

KG  
11365  
105

B. 34

No. 34.

*Reduction of Transit*

*Oct. 14. 1859 to March 27. 1860*

Sold by T. Groom & Co., Stationers, India Building, 62 State St., Boston.

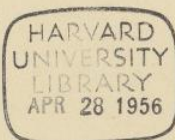
KG 11365.105







KG 11365.105





Oct. 14. 1859

A.H.

M. West

 $\alpha$  Ophiuchi

28.9

32.6

36.2

39.7

17 28 48.3

180.7

17 28 36.14

Oct 16/17

H.P.T.

M. West

| 5 Tauri |       | α Columbae |       | α Orionis |       | Moon 110 |       | γ Geminor |       |    |      |   |   |       |
|---------|-------|------------|-------|-----------|-------|----------|-------|-----------|-------|----|------|---|---|-------|
|         | 21.7  |            | 39.4  |           | 40.8  |          | 53.8  |           | 30.4  |    |      |   |   |       |
|         | 28.5  |            | 43.9  |           | 44.1  |          | 58.0  |           | 34.2  |    |      |   |   |       |
|         | 29.0  |            | 47.9  |           | 47.9  |          | 2.0   |           | 37.8  |    |      |   |   |       |
|         | 32.9  |            | 52.1  |           | 51.3  |          | 5.8   |           | 41.4  |    |      |   |   |       |
| 5       | 29    | 36.5       | 5     | 34        | 56.1  | 5        | 47    | 54.9      | 5     | 59 | 9.8  | 6 | 6 | 45.1  |
|         | 148.6 |            | 239.8 |           | 239.4 |          | 129.4 |           | 189.3 |    |      |   |   |       |
| 5       | 29    | 29.12      | 5     | 34        | 47.96 | 5        | 47    | 47.88     | 5     | 59 | 1.88 | 6 | 6 | 37.86 |

Oct. 16/17

H. P. T.

M. W. W.

1859 phase

| $\mu$ Geminor |       | $\epsilon$ Can. Maj. |      | $\gamma$ Can. Maj. |       | Anonyma |       | $\delta$ Geminor |       |   |       |   |    |       |   |
|---------------|-------|----------------------|------|--------------------|-------|---------|-------|------------------|-------|---|-------|---|----|-------|---|
|               | 33.9  |                      | 11.7 |                    | 30.5  |         | 14.6  |                  | 49.4  |   |       |   |    |       |   |
|               | 38.0  |                      | 15.9 |                    | 34.2  |         | 19.6  |                  | 53.8  |   |       |   |    |       |   |
|               | 41.7  |                      | 19.9 |                    | 37.7  |         | 23.0  |                  | 57.8  |   |       |   |    |       |   |
|               | 45.3  |                      | 23.9 |                    | 41.1  |         | 26.9  |                  | 1.2   |   |       |   |    |       |   |
| 6             | 14    | 49.0                 | 6    | 53                 | 28.0  | 6       | 57    | 45.0             | 7     | 7 | 30.7  | 7 | 12 | 4.8   | 7 |
|               | 207.9 |                      | 99.4 |                    | 188.5 |         | 115.8 |                  | 167.2 |   |       |   |    |       |   |
| 14            | 14    | 41.58                | 6    | 53                 | 19.88 | 6       | 57    | 37.70            | 7     | 7 | 28.16 | 7 | 11 | 57.44 | 7 |

Oct. 16/17

H. P. T.

M. W. W.

| $\alpha$ Geminor |            | $\beta$ Geminor |            | $\gamma$ Can Min. |      | $\delta$ Cancri |      |
|------------------|------------|-----------------|------------|-------------------|------|-----------------|------|
| 4                | 43.0       |                 | 48.8       |                   | 45.8 |                 | 58.8 |
| 8                | 47.3       |                 | 52.5       |                   | 49.3 |                 | 3.0  |
| 8                | 51.2       |                 | 56.3       |                   | 52.8 |                 | 6.7  |
| 2                | 55.0       |                 | 0.5        |                   | 56.2 |                 | 10.5 |
| 8                | 7 25 59.4  | 7 37 4.6        | 7 32 59.7  | 7 35 14.6         |      |                 |      |
| 2                | 265.9      | 162.7           | 263.8      | 93.6              |      |                 |      |
| 44               | 7 25 51.18 | 7 36 56.54      | 7 32 52.76 | 7 35 6.72         |      |                 |      |

Oct. 19, 1859

| A.U.           |      | M. Wier       |      | J. H.S.          |      |              |      |
|----------------|------|---------------|------|------------------|------|--------------|------|
| $\alpha$ Lyrae |      | $\beta$ Lyrae |      | $\delta$ Aquilae |      | $\alpha$ Aq. |      |
|                | 13.9 |               | 57.4 |                  | 2.8  |              |      |
|                | 18.5 |               | 1.9  |                  | 6.5  |              |      |
|                | 23.0 |               | 5.9  |                  | 9.9  |              |      |
|                | 27.4 |               | 10.0 |                  | 13.4 |              |      |
| 18             | 32   | 31.9          | 18   | 45               | 14.3 | 18           | 59   |
|                |      | 114.7         |      |                  | 89.5 |              | 49.8 |
| 18             | 32   | 22.94         | 18   | 45               | 5.90 | 18           | 59   |
|                |      |               |      |                  |      |              | 9.96 |

$$\Sigma \epsilon^2 = 0.0346$$

$$f = 0.063$$

Nov. 1.

T.H.P.

W. W. D.

 $\alpha$  Aquilae $\beta$  Aquilae

8.2

37.4

12.0

41.1

—

44.6

—

—

19 44 22.3 19 48 51.6

Nov. 1. 1859.

A.M.

M. West

| γ Aquilae |       | Moon 10 |       | ρ Capricorn |       | α Cygni |       |       |
|-----------|-------|---------|-------|-------------|-------|---------|-------|-------|
|           | 47.4  |         | 33.2  |             | 3.8   |         | 47.6  |       |
|           | 51.1  |         | 37.3  |             | 7.5   |         | 52.6  |       |
|           | 54.5  |         | 41.0  |             | 11.1  |         | 57.4  |       |
|           | 58.0  |         | 44.6  |             | 14.7  |         | 2.2   |       |
| 19        | 40    | 1.6     | 20    | 12          | 48.7  | 20      | 21    | 18.4  |
|           | 212.6 |         | 204.8 |             | 55.5  |         | 167.1 |       |
| 19        | 39    | 54.52   | 20    | 12          | 40.96 | 20      | 21    | 11.10 |
|           |       |         |       |             |       |         | 20    | 36    |
|           |       |         |       |             |       |         |       | 57.42 |

Nov. 2.

M. Wint

| A.H.        |      | Moon  |       | ♄ Cygni |       | ♑ Capricorn |      | ♏ Cephei |       |    |       |    |       |      |
|-------------|------|-------|-------|---------|-------|-------------|------|----------|-------|----|-------|----|-------|------|
| ♑ Capricorn |      |       |       |         |       |             |      |          |       |    |       |    |       |      |
|             | 3.0  |       | 28.0  |         | 8.3   |             | 37.9 |          | 45.6  |    |       |    |       |      |
|             | 6.8  |       | 32.0  |         | 12.4  |             | 41.8 |          | 56.8  |    |       |    |       |      |
|             | 10.5 |       | 35.7  |         | 16.3  |             | 45.3 |          | 6.5   |    |       |    |       |      |
|             | 14.0 |       | 39.2  |         | 20.1  |             | 48.7 |          | 16.5  |    |       |    |       |      |
| 20          | 21   | 17.8  | 21    | 1       | 43.1  | 21          | 7    | 24.3     | 21    | 14 | 52.7  | 21 | 27    | 27.1 |
|             | 52.1 |       | 178.0 |         |       |             | 81.4 |          | 226.4 |    |       |    | 152.5 |      |
| 20          | 21   | 10.42 | 21    | 1       | 38.60 | 21          | 7    | 16.28    | 21    | 14 | 45.28 | 21 | 27    | 6.50 |

Nov. 3. 1859.

A.H.

M. Wint

1859phase

| N. H.   |      | "        |      | Moon TO |       | "       |      | "       |      |    |       |    |   |       |    |
|---------|------|----------|------|---------|-------|---------|------|---------|------|----|-------|----|---|-------|----|
| Aquarii |      | Capricor |      | Moon TO |       | Aquarii |      | Aquarii |      |    |       |    |   |       |    |
|         | 8.3  |          | 37.2 |         | 52.7  |         | 3.1  |         | 37.6 |    |       |    |   |       |    |
|         | 12.0 |          | 41.0 |         | 56.5  |         | 6.7  |         | 41.2 |    |       |    |   |       |    |
|         | 15.4 |          | 44.4 |         | 59.9  |         | 10.3 |         | 44.7 |    |       |    |   |       |    |
|         | 18.9 |          | 48.0 |         | 3.4   |         | 13.9 |         | 48.0 |    |       |    |   |       |    |
| 21      | 2    | 22.5     | 21   | 14      | 51.8  | 21      | 48   | 7.4     | 22   | 59 | 17.6  | 22 | 9 | 51.6  | 21 |
|         |      | 77.1     |      |         | 222.4 |         |      | 179.9   |      |    | 51.6  |    |   | 223.1 |    |
| 21      | 2    | 15.42    | 21   | 14      | 44.48 | 21      | 47   | 59.98   | 22   | 59 | 10.32 | 22 | 9 | 44.62 | 21 |

Nov. 4.

A.H.

