The Night Sky

Another "Near-Miss" of a Moon-Mars Occultation

After a "near-miss" with the Moon covering up Mars in December 2022, this upcoming month of January 2023 will see another "near-miss" of the Moon covering up Mars. In December, the Moon's southern limb just passed to north of Mars. This time however, the Moon's northern limb will just pass to the south of Mars. On the night of January 30th/31st, a waxing gibbous Moon will reach closest approach to the "red-planet" Mars at 11:20 p.m. EST. We were "clouded-out" for the December 2022 "near-miss", hopefully we'll have a clear sky for the January 2023 "near-miss".

At the beginning of the month, look towards the west-southwest horizon 30 minutes after sunset to spot the Evening Star, Venus. Venus is very bright and should be easy to spot, even in the bright twilight sky. As the sky darkens, continue looking upward away from Venus to spot the "ringed-planet", Saturn. On the evening of January 22nd, Venus will have an extremely close conjunction with Saturn where the two will only be 21 arcminutes apart. However, since Venus is some 76 times brighter than Saturn, you may need binoculars to spot Saturn in the glare of Venus.

Brilliant Jupiter will be easy to spot in the evening southern sky all month. The "King of the Planets" lies nearly on the celestial equator in the constellation of Pisces, eastward of the planet Saturn.

We now have to wait until the early evening to catch our next naked-eye planet, the innermost planet to the Sun, Mercury. From mid-January through the first week of February, Mercury has a very favorable dawn apparition above the southeastern horizon an hour before sunrise. Mercury reaches greatest elongation from the Sun on the morning of January 30th.

The January 2023 Full Moon will occur on the 6th at 6:08 p.m. EST. The January's Full Moon is known as the Full Wolf Moon by some native Americans.

The Earth will be at perihelion, its closest point to the Sun, on January 4th at 11:17 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 147,098,925 km (91,403,034 miles) at this time on January 4th, about 3% nearer than at its apogee position.

January 2023 does not have any astronomy open houses scheduled at the ETSU observatory, however there is one scheduled on Saturday, February 25th 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 2022 planetarium show will be on January 19th 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.

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