

The Night Sky

Conjunctions Galore this Month

On the morning of January 8th, the Moon will occult the red supergiant star Antares for much of the country. Unfortunately for Johnson City, the Sun will have already risen just as the occultation begins. However, prior to dawn, you can see the waning crescent Moon just to the right of this first magnitude star in the morning twilight. In addition to this close pairing, brilliant Venus appears to the upper left of the Moon, and the innermost planet, Mercury, appears to the lower left, about 3 times as far away as Venus. On the following morning, see if you can spot the thin crescent of the Moon to the lower right of Mercury just above the southeast horizon 30 minutes before sunrise.

On the early evening of January 18th, the Moon has a fairly close conjunction with the “King of the Planets”, Jupiter. Even in bright twilight, this pair will be easy to make out looking just south of your zenith (i.e., the point overhead). As the sky darkens, see if you can notice the Moon slowly pull away from Jupiter.

On the evenings of January 13th and 14th, Saturn will be in the vicinity of the waxing crescent Moon. On the 13th, the Moon will be to the lower right of Saturn in the southwest sky, and on the 14th, the Moon will be to the upper left of the ringed planet.

On the morning of January 27th, there will be a close conjunction between Mercury and the red planet Mars. Unfortunately, this conjunction takes place low above the southeastern horizon in the bright morning twilight. Mercury will be much brighter than Mars for this conjunction, since Mars is on the other side of the Sun just emerging from the solar glare. Mars will be difficult to spot with the naked-eye, binoculars will help you spot it.

The first Full Moon of the year occurs on January 25th at 12:54 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 2nd at 7:38 p.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 91,404,095 miles at this time on January 2nd, about 3% nearer than at its apogee position.

January 2024 does not have any astronomy open houses scheduled at the ETSU observatory, however there is one scheduled on Saturday, February 17th 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. 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 2024 planetarium show will be on January 18th 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.