast. Am - 53.75 = 53.83 noon

E 2 - 11. 14. 0

M 2 - 0. 19. 20

M 2 - 12. 22. 20

236 - 11. 13. 3.6

236 - 11. 16. 00

236 - 11. 19. 00.5

11. 14. 0.0

11. 16. 2.57

10. 55. 09.63

53.83

10. 55. 56.37

46.74

11. 13. 06.17

0. 20. 06.20

10. 55. 56.37

3.6

0. 19. 56.72

5.98

236 slow

2.57

20

0. 20. 02.90

19. 20.

42.90

16

Sept 4<sup>th</sup>

58.90

1856. Sept. 9<sup>th</sup>

E.C. fast - 57.0

E.C. - 12..28..0

236 - 12..27..4.35

12..28..0..0

57

12..27..03.0

12..27..06.35

fast 3.35

4<sup>th</sup> slow 2.57

5/592/1.18

M.C. - 1..16..0

236 - 12..32..39.5

12..32..39.5

3.35

12..32..36.15

11..15..39.14

1..16..57.01

0..59..50.17

15..57.58

56.84

01

1..16..44.40

1..16..00

44.40

16

M.C. slow - 60.40

4<sup>th</sup> 58.90

1.50 ÷ 5 = 0.30

Sept. 13<sup>th</sup>

E.C. fast - 60.32 PM

E.C. - 14..52..0

236 - 14..51..29.5

14..52..0

1..0.32

14..50..59.68

236 - 14..57..29.50

29.82

3.35

4) 26.87 (6.62)

M.C. - 3..21..0

236 - 14..54..15

14..54..15

29.82

14..53..45.18

11..31..25.35

3..22..19.83

2..59..30.57

21..56.39

18.95

83

3..21..46.68

M.C. - 3..21..00-0

46.68

16.

M.C. slow.

62.68

9<sup>th</sup> 60.40

4/2.28 (0.57)

11..14..52.40

46.74

11..15..39.14

41..26.42.06

46.74

11..30..38.61

46.74

11..31..25.35

1856

Sept 14/15

EE - 8.11.0

236 - 8.10.28.6

α Ophiuchi

17.29.14.90

18.50

22.15

25.70

29.40

Sept 19<sup>th</sup>

γ Draconis 65.63 α Ophiuchi 6 - fast - 65.57

17.29.22.13

17.29.22.24

17.28.16.67

65.57

EE - 15.48.0

236 - 15.47.28.5

EE - 15.56.0

236 - 15.55.28.5

15.56.0

1.5.60

15.54.54.40

55.28.5

+ 34.10

13<sup>th</sup>

+ 29.82

6/428 / 0.71

ME - 3.53.20

236 - 15.50.04.5

15.50.24.5

34.10

15.49.50.40

11.55.04.68

3.54.45.72

2.59.30.57

53.57.15

44.88

72

3.54.07.26

ME 3.53.20

47.26

16

63.26

13<sup>th</sup> 62.68

6/58 / 0.09

EE fast 1.7.73 by Rate of +0.88

Sept 20/21

EE - 6.12.0

B-239 - 6.9.5.2

EE - 6.24.0

239 - 6.15.53

6.24.0.0

1.07.73

30.22.52.27

12.02.57.78

18.19.54.49

17.57.03.07

18.56.89

53.85

49

18.16.54.30

239 - 18.15.53

EE - 6.12.0

1.06.85

30.10.53.15

B EE - 6.31.0

239 - 6.23.52

6.31.0

30.29.52.27

12.02.57.78

18.26.54.49

17.57.03.07

25.55.74

53.85

49

6.23.53.15

23.52

1.1 239 Slow of Cambridge

M.C. set to Cambridge m.c.

