

# Stars over Sisters

By Zoey Lorusso and Lizzie McCrystal  
Columnists

Astronomy is the branch of science that deals with celestial objects such as the sun, moon, stars, planets — the entire physical universe beyond the earth. It's a study that can hold great fascination for anyone who looks up into a dark sky and wonders what's there, and it's a study that can transform thinking. Copernicus, Galileo, and Kepler are famous examples.

Because the dark of night is available to all, astronomy can be enjoyed on a multitude of levels, from investigating its scientific aspects to simply being awed by the beauty of a star-studded sky.

Highlighted this month is another constellation of autumn: Aquarius the Water Carrier. This stellar grouping can be difficult to spot, as it doesn't have many bright stars. It is one of the constellations of the zodiac and is situated between Capricornus to the west and Pisces to the east. The zodiac is a strip of the celestial sphere centered on the ecliptic where the sun, moon, and planets are always found. To find the constellation, look to the southwest after nightfall.

The constellation's two brightest stars, Sadalsuud and Sadalmelik, both shine at about third magnitude. They are 540 and 800 light-years away, respectively. Key to identifying the constellation is finding

the four-star Y-shaped asterism that denotes Aquarius' water jar. It is located about five degrees due east of Sadalmelik.

In February 2017, NASA announced that dwarf star TRAPPIST-1 has seven Earth-like rocky planets. Of these, three are in the star's habitable zone and scientists believe they may contain water.

Many dazzling deep-sky objects are generously sprinkled throughout Aquarius, the three brightest of which are found in Messier's catalog. The most impressive of these is M2, an ancient and distant globular star cluster. This cluster contains about 150,000 stars and lies at the outer edge of the Milky Way galaxy, 55,000 light-years away. It is compact, significantly elliptical in shape, and is estimated to be approximately 13 billion years old.

There are a variety of stories involving Aquarius in Greek mythology. One of them associates him with Ganymede, son of Trojan king Tros, who was taken to Mount Olympus by Zeus to act as cup-carrier to the gods. Illustrations sometimes depict him pouring water from an amphora.

The Leonid meteor shower peaks between the evening of November 16 and the morning of November 17. While some of the greatest displays of meteors in history are associated with the Leonids, the rate this year is only expected to be around 15 meteors per hour. The meteors are caused by debris left behind from comet

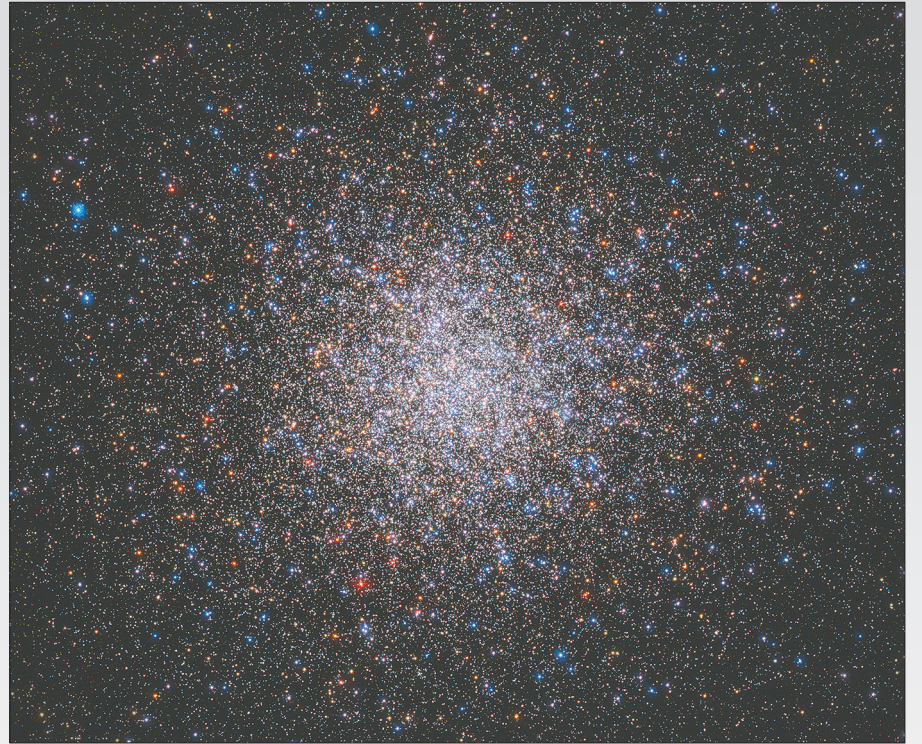


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M2, an ancient globular star cluster located at the outer edge of our Milky Way galaxy, resides in the constellation of Aquarius.

Tempel-Tuttle that burn up upon entering the earth's atmosphere.

A penumbral lunar eclipse will take place on the early morning of November 30. Unlike an umbral eclipse, the moon will darken only slightly. Maximum eclipse will occur at 1:43 a.m. PST.

All five of the visible planets can be seen this month. Jupiter and Saturn can still be seen low in the southwestern sky after sunset. By month's end, both gas giants will set by 8 p.m. local time.

But it's Mars that dominates the evening sky. On October 6, the Red Planet approached to within 38.6

million miles of the earth, giving amateur astronomers with telescopes great views of its surface features. Although the two planets are currently receding from each other, Mars remains bright this month and good telescopic views are still possible. As for Mercury and Venus, they are visible in the morning sky just before sunrise.

Since the moon was full on Halloween, it will be on the wane during the first half of November. After new moon on November 15, it will wax until the full Beaver Moon arrives on the scene November 30.

Don't forget to keep looking up!

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