

Stretching the sunlight

The skies of April reflect the transition from spring to summer. Sky watchers can observe as spring goes out like a lion, as the constellation Leo the Lion slowly shifts westward and is replaced by the stars of early summer.

Time also shifts as we gradually transit from spring to summer. In the Northern Hemisphere, most countries will make the shift from Local Standard Time to Daylight Standard Time by adjusting the hands of clocks so that we "spring forward" one hour. This adjustment was first proposed by an Englishman, William Willett, in his pamphlet *Waste of Daylight*, published in 1907. It took nearly ten years for the idea to catch on, and it was passed into law by the United States Congress as the Standard Time Act in 1917.

The entire country was placed under Daylight Savings Time starting on March 30, 1918. This occurred during our involvement in World War I and the act was adopted in part to help the war effort by increasing the number of usable daylight hours and saving energy. At the close of the war, the act was repealed and was not reinstated on a permanent basis until the start of World War II.

Over the years, the date for the springtime shift has fluctuated from the beginning to the end of April, while the last Sunday in October consistently has been the date to "fall back." Currently, the first Sunday in April is the day for setting clocks forward one hour, officially at 2:00 a.m. Sunday morning. Technically, there is no hour between 2:00 and 3:00 a.m. that day.

Time also plays a hand in determining the date for Easter Sunday, which in turn determines the dates for various other days of religious significance during the calendar year. The general rule for determining the date for Easter is based on the March equinox. Easter Sunday is the first

Sunday that follows the full moon occurring after the March equinox. This year, for example, the equinox is on March 21, and the next full moon is April 15, a Saturday. Therefore, Easter Sunday is the next day, April 16. Easter can be as early as March 22 if the full moon occurs on the equinox and the equinox is a Saturday. On the other hand, Easter Sunday can be as late as April 25, if there is a full moon the day before the March equinox. This would mean that the next full moon would not occur until at least April 18, which could also be a Sunday. Consequently, Easter would not be celebrated until the following Sunday, around April 25.

The tail of the lion

Late spring and early summer bring two faint but interesting constellations into view that rise over the eastern horizon after sunset. Located below the stars of Leo and the bright planet Mars is the faint constellation of Sextans. This constellation was named by the seventeenth-century Polish astronomer Johannes Hevelius to honor one of the most useful astronomical instruments he invented—the sextant. Many constellation names were named after devices such as the telescope, microscope, compass, and even the furnace.

Further east of Leo and the star Denebola is another faint, nearly inconspicuous constellation known as Coma Berenices, or Berenice's lock of hair. It was viewed by some as the tuft of hair at the end of the lion's tail, hence Denebola's name, which is an abbreviation of an Arabic phrase meaning tail of the lion. Berenice was the Queen of England during the third century B.C. According to legend, she cut off her beautiful long hair to thank the goddess Venus for her husband's safe return from a war. Interestingly, Berenice is the only

Why do the days seem longer as summer vacation draws near?

nonmythological human honored as a constellation. Although Coma Berenices has few bright stars, the constellation is unique in that it contains the North Galactic Pole (NGP).

The NGP is the pivot point about which our spiral-shaped galaxy, the Milky Way, slowly rotates, completing one rotation—a galactic year—in approximately 250 million years. By looking toward the NGP, one can view extragalactic space—what lies beyond our own galaxy.

Beyond a shadow

April, in addition to ushering in fairer weather, also marks the beginning of the eclipse season for 1995. On April 15, the full moon enters the Earth's shadow, setting up a partial lunar eclipse visible across most of North America, but most favorable for viewing on the West Coast. The Moon enters the darker umbral shadow of the Earth at approximately 8:41 a.m. Eastern Daylight Time (EDT). Mideclipse occurs at 9:18 a.m. EDT when approximately 11 percent of the Moon will be darkened. The eclipse will be difficult to see east of the Mississippi because it will occur at moonset, which coincides approximately with sunrise. Viewing the partial eclipse will be much easier for those in the West as the eclipse occurs before sunrise and moonset at their local time.

