The Night Sky

Jupiter at Opposition

The King of the Planets, Jupiter, will be at opposition with the Sun on January 10th, when this gas giant gleams at magnitude -2.7 and presents a 46.6 arcminute-wide disk through a telescope. When viewing Jupiter through a telescope, it is easy to see that its disk is slightly flattened. This is due to its rapid rotation. Jupiter has the fastest rotation of all planets in the solar system, completing one day in just under 10 hours (approximately 9 hours and 55 minutes). On this day, Jupiter rises at sunset and sets at sunrise on the next day.

Three nights later on the 13th, it reaches its northernmost position in the constellation of Gemini on the sky during its nearly 12 year orbital period. From our location in eastern Tennessee, Jupiter spends much of the evening nearly directly overhead. Since this part of the sky contains numerous bright stars, Pollux, Castor, Capella, Aldebaran, and Betelguese, brilliant Jupiter sets up this celestial showcase as a truly spectacular spectacle!

Earlier in the month, on the night of January 3rd, the Full Moon will be located just to the left of Jupiter. Gemini's two bright stars, Pollux and Castor, will be just to upper left of the Moon – Pollux the lower star, Castor the upper star.

Saturn sits low above the western horizon during the evening hours. With the tilt of its rings edge on late last year, the rings are now starting to open up.

The Moon will reach full phase on January 3rd at 5:03 a.m. EST. January's Full Moon is known as the Full Wolf Moon, since Native Americans would often hear wolves howling during the cold January nights. This Full Moon is also a Supermoon! A Supermoon is one where the full phase falls within a day of lunar perigee, the point in the Moon's orbit about the Earth is at its closest.

On this same day, the 3rd, the Earth passes through perihelion, the closet point to the Sun for 2026, at 12:16 p.m. EST.

A free astronomy open house takes place on Saturday, January 24th from 8 to 10 pm at the campus Harry D. Powell Observatory. 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, this month's planetarium show will be on January 15th 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 https://www.etsu.edu/cas/physics/ by selecting the Public Outreach pull down menu on the lower-left side of this web page.