

Astronomical Highlights 2021

Eclipses

Of the 4 eclipses that occur in 2021 (2 solar, 2 lunar), only one of the solar, and part of both Lunar Eclipses will be visible from Hampton Roads. On **May 26**, our area will be treated to partial phases of a total lunar eclipse from 5:44 to 5:57 EDT moonset. The entire eclipse is visible from the western US. On **June 10**, we are treated to the partial phase of an annular solar eclipse from 5:43 sunrise until 6:25 EDT. Again, in the early morning of **November 19**, we are treated to most of a 98% Partial Lunar Eclipse from 2:18 to 5:47 EST.

Planets

Mercury reaches its greatest eastern elongations in the evening sky **Jan 24**, **May 17**, and **Sept 14**, and greatest western elongations in the morning sky **Mar 6**, **Jul. 4**, and **Oct 25**. Around these dates will be the best times to try to spot this elusive planet in twilight. Venus reaches its greatest eastern elongation in the evening sky on **Oct 29** and remains in the evening sky until its **Jan 8, 2022** inferior conjunction with the Sun. Greatest brilliancy of Venus occurs on **Dec 3** (evening). The remaining superior planets are best observed near opposition, which occurs for Saturn on **Aug 2**, for Jupiter on **Aug 20**, for Neptune on **Sep 14**, and for Uranus on **Nov 4**.

Meteor Showers

The best meteor shower of the year is expected to be the **Aug. 12 Perseids** (zhr=110) which coincides with a waxing crescent Moon. Other showers with minimal moon interference include the **April 21 Lyrids** (First Quarter), **May 4 Eta Aquarids** (Last Quarter), **November 5 S. Taurids** (waxing crescent), and **November 12 N. Taurids** (First Quarter). The remainder of the meteor showers have serious interference with the Moon.

Lunar Occultations/Grazes

From Hampton Roads, the planet Mercury is occulted by the waning crescent moon in daylight **November 3**. The brightest star occulted here by the Moon this year is +2.0 magnitude Nunki (sigma SGR) on **Aug. 19**. Other bright stars occulted this year are +3.5 Eta Leonis, +3.5 Kappa Geminorum, +4.0 Nu Virginis, and +4.0 Tau Aquarii, among many others.

Our closest local grazes are of +5.0 XZ11006/57 GEM (14km S) on **March 22**, +3.0 XZ9694/epsilon GEM/Mebstuta (27km NE) on **Aug. 5**, and +2.0 XZ26084/sigma SGR/Nunki (29km SE) on **Aug. 19**.