# The Night Sky

## Ceres at Opposition

---

The largest asteroid in the solar system, Ceres, will be directly opposite in the sky from the sun the night of May 28th. Ceres is also classified as a "dwarf planet." A dwarf planet is a celestial body that (a) is in orbit around the Sun, (b) has sufficient mass for its self-gravity to overcome rigid body forces so that it assumes a hydrostatic equilibrium (nearly round) shape, (c) has not cleared the neighborhood around its orbit, and (d) is not a satellite. There are 5 dwarf planets in the solar system: Ceres, Pluto, Haumea, Makemake and Eris. With the exception of Ceres, which is located in the asteroid belt, the other dwarf planets are found in the outer solar system. Even at opposition, Ceres is just below naked-eye brightness, this year shining at magnitude 7.0. As such, you will need binoculars or a small telescope to spot Ceres at the border of Ophiuchus and Scorpius on the night of opposition just to the north of Chi Ophiuchi.

The red-planet Mars is still visible in the evening sky as it races the sun across the sky. Mars moves from the constellation of Taurus eastward into Gemini. At the beginning of May, Mars sets some 3 hours after the sun, but by month's end, it sets two-and-a-half hours after the sun. Mars continues to fade in brightness as the earth move farther away from the red planet. On the night of May 19th, Mars passes just to the north of the big open star cluster M35 at the feet of Gemini.

On the last few days of the month, sharp-eyed observers might catch the innermost planet Mercury in the bright evening twilight just above the west-northwest horizon. Binoculars will help you spot Mercury.

The largest planet in the solar system, Jupiter, makes its way into the evening sky by the end of May. Jupiter rises more than 3 hours after sunset on May 1st, but by the end of the month, the "King of the Planets" rises 40 minute after sunset. Jupiter continues to brighten as it approaches opposition on June 10th. Jupiter is currently in southern Ophiuchus, so it will be relatively low in the southern sky throughout the summer.

Two hours after Jupiter-rise, Saturn pops up above the southeastern horizon. The ringed planet now resides in eastern Sagittarius, hence will never get very high in the southern sky when it is visible. Like Jupiter, the ringed planet brightens slightly throughout the month.

Finally, Venus will be difficult to spot in the early morning twilight. It rises only an hour before the sun, but will be relatively low above the eastern horizon in the bright twilight.

The moon will be at full phase on May 18th at 5:11 p.m. EDT. May full moons were refer to as the "Full Flower Moon" by early Native American since flowers are abundant everywhere in the United States in May.

The ETSU Powell Observatory open houses are on hiatus until September. Later this summer, the 2019-2020 schedule for our Astronomy open houses can be found on the web at

https://www.etsu.edu/cas/physics/observatory/default.php. In addition, the monthly planetarium shows will be on hiatus until September as well. Check the Planetarium web site at https://www.etsu.edu/cas/physics/outreach/planetarium.php in August to get the schedule for the 2019-2020 Academic Year.

---

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 http://www.etsu.edu/cas/physics/ by selecting the Public Outreach pull down menu at the top of this web page.