

# How do you figure when spring starts?

**S**PRING officially arrives for the northern hemisphere on Monday, March 20, at 10:28 a.m.

The "official" start of spring often puzzles people. Just what does exactly determine the precise moment?

The answer is the position of the sun with respect to a line called the celestial equator.

The earth's equator is a line that divides our planet into a northern and southern hemisphere. When this equator line is extended out into space, it's called the celestial equator, and it divides the sky into two hemispheres as well.

EARTH ORBITS the sun, but our planet's axis is tilted 23.5 degrees so the sun may appear as much as 23.5 degrees above or 23.5 degrees below the celestial equator.



skywatch  
**Raymond E. Bullock**

In June the sun is at its highest above the equator, because the earth's northern hemisphere is tilted its most toward the sun, and we have summer.

In December the sun is at its lowest point, and we have winter.

Obviously there are two points where the sun's pathway crosses the celestial equator. When the sun is traveling from its low point towards its high point, it crosses the celestial equator moving from south to north.

The precise moment the sun crosses that line is the official start of spring.

THE POINT of that crossing also has a special name. It's the vernal equinox.

"Vernal" is the Latin word for spring, and "equinox" means equal night. The length of the day is nearly equal to the length of night during this time. On the vernal equinox, the sun rises due east and sets due west.

We are rather self-centered in calling it the "vernal" equinox. We may be starting spring in the northern hemisphere, but the people below the equator are starting autumn. Full moon is at 4:58 a.m. on March 22, two days after the vernal equinox. The moon will be fully lighted

by the sun and will set due almost west as the sun rises due east.

The bright star above and to the east (left) of the moon on the morning of March 23 is Spica (SPV ca), in Virgo. On the next morning the moon is to the east of Spica.

EASTER SUNDAY is on March 26 this year, but next year it falls in April.

Determining the date of this very erratic holiday is not as difficult as you may think. All you need to know is the phase of the moon and a few rules.

The ground rules for determining Easter were set up in the year 325 A.D. when the Emperor Constantine called for a Council at Nicaea for the purpose of calendar reform.

Based on the advice of his Christian Council, he decreed that Easter would be observed on the first Sunday following the first full moon that occurs after the vernal equinox (the start of spring).

The reason for choosing the full moon, rather than the new moon, was so people making a pilgrimage to the Holy Land could travel at

night by the light of the moon.

Since the start of spring occurs on March 20 or 21, the earliest date that can be Easter is March 22.

BUT NOW WE must consider the inevitable exceptions to the rule.

If the first full moon to occur after the start of spring falls on a Sunday, then the following Sunday is Easter. If the full moon happens to be on the same day as the vernal equinox, then the April full moon is used.

If the April full moon falls on a Sunday, the following Sunday is Easter unless that date is later than April 25, which is the latest date Easter is permitted to fall. If that Sunday does fall after the 25th, then the previous Sunday, the one with the full moon, must be used.

So all things considered, Easter can come as early as March 22, which it last did in the year 1818 and will again in 2285, or it may come as late as April 25, which it did in 1943 and will again in 2038.

This year Easter Sunday is March 26, which is only four days after the full moon.

Now, wasn't that simple?

MARS, JUPITER and Aldebaran form a triangle on the evening of the 26th. Compare the brightness and color of Mars and Aldebaran. People often confuse the two.

Mars is a planet, reflecting the light of the sun. Aldebaran is a star, producing its own light. Mars is at the apex of the triangle. Aldebaran is at the lower left.

The moon is approaching the star Antares (an TAR ces), in Scorpius, on the morning of March 27. On the 28th, the moon is east of Antares.

Last Quarter Moon is at 5:21 a.m. on March 30. It is approaching the last-quarter of its orbit around the earth. It is also approaching Saturn, which is above and to the east (left) of the moon in Sagittarius. On the following morning the moon has passed Saturn.

An excellent aid for learning constellations and keeping up to date with the sky is the monthly "Sky Calendar." A one year subscription is \$6 and is available from Abrams Planetarium, Michigan State University, East Lansing, 48824.

## Accounting exam date set

Walver exams for the Paraprofessional Accountant Program, offered by the Division of Continuing Education at Oakland University, will be conducted at 6:30 p.m. Tuesday, March 28, on campus near Rochester.

Advance registration and payment of \$10 per exam are required. To register, call OU at 370-3120 weekdays during business hours.

The walver exams allow enrollees sufficiently experienced in accounting to be excused from taking two courses in principles of practical accounting required in the 15-month Paraprofessional Accountant program, which begins April 3 on campus.

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