

WHEN IS SPRING, SPRING?

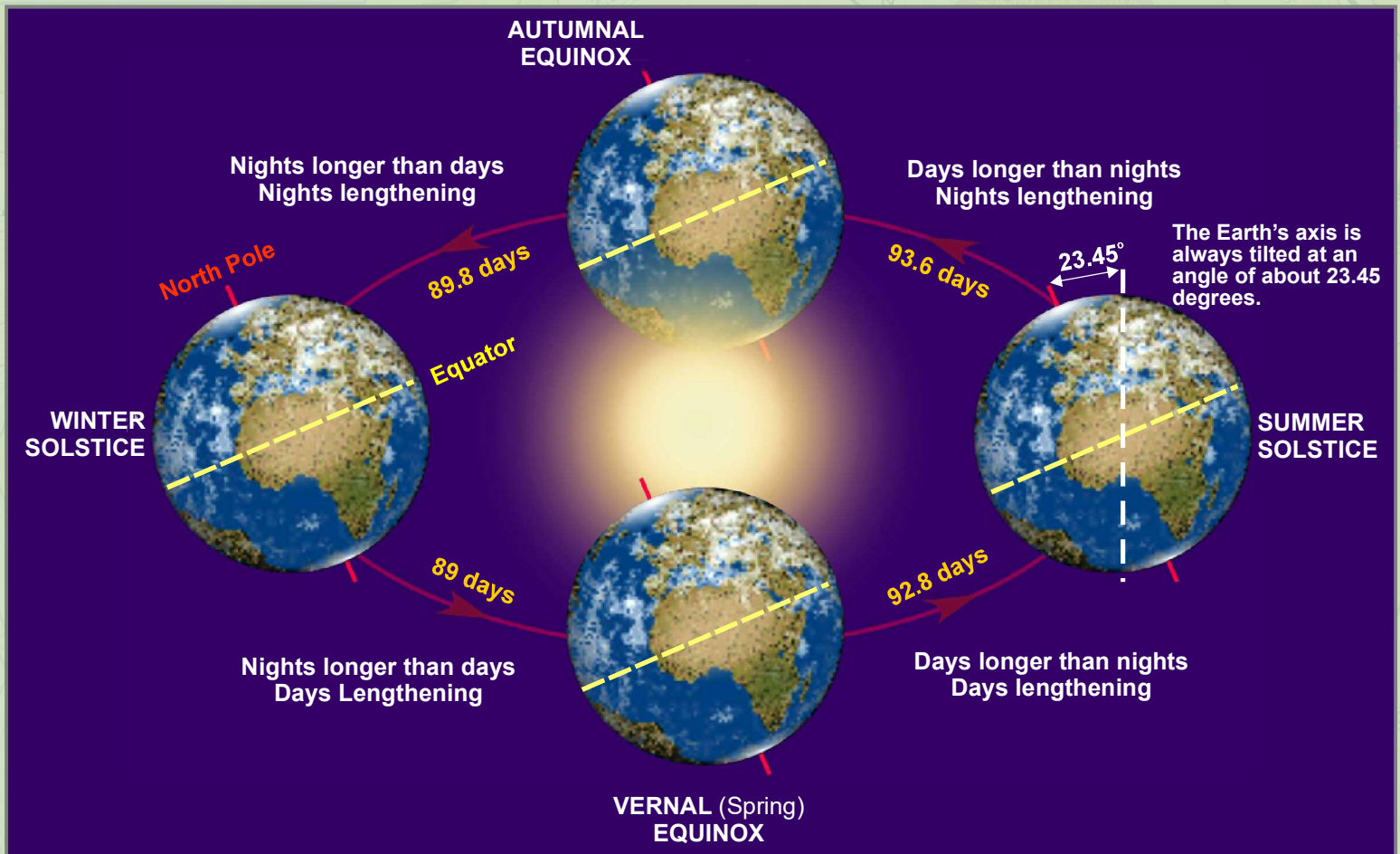
In 2025, the March equinox happens on March 20 and is the astronomical beginning of the spring season in the Northern Hemisphere and the autumn season in the Southern Hemisphere. But the question remains when is spring, spring.

The spring equinox in the Northern Hemisphere (also called the March equinox or vernal equinox across the globe) occurs when the Sun crosses the celestial equator going south to north. It's called the "celestial" equator because it's an imaginary line in the sky above the Earth's equator (see graphic below).

The word equinox comes from the Latin words for "equal night"—aequus (equal) and nox (night). On the equinox, the length of day and night is nearly equal in all parts of the world.

Astronomical Spring

Astronomically speaking, the first day of spring



Equinoxes are the only two times yearly that the Sun rises due east and sets due west for all of us on Earth! While the Sun passes overhead, the tilt of the Earth is zero relative to the Sun, which means that the Earth's axis neither points toward nor away from the Sun.

is marked by the spring equinox, which falls on March 19, 20, or 21.

Meteorological Spring

Meteorologically speaking, the official first day of spring is March 1 (and the last is May 31). Weather



scientists divide the year into quarters to make it easier to compare seasonal and monthly statistics from one year to the next. The meteorological seasons are based on annual temperature cycles rather than on the position of Earth in relation to the Sun, and they more closely follow the Gregorian calendar. Using the dates of the astronomical equinoxes and solstices for the seasons would present a statistical problem, as these dates can vary slightly each year.

Tid Bits About the Equinox

Night and day are often said to be equal in length. For our ancestors, whose timekeeping was less than precise than ours, day and night likely did seem equal. But today we know that to not be true.

Day and night are not exactly equal on the equinox. Daytime begins the moment any part of the Sun appears over the horizon and is not finished until the last part of the Sun disappears below the horizon. The "nearly" equal hours of day and night are due to refraction of sunlight or a bending of the light's rays that causes the sun to appear above the horizon when the actual position of the sun is below the horizon. If the Sun were to shrink to a starlike point – and we lived in a world without air – the spring and autumn equinoxes would truly have equal nights.

Additionally, the days become a little longer at the higher latitudes (those at a distance from the equator) because it takes the sun longer to rise and set. Therefore, on the equinox and for several days before and after the equinox, the length of day will range from about 12 hours and six and one-half minutes at the equator, to 12 hours and 8 minutes

at 30 degrees latitude, to 12 hours and 16 minutes at 60 degrees latitude.

No matter where you live on Earth, with the exception of the North and South Poles, the sun rises due east and sets due west at the equinox. At the equinoxes, the sun appears overhead at noon as seen from Earth's equator.

Due to time zone differences, there has not been a March 21 equinox in Canada during the 21st century. A March 21 equinox will next be seen in 2101.

The Seasons

The Earth makes a complete revolution around the sun once every 365 days, following an orbit that is elliptical in shape. This means that the distance between the Earth and Sun, which is 93 million miles on average, varies throughout the year.

During the first week in January, the Earth is about 1.6 million miles closer to the sun. This is referred to as the perihelion. The aphelion, or the point at which the Earth is about 1.6 million miles farther away from the sun, occurs during the first week of July. This fact may sound counter to what we know about seasons in the Northern Hemisphere, but actually, the difference is not significant in terms of climate and is NOT the reason why we have seasons.

Seasons are caused by the fact that the Earth is tilted on its axis by 23.5°. The tilt's orientation with respect to space does not change during the year; thus, the Northern Hemisphere is tilted toward the sun in June and away from the sun in December, as illustrated in the graphic above.