1879phae.proj.1524

KG
11366
v.520

Flexure
Runs From Feb 12 to Oct. 1
Collimation.
A1 1879

Charles W. Sever, University Bookstore, Cambridge.

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2

1879 Feb. 12.9 = M.T

h 21 m 23 = 236

Runs

| 5 | 6 | | F1 | | G | | H6 | |
|---|---|---|---|---|---|---|---|---|
| 17.8 | 17.9 | 19.0 | 18.4 | 19.0 | 16.3 | 19.2 | 18.3 |
| 17.7 | 18.1 | 18.8 | 18.2 | 19.1 | 17.2 | 18.9 | 19.2 |
| 17.5 | 18.5 | 19.0 | 18.5 | 19.1 | 17.1 | 19.0 | 18.6 |
| 18.0 | 18.1 | 18.9 | 18.3 | 19.3 | 16.7 | 19.2 | 18.7 |
| 17.5 | 18.2 | 18.7 | 18.2 | 18.4 | 17.2 | 19.0 | 18.7 |
| 385 | 8 | 44 | 16 | 49 | 45 | 3 | 35 |
| 17.70 v | 18.16 | 18.88 | 18.32 | 18.98 | 16.90 | 19.06 | 18.70 |

1879 Feb. 12.9 = M.T.

h 21 m 38 = 236

| | |
|---|---|
| 46.865 | 46.~~862~~ 813 |
| 864 | 807 |
| 86.8 | 823 |
| 868 | 806 |
| 866 | 810 |
| 31 | 59 |
| 46.866 | 46.812 |
| 46.812 | |
| 1678 | |
| 46.839 | |
| ~~019~~ | |
| 46.820 | |

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1879. Feb. 12.9 = N I

Flexure

| Ar. 6 E | Ar. 6 H | Ar. 6 G | Ar. 6 % | Y. 6 E | Y. 6 H | Y. 6 G | Y. 6 % |
|---|---|---|---|---|---|---|---|
| ~~40.9~~ | 40.1 | 39.9 | ~~39.7~~ 41.6 | 27.8 | 37.9 | 44.0 | 36.8 |
| 40.6 | 41.0 | 39.7 | 41.3 | 28.0 | 37.4 | 44.1 | 37.2 |
| 40.8 | 40.7 | 39.7 | 41.0 | 27.7 | 37.9 | 43.8 | 36.7 |
| 40.8 | 40.9 | 39.5 | 41.0 | 27.7 | 38.2 | 43.3 | 37.0 |
| 40.7 | 40.8 | 39.8 | 40.9 | 27.9 | 38.1 | 44.4 | 37.0 |
| 38 | 45 | 36 | 8 | 41 | 45 | 46 | 47 |
| 40.76 | 40.90 | 39.72 | 41.16 | 27.82 | 37.90 | 43.92 | 36.94 |

A 1/2

41.16 — 40.90 = 0.26

40.76 — 39.72 = 1.04

41.16 — 39.72 = 1.44

43.52 — 27.82 = 15.70

36.84 — 37.90 = −1.06

37.42 — 27.82 = 9.60

| E | H | G | % |
|---|---|---|---|
| 40.76 | 40.90 | 39.72 | 41.16 |
| 40.90 | 41.16 | 40.76 | 40.48 |
| 39.72 | 40.24 | 37.42 | 40.24 |
| 41.16 | 37.42 | 2.82 | 37.42 |
| 162.54 | 159.72 | 120.72 | 159.30 |
| 40.63 | 39.93 | 30.18 | 39.83 |

| E | H | G | % |
|---|---|---|---|
| 27.82 | 37.90 | 43.92 | 36.94 |
| 37.90 | 36.84 | 1.44 | 37.42 |
| 43.52 | 37.42 | 15.70 | 36.84 |
| 36.84 | 37.42 | 9.60 | 37.42 |
| 146.08 | 149.58 | 70.66 | 148.62 |
| 36.65 | 37.40 | 17.67 | 37.16 |

3.98

1.99

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4

1879. Feb. 13.9 = N.L.T.
21 30 = 236

Runs.

| ε | ζ | F | | G | | H | |
|---|---|---|---|---|---|---|---|
| 1.8 | 2.1 | 0.9 | 0.2 | 59.3 | 56.8 | 59.6 | 59.5 |
| 1.8 | 1.7 | 1.2 | 0.7 | 59.2 | 56.0 | 58.8 | 59.9 |
| 1.4 | 1.6 | 1.1 | 0.3 | 59.0 | 56.7 | 59.0 | 59.7 |
| 1.8 | 2.4 | 1.0 | 0.6 | 58.9 | 57.2 | 59.4 | 59.3 |
| 1.6 | 2.4 | 1.0 | 0.3 | 59.1 | 57.0 | 60.0 | 59.2 |
| 34 | 102 | 2 | 21 | 5 | 37 | 18 | 26 |
| 1.68 | 2.04 | 1.04 | 0.42 | 59.10 | 56.74 | 59.36 | 59.52 |

| | |
|---|---|
| 46.880 | 46.887 |
| 815 | 898 |
| 822 | 897 |
| 822 | 897 |
| 808 | 892 |
| 67 | 471 |
| 46.813 | 46.894 |
| 46.894 | |
| 1707 | |
| 46.853 | |
| - 019 | |
| 46.834 | |

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1879 Feb. 13.9 = M.T.

21 35 = 236

N. 6. Flexure S. 6.

| 15 E 4 | F | G | H |
|---|---|---|---|
| 38.1 | 38.8 | 33.7 | ~~36.8~~ |
| 38.4 | 38.6 | 33.8 | 36.7 |
| ~~39.1~~ | 38.0 | 33.6 | 36.1 |
| 38.2 | 38.1 | 33.9 | 35.4 |
| 38.3 | 38.0 | 34.2 | 35.5 |
| 42.1 | 15 | 19 2 | 305 |
| 38.42 | 38.30 | 33.84 | 36.10 |

21 55 = 236

| 5 E 4 | F | G | H |
|---|---|---|---|
| ~~41.8~~ | 40.8 | 38.0 | 40.3 |
| ~~41.9~~ | 40.9 | 38.1 | 40.5 |
| 41.8 | 41.1 | 38.1 | 40.0 |
| 41.9 | 41.5 | 38.2 | 39.7 |
| 41.8 | 41.1 | 37.8 | ~~40.2~~ |
| 42 | 4 | 2 | 7 |
| 41.84 | 41.08 | 38.04 | 40.14 |
| 38.04 | 40.14 | | |
| 7988 | 122 | | |
| 39.94 | 40.61 | 3.84 | 3.77 |
| 36.10 | 36.84 | 1.92 | 1.88 |
| 3.84 | 3.77 | | 1.97 ~~1.88~~ 1.93 |

N. 4 = 186 = 22. 0

3002) = 22 0

2680

1.92
1.88
11.90

| 5 E 4 | F | G | H |
|---|---|---|---|
| 29.2 | 39.2 | 42.8 | 33.7 |
| 29.4 | 38.8 | 42.8 | 34.5 |
| 29.0 | 38.8 | 42.8 | 34.2 |
| 29.4 | 39.7 | 43.0 | 34.6 |
| 29.7 | 36.8 | 42.9 | 34.9 |
| 17 | 53 | 43 | 21 9 |
| 29.34 | 39.06 | 42.86 | 34.88 |
| 4 | | | |
| 42.86 | 34.38 | | |
| 7220 | 1348 | | |
| 36.10 | 36.84 | | |

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1879, Feb. 15 h m

I = N. 236 = 17 h 40 m  I = 21 30

| | | | | | |
|---|---|---|---|---|---|
| 46.804 | 46.762 | 46.962 | 46.607 | 46.973 | 46.600 |
| 800 | 757 | 964 | .597 | 978 | 601 |
| 809 | 742 | 960 | 620 | 978 | 589 |
| 800 | 742 | 967 | 617 | 970 | 598 |
| 806 | 738 | 961 | 608 | 979 | 606 |
| 19 | 241 | 14 | 49 | 28 | 2994 |
| 46.804 | 46.748 | 46.963 | 46.610 | 46.976 | 46.598 |
| .748 | | | 46.963 | | 976 |
| 1552 | | | 1573 | | 1574 |
| 46.776 | | | 46.786 | | 787 |
| −019 | | | −019 | | −019 |
| 46.757 | | | 46.767 | | 46.768 |

Collimation Set 21−

46.834 from 4 h 30 m

Tree 21 h 35 m

Set 21−

46.767

T = 21 h 40 m.

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8

1879, Feb. 18.9 M.T.

T. = 21 45

## Runs

| 5 E | 6 O | F | | G | | H | |
|---|---|---|---|---|---|---|---|
| 10.4 | 10.7 | 10.5 | 10.3 | 6.9 | 5.8 | 8.8 | 6.8 |
| 10.6 | 11.2 | 11.2 | 9.8 | 7.7 | 5.2 | 7.6 | 7.1 |
| 10.8 | 10.5 | 11.2 | 9.8 | 7.7 | 5.8 | 8.7 | 6.7 |
| 10.5 | 10.6 | 11.1 | 10.2 | 7.8 | 5.7 | 8.6 | 6.8 |
| 10.9 | 10.2 | 10.8 | 10.0 | 7.9 | 5.7 | 7.8 | 6.3 |
| 32 | 32 | 48 | 01 | 30 | 32 | 15 | 37 |
| 10.64 | 10.64 | 10.96 | 10.02 | 7.60 | 5.64 | 8.30 | 6.74 |

## N. b. Flexure S. b.

| 5 E 4 | F | G | H | E | F | G | H |
|---|---|---|---|---|---|---|---|
| 40.1 | 38.9 | 36.8 | 36.7 | 30.2 | 38.4 | 44.2 | 33.8 |
| 39.6 | 39.0 | 37.4 | 36.8 | 29.6 | 38.3 | 44.8 | 34.7 |
| 39.9 | 39.2 | 37.2 | 36.4 | 28.8 | 38.3 | 44.7 | 34.3 |
| 39.6 | 39.0 | 37.5 | 36.9 | 28.8 | 38.7 | 44.7 | 33.4 |
| 40.1 | 39.6 | 37.8 | 36.7 | 29.0 | 38.6 | 45.3 | 33.2 |
| 1993 | 7 | 17 | 35 | 4 | 23 | 37 | 44 |
| 39.86 | 39.14 | 37.34 | 36.70 | 29.08 | 38.46 | 44.74 | 33.88 |
| 37.34 | 36.70 | | | 44.74 | 33.88 | | |
| 1720 | 1584 | | | 7382 | 1234 | | |
| 38.60 | 37.92 | | | 36.91 | 36.17 | | |
| 36.91 | 36.17 | | | | | | |
| 1.69 | 1.75 | | | | | | |
| .84 | .87 | | | | | | |
| | +0.85 | | | | | | |

39.86 29.08
39.14 38.46
37.34 44.74
36.70 33.88
153.04 146.16
38.26 36.54
1.72
+.86

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1879. Feb. 19.0 h
T = 2.26 ± .21 55

| S.6. | N.6. |
|---|---|
| 46.508 | 47.052 |
| 505 | 055 |
| 508 | 057 |
| 508 | 048 |
| 510 | 045 |
| 39 | 257 |
| 46.508 | 47.051 |

47.051
13 55 9
46.779
- 019
46.760

Coll. sel-01 46.767

~~Saturn~~
S

1879phae.proj.1524.



1879, Feb. 20.9 = M T
T = 21h 30m ch. 236

Runs

| 5′ | ℰ | 6′ | F | | G | ☆ | H |
|---|---|---|---|---|---|---|---|
| 5.4 | 4.6 | 4.0 | 3.0 | 1.0 | 588 | 2.5 | 1.5 |
| 4.8 | 4.7 | 4.0 | 3.2 | 0.7 | 589 | 2.7 | 0.8 |
| 4.0 | 3.7 | 4.0 | 2.7 | 0.8 | 58.7 | 1.5 | 0.8 |
| 3.8 | 3.8 | 3.8 | 3.1 | 1.0 | 58.9 | 2.1 | 1.3 |
| 4.5 | 3.7 | 4.1 | 3.7 | 1.3 | 58.9 | 2.2 | 0.7 |
| 22.5 | 20.5 | 19.9 | 15.7 | 4.8 | 42 | 11.0 | 5.1 |
| 4.50 | 4.10 | 3.98 | 3.14 | 0.96 | 58.84 | 2.20 | 1.02 |

Flexure

N.℞.

| 5′ | ℰ | 4′ | F | G | H |
|---|---|---|---|---|---|
| 46.0 | | | 38.8 | 35.4 | 37.8 |
| 39.7 | | | 39.2 | 35.5 | 37.7 |
| 39.9 | | | 39.2 | 35.2 | 37.2 |
| 39.7 | | | 39.8 | 35.3 | 37.3 |
| 39.8 | | | 39.0 | 35.0 | 37.8 |
| 41 | | | 10 | 14 | 28 |
| 39.82 | | | 39.20 | 35.28 | 37.56 |
| 35.28 | | | 37.56 | | |
| 151.0 | | | 1676 | | |
| 37.55 | | | 38.38 | | |
| 37.22 | | | 37.52 | | |
| +0.33 | | | +0.86 | | |
| +.16 | | | +1.43 | | |
| | | | 16 59 | | |
| | | | +0.30 | | |

S.℞.

| ℰ | F | G | H |
|---|---|---|---|
| 31.0 | 40.0 | 43.1 | 35.0 |
| 30.9 | 40.2 | 44.2 | 34.9 |
| 31.6 | 40.2 | 43.7 | 34.6 |
| 30.8 | 40.1 | 43.0 | 35.4 |
| 30.8 | 40.1 | 43.1 | 34.7 |
| 51 | 6 | 21 | 46 |
| 31.02 | 40.12 | 43.42 | 34.92 |
| 43.42 | 34.92 | | |
| 7444 | 7504 | | |
| 37.22 | 37.52 | | |

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1879. Feb. 20.9

Collimation

| N.C. | S.C. |
|---|---|
| 47.060 | 46.49.7 |
| 059 | 493 |
| 059 | 496 |
| 054 | 502 |
| 056 | 498 |
| 38 | 36 |
| 47.058 | 46.497 |

46.497
13555
46.777
019
46.758

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12

1879 Feb. 22

Fiducial

| 5 Ɛ 4 | N. 6. Fi | G | H | 10 Ɛ 4 | Y. 6. Fi | G | H |
|---|---|---|---|---|---|---|---|
| 40.2 | 39.6 | 35.9 | 36.5 | 29.4 | 39.3 | 42.8 | 32.5 |
| 40.1 | 39.6 | 34.9 | 36.2 | 29.5 | 39.2 | 42.8 | 32.5 |
| 39.9 | 39.7 | 34.8 | 36.3 | 29.2 | 39.1 | 42.5 | 33.1 |
| 40.3 | 39.8 | 35.3 | 37.2 | 29.3 | 39.0 | 42.7 | 33.1 |
| 40.4 | 39.9 | 35.3 | 36.9 | 29.4 | 38.9 | 42.7 | 33.0 |
| 9 | 36 | 2 | 31 | 18 | 5 | 35 | 142 |
| 40.18 | 39.72 | 35.04 | 36.62 | 29.36 | 39.10 | 42.70 | 32.84 |
| 35.04 | 36.62 | | | 42.70 | 32.84 | | |
| 75.22 | 1634 | | | 72.06 | 71.94 | | |
| 37.61 | 38.17 | | | 36.06 | 35.97 | | |
| 36.06 | 35.97 | | | | | | |
| 1.55 | 2.20 | | | | | | |
| .76 | 1.10 | | | | | | |
| | 76 | | | | | | |
| | 1768 | | | | | | |

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| $I = 17^h\ 40^m$ | $I = 2^h\ 2^m\ 10$ Collimation |
|---|---|
| 47.071 | 47.038 |
| 065 | 038 |
| 070 | 058 |
| 068 | 050 |
| 060 | 043 |
| 334 | 219 |
| 47.067 | 47.044 |

| | |
|---|---|
| 46.527 | 46.498 |
| 504 | 482 |
| 522 | 481 |
| 521 | 480 |
| 521 | 500 |
| 105 | 431 |
| 46.521 | 46.486 |
| 47 067 | 47 044 |
| 13588 | 13530 |
| 46.794 | 46.765 |
| wt = 1 | wt = 1/3 |

From this date Conclusion for diurnal aberration not to be applied

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1879 Feb. 23

I= 17h 35m

47 029
027
030
020
019
025

47. 025

46. 557
550
549
540
540
236

46. 547
47. 025
13 572
46,786

Set collimation at 46.800

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1879 Feb. 24 = M.T.

$22^h\ 35^m = 236$

Runs

| 5 | 6 | 0 | | F | | G | | H | |
|---|---|---|---|---|---|---|---|---|---|
| 8.0 | 8.8 | | 8.1 | 7.7 | 5.4 | 3.4 | 7.1 | 5.3 | |
| 8.0 | 8.3 | | 8.3 | 7.5 | 6.1 | 3.7 | 6.3 | 5.9 | |
| 7.9 | 8.7 | | 8.5 | 7.2 | 6.1 | 3.3 | 6.1 | 6.6 | |
| 7.8 | 8.9 | | 8.1 | 7.4 | 5.0 | 3.8 | 6.4 | 5.8 | |
| 8.7 | 9.0 | | 8.1 | 7.5 | 5.7 | 3.7 | 6.3 | 5.9 | |
| 4 | 37 | | 11 | 23 | 3.3 | 29 | 22 | 45 | |
| 8.08 | 8.74 | | 8.22 | 7.46 | 5.66 | 3.58 | 6.44 | 5.90 | |

Ref. Setting wrong.

| | N.6. | | | Fleclure | | | S.6. | |
|---|---|---|---|---|---|---|---|---|
| 5 6 4 | F | G | H | E | F | G | H | |
| 40.8 | 39.9 | 36.8 | 37.3 | 26.8 | 37.1 | 40.8 | 31.9 | |
| 40.5 | 40.1 | 36.9 | 38.0 | 26.5 | 37.1 | 40.9 | 31.0 | |
| 40.3 | 40.4 | 36.3 | 38.1 | 26.4 | 37.3 | 40.3 | 31.8 | |
| 40.2 | 40.3 | 36.0 | 37.9 | 26.5 | 37.2 | 40.4 | 31.7 | |
| 39.7 | 40.6 | 36.8 | 37.9 | 26.8 | 37.1 | 40.6 | 31.9 | |
| 15 | 13 | 28 | 42 | 30 | 8 | 30 | 33 | |
| 40.30 | 40.26 | 36.56 | 37.84 | 26.60 | 37.16 | 40.60 | 31.66 | |
| 36.56 | 37.84 | | | 40.60 | 31.66 | | | |
| 7686 | 7810 | | | 6720 | 6882 | | | |
| 3843 | 39.05 | | | 33.60 | 34.41 | | | |
| 33.60 | 34.41 | | | | | | | |
| 4.83 | 4.64 | | | | | | | |
| 2.41 | 2.32 | | | | | | | |

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1879phae.proj.1524.



Collimation

I = 22 45

| | |
|---|---|
| ~~46.951~~ | .960 |
| ~~972~~ | 965 |
| ~~954~~ | 966 |
| ~~963~~ | 963 |
| ~~954~~ | .966 |
| ~~294~~ | 20 |
| ~~46.959~~ | 46964 |

46.498
503
494
495
500
2490
46.498
46. 964
1462
46.731

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1879. Feb. 24 Set II

I = 26 δ N.C. Flexure No. II P.C.

| 10 ε 4 | F1 | G | H | ε | F1 | G | H |
|---|---|---|---|---|---|---|---|
| 39.5 | 38.8 | 34.5 | 34.2 | 28.2 | 36.9 | 39.1 | 29.1 |
| 39.9 | 39.2 | 34.9 | 35.0 | 27.7 | 37.0 | 39.1 | 29.5 |
| 39.9 | 38.9 | 34.7 | 34.3 | 27.3 | 37.2 | 39.2 | 29.3 |
| 39.9 | 39.1 | 34.3 | 34.7 | 27.0 | 37.3 | 39.2 | 29.1 |
| 39.9 | 38.8 | 34.3 | 34.2 | 27.7 | 37.1 | 39.6 | 29.3 |
| 44 | 48 | 27 | 24 | 29 | 5 | 12 | 13 |
| 39.88 | 38.96 | 34.54 | 34.48 | 27.58 | 37.10 | 39.24 | 29.26 |
| 34.54 | 3448 | | | 39.24 | 29.26 | | |
| 1442 | 7344 | | | 6682 | 6636 | | |
| 37.21 | 36.72 | | | 33.41 | 33.18 | | |
| 33.41 | 33.18 | | | | | | |
| 3.80 | 3.54 | | | | | | |
| 1.80 | 1.77 | | | | | | |

N.C.

Set I

Flexure No. I P.C.

| 10 ε 4 | F1 | G | H | 10 ε 4 | F1 | G | H |
|---|---|---|---|---|---|---|---|
| 40.1 | 39.7 | 34.3 | 34.4 | 27.7 | 37.8 | 39.2 | 29.5 |
| 40.2 | 39.3 | 34.2 | 34.5 | 27.5 | 37.3 | 39.3 | 29.1 |
| 40.8 | 39.1 | 34.4 | 34.0 | 27.4 | 37.3 | 39.1 | 28.7 |
| 402 | 38.9 | 34.9 | 34.2 | 27.9 | 37.0 | 39.1 | 29.2 |
| 400 | 39.2 | 34.3 | 34.3 | 27.3 | 37.9 | 39.4 | 29.0 |
| 5 | 12 | 21 | 14 | 28 | 23 | 11 | 5 |
| 40.10 | 39.24 | 34.42 | 34.28 | 27.56 | 37.46 | 39.22 | 29.10 |
| 3442 | 3428 | | | 39.22 | 29.10 | | |
| 7452 | 1352 | | | 6678 | 6656 | | |
| 37.26 | 36.76 | | | 33.79 | 33.28 | | |
| 33.79 | 33.28 | | | | | | |
| 3.47 | 3.48 | | | | | | |
| 1.73 | 1.74 | | | | | | |
| | 1.73 | | | | | | |

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11° 23b = 20 0

46.952
956
954
944
940
246
46949

46.579
588
598
589
598
452
46.590
46 949
1539
46.769

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1879. Feb. 26

T= 22 20

Flexure

N.P.

| E | F | G | H |
|---|---|---|---|
| 36.7 | 36.0 | 35.2 | 36.1 |
| 37.2 | 38.7 | 34.8 | 36.1 |
| 37.2 | 38.6 | 34.7 | 35.4 |
| 37.2 | 38.1 | 34.7 | 36.1 |
| 37.0 | 38.7 | 34.3 | 35.7 |
| 3 | 21 | 37 | 294 |
| 37.08 | 38.42 | 34.74 | 35.88 |
| 3474 | 3588 | | |
| 1182 | 1430 | | |
| 35.91 | 37.15 | | |
| 35.08 | 36.11 | | |
| 0.83 | 1.04 | | |
| 0.41 | 0.52 | | |
| | 41 | | |
| | 0.47 | | |

S.P.

| E | F | G | H |
|---|---|---|---|
| 27.6 | 37.4 | 42.2 | 342 |
| 28.4 | 380 | 41.9 | 342 |
| 28.5 | 38.6 | 41.8 | 341 |
| 28.0 | 38.3 | 421 | 33.7 |
| 28.2 | 384 | 421 | 342 |
| 7 | 7 | 1 | 4 |
| 28.14 | 38.14 | 42.02 | 3408 |
| 42.02 | 3408 | | |
| 7016 | 1222 | | |
| 35.08 | 36.11 | | |

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1879phae.proj.1524.



I = 22 20 = Ch. No. 236
Collimation

47.024
014
012
027
029
106
47.021

46.542
545
540
530
536
193
46.539
47.021
13 560
46.780

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22

1899 Feb.

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1879phae.proj.1524.



1879. Feb. 26.9
T = 22h 25m = No. 236

47.077
084
180
082
077
400
47.080

46.544
556
559
558
554
273
46.559
47 080
13639
46.819 Set c at 46.819

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1879. March. 1
T = 18h 35m Ch = 236

| N.C. | | | | Flexure | S.C. | | |
|---|---|---|---|---|---|---|---|
| 5 E 4 | F | G | H | E | F | G | H |
| ~~27.7~~ | ~~38.0~~ | 35.2 | ~~38.5~~ | 27.8 | 38.8 | 42.7 | 35.2 |
| ~~36.0~~ | 38.5 | 35.2 | 38.1 | 27.6 | 38.3 | 41.9 | 35.0 |
| ~~37.9~~ | ~~39.0~~ | 35.0 | 38.2 | 27.7 | 38.7 | 42.0 | 34.2 |
| ~~48.0~~ | 38.4 | 35.1 | 38.0 | 27.7 | 39.0 | 41.9 | 34.0 |
| ~~28.0~~ | 38.8 | 34.9 | 38.0 | 27.4 | 38.9 | 41.7 | 33.9 |
| 46 | 27 | 254 | 8 | 32 | 437 | 2 | 22.3 |
| ~~37.92~~ | 38.54 | 35.08 | 38.16 | 27.64 | 38.74 | 42.04 | 34.46 |
| 35.08 | 38.16 | | | 42.04 | 34.46 | | |
| ~~8300~~ | 7670 | | | 6968 | 7320 | | |
| ~~36.50~~ | 38.35 | | | 34.84 | 36.60 | | |
| 34.84 | 36.60 | | | | | | |
| 1.64 | ~~1.175~~ | | | | | | |
| 0.82 | 0.57 | +85 | | | | | |
| | ~~25~~ | | | | | | |
| | 1.28 | | | | | | |

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1879phae.proj.1524.



