

The Newsletter for Keene Amateur Astronomers

Vol. 2026 No. 5

May 2026

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## ‘Earthset’



‘Earthset’ — Earthset captured through the Orion spacecraft window at 6:41 p.m. EDT, April 6, 2026, during the Artemis II crew’s flyby of the Moon. A muted blue Earth with bright white clouds sets behind the cratered lunar surface.’ | Credit: NASA. [Full-resolution version.](#)

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## Editor's Message

This month starts with a meteor shower. The Eta Aquarids meteor shower will peak on May 5th and 6th. Expect to see 10 - 30 meteors an hour with best viewing in the pre-dawn hours on the 6th. These meteors are known for their glowing "trains" which are trails of debris that continue to glow for a few seconds to several minutes. The shower will continue until the 28th.

On May 18th, Venus will shine in the West just after sunset with the crescent Moon. The following night, Jupiter will appear to the upper left of the Moon on the 19th.

May began with a Full Moon on the 1st and will end with a Blue Moon. The second full Moon of the month will occur on the 31st.

Great objects to view this month:

- **Messier 5** - a globular cluster in Serpens. It will appear as a hazy patch with binoculars and it will resolve into a cluster of stars with a telescope.
- **Cor Caroli** - a double star that lies 14 degrees from Alkaid at the end of the Big Dipper's handle. It is a great object to view with binoculars. At a power of 30x it will resolve into a bright white star and its gold companion.
- **NGC 4565 - The Needle Galaxy** - in Coma Berenices will appear as a sliver of light with binoculars. A telescope will reveal an edge-on spiral galaxy with dramatic dust lanes.

Enjoy the beauty and wonder of the night sky,

- Susan Rolke

## Monthly Business Meeting

The business meeting will be on the 15th at the Observatory followed by an observing session.

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## Astronomy Conventions, Retreats, and More

[Stellafane](#) will be held August 13th - 16th. You can learn more and buy tickets for the event at their [new website](#) dedicated to the convention.

[DarkSky International's Photo Contest - Capture the Dark](#), submit your entry by June 30th. The contest is in its 5th year. There are multiple categories.

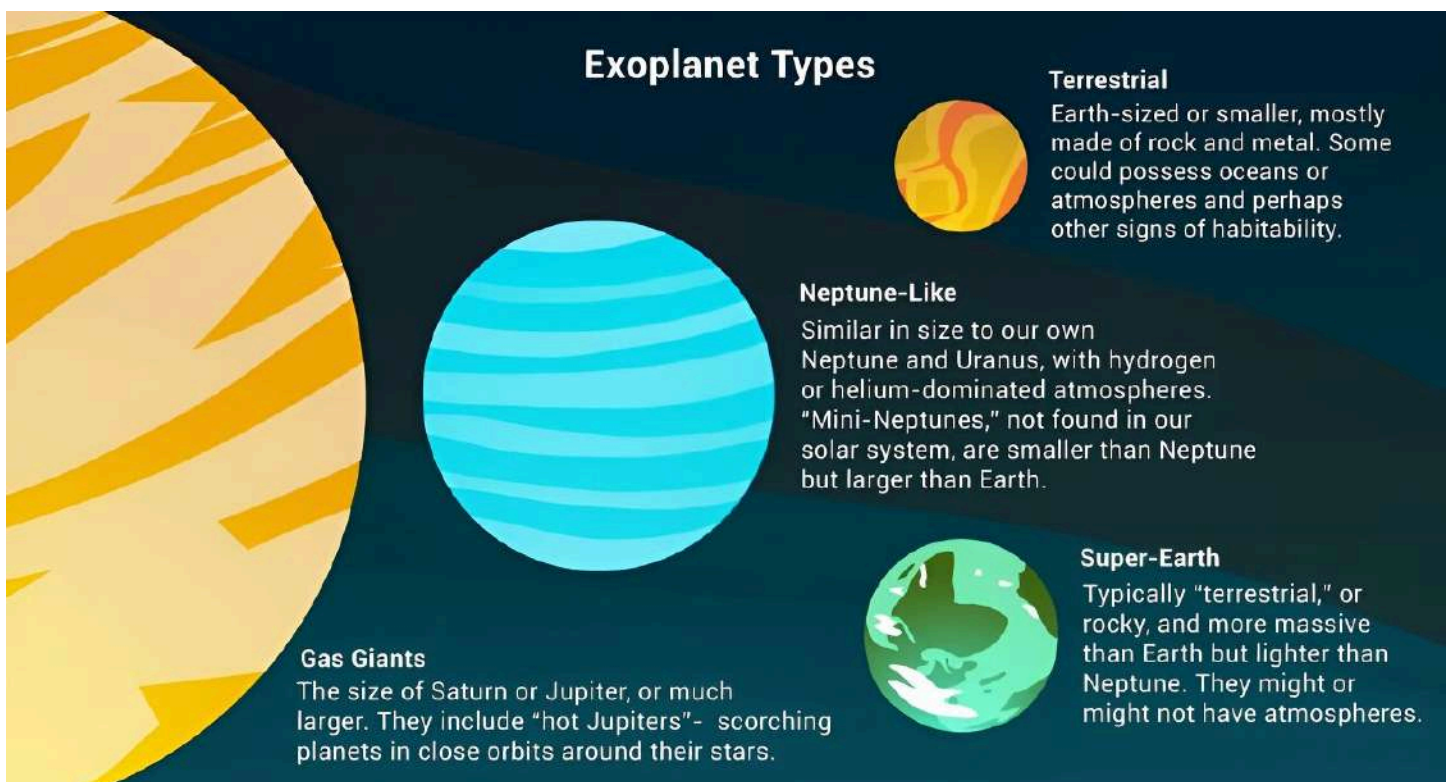
McDonald Observatory - Virtual Tour of several galaxies including the Eye of Sauron, The Koi Fish, the Crowbar, and more. [Tune in here](#) on May 7th to join this live view of galaxies.