6.12.0

1.7.73

30.10.52.27

12.02.57.78

18.07.54.49

17.57.03.07

6.58.85

53.85

18.04.56.26

9.5.2

4.08.94

12.02.11.04

46.74

12.02.57.78

EE - 6.52.00

236 - 6.51.28.2

54

1.28

65.57

66.85

68

7.73

Sept. <sup>23</sup>/<sub>24</sub>

EC - 9..52..0  
 280 - 9..36..17.7

MC - 9..33..0  
 280 - 9..32..57.5

EC - 9..54..0  
 280 - 9..38..17.4

24th

EC - 15..15..0  
 280 - 2..58..24.3  
 15..15..0

MC 3..1..0  
 280 - 3..0..57.4

8 C fast <sup>ms</sup> 1..10..44

22 - 1..07..73  
 1271

1..10..44

12..14..0..70

15..13..49..56

46.74

12..14..47..44

12..14..47..44

2..59..02..12

1..59..40..34

58..50..33

1.99

12

2..58..32..78

280 2..58..24.3

280 Slow 8.48

280 - 3..0..57.4

3..0..59..88

MC - 3..1..00

MC fast of Carr 0.22

16

MC Slow of Boston 15.78

1856

Sept 25th

EC - 13..18..0

280 - 12..57..46.0

13..18..0

1..11.3

13..16..48.7

12..18..44.0

0..58..04.7

57..50.50

3.99

70

0..57..55.19

280 - 0..57..46.00

- 9.19

MC - 12..55..0

280 - 12..54..50.7

12..17..57.26

46.74

12..18..44.00

280 - 0..54..50.7

9.19

0..54..59.89

MC 0..55..00 -

MC slow of Camb

0.11

16

16.11

EC - 1..12.3

MC - 12..56..0

280 - 12..55..50.7

24 fast 0.22 Rate - 0.33

Sept 26th

EC - 16..15..0

280 - 3..38..28.7

16..15..00.0

1..15.49

16..13..44.51

12..34..30.21

3..39..14.31

2..59..30.57

38..53.61

73.96

.31

3..38..38.39

280 - 3..38..28.7

280 - Slow 9.69

16..16..20

3..39..48.5

12..33..43.47

46.74

12..34..30.21

EC fast - 1..15.11 gaining .92

MC - 3..43..0

280 - 3..42..49.7

3..42..49.7

9.69

3..42..59.39

43.00

61

16.00

MC - slow of Boston 15.39

hourly - 0.038

Oct 2<sup>nd</sup>

EC - 15.55.0

280 - 3.06.41.4

15.55.0

1.17.54

15.53.42.46

12.46.19.87

3.07.22.59

2.59.30.57

6.58.85

20.94

59

3.06.51.89

280 - 3.06.41.40

280 slow - 10.49

29<sup>th</sup> left 9.69

3/80/.27

EC fast - 1.17.54

MC - 15.4.0

280 - 3.3.49.5

3.03.49.5

12.45.33.13

46.74

12.46.19.87

MC 3.3.59.99

+ 0.01

16.00

Slow of Boston

15.99

29 - " - "

15.39

3/60/0.20

Oct 8<sup>th</sup>

EC - 17.36.0

280 - 4.23.43.2

17.36.0.0

1.21.38

17.34.38.62

13.09.59.20

4.24.39.42

3.59.20.68

23.56.07

38.89

42

3.23.56.06

280 3.23.43.20

- 12.86

MC - 4.26.0

280 - 4.25.46.6

13.09.12.46

46.74

09.59.20

4.25.46.6

12.86

4.25.59.46

MC 4.26.00.00

MC fast 54

16.00

MC slow of Boston

15.46

2<sup>nd</sup> slow

15.99

6/53/0.09 gaining

8/9 Am EC - 9.6.0

280 - 7.51.10

1856

Oct 15<sup>th</sup>

EC - 17.. 13.. 0

280 - 17.. 33.. 8.1

17.. 13.. 0.0

1.. 24.41

17.. 11.. 35.59

13.. 37.. 35.08

3.. 34.00.51

2.. 59.. 30.57

33.. 54.43

57

3.. 33.. 25.45

3.. 33.. 8.1

280 Slow - 17.35

MC - 3.. 37.. 0

280 - 3.. 36.. 42.5

13.. 36.. 48.34

46.74

13.. 37.. 35.08

3.. 36.. 42.5

17.35

3.. 36.. 59.85

MC 3.. 37.. 00.00

fast + .15

16.00

15 15.85 MC Slow of B

8h 15.46

7/39 10.06 timing

EC fast 1.. 24.41

8th - 1.. 21.38

7/303 1.4328  
23Oct 19  
20

EC fast 1.. 24.35

EC - 8.. 16.. 0

280 - 6.. 17.. 55

8.. 16.. 0.0

1.. 24.35

32.. 14.. 35.65

13.. 53.. 21.30

18.. 21.. 14.35

17.. 57.. 03.07

20.. 56.56

18.96

35

18.. 18.. 13.94

280 - 18.. 17.. 55

18.94

EC 8.. 17.. 00

280 6.. 18.. 52.8

13.. 52.. 34.56

46.74

13.. 53.. 21.30

MC - Slow of Boston

MC 6.. 22.. 0

280 - 6.. 21.. 40

6.. 21.. 40

18.94

6.. 21.. 58.94

6.. 22.. 00.00

fast of Cam 1.06

16

14.94

15.85

45.91

40  
10

(.20 gaining)

Oct 25-

E.C. fast - 1.. 23.97

E.C. - 19.. 58.. 0

280 - 5.. 38.. 19.4

19.. 58.. 0

1.. 23.97

19.. 56.. 36.03

14.. 17.. 00.62

5.. 39.. 35.41

4.. 59.. 10.85

38.. 53.61

34.90

41

5.. 38.. 39.77

280 5.. 38.. 19.4

280 Slow of E - 20.37

M.C. 5.. 56.. 0

280 - 5.. 55.. 36.5

14.. 16.. 13.88

46.74

14.. 17.. 00.62

5.. 55.. 36.5

20.37

5.. 55.. 56.87

M.C. - 5.. 56.. 00.