M. W. L.

| 2 Aquarii |            | 1 "Aquarii |       | Moon 10 |       | 2 "Aquarii |       | h' Aquarii (faint) |      |
|-----------|------------|------------|-------|---------|-------|------------|-------|--------------------|------|
| 1.6       | 3.3        |            | 37.6  |         | 42.2  |            | 29.6  |                    | 3.0  |
| 2         | 6.9        |            | 41.2  |         | 45.9  |            | 33.3  |                    | 6.6  |
| 7         | 13.9       |            | 44.6  |         | 52.7  |            | 36.6  |                    | 10.0 |
| 0         | 17.7       |            | 48.1  |         | 49.2  |            | 40.2  |                    | 13.3 |
| 6         | 21 59 10.4 | 22 9       | 51.7  | 22 32   | 56.4  | 22 45      | 43.8  | 22 58              | 57.1 |
| 1         | 52.2       |            | 223.2 |         | 246.4 |            | 183.5 |                    | 50.0 |

12 21 59 10.44 22 9 44.64 22 32 49.28 22 45 36.70 22 58 10.00

Nov. 6, 1859

H. P. J.

M. W. B.

| H. P. J.         |       | M. W. B.         |       | Moon             |     | TO               |      | d Piscium        |   |                  |   |
|------------------|-------|------------------|-------|------------------|-----|------------------|------|------------------|---|------------------|---|
| $\gamma$ Piscium | "     | $\delta$ Piscium | "     | $\delta$ Piscium | "   | $\delta$ Piscium | "    | $\delta$ Piscium | " | $\delta$ Piscium | " |
| 5.4              |       | 56.5             |       | 5.1              |     | 47.1             |      | 35.0             |   |                  |   |
| 9.0              |       | 0.1              |       | 8.8              |     | 50.4             |      | 38.7             |   |                  |   |
| 12.4             |       | 3.4              |       | 12.2             |     | 53.9             |      | 42.1             |   |                  |   |
| 15.9             |       | 6.9              |       | 15.6             |     | 57.7             |      | 45.7             |   |                  |   |
| 23 10 19.4       | 23 20 | 10.4             | 23 35 | 19.1             | 0 2 | 1.4              | 0 13 | 49.3             | 0 |                  |   |
| 62.1             |       | 77.3             |       | 60.8             |     | 210.5            |      | 210.8            |   |                  |   |
| 23 10 12.42      | 23 20 | 3.46             | 23 35 | 12.16            | 0 1 | 54.10            | 0 13 | 42.16            | 0 |                  |   |

6. Nov.

H.P. 7.

M. W.

45 Picium

39.9

43.7

47.2

50.1

54.4

235.7

18 47.14

Nov. 8, 1859.

H.P. 7.

M. West

1859phase

| ♄ Piscium |       | ♄ Piscium |      | Moon TV |       | ♄ Arietis |      | B.A.C. 607 |      |    |       |   |    |      |    |
|-----------|-------|-----------|------|---------|-------|-----------|------|------------|------|----|-------|---|----|------|----|
|           | 50.6  |           | 34.8 |         | 40.3  |           | 4.0  |            | 59.2 |    |       |   |    |      |    |
|           | 54.1  |           | 38.5 |         | 44.3  |           | 8.0  |            | 3.0  |    |       |   |    |      |    |
|           | 57.5  |           | 41.9 |         | 47.6  |           | 11.4 |            | 6.3  |    |       |   |    |      |    |
|           | 1.1   |           | 45.3 |         | 51.3  |           | 15.2 |            | 10.2 |    |       |   |    |      |    |
| 0         | 56    | 4.7       | 1    | 6       | 49.0  | 1         | 37   | 58.1       | 1    | 47 | 19.2  | 1 | 52 | 14.0 | 20 |
|           | 168.0 |           |      |         | 209.5 |           |      | 238.6      |      |    | 57.8  |   |    | 92.7 |    |
| 0         | 55    | 57.60     | 1    | 6       | 41.90 | 1         | 37   | 47.72      | 1    | 47 | 11.56 | 1 | 52 | 6.54 | 20 |

Nov. 11.

Ill. West

A. H.

2 Capricorn

" Cygni

23.2

42.0

26.8

46.9

30.2

52.0

33.6

56.8

37.4

1.8

151.2

199.5

30.24

51.90

Nov. 11. 1859.

H. R. J.

M. West

| $\gamma$ Tauri | $\alpha$ Tauri | Moore 110 | 103 Tauri | $\beta$ Tauri | $\delta$ |
|----------------|----------------|-----------|-----------|---------------|----------|
| 16.5           | 32.2           | 5.2       | 41.8      | 33.1          |          |
| 20.7           | 36.3           | 9.1       | 45.7      | 36.9          |          |
| 24.0           | 40.0           | 12.8      | 49.3      | 41.2          |          |
| 28.0           | 43.9           | 16.6      | 53.2      | 44.6          |          |
| 31.93          | 47.94          | 21.34     | 57.1      | 48.6          | 7        |
| 121.1          | 200.3          | 65.0      | 247.1     | 204.6         |          |
| 24.223         | 40.064         | 13.004    | 49.425    | 40.88         |          |

Nov. 19/15

H. P. T.

M. W. R.

|     | 1 <sup>st</sup> Gemini | 2 <sup>nd</sup> Gemini | 2 Can     | Min.       | Moon      | 110 | Jupiter 1 <sup>st</sup> Line |
|-----|------------------------|------------------------|-----------|------------|-----------|-----|------------------------------|
| 3.1 | 49.7                   | 42.7                   | 3.3       | 19.6       | 0.4       |     |                              |
| 6.9 | 53.6                   | 47.2                   | 6.8       | 23.7       | 4.3       |     |                              |
| 1.2 | 57.0                   | 51.5                   | 9.9       | 27.1       | 7.6       |     |                              |
| 4.6 | ---                    | 53.2                   | 13.2      | 30.8       | 11.3      |     |                              |
| 8.6 | 7 12 4.47              | 25 59.4                | 7 32 16.8 | 7 46 34.97 | 49 15.1   |     |                              |
| 4.4 |                        | 256.0                  | 49.0      | 136.0      | 28.7      |     |                              |
| 88  | 7                      | 25 51.20               | 7 32 9.80 | 7 46 27.20 | 7 49 7.74 |     |                              |

Nov. 17/18 1859.

H. P. T.

M. W. W.

| 1 Cancri | $\psi^2$ Cancri | $\lambda$ Cancri | $\gamma$ Cancri |
|----------|-----------------|------------------|-----------------|
| 58.7     | 4.4             | 16.2             | 40.6            |
| 2.9      | 8.6             | 19.9             | 44.3            |
| 6.5      | 12.1            | 23.6             | 48.0            |
| 10.4     | 15.9            | 27.3             | 51.3            |
| 14.3     | 19.6            | 31.2             | 55.2            |
| 92.8     | 60.6            | 118.2            | 289.4           |

|   |    |      |   |   |       |   |    |       |   |    |       |
|---|----|------|---|---|-------|---|----|-------|---|----|-------|
| 7 | 55 | 6.56 | 8 | 2 | 12.12 | 8 | 12 | 22.64 | 8 | 24 | 47.88 |
|---|----|------|---|---|-------|---|----|-------|---|----|-------|

Nov. 15/16.

Ill. West

| A.H.     |      |       | " "      |      |   | " "       |      |   | " "      |       |   |           |       |  |
|----------|------|-------|----------|------|---|-----------|------|---|----------|-------|---|-----------|-------|--|
| Moon 110 |      |       | α Cancri |      |   | 83 Cancri |      |   | α Hydrae |       |   | α Urs Maj |       |  |
| cloudy   | 14.3 |       | cloudy   | —    |   | cloudy    | —    |   | hazy     | 44.9  |   |           | 27.0  |  |
|          | 18.0 | 8     | 50       | 56.5 |   |           | 16.2 |   |          | 48.8  |   |           | 32.8  |  |
|          | 21.5 |       |          | —    |   |           | 19.3 |   |          | 52.3  |   |           | 38.4  |  |
|          | 25.5 |       |          | —    |   |           | 23.3 |   |          | 55.6  |   |           | 44.1  |  |
| 8        | 46   | 29.5  |          | —    | 9 | 11        | —    | 9 | 20       | 59.1  | 9 | 23        | 50.1  |  |
|          |      | 108.8 |          |      |   |           |      |   |          | 260.7 |   |           | 192.4 |  |
| 8        | 46   | 21.76 |          |      |   |           |      | 9 | 20       | 52.14 | 9 | 23        | 38.48 |  |

Nov. 15. 1859

H.P.T.

M. West

1859phae

| $\alpha$ Lyrae |       | $\beta$ Lyrae |       | $\delta$ Aquilae |      | $\alpha$ Aquilae |      | $\beta$ Aquilae |      | $\alpha$ |      |    |    |       |   |
|----------------|-------|---------------|-------|------------------|------|------------------|------|-----------------|------|----------|------|----|----|-------|---|
|                | 12.2  |               | 55.4  |                  | 1.0  |                  | 59.8 |                 | 28.8 |          |      |    |    |       |   |
|                | 16.5  |               | 59.7  |                  | 4.7  |                  | 3.5  |                 | 32.6 |          |      |    |    |       |   |
|                | 21.0  |               | 3.8   |                  | 8.1  |                  | 6.8  |                 | 36.0 |          |      |    |    |       |   |
|                | 25.4  |               | 7.8   |                  | 11.6 |                  | 10.4 |                 | 39.3 |          |      |    |    |       |   |
| 18             | 32    | 30.0          | 18    | 45               | 12.1 | 18               | 59   | 13.2            | 19   | 44       | 14.2 | 19 | 48 | 42.9  | 8 |
|                | 105.1 |               | 138.8 |                  |      |                  |      | 40.6            |      |          | 94.7 |    |    | 179.6 |   |

|    |    |      |    |    |      |    |    |      |    |    |      |    |    |       |   |
|----|----|------|----|----|------|----|----|------|----|----|------|----|----|-------|---|
| 18 | 32 | 21.0 | 18 | 45 | 3.76 | 18 | 59 | 8.12 | 19 | 44 | 6.94 | 19 | 48 | 35.92 | 8 |
|----|----|------|----|----|------|----|----|------|----|----|------|----|----|-------|---|

$$\Sigma r^2 = 0.0346$$

$$r = 0.063$$

Nov. 16/17.

A.H.

