

from the

| MOON' PHASES.       | D. | Toronto. |    | Quebec. |    | Twilight or Daylight begins and ends at— |       |          |       |           |       |             |       |         |       |     |  |
|---------------------|----|----------|----|---------|----|------------------------------------------|-------|----------|-------|-----------|-------|-------------|-------|---------|-------|-----|--|
|                     |    |          |    |         |    | Toronto.                                 |       | Halifax. |       | Montreal. |       | Fredricton. |       | Quebec. |       |     |  |
|                     |    |          |    |         |    |                                          |       |          |       |           |       |             |       |         |       |     |  |
|                     |    | h        | m  | h       | m  | Day.                                     | Beg.  | End      | Beg.  | End       | Beg.  | End         | Beg.  | End     | Beg.  | End |  |
|                     |    |          |    |         |    | A. M.                                    | P. M. | A. M.    | P. M. | A. M.     | P. M. | A. M.       | P. M. | A. M.   | P. M. |     |  |
| ○ Full Moon .....   | 1  | 10       | 24 | ev      | 10 | 56                                       | ev    |          |       |           |       |             |       |         |       |     |  |
| ☾ Last Quarter ...  | 4  | 9        | 44 | ev      | 10 | 16                                       | ev    | h        | m     | h         | m     | h           | m     | h       | m     |     |  |
| ☾ New Moon .....    | 14 | 1        | 30 | ev      | 2  | 2                                        | ev    | 15       | 39    | 6         | 48    | 5           | 39    | 6       | 48    |     |  |
| ☾ First Quarter ... | 22 | 0        | 17 | ev      | 0  | 49                                       | ev    | 10       | 5     | 29        | 6     | 59          | 5     | 30      | 6     |     |  |
| ☾ Perigee . ....    | 15 | 9        | 14 | ev      | 9  | 46                                       | ev    | 20       | 5     | 14        | 7     | 12          | 5     | 16      | 7     |     |  |
| ☾ Apogee . ....     | 28 | 2        | 50 | ev      | 3  | 22                                       | ev    | 28       | 5     | 27        | 22    | 5           | 27    | 22      | 5     |     |  |

GIE.

Slight Showers.

Day days.

's Satellites.

Jupiter will month. Ju- the sun.

of a triangle e what is the est inscribe 1

ent sides of e 3, and 5, 8; requir d

ht of a t t- 91, and the 2; requir d

es of a tri- and 28; re- of a pent be equally re corner s.

diameter

Ephemeris of the Planets, &c.

| Day | Mo. | Venus South Even. | Mars South Even. | Jupiter South. | Saturn South Even. | Sun's Longi- tude. | Sun's Right Ascen. | Venus Right Ascen. | Mars Right Ascen. | Jupiter Right Ascen. | Saturn Right Ascen. | Venus Decl. South. | Mars Decl. South. | Jupiter Decl. South. | Saturn Decl. North. |
|-----|-----|-------------------|------------------|----------------|--------------------|--------------------|--------------------|--------------------|-------------------|----------------------|---------------------|--------------------|-------------------|----------------------|---------------------|
| 7   | 19  | h m               | h m              | h m            | h m                | °                  | h m                | h m                | h m               | h m                  | h m                 | °                  | °                 | °                    | °                   |
| 1   | ... | 1 3               | 1 14             | morn           | 7 43               | 312 21             | 20 59              | 21 49              | 21 59             | 20 52                | 4 30                | 14 48              | 13 25             | 18 13                | 20 13               |
| 7   | ... | 1 8               | 1 8              | 11 48          | 7 20               | 318 20             | 21 23              | 22 18              | 22 17             | 20 58                | 4 30                | 12 12              | 11 43             | 17 50                | 20 14               |
| 2   | ... | 1 13              | 1 21             | 11 30          | 6 56               | 324 30             | 21 47              | 22 46              | 22 35             | 21 2                 | 4 30                | 9 21               | 9 58              | 17 27                | 20 16               |
| 19  | ... | 1 17              | 0 56             | 11 13          | 6 33               | 330 33             | 22 10              | 23 14              | 22 53             | 21 9                 | 4 30                | 6 28               | 8 9               | 17 3                 | 20 18               |
| 25  | ... | 1 21              | 0 50             | 10 55          | 6 10               | 336 35             | 22 33              | 23 41              | 23 16             | 21 14                | 4 31                | 3 25               | 6 18              | 16 39                | 20 21               |
| 28  | ... | 1 23              | 0 47             | 10 46          | 5 58               | 339 40             | 22 45              | 23 55              | 23 14             | 21 17                | 4 31                | 1 52               | 5 21              | 16 27                | 20 22               |