M.C. fast 3.13

16

 $\frac{19}{20}$ 

12.87

14.94

55/207 (+0.38)

420

Oct 30-

E.C. fast - 1.. 19.11

E.C. - 17.. 22.. 0

236 - 17.. 20.. 19.5

17.. 22.. 0

1.. 19.11

17.. 20.. 40.89

236 17.. 20.. 19.50

Slow 21.39

M.C. - 2.. 59.. 00

- 3.. 02.. 0

236 - 17.. 35.. 45.5

- 17.. 38.. 46.0

17.. 35.. 45.5

21.39

14.. 35.. 56.66

17.. 36.. 06.89

46.74

14.. 36.. 43.40

14.. 36.. 43.40

2.. 59.. 23.49

1.. 59.. 40.34

58.. 50.33

22.94

49

2.. 58.. 54.10

M.C. - 2.. 59.. 00.00

M.C. fast 5.90

16.0

30 M.C. Slow of Boston 10.10

25 - " " " 12.87

5/277/40.55 gaining

1.1922

1895

19.16

33

55) 301/1.55  
278  
26

1856.

Nov  $\frac{3}{4}$ 

EE - 10..59..0

236 - 10..57..28.2

Nov 4<sup>th</sup>

EE - 15..59..0

236 - 15..57..28.7

15..59..0.0

1..13.11

15..57..46.89

15..57..28.7

- 18.19

EE fast 30 + 1..19.11

Nov 4 + 1..11.6

EE 57.57 (-1.52)

Dupla 15..59..0.0

1..11.6

15..57..48.40

57..28.7

- 19.70

Nov  $\frac{4}{5}$ 

EE - 11..50..0

236 - 11..48..30.5

11..50..0.0

1..15.52

11..48..44.48

11..48..30.5

Nov 4/5 - 13.98

Oct 30 - 21.39

236 55/7.41/1.4

EE fast - 1..15.52

ME - 20..55..25 - 58..20

236 - 11..54..54.5 - 57..50

13.98

35..55..08.48

14..56..26.18

20..58..42.30

19..56..43.41

57..50.50

41.88

.30

20..55..16.09

20..55..25.00

+ 8.91

16

Nov 4/5 am ME slow 7.09

Oct 30 - 3 PM - 10.10

55/3.01

275

260

(3 Am E. G. fast - 1..13.11) - 1.5 = 1..11.6

ME - 20..5..40 ME - 20..8..40

236 - 11..1..04

236 - 11..4..04.5

ME - 1..5..50 - 1..08..45

236 - 16..2..03.5 - 16..04..59

16..2..03.5

18.19

16..2..21.69

14..56..26.18

1..05..55.57

0..59..50.17

4..59..18

54.85

.57

.05..44.71

1..05..50.40

5.69

16.00

10.31

14..55..39.44

46.74

14..56..26.18

16..2..03.50

19.70

16..02..23.20

14..56..26.18

1..05..57.02

0..59..50.17

4..59..18

56.84

.02

1..05..46.21

1..05..50.00

ME fast - 3.79

16.00

ME slow of Arthur 12.21

30<sup>th</sup> " - 10.10

5/2.11 (0.42)

11

14..55..39.44

1..15.49

46.74

.52

14..56..26.18

.52

57

EE - 30 PM fast 1..19.11

2.10

Nov 4/5 am 1..15.52

1..15.52

55/3.59 (.65 during)

330

290

Nov-10<sup>th</sup>E.C. fact <sup>on</sup> 1.10.05

E.C. - 18.55.00 ME - 3.36.35 - 3.39.30.0

236-18.53.42 236-18.56.57 236-18.59.52.5

E.C. - 19.09.00

236-19.07.42.1

19.09.00

1.10.05

19.07.49.95

236-19.07.42.1

- 7.85

18.56.57.00

7.85

18.57.04.85

15.20.05.52

3.36.59.33

2.59.30.57

35.54.10

58.84

33

3.36.23.78

6.35.00

M.E.C. + 11.22

16.00

M. Star of Boston - 4.78

4/5 - " - - 7.09

55/231

103

(0.42 gaining)

15.19.18.78

46.74

15.20.05.52

E.C. Nov 4/5 1.15.52

10 - 1.10.05

E.C. Nov 5/5 55/557/1.04

$$\begin{array}{r} 7.1 \\ 31 \\ \hline 5/10.2/2.0 \end{array}$$

Nov 13/14

EE fast - 1.05.23

EE - 12.35.0

236 - 12.33.57

EE - 12.49.0

236 - 12.47.57

12.49.0

1.05.23

12.47.54.77

236 - 12.47.57.03

Slow - 3.77

ME - 21.04.00 ME - 21.07.0

236 - 12.39.06.5 236 - 12.42.7

12.39.06.50

3.77

36.39.10.27

15.31.55.19

21.07.15.08

20.56.33.58

6.58.85

14.96

.08

21.03.47.47

21.04.00

ME fast of E +12.53  
16

ME Slow of Boston - 3.47

10 PM Slow - 4.78

35) 1.31 (0.38 gaining)  
1.05  
26014 - 1.05.23  
17 1.2.10  
3/3 0.3/1.07  
-26