# Rethinking Planet Formation Around the Galaxy's Most Common Stars

By Susan Rolke

The search for exoplanets has come a long way since the first confirmed detection of a planet orbiting a distant star 30 years ago. I remember sitting in my high school physics class back in the 80s, listening to my teacher speculate about planets beyond our solar system. He believed they would be rare and he wasn't alone in his opinion. With dedicated missions like the Kepler Space Telescope and the Transiting Exoplanet Survey Satellite (TESS), astronomers have now cataloged thousands of worlds beyond our own. Today, we know planets are common, and astronomers now estimate there may be at least one planet for every star in our galaxy.

In the early days of hunting for exoplanets, "hot Jupiters" dominated the discoveries. These large, massive planets orbit very close to their stars, which made them much easier to detect with the technology available at the time. I remember emphasizing to students that our data was heavily biased toward detecting "hot Jupiters." As technology improved, a different picture emerged. Astronomers detected smaller distant worlds as well as ones that orbited further from their parent star. Currently, the most common type of exoplanet are Sub-Neptunes. These planets are smaller than Neptune but larger than Earth, typically wrapped in a thick, gaseous atmosphere. The second most common class are super-Earths, rocky planets larger than our own.



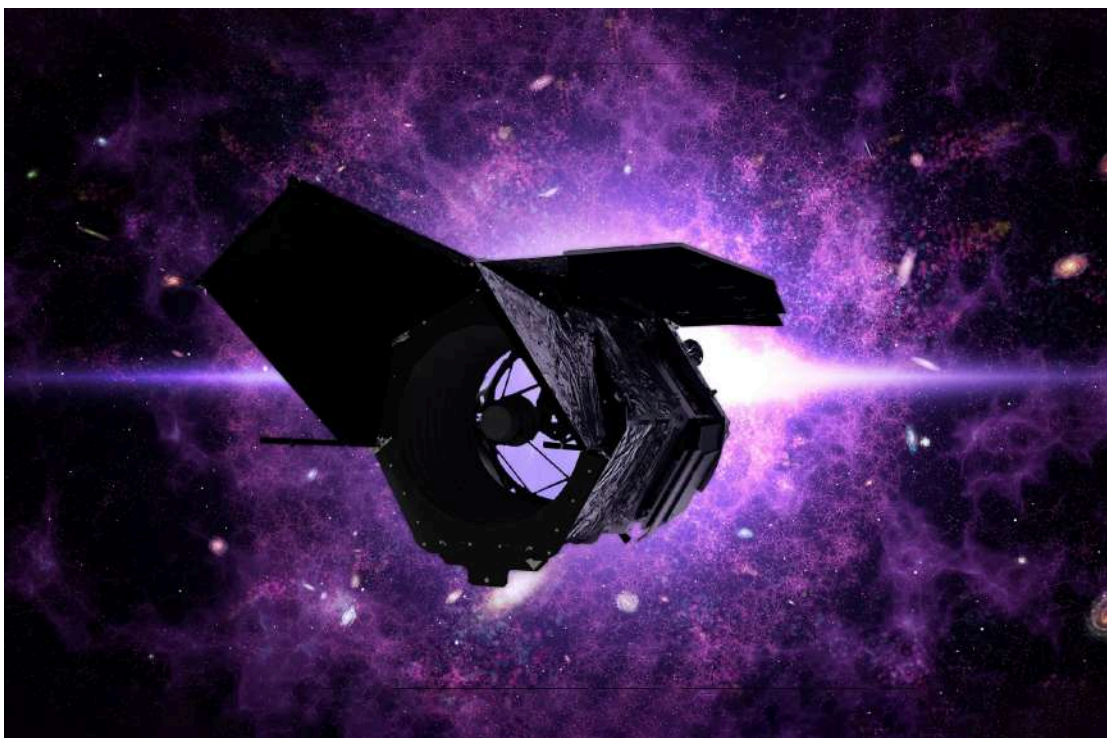
This infographic details the main types of exoplanets. Scientists have been working to better understand the "size gap," or conspicuous absence, of planets that fall between super-Earths and sub-Neptunes. Credit: NASA/JPL-Caltech

NASA's TESS will survey 85% of the sky focusing on detecting planets orbiting nearby stars. Using its wide field camera it has been able to detect small rocky worlds and determine their mass, size, density, and orbit. It has found several worlds orbiting in the habitable zone.

A recent study has taken a closer look at planets orbiting M dwarf stars, also known as red dwarfs. These stars are of particular interest because they are by far the most common type in the Milky Way accounting for over 70% of the stellar population. However, they are also faint, which makes detecting their planets more challenging. Using data from TESS, researchers examined data from over 8,100 small stars classified as mid to late M stars. This category of M stars are redder and fainter, ranging from 8% to 40% the size of our Sun. What the researchers found was unexpected. Super-Earths dominated these systems and sub-Neptunes were rare.

