

The Night Sky

Earth at Aphelion this Month

Even though the month of July is typically among the hottest months of the year, the Earth is at its farthest distance from the Sun in its elliptical orbit. The Earth is at aphelion (i.e., farthest distance from the Sun) on July 3rd at 3:54 p.m. EDT. At this time, the Earth will be 94,502,939 miles from the Sun, some 3.4% farther than it was at perihelion (i.e., closest point) in January. On this same day, the innermost planet to the Sun, Mercury will be at greatest elongation, 26-degrees east of the Sun. To see Mercury, look towards the western horizon 30 minutes after sunset. There you should be able to spot Mercury about 10-degrees above the horizon. The bright twilight might make it difficult to spot Mercury, binoculars should help you see it.

Mars is the only other naked-eye planet in the evening sky, moving from the constellation of Leo into the constellation of Virgo over the month of July. The Red Planet is quite a bit fainter than it was at opposition back in January, but it still should be easy to spot with the naked-eye. On July 28th, the waxing-crescent Moon will be in conjunction with Mars.

We now have to wait for the early morning sky to catch the other bright planets. Venus is currently an incredibly bright stellar-like object in the morning sky. It will continue to be the “morning star” throughout the rest of the summer. After its late-June conjunction with the Sun, Jupiter pokes his “head” out of the morning solar glare by mid-July. As the days progress, the distance between Jupiter and Venus decreases until they have a very close conjunction on August 12th.

Saturn is currently located in the constellation of Pisces. During the month, Saturn lies very close to the farthest main planet in the solar system, Neptune, which lies just to the north of Saturn. The Moon joins this pair on the night of July 15-16. Note that you will need a telescope or a decent set of binoculars to spot Neptune.

The Moon will reach full phase on July 10th at 4:37 p.m. EDT. The July full Moon is often called the Full Buck Moon since new antlers on young buck deer begin to push out of their foreheads during this month.

The ETSU Powell Observatory open houses and the monthly planetarium shows are on hiatus until September. Later this summer, the 2025-2026 schedule for our Astronomy open houses can be found on the web at <https://www.etsu.edu/cas/physics/observatory/starparty.php>, and planetarium shows posted at <https://www.etsu.edu/cas/physics/outreach/planetarium.php>.

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.