Nov 16/17

EE - 12.48.0.0

236 - 12.46.57.4

17th EE - 19.0.0

236 - 18.58.57.8

19.00.0

1.01.94

18.58.58.06

236 - 18.58.57.8

Slow 0.26

12.48.0.0

1.2.20

12.46.57.80

236 - 12.46.57.4

236 Slow .40

12.49.03.00

36.49.03.40

ME - 21.02.05.0

236 - 12.49.03.0

ME - 3.15.05

236 - 19.03.4.5

19.03.4.5

26

19.03.4.76

15.47.41.42

3.15.23.34

2.59.30.57

14.57.54

22.94

.34

3.14.51.33

3.15.05

ME fast 13.67

16

ME 17th PM Slow 2.33

EE fast - 9 AM - 1.02.20

3 PM - 1.01.94

ME - 3.18.5

236 - 19.6.5

16th 15.42.58.12

46.74

15.43.44.86

36.49.03.40

21.05.18.54

20.56.33.58

4.59.18

17.95

54

21.01.51.25

21.02.05

ME fast 13.75

16

ME fast 13.75

2.25 Slow of Boston

13th - 3.47

3) 122 10.40 gaining

Nov. 22 -

EC fast - 56.79

EC - 20..24..0

236 - 20..23..9.0

20..24..0

56.79

20..23..03.21

236 - 20..23..09.00

236 fast 5.79

17th slow - 0.26

5/6.05 / +1.21

MC - 4..18..20

236 - 20..26..16.5

5.79

20..26..10.71

16..07..24.20

4..18..46.51

3..59..20.68

17..57.05

45.87

57

4..18..04.12

4..18..20

MC fast of Camb. 15.89

16

MC slow of Boston 0.11

17th PM slow 2.33

5/2.22 / 0.44 gaining.

26th fast - 58.27

19/17 - 62.20

4/3.93 fast 50.99

16..06..37.46

46.74

16..07..24.20

56.79

58.27

56.79

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56.79

Nov. 26 -

EC fast 57.69

1.76

22 - 0.11

EC - 20..44..0

MC - 4..23..25

MC - 0..42..0

1.76

236 - 20..43..17

236 - 20..47..12

280 - 0..41..46.5

1.65

0..42..0

4.23.25

EC - 17..20..50

16..30..16.81

1.65

280 - 0..48..50.5

46.74

0..41..58.35

17..20..50

16 31..03.55

0..41..46.5

57.69

28 slow 11.8

17..19..58.31

0..55.00

16..31..03.55

V 0..54.48.2 send

0..48..54.76

1.00.0

0..47..52.14

11.8

53.85

V 1..59.48.2 send

76

0..48..46.75

48..50.50

280 fast of Camb 03.75

16.00

280 slow of Boston 12.25

april 11.8

.45 should have tapped half a second sooner

Selegraphical to Boston.

Nov. 28<sup>th</sup>

E.C. fast ~ 57.49

E.C. 20..15..0

236- 20..14..20.3

20..15..0

57.49

20..14..08.51

236- 20..14..20.3

fast 11.79

22

5.79

6) 6 00/1.00

M.C. 3..44..20 — 3..47..10

236- 20..15..55 — 20..18..45.5

20..15..55 16..30..16.87

11.79

46.74

20..15..43.21

16..31..03.55

16..31..03.553..44..39.66

2..59..30.57

43..52.79

38.89

66

3..44..02.85

3..44..20.00

M.C. fast of Cam 17.15

16

" fast of Boston 1.15

22 Slow of Boston 0.11

6) 126/0.21

Dec 3<sup>rd</sup>

E.C. fast - 47.75

Rate - 0.76

E.C. 17..19..0

M.C. 1..7..15

M.C. 2..54..0

E.C. 19..48..0

236- 17..18..28.3

236- 17..58..9

236- 19..45..11.5

236- 19..47..28.5

17..19..0

17..58..9

47.75

16.05

16..49..59.60

17..18..12.25

17..57..52.95

46.74

236 17..18..28.30

16..50..46.30

16..50..46.30

236 fast 3 16.05

1..07..06.6528<sup>th</sup> 236 fast - 11.79

0..59..50.17

5/5.26/1.05

6..58..85

5.98

65

1..06..55.65

M.C. 1..07..15.00

+ 19.35

16

Dec 3 M.C. fast of Boston 3.35

28<sup>th</sup> " " " 1.15

5/220/0.44 gaining.

