

ECLIPSES FOR THE YEAR 1887.

During this year there will be four Eclipses, two of the Sun and two of the Moon, in the following order :

I. February 7-8. There will be a partial Eclipse of the Moon, invisible here. The first contact with the Penumbra occurs in Longitude $118^{\circ} 36'$ W., Latitude $14^{\circ} 39'$ N. The middle occurs in Longitude $152^{\circ} 6'$ W., Latitude $14^{\circ} 20'$ N., ending in Longitude $174^{\circ} 22'$ E., and Latitude $14^{\circ} 0'$ N. The first contact with the shadow occurs at 52° from the northmost point of the Moon's limb towards the East.

The last contact at $27'$ towards the West.

II. February 22nd. There will be an Annular Eclipse of the Sun, invisible. We give some of the astronomical particulars. This Eclipse begins on the Earth generally February 22nd, 6h. 40m. 8 mean time at Greenwich, in Longitude $165^{\circ} 25'$ E. of Greenwich and Latitude $37^{\circ} 39'$ S. It ends on the Earth generally February 22, 12h. 25m. 4, in Longitude $91^{\circ} 41'$ W. of Greenwich and Latitude $7^{\circ} 1'$ S.

III. August 3rd. There will be a partial Eclipse of the Moon, visible at Greenwich, and as a guide for our readers we give the following particulars : The first contact with the Penumbra occurs August 3rd, 6h. 11m. 9, mean time at Greenwich, in Longitude $87^{\circ} 4'$ E. of Greenwich and Latitude $17^{\circ} 6'$ S. The middle of the Eclipse occurs at 8h. 48m. 9, in Longitude $49^{\circ} 8'$ E. of Greenwich and in Latitude $16^{\circ} 50'$ S. Last contact with the Penumbra occurs in Longitude $11^{\circ} 10'$ E., and in Latitude $16^{\circ} 35'$ S. The first contact with the shadow occurs at 130° from the northernmost point of the Moon's limb toward the East.

IV. August 18th. There will be a total Eclipse of the Sun, only partly visible as a partial Eclipse at Greenwich. The following details will show the relations of this Eclipse to our Latitude. It begins on the Earth generally August 18th, 15h. 5m. 5, mean time at Greenwich, in Longitude $54^{\circ} 30'$ East of Greenwich and in Latitude $37^{\circ} 27'$ North. Central Eclipse at noon August 18th, 17h. 15m. 5, in Longitude $102^{\circ} 0'$ East of Greenwich and in Latitude $53^{\circ} 47'$ North. This Eclipse ends on the Earth generally in Longitude $155^{\circ} 26'$ East of Greenwich and in Latitude $9^{\circ} 57'$ North. At Greenwich the Sun will rise partially Eclipsed, and continue about fifteen minutes.