March 1
T = 18h 35m

46.96.11
956
96.7
970
968
382
46.964

46.582
578
579
573
576
38
46.578
46964
1542
46.771

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1879phae.proj.1524.



1879 March 2
I = 23h 10m

N.6. Filature S.6.

| 5 E 4 | F | G | H | E | F | G | H |
|---|---|---|---|---|---|---|---|
| 38.7 | 39.2 | 35.9 | 39.1 | ~~5 E 4~~ 26.7 | 38.1 | 41.2 | 33.3 |
| 38.6 | 39.2 | 36.0 | 39.3 | 26.7 | 38.6 | 41.7 | 33.7 |
| 38.2 | 39.7 | 35.8 | 39.2 | 26.3 | 38.1 | 41.7 | 34.1 |
| 38.6 | 39.8 | 35.9 | 38.4 | 26.4 | 38.1 | 41.3 | 33.9 |
| 38.3 | 39.4 | 35.9 | 38.8 | 26.7 | 38.3 | 41.8 | 33.7 |
| 24 | 23 | 45 | 48 | 28 | 12 | 27 | 37 |
| 38.48 | 39.46 | 35.90 | 38.96 | 28.56 | 38.24 | 41.54 | 33.74 |
| 35.90 | 38.96 | | | 41.54 | 33.74 | | |
| 14.38 | 18.42 | | | 70.10 | 71.98 | | |
| 37.19 | 39.21 | | | 35.05 | 35.99 | | |
| 35.05 | 35.99 | | | | | | |
| 2.14 | 3.22 | | | | | | |
| 1.07 | 1.61 | | | | | | |
| | 1.07 | | | | | | |
| | 2.68 | | | | | | |
| | 1.34 | | | | | | |

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March 2

I - 23 10

47.034
053
046
050
051
234
47.047

46.572
559
571
573
568
343
46.569
47.047
13 616
46.808

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879. March 2
T = 20h 0m = Ch. 236

N. 6. Flexure S. 6

| 5 E 4 | F1 | G | H | E | F1 | E 42 | |
|---|---|---|---|---|---|---|---|
| 38.5 | 39.7 | 36.6 | 39.3 | 27.3 | 39.2 | 42.8 | 35.7 |
| 38.8 | 39.6 | 36.3 | 39.4 | 28.0 | 39.0 | 42.4 | 34.8 |
| 38.8 | 39.8 | 36.3 | 39.2 | 27.7 | 38.8 | 42.7 | 35.0 |
| 38.8 | 39.9 | 36.2 | 39.3 | 27.7 | 39.2 | 42.3 | 35.2 |
| 38.9 | 39.8 | 36.2 | 38.8 | 27.8 | 38.7 | 42.5 | 35.0 |
| 38 | 38 | 16 | 10 | 35 | 44 | 27 | 7 |
| 38.76 | 39.76 | 36.32 | 39.20 | 27.70 | 38.98 | 42.54 | 35.14 |
| 36.32 | 39.20 | | | 42.54 | 35.14 | | |
| 7508 | 7896 | | | 7024 | 7412 | | |
| 37.54 | 39.48 | | | 35.12 | 37.06 | | |
| 35.12 | 37.06 | | | | | | |
| 2.42 | 2.42 | | | | | | |
| 1.21 | 1.21 | | | | | | |

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1879phae.proj.1524.



46.982
983
992
982
991
430
46.986

46.584
588
566
569
580
367
46.573
46986
1559
46.779 Set C at 46.779

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1879phae.proj.1524.

30

1879. March 4

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1879phae.proj.1524.



March 4
I = 22h 50m

46.997
47.004
46.998
.990
989
34973
46.995

46.588
595
585
589
593
450
46.590
46995
1585
46.792 Set at

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1879, March 4

T = 20 15 = Ch. 236

Runs

| 5 | E | F | | G | | H | |
|---|---|---|---|---|---|---|---|
| 0.1 | 03 | 3.2 | 2.2 | 3.0 | 1.5 | 5.6 | 4.3 |
| 0.0 | 0.6 | 2.8 | 2.7 | 2.9 | 1.2 | 5.4 | 4.3 |
| 0.0 | 00 | 2.3 | 2.2 | 3.1 | 1.7 | 5.1 | 4.3 |
| 00 | 0.0 | 2.7 | 2.2 | 3.3 | 1.9 | 4.8 | 4.6 |
| 0.1 | 0.4 | 2.5 | 2.3 | 2.7 | 1.8 | 5.2 | 4.7 |
| 2 | 13 | 35 | 16 | 0 | 31 | 11 | 22 |
| 0.04 | 0.26 | 2.70 | ~~2.32~~ 2.32 | 3.00 | 1.62 | 5.22 | 4.44 |

N. E. Flexure S. E.

| 5 E 4 | F | G | H | E | F | G | H |
|---|---|---|---|---|---|---|---|
| 36.8 | 38.8 | 38.8 | 41.7 | 25.8 | 37.7 | 44.1 | 37.4 |
| 36.5 | 38.8 | 38.4 | 41.2 | 256 | 37.4 | 43.8 | 37.0 |
| 36.8 | 09.2 | 37.9 | 41.3 | 258 | 37.7 | 438 | 37.0 |
| 36.8 | 38.8 | 38.2 | 40.8 | 256 | 37.1 | 43.9 | 37.1 |
| 36.9 | 38.8 | 38.4 | 40.8 | 25.7 | 37.3 | 43.9 | 36.9 |
| 38 | 44 | 17 | 8 | 30 | 22 | 45 | 4 |
| 36.76 | 38.88 | 38.34 | 41.16 | 25.60 | 37.44 | 43.90 | 37.08 |
| 38.34 | 41.16 | | | 43.90 | 37.08 | | |
| 7510 | 8004 | | | 6950 | 7552 | | |
| 37.55 | 40.02 | | | 3475 | 37.76 | | |
| 3475 | 37.76 | | | | | | |
| 280 | 226 | | | | | | |
| 140 | 113 | | | | | | |
| 113 | | | | | | | |
| 253 | | | | | | | |
| 1.26 | | | | | | | |

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March 4, 1879

Collimation

47.042
054
051
054
054
5
47.051

46.454
.466
463
461
468
12
46.462
47.051
13513
46.756 Set at 46.790

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1879. March 5
I = $1^h$ $35^m$ = Ch. 236

47.075
062
060
069
068
34
47.067

46.507
502
505
494
480
2488
46.498
47.067
13565
46.782 S

Set C at 46.790

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1879phae.proj.1524.



1879. March 10
I= ~~23~~ 1 45 Ch. 236

46.772
787
813
788
817
3977
46.793

46. ~~792~~ 793
793
783
803
801
472
46.794
46.793
1787
46.793

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1879phae.proj.1524.



1879. March 11

$T = 20^{m}\ 0^{s} = 236$

## Runs

| 5 Eo | | Fl | | G | | Hb | |
|---|---|---|---|---|---|---|---|
| 15.2 | 16.4 | 7.6 | 7.1 | 8.8 | 7.3 | 10.7 | 10.3 |
| 15.6 | 16.1 | 7.4 | 6.9 | 8.3 | 6.2 | 10.3 | 9.6 |
| 15.9 | 16.1 | 7.7 | 6.7 | 8.8 | 6.4 | 9.8 | 9.7 |
| 16.1 | 16.3 | 7.4 | 7.1 | 9.2 | 6.8 | 9.7 | 9.7 |
| 15.7 | 16.0 | 7.6 | 7.3 | 8.7 | 7.1 | 10.1 | 9.2 |
| 37 | 9 | 27 | 1 | 38 | 38 | 6 | 35 |
| 15.74 | 16.18 | 7.54 | 7.02 | 8.76 | 6.76 | 10.12 | 9.70 |

## Flexure

| N.C. 5 Eb 4 | H | G | Hb | S.C. E | Fl | G | Hb |
|---|---|---|---|---|---|---|---|
| 37.5 | 39.1 | 41.1 | 41.9 | 27.9 | 39.2 | 46.3 | 39.1 |
| 37.3 | 39.6 | 39.7 | 41.8 | 27.8 | 38.7 | 46.7 | 38.8 |
| 37.6 | 39.5 | 40.1 | 41.9 | 27.3 | 38.7 | 46.2 | 38.7 |
| 37.9 | 39.9 | 39.9 | 42.2 | 27.8 | 38.8 | 46.7 | 39.0 |
| 37.8 | 40.0 | 39.6 | 42.0 | 27.4 | 38.7 | 46.5 | 38.6 |
| 31 | 31 | 20 ~~0~~ 4 | 98 | 32 | 41 | 24 | 42 |
| 37.62 | 39.62 | 40.08 | 41.96 | 27.64 | 38.82 | 46.48 | 38.84 |
| 40.08 | 41.96 | | | 46.48 | 38.84 | | |
| 77.70 | 81.58 | | | 74.12 | 77.66 | | |
| 38.85 | 40.79 | | | 37.06 | 38.83 | | |
| 37.06 | 38.83 | | | | | | |
| 1.79 | 1.96 | | | | | | |
| 1.96 | | | | | | | |
| 3.75 | | | | | | | |
| 1.87 | | | | | | | |
| .93 | | | | | | | |

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1879, March 11

T = 3h 0m = Ch. 236

| I | II |
|---|---|
| 46.797 | 46.821 |
| 802 | 812 |
| 833 | 808 |
| 827 | 812 |
| 810 | 803 |
| 69 | 56 |
| 46.814 | 46.811 |

T = 20 0

| I | II |
|---|---|
| 46.724 | 46.771 |
| 73.6 | 75.7 |
| 737 | 761 |
| 73.4 | 764 |
| 740 | 752 |
| 171 | 305 |
| 46.734 | 46.761 |

| | |
|---|---|
| 46.891 | 46.894 |
| .860 | 880 |
| .892 | 880 |
| .899 | 878 |
| .900 | 863 |
| 4442 | 395 |
| 46.888 | 46.879 |
| 46 814 | 46 811 |
| 1702 | 1690 |
| 46.851 | 46 845 |

| | |
|---|---|
| 46.874 | 46.847 |
| 880 | 841 |
| 874 | 850 |
| 870 | 834 |
| 879 | 837 |
| 377 | 209 |
| 46.875 | 46.842 |
| 46.734 | 76.1 |
| 1609 | 1603 |
| 46.804 | 46, 801 |

Set. C at 46.791

Set C at 46.802

Seeing very bad

Adjusted for focus between I and II

Seeing good

Adjusted for focus between I and II

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1879phae.proj.1524.



1879 March 12
I = 20h 0m = Ch. 236

Fleshure

| E | F | G | H |
|---|---|---|---|
| 37.7 | 39.0 | 37.5 | 39.8 |
| 38.1 | 39.0 | 37.3 | 39.6 |
| 38.0 | 39.3 | 37.9 | 39.2 |
| 38.2 | 39.2 | 38.2 | 39.8 |
| 38.2 | 39.2 | 38.0 | 39.6 |
| 2 | 7 | 1839 | 30 |
| 38.04 | 39.14 | 37.68 | 39.60 |
| 37.68 | 39.60 | | |
| 1572 | 74 | | |
| 3786 | 39.37 | | |
| 3656 | 38.21 | | |
| 130 | 1.16 | | |
| 116 | | | |
| 246 | | | |
| 126 | | | |

| E | F | G | H |
|---|---|---|---|
| 28.0 | 39.2 | 45.7 | 37.9 |
| 28.0 | 391 | 45.2 | 37.6 |
| 280 | 38.9 | 450 | 37.2 |
| 281 | 39.0 | 45.1 | 37.1 |
| 278 | 39.0 | 44.7 | 371 |
| 399 | 2 | 7 | 19 |
| 27.98 | 39.04 | 4514 | 37.38 |
| 4514 | 37.38 | | |
| 7312 | 7642 | | |
| 36.56 | 3821 | | |

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Mar 12

I=20 0

46.776
782
777
780
78.5
0
46.780

46.726
724
722
727
724
23
46.725
780
1505
46.752 C. Set at 46.752

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1879phae.proj.1524.

42

1879. March 16

I = 0 15

46. 848
873
872
853
873
319
46. 864

46. 714
744
745
749
737
189
46. 738
46 864
1602
46. 801 Set C at 46. 801

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1879. March 18

I = 23 20

Runs

| 5' E 6 | | F | | G | | H | |
|---|---|---|---|---|---|---|---|
| 10.4 | 10.2 | 12.2 | 11.6 | 11.4 | 9.0 | 11.1 | 10.3 |
| 10.6 | 10.0 | 12.6 | 11.8 | 11.2 | 9.4 | 11.2 | 11.2 |
| 10.0 | 10.2 | 12.2 | 12.2 | 11.7 | 9.4 | 10.8 | 11.3 |
| 10.0 | 10.6 | 12.4 | 12.0 | 11.8 | 9.2 | 10.8 | 11.0 |
| 10.5 | 10.7 | 12.3 | 11.8 | 12.2 | 9.2 | 11.0 | 10.3 |
| 15 | 17 | 17 | 44 | 33 | 12 | 49 | 41 |
| 10.30 | 10.34 | 12.34 | 11.88 | 11.66 | 9.24 | 10.98 | 10.82 |

N.6. Flerure S.6.

| 5' E 4' | F | G | H | E | F | G | H |
|---|---|---|---|---|---|---|---|
| 37.6 | 40.1 | 38.2 | 38.6 | 27.3 | 37.1 | 42.8 | 35.7 |
| 36.7 | 40.2 | 37.3 | 38.6 | 27.0 | 37.2 | 43.0 | 36.0 |
| 37.4 | 40.7 | 37.1 | 38.5 | 27.0 | 37.2 | 42.5 | 35.2 |
| 37.8 | 40.2 | 37.6 | 38.6 | 27.0 | 37.0 | 42.6 | 35.2 |
| 37.5 | 40.0 | 37.8 | 37.9 | 26.8 | 37.0 | 42.3 | 35.6 |
| 20 | 12 | 30 | 22 | 1 | 5 | 32 | 27 |
| 37.40 | 40.24 | 37.60 | 38.44 | 27.02 | 37.10 | 42.64 | 35.54 |
| 37.60 | 38.44 | 37.40 | 37.02 | 42.64 | 35.54 | | |
| 100 | 78.68 | 40.24 | 37.10 | 6966 | 7264 | | |
| 37.50 | 39.34 | 37.60 | 42.64 | 34.83 | 36.32 | | |
| 34.83 | 36.32 | 38.44 | 35.54 | | | | |
| 2.67 | 3.02 | 153.68 | 142.30 | | | | |
| 3.02 | | 38.42 | 35.58 | | | | |
| 5.69 | | | 2.84 | | | | |
| 2.84 | | | 1.42 | | | | |
| 1.42 | | | | | | | |

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Mars

46.861
859
862
863
862
7
46.861

46.669
670
662
663
667
331
46.666
46, 861
1527
46.763

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46

1879 March 20

T h m
0 0

46.913
907
910
913
916
59
46.912

46.722
712
727
730
718
109
46.722
46.912
1634
46.817 Set c at 46.763

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~~Mar 9 1879~~

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1879. March 23

I = 0 20

Runs

| 5 E 6 | | F1 | | G | | H | |
|---|---|---|---|---|---|---|---|
| 11.9 | 12.2 | 15.3 | 14.8 | 16.1 | 13.8 | 15.9 | 15.4 |
| 11.9 | 12.8 | 15.2 | 14.5 | 15.9 | 13.6 | 16.3 | 15.8 |
| 12.6 | 11.8 | 15.1 | 14.7 | 15.4 | 13.5 | 16.6 | 15.3 |
| 12.0 | 12.0 | 15.3 | 14.5 | 15.3 | 13.4 | 16.0 | 16.0 |
| 12.7 | 11.7 | 15.1 | 14.2 | 15.4 | 13.6 | 16.4 | 15.9 |
| 11 | 5 | 10 | 27 | 31 | 29 | 12 | 34 |
| 12.22 | 12.10 | 15.02 | 14.54 | 15.62 | 13.58 | 16.24 | 15.68 |

N.6. Flexure L.6.

| 5 E 4 | F1 | G | H | E | F1 | G | H |
|---|---|---|---|---|---|---|---|
| 36.0 | ~~38.8~~ 38.8 | 37.2 | 39.8 | 26.9 | 38.4 | 43.7 | 37.0 |
| 35.9 | 39.0 | 37.8 | 40.1 | 26.9 | 38.2 | 44.1 | 36.9 |
| 36.0 | 38.8 | 37.5 | 40.2 | 26.6 | 38.6 | 43.9 | 36.8 |
| 35.6 | 38.8 | 37.9 | 39.7 | 27.0 | 38.5 | 44.0 | 37.1 |
| 35.6 | 38.8 | 37.8 | 39.7 | 27.2 | 38.7 | 44.1 | 36.8 |
| 31 1 | ~~37~~ 32 | 32 | 45 | 46 | 24 | 48 | 46 |
| 36.22 | 38.84 | 37.64 | 39.90 | 26.92 | 38.48 | 43.96 | 36.92 |
| 37.64 | 39.90 | | | 43.96 | 36.92 | | |
| 1386 | 1874 | | | 7088 | 1540 | | |
| 36.93 | 39.37 | | | 35.44 | 37.70 | | |
| 35.44 | 37.70 | | | | | | |
| 1.49 | 1.67. | | | | | | |
| 1.67 | | | | | | | |
| 3 1 L | | | | | | | |
| 1.58 | | | | | | | |

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1879phae.proj.1524.



47.082
073
086
083
080
4
47.081

46.428
419
420
418
420
105
46.421
47.081
13502
46.751

Let $C_{\lambda}^{at} = 46.761$

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1879phae.proj.1524.

50

1879. March 24

Γ = 0 20

N.b. Fleurus G.b.

| 5 E 4 | 3 E 4 | E | H | E | F | G | H |
|---|---|---|---|---|---|---|---|
| 34.9 | 38.3 | 37.7 | 38.7 | 25.7 | 37.2 | 43.9 | 35.2 |
| 35.0 | 38.3 | 37.2 | 38.8 | 25.8 | 37.4 | 43.4 | 35.2 |
| 34.8 | 37.9 | 37.6 | 38.6 | 25.9 | 38.0 | 43.8 | 35.8 |
| 35.0 | 38.7 | 37.7 | 39.0 | 25.9 | 37.8 | 43.2 | 35.6 |
| 34.9 | 38.5 | 37.7 | 38.6 | 26.0 | 37.8 | 43.2 | 35.2 |
| 246 | 17 | 29 | 37 | 43 | 32 | 25 | 20 |
| 34.92 | 38.34 | 37.58 | 38.75 | 25.86 | 37.64 | 43.50 | 35.40 |
| 37.58 | 38.75 | | | 43.50 | 35.40 | | |
| 1250 | 109 | | | 6936 | 7304 | | |
| 36.25 | 38.55 | | | 3468 | 36.52 | | |
| 34.68 | 36.52 | | | | | | |
| 1.57 | 2.03 | | | | | | |
| 203 | | | | | | | |
| 360 | | | | | | | |
| 1.80 | | | | | | | |

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1879phae.proj.1524.



March 24.0
I = 0h 20m

47.078
083
083
080
088
~~085~~
14
47.083

March 24.9
I = 0h 5m

47.092
.088
080
088
092
40
~~47.088~~

46.428
422
429
436
423
138
46.428
47 083
13511
46.755

46.429
.410
.413
411
416
~~429~~
46.406
47.088
13504
46.752

C set at ~~46761~~ 46.755

C set at 46752

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1879phae.proj.1524.



Mar. 30 1879

47.109 46.415
109 410
102 413
100 420
98 413
1
518 71
47.1036 46.4142
47.1036
13518
46.758

Sol = 46.758

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1879. March 31.9

T = 0 $^{h}$ 20 $^{m}$ = 6h. 236

Runs

| 5 E 0 | | F | | G | | H | |
|---|---|---|---|---|---|---|---|
| 8.08 | 8.12 | 10.1 | 9.2 | 9.2 | 7.4 8.0 | 10.0 | 9.4 |
| 8.2 | 8.1 | 10.0 | 9.4 | 9.8 | 7.2 | 9.5 | 9.4 |
| 8.5 | 8.2 | 10.0 | 9.1 | 9.5 | 7.2 | 10.2 | 9.0 |
| 8.0 | 8.0 | 10.2 | 9.9 | 9.9 | 7.0 | 10.3 | 9.2 |
| 8.3 | 8.3 | 10.2 | 10.0 | 9.9 | 7.0 | 9.8 | 9.2 |
| <10 | 8 | 5 | 26 | 33 | 36.4 ~~35~~ 28 | 48 | 12 |
| 8.02 | 8.16 | 10.10 | 9.52 | 9.66 | 7.76 | 9.96 | 9.24 |

N.E. Flexure S.E.

| 5 E 4 | F | G | H | E | F | G | H |
|---|---|---|---|---|---|---|---|
| 37.3 | 39.8 | 37.3 | 39.8 | 28.6 | 38.9 | 43.9 | 36.3 |
| 37.4 | 40.0 | 37.2 | 40.0 | 28.6 | 39.4 | 43.9 | 37.8 |
| 37.8 | 40.2 | 37.2 | 39.2 | 28.6 | 39.4 | 44.0 | 37.6 |
| 37.7 | 40.3 | 37.2 | 40.0 | 28.3 | 39.3 | 44.3 | 37.6 |
| 37.8 | 39.8 | 37.8 | 40.0 | 28.1 | 39.3 | 44.3 | 37.8 |
| 30 | 1 | 17 | 1990 | 22 | 13 | 4 | 41 |
| 37.60 | 40.02 | 37.34 | 39.80 | 28.44 | 39.26 | 44.08 | 37.82 |
| 37.34 | 39.80 | | | 41.08 | 37.82 | | |
| 74.94 | 79.82 | | | 72.52 | 17.08 | | |
| 37.47 | 39.91 | | | 36.26 | 38.54 | | |
| 36.26 | 38.54 | | | | | | |
| 1.21 | 1.37 | | | | | | |
| .61 | 68 | | | | | | |

165

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1879phae.proj.1524.



March 31.9

47.097
085
099
099
105
480
47.096

46.393
392
392
.398
.398
23
46.396
47.096
13 486
46.746

Set at 46.743

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1879phae.proj.1524.



1879. April 1. 9
I = 0 30
Collimation

47.030
040
050
042
034
196
47.039

46.495
480
487
487
483
32
46.486
47.039
13525
46.762 Set at 46.762

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1879phae.proj.1524.



1879 Aph. 6
I = 1 30

47.971

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1879phae.proj.1524.



1879 Apr 29

T = 0h 30m

5E0

Runs

| | | F | | G | | H | |
|---|---|---|---|---|---|---|---|
| 11.1 | 11.3 | 14.0 | 13.9 | 15.2 | 13.2 | 15.8 | 14.6 |
| 11.3 | 10.8 | 14.8 | 14.5 | 14.8 | 13.1 | 16.3 | 15.2 |
| 11.0 | 10.8 | 14.9 | 14.2 | 14.8 | 12.8 | 15.8 | 14.2 |
| 11.2 | 10.6 | 14.4 | 14.2 | 14.2 | 12.9 | 15.9 | 14.8 |
| 10.9 | 10.8 | 14.2 | 14.1 | 15.2 | 13.0 | 15.3 | 14.7 |
| 5 | 43 | 23 | 9 | 42 | 45 | 41 | 35 |
| 11.10 | 10.86 | 14.46 | 14.18 | 14.84 | 12.90 | 15.82 | 14.70 |

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1879phae.proj.1524.



1879. Apr. 29
T = 0 21h 35m

47.077 .063
.078 .053
.069 .061
.070 .057
.060 .050
284

47.057

46.430
429
432
430
432
3
46.431
47.057
13488
46.744

C. ret at 46.744

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1879phae.proj.1524.

60

1879 Apr. 6

I = 5 50

N.b. Flexure S.b

| 5 E 4 | F | G | H | E | F | G | H |
|---|---|---|---|---|---|---|---|
| 37.0 | 37.9 | 40.8 | 42.0 | 26.7 | 37.8 | 47.3 | 41.1 |
| 37.2 | 37.8 | 40.4 | 42.0 | 26.8 | 38.0 | 46.8 | 41.1 |
| 367 | 37.9 | 40.7 | 42.0 | 27.1 | 38.6 | 46.6 | 41.0 |
| 372 | 37.9 | 40.1 | 42.3 | 27.0 | 38.3 | 46.7 | 41.3 |
| 369 | 37.7 | 46.5 | 42.1 | 26.5 | 383 | 46.8 | 41.3 |
| 100 | 42 | 25 | 4 | 41 | 10 | 42 | 8 |
| 37.00 | 37.84 | 40.50 | 42.10 | 26.82 | 38.20 | 46.84 | 41.16 ? |
| 4050 | 42.10 | | | 46.84 | 41.16 | | |
| 7750 | 7994 | | | 7366 | 7936 | | |
| 3875 | 39.97 ? | | | 36.83 | 39.68 | | |
| 36.83 | 39.68 | | | | | | |
| +1.29 | +0.29 | | | | | | |
| 38.12 | +.92 | | | | | | |
| +.96 | +.14 | | | | | | |
| 39.08 | 40.55 | | | | | | |

1.72
+.96
.28

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1879phae.proj.1524.



1879 Apr. 6
I = 1 30

47.071
075
070
063
074
3
47.071

46.443
439
432
433
442
189
46.447
47.071
13518
46.759

Set at
46.744

Apr. 6
I = 5 50

47.007
.009
.008
018
.012
54
47.011

46.485
488
483
488
.494
438
46.488
47.011
13499
46.749

Set at
46.744

Apr. 6.9
I = 0 50

47.004
47.018
.006
.006
.002
36
47.009

46.442
453
462
454
466
277
46.455
47.007
13462
46.731

Set at
46.740

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1879phae.proj.1524.