Dec 6<sup>th</sup>

EC - 21..29..0

236-21..28..34.2

21..29..0.0

45.24

21..28..14.76

236..21..28..34.20

236 fast 19.44

3 - " - 16.05

3/339/1.13

C.C. Hart - 45.24

MC - 4..37..0

236-21..40..19

21..40..19

19.44

21..39..59.56

17..02..36.02

4..37..23.54

3..59..20.68

36..53.94

22.94

54

4..36..38.10

4..37..00.0

MC fast of Cam 21.90

16

MC fast of Boston 5.90

Dec 3 - fast - 3.35

3/255/0.85

Dec 9<sup>th</sup>

EC - 20..54..00

236-20..53..39.2

20..54..00

42.32

20..53..17.68

236..20..53..39.2

236 fast Cam visit 21.52

MC - 3..40..10

236-20..55..9.5

20..55..09.5

21.52

20..54..47.98

17..14..25.69

3..40..22.29

2..59..30.57

39..53.45

21.94

29

3..39..46.19

MC - 3..40..10.00

+ 23.81

16

MC fast of Boston 9<sup>th</sup> 7.81

- " - " - 6 - 5.90

2)191/0.64 gaining

MC - 4..39..35

236-21..42..54.5

17..1..49.28

46.74

17..02..36.02

3.22 fast - 47.75

6 - " - " - 45.24

3/251/1.84

C.C. fast - 42.32

MC - 3..40..10

3..43..10

236-20..55..9.5

20..48..10

20..55..09.5

17..13..38.95

21.52

46.74

20..54..47.98

17..14..25.69

17..14..25.69

3..40..22.29

2..59..30.57

39..53.45

21.94

29

3..39..46.19

MC - 3..40..10.00

+ 23.81

16

MC fast of Boston 9<sup>th</sup> 7.81

- " - " - 6 - 5.90

2)191/0.64 gaining

1856-Dec-10

EC - 21..31..0

236 - 21..30..40.7

21..31..0

40.96

21..30..19.04

236 - 21..30..40.70

24.66

9<sup>th</sup> 21.52

+ 16

MC - 4..25..25

236 - 21..44..28.5

21..44..28.5

21.66

21..44..06.84

17..18..22.25

4..25..44.29

3..59..20.68

24.55.90

43.88

29

4..25..00.95

25.00

24.25

16

MC part of 13. + 8.25

9<sup>th</sup> + 7.81

.44

EC + 40.96

MC - 4..28..25

236 - 21..47..29

17..17..35.57

46.74

17..18..22.25

12 Dec

EC - 21..43..0

236 - 21..42..44.0

21..43..0.0

39.10

21..42..20.90

236 - 21..42..44.00

23.10

10<sup>th</sup> 21.66

2) 1.44 / 0.72

MC - 4..18..05.0

236 - 21..45..01.0

21..45..01.0

23.10

21..44..37.90

17..26..15.37

4..18..22.53

3..59..20.68

17..57..05

19.95

68

4..17..38.36

4..18..05.00

26.64

16

10.64

10<sup>th</sup>

EC part - 39.10

MC - 4..21..10

236 - 21..48..06.5

17..25..28.63

46.74

17..26..15.37

1856- Dec. 13-

CE 21..26..0

236-21..25..45.7

21..26..0

38.70

21..25..21.30

21..25..45.7

236 fast 24.40

ME-3..58..35

236-21..29..25

21..29..25

24.40

21..29..00.60

17..30..11.93

3..58..48.67

2..59..30.57

57..50.50

47.87

67

3..58..09.55

ME 3..58 35.0

25.45

16

9.25

CE fast 38.7

ME-4..1..35

236-21..32..25.5

17..29..25.19

46.74

17.30.11.93

Dec. 15<sup>th</sup> Am

CE-14..14..00.

236-14..13..48.7

14..14..00

37.46

14..13..22.54

236-14..13..48.7

236 fast 26.16

10<sup>th</sup>

ME-8..40..0

236-14..17..32

14..17..32

26.16

38..17..05.86

17..34..08.49

20..42..57.35

19..56..43.41

41..53.12

56.84

35

8..39..83.72

8..40..00.00

ME fast of Cam 26.28

16

ME fast of Boston 10.28

CE fast-37.46

17..33..21.75

46.74

17..34..08.49

1856 Dec-15<sup>th</sup>

E.C. fast. 37.31

E.C. 21.. 0.. 0  
 236- 20..59..49.1  
 21.. 0.. 0  
37.31  
 20..59..22.69  
 20..59..49.1  
26.41

MC- 3.. 23 ..45  
 236-21.. 0..2 ..23.5  
 21.. 0 2 ..23.5  
26.41  
 21.. 01 ..57.09  
 17.. 38.. 05.05  
3 ..23 ..52.04  
 2.. 59.. 30.57  
 22.. 56..23  
 57.86

MC- 3..26 ..45  
 236-21..05 ..24  
 MC 4 ..06 ..40  
 236.21..45 ..25.5  
17..37..18.31  
46.74  
 17..38..05.05

04  
 2 ..23 ..18.64  
 3 ..23 ..45  
26.36  
 16.6

MC fast of Boston 10.36  
 13 fast of 13 — 9.25  
 2)111 (0.55

Dec 19/20

Ep- 15..1.. 0  
 236- 15.. 0.. 57.2  
 15..1.. 0  
33.16  
 15.. 0..26.84  
 236 15.. 0..57.2  
 fast 24.36