| Day of Month. | Day of Week. | Day of Year. | Calendar for Upper Canada and Nova Scotia. |    |           |    |             |    | Calendar for Lower Canada and New Brunswick. |    |           |      |             |    | DEPARTMENT FOR ALL OF UPPER AND LOWER CANADA. |                                  |                |                   |                         |                          |       |     |     |      |    |    |    |    |
|---------------|--------------|--------------|--------------------------------------------|----|-----------|----|-------------|----|----------------------------------------------|----|-----------|------|-------------|----|-----------------------------------------------|----------------------------------|----------------|-------------------|-------------------------|--------------------------|-------|-----|-----|------|----|----|----|----|
|               |              |              | Sun Rises.                                 |    | Sun Sets. |    | Moon Rises. |    | Sun Rises.                                   |    | Sun Sets. |      | Moon Rises. |    | Pole Star in Meridian Evening.                | Shadow at Noon Meridian Evening. | Mn's Age Noon. | Moon South. Morn. | Moon's Place at 7 P. M. | Sun's declination South. |       |     |     |      |    |    |    |    |
|               |              |              | h                                          | m  | h         | m  | h           | m  | h                                            | m  | h         | m    | h           | m  |                                               |                                  |                |                   |                         |                          | h     | m   | s   | days | h  | m  | °  | '  |
| 1             | Thur.        | 32           | 7                                          | 18 | 5         | 10 | 4           | 39 | 7                                            | 28 | 0         | 4    | 31          | 4  | 19                                            | 47                               | 12             | 13                | 53                      | 14.2                     | Morn. | ss  | 11  | 17   | 6  | 35 |    |    |
| 2             | Friday       | 33           | 7                                          | 17 | 5         | 11 | 5           | 41 | 7                                            | 26 | 5         | 2    | 5           | 4  | 15                                            | 51                               | 12             | 14                | 6                       | 15.3                     | 24    | do. | 2   | 16   | 49 | 22 |    |    |
| 3             | Satur.       | 34           | 7                                          | 16 | 5         | 13 | 6           | 44 | 7                                            | 25 | 3         | 6    | 31          | 4  | 11                                            | 54                               | 12             | 14                | 7                       | 16.2                     | 1     | 9   | ss  | 3    | 16 | 31 | 51 |    |
| 4             | Sund.        | 35           | 7                                          | 14 | 5         | 14 | 7           | 48 | 7                                            | 23 | 5         | 7    | 45          | 4  | 7                                             | 57                               | 12             | 14                | 13                      | 17.3                     | 1     | 52  | do. | 17   | 16 | 14 | 3  |    |
| 5             | Mond.        | 36           | 7                                          | 13 | 5         | 16 | 8           | 51 | 7                                            | 22 | 6         | 8    | 56          | 4  | 4                                             | 0                                | 12             | 14                | 18                      | 18.3                     | 2     | 23  | do. | 23   | 15 | 55 | 58 |    |
| 6             | Tuesd.       | 37           | 7                                          | 12 | 5         | 17 | 9           | 53 | 7                                            | 20 | 8         | 9    | 51          | 4  | 0                                             | 4                                | 12             | 14                | 22                      | 19.3                     | 3     | 14  | ss  | 11   | 5  | 37 | 37 |    |
| 7             | Wed.         | 38           | 7                                          | 11 | 5         | 18 | 10          | 59 | 7                                            | 19 | 9         | 11   | 2           | 3  | 56                                            | 7                                | 12             | 14                | 25                      | 20.3                     | 4     | 55  | do. | 23   | 15 | 19 | 0  |    |