62

1879. Apr. 7

I = 5 55

N. b. . Flexure S. b.

| 5 E 4 | F | G | H | E | F | G | H |
|---|---|---|---|---|---|---|---|
| 33.3 | 39.3 | 44.2 | 45.1 | 25.2 | 36.8 | 46.5 | 41.1 |
| 33.2 | 39.7 | 44.0 | 44.8 | 24.8 | 36.4 | 46.6 | 40.6 |
| 33.6 | 39.7 | 43.8 | 44.8 | 25.2 | 36.6 | 46.3 | 40.5 |
| 33.7 | 39.2 | 43.4 | 44.6 | 25.1 | 36.3 | 46.3 | 40.7 |
| 33.8 | 39.4 | 43.9 | 44.8 | 25.0 | 37.2 | 46.1 | 40.8 |
| 26 | 23 | 43 | 41 | 3 | 33 | 21 | 37 |
| 33.52 | 39.46 | 43.86 | 44.82 | 25.06 | 36.66 | 46.42 | 40.74 |
| 43.86 | 44.82 | | | 46.42 | 40.74 | | |
| 77.38 | 84.28 | | | 71.48 | 77.40 | | |
| 38.69 | 42.14 | | | 35.74 | 38.70 | | |
| 35.74 | 38.70 | | | | | | |
| 2.95 | 3.44 | | | | | | |
| ±1.47 | 1.72 | | | | | | |
| | ±1.59 | | | | | | |

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1879phae.proj.1524.



I' = 5 55

47.018
015
013
015
011
22
47.014

46.465
460
468
457
467
4 317
46.463
47 014
13477
46.739 Letat
46.740

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

1879phae.proj.1524.



1879. Apr. 7.9
T = 23h 30m

## Runs

| 5′ E | 5′ O | F1 | | G | | H6 | |
|---|---|---|---|---|---|---|---|
| 8.8 | 9.3 | 12.2 | 11.8 | 12.4 | 9.9 | 14.5 | 13.3 |
| 8.7 | 9.1 | 12.2 | 11.8 | 12.0 | 9.7 | 14.2 | 12.8 |
| 8.3 | 9.1 | 11.7 | 11.0 | 12.2 | 10.3 | 14.2 | 13.5 |
| 8.4 | 9.6 | 11.8 | 11.9 | 12.2 | 10.1 | 14.2 | 13.7 |
| 8.3 | 9.1 | 12.1 | 11.3 | 11.2 | 10.0 | 14.3 | 13.7 |
| 25 | 12 | 0 | 28 | 0 | 0 | 14 | 20 |
| 8.50 | 9.24 | 12.00 | 11.56 | 12.00 | 10.00 | 14.28 | 13.40 |

## N. C. Flexure S. C.

| E | F1 | G | H6 | E | F1 | G | H6 |
|---|---|---|---|---|---|---|---|
| 5′ 4 | | | | | | | |
| 37.9 | 40.6 | 40.2 | 43.5 | 25.9 | 37.4 | 44.2 | 38.4 |
| 37.7 | 40.4 | 39.8 | 43.4 | 25.7 | 37.4 | 44.2 | 38.2 |
| 37.8 | 40.2 | 40.1 | 43.0 | 25.7 | 37.3 | 44.1 | 37.8 |
| 37.7 | 40.2 | 39.8 | 42.4 | 25.7 | 37.6 | 43.8 | 38.3 |
| 37.9 | 40.2 | 39.9 | 42.6 | 26.2 | 38.3 | 441 | 38.0 |
| 40 | 16 | 48 | 49 | 42 | 30 | 4 | 7 |
| 37.80 | 40.32 | 39.96 | 42.98 | 25.84 | 37.60 | 44.08 | 38.14 |
| 39.96 | 42.98 | | | 44.08 | 38.14 | | |
| 7776 | 83.30 | | | 6992 | 7574 | | |
| 38.88 | 41.65 | | | 34.96 | 37.87 | | |
| 34.96 | 37.87 | | | | | | |
| 3.92 | 3.78 | | | | | | |
| | 3.92 | | | | | | |
| | 7.70 | | | | | | |
| | 3.85 +1.92 | | | | | | |

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1879phae.proj.1524.



T = 23 30

47.039
025
022
035
028
149
47.030

46.491
472
486
488
468
405
46.481
47.030
13511
46.755 C = Setat
46.755

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1879phae.proj.1524.

66

1879. Apr. 8

I = 20 15

N.6. Fiedure S.C.

| 5E 4 | F1 | G | 16 | 20 | F1 | G | 16 |
|---|---|---|---|---|---|---|---|
| 36.6 | 40.0 | 38.8 | 41.3 | 27.8 | 38.8 | 46.2 | 39.0 |
| 36.5 | 40.2 | 38.9 | 40.7 | 27.3 | 38.8 | 45.4 | 38.8 |
| 36.3 | 39.9 | 38.9 | 41.7 | 27.4 | 39.2 | 45.4 | 39.0 |
| 36.8 | 40.0 | 38.3 | 41.2 | 27.5 | 39.0 | 45.7 | 39.0 |
| 36.8 | 40.0 | 38.0 | 40.7 | 27.3 | 39.4 | 45.4 | 39.0 |
| 30 | 1 | 29 | 46 | 23 | 2 | 41 | 48 |
| 36.60 | 40.02 | 38.58 | 41.12 | 27.46 | 39.04 | 45.82 | 38.96 |
| 38.58 | 41.12 | | | 45.82 | 38.96 | | |
| 1518 | 8114 | | | 7328 | 7800 | | |
| 37.59 | 40.57 | | | 36.64 | 39.00 | | |
| 36.64 | 39.00 | | | | | | |
| .95 | 1.57 | | | | | | |
| 48 | 79 | | | | | | |
| | 127 | | | | | | |
| | +64 | | | | | | |

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1879phae.proj.1524.



46.947
952
961
947
949
256
46.954

46.535
.538
.530
.53.0
530
13
46.533
46.951
1484
46.742 Set at
46.755

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1879phae.proj.1524.

68

1879, Apr. 9.9

= 1 0

| | N.C. | | Flexure | | S.C. | | |
|---|---|---|---|---|---|---|---|
| E | F | G | K | E. | F | G | K |
| 5 4 | | | | | | | |
| 35.8 | 39.8 | 44.2 | 43.7 | 25.2 | 36.4 | 47.3 | 39.9 |
| 35.6 | 39.2 | 43.3 | 43.7 | 24.8 | 36.9 | 46.8 | 39.2 |
| 35.9 | 39.2 | 42.9 | 44.2 | 24.9 | 36.5 | 47.0 | 38.8 |
| 35.9 | 39.2 | 42.5 | 43.7 | 24.9 | 36.6 | 47.1 | 38.7 |
| 36.1 | 39.2 | 42.8 | 43.9 | 24.8 | 36.6 | 47.1 | 38.9 |
| 293 | 16 | 157 | 42 | 46 | 30 | 3 | 5 |
| 35.86 | 39.32 | 43.14 | 43.84 | 24.92 | 36.60 | 47.06 | 39.10 |
| 43.14 | 43.84 | 25.86 | 24.92 | 47.06 | 39.10 | | |
| 7900 | 8316 | 39.32 | 36.60 | 7198 | 1570 | | |
| 39.50 | 41.58 | 43.14 | 47.06 | | | | |
| 35.99 | 37.85 | 43.821 | 39.10 | 35.99 | 37.85 | | |
| 3.51 | 3.73 | 162.16 | 147.68 | | | | |
| | 3.51 | 40.54 | 36.92 | | | | |
| | 7.24 | | 36.2 | | | | |
| | 3.62 | 181 | 1.81 | | | | |

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1879phae.proj.1524.



| I = 1 0 | I = 1 20 | I = 1 25 |
|---|---|---|
| 46.930 | 46.918 | 46.924 |
| .937 | 922 | 926 |
| 945 | 925 | 911 |
| 933 | 922 | 927 |
| 942 | 927 | 922 |
| 187 | 14 | 110 |
| 46.937 | 46.923 | 46.922 |

| | | |
|---|---|---|
| 46.670 | 46787 822 | 46. 634 |
| 659 | 794 822 | 660 |
| 680 | 809 820 | 666 |
| 679 | 809 820 | 668 |
| 670 | 819 824 | 668 |
| 358 | 8 | 296 |
| 46.672 | 46.822 | 46.659 |
| 46.937 | 46923 | 46 922 |
| 1609 | 1745 | 1581 |
| 46.804 | 46.872 | 46, 790 |
| | | 804 |
| | | 1594 |
| | | 46.797 C = 46797 |

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1879phae.proj.1524.

70

1879. Apr. 12.8

T = 21 40

N.b. Flexure S.b.

| E | F | G | Fb | E | F | G | Fb |
|---|---|---|---|---|---|---|---|
| 5 4 | | | | | | | |
| 36.8 | 40.0 | 39.2 | 40.3 | 28.7 | 41.1 | 47.7 | 40.6 |
| 37.2 | 40.3 | 38.9 | 40.6 | 28.8 | 40.7 | 47.6 | 40.8 |
| 37.4 | 40.2 | 38.9 | 40.3 | 28.7 | 40.7 | 47.4 | 41.1 |
| 37.1 | 40.4 | 39.9 | 40.8 | 28.8 | 41.0 | 47.7 | 40.8 |
| 36.6 | 40.1 | 39.2 | 40.4 | 28.8 | 41.1 | 47.7 | 40.3 |
| 11 | 10 | 11 | 24 | 38 | 46 | 31 | 36 |
| 37.02 | 40.20 | ~~39.22~~ 44 | 40.48 | 28.76 | 40.92 | 47.62 | 40.72 |
| 39.22 | 40.48 | | | 47.62 | 40.72 | | |
| 1624 | 80.68 | 37.02 | 2876 | 7638 | 8164 | | |
| 38.12 | 40.34 | 40.20 | 40.92 | 3819 | 40.82 | | |
| 38.19 | 40.82 | ~~44~~ 22 | 47.62 | | | | |
| - 0.07 | - 0.48 | 40.48 | 40.72 | | | | |
| - 48 | | 16192 | 1802 | | | | |
| 55 | | 4048 | 3960 | | | | |
| = .27 | | | 98 | | | | |
| | | | 1458 | | | | |

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1879phae.proj.1524.



46.974
973
974
974
977
22
46974

46.552
545
553
552
552
4
46.551
974
1525
46.762 Set at
46.797

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1879phae.proj.1524.

72

1879 Apr. 13.9
I = 0h 10m

46.958
952
960
959
960
289
46.958

46.385.559
375 556
370 550
371 549
376.577
27 291
46.375 46.558
46.958 958
1323 1516
46.396 46.758 Coeff at 46.758

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1879phae.proj.1524.



1879. Apr. 14
T = 5h 55m

Collimation

46.908
907
911
908
899
27
46.905

46.601
616
613
612
616
8
46.612
905
1517
46.758 Set at
46.758

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1879phae.proj.1524.

74

1879. Apr. 15.8

T = 23 55

46.952
950
954
949
958
263
46.953

46, 575
575
574
572
573
19
46.534
L 953
1487
46,743 C = Lal at 46743

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1879phae.proj.1524.



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1879phae.proj.1524.



1879. Apr. 19

T = 20 30

## Runs

| E | E | F | | G | | H | |
|---|---|---|---|---|---|---|---|
| 2.3 | 2.6 | 5.0 | 4.9 | 4.9 | 3.8 | 6.6 | 4.9 |
| 2.2 | 1.8 | 5.0 | 4.8 | 5.1 | 3.4 | 5.9 | 5.1 |
| 1.8 | 1.8 | 5.4 | 4.8 | 5.1 | 3.8 | 5.9 | 5.2 |
| 2.1 | 1.8 | 5.2 | 4.8 | 5.2 | 3.8 | 5.8 | 4.7 |
| 1.8 | 2.2 | 5.3 | 4.3 | 5.3 | 3.3 | 5.9 | 4.7 |
| 2 | 2 | 9 | 36 | 6 | 31 | 11 | 46 |
| 2.04 | 2.04 | 5.18 | 4.72 | 5.12 | 3.62 | 6.02 | 4.92 |

## N.b.

| E | F | G | K |
|---|---|---|---|
| 5 4 | | | |
| 37.8 | 40.3 | 40.8 | 41.7 |
| 37.9 | 40.7 | 40.4 | 41.8 |
| 37.3 | 40.4 | 40.2 | 41.3 |
| 37.2 | 40.5 | 40.0 | 41.2 |
| 37.1 | 40.1 | 40.4 | 40.3 |
| 23 | 20 | 18 | 13 |
| 37.46 | 40.40 | 40.36 | 41.26 |
| 40.36 | 41.26 | | |
| 7782 | 166 | | |
| 38.91 | 40.83 | | |
| 37.86 | 4042 | | |
| 1.05 | 0.41 | | |
| 0.41 | | | |
| 1.46 | | | |
| 1.73 | | | |

## Flexure

| E | F | G | K |
|---|---|---|---|
| 28.6 | 40.5 | 47.2 | 39.9 |
| 28.7 | 40.7 | 46.9 | 40.4 |
| 28.8 | 40.6 | 46.6 | 40.3 |
| 28.9 | 40.7 | 47.0 | 40.3 |
| 29.0 | 40.8 | 46.9 | 40.0 |
| 40 | 33 | 46 | 9 |
| 28.80 | 40.66 | 46.92 | 40.18 |
| 46.92 | 40.18 | | |
| 7572 | 84 | | |
| 37.86 | 40.42 | | |

## S.b.

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

1879phae.proj.1524.



T = 20 30
Collimation

46.993
999
993
997
992
24
46.995

46.508
504
509
516
512
49
46.510
46.995
1505
46.757

Set at
46.747

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

1879phae.proj.1524.



1879. Apr. 20

T = 6h 0m

Collimation

46.950
963
965
956
954
288
46.958

46.547
535
543
549
538
212
46.542
958
1500
46.750

Set at
46.747

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1879phae.proj.1524.



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1879phae.proj.1524.



1879. Apr. 21

I = 1 30

| I | II |
|---|---|
| 46.866 | 46.879 |
| 871 | 879 |
| 852 | 879 |
| 873 | 891 |
| 857 | 898 |
| 319 | 56 |
| 46.864 | 46.881 |

| | |
|---|---|
| 46.598 | 46.585 |
| 580 | 593 |
| 587 | 605 |
| 580 | 595 |
| 584 | 584 |
| 29 | 462 |
| 46.586 | 46.592 |
| 864 | 881 |
| 1450 | 1473 |
| 46.725 | 46.736 |

Set at 46.747

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

1879phae.proj.1524.



1879. Apr. 23
T = 5 50

Collimation
46.807
46.820
.810
.812
.822
71
46.814

46.729
720
710
710
719
88
46.718
814
1532
46.766

Set at
46.747

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

1879phae.proj.1524.

82

1879. Apr. 23

T = 1 40

Collimation

46.842
.863
.880
883
879
347
46.869

46.646
638
628
637
631
180
46.636
869
1505
46.752

Set at
46.747

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1879phae.proj.1524.



Am 26 1879
T = 0h 30m

46.850
852
838
846
849
25J
8510

46.626
627
618
633
640
143

46.629
46.851
1480
46.740

@ S21-07
46.740

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84

1879. Apr. 30

I = 0h 15m

## Runs

| E | | F | | G | | H | |
|---|---|---|---|---|---|---|---|
| 5 | 0 | 0 | 4 | | | | |
| 56.5 | 57.5 | 0.9 | 0.8 | 10.7 | 9.4 | 9.2 | 7.8 |
| 57.2 | 57.2 | 1.2 | 0.5 | 10.3 | 8.7 | 9.4 | 8.0 |
| 57.2 | 57.5 | 1.4 | 0.4 | 10.6 | 8.9 | 8.8 | 7.8 |
| 57.0 | 57.2 | 1.0 | 0.2 | 10.4 | 8.9 | 8.7 | 8.0 |
| 56.5 | 57.0 | 0.7 | 0.6 | 10.0 | 9.0 | 8.0 | 7.8 |
| 44 | 14 | 2 | 25 | 20 | 49 | 41 | 44 |
| 56.88 | 57.28 | 1.04 | 0.50 | 10.40 | 8.98 | 8.82 | 8.88 |

## N. E. Flexure S. E.

| E | | F | G | H | E | F | G | H |
|---|---|---|---|---|---|---|---|---|
| 5 | 4 | | | | | | | |
| 34.4 | | 37.9 | 47.5 | 45.7 | 24.8 | 37.4 | 53.0 | 42.7 |
| 34.2 | | 38.2 | 47.8 | 46.3 | 24.8 | 37.2 | 52.8 | 42.3 |
| 34.6 | | 38.1 | 47.7 | 46.2 | 24.7 | 37.2 | 52.9 | 42.6 |
| 34.4 | | 37.9 | 47.7 | 45.7 | 24.7 | 37.3 | 53.2 | 42.2 |
| 34.0 | | 37.8 | 47.8 | 45.8 | 24.6 | 37.2 | 52.9 | 42.2 |
| 16 | | 49 | 35 | 47 | 36 | 13 | 48 | 20 |
| 34.40 | | 37.98 | 47.70 | 45.94 | 24.72 | 37.26 | 52.96 | 42.40 |
| 4770 | | 4594 | | | 52.96 | 42.40 | | |
| 8210 | | 8392 | | | 7768 | 7966 | | |
| 41.05 | | 41.96 | | | 38.84 | 39.83 | | |
| 38.84 | | 39.83 | | | | | | |
| 2.21 | | 2.13 | | | | | | |
| 2.13 | | | | | | | | |
| 4.34 | | | | | | | | |
| 2.17 | | | | | | | | |

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I = 0 15

Collimation

46.808

804

804

809

810

35

46.807

46.717

714

716

712

710

19

46.714

807

1521

46,760

Set at 46.740

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1879phae.proj.1524.



1879 May 5.9
I = 2h 45m

46.792
798
777
795
780
442
46.788

46.856
838
843
848
840
25
46.845
788
1633
46.816 Seeing very bad indeed

Set at 46.760

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1879phae.proj.1524.



May 6. 1879

| I = 21 45 | I = 22 5 | | |
|---|---|---|---|
| 46.670 | 46.644 | | |
| 65.7 | 662 | | |
| 662 | 651 | | |
| 663 | 652 | | |
| 669 | 660 | | |
| 321 | 269 | | |
| 46.664 | 46.667 | | |
| | | | |
| 46.790 | 46.795 | 46.667 | |
| 773 | 797 | 797 | |
| 772 | 804 | 1464 | |
| 777 | 795 | 46.732 | Set at 46.760 |
| 787 | 792 | | |
| 349 | 483 | | |
| 46.780 | 46.797 | Runs | |
| 664 | | | |

| 1444 | E | | F1 | | G | | H | | |
|---|---|---|---|---|---|---|---|---|---|
| 46.722 | 4.6 | 4.8 | 9.2 | 9.2 | 19.8 | 18.2 | 17.2 | ~~17.9~~ | 16.4 |
| | 4.2 | 4.8 | 9.8 | 9.4 | 19.9 | ~~17~~.8 | 17.0 | ~~17.9~~ | 16.9 |
| | 4.7 | 4.9 | 9.8 | 9.4 | 19.2 | ~~17~~.8 | 16.6 | ~~16.6~~ | 16.3 |
| | 4.0 | 5.0 | 9.9 | 9.0 | 19.7 | 18.0 | 17.2 | ~~16.6~~ | 16.0 |
| | 4.7 | 5.2 | 9.8 | 9.2 | 19.4 | 17.8 | 17.6 | ~~15.9~~ | 16.5 |
| | 22 | 47 | 35 | 12 | 30 | 39.6 49 | 6 | | 21 |
| | 4.44 | 4.94 | 9.70 | 9.24 | 19.60 | 17.98 2- | 17.12 | | 16.42 |

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1879phae.proj.1524.



1879. May 7
I = 1 40

46.704
708
712
718
720
62
46.712

46.741
746
743
742
738
210
46.742
712
1454
46.727
C Let at 46727

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1879phae.proj.1524.

90

1879. May 13

I = 0 4/0

Runs

| E | | F | | G | | H | |
|---|---|---|---|---|---|---|---|
| ' | " | ' | " | | | | |
| 5 | 0 | 0 | 4 | | | | |
| 25.2 | 25.4 | 7.3 | 8.2 | 22.4 | 21.3 | 19.4 | 18.7 |
| 24.6 | 25.7 | 7.7 | 8.1 | 22.0 | 20.9 | 19.8 | 18.1 |
| 24.8 | 25.2 | 8.3 | 7.8 | 21.9 | 20.7 | 19.4 | 18.4 |
| 24.9 | 25.6 | 8.2 | 7.7 | 21.8 | 20.9 | 19.2 | 18.6 |
| 24.3 | 25.4 | 8.4 | 8.1 | 21.9 | 21.1 | 19.0 | 18.4 |
| 38 | 23 | 39 9 | 39 9 | 100 | 49 | 18 | 22 |
| 2476 | 25.46 | 7.98 | 7.98 | 22.00 | 20.98 | 19.36 | 18.44 |

Fledure

| N. E. | | | | S. E. | | | |
|---|---|---|---|---|---|---|---|
| E | F | G | H | E | F | G | H |
| 55 | 4 | | | | | | |
| 57.9 | 40.1 | 53.8 | 50.7 | 47.8 | 38.1 | 59.2 | 48.8 |
| 57.6 | 40.2 | 53.2 | 50.7 | 47.2 | 39.0 | 59.1 | 48.2 |
| 57.5 | 40.2 | 52.8 | 50.9 | 47.1 | 39.0 | 58.5 | 48.3 |
| 57.8 | 40.4 | 52.7 | 50.3 | 46.9 | 39.1 | 58.8 | 48.8 |
| 57.7 | 40.2 | 52.4 | 51.0 | 47.3 | 38.9 | 58.7 | 48.8 |
| 35 | 11 | 49 | 36 | 13 | 441 | 43 | 29 |
| 57.70 | 40.22 | 52.98 | 50.72 | 47.26 | 38.82 | 58.86 | 48.58 |
| 5298 | 50.72 | | | 58.86 | 48.58 | | |
| 11068 | 9094 | | | 10612 | 8740 | | |
| 5534 | 45.47 | | | 53.06 | 43.70 | | |
| 53.06 | 43.76 | | | | | | |
| 2.28 | 1.77 | | | | | | |
| ~~1.17~~ | 88 | | | | | | |
| 1.14 | 1.14 | | | | | | |

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1879phae.proj.1524.



1879 May 13

I = 1 0 II = 1 10 Collimator in focus

I Collimation II = Adjusted for focus. see foll. page

46.702
713
710
703
709
37
46.707

46.938
949
949
939
93.1
206
46.941
707
1648
46.824
Focus very bad reject.

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1879phae.proj.1524.

92

1879. May 13

I = 1 0 15

N.b. Flexure S.b.

| E | F | G | H | E | F | G | H |
|---|---|---|---|---|---|---|---|
| 5 4 | | | | | | | |
| 57.3 | 40.7 | 53.9 | 51.7 | 48.2 | 39.2 | 59.8 | 48.6 |
| 57.2 | 40.9 | 54.2 | 51.7 | 48.1 | 39.2 | 59.1 | 48.7 |
| 57.3 | 41.1 | 53.9 | 51.8 | 48.2 | 38.8 | 59.2 | 48.7 |
| 57.8 | 40.8 | 53.7 | 52.2 | 48.7 | 39.4 | 59.6 | 48.8 |
| 57.8 | 40.8 | 53.8 | 52.2 | 48.2 | 39.3 | 59.0 | 48.8 |
| 24 | 43 | 45 | 46 | 14 | 19 | 17 | 36 |
| 57.48 | 40.86 | 53.90 | 51.92 | 48.28 | 39.18 | 59.34 | 48.72 |
| 53.90 | 51.92 | | | 59.34 | 48.72 | | |
| 111.38 | 92.78 | | | 107.62 | 87.90 | | |
| 55.69 | 46.39 | | | 53.81 | 43.95 | | |
| 53.81 | 43.95 | | | | | | |
| 1.88 | 2.44 | | | | | | |
| .94 | 1.22 | | | | | | |

94
216
168

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1879 May 13
I' = 1 15h
Adjusted for focus
46.683
680
688
678
670
399
46.680

46.878
870
871
869
867
5
46.871
680
1551
46.775

Set C. at 46.775

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~~This plate with plates Nos. 2 3 & 4 were ruled on the Rogers engine~~

~~* The measures were made with the Rogers Comparator~~

~~1 Div = 1/7995 inch~~

May 23

Investigation of the ruled plates which are to be substituted for the metal comparing the new Micrometers E F G H.

Diagram




The following measures were made with the Rogers Comparator, using the same part of the screw for each space. The zero of the four plates ruled is a revolution of the Rogers screw away from the zero marked on the body of the engine.

The measures are in the order 1 2 3 4 5

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1879. May 23

Measures of Microscope Plate, No. 1 of the ~~Asteroids~~ double Nebulæ.

~~double Nebulæ~~ 6th band 1.

