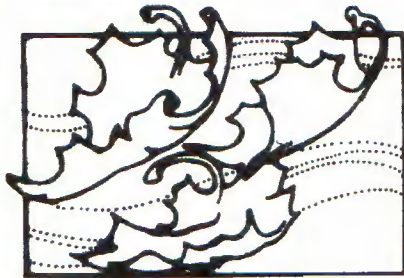


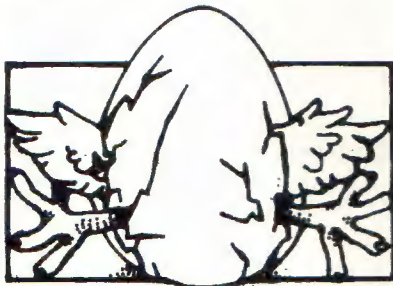
Summer comes to an end, and can an egg really balance on its end during the equinox?

The close of summer



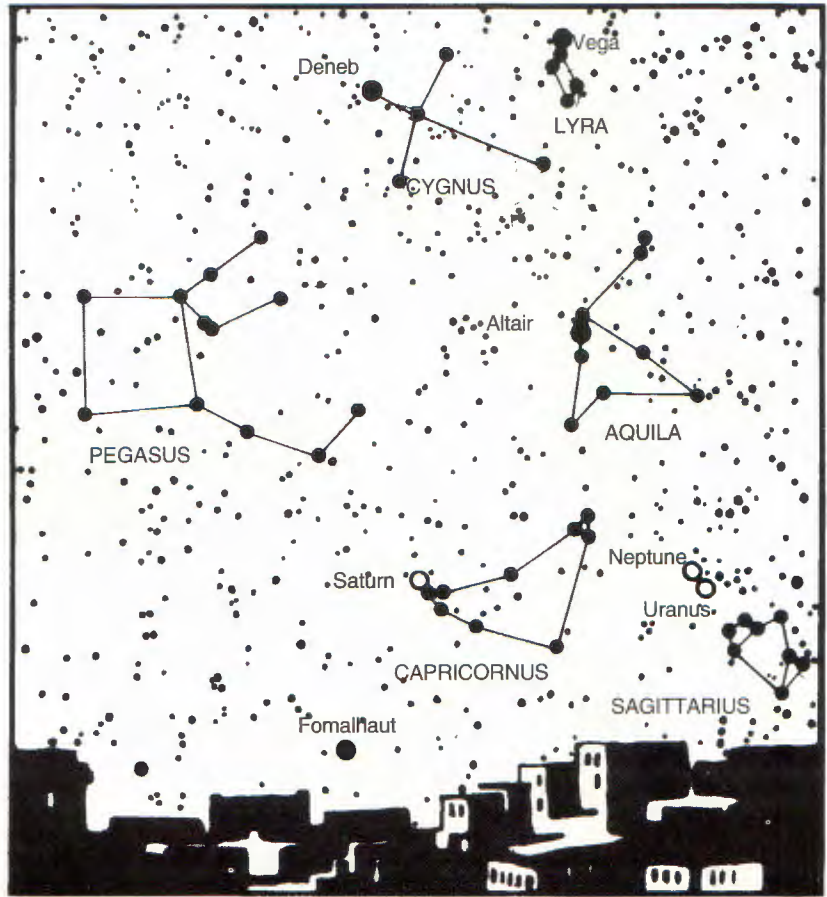
ART BY MAX-KARL WINKLER

The last week of September marks the beginning of fall in the northern hemisphere as summer officially comes to a close on Wednesday, September 22 at 8:22 p.m. eastern daylight time. The date is the day of the autumnal equinox, a day when the length of day and night are most closely equal. For those living in the northern hemisphere, it signals the start of fall; for those living in the southern hemisphere, it signals the onset of spring.



A balanced day

On the days of the September and March equinoxes, it is not unusual to hear or see news reports about being able to balance an egg so that it sits narrow end up. Although this ranks as one of the all-time great examples of "bad science," it provides an opportunity for students to question a common belief and test its validity. Typically, explanations involve gravity—one suggesting that gravity is "balanced," while another is that the Sun exerts a greater gravitational pull on Earth. What do students



LOOKING SOUTH AT 9:00 P.M. ON SEPTEMBER 30, 1993.

think about this? Have they heard any explanations that would account for this phenomenon? Investigating the validity of the egg-balancing belief can lead to such questions as

- The equinox is often defined as a certain date, when in fact, the equinox is only the moment when the Sun reaches specific celestial coordinates. Therefore, if the belief is true, shouldn't the egg only be balanced exactly at the specific time of the equinox?

- If gravity is involved in balancing the egg, shouldn't other objects balance as well? The point is that an egg may or may not balance on *any* day; there is no significance to the date of the equinox.
- Will an egg balance on other days during the year?