These findings challenge current models of planetary formation. It suggests that the processes that build planets may depend strongly on the mass of the star and the properties of the cloud of gas and dust from which it forms. Around mid to late M dwarfs, those processes appear to favor the formation of water-rich worlds rather than gas-dominated planets.

These findings also raise intriguing questions about the conditions needed for life. In our own solar system, many of the building blocks of life, such as organic compounds and amino acids, have been found on asteroids, supporting the idea that asteroid impacts helped seed early Earth with essential materials. However, previous findings determined that planetary systems around mid to late M dwarfs lack asteroid belts. This raises questions on the ability for life to form on these worlds and whether or not asteroid impacts are needed for the emergence of life.



Artistic rendering of the Nancy Grace Roman Space Telescope. Credit: NASA

Our understanding of distant worlds is poised to grow rapidly in the coming years. The James Webb Space Telescope is already transforming exoplanet science by studying the atmospheres of distant planets in unprecedented detail. Looking ahead, a new generation of observatories will push these discoveries even further. NASA's Nancy Grace Roman Space Telescope, named after the agency's first chief astronomer, will be capable of directly imaging exoplanets and planet-forming disks, while also conducting a large-scale census of planetary systems across our galaxy. The Extremely Large Telescope, currently under construction in Chile, will collect roughly ten times more light than the largest telescopes operating as of 2025. This immense power will allow astronomers not only to directly image exoplanets, but also to analyze their atmospheres in search of potential biomarkers, chemical signatures that could indicate the presence of life.

In just a few decades, we have gone from wondering whether planets around other stars existed to cataloging thousands of them. Each new discovery is reshaping our understanding of how planetary systems form and evolve. With powerful new telescopes coming online, we are moving closer to answering one of humanity's oldest questions: are we alone in the universe?