MC- 9 ..5 ..20 MC- 9.. 08 ..15  
 236-15 ..2 ..34 236- 15.. 05 ..29.5  
 15.. 2.. 34  
24.36 17.. 53..04.54  
 39..02..09.62 46.74  
 17.. 53..57.28 17.. 53..51.28  
21..08..18.36  
 20..56..33.58  
 7..58..69  
 17..95  
36  
 9..04..50.58  
 9..05..20

29.42  
16

20th MC fast of 13.  
 15th — — — —

13.42  
10.36  
 45/306 (0.67  
 270

Dec. 25<sup>h</sup>

E.C. - 22.56.00

236 - 22.55.58.5

22.56.00.0

29.89

22.55.31.11

236 - 22.55.58.50

236 fast 27.39

E.C. - fast - 29.89

M.C. - 4.41.25

M.C. - 4.4.15

236 - 22.59.36.5

236 - 23.2.27

22.59.36.5

27.39

18.16.43.90

22.59.09.11

46.74

18.17.30.64

18.17.30.64

4.41.38.47

3.59.20.68

40.53.28

37.90

47

4.40.52.33

4.41.25.01

32.67

16

M.C. 25 fast 16.67

20 13.75

5/292 (0.58) gaining

Dec. 28/29

E.C. - 15.20.00

236 - 15.20.3.1

15.20.00

27.90

15.19.32.10

236 - 15.20.3.10

236 fast - 31.00

25<sup>h</sup> P.M. - 27.39

35/3.61/1.0

E.C. fast - 27.90

M.C. - 20.50.10

M.C. - 20.53.10

236 - 15.22.50

236 - 15.25.50.5

15.22.50

18.28.33.57

31.00

46.74

39.22.19.0

18.29.20.31

18.29.20.31

20.52.58.69

19.56.43.41

57.57.48

57.84

69

20.49.33.42

M.C. 20.50.10.00

36.58

16

M.C. fast - 28/29

25 P.M. 16.67

20.58

16.67

35/3.61/1.1

3.2

4

Dec 30

E C fast. 26.35

$$\begin{array}{r} \text{E C} - 23..17..0 \\ 236 - 23..17..5.2 \\ \hline 23..17..0 \end{array}$$

$$\begin{array}{r} 26.35 \\ 23..16..33.65 \end{array}$$

$$\begin{array}{r} 236 - 23..17..5.20 \\ 236 \text{ fast} \quad 31.55 \end{array}$$

$$\begin{array}{r} \text{MC} 4..42.35 \\ 236 - 23..20..29.5 \end{array}$$

$$23..20..29.5$$

$$31.55$$

$$23..19..57.95$$

$$18..37..13.43$$

$$4..42..44.52$$

$$3..59..20.68$$

$$41..53.12$$

$$43.88$$

$$52$$

$$4..41..58.20$$

$$4..42..35.00$$

$$36.80$$

$$16$$

$$\text{MC Dec-30}^{\text{fast}} \text{B} - 20.80$$

$$\text{Dec-25} - 16.67$$

$$5)413 \text{ } 10.83 \text{ gaining}$$

1857. Jan. 6<sup>th</sup>

E C - fast. 20.99

$$\begin{array}{r} \text{E C} - 23..49..0 \\ 236 - 23..49..7.5 \\ \hline 23..49..0 \end{array}$$

$$20.99$$

$$23..48..39.01$$

$$236 - 23..49..07.50$$

$$236 \text{ fast} \quad 28.49$$

$$\begin{array}{r} \text{MC} 5-30..45 \quad 5..33..45 \\ 236..0..36..16.5 \quad 0..39..17 \end{array}$$

$$24..36..16.50$$

$$28.49$$

$$19..04..02.60$$

$$24..35..48.01$$

$$19..04..49.34$$

$$46.74$$

$$5..30..58.67$$

$$4..59..10.85$$

$$29..55.09$$

$$57.84$$

$$67$$

$$5..30..04.45$$

$$\text{MC} 5..30..45$$

$$40.55$$

$$16.00$$

$$24.55$$

$$20.00$$

$$7)375 \text{ } 53.54$$

1857

Jan. 6.

EC - 15.50.0

236 - 15.50.18.7

15.50.0

20.32

15.49.39.68

236 - 15.50.08.70

29.02

MC - 20. - 36.0.0

236 - 15. - 44.0.0

15.44.0.0

29.02

39.43.30.98

19.04.49.34

20.38.41.64

19.56.43.41

37.53.77

40.89

64

20.35.18.71

MC 20.36.00.0

41.29

16

MC fast.

