

KG
11365
131

F. 2

1846.

*April to October.
Comets and meridian
Transits.*

KG 11365.131

Value of ρ of Fe-Silicium on 5th Sep

$$\gamma = 30 \frac{3}{4} = (31 - \frac{1}{4})''$$

1846 April 27th Alt right hand

* below 8 or 9 to Comet below

17	55	53.5	54
	56	15.5	17 57 " 18
	58	10.0	58 " 56.5
		31.0	22.0
17	57	12.75	17 58 " 07.25

23.41
17.83
5.48

23.41.45 R
62.07

Comet really S of 50.
Comet of Feb. was first
discovered by De Vico in
Feb 20th Rome 6 days before
it was seen at Lamb.

* Approx 23.41
8 62.10

Dist from E ~~124~~ = 134
S = 99

18	00	55.5	18	01	58.7
	01	17.5		02	26.
	03	68.5			55.5
	32			04	26.0

* 8 or 9th of April 1846 * Obsd.
18 07 " 23.5 18 09 " 04.58
48.5 269

first alt in Dec
h 5.29.09
61.58

18	82.8	18.7
09	45.5	18 11 " 41 "

27th PM K6 11365.131
Micrometer Head of on Polaris

1911 25th Slow 1.33.36 Rate - 2.12 h/0000

9.03.24.5	α
9.04.01.7	0.50
04.38.2	1.00
05.19.5	1.50
05.56.3	2.00
35.4	2.50
14.4	3.00

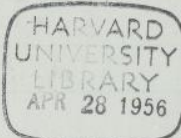
$$\frac{c_2 a - c_2 a'}{c_2 b} = \frac{c_2 c - c_2 c'}{c_2 d}$$

$$\frac{c_2 a - c_2 a'}{c_2 b} = \frac{c_2 c - c_2 c'}{c_2 d}$$

$$dt + na + ml = s$$

$$dt + n'a + m'l = s'$$

$$(n-n')a + (m-m')l = s-s'$$



April 28th 1946
 23^h 43^m 58^s
 62[°] 46'

* Lymanbridge * h m s
 23^h 43^m 7^s 62[°] 53'
 23^h 41^m 7^s 62[°] 54'
 d.R. 2.15

Comet right * left

17 24^h 43.8 17 25^h 13
 25 04.5 T 25 42.3
 26 32.7⁺
 10.5 27 04
 31.2

17 29^h 36.1 30^h 09.6
 T 59.3 T 38.5
 31 32.4 32 01
 06.2 28.5

17 33^h 03 33^h 32.5
 T 23.7 T 34 01.7
 34 52.6 35 19.4
 31.4 50.6

Comet left 9

17 40^h 58.5
 T 160.4 41^h 21.6 + 181.2
 + 106.6 43 08.2
 43 38.9
 17 42 14.90
 17 42 18.70
 17 42 16.8

* 4 ext night

17 47^h 22
 T = 20 42
 17 47 32

* 2 mid field

43 16.5 T 215.0 32.5
 + 180.2 46 17.7 48 32.7
 41.5
 17 47 02.60
 17 47 08.00
 17 47 08.30
 445.5

1.33.4
 5.2
 1.38.6
 2.20.21.6
 46.7
 2.21.08.3

17 42.16.8
 54.47.1
 18.03.47.8
 3 160.51.7
 17 53.37.2
 1.38.6
 17 55.15.8
 2.21.08.3
 15.33.07.5
 14 57.32.56
 32.54.59
 6.98
 1530.34.63

April 27.2
28.0 ddd

Comet very faint large & without center

Hlymo S 1.7
R 18.062.07.42
14.48
62.48.4562.53.148
5.54
62.47.20

Comet left * 2

* 3 left

* 4 Edgewright

17 53. 26.5 17 55.31

T₂ 160.1 47.7 T₂ 16.0 49

+ 12.0 55. 47.5 58. 50.52 181.5

56. 06.6 59 07.0

17 54. 46.5 17 57. 19.00

17 54. 47.7 17 57. 19.75

47.1 17 57. 19.38

17 54. 47.10 2.32.28

17 57. 47

T₂ 14.5 58. 04.5

01. 06.0

21.5

17 59. 34.25

17 59. 35.25

17 59. 34.75

17 59. 34.75

4.47.65

17 59. 47.9 + 44.6

18. 00 32.5

18. 00. 10.2

Stars in Greenbridge

* 2 4142, * 3 4149, * 4 4152

* 2 R 23. 40. 39.61 + 30
62. 57. 42.3

* 3 R 23. 42. 55.43 + 30

8. 62. 53. 14.8

* 4 R 23. 43. 28.86 + 36

S 63. 07. 42.0

Comet very faint in the dawn

18. 02. 24.7

04. 28

06. 40.5

18. 08. 98.5

* 3 R 23. 42. 55.43 + 30

T₃ 166.8 02 47.0T₂ 12.5 44.5T₂ 14.0 57.5T₂ 45.2 09 29.7

+ 121.0

+ 179.1

+ 181.0

18. 09. 01.1

04. 48.

07. 43.6

09 58.5

17. 03. 47.9

05 11.5

08 00.5

10. 14.5

17. 03. 47.9

18. 03. 48.1

18. 06. 14.25

18. 08. 27.5

17. 03. 47.9

18. 03. 47.8

18. 06. 14.05

18. 08. 28.0

17. 03. 47.9

47.8

18. 06. 14.15

18. 08. 27.75

17. 03. 47.9

47.8

18. 06. 14.15

18. 08. 27.75

17. 03. 47.9

47.8

18. 06. 14.15

18. 08. 27.75

17. 03. 47.9

47.8

18. 06. 14.15

18. 08. 27.75

17. 03. 47.9

47.8

18. 06. 14.15

18. 08. 27.75

17. 03. 47.9

47.8

18. 06. 14.15

18. 08. 27.75

17. 03. 47.9

47.8

18. 06. 14.15

18. 08. 27.75

17. 03. 47.9

47.8

18. 06. 14.15

18. 08. 27.75

17. 03. 47.9

47.8

18. 06. 14.15

18. 08. 27.75

17. 03. 47.9

47.8

18. 06. 14.15

18. 08. 27.75

17. 03. 47.9

47.8

18. 06. 14.15

18. 08. 27.75

17. 03. 47.9

47.8

18. 06. 14.15

18. 08. 27.75

17. 03. 47.9

47.8

18. 06. 14.15

18. 08. 27.75

17. 03. 47.9

47.8

18. 06. 14.15

18. 08. 27.75

17. 03. 47.9

47.8

18. 06. 14.15

18. 08. 27.75

17. 03. 47.9

47.8

18. 06. 14.15

18. 08. 27.75

17. 03. 47.9

47.8

18. 06. 14.15

18. 08. 27.75

17. 03. 47.9

47.8

18. 06. 14.15

18. 08. 27.75

17. 03. 47.9

47.8

18. 06. 14.15

18. 08. 27.75

17. 03. 47.9

47.8

18. 06. 14.15

18. 08. 27.75

17. 03. 47.9

47.8

18. 06. 14.15

18. 08. 27.75

17. 03. 47.9

47.8

18. 06. 14.15

18. 08. 27.75

17. 03. 47.9

47.8

18. 06. 14.15

18. 08. 27.75

17. 03. 47.9

47.8

18. 06. 14.15

18. 08. 27.75

17. 03. 47.9

47.8

18. 06. 14.15

18. 08. 27.75

17. 03. 47.9

47.8

18. 06. 14.15

18. 08. 27.75

17. 03. 47.9

47.8

18. 06. 14.15

18. 08. 27.75

17. 03. 47.9

47.8

18. 06. 14.15

18. 08. 27.75

17. 03. 47.9

47.8

18. 06. 14.15

18. 08. 27.75

17. 03. 47.9

47.8

18. 06. 14.15

18. 08. 27.75

17. 03. 47.9

47.8

18. 06. 14.15

18. 08. 27.75

17. 03. 47.9

47.8

18. 06. 14.15

18. 08. 27.75

17. 03. 47.9

47.8

18. 06. 14.15

18. 08. 27.75

17. 03. 47.9

47.8

18. 06. 14.15

18. 08. 27.75

17. 03. 47.9

47.8

18. 06. 14.15

18. 08. 27.75

17. 03. 47.9

47.8

18. 06. 14.15

18. 08. 27.75

17. 03. 47.9

47.8

18. 06. 14.15

18. 08. 27.75

17. 03. 47.9

Dif. of Dec

* Outer *

* Inner

* 1 " *

* 1 " *

* 10. 41.5

* 10. 47.5 Comet S of * 2

* 11. 08.7

* 10. 06.3

* 10. 55.1

* 10. 38.0

* 10. 55.1

* 10. 30.6

* 6. 07.4.6

* 6. 16.8 Comet S of * 3

* 5. 59.5.3

* 6. 01.5

* 5. 26.2.1

* 5. 49.5

* 5. 51.0

* 6. 02.6

* 20. 52.2

* 20. 40.8

* 20. 40.8

* 20. 14.4

* 20. 35.8

* 20. 35.8

* 20. 52.2

* 20. 40.8

* 20. 40.8

* 20. 14.4

* 20. 35.8

* 20. 35.8

* 20. 52.2

* 20. 40.8

* 20. 40.8

* 20. 14.4

* 20. 35.8

* 20. 35.8

* 20. 52.2

* 20. 40.8

* 20. 40.8

* 20. 14.4

* 20. 35.8

* 20. 35.8

* 20. 52.2

* 20. 40.8

* 20. 40.8

* 20. 14.4

* 20. 35.8

* 20. 35.8

* 20. 52.2

* 20. 40.8

* 20. 40.8

* 20. 14.4

* 20. 35.8

* 20. 35.8

I am rather stupid this side withup
this page.T₂ 738 509.0 740.8 97.8 147.5

+ 106.6 48.7 515.4 7.2 140.2 82.1 144.1

54.9

762 482.8 24.6 97.5 157.5

55.7 473.7 614.3 82.5 126.8

R

506.6 515.4 506.6

628.0 144.1 147.5

60/1134.8 (18) 571.3 559.1

506.6 478.9 509.0

628.0 157.7 147.5

60/1134.8 (18) 571.3 559.1

506.6 478.9 509.0

628.0 157.7 147.5

60/1134.8 (18) 571.3 559.1

M.S. &

Apr. 27th 15^h 30^m 35^s

23. 38. 11.40 * 3

23. 38. 09.47 * 2

62. 47. 22.28 * 3

62. 47. 06.2 * 4

62. 47. 03.5 * 2

62. 47. 10 R 23. 38. 11

Comet $\delta = 62^\circ 47'$

$$\begin{array}{rcl}
 T_1 160.4 = 2.2052 & t_1 106.6 = 2.0278 & \\
 \cos = 9.6602 & 9.6602 & \\
 73.35 = 1.8654 & 48.75 = 1.6880 & \\
 \text{Table } 507.0 & 507.0 & 515.1 \quad 515.5 \quad 515.5 \\
 \text{Star 3 } 139.6 * 4 & 745.2 & 138.3 * 2 \quad 132.0 * 4 \\
 367.4 & 1852.2 & 376.8 \quad 647.5 \quad \text{S of Stars}
 \end{array}$$

Star 2. $\delta = 62^\circ 58'$

$$\begin{array}{rcl}
 t_1 181.2 = 2.2582 & & \\
 62.58 \cos = 9.6575 & & \\
 82.36 = 1.9157 & & \\
 132.0 & &
 \end{array}$$

$$\begin{array}{rcl}
 T_2 160.1 & 2.2044 & t_2 119.8 \quad 2.0785 \\
 & 9.6602 & 9.6602 \\
 73.22 & 1.8646 & 54.79 \quad 1.7387 \\
 508.0 & 508.0 & 508.0 \quad 477.5 \quad 479.5 \quad 479.5 \\
 \text{Star 3 } 148.5 * 2 & 133.5 * 4 & 732.8 \quad 118.0 * 2 \quad 126.8 * 4 \\
 359.5 & 641.5 & 1240.8 \quad 361.5 \quad 606.3 \quad \text{S of Stars}
 \end{array}$$

$$\begin{array}{rcl}
 T_2 216.0 & 2.3344 & t_2 181.5 \quad 2.2589 \\
 & 9.6575 & 9.6575 \\
 98.15 & 1.9919 & 82.50 \quad 1.9164 \\
 133.5 & & 126.8
 \end{array}$$

$$\begin{array}{rcl}
 T_3 166.8 & 2.2222 & t_3 121.0 \quad 2.0828 \\
 & 9.6602 & 9.6602 \\
 76.28 & 1.8824 & 55.33 \quad 1.7430 \\
 482.0 & 482.0 & 482.0 \quad 475.9 \quad 475.9 \quad 475.9 \\
 \text{Star 3 } 155.5 * 2 & 136.7 * 4 & 732.4 \quad 126.4 * 2 \quad 162.1 * 4 \\
 326.2 & 668.7 & 1214.4 \quad 349.5 \quad 638.0 \quad \text{S of Stars} \\
 \text{Star 3 } \delta = 62^\circ 53' & &
 \end{array}$$

$$\begin{array}{rcl}
 T_3 212.5 & 2.3274 & t_3 179.1 \quad 2.2531 \\
 & 9.6575 & 9.6575 \\
 96.60 & 1.9849 & 81.40 \quad 1.9106 \\
 186.7 & & 162.1
 \end{array}$$

$$\begin{array}{rcl}
 T_1 215.0 & 2.3324 & t_1 180.2 \quad 2.2557 \\
 \delta \cos & 9.6588 & 9.6588 \\
 98.00 & 1.9912 & 82.13 \quad 1.9145 \\
 139.6 & & 138.3
 \end{array}$$

$$\begin{array}{rcl}
 \text{Star 4 } \delta = 63^\circ 08' & & \\
 T_1 20.0 & 1.3010 & \\
 & 9.6551 & \\
 9.04 & 0.9561 & \\
 745.2 & &
 \end{array}$$

$$\begin{array}{rcl}
 T_2 214.5 & 2.3314 & t_2 181.5 \quad 2.2589 \\
 & 9.6588 & 9.6588 \\
 97.77 & 1.9902 & 82.74 \quad 1.9177 \\
 148.5 & & 118.0
 \end{array}$$

$$\begin{array}{rcl}
 T_2 44.6 & 1.6493 & \\
 & 9.6551 & \\
 20.16 & 1.3044 & \\
 732.8 & &
 \end{array}$$

$$\begin{array}{rcl}
 T_3 214.0 & 2.3304 & t_3 181.0 \quad 2.2577 \\
 & 9.6588 & 9.6588 \\
 97.55 & 1.9892 & 82.51 \quad 1.9165 \\
 155.8 & & 126.4
 \end{array}$$

$$\begin{array}{rcl}
 T_3 45.2 & 1.6551 & \\
 & 9.6551 & \\
 20.43 & 1.3102 & \\
 732.4 & &
 \end{array}$$

April 30th Dell 2^h R 23^h 28^m
 May 1st 8 64^o 45'

* 7^{or} 8^h
 23^h 20^m 35^s
 64^o 45'

* 2^h 25^m 16^s
 64^o 54'

Rate 1.91
 13.97

20.36
 47.13
 68.13

Apr. 26th Dell 2^h 25^m 16^s

13.4
 8.29.6 3rd Dell
 1.9
 8.31.5 4th Dell

May 3rd Pelt

Immersion of * 2 Leonis. (double?)

H 11.36.00.0 H 12.18.00.0
 239 8.31.44.2 239 9.23.36.7

good. 239 - 8^h 54^m 33^s - 5 winked near half a second
 By W.L.B. 5ft Equatorial

good. 1911 - 11^h 38^m 35^s - 17 beats about half the light of the star suddenly vanished
 By G.P.B. from 3 to 5 before total immersion
 State Equatorial. Ci wink & star very steady. Heavy dew - calm fog rising.

4th 1.54.0
 Rate 2.2
 1.51.8
 2.44.00.91
 46.75
 2.44.47.66
 7.58.41.36
 54.51.00
 24.92
 Im M.S.T. 8.54.02.9 2 G.P.B.

8.54.31.0
 28.1

Im M.S.T. 8.54.02.9

11.36.00.0 8.32.60
 8.30.8 1.8
 8.30.8
 11.27.29.2
 2.44.47.66
 8.42.41.54
 7.58.41.36
 41.53.12
 40.89

8.41.15.91
 8.41.44.2

239 + 28.3

12.18.00.0
 8.30.9
 12.09.29.1
 2.44.47.66
 8.24.41.44
 8.58.31.53
 23.56.07
 40.89
 9.23.08.93
 9.23.36.7
 239 + 27.8

Immersion of 2 Leonis

May 3rd 1846

M.S.T. 8^h 54^m 02^s 9 W.L.B. 5ft Equatorial 79
 8^h 54^m 02^s 9 G.P.B. 4ft State Equatorial 90

20.6

f/15 1/1.7

May 4th PM 1846

steady but not a good image seems clouded.

a lionis 44.3
61.7
18.8
96.3

07.0
24.3
41.4
58.8

9.58 53.6
144.7

10.01 16.4
13.79
27.58

9.58 16.94
10.00 11.96

10.00 39.58
+ 1.09
10.00 40.67

1.55.02
- 12

10.00 40.67
+ 10
10.00 40.77

1.54.90
- 98

1.54.00
10.02 34.77

1.54.00
10.26.60

10.02 34.77
H + 8^m 32.60

16.5
33.8
50.9
08.0

10.23.25.3

124.5
249.0

10.22.48.90
+ 1.00

10.22.49.90
- 10

10.22.50.01
1.54.00

10.24.44.01

Rate from 25 to 4th + 1.90

075
15.1
47.5
1.76

10.14.00.0

1911-10.03.33.4

10.26.6

10.37.00.0

10.26.33.3

10.26.7

11.13.00.0

11.02.33.2

10.26.8
1.53.9
8.32.2

96.7
97.3
97.0

10.13

1.54.4

10.26.6

8.32.2

8.35

22.37.00.0

158 7.33.54.1

22.37.00.0

8.35

22.28.28.8

2.52.40.8

19.35.44.0

18.56.53.24

54.54.27

43.88

19.32.31.34

19.33.54.1

+1.22.7

16

Corrected for ux & lv. and Error

but not for Rate. 1911 - 11.54.00

a lionis 10.00.11.98 Rate - 2.45.51

Q's 1st 10.02.34.77

Q's lionis 10.24.44.01

54.45
97 0.605
495
1.09

09?

45.7

22.0

58.7

10.53.35.5

16.09

2

32.18

10.52.20.18

10.54.13.06

-1.52.88

corlv - .26

1.52.62

+ 1.36

4th 1.53.98

2nd 1.53.98

8/ 21.0 (2

2.82

and 9.6634

and 9.9892

49.51' time (8-8) 0.1167

and 0.1315

9.9008

2.28 0.3579

0.2587 = 1.81 = az E of S.

8.32.62 4 May PM

8.15.50 25 Apr. PM

9/17.10 (1.90

8.10

25th 1.33.45

4th 1.53.98

9/20.53 (2.28

1.5

1.5

73

Rate of 1911 from 25th to 4th - 2.28

" " 4th to 12 - 2.62

2.45

a un. mag.

10.52.20.18

+ 0.26

- 1.38

10.52.19.06

23..11
67..18
23..10
67..20

23..10
17..33
5..51

38..

23..11
25..20

66..32
48
67..20

12..09

23..

22..55
12
22..43
67..17

23..10.52
1.16
23..12.08

36
24
144
72
924

May 4th
5th still

* o left in (34)

Comet right

* right 5th

Ring out of the focus of the eyeglass. somewhat
which affects the obs. of the star.

00.

17..44..57.5

17 43..39 T 23.53
t 20.06

45..16.

45 13.

48 36.6

These come too near the comet to be well dist

56

52.8

17..44..28.50
17..44..26.00
17..44..27.25

17..46..58.74
17..46..56.30
17..46..54.92
17..44..27.25
2..28.47

17..50..18

17..52 12.2

T 165.0
t 75.5
51..07 T 23.53
t 200.0

29.5

42..22.5

55..49.5

53 13.

56 07.5

17..51..40.50
17..51..44.75
17..51..42.62

17..54..09.85
17..54..09.50
17..54..09.68
17..51..42.62
2..27.06

17 57..12

17 59..01.4

T 157.5
t 80.0
57..48.5

T 23.56
t 201.2
17.5

59 8.5

18..02..39.71

49.5

57.0

17..58..30.75
17..58..28.50
17..58..29.62

18..00..49.2
18..00..58.1
18..00..58.65
17..58..29.62
2..29.03

May 4thMay 5th 15..02..17

Comets R 23..09..51.13
S 67..21..12.3

Jan. 1846

17..44..27

17..51..43 2..47..57.46

17..58..29 48.75

17..51..33 2..48..44.21

17..51..56

17..53..29

2..48..44

15..04..45

14..57..32.56

3..59..34

44.84

15..02..16.4

(At this observation another
comet was within a few degrees of
this See May 19th)

for R
 counter right * left

18 08 46.5	18 11 10
09 03.5	11 24.6
12 24.5	15 02.5
12 52.5	15 19.5
18 10 49.50	18 13 14.75
18 10 44.00	18 13 13.55

Comet δ 67° 21'

T_1 17.5 2.2430	t_1 94 1.9731
δ cor 9.5856	9.5856
67.4 = 1.8286	36.2 1.5587
551.5	570.4
308.2	247.1
243.3	323.3
	247.3
	60 253.3 41.47.3

T_2 165.0 2.2175	t_2 75.5 1.8779
9.5856	9.5856
63.6 1.8031	29.1 1.4635
576.4	592.9
308.2	25.24
268.2	34.05
	64.2
	2 160.7
	60 304.4 5.04.4

T_3 157.5 2.1973	t_3 80.0 1.9031
9.5856	9.5856
60.7 1.7829	30.8 1.4887
593.7	587.9
306.5	243.5
287.2	344.4
	267.2
	2 163.16
	305.8 5.15.8

T_4 246.0 2.3909	t_4 201.0 2.3012
9.5856	9.5856
94.7 1.9765	77.1 1.8868
235.2	254.1
192.3	13.4
42.9	240.7

The Comet is so faint that it is a long time before I can see it at all after using the lamp to note the chronometer.

