

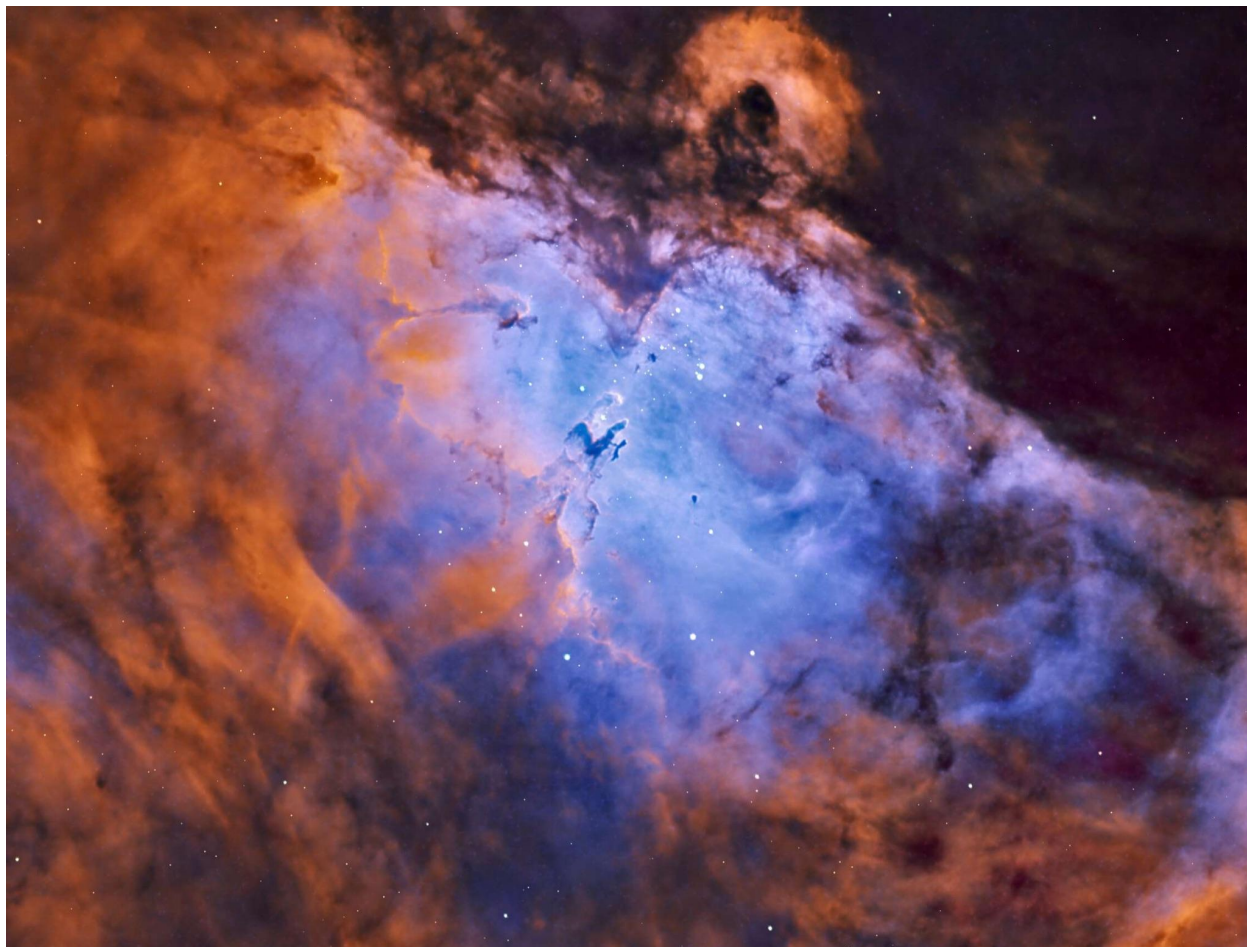
Celestial



Observer

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CCAS member Frank Widmann took this photo of The Eagle Nebula (M16). The dark silhouette at the center of this image is known as the "Pillars of Creation", an area made famous once imaged by the Hubble Space Telescope.