25.29

EC - fast 20.32

24.85

27

26.82

25.29

47

11

25.05

Jan 12/13

EC - fast 16.0

EC 14.49.0 MC 19.15.0

236 14.49.17 - 236 - 14.46.23

14.49.0

16.0

14.48.44.0

49.17

33.00

19.15.0

14.46.23

14.46.23.0

33.00

38.45.50.00

19.28.28.68

19.17.21.32

18.56.53.24

16.57.21

20.95

32

19.14.11.72

MC

19.15.00

48.28

16

MC fast of 15

32.28

11.00

47

25.29

6.99/1.16

19.27.41.94

46.74

19.28.28.68

1857.

Jan. 19/20

E.C. fast. 12.65

$$\begin{array}{r} 12/13 + 16.0 \text{ E.C.} \\ 14/20 + 12.65 \text{ rate} \\ \hline 2) 3.35 \text{ } 0.48 \\ \text{Looming} \end{array}$$

EE - 17.58.00    EE - 18.00.00    MC - 22.02.50    MC - 22.06.00

236 - 17.58.20    236 - 18.00.20    236 - 18.02.10.5    236 - 18.05.21

17.58.00  
12.65

18.02.10.50    19.55.17.85

32.65    46.74

17.57.47.35

42.01.37.85    19.56.04.59

17.58.20

19.56.04.59

236 fast 32.65

22.05.33.26

12/13 - " - " 33.00

21.56.23.75

7/35 / 0.05 very cold.

4.59.18

32.91

26

22.01.56.10

MC - 22.02.50.00

MC fast. C 53.90

16

12/13 MC fast of B - 37.90

22.412.1

12/13 - fast

32.28

7/5.62 / 0.80

Jan. 23-

E.C. fast - 11.72

EE - 23.54.00

MC - 4.01.30

MC - 4.04.30

236 - 23.54.21.2

236 - 0.13.36.5

236 - 0.16.37

23.54.00

0.13.36.5

20.11.4.08

-11.72

-32.92

46.74

23.53.48.28

24.13.03.58

20.11.50.82

236 - 23.54.21.2

20.11.50.82

236 fast +32.92

4.01.12.76

23 EC - 11.72

3.59.20.68

19/20 - " - 12.65

59.84

35/93 / 0.3

14.97

.76

4.00.33.25

MC - 4.01.30.00

MC Fast of Cam 56.75

16

23 MC fast of Boston 40.75

19/20 - " - " - 37.90

31/2.85 / 0.81 gaining

857.

Jan. 26.

EE - 18..17..0

236 - 18..17..17.2

18..17..0

10.95

18..16..49.05

17..17..17.20

236 fast 28.15

23 PM fast 32.92

$$\begin{array}{r} 25) 4.777 \\ \underline{22} \end{array}$$

ME - 21..57..0

236 - 18..19..48.5

18..19..48.5

28.15

42..19..20.35

20..19..43.93

21..59..36.42

20..56..33.56

58..50.33

35.90

42

21..56..00.23

ME - 21..57..00.00

ME fast E - 59.77

16

ME fast B 43.77

23 PM - " - " 40.75

25/3.024/1.2

51

EE fast. 10.95

ME - 22..3..45

236 - 18..26..34.5

20..18..57.19

46.74

20..19..43.93

23 - 0.11. 11.72

26 AM 10.95

25/77/24.31

1857 Jan. 29/30

EE - 18..22..0

236 - 18..22..24.6

18..22..0

5.90

18..21..54.10

18..22..24.6

236 fast 30.50

ME - 22..47..12.5

236 - 18..25..49

18..25..49

30.50

42..25..18.50

21..35..30.17

20..49..48.33

19..56..43.41

48..57.97

47.87

33

20..46..23.58

ME - 20..47..25.00

ME fast 29/30 61.42

" - " 25/26 59.77

4) 1.65 / 0.41

61.42

16

45.42

EE fast. 5.90

ME - 26..50..15

236 - 18..28..39.5

20..34..43.43

46.74

35..30.17

23 &amp; 24 Extreme cold - Therm - 16

1857. Feb. 2

EC - 0..39..0  
 236 - 0..39..31.2  
0..39..0.0  
 2.65  
 0..38..57.35  
 0..39..31.2  
 236 fast - 33.85

EC fast. 2.65

MC - 3..52..45    MC - 3..55..45  
 236 - 0..44..10.5    236 - 0..47..11  
0..44..10.5  
 33.85    20..50..29.65  
 24..43..36.65    46.74  
 20..51..16.39    20.51..16.39  
3..52..20.26  
 2..59..30.57  
 57..57.48  
 19.95  
26  
 3..51..42.20  
 3..52..45.00  
 62.80  
 16  
 MC Fast 46.80  
45.42  
 3)138 / 0.46

Feb. 9th

EC - 2..15..0  
 236 - 2..15..2.4  
2..15..4.71  
 236 - 2..15..2.4  
 236 slow 2.31

