

THE MOON'S RISING is given from Full to Change, and the setting from Change to Full.

MOON'S PLACE.—The symbols and numbers in this column indicate the Moon's place in the Signs or Constellations of the Zodiac, to the nearest degree of longitude, at 7 o'clock P. M. Toronto Time. Pisces being regarded the first of the signs.

MOON'S AGE.—This column shows to the nearest tenth of a day, the Moon's age at noon, Toronto.

MOON SOUTH.—This column shows the time the Moon is "south," or in the meridian of Toronto, and is nearly the same for all parts of the Provinces.

TWILIGHT.—This table shows at intervals of six days, the times of beginning of twilight in the morning, and of the end at evening—the sun, at the computed instants, being 80 degrees below the horizon.

THE MOON'S PHASES.—This table shows the time for two meridians, when the Moon passes the geocentric longitudes of 0 dg., 90 dg., 180 dg., and 270 dg., from the Sun.

THE COLUMN OF "POLE STAR IN MERIDIAN," shows for every day in the year, the exact time when the North Star makes its transit over the upper meridian of longitude, 5 h. 8 m. 12 s., west of Greenwich, and is sufficiently exact for ordinary use in all of the British Provinces.

The time of the Lower Transit for any given day may be found by adding 31 h. 58 m. 2.045 s. to the time of the preceding Upper Transit. This column is designed to facilitate the computation of the Rising, Setting, and Meridian Passage of the brightest Fixed Stars, by using the numbers opposite the same in the Star Table. It will also be found of some service to surveyors and astronomers. When great exactness is required, the meridian passage of the Pole Star, for several places, may be obtained by applying the following corrections to the times expressed in the calendar pages. For Toronto, subtract 2.55 seconds; for Kingston, add 0.22 sec.; for Montreal add 2.24 sec.; for Quebec, add 3.36 sec.; for Fredericton, add 6.32 sec.; and for Halifax, add 8.78 sec.

The times of greatest eastern elongation of the Polar Star, may be found for any day by *subtracting* the following constants from the time of Upper Transit; and the time of greatest Western elongation may be found by *adding* the same constants. For Toronto, 5 h. 53 m. 26.9 sec.; for Kingston, 5 h. 53 m. 21.4 sec.; for Halifax, 5 h. 53 m. 15 sec.; for Montreal, 5 h. 53 m. 4.4 s.; for Fredericton, 5 h. 52 m. 56.8 s.; and for Quebec 5 h. 52 m. 46.75 s. In computing these constants, the mean polar distance of the North Star for 1855 was assumed at 1° 28 m., and the slight variations in that distance will not produce an error of more than two seconds in the constants, when the variations have their greatest value.

There is not sufficient room for a table of the "Azimuth of Greatest Elongation" of the Pole Star. But this can be very easily found for any place by the following formula, the star's polar distance, and the co-latitude of the place being known; the former of which is given for every day in this Almanac.

$$\text{Log. Sine Azimuth} = 10 + \text{Log. Sine Polar Distance} - \text{Log. Sine co-Lat.}$$

NOTE.—The Problems in this Almanac are of a highly practical character, and combine utility with the theoretical. Persons who send solutions of any of these problems, (post-paid) to the Publisher, at Toronto, before July 1st, 1855, will have the same publicly acknowledged in the issue for 1856.

Eclipses for the Year 1855.

There will be two eclipses of the Sun and two of the Moon this year.

I. A Total Eclipse of the Moon, in the evening of May 1, visible throughout Canada. Magnitude 18.348 digits on the southern limb. The total eclipse begins 1 h. 3 m. after the beginning of the eclipse. Total duration of eclipse 3 h. 42 m. See the following table.

II. A Partial Eclipse of the Sun, May 15th, invisible in Canada.

III. A total Eclipse of the Moon, early in the morning of October 25th, visible throughout Canada. Magnitude 17.568 digits on the Moon's Northern limb. Entire duration, 3 h. 25 m. See the following table.

IV. A partial Eclipse of the Sun, Nov. 9th, invisible in Canada.

PRINCIPAL PLACES.	ECLIPSE OF MAY 1ST AND 2ND.				ECLIPSE OF OCTOBER 25TH.			
	Eclipse Begins	Total Begins	Total ends	Eclipse ends	Eclipse begins	Total begins	Total ends	Eclipse ends
	Eve 1st.	Eve. 1st.	Morn 2nd.	Morn 2nd.	Morn 25th.	Morn 25th.	Morn 25th.	Morn 25th.
St. John's, Newfoundland	h. m. 10 45	h. m. 11 48	h. m. 1 24	h. m. 2 27	h. m. 2 15	h. m. 3 10	h. m. 4 45	h. m. 5 46
Halifax, Nova Scotia	10 0	11 3	0 39	1 42	1 30	2 31	4 0	5 1
Fredericton, N. B.	9 47	10 50	0 27	1 29	1 17	2 18	3 47	4 48
Quebec	9 29	10 32	0 8	1 11	0 59	2 0	3 29	4 30
Three Rivers	9 24	10 27	0 3	1 6	0 54	1 55	3 24	4 25
Montreal	9 20	10 23	11 59 (ev 1st)	1 2	0 50	1 51	3 20	4 21
Cornwall	9 15	10 18	11 54	0 57	0 45	1 46	3 15	4 16
Prescott	9 12	10 15	11 51	0 54	0 42	1 43	3 12	4 13
Bytown	9 10	10 13	11 49	0 52	0 40	1 41	3 10	4 11
Kingston	9 7	10 10	11 46	0 49	0 37	1 38	3 7	4 8
Cobourg	9 2	10 5	11 41	0 44	0 32	1 33	3 2	4 3
Toronto	8 57	10 0	11 36	0 39	0 27	1 28	2 57	3 58
Hamilton	8 54	9 57	11 33	0 36	0 24	1 25	2 54	3 55
London	8 49	9 52	11 29	0 31	0 19	1 20	2 49	3 50

Mathematical Acknowledgements.

We have the pleasure to notice a large number of Solutions of the Problems in the Almanac for 1854, from various correspondents.

We cannot print the Solutions for want of room, nor was this our design, as we do not intend to make the Almanac take the place or character of a mathematical work. The *Answers* of the Problems will be published, and those who solve them correctly will be noticed. In examining the Solutions, we have discarded mistakes in the operations, where the *principles* of working were correct. In such cases we accord to the author the honor of a right solution. We cannot pledge ourselves to look for such errors when the answers are wrong, and correspondents are requested to be very careful in the operations.