



PISGAH  
ASTRONOMICAL  
RESEARCH INSTITUTE

## Astro Advisory

*Notice of an upcoming  
astronomical event.*

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### THE DATE OF EASTER

**Rosman, NC (April 5, 2017)** – Astronomers at the Pisgah Astronomical Research Institute point out that at 6:29 a.m. EDT on Monday, March 20 the Sun, in its annual path around the sky, crosses the *celestial equator* on its way north for the spring. Of course, we realize it is not really the Sun that is moving but rather the Earth as it orbits the Sun each year. But, from our vantage point on the Earth, it appears to us that the Sun is moving along a path through the zodiac constellations. This path, called the *ecliptic*, crosses the celestial equator at two points on opposite sides of the sky. The point at which the Sun crosses heading north for the spring is called the *spring* or *vernal equinox*.

The first day of spring has always held great significance for calendar makers. In fact, until recent times, the year actually began, not on January 1, but on March 25, which was an approximation to the first day of spring. (Ask your family genealogist what this does in determining the date of birth of great-great-grandpa or grandma.) The vernal equinox historically has been used to determine the date of Easter. In simple terms Easter occurs on the first Sunday following the first full moon that occurs on or after the day of the vernal equinox. In 2017 the vernal equinox is on March 20 and the first full moon after that is on Tuesday, April 11. Thus, Easter this year is the next Sunday, April 16.

While this rule works in most years, things are not always so simple. The western Christian churches don't actually use the precise astronomical dates of the vernal equinox and full moon. Rather they use what is called the *ecclesiastical moon*, determined from tables, and fix the vernal equinox at March 21. Under these rules Easter can occur as early as March 22 or as late as April 25. Not only that, the eastern churches have a variety of rules some going back to the ancient Julian calendar rather than the Gregorian calendar developed in 1582 under the direction of Pope Gregory XIII. Thus, it is possible that Easter could occasionally occur on other than the date determined by the astronomical vernal equinox and full moon.

For more information on this topic and future dates of Easter visit the Astronomical Applications Department of the US Naval Observatory at

<http://aa.usno.navy.mil/data/docs/easter.html>

**About PARI** - PARI is a public not-for-profit public organization established in 1998. Located in the Pisgah National Forest southwest of Asheville, NC, PARI offers STEM educational programs at all levels, from K-12 through post-graduate research. For more information about PARI and its programs, visit [www.pari.edu](http://www.pari.edu).

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