23.12.1	1846 * 12	23.12.19.32	2.413
		9.64	1.652
		22.42.30.2	19.63
		1.18.5	78.52
		22.43.47.2	
		67.16.10.8	

Star 67° 17'

T_1 235.3 2.3716	t_1 200.6 2.3023
9.5868	9.5868
90.9 1.9584	77.5 1.8891
308.2	247.1

T_2 235.3 2.3716	t_2 200.0 2.3010
9.5868	9.5868
90.9 1.9584	77.2 1.8878
308.2	252.4

T_3 235.1 2.3722	t_3 201.2 2.3036
9.5868	9.5868
91.0 1.9590	77.7 1.8904
306.5	243.5

T_4 249.5 2.3971	t_4 217.9 2.3393
9.5868	9.5868
96.4 1.9839	84.2 1.9251
192.3	13.4

May ⁴/₁₂ to alt. Noon

Not steady

Polaris power (53) = 80

2. 36. 31.5 B 0.50

37. 15.9 A fixed at zero

37. 51.6 B 1.00

38. 25.9 B 1.50

39. 08.6 2.00

45.7 + 1.5 2.50

40. 25.0 3.00

41. 04.7 3.50

43. 21. 4.00

42. 20.0 4.50

43. 09.6 5.00

41. 6 5.50

44. 20.8 6.00

45. 2 6.50

45. 38.2 7.00

46. 19.4 7.50

44. 5 8.00

47. 29.0 + 2 8.50

48. 11.0 9.00

49. 2 9.50

2. 49. 31.0 10.00

12. 59.5

72.0

779.5

S 1.57808

15 8.42192

9.59901

77.99 1.89182

1.48943

R = 30.89 9 B

6.32.1

6.27.4

37.8 = 1.57749

9.59901

1.17550

0.30103

2996 1.47653

Polaris at zero

May ¹¹/₁₂ alt 8.44

0. 29. 45.6 at 100 Dif

Not steady - clean - power (137) = 200 at

0. 30. 14.0 B at 0.50 224

31. 00.9 B at 1.00 42.9

36.7 35.8

19.8 43.1

55.5 35.7

34.7 39.2

34. 11.4 36.7

52.7 41.3

35. 28.0 B at 4.50 35.3

36. 11.8 43.8

45.8 34.0

37. 29.8 at 5. 44.0

38. 07.0 37.2

48.8 at 7. 41.8

39. 25.0 36.2

40. 05.5 at 8.00 40.5

43.5 38.0

41. 24.8 40.3

42. 01.8 37.0

42. 44.5 B at 10.00 42.7

12. 58.9

720.0

779.9 = 1.89148

9.59901

1.48949

R = 30.87 B

7. 32.7

6. 26.2

6. 32.7

1846-

May 6th γ Virginis A and B the same side of zero very steady

~~Notes~~						
B direct	B $\phi.003$	$\phi.035$	1.057	1.042	1.005	0.977
A comp	A 0.057	$.115$	$.090$	$.090$	$.145$	$.160$
	0.943	$.885$	$.910$	$.910$	$.855$	$.840$
WLB Dist	0.160	0.150	0.147	0.132	0.140	0.137

x getting unsteady

B	0.95.5	910	905	89.8	897	880
WLB A	20.0	20	220	27.0	257	273
	70.0	800	780	73.0	743	727
Dist	0.155	$.110$	$.125$	$.168$	$.154$	$.153$

not very steady

B	13.077.3	74.2	71.9	68.8	64.5
GPB A	36.2	39.6	41.1	46.0	47.7
	13.5	13.2	13.0	14.8	12.2
					best

1846 May $\frac{11}{12}$ & all $\frac{28.45}{18.82}$ of α 7.11 $\frac{22.15}{69.52}$
at 7.24

Polaris very unsteady East

* is elongated at the edge of field
in direction of α

Past zero

0 .. 47..04	α 10.00	Diff.
42.5	9.50	38.5
19.8	9.00	37.3
01.9		42.1
42.8		409
50.. 19.5		367
00.5		410
39.4		389
17.8		384
57.2		39.4
36.5	α 5.00	39.3
54.. 16.0		39.5
54.8		38.8
32.5		37.7
10.7		38.2
jump 52.2		41.5
bad 30.5		38.3
08.8		38.3
49.8		41.0
59.. 26.8		37.0
1.. 50.. 07.2		<u>44.4</u>
33.03.2		
280.0		
783.2		

1.89327

9.53401

1.49188

at 31.04

Polaris West α

Clouds & Storm King.

intermittent observations

Polaris Count below West h

1911	1.. 49.. 35	0 88..31	
	2.. 10	88..30	
		0.. 58.. 45	West
Set time	1.. 51.. 45	0.. 58.. 46	
		0.. 58.. 47	
		1.. 51.. 45	
Int. Ref. Polaris		0.. 53.. 00	
True R		1.. 03.. 40	
		10.. 40	

1846

May 12[±]

very steady.

53.3
16.7
12 can ven. 38.7
59.8
12.47 22
1805
2
12.46 36.10
12.48 51.41
2.15.31
cor len 30
2.15.01
cor ax 09
2.14.96

20.6
37.3
Spica 54.5
11.5
13.15.29
-1423
2
2846
24
13.14.52.46
13.17.8.13
2.15.67
cor len 15
2.15.52
cor ax 53
2.14.99

very good
Polaris SP
13.01.15 mid
-2
13.01.13
13.03.41.26
-2.28.28
cor len 6.60
2.34.9
2.15.0
19.9

cc -- 13.30.0
1911-13.18.51.2
11.04.8
2.15.5
8493

40/6.60 16.16 40/20.0 6.90

Lune

2.4

E W
106 - 110+
+ 105 - 110
105 - 112+
+ 104 - 114
127 19
105.2 112.2
105.2
17
3.5 = 0.29

1.56
2.15.4
2.15.7/25
16
57

Spica 10.21 S
12 can Ven 39.09 N

at 13^h Sid 1911 - 2^m 15.0

47.97
27.53
19.44

Mag 12th 1st Ach

By Polarix $\alpha z = 0.66$ Eqs

025)1000(40

130
65
195
188

too late for Antares and the

building sides & Scorpii;

A Ophiuchi

was passing when
the moon was.

H 16.46.00.0

1911 16.34.54.8

on Scorpii
54.5
12.3
29.9
47.6
16 31.05.5

ad. 1st 27.5
2nd 46.2
3rd 64.5
4th 23.0

H 17.26.10

1911 17.24.54.7

139.8
16.30.27.96
cor lev 13
cor az 60
16.30.28.69
2.15.40
16.32.44.09

17.09.41.8
133.0
26.60
17.09.02.60
cor az 62
12
17.09.03.34
2.15.40
17.11.18.74
25.4

H 17.47.00

1911 17.35.54.6

17.27.49.90

02.2
19.3
36.5
53.8
17 21.11.3
1131
2262

17.32.38.0
1189
2378
17.32.59.78
cor lev 12
cor az .64

on Scorpii 17.26.5

19.20.5

on Ophiuchi 12.40.4

D Ophi. 21.36.5

Corrected for error.

Reduced for $\alpha z \times \text{lev}$ but

not for rate.

on Scorpii 16.32.44.09 Rate of 1911

at 2nd 17.11.18.74 - 2.40

D Ophiuchi 17.35.15.94

on Ophiuchi 17.27.50.55

17.25.34.62
cor lev 20
34.82
cor az 33
17.25.35.15
1911 - 2.15.40
17.27.50.55

17.32.00.54
2.15.40
17.34.15.94

1846
a ophiuchi

linchi	17	23.2
	34.5	41.5
	52	59.5
		17.2
17..26..	8.8	17..32..36
		16.74
	102.3	33.48
	20.46	
17..25..	32.46	17..31..57.48
	20	work 12
	38	work 64
17..25..	32.93	17..31..58.24
17..27..	49.93	2..17..50
2..17..00		17..34..15.76

102.3
 20.46
 $17.25 \quad 32.41$
 20
 38

 $17.25 \quad 32.93$
 $17.27 \quad 49.93$
 $2.17.00$

Daphnia 23.2
41.5
59.5
17.2
17.32 = 36
16.74
33.48
17.31 = 57.48
cor len 12
cor ar 64
17.31 = 58.24
2.17 = 50
17.34 = 57.96

14-04-36.37

Level
E W

44.1
 i Sagittum 2.3
 20
 38.2
 18.. 2.. 56.4

 1510
 3020
 18.. 02.. 18.2
 az 6
 fu 17
 18.. 02.. 18.9
 2.. 17.5
 18.. 04.. 36.1

Stars very
Barry
and
high wind

55.2 8.3
 17. 27.0
 35 46
 52.2 4.3
 18.07.10.1 18.12.22.6

$$\begin{array}{r} 982 \\ 2 \\ \hline 1964 \end{array} \quad \text{ax}$$

$$\begin{array}{r} 18 \cdot 11 \cdot 43.66 \\ \text{ax} \quad 60 \\ \text{bx} \quad 13 \\ \hline 44.37 \end{array} \quad \begin{array}{r} 18 \cdot 11 \cdot 44.87 \\ 2 \cdot 17.50 \\ 18 \cdot 14 \cdot 01.87 \end{array}$$

18. 15. 17.6
J lus min 19. 59.2 mid
24. 24.0
29. 28.7

8
 56 1/2 Hams
 42.8
 1
 19
 37
 18..46..55.

 144 8
 2896
 18..46..15.96
 22 64
 60 12

 17.72
 2..17..50

 55 18..48..35.22

0 Sagittaria 13.6 mid 32
 32 Sagittaria 49.5
 18.53 50.3 18.56 41.7

23
40.5
18.58.56

55 18
 13.3
 31
 48.8
 19..11 6.3

 1444
 19.. 10..28 88
 az 60

 13
 29.61
 2.. 17.50
 19..12..47.11

May $\frac{13}{14}$

δ Aquila 56.8
 13.5
 30.3
 47
19.16.04

 54
 11.3
 29
 46
19.32.4
 13.43
 19.31.26.86
 lev 13
 az 59
19.31.27.58
 2.17.50
19.33.45.08

8.3
 26
 43.0
 0
19.37.17
 28.5
 46
 2.8
 14.5
19.41.36.6
 1234
 2
2468
 24
 19.41.0.68
 43.18.41
19.11-2.17.73
 4th
 1.54.00
 9/23.7(2.60)
 16
 55

57.2
 14.8
 31.5
 47.4
19.45.5
 1463
 2
29.26
 47.13
 -2.17.47
 2.17.7
 16.2
2.35.9
 20.01.0
 19.11-19.49.50
 11.10
 2.17.8
 14th
 8.52.2
 4th
 8.32.6
 1.9.6

Rate of γ +2.00

8 hrs min
 15th obs 18.14.17.2
 18.22.7.91
2.10.71
 11.

4th
 m' Sag 21.05
 Q 17.25
 p' Sagitt. 18.00.5
 s' Sagitt. 21.18
 c² Sagitt 16.29.5

Cor. for az. lev. and Error.
 not for Rate

May 13th
 1846
 D Aphinchi 17.34.15.74
 m' Sagittarii 18.04.36.46
 Q, 2nd limb 18.14.01.87
 s' Sagittarii 18.48.35.22
 s' " 19.12.47.11
 c² " 19.33.45.08
 1911 Rate = -2.50

May 18th 9^h 30^m to 11^h 30^m Evg.

*
R 21^h 23^m 21^h 10^m 17^s
δ 74° 32' 74° 37'

21.29
13.47
7.47
21.23
13.44
8.89

For Remarks and for
for the original record of these observations
See a leaf towards the end of this Book
marked with a Capital A at the bottom
in ink. Recorded them by accident
the light being very faint.

* 7th left

13.. 55.. 50.9

T₁ 372.1 56.. 13.0

t₁ 321.0 14.. 01.. 34.0

02.. 03.0

T 13.. 58.. 56.95

+ 13.. 58.. 53.50

55.27

14.. 19.. 31.5

T₂ 372.4 19.. 54.0

t₂ 320.7 25.. 14.7

25.. 43.9

T 14.. 22.. 37.7

+ 14.. 22.. 34.7

3.6.2

14.. 38.. 39.6

T₃ 374.4 39.. 04.2

t₃ 318.6 44.. 22.8

44.. 54.0

T 14.. 41.. 46.80

+ 14.. 41.. 43.50

45.15

Count left

14.. 06.. 20.5

T₁ 364.5 06.. 54.0

t₁ 299.0 11.. 53.0

12.. 25.0

T 14.. 09.. 22.75

+ 14.. 09.. 23.50

14.. 09.. 23.10

13.. 58.. 55.27

10.27.88

14.. 30.. 02.0

T₂ 365.5 30.. 38.0

t₂ 288.5 35.. 26.5

36.. 05.5

T 14.. 33.. 03.75

+ 14.. 33.. 02.25

14.. 33.. 03.00

.. 22.. 36.20

10.27.80

14.. 49.. 13.2

T₃ 369.8 49.. 39.0

t₃ 293.0 54.. 32.0

55.. 23.0

T 14.. 52.. 18.1

+ 14.. 52.. 05.50

14.. 52.. 11.80

14.. 41.. 45.15

10.26.65

14.. 09.. 23

14.. 33.. 03

14.. 52.. 17

94.38

14.. 31.. 33

2.26

14.. 33.. 59

3.. 43.. 56

10.. 50.. 03

9.. 55.. 22

49.. 51

03

10.. 48.. 18

10.58

3.. 43.. 09.23

46.75

55.98

Star

R 21^h 10^m 17^s

Mr. Cat 7493

δ 74° 36' 44.9

Star

R 21^h 20^m 44^s

δ 74° 35' 44.9

Star

R pretty good

δ not reliable

10.58, 10.. 48.. 16

Motion of Comet $\frac{1}{144}$ of diurnal motion.

Comet $\delta 74^{\circ} 32'$

Star $\delta 74^{\circ} 37'$

T_1 364.5
 $\cos \delta$ 2.5
 367.0 = 2.56467
 $\cos \delta$ 9.4266
 97.9 1.9907
 143.6

t_1 299.0 2.
 2.1
 301.1 2.47874
 $\cos \delta$ 9.4266
 80.3 1.9047
 190.4

T_1 372.1 2.57066
 $\cos \delta$ 9.4237
 98.7 1.9944
 107.5
 t_1 321.0 2.50651
 $\cos \delta$ 9.4237
 85.2 1.9303

T_2 363.5
 2.5
 366.0 2.56348
 $\cos \delta$ 9.4266
 97.6 1.9895
 154.2

t_2 298.5
 2.1
 296.6 2.45728
 $\cos \delta$ 9.4266
 76.4 1.8833
 265.7

T_2 372.4 2.57101
 $\cos \delta$ 9.4237
 98.8 1.9947
 102.3
 t_2 320.7 2.50610
 $\cos \delta$ 9.4237
 85.1 1.9298

T_3 369.8
 2.5
 372.3 2.57089
 $\cos \delta$ 9.4266
 99.3 1.9964
 60

t_3 293.2
 2.1
 295.3 2.47826
 $\cos \delta$ 9.4266
 78.8 1.8963
 222.9 190 243
 120
 2) 333
 166

T_3 374.4 2.57334
 $\cos \delta$ 9.4237
 99.3 1.9970
 60
 t_3 318.6 2.50325
 $\cos \delta$ 9.4237
 84.5 1.9269

Star $45''$ S of center
 Comet 166 }
 121 = 1.01 Comet S. of Star

May 18th - 19th Am

Disturb 0.8 alt 45.30
 18 35.5
 53
 23.5 .. 10.3

6 - 23... 23... 0
 1911 - 23... 11... 28.3

42273
 98
 42176

480
 98.0

Σ W
 + 115 - 120
 116 - 123 +
 + 117 - 121
 117 - 121 +

12 54.8

12.568

12
 60
 720
 46.8

77.6.8 = 1.89031

38.4

6) 38.4 (6.4
 36.0
 2.4 12.50

2
 3.0
 57 193.5
 38.76
 57.52

8.42176
 0.31207
 15 17609
 1.48816 = 30.77

May 18th 6 P.M.

Polaris - power 200 5 ft Equatorial.

At 10⁰⁰ 10.00.21.7 37.5
 9.40 01.01.2 39.5
 01 38.4 37.2
 uncertain no 02 15.0 38.6
 'look out' 02 56.0 41.0
 03 35.5 39.5
 04 14.8 39.3
 04 49.8 39.0
 Not moved in Dec 05 31.7 37.4
 06 09.6 37.4
 5⁰⁰ 06 48.9 39.3
 07 28.7 39.8
 08 06.2 37.5
 08 44.9 38.7
 09 24.2 39.3
 10 03.7 39.5
 10 40.9 37.2

56.5

72
 776.8 = 1.89031

9.59401

30.74 = 1.48832

Gen 00. 12 37.2 38.4
 13 18.5 41.3

ΔR = 30.74
 - 0.50 38.0 39.5
 - 1.00 37.5 39.5

6.272

6.24.6

15.5 38.0

53.5 38.0

Star
A continued

Lij

reads = 10.. 16.. 32.8 39.3

12.2 39.4

52.5 40.3

32.2 39.7

10.5 38.3

48.8 38.3

no look out 28 38.9 39.5 0 1

06.7 27.8

44.5 37.8

7.50 29.0 40.5

02.7 37.7

41.5 38.8

21.7 40.2

59.5 37.8

36.9 39.4

17.5 40.6

77.0 1.89154
R 30.87 9.59401
1.46955

- 10.00

B -10.00 10.. 29.. 53.5

30.2 36.7

11.2 41.0

48.5 37.3

27.2 38.7

05.0 37.8

44.4 39.4

20.9 36.5

03.9 43.0

40.5 36.6

18.8 38.3

53.7 34.9

36.5 42.8

good 13.0 36.5

53.5 40.5

30.1 36.6

12.8 42.7

47.5 34.7

30.5 43.0

06.3 35.8

48.3 42.0

12.54.8
72.8 1.98919
77.49 9.59401
1.46955

B.R. = 7070

10.42

Zero

May 18th 6 30 PM
PolarisJuly 15th

B Continued	42	48.3	Ship	15	18	048.3	r
Reads +0.50	10	43.25.5	37.2	35.4	43.7	0.50	
+1.00		07.9	42.4	42.9	26.6		
getting unsteady		44.5	36.6	37.1	03.7		
		25.7	41.2	41.1	44.8		
		01.9	36.2	36.9	21.7		
		44.4	42.5				
		20.5	36.1				
		00.6	40.1				
		37.7	37.1				
		20.4	42.7				
Star steady		55.5	35.1				
		37.5	42.0				
		13.8	36.3				

Values of Micrometer on the
5th Equatorial13.2.7
780
742.710^r

56.2	42.4	May 11 A	31.04
31.2	35.0	" 18	30.78
15.0	43.8	" 18	30.87
48.0	33.0		26.9
32.8	44.8		30.90
06.6	33.8		
51.0	44.4		
25.5	34.5		
09.5	44.0		

B 30.89	May 4
30.87	" 11
30.70	" 18
31.02	" 18
4/ 348	
30.87	

BR=31.02

1.54360
9.54401
1.49161Value of one Revolution of the Micrometer
of the 5th Equatorial by transits of
the Pole Star $r = 30''.9$ and $A = B$.

$$r = (31'' - 0.1)$$

May 19th PM

Comet

above

*_a 11th above
$$\begin{array}{r} 15.32.12.5 \\ 15.36.01.7 \\ \hline 2.10.5 \end{array}$$

$$\begin{array}{r} 16.11.30 \\ 16.09.24 \\ \hline 2.02 \end{array}$$

$$\delta 51.45 \quad h 9.03.54$$

$$\begin{array}{r} 15.29.04.9 \\ 15.31.07.9 \end{array}$$

$$\begin{array}{r} 119.1 \\ 80.0 \end{array} \quad \begin{array}{r} 29.21.7 \\ 30.41.7 \end{array} \quad \begin{array}{r} 7.129.6 \\ 9.964 \end{array} \quad \begin{array}{r} 31.24.3 \\ 33.00.7 \end{array}$$

$$\begin{array}{r} 31.04 \\ 33.17.5 \end{array}$$

$$\begin{array}{r} 15.30.01.7 \\ 15.32.12.50 \end{array}$$

$$\begin{array}{r} 15.30.04.4 \\ 15.32.12.70 \end{array}$$

$$\begin{array}{r} 15.30.03.05 \\ 15.32.12.60 \end{array}$$

$$\begin{array}{r} 15.30.01.7 \\ 2.09.55 \end{array}$$

Comet

*_a 11th

$$\begin{array}{r} 16.08.38.5 \\ 16.10.22.5 \end{array}$$

$$\begin{array}{r} T_3 102.0 \\ t_3 54.3 \end{array} \quad \begin{array}{r} 09.01.2 \\ 09.45.5 \end{array} \quad \begin{array}{r} T_3 27.7 \\ t_3 109.0 \end{array} \quad \begin{array}{r} 10.35.5 \\ 12.24.5 \end{array} \quad \begin{array}{r} 7.49.0 \\ 12.40.2 \end{array}$$

$$\begin{array}{r} 10.20.5 \\ 12.40.2 \end{array}$$

$$\begin{array}{r} 16.09.28.3 \\ 16.11.30.00 \end{array}$$

$$\begin{array}{r} 16.09.29.5 \\ 16.11.31.35 \end{array}$$

$$\begin{array}{r} 16.09.28.90 \\ 16.11.30.67 \end{array}$$

$$\begin{array}{r} 16.09.28.90 \\ 2.01.77 \end{array}$$

15.30.05.5

15.36.04.8

16.09.28.9

16.23.16.1

16.32.56.1

57.11.51.4

16.02.27.3

2.33.2

16.04.55.5

3.47.52.5

12.17.03.0

11.58.02.04

16.57.21

12.15.02.2

3.47.05.79

46.75

3.47.52.54

Per correct obs of 22nd

Per

The obs of May 22 was used 41" in error

From obs of May 19, 21, and 22 Prof. P. gets

Per. pap. June 5. 2158

Prof. P. gets

by comp. plan of 22

4.6423

On the 4th of May

Per

Dist 0.6245

0.6461

its Dist = 0.3

Per

Incl. 29° 30'

29° 15.5

and near the Comet

Long. Node

259° 46"

264.259

of Feb.

Per

160° 45'

164.237

Per to Node 99° 1' Retrograde.

So that an error of 1" in the obs makes a change of near 400" in the Node.

When first seen in the Equatorial

It did not appear perfectly round

but gave an idea

of its showing a tail very much foreshortened but I judged on the wrong side from the Sun

I had been looking for $\frac{1}{2}$ or $\frac{3}{4}$ of an hour and was making the last sweep from S to N. butly abt Nally through. I did not think it was a Comet before it moved. it looked too bright. as did that of Feb.