M. West

| $\alpha$ Cancri |              | " 83 Cancri |       | " Moon 110 |       | " $\pi$ Leonis |       | " $\alpha$ Leonis |       |
|-----------------|--------------|-------------|-------|------------|-------|----------------|-------|-------------------|-------|
| 8               | 51.1         |             | 11.2  |            | 37.0  |                | 50.1  |                   | 56.0  |
| 6               | 55.1         |             | 14.8  |            | 40.4  |                | 53.7  |                   | 59.2  |
| 0               | 58.4 (faint) |             | 18.3  |            | 44.0  |                | 57.0  |                   | 2.9   |
| 3               | 1.9          |             | 21.9  |            | 47.7  |                | 0.5   |                   | 6.7   |
| 9 8             | 51 5.6       | 9 11        | 23.7  | 9 42       | 51.4  | 9 53           | 4.2   | 10 1              | 9.7   |
| 6               | 172.1        |             | 91.9  |            | 220.5 |                | 163.5 |                   | 134.5 |
| 22 8            | 50 58.42     | 9 11        | 18.38 | 9 42       | 44.10 | 9 52           | 57.10 | 10 7              | 2.90  |

Nov. 25, 1859

| H. P. J.       |    | A. H.           |    | M. W. L.        |       |                  |    |                  |    |   |       |    |    |       |   |
|----------------|----|-----------------|----|-----------------|-------|------------------|----|------------------|----|---|-------|----|----|-------|---|
| $\alpha$ Lyrae |    | $\delta$ Pegasi |    | $\alpha$ Pegasi |       | $\gamma$ Piscium |    | $\kappa$ Piscium |    |   |       |    |    |       |   |
| 49.2           |    | 9.9             |    | 28.5            |       | 36.0             |    | 26.8             |    |   |       |    |    |       |   |
| * 54.4         |    | 13.5            |    | 32.0            |       | 39.6             |    | 30.4             |    |   |       |    |    |       |   |
| 58.0           |    | 17.0            |    | 35.4            |       | 43.0             |    | 33.8             |    |   |       |    |    |       |   |
| 2.5            |    | 20.5            |    | 39.1            |       | 46.4             |    | 37.2             |    |   |       |    |    |       |   |
| 18             | 33 | 7.2             | 22 | 34              | 24.2  | 22               | 57 | 42.8             | 23 | 9 | 50.0  | 23 | 19 | 40.7  | 0 |
| 171.3          |    | 85.1            |    | 177.8           |       | 215.0            |    | 168.9            |    |   |       |    |    |       |   |
| 18             | 32 | 38.26           | 22 | 34              | 17.02 | 22               | 57 | 35.56            | 23 | 9 | 43.00 | 23 | 19 | 33.78 | 0 |

\*  $\Sigma$

Nov. 28.

Ill. West

A.H.

 $\epsilon$  Piscium"  $\alpha$  Arietis

27.3

3.8

31.0

7.7

34.3

11.3

37.8

15.1

41.4

59

19.0

171.8

56.9

34.361

59

11.38

Nov. 28/29.

H.P.J.

Polaris s.p.  $\alpha$  Virginis

|    |    |       |    |    |       |
|----|----|-------|----|----|-------|
|    | 3  | 44.4  |    |    | 35.6  |
|    | 6  | 10.5  |    |    | 39.4  |
|    | 8  | 30.4  |    |    | 42.6  |
|    | 10 | 47.8  |    |    | 45.8  |
| 13 | 13 | 11.3  | 13 | 17 | 49.5  |
|    |    | 144.4 |    |    | 212.9 |
| 13 | 8  | 28.88 | 13 | 17 | 42.58 |

Dec. 2.

H.P.T.

M. West

 $\alpha$  Aquilae

49.5

53.2

56.6

59.9

19 44 3.7

222.9

19 43 56.58

Dec. 8, 1859.

A. H.

Ill. West

1859phae

| $\alpha$ Cephei |      | $\beta$ Aquarii |      | $\gamma$ Pegasi |       | $\delta$ Pegasi |      | $\epsilon$ Aquarii |      | $\zeta$ Aquarii |       |    |    |       |   |
|-----------------|------|-----------------|------|-----------------|-------|-----------------|------|--------------------|------|-----------------|-------|----|----|-------|---|
|                 | 9.4  |                 | 16.6 |                 | 23.8  |                 | 46.0 |                    | 41.1 |                 |       |    |    |       |   |
|                 | 17.2 |                 | 20.5 |                 | 27.3  |                 | 50.2 |                    | 41.8 |                 |       |    |    |       |   |
|                 | 24.3 |                 | 23.7 |                 | 31.0  |                 | 53.5 |                    | 48.2 |                 |       |    |    |       |   |
|                 | 31.7 |                 | 27.2 |                 | 34.5  |                 | 57.3 |                    | 51.6 |                 |       |    |    |       |   |
| 21              | 15   | 39.4            | 21   | 24              | 31.0  | 21              | 37   | 38.2               | 21   | 47              | 1.8   | 21 | 58 | 55.1  | 3 |
|                 |      | 122.0           |      |                 | 119.0 |                 |      | 154.8              |      |                 | 208.8 |    |    | 240.8 |   |
| 21              | 15   | 24.40           | 21   | 24              | 28.80 | 21              | 37   | 30.96              | 21   | 46              | 41.76 | 21 | 58 | 48.16 | 3 |

Dec 8.

Ill. Wren

| A.U.       |       | S. Arietis |      | α Persei |      | Moon TO |       | v' Tauri |          |
|------------|-------|------------|------|----------|------|---------|-------|----------|----------|
| S. Arietis |       | S. Arietis |      | α Persei |      | Moon TO |       | v' Tauri |          |
| 1          | 44.9  |            | 58.7 |          | 24.8 |         | 51.3  |          | 3.5      |
| 2          | 48.6  |            | 2.8  |          | 30.5 |         | 55.4  |          | 7.5      |
| 3          | 52.4  |            | 6.4  |          | 35.7 |         | 59.2  |          | 11.2     |
| 4          | 56.1  |            | 9.8  |          | ...  |         | 3.4   |          | 14.7     |
| 5          | 59.7  | 3          | 14.1 | 3        | 46.5 | 4       | 7.2   | 4        | 18.6     |
| 6          | 261.7 |            | 91.8 |          |      |         | 176.5 |          | 55.5     |
| 7          | 52.34 | 3          | 6.36 |          |      | 4       | 59.30 | 4        | 18 11.10 |

Dec. 8, 1859

A.H.

M. W. W.

 $\epsilon$  Tauri $\alpha$  Tauri $\tau$  Tauri

34.3

1.1

58.2

37.9

4.9

2.1

41.6

8.4

5.7

45.2

12.0

9.7

4 20

49.1

4 28

15.6

4 34

13.2

208.1

42.0

88.9

4 20

41.62

4 28

8.40

4 34

17.78

Dec 8/9.

Ill. War

| S.N.            |       | M. War          |       |                   |       |                |      |                    |    |    |       |    |    |       |
|-----------------|-------|-----------------|-------|-------------------|-------|----------------|------|--------------------|----|----|-------|----|----|-------|
| $\gamma$ Leonis |       | $\delta$ Leonis |       | $\epsilon$ Leonis |       | $\beta$ Leonis |      | $\gamma$ Urs. Maj. |    |    |       |    |    |       |
|                 | 54.9  |                 | 41.1  |                   | 54.0  |                | 1.6  |                    |    |    | 28.9  |    |    |       |
|                 | 58.7  |                 | 50.2  |                   | 57.7  |                | 5.1  |                    |    |    | 35.4  |    |    |       |
|                 | 2.0   |                 | 53.8  |                   | 1.0   |                | 9.2  |                    |    |    | 40.9  |    |    |       |
|                 | 5.4   |                 | 57.3  |                   | 4.3   |                | 12.9 |                    |    |    | 47.0  |    |    |       |
| 10              | 58    | 9.2             | 11    | 7                 | 1.0   | 11             | 30   | 8.1                | 11 | 42 | 16.7  | 11 | 46 | 52.8  |
|                 | 130.2 |                 | 208.4 |                   | 125.1 |                | 49.9 |                    |    |    | 209.0 |    |    |       |
| 10              | 58    | 2.04            | 11    | 6                 | 52.68 | 11             | 30   | 1.02               | 11 | 42 | 9.18  | 11 | 46 | 41.00 |

Dec. 13. 1859.

A.H.

Pegasi

Aguarii

Aguarii

33.7

42.2

25.2

37.4

44.9

28.8

40.8

49.2

32.3

44.6

52.7

35.9

21

37

48.1 22

9

56.4 22

28

39.3

204.6

246.4

161.5

21

37

40.92 22

9

49.28 22

28

32.30

Dec. 13.

St. W. P.

H. P. J.

| 83 Cancri |       | α Hydrae |      | ε Leonis |      | Moon 110 |       | ν Leonis. |      |    |       |   |    |      |
|-----------|-------|----------|------|----------|------|----------|-------|-----------|------|----|-------|---|----|------|
|           | 27.0  |          | 59.5 |          | 49.7 |          | 10.8  |           | 58.5 |    |       |   |    |      |
|           | 31.0  |          | 3.3  |          | 49.4 |          | 14.9  |           | 2.2  |    |       |   |    |      |
|           | 34.5  |          | 7.0  |          | 53.0 |          | 18.2  |           | 5.7  |    |       |   |    |      |
|           | 38.0  |          | 10.3 |          | 56.7 |          | 22.2  |           | 9.1  |    |       |   |    |      |
| 9         | 11    | 41.6     | 9    | 21       | 14.0 | 9        | 25    | 0.4       | 9    | 38 | 26.2  | 9 | 51 | 13.1 |
|           | 172.1 |          | 94.1 |          |      |          | 204.2 |           |      |    | 92.3  |   |    | 88.6 |
| 9         | 11    | 34.42    | 9    | 21       | 1.82 | 9        | 24    | 33.04     | 9    | 38 | 18.46 | 9 | 51 | 5.72 |

Dec. 13, 1859.

H.P.T.