| 8             | Thur.        | 39           | 7                                          | 8  | 5         | 19 | Morn        | 7  | 18                                           | 5  | 11        | Morn | 3           | 52 | 11                                            | 12                               | 14             | 28                | 21.3                    | 4                        | 38    | ss  | 6   | 15   | 0  | 7  |    |    |
| 9             | Friday       | 40           | 7                                          | 7  | 5         | 21 |             | 7  | 17                                           | 5  | 13        |      | 12          | 3  | 48                                            | 14                               | 12             | 14                | 30                      | 22.3                     | 5     | 23  | do. | 19   | 14 | 40 | 59 |    |
| 10            | Satur.       | 41           | 7                                          | 6  | 5         | 22 | 1           | 18 | 7                                            | 16 | 5         | 14   | 1           | 25 | 3                                             | 44                               | 17             | 12                | 14                      | 31                       | 23.3  | 6   | 12  | ss   | 3  | 14 | 21 | 36 |
| 11            | Sund.        | 42           | 7                                          | 4  | 5         | 24 | 2           | 20 | 7                                            | 15 | 5         | 2    | 38          | 3  | 40                                            | 21                               | 12             | 14                | 31                      | 24.3                     | 7     | 6   | do. | 10   | 14 | 1  | 59 |    |
| 12            | Mond.        | 43           | 7                                          | 3  | 5         | 25 | 3           | 43 | 7                                            | 14 | 5         | 3    | 54          | 3  | 36                                            | 24                               | 12             | 14                | 31                      | 25.3                     | 8     | 6   | ss  | 1    | 13 | 42 | 8  |    |
| 13            | Tuesd.       | 44           | 7                                          | 2  | 5         | 27 | 4           | 52 | 7                                            | 12 | 5         | 4    | 3           | 32 | 3                                             | 32                               | 27             | 12                | 14                      | 30                       | 26.3  | 9   | 9   | do.  | 15 | 13 | 22 | 3  |
| 14            | Wed.         | 45           | 7                                          | 1  | 5         | 28 | 5           | 57 | 7                                            | 11 | 5         | 5    | 4           | 3  | 28                                            | 31                               | 12             | 14                | 28                      | 27.3                     | 10    | 15  | do. | 30   | 13 | 1  | 45 |    |
| 15            | Thur.        | 46           | 7                                          | 0  | 5         | 29 | 6           | 43 | 7                                            | 10 | 5         | 6    | 51          | 3  | 24                                            | 34                               | 12             | 14                | 25                      | 28.3                     | 11    | 19  | ss  | 10   | 12 | 41 | 14 |    |
| 16            | Friday       | 47           | 6                                          | 58 | 5         | 31 | Sets        | 7  | 6                                            | 5  | 23        | Sets | 3           | 20 | 38                                            | 12                               | 14             | 22                | 29.3                    | ev. 18                   | ss    | 1   | 12  | 20   | 31 |    |    |    |
| 17            | Satur.       | 48           | 6                                          | 56 | 5         | 32 | 6           | 51 | 7                                            | 5  | 23        | 6    | 48          | 3  | 16                                            | 41                               | 12             | 14                | 18                      | 30.3                     | 1     | 14  | do. | 10   | 11 | 59 | 36 |    |
| 18            | Sund.        | 49           | 6                                          | 55 | 5         | 33 | 8           | 10 | 7                                            | 3  | 25        | 8    | 9           | 3  | 12                                            | 44                               | 12             | 14                | 13                      | 31.3                     | 2     | 6   | ss  | 1    | 11 | 38 | 30 |    |