New Comet May 19th 12 to 1 del above
 16 .. 22 .. 08.2 16 .. 23 .. 51.5 16 .. 28 .. 16.5
 T₁ 135.0 22 .. 28.2 T₁ 157.9 24 .. 05.5 T₁ 146.5 28 .. 30.5
 t₁ 96.8 24 .. 05. t₁ 119.2 30 .. 29.7
 24 .. 23.2 26 .. 29.4 43.0
 16 .. 23 .. 16.60 16 .. 25 .. 10.45 16 .. 29 .. 30.10
 16 .. 23 .. 15.70 16 .. 25 .. 11.15 16 .. 29 .. 29.75
 16 .. 23 .. 16.15 16 .. 25 .. 10.80 16 .. 29 .. 29.93
 16 .. 23 .. 16.15 16 .. 25 .. 10.80 16 .. 25 .. 10.80
 1 54.85 4 .. 19.13

very low in the horizon
 Centre of field
 h 10 .. 14 .. 57
 16 .. 47 .. 27
 6 .. 32 .. 30
 851.35

* a
 16 .. 31 .. 50.7 16 .. 33 .. 30
 T₁ 133.8 32 .. 05.8 T₁ 159.4 33 .. 44.5
 t₁ 477 t₁ 131.5
 33 .. 49.5 35 .. 56.0
 34 .. 04.5 36 .. 09.4
 16 .. 32 .. 57.60 16 .. 34 .. 49.7
 16 .. 32 .. 54.65 16 .. 34 .. 50.25
 16 .. 32 .. 56.12 16 .. 34 .. 49.98
 16 .. 32 .. 56.12 16 .. 34 .. 50.12
 1 53.86

* L
 16 .. 37 .. 56.4 Truck 10 .. 00 .. 31
 38 10.5 Co h 1 .. 59 .. 25 δ 51 .. 42
 T₁ 144.3 40 .. 07.2
 t₁ 116.7 40 20.7
 16 .. 34 .. 08.55
 16 .. 39 .. 08.55
 16 .. 39 .. 08.70
 16 .. 34 .. 49.98
 4 .. 18.72
 the * a is green. 1226

May 22nd PM Obs for dip of * a and * L

* a 2 * L

14 .. 09 .. 26.5 14 .. 13 .. 53.5

09 40.6 16 05.5

17 .. 37.5 14 .. 14 .. 59.5

11 51.7 14 .. 10 .. 39.5

14 .. 10 .. 39.05 14 .. 10 .. 39.5

14 .. 10 .. 39.05 14 .. 10 .. 39.5

a + above * L below

14 .. 24 .. 04.5 14 28 .. 13.7

14 .. 26 .. 09.5 14 28 .. 26.7

26 25.4 30 41.5

14 .. 25 .. 14.95 14 .. 29 .. 34.10

14 .. 25 .. 14.55

both above

* a very high * L 2

14 .. 35 .. 26.9

35 56.4

36 30.6

36 59.0

1846 Jan 1st R 6 .. 41 .. 18.82
 δ 51 .. 41 .. 44.6

Cor. of motion in $R = \frac{1}{24.0}$ Comet $\delta 51.32'$ a Star $10^{\circ} 57.35'$

$$\begin{array}{rcl}
 T_1 119.1 & 2.0759 & t_1 80.0 \quad 1.9031 \\
 \text{cor. mo. } -.3 & 9.7932 & \text{cor. mo. } -.2 \quad 9.7932 \\
 74.0 & 1.8691 & 49.7 \quad 1.6963 \\
 501.7 & \text{Cor. pmo} & 510.0 \quad \text{Cor. pmo} \\
 444.5 & +2.4 & 444.0 \quad +1.1 \\
 \hline
 59.9 & & 66.0
 \end{array}$$

$$\begin{array}{rcl}
 T_1 129.6 & 2.1126 & t_1 96.4 \quad 1.9541 \\
 & 9.7933 & 9.7933 \\
 80.5 & 1.9059 & 59.9 \quad 1.7774 \\
 441.8 & & 444.0
 \end{array}$$

$$\begin{array}{rcl}
 T_2 118.7 & 2.0744 & t_2 80.3 \quad 1.9047 \\
 -.3 & 9.7938 & -.2 \quad 9.7938 \\
 73.7 & 1.8677 & 49.9 \quad 1.6980 \\
 504.1 & +2.5 & 508.8 \quad +1.1 \\
 433.5 & & 435.5 \\
 \hline
 70.6 & & 73.3
 \end{array}$$

$$\begin{array}{rcl}
 T_2 130.8 & 2.1166 & t_2 98.2 \quad 1.9921 \\
 & 9.7933 & 9.7933 \\
 81.3 & 1.9099 & 61.0 \quad 1.7854 \\
 433.5 & & 435.5
 \end{array}$$

$$\begin{array}{rcl}
 T_3 102.0 & 2.0086 & t_3 54.3 \quad 1.7348 \\
 -.3 & 9.7938 & -.1 \quad 9.7938 \\
 63.4 & 1.8024 & 33.8 \quad 1.5286 \\
 577.6 & +1.8 & 578.5 \quad -0.7 \\
 383.0 & & 375.6 \\
 \hline
 194.6 & & 202.9
 \end{array}$$

$$\begin{array}{rcl}
 T_3 137.7 & 2.1389 & t_3 109.0 \quad 2.0374 \\
 & 9.7933 & 9.7933 \\
 85.6 & 1.9322 & 67.7 \quad 1.8307 \\
 383.0 & & 375.6
 \end{array}$$

$$\begin{array}{rcl}
 T_4 135.0 & 2.1303 & t_4 96.8 \quad 1.9859 \\
 -.3 & 9.7941 & -.2 \quad 9.7941 \\
 84.0 & 1.9244 & 60.3 \quad 1.7800 \\
 403.5 & +3.5 & 441.0 \quad -1.6 \\
 135.6 & & 157.0 \\
 \hline
 269.9 & & 284.0
 \end{array}$$

$$\begin{array}{rcl}
 T_4 157.9 & 2.1984 & t_4 131.3 \quad 2.1183 \\
 & 9.7933 & 9.7933 \\
 98.1 & 1.9917 & 81.6 \quad 1.9116 \\
 135.6 & & 157.0
 \end{array}$$

$$\begin{array}{rcl}
 T_5 133.8 & 2.1265 & t_5 97.7 \quad 1.9899 \\
 \text{cor. } \delta & 9.7943 & -.2 \quad 9.7943 \\
 83.3 & 1.9208 & 60.8 \quad 1.7842 \\
 411.6 & +3.4 & 437.0 \quad -1.6 \\
 91.8 & & 154.0 \\
 \hline
 319.8 & & 283.0
 \end{array}$$

$$\begin{array}{rcl}
 T_5 159.4 & 2.2025 & t_5 131.5 \quad 2.1189 \\
 & 9.7933 & 9.7933 \\
 99.0 & 1.9958 & 81.7 \quad 1.9122 \\
 91.8 & & 154.0
 \end{array}$$

Star 7 $\delta 51.42$

$$\frac{\text{daily motion in dec}^\circ}{360^\circ} = \frac{1}{240}$$

$T_1 146.5$	2.1658	$t_1 119.2$	2.0763	309.6	302.9
	9.7922		9.7922	135.6	157.0
90.8	1.9580	73.9	1.8685	445.2	459.9
309.6		302.9			445.2
403.5		441.0			5.1
$60 \overline{) 713.11}$		748.9			$452.6 = 7.32.6$
11.2					

$T_2 144.3$	2.1593	$t_2 116.7$	2.0671	331.9	324.0
	9.7922		9.7922	91.9	154.0
89.4	1.9515	72.3	1.8593	423.7	498.0
331.9		324.0			423.7
411.6		497.0			101.7
$60 \overline{) 743.51}$		761.0			$450.8 = 7.30.8$
14					

Star 6 in Apr 1226

$$\text{dif. Dec } \alpha \times 2 = 7.31.7 + 5.0 \text{ ref}$$

Dif dec $\times \alpha$ and Comet

Inn	Out	
$1.06.0$	$1.00.0$	Comet S of Star
$1.10.6$	$1.13.3$	"
$3.14.6$	$3.22.9$	"
$4.27.9$	$4.44.0$	"
$5.19.8$	$4.43.0$	"
$3.03.8$	$3.00.6$	"

Dif dec $\times 2$ Comet

$12.23.9$	$11.53.1$	"
$12.41.0$	$12.23.5$	"
$12.32.5$	$12.08.3$	"

Dif R $\times \alpha$

$2.09.55$	Comet preceds $\times \alpha$
$2.09.70$	"
$2.01.77$	"
$1.54.65$	"
$1.53.86$	"
$2.01.71$	"
cor ref .03	

$2.01.74 = .11$ cor. for mo. in dec

$$\begin{array}{r} \times R 6.37.00.08 \\ 6.34.58.45 \end{array}$$

$$\begin{array}{r} 51.41.44.6 \times 1.8 \\ 51.34.12.4 \\ 5.0 \end{array}$$

$$\times \alpha \delta 51.34.07.9$$

$$6.41.18.82 \times 6.8$$

$$\times \alpha \text{ dif R } 4.18.92 + .18 \text{ cor ref}$$

$$\times \alpha \text{ R } 6.37.00.08$$

$$\times \alpha \delta 51.34.07.9$$

May 19th

Dec 12.15.02

$$\begin{array}{r} 6.34.58.45 \\ 51.31.04.4 \end{array}$$

$$\begin{array}{r} 3.02.2 \text{ dif dec} \\ \text{cor ref } 1.3 \\ 3.03.5 - 2.0 \text{ cor mo. in R} \\ 31.34.07.9 \\ 31.06.4 \end{array}$$

May 20th 9th M
$$\begin{array}{r} 6.410 \\ 12.40 \\ \hline 6.01 \end{array}$$

$$\begin{array}{r} 6.47 \\ 12.47 \\ \hline \end{array}$$

24)310(1)

24)50(3)

Comet seen through a fissure in Heavy Clouds
Center of field

1911 12.46.30

h 6.09.50 0 50.18

at one hour later at 13.40^h δ
~~One hour later~~ δ

* above

48 21.8

$$\begin{array}{r} 37.5 \\ \hline \text{Clouds} \end{array}$$

$$\begin{array}{r} 12.46.30 \\ 2.30 \\ \hline \end{array}$$

$$\begin{array}{r} 12.49.00 \\ 6.09.50 \\ \hline \end{array}$$

$$\begin{array}{r} 6.39.10 \\ 6.34.00 \\ \hline \end{array}$$

5.69

at 12.15

$$\begin{array}{r} 12.41 \\ 3.52 \\ \hline 8.57 \\ 7.52 \\ \hline 8.55 \end{array}$$

$$\begin{array}{r} 6.39.21 \\ 44 \\ \hline 6.40.05 \\ 6.34.56 \\ \hline 5.07 \end{array}$$

$$\begin{array}{r} 50.15 \\ 11 \\ \hline 50.26 \\ 51.32 \\ \hline 1.28 \end{array}$$
21st 10.40h

alpha 1.29.08-10

1.29.03

h 7.00.00 D 38.41

2.38

25.31.41

7.00.00

Inter R of alpha 18.31.41

18.31.41

Since R 18.31.46

18.30.05

1.34.31-10

h 7.05.23

$$\begin{array}{r} 38.41 \\ 38.38 \\ \hline \end{array}$$

3

10.5

$$\begin{array}{r} 6.39.21 \\ 5.07 \\ \hline 6.44.28 \end{array}$$

$$\begin{array}{r} 50.15 \\ 1.28 \\ \hline 48.47 \end{array}$$

May 21st 1846

* ap. 59 of Count

$$\begin{array}{r}
 12 \dots 42 \dots 58.4 \times A \quad 4 \dots 24 \\
 12 \dots 43 \dots 55.8 \text{ Count B} \quad 11.69 \\
 \hline
 57.4 \quad 15.93
 \end{array}$$

For place of 8th

$$\begin{array}{r}
 13 \dots 13 \dots 37.8 \quad D 49 \dots 07 \\
 h \quad 6 \dots 33 \dots 34.0
 \end{array}$$

Place of Count

$$\begin{array}{r}
 13 \dots 19 \dots 12 \quad D 48 \dots 57 \\
 h \quad 6 \dots 38 \dots 02 \quad 48 \dots 54 \text{ ap Dec} \\
 \hline
 6 \dots 41 \dots 10 \\
 \quad 2 \dots 37 \\
 \hline
 6 \dots 43 \dots 47 \quad R \text{ Count approx}
 \end{array}$$

$$\begin{array}{r}
 12 \dots 47 \dots 25.0 \times A \quad 4 \dots 24 \\
 12 \dots 48 \dots 24.9 \text{ Count B} \quad 12.26 \\
 \hline
 59.9 \quad 16.50
 \end{array}$$

$$\begin{array}{r}
 12 \dots 50 \dots 42.4 \times A \quad 4 \dots 24 \\
 12 \dots 51 \dots 43.3 \text{ Count B} \quad 12.35 \\
 \hline
 60.9 \quad 16.59
 \end{array}$$

$$13 \dots 19 \dots 12.0 \text{ Count } 0^{\circ} 00$$

$$13 \dots 23 \dots 04.9 \times 5 \text{ or } 6 \quad 11.06 \text{ Bap}$$

$$\begin{array}{r}
 12 \dots 52 \dots 36.4 \times A \quad 4 \dots 24 \\
 \text{Count } 12 \dots 53 \dots 37.0 \quad 12.80 \\
 \hline
 60.6 \quad 17.04
 \end{array}$$

$$\begin{array}{r}
 12 \dots 55 \dots 44.9 \times A \quad 4 \dots 24 \\
 12 \dots 56 \dots 46.9 \text{ Count B} \quad 13.01 \\
 \hline
 62.0 \quad 17.25
 \end{array}$$

Count ap Right
* Left

Good

$$\begin{array}{r}
 12 \dots 59 \dots 59.9 \times A \quad 4 \dots 40 \\
 13 \dots 01 \dots 03.4 \text{ Count B} \quad 13.36 \\
 \hline
 63.5 \quad 17.76
 \end{array}$$

$$\begin{array}{r}
 13 \dots 04 \dots 57.6 \times A \quad 4 \dots 40 \\
 13 \dots 06 \dots 00.9 \text{ Count B} \quad 13.81 \\
 \hline
 63.3 \quad 18.21
 \end{array}$$

May 21st

Star 5 or 6

13.32 46.9 $\times$ 4.13 Right hand 47.4
 13.39 54.4 $\times$ 12.47 Left " 59.9
 7.07.5 16.60 60.9

13.41 55.5 Comet B 9.63 Right
 711 22.10 62.0
 63.5
 63.3
 71.1
 71.7

13.46 16.8 $\times$ 5 or 6 B 3.59 1 9) 304
 13.53 24.2 $\times$ 2 A 12.72 53.38
 7.07.4 16.61 1.03.38 dif R

13.54 35.9 Comet A 10.84
 717 23.56

12.43.55.8

12.48.24.9

12.51.43.3

12.53.37.0

12.56.47.0

13.01.03.4

13.06.00.9

13.41.05.5

13.54.35.9

9) 57.13.7

13.06.21.5

2.38.4

13.09.00.0

3.55.45.6

9.13.14.4

8.58.31.5

12.57.9

14.0

diff 9.11.43.8

3.54.58.9
 46.75
 3.55.45.6

13.53
 First Celest $\times$ a R 6.43.01.69
 decum with one δ 49.05.11.6
 dif.

British Cat $\times$ 2 R 6.35.54.97
 δ 48.56.39.5

The Comet is apparently
 better defined on the right
 and above.
 bears a faint
 illumination



and This series of 9 Comparisons
 with two stars observed and reduced
 between 9^h 45^m and 11^h

15.01.00.0
 1911 14.49.16.7
 11.43.3
 9.04.0
 1911 - 2.38.4

15.93
 16.50
 16.59
 17.04
 17.25
 17.76
 18.21
 22.10
 23.56

9) 164.94
 18.327
 164.94
 18.327
 31
 18.327
 549.81
 568.137
 4.582

60) 563.555 (9.23.6 dif dec
 540
 23

6.44.05.7
 δ 48.55.48.0

MSF 21st 9.11.43.8

The Comet was found

$$\begin{array}{r}
 26 - 23.33.0 \\
 158 - 7.27.27.5 \\
 \hline
 3.54.58.90 \\
 \quad 46.75 \\
 \hline
 3.55.45.65
 \end{array}$$

$$\begin{array}{r}
 \text{Am 14 } 26 - 8.52.2 \\
 + 22 \quad 15.2 \\
 \hline
 22 \quad 9.07.4 \\
 23.33.00.0 \\
 \hline
 23.23.52.6 \\
 3.55.45.6 \\
 \hline
 19.28.07.0 \\
 18.56.53.24 \\
 27.55.41 \\
 \hline
 6.98 \\
 7.24.55.63 \\
 158 7.26.27.5 \\
 \hline
 2.31.87 \\
 \quad 16 \\
 \hline
 158 + 1.15.47
 \end{array}$$

$$\begin{array}{r}
 158 - 7.45.0 \\
 682 - 7.43.53.2 \\
 \hline
 158 - 7.46.0 \\
 239 - 7.44.47
 \end{array}$$

$$\begin{array}{r}
 \text{Am 14 } 8.52.2 + 2.01 \\
 4 - 8.31.6 + 1.7 \\
 \hline
 \text{Apr 25 } 8.16.5 \\
 \text{The ratio } 1.9 \\
 \hline
 15.2
 \end{array}$$

$$\begin{array}{r}
 23.46.0 \\
 7.39.25.4 \\
 \hline
 23.46.00 \\
 4.07.41 \\
 \hline
 23.36.52.6 \\
 3.55.45.6 \\
 \hline
 19.41.07 \\
 18.56.53.24 \\
 40.53.28 \\
 \hline
 6.98 \\
 7.37.53.50 \\
 158 7.39.25.4 \\
 \hline
 1.31.9 \\
 \quad 16 \\
 \hline
 + 1.15.90
 \end{array}$$

May 22nd

Measured the distance of the two stakes from the Equatorial for the distance of mark for micrometer values

Dist of Stakes $5.39^{\text{ft}} - 9.9^{\text{in}}$ measured on the tops of stakes in a right line

Perpendicular heights of stakes from surface of the ground

Stake nearest Equatorial	1 st $\frac{1}{2}$	Dist of stakes alt 24 th
(not the permanent one)	1	7.5
	1	6.0

Permanent stakes	1	0
$6\frac{1}{2}$ lower perpen	1	9
dicular ~~to the parallel line~~	1	11

Angle of depression	2	04.5
$3^{\circ} 14' 35''$	3	06.5
	4	01.2
	4	01.5
	5	10.5
	6	01. $\frac{3}{4}$
	6	04.
	6	05 $\frac{1}{4}$
	6	03 $\frac{1}{2}$
	5	11. $\frac{1}{2}$
	5	10 $\frac{1}{2}$
	5	05
	5	05
	5	03
	4	11
	4	10 $\frac{1}{2}$
	4	01 $\frac{1}{2}$
	3	10
Last stake.	2	04

$$\begin{array}{r} 48.55 \\ 1.12 \\ \hline 47.43 \end{array} \quad \begin{array}{r} 6.44.06 \\ 4.24 \\ \hline 6.48.30 \end{array}$$

$$\begin{array}{r} 47.29 \\ 2 \\ \hline 47.29 \end{array}$$

$$\begin{array}{r} 47.29 \\ 2 \\ \hline 47.29 \end{array}$$

Comet of May 19th

1846 May 22

approx 8 47° 30'

* R 6.45.32

* ⁷⁻⁸ above 14' from Comet below

$$\begin{array}{r} 12.40.18.8 \\ T 119.2 \\ + 88.6 \\ \hline 42.18.3 \\ \hline 12.41.18.40 \\ 12.41.18.40 \end{array} \quad \begin{array}{r} 12.42.16.8 \\ T 110.7 \\ + 94.43.57.2 \\ \hline 44.07.5 \\ \hline 12.43.11.50 \\ 12.15 \end{array}$$

$$\begin{array}{r} 34.05 \\ 49. \\ \hline \end{array}$$

$$\begin{array}{r} 12.44.36.9 \\ T 119.6 \\ + 88.5 \\ \hline 44.52.4 \\ 46.20.9 + 81.9 \\ \hline 36.5 \\ \hline 12.45.36.70 \\ 12.43.36.65 \end{array} \quad \begin{array}{r} 12.46.34.5 \\ T 112.5 \\ + 81.9 \\ \hline 46.49.0 \\ 48.10.9 \\ \hline 48.27.0 \\ \hline 47.29.95 \\ 30.75 \end{array}$$

$$\begin{array}{r} 12.48.55.9 \\ T 119.6 \\ + 89.2 \\ \hline 50.40.4 \\ 50.55.5 \\ \hline 12.49.55.70 \\ 12.49.55.80 \end{array} \quad \begin{array}{r} 12.50.52.9 \\ T 115.1 \\ + 85.6 \\ \hline 51.06.6 \\ 52.32.2 \\ \hline 48.0 \\ \hline 12.51.50.45 \\ 12.51.49.40 \end{array} \quad \begin{array}{r} h 6.07.06 \\ D 47.34' \\ \hline 6.07.06 \\ 2.42 \\ \hline 09.44 \end{array} \quad \begin{array}{r} mid field D 47.45' \\ 12.49.56 \\ 2.42 \\ \hline 12.52.38 \\ 6.07.06 \\ \hline 6.45.32 \end{array}$$

* R 6.47

Power 100 alt May 22nd Pole
above

* 13 13.. 54.4 B 19=40
Comet 13 .. 15 .. 54.4 below A 8.77
2 .. 00.0 28.17

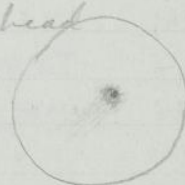
* 13 .. 20 .. 56.7 B 88451
Comet 13 .. 23 .. 00.5 A 87323
2 .. 03.8 60) 866.19 Comet N of star
14 .. 26.2

* 13 .. 27 .. 59.5
Comet 1

13 .. 30 .. 10.4 B 19.32
13 .. 32 .. 11.5 A 7.17
2 .. 01.1 26.47
31
26.47
7941
820.57
6.62
60) 813.95 Comet S of star
13 .. 34.0

Comet is getting fainter the sky is a little
hazy with cirrus
scarcely bears illumination