Resources and further readings/videos:

- [TESS Planet Occurrence Rates Reveal the Disappearance of the Radius Valley around Mid-to-late M Dwarfs](#)
- [NASA News Conference: Nancy Grace Roman Space Telescope](#)
- [NASA's website for the Nancy Grace Roman Space Telescope](#)
- [ESO's website for the Extremely Large Telescope](#)

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## Night Sky Network Online Webinar

As of the beginning of the month, there was no information provided for the next [Night Sky Network](#) webinar. You can check the site directly to see if they have updated this.

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## Observing

To find out skywatching tips for this month, click on the following link to learn more.

Video: [What's Up May 2026 Sky Watching Tips from NASA](#)

You can find past pdfs of the Astronomical League charts [here](#). Turn to the end of the Newsletter to see what is up this month.

## NASA Night Sky Notes



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](https://nightsky.jpl.nasa.gov) to find local clubs, events, and more!

# Celestial Wonders in Leo

Originally written by Dave Prosper, updated by Kat Troche

Leo is a prominent sight for stargazers in April. Its famous sickle, punctuated by the bright star Regulus, draws many a beginning stargazer's eyes, inviting deeper looks into some of Leo's celestial delights, including a great double star and a famous galactic trio.

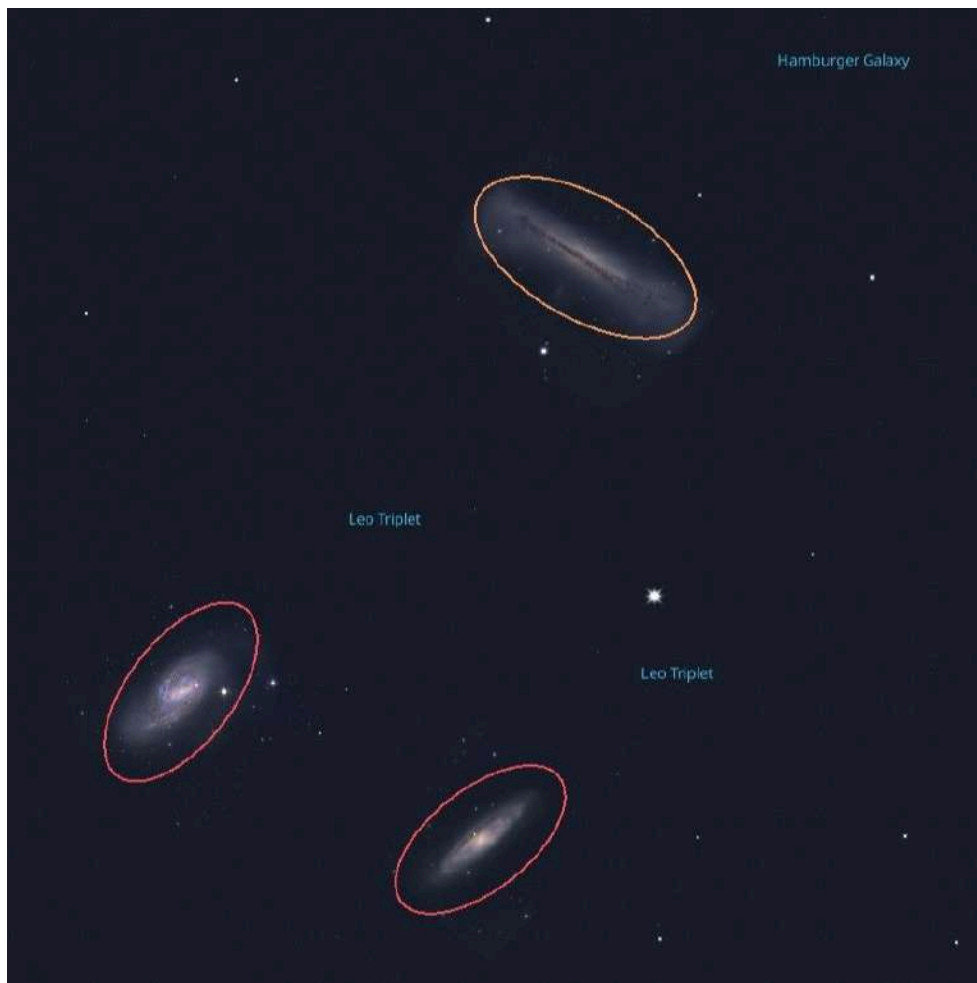


The constellation, Leo. You can find this constellation in the springtime skies. Stellarium Web

