The Night Sky

Mercury Transits the Sun on November 11th

We will experience a relatively rare event the morning of November 11th, the solar system's innermost planet Mercury will move across the face of the sun. This solar transit begins around sunrise at 7:35 a.m. EST on this date. It then reaches the transit midpoint at 10:19 a.m. and ends at 1:04 p.m. The Department of Physics and Astronomy at ETSU will offer the opportunity for the public to safely view this event. Telescopes will be set up on an athletic field on the west side of the main ETSU campus, just north of the Center for Physical Activity from 9:30 a.m. until 12:30 p.m. to safely view this event. Visitors should enter campus from State of Franklin Road and can park in the large lots adjacent to the athletic field area. Should the sky be cloudy during this time on November 11th, this observing event at ETSU will be cancelled.

Typically, there are usually about a dozen Mercury transits per century. The last such transit of Mercury viewable from Johnson City was on May 9, 2016. The one prior to that occurred in 2006. Let's hope for a clear sky on November 11th since the next Mercury transit viewable from Johnson City will not occur until May 7, 2049, nearly 30 years from now.

In the evenings during November 2019, find a spot with an unobstructed western horizon and go out about ½ hour after sunset. Looking towards the southwest, you should be able to spot Venus shining brightly in the evening twilight hanging low above the horizon. Venus will stay relatively low above the southwest horizon all month within an hour after sunset. As the month progresses, watch bright Jupiter sink lower and lower in the southwest sky as it approaches Venus. On November 22nd, Jupiter just passes above Venus for a close conjunction. Having the two brightest planets so close to each other, about 2-degrees of arc apart, should make for a spectacular sight in the evening twilight. On November 28th, Thanksgiving evening, a thin crescent moon will be located just above Venus with Jupiter to the lower right of Venus.

Saturn will also be visible in the southwestern evening sky located about 12-degrees of arc to the upper left of Jupiter. Saturn's rings are still tilted to nearly their maximum extent with the ringed planet residing in the eastern part of the constellation of Sagittarius.

We now must wait until the early morning to catch our next "naked-eye" planet – the red planet Mars. At the beginning of the month, Mars rises about 1¾ hour before the sun, but by month's end, Mars rises nearly 2½ hours before the sun. During the last half of the month, Mercury pops back into view in the morning sky about one week after it transits the sun. For the rest of the month Mercury and Mars will keep each other company in the pre-dawn sky.

The moon will be at full phase at 8:37 a.m. EST on November 12th. Full moons in November are known as the "Full Beaver Moon" by Native Americans, since beavers are actively preparing for

winter during this month. Daylight Savings Time ends in the early morning of November 3rd. As such, make sure you "fall back" one hour with your clocks before you go to bed on November 2nd.

The next free public astronomy open house at the ETSU Powell Observatory will occur on Saturday, November 2nd from 8 to 10 p.m. At these open houses, the public can view objects in the sky through telescopes and hear talks by faculty of the Physics and Astronomy Department. Note that the open houses are cancelled if the sky is cloudy. Further information about these open houses and directions to the observatory can be found on the web at https://www.etsu.edu/cas/physics/observatory/default.php.

For those of you who would rather explore the night sky indoors, the first of the monthly planetarium shows for this season begin on November 21st at 7:00 p.m. at the ETSU Planetarium in Hutcheson Hall. A location map of the Planetarium on the ETSU campus can be found on the web at https://www.etsu.edu/cas/physics/outreach/planetarium.php.

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