Comet appears bright at intervals
Now shows a tail 10' following in R
Head about as broad as the thick-
up of the ring. but a faint light extends
further. The end of tail a little
North of the head



Light pretty well concentrated

May 22

* $\delta 47^{\circ} 30'$

T 119.2 2.07628 + 98.6 1.94743
 9.82968 9.82968
 80.5 1.90596 59.9 1.77711
 441.8
 499.3 444.0

Comet $\delta 47^{\circ} 45'$

T 110.7 2.04415 + 79.4 1.89982
 9.82761 9.82761
 74.4 1.87176 59.4 1.72743
 74.3 499.3
 441.8
 60) 941.1
 15.41.1

T 119.6 2.07773 + 88.5 1.94694
 9.82968 9.82968
 80.8 1.90741 59.8 1.77662
 438.6 444.8

T 112.5 2.05115 + 81.9 1.91328
 9.82761 9.82761
 75.6 1.87876 55.1 1.74089
 75.5 489.1
 438.6
 60) 927.7 (15.27.7
 60
 327

T 119.6 2.07773 + 89.2 1.95036
 9.82968 9.82968
 80.8 1.90741 60.3 1.78004
 438.6 441.0

T 115.1 2.06108 + 85.6 1.93247
 9.82761 9.82761
 77.4 1.88869 57.5 1.76008
 77.3 472.7
 438.6
 911.3 (15.11.3
 60
 327

Third Celeste + R 6.45.48.21
 1376 $\delta 47^{\circ} 28' 11.1''$ 10.0

AB Star 2d ~~2.40~~ ~~consequently~~

Diff dec
 -Date Jan Mar
 Annulus 15.41.1 15.33.2 15.37.1
 diameter 15.27.7 15.23.1 15.25.4
 15.11.3 15.03.3 15.07.3
 Hair 1 14.1
 diameter 14.26.2

13.34.0
 5) 24.20.0
 14.50.0

disg 9.01.28 $\delta 47^{\circ} 43' 1.1''$
 00.0

The stars marked 88° 49' 22" and
 in First Celeste are visible with

Jan 1 9^h 12 7.02 40.3
 22 34.19 46.5

$l = 0''$

found level

16

14^h 8.42.2

day 30^h

2.3

23.49.00.0
 7.16 49.6

23.49.00.0 4.26.31.35
 9.24.2 46.75
 23.39.35.8 27.18.1

4.27.15.1
 19.12.17.7

18.56.53.24

11.58.03

16.95

19.09.08.9

19.10.59.6

+ 1.50.7

19.12.17.7

19.12.17.7

19.12.17.7

19.12.17.7

19.12.17.7

19.12.17.7

19.12.17.7

19.12.17.7

19.12.17.7

19.12.17.7

19.12.17.7

19.12.17.7

19.12.17.7

19.12.17.7

19.12.17.7

19.12.17.7

19.12.17.7

19.12.17.7

19.12.17.7

19.12.17.7

19.12.17.7

19.12.17.7

19.12.17.7

19.12.17.7

19.12.17.7

19.12.17.7

19.12.17.7

19.12.17.7

19.12.17.7

19.12.17.7

19.12.17.7

19.12.17.7

19.12.17.7

19.12.17.7

19.12.17.7

Jan 1 9^h 12 7.02 40.3
 22 34.19 46.5

10 52.34.5

14.9.8

2.9.6

10.51.17.96

10.54.12.37

2.54.15

22

2.54.37

19.11 - 2.54.99

58

12

30

Arcturus 47.8

06

14.6.24

1098

2

20.96

14.5.45.96

8.40.96

2.55.60

2.54.67

2.54.6

2.54.6

2.54.6

2.54.6

2.54.6

2.54.6

2.54.6

2.54.6

26.3

40.1

57.2

14.2

31.5

13.14.14.9

1.8.19

36.38

13.14.12.38

17.8.04

2.55.66

19.11 - 2.54.99

14.22.0

19.11 - 14.09.32.6

14.22.0

14.22.0

14.22.0

14.22.0

14.22.0

14.22.0

14.22.0

14.22.0

14.22.0

14.22.0

14.22.0

14.22.0

14.22.0

14.22.0

14.22.0

14.22.0

13.31.0

19.11 - 13.18.33

12.27

2.55

9.32

13.31

13.31

13.31

13.31

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13.31

8144
 9010
 134
 92
 9.8090

Real for rate 8-8

72.56

at 13.14

Arcturus 2.54.37

8-62.35.8

Arcturus 2.55.66

8-10.21.5

1.29 = 0.1106

8-10.21.5

Eds ar = 0.82

9.8090 = 9.9196

lar = 0"

9.8090 = 9.9196

19.11 Spica - 2.55.00

9.8090 = 9.9196

at 13.14 Arct 2.54.60

9.8090 = 9.9196

Arcturus 2.55.00

9.8090 = 9.9196

19.11 Spica - 2.55.00

9.8090 = 9.9196

at 13.14 Arct 2.54.60

9.8090 = 9.9196

Arcturus 2.55.00

9.8090 = 9.9196

19.11 Spica - 2.55.00

9.8090 = 9.9196

at 13.14 Arct 2.54.60

9.8090 = 9.9196

Arcturus 2.55.00

9.8090 = 9.9196

19.11 Spica - 2.55.00

9.8090 = 9.9196

at 13.14 Arct 2.54.60

9.8090 = 9.9196

Arcturus 2.55.00

9.8090 = 9.9196

R 7^h 06^mJan 3rd P.M. Comet Dab 38.10

* a below

Stars come so near each other that the markings are ^{not} good at 9^h 30^m Lat. 15° 31' 51" Long. 109° 06' 26" R 7^h 01^mComet of May 19th

* b below Comet above

* c

14..08.52.2 T101.3 10.00.5 T103.5 10.45.9 T104.5 12.20.4

T123.4 09.03.7 874.4 14.3 + 79.7 59.0 ± 103.4 131.5

97.2 58.7 11.28.8 81.7 12.17.2 81.5 14.14.9

429.9	14..09..53.90	14..10..51.55	14..11..37.65	14..13..22.65
452.8		14..10..51.15	14..11..38.10	14..13..23.20
452.7		14..10..51.35	14..11..37.97	14..13..22.92
		46.52	46.52	46.52

* b below

Comet above

14..14..54.7	14..15..39.8
T100.7 15 08.4 T104.9	15..52.9
+ 74.1 16..22.5 + 78.0	17..10.9
79.1 35.4 82.5	24.7
58.2	
455.7 14..15..45.45	14..16..31.90
456.7 14..15..45.05	14..16..32.25
455.7 456.7 420.6	14..16..32.08
420.6 433.2	14..15..45.25
476.3 459.9	46.43

* b below

Comet above

14..17..58.7	14..18..43.4
T100.2 18..12.0 T103.8	18..55.4
+ 72.9 + 78.5	
78.7 19..24.9 81.7	20..38.9 13.9
57.1 38.9 61.8	20..13.9 27.2

14..18..48.50 429.2 14..19..34.65

14..18..48.45 429.1 14..19..35.70

459.5 459.5 429.2 14..19..34.98

464.4 459.2 464.4 14..18..48.62

459.7	60	459.3	61	14	46.36
		66			
		24.3			
		24.3			

Diff. Dec * b

Ante. " " " "

455.7 456.7 420.6

14..42.7 14..44.2 14..45.7

14..36.3 14..49.9 14..49.7

14..42.55 14..49.25 14..46.3

14..42.5 14..46.3 14..48.7

14..48.7 14..48.7 14..48.7

14..48.7 14..48.7 14..48.7

14..48.7 14..48.7 14..48.7

14..48.7 14..48.7 14..48.7

14..48.7 14..48.7 14..48.7

14..48.7 14..48.7 14..48.7

14..48.7 14..48.7 14..48.7

14..48.7 14..48.7 14..48.7

14..48.7 14..48.7 14..48.7

14..48.7 14..48.7 14..48.7

14..48.7 14..48.7 14..48.7

14..48.7 14..48.7 14..48.7

14..48.7 14..48.7 14..48.7

14..48.7 14..48.7 14..48.7

14..48.7 14..48.7 14..48.7

14..48.7 14..48.7 14..48.7

14..48.7 14..48.7 14..48.7

14..48.7 14..48.7 14..48.7

14..48.7 14..48.7 14..48.7

14..48.7 14..48.7 14..48.7

14..48.7 14..48.7 14..48.7

First left 1208.9

* b R 7^h 00^m 41.947

δ 38° 26' 35.3

* c 7^h 03^m 12.33

δ 38° 21' 45"

by R 7^h 01^m 27.92 * b

Diff. R * b and Comet

46.52 8 follows * b

46.43 8 Count

46.36 * b 38° 11' 46.4

46.33 * c 38° 12' 01.5

46.42

46.64

R 7^h 01^m 27.79

δ 38° 11' 46.4

June 3rd

ditaxe 3^{me} 28' 10" 80a
1, 6e 2-31 6-4' 30" ditaxe

* a below

4 2 below

Count above

~~PC~~ below

1846phae. p

14 .. 25 .. 27.9 T. 97.9 14. 26 .. 38.5 14. 27 22.1 14 29 .. 07.8
25 .. 39.5 + 70.1 26 .. 52.4 27 34.0 + 101.7
+ 101.1 28 .. 02.5 28 43.2 29 30 .. 49.5
77.7 27 .. 20.6 28 .. 16.4 29 .. 05.5 14 .. 29 .. 58.65
2038 31.3 476.3 477.3 432.4 425.1 14 .. 28 .. 13.80 14 .. 27 .. 27.30
14 26. 30.05 14 .. 27 .. 27.30 14 .. 28 .. 13.60 14 .. 29 .. 58.6
2 58 14 .. 27 .. 27.45 14 .. 28 .. 13.60 14 .. 29 .. 58.6
4 44 14 .. 27 .. 27.37 14 .. 28 .. 13.60 14 .. 29 .. 58.6
10 11 04 14 .. 27 .. 27.37 14 .. 28 .. 13.60 14 .. 29 .. 58.6
476 11 04 14 .. 27 .. 27.37 14 .. 28 .. 13.60 14 .. 29 .. 58.6
206.0 476 11 04 14 .. 27 .. 27.37 14 .. 28 .. 13.60 14 .. 29 .. 58.6
1270 4.30 14 .. 27 .. 27.37 14 .. 28 .. 13.60 14 .. 29 .. 58.6

1911-3.02^a

$$\begin{array}{r} 1.74 \cdot 19 = 24.5 \\ \times \quad 27 \quad 37 \\ \hline 1 \quad 49 \quad 01.5 \\ \quad \quad 3 \quad 02 \\ \hline 1 \quad 50 \quad 03.5 \end{array}$$

June 3rd at 1^h 10^m alt
 Count of Feb R 17^h 52^m 14^s
 S 73° 32' 55"

June 5th

1116

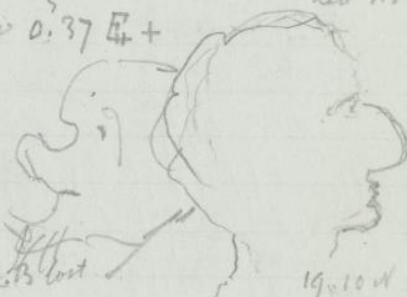
1.33
 0.57
 9.54
 9.935 az = 0.86

0.39 = $\frac{\cos \delta \cos \alpha}{\cos \alpha \sin(\delta - \delta)}$ Spica & 9 Bootes

W E

+68 - 74
 63 - 80 +
 +69 - 74
 64 - 80 +
 66 77

Dev 0.37 E +



36.2 Fe - 13 .. 36.0
 53.4 1911- 13 .. 23 .. 19.2
 Spica 11
 28

13 .. 14 .. 45.2

1638

2

3276

-24

13 .. 14 .. 08.76

24

13 .. 14 .. 08.52

13 .. 17 .. 08.01

2 .. 59.49

12.3

30

47

14.2 .. 21.2

1045

2090

24

14 .. 01 .. 44.90

2 .. 59.49

14 .. 04 .. 44.39

0.17
 19
 36.2
 53.7

13 .. 43 .. 11

1116

2

2232

12

13 .. 42 .. 34.32

04

13 .. 42 .. 34.36

11 Bootes 27
 44.7
 13 .. 45 .. 2.4

1244

13 .. 44 .. 24.88

13 .. 47 .. 23.66

2 .. 58.78

curlew 36

2 .. 59.14

1911- 14 .. 13 .. 19.1

2.58.8

1st 2.58.6

4.13.8

Spica S

Q S

K Virg S

1.0

n Cloudy broken

Thunder cloud passing to the Northward

East end too high

lv = 0.375 az = 0.80 Egs

Spica

13 .. 14 .. 08.76

2 .. 59.49

13 .. 17 .. 08.25

13 .. 42 .. 34.36

2 .. 59.49

13 .. 45 .. 33.85

Spica 10 .. 21 S

Q 11 .. 45 S

K Virg. 9 .. 33 S

curlew

0.24

0.23

0.24

az

0.65

0.67

0.64

Cor. for az & level not for rate.

Spica 13 .. 17 .. 08.25

Q 1st 13 .. 45 .. 33.85

K Virg. 14 .. 04 .. 44.39

Rate of 1911 - 1.5

June 5th

13 .. 42 .. 34.32

-1.23

+1.67

13 .. 42 .. 34.76

2 .. 58.47

13 .. 45 .. 33.63

K Virg.

14 .. 01 .. 44.90

-24

+64

14 .. 01 .. 45.30

2 .. 58.88

14 .. 04 .. 44.18

Spica - 13 .. 14 .. 08.76

dev - 1.24

az + 65

13 .. 14 .. 09.17

2 .. 58.66

2 .. 59.49

13 .. 14 .. 09.17

2 .. 58.84

13 .. 17 .. 08.01

Jan 6th PM 1846

Virginus	Arcturus	Arcturus	Virginus
11.7	07.3	17.4	
28.8	25.3	34.8	
46.0	43.0	52.0	
03.0	00.8	09.3	
14.02.20.3	19.0	14.08.26.7	
99.8	85.4	136.2	
19.96	17.08	26.04	
14.01.43.96	14.05.41.08	14.09.50.04	
lev -11	-1.7	-1.0	
ax +30	+1.5	+3.2	
14.01.44.15	14.05.41.06	14.07.50.26	
3.00.00	14.08.40.92	3.00.00	
14.04.44.15	2.59.86	14.10.50.26	

Level	W
95	83
85	90
91.5	86.5
	91.5
	5.0
	2.5
lev = 0.17 E+	

14.13.00
1911 14.00.15.7

14.28.00.0

1911 14.15.15.6
12.44.4

15.10.00.0

1911 14.57.15.4

15.22.00.0

1911 15.09.15.3

lev = 0.17 E+ w2 = 0.38 Egs

1911-3.00.0

King ring

	S	cor lev	cor ax
4 Virginus	9.335	0.11	0.30
Arcturus	20.008	0.17	0.15
2 Virg.	12.405	0.10	0.32
α	15.105	0.10	0.33
α ² Libra	15.245	0.10	0.33
Arcturus	74.47N	0.65	
α Libra	8.495	0.11	0.30

Corrected King 14.04.44.15 Rate
for axale. λ 14.10.50.26 -1.2

α¹ 14.40.32.65

α² Libra 14.42.25.23

α Libra 15.08.46.69

Stars blurred.

Arcturus	Arcturus
52.0	10.5
09.6	15.0
27.0	19.0
44.5	23.0
14.39.01.9	14.50.28.0
125.0	85.5
2	17.0
14.39.25.00	cor lev 65
14.42.25.41	14.48.16.45
14.42.25.41	14.51.15.85
12.44.4	2.59.40
8.44.0	3.00.51
	1.11 -dt

14.39.25.00

lev -1.0

ax +3.3

14.39.25.23

3.00.00

14.42.25.23

Arcturus 74.47cos 9.41908

α² Libra 14.24cos 9.98412

90.11cos 0.00000

42.23me 0.13155

9.53475

1.11 dt 0.04572

0.38 9.58007

Arcturus	Arcturus
58.4	10.5
16.5	16.21
34.3	14.37.22.42
52.4	lev -1.0
14.38.10.5	ax +3.3
162.1	14.37.32.65
14.37.22.42	3.00.00
14.37.32.65	14.40.32.65

15.08.46.82

14.3

31.5

48.5

05.5

15.06.22.7

112.5

22.50

15.05.46.50

lev -1.1

ax +3.0

15.05.46.69

3.00.00

15.08.46.69

Jan 8th Feb
$$\begin{array}{r} H \ 0..24..00.0 \quad 5..02..00.4 \\ 14 \ 7..08..55.8 \quad \underline{46.7} \\ \hline \end{array}$$

$$0..24..00.0$$

$$9..47.2$$

$$0..14..12.8$$

$$5..02..49.1$$

$$19..11..25.7$$

$$18..56..43.24$$

$$10..58.20$$

$$24.93$$

$$19..08..17.1$$

$$19..05..58.8$$

14

$$+38.7$$

$$\begin{array}{r} 14 \ 7..28 \\ Pa \ 7..2837.4 \\ \hline \end{array}$$

$$0.06 \quad 0.55$$

$$0.07 \quad 0.52$$

$$0.10 \quad 0.40$$

$$0.10 \quad 0.40$$

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$$0.10 \quad 0.40$$

$$27.17$$

$$25.26$$

$$17 \ 3..03.5$$

$$6 \ 15 \ 3..00.0$$

$$3.4$$

$$1.7$$

$$1.7$$

$$1.7$$

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$$1.7$$
Same 8th PM

Bad seeing.

lev = 0.135+

bad seeing and
very unstable

$$\begin{array}{r} 39.5 \\ 57.5 \\ 15.9 \\ 33.8 \\ 15..48..52.5 \\ \hline 189.2 \\ 2 \\ 37.84 \\ 24 \\ 15..48..13.84 \\ 51..17.88 \\ \hline 3..04.04 \\ 15..48..13.84 \\ 60 - .06 \\ 44 + 55 \\ 15..48..14.38 \\ 3..03.50 \\ 15..51..17.83 \end{array}$$

$$\begin{array}{r} 55.4 \\ 13.8 \\ 31.2 \\ 48.9 \\ 15..54..07.0 \\ \hline 146.3 \\ 2 \\ 15..53..24.26 \\ 56..33.01 \\ - 3..03.75 \\ 15..53..29.26 \\ - 07 \\ + 52 \\ 15..53..29.71 \\ 3..03.50 \\ 15..56..33.21 \end{array}$$

$$\begin{array}{r} 44.2 \\ 01.5 \\ 18.1 \\ 34.9 \\ 16..03..51.8 \\ \hline 140.5 \\ 2 \\ 28.10 \\ 12 \\ 16..3..16.10 \\ 16..6..20..10 \\ - 3..04.00 \\ 16..03..16.10 \\ - 10 \\ + 40 \\ 16..03..16.40 \\ 3..03.50 \\ 16..06..19.90 \end{array}$$

$$\begin{array}{r} H \ 16..19..00.0 \\ 1911 \ 16..06..07.8 \end{array}$$

$$\begin{array}{r} H \ 17..56..00.0 \\ 1911 \ 17..43..07.7 \\ 12..52.3 \\ 3..3.9 \\ H + 9..48.4 \end{array}$$

$$\begin{array}{r} H \ 17..26..00.0 \\ 1911 \ 17..13..07.6 \\ 9.44 \\ 20 - 0.33..0 \\ 158-7..15..19 \end{array}$$

$$\begin{array}{r} 5.5.56.91 \\ 46.28 \\ 5.6.43.66 \\ 24 \ 33..0 \\ 9..49.3 \\ 24..23..10.70 \\ 5..6..43.66 \\ 19..26..27.04 \\ 18..56..53.24 \\ 15..57.38 \\ 26.92 \\ 7..13..17.88 \\ 7..15.19 \\ + 2..1.42 \\ 16 \\ B \ 158-1.45.4 \end{array}$$

June 8th (continued)172
610.2620
0.2646
0.2599lev $\pm$ 0.13 E+

second limb ragged.

very much steady, calm 13.

