# Snake River Skies

The Monthly Newsletter of the Magic Valley Astronomical Society

March 2024


**Membership Meeting**
March 9th at the Herrett Center
CSI main campus at 7:00pm

**Centennial Observatory**
See Inside for Details

**Faulkner Planetarium**
See Inside for Details

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*Magic Valley Astronomical Society is a member of the Astronomical League*

*M-51 imaged by*
*Rick Widmer & Ken Thomason*
*Herrett Telescope - Shotwell Camera*

**www.mvastro.org**

## Vice-President's Message

The March meeting on the 9th will feature Dr. Candace Wright, She will be talking about eclipses with the big one coming up. I know the members know a lot about eclipses – So she will cover some unique angles.

As we wait with baited breadth for the warmer days of Spring to appear, let's turn our focus to the event coming shortly: The total solar eclipse. The total solar eclipse is scheduled for April 8, 2024. Annular eclipses are exciting and fun. It will come up through Mexico and into Texas, then thru the Midwest and into Ohio, New York and Maine. And I'm hearing some places are already sold