This plate ~~has been~~ was ~~cut~~ ruled on the surface of ~~the~~ a ~~glass~~ mirror of speculum metal, ~~the~~ ~~surface~~ of which

| mean | Dist Computed | | Corr | Σ | | | Dist. | Corr | Σ |
|---|---|---|---|---|---|---|---|---|---|
| 100.00 | 99.92 = | 99.960 | +.023 | +.023 | +.035 | +.035 | 41.3 | 41.4 | 41.35 | +.20 | +.20 |
| 100.12 | .12 = | 100.110 | −.127 | −.104 | −.115 | −.080 | 41.7 | 41.7 | 41.70 | −.15 | +.05 |
| 99.98 | .00 = | 99.990 | −.007 | −.111 | +.005 | −.075 | 41.7 | 41.3 | 41.50 | +.05 | +.10 |
| 99.95 | .95 = | 99.950 | +.033 | −.078 | +.045 | −.030 | 41.3 | 41.7 | 41.50 | +.05 | +.15 |
| 99.92 | .90 = | 99.910 | +.073 | −.005 | +.085 | +.055 | 41.2 | 41.2 | 41.20 | +.35 | +.50 |
| 100.13 | .15 = | 100.140 | −.157 | −.162 | −.145 | −.090 | 41.6 | 41.5 | 41.55 | .00 | +.50 |
| 100.00 | .00 = | 100.000 | −.017 | −.179 | −.005 | −.095 | 41.5 | 41.8 | 41.65 | −.10 | +.40 |
| 99.95 | .98 = | 99.965 | +.018 | −.161 | +.030 | −.065 | 41.7 | 41.7 | 41.70 | −.15 | +.25 |
| 100.12 | .10 = | 100.110 | −.127 | −.288 | −.115 | −.180 | 41.5 | 41.8 | 41.65 | −.10 | +.15 |
| 99.86 | .90 = | 99.880 | +.103 | −.185 | +.115 | −.065 | 41.7 | 41.8 | 41.75 | −.20 | −.05 |
| 99.98 | .99 = | 99.985 | −.002 | −.187 | +.010 | −.055 | | | 555 | | |
| 99.98 | .95 = | 99.965 | +.018 | −.169 | +.030 | −.025 | | | 41.555 | | |
| 100.12 | .13 = | 100.125 | −.142 | −.311 | −.130 | −.155 | | | | | |
| 99.87 | .94 = | 99.955 | +.028 | −.288 | +.040 | −.115 | | | | | |
| 99.86 | .90 = | 99.880 | +.103 | −.185 | +.115 | +.000 | | | | | |
| | 1) | 99.993 | | | | | | | | | |

mean

+04 −03 +01
−09 −08 −08
−07 −06 −07
−03 −18 −10
+05 −17 −11
−09 −18 −14
−08 −21 −15
−06 −15 −11
−15 −14 −16
−06 −15 −10
−06 −21 −13
−03 −20 −12
−16 −16 −11
+12 −05 −5
−00 −03 −0

99.964
100.019
99.982
2999.65
999.95

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# Measures of Microscope Plate No. 1 repeated

0.00
8.00 100.00 100.05
100.00 100.10
108.10

0.00
8.08
100.02 100.02 100.04 100.03
108.12

0.00
8.10 100.13 100.06
100.13 100.13
108.13

Series II

100.05 −05 −03 −.05
100.07 −08 −05 −.12
100.00 +00 −06 −.12

+000
−8.10 100.05 100.07
100.15 100.10
108.20

0.00
8.15
100.05 100.05 100.05 100.05
108.20

0.00
8.12 100.02 100.00 100.01
108.02
108.12

99.86 +14 −18 +.02
99.99 +01 −07 +.03
100.03 −03 −08 .00
100.05 −05 −21 −.05
99.86 +04 −15 −.01
100.01 +01 −14 −.02
100.03 −03 −15 −.05
100.08 −08 −21 −.13
100.01 +01 −26 −.14
99.88 +02 −16 −.12
99.81 +09 −05 −.03

0.00
8.15
100.00 100.00 100.00
108.15

0.00
8.20
100.02 100.02 99.90 99.96
108.10

0.00
8.12 99.95 99.97
99.95
108.12

100.00 +00 −03
99.90 99.92
99.91 100.02
150003
100.002

0.00
8.10 99.82 99.86
99.82 00.18 00.10 9990
108.00

0.00
8.20
100.05 100.05 99.98 100.01
100.05
108.18

0.00
8.10
99.90 99.92
108.02

0.00
8.10 99.98 99.99
99.98 100.00
108.10

0.00
8.10
100.05 100.02 100.03
100.05
108.12

0.00
108.18 100.00 100.00 100.00
100.00
108.18

99.994
100.016
99.996
300006
100.002

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# Plate No. 2

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 0.02 | 100.02 100.01 100.02 | 0.00 | 0.00 | 100.00 100.02 100.01 | 0.00 | 0.00 | 100.05 99.97 100.01 | 100.02 | −.01 | −.01 |
| 8.14 | 8.15 | | 8.08 | 8.12 | | 8.15 | 8.08 | | 100.09 | −.08 | −.09 |
| 100.12 | 100.06 | 100.04 100.02 | 100.00 | 100.08 | 100.08 100.08 | 100.05 | 100.08 | 100.08 100.04 100.06 | 100.00 | +.01 | −.08 |
| 108.15 | 108.16 | | 108.10 | 108.20 | | 108.12 | 108.12 | | 99.89 | +.12 | +.04 |
| | | | | | | | | | 100.06 | −.04 | .00 |
| 0.00 | 0.05 | 100.04 100.09 100.14 | 0.00 | 0.00 | 99.95 99.99 100.03 | 0.00 | 0.00 | 99.98 99.93 99.95 | 100.01 | .00 | .00 |
| 8.06 | 8.10 | | 8.02 | 8.08 | | 8.07 | 8.02 | | 99.99 | +.02 | +.02 |
| 100.04 | 100.15 | 100.10 100.15 = 100.12 | 99.95 | 100.00 | 100.00 100.01 100.02 | 99.98 | 99.92 | 99.92 99.93 99.95 | 100.02 | −.01 | +.01 |
| 108.20 | 108.25 | | 108.05 | 108.10 | | 108.00 | 108.07 | | 100.12 | −.11 | −.10 |
| | | | | | | | | | 100.05 | −.04 | −.14 |
| 0.00 | 0.00 | 100.00 100.00 | 0.00 | 0.00 | 100.00 100.04 100.02 | 0.00 | 0.00 | 100.02 100.04 100.03 | 100.01 | .00 | −.14 |
| 8.12 | 8.12 | | 8.18 | 8.16 | | 8.14 | 8.18 | | 99.95 | +.06 | −.08 |
| 100.00 | 99.92 | 99.92 100.02 99.96 | 100.00 | 99.95 | 99.95 99.93 99.91 | 100.02 | 100.02 | 100.02 100.02 100.02 | 100.03 | −.02 | −.10 |
| 108.12 | 108.14 | | 108.12 | 108.07 | | 108.18 | 108.20 | | 99.90 | +.11 | +.01 |
| | | | | | | | | | 100.07 | −.06 | −.05 |
| 0.00 | 0.00 | 99.92 99.87 99.89 | 0.00 | 0.00 | 100.13 100.10 100.12 | 0.00 | 0.00 | 99.95 99.85 99.90 | 150021 | | |
| 8.15 | 8.10 | | 8.05 | 8.04 | | 8.15 | 8.10 | | 100.014 | | |
| 99.92 | 99.96 | 99.96 99.92 99.94 | 100.13 | 100.05 | 100.05 100.14 100.09 | 99.95 | 99.92 | 99.92 99.92 | | | |
| 108.05 | 108.02 | | 108.15 | 108.18 | | 108.00 | 108.02 | | | | |
| 0.00 | 0.00 | 100.02 100.10 100.06 | 0.00 | 0.00 | 100.08 100.01 100.05 | 0.00 | 0.00 | 100.08 100.07 100.07 | | | |
| 8.00 | 8.02 | | 8.15 | 8.12 | | 8.15 | 8.13 | | | | |
| 100.05 | 100.03 | 100.03 100.13 100.08 | 100.08 | 100.02 | 100.02 99.98 100.00 | 100.08 | 100.08 | 100.08 100.08 100.07 | | | |
| 108.10 | 108.15 | | 108.16 | 108.10 | | 108.22 | 108.20 | | | | |

100.012
100.038
99.992
300042
100014

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# Plate No. 2

| | | | | | |
|---|---|---|---|---|---|
| 100.02 | 100.02 | -.01 | -.01 | 6" spaces | |
| 100.09 | 100.12 | -.11 | -.12 | 41.6 41.3 = 41.45 | -.02 -.02 |
| 100.00 | 99.96 | +.06 | -.06 | 41.3 41.3 41.30 | +.13 +.11 |
| 99.89 | 99.94 | +.07 | +.01 | 41.2 41.4 41.30 | +.13 +.24 |
| 100.06 | 100.08 | -.07 | -.06 | 41.4 41.6 41.50 | -.07 +.17 |
| 100.01 | 100.08 | -.06 | -.12 | 41.2 41.2 41.20 | +.23 +.40 |
| 99.99 | 100.01 | .00 | -.12 | 41.5 41.3 41.40 | +.03 +.43 |
| 100.02 | 99.93 | +.08 | -.04 | 41.7 41.7 41.70 | -.27 +.16 |
| 100.12 | 100.09 | -.07 | -.11 | 41.4 41.2 41.30 | +.13 +.29 |
| 100.05 | 100.00 | +.01 | -.10 | 41.4 41.7 41.55 | -.12 +.17 |
| 100.01 | 100.06 | -.05 | -.15 | 41.4 41.8 41.60 | -.17 .00 |
| 99.95 | 99.93 | +.09 | -.06 | 430 | |
| 100.03 | 100.02 | -.01 | -.07 | 41.43 | |
| 99.90 | 99.92 | +.09 | +.02 | | |
| 100.07 | 100.08 | -.06 | -.04 | | |
| 1500.21 | 1500.24 | | | | |
| 100.014 | 100.016 | | | | |

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# Microscope Plate No. 3

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 0.00 | 99.94 99.95 | 99.95 | 0.00 | 0.02 | 100.12 100.10 | 100.11 | 0.00 | 0.00 | 100.00 100.03 | 100.01 | 99.95 | +.04 | +.04 | 0.00 | 0.00 | 99.94 99.95 | 99.95 | 0.00 | 0.02 | 100.12 100.10 | 100.11 | 0.00 | 0.00 | 100.00 100.03 | 100.01 | 99.95 | +.04 | +.04 |
| 8.02 | 8.00 | | | 8.05 | 8.08 | | | 8.02 | 8.02 | | | 100.12 | -.13 | -.09 | 8.02 | 8.00 | | | 8.05 | 8.08 | | | 8.02 | 8.02 | | | 100.12 | -.13 | -.09 |
| 99.94 | 99.94 | 9994 99.95 9995 | | 100.12 | 100.15 | 100.13 100.09 100.06 | | 108.00 | 100.00 | 100.00 100.01 | | 99.98 | +.01 | -.08 | 99.94 | 99.94 | 9994 99.95 9995 | | 100.12 | 100.15 | 100.13 100.09 100.06 | | 108.00 | 100.00 | 100.00 100.01 | | 99.98 | +.01 | -.08 |
| 107.99 | 107.95 | | | 108.15 | 108.14 | | | 108.05 | 108.05 | | | 99.92 | +.08 | .00 | 107.99 | 107.95 | | | 108.15 | 108.14 | | | 108.05 | 108.05 | | | 99.92 | +.08 | .00 |
| | | | | | | | | | | | | 100.05 | -.06 | -.06 | | | | | | | | | | | | | 100.05 | -.06 | -.06 |
| 0.00 | 0.00 | 100.15 100.10 | 100.12 | 0.00 | 0.00 | 99.90 99.97 | 99.93 | 0.00 | 0.00 | 99.95 99.94 | 99.95 | 100.11 | -.12 | -.18 | 0.00 | 0.00 | 100.15 100.10 | 100.12 | 0.00 | 0.00 | 99.90 99.97 | 99.93 | 0.00 | 0.00 | 99.95 99.94 | 99.95 | 100.11 | -.12 | -.18 |
| 8.05 | 8.10 | | | 7.98 | 8.00 | | | 8.10 | 8.03 | | | 99.93 | +.06 | -.12 | 8.05 | 8.10 | | | 7.98 | 8.00 | | | 8.10 | 8.03 | | | 99.93 | +.06 | -.12 |
| 100.15 | 100.12 | 100.12 100.05 | 100.08 | 99.90 | 99.94 | 99.94 99.95 9995 | 99.95 | 99.95 | 99.99 | 99.99 99.98 | 99.98 | 99.87 | +.13 | +.01 | 100.15 | 100.12 | 100.12 100.05 | 100.08 | 99.90 | 99.94 | 99.94 99.95 9995 | 99.95 | 99.95 | 99.99 | 99.99 99.98 | 99.98 | 99.87 | +.13 | +.01 |
| 108.15 | 108.15 | | | 107.95 | 107.95 | | | 108.04 | 108.01 | | | 100.17 | -.18 | -.17 | 108.15 | 108.15 | | | 107.95 | 107.95 | | | 108.04 | 108.01 | | | 100.17 | -.18 | -.17 |
| | | | | | | | | | | | | 99.92 | +.07 | -.10 | | | | | | | | | | | | | 99.92 | +.07 | -.10 |
| 0.00 | 0.00 | 100.00 99.97 | 99.98 | 0.00 | 0.00 | 99.85 99.90 | 99.87 | 0.00 | 0.00 | 100.04 100.13 | 100.08 | 100.01 | -.02 | -.12 | 0.00 | 0.00 | 100.00 99.97 | 99.98 | 0.00 | 0.00 | 99.85 99.90 | 99.87 | 0.00 | 0.00 | 100.04 100.13 | 100.08 | 100.01 | -.02 | -.12 |
| 8.04 | 8.00 | | | 8.02 | 8.00 | | | 8.00 | 8.00 | | | 99.95 | +.05 | -.07 | 8.04 | 8.00 | | | 8.02 | 8.00 | | | 8.00 | 8.00 | | | 99.95 | +.05 | -.07 |
| 100.00 | 99.92 | 99.92 100.00 | 99.96 | 99.85 | 99.90 | 99.90 99.93 | 99.91 | 100.04 | 100.04 | 100.04 100.13 | 100.08 | 100.08 | -.09 | -.16 | 100.00 | 99.92 | 99.92 100.00 | 99.96 | 99.85 | 99.90 | 99.90 99.93 | 99.91 | 100.04 | 100.04 | 100.04 100.13 | 100.08 | 100.08 | -.09 | -.16 |
| 108.01 | 108.00 | | | 107.92 | 107.93 | | | 108.13 | 108.13 | | | 99.87 | +.12 | -.04 | 108.01 | 108.00 | | | 107.92 | 107.93 | | | 108.13 | 108.13 | | | 99.87 | +.12 | -.04 |
| | | | | | | | | | | | | 99.96 | +.04 | .00 | | | | | | | | | | | | | 99.96 | +.04 | .00 |
| 0.00 | 0.00 | 99.95 99.96 | 99.92 | 0.00 | 0.00 | 100.15 100.20 | 100.17 | 0.00 | 0.00 | 99.88 99.86 | 99.87 | 14 99989 | | | 0.00 | 0.00 | 99.95 99.96 | 99.92 | 0.00 | 0.00 | 100.15 100.20 | 100.17 | 0.00 | 0.00 | 99.88 99.86 | 99.87 | 14 99989 | | |
| 8.12 | 8.07 | | | 8.00 | 8.02 | | | 8.04 | 8.00 | | | 99993 | | | 8.12 | 8.07 | | | 8.00 | 8.02 | | | 8.04 | 8.00 | | | 99993 | | |
| 99.95 | 99.88 | 99.88 99.93 | 99.90 | 100.15 | 100.15 | 100.15 100.16 | 100.15 | 99.88 | 99.87 | 99.87 99.88 | 99.87 | | | | 99.95 | 99.88 | 99.88 99.93 | 99.90 | 100.15 | 100.15 | 100.15 100.16 | 100.15 | 99.88 | 99.87 | 99.87 99.88 | 99.87 | | | |
| 108.02 | 108.00 | | | 108.20 | 108.18 | | | 107.90 | 107.88 | | | | | | 108.02 | 108.00 | | | 108.20 | 108.18 | | | 107.90 | 107.88 | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.00 | 0.00 | 100.05 100.06 | 100.05 | 0.00 | 0.00 | 99.90 99.95 | 99.92 | 0.00 | 0.00 | 99.95 99.97 | 99.96 | | | | 0.00 | 0.00 | 100.05 100.06 | 100.05 | 0.00 | 0.00 | 99.90 99.95 | 99.92 | 0.00 | 0.00 | 99.95 99.97 | 99.96 | | | |
| 8.08 | 8.03 | | | 8.00 | 8.03 | | | 8.03 | 8.03 | | | | | | 8.08 | 8.03 | | | 8.00 | 8.03 | | | 8.03 | 8.03 | | | | | |
| 100.05 | 100.07 | 100.07 100.12 | 100.09 | 99.90 | 99.98 | 99.98 99.93 | 99.95 | 99.95 | 99.95 | 99.95 99.97 | 99.96 | | | | 100.05 | 100.07 | 100.07 100.12 | 100.09 | 99.90 | 99.98 | 99.98 99.93 | 99.95 | 99.95 | 99.95 | 99.95 99.97 | 99.96 | | | |
| 108.14 | 108.15 | | | 107.95 | 107.96 | | | 108.00 | 108.00 | | | | | | 108.14 | 108.15 | | | 107.95 | 107.96 | | | 108.00 | 108.00 | | | | | |

100004
100000
99974
299978
99993

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Plat No. 3.

| | | | | | | |
|---|---|---|---|---|---|---|
| 99.95 | 99.95 | +.04 | +.04 | | | |
| 100.12 | 100.08 | -.09 | -.05 | 6" spaces | | |
| 99.98 | 99.96 | +.04 | -.01 | 41.8 | 41.8 = 41.80 | -.21 | -.21 |
| 99.92 | 99.90 | +.09 | +.08 | 41.4 | 41.7 | 41.55 | +.04 | -.17 |
| 100.05 | 100.09 | -.10 | -.02 | 41.5 | 41.3 | 41.40 | +.19 | +.02 |
| 100.11 | 100.09 | -.09 | -.11 | 41.5 | 41.6 | 41.55 | +.04 | +.06 |
| 99.93 | 99.95 | +.04 | -.07 | 41.2 | 41.5 | 41.35 | +.24 | +.30 |
| 99.87 | 99.91 | +.08 | +.01 | 41.5 | 41.6 | 41.55 | +.04 | +.34 |
| 100.17 | 100.15 | -.15 | -.14 | 41.3 | 41.7 | 41.50 | +.09 | +.43 |
| 99.92 | 99.95 | +.04 | -.16 | 41.8 | 41.7 | 41.75 | -.16 | +.21 |
| 100.01 | 100.01 | -.02 | -.12 | 41.7 | 41.6 | 41.65 | -.06 | +.15 |
| 99.95 | 99.98 | +.02 | -.16 | 41.8 | 41.8 | 41.80 | -.21 | -.06 |
| 100.08 | 100.08 | -.04 | -.19 | | | 590 | | |
| 99.87 | 99.87 | +.12 | -.07 | | | 41.59 | | |
| 99.96 | 99.96 | +.04 | -.03 | | | | | |
| | 1499.93 | | | | | | | |
| | 99.995 | | | | | | | |

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# Microscope plate No. 4.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 0,00 | | | 0,00 | | | 0,00 | | 99.95 +.05 +.05 |
| 8,08 | 99.95 | 99.95 | 8,03 | 100.02 | 100.02 | 8,01 | 99.87 99.93 | 100.17 -.16 -.11 |
| 99.95 | 99.94 | | 100,02 | 100.03 | | 99.87 | 9999 | 100.00 .00 -.11 |
| 108,02 | | | 108,06 | | | 108,00 | | 99.98 +.03 -.08 |
| | | | | | | | | 100.03 -.03 -.11 |
| 0,00 | | | 0,00 | | | 0,00 | | 100.02 -.01 -.12 |
| 7,95 | 100.10 | | 8,10 | 99.95 | 99.97 | 8,04 | 9995 99.95 | 99.97 +.03 -.09 |
| 100,10 | 100.15 | 100.17 | 99.95 | 100,00 | | 99.95 | 9996 | 99.98 +.03 -.06 |
| 108,10 | | | 108,10 | | | 108,00 | | 100.06 -.06 -.12 |
| | | | | | | | | 99.99 +.02 -.10 |
| 0,00 | | | 0,00 | | | 0,00 | | 99.93 +.07 -.03 |
| 8,00 | 100,00 | | 8,02 | 99.98 | 99.98 | 8,08 | 100.04 100.04 | 99.957 .06 +.03 |
| 100,00 | 100,00 | 100,00 | 99.98 | 9998 | | 100,04 | 100.04 | 100.04 -.04 -.01 |
| 108,00 | | | 108,00 | | | 108,12 | | 99.99 +.02 +.01 |
| | | | | | | | | 100.01 .02 |
| | | | | | | | | 15 8007 |
| | | | | | | | | 100,05 |
| 0,00 | | | 0,00 | | | 0,00 | | |
| 7,95 | 99.90 | 99.98 | 8,03 | 100.04 | 100.06 | 8,10 | 100,00 99.99 | |
| 99.90 | 100.07 | | 100,04 | 100.09 | | 100,00 | 99.98 | |
| 108,02 | | | 108,12 | | | 108,08 | | |
| | | | | | | | | |
| 0,00 | | | 0,00 | | | 0,00 | | |
| 8,02 | 100,02 | 100,03 | 8,00 | 99.98 | 99.99 | 8,10 | 100,00 100.01 | |
| 100,02 | 100.05 | | 99.98 | 100,00 | | 100,00 | 100,02 | |
| 108,07 | | | 108,00 | | | 108,12 | | |

100,026
100,004
99.984
300014
100,005

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May 24

Plate No. 4

6" spaces

| | | | | |
|---|---|---|---|---|
| 41.3 | 41.3 = | 41.30 | +.25 | +.25 |
| 41.7 | 41.7 | 41.70 | −.15 | +.10 |
| 41.5 | 41.5 | 41.50 | +.05 | +.15 |
| 41.3 | 41.3 | 41.30 | +.25 | +.40 |
| 41.5 | 41.5 | 41.50 | +.05 | +.45 |
| 41.5 | 41.5 | 41.50 | +.05 | +.50 |
| 41.7 | 41.7 | 41.70 | −.15 | +.35 |
| 41.8 | 41.8 | 41.80 | −.25 | +.10 |
| 41.4 | 41.4 | 41.40 | +.15 | +.25 |
| 41.8 | 41.8 | 41.80 | −.25 | +.00 |

550

41.50

The new y ~~all these plates is the 4 ser.~~ from the new ~~on the boy y the engine~~

1879phae.proj.1524.



Recapit relations.

Plate I II III IV  Setting  Reading of  Corrected
Ruling  Screw setting

| I | II | III | IV | Mean | Corr. reading of ruling screw | | |
|---|---|---|---|---|---|---|---|
| +01 | -01 | +04 | +05 | +02 | +06 | 29.738 | 29.744 |
| -08 | -09 | -09 | -11 | -09 | -2.7 | 60.195 | 60.168 |
| -07 | -08 | -08 | -11 | -09 | -2.7 | 90.132 | 90.105 |
| -10 | +04 | +00 | -08 | -.04 | -1.2 | 19.691 | 19.699 |
| -11 | +00 | -06 | -11 | -07 | -2.1 | -50.010 | 49.989 |
| -14 | +00 | -18 | -12 | -11 | -3.3 | 80.272 | 80.239 |
| -15 | +02 | -12 | -09 | -.08 | -2.4 | 9.828 | 9.804 |
| -11 | +01 | +01 | -06 | -.04 | -1.2 | 39.868 | 39.856 |
| -16 | -10 | -17 | -10 | -.14 | -4.2 | 70.312 | 70.270 |
| -10 | -14 | -10 | -10 | -.11 | -3.3 | -99.994 | 99.961 |
| -13 | -14 | -12 | +03 | -11 | -3.3 | 29.799 | 29.766 |
| -12 | -08 | -07 | +03 | -.06 | -1.8 | 60.232 | 60.214 |
| -11 | -10 | -16 | -01 | -.10 | -3.0 | 90.182 | 90.152 |
| -8 | +01 | -04 | +01 | -3 | -0.9 | 19.744 | 19.735 |
| -0 | +00 | +00 | +00 | +0 | +0.0 | 50.050 | 50.050 |

Original setting 6" band

| | | | Corrected setting |
|---|---|---|---|
| 9.828 | -24 | -24 | 9.804 |
| 12.778 | -23 +00 | -23 | 12.755 |
| 15.748 | -22 +00 | -22 | 15.726 |
| 18.733 | -21 +09 | -12 | 18.721 |
| 21.723 | -20 +15 | -05 | 21.718 |
| 24.703 | -19 +30 | +11 | 24.714 |
| 27.715 | -14 +33 | +15 | 27.730 |
| 30.747 | -16 +24 | +08 | 30.755 |
| 33.782 | -15 +15 | +00 | 33.782 |
| 36.818 | -14 +12 | -02 | 36.816 |
| 39.668 | -12 +00 | -12 | 39.856 |

6" spacers

| I | II | III | IV | Mean (±41.5) | Index corr. of ruling screw. |
|---|---|---|---|---|---|
| +20 | -02 | -21 | +25 | +.05 | +.00 | +00 |
| +05 | +11 | -17 | +10 | +.02 | +00 | +00 |
| +10 | +24 | +02 | +15 | +.13 | +03 | +09 |
| +15 | +17 | +06 | +40 | +.19 | +05 | +15 |
| +50 | +60 | +30 | +45 | +.41 | +10 | +30 |
| +50 | +43 | +34 | +52 | +.44 | +11 | +33 |
| +40 | +16 | +43 | +35 | +.34 | +8 | +24 |
| +25 | +29 | +21 | +10 | +21 | +5 | +15 |
| +15 | +17 | +15 | +25 | +.16 | +4 | +12 |
| -05 | +0 | -06 | +02 | +.02 | +00 | +00 |

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1879. May 24

Measures of Plate No. 5. This plate was ruled by applying the corrections derived from the measures of the plates 1, 2, 3 + 4.