Ill. West

1859phase

| N.O.P. 1.                   |    |       |    | "        |  |       |    | "           |  |       |    | "        |  |      |  |
|-----------------------------|----|-------|----|----------|--|-------|----|-------------|--|-------|----|----------|--|------|--|
| Saturn 1 <sup>st</sup> Limb |    |       |    | α Leonis |  |       |    | α Urs. Maj. |  |       |    | δ Leonis |  |      |  |
|                             |    | 5.2   |    |          |  | 11.8  |    |             |  | 13.0  |    |          |  | 55.8 |  |
|                             |    | 8.8   |    |          |  | 15.7  |    |             |  | 20.5  |    |          |  | 0.0  |  |
|                             |    | 12.3  |    |          |  | 19.0  |    |             |  | 27.8  |    |          |  | 3.7  |  |
|                             |    | 15.8  |    |          |  | 22.6  |    |             |  | 33.3  |    |          |  | 7.3  |  |
| 10                          | 55 | 19.9  | 10 | 1        |  | 26.2  | 10 | 55          |  | 43.2  | 11 | 7        |  | 11.2 |  |
|                             |    | 62.0  |    |          |  | 95.3  |    |             |  | 139.8 |    |          |  | 78.0 |  |
| 10                          | 55 | 12.40 | 10 | 1        |  | 19.06 | 10 | 55          |  | 27.96 | 11 | 7        |  | 3.60 |  |

Dec. 15. 1859

| H.P. 7.       |                 |                   | M. W. 1.   |                |  |
|---------------|-----------------|-------------------|------------|----------------|--|
| $\rho$ Leonis | $\delta$ Leonis | $\epsilon$ Leonis | Moon 110   | $\beta$ Leonis |  |
| 47.6          | 0.2             | 53.7              | 45.2       | 15.7           |  |
| 51.1          | 3.9             | 57.2              | 49.0       | 19.6           |  |
| 54.6          | 7.4             | 0.9               | 52.6       | 22.8           |  |
| 58.1          | 11.1            | 4.4               | 59.7       | 26.7           |  |
| 10 26 1.8     | 11 7 14.2       | 11 10 7.9         | 11 12 59.3 | 11 42 30.1     |  |
| 213.2         | 37.8            | 124.1             | 261.8      | 114.9          |  |

10 25 54.64 11 7 7.56 11 10 0.82 11 12 52.36 11 42 22.98

Dec. 20. 1859

M. West

A. H.  
v Leonis $\beta$  Leonis $\gamma$  Urs Maj.

|      |       |       |
|------|-------|-------|
| 17.2 | 20.0  | 52.3  |
| 20.9 | 28.8  | 58.5  |
| 24.2 | 32.3  | 4.3   |
| 27.7 | 35.9  | 10.2  |
| 31.3 | 39.6  | 16.4  |
| 1.4  | 111.6 | 141.7 |

|    |    |       |    |    |       |    |    |      |
|----|----|-------|----|----|-------|----|----|------|
| 11 | 30 | 31.3  | 11 | 42 | 39.6  | 11 | 47 | 16.4 |
| 11 | 30 | 24.28 | 11 | 42 | 32.32 | 11 | 47 | 4.34 |

Dec. 21

A.U.

M. W. R.

α Arietis

17" Ceti

48.6

32.3

52.5

36.0

56.2

39.3

59.9

42.7

3.8

2

10

46.3

221.0

196.6

1 59 64.20 2 10 39.32

Dec. 23, 1859.

| A.H.               |           | M. West       |                  |
|--------------------|-----------|---------------|------------------|
| $\epsilon$ Piscium | Polaris * | $\theta$ Ceti | $\gamma$ Piscium |
| 16.1               | 7         | 49.0          | 37.4             |
| 19.7               | 10        | 17.5          | 41.0             |
| 23.0               | 12        | 28.5          | 44.4             |
| 26.7               | 14        | 48.5          | 47.9             |
| 30.3               | 17        | 12.1          | 51.6             |
| 118.8              | 153.6     | 222.3         | 212.1            |
| 23.16              | 12        | 30.60         | 17               |
| 44.46              | 24        | 42.42         | 34               |

obs on 236 (chron.)  
by E. S. L.

EC = 1 21 00

236 = 1 24 54.4

Dec 27

A.U.

Hl. Wm

"

| $\eta$ Piscium | $\nu$ Piscium |
|----------------|---------------|
| 43.8           | 53.0          |
| 47.2           | 56.8          |
| 50.7           | 0.0           |
| 54.3           | 3.2           |
| 1 24 58.01     | 35 7.2        |
| 254.0          | 120.2         |
| 1 24 50.801    | 35 0.04       |

Dec 29, 1859.

A.H.

Ill. Wm

Moon 10

 $\alpha$  Regani $\gamma$  Piscium

26.1

33.9

41.3

29.9

37.6

45.0

33.5

40.9

48.2

37.0

44.4

51.6

22 40 40.6 22 58 48.3 22 10 55.3

167.1

209.1

241.4

22 40 33.42 22 58 41.02 23 10 48.28

Jan. 1. 1860

| H.P.T.    |       |        | M. West |        |         | B.A.C. |         |        | P. Piscium |       |  |
|-----------|-------|--------|---------|--------|---------|--------|---------|--------|------------|-------|--|
| Cassiopei |       |        | Moon TO |        |         | 34.1   |         |        | p          |       |  |
|           | 23.1  | —      |         | 12.2   |         |        | 40.5    |        |            | 36.8  |  |
|           | 29.3  | 31.7   |         | 16.0   |         |        | 44.3    |        |            | 40.5  |  |
|           | 35.4  | 35.4   |         | 19.4   |         |        | 47.3    |        |            | 44.2  |  |
|           | 41.5  | 38.9   |         | 22.9   |         |        | 51.2    |        |            | 48.0  |  |
| 0         | 33    | 47.8 0 | 37      | 42.8 0 | 53      | 26.7 1 | 4       | 55.0 1 | 20         | 51.7  |  |
|           | 177.1 |        |         | 97.2   |         |        | 238.3   |        |            | 221.2 |  |
| 0         | 33    | 35.42  | D       | 53     | 19.44 1 | 4      | 47.66 1 | 20     |            | 44.24 |  |

Jan. 1. 1860.

H. P. T.

M. West

Anonyma \*

"  $\gamma$  Piscium"  $\beta$  Arietis"  $\gamma$  Piscium

2.2

3.6

49.0

54.2

6.1

7.2

52.9

57.7

9.6

10.8

56.4

1.3

13.2

14.5

0.2

4.8

17.01

36

—

49

4.01

26

8.4

48.1

162.5

126.4

9.62

48

56.501

26

1.28

\* 6' north of  $\gamma$  Piscium

Jan. 2

A.H.

Ill. West

| B.A.C. 341 |       | p Piscium |       | Moon 10 |       | $\beta$ Arietis |       | $\alpha$ Arietis |        |
|------------|-------|-----------|-------|---------|-------|-----------------|-------|------------------|--------|
|            | 42.4  |           | 38.9  |         | 30.1  |                 | 50.8  |                  | 13.6   |
|            | 45.9  |           | 42.6  |         | 33.9  |                 | 54.8  |                  | 17.4   |
|            | 49.4  |           | 46.2  |         | 37.7  |                 | 58.3  |                  | 20.9   |
|            | 53.0  |           | 49.9  |         | 41.1  |                 | 1.9   |                  | 24.4   |
| 1 3        | 56.8  | 1         | 53.6  | 1       | 45.2  | 1               | 48    | 57.2             | 0 28.5 |
|            | 247.5 |           | 231.2 |         | 188.0 |                 | 171.5 |                  | 104.8  |

|     |       |   |       |   |    |       |   |    |       |     |       |
|-----|-------|---|-------|---|----|-------|---|----|-------|-----|-------|
| 1 3 | 49.50 | 1 | 46.24 | 1 | 41 | 37.60 | 1 | 47 | 58.30 | 2 0 | 20.96 |
|-----|-------|---|-------|---|----|-------|---|----|-------|-----|-------|

Jan. 5

A.H.

Ill. West

| 17 Tauri |       |       | 27 Tauri |       |    | Moon 10 |      |       | 2 Aurigae |       |   | 2 Aurigae |      |  |
|----------|-------|-------|----------|-------|----|---------|------|-------|-----------|-------|---|-----------|------|--|
|          | 37.0  |       |          | 53.6  |    |         | 49.4 |       |           | 55.7  |   |           | 22.7 |  |
|          | 41.0  |       |          | 57.6  |    |         | 53.3 |       |           | 0.2   |   |           | 27.7 |  |
|          | 44.7  |       |          | 1.2   |    |         | 57.3 |       |           | 4.1   |   |           | 32.6 |  |
|          | 48.3  |       |          | 4.9   |    |         | 1.1  |       |           | 8.1   |   |           | 37.5 |  |
| 3        | 37    | 52.63 | 42       | 8.83  | 34 | 5.44    | 49   | 12.45 | 7         | 42.8  | 4 |           |      |  |
|          | 223.6 |       |          | 126.1 |    | 166.5   |      | 80.5  |           | 163.3 |   |           |      |  |

|   |    |        |    |       |    |        |    |       |   |       |   |  |  |  |
|---|----|--------|----|-------|----|--------|----|-------|---|-------|---|--|--|--|
| 3 | 37 | 44.723 | 42 | 1.223 | 33 | 57.304 | 49 | 4.105 | 7 | 32.66 | 4 |  |  |  |
|---|----|--------|----|-------|----|--------|----|-------|---|-------|---|--|--|--|

Jan. 6.

A.H.

