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# ASTRONOMICAL CALCULATIONS.

**NOTE.**—In the computations for this Almanac the Seasons, Eclipses, and Moon's Phases are given in Standard Railroad Time. But it is impracticable to give the Risings and Settings of the Sun and Moon in that time.

By the following rule the standard time may be ascertained: For any place East of one of the Standard Meridians, and taking that Meridian's time, four minutes must be subtracted from the Almanac dates for every degree of difference of longitude.

For a place West of any Standard Meridian, and taking that Meridian's time, add four minutes to the Almanac date for rising and setting for every degree of difference of longitude. Any good school map will give the longitude near enough for the application of these rules.

## THE FOUR SEASONS—1887.

(EASTERN STANDARD TIME.)

WINTER  
SPRING  
SUMMER  
AUTUMN  
WINTER

begins 1886, December 21, 4, evening, and lasts 89 1  
 " 1887, March 20, 5, " " " 92 20  
 " 1887, June 21, 1, " " " 93 15  
 " 1887, September 23, 4, morning, and lasts 89 18  
 " 1887, December 21, 10, evening, Trop. Yr. 365 6

## ECLIPSES, 1887.

- In the year 1887 there will be four Eclipses, two of the Sun and two of the Moon.
- I. A Partial Eclipse of the Moon, February 6. Visible wholly to North America and Pacific Ocean, and more or less to South America, China and Australia. Occurring as follows: Moon enters Shadow, 4 h., 14 m., A.M. Moon leaves Shadow, 6 h., 30 m., A.M. Magnitude of Eclipse, 0.436 of Moon's diameter.
  - II. An Annular Eclipse of the Sun, February 22. Invisible
  - III. A Partial Eclipse of the Moon, August 3. Invisible
  - IV. A Total Eclipse of the Sun, August 19. Invisible

## THE TWELVE CONSTELLATIONS IN THE ZODIAC.

-  Aries, the Ram.
-  Taurus, the Bull.
-  Gemini, the Twins.
-  Cancer, the Crab.
-  Leo, the Lion.
-  Virgo, the Virgin.
-  Libra, the Balance.
-  Scorpio, the Scorpion.
-  Sagittarius, the Bowman.
-  Capricornus, the Goat.
-  Aquarius, the Waterman.
-  Pisces, the Fishes.



## MOVABLE FEASTS, ETC., 1887.

- Epiphany, Jan. 6.
- Septuagesima Sunday, Feb. 6.
- Sexagesima Sun. Feb. 13
- Quinquagesima—Shrove Sunday, Feb. 20.
- Ash Wednesday, Feb. 23.
- Quadragesima—1st Sunday in Lent, Feb. 27.
- Mid Lent, March 20.
- Palm Sunday, April 3.
- Good Friday, April 8.
- Easter Sunday, April 10
- Low Sunday, April 17.
- Rogation Sun., May 15.
- Ascension Day—Holy Thursday, May 19.
- Pentecost—Whit Sunday, May 29.
- Trinity Sunday, June 5.
- Corpus Christi, June 9.
- Advent Sunday, Nov. 27
- Christmas Day, Dec. 25

1887.

CALENDAR.

1887.

Jan.	S	M	T	W	T	F	S	Apr.	S	M	T	W	T	F	S	July.	S	M	T	W	T	F	S	Oct.	S	M	T	W	T	F	S
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This Diary Almanac will be found the most useful of any Almanac presented to the public.