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 100.05 | .02 | .04 | .04 | .04 | 10.038 | −.010 | −.010 | −.01 | | |
| 99.99 | .97 | .04 | .00 | .03 | .010 | +.018 | +.008 | +.00 | | |
| 99.98 | 100.09 | .00 | .05 | .03 | .012 | +.016 | +.024 | +.01 | | |
| 99.98 | 100.03 | .03 | .04 | .03 | .022 | +.006 | +.030 | +.02 | | |
| 99.98 | .97 | .04 | .03 | .07 | .018 | +.010 | +.040 | +.02 | 41.7 | 41.6 | 41.5 | 41.60 |
| 100.07 | .07 | .02 | .03 | .01 | .040 | −.012 | +.028 | +.02 | 41.6 | 41.6 | 41.6 | 41.60 |
| 100.07 | .00 | .00 | .04 | .00 | .022 | +.006 | +.034 | +.02 | 41.6 | 41.6 | 41.7 | 41.63 |
| 100.00 | .10 | .15 | .10 | .10 | .090 | −.062 | −.028 | −.02 | 41.8 | 41.5 | 41.5 | 41.60 |
| 100.04 | .00 | .05 | .03 | .02 | .028 | +.000 | −.028 | −.02 | 41.5 | 41.5 | 41.6 | 41.53 |
| 100.03 | 99.98 | .01 | .01 | .00 | .006 | +.022 | +.006 | +.00 | 41.7 | 41.5 | 41.6 | 41.60 |
| 100.00 | .04 | .06 | .07 | .03 | .040 | −.012 | −.018 | −.01 | 41.5 | 41.5 | 41.5 | 41.50 |
| 100.05 | .04 | .00 | .08 | .05 | .046 | −.018 | −.036 | −.02 | 41.5 | 41.6 | 41.5 | 41.53 |
| 100.02 | .03 | .00 | .03 | .06 | .028 | +.000 | −.036 | −.02 | 41.6 | 41.5 | 41.5 | 41.53 |
| 100.00 | .00 | .00 | .03 | .02 | .010 | +.018 | −.018 | −.01 | 41.5 | 41.5 | 41.5 | 41.50 |
| 100.01 | .00 | .04 | .02 | .04 | .022 | +.006 | +.00 | | | | | |

100.028

562

41.562

100.028 = 60″

.5998

1 div = .5998″

1879phae.proj.1524.



6" Mg band

| | | | | II | I+II | | Σ | Σ" |
|---|---|---|---|---|---|---|---|---|
| 41.5 | 41.5 | 41.5 | = | 41.50 | 41.550 | −003 | −003 | +00" |
| 41.6 | 41.5 | 41.6 | | 41.57 | 41.580 | −033 | −036 | +00 |
| 41.5 | 41.5 | 41.6 | | 41.53 | 41.580 | −033 | −069 | −01 |
| 41.5 | 41.6 | 41.5 | | 41.53 | 41.560 | −013 | −082 | −01 |
| 41.4 | 41.6 | 41.4 | | 41.47 | 41.520 | +047 | −035 | −00 |
| 41.6 | 41.6 | 41.7 | | 41.63 | 41.610 | −063 | −098 | −.01 |
| 41.4 | 41.4 | 41.4 | | 41.40 | 41.450 | +097 | −001 | −.00 |
| 41.5 | 41.6 | 41.6 | | 41.57 | 41.550 | −003 | −004 | −.00 |
| 41.6 | 41.6 | 41.5 | | 41.57 | 41.550 | −003 | −007 | −.00 |
| 41.6 | 41.6 | 41.5 | | 41.57 | 41.521 | +007 | +.000 | +.00 |
| | | | | 534 | 41.547 | | | |
| | | | | 41.534 | | | | |

41.5 5 div = 6.0"

1 div = .1444

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May 7th 1879

Investigation of periodic errors in (Clark)
Micrometer screws.

Method of investigation

Scale No. 5 whose errors are to be found is on page 107 and is marked in the movable slide of the micrometer and the same are then adjusted under a Rayment Objective on the large Comparator. The following readings are then made.

No 1

| Div | | | | | | |
|---|---|---|---|---|---|---|
| 0 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 1 | 9.90 | 9.95 | 10.00 | 10.00 | 0.07 | 9.97 |
| 2 | 19.87 | 1.02 | 1.00 | 1.00 | 0.88 | 19.97 |
| 3 | 29.88 | 1.05 | 1.08 | 1.00 | 0.03 | 30.04 |
| 4 | 39.90 | .97 | 1.02 | 1.03 | 0.98 | 39.98 |
| 5 | 49.85 | .96 | .98 | .98 | 1.00 | 49.96 |
| 6 | 59.85 | .97 | .99 | .99 | .98 | 59.96 |
| 7 | 69.87 | .96 | .97 | .96 | .96 | 69.96 |
| 8 | 79.83 | 1.00 | .94 | 1.00 | .97 | 79.96 |
| 9 | 89.85 | 1.00 | .99 | 1.02 | .95 | 89.96 |
| 10 | 99.87 | 1.02 | 1.00 | 1.03 | 1.03 | 99.99 |

No 2

| Div | | | | | | |
|---|---|---|---|---|---|---|
| 0 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1 | 9.92 | 1.00 | .95 | .98 | .02 | 9.97 |
| 2 | 19.95 | 1.00 | .92 | 1.00 | 1.00 | 19.97 |
| 3 | 29.95 | 1.00 | 1.00 | 1.00 | 1.00 | 29.99 |
| 4 | 39.92 | 1.05 | 1.00 | 1.00 | 1.02 | 40.00 |
| 5 | 49.95 | 1.00 | 1.00 | 1.00 | 1.00 | 49.99 |
| 6 | 59.95 | 1.05 | 1.00 | 1.00 | 1.00 | 60.02 |
| 7 | 69.90 | 1.00 | 1.00 | 1.00 | 1.04 | 69.99 |
| 8 | 79.95 | 1.00 | 1.00 | 1.00 | 1.00 | 79.99 |
| 9 | 89.87 | 1.00 | 1.00 | 1.00 | 1.07 | 89.99 |
| 10 | 99.89 | 1.00 | 1.00 | 1.00 | 1.00 | 99.98 |

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Log.

Dec

| | | | | | | |
|---|---|---|---|---|---|---|
| 1 | 00.0 | 00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2 | 9.97 | 96 | 98 | 96 | 100 | 9.97 |
| 3 | 20.00 | 90 | 98 | 102 | 98 | 19.99 |
| 4 | 30.00 | 90 | 100 | 103 | 100 | 29.99 |
| 5 | 40.00 | 95 | 102 | 112 | 104 | 40.03 |
| 6 | 50.03 | 100 | 104 | 110 | 103 | 50.05 |
| 7 | 60.08 | 108 | 115 | 115 | 102 | 60.10 |
| 8 | 70.10 | 100 | 106 | 112 | 110 | 70.07 |
| 9 | 80.02 | 100 | 110 | 110 | 112 | 80.07 |
| 10 | 90.00 | 96 | 112 | 102 | 100 | 90.02 |
| 11 | 100.00 | 96 | 100 | 100 | 100 | 99.99 |

Log

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 0 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 − 00 | 0.00 |
| 1 | 10.00 | 92 | 98 | 94 | 103 | 9.97 − 01 | 9.96 |
| 2 | 20.00 | 100 | 100 | 100 | 97 | 19.99 − 01 | 19.98 |
| 3 | 30.00 | 100 | 100 | 103 | 00 | 30.01 − 02 | 29.99 |
| 4 | 40.10 | 00 | 00 | 10 | 06 | 40.05 − 02 | 40.03 |
| 5 | 50.15 | 05 | 05 | 12 | 10 | 50.09 − 03 | 50.06 |
| 6 | 60.12 | 00 | 08 | 15 | 10 | 60.09 − 03 | 60.06 |
| 7 | 70.10 | 05 | 10 | 10 | 10 | 70.09 − 04 | 70.05 |
| 8 | 80.12 | 10 | 10 | 14 | 12 | 80.12 − 04 | 80.08 |
| 9 | 90.12 | 00 | 07 | 10 | 10 | 90.06 − 05 | 90.01 |
| 10 | 100.10 | 98 | 100 | 107 | 08 | 100.025 − 05 | 100.00 |

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# Recapitulation

Microscope No 1 No 2 No 3 No 4

| Div | | | | | Accumulative Corrections 1 | 2 | 3 | 4 | Mean |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | .00" | +.00" | .00" | .00" | +.00 |
| 0 | 0.00 | 0.00 | 0.00 | 0.00 | | | | | |
| 1 | 9.97 | 9.97 | 9.97 | 9.96 | +.03 | +.03" | +.04 | +04 | +.03 |
| 2 | 19.97 | 19.97 | 19.99 | 19.98 | +03 | +03 | +.01 | +02 | +.02 |
| 3 | 30.01 | 29.98+1 | 29.99 | 29.99 | +01 | +00 | +.01 | +01 | +.00 |
| 4 | 39.98 | 40.00+1 | 40.03 | 40.03 | +02 | −01 | +.03 | −03 | −.01 |
| 5 | 49.96+1 | 49.99+1 | 50.05+1 | 50.06 | +03 | +00 | −.06 | −06 | −.02 |
| 6 | 59.96+1 | 60.02+1 | 60.10+1 | 60.06 | +05 | +03 | −.11 | −06 | −.04 |
| 7 | 69.95+1 | 69.99+2 | 70.07+1 | 70.05 | +04 | −01 | −.08 | −05 | −.03 |
| 8 | 79.96+1 | 79.99+2 | 80.07+1 | 80.08 | +03 | −01 | −.08 | −.08 | −.03 |
| 9 | 89.96+1 | 89.99+2 | 90.02+1 | 90.01 | +03 | −01 | −.08 | −01 | −.01 |
| 10 | 99.99 | 99.98+2 | 99.97+1 | 100.0 | +00 | +00 | +.00 | +.00 | +.00 |

Since 100 div = 60"

1 div = 6.00"

.01 div = .06"

Mean values of accumulated Corrections

# Corrections for runs.

1879phae.proj.1524.



| Div | Mean Correction from 2 Sr means of 4 Uniform Microscopes. | Correction from measures of Standard plate | Δ |
|---|---|---|---|
| 0 | +0.00″ | +0.00″ | +0.00″ |
| 1 | +.03 | +.00 | +.03 |
| 2 | +.02 | −.01 | +.03 |
| 3 | +.00 | −.01 | +.01 |
| 4 | −.01 | −.00 | −.01 |
| 5 | −.02 | −.01 | −.01 |
| 6 | −.04 | −.00 | −.04 |
| 7 | −.03 | −.00 | −.03 |
| 8 | −.03 | −.00 | −.03 |
| 9 | −.01 | −.00 | −.01 |
| 10 | +.00 | −.00 | +.00 |

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May 5-1879

Investigation of errors of micrometer screw E.R.G.N. before the substitution of the new Clark micrometer screw. Plan of investigation same as described on page 187A,

Micrometer E. Micrometer 1

| | May 5 | May 7 | May 9 | May 12 | Mean | | 4 | |
|---|---|---|---|---|---|---|---|---|
| 40 | 7.74 | 6.06 | 6.56 | 6.66 | 6.75–6.66 | 0.09 | | |
| 41 | 6.84 | 5.20 | 5.50 | 5.62 | 5.81–5.33 | 0.48 | 60.39 | –35 |
| 42 | 5.52 | 3.52 | 3.94 | 4.44 | 4.36–4.00 | 0.36 | 59.88 | +12 |
| 43 | 4.30 | 1.86 | 2.66 | 2.90 | 2.93+2.67 | 0.26 | 59.90 | +10 |
| 44 | 2.64 | 0.52 | 1.28 | 1.64 | 1.52+1.33 | 0.19 | 59.93 | +07 |
| 45 | 0.66 | 59.76 | 59.72 | 0.24 | 0.09+0.00 | 0.09 | 59.90 | +10 |
| | | | | | 6.66 | | 60.00 | |
| | | | | | 1.333 | | | |

Micrometer E.

| | May 5 | May 7 | May 7 | May 9 | May 9 | May 12 | 12 | 13 | Mean | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 40 | 7.74 | 6.06 | 6.36 | 6.56 | 6.64 | 6.66 | 6.62 | 6.10 | 6.59– | | |
| 41 | 6.84 | 5.20 | 4.86 | 5.50 | 5.08 | 5.62 | 5.58 | 4.80 | 5.45 | 5886 | |
| 42 | 5.52 | 3.52 | 3.36 | 3.94 | 3.46 | 4.44 | 4.30 | 3.40 | 3.99– | 5854 | |
| 43 | 4.30 | 1.86 | 1.62 | 2.66 | 1.94 | 2.90 | 2.58 | 1.80 | 2.46 | 5847 | |
| 44 | 2.64 | 0.52 | 0.82 | 1.28 | 1.02 | 1.64 | 1.22 | 0.47 | 1.20 | 5874 | |
| 45 | 0.66 | 59.76 | 59.74 | 59.72 | 59.66 | 0.24 | 0.26 | 59.10 | 59.89 | 5869 | |
| | | | | | | | | | 29330 | | |
| | | | | | | | | | 58.66 | | |

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Microscope P

Correction for each 1"

| | May 7 | 7 | 9 | 9 | 12 | 12 | 13 | Mean | |
|---|---|---|---|---|---|---|---|---|---|
| 40 | 7.04 | 7.18 | 6.50 | 5.08 | 7.88 | 8.16 | 6.73 | 6.94 | 5857 |
| 41 | 5.76 | 5.48 | 5.28 | 3.98 | 6.48 | 6.48 | 5.13 | 5.51 | 5875 |
| 42 | 4.54 | 4.06 | 4.22 | 2.86 | 5.18 | 5.16 | 3.83 | 4.26 | 5870 |
| 43 | 2.76 | 2.80 | 3.10 | 1.46 | 4.42 | 3.50 | 2.30 | 2.96 | 5845 |
| 44 | 1.34 | 0.94 | 1.84 | 59.98 | 2.46 | 2.40 | 0.93 | 1.41 | 5870 |
| 45 | 0.22 | 59.82 | 0.58 | 58.40 | 0.52 | 1.04 | 59.77 | 0.11 | |

29817
58.64

Microscope S.

| | May 7 | 7 | 7 | 7 | 9 | 9 | 12 | 12 | 12 | 12 | Mean | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 40 | 8.08 | 8.26 | 8.14 | 8.28 | 7.24 | 6.22 | 8.06 | 8.02 | 8.66 | 9.70 | 8.00 | |
| | 6.02 | 5.86 | 6.90 | 6.28 | 5.30 | 5.06 | 6.28 | 6.10 | 6.58 | 6.58 | 6.00 | 5827 |
| | 4.60 | 3.94 | 4.76 | 4.04 | 4.20 | 3.34 | 4.86 | 4.82 | 4.80 | 5.12 | 4.47 | 5847 |
| | 2.52 | 2.94 | 3.26 | 2.96 | 2.70 | 1.86 | 2.86 | 2.94 | 3.24 | 3.98 | 2.99 | 5852 |
| | 1.72 | 0.84 | 1.24 | 1.54 | 0.98 | 0.02 | 1.92 | 1.54 | 1.66 | 2.02 | 1.35 | 5836 |
| | 0.24 | 59.36 | 0.12 | 0.14 | 0.02 | 58.86 | 0.94 | 0.16 | 0.34 | 1.38 | 0.22 | 5881 |

29219
58.48

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Microscope No.

| | May 7 | 7 | 7 | 9 | 9 | 12 | 12 | 13 | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 40 | 6.06 | 5.90 | 6.70 | 5.86 | 5.20 | 4.98 | 7.28 | 6.46 | 801 | 627 |
| 41 | 4.40 | 3.64 | 4.78 | 3.72 | 3.82 | 2.66 | 5.96 | 4.44 | 580 | 4.36 58.08 |
| 42 | 2.78 | 2.50 | 3.00 | 2.52 | 2.10 | 1.38 | 4.52 | 3.18 | 463 | 2.95 58.60 |
| 43 | 1.42 | 1.02 | 1.52 | 1.00 | 0.58 | 0.20 | 3.04 | 1.90 | 323 | 1.55 58.60 |
| 44 | 59.98 | 59.64 | 0.14 | 59.46 | 59.10 | 58.46 | 1.92 | 0.36 | 177 | 0.09 58.54 |
| 45 | 58.44 | 58.34 | 59.92 | 59.98 | 59.22 | 56.88 | 0.56 | 58.74 | 59.93 | 58.87 58.58 |

29240

58.48

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# Recapitulation

## Microscope E.

Const = 58."66

| | Computed value from each plate II | Observed values | Cor. I | Cor. II |
|---|---|---|---|---|
| | " | " | " | " |
| 0-1 | 58.171 | 58.86 | -16 | -16 |
| 0-2 | 58.66 | 58.54 | +12 | -04 |
| 0-3 | 58.64 | 58.47 | +17 | +13 |
| 0-4 | 58.62 | 58.74 | -12 | +01 |
| 0-5 | 58.66 | 58.69 | -.03 | -.02 |

## Microscope F

Constant = 58."64 =

| | | | | |
|---|---|---|---|---|
| 0-1 | 58.69 | 58.57 | +12 | +12 |
| 0-2 | 58.64 | 58.75 | +11 | +01 |
| 0-3 | 58.62 | 58.70 | -08 | -07 |
| 0-4 | 58.60 | 58.45 | +15 | +08 |
| 0-5 | 58.64 | 58.70 | -06 | +02 |

## Microscope G.

Const = 58."47 =

| | | | | |
|---|---|---|---|---|
| 1 | 58.53 | 58.27 | +26 | +26 |
| | 58.48 | 58.47 | +01 | +27 |
| | 58.46 | 58.52 | -06 | +21 |
| | 58.44 | 58.36 | +08 | +29 |
| | 58.47 | 58.67 | -20 | -10 |

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Microscope No

Comet 5848

| | | $\Delta_{11}$ | $\Sigma$ |
|---|---|---|---|
| 58.53 | 58.08 | +0.45 | +45* |
| 58.48 | 58.60 | −12 | +33 |
| 58.46 | 58.60 | −14 | +19 |
| 58.44 | 58.54 | −10 | +9 |
| 58.48 | 58.58 | −10 | −1 |

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May 13 1881

Investigation of Periodic errors of (old) micrometer Screws 2 & 16 in each 6" Plot 2.

Micrometer 2 (0) Count = 5866

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 40' | 1.24 | 1.10 | 40' 1.17 | 572 | 5.78 | +07 | +03 | +03 |
| | 6.82 | 6.96 | 6.89 | 583 | 5.88 | +05 | +01 | +04 |
| | 12.90 | 12.54 | 12.72 | 552 | 5.86 | +34 | +30 | +34 |
| | 18.36 | 18.12 | 18.24 | 598 | 5.90 | −08 | −12 | +22 |
| | 24.46 | 23.98 | 24.22 | 590 | 5.88 | −02 | −06 | +16 |
| | 30.28 | 29.96 | 30.12 | 584 | 5.79 | −05 | −09 | +07 |
| | 35.86 | 36.06 | 35.96 | 586 | 5.85 | −01 | −05 | +02 |
| | 42.08 | 41.56 | 41.82 | 558 | 5.90 | +38 | +28 | +30 |
| | 47.56 | 47.24 | 47.40 | 621 | 5.88 | −33 | −37 | −07 |
| | 53.86 | 53.36 | 53.61 | 578 | 5.89 | +11 | +07 | +00 |
| | 59.56 | 59.22 | 59.39 | | | | | |

+89
−49
+040

Count = 5864

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 45' | 1.67 | 1.55 | 1.61 | 576 | 5.79 | +03 | +02 | +02 |
| | 7.50 | 7.24 | 7.37 | 613 | 5.89 | −24 | −25 | −23 |
| | 13.60 | 13.40 | 13.50 | 548 | 5.86 | +37 | +36 | +113 |
| | 19.11 | 18.82 | 18.96 | 618 | 5.90 | −29 | −30 | −17 |
| | 25.20 | 25.15 | 25.17 | 595 | 5.89 | −06 | −07 | −24 |
| | 31.14 | 31.10 | 31.12 | 603 | 5.78 | −25 | −26 | −50 |
| | 37.10 | 37.20 | 37.15 | 544 | 5.86 | +44 | +43 | +07 |
| | 42.83 | 42.35 | 42.59 | 581 | 5.89 | +09 | +08 | +01 |
| | 48.50 | 48.30 | 48.40 | 620 | 5.88 | −32 | −33 | −32 |
| | 54.60 | 54.60 | 54.60 | 556 | 5.89 | +33 | +32 | +00 |
| | 60.23 | 00.10 | 60.16 | | | | | |

+176
−101

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# Mercury Corr = 5".847

| | | | Mean | (C) | (O) | Δ | Δ | Σ |
|---|---|---|---|---|---|---|---|---|
| | " | " | | | | | | Corr. |
| 40' | 1.30 | 1,37 | 1,33 | | | | | |
| | 7,33 | 6.83 | 7.08 | 6.75 | 6.78 | +.03 | -.00 | -.00 |
| | 13.37 | 13.43 | 13.40 | 6.32 | 5.86 | +46 | +48 | +49 |
| | 19.40 | 19.47 | 19.43 | 6.03 | 5.84 | -19 | -22 | -71 |
| | 24.83 | 24.63 | 24.73 | 5.30 | 5.89 | +59 | +55 | -16 |
| | 30.30 | 30.30 | 30.30 | 5.57 | 5.87 | +30 | +27 | +11 |
| | 35.83 | 35.87 | 35.85 | 5.55 | 5.77 | +22 | +18 | +29 |
| | 42.23 | 42.47 | 42.35 | 6.50 | 5.84 | -66 | -69 | -40 |
| | 48.40 | 48.47 | 48.43 | 6.08 | 5.88 | -20 | -23 | -63 |
| | 54.10 | 54.03 | 54.06 | 5.63 | 5.86 | +23 | +19 | -44 |
| | 59.57 | 59.17 | 59.37 | 5.31 | 5.87 | +46 | +43 | +00 |
| | | | | | | +184 | | |
| | | | | | | -152 | | |
| | | | | | | +033 | | |

# No Corr = 5".848

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | " | " | | | | | | |
| 40 | 0.90 | 1.24 | 107 | | | | | |
| | 6.10 | 6.82 | 6.46 | 5.39 | 5.98 | +39 | +37 | +37 |
| | 12.07 | 12.90 | 12.48 | 6.02 | 5.87 | -15 | -17 | +20 |
| | 17.97 | 18.36 | 18.26 | 5.78 | 5.85 | +07 | +04 | +24 |
| | 23.23 | 24.46 | 24.09 | 5.83 | 5.89 | +06 | +04 | +28 |
| | 29.23 | 30.28 | 30.00 | 5.91 | 5.86 | -05 | -07 | +21 |
| | 35.73 | 35.86 | 35.80 | 5.80 | 5.77 | -.03 | -.06 | +15 |
| | 41.70 | 42.08 | 41.89 | 6.09 | 5.84 | -25 | -27 | -112 |
| | 47.40 | 47.56 | 47.48 | 5.59 | 5.88 | +29 | +27 | +15 |
| | 53.20 | 53.86 | 53.53 | 6.05 | 5.87 | -18 | -21 | -06 |
| | 59.10 | 59.56 | 59.33 | 5.80 | 5.88 | +.08 | +06 | +00 |
| | | | | | | +.89 | | |
| | | | | | | -.66 | | |
| | | | | | | +.23 | | |

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1879 May 28

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1879. May 28

T = 23 45

46.609
606
609
602
602
19
46.604

46857
863
863
863
862
8
46.862
46.604
1466
46.733

C Set at 46.733

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1879. May 28

Readings of new Micrometers for the minutes of the fixed glass scale corresponding to the minute notches of the old Micrometers.

Measured on the first of the double lines nearest the screw.

