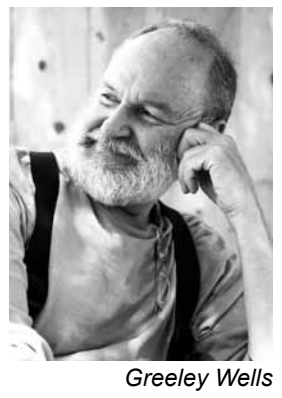
THE STARRY SIDE

Falling back into the night sky

BY GREELEY WELLS



Greeley Wells

A very exciting event is approaching: the second eclipse of the current lunar tetrad. A lunar tetrad is a series of four lunar eclipses, spaced six months apart. This eclipse will last roughly an hour, peaking in the very early morning of October 8 at approximately 3:15 am.

A lunar eclipse occurs when a full moon passes into earth's shadow. This can happen only with a "syzygy"—an exact alignment of the sun, earth and moon.

We can see light in the moon during an eclipse because of the refraction of sunlight. Refraction occurs when electromagnetic waves, in this case light, deviate from a straight line due to changes in atmospheric density. If we had no atmosphere, the light would not be able to "bend" around the planet and reach the moon, and the eclipse would not be seen.

People often refer to a lunar eclipse as a "blood moon" because of the reddish color the moon takes on. This happens because refracted light from the sun must pass through very dense parts of our atmosphere. The shorter wavelengths are scattered or dispersed by air molecules, but red, the longest wavelength, travels more easily through these pockets of dense atmosphere, coloring the moon.

If you'd like more than a lunar eclipse, you're in luck! You'll also have a chance to witness a partial solar eclipse on the day of the autumn equinox: October 23, at approximately 2 pm. Unlike the lunar eclipse, it's not safe to look directly at a partial solar eclipse. I recommend using pinpoint projection.

A pinpoint projector is easy to make with a bit of aluminum foil, a large piece of cardboard, and some white paper. First, cut a playing-card-size opening in the cardboard. Cover this with one or two pieces of aluminum foil. Next, with the tip of a pen poke a hole about three millimeters wide in the aluminum foil.

With the sun to your back (so that you are not looking at it!), lay the white piece of paper on a flat surface. Without looking directly at the sun, prop or hold up the cardboard so that the sun shines through the pinhole and onto the white paper. Play a little with distances to get the image on the white paper large enough to see clearly. Enjoy the show!