G.W. West.

| $\alpha$ Tauri |      | $\gamma$ Aurigae |      | $\alpha$ Aurigae |       | $\beta$ Tauri |       | $\delta$ Orionis |      |    |       |   |    |      |
|----------------|------|------------------|------|------------------|-------|---------------|-------|------------------|------|----|-------|---|----|------|
|                | 56.4 |                  | 58.0 |                  | 24.7  |               | 32.1  |                  | 57.7 |    |       |   |    |      |
|                | 0.3  |                  | 2.0  |                  | 30.1  |               | 36.2  |                  | 1.3  |    |       |   |    |      |
|                | 3.9  |                  | 6.2  |                  | 34.7  |               | 40.1  |                  | 4.5  |    |       |   |    |      |
|                | 7.6  |                  | 10.2 |                  | 39.7  |               | 44.1  |                  | 8.0  |    |       |   |    |      |
| 4              | 35   | 11.5             | 4    | 49               | 14.4  | 5             | 7     | 45.1             | 5    | 18 | 48.0  | 5 | 26 | 11.8 |
|                | 79.7 |                  | 90.8 |                  | 174.3 |               | 200.4 |                  | 83.3 |    |       |   |    |      |
| 4              | 35   | 3.94             | 4    | 49               | 6.16  | 5             | 7     | 34.86            | 5    | 18 | 40.08 | 5 | 26 | 4.66 |

Jan. 6. 1860.

Ill. West

A.H.

1859phae

| A. H.   |       | " "     |       | Moon TO |       | " "     |       | " "     |       |   |      |
|---------|-------|---------|-------|---------|-------|---------|-------|---------|-------|---|------|
| Leporis |       | Orionis |       | Moon TO |       | Orionis |       | Geminor |       |   |      |
|         | 39.5  |         | 13.0  |         | 16.2  |         | 42.0  |         | 31.5  |   |      |
|         | 43.2  |         | 16.6  |         | 20.2  |         | 45.6  |         | 35.6  |   |      |
|         | 46.8  |         | 20.0  |         | 24.3  |         | 49.0  |         | 39.2  |   |      |
|         | 50.5  |         | 23.4  |         | 28.2  |         | 52.5  |         | 43.0  |   |      |
| 5       | 27    | 5       | 30    | 40      | 32.5  | 5       | 48    | 56.1    | 6     | 7 | 46.8 |
|         | 234.2 |         | 100.1 |         | 121.4 |         | 245.2 |         | 196.1 |   |      |

|   |    |       |   |    |       |   |    |       |   |    |       |   |   |       |   |
|---|----|-------|---|----|-------|---|----|-------|---|----|-------|---|---|-------|---|
| 5 | 27 | 46.84 | 5 | 30 | 20.02 | 5 | 40 | 24.28 | 5 | 48 | 49.04 | 6 | 7 | 39.22 | 6 |
|---|----|-------|---|----|-------|---|----|-------|---|----|-------|---|---|-------|---|

Jan. 6.

A.H.

Hl. West

 $\mu$  Gemina

35.5

39.4

43.0

46.8

6 15 50.7

215.4

6 15 43.08

Jan. 8. 1860.

H. P. J.

M. West

1859phae

| $\alpha$ Geminor |       | $\gamma$ Geminor |      | $\delta^2$ Geminor |       | Jupiter 1 <sup>st</sup> Dist |      | $\beta$ Geminor |           |
|------------------|-------|------------------|------|--------------------|-------|------------------------------|------|-----------------|-----------|
|                  | 23.6  |                  | 12.0 |                    | 49.2  |                              | 58.3 |                 | 54.9      |
|                  | 27.9  |                  | 13.9 |                    | 53.8  |                              | 2.3  |                 | 59.0      |
|                  | 31.9  |                  | 23.7 |                    | 57.7  |                              | 6.0  |                 | 2.8       |
|                  | 35.9  |                  | 27.7 |                    | 1.7   |                              | 9.5  |                 | 6.4       |
| 7                | 3     | 39.8             | 7 18 | 19.8               | 7 27  | 5.9                          | 7 30 | 13.4            | 7 38 10.7 |
|                  | 159.1 |                  | 99.1 |                    | 168.3 |                              | 89.5 |                 | 133.8     |

|   |   |       |   |    |       |   |    |       |   |    |      |   |    |      |
|---|---|-------|---|----|-------|---|----|-------|---|----|------|---|----|------|
| 7 | 3 | 31.82 | 7 | 18 | 19.82 | 7 | 26 | 33.66 | 7 | 30 | 5.90 | 7 | 38 | 2.76 |
|---|---|-------|---|----|-------|---|----|-------|---|----|------|---|----|------|

Jan. 8.

H. P. I.

Ill. West

Moon 110

15 " Aguo

7 " Canci

8 " Canci

59.0

43.4

46.9

54.2

2.9

49.3

51.0

58.6

6.7

52.0

54.7

1.5

10.3

56.8

58.4

5.0

7

57

14.28

3

0.88

26

2.18

38

8.9

93.1

205.3

213.1

127.6

7

57

6.628

2

53.068

25

44.628

38

1.52

Jan. 9. 1860.

Ill. West

A. H.

 $\beta$  Arietis $\alpha$  Arietis

5.2

27.8

9.1

31.7

12.7

35.3

16.4

39.0

1 48

20.3 2 0

42.9

63.7

176.7

1 48

12.74 2 0

35.34

Jan. 15/16

| A.H.            |       | " "             |       | " "             |      | " "      |      | " "   |    | " " |       |
|-----------------|-------|-----------------|-------|-----------------|------|----------|------|-------|----|-----|-------|
| $\gamma$ Bootis |       | $\tau$ Virginis |       | $\alpha$ Bootis |      | Moon 110 |      |       |    |     |       |
|                 | 23.8  |                 | 54.5  |                 | 39.1 |          | 34.3 |       |    |     |       |
|                 | 27.6  |                 | 58.2  |                 | 43.0 |          | 38.2 |       |    |     |       |
|                 | 31.2  |                 | 1.6   |                 | 46.4 |          | 41.9 |       |    |     |       |
|                 | 34.9  |                 | 5.0   |                 | 50.2 |          | 45.7 |       |    |     |       |
| 13              | 49    | 38.7            | 13    | 36              | 8.6  | 14       | 10   | 54.0  | 14 | 27  | 49.6  |
|                 | 156.2 |                 | 127.9 |                 |      |          |      | 232.7 |    |     | 209.7 |
| 13              | 49    | 31.24           | 13    | 36              | 1.58 | 14       | 10   | 46.54 | 14 | 27  | 41.94 |

Jan. 16. 1860.

A.H.

M. Wier

| Aniell's |   | 67 Ceti |   | 20 Librae |    | 21 Librae |    | β Librae |            |
|----------|---|---------|---|-----------|----|-----------|----|----------|------------|
|          |   | 40.8    |   | 24.6      |    | 17.3      |    | 39.6     | 53.5       |
|          |   | 44.7    |   | 28.2      |    | 21.3      |    | 43.5     | 57.1       |
|          |   | 48.3    |   | 31.6      |    | 25.0      |    | 46.8     | 0.6        |
|          |   | 52.1    |   | 35.0      |    | 28.7      |    | 50.5     | 4.1        |
| 2        | 0 | 56.0    | 2 | 38.6      | 14 | 32.7      | 15 | 54.3     | 15 7.8     |
|          |   | 241.9   |   | 158.0     |    | 125.0     |    | 234.7    | 123.1      |
| 2        | 0 | 48.38   | 2 | 31.60     | 14 | 25.00     | 15 | 46.94    | 15 11 0.62 |

Jan. 16.

A.H.

Moon

47.8

51.9

55.5

59.3

15 24 3.3

217.8

15 23 55.56

Jan. 20.

A. U.

J. W. W. W.

\* x Ceti .

30.7

34.4

37.8

41.2

2 56 44.8

188.9

2 56 37.78

Jan. 29/23

A. H.

M. W. W.

2 Librae

ψ Bootis

β Librae

47.0

25.5

7.2

50.7

29.5

11.0

54.2

33.4

14.3

57.6

37.3

17.8

14 45

1.5

14

59

41.2

15

11

21.4

211.0

166.9

71.9

14 44

54.20

14

58

33.38

15

11

14.38

Jan. 25.

A.H.

Ill. Wul

1859phae.

| A. H. |   | Andromedae |   | γ Pegasi |       | α Cassiopeae |    | β Ceti |   | Polaris |      |   |    |       |   |
|-------|---|------------|---|----------|-------|--------------|----|--------|---|---------|------|---|----|-------|---|
|       |   | 51.4       |   | 44.7     |       | 11.8         |    | —      |   | 4       | 34.4 |   |    |       |   |
|       |   | 55.4       |   | 48.4     |       | 18.3         |    | 20.8   |   | 6       | 56.9 |   |    |       |   |
|       |   | 59.3       |   | 52.0     |       | 24.2         |    | 24.4   |   | 9       | 15.6 |   |    |       |   |
|       |   | 3.2        |   | 55.4     |       | 30.4         |    | 28.0   |   | 11      | 29.9 |   |    |       |   |
| 0     | 3 | 7.3        | 0 | 7        | 59.2  | 0            | 34 | 36.7   | 0 | 38      | —    | 1 | 13 | 56.6  | 1 |
|       |   | 176.6      |   |          | 259.7 |              |    | 121.4  |   |         |      |   |    | 193.4 |   |
| 0     | 2 | 59.32      | 0 | 7        | 51.94 | 0            | 34 | 24.28  |   |         |      | 1 | 9  | 14.68 | 1 |

Jan. 25

A.H.  
Polaris"  $\gamma$  PisciumIll East  
"  $\nu$  Piscium

|   |    |       |        |       |        |       |       |
|---|----|-------|--------|-------|--------|-------|-------|
| 4 | 4  | 34.4  |        | 43.2  |        | 52.7  |       |
| 3 | 6  | 36.9  |        | 47.0  |        | 56.3  |       |
| 6 | 9  | 15.6  |        | 50.5  |        | 59.8  |       |
| 9 | 11 | 29.9  |        | 54.0  |        | 3.2   |       |
| 6 | 1  | 13    | 56.61  | 25    | 57.81  | 36    | 6.8   |
| 4 |    | 193.4 |        | 252.5 |        | 178.8 |       |
| 8 | 1  | 9     | 14.681 | 25    | 50.501 | 35    | 59.76 |

Jan. 27. 1860.

A.H.