Microscope E.

| 0′ | 1′ | 2′ | 3′ | 4′ | 5′ |
|---|---|---|---|---|---|
| 49.2 | 51.1 | 50.7 | 50.8 | 50.6 | 50.2 |
| 50.0 | 50.2 | 50.0 | 51.0 | 50.3 | 50.4 |
| 49.7 | 50.7 | 50.0 | 51.0 | 50.2 | 50.0 |
| 49.9 | 51.3 | 50.8 | 51.8 | 50.8 | 50.3 |
| 49.9 | 50.3 | 50.6 | 51.8 | 51.4 | 50.0 |
| 37 | 36 | 21 | 14 | 35 | 9 |
| 49.74 | 50.72 | 51.42 | 51.28 | 50.70 | 50.18 |

E repeated

| | | | | | |
|---|---|---|---|---|---|
| 50.3 | 50.6 | 50.3 | 51.2 | 50.8 | 50.7 |
| 50.0 | 50.6 | 50.0 | 50.9 | 51.2 | 50.0 |
| 50.2 | 50.1 | 50.0 | 51.2 | 50.3 | 50.7 |
| 50.8 | 50.7 | 50.1 | 50.4 | 50.0 | 50.5 |
| 50.3 | 50.3 | 49.9 | 50.4 | 50.1 | 50.2 |
| 16 | 23 | 3 | 41 | 24 | 21 |
| 50.32 | 50.46 | 50.06 | 50.82 | 50.48 | 50.42 |
| 50.03 | 50.09 | 50.74 | 51.05 | 50.09 | 50.30 |

Microscope F

| | | | | | |
|---|---|---|---|---|---|
| 48.9 | 49.6 | 48.3 | 48.2 | 47.8 | 47.5 |
| 49.3 | 49.4 | 48.3 | 48.8 | 48.0 | 48.3 |
| 49.1 | 48.7 | 49.2 | 49.2 | 49.8 | 48.1 |
| 49.6 | 49.7 | 48.0 | 49.3 | 49.7 | 48.7 |
| 48.9 | 49.3 | 48.8 | 48.7 | 48.0 | 48.6 |
| 458 | 17 | 26 | 42 | 33 | 12 |
| 49.16 | 49.34 | 48.52 | 48.84 | 48.66 | 48.24 |

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Microscope G

| | | | | | |
|---|---|---|---|---|---|
| 48.9 | 50.5 | 49.2 | 50.7 | 50.1 | 50.2 |
| 49.2 | 50.0 | 49.2 | 49.8 | 50.8 | 50.7 |
| 49.8 | 50.4 | 49.8 | 50.2 | 51.2 | 50.4 |
| 49.8 | 50.1 | 49.8 | 50.6 | 50.9 | 50.5 |
| 49.4 | 49.7 | 49.7 | 50.1 | 50.8 | 50.3 |
| 21 | 7 | 27 | 14 | 38 | 21 |
| 49.42 | 50.14 | 49.54 | 50.28 | 50.76 | 50.42 |

Microscope H

| | | | | | |
|---|---|---|---|---|---|
| 49.7 | 49.8 | 49.8 | 51.1 | 49.8 | 50.2 |
| 50.1 | 50.8 | 49.8 | 51.3 | 49.9 | 50.0 |
| 50.0 | 49.0 | 49.2 | 51.8 | 50.0 | 51.0 |
| 50.5 | 50.0 | 48.8 | 51.2 | 50.7 | 50.8 |
| 50.1 | 50.2 | 49.3 | 51.0 | 50.1 | 50.7 |
| 4 | 24 | 32 | 14 | 5 | 27 |
| 50.08 | 49.96 | 49.44 | 51.28 | 50.10 | 50.54 |

Repeated setting in same division

| | | | | |
|---|---|---|---|---|
| 21.7 | 21.6 | 21.5 | 21.9 | 21.3 |
| 21.6 | 21.8 | 21.9 | 21.9 | 21.8 |
| 21.4 | 21.8 | 21.8 | 21.6 | 21.4 |
| 21.7 | 21.7 | 21.8 | 21.5 | 21.6 |
| 21.7 | 21.5 | 21.7 | 21.7 | 21.7 |
| 21.8 | 21.4 | 21.5 | 21.5 | 21.8 |
| 21.8 | 21.7 | 21.4 | 21.4 | 21.4 |
| 21.8 | 21.8 | 21.4 | 21.8 | 21.9 |
| 21.8 | 21.8 | 21.8 | 21.7 | 22.0 |
| 21.7 | 21.3 | 21.9 | 21.4 | 21.6 |
| 70 | 61 | 67 | 64 | 65 |
| 21.70 | 21.61 | 21.67 | 21.64 | 21.65 |

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1879phae.proj.1524.



1879 May 29

T = 1h 35

| E | F |
|---|---|
| 12.86 | 14.00 |
| 11.20 | 13.38 |
| 2406 | 2738 |
| 12.03 | 13.69 |
| 11.84 | 13.64 |
| +0.19 | + 0.05 |
| 005 | |
| 24 | |
| 0.12 | |

Flexure

N. Lg.

| 10 E | 0 | F | G | H | | E | F | G | H |
|---|---|---|---|---|---|---|---|---|---|
| 11.4 | 13.3 | 13.0 | 14.1 | 9.8 | 11.5 | 11.8 | 13.2 | 5.3 | 14.0 | 18.4 | 12.8 |
| 11.7 | 12.8 | 13.3 | 13.7 | 10.1 | 11.2 | 11.8 | 13.3 | 5.2 | 14.5 | 18.7 | 12.7 |
| 11.3 | 12.7 | 13.1 | 13.7 | 10.0 | 11.1 | 11.7 | 13.6 | 5.3 | 15.1 | 18.8 | 12.3 |
| 11.3 | 12.7 | 13.2 | 14.3 | 10.0 | 11.1 | 11.4 | 13.2 | 5.0 | 15.2 | 18.3 | 12.7 |
| 11.0 | 12.8 | 13.0 | 14.2 | 9.8 | 11.1 | 11.6 | 13.6 | 5.1 | 15.0 | 18.3 | 12.1 |
| 17 | 14 3 | 6 | 0 | 24.7 | 10 | 33 | 19 | 9 | 238 | 25 | 26 |
| 11.84 | 12.86 | 13.12 | 14.00 | 9.94 | 11.20 | 11.66 | 13.38 | 5.18 | 14.76 | 18.50 | 12.52 |
| 994 | 11.44 | 11.66 | 1364 | .36 | | | | 18.50 | 12.52 | | |
| 2128 | 1.02 | 1.78 | | | | | | 2368 | 2728 | | |
| 1064 | | 0.64 | 51 | | | | | 11.84 | 13.64 | | |
| 11.84 | | 13.64 | 18 | | | | | | | | |
| | | | 69 | | | | | | | | |
| | | | +.30 | | | | | | | | |

| | | |
|---|---|---|
| 12.86 | ~~15.50~~ | 5.18 |
| 14.00 | | 14.76 |
| 11.20 | | 18.50 |
| 13.38 | | 12.52 |
| 1144 | | 50.96 |
| 12.86 | | 1274 |
| | | +.12 |
| | | +06 |

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1879phae.proj.1524.



May 29
I = 1 35

46.593
581
600
603
592
2969
46.594

46.916
902
902
912
900
32
46.906
594
1500
46.750 C Set at 46.750

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1879. June 1

□ = 1 30

N.C. Fleduse S.C.

| 10 E 0 | F | G | H | E | F | G | H |
|---|---|---|---|---|---|---|---|
| 13.2 | 10.6 | 11.4 | 12.5 | 6.3 | 10.9 | 18.2 | 11.6 |
| 13.2 | 10.8 | 12.0 | 12.6 | 6.1 | 11.1 | 18.3 | 11.4 |
| 13.2 | 10.2 | 12.0 | 12.1 | 5.7 | 11.2 | 18.3 | 11.8 |
| 13.1 | 11.0 | 11.8 | 11.8 | 5.9 | 11.3 | 18.3 | 11.5 |
| 13.2 | 10.7 | 11.8 | 11.9 | 6.0 | 11.4 | 18.3 | 11.5 |
| 9 | 34 | 90 | 9 | 0 | 9 | 14 | 28 |
| 13.18 | 10.68 | 11.80 | 12.18 | 6.00 | 11.18 | 18.28 | 11.56 |
| 11.80 | 12.18 | 13.18 | 6.00 | 18.28 | 11.56 | | |
| 24.98 | 22.86 | 10.68 | 11.18 | 24.28 | 74 | | |
| 12.49 | 11.43 | 11.80 | 18.28 | | | | |
| 12.14 | 11.37 | 12.18 | 11.56 | 12.14 | 11.37 | | |
| +35 | .06 | 78.4 | 47.02 | | | | |
| +06 | | 11.96 | 11.76 | | | | |
| 41 | | | .20 | | | | |
| .20 | | | | | | | |
| 10 | | | | | | | |

Collimation

| | |
|---|---|
| 46.513 | 47.078 |
| 506 | 078 |
| 512 | 077 |
| 518 | 082 |
| 513 | 082 |
| 62 | 237 |
| 46.512 | 47.067 |
| | 46.512 |
| | 13579 |
| | 46.789 |

C Set at 46.789.

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1879. June 1

Circle Division

Runs

| 5 | E | O | F | | G | | H | |
|---|---|---|---|---|---|---|---|---|
| 3.4 | 3.0 | | 0.9 | 1.4 | 1.2 | 1.7 | 2.5 | 1.5 |
| 3.5 | 2.9 | | 0.6 | 1.9 | 1.3 | 1.2 | 2.2 | 1.0 |
| 3.7 | 2.9 | | 1.5 | 1.6 | 1.4 | 1.3 | 2.6 | 1.3 |
| 3.7 | 2.8 | | 1.1 | 1.5 | 1.2 | 1.0 | 2.5 | 1.1 |
| 3.7 | 3.2 | | 1.1 | 1.8 | 1.3 | 1.2 | 2.4 | 1.1 |
| 30 | 48 | | 2 | 32 | 14 | 14 | 22 | 10 |
| 36.0 | 2.96 | | 1.04 | 1.64 | 1.28 | 1.28 | 2.44 | 1.20 |

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1879. June 1

Glass Index

E

| 5′ | 0′ | 1′ | 2′ | 3′ | 4′ | 5′ |
|---|---|---|---|---|---|---|
| | 50.0 | 50.3 | 49.7 | 49.7 | 50.3 | 50.2 |
| | 49.9 | 50.4 | 50.4 | 49.9 | 50.8 | 50.8 |
| | 50.3 | 50.2 | 49.9 | 50.6 | 50.2 | 50.2 |
| | 49.9 | 50.8 | 49.8 | 50.2 | 50.2 | 50.9 |
| | 49.9 | 50.1 | 50.0 | 50.4 | 50.8 | 49.8 |
| | 0 | 18 | 48 | 6 | 23 | 19 |
| | 50.00 | 50.36 | 49.96 | 50.12 | 50.46 | 50.38 |

F1

| 0′ | 1′ | 2′ | 3′ | 4′ | 5′ |
|---|---|---|---|---|---|
| 49.3 | 49.7 | 49.0 | 49.4 | 49.0 | 49.0 |
| 49.4 | 49.8 | 49.8 | 49.3 | 48.7 | 49.2 |
| 49.4 | 49.8 | 49.9 | 49.5 | 49.8 | 58.7 |
| 49.5 | 49.8 | 49.8 | 49.3 | 49.2 | 49.8 |
| 49.6 | 49.9 | 49.9 | 49.5 | 49.1 | 48.8 |
| 22 | 40 | 34 | 20 | 8 | 5 |
| 49.44 | 49.80 | 49.68 | 49.40 | 49.16 | 49.10 |

G

| 0′ | 1′ | 2′ | 3′ | 4′ | 5′ |
|---|---|---|---|---|---|
| 49.2 | 50.2 | 49.4 | 49.7 | 49.8 | 49.8 |
| 49.2 | 49.9 | 49.4 | 50.3 | 50.3 | 49.7 |
| 49.3 | 50.1 | 49.9 | 49.9 | 50.5 | 49.8 |
| 49.3 | 50.2 | 50.0 | 50.2 | 49.7 | 49.7 |
| 49.4 | 50.1 | 50.4 | 50.1 | 50.1 | 49.8 |
| 14 | 5 | 41 | 2 | 4 | 36 |
| 49.28 | 50.10 | 49.82 | 50.04 | 50.08 | 49.72 |

H

| 0′ | 1′ | 2′ | 3′ | 4′ | 5′ |
|---|---|---|---|---|---|
| 50.3 | 50.2 | 50.4 | 50.9 | 50.8 | 51.3 |
| 50.8 | 50.3 | 49.8 | 51.3 | 50.7 | 50.7 |
| 50.8 | 50.5 | 49.9 | 51.3 | 50.9 | 51.2 |
| 50.5 | 50.0 | 50.2 | 51.2 | 50.9 | 51.1 |
| 50.9 | 50.8 | 50.3 | 51.0 | 50.9 | 50.9 |
| 33 | 18 | 16 | 7 | 42 | 52 |
| 50.66 | 50.36 | 50.12 | 51.14 | 50.84 | 51.04 |

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1879. June 4

I = 1' 40

| N.C. | | | | Flexure | S.C. | | | |
|---|---|---|---|---|---|---|---|---|
| E | O. | 10 | O | | | | | |
| 16.2 | 15.8 | 17.2 | 9.9 | 16.2 | 7.3 | 16.0 | 15.8 | 15.20 |
| 16.2 | 16.2 | 17.8 | 9.8 | 16.0 | 7.4 | 16.4 | 15.9 | 15.3 |
| 16.6 | 16.3 | 17.7 | 9.9 | 16.4 | 7.6 | 16.8 | 15.9 | 15.1 |
| 16.4 | 16.2 | 17.8 | 10.1 | 16.1 | 7.5 | 16.4 | 16.3 | 15.2 |
| 16.2 | 16.1 | 17.1 | 10.1 | 16.3 | 75 | 16.0 | 16.2 | 15.4 |
| 16 | 6 | 26 | 48 | 10 | 23 | 16 | 1 | 10 |
| 16. | 16.12 | 17.52 | 9.96 | 16.20 | 7.46 | 16.32 | 16.12 | 15.20 |
| | 9.96 | 16.20 | | | 16.12 | 15.20 | | |
| | 2608 | 1372 | | | 2358 | 1152 | | |
| | 13.054 | 16.86 | | | 11.79 | 15.76 | | |
| | 11.79 | 15.76 | | | | | | |
| | 17.6 / 1.18 | 1.10 | | | | | | |
| | +1.38 | | | | | | | |

I = 1 45

| | |
|---|---|
| 46.622 | 46.865 |
| 605 | 862 |
| 619 | 860 |
| 613 | 874 |
| 612 | 850 |
| 71 | 312 |
| 46.614 | 46.862 |
| 862 | |
| 1476 | |
| 46.738 | |

I = 1 52

| | |
|---|---|
| 46.615 | 46.843 |
| 608 | 858 |
| 618 | 855 |
| 618 | 866 |
| 618 | 858 |
| 77 | 282 |
| 46.615 | 46.856 |
| 856 | |
| 1471 | |
| 46.735 | |

C Set at 46.736

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June 7. 1879

T = 23 45

| E | F | G | Flexure H | E | F | G | H |
|---|---|---|---|---|---|---|---|
| 10 0 | | | | | | | |
| 16.5 | 16.9 | 6.2 | 14.7 | 9.9 | 18.0 | 25.3 | 14.7 |
| 16.8 | 16.8 | 6.1 | 14.7 | 9.8 | 18.8 | 15.2 | 15.1 |
| 17.0 | 17.2 | 6.2 | 14.7 | 10.0 | 18.6 | 15.2 | 15.0 |
| 17.0 | 17.2 | 6.2 | 15.0 | 10.2 | 18.9 | 15.2 | 15.0 |
| 16.8 | 16.8 | 6.5 | 14.9 | 9.9 | 18.8 | 15.6 | 15.0 |
| 341 | 49 | 12 | 40 | 48 | 33 | 15 | 48 |
| 16.82 | 16.98 | 6.24 | 14.80 | 9.96 | 18.66 | 25.30 | 14.96 |
| 624 | 1480 | | | 15.30 | 1496 | | |
| 2306 | 1178 | 16.82 | 9.96 | 23.26 | 1362 | | |
| 11.53 | 15.89 | 16.58 | 18.66 | 11.63 | 1681 | | |
| 11.63 | 16.81 | 16.24 | 15.30 | | | | |
| −.10 | −92 | 14.80 | 14.96 | | | | |
| −92 | | 2484 | 6888 | | | | |
| 102 | | 16.21 | 4.72 | | | | |
| −.51 | | | 1.49 | | | | |
| | | | +.94 | | | | |

| | |
|---|---|
| 46.606 | 46.841 |
| 600 | 820 |
| 609 | 838 |
| 611 | 849 |
| 607 | 848 |
| 33 | 196 |
| 46.607 | 46.839 |
| .839 | |
| 446 | |
| 46.723 | |

Coetat 46.723

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1879 June 7

T = 1 40

| 5 | E | F | G | H |
|---|---|---|---|---|
| 5' | 0' | 1' | | |
| 7.8 | 7.5 | 10.2 9.1 | 58.7 58.7 | 6.3 6.8 4.8 |
| 8.4 | 7.4 | 9.0 9.1 | 59.2 58.9 | 6.3 7.0 5.0 |
| 8.0 | 7.2 | 9.1 9.1 | 59.1 58.6 | 6.2 6.8 5.3 |
| 8.0 | 6.8 | 9.2 8.9 | 59.2 58.7 | 6.3 6.6 5.1 |
| 8.0 | 6.9 | 9.5 9.0 | 58.8 58.2 | 6.1 7.0 5.3 |
| 8.04 | 7.16 | 9.04 9.04 | 59.00 58.62 | 6.24 5.10 |

E

| 5' | 0' | 1' | 2' | 3' | 4' | 5' |
|---|---|---|---|---|---|---|
| 8.7 | 9.2 | 8.3 | 8.8 | 9.4 | 8.7 | |
| 8.8 | 9.2 | 8.5 | 9.0 | 9.2 | 8.4 | |
| 8.7 | 8.7 | 8.6 | 9.2 | 9.0 | 8.9 | |

F1

| 5' | 0' | 1' | 2' | 3' | 4' | 5' |
|---|---|---|---|---|---|---|
| 10.2 | 10.7 | 9.8 | 10.1 | 10.6 | 10.7 | |
| 10.4 | 10.4 | 10.4 | 10.3 | 10.5 | 10.6 | |
| 9.8 | 10.8 | 10.2 | 10.1 | 9.7 | 10.4 | |

G

| 5' | 0' | 1' | 2' | 3' | 4' | 5' |
|---|---|---|---|---|---|---|
| 7.9 | 8.3 | 8.7 | 9.0 | 9.0 | 7.8 | |
| 8.4 | 8.6 | 7.8 | 8.8 | 8.5 | 8.8 | |
| 8.2 | 9.0 | 7.8 | 8.6 | 9.2 | 8.6 | |

H

| 5' | 0' | 1' | 2' | 3' | 4' | 5' |
|---|---|---|---|---|---|---|
| 11.7 | 11.1 | 10.7 | 12.2 | 10.8 | 10.9 | |
| 11.3 | 10.7 | 10.6 | 11.7 | 11.2 | 11.4 | |
| 11.0 | 10.9 | 10.8 | 11.4 | 10.9 | 11.7 | |

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1879 June 8

T = 1 40

| | N.C. | | | Flexure | | | S.C. | |
|---|---|---|---|---|---|---|---|---|
| E | F | G | H | E | F | G | H |
| 10 0 | | | | | | | | |
| 17.8 | 18.6 | 8.8 | 14.8 | 11.2 | 19.8 | 16.7 | 14.8 |
| 17.7 | 18.3 | 8.4 | 14.8 | 10.8 | 20.3 | 16.5 | 15.0 |
| 17.7 | 18.5 | 8.7 | 14.7 | 10.8 | 19.8 | 16.8 | 14.7 |
| 18.0 | 18.8 | 8.8 | 15.1 | 11.1 | 19.8 | 16.4 | 14.7 |
| 18.1 | 18.6 | 8.9 | 14.3 | 11.2 | 19.4 | 16.7 | 14.6 |
| 43 | 28 | 36 | 37 | 51 | 41 | 31 | 38 |
| 17.86 | 18.56 | 8.72 | 14.74 | 11.02 | 19.82 | 16.62 | 14.76 |
| 8.72 | 14.74 | | | 16.62 | 14.76 | | |
| 26.58 | 1330 | 53 | 17.86 | 11.02 | 764 | 14.58 | |
| 13.29 | 16.65 | 64 | 18.56 | 19.82 | 1382 | 17.29 | |
| 13.82 | 17.29 | 117 | 8.72 | 16.62 | | | |
| -.53 | -.64 | -.58 | 14.74 | 14.76 | | | |
| -.26 | -.32 | | 29.88 | 2222 | | | |
| | | | 17.94 | 15.55 | | | |
| | | | | 192 | | | |
| | | | | .96 | | | |

I

46.570
578
573
572
574
17
46,573
821
1394
46,697

46.818
825
828
826
828
25
46.821

46,579
587
580
578
576
0
46,580
832
1412
46,706
697
1403
46,701

II

46,828
836
833
836
828
11
46,832

C. setat 46,735

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1879 June 12

| | |
|---|---|
| 46, 552 | 46,846 |
| 552 | 861 |
| 587 | 862 |
| 558 | 849 |
| 554 | 860 |
| 17 | 278 |
| 46, 593 | 46,856 |
| | 46,553 |
| | 1449 |
| | 46,725 |

I = 8 40

| N.C. | | | | Flexure | | | S.C. | |
|---|---|---|---|---|---|---|---|---|
| E | H | G | K | E | H | G | K | |
| 10 0 | | | | | | | | |
| 16,7 | 18,2 | 9.8 | 14,2 | 9.2 | 18.9 | 16.6 | 14.1 | |
| 16,8 | 18.6 | 9.9 | 14,1 | 9.6 | 19,2 | 16.8 | 13.7 | |
| 16.7 | 18,8 | 9.8 | 14,3 | 9.3 | 19,2 | 16.6 | 13.8 | |
| 16.7 | 19.0 | 9.8 | 14.3 | 9.4 | 19.2 | 16.8 | 13.8 | |
| 16.6 | 19.7 | 10.0 | 14.3 | 9.3 | 19.2 | 16.9 | 13.5 | |
| 35 | 43 | 43 | 12 | 16 | 7 | 37 | 39 | |
| 16.70 | 18.86 | 9.86 | 14.24 | 9.36 | 19.14 | 16.74 | 13.78 | |
| 9.83 | 14,24 | 16.70 | 9.36 | 16.74 | 13.78 | | | |
| 2653 | 1310 | 18.86 | 19.14 | 2610 | 1292 | | | |
| 13,26 | 16.55 | 9.83 | 16.74 | 13.05 | 16.46 | | | |
| 13.05 | 1646 | 14,24 | 13.78 | | | | | |
| +.21 | .09 | 5963 | 5902 | | | | | |
| 09 | + | 1491 | 1475 | | | | | |
| 30 | | | 16 | | | | | |
| +.15 | | | +08 | | | | | |
| +07 | | | | | | | | |

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1879. June 16
L = 23h 50m

| | N.6. | | | Flexure | | | S.6. |
|---|---|---|---|---|---|---|---|
| 10 E | F | G | H | E | F1 | G | H |
| 10 0 | | | | 10 0 | | | |
| 18.7 | 20.5 | 8.8 | 15.7 | 12.2 | 20.3 | 14.9 | 14.2 |
| 18.5 | 20.3 | 8.8 | 15.4 | 10.2 | 20.1 | 15.1 | 14.2 |
| 18.3 | 20.2 | 8.9 | 15.7 | 10.1 | 20.0 | 15.2 | 14.2 |
| 18.3 | 20.2 | 8.8 | 15.8 | 10.1 | 20.2 | 14.0 | 14.2 |
| 18.1 | 20.1 | 9.1 | 15.7 | 10.1 | 20.2 | 15.1 | 14.2 |
| 19 | 13 | 44 | 33 | 7 | 8 | 43 | 14.20 |
| 18.38 | 20.26 | 8.88 | 15.66 | 10.14 | 20.16 | 14.86 | |
| 8.88 | 15.66 | | | 14.86 | 14.20 | | |
| 2726 | 3592 | | | 2500 | 3436 | | |
| 1363 | 17.96 | | 113 | 12.50 | 17.18 | | |
| ~~1250~~ | ~~4.18~~ | | | | | | |
| ~~2500~~ | ~~8436~~ | | | | | | |
| ~~+1.13~~ | ~~+078~~ | | +1.13 | 0.78 | | | |
| ~~1137~~ | 16.40 | | +58 | +39 | | | |
| ~~16.40~~ | | | | 58 | | | |
| ~~777~~ | | | | 97 | | | |
| ~~15.86~~ | | | | +48 | | | |

| | |
|---|---|
| 46.614 | 46.798 |
| 617 | 803 |
| 619 | 803 |
| 613 | 802 |
| 610 | 800 |
| 23 | 6 |
| 46.615 | 46.801 |
| 801 | |
| 1416 | |
| 46,708 | Set C = 46708 |

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1879phae.proj.1524.



June 14 1879

0h 42m

| | |
|---|---|
| 46,590 | 46,820 |
| 590 | 816 |
| 589 | 825 |
| 591 | 826 |
| 591 | 820 |
| 590 | 107 |
| 46. | 46,821 |
| | 46,590 |
| | 141 |
| | 46,705 |

Sol'n 46,705

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

1879phae.proj.1524.



1879, June 18

I = 23 50

| | N.C. | | | Flexure | | S.C. | |
|---|---|---|---|---|---|---|---|
| E | F | G | H | E | F | G | H |
| 10 0 | | | | | | | |
| 17.9 | 21.8 | 8.7 | 14.2 | 9.9 | 21.2 | 14.2 | 12.4 |
| 17.8 | 21.7 | 8.0 | 14.6 | 9.9 | 21.2 | 14.5 | 13.0 |
| 17.8 | 21.6 | 8.5 | 14.6 | 10.2 | 21.2 | 14.6 | 12.7 |
| 17.7 | 21.4 | 8.5 | 14.3 | 10.0 | 21.1 | 14.7 | 12.7 |
| 17.9 | 21.7 | 8.7 | 14.2 | 10.0 | 21.1 | 14.6 | 12.7 |
| 41 | 32 | 24 | 19 | 0 | 8 | 26 | 35 |
| 17.82 | 21.64 | 8.48 | 14.38 | 10.00 | 21.16 | 14.52 | 12.70 |
| 8.48 | 14.38 | | | 1452 | 12.70 | | |
| 2630 | 3602 | | | 2452 | 3386 | | |
| 13.15 | 1801 | | | 12.26 | 16.93 | | |
| 12.26 | 16.93 | | | | | | |
| 0.89 | 1.08 | | | | | | |
| 197 | | | | | | | |
| ~~46.~~ +98 | | | | | | | |
| ~~44~~ 19 | | | | | | | |
| 46.587 | 46.819 | | | | | | |
| 590 | 811 | | | | | | |
| 592 | 810 | | | | | | |
| 590 | 810 | | | | | | |
| 605 | 810 | | | | | | |
| 2464 | 10 | | | | | | |
| 46.593 | 48.812 | | | | | | |
| 812 | | | | | | | |
| 1305 | | | | | | | |
| 46.~~70~~02 | | | | | | | |

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1879phae.proj.1524.



