

Explanations, and Principal Articles of the Calendar for 1870.

EXPLANATIONS.

All the calculations are reduced to local mean time for Charlottetown, lat. $46^{\circ} 13' 55''$ N., long. $63^{\circ} 7' 23''$ W., with the exception of equation of time and Sun's right ascension and declination, which are given for apparent noon. The Sun's apparent semi-diameter is also inserted on the respective days for each complete second of arc.

At the head of each month, beside the changes of the Moon, are given the Moon's bearing at the time of change, the Perigee or Moon's nearest approach to the earth, and the days when the Moon crosses the Equator, and reaches her greatest north or south declination; on which point Saxby's system of Lunar Equinoxials is founded; the principle being that on these days the Moon's influence on the atmospheric tides is most marked; and when these times fall close upon the time of Moon's change or Perigee, this disturbing influence is proportionally increased. These cases are marked ** or *** according as two or three of these influences combine. When *** occur, a gale or other strong atmospheric disturbance may be expected with considerable certainty.

In addition to the general local disturbance on these days, the effects of a storm generated within the tropics is sometimes propagated so as to arrive in about two or three days—it having been found that the average rate at which these travel is about 16 miles per hour.

ECLIPSES.

There will be six Eclipses this year, two of the Moon and four of the Sun, one of which will be partially visible at Charlottetown.

I. A total eclipse of the Moon, January 17th. Greenwich mean time of opposition, 2h. 47m. 27s.

II. A partial eclipse of the Sun, January 31. Greenwich mean time of conjunction, 2h. 59m. 11s. Only visible at the South Pole and the Antarctic Ocean.

III. A partial eclipse of the Sun, June 28. Greenwich mean time of conjunction, 11h. 40m. 21s. Visible at Melbourne, Sidney, Van Diemen's Land, New Zealand and part of the South Pacific Ocean.

IV. A total eclipse of the Moon, July 12. Greenwich mean time of opposition, 10h. 33m. 36.8s. The Moon will rise at Charlottetown, partially but not conspicuously obscured in the Penumbra.

V. A partial eclipse of the Sun, July 27. Greenwich mean

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