Ill. East

| $\gamma$ Cephei |    |       | Moon 10 |    |       | $\alpha$ Andromedae |   |       | $\alpha$ Cassiopeae |    |       |
|-----------------|----|-------|---------|----|-------|---------------------|---|-------|---------------------|----|-------|
|                 |    | 55.6  |         |    | 19.1  |                     |   | 55.9  |                     |    | 16.3  |
|                 |    | 11.4  |         |    | 22.8  |                     |   | 59.8  |                     |    | 22.4  |
|                 |    | 26.5  |         |    | 26.4  |                     |   | 3.8   |                     |    | 28.6  |
|                 |    | 41.4  |         |    | 29.9  |                     |   | 7.7   |                     |    | 35.0  |
| 23              | 34 | 57.2  | 23      | 52 | 33.6  | 0                   | 3 | 11.7  | 0                   | 34 | 41.1  |
|                 |    | 192.1 |         |    | 131.8 |                     |   | 138.9 |                     |    | 143.4 |
| 23              | 34 | 26.42 | 23      | 52 | 26.36 | 0                   | 3 | 3.78  | 0                   | 34 | 28.68 |

Jan. 30

| A.H.                |              |         | Ill. East        |                     |                 |
|---------------------|--------------|---------|------------------|---------------------|-----------------|
| $\alpha$ Cassiopeae | "<br>Polaris |         | $\gamma$ Piscium | "<br>$\beta$ Arctis | $\alpha$ Arctis |
| 22.6                | 4            | 42.1    | 54.3             | 44.2                | 11.6            |
| 29.0                | 7            | 5.4     | 58.0             | 53.1                | 15.5            |
| 35.1                | 9            | 21.0    | 1.6              | 56.7                | 19.3            |
| 41.2                | 11           | 36.6    | 5.2              | 0.3                 | 22.9            |
| 0 34 47.7 1         | 14           | 3.0 1   | 26 8.8 1         | 49 4.1 2            | 1 26.9          |
| 175.6               |              | 108.1   | 127.9            | 163.4               | 96.2            |
| 0 34 35.12 1        | 9            | 21.62 1 | 26 1.58 1        | 48 56.68 2          | 1 19.24         |

Jan. 30.

Ill. East

A.H.

Moon 10

 $\xi^2$  Ceti

5.4

38.4

9.2

42.0

13.0

45.4

16.7

48.9

2 12 20.6 5 22 52.5

64.9

227.2

2 12 12.98 5 22 45.44

Feb. 1. 18 60.

A. H.

M. East

| N. 26.  |      | "               |      | "                |      |   |       |       |
|---------|------|-----------------|------|------------------|------|---|-------|-------|
| Polaris |      | $\beta$ Arietis |      | $\alpha$ Arietis |      |   |       |       |
| 4       | 52.0 |                 | 53.8 |                  | 16.5 |   |       |       |
| 7       | 13.6 |                 | 57.8 |                  | 20.2 |   |       |       |
| 9       | 29.3 |                 | 1.6  |                  | 24.2 |   |       |       |
| 11      | 46.3 |                 | 5.2  |                  | 27.9 |   |       |       |
| 1       | 14   | 11.2            | 49   | 9.1              | 2    | 1 | 31.9  |       |
|         |      | 152.4           |      | 127.5            |      |   | 120.7 |       |
| 1       | 9    | 30.48           | 1    | 49               | 1.50 | 2 | 1     | 24.14 |

1860. Feb. 1

G.P.B.

Ill. War

| Cephei s.p. |       |       | 5 " Leonis |      |       | 30 " Leo. Min. |      |       | " " |      |      | γ Leonis |      |       |    |
|-------------|-------|-------|------------|------|-------|----------------|------|-------|-----|------|------|----------|------|-------|----|
|             | 11.3  |       |            | 6.0  |       |                | 5.1  |       |     | 57.9 |      |          | 27.7 |       |    |
|             | 26.8  |       |            | 10.3 |       |                | 9.5  |       |     | 2.5  |      |          | 32.4 |       |    |
|             | 41.6  |       |            | 14.3 |       |                | 13.1 |       |     | 6.0  |      |          | 35.4 |       |    |
|             | 56.0  |       |            | 18.3 |       |                | 17.3 |       |     | 10.1 |      |          | 39.3 |       |    |
| 11          | 36    | 12.3  | 10         | 11   | 22.1  | 10             | 20   | 21.6  | 10  | 18   | 14.7 | 10       | 14   | 42.7  | 10 |
|             | 148.0 |       |            |      | 71.0  |                |      | 67.0  |     |      | 91.2 |          |      | 177.5 |    |
| 11          | 35    | 41.60 | 10         | 11   | 14.20 | 10             | 20   | 13.40 | 10  | 18   | 6.24 | 10       | 14   | 35.50 | 10 |

Feb. 1.

G. P. B.

Ill. West

36 Sec. Min.

7.3

11.7

16.0

20.0

10 32 24.4

79.4

10 32 15.88

1860. ~~Jan.~~ Feb. 7

A. H.

J. L. West

2 Anisae

" 2 Aug

5.2

32.0

9.5

37.1

13.6

42.2

17.7

47.0

4 50 21.9 5 8 52.3

67.9 210.6

4 50 13.58 5 8 42.12

Feb. 7.

H. P. J.

Ill. Wm

| o Leonis |       | $\alpha$ Leonis |      | Moon 110 |       | $\gamma$ Leonis |      |
|----------|-------|-----------------|------|----------|-------|-----------------|------|
|          | 55.4  |                 | 9.4  |          | 25.3  |                 | 2.7  |
|          | 59.1  |                 | 13.2 |          | 29.0  |                 | 6.3  |
|          | 2.7   |                 | 16.7 |          | 32.6  |                 | 9.7  |
|          | 6.1   |                 | 20.2 |          | 36.0  |                 | 13.0 |
| 9        | 36    | 9.8             | 10   | 3        | 23.9  | 10              | 27   |
|          | 133.1 |                 |      |          | 83.4  |                 |      |
|          |       |                 |      |          | 162.7 |                 |      |
| 9        | 36    | 2.62            | 10   | 3        | 16.68 | 10              | 27   |
|          |       |                 |      |          | 32.54 | 11              | 0    |
|          |       |                 |      |          |       |                 | 9.68 |

1860. Feb. 8

H.P.T.

J.M. West

l Leonis

x Leonis

Moon 110

v Leonis

10.7

4.4

37.7

3.9

14.3

8.2

41.3

7.4

17.8

11.6

44.7

10.7

21.3

15.0

48.2

14.2

10 44

25.0 11 0

18.7 11 23

52.0 11

32 17.8

89.1

57.9

223.9

54.0

10 44

17.82 11 0

11.58 11 23

44.78 11

32 10.80

Feb. 14

A. H.

Ill. W. C.

2 Tauri

2 Tauri

54.7

21.5

58.6

25.3

2.1

28.8

5.8

32.4

4 23

9.6

4

30

36.1

130.8

144.1

4 23

2.16

4

30

28.82

Feb. 20.

Ill. Wis

A.H.

1859phae

| $\delta$ Geminor |      | $\epsilon$ Geminor |      | $\alpha$ Can Min |       | $\beta$ Geminor |      |       |   |    |       |
|------------------|------|--------------------|------|------------------|-------|-----------------|------|-------|---|----|-------|
|                  | 27.7 |                    | 21.1 |                  | 40.7  |                 | 26.4 |       |   |    |       |
|                  | 31.4 |                    | 23.5 |                  | 44.3  |                 | 30.6 |       |   |    |       |
|                  | 35.1 |                    | 29.6 |                  | 47.8  |                 | 34.4 |       |   |    |       |
|                  | 38.6 |                    | 33.4 |                  | 51.2  |                 | 38.4 |       |   |    |       |
| 7                | 14   | 42.7               | 7    | 28               | 37.7  | 7               | 34   | 54.8  | 7 | 39 | 42.4  |
|                  |      | 175.7              |      |                  | 147.3 |                 |      | 238.8 |   |    | 172.2 |
| 7                | 14   | 35.14              | 7    | 28               | 29.46 | 7               | 34   | 47.76 | 7 | 39 | 34.44 |

Feb. 23

A.U.

 $\alpha$  Aurigae $\beta$  Tauri

|   |   |      |   |       |
|---|---|------|---|-------|
|   |   | 6.2  |   | 13.5  |
|   |   | 11.4 |   | 17.7  |
|   |   | 16.2 |   | 21.5  |
|   |   | 20.9 |   | 25.4  |
| 5 | 9 | 26.0 | 5 | 20    |
|   |   | 80.7 |   | 107.5 |

|   |   |        |    |       |
|---|---|--------|----|-------|
| 5 | 9 | 16.145 | 20 | 21.50 |
|---|---|--------|----|-------|

1860. Feb. 25

1859phae.proj

| H.P.Y.  |       | " "     |       | Ill. West<br>A.H. |       | H.P.Y.    |       | A.H.      |      |       |
|---------|-------|---------|-------|-------------------|-------|-----------|-------|-----------|------|-------|
| ε Tauri |       | α Tauri |       | ε Aurigae         |       | ε Leporis |       | α Aurigae |      |       |
|         | 18.0  |         | 44.3  |                   | 43.1  |           | 23.0  |           | 9.8  |       |
|         | 21.6  |         | 48.2  |                   | 47.2  |           | 27.1  |           | 15.0 |       |
|         | 25.0  |         | 51.8  |                   | 51.3  |           | 30.7  |           | 20.1 |       |
|         | 28.8  |         | 55.5  |                   | 55.3  |           | 34.4  |           | 24.7 |       |
| 4       | 23    | 32.54   | 30    | 59.14             | 50    | 59.75     | 2     | 38.25     | 9    | 30.0  |
|         | 125.9 |         | 258.9 |                   | 256.6 |           | 153.4 |           | 99.6 |       |
| 4       | 23    | 28.184  | 30    | 51.784            | 50    | 51.325    | 2     | 30.685    | 9    | 19.92 |

Feb. 25

| U.P.Y.        |       | A.H.             |       | M. Wren<br>A.H.  |      |
|---------------|-------|------------------|-------|------------------|------|
| $\beta$ Tauri |       | $\delta$ Orionis |       | $\delta$ Orionis |      |
|               | 17.1  |                  | 43.0  |                  | 38.2 |
|               | 21.7  |                  | 46.6  |                  | 1.9  |
|               | 25.3  |                  | 49.9  |                  | 3.2  |
|               | 29.3  |                  | 53.4  |                  | 8.6  |
| 5 20          | 33.5  | 5 27             | 57.0  | 5 32             | 12.3 |
|               | 127.3 |                  | 249.9 |                  | 86.2 |
| 32 5 20       | 25.46 | 5 27             | 49.98 | 5 32             | 5.24 |

Feb. 27

A.U.