| 19            | Mond.        | 50           | 6                                          | 53 | 5         | 35 | 9           | 24 | 7                                            | 2  | 26        | 9    | 26          | 3  | 8                                             | 48                               | 12             | 14                | 7                       | 32.3                     | 2     | 55  | do. | 15   | 11 | 17 | 13 |    |
| 20            | Tuesd.       | 51           | 6                                          | 52 | 5         | 36 | 10          | 37 | 7                                            | 0  | 28        | 10   | 46          | 3  | 4                                             | 51                               | 12             | 14                | 1                       | 33.3                     | 3     | 43  | do. | 23   | 10 | 55 | 46 |    |
| 21            | Wed.         | 52           | 6                                          | 50 | 5         | 37 | 11          | 48 | 6                                            | 58 | 5         | 30   | 11          | 53 | 3                                             | 0                                | 55             | 12                | 13                      | 54                       | 34.3  | 4   | 39  | ss   | 12 | 10 | 34 | 8  |
| 22            | Thur.        | 53           | 6                                          | 49 | 5         | 39 | Morn        | 6  | 56                                           | 5  | 32        | Morn | 2           | 56 | 58                                            | 12                               | 13             | 47                | 35.3                    | 5                        | 19    | do. | 25  | 10   | 12 | 21 |    |    |
| 23            | Friday       | 54           | 6                                          | 47 | 5         | 40 |             | 58 | 6                                            | 55 | 5         | 33   | 1           | 6  | 2                                             | 53                               | 2              | 12                | 13                      | 38                       | 36.3  | 6   | 9   | ss   | 8  | 9  | 50 | 24 |
| 24            | Satur.       | 55           | 6                                          | 45 | 5         | 42 | 2           | 46 | 6                                            | 54 | 5         | 34   | 2           | 14 | 2                                             | 49                               | 5              | 12                | 13                      | 30                       | 37.3  | 7   | 9   | do.  | 26 | 9  | 28 | 19 |
| 25            | Sund.        | 56           | 6                                          | 44 | 5         | 43 | 3           | 9  | 6                                            | 51 | 5         | 35   | 3           | 19 | 2                                             | 45                               | 9              | 12                | 13                      | 20                       | 38.3  | 8   | 51  | ss   | 2  | 9  | 6  | 5  |
| 26            | Mond.        | 57           | 6                                          | 42 | 5         | 44 | 4           | 3  | 6                                            | 50 | 5         | 37   | 4           | 15 | 2                                             | 41                               | 12             | 12                | 13                      | 10                       | 39.3  | 8   | 42  | do.  | 14 | 8  | 43 | 43 |
| 27            | Tuesd.       | 58           | 6                                          | 40 | 5         | 46 | 4           | 51 | 6                                            | 57 | 5         | 39   | 5           | 1  | 2                                             | 37                               | 16             | 12                | 12                      | 59                       | 40.3  | 9   | 32  | do.  | 26 | 8  | 21 | 14 |
| 28            | Wed.         | 59           | 6                                          | 39 | 5         | 47 | 5           | 30 | 6                                            | 55 | 5         | 41   | 5           | 40 | 2                                             | 33                               | 19             | 12                | 12                      | 48                       | 41.3  | 10  | 20  | ss   | 8  | 7  | 58 | 37 |

PROB. 4.—The sides of a hexagon are 12, what is the side of the largest inscribed square?

PROB. 5.—A father wills \$16,000, \$12,000, and \$8,000, to his three children. But it is found his estate is worth only \$20,000. How much must each share be?

PROB. 6.—The clocks in Italy go on to 24 hours? How many strokes do they strike in that time?

PROB. 7.—A. B. and C. agree to do a piece of work for \$26.45. A. and B. do 3-4ths of it, A. and C. do 9-10ths, and B. and C. do 13-20ths. What ought each to have?

PROB. 8.—The greatest diameter of an octagon is 18, required its inscribed square.

PROB. 9.—Required the largest 8-sided figure that can be inscribed in a square, whose side is 20 inches.