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## ***Mountain Skies*** July 3, 2017

### THE SCORPION AND THE ARCHER DOMINATE OUR SOUTHERN SKY

**The stars:** The summertime Milky Way is a beauty to behold if we can view it under clear, dark skies. The mountains of western North Carolina often present us with such opportunities. Becoming more and more prominent as the summer progresses are the constellations of Scorpius the scorpion and Sagittarius the archer. These constellations are extremely important to astronomers as the Milky Way stretches from Scorpius and Sagittarius up across the sky through Aquila the eagle and Cygnus the swan and into the northeast where Cassiopeia the queen is rising.

Of all the constellations in the sky Scorpius (not Scorpio, please), probably along with Orion the hunter in the winter skies, looks most like what the ancient Greeks envisioned it to be. Low almost due south in the early evening three stars mark the head and claws of this critter. Below the head of the scorpion its body stretches downward with a bright red star marking the heart. This star looks strikingly similar in color to the red planet Mars called *Ares* by the Greeks. Therefore, the Greeks named it *Antares* (literally “Rival of Mars”) so that the observer would not mistake it for the god of war. We have kept this name on modern star maps. Continuing down the body of the scorpion, we can trace the tail that loops eastward and upward to two prominent stars marking the stinger at the end of the tail. To the Pawnee Indians of North America these were two swimming ducks.

Rising in the southeast and following the scorpion up into our southern sky during the summer months, Sagittarius the archer is one of two celestial centaurs with the body of a horse and torso of a human. But it is difficult to envision such a creature among these stars. Instead, look for a pattern of stars in the form of a “teapot.” The spout is directed towards neighboring Scorpius to the west and the haze of the Milky Way appears as steam coming out of the spout. The center of the Galaxy is located in Sagittarius and this area of the sky is rich in star clusters and nebulae of interest to both astronomers and casual viewers of the sky. Try exploring this area of the sky with a pair of binoculars.

**The planets:** Early this summer we have two naked-eye planets rather low in the south as the sky darkens. To the southwest we find two bright objects in Virgo the maiden. If we look closely at them, we will find the one to the left and a little lower is a bright star; it twinkles. This is Spica, the brightest star in Virgo. Even brighter and up to the west of Spica is the giant planet Jupiter; it doesn't twinkle which tells us it must be a planet, not a star. Jupiter is the second brightest planet in the sky and we can dub it our "evening star" for the time being since the much brighter Venus is now our "morning star" high in the east before sunrise. Tonight, however, Jupiter is outshone only by a waxing gibbous moon high in the south. The second planet visible early tonight is the beautiful ringed planet Saturn. Currently Saturn is nestled about half-way between Antares and the rising teapot of Sagittarius. Jupiter with its four large moons and Saturn with its rings are fascinating objects to view through a telescope or even a good pair of binoculars.

These two bright planets are not alone. The elusive Mercury which currently is very low in the evening twilight in the southwest is a real challenge to find after sunset since it's not anywhere near as bright as either Jupiter or Saturn. However, as the month progresses it will lie higher in the gathering dusk. At its highest on the 19th it will remain visible throughout July but disappears into the glare of the sun in early August.

The red planet Mars is too close to the sun to be observed and will pass behind our central star in *superior conjunction* on the 27th.

**The sun:** At 4 p.m. EDT today the earth will be at aphelion 94,505,901 miles from the sun or about 1½ million miles farther than average. This is due to the fact that the earth's orbit is not a circle.

**Celestial Calendar:**

July 3, 4 p.m. EDT - Earth at aphelion (farthest point from the sun)

July 9, 12:07 a.m. EDT – Full Moon

July 16, 3:26 p.m. EDT – Last Quarter Moon

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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).

For further information or questions about this *Mountain Skies* column, contact Dr. Bob Hayward at [rbhayward@pari.edu](mailto:rbhayward@pari.edu). Graphics produced with *TheSky* Astronomical Software, Software Bisque.

***Southern Sky 3 July 2017 graphic goes with this column.***