Ill. Wm

Moon 10

α Tauri

α Aurigae

3.8

47.7

46.4

6.9

51.4

50.7

10.6

54.0

54.6

14.3

58.1

58.7

2 47 18.3 4

31

2.2 4

51

3.0

53.9

214.8

213.4

2 47 10.78 4

30

54.96 4

50

54.68

Feb.

| A.U.             |   |       |   | Hl. Mer          |       |      |       |
|------------------|---|-------|---|------------------|-------|------|-------|
| $\alpha$ Aurigae |   |       |   | $\beta$ Tauri    |       |      |       |
|                  |   |       |   | $\delta$ Orionis |       |      |       |
|                  |   | 19.6  |   | 27.2             |       | 52.8 |       |
|                  |   | 25.8  |   | 31.3             |       | 56.4 |       |
|                  |   | 29.9  |   | 35.2             |       | 59.7 |       |
|                  |   | 34.8  |   | 39.2             |       | 3.3  |       |
| 5                | 9 | 39.9  | 5 | 20               | 43.2  | 5    | 28    |
|                  |   | 149.2 |   |                  | 176.1 |      | 179.0 |
| 5                | 9 | 29.84 | 5 | 20               | 35.22 | 5    | 27    |
|                  |   |       |   |                  |       |      | 59.80 |

March 2.

A.U.

M. Wae

1859phae

| N.A.             |       | "             |       | "                |      | "       |       |      |   |    |      |
|------------------|-------|---------------|-------|------------------|------|---------|-------|------|---|----|------|
| $\gamma$ Geminor |       | $\mu$ Geminor |       | $\gamma$ Geminor |      | Moon 10 |       |      |   |    |      |
|                  | 26.9  |               | 30.8  |                  | 39.0 |         | 11.5  |      |   |    |      |
|                  | 30.8  |               | 34.7  |                  | 42.8 |         | 15.6  |      |   |    |      |
|                  | 34.6  |               | 38.3  |                  | 46.4 |         | 19.3  |      |   |    |      |
|                  | 38.2  |               | 42.0  |                  | 50.0 |         | 23.4  |      |   |    |      |
| 5                | 9     | 42.1          | 5     | 17               | 45.9 | 5       | 32    | 53.7 | 5 | 48 | 27.3 |
|                  | 172.6 |               | 191.7 |                  |      |         | 231.9 |      |   |    | 97.1 |

|   |   |      |   |   |    |      |   |    |      |   |    |       |
|---|---|------|---|---|----|------|---|----|------|---|----|-------|
| 5 | 9 | 34.5 | 2 | 5 | 17 | 38.3 | 4 | 32 | 46.3 | 8 | 48 | 19.42 |
|---|---|------|---|---|----|------|---|----|------|---|----|-------|

March 5

| A.U.        |           | M. Wm     |          |
|-------------|-----------|-----------|----------|
| 83 Cancri   | " Hydrae  | " Urs Maj | " Leonis |
| 17.8        | 50.4      | 33.4      | 1.7      |
| 21.6        | 54.1      | 39.3      | 5.7      |
| 25.1        | 52.4      | 44.9      | 9.4      |
| 28.8        | 1.0       | 50.4      | 13.2     |
| 9 14 32.59  | 24 4.79   | 26 56.29  | 41 17.2  |
| 125.8       | 167.6     | 224.2     | 47.2     |
| 9 19 25.169 | 23 57.529 | 26 44.849 | 41 9.44  |

March. 9. 1860

H.P.Y.

M. Wm

1859phae

|          |    |             |    |            |       |          |    |             |    |          |       |    |   |       |    |
|----------|----|-------------|----|------------|-------|----------|----|-------------|----|----------|-------|----|---|-------|----|
| N. O. 7. |    | 58 Virginis |    | 2 Virginis |       | Moon 110 |    | 89 Virginis |    | BAC 4700 |       |    |   |       |    |
|          |    | 22.6        |    | 4.6        |       | 31.0     |    | 31.1        |    | 27.1     |       |    |   |       |    |
|          |    | 26.3        |    | 8.2        |       | 34.9     |    | 34.9        |    | 30.8     |       |    |   |       |    |
|          |    | 30.0        |    | 11.6       |       | 38.4     |    | 38.4        |    | 34.3     |       |    |   |       |    |
|          |    | 33.4        |    | 15.0       |       | 42.0     |    | 42.1        |    | 38.0     |       |    |   |       |    |
| 13       | 13 | 37.1        | 13 | 21         | 18.7  | 13       | 43 | 45.8        | 13 | 45       | 46.0  | 14 | 6 | 41.7  | 14 |
|          |    | 149.4       |    | 58.1       |       | 192.1    |    | 192.5       |    | 171.9    |       |    |   |       |    |
| 13       | 13 | 29.88       | 13 | 21         | 11.62 | 13       | 43 | 38.42       | 13 | 45       | 38.50 | 14 | 6 | 34.38 | 14 |

Mar. 9

Ill Wind

U.P.T.

| $\alpha$ Bootis | $\rho$ Bootis | $\epsilon$ Bootis | $\delta^2$ Librae | $\gamma$ Bootis |
|-----------------|---------------|-------------------|-------------------|-----------------|
| 31.1            | 1.8           | 6.2               | 23.2              | 40.8            |
| 35.0            | 6.0           | 10.6              | 27.1              | 45.1            |
| 38.8            | 14.0          | 14.3              | 30.5              | 48.9            |
| 42.0            | 10.0          | 18.6              | 34.0              | 52.5            |
| 14 12 46.1      | 14 29 18.3    | 14 42 22.3        | 14 46 37.8        | 15 1 56.6       |
| 193.0           | 50.1          | 72.0              | 152.6             | 243.9           |
| 14 12 38.60     | 14 29 10.02   | 14 42 14.40       | 14 46 30.52       | 15 1 48.78      |

March 9. 1860

Ill. Wul

H.P.Y.

 $\beta$  Librae  $\alpha$  Cor Ber $\delta$  Ophiuchi  $\alpha$  Scorpii $\alpha$  Herculis

43.8 59.6 15.7 4.0 30.8

47.3 3.9 19.2 8.1 33.8

50.5 7.3 22.3 11.9 37.2

54.0 11.3 26.0 15.8 40.7

15 12 55.9 15 32 15.2 16 10 29.6 16 24 19.5 17 11 44.6 16

2 53.5 97.3 112.8 59.3 186.3

15 12 50.70 15 32 7.46 16 10 22.56 16 24 11.86 17 11 37.26 16

March 9.

H.P.Y.

Ill. W. L.

1859phae

| 5 Hercules |       | $\kappa$ Ophiuchi |       | $\theta$ Ophiuchi |       | $\beta$ Draconis |       | $\mu$ Hercules |      |    |       |    |    |       |
|------------|-------|-------------------|-------|-------------------|-------|------------------|-------|----------------|------|----|-------|----|----|-------|
|            | 13.7  |                   | 17.0  |                   | 39.0  |                  | 25.3  |                | 12.0 |    |       |    |    |       |
|            | 18.0  |                   | 20.8  |                   | 43.0  |                  | 31.6  |                | 16.0 |    |       |    |    |       |
|            | 22.0  |                   | 24.3  |                   | 46.8  |                  | 37.0  |                | 20.0 |    |       |    |    |       |
|            | 26.0  |                   | 27.7  |                   | 50.5  |                  | 42.4  |                | 23.6 |    |       |    |    |       |
| 16         | 39    | 30.3              | 16    | 54                | 31.1  | 17               | 16    | 54.8           | 17   | 30 | 48.2  | 17 | 44 | 28.1  |
|            | 110.0 |                   | 120.9 |                   | 234.1 |                  | 184.5 |                | 99.7 |    |       |    |    |       |
| 16         | 39    | 22.00             | 16    | 54                | 24.18 | 17               | 16    | 46.82          | 17   | 30 | 36.90 | 17 | 44 | 19.94 |

March 9.

A.U.

Ill. Wm

y Draconi

30.0

35.9

41.2

47.0

17 56 52.7

206.8

17 56 41.36

March. 14/15

A. H.

M. W. L.

 $\gamma$  Draconis

38.8

44.7

50.0

55.6

17 57 1.3

190.4

17 56 50.08

March 16

A.H.

Ill. Wm

2 Orionis

r Orionis

S Urs. Men. S.P.

51 Cephæi

2 Can. Maj

0.4

59.5

18

53.4

35

1.0

31.5

4.1

3.2

19

52.7

36

17.7

35.5

7.4

6.7

20

51.5

37

27.3

39.4

10.9

10.3

21

47.8

38

39.0

43.4

5

57

14.5

6

3

14.06

22

48.26

39

54.06

56

47.4

7

37.3

93.7

253.6

139.0

197.2

5

57

7.466

3

6.746

20

50.726

37

27.806

56

39.44

8

March 16.