June 18

T: 3 0

| | N.C. | | Flexure | | L.C. | | |
|---|---|---|---|---|---|---|---|
| E | F | G | H | E | F | G | |
| 10 0 | | | | | | | |
| ~~17.6~~ | ~~19.9~~ | 7.0 | 14.6 | 9.2 | 19.8 | 13.8 | 13.1 |
| 16.9 | 19.8 | 7.0 | 14.8 | 9.2 | 19.4 | 13.9 | 13.2 |
| 16.8 | 19.8 | 7.2 | 14.7 | 9.2 | 19.9 | 14.1 | 13.0 |
| 16.8 | 19.8 | 7.5 | 14.7 | 9.2 | 20.0 | 14.1 | 13.0 |
| 16.7 | 19.7 | 7.4 | 14.7 | 9.1 | 20.1 | 14.0 | 13.0 |
| 48 | 40 | 11 | | 9 | 42 | 49 | 3 |
| 16.96 | 19.80 | 7.22 | 14.70 | 9.18 | 19.84 | 13.98 | 13.06 |
| 7.22 | 14.70 | | | 13.98 | 13.06 | | |
| 24.18 | 34.50 | | | 23.16 | 32.90 | | |
| 12.09 | 17.25 | | | 11.58 | 16.45 | | |
| 11.58 | 16.45 | | | | | | |
| 0.51 | 0.80 | | | | | | |
| 0.80 | | | | | | | |
| 1.31 | | | | | | | |
| +.65 | | | | | | | |
| 1.82 | | | | | | | |

| | |
|---|---|
| 46.598 | 46.812 |
| 600 | 804 |
| 597 | 800 |
| 599 | 803 |
| 602 | 798 |
| 496 | 17 |
| 46.599 | 46.803 |
| 803 | C Set at 46.702 |
| 1402 | |
| 46.701 | |

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

1879phae.proj.1524.



1879 June 19

I = 0 15

| | N.6 | | | Flexure | | | S.6. |
|---|---|---|---|---|---|---|---|
| E | F | G | H | E | F | G | H |
| 10 0 | | | | | | | |
| 18.6 | 20.8 | 8.8 | 15.8 | 9.2 | 20.2 | 13.9 | 13.8 |
| 18.8 | 21.4 | 8.3 | 15.7 | 9.4 | 20.3 | 14.0 | 13.8 |
| 18.4 | 21.8 | 8.7 | 15.9 | 9.3 | 20.1 | 14.1 | 13.2 |
| 18.8 | 21.8 | 8.8 | 15.9 | 9.4 | 20.7 | 14.1 | 13.5 |
| 18.7 | 21.8 | 8.3 | 15.6 | 9.2 | 20.2 | 14.1 | 13.5 |
| 33 | 26 | 29 | 39 | 15 | 15 | 2 | 28 |
| 18.66 | 21.54 | 8.54 | 15.78 | 9.30 | 20.30 | 14.04 | 13.56 |
| 8.54 | 1578 | | | 14.04 | 13.56 | | |
| 2720 | 3732 | | | 2334 | 3386 | | |
| 13.60 | 18.66 | | | 1167 | 16.93 | | |
| 1167 | 16.93 | | | | | | |
| 1.93 | 1.73 | | | | | | |
| 1.73 | | | | | | | |
| 366 | | | | | | | |
| +183 | | | | | | | |
| +.91 | | | | | | | |

| | |
|---|---|
| 46.562 | 46.810 |
| 570 | 818 |
| 578 | 814 |
| 579 | 812 |
| 578 | 812 |
| 367 | 16 |
| 46.573 | 46.813 |
| 813 | |
| 1386 | C Set at 46.702 |
| 46.693 | |

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

1879phae.proj.1524.



1879. June 21
$T = 0^h\ 40^m$

| N.C. E | N.C. F | N.C. G | N.C. H | Fleduse E | Fleduse F | L.C. G | L.C. H |
|---|---|---|---|---|---|---|---|
| 10 0 | | | | | | | |
| 17,1 | 19.2 | 9.5 | 14.4 | 8.8 | 19.8 | 15,4 | 12,5 |
| 17.1 | 20.1 | 9.2 | 14,6 | 8.7 | 19.2 | 15,0 | 12.7 |
| 17.3 | 20.2 | 8.9 | 14.6 | 8.9 | 19.3 | 15.6 | 12.8 |
| 17.3 | 19.9 | 9.1 | 14.1 | 8.8 | 19.6 | 15,2 | 12.9 |
| 17.2 | 19.9 | 9.0 | 14.3 | 9,1 | 19.5 | 15,1 | 12.8 |
| 10 | 43 | 7 | 20 | 43 | 24 | 13 | 37 |
| 17.20 | 19.86 | 9.14 | 14.40 | 8.86 | 19.48 | 15.26 | 12.74 |
| 9.14 | 1440 | | | 1526 | 12.74 | | |
| 2634 | 1426 | | | 2412 | 1222 | | |
| 13.17 | 17.13 | | | 12.06 | 16.11 | | |
| 1206 | 16.11 | | | | | | |
| 1,11 | 1.02 | | | | | | |
| 1.02 | | | | | | | |
| 1.13 | | | | | | | |
| 0.56 | | | | | | | |
| +.28 | | | | | | | |

| | |
|---|---|
| 46.561 | 46.878 |
| .558 | 877 |
| .562 | 878 |
| .558 | 882 |
| .564 | 873 |
| 303 | 38 |
| 46.561 | 46.878 |
| 878 | |
| 1439 | |
| 46.719 | |

C Set at 46702

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

1879phae.proj.1524.



1879. June 22

$\Gamma = 0\ 30$

| N.b. | | | F leaure | | L.b | | |
|---|---|---|---|---|---|---|---|
| E | F | G | H | E | F | G | H |
| 10 0 | | | | | | | |
| 17.0 | 18.8 | 9.4 | 14.2 | 9.0 | 19.0 | 15.8 | 12.4 |
| 16.5 | 19.0 | 9.3 | 14.0 | 8.8 | 18.9 | 15.7 | 12.4 |
| 16.5 | 19.5 | 10.0 | 14.0 | 9.3 | 18.8 | 15.9 | 12.1 |
| 16.7 | 19.0 | 9.5 | 14.2 | 8.8 | 18.8 | 15.9 | 12.0 |
| 16.8 | 19.6 | 9.3 | 13.9 | 8.4 | 18.7 | 16.0 | 12.1 |
| 35 | 19 | 25 | 3 | 43 | 42 | 43 | 10 |
| 16.70 | 19.38 | 9.50 | 14.06 | 8.86 | 18.84 | 15.86 | 12.20 |
| 950 | 14.06 | | | 15.86 | 12.20 | | |
| 2620 | 1344 | | | 2472 | 1104 | | |
| 1310 | 16.72 | | | 12.36 | 15.52 | | |
| 12.36 | 15.52 | | | | | | |
| 0.74 | 1.20 | | | | | | |
| 120 | | | | | | | |
| 1.94 | | | | | | | |
| .97 | | | | | | | |
| +.48 | | | | | | | |

| | |
|---|---|
| 46.550 | 46.869 |
| 551 | 898 |
| 551 | 880 |
| .557 | 901 |
| .541 | 891 |
| 0 | 439 |
| 46.550 | 46.888 |
| 46.888 | |
| 1438 | |
| 46.719 | C set at 46.719 |

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

1879phae.proj.1524.



1879. June 23
I = 0 45

| | Nb. | | | | Flekure | | | | Lb. | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | E | F | G | H | E | F | G | H | E | F | G | H |
| 10 | 0 | | | | | | | | | | | |
| | 16.7 | 18.6 | 10.7 | 13.5 | | 7.2 | 17.2 | 15.7 | | 11.8 | | |
| | 16.4 | 18.2 | 10.3 | 13.7 | | 7.6 | 17.6 | 15.4 | | 11.7 | | |
| | 16.4 | 18.1 | 10.1 | 13.8 | | 7.4 | 17.6 | 15.4 | | 11.3 | | |
| | 16.2 | 18.0 | 10.0 | 13.7 | | 7.4 | 17.5 | 15.3 | | 11.1 | | |
| | 16.2 | 18.0 | 10.1 | 13.7 | | 7.5 | 17.4 | 15.8 | | 11.1 | | |
| | 19 | 9 | 12 | 34 | | 21 | 23 | 26 | | 20 | | |
| | 16.38 | 18.18 | 10.24 | 13.68 | | 7.42 | 17.46 | 15.52 | | 11.40 | | |
| | 1024 | 13.68 | | | | 1552 | 11.40 | | | | | |
| | 2662 | 1186 | | | | 2294 | 886 | | | | | |
| | 13.31 | 15.93 | | | | 11.47 | 14.43 | | | | | |
| | 11.47 | 14.43 | | | | | | | | | | |
| | 1.84 | 1.50 | | | | | | | | | | |
| | 15 0 | | | | | | | | | | | |
| | 3 3 4 | | | | | | | | | | | |
| | 1.17 | | | | | | | | | | | |
| | +.58 | | | | | | | | | | | |

| | |
|---|---|
| 46.481 | 46.928 |
| .470 | 923 |
| .470 | 923 |
| .477 | 920 |
| .474 | 918 |
| 22 | 112 |
| 46.474 | 46922 |
| 922 | |
| 1396 | |
| 46,698 | |

C set at 46.719

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

1879phae.proj.1524.



1879, June 24
T = 1 50

Flexure

| E | F | G | H | E | F | G | H |
|---|---|---|---|---|---|---|---|
| 10 0 | | | | | | | |
| 16.0 | 18.9 | 10.3 | 14.1 | 8.6 | 19.4 | 17.2 | 13.2 |
| 16.1 | 19.0 | 10.2 | 14.2 | 8.4 | 19.8 | 17.2 | 13.2 |
| 16.1 | 19.2 | 10.2 | 14.0 | 8.3 | 19.7 | 17.2 | 13.2 |
| 16.2 | 19.0 | 10.2 | 13.8 | 8.4 | 20.0 | 16.9 | 13.0 |
| 16.2 | 19.0 | 10.1 | 14.0 | 8.5 | 19.8 | 17.1 | 13.0 |
| 6 | 1 | 10 | 1 | 22 | 37 | 6 | 6 |
| 16.12 | 19.02 | 10.20 | 14.02 | 8.44 | 19.74 | 17.12 | 13.12 |
| 10.20 | 14.02 | | | 17.12 | 13.12 | | |
| 2632 | 1304 | | | 2556 | 1286 | | |
| 13.16 | 16.52 | | | 12.78 | 16.43 | | |
| 12.78 | 16 43 | | | | | | |
| 0.38 | 0.09 | | | | | | |
| 0.09 | | | | | | | |
| .47 | | | | | | | |
| .23 | | | | | | | |
| +.11 | | | | | | | |

| | |
|---|---|
| 46.510 | 46.925 |
| 504 | 930 |
| 508 | 928 |
| 511 | 927 |
| 513 | 930 |
| 46 | 140 |
| 46.509 | 46.928 |
| 928 | |
| 1437 | |
| 46.718 | |

C set at 46.719

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

1879phae.proj.1524.



1879 June 25
$\overline{I} = 1\ 35$

N.C. Flexure S.C.

| E | F | G | H | E | F | G | H |
|---|---|---|---|---|---|---|---|
| 10 0 | | | | | | | |
| 17.0 | 17.9 | 10.5 | 14.8 | 9.0 | 19.1 | 17.4 | 14.0 |
| 16.7 | 17.8 | 10.3 | 15.0 | 8.7 | 18.9 | 17.8 | 13.5 |
| 16.3 | 18.0 | 10.8 | 15.0 | 8.8 | 19.0 | 17.7 | 13.7 |
| 16.4 | 18.4 | 10.8 | 14.7 | 8.9 | 19.2 | 17.7 | 13.4 |
| 16.4 | 18.7 | 10.8 | 14.8 | 8.9 | 19.4 | 17.3 | 13.7 |
| 28 | 8 | 32 | 43 | 43 | 6 | 29 | 33 |
| 16.56 | 18.16 | 10.64 | 14.86 | 8.86 | 19.12 | 17.58 | 13.66 |
| 10.64 | 14.86 | | | 17.58 | 13.66 | | |
| 720 | 1302 | | | 2644 | 1278 | | |
| 13.60 | 16.51 | | | 13.22 | 16.39 | | |
| 13.22 | 16.39 | | | | | | |
| .38 | .12 | | | | | | |
| .12 | | | | | | | |
| 50 | | | | | | | |
| .25 | | | | | | | |
| +.12 | | | | | | | |

| | |
|---|---|
| 46.500 | 46.950 |
| 504 | 942 |
| 502 | 940 |
| 508 | 948 |
| 500 | 950 |
| 14 | 230 |
| 46.503 | 46.946 |
| 46.946 | |
| 1449 | C set at 46.719 |
| 46.725 | |

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

1879phae.proj.1524.



1879 June 30
T = 1 30

Fleaine

| N. l. E | N. l. F | N. l. G | N. l. H | S. l. E | S. l. F | S. l. G | S. l. H |
|---|---|---|---|---|---|---|---|
| 10 0 | | | | | | | |
| 18.6 | 21.0 | 9.7 | 16.7 | 10.2 | 20.8 | 15.8 | 15.3 |
| 18.7 | 20.7 | 9.9 | 16.4 | 10.2 | 21.2 | 15.6 | 14.7 |
| 18.7 | 20.7 | 9.7 | 16.5 | 10.2 | 21.2 | 15.3 | 14.8 |
| 18.4 | 21.3 | 9.8 | 16.3 | 10.2 | 21.2 | 15.7 | 15.0 |
| 18.6 | 20.6 | 9.8 | 16.3 | 10.1 | 20.7 | 15.8 | 15.0 |
| 30 | 43 | 39 | 22 | 9 | 1 | 32 | 48 |
| 18.60 | 20.86 | 9.78 | 16.44 | 10.18 | 21.02 | 15.64 | 14.96 |
| 9.78 | 16.44 | | | 15.64 | 14.96 | | |
| 2838 | 3730 | | | 2582 | 3598 | | |
| 14.19 | 18.65 | | | 12.96 | 17.99 | | |
| 12.96 | 17.99 | | | | | | |
| 1.23 | 0.66 | | | | | | |
| 066 | | | | | | | |
| 189 | | | | | | | |
| .95 | | | | | | | |
| +.47 | | | | | | | |

| | |
|---|---|
| 46.493 | 46.900 |
| 501 | 902 |
| 499 | 897 |
| 502 | 897 |
| .511 | 892 |
| 06 | 488 |
| 46.501 | 46.898 |
| 46.898 | |
| 1399 | |
| 46.699 | |

Set C at 46.699

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1879phae.proj.1524.



1879. July 1
I = 1 40

N.6. Fleckure S.6

| E | F | G | H | E | F | G | H |
|---|---|---|---|---|---|---|---|
| 10 0 | | | | | | | |
| 19.2 | 21.2 | 10.0 | 17.7 | 10.2 | 20.8 | 15.2 | 15.8 |
| 19.1 | 21.6 | 10.1 | 17.6 | 10.6 | 20.8 | 15.1 | 15.2 |
| 19.0 | 21.5 | 10.0 | 17.2 | 10.3 | 20.4 | 15.2 | 15.2 |
| 19.0 | 21.7 | 10.1 | 17.1 | 10.6 | 20.7 | 15.2 | 15.1 |
| 19.0 | 21.2 | 10.6 | 17.2 | 10.6 | 20.6 | 15.1 | 15.2 |
| 3 | 22 | 8 | 18 | 23 | 33 | 8 | 15 |
| 19.06 | 21.44 | 10.16 | 17.36 | 10.46 | 20.66 | 15.16 | 15.30 |
| 10.16 | 17.36 | | | 15 16 | 15 30 | | |
| 2922 | 3880 | | | 2562 | 3596 | | |
| 1461 | 1940 | | | 1281 | 1798 | | |
| 1281 | 1798 | | | | | | |
| 180 | 142 | | | | | | |
| 142 | | | | | | | |
| 322 | | | | | | | |
| 161 | | | | | | | |
| +,80 | | | | | | | |

46.488 46867
~~488~~ 864
492 862
491 870
483 878
442 41
46.488 46.868
46.868
1356
46.678

C set at 46.699

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

1879phae.proj.1524.



1879 July 2
T = 1 35

| | N. l | | | Fleasure | | | S. l |
|---|---|---|---|---|---|---|---|
| E | F | G | H | E | F | G | H |
| 10 0 | | | | | | | |
| 16.4 | 21.0 | 12.2 | 16.3 | 10.2 | 19.8 | 17.9 | 15.0 |
| 18.2 | 20.7 | 12.2 | 16.6 | 10.6 | 20.0 | 18.0 | 15.0 |
| 18.6 | 21.0 | 12.7 | 16.6 | 10.8 | 20.1 | 17.8 | 15.0 |
| 18.5 | 21.2 | 12.3 | 16.3 | 10.6 | 20.2 | 17.9 | 15.0 |
| 18.7 | 21.3 | 12.5 | 16.3 | 10.6 | 20.4 | 18.0 | 14.9 |
| 24 | 2 | 19 | 21 | 28 | 5 | 396 | 249 |
| 18.48 | 21.04 | 12.38 | 16.42 | 10.56 | 20.10 | 17.92 | 14.98 |
| 12.38 | 16.42 | | | 17.92 | 14.98 | | |
| 3086 | 3746 | | | 2848 | 3608 | | |
| 15.93 | 18.73 | | | 14.24 | 18.04 | | |
| 1424 | 1804 | | | | | | |
| 1.69 | 0.69 | | | | | | |
| 0.69 | | | | | | | |
| 2.38 | | | | | | | |
| 1.19 | | | | | | | |
| +.59 | | | | | | | |

| | |
|---|---|
| 46.463 | 46.920 |
| 460 | 914 |
| 463 | 918 |
| 47.0 | 914 |
| 461 | 917 |
| 317 | 83 |
| 46463 | 46917 |
| 917 | |
| 1380 | |
| 46.690 | |

C setat 46.690

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

1879phae.proj.1524.



1879. July 3
I=1 40

| | |
|---|---|
| 46.433 | 46963 |
| 440 | 962 |
| 44.0 | 951 |
| 448 | 950 |
| 441 | 964 |
| 2 | 290 |
| 46.440 | 46958 |
| 46.958 | |
| 1398 | |
| 46.699 | Set cat 46.690 |

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

1879phae.proj.1524.



1879 July 5

$T = 2^h\ 10^m$

N. 6 Flexure S 6

| E | F | G | H | E | F | G | H |
|---|---|---|---|---|---|---|---|
| 10. 0 | | | | 10 0 | | | |
| 32.7 | 28.4 | 9.1 | 9.0 | 23.9 | 28.6 | 15.2 | 7.0 |
| 32.6 | 28.8 | 9.3 | 8.9 | 24.0 | 28.7 | 14.9 | 6.8 |
| 32.5 | 29.1 | 9.2 | 9.0 | 24.0 | 29.1 | 14.9 | 7.0 |
| 32.3 | 29.0 | 9.1 | 9.1 | 23.8 | 28.8 | 15.4 | 6.9 |
| 33.4 | 28.2 | 9.1 | 8.9 | 24.1 | 28.6 | 15.3 | 7.0 |
| 35 | 35 | 8 | 44 | 198 | 38 | 7 | 47 |
| 32.70 | 28.70 | 9.16 | 8.98 | 23.96 | 28.76 | 15.14 | 6.94 |
| 9.16 | 8.98 | | | 15.14 | 6.94 | | |
| 4186 | 3768 | | | 3910 | 3570 | | |
| 20.93 | 18.84 | | | 19.55 | 17.85 | | |
| 19.55 | 17.85 | | | | | | |
| 1.38 | 0.99 | | | | | | |
| .99 | | | | | | | |
| 2.37 | | | | | | | |
| 1.18 | | | | | | | |
| +.59 | | | | | | | |

| | |
|---|---|
| 46.485 | 46.860 |
| 479 | 861 |
| 481 | 860 |
| 490 | 860 |
| .480 | 853 |
| 415 | 294 |
| 46.483 | 46.859 |
| 859 | |
| 1342 | |
| 46.671 | |

Coet at 46.690

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

1879phae.proj.1524.



# I

## Runs

| E | F | G | H |
|---|---|---|---|
| 5 0 | 0 0 | ~~+3~~ | |
| 5.2 | 4.3 | 1.3 | 2.0 | 42.2 | 41.4 | 42.4 | 40.8 | 40.8 | 41.3 |
| 5.6 | 4.3 | 2.2 | 2.3 | 42.7 | 41.3 | 42.3 | 40.8 | 40.3 | 41.2 |
| 5.3 | 4.3 | 3.4 | 2.3 | 42.3 | 41.3 | 42.7 | 40.3 | 40.8 | 41.1 |
| 5.0 | 4.2 | 2.1 | 2.3 | 42.5 | 41.5 | 43.2 | 40.5 | 40.3 | 40.8 |
| 5.1 | 4.1 | 1.6 | 2.2 | 42.8 | 41.8 | 42.7 | 40.9 | 40.4 | 40.8 |
| 12 | 12 | 10 6 | 11 | 25 | 23 | 23 | 33 | 26 | 52 |
| 5.24 | 4.24 | 2.12 | 2.22 | 42.50 | 41.46 | 42.46 | 40.66 | 40.52 | 41.04 |

# II

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 4.9 | 4.0 | 2.1 | 2.2 | 42.6 | 41.0 | 42.4 | 42.0 | 40.8 |
| 4.9 | 4.0 | 2.2 | 1.7 | 42.1 | 41.1 | 42.3 | 42.0 | 41.0 |
| 4.8 | 4.2 | 2.3 | 1.8 | 41.1 | 41.5 | 42.7 | 41.8 | 41.2 |
| 4.8 | 4.1 | 2.2 | 2.6 | 42.1 | 41.2 | 43.2 | 41.8 | 41.1 |
| 5.0 | 3.9 | 2.3 | 1.8 | 42.7 | 41.4 | 42.7 | 42.0 | 40.7 |
| 44 | 2 | 11 | 101 | 6 | 12 | 3 | 46 | 48 |
| 4.88 | 4.04 | 2.22 | 2.02 | 42.12 | 41.24 | | 41.92 | 40.96 |

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

1879phae.proj.1524.



1879. July 8
T = 1 35

| | |
|---|---|
| 46.507 | 46.859 |
| 508 | 853 |
| 505 | 852 |
| 517 | 857 |
| 512 | 851 |
| 49 | 2 |
| 46.598 | 46.854 |
| .854 | |
| 1452 | C set at 4669 |
| 46.726 | |

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

1879phae.proj.1524.



1879. July 10
I = 1 35

| | N. b | | Flexure | | S. b | | |
|---|---|---|---|---|---|---|---|
| E | F | G | H | E | F | G | H |
| 10 0 | | | | | | | |
| 2.9 | 13.9 | 5.6 | 9.9 | 56.8 | 4.7 | 12.0 | 79.4 |
| 3.0 | 14.3 | 5.2 | 10.2 | 56.4 | 5.0 | 12.9 | 79.7 |
| 2.9 | 14.9 | 5.3 | 10.0 | 56.2 | 5.0 | 12.8 | 79.7 |
| 2.9 | 15.3 | 5.4 | 9.9 | 56.3 | 5.3 | 12.8 | 79.6 |
| 2.3 | 14.9 | 5.6 | 9.9 | 56.0 | 5.5 | 12.8 | 79.3 |
| 40 | 233 | 21 | 499 | 17 | 5 | 33 | 127 |
| 2.80 | 14.66 | 5.42 | 9.98 | 56.34 | 15.10 | 12.66 | 79.54 |
| 5.42 | 9.98 | 2.80 | 56.34 | 1266 | 1954 | | |
| 8.22 | 24.64 | 14.66 | 15.10 | 12900 | 2464 | | |
| 4.11 | 12.32 | 5.42 | 12.66 | 450 | 1232 | | |
| 4.50 | 12.32 | 9.88 | 19.54 | | | | |
| −0.39 | +0.00 | 3286 | 263.64 | | | | |
| −.20 | | 8.21 | 5.91 | | | | |
| | | | 2.30 | | | | |
| | | | 1.15 | | | | |

| | |
|---|---|
| 46.460 | 46.902 |
| 462 | 898 |
| 459 | 898 |
| 461 | 900 |
| 468 | 890 |
| 10 | 488 |
| 46.462 | 46.898 |
| 46.898 | |
| 1360 | C set at 46.690 |
| 46.680 | |

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

1879phae.proj.1524.



1879. July 10

Rune

| E | | F | | G | | H | |
|---|---|---|---|---|---|---|---|
| 5 | 0 | | | | | | |
| 11.3 | 10.8 | 22.2 | 23.8 | 13.3 | 12.7 | 19.8 | 19.7 |
| 11.2 | 10.7 | 22.3 | 24.1 | 13.7 | 12.3 | 20.0 | 19.0 |
| 11.2 | 10.8 | 22.8 | 23.9 | 13.3 | 12.6 | 20.1 | 19.2 |
| 11.1 | 10.5 | 22.6 | 24.1 | 13.3 | 12.5 | 20.2 | 19.2 |
| 11.2 | 10.4 | 22.8 | 23.7 | 13.2 | 12.2 | 20.0 | 18.8 |
| 10 | 32 | 27 | 46 | 18 | 23 | 1 | 459 |
| 11.20 | 10.14 | 22.54 | 23.92 | 13.36 | 12.46 | 20.02 | 19.18 |

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1879phae.proj.1524.