Next Star Party: Saturday, July 23rd

Star Parties are back! Join CCAS members for in-person stargazing at Santa Margarita Lake. Visit our website for more info.

Find out more here:

CentralCoastAstronomy.org/star-parties/

James Webb Space Telescope First Photos!

The first five full-color images taken by NASA's James Webb Space Telescope have been released!

Find out more here:

Webb.nasa.gov/

Star Parties are back!

Next Stargazing: Saturday, July 23rd

at Santa Margarita Lake



CCAS member Paul Wilson took this photo of The Milky Way at June's Star Party at Santa Margarita Lake. This is a single shot with a modified DSLR camera with an 18mm wide angle lens, 45 seconds, 1600 ISO. Also captured in this photo is a small meteor streaking through the sky.

Join CCAS members and amateur astronomers at Santa Margarita Lake for a night of stargazing and enjoying the Summer sky! Star Parties are free, open to members, and weather permitting. For directions and more info, follow the link below!

CentralCoastAstronomy.org/star-parties/

Find Hercules and His Mighty Globular Clusters

by David Prosper for Night Sky News



Composite image of the dense starry core of M92 imaged in multiple wavelengths. While your own views of these globular clusters won't be nearly as crisp and detailed, you might be able to count some of its member stars. How far into their dense cores can you count individual stars? Credits: ESA/Hubble & NASA; Acknowledgment: Gilles Chapdelaine.

Source: <https://www.nasa.gov/feature/goddard/2017/messier-92>

Hercules is one of the standout heroes of Greek mythology, but his namesake constellation can be surprisingly hard to find - despite being one of the largest star patterns in our night skies! Once you find the stars of Hercules, look deeper; barely hidden in the space around his massive limbs and “Keystone” asterism are two beautiful globular star clusters: M13 and M92!

Since the constellation itself is relatively dim but bordered by brighter constellations, you can find the stars of Hercules by looking between the bright

stars Vega and Arcturus. They are fairly easy to identify, and we have tips on how to do so in previous articles. Vega is the brightest star in the constellation Lyra and one of the three stars that make up the Summer Triangle (June 2020: Summer Triangle Corner: Vega). Arcturus is the brightest star in the constellation Boötes, and can be found by “arcing to Arcturus” from the handle of the Big Dipper (May 2021: Virgo’s Galactic Harvest). You may be able to find Hercules’s “Keystone” asterism first; this distinct pattern of four stars is traditionally shown as the

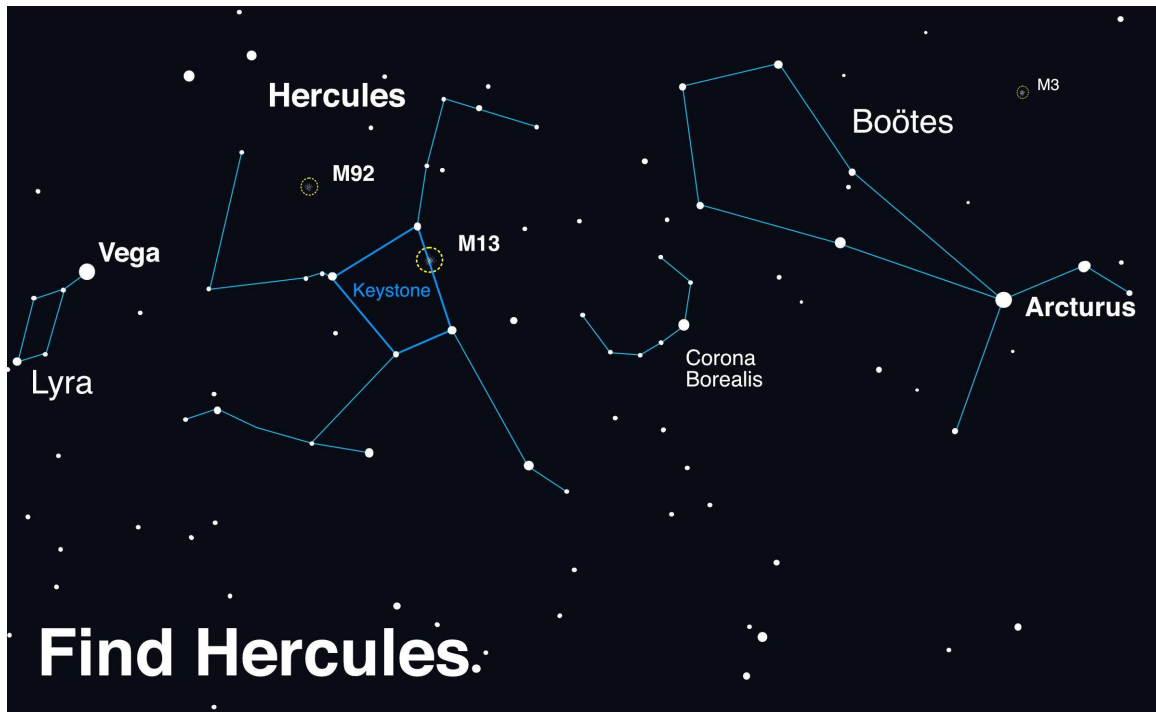
torso of the great hero, though some illustrators prefer marking the Keystone as the head of Hercules. What pattern do you see in the stars of Hercules?

