Eclipses, 1880.

In the year 1880 there will be four Eclipses of the SUN and two of the MOON.

I—A Total Eclipse of the Sun, January 11, 1880, invisible at Greenwich.

Begins on the Earth generally, Jan. 11, 8h. 0m. 5s., Mean Time at Greenwich, in Longitude 153° 44′ E. of Greenwich, and Latitude 4° 33′ N.

Central Eclipse begins generally, Jan. 11, 9h. 3m. 8s., in Longitude 142° 20′ E. of Greenwich, and Latitude 15° 18′ N.

Central Eclipse at noon, Jan. 11, 10h. 48m. 2s., in Longitude 160° 0′ W. of Greenwich, and Latitude 10° 24′ N.

Central Eclipse ends generally, Jan. 11, 12h. 4m. 5s., in Longitude 109° 47′ W. of Greenwich, and Latitude 41° 41′ N.

Ends on the Earth generally, Jan. 11, 13h. 7m. 8s., in Longitude 118° 56′ W. of Greenwich, and Latitude 31° 27′ N.

II—A Total Eclipse of the Moon, June 21–22, 1880, invisible at Greenwich.

	h.	m.	s.	
First contact with the Penumbra, June 21	23	18	1	} M
First contact with the Shadow				
Beginning of Total Phase				
Middle of Eclipse				
End of Total Phase				
Last contact with the Shadow				
Last contact with the Penumbra				

At these times respectively, the Moon will be in the Zenith at the places whose positions are,

	°	′		°	′
Longitude	170	40 W.	} of Greenwich.	Latitude 24	12 S.
	175	46 E.		24	9
	157	23		24	4
	152	59		24	3
	148	35		24	1
	130	11		23	56
	116	37 E.		23	52 S.

III—An Annular Eclipse of the Sun, July 6–7, 1880, invisible at Greenwich.

Begins on the Earth generally, July 6, 22h. 43m. 0s., Mean Time at Greenwich, in Longitude 59° 37′ W. of Greenwich, and Latitude 22° 47′ S.

Central Eclipse begins generally, July 7, 0h. 31m. 0s., in Longitude 64° 55′ W. of Greenwich, and Latitude 51° 51′ S.

Central Eclipse at noon, July 7, 1h. 34m. 6s., in Longitude 22° 28′ W. of Greenwich, and Latitude 52° 30′ S.

Central Eclipse ends generally, July 7, 1h. 49m. 5s., in Longitude 8° 10′ W. of Greenwich, and Latitude 66° 34′ S.

Ends on the Earth generally, July 7, 3h. 37m. 4s., in Longitude 12° 44′ E. of Greenwich, and Latitude 44° 43′ S.

IV—A Partial Eclipse of the Sun, December 1, 1880, invisible at Greenwich.