A lunar phenomenon that will be observable to all will occur when the Moon occults the star Spica. In other words, the Moon will pass between us and our line of view of Spica, therefore blocking our view of it a few hours before the start of the lunar eclipse. Table 1 shows the times of Spica's disappearance for selected cities. Consult a local planetarium or astronomical organization in your area for more specific times.

Two weeks later, an annular eclipse of the Sun occurs, as the Moon covers the Sun much in the

same way that it did in May of 1994. This eclipse will be visible across nearly all of South America, with the path of annularity passing over southern Ecuador, northern Peru, and on to Brazil and the Atlantic Ocean. Warn students never to view the Sun or an eclipse of the Sun directly.

Evening planets

Mars: Rises before sunset and is visible all night.

Jupiter: Rises after sunset and is visible all night.

Moon phases

April

First Quarter - April 7

Full Moon - April 15

Third Quarter - April 21

New Moon - April 29

May

First Quarter - May 7

Full Moon - May 14

Third Quarter - May 21

New Moon - May 29

Bob Riddle is the planetarium director of the Kansas City School District at Southwest Magnet Math & Science High School.

TABLE 1.

Disappearance times for Spica

Atlanta, Georgia - 6:34 a.m.

Eastern Daylight Time

Kansas City, Missouri - 5:14 a.m.

Central Daylight Time

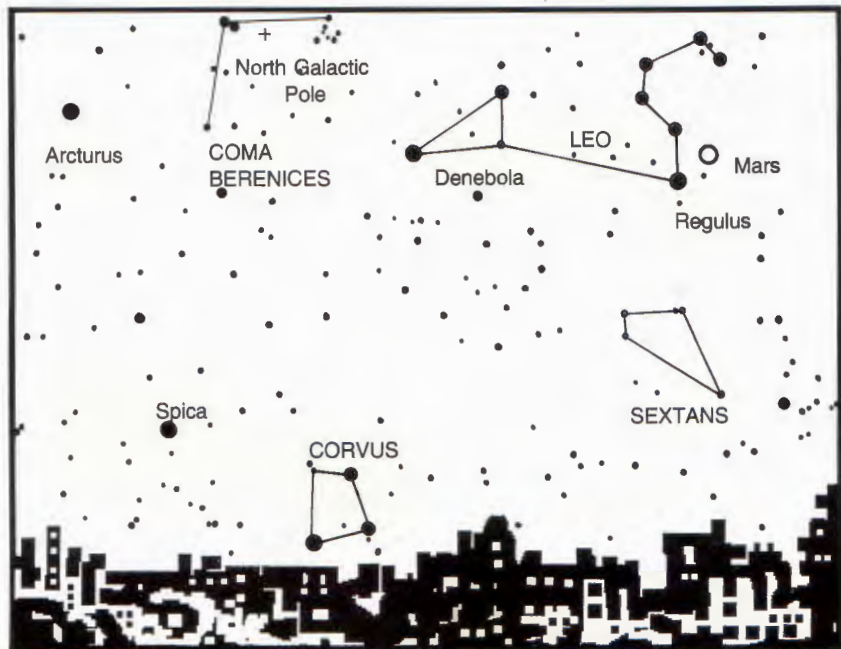
Denver, Colorado - 4:02 a.m.

Mountain Daylight Time

Los Angeles, California - 2:57 a.m.

Pacific Daylight Time

From *Abram's Planetarium Sky Calendar* (April, 1995), Abram's Planetarium, Michigan State University, East Lansing, MI 48824.



LOOKING SOUTH AT 9 P.M. ON MAY 15, 1995.

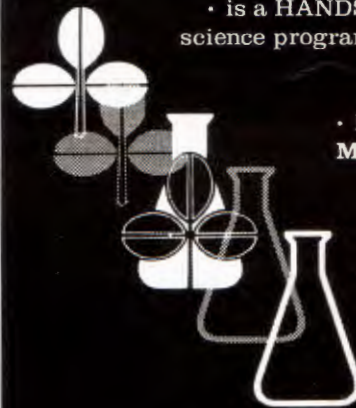
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