22.7
41.6
00.2
19.1
16 17 38.0

111.6
22.32
16 16 58.32
lev - 0.05

58.27
16 20 02.32
3 04.05

16 16 58.27
az + 58

16 16 58.85
3 03.50

16 20 02.35
04.0

21.8

39.0

58.6

17 05 14.0
125.4

25.08

17 04 37.08
lev .12

17 04 36.96

17 07 40.70
3 03.74

3 04.05
31

17 04 36.96
az + 28

17 04 37.24

17 07 40.70
3 03.46

03.2
22.0
40.4
58.6
16 38 17.1
131.3
26.26

16 37 38.26
lev - 0.07
az + 52

16 37 38.71
3 03.50

16 40 42.21

getting better

59.9 minute
17.3 hand in the way

34.6
52.3

16 59 09.8
163.9

16 58 32.78
lev - 0.07

az + 49

16 58 33.20
3 03.50

17 01 36.70

α Scorpii $\cos \delta \cos \delta' = 0.2585$
 α Herculis $\cos \delta \cos \delta' = 0.2585$

0.2585

dt = 0.319.4914

az 0.56 = 9.7499

1911-3.03.5 lev 0.13 E+ az 0.56 EJS

	δ	corlos	cor az
α Scorpii	26.04 S	0.05	0.58
α	19.17	0.07	0.52
γ Ophi	15.32 S	0.07	0.49
α Her.	14.34 N	0.12	0.28
β Ophi	24.50 S	0.05	0.56

1911-3.03.5

	Rate
Corrected for α Scorpii	15 51 17.83 1911
az & level. β'	15 56 33.21 - 1.6
June 8 th	α " 16 20 42.35
not for	α " 16 40 42.21
Rate	γ Ophi. 17 01 36.70
	β " 17 12 37.29

Sum $\frac{10^{\text{th}}}{11^{\text{th}}}$ 1846

μ Sagittarii
 54.8
 12.8
 31.2
 49.0
 18..02..07.4
 145 $\frac{2}{2}$
 18..01..29.04
 18..04..36.96
 3..07.92
 18..04..37..04

μ Sagittarii 48.4
 07.0
 25.5
 44.3
 18..16..03.0
 1182
 18..15..23..64
 3..08..08
 18..18..31..67

δ Ursae minoris
 and 18..19..13.0 - 4 belts

Level
 E W
 89 95
 96 88
 92.5 " 91.5
 E + 0.5
 97 90
 89 99
 93.0 94.5

H 18..18..00.0
 1911 18..04..59.65
 13..00.35
 3..07.7
 H + 9..52.6

H 19..15..00.0
 1911 19..01..59.4
 9..52.6
 5
 15th Dec 9..58

not well measured
 taken
 by
 57.4
 19.2
 40.5
 02.1

α 2nd mel
 34.5
 53.0
 11.2
 29.4

18..29..24.0
 1332
 26.64
 18..28..38.64
 18..31..46.37
 3..07.73

18..48..48.0
 1661
 33.22
 24
 18..48..09..22
 3..07.89
 18..51..17.21

μ Sagittarii 48.5
 06.4
 24.5
 42.7
 18..53..01.0
 1131
 18..52..22.62
 3..08.08
 18..55..30.64

μ Sagittarii 57.6
 15.7
 33.5
 51.5
 18..58..09.7
 1580
 18..57..31.60
 3..08.00
 19..00..39.60

δ Ursae minoris

18..19..11
 18..22..41.4
 3..00.4
 3..07.7

az by α Lyrae x *μ* Sagitt = 0.521 E
 " *δ Ursae* = 0.66 Is there not some collimation?

lev = 0 az = 0.43 E of S

az = 0.66

7.3

Corrected for Error az Rate -2.3
 and lev. but not for rate

μ Sagitt. 18..04..37.04 1911-3..08.0
 λ " 18..18..31.67 Rate + 2.3
 Sum 10th 1846 α 2nd 18..51..17.21
 0 Sagitt. 18..58..30.64
 π " 19..00..39.60

δ az
 1911 3..08.0 *μ* Sagitt 21.055 0.41
 λ " 25.305 0.44
 α Lyra 38.384 0.05
 α 2nd 18..18.5 0.40
 0 Sagitt 21.585 0.43
 π " 21.165 0.41

June 12th by daylight 1846
 per 7^h 00^m Dist 1.46
 Dec 33° 40'

Star 5 ap 5 of 8

at Star 5 below Comet below

14 20 51.6 14 20 11.5
 T 65.0 21 16.0 T 112.7 20 22.7
 + 17.5 21 33.5 + 89.3 21 52
 53.9 21 56.6 93.5 22 04.2
 14.5 14 21 24.10 74.0 14 21 07.85
 629.7 14 21 24.75 260.6 14 21 06.35
 617.8 14 21 24.42 301.6 14 21 07.10

x 6

14 23 17.8 14 22 36.8
 T 14.0 23 49.5 T 110.7 22 48.5
 + 2.5 23 52.0 + 88.7 24 17.2
 53.1 24 21.8 91.8 24 27.5
 2.1 14 23 50.7 78.6 14 23 32.15
 633.3 14 23 49.80 292.6 14 23 32.85
 636.6 14 23 50.28 306.0 14 23 32.50

* 6 Ind moved in S

14 25 58.4 14 25 18.8
 T 88.2 26 20.0 T 113.9 25 30.2
 + 22.7 26 44.7 + 92.3 27 02.5
 56.6 27 06.6 94.4 27 12.7
 616.0 27 06.6 76.4
 604.0 14 26 32.35 241.9 14 26 16.35

14 26 32.50 265.7 14 26 15.75
 14 26 32.42 14 26 16.05

14 26 24.7

14 23 50

11 46

5 21 43.1

14 23 35 46.7
 3 12 15 22 29.8

14 26 47

5 22 30

9 04 17

8 58 31.5

3 57.3

16.9

9 02 47.7

* 6 in Dist. tel. p. 212

Comet of May 19th

Comet ~~just~~ low in the horizon and without difficulty bright for its size that distance but very small

629

* Approx R 6^h 57^m 32^s
 " S 34° 04'

T₁ 629.7
 260.6
 369.1

t₁ 617.8
 301.6
 318.2

Comet S of Star 6

Antar June
 6 09.1 5 18.2

T₂ 633.3
 292.6
 340.7

t₂ 636.6
 306.0
 330.6

5 40.7 approx 5 30.6
 6 14.1 5 38.3
 6 01.5 + 2.3 5 29.9 + 2.3

T₃ 616.0
 241.9
 374.1

t₃ 604.0
 265.7
 338.3

Comet precedes

0 17.32
 0 17.78

6 58 06.63
 34 04 00.3
 17.32
 6 57 44.31

33 58 12.9
 5 47.4
 33 58 12.9

0 16.37 approx
 0 17.16 + .15
 6 58 06.63 Dist.

h 7^h 31^m 30^s + ref = 22^s June 1st S 34° 04' 00" 3 tel 1846
 D 33° 59' - ref = 5' 1846

7 31 52

14 26 32

6 54 40

3 12

6 57 52

1911

R = 6 57 49.31

S = 33 58 12.9

June 12 M.S.T. 7^h 02^m 48^s

June 12th (continued)

Comet of May 19

$$\frac{519.5}{265.7} = 1.955$$

$$\frac{265.7}{253.8} = 1.047$$

* a below

* b above

* c below

comet above

35 88.368	14 36.12	14 36 43.8	14 36 04.5
35 50.6	36 21.5	37 04.4	" 18.5
57.7 36 48.3	101.9 38 03.4	92.1 38 36.5	37 31.7
47.9	84.5	76.4 38 36.5	
519.5 37 01.	00.00 12.5	265.7 38 47.5	45.6
14 36 49.45	14 37 12.45	14 37 50.45	

13th
 1. 12.00.0 76 1. 13.00.0
 19 7.37.48.8 19 7.37.48.8
 June 13th del
 1. 13.00.0 5. 21.43.14
 9.58 46.73
 1. 03.42 5. 22.29.87
 5. 22.29.9 Rate of 1/4 - 1.7
 19. 40.32.1

1. 56.53.24
 39. 53.45
 31.91
 19. 37.18.70
 19. 37.48.7
 1/4 + 30.0

1. 43.5
 00.4
 17.0
 34.0
 21. 20.51.2
 1361
 27.22
 21. 20.15.22
 21. 23.29.64
 3. 14.42
 21. 23.29.72

1. 08.5
 25.5
 42.4
 59.0
 21. 55.16.0
 1414
 2828
 21. 54.40.28
 3. 14.44
 21. 57.54.72

June 14th
 15th del
 14.6
 43.2
 32.0
 20.08
 21. 25.10.0
 1500
 21. 23.30.00
 21. 26.42.95
 3. 12.95
 3. 13.08
 3. 14.46
 1.38

1. 49.5
 06.9
 24.1
 41.3
 22. 48.58.8
 1706
 34.12
 22. 48.22.12
 3. 14.46
 22. 51.36.58

Asaphus & Asaphus
 69. 43.00 9. 53.682
 6. 14.00 9. 99.742
 76. 07.00 0. 01.288
 42. 23.00 0. 13.155
 9. 67.867
 1. 38.00 0. 13.938
 42. 0.66 = 9. 81.855

1.5
 79. 41.79.19
 41

Level
 87 92
 94 85.5
 90.5 88.8
 88.8
 19 = 0.11 lev = 0.05

21. 29.00
 1911 21. 15.44.45

21. 50.00.0
 1911 21. 36.44.4
 13. 11.16
 3. 14.0
 15 1/4 + 9.576
 2nd del 9.32.6
 13. 12.5 (1892)

1911-21.14.0 lev 5 + 0.05
 Rate 2.8 S w2 = 0.66 E 95
 cor lev error

Asaphus 6.145 0.04 0.51
 Asaphus 69.53N 0.13 0.8 alt
 E Pegasi 9.10N 0.04 0.37
 Asaphus 1.03S 0.04 0.45
 C. 2nd 3.00S 0.04 0.47

Corrected for error, as x level
 but not for Rate

Asaphus 21. 23.29.72 1911 Rate -1.7
 June 14th E Pegasi 21. 37.40.04
 Asaphus 21. 57.54.72
 C. 2nd 22. 51.36.58

22nd 10th 11.0

253-34.1
15 3.15
119

0.0-57.00
19 6-45.42.2

0-57.00 5-57.12.16
10-11 46.75
0-48.49 58.9
5-47.39
18-48.50 19 Rate -3.60
17-57.03.1
47-52.1
49.9
18-45.45.1
18-45.42.3
19 +2.82

June 25th P.M.

01.4
18.6
35.8
52.9
13-09-10.0
108.7
217.4
127
13-18-33.74
13-17-07.84
1911-3-34.10
3-38.20
4.10

1911 13-32.00
1911 13-18-00.75
13-59.25
3-34.1
26+10-25.1

Rate of 1911-2.05

June 29th P.M.

6.28-44.61	19 8-26-35.0	15-13-00	15-20-00
46.75	4.2	10-37.4	10-37.4
6.29-31.36	8-26-30.8	15-02-22.6	15-09-22.6
	27.2	6-29-31.36	6-29-31.36
	8-26-58.0	8-32-51.24	8-34-51.24
		7-58-41.36	7-58-41.36
	8-27-40.0	31-54.76	38-53.61
	2.8	50.86	50.86
	8-27-37.2	8-31-27.22	8-38-26.07
	39.3	8-31-00.0	8-39-05.4
	8-26-57.9	19 -27.2	29 +39.3

Immersion of 69 Leonis
June 29th 1846

M.S.Z. 8-26-57.9 H.C.B.
8-26-58.0 G.P.B. 6' 33" S.

1846 - June 27th P.M.

1911-

54
 14
 Sprica 31.2
 48.4
 13.14 .05.3
145.4
 13.13 .24.18
 17 .7.82
3 .38.64

Polaris
 mid 13. 0. 22-4
 13. 0. 20
 13. 4. 14.2
- 3. 54.2

Ce - 15. 22. 0
 1911- 13. 07. 57.3
 Te - 14. 5. 0
 1911- 13. 11. 57.3
14. 08.7
3. 38.8
10. 30.2

Level
 E - W
 + 95 - 90
 90 - 94+
 + 94 - 90
90 - 94

11.3
 29.2
 7 Brooks 47.2
 5
 13 .44. 23
105.7
211.4
 24
 13.43 .45.14
 47 .23.46
3 .38.32

7
 H 14. 52. 00.0
 Cy 497 8. 11. 37.6
 H 94 54. 00.0
 158 8. 13. 44.2

H 14. 54. 0.0
 239 8. 12. 9.7

Cambridge mean solar time
 occultation of 69 Leonis
 8. 26. 58.0 G.P.B.
8. 26. 57.7 8 H.G.B.

June 29th P.M.

Jan. 69 Leonis 6. 33. 5
 G.P.B. 8. 26. 35.0 - 10 beats G.P.B.
 Good.

June 26th P.M.

H 15. 13. 00.0
 94 8. 31. 00.0

Imm Mo B In m v beats
 69 Leo Bow - 8. 27. 40-7
 239 very well

Ce - 15. 20. 0
 Bow 239 - 8. 39. 5.4
 158 - 8. 42. 0
 239 - 8. 40. 253

Ce - 15. 23. 0
 Cy - 8. 42. 32.2

Ce fast at occultation 10. 38.4

Ce - 16. 25. 0
 19-9 .43. 47.4

June 29th
 S Ursae Min.
 15. 44. 44.8
 mid. 46. 07.2
 47 30.0
 15 0
 15. 46. 05.00
 15. 49. 43.28
 3. 38.28
 96
 3. 39.24

— 16.4
 J. Scorp 34.8
 52.6
 10.6
 15 53. 28.5
 1329
 2658
 15. 52. 50.58
 15. 56. 33.03
 3. 42.45
 3. 39.24
 3.21

3. 42.45
 76
 1911-3. 41.69

Leo A + 0.20

Level
 H¹ W
 782 773
 780 775
 781 774
 780.5 774.5
 74.5 3.0 0.20
 6.0
 71
 1911

30 km

U. - 1. 4. 0
 1911-0. 49. 40.5
 14. 19.5

S Ursae Scorp
 cond 19.22 9.97470
 cond 78.15 9.30887
 cond 97.37 0.00385
 cond 42.23 0.13154
 9.41896
 3.21 0.50651
 as = 0.82 9.92547
 A. J. S.

Culminations made up
 to the last of June —

June 30th Am

1911 - 0.49.40.5

3.42.1

0.53.22.6

Te - 1.4.0.0

Te fast 29 P. 10.38.4 at ocul

30 P. 10.39.6

1. Am 10.40.6

10.40.6

July 3rd P.M. 1946

14.34.50.1

Tab 14.38.18.07

Atrophocline jumping

34.7

54.0

63.5

52.6

13.0

21.2

10.2

32.3

38.5

28.0

51.0

56.0

14.11.46.0

14.35.10.3

14.39.13.5

161.5

150.6

122.7

32.30

14.34.30.12

14.38.36.58

14.11.08.30

-44

14.42.25.28

lv -23

4 +21

3.48.70

az +.68

14.34.29.89

14.38.36.58

14.11.08.75

-23

2 +70

14.38.37.05

Level

E W

90 76

88 79

89.0 77.5

77.5

48 = 0.40 E +

14.34.00.0

1911.14.19.25.6

Cloudy

26.1

43.3

00.4

17.4

15.05.34.5

111.7

22.34

15.04.58.34

-25

+63

15.04.58.72

1911. Slow

at 15 hrs - 3.48.64

rate error 1.7

hurry 0.07

middle time 15th

B. Madlinors 15.24.00.0

14.45.22.2 1911.15.9.25.4

46.26.5

47.30.8

48.35.0

49.40.0 39.5?

14.42

14.47.28.84

14.51.14.28

3.45.44

3.48.70

lv 3.26

lv 1.31

lv 35

2.30

14.47.28.84

lv -1.28

az -1.60

B. Maxedina

9.53475

3.26.0.5322

1.11.0.4797

az = 1.11 L

9.53475

2.30 0.36173

0.79 9.89648

az = 0.79 E 9.8

0.35

lv = 0.40 E +

az = 0.80 E 9.8

corrected for level, az. Clock rate & error

Tab 14.38

D. Limb - 14.14.56.87

E. Bootis - 14.38.18.00

a. Libra - 14.42.25.16

B. Libra - 15.08.46.86

18.07

25.28

46.74

1846

July-4

96-14.46.5
 1911-14.31.22
14.38

a² Libra 2.5
 19.18
 37
 54.4
 14.39.12
115.9
231.8
 12
 14.38.35.18
 14.42.25.27
 -3.50.09
 cor lev +30
 cor WZ +1.64
 1911 -3.49.25
14.38
 31 +10.45.5

a² Libra

14.38.35.18

t -.23

a +.49

14.38.35.44

3.50.5
 14.38.2
 10.47.5
 10.25.1
 1722.4
 44
 2.50 Rate of 9.5347
 164 = 0.2148
 9.7495
 0.56
 3.48.68
 3.40.32
 1.64

Barnmin

21.3
 46.25
 47.29.5 mid
 14.48.33.7

18.82
 29.4
 -2

14.47.27.4
 5.1 +4.78
 -3.47.38

14.47.27.40
 t -1.28
 a -1.08

1911 Slow 14.38 - 3.49.43

t -1.7

t -1.07

a² Libra - 14.42.25.27 - 25.27
 Do 1st Limb - 15.10.36.28

20 Libra

-24.40
 47.37
22.57
 14.55

K Libra

Level

E	W
87	78
89	76
88	77

lev E + 0.40

11.7
 30.0
 Do 1st Limb 48.5
 -16 6.3
 15.07.24.3

110.8
 22.16

15.06.46.16
 1 -.23

a +.49
 15.06.46.42

29.8
 44.0
 15.48.06.4

21.6
27.6

level E + 40

lev E + 56

Tab

July 4th to Polo

21.21.50.9

$$12)54 \left(4\frac{1}{2} = \frac{20.5}{22.5} \right)$$

Uc - Jan. 28 Libra 14.58" S

g.P.B. 19 8.34.00.0 - 54 beats
Steady

15.15.00 Uc fast 10.48.1

8.12.15.0

M.C.B. 1911 15.22.02 - 19 beats
- 9.5 Doubtful
15.21.52.5 2 seconds

Post Event was at the Observatory at
the time

15.46.00.0 Right
8.43.07.4

19.4
7.6

Uc - 14.46.0
1911-14.31.22
- 14.38

19- 8.34.00.0
22.5

8.33.37.5
1.28.8

8.35.01.2

8.35.01.8 M.S. 2.4.11.1/2

15.46.00.0

10.48.1

15.35.11.9

6.49.14.8

8.45.57.7

1.26.2

8.46.37.7

8.43.07.4

1.24.3

6.48.27.40
46.75
6.49.14.15

1911 - 14.31.22
3.49.9
14.35.11.9
Uc - 14.46.00
Uc fast 10.48.1

obs 1911 - 15.21.52.5
3.49.9
15.25.42.4
6.49.14.15
8.36.28.25
7.58.11.36
35.54.10
27.92
25

In 28 libra 8.35.03.63 1913

Uc 15.15.0.0
10.48.1
15.04.11.9
6.49.14.15
8.14.57.75
7.58.11.36
13.57.71
56.84
75
8.13.36.66
8.12.13.00
14. Slow 1.28.66

July 6th
 97270
 94191
 305346
 30527
 7
 0.123
 9.478
 993

3.4940
 2.5300
 3.60

3.60 9.5347
 0.0910 = 1.23 = 42 Eqs

ε Bootis 28

14.35 47 6.5

14.34 26.0

14.38 18.04

-3.52.04

14.34 26.0

l - .4

a + .4

2 Libra 59.5

17.2

34.5

-15 52.0

14.39 9.2

1624

14.38 32.48

42.25.26

-3.52.78

14.38 32.48

l - .23

a + 1.06

14.38 33.31

B' Scorp' 50.2

6.3

24.4

-19 42

56.8

15.53 18

1405

2810

15.52 40.10

56 33.02

3 52.92

15.52 40.10

1.81 - .21

a + 1.14

41.03

17.08 36.50

l - .21

a + 1.14

17.08 37.43

3 52.38

17.12 29.81

δ Ophiuchi 55

12.2

29.2

-3 26.0

16.3 3

1354

16.2 27.08

6 20.10

-3.53.02

16.02 27.08

l - .23

a + .87

16.02 27.66

48.8

25.2

17.31 1.6

1161

17.30 28.22

l - .19

a + 1.20

17.30 24.23

3 52.42

17.34 16.65

16.36

.29

Burns min

14.45 19.5

46.24

74.47 47.27.9

48.32

49.37

1304

14.47 26.08

14.51 14.21

3.48.13

14.47 26.08

l - 1.28

a - 2.40

33.5

52.3

Antares 11

-26 30

16.16 48.7

1655

3310

16.16 09.10

16.20 02.37

-3.53.27

16.16 09.10

l - .17

a + 1.27

16.16 10.20

α - 14.37.0

1911-14.22.13.3

α 14.8.0

1911-14.53.13.2

13.79

42

14.21

Level

E W

+77 - 64

75 - 66+

76 - 65

65

11 l - 1.40

5.5 a + 1.28

α - 17.30.0

1911 17.15.12.8

1911 slow at 15.27 - 3.52.30 106

1.3

ε Bootis - 14.37.18.24 18.04-20

α Libra 14.42.25.55 25.26-29

B' Scorp' 15.56.32.43 33.01+58

δ Ophiuchi 16.06.19.99 20.10+11

α Scorp' 16.20.02.55 02.37-18

D15 - 17.12.29.81

δ Ophiuchi 17.34.16.65 16.36-29

July 6

a² Libra 1911

-3.52.78

14.38.32.48

a² Libra obs 14.38.32.48
 Level + 1.80?
 azimuth + 1.97
 14.38.34.15
 14.42.25.26
 14.46.75
 10.48.8

Mal

B los min 14.47.26.08

Level - 1.77
 az - 4.80
 14.47.10.61
 14.57.14.21
 - 4.53.63

July 7th P.M.

162

15 1/2 (13)

returns
 12.6
 31
 46
 6.8
 14 .. 5 .. 24.3
 113 7/2
 22 74
 14 .. 4 .. 46.74
 8 .. 40.63
 3 .. 53.89

E. Proth
 48.3
 276
 45
 14 .. 38 .. 42
 1205
 2
 14 .. 36 .. 24.10
 36 .. 18.03
 -3 .. 53.93

14 .. 25 .. 0
 1912 14 .. 10 .. 9.2
 14 .. 50.8
 3 .. 53.9
 14 .. 10 .. 56.9
 58.2
 16.0
 33.5
 57
 14 .. 39 .. 8.2
 156.9
 14 .. 38 .. 31.38
 14 .. 42 .. 25.26
 -3 .. 53.88

Level
 E L
 73 - 72
 70 - 79 +
 73 - 71
 69 - 75
 71 73
 W + 0.06

32.6
 57.4 - 15m 9.98419
 Antares 10.3 74.47m 9.41908
 29 90 cm 0.00000
 42.25m 0.13156
 9.53483
 1613 2 0.8 9.9031

Burn min
 45 .. 12.5
 46 .. 17
 47 .. 21
 48 .. 25.5
 49 .. 30.2
 96 2
 2
 14 .. 47 .. 19.24
 51 .. 14.00
 3 .. 54.96
 18
 3 .. 54.6

15 .. 8 .. 0
 1911 - 10 .. 53 .. -8.8

3226 0.27 = 9.4379
 24
 16 .. 16 .. 08.26
 20 02.37
 -3 .. 54.11
 0.27 W 9.5

22
 40
 Pophid 58.3
 16.5
 17 .. 8 .. 35
 1618
 2
 3236
 24

47.6
 6
 D. Phid 24.7
 42.5
 17 .. 31 .. 0
 1108
 2
 22.16

26 - 19 .. 26.0
 1911 - 17 .. 11 .. 8.3
 1451.7

41.0
 D. L. 59.7
 alt 27.40 18
 35.7
 18 .. 13 .. 55
 1994
 39.88
 18 .. 13 .. 14.88

Any near
 the side of the
 horizon
 Sagittari 16.8
 36.2
 55.2
 13.6
 18 .. 42 .. 32.6
 14464
 2928
 18 .. 41 .. 53.28

2.5
 21
 0 Sagittari 39.2
 57.2
 18 .. 52 .. 15.5
 1254
 25.08
 18 .. 51 .. 37.08

19 .. 12.0
 1911 - 18 .. 57.8.2
 1451.8
 3 .. 54.0
 14 + 10 .. 57.8

See next page for reductions

July 8th Bell
$$\begin{array}{r} 22 + 10.58.1 \\ 7.00.17.07 \\ \hline 4675 \end{array}$$

$$\begin{array}{r} 22.11.00.0 \\ 19 6.53.45.8 \\ 7.01.03.82 \end{array}$$

2.11.00.0

15.58.1

2.00.09.90

7.01.03.82

18.58.58.08

17.57.03.07

57.50.50

57.94

18.55.51.5

18.53.45.8

$$\begin{array}{r} 19 \\ -2.05.7 \end{array}$$

19 7.02.00

158 7.06.22.4

7.02.00

2.05.7

7.04.05.7

7.06.22.4

+2.16.7

2.22.00.0

7.09.06.7

2.22.00.0

10.58.1

2.11.01.9

7.01.03.8

19.09.58.1

18.58.53.24

8.59.52

57.84

18.56.59.7

19.09.06.7

2.17.0

Reductions July 7

20° arcturus	27° α Bootis	α Libra -15	α Scorpi -26°	α Ursa Min
14.04.46.74	14.34.24.10	14.38.31.38	16.16.08.26	14.47.19.24
lv +.06	+0.06	+0.03	+0.02	+0.18
az -.11	-.09	-.23	-.28	+0.55
14.04.46.69	14.34.24.07	14.38.31.18	16.16.08.00	14.47.19.97
3.54.05	3.54.07	3.54.07	3.54.11	3.54.09
14.08.40.74	14.38.18.14	14.42.25.25	16.20.02.11	14.51.14.06
40.63	18.03	25.25	2.37	14.00
-.13	.11	.00	+.26	-.06

-21° p Ophiuchi	-22° D Ophiuchi	α 1 st -19°	α Sagitt -19°	α Sagitt -22°
17.07.56.36	17.30.22.16	18.13.15.88	18.41.53.28	18.51.37.08
lv +.03	+0.03	+0.03	+0.03	+0.03
az -.26	-.26	-.25	-.25	-.26
17.07.56.13	17.30.21.93	18.13.15.66	18.41.53.06	18.51.36.85
3.54.23	3.54.25	3.54.29	3.54.32	3.54.33
17.11.50.36	17.36.16.18	18.17.09.95	18.45.47.38	18.55.31.18
.30	16.36		47.01	31.11
-.06	+.18		-.37	-.07

$$1911 \text{ slow at } 14.52 - 3.54.09$$

$$\begin{array}{r} \text{losing} -1.5 \\ \text{hazily} .06 \end{array}$$

$$\begin{array}{r} 12 \\ 2 \\ 14 \\ 5 \\ 23 \\ 18 \\ 2 \\ 29 \end{array}$$

July 9.