Leo's distinctive forward sickle, or "reverse question mark," is easy to spot as it climbs the skies in the southeast after sunset. If you are having a difficult time spotting the sickle, look for bright Sirius and Procyon in

Canis Major and Canis Minor. Complete a triangle by drawing two lines to the east, joining at the bright star Regulus, the “period” in the reverse question mark. Trailing them is a trio of bright stars forming an isosceles triangle, the brightest star in that formation named Denebola. Connecting these two patterns together forms the constellation of Leo the Lion, with the forward-facing sickle being the lion’s head and mane, and the rear triangle its hindquarters. Can you see this mighty feline? It might help to imagine Leo proudly sitting up and staring straight ahead, like a celestial Sphinx. To help find these objects, you can use online tools like [Stellarium Web](#).

If you peer deeper into Leo with a small telescope or binoculars, you’ll find a notable double star! Look in the sickle of Leo for its second-brightest star, Algieba, also called Gamma Leonis. This star splits into two bright yellow stars even with a small magnification. You can make this “split” with binoculars, but it’s more apparent with a telescope. Compare the color and intensity of these two stars: do you notice any differences? There are other multiple-star systems in Leo; spend a few minutes scanning with your instrument of choice, and see what you discover.



The Leo Triplet - three galaxies that appear to be close together under the star Chertan in the Leo constellation. Stellarium

One of the most famous sights in Leo is the “Leo Triplet”: three galaxies that appear to be close together. They are indeed gravitationally bound to one another, around 30 million light-years away! You’ll need a telescope to spot them, and use an eyepiece with a wide field of view to see all three galaxies at once! Look below the star Chertan to find galaxies [M65](#), [M66](#), and NGC 3628 – The Hamburger Galaxy. Compare and contrast the appearance of each galaxy – while they are all spiral galaxies, each one is tilted at different angles to our point of view! Do they all look like spiral galaxies to you?

April is Citizen Science Month, and there are some fun Leo-related activities you can participate in! If you enjoy comparing the Triplets, the [Galaxy Zoo](#) project could use your eyes to help classify different galaxies from sky survey data! Looking at Leo itself can even help measure light pollution: the [Globe at Night](#) project uses Leo as their target constellation for sky quality observations from the Northern Hemisphere. Find and participate in many more NASA community science programs at [NASA Citizen Science](#). Happy observing!

