

Astronomical Highlights 2020

Eclipses

Of the 6 eclipses that occur in 2020 (2 solar, 4 lunar), none of the solar, and only 2 of the 4 Penumbral Lunar Eclipses will be visible at all from Hampton Roads. On **July 4-5**, a 38.0% penumbral lunar eclipse runs from 23:04 to 1:55 EDT. On **November 30**, an 85.5% penumbral lunar eclipse runs from 2:29 to 6:55 EST. Penumbral lunar eclipses are difficult to observe but the darkening is easily recorded photographically.

Planets

Mercury reaches its greatest eastern elongations in the evening sky **Feb 10, Jun 4, and Oct. 1**, and greatest western elongations in the morning sky **Mar 23, Jul. 22, and Nov 10**. 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 **Mar. 24** and remains in the evening sky until its **June 3** superior conjunction with the Sun. Venus reaches its greatest western elongation in the morning sky on **Aug. 12**. Greatest brilliancy of Venus occurs on **Apr. 27** (evening) and **July 10** (morning). Mars comes to opposition on **Oct. 13** with closest approach on **Oct. 6** at 0.41 AU, displaying a 22.6 arcsec disk. The remaining superior planets are best observed near opposition, which occurs for Jupiter on **July 14**, for Saturn on **July 20**, for Neptune on **Sep 11**, and for Uranus on **Oct 31**.

Meteor Showers

The best meteor shower of the year is expected to be the **Dec. 14** Geminids (zhr=150) which coincides with New Moon. The **Aug. 12** Perseids (zhr=100) will be hampered after midnight by the Last Quarter moon. The **May 6** Eta Aquarids (zhr=60) are also favored by a 2% waxing crescent moon. The **Jul 29** Delta Aquarids are similarly favored by an 11% waning crescent. The other major showers are all hampered by the moon this year.

Lunar Occultations/Grazes

From Hampton Roads, the planet Mars is occulted by the waning crescent moon after sunrise **Feb. 18**. The brightest star occulted here by the Moon this year is +2.6 magnitude Graffias (beta 1 SCO) on **Sep, 21**. Other objects occulted this year are NGC1647, M8 (Lagoon Nebula), NGC2129, and M35. Our closest local grazes are of +6.9 magnitude ZC1569 in Leo on **Dec. 7**, and +6.6 magnitude ZC960 / 10 GEM on **Aug. 15**.