Bootes 44
3
21.7
41
14..35..0

997
34.19.94
38.18
3.58.06

E- 14..36.0
1911- 14..21..0.2
14..21..0.0
3.58.06
14..24.58.06
14..36.0
11.01.94

July 12-13 Am

56.8
13.6
31
0 46.3
23..23..5.4
14.51
27..22..24.02
10.00
11.36
11.0.40
23..22..28.66

26.2
43
0
+5° 17
23..28..34
1102
2204
23..27..58.04
23..32..04.61
-4..06.57
23..27..54.04

47
16.6
47
16.2
0..28..47
1638
3276
12
0..27..44.76
31..51.99
4 07.23

a. Capri
+56
0..28..47
0.0406
0.3010
9.7396 = 0.55

1911 at 23..45..Slow - 4..6.97
losing - 2.44
hunchy - 0.10

48.9
3.3 made up
22.3
+6 39.5
23..47..16.7
16.87
32.34
23..47..20.30
10.00
-0.0.32
23..47..19.98

Daloris
0.39.9.0 18 min

2 Picini
23..27..58.04
10.00
a-0.24
23..27..57.70

42
59.5
16.7
34
0 +14 17.5
1937
38.74
0..01..14.74
0..05..21.50
4.06.76

2 Pegasi
0..01..14.74
a-27
0.00
0..01..14.47

Shul
E-W
82 - 88 +
+85 - 84
82 - 88 +
87 - 83

Sec = 0
az = 0.55 WGS

E- 0..29..0
1911- 0..13..44.4
-15.45.6
4.0.8
11 08.8

Dis 2 limb 23..26..35.60
2 Picini 23..32..04.64
W Picini 23..57..26.95
2 Pegasi - 0..05..21.46

Tab
mos
4.61-03
26.99+04
21.57+05

July 15 - 16 Am

$$\begin{array}{r} 1.51 \\ 92.22 \\ \hline 93.73 \end{array}$$

Polaris
1 - 0 - 10.2 mid win

$$\begin{array}{r} 1 - 0 - 8.2 \\ 1 - 4 - 29.7 \\ 1911 - 4 - 21.5 \end{array}$$

$$8.29' \text{ at } = 8.4220 \quad 1.5780$$

$$49.54 \text{ sec} = 0.1423 \quad 9.858$$

$$8.5643 \quad 1.436$$

$$7.0 \quad 0.8451 \quad 9.477$$

$$8.0 \quad 9.4094 \quad 0.913$$

$$Lw = W + 0.70$$

$$W = 0.00$$

$$E - 1.20.00$$

$$1911 - 1.04.00$$

$$E - 1.34.0$$

$$1911 - 1.18.29.7$$

$$15.30.3$$

$$4.14.4$$

$$11.15.9$$

$$Lw = 0.30 W +$$

$$S \quad W$$

$$+102 - 102$$

$$94 - 111 +$$

$$+103 - 102$$

$$93 - 112$$

$$98 \quad 107$$

$$4.5 \quad 30$$

$$11.15.8$$

$$11.16.8$$

$$2.4$$

$$4.8$$
July 18th

$$16 + 11.15.8$$

$$4.8$$

$$11.20.7$$

$$21 + 11.27.9$$

$$7.39.42.63$$

$$46.75$$

$$7.40.29.38$$

$$E - 2.48.0$$

$$158 - 6.55.21.2$$

$$26.48.0.0$$

$$11.20.7$$

$$26.36.39.3$$

$$7.40.29.38$$

$$18.56.09.92$$

$$17.57.3.07$$

$$55.50.82$$

$$8.97$$

$$1.92$$

$$6.53.03.78$$

$$6.55.21.2$$

$$2.17.42$$

$$1.6$$

$$158 \text{ of } B + 2.01.4$$

$$E - 3.14.0$$

$$239 - 7.29.04$$

$$27.14.0$$

$$11.20.7$$

$$27.02.39.3$$

$$7.40.29.38$$

$$19.22.09.92$$

$$18.56.53.24$$

$$27.56.39$$

$$8.97$$

$$.92$$

$$7.18.59.52$$

$$7.20.04$$

$$1.04.48$$

$$-26.4 \text{ of } B +$$

$$Tab \text{ head}$$

$$a \text{ Arietis } 1.58.32.68$$

$$32.68$$

$$D. 2^{\circ} \text{ Limb } 2.05.14.49$$

$$\begin{array}{r} 26.8 \\ 43.8 \end{array}$$

$$02.0$$

$$20.3$$

$$1.54.38.5$$

$$2.04.56.7$$

$$1513$$

$$30.26$$

$$2.54.18.26$$

$$1.58.32.68$$

$$4.14.42$$

$$11.15.9$$

$$14.9$$

$$11.29.9$$

$$22.23 \text{ am}$$

$$E - 2.30.0$$

$$158 - 6.15.8$$

$$7.59.25.41$$

$$46.75$$

$$8.00.12.16$$

$$2.30.0$$

$$11.29.9$$

$$26.18.30.10$$

$$8.00.12.16$$

$$18.18.17.94$$

$$17.57.03.07$$

$$17.57.10.5$$

$$18.95$$

$$94$$

$$6.15.08.01$$

$$6.15.8$$

$$-10.01$$

$$-16$$

$$26.$$

$$\begin{array}{r} 26.6 \\ 44.6 \end{array}$$

$$02.0$$

$$19.9$$

$$2.04.37.5$$

$$1206$$

$$24.12$$

$$2.01.00.12$$

$$4.00$$

$$6.27$$

$$2.1.00.39$$

$$20.7.51.32.30$$

$$46.75$$

$$52.19.08$$

$$21.11.29$$

$$E - 2.57.00.0$$

$$158.6.49.57$$

$$2.45.32.0$$

$$7.52.19.0$$

$$18.53.13.0$$

$$17.57.03.07$$

$$52.51.32$$

$$12.96$$

$$18.50.07.40$$

$$18.49.57.0$$

$$158 - 10.4$$

$$16.0$$

$$-26.4 \text{ of } B +$$

$$a \text{ Arietis } 1.58.32.68$$

$$D. 2^{\circ} \text{ Limb } 2.05.14.49$$

1846 July 15th P.M. 1846
 Telescope East Comb below Gas above At right 10 left

B increasing its reading

α		reported
0.00	05.8	7.6
0.10	13.4	7.1
0.20	20.5	6.1
0.30	26.6	6.7
	33.3	6.1
	39.4	8.4
	47.8	11.6
	59.4	8.0
	07.4	8.0
	15.4	8.9
	24.3	6.4
	30.7	7.1
	37.8	8.0
	45.8	5.4
	56.7	6.7
	58.4	7.4
	05.8	10.5
	16.3	8.5
	24.4	7.4
	31.8	8.0
2.00	39.8	

Seen by W.C.B. & G.H.B.
 July 20th at 9^h 55^m P.M.
 Saw a meteor as bright as Venus at
 the brightest (apparently)
 the path a course from about 77 Cygni to
 little concern near α Capricorn (me)
 towards the in front darker than the rest and red.
 resembles γ M4 or purple, the rest yellowish white.
 Hutton think meteor the largest Hutton has
 it was straight ever seen.

Small meteors are quite
 plenty. They do not seem
 to move ^{rapidly} fast in the comet's
 than ^{the} the naked eye of the same
 brilliancy

$$\begin{array}{r}
 11^{\text{th}} \quad 11.28.0 \\
 7 \quad 10.57.8 \\
 14 \quad 30.2 \quad 12.16 \\
 \hline
 28 \\
 14 \\
 \hline
 80
 \end{array}$$

$$\begin{array}{r}
 11^{\text{th}} \quad 11.28.0 \\
 8.6
 \end{array}$$

$$\begin{array}{r}
 25^{\text{th}} \text{ July } 26 + 11.36.6
 \end{array}$$

12.25

$$\begin{array}{r}
 62.11 \\
 47.5 \\
 \hline
 14.34 \\
 10.02 \\
 \hline
 22.23 \\
 22.25
 \end{array}$$

1911 Run down July 26th at 27^h

July 27th

1911- 57
 PD-75.26 15.8
 atheranlis 32.3
 44.5
 17-7 26.5
1186

2372
 24
 17-06-47.72
 17-07-40.69
 1911 - 52.97

8u
 -2.05 = 11.05
 10
 17-07-27.7
 17-07-45.8
 4
 18-4-22.2
9972

19.94
 24
 18-03-43.54
 18-04-37.27
 -53.33

West of S 0.46 - 9.66276
 37.35 - 9.78527
 111.05 - 9.96441
 33.30 - 10.20811
 42.23 - 10.13156
9.80761 = 5.64 west of S

64 - 9.80761
 B. Braco 10.21473 (M) 10.03009
 -9.24110 9.95167
 9.26344 18 9.78937 0.61

Level
 Σ - W
 +83 - 85
82 - 85
 55
 2.5
212.5
 19.2 west too high

PD 49.5
 37.35 12.8
 40.5
 B. Braco 8.3
 36
 17-27-04
916
 2
 1832
 -12
 17-26-06.32
 17-26-09.08
 -53.76

Level 1.2 = 0.07918
 37.35 - 10.21473
 47.37 - 9.99331
 10.02 - 0.28722 = 1.9 = 0.13

6.1 - 0.07918
 111.05 - 10.03009
 47.37 - 9.65003
 63.28 - 9.75930 = 0.5 = 0.04

0.07918
 75.26 - 10.01419
 47.37 - 9.94667
 27.49 - 0.04004 - 1.19 - 0.08
 9.80761
 10.01419
 9.66899
 9.49079 = 0.31

W - 17-11.0
 1911-16-58-21.2

W - 17-43.0
 1911-17-30-21.2

17-30-21.2
 53.5

17-31-14.7
 17-43.00
 11-45.3

13th PM 11-10.0
 14/35.3
 24/25
73
 30

28th Am
 W - 3-30.0
 158-6-55-3.6

8-19-8.19 3-30-0.0
 46.25 11-46.5
 8-19-54.94 27-18-13.5
 8-19-54.94
 18-58-18.56

17-57-03.07
 57-50.50
 17-95
 156

6-55-12.08
 6-55-3.6
 -8.48
 16

158.13 24.48

Meridian Transits July 28th - 1846

Collimation Level W + 0.03 Azimuth W of South 0.039 West of South
 Clock error at 0^h Sidereal time Clock rate gaining - 2.70
 Illumination East