Globular star clusters appear “fluffy,” round, and dense with stars, similar to a dandelion gone to seed, in contrast to the more scattered and decentralized patterns of open clusters. Open clusters are generally made up of young stars that are gradually spreading apart and found inside our Milky Way galaxy, while globular clusters are ancient clusters of stars that are compact, billions of years old, bound to each other and orbit around our galaxy. Due to their considerable distance, globular clusters are usually only visible in telescopes, but one notable exception is M13, also known as the Great Cluster or Hercules Cluster. During very clear dark nights, skilled observers may be able to spot M13 without optical aid along the border of the Keystone, in between the stars Zeta and Eta Herculis - and a bit closer to Eta. Readily visible as a fuzzy “star” in binoculars, in telescopes M13 explodes with stars and can fill up an eyepiece view with its sparkling stars, measuring a little over half the diameter of a full Moon in appearance! When viewed through small telescopes, globular clusters can appear orblike and without discernible member stars, similar in appearance to the fuzzy comae of distant comets. That’s why comet hunters Edmund

Halley and Charles Messier discovered and then cataloged M13, in 1714 and 1764 respectively, marking this faint fuzzy as a “not-comet” so as to avoid future confusion.

While enjoying your view of M13, don’t forget to also look for M92! This is another bright and bold globular cluster, and if M13 wasn’t so spectacular, M92 would be known as the top celestial sight in Hercules. M92 also lies on the edge of naked-eye visibility, but again, binoculars and especially a telescope are needed to really make it “pop.” Even though M92 and M13 appear fairly close together in the sky, in actuality they are rather far apart: M13’s distance is estimated at about 25,000 light years from Earth, and M92’s at approximately 27,000 light years distant. Since M13 and M92 appear so close together in our skies and relatively easy to spot, switching between these two clusters in your scope makes for excellent star-hopping practice. Can you observe any differences between these two ancient clusters of stars?

Globular clusters are closely studied by astronomers for hints about the formation of stars and galaxies. The clusters of Hercules have even been studied by NASA’s space telescopes to reveal the secrets of their dense cores of hundreds of thousands of stars. Find their latest observations of globular clusters - and the universe - at nasa.gov.



Look up after sunset during summer months to find Hercules! Scan between Vega and Arcturus, near the distinct pattern of Corona Borealis. Once you find its stars, use binoculars or a telescope to hunt down the globular clusters M13 and M92. If you enjoy your views of these globular clusters, you're in luck - look for another great globular, M3, in the nearby constellation of Boötes.

Image created with assistance from Stellarium: stellarium.org



This article is distributed by NASA's Night Sky Network (NSN). The NSN program supports astronomy clubs across the USA dedicated to astronomy outreach. Visit nightsky.jpl.nasa.gov to find local clubs, events, and more!

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CCAS Information

Founded in 1979, the Central Coast Astronomical Society (CCAS) is an association of people who share a common interest in astronomy and related sciences.

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Frank Widmann took this photo of M15. Located in the constellation Pegasus and approximately 12 billion years old, it is one of the oldest and densest globular clusters ever discovered.