



# Astronomical

## EQUINOX | SOLSTICE

### Vernal Equinox

The March or Northward Equinox is the Equinox on the Earth when the subsolar point appears to leave the Southern Hemisphere and cross the celestial equator, heading northward as seen from Earth. The March Equinox is known as the Vernal Equinox in the Northern Hemisphere and as the Autumnal Equinox in the Southern Hemisphere.

The March Equinox may be taken to mark the beginning of spring and the end of winter in the Northern Hemisphere but marks the beginning of autumn and the end of summer in the Southern Hemisphere. The March Equinox can occur at any time from March 21 to March 24.

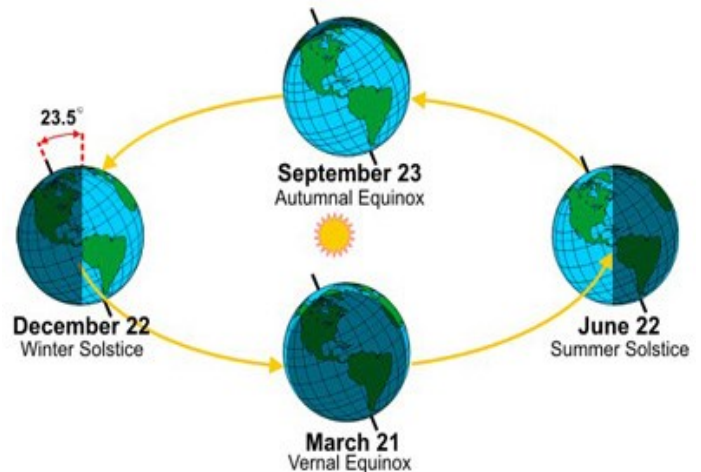
In astronomy, the March Equinox is the zero point of sidereal time and, consequently, right ascension. It also serves as a reference for calendars and celebrations in many human cultures and religions.

### Summer Solstice

The Summer Solstice (or Estival Solstice), also known as Midsummer, occurs when one of the Earth's poles has its maximum tilt toward the Sun. It is described as the longest day of the year. It happens twice yearly, once in each hemisphere (Northern and Southern). For that hemisphere, the summer solstice is when the Sun reaches its highest position in the sky and is the day with the longest period of daylight. At the pole, there is continuous daylight around the summer solstice. On the summer solstice, Earth's maximum axial tilt toward the Sun is  $23.44^\circ$ . Likewise, the Sun's declination from the celestial equator is  $23.44^\circ$ .

The Summer Solstice occurs during the hemisphere's summer. This is the June Solstice in the Northern Hemisphere and the December Solstice in the Southern Hemisphere. The Summer Solstice occurs sometime between June 20 and June 22 in the Northern Hemisphere and between December 20 and December 23 in the Southern Hemisphere.

Since prehistory, the Summer Solstice has been seen as a significant time of year in many cultures, and has been marked by festivals and rituals. Traditionally, in many temperate regions (especially Europe), the summer solstice is seen as the middle of summer and referred to as "midsummer". Today, however, in some countries and calendars it is seen as the beginning of summer.



### Autumnal Equinox

The September or Southward Equinox is the moment when the Sun appears to cross the celestial equator, heading southward. The September Equinox is known as the Autumnal Equinox in the Northern Hemisphere and as the Vernal Equinox in the Southern Hemisphere.

The September Equinox may be taken to mark the end of summer and the beginning of autumn (in the Northern Hemisphere, while marking the end of winter and the start of spring in the Southern Hemisphere). The September Equinox can occur at any time from September 21 to September 24.

At the Equinox, at the equator, the Sun rises directly in the east and sets directly in the west. Before the Southward equinox, the Sun rises and sets more to the north, and afterwards, it rises and sets more to the south.

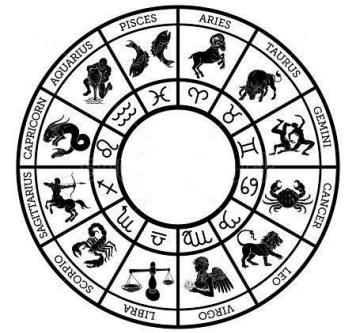
## Winter Solstice

The Winter Solstice (or Hibernial Solstice), also known as Midwinter, occurs when one of the Earth's poles has its maximum tilt away from the Sun. It is described as the longest night of the year. It happens twice yearly, once in each hemisphere (Northern and Southern). For that hemisphere, the Winter Solstice is the day with the shortest period of daylight and longest night of the year, when the sun is at its lowest daily maximum elevation in the sky.

The Winter Solstice occurs during the hemisphere's winter. Winter Solstice occurs sometime between December 20 and December 22 in the Northern Hemisphere and between June 20 and June 23 in the Southern Hemisphere.

Traditionally, in many temperate regions, the Winter Solstice is seen as the middle of winter, but today in some countries and calendars, it is seen as the beginning of winter.

Since prehistory, the Winter Solstice has been seen as a significant time of year in many cultures, and has been marked by festivals and rituals. It marked the symbolic death and rebirth of the sun. The seasonal significance of the winter solstice is in the reversal of the gradual lengthening of nights and shortening of days.



## ASTROLOGICAL

The zodiac is an area of the sky that extends approximately 8° north or south (as measured in celestial latitude) of the ecliptic, the apparent path of the Sun across the celestial sphere over the course of the year. The paths of the Moon and visible planets are also within the belt of the zodiac.

In Western astrology (and formerly astronomy) the zodiac is divided into twelve signs, each occupying 30° of celestial longitude and roughly corresponding to the constellations Aries, Taurus, Gemini, Cancer, Leo, Virgo, Libra, Scorpio, Sagittarius, Capricorn, Aquarius and Pisces.

The twelve astrological signs form a celestial coordinate system, or more specifically an ecliptic coordinate system, which takes the ecliptic as the origin of latitude and the Sun's position at vernal equinox as the origin of longitude.

- Aries | Ram / Fire / Mar21-Apr19
- Taurus | Bull / Earth / Apr20-May20
- Gemini | Twins / Air / May21-Jun20
- Cancer | Crab / Water / Jun21-Jul22
- Leo | Lion / Fire / Jul23-Aug22
- Virgo | Virgin / Earth / Aug23-Sep22
- Libra | Scales / Air / Sep23-Oct22
- Scorpio | Scorpion / Water / Oct23-Nov21
- Sagittarius | Archer / Fire / Nov22-Dec21
- Capricorn | Goat / Earth / Dec22-Jan19
- Aquarius | Water Bearer / Air / Jan20-Feb18
- Pisces | Fish / Water / Feb19-Mar20