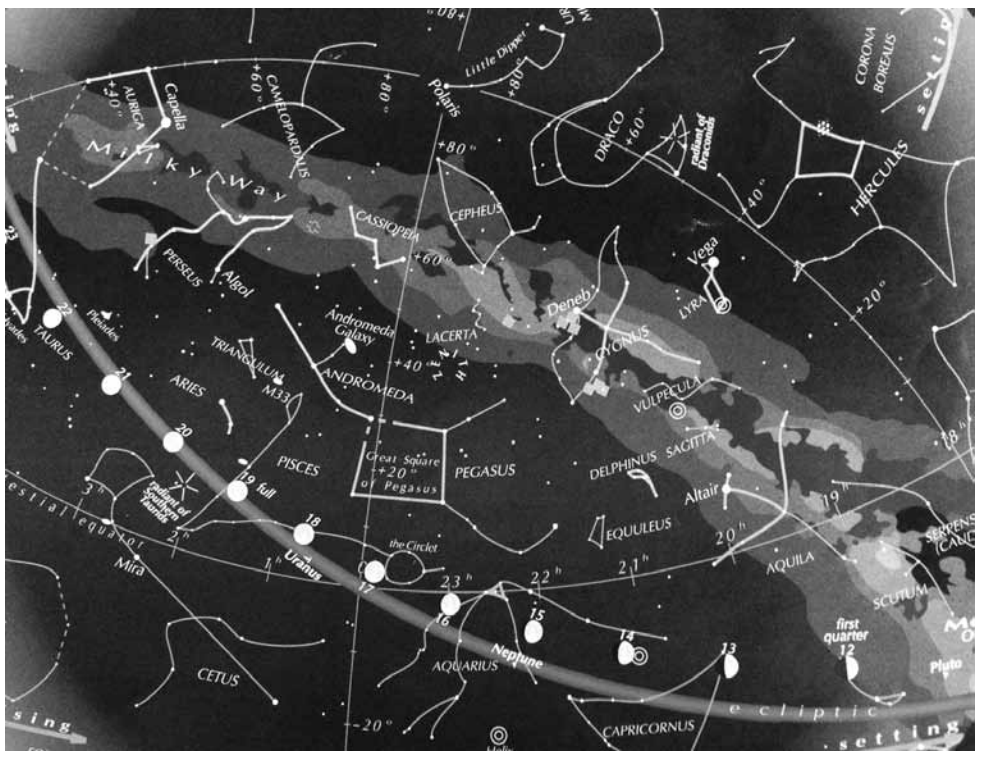
Autumn constellations

The Summer Triangle is sinking into the west and is still quite apparent. What's new is Cassiopeia; her husband, Cepheus; their daughter, Andromeda; and the hero Perseus. They cover the north-northeast sky with their story, which I've related many times. (A quick Google search will bring it all back to you.) They are all nicely mixed in with the large square of Pegasus, whom Perseus rides in to save the day. Pegasus is the signal constellation of the season. Big and almost overhead, he's easy to find. He drags up winter constellations from the east and pushes summer ones down into the west as the season progresses.

If you are interested in learning more about the night sky and eclipses, check out these excellent websites: earthsky.org and MrEclipse.com.

Greeley Wells
greeley@greeley.me

Illustration: Guy Ottewell's Astronomical Calendar 2014.



Greeley's Sky Calendar

The planets

Jupiter has become a dawn "star" after years in the evening sky. Jupiter gets higher and higher as the fall season progresses. At the end of September, Jupiter replaces the beautiful Venus all alone in the dawn.

Venus is still an early riser in September, gracing the morning dawn. She's north-northeast less than a degree of Regulus the morning of September 5. (A degree is as wide as a finger on a fully outstretched hand and arm.) But Venus slips into the sun and disappears by month's end. In late November she slowly rises to grace the sunset till August 2015.

Mars is in the southwestern quadrant most of the season. It's near the red Antares on September 28.

Saturn is pretty much invisible in the sun or sun glare.

Mercury may be visible only low in the November dawn as it rises from behind the sun.

Other events of note

If you are a lunar aficionado, make sure to observe the full moons that will occur on September 9, October 8, and November 6. Mark those calendars!

The Leonids meteor shower will grace us November 16-17.

Siskiyou Field Institute fall classes cater to fungi fans

Siskiyou Field Institute (SFI) in Selma will offer three fall mushroom classes geared to all levels of interest.

On **Sunday, October 19**, Mike Potts will lead a family-friendly mushroom identification hike. "Edible Mushrooms of the Southern Cascades" will start in north Medford and proceed east for an afternoon field trip. Tuition is $35.

Sunday, October 26, Mike will teach "Edible Mushrooms of the Siskiyous," which begins with a classroom session at Deer Creek Center at 1241 Illinois River Road in Selma and ends with a field trip in the Cave Junction area. Tuition is $55; pre-registration is required.

Mike has studied southern Oregon fungi and their habitats since 2007. He is an expert in field identification and a passionate photographer of mushrooms. His photos can be found in the Audubon Mushroom Field Guide iPhone app and on his website at mikepottsphotography.smugmug.com. Mike has been helping with mushroom identification and leading hikes in the Ashland area for the last several years.

For those who want an in-depth look at the entire kingdom of fungi, SFI offers the three-day "Forest Mushrooms of Southwest Oregon/Northwest California" taught by US Forest Service botanist David Lebo. The class begins Friday afternoon, November 7, at Deer Creek Center. On Saturday, November 8, students will explore mushrooms and other fungi in the Smith River Canyon of Northern California and end up in Brookings for the night. Sunday morning's foray takes place along the coast. Class tuition is $155; pre-registration is required.

Find out more about these and other fall Siskiyou Field Institute classes by visiting www.thesfi.org or calling 541-597-8530.

What the heck is this, you ask? Find out at one of the three Siskiyou Field Institute mushroom classes offered this fall. Photo by Dasja Dolan.