Day of the month	Wires	Polaris S.P. Dec. + 88°.29'	Spica Dec. - 10°.25'	Arcturus Dec. + 19°.59'	ε Bootis Dec. + 27°.44'	α ² Libra Dec. - 15°.24'
28 th	A	h m s	h m s	h m s	h	
	B					
	C	13..03..49.3	13..16..14.2	14..07..47.0	14..37..24.7	14..41..33.6
	D		31.2	05.0	43.5	49.2
	E		48.5	23.0	03.0	06.6
Tab A		47.3	181.7	1050	1137	1482
			36.34	2100	14..37..22.74	29.64
			-24.00	+24.00	00.00	00.00
		13..03..47.3	13..16..12.34	14..07..45.00	14..37..22.74	14..41..29.64
		Col. ~~~~~	~~~~~	~~~~~	~~~~~	~~~~~
		Level. -.74	+ .02	+ .03	+ .03	+ .02
		azi -1.11	-.03	-.02	-.01	-.03
		13..03..45.45	13..16..12.33	14..07..45.01	14..37..22.76	14..41..29.63
		13..04..40.60	13..17..07.46	14..08..40.33	14..38..17.72	14..42..25.01
		- 55.15	- 55.13	- 55.32	- 54.96	- 55.38
		β Urs. min. Dec. + 74°.47'	α Coronae Dec. + 27°.14'	α Serpentis Dec. + 6°.55'	β ¹ Scorpii Dec. - 19°.23'	δ Ophiuchi Dec. - 3°.18'
	A	10.0	41.0	16.1	3.6	52.5
	B	14.7	0.3	33.6	21.0	9.4
	C	14..50..18.3	15..27..18.9	15..35..50.5	15..55..39.0	16..05..26.2
	D	22.4	38.0	7.4	57.2	43.0
	E	27.0	57.0	24.2	15.0	00.0
		824	1452	121.8	1258	1211
		16.48	29.04	24.36	25.16	24.22
		~~~~~	-12.00	+24.00	+12.00	~~~~~
		16.48	17.04	48.36	37.16	24.22
Tab B		Col. ~~~~~	~~~~~	~~~~~	~~~~~	~~~~~
		Level +.08	+ .03	+ .02	+ .01	+ .02
		azi +.18	-.01	-.02	-.04	-.03
		14..50..16.74	15..27..17.06	15..35..48.36	15..55..37.13	16..05..24.21
		15..51..12.40	15..28..12.37	15..36..43.82	15..56..32.83	16..06..19.94
		- 55.66	- 55.21	- 55.46	- 55.60	- 55.73

July 28 observed by 1911-

12.01.2  
 H 3. 39.00.0 8. 42.47.52  
 158 6. 40.40.0 46.75  
 8. 26.58.8 8. 47.34.3

8. 43.34.3  
18. 43.24.5 14 6. 47.00.0  
 17. 57.03.07 158 6. 48.15.8  
 42. 52.95.

23.93 14 Fast Aug 3rd  
 18. 40.20.4 C. 46.7. +3.8

14. 40.40.0  
 158 +19.6  
16.0  
 158 +3.6 of Bent.

6. 48.15.8  
15.6  
 47. 56.2  
 29 - 56.2

Comparisons

Re - 13.32.0 Level  
 1911-13.19.17.1 E W  
 69.73+

E - 14.26.0 +70.71  
 1911-14.11.16.8 70.71+  
12.43.2 +71.69

E - 15.09.0 280 284  
 1911-14.56.16.7 70.71

E - 15.51.0 wto 410.5 = 0.03  
 1911-15.38.16.6

12.42.9 July 28-  
11.48.7 12.43.2  
 1.2  
 11.48.7  
 1.2  
 11.49.2

29th 11.49.2  
12.0  
 H + Aug 3rd 12.01.2

Stars

at Ohm Biel

Polaris - 53.69  
 Spica - 53.68  
 α Bootis - 53.75  
 ε Bootis - 53.33  
 α² Librae - 53.74  
 β¹ Min - 53.98  
 α Corona - 53.48  
 α Serpenti - 53.67  
 β¹ Scorpii - 53.81  
 δ Ophiuchi - 53.94

2904

1846 August 3rd put back the Transit Clock Ten minutes  $\Sigma$  W

Antares

14  
32  
58.3  
8.3

$\alpha - 14..19..0$   
 $1411-14..15..47.1$

$16^h 2^m - 5.97$

coincidence at .17^a

$76-74$   
 $74-76$   
 $75-75$

22 20  
1 13  
20  
1211  
20.8  
12

15.4  
34.8  
antares 53.5  
26 12.3  
16 19 31.2

9 Op  
4 Op

$\alpha$  17-42

1st Sag.

2nd Sag

18-18 22.20' alt

6797.5 (16.2  
3  
47.37  
25.305 alt 13.2 = 5.968  
22.07 from 2 wire

1372  
27.44  
16..18..51.44  
1 + .04

$\Sigma$  16..50..00  
1911-16..46..46.7

$\eta$   $\alpha$  52.7  
10.8  
-15.32 28.0  
45.7  
17 01..03.1  
1303  
17..00..26.06  
6 + .06  
a - .14

a - .18  
16..18..51.32  
1..10..58  
16..29..01.90  
16..20..02.15  
+ .25

14..34.57.0  
+14..34.14.8  
Mercurius 32.3  
a study 49.5  
17..07..07.2

Wind East 1

Running & horse 4

pretty good

vision

$\Sigma$  17..53..00.0

1911 17..49 46.35

17..00..25.98  
1..10..67  
17..01..36.65  
36.60  
- .05

1508  
17..06..30.16  
6 + .09  
a - .08  
17..06..30.17  
1..10..69  
17..07..40.86  
40.60  
- .26

$\Sigma$  18..26..00  
1911 18..22..46.2  
3..13.8

Aug 3rd Pld (Continued)

The first wire is by some means broken &amp; the micrometer wire is used in its place

Level

$\alpha$  Cygnus 51.5  
 10.3  
 $-24.50$  28.7  
 47.7  
17.12.06.0  
 1342  
 17.11.26.84  
 $+ .04$   
 $a = .16$   
17.11.26.72  
 $1.10.69$   
17.12.37.41  
 $37.22$   
 $- .19$

$\beta$  Draconis 55.3  
 23.4  
 $+52.25$  50.9  
 18.5  
17.26.46.0  
 1841  
 3682  
 17.25.48.82  
17.26.59.91  
 $-1.11.09$   
17.25.48.82  
 $tw + 0.16$   
 $az + 0.04$   
17.25.49.02  
 $1.10.73$   
17.26.59.75  
 $59.91$   
 $+ .16$

$\delta$  Cygnus 31.5  
 49.5  
 $-21.36$  07.5  
 25.5  
17.33.48.5  
 1475  
 29.50  
17.33.05.50  
 $+ .05$   
 $a = .16$   
17.33.5.39  
 $1.10.75$   
17.34.16.14  
17.34.16.12  
 $- .02$

East West 9.907  
 76 80 20 9.303  
 77 79 9.210  
 76.5 79.5  $az = 0.16$   
 Level = 0.10 West too high  
 $az = 0.16$  W of S

a little transverse

47.7  
 $\times$  06.5  
 $\alpha$  Cygnus 24.6  
 43.7  
17.44.06.8  
 1137  
 17.43.22.74  
 $+ .05$   
 $a = .15$   
17.43.22.64  
 $1.10.76$   
17.44.33.40

$\gamma$  Cygnus 52.3  
 10.5  
 $-21.05$  28.5  
 46.5  
18.04.04.8  
 1326  
 18.03.26.52  
18.04.37.24  
 $-1.10.72$   
3.13.70  
 $2.03.2$   
18.03.26.52  
 $+ .05$   
 $a = .15$   
18.03.26.42  
 $1.10.81$   
18.04.37.23  
 $37.24$   
 $+ .01$

$\delta$  Cygnus 45.8  
 04.7  
 $\gamma$  Cygnus 23.3  
 $\gamma - 25$  41.9  
18.15.00.5  
 1062  
 18.17.21.24  
 $+ .04$   
 $a = .16$   
18.17.21.12  
 $1.10.84$   
18.18.31.96  
 $32.18$   
 $+ .22$

at 17.9 - 19.1 slow  
 losing slowly  
 $1.10.68$   
 $3.1$   
 $- .13$

August 4th

Low max = 0.0

$\Sigma - 18 \dots 11.0$   
 $1911-18 \dots 07.40.8$

59.  
 25  
 51  
 19.2  
 17.52.46  
 1912  
 3824  
 12  
 17.51.50.24  
 53  
 17.51.50.24  
 Low 00  
 az 00  
 57.1  
 13.3  
 34.7  
 55.3  
 18.31.17.6  
 1820  
 2  
 18.30.32.40  
 24  
 18.30.02.40  
 1.46.48  
 1.14.04  
 18.30.32.40  
 0.00  
 0.00  
 46.  
 7.3  
 25  
 43  
 21  
 18.4.1  
 1150  
 2  
 14.3.23.00  
 4.37.24  
 -1.44.24  
 18.03.23.00  
 0.00  
 0.00  
 42.5  
 1.4  
 20  
 38.3  
 18.17.57  
 1492  
 2  
 2984  
 12  
 18.17.17.84  
 0.00  
 0.00

$\Sigma - W$   
 $72-71$   
 $69-73$   
 $70.5-72$

$\lambda \text{ Sag} - 25.30$   
 $47.37$   
 $18.18 - 22.07$   
 $\text{Low } W + 0.05$   
 $\text{az} = 0.0$

$\Sigma - 19 \dots 8.0$   
 $1911-19 \dots 4.40.4$   
 $19.4.40.4$   
 $1.14.3$   
 $19.5.54.7$   
 $14.8$   
 $22 + 2.05.3$

$28.45$   
 $31.7$   
 $mk$   
 $46.8$   
 $4.6$   
 $18.46.22.2$

alt 29.33  
 Dis 1 Limb  
 18  
 18.48.5.3  
 1339  
 2  
 18.47.26.78  
 0.00  
 0.00

$57.7$   
 $10.2$   
 $28.6$   
 $46.5$   
 $19.0.4.2$   
 $1306$   
 $18.59.26.12$   
 $0.00$   
 $0.00$

at 18-8-1911 Slow. 1.14.24  
 losing 3.1  
 slowly - .13

Tab. Sec 3  
 $\gamma \text{ Draconis} - 17.53.04.47 - 4.62 + 15$   
 $\mu \text{ Sagittarii} - 18.04.37.24 - 37.23 - 01$   
 $\lambda \text{ Sagittarii} - 18.18.32.09 - 32.17 + 08$   
 $\alpha \text{ Lyrae} - 18.31.46.68 - 46.47 - 21$   
 $\delta \text{ 1st Limb} - 18.48.41.10 -$   
 $\pi \text{ Sagittarii} - 19.00.40.46 - 40.33 - 13$

45.25  
 18.11 03.7  
 20.6  
 38.3  
 3-25 56.0

4-5 Am

8.50.40.63  
 0.46.75  
 + 51.27.34

26-4.17.0  
 29-7.19.19.7

4.17.0  
 2.6.2.

20.14.53.8  
 8.57.27.38  
 19.23.26.42

18.56.53.24  
 22.56.23  
 25.93  
 .42

7.20.15.82

7.19.19.7

29. Nov 56.1

22-4.0.0  
 158-7.3.39.

4.0.0.0  
 2.06.2

27.57.53.80

8.57.27.38

19.06.26.42

18.56.53.24

5.59.02

25.93

.42

7.03.18.61

7.3.39

+ 20.39

16

+ 4.39

1846 August 5th - mid night

1911

46.0	46.2
4.4	10
22.4	31.5
21 40.3	+39 53
18.3 56.4	18.31 15
<u>1615</u>	<u>1477</u>
2	
32.30	18.30 29.54
12	31 46.46
18.3 20.30	1 16.92
4 37.22	3 26.35
-1 16.92	26+2 07 43
18 03 20.30	18 30 29.54
6 5.09	60 -16

10.2	
27.7	30.5
45	48
1.7	4.8
19.38 19	21.8
936	19.42.39
2	1341
1872	26.82
2472	-24
19.37 42.72	19.42.02.82
8 59.84	3 19.78
-1 17.16	-1 16.96

44.
1.4
19
35.9
9 8 54
1443
2
2886
12
9 8 16.86

Σ CW

64 - 62

67 - 57

62 - 63

66 - 60

$$\frac{64.8 \text{ } 60.5}{60 \text{ } E + 0.17}$$

$$\Sigma 17.47.0$$

$$1911-17.43.35.8$$

- 18.53.0

$$1911-18.49.35.65$$

$$3.26.35$$

Σ - 19.7.0

$$1911-19.03.35.5$$

20.0.0

$$19.56.35.3$$

03.24.7

1.17.4

5.2.07.7

3rd 2.03.2

2/4.5

2.25

Rate of ΣC

+ 2.25

49  
6.9  
25  
Σ Sagittarius 43  
78.0 01

1149

2

18.59.22.98

19.0.40.33

- 1.17.35

for Reductions see next page

B Aquila 59.7  
17.0  
33.7  
50.5  
19.47 7.5  
1584  
2

9.46.31.68

17.48.53

- 1.16.85

Σ - 20.32.0

$$1911-20.28.35.2$$

20.3  
39  
57  
15.2  
19.52 33.5  
1550  
2

3100

24

19.51 55.00

34.4

52

Σ Aquarii 8.8

25.6

20.38 43

1538

30.76

20.38 46.76

1.17  
10.8  
2/6.2  
3.1

$$\begin{array}{r}
 10^{\text{th}} \text{ All } 2 \dots 17.8 \\
 76 \text{ } 4 \dots 38 \dots 00.0 \\
 158 \text{ } 7 \dots 21 \dots 30.4 \\
 4 \dots 35 \dots 42.2 \\
 9 \dots 11 \dots 10.16 \\
 19 \dots 24 \dots 32.04 \\
 18 \dots 56 \dots 53.24 \\
 23 \dots 56 \dots 07 \\
 31.91 \\
 19 \dots 21 \dots 21.26 \\
 19 \dots 21 \dots 30.40 \\
 148 + 9.14 \\
 16 \\
 10^{\text{th}} 158 - 6.86 \text{ of Boston.}
 \end{array}$$

Aug 5th

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

Aug 6 August - 10 - 11th Am

4  
 28  
 51.7  
 15.3  
 5.4.40  
 129.0  
 258.0  
 24  
 5.3.49.80  
 5.5.22.10  
 -1.32.30

Boreo   
 56.2  
 5.6.13

27.8  
 47  
 5.5  
 25  
 5.15.44.4  
 139.7  
 279.4  
 24  
 5.15.3.94  
 5.16.35.99  
 -1.32.05

E. W  
 90 - 87  
 88 - 84

E. 5.0.0  
 1911-4.58.8.3

5.35.0  
 1911-5.31.8.4

5.31.8.4  
 1.32.6  
 5.32.41.0  
 5.35  
 6.2.29.4.3  
 2.23.3

22  
 38.3  
 55  
 12  
 5.27.28.9  
 146.2  
 2  
 29.24  
 24  
 5.26.53.24  
 5.28.25.40  
 -1.32.56

August 12th

1911 at 4.44 Slow 1.38.03  
 Coring 3

Lab seconds

Os 2 Limb - 2.47.41.49  
 a Louri - 4.27.07.98 - 7.84.14  
 Capella - 5.05.22.03 - 22.17.14

Oct. of Augth 12th 8 minutes seen in 25 minutes. 8.40 to 9.5  
 with various directing & relocations - crooked & straight paths  
 A great many more seen in the course of the day of the 11th. One  
 of which was as bright as Venus from (77) Cygni to Capriopsis

1.32.5  
 1.10.6  
 7217/3.1

August 12nd - (13th Am)

30  
 138.9  
 277.8  
 24  
 2...46...3.78  
 1 - .09  
 a .00

37  
 14.5  
 32  
 +16° 49.7  
 4-26...7.2  
 150.4

4-25-30.08  
 11-27-07.84  
 1911-1-37.76  
 4-01.4  
 4 + 2.23.6

curious  
 a 25-30.08  
 4-25-30.08  
 11-27-07.84  
 4-01.4  
 4 + 2.23.6

August 19th Del

45.8  
 03.3  
 20.6  
 8 88.3  
 4-25-56.0  
 154.0  
 36.86  
 4-25-18.80  
 4-27-08.05  
 1911 -1-49.25  
 4-26.1  
 4 + 2.36.9  
 2-23.6  
 6) 13.3  
 4 Rat + 2.25

4-37.00  
 1911 4-32.33.9  
 4-26.1

Leo

9-45-52.39  
 46.75  
 9-46-39.14

4-44-00.0  
 158 6-51-54.4  
 4-44-00.0  
 2-37.0  
 4-41-23.0  
 9-46-39.1  
 18-54-43.9  
 17-57-03.07  
 53-51.15  
 42.88  
 18-51-38.06  
 18-51-54.4  
 158 +16.4

Line  
 E W  
 87 - 86+  
 +89 - 84  
 88 85

CE + 0.10  
 58 5.05-22.18  
 21.8 5.05-44.00  
 46 1-34.18  
 10 9-22-43.07  
 5-4-34.7  
 160.5  
 5-03-44.10  
 14  
 5-03-43.96  
 1911-5-17.58.5  
 4-01.5

of 2 may, & large  
 4-22.6  
 2-19.5  
 4.1

Ratio of 4 + 2.05

2-23.6  
 4.1  
 4-14-42-27.7  
 6.1  
 4-18-41-52-33.8

198 18th Del  
 7-27-00.0  
 158 7-30-07.7  
 3-07.7  
 2-38.4  
 158-18th Del +14.9  
 9-41-55.84  
 46.75  
 9-42-42.59

158-18th Del  
 18-56-00.0  
 158 18-54-14.6  
 3.14.6  
 16.4  
 2-58.2  
 19th Del 19

6 - 2.35.0  
1911-2-30.58.7

6 - 3.38.0  
 1911-3-33.58.7  
 4-01.3

6 - 4.12.0  
 158-6-43 43.2

4-12-0.0  
 2-23.3  
 28-9-36.7  
 9-22-59.82  
 18-46-36.88  
 17-57-13.07  
 45-52.46  
 35.90  
 .88

6-43-32.31  
 158 6-47-43.2  
 +16.9  
 16  
 -5.1

6-4-35.8  
 1911-4-30-58.5  
 4-30-58.5  
 1-37.76  
 4-33-36.26  
 4-35.8  
 4 + 2.23.74

5-17-00.0  
 4-25-38.8  
 5-17-00.0  
 2-38.4  
 5-14-26.2  
 9-42-42.6  
 19-31-43.6  
 18-56-53.2

30-54.9  
 42.9  
 19-28-30.6  
 19-25-38.8  
 -2-51.8  
 1-26.7  
 25.6  
 8/85.0  
 10.6

1846 August 24th

$$\begin{array}{r} 18.42.0 \\ 1911-18.37.8.8 \end{array}$$

$$\begin{array}{r} \text{avg } 16^{\circ} \text{ latitude} \\ 174.46.35 \end{array}$$

$$\begin{array}{r} 0.38 \\ \times 38 \\ \hline 14.54 \\ 46.5 \\ 8.3 \\ \hline 18.30.30.0 \\ 1043 \\ 2086 \\ 24 \\ \hline 18.29.44.86 \\ 31.46.16 \\ \hline -2.01.30 \end{array}$$

$$\begin{array}{r} 0.33.11 \\ \times 33.11 \\ \hline 47.12 \\ 7.14 \\ 27.3 \\ 48 \\ \hline 18.43.8 \\ 1279 \\ 2 \\ \hline 18.42.25.58 \\ 46.26.65 \\ \hline -2.01.07 \end{array}$$

Lineal

$$\begin{array}{r} E \quad W \\ 89-90 \\ 91-88 \\ 90-89 \end{array}$$

$$\begin{array}{r} 21.37 \\ 47.37 \\ \hline \text{net } 69.14 \\ \hline 58.42 \end{array}$$

$$\begin{array}{r} 19.9.0 \\ 1911-19.4.8.7 \\ \hline 4.51.3 \end{array}$$

$$\begin{array}{r} 19.55.0 \\ 1911-19.50.8.6 \\ \hline 4.51.4 \\ 2.1.2 \\ \hline 2.50.2 \end{array}$$

$$\begin{array}{r} +19.38 \\ 48.5 \\ 6.2 \\ \hline 8.49.12.40 \\ 41.7 \\ \hline 18.56.59.0 \\ 1694 \\ 3388 \\ 72 \\ \hline 18.56.21.88 \\ 58.23.26 \\ \hline -2.01.38 \end{array}$$

$$\begin{array}{r} 0.48 \\ \times 2.48 \\ \hline 14 \\ 31.3 \\ 47.7 \\ 4.8 \\ \hline 19.16.22 \\ 1098 \\ 2196 \\ +24 \\ \hline 19.15.45.96 \\ 17.47.42 \\ \hline -2.01.46 \end{array}$$

$$\begin{array}{r} 0.14 \\ \times 10.14 \\ \hline 26.4 \\ 43.5 \\ 0.3 \\ 17.3 \\ \hline 19.37.34.4 \\ 1119 \\ 2238 \\ -24 \\ \hline 19.36.58.38 \\ 34.59.79 \\ \hline -2.01.41 \\ 4.51.3 \\ \hline 19.34.56.97 \end{array}$$

$$\begin{array}{r} 0.28 \\ \times 5.28 \\ \hline 46 \\ 3.3 \\ 20 \\ 37.3 \\ \hline 19.41.54.6 \\ 1512 \\ 3024 \\ -72 \\ \hline 19.41.18.24 \\ 43.19.70 \\ \hline -2.01.46 \end{array}$$

$$\begin{array}{r} 0.01 \\ \times 6.01 \\ \hline 15 \\ 32.2 \\ 48.8 \\ 5.8 \\ \hline 19.46.22.8 \\ 1146 \\ 2292 \\ 24 \\ \hline 19.45.46.92 \\ 47.48.46 \\ \hline -2.01.54 \end{array}$$

$$\begin{array}{r} 20.74.50.3 \\ 20.14.48.3 \\ 16.58.58 \\ -2.10.28 \\ \hline 2.01.54 \\ 8.74 \end{array}$$

$$\begin{array}{r} 3.36 \\ 1.94 \\ \hline 58.56 \end{array}$$

1911 Losing 2.3  
and west of South

$$\begin{array}{r} 1.09 \\ 47.37 \\ \hline 46.28 \end{array}$$

25th Feb after the Earthquake

103	99
97	105
100	102

Bar 30.264  
Cut 586.05 from 2nd Wm

11.34 11.31

2nd Wm

0.17	0.17
11.17	11.14

2nd Wm is from the mark  
on the barn the transverse

off 4.58^{pm} Was awaked by a trem-  
bling of the house & the noise of shaking windows & doors. The  
vibrations I thought 3 times in a second. Throught it was an  
Earthquake soon after, I put out the instant marked the time at 4.57^{pm}  
the vibrations were much quicker than I should, imagined they would be.

The magnetometer horizontal force was moving at 7 divisions horizontal and 1 vertical  
25th Feb H 2.51.2 10.09.31.71 10.13.28.26  
46.75 46.75  
10.10.18.46 10.14.15.01

Sec. out of order

25th Feb

H 6.16.00.0

424 6.04.10.7

Dr. Wyman noted the time as 4.57^{pm}  
felt at Lowell & Worcester.

Newbury Port, Portland.

H 12.38.00

12.39.05.3
1.05.3

H 10.52.00.0

H 12.31.14.7

10.52.00.0

2.51.6

10.49.08.4

10.14.15.01

34.53.39

33.54.43

52.85

0.34.47.67

0.31.16.7

H -3.31.0 Aug 25

1.05.3

-2.25.7

5.00.0

2.34.3

22.16.61  
8.7  
L.14  
8.13  
71

25.95.81  
L.14  
4.24  
2.9  
81

05.05.81

8.8

5.97

5.52

4

88-16

90-68

73

dust

38.38  
42.23  
3.45

1846. August 30-31st

aluminum

4..25..33.0 Cast

2.5

E	W
87	88
90	94
177	172

 TC- 4...8...0  
 1911- 4...2...22

23.7 lost

26-5-20-1

46.0

1911-5-14-41.7

12.0

5-18.3

96.2

5..04 00.5

11 0 4

22 0 8

5..03..00.08

5..5..22.81

2..12.8

5..18.3

3..05.5

 Aug 31st - Micrometer wire is used in the place of the, at a little out of place

3.83

20.5

39

56

22.26

12.5

21.8

2

2436

12

36.36

17..25..

36.36

48

7

25.2

43

1.8.3

1.3

1145

2

18..2..22.90

4..36.42

2..14.02

18..02..22.78

2..14.14

27?

46

4

22

17..32..40.2

1292

2584

46

17..32..01.84

C-.11

a 0

17..32..01.73

2..14.10

17..34..15.83

90

+1.07

12.2

31.6

49.6

8

18..17..26.4

1178

2

2356

24

18..16..47.56

57.7

25

17..51..46.7

1906

3812

12

17..50..50.12

53..03.69

2..13.77

6

35

2..14.12

36.3

16

35

54

18..44..12.4

1637

32.74

 TC-17..22..0  
 1911-17..16..39.4

E-18..29..0

1911-18..23..39.6

5..20.4

3..13.4

3..07.0

Level

E-W

72-64

68..65

72..64

72..65

72..65

72..65

72..65

72..65

72..65

72..65

72..65

72..65

72..65

72..65

E2 of mine

-23..50

47..37

23..47

17..22

D of mine

D 18.16

Say A -25.30

47..37

18..18 22..07

0 Say

Level

E-W

72-64

68..65

72..64

72..65

72..65

72..65

72..65

72..65

72..65

72..65

72..65

72..65

72..65

72..65

72..65

72..65

5.57.00.0  
158 7.13.16.6

10.37.07.58  
46.75  
10.37.54.33

5.57.00.0  
3.45.08.0  
5.53.45.5  
10.37.44.3  
19.15.51.2  
18.56.53.24  
14.57.54  
50.86  
19.12.48.84  
19.13.16.8  
154 + 28.3  
18.0

+12.50 off boat

31st Nov

1911- 2.13.4  
5.20.4  
Te + 3.07.0  
1.15  
1st 3.08.15  
6.9  
4th Am 3.15.0

1911 at 18.07 Slow 2.14.16

7.15.00.0 Sept. 1st  
158 7.19.49.2  
4.49.2  
28.8

14 -4.20.9 Sept 1st  
3.31.0 Aug 25  
7.49.9 (7.1 Rate of 14)

Te +

10.52.53.79  
46.75  
4-5 10.53.40.54  
10.48.57.21  
46.75  
10.49.43.99

Sept- 4th Am

Te- 5.57.0  
158- 7.01.23.2  
5.57.0.0  
3.15.0  
29.53.45.0  
10.49.43.99  
19.04.04.06  
18.56.53.24  
3.15.34  
1.01  
7.00.53.59  
