

EXPLORATION OF BRITISH NORTH AMERICA.

57

FORT CARLTON.—Lat. 52° 52' 30" N.

1858. May 20th at 2H. 30M. P.M. (M. T. at Place nearly), the following Lunar was taken (Sun W. of Moon)  
Index Error +1' 55". Error of Chron. on M. T. at Place 6H. 39M. 37.3s. Approx. Error on G.M.T. 12M. slow.  
(Mean of 9 Sight.)

|                           |   |    |             |                   |          |
|---------------------------|---|----|-------------|-------------------|----------|
|                           |   |    | D. H. M. S. |                   | ° ' "    |
| Mean of Chronometer Times | - | 20 | 9 11 49.6   | Mean of Distances | 102 5 43 |
| Error                     | - | -  | 6 39 37.3   | Index Error       | - + 1 55 |
| T.M.T. at Place           | - | 20 | 2 32 12.3   |                   | 102 7 38 |

| ☉'s N. P. D. | Cor.   | Cor.  | Eq. of T. | ½ App. Hr. L. | In Arc.   | ½ (l' + p). |
|--------------|--------|-------|-----------|---------------|-----------|-------------|
| ° ' "        | "      | S.    | M. S.     | H. M. S.      | H. M. S.  | ° ' "       |
| 19 58 52     | 30.9   | 14.0  | 3 45.84   | 2 32 12.3     | 1 17 58.4 | 69 56 11    |
| 4 56.7       | 9.6    | 9.6   | 1.34      | 3 44.5        | 60        | 37 7 30     |
| 20 3 49      | 1854   | 840   | 3 44.5    | 2 35 56.8     | 77 58 24. | 107 3 41    |
| 69 56 11     | 2781   | 1260  | + to M.T. | 1 17 58.4     | 19 29 36  | 53 31 50    |
|              | 296.64 | 1.344 |           |               |           |             |
|              | 4 56.7 |       |           |               |           |             |

$$\text{Sin. } \theta = \sqrt{\text{sin. } l' \cdot \text{sin. } p \cdot \text{cos. } \frac{2H}{2}} \dots \dots \dots (1)$$

$$\text{Sin. } \frac{z}{2} = \sqrt{\text{sin. } \left( \frac{l' + p}{2} + \theta \right) \cdot \text{sin. } \left( \frac{l' + p}{2} - \theta \right)} \dots (2)$$

|               |          |          |    |           |
|---------------|----------|----------|----|-----------|
| H             | °        | '        | '' |           |
| $\frac{H}{2}$ | 2 cos.   | 19 29 36 | =  | 19.948730 |
| p             | sin.     | 69 56 11 | =  | 9.972810  |
| p'            | sin.     | 37 7 30  | =  | 9.780717  |
|               |          | 53 31 50 |    | 19.702257 |
|               | sin.     | 45 13 0  |    | 9.851128  |
|               | sin.     | 98 44 50 | =  | 9.994919  |
|               | sin.     | 8 18 50  | =  | 9.160156  |
|               |          |          |    | 19.155075 |
|               | sin.     | 22 12 40 |    | 9.577537  |
|               |          | 2        |    |           |
| s'            |          | 44 25 20 |    |           |
|               |          | 45 34 40 |    |           |
|               | R. & P + | 50       |    |           |
| s             |          | 45 35 30 |    |           |

To compute True and Apparent Altitude of ☽, m', and m.

| M. ☉'s R. A. | ☽'s R. A.  | Cor.   | Cor.  | ☽'s N. P. D. | ½ Hr. L.  |
|--------------|------------|--------|-------|--------------|-----------|
| H. M. S.     | H. M. S.   | S.     | 15.1  | ° ' "        | H. M. S.  |
| 3 51 24.09   | 10 50 46.9 | 117.65 | 36    | 7 42 28.3    | 3 52 58.7 |
| 1 28.70      | 1 10.5     | 1.96   |       | 9 3.6        | 2 32 12.3 |
| 5.91         |            |        | 906   |              |           |
| 3 52 58.7    | 10 51 57.5 | 36     | 453   | 7 33 24.7    | 6 25 11   |
|              |            | 117 6  | 543.6 | 82 26 35     | 10 51 47  |
|              |            | 558    | 9 3.6 |              | 4 26 46   |
|              |            | 70.56  |       |              | 2 13 23   |
|              |            | 1 10.5 |       |              |           |