A stellar September

Appearing nearly overhead during September for those in the midlatitudes is the Summer Triangle, a star pattern formed by three bright stars—Vega in Lyra the Harp, Deneb in Cygnus the Swan, and Altair in Aquila the Eagle. One of the more popular celestial objects in the sky at this time of year is the star marking the bottom of the cross-shaped Cygnus. It is a star known as Albireo, from the Arabic for "eye." To the naked eye, Albireo appears to be just another star, but with the assistance of binoculars or a small telescope, it resolves into a pair of stars. What is striking about this double-star system is that one star has a brilliant gold-yellow color that contrasts with the blue of its companion.

South of Deneb and the Summer Triangle is the constellation Capricornus the Sea Goat. For the past year or so, this grin-shaped constellation has been the host for the planet Saturn. Shining brightly over the southern horizon at sunset, Saturn is easily seen with the unaided eye, and the rings are very spectacular through a telescope. Saturn, like Mars, appears to move backward as the Earth, moving along its orbital path, overtakes and passes it. Since June 11, Saturn has been moving in retrograde amongst the stars of Capricornus. Late in October, Saturn will return to its normal eastward motion. Its apparent change in direction can be observed by noting the position of Saturn relative to the

stars around it on a biweekly basis.

The full moon occurring on September 30 is known as the Harvest Moon, as it is the first full moon following the September equinox. It is called the Harvest Moon because its bright reflected light assists farmers in harvesting their crops by allowing them to work past sunset. This particular Harvest Moon can also be called a Blue Moon because it is a rarely occurring second full moon within a calendar month.

Evening planets

September and October

Saturn: Rises shortly after sunset and is visible all night.

Mars: Very low in the southwest at sunset.

Jupiter: Very low in the southwest at sunset.

Moon phases

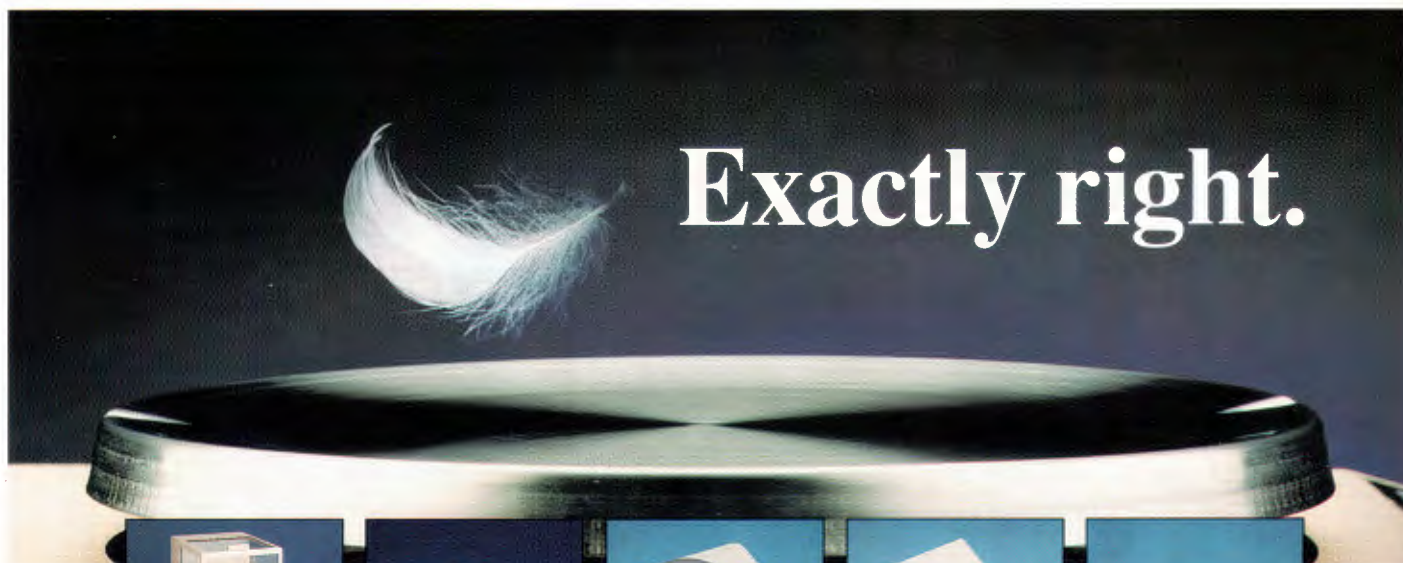
September

Full Moon - September 1
 Last Quarter - September 9
 New Moon - September 16
 First Quarter - September 22
 Full Moon - September 30

October

Last Quarter - October 8
 New Moon - October 15
 First Quarter - October 22
 Full Moon - October 30

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



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