*Originally posted by Dave Prosper: April 2021*

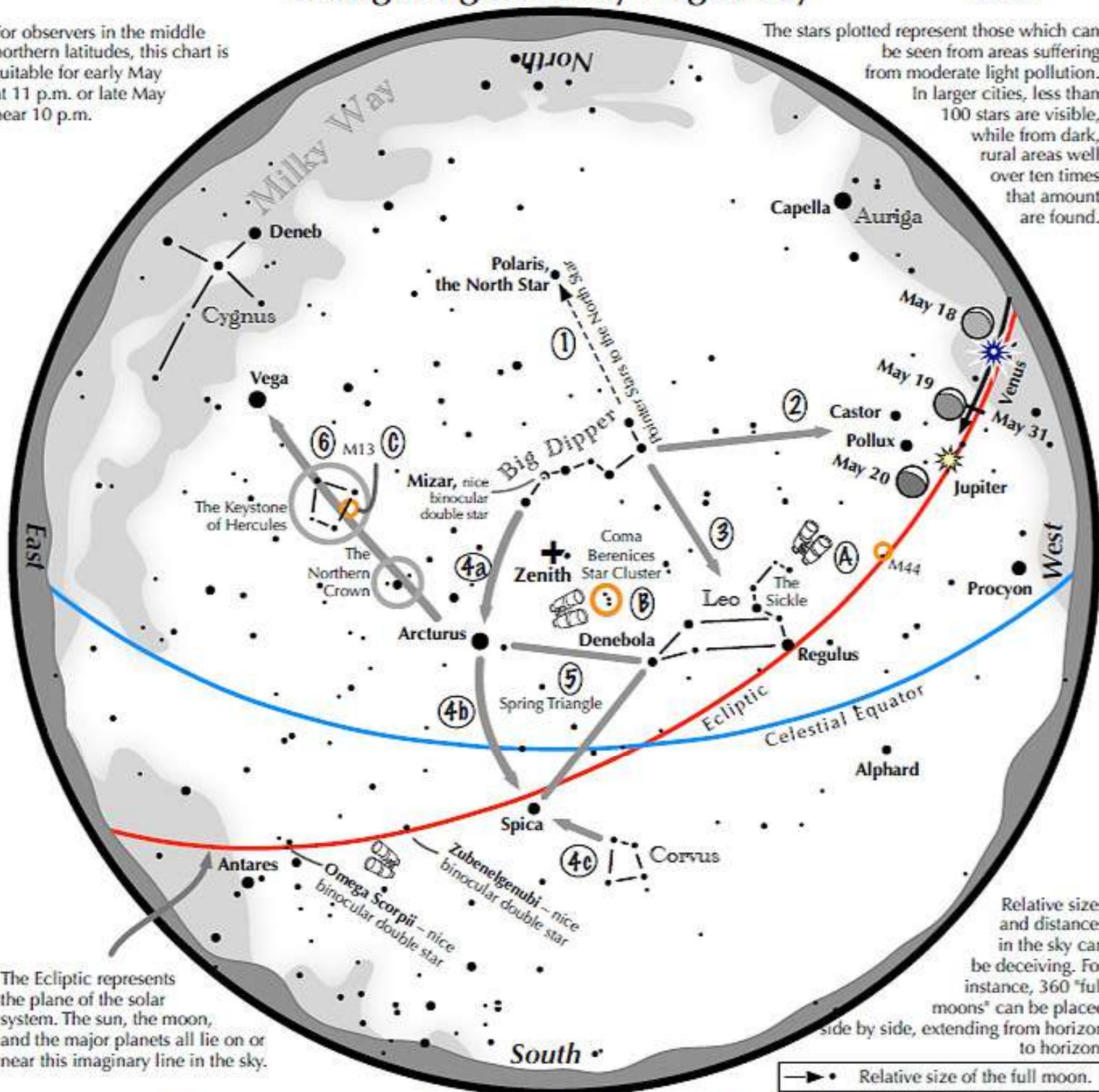
*Last Updated by Kat Troche: April 2026*

# Navigating the May Night Sky

2026

For observers in the middle northern latitudes, this chart is suitable for early May at 11 p.m. or late May near 10 p.m.

The stars plotted represent those which can be seen from areas suffering from moderate light pollution. In larger cities, less than 100 stars are visible, while from dark, rural areas well over ten times that amount are found.



Relative sizes and distances in the sky can be deceiving. For instance, 360 "full moons" can be placed side by side, extending from horizon to horizon.

→ • Relative size of the full moon.

