The *Solar Year* is the time which the sun takes in passing over the twelve signs of the Zodiac, which is 365 days 5h. 48m. 48s. The *Civil Year* is 365 days 6 hours, or rather 365 days for three years in succession, and every fourth year 366. The *Sidereal Year* is 365 days 6h 6m. 18.5s. The *Anomalistic Year* is 365 days 6h. 14m. The *Lunar* or Astronomical Year is 354 days 8h. 48.6m., or 12 lunations. The Anomalistic Year is an advance of the orbit as part of the solar system in space, and its excess over the Sidereal or Tropical year is the stellar measure of the annual advance of the whole system.

Eclipses.

During the year 1870 there will be four eclipses of the Sun and two of the Moon.

I.—A total eclipse of the Moon, January 17th, visible in Canada. The following table contains the mean time of the only phase of the eclipse visible, as the Moon will have set previous to the contact with the shadow.

Phase.	*Kingston.*	*Cobourg.*	*Hamilton.*	*London.*
	h.m.	h.m.	h.m.	h.m.
First contact with pen.....	6 50 a.m.	6 43 a.m.	6 36 a.m.	6 31 a.m.

II.—A partial eclipse of the Sun, January 31, 1870, invisible in Canada, confined to the Southern Ocean.

III.—A partial eclipse of the Sun, June 28, 1870, invisible in Canada, confined to the south of Australia, New Zealand, and adjacent ocean.

IV.—A total eclipse of the Moon, July, 1870. The greatest part of the eclipse will terminate previous to the Moon's rising, the only phase visible being the last contact with the penumbra.

Phase.	*Kingston.*	*Cobourg.*	*Hamilton.*	*London.*
	h.m.	h.m.	h.m.	h.m.
Last contact with pen.....	8 16 p.m.	8 09 p.m.	8 02 p.m.	7 57 p.m.

V.—A partial eclipse of the Sun, July 27th, invisible in Canada.

VI.—A total eclipse of the Sun, December 22nd, 1870. Visible as a partial one in the Maritime Provinces, invisible in Ontario. Begins on the earth generally, December 21st, 22d. 13h. 36m. mean time at Greenwich, in latitude 35° 37 N., and longitude 45° 44′ W. of Greenwich. Central eclipse begins generally 23h. 34m., in longitude 43° 45′ W., and latitude 56° 11′ N.; ends 22d. 1h. 21m. in longitude 69° 55′ E., and latitude 48° 03′ N. Eclipse ends on the earth generally 22d. 2h. 41m., in longitude 37° 16′ E., and latitude 26° 05′ N.

Appearances of the Planets.

Jupiter will be an evening star until the 24th May, afterwards a morning star. Mars will be an evening star until the 12th March, afterwards a morning star. Saturn will be a morning star until April 4th, then an evening star until the latter part of December. Venus is an evening star until the 14th of February, and a morning star until the 7th of December