BEGINNING AND LENGTH OF THE SEASONS.

	H.	M.	
Sun enters ♑ (Winter begins) Dec. 22, 1863, at	1	58	M.
Sun enters ♈ (Spring begins) March 20, 1864, at	8	10	M.
Sun enters ♋ (Summer begins) June 21, 1864, at	4	42	M.
Sun enters ♎ (Autumn begins) Sept. 22, 1864, at	7	16	A.
Sun enters ♑ (Winter begins) Dec. 21, 1864, at	1	8	A.

		D.	H.	M.
Length of the	Winter of 1863-64	89	6	12
	Spring of 1864	92	20	42
	Summer of 1864	93	14	24
	Autumn of 1864	89	17	47
Length of the Tropical year		365	11	5

ECLIPSES.

There will be TWO Eclipses this year—both of the Sun.

1. Thursday, May 5. A total Eclipse of the Sun, *invisible* in Nova Scotia; but will be seen in the North Pacific Ocean, California, and in the North Western part of North America.

Eclipse begins May 5..... 4h. 46m. A. } Mean time at
Eclipse ends May 5.....10h. 15m. A. } Halifax.

II. Sunday, October 30. A total Eclipse of the Sun, *invisible* in all parts of British North America; but will be seen in the South Atlantic Ocean, and in all parts of South America. It will be partial at the Cape of Good Hope.

Eclipses take place every half year, and at each period there may be one, two, or three; if only one it must be an eclipse of the Sun. When the earth becomes situated between the Sun and the Moon, the latter must be covered with darkness, and there will be an eclipse of the Moon, which will be total or partial, according as the Moon plunges wholly or in part into the cone of the shadow—it will be central, if the centre of the Moon coincides exactly with that of the terrestrial shadow. A total eclipse of the Moon never exceeds two hours, and may be shorter than that period.

When the Moon interposes herself between the Sun and the earth, the former may be eclipsed. The eclipse is *partial* when the Moon hides only a part of the Sun's disk; total, when she covers the whole of it; *annular* when the Sun, masked by the Moon, projects all round in the form of a luminous ring; lastly, it is *central* when the spectator's place is in the prolongation of the line joining the centres of the Sun and Moon.

The Moon being nearly of the same figure as the earth, her shadow and her penumbra are formed in the same manner; only as she is much smaller, her cone of shadow can never cover more than a portion of the earth's surface. A solar eclipse never takes place at the same time all over the earth, and the same eclipse of the Sun, which is total for one point on the earth, may be invisible at another. In most solar eclipses, the Moon's disk is clothed with a faint light, proceeding from the reflection caused by the illuminated part of the earth.