7.01.23.2  
29.61  
18  
13.61

Aug 31st

7 Draconis 4 th	W Sagitt. -21	Q's int -19	W Sagitt. -26
17.50.50.12	18.02.22.90	18.16.47.56	18.43.32.74
6 -35	6 -12	-12	-10
a .0	0	0	0
17.50.49.77	18.02.22.78	18.16.47.44	18.43.32.64
2.14.14	2.14.16	2.14.16	2.14.24
17.53.03.91	18.04.36.94	18.19.01.60	18.45.46.88
03.89	36.92		18.45.46.84
-.02	-.02		-.04

Sept 4 Aquarii 21.23.41.22

A Lepus 21.26.27.29

B Pegasi 21.36.56.47

A Aquarii 21.57.46.33

A 22.08.39.04

C 22.25.46.42

B Pegasi 22.27.57.38

B Pegasi 23.09.96.05

Sept 4th PMW E  $\Delta + 0.37 = \text{lev.}$ 

64 78

67 75

65.5 76.5

65.5

2/110

25.30

47.77

22.08

H 21.17.00.0

1911 21.11.24.2

H 21.56.20.00

1911 21.50.23.95

H 22.42.00.0

1911 22.36.23.8

B Aquarii

21.21.10.00

B Aquarii 21.23.30.76

2.20.76

9.71

9.54

0.18 = 9.25

0.18 = 9.25

21.25.23.93

21.26.44.34

2.20.41

1911 at 21.33 Slow. 2.20.69

losing  
handly

1.6

- .07

53.3 14.5

10.5 31.8

27.4 49.0

44.5 06.5

22.07.01.5 22.25.24.2

1272 1160

22.06.25.44 2320

C - .25 22.24.47.20

a + .14 - .26

22.06.25.33 + 13

2.20.73 22.24.47.07

22.08.46.06 2.20.76

46.03 22.27.07.83

- .03

A Aquarii is too  
near the Moon

faint

58.2

15.4

32.5

49.5

22.32.07.0

1526

22.31.30.52

- .32

+ 10

22.31.30.30

2.20.76

22.33.51.06

50.94

- .12

could not find  
a piece ~~in~~  
wrong alt.

$\begin{array}{r} 74 \\ 76 \\ \hline 75 \end{array}$ 
 $\begin{array}{r} W \\ 61 \\ 61 \\ \hline 61 \end{array}$ 
 $\begin{array}{r} 141 \\ 17 \\ 0.47 \\ E + 0.47 \end{array}$

29)  $\frac{40}{28} \text{ (16)}$   
 $\frac{1120}{180}$

$\frac{47.3}{3.53}$   
 $\frac{47.3}{45.44}$

$\frac{2.96}{47.38}$   
 $\frac{47.38}{48.84}$   
 $\frac{48.84}{52.28}$

$\frac{23.94}{23.53}$   
 $\frac{23.53}{1.00}$

04.0	05.5
21.0	22.8
37.5	40.1
54.3	47.5
11.4	0.26
119.2	130.9
23.64	26.18
23.. 51.. 35.64	0.. 25.. 38.18
- .73	- .73
+ .10	+ .09
23 .. 51 .. 35.41	0 .. 25 .. 37.46
2 .. 24.46	2 .. 24.46
23 .. 53 .. 59.87	0 .. 28 .. 02.36
59.96	
+ .03	

32.0 mols  $\text{H}_2$  23.44.00  
2.5 19.11 23.38.16.2

77 0 44.00.00  
 1911 20 38.15.85  
 5.44.15  
 2.24.5  
 3.19.8  
 77 1 12.00  
 1911 1 16.15.7

for Polaroid  
d.c. = 25  
d.t.a. = 28

$$wz = 0.14 \text{ Egs}$$

$$\begin{array}{r} 57 \\ 15.0 \\ 32.5 \\ -19 \quad 50.6 \\ \hline 0.34.08.3 \\ \hline 153 \quad 4 \\ \quad \quad 2 \\ 0.33.30.68 \\ 35.55.00 \\ 2.24.82 \\ 5.44 \\ \hline 0.33.30.68 \\ \quad \quad -24 \\ \quad \quad \quad u +.13 \\ \hline 0.33.30.57 \\ \quad \quad 2.24.56 \\ \hline 0.35.55.07 \\ \quad \quad 51.97 \\ \hline \quad \quad -10 \end{array}$$

$$\begin{array}{r} 34.4 \\ 51.3 \\ 8.2 \\ 25.0 \\ \hline 0.48 \end{array}$$

$$\begin{array}{r} 42.3 \\ 1512 \\ 3024 \\ \hline 0.58 \end{array}$$

$$\begin{array}{r} 06.24 \\ - .37 \\ + .09 \\ \hline 0.58 \end{array}$$

$$\begin{array}{r} 05.96 \\ 2,24.56 \\ \hline 0.50 \end{array}$$

$$\begin{array}{r} 30.50 \\ 30.41 \\ \hline - .09 \end{array}$$

Polonia

mis | 1.03.01. - 8

---

1.02.57.0

1.05.05.4

---

2.08.4

1.02.57.0

2-12.

a-4

---

1.02.41.0

1911 at ^h 0.30 ^m Slow ^m 2.24 ^s 50  
 to in 1.86  
 handily - .08

Sept 2 1946

1.28 1.37  
58.58 56.002.05  
1' lat47.58  
8.08  
55.46

12

$$\begin{array}{r} 11.11.00.0 \\ 1911 \quad 1 \quad 05.12.4 \end{array}$$

$$\begin{array}{r} \text{E Picini} \\ \text{last win} \quad 0 \quad 53.11.5 \end{array}$$

$$\begin{array}{r} \text{E Picini} \quad 32.5 \\ 49.9 \quad \text{mid of Polaris} \\ 06.5 \quad 1 \quad 02.55.5 - 8 \text{ beats} \\ 23.4 \quad 4.0 \\ 0 \quad 58 \quad 40.5 \quad 1 \quad 02.51.5 \\ 142.4 \quad 1 \quad 05.08.9 \\ 2848 \quad 2 \quad 14.4 \\ 1 \quad 02.51.5 \\ 0 \quad 58 \quad 04.48 \quad -12.0 \\ 1 \quad -37. \\ \hline u \quad 00 \\ 0 \quad 58.04.11 \\ 2.26.00 \\ 1 \quad 00.30.11 \\ 30.43 \\ +.32 \end{array}$$

$$\begin{array}{r} \text{Lew} \quad W \\ 81 \quad 61 \\ 76 \quad 67 \\ 78.5 \quad 64.0 \\ 64.0 \quad 7.25 = 0.48 \quad E+ \\ 14.5 \quad \text{Lew } E+0.49 \\ \text{ax} = 0 \end{array}$$

$$\begin{array}{r} 1 \quad 51.00.0 \\ 1911 \quad 1 \quad 45.12.2 \\ 5 \quad 47.8 \\ 42 \quad 13.00.0 \\ 1911 \quad 2 \quad 07.12.1 \end{array}$$

$$\begin{array}{r} 20.2 \text{ late} \\ \text{Picini} \quad 38.2 \\ M+15 \quad 55.2 \\ 12.6 \\ 1 \quad 21 \quad 30.2 \\ 146.4 \\ 29.28 \\ 1 \quad 20 \quad 53.28 \\ 1 \quad -43 \\ \hline u \quad 0 \\ 1 \quad 20 \quad 52.85 \\ 2 \quad 26.02 \\ 1 \quad 23 \quad 18.87 \\ 18.99 \\ +.12 \end{array}$$

$$\begin{array}{r} \text{mustard} \quad 14.4 \\ \text{not good} \quad 31.8 \\ 20 \quad 49.0 \\ 0 \quad 49 \quad 06.5 \\ 1 \quad 24 \quad 24.5 \\ 116.2 \\ 23.24 \\ 1 \quad 23 \quad 47.24 \\ -41 \\ \hline 0 \\ 1 \quad 23 \quad 46.83 \\ 2 \quad 26.03 \\ 1 \quad 21 \quad 20.86 \end{array}$$

$$\begin{array}{r} 02.3 \\ \text{Picini} \quad 19.5 \\ 11.20 \quad 36.6 \\ 53.6 \\ 1 \quad 27 \quad 11.0 \\ 113.0 \\ 22.60 \\ 1 \quad 26 \quad 34.60 \\ -42 \\ \hline 0 \\ 1 \quad 26 \quad 34.18 \\ 2 \quad 26.03 \\ 1 \quad 29 \quad 00.21 \end{array}$$

$$\begin{array}{r} 22.0 \\ \text{Picini} \quad 39.1 \\ 08.22 \quad 56.0 \\ 13.0 \\ 1 \quad 35 \quad 30.5 \quad 0.02 \\ 156.5 \\ 30.10 \\ 1 \quad 34 \quad 54.10 \\ -40 \\ \hline 0 \\ 1 \quad 34 \quad 53.70 \\ 2 \quad 26.04 \\ 1 \quad 37 \quad 19.74 \\ 1 \quad 19.66 \\ -.08 \end{array}$$

$$\begin{array}{r} 4 \text{ of } 4 \text{ lines SP alt } 3^\circ \\ 1 \quad 39 \quad 30.2 - 4 \\ \text{last } 410 \quad 00.5 - 12 \end{array}$$

Sept 7 Continued

34.0	56.4
52.5	13.4
10.5	30.5
29.0	47.3
1.56.47.3	2.03.04.7
1633	1423
32.66	2.02.28.46
1.56.08.66	6 -40
1.58.34.26	a 0
1911 - 2.25.60 + 0.48	6.02.28.06
	2.26.07
+ 5.47.8	2.04.54.13
	54.19
	+ .06
1.56.08.66	
6 -48	
a 0	
1.56.08.18	
2.26.06	
1.58.34.24	
1.58.34.24	
.00	

Aug 9  
transmission apparatus

(+ * Ant.

15° E of Sagitt.



15° - x

Rate of 1911  
 Sept 6 to 7 - 1.8  
 Aug 31 to Sept 9 - 1.8  
 " 10 to Aug 31 - 2.0  
 July 27 to Aug 10 - 2.6  
 June 14 to July 16 - 2.0  
 May 4 to June 14 - 1.9

1911. Flow at 2.56 - 2.26.06  
 Coring 1.67  
 knowledge - .07

May 18th 9 to 11 Evg.

* left Grountledge

* 6 or 8  
leftLight clouds passing  
Wind. 3 to 413  
T 372.1  
± 321.0

55

50.9

T 372.4

14 19 31.5

19 54.0

56 13.0

± 320.7

25 14.7

25 43.9

* left  
~~27~~ 43.5

14 38 39.6

T 374.4  
± 318.6

39 04.2

44 22.8

44 54

Set

14 01 34

14 02 03.0

13 58 53.5

Sun

Comet left

14 30 02

30 38 first 55 to early

35 26.5

36 05.5

14 49 13.2

49 39

54 32

55 23

T 364.5  
± 299.0

14 06 20.5

06 54

11 53

12 25

T 363.5  
± 298.5T 369.8  
± 293.0

The comet very faint  
diffused over a space some five  
minutes in diameter (11' to 12' S).  
largest diameter North & South -  
we were troubled with light clouds  
passing over the field frequently  
hiding the stars of magnitude.





Sept 11  
 beautifully steady. The atmosphere in an admirable condition for observing.  
 S.P. 1  
 +82.17 - 49  
 E 93 83 level error H 4" 26.00  
 87 90 E + 0.15 24194 23.40.65  
 90 86.5 - 2.19.35  
 48.0 52.5 = 55.5 - 10 13.0  
 05.5 5.00 59.5  
 23.1 03.04.8  
 40.5 05.09.5  
 5.07 25.6

4 28.58.5 16.56 1323 1163  
 33 12 26.46 2326

4 28.21.12 03.02.46 5.06.35.26  
 27.08.96 17.01.48.83 5.23.47  
 1.12.36 1.13.63 1.08.79  
 4 28.21.12 6.04 2.19.4  
 8 -14 0.1.8 3.31.2  
 a -46 17.1.11.87 5.06.35.26  
 4 28.20.52 C -120  
 58.0 08.73 a + 12  
 16.5 8.73 5.06.35.18  
 34.7 registered 11.81  
 19 52.7 5.6.23.37  
 5 15.11.2 37  
 1631 - 00

5  
 1.8  
 az = 1.00 wgs

5 5. 12.00.0

2419 5 9.40.6  
 2.19.4

5 5. 40.00.0

2419 5 9.40.6  
 2.19.45  
 1.12.7  
 3.32.1

Jupiter has only two belts  
 faint but broad. The appar-  
 ent upper one has its upper  
 side suddenly bent

Oct 1st the belt is more oblique

E - 6. 10. - 0.0  
 - 3.37.3

30.06.22.7  
 11.29.09.59  
 18.37.13.11

17.57.03.07  
 36.53.94  
 12.96  
 .11

6.34.10.08  
 6.34.49.70  
 34.62  
 16  
 23.6

2419 - at 4.47^h - fast - 11.80  
 gaining 0.9  
 slowly .04

Sept 15th P.M.

$\begin{array}{r} \text{H } 17.45.00.0 \\ 2419 \text{ } 17.42.38.7 \\ \hline 2.21.5 \end{array}$

Level  
 E W  
 89 89  
 $\frac{87}{93}$   $\frac{84}{86.5}$   
 0.22 E too high

$\begin{array}{r} 29.7 \\ 56.8 \\ 240 \\ 50.8 \\ \hline 7 \text{ } 55.18.3 \\ 1696 \\ \hline 3392 \\ 12 \\ \hline 17.54 \text{ } 21.92 \\ 17.53.03.38 \\ \hline 1.18.54 \\ \hline \text{no } 44 \\ 1.18.10 \\ 2.21.8 \\ \hline \text{H} + 3.39.4 \end{array}$

$\begin{array}{r} 21.2 \\ 39.4 \\ 57.2 \\ 15.3 \\ \hline 18.06 \text{ } 33.5 \\ 1565 \\ \hline 31.32 \\ 18.05.55.32 \\ 18.04.36.65 \\ \hline 1.18.67 \end{array}$

Sept 23rd July  
 $\begin{array}{r} \text{H } 7.34.00.0 \\ 424 \text{ } 7.10.24 \end{array}$

Rate of H 2.34

$\begin{array}{r} 15 \text{ Ph } 3.39.4 \\ 17.6 \end{array}$

$\begin{array}{r} 23 \text{ July } 3.57.0 \text{ H} + \end{array}$

$\begin{array}{r} 98.7 \text{ } 29.00.4 \\ \text{H} \text{ } 7.40.00.0 \end{array}$

$\begin{array}{r} 3.57.0 \\ 7.36.03.0 \end{array}$

$\begin{array}{r} 12.04.38.5 \\ 19.31.24.5 \end{array}$

$\begin{array}{r} 18.56.53.24 \\ 30.94.9.2 \end{array}$

$\begin{array}{r} 23.93 \\ 19.28.12.6 \end{array}$

$\begin{array}{r} 19.29.00.4 \\ 48 \text{ } + 47.8 \end{array}$

$\begin{array}{r} 15.0 \\ \text{of } \text{H} + 31.8 \end{array}$

$\begin{array}{r} 7.29.00 \\ 7.27.21.3 \end{array}$

$\begin{array}{r} 2.37.8 \\ 4.00.0 \\ \hline 1.22.2 \end{array}$

$\begin{array}{r} 2.19.45 \\ 2.37.5 \\ \hline 11 \text{ } 18.35 \end{array}$

$\begin{array}{r} 1.6 \\ 2.5 \\ \hline .9 \end{array}$

$\begin{array}{r} 1.6 \\ 2.5 \\ \hline .9 \end{array}$

$\begin{array}{r} 1.6 \\ 2.5 \\ \hline .9 \end{array}$

$\begin{array}{r} 1.6 \\ 2.5 \\ \hline .9 \end{array}$

$\begin{array}{r} 1.6 \\ 2.5 \\ \hline .9 \end{array}$

$\begin{array}{r} 1.6 \\ 2.5 \\ \hline .9 \end{array}$

$\begin{array}{r} 1.6 \\ 2.5 \\ \hline .9 \end{array}$

$\begin{array}{r} 1.6 \\ 2.5 \\ \hline .9 \end{array}$

$\begin{array}{r} 1.6 \\ 2.5 \\ \hline .9 \end{array}$

$\begin{array}{r} 1.6 \\ 2.5 \\ \hline .9 \end{array}$

$\begin{array}{r} 1.6 \\ 2.5 \\ \hline .9 \end{array}$

$\begin{array}{r} 1.6 \\ 2.5 \\ \hline .9 \end{array}$

$\begin{array}{r} 1.6 \\ 2.5 \\ \hline .9 \end{array}$

Sept 23rd P.M.  
 at 6.35 saw a meteor  
 of first magnitude passed about  
 20 below the bright star in  
 Sagittarius.

$\begin{array}{r} 150 \end{array}$

South

$\begin{array}{r} 23 \text{ } 3.57.0 \\ 24 \text{ } 3 \end{array}$

$\begin{array}{r} 4.00 \end{array}$

37.8

16

13.8

32

$\begin{array}{r} 18.6 \text{ } 50 \end{array}$

Sept 28^t

M. Sagittarii  
 37.8 18.2  
 56.0 17.8  
 13.8 16.2  
 -21 32 18.0  
 18.06 .50 18.0

179.6  
 35.92  
 -24  
 18.06 .11.92  
 18.04 .36.40  
 2557 + 1.35.52  
 18.06 .11.92  
 1.00  
 a 01  
 18.06 .11.92  
 -1.35.35  
 18.04 .36.58  
 36.41  
 - .21

4.6  
 22.2  
 40.4  
 -18 58.5  
 18.59 .16.8  
 132.5  
 26.50  
 12  
 18.58 .38.50  
 1.00  
 a 0  
 18.58 .38.50  
 -1.35.41  
 18.57 .03.09

d. Sagittarii  
 0.3  
 18.  
 -19 38  
 19.10 .53.8  
 140.6  
 24.12  
 -12  
 19.10 .16.12  
 8.140.51  
 1.35.37  
 19.10 .16.12  
 1.00  
 a 0  
 19.10 .16.12  
 -1.35.42  
 19.8 .40.70  
 40.81

6-18.15.0  
 2557-18.12.22.7  
 2.37.3

The diaphragm taken out and a new  
 wire put in (A when ill. is E)  
 have doubt as to whether the diaphragm  
 is ~~firm~~. The trouble has since  
 been ascertained a corrected it was not  
 in the instrument.

2125.16.48.6  
 -14 23.3  
 18.22 .40.6  
 139.5  
 279.0  
 24.90  
 18.22 .03.90  
 18.20 .28.37  
 +1.35.59  
 2.37.2  
 4.12.8  
 18.22 .03.90  
 1.00

a 0  
 22.03.90  
 1.35.37  
 20.28.33  
 28.31  
 .28

A. Lyce  
 18.46.01.38

39.4  
 0.8  
 22.5  
 44  
 18.34 .5.5  
 102.2  
 18.33 .20.44  
 31 .45.33  
 +1.35.11  
 18.33 .20.44  
 1.00

a 00  
 18.33 .20.44  
 1.35.39  
 1.45.05  
 33  
 22.5 +.28

B. Lyce  
 43.2  
 3.5  
 23.7  
 18.46 .44

126.9  
 25.38  
 -24  
 18.46 .01.38  
 44.25.90  
 +1.35.48

49.12  
 27.5  
 -18 43  
 19.15 .0.6  
 114.6  
 19.14 .22.92  
 12.47.81  
 +1.35.11

19.14 .22.92  
 12.47.81  
 +1.35.11

d. Sagittarii  
 19.8

-19.13  
 47.37  
 28.24

p' 29.29

p' Sagittarii  
 19.14.22.92  
 1.00  
 a 0

18.46.01.38  
 -1.35.40  
 18.44.25.98

2.37.2  
 6-19.21.0  
 2557-19.18.22.8  
 19.18.22.8  
 1.35.1  
 19.16.47.7  
 19.21.00  
 4.12.3  
 1.2  
 4.13.5  
 2.37.2  
 1.35.3  
 4.12.5

28-29 Am

6-7-33-0

$$\begin{array}{r} 11.27.31.04 \\ 46.73 \\ \hline 11.28.17.77 \end{array}$$

239-6.58-20.5

$$\begin{array}{r} 7.33.0 \\ 4.13.5 \\ \hline 31.28.46.5 \end{array}$$

$$\begin{array}{r} 11.28.17.77 \\ 20.00.24.73 \\ \hline 19.56.53.24 \end{array}$$

$$\begin{array}{r} 27.92 \\ 73 \\ \hline 7.57.12.06 \end{array}$$

$$\begin{array}{r} 7.48.0 \\ 4.13.5 \\ \hline 7.13.18.0 \end{array}$$

$$\begin{array}{r} 7.48.0 \\ 4.13.5 \\ \hline 7.13.18.0 \end{array}$$

$$\begin{array}{r} 7.48.0 \\ 4.13.5 \\ \hline 7.13.18.0 \end{array}$$

$$\begin{array}{r} 7.48.0 \\ 4.13.5 \\ \hline 7.13.18.0 \end{array}$$

$$\begin{array}{r} 7.48.0 \\ 4.13.5 \\ \hline 7.13.18.0 \end{array}$$

$$\begin{array}{r} 7.48.0 \\ 4.13.5 \\ \hline 7.13.18.0 \end{array}$$

$$\begin{array}{r} 7.48.0 \\ 4.13.5 \\ \hline 7.13.18.0 \end{array}$$

$$\begin{array}{r} 7.48.0 \\ 4.13.5 \\ \hline 7.13.18.0 \end{array}$$

$$\begin{array}{r} 7.48.0 \\ 4.13.5 \\ \hline 7.13.18.0 \end{array}$$

$$\begin{array}{r} 7.48.0 \\ 4.13.5 \\ \hline 7.13.18.0 \end{array}$$

$$\begin{array}{r} 7.48.0 \\ 4.13.5 \\ \hline 7.13.18.0 \end{array}$$

$$\begin{array}{r} 7.48.0 \\ 4.13.5 \\ \hline 7.13.18.0 \end{array}$$

$$\begin{array}{r} 7.48.0 \\ 4.13.5 \\ \hline 7.13.18.0 \end{array}$$

$$\begin{array}{r} 7.48.0 \\ 4.13.5 \\ \hline 7.13.18.0 \end{array}$$

28th.

2557. Fast at 18.20 - 1.35.37

$$\begin{array}{r} \text{gaining} \quad 1.5 \\ \text{losing} \quad .06 \end{array}$$

Tab med

M' Sagittarii - 18.04.36.56 - 36.41-.15

2125 A &amp; Ceb - 18.20.28.53 - 28.31-.22

a Lyrae - 18.38.45.05 - 45.33+.28

D 1st Limb - 18.57.03.09

B Lyrae - 18.44.25.98 - 25.90-.08

d Sagittarii - 19.08.40.70 - 40.81+.11

p' Sagittarii - 19.12.47.49 - 47.81+.32

Sept- 29th

41.  
 a Lyra 2.8  
 24.4  
 +.39 46

18.34 .. 7.4

11.18

18.33.. 22.32

18.31 45.30

1 .. 37.02

2 .. 38

4 .. 15

18.33.. 22.32

6.0

u.0

44.2

d Sagittarii 2

-19 37.8

19.10 .. 55.5

149.5

1.37 .. 29.90

19.10 .. 17.90

6.0

a.0

32.3

57.0

Ds 15imb 8.8

-15 27

19.59 .. 45

15.47

30.82

19.59 .. 06.82

6.0

a.0

S - W

97 .. 90

92 .. 98

94 .. 94

Low = 0

24.8

45

B Lyrae

5

+39

25

18.46 .. 45

13.48

26.96

18.46 .. 02.96

6.0

a.0

57.7

9

p' Sagitt.

27

-14

44.7

19.15 .. 2.2

12.46

19.14 .. 24.92

6.0

a.0

2557. at 18.40 Fast 1.37.04

Tab

gaining

1.8

honey

.06

a Lyrae 18.31.. 45.28 - 45.30+.02

B Lyrae 18.44.. 25.91 - 25.90-.01

d Sagittarii 19.08.. 40.83 - 40.79-.04

p' Sagitt. 19.12.. 47.85 - 47.79-.06

Ds 15imb 19.57.. 29.70 -

Te - 20.38.0

2557-20.35.21.9

Te - 18.14.. 0

2557-18.11.. 22.1

2.37.9

Te - 18.54.. 0

2557-18.57.. 22

2.38

d Sag 19.8

28.24

a' Capr

16.8

32

a' Capr

39.1

56

20.11.. 13.7 mid

clouds

50

Sept 30

low E + 0.08

46.5 all  
 Ds 4.4 34.55  
 1st Limb 22  
 -12° 39.1 cloudy  
 20.59.57  
 1594  
 31.88  
 20.59.19.88  
 C-05

29  
 49  
 8 Cygni 8.7  
 +30 27.5  
 21.18.47  
 1512  
 3024  
 21.09.06.24  
 21.06.25.94  
 1.40.30  
 21.08.06.24  
 -09

E W  
 87 - 90+  
 +93 - 85  
 1150 175  
 90 87.5

25  
 25  
 1512.608

26-21.28.0  
 2557-21.25.20.6  
 2.39.2  
 1.40.3  
 4.19.5

1st Limb  
 1.36.1

2nd Limb

1.55.4

2.30.0

Instrument thought out of adjustment. Body Saturn 11.5

21.52.46.6

1.6.33.6  
 21.52.11.2  
 12.7  
 13.9

4.25.6  
 21.52.12.7

21.52.11.95  
 21.52.09.95

2.5  
 12.5  
 4.15.2  
 4.30  
 1.35.5  
 2.06.2

at times  
 very faint.  
 cloudy  
 49  
 5.4  
 8 Pegasi 22  
 +9° 39.3  
 21.38.56.3  
 1620  
 3240  
 21.38.20.40  
 21.36.41.00  
 +1.39.40  
 21.38.20.40  
 -07

26-22.5.0  
 2557-22.2.21.2  
 12.38.8  
 1.39.4  
 4.18.2

2557 at 21.23 Fast - 1.39.49

faintly 2.11  
 hourly .09  
 Tab

2.37.2  
 39.2  
 2  
 5  
 3

Ds 1st Limb - 20.57.39.37  
 8 Cygni - 21.06.26.68 - 26.50 - .18  
 8 Pegasi - 21.36.40.82 - 41.0 + .18

October 5th PM 1846

Times of passage of *Q* in true  $\Delta$  limb. Times marked by Henry Safford.

424 20..28..02.0 * *A* 6..66 *  
20..29..58.0 *Q* 2nd limb. 20..28..49. *B* 5..47 *Q* 1st *N*

20..33..09.4 * *A* 6..66 *  
20..35..16.6 *Q* 2nd 20..34..00 *B* 3..41 *Q*

20..38..18.6 * *A* 6..36 *  
20..40..39.4 *Q* 2nd 20..39..25 *B* 1..58 *Q*

J.S. M. ① 20..43..59.1 * *A* 3..10 *  
20..47..24.0 *Q* 2nd 20..46..13 *B* 2..39 *Q*

20..54..09.0 * *A* 0..80 or .89 *  
20..57..06.4 *Q* 2nd 20..55..54.5 *B* 0..76 *Q*

20..58..27.9 * *A* 0..89 * same  
21..01..33.0 *Q* 2nd 21..00..00 *B* -0..89 *Q* dec

424 + 2..56^s

Aug 19th 9^h 40^m A

21..08..58

8. 1. "  
74..54..39 N

Dist Earth

140 millions

Dist Sun

146 millions.

