

The Night Sky

January 2025 is an Astronomically Busy Month!

There are all sorts of fascinating events going on in the Night Sky during this first month of 2025! First off in the southwestern evening sky from January 2nd through the 4th, watch the waxing crescent Moon glide from below Venus on the 2nd, to just to the upper left of Venus on the 3rd, to just to the upper left of Saturn on the 4th. During these 3 days, these 3 bright celestial objects make near a straight line with each other. As the month progresses, the waxing gibbous Moon passes in front of the Pleiades star cluster in Taurus on the 9th, then sits just to the left of Jupiter on the 10th. On the last day of the month, a very thin, waxing crescent Moon sits just to the lower right of Saturn. On the next night, February 1st, the crescent Moon and Venus have a very close conjunction, with Venus sitting just to the right of the Moon.

These planet-lunar conjunctions in January will all be very photogenic, however the best planet/lunar conjunction takes place on the night of January 13-14, when the Full Moon occults (i.e., covers up) the Red Planet Mars. This occultation takes place just 2 days prior to Mars being at opposition with the Sun on January 15-16. This occultation begins at 8:44 p.m. EST on January 13th and ends at 12:52 a.m. EST on the 14th as seen from Johnson City. The pair will be nearly overhead during this occultation from our location.

January 2025 will also host a close planetary conjunction between Saturn and Venus which takes place on the evening of January 17th in the southwestern sky. This conjunction will be visible just as the evening twilight begins to fade until the pair sets some 2 hours after twilight has ended.

The first Full Moon of the year occurs on January 13th at 5:27 p.m. EST. The January's Full Moon is known as the Full Wolf Moon by native Americans since wolves can often be heard howling during the cold nights of January.

The Earth will be at perihelion, its closest point to the Sun, on January 4th at 8:30 a.m. EST. Like all the planets in the solar system, the Earth has an elliptical orbit, with the closest point in its orbit (perihelion) occurring in early January, and its farthest point (aphelion) occurring in early July. Distance from the Sun's center to Earth's center will be 91,405,993 miles at this time on January 4th, about 3% nearer than at its apogee position.

January 2025 does not have any astronomy open houses scheduled at the ETSU observatory, however there is one scheduled on Saturday, February 1st from 8 to 10 pm. 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. Make sure you dress warmly since you will likely be standing outside for some time to look through one of our telescopes. 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/starparty.php>.

For those of you who would rather explore the night sky indoors, the January 2025 planetarium show will be on January 16th 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> for further information.

This month's Night Sky was written by Dr. Donald G. Luttermoser, Chair of the Department of Physics and Astronomy at ETSU. He can be reached at lutter@etsu.edu. Any students wishing to pursue a career in Physics or Astronomy are encouraged to contact him at this email address. Astronomy-related information for the public, including a link to the ETSU Powell Observatory, can be found at <http://www.etsu.edu/cas/physics/> by selecting the Public Outreach pull down menu on the lower-left side of this web page.