The Night Sky

Possible Bright Comet in the Morning Sky

For you early risers, on August 31st and September 1st, look to the east-northeast 30 minutes before sunrise to spot our innermost planet Mercury hovering 10 degrees above the horizon with a thinly crescent Moon in the vicinity. On the 31st, the Moon will be about 10 degrees above Mercury and on the 1st, a razor-thin waning crescent Moon just to the upper left of Mercury. The Moon might be hard to see in the brightening twilight, so binoculars will help you spot our natural satellite. Mercury will reach its highest point above the horizon on the 6th, then on the 9th, Mercury has a very close conjunction with Leo's brightest star Regulus.

Meanwhile in the evening sky, Venus hangs low above the west-southwest horizon 30 minutes after sunset. On the 5th of September, a thin waxing crescent Moon sits just to the left of Venus. It may be tough spotting the Moon in the evening twilight, however Venus should be easy due to its brightness, binoculars should help you spot the Moon.

On the night of September 7/8, Saturn reaches opposition. At this time, it rises in the southeast at sunset, and sets at sunrise. Saturn's rings are nearly edge on, being tilted only 3.5 degrees toward our line-of-sight. On the morning of September 17th, a nearly full, waxing gibbous Moon has a close encounter with the ringed planet from our location.

Jupiter is still a brilliant object in the early morning sky, sitting in the constellation of Taurus. Looking to the lower left of Jupiter, the red-planet Mars resides in the constellation of Gemini. The separation between Jupiter and Mars continues to increase after their very close conjunction last month on August 14th. From September 23rd through the 26th, the Moon joins these two bright planets, with the waning crescent Moon sitting just to upper left of Mars on the 25th.

Although there is no guarantee, we may be in for a treat with the appearance of a bright comet in the morning sky on the last few days of September. Comet Tsuchinshan-ATLAS (C/2023 A3) may reach naked-eye visibility hanging low above the eastern horizon 30 minutes before sunrise. This comet is making its first trip in the inner solar system from the Oort Cloud of comets far out in the solar system. Such comets however are fairly fickle, sometimes they burst in brightness making them the brightest object in the night sky, like Comet West in the spring of 1976, other times they fizzle out, not reaching their predicted maximum brightness. For instance, Comet Kohoutek, an Oort Cloud comet, was predicted to be the "Comet of the Century" in early 1974. Kohoutek did become fairly bright as seen from the southern hemisphere, unfortunately it turned out to be a disappointing "no-show" for those of us in the northern hemisphere.

On September 22nd at 8:44 a.m. EDT, the Sun sits at the Autumnal Equinox on the celestial sphere. At this time, the Sun moves from the northern hemisphere of the sky to the southern hemisphere. On this day, there are 12 hours of sunlight and 12 hours of darkness, and marks the beginning of the season of Autumn.

The Moon will reach full phase on September 17th at 10:34 p.m. EDT. The full Moon that occurs closet to the Autumnal Equinox is known as the Harvest Moon. This full Moon is also a "supermoon". A supermoon occurs when a full Moon falls within a day of the Moon's perigee, the closet point to the Earth in the Moon's elliptical orbit. On such evenings, the Moon looks bigger and brighter as compared to an average full Moon. On top of this, this month's full Moon will undergo a short partial lunar eclipse on this night. The eclipse will last from 10:12 p.m. through 11:17 p.m. EDT with the greatest part of this eclipse occurring at 10:44 p.m. EDT. During such deep penumbral lunar eclipses, one side of the Moon will appear much darker than the other side of the Moon.

The ETSU Powell Observatory open houses will resume on September 7th from 8 until 10 p.m. EDT. 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. The 2024-2025 schedule for our Astronomy open houses 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, a planetarium show will be presented on September 19th at 7:00 p.m. at the ETSU Planetarium in Hutcheson Hall. Please check the Planetarium web page at https://www.etsu.edu/cas/physics/outreach/planetarium.php for further information

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