M. W. W.

A. U.

|     | $\gamma$ Can Maj | $\alpha$ Can Maj | $\delta$ Gemino | $\alpha$ Gemino | $\alpha$ Can. Min |
|-----|------------------|------------------|-----------------|-----------------|-------------------|
| 1.5 | 50.3             | 23.3             | 10.6            | 4.1             | 23.9              |
| 1.5 | 54.1             | 27.0             | 14.1            | 8.4             | 27.5              |
| 3.4 | 57.7             | 30.5             | 18.1            | 12.3            | 34.2              |
| 3.4 | 1.2              | 34.1             | 21.8            | 16.4            | 30.8              |
| 3.4 | 7 0 4.9 6        | 42 38.0 7        | 15 25.7 7       | 29 20.5 7       | 35 37.9           |
| 3.2 | 168.2            | 132.9            | 90.7            | 61.7            | 154.3             |
| 44  | 6 59 57.64 6     | 42 30.58 7       | 15 18.14 7      | 29 12.34 7      | 35 30.86          |

March 16.

A.H.

Ill. Wm

 $\beta$  Seminov

9.4

13.7

17.6

21.4

7 20 25.1

87.6

7 40 17.52

16

16

March 16

Ill Part

| $\alpha$ Ophiuchi |      | " $\delta$ Urs Min. |      | $\alpha$ Herculis |       | " $\theta$ Ophiuchi |       | " $\beta$ Draconis |         |       |
|-------------------|------|---------------------|------|-------------------|-------|---------------------|-------|--------------------|---------|-------|
|                   | 28.2 |                     | 3.0  |                   | 41.0  |                     | 50.1  |                    | 36.1    |       |
|                   | 31.9 |                     | 31.0 |                   | 44.8  |                     | 54.1  |                    | 42.0    |       |
|                   | 35.2 |                     | 56.2 |                   | 48.3  |                     | 57.9  |                    | 47.8    |       |
|                   | 38.7 |                     | 20.7 |                   | 51.6  |                     | 1.6   |                    | 53.1    |       |
| 16                | 54   | 42.3                | 17 3 | 48.0              | 17 11 | 55.4                | 17 17 | 51.5               | 17 30   | 59.4  |
|                   |      | 176.3               |      | 138.9             |       | 241.1               |       | 169.2              |         | 238.4 |
| 16                | 54   | 35.26               | 17 3 | 31.78             | 17 11 | 48.22               | 17 16 | 57.84              | 17 - 30 | 47.68 |

March. 16

Ill. Ear

| A.H.      |    |       | "           |    |       | "          |    |       | "           |    |       | "          |    |       |
|-----------|----|-------|-------------|----|-------|------------|----|-------|-------------|----|-------|------------|----|-------|
| ophiurchi |    |       | co Draconis |    |       | μ Herculis |    |       | ψ' Draconis |    |       | γ Draconis |    |       |
|           |    | 51.2  |             |    | 57.6  |            |    | 22.9  |             |    | 33.0  |            |    | 41.4  |
|           |    | 55.0  |             |    | 7.2   |            |    | 30.8  |             |    | 44.5  |            |    | 52.7  |
|           |    | 58.6  |             |    | 17.0  |            |    | 34.7  |             |    | 56.0  |            |    | 58.1  |
|           |    | 2.1   |             |    | 26.2  |            |    | 38.7  |             |    | 6.6   |            |    | 3.9   |
| 17        | 32 | 5.7   | 17          | 41 | 36.1  | 17         | 44 | 27.0  | 17          | 48 | 18.8  | 17         | 57 | 47.3  |
|           |    | 172.6 |             |    | 145.1 |            |    | 154.1 |             |    | 158.9 |            |    | 203.4 |
| 17        | 31 | 58.52 | 17          | 41 | 77.02 | 17         | 44 | 30.82 | 17          | 47 | 55.78 | 17         | 56 | 52.68 |

March. 16

N. U.

2 Sgrae

34.3

38.9

43.3

47.7

18 34 52.4

216.6

18 34 43.32

1860. March. 19

A.H.

M. East

| Auriga      |    | Tauri  |    | Orionis |    | Leporis |    | Orionis |   |
|-------------|----|--------|----|---------|----|---------|----|---------|---|
| 47.2        |    | 54.7   |    | 20.3    |    | 1.9     |    | 35.6    |   |
| 52.2        |    | 58.8   |    | 23.9    |    | 5.5     |    | 39.2    |   |
| 57.1        |    | 2.7    |    | 27.3    |    | 9.1     |    | 42.6    |   |
| 2.0         |    | 6.6    |    | 30.7    |    | 12.7    |    | 46.0    |   |
| 5 10 7.1 5  | 21 | 10.7 5 | 28 | 34.3 5  | 30 | 16.6 5  | 32 | 49.6    | 5 |
| 165.6       |    | 133.5  |    | 136.5   |    | 45.8    |    | 213.0   |   |
| 5 9 57.12 5 | 21 | 2.70 5 | 28 | 27.30 5 | 30 | 9.16 5  | 32 | 42.60   | 5 |

March. 19

A.H.

M. East

| A.H.      |            | "        |        | "         |       | "          |       | "         |       |
|-----------|------------|----------|--------|-----------|-------|------------|-------|-----------|-------|
| 2 Orionis |            | 8 Mr Maj |        | 51 Cephii |       | 2 Can. Maj |       | 2 Can Maj |       |
| 6         | 4.6        | 18       | 59.7   | 35        | 2.1   |            | 27.5  |           | 35.7  |
| 2         | 8.2        | 20       | 0.0    | 36        | 17.6  |            | 31.2  |           | 39.8  |
| 6         | 11.7       | 20       | 57.0   | 37        | 29.3  |            | 34.8  |           | 43.7  |
| 0         | 15.1       | 21       | 54.1   | 38        | 39.2  |            | 38.3  |           | 47.6  |
| 6         | 5 51 18.8  | 6 22     | 54.4   | 6 39      | 56.3  | 6 42       | 42.1  | 6 56      | 51.7  |
| 0         | 58.4       |          | 22 5.2 |           | 144.5 |            | 173.9 |           | 218.5 |
| 10        | 5 51 11.68 | 6 20     | 57.04  | 6 37      | 28.90 | 6 42       | 34.78 | 6 56      | 43.70 |

March 19. 1860

A.H.

Ill. East

1859phase

| N. H.              |       | "                |      | "                 |       | "               |      |       |   |    |       |
|--------------------|-------|------------------|------|-------------------|-------|-----------------|------|-------|---|----|-------|
| $\gamma$ Can. Maj: |       | $\alpha$ Geminor |      | $\alpha$ Can. Min |       | $\beta$ Geminor |      |       |   |    |       |
|                    | 54.6  |                  | 8.2  |                   | 28.1  |                 | 13.8 |       |   |    |       |
|                    | 58.3  |                  | 12.5 |                   | 31.7  |                 | 17.9 |       |   |    |       |
|                    | 2.0   |                  | 16.6 |                   | 35.1  |                 | 21.8 |       |   |    |       |
|                    | 5.3   |                  | 20.6 |                   | 38.5  |                 | 25.6 |       |   |    |       |
| 7                  | 1     | 9.1              | 7    | 29                | 24.9  | 7               | 35   | 42.2  | 7 | 40 | 29.7  |
|                    | 129.3 |                  |      |                   | 82.8  |                 |      | 175.6 |   |    | 108.8 |
| 7                  | 1     | 1.86             | 7    | 29                | 16.56 | 7               | 35   | 35.12 | 7 | 40 | 21.76 |

March 23.

A.H.

M. W. P.

| S. W. Min |       | 51 Ceph |        | 2 Canis Maj. |        | 5 Canis Maj. |        | 7 Canis Maj. |      |
|-----------|-------|---------|--------|--------------|--------|--------------|--------|--------------|------|
| 19        | 6.7   | 35      | 8.4    |              | 34.7   |              | 42.8   |              | 1.7  |
| 20        | 7.0   | 36      | 24.7   |              | 38.4   |              | 46.9   |              | 5.4  |
| 21        | 5.1   | 37      | 34.5   |              | 42.0   |              | 50.7   |              | 8.9  |
| 22        | 2.2   | 38      | 47.5   |              | 45.5   |              | 54.6   |              | 12.6 |
| 6 23      | 2.66  | 40      | 1.26   | 42           | 49.26  | 6 56         | 58.77  | 7 1          | 16.2 |
|           | 23.6  |         | 116.3  |              | 209.8  |              | 253.7  |              | 44.8 |
| 6 21      | 4.726 | 37      | 35.266 | 42           | 41.966 | 6 56         | 50.747 | 7 1          | 8.96 |

March, 23, 1860.

Ill. West

A.H.

| S Geminor |       | τ Draconis sp. |       | α Geminor |        | α Can Min |       | β Geminor |       |
|-----------|-------|----------------|-------|-----------|--------|-----------|-------|-----------|-------|
|           | 21.9  |                | 41.8  |           | 15.4   |           | 35.1  |           | 20.8  |
|           | 25.8  |                | 53.7  |           | 19.7   |           | 38.8  |           | 25.0  |
|           | 29.4  |                | 29.5  |           | 23.6   |           | 42.1  |           | 28.8  |
|           | 33.2  |                | 5.1   |           | 27.7   |           | 45.5  |           | 32.7  |
| 7 15      | 37.1  | 7 22           | 18.07 | 29        | 31.96  | 35        | 49.27 | 40        | 36.7  |
|           | 147.4 |                | 148.1 |           | 118.3  |           | 210.7 |           | 144.0 |
| 7 15      | 29.48 | 7 21           | 29.62 | 29        | 23.666 | 35        | 42.14 | 40        | 28.80 |

March, 26

A.H.

S Hyd. et Crat.

♂ Leonis

|    |       |       |    |       |
|----|-------|-------|----|-------|
| 8  |       | 3.7   |    | 38.1  |
| 0  |       | 7.3   |    | 41.8  |
| 8  |       | 10.8  |    | 45.3  |
| 7  |       | 14.3  |    | 48.9  |
| 7  | 11 16 | 18.1  | 45 | 52.6  |
| 0  |       | 54.2  |    | 226.7 |
| 80 | 11 16 | 10.84 | 45 | 45.34 |

Mar. 27.

A.U.

M. W. L.

 $\mu$  Geminor

" Can Maj

12.7

41.6

16.4

45.5

20.0

49.1

23.7

52.7

6 18 27.6 6 42 56.3

100.4

245.2

6 18 20.08 6 42 49.04



