EC slow. 4.71 hr. 1.03

MC - 5..00..30    MC - 5..3 30  
 236 - 2..19..4    236 - 2..22 4.5  
2..19..04.0  
 2.31    21..18..05.55    49.146  
 26..19..06.31    46.74    038  
 21..18..52.29    21..18..52.29    49.186  
 5..00..14.02  
 49.16  
 4..59..24.84  
 MC - 5..00..30  
 fast of Lamb - 65.16  
 -16  
 13    7)49.16 / 0.72

No 236. Run down on the 9th

1857

Feb. 10<sup>th</sup>

EC - 1..39..0  
 236 - 1..39..3.7  
 1..39..5.58  
 236 - 1..39..3.7  
 slow 1.88

E.C. - 5.58

MC - 4..20..15  
 236 - 1..42..39.5  
 1..42..39.5 21..22..02.11  
 1.88 46.74  
 25..42..41.38 21 22..48.85  
 21..22..48.85  
 4..19..52.53  
 3..59..20.68  
 18..56.89  
 57.86  
 53  
 4..19..09.96  
 MC 4..20..15.00  
 Cam 65.04  
 16.  
 B 49.04

Feb. 17<sup>th</sup>

E.C. slow 8.46

EC - 19..33..00 MC - 21..42..10 - 21..45..10 EC - 19..41..0  
 236 - 19..33..13 236 - 19..35..05 - 19..38 5.5 236 - 19..41..12.9  
 19..33..00 19..35..05  
 8.46 4.54 21..49..37.99  
 19..33..08.46 43..35..00.46 46.74  
 236 19..33..13.00 21..50..24.73 21..50..24.73  
 236 fast 4.54 21..44..35.73  
 20..56..33.58  
 43..52.79  
 34.91  
 73  
 21..41..02.01  
 MC - 21..42..10.00  
 fast of E 67.99  
 16  
 fast of B 17/18 51.99  
 " " 10<sup>th</sup> 49.04

75/2.95/0.3933 Rate pairing.

225  
 700  
 1675  
 250  
 225  
 25

Feb 22' 1857

E.C. Slow 11.11

$$\begin{array}{r} 2.6.76 \\ 6 \\ \hline 280.56 \end{array}$$

E.C. = 6.46. —

236 = 6.46.21.80

6.46.10.62

236 + 11.48

22 6.46.11.11

236. 6.46.21.80

236 fast 10.69

M.C. = 8.38. —

236 = 6.48.34.15

6.48.34.15

10.69

30.48.23.46

22.10.07.51

8.38.15.95

7.58.41.39

37.53.78

18.96

95

8.36.51.08

8.28.11

68.93

16

52.93

22.09.20.77

46.74

22.10.07.51

16

Feb. 24<sup>th</sup>

E.C. — 3.25.0

236 — 3.25.24.6

3.25.11.99

236 — 3.25.24.60

236 fast 12.61

M.C. — 5.09.30

236 — 3.27.24.5

3.27.24.5

12.61

27.27.11.89

22.18.00.62

5.09.11.27

4.58.10.85

8.58.53

10.97

27

5.08.20.62

5.09.30

Camb 69.38

16.00

M.C. fast of B.

22° — 53.38

52.93

2451.22

E.C. — Slow. 11.99

M.C. — 5.12.30

236 — 3.30.25

22.17.13.88

46.74

22.18.00.62

Feb 25<sup>th</sup> 1857.

33.5

$$\begin{array}{r}
 EC = 7.38 = \\
 236 = 7.38 \quad 26.90 \\
 \quad \quad 7.38 \quad 12.24 \\
 \quad \quad 236 + 14.66
 \end{array}$$

$$\begin{array}{r}
 MB \quad 9.18 \quad 9.18 \quad 55.0 \\
 236 \quad 7.40 \quad 33.2 \quad 7.41 \quad 28.5 \\
 \quad \quad \quad 14.66 \\
 \quad \quad \quad 7.40 \quad 18.54 \quad .59
 \end{array}$$

$$MB + 54.07$$

$$MB + 34.10$$

$$EC \text{ Nov. } 13.61$$

$$22 \quad 11.11$$

$$5/2.50/0.50$$

$$22.29.03.54$$

$$46.74$$

$$22.29.50.28$$

Feb. 27<sup>th</sup> PM

$$EC - 3.23.0$$

$$MC - 4.58.00$$

$$236 - 3.23.29.2$$

$$236 - 3.27.44.5$$

$$3.23.0$$

$$3.27.44.5$$

$$13.61$$

$$15.59$$

$$3.23.13.61$$

$$27.27.28.91$$

$$3.23.29.2$$

$$22.29.50.28$$

236 fast.

$$15.59$$

$$4.57.38.63$$

$$3.59.20.68$$

$$56.50.66$$

$$37.89$$

$$.63$$

$$4.56.49.86$$

$$4.58.00$$

$$70.14$$

$$16$$

MC fast of 13 -

$$54.14$$

24<sup>th</sup> " -

$$53.38$$

$$3)76/0.25 \text{ gaining}$$

March 3-