1879 Aug 11.9
I = 9h 15m

| I | II |
|---|---|
| 46.767 | 46.777 |
| 765 | 772 |
| 765 | 779 |
| 764 | 785 |
| 766 | 770 |
| 27 | 33 |
| 46.765 | 46.777 |
| | |
| 47.164 | 47 240 |
| 160 | 231 |
| 160 | 236 |
| 168 | 239 |
| 164 | 240 |
| 16 | 186 |
| 47.163 | 47.237 |
| 46.765 | 46.777 |
| 13928 | 14014 |
| 46.964 | 47.007 |

Set C. at 46.964

Collimator runs out
[illegible] 46.964

Use 47.007

1879phae.proj.1524.



1879 Aug. 12
T = 4h 35m

46.722
710
713
712
713
70
46.714

47.236
246
234
231
241
188
47.238
46.714
13952
46.976

C set at. 46.964

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

1879phae.proj.1524.



1879. Aug. 18.9
I = 9h 35m

46.786
770
771
778
792
397
46.779

L

47.153
140
130
141
138
202
47.140
46.779
13919
46.959

C set at 46.959

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

1879phae.proj.1524.



1879 Aug. 18.9

Runs

| E | | F | | G | | H | |
|---|---|---|---|---|---|---|---|
| ′ 5 | ″ 0 | 14 | | | | | |
| 15.8 | 15.1 | 14.1 | 14.9 | 24.8 | 23.8 | 22.2 | 20.2 |
| 16.0 | 15.0 | 14.1 | 14.8 | 24.7 | 23.5 | 22.1 | 20.1 |
| 16.1 | 14.7 | 14.3 | 15.0 | 24.5 | 23.9 | 22.0 | 20.6 |
| 16.1 | 15.0 | 14.1 | 14.9 | 24.8 | 24.1 | 22.0 | 20.4 |
| 16.0 | 15.0 | 14.1 | 14.9 | 24.8 | 24.2 | 22.0 | 21.1 |
| 0 | 48 | 7 | 45 | 39 | 48 | 3 | 2.4 |
| 16.00 | 14.96 | 14.14 | 14.90 | 24.78 | 23.96 | 22.06 | 20.48 |

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

1879phae.proj.1524.



1879 Aug. 20.5 Aug. 20.9
I = 3 15 I = 9 45

| | |
|---|---|
| 46.712 | 46.740 |
| 712 | 740 |
| 720 | 74.0 |
| 710 | 742 |
| 704 | 745 |
| 58 | 7 |
| 46712 | 46.741 |

| | |
|---|---|
| 47.160 | 47.170 |
| 169 | 173 |
| 16.1 | 15,5 |
| 171 | 16.5 |
| 16.0 | 16.0 |
| 21 | 299 |
| 47.164 | 47.160 |
| 46.712 | 46.741 |
| 13876 | 13901 |
| 46.938 | 46.950 |

C. adopt 46.950

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

1879phae.proj.1524.



1879. Aug. 24.9
$T = 10^h\ 0^m = 6h.236$

46.695
710
704
709
.712
30
46.706

47.189
199
210
207
200
1005
47.201
46.706
13907
46.953 Set c at 46.950

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

1879phae.proj.1524.



Aug. 24.9

Runs.

| E | | F | | G | | H | |
|---|---|---|---|---|---|---|---|
| 5 | 0 | | | | | | |
| 28.7 | 28.2 | 29.2 | 29.9 | 40.7 | 39.7 | 36.2 | 35.4 |
| 28.9 | 28.0 | 29.0 | 29.9 | 41.0 | 39.6 | 36.3 | 35.4 |
| 28.5 | 28.0 | 29.1 | 29.9 | 41.1 | 39.7 | 37.0 | 35.1 |
| 28.8 | 28.1 | 29.1 | 30.0 | 41.3 | 39.7 | 36.9 | 35.2 |
| 28.9 | 28.2 | 29.0 | 30.0 | 41.1 | 40.0 | 37.0 | 35.8 |
| 38 | 5 | 4 | 47 | 2 | 37 | 34 | 19 |
| 28.76 | 28.10 | 29.08 | 29.94 | 41.04 | 39.74 | 36.68 | 35.38 |

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

1879phae.proj.1524.



1879. Sept. 5

$L \sim 8^h\ 0^m$

N.C Flexure S.C

| A. E | I. | G | H | E | I. | G | H |
|---|---|---|---|---|---|---|---|
| 10 0 | | | | | | | |
| 57.7 | 3.0 | 8.2 | 8.8 | 49.2 | 2.2 | 14.0 | 7.2 |
| 58.0 | 3.3 | 8.7 | 8.9 | 49.0 | 2.0 | 14.3 | 7.4 |
| 58.0 | 3.3 | 8.6 | 8.6 | 49.0 | 2.4 | 14.2 | 7.2 |
| 58.2 | 3.3 | 8.7 | 8.9 | 49.3 | 2.3 | 14.6 | 7.2 |
| 58.4 | 3.3 | 8.6 | 9.2 | 49.3 | 2.3 | 14.3 | 7.2 |
| 3 | 12 | 28 | 44 | 8 | 12 | 14 | 12 |
| 58.06 | 3.24 | 8.56 | 8.88 | 49.16 | 2.24 | 14.28 | 7.24 |
| 8.56 | 8.88 | | | 1428 | 724 | | |
| 12662 | 1212 | | | 12344 | 948 | | |
| 3.31 | 6.06 | | | 1.72 | 4.74 | | |
| 1.72 | 4.74 | | | | | | |
| 4.74 | 1.32 | | | | | | |
| 6.46 | 1.59 | | | | | | |
| 3.73 | 251 | | | | | | |
| +1.62 | +.73 | | | | | | |

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

1879phae.proj.1524.



Sept. 5

I = 8 0

Collimation

46.756
75.1
744
744
747
42
46.748

47.180
185
184
184
192
25
47.185
46.748
13933
46.966 Set at 46.966

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1879phae.proj.1524.

166

1879. Sept. 8

$T = 10^h\ 55^m$

L

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1879phae.proj.1524.



Sept. 8
I = 10 55

46.752
763
759
754
752
30
46.756

47.130
127
130
136
129
2
47.130
46.756
13886
46.943 Set at 46.966

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

1879phae.proj.1524.



1879. Sept. 9

D = 7 15

I = 7 . 50

## Runs

| E | | F | | G | | H | |
|---|---|---|---|---|---|---|---|
| 5 | 0 | | | | | | |
| 25.2 | 25.3 | 34.2 | 34.2 | 32.8 | 31.7 | 35.2 | 34.1 |
| 26.0 | 25.0 | 34.3 | 34.2 | 32.8 | 31.8 | 35.3 | 33.9 |
| 25.5 | 25.0 | 34.1 | 34.3 | 32.6 | 31.4 | 35.6 | 34.0 |
| 26.0 | 25.2 | 34.3 | 34.8 | 32.5 | 31.5 | 35.3 | 34.2 |
| 26.5 | 25.2 | 34.2 | 34.4 | 32.4 | 31.4 | 35.5 | 34.2 |
| 42 | 7 | 11 | 19 | 31 | 28 | 19 | 4 |
| 25.84 | 25.14 | 34.22 | 34.38 | 32.62 | 31.56 | 35.38 | 34.08 |

## N.C.

| E | | F | | G | | H | |
|---|---|---|---|---|---|---|---|
| 10 | 0 | | | | | | |
| 52.9 | 55.4 | 59.2 | 3.8 | 57.8 | 1.9 | 0.3 | 4.0 |
| 51.2 | 56.0 | 59.1 | 3.7 | 58.1 | 2.0 | 0.3 | 4.4 |
| 51.0 | 55.8 | 59.5 | 3.9 | 58.1 | 2.0 | 0.5 | 4.6 |
| 54.2 | 55.8 | 59.3 | 3.9 | 57.8 | 1.9 | 0.9 | 4.7 |
| 52.7 | 55.6 | 59.8 | 3.9 | 57.8 | 1.9 | 0.7 | 4.5 |
| 36 | | 42 | | 97 | | 22 | |
| 55.72 | | 3.84 | | 1.94 | | 4.44 | |
| 1.94 | | 4.44 | | 55.72 | | 47.70 | |
| 11766 | | 8 28 | | 3.84 | | 4.30 | |
| 58.83 | | 4.14 | | 1.94 | | 8.20 | |
| 57.95 | | 4.15 | | 4.44 | | 4.00 | |
| +.088 | | -0.01 | | 24594 | | 24420 | |
| -.001 | | | | 57.95 | | 61.05 | |
| +.887 | | | | .148 | | 43 | |
| +.002 | | | | | | +22 | |

## Flexure

| E | F | G | H |
|---|---|---|---|
| 47.4 | 3.9 | 8.2 | 4.2 |
| 47.7 | 4.1 | 8.2 | 4.1 |
| 47.8 | 4.5 | 8.2 | 4.0 |
| 47.8 | 4.5 | 8.3 | 3.8 |
| 47.8 | 4.5 | 8.1 | 3.9 |
| 35 | 15 | 10 | 0 |
| 47.70 | 4.30 | 8.20 | 4.00 |
| 8.20 | 4.00 | | |
| 10590 | 8.30 | | |
| 57.95 | 4.15 | | |

## S.C.

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1879phae.proj.1524.



1879. Sept 9 T = 7 50

| I | II |
|---|---|
| 46.750 | 46.739 |
| 750 | 72.9 |
| 753 | 73.3 |
| 754 | 734 |
| 750 | 732 |
| 7 | 17 |
| 46.751 | 46.733 |

| | | |
|---|---|---|
| 47.104 | | 47.122 |
| 103 | | 117 |
| 100 | | 112 |
| 100 | | 118 |
| 102 | | 12.1 |
| 9 | | 90 |
| 47.102 | | 47.118 |
| 46751 | | 46.733 |
| 13853 | | 13851 |
| 46.926 | C set at 46.926 | 46.926 |

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1879. Sept. 10
T = $6^h$ $0^m$

46.702
710
711
706
700
29
46.706

47.056
.066
.056
052
059
L 289
47.058
46 706
13764
46.882 Set C at 46.926

Seeing very bad indeed.

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1879phae.proj.1524.



1879 Sept. 12
I = 13 35

| N.6 E | N.6 F | N.6 G | Flexure H | S.6 E | S.6 F | S.6 G | S.6 H |
|---|---|---|---|---|---|---|---|
| 10 0 | | | | | | | |
| 52.0 | 0.0 | 59.1 | 57.8 | 44.7 | 0.8 | 57.7 | −0.8 |
| 51.9 | 0.1 | 59.1 | 58.1 | 44.8 | 0.9 | 57.5 | 0.7 |
| 51.9 | 0.0 | 59.1 | 58.1 | 44.7 | 0.9 | 57.5 | 0.4 |
| 52.0 | 0.0 | 58.9 | 58.1 | 44.6 | 0.9 | 57.4 | 0.4 |
| 52.0 | +0.1 | 59.1 | 58.2 | 44.6 | 0.9 | 57.3 | 0.5 |
| 98 | | 3 | 3 | 34 | 44 | 24 | 28 |
| 51.96 | 0.0 | 59.06 | 58.06 | 44.68 | 0.88 | 57.48 | −0.56 |
| 59.06 | 58.06 | | | 57.48 | 0.56 | | |
| 11102 | 11806 | | 51.96 44.68 | 11216 | 144 | | |
| 55.51 | ~~6.08~~ | 59.03 | 0.10 0.08 | 5608 | 0.72 | | |
| 5608 | 60.72 | 60.72 | 59.06 57.48 | | | | |
| ~~−0.57~~ | ~~2.64~~ | −1.69 | ~~0.46 0.44~~ | | | | |
| ~~5.37~~ | | −.53 | 22908 | | | | |
| 1274 | | 22.6 | 57.27 | | | | |
| ~~637~~ | | −.67 | ~~23250~~ | | | | |
| ~~+3.18~~ | | | ~~58.36~~ | | | | |
| | | | 23248 | | | | |
| | | | 58.12 | | | | |

| | |
|---|---|
| 46.758 | 47.083 |
| 751 | 090 |
| 757 | 090 |
| 759 | 095 |
| 764 | 092 |
| 289 | 450 |
| 46.758 | 47.090 |
| 47090 | |
| 13848 | |
| 46.924 | C = 46.926 |

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1879. Sept. 14

$T = 5^h\ 50^m$

| | N.C. | | Flexure | | S.C. | | |
|---|---|---|---|---|---|---|---|
| E | F1 | G | H | E | F1 | G | H |
| 10 0 | | | | | | | |
| 56.0 | 2.9 | 59.9 | 3.9 | 47.1 | 2.9 | 5.0 | 7.1 |
| 56.0 | 3.0 | 59.9 | 3.7 | 47.6 | 2.8 | 5.1 | 6.8 |
| 55.9 | 3.1 | 60.0 | 3.2 | 47.2 | 2.8 | 4.9 | 6.7 |
| 55.8 | 2.8 | 60.1 | 3.3 | 47.5 | 2.9 | 5.0 | 6.3 |
| 56.2 | 3.6 | 60.1 | 3.5 | 47.7 | 2.5 | 4.9 | 6.7 |
| 49 | 4 | 0 | 26 | 21 | 39 | 24 9 | 36 |
| 55.98 | 3.08 | 0.00 | 3.52 | 47.42 | 2.78 | 4.98 | 6.72 |
| 6000 | 3.52 | 55.58 | 47.42 | 46.98 | 6.72 | | |
| 11598 | 60 | 3.08 | 2.78 | 11249 | 950 | | |
| 57.99 | 3.30 | 0.00 | 4.58 | 56.20 | 4.75 | | |
| 56.20 | 4.75 | 3.52 | 6.32 | | | | |
| +1.79 | -1.45 | 24258 | 24190 | | | | |
| -1.45 | | 6.064 | 6.048 | | | | |
| +.034 | | | 16 | | | | |
| +.588 | | | +.08 | | | | |

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1879. Sept. 14
I = 5 50

46.749
750
751
760
762
272
46.754

47.039
048
038
040
030
195
47.039
46.754
13793
46.896 Set c at 46926

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1879. Sept. 16

T = 6 0

| | N.C. | | Flexure | | S.C. | | |
|---|---|---|---|---|---|---|---|
| E | F | G | H | E | F | G | H |
| 10 1 | | | | | | | |
| 56.6 | 4.7 | 0.6 | 3.6 | 47.7 | 3.2 | 5.9 | 1.3 |
| 56.4 | 4.2 | 0.8 | 3.5 | 47.6 | 3.2 | 5.9 | 1.3 |
| 56.3 | 4.1 | 0.9 | 3.2 | 47.3 | 2.9 | 6.0 | 1.2 |
| 56.6 | 4.0 | 0.8 | 3.2 | 47.7 | 2.8 | 5.8 | 1.5 |
| 56.6 | 4.0 | 0.9 | 3.3 | 47.6 | 2.6 | 5.6 | 16 |
| 25 | 10 | 40 | 18 | 29 | 47 | 42 | 19 |
| 56.50 | 4.20 | 0.80 | 3.36 | 47.58 | 2.94 | 584 | 138 |
| 0.80 | 336 | 56.50 | 47.58 | 584 | 138 | | |
| 11730 | 756 | 4.20 | 2.94 | 1342 | 432 | | |
| 58.65 | 3.78 | 0.80 | 5.84 | 5671 | 2.11 | | |
| 5671 | 2.11 | 3.36 | 1.38 | | | | |
| 194 | 1.67 | 24486 | 23774 | | | | |
| 167 | | 6121 | 5943 | | | | |
| 361 | | | | | | | |
| +.90 | | 178 | | | | | |
| | | +.89 | | | | | |

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1879phae.proj.1524.



9 sept 16
I = 6 0

46.771
763
769
771
764
338
46.768

47.047
048
049
052
060
256
47.051
46.768
13819
46.910

C = 46.926 set at

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1879phae.proj.1524.



1879 Sept 17

T = 11 35

46.772
768
763
763
767
33
46.767

47.028
026
020
.027
.020
21
47.024
46.767
13 791
46.895

C set at 46.895

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1879phae.proj.1524.



1879. Sept. 22

I = 11 50

| I | II |
|---|---|
| 46.823 | 46.814 |
| 813 | 823 |
| 820 | 830 |
| 830 | 830 |
| 825 | 827 |
| 111 | 124 |
| 46.822 | 46.825 |
| | |
| 46.888 | 46.911 |
| 895 | 900 |
| 889 | 909 |
| 890 | 914 |
| 892 | 902 |
| 4 | 36 |
| 46.891 | 46.907 |
| 822 | 825 |
| 1713 | 1732 |
| 46.856 | 46.866 |
| 866 | |
| 2 | |

46.861 det cat 46.861

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

1879phae.proj.1524.



1879 Sept. 24

T = 12 25

46.828
814
812
817
810
31
46.816

46.957
940
951
955
950
3
46.951
46.816
1767
46.883

C set at 46.883

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1879phae.proj.1524.



1879. Sept. 24
I = 7 10

Runs

| E | | F | | G | | H | |
|---|---|---|---|---|---|---|---|
| 5 | 0 | | | | | | |
| 20.6 | 20.1 | 27.7 | 27.8 | 20.9 | 19.8 | 24.7 | 23.0 |
| 20.8 | 20.0 | 27.3 | 27.9 | 20.9 | 19.8 | 24.2 | 22.7 |
| 20.9 | 20.2 | 27.7 | 28.1 | 21.0 | 19.7 | 24.2 | 22.8 |
| 21.0 | 20.2 | 27.2 | 27.9 | 20.7 | 19.6 | 24.4 | 22.8 |
| 21.0 | 20.0 | 27.4 | 27.8 | 20.6 | 19.6 | 24.4 | 22.9 |
| 43 | 5 | 23 | 45 | 41 | 35 | 19 | 42 |
| 20.86 | 20.10 | 27.46 | 27.90 | 20.82 | 19.70 | 24.38 | 22.84 |

| | |
|---|---|
| 46.820 | 46.900 |
| 834 | 902 |
| 820 | 918 |
| 822 | 900 |
| 820 | 890 |
| 116 | 10 |
| 48.823 | 46902 |
| | 46823 |
| | 1725 |
| | 46.882 |

Seeing very bad.

Set C at 46.883

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1879phae.proj.1524.



1879. Sept. 26

T = 17 30

| | N. L. | | | Flexure | L. L. | | |
|---|---|---|---|---|---|---|---|
| E | F. | G | H | E | F | G | H |
| 10 0 | | | | | | | |
| 58.8 | 6.8 | 0.3 | 3.2 | 51.3 | 7.0 | 6.9 | 2.3 |
| 59.2 | 6.6 | 0.6 | 3.0 | 51.6 | 7.4 | 7.1 | 2.3 |
| 59.0 | 6.8 | 0.3 | 3.0 | 51.2 | 7.2 | 7.1 | 2.2 |
| 59.0 | 6.8 | 0.3 | 3.0 | 51.0 | 7.2 | 7.0 | 2.2 |
| 58.9 | 6.8 | 0.4 | 3.0 | 50.9 | 7.3 | 7.0 | 2.1 |
| 49 | 38 | 19 | 2 | 10 | 11 | 1 | 11 |
| 58.98 | 6.76 | 0.38 | 3.04 | 51.20 | 72.2 | 7.02 | 222 |
| 038 | 304 | ? | | 702 | 222 | | |
| 11936 | 980 | | | 11822 | 944 | | |
| 5-968 | 4.90 | | | 5-911 | 4.72 | | |
| 5-911 | 472 | | | | | | |
| +057 | +0.18 | | | | | | |
| +18 | | | | | | | |
| 75 | | | | | | | |
| +1.79 | | | | | | | |
| 38 | | | | | | | |

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1879phae.proj.1524.



I = 17 35

46 823
832
833
836
839
13
46.833

46850
850
850
850
850
46 850
46.833
1683
46.841 C set at 46.841

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1879phae.proj.1524.



1879. Sept. 27
D = 7 5

| | N.C. | | | Flexure | | | S.C. | |
|---|---|---|---|---|---|---|---|---|
| E | F | G | H | E | F | G | H | |
| 0 1 | | | | | | | | |
| 0.9 | 7.8 | 59.7 | 3.6 | 52.0 | 7.7 | 5.2 | 1.8 | |
| 0.6 | 7.1 | 59.8 | 3.7 | 52.0 | 7.0 | 5.3 | 2.1 | |
| 0.9 | 7.2 | 59.3 | 4.1 | 52.0 | 7.0 | 5.2 | 1.7 | |
| 0.9 | 7.0 | 59.6 | 3.8 | 51.9 | 7.0 | 54 | 1.7 | |
| 0.9 | 7.1 | 59.5 | 3.9 | 52.0 | 7.3 | 54 | 2.0 | |
| 42 | 12 | 29 | 41 | 99 | 10 | 15 | 43 | |
| 0.84 | 7.24 | 59.58 | 3.82 | 57.98 | 7.20 | 5.30 | 1.86 | |
| 59.58 | 3.82 | | | 5.30 | 1.86 | | | |
| 0.42 | 11.06 | | | 11.728 | 9.06 | | | |
| 0.21 | 5.53 | | | 58.64 | 4.53 | | | |
| 58.64 | 4.53 | | | | | | | |
| 1.57 | 1.00 | | | | | | | |
| 1.00 | | | | | | | | |
| 2.57 | | | | | | | | |
| +.64 | | | | | | | | |

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I = 7 5⁻

46.844
840
850
841
850
22 5⁻
46.845

46.840
854
854
858
857
13
46.853
46.845
1698
46.849 C set at 46.841

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1879phae.proj.1524.



Sept. 28 1879

46 830
829
831
832
832
46 83.06

46 90 85
912
900
918
904
36
46.90,72
46 83.06
17378
46 86.89

@1-0146 86,9

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1879. Sept 30

T = 10 15

Runs

| E | | F | | G | | H | |
|---|---|---|---|---|---|---|---|
| 15.70 | | | | | | | |
| | | | | II | I | | |
| 27.9 | 27.9 | 37.8 | 37.7 | 34.9 | 35.1 | 35.1 | 33.7 |
| 27.8 | 27.4 | 37.7 | 37.9 | 34.8 | 35.1 | 34.7 | 34.1 |
| 27.9 | 27.8 | 37.9 | 37.9 | 34.9 | 35.0 | 35.1 | 33.8 |
| 27.8 | 27.5 | 38.0 | 37.9 | 34.9 | 35.0 | 35.0 | 33.8 |
| 27.8 | 27.6 | 38.1 | 37.5 | 34.8 | 35.1 | 35.0 | 33.9 |
| 42 | 32 | 45 | 39 | 43 | 3 | 49 | 4/1/73 Stat |
| 27.84 | 27.64 | 37.90 | 37.78 | 34.86 | 35.06 | 34.98 | 33.82 6 |

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1879, Sept. 30

I = 10 15

46.777
764
768
760
770
39
46.768

46.983
988
994
997
999
11
46.992
768
1760
46.880 C set at 46.869

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Recapitulation of readings on flow scale.

| | May 28 | June 1 |
|---|---|---|
| E | 60.88 | 60.36 |
| | 60.70 | 59.60 |
| | 59.86 | 60.16 |
| | 59.42 | 60.34 |
| | 59.48 | 59.92 |
| F | 60.56 | 60.36 |
| | 60.15 | 59.88 |
| | 60.31 | 59.72 |
| | 59.54 | 59.76 |
| | 59.71 | 59.94 |
| G | 60.18 | 60.82 |
| | 59.18 | 59.72 |
| | 60.32 | 60.22 |
| | 59.82 | 60.04 |
| | 59.58 | 59.64 |
| N | 60.72 | 59.70 |
| | 59.40 | 59.76 |
| | 60.74 | 60.02 |
| | 60.48 | 59.70 |
| | 59.66 | 60.20 |

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1879phae.proj.1524.



1879. Oct. 1

T = 7h 5m

| | N. L. Flexure S. L. | | | | | | |
|---|---|---|---|---|---|---|---|
| E | F | G | H | E | F | G | H |
| 10 0 | | | | | | | |
| 56.9 | 6.4 | 4.9 | 4.9 | 48.2 | 6.5 | 9.9 | 2.2 |
| 56.8 | 6.3 | 4.8 | 4.9 | 48.0 | 6.0 | 10.0 | 2.0 |
| 56.8 | 6.9 | 4.9 | 5.0 | 47.9 | 6.0 | 9.8 | 2.0 |
| 57.0 | 6.9 | 4.4 | 4.9 | 48.1 | 6.0 | 9.4 | 2.2 |
| 57.5 | 6.4 | 5.0 | 4.8 | 47.9 | 5.8 | 9.7 | 1.9 |
| 0 | 29 | 40 | 45 | 1 | 3 | 38 | 3 |
| 57.00 | 6.58 | 4.80 | 4.90 | 48.02 | 6.06 | 9.76 | 2.06 |
| 4.80 | 4.90 | | | 9.76 | 2.06 | | |
| 1.80 | 11.48 | | | 11.78 | 8/2 | | |
| 0.90 | 5.74 | | | 5.89 | 4.06 | | |
| 58.89 | 4.06 | | | | | | |
| 2.01 | 1.68 | | | | | | |
| 1.68 | | | | | | | |
| 3.69 | | | | | | | |
| +.92 | | | | | | | |

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1879phae.proj.1524.



Oct. 1

46.731
719
724
725
728
127
46.725

47.029
048
040
050
048
215
47.043
46.725
13.768
46.884 Cast at 46.869

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