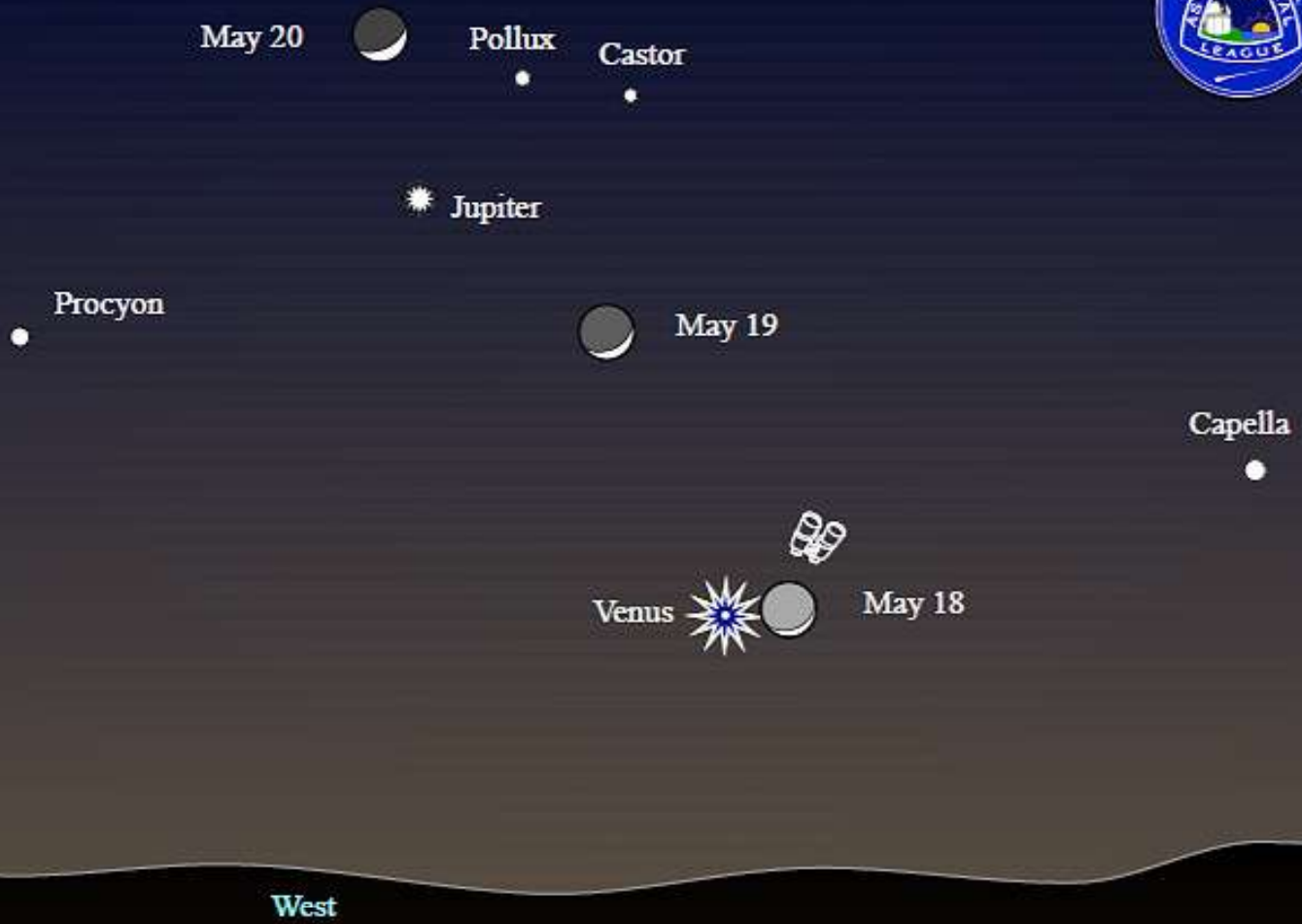
## Navigating the May night sky: Simply start with what you know or with what you can easily find.

- 1 Extend a line northward from the two stars at the tip of the Big Dipper's bowl. It passes by Polaris, the North Star.
- 2 Through the two diagonal stars of the Dipper's bowl, draw a line pointing to the twin stars of Castor and Pollux in Gemini.
- 3 Directly below the Dipper's bowl reclines the constellation Leo with its primary star, Regulus.
- 4 Follow the arc of the Dipper's handle. It first intersects Arcturus, then continues to Spica. Confirm Spica by noting that two moderately bright stars just to its southwest form a straight line with it.
- 5 Arcturus, Spica, and Denebola form the Spring Triangle, a large equilateral triangle.
- 6 Draw a line from Arcturus to Vega. One-third of the way sits "The Northern Crown." Two-thirds of the way hides the "Keystone of Hercules." A dark sky is needed to see these two dim stellar configurations.

### Binocular Highlights

A: M44, a star cluster barely visible to the naked eye, lies to the southeast of Pollux. B: Look near the zenith for the loose star cluster of Coma Berenices. C: M13, a round glow from a cluster of over 500,000 stars.





## If you can see only one celestial event this month, see this one.

### The crescent moon passing Venus then Jupiter

Look to the west-northwest 60 minutes after sunset on May 18, 19, and 20.

- On the first evening, the crescent moon full with earthshine glows immediately next to brilliant Venus.
- The next evening finds a somewhat thicker crescent moon sitting midway between Venus and Jupiter.
- On May 20, the moon lies above Jupiter and in a line with Castor and Pollux.
- The bright stars Capella and Procyon act as boundaries helping frame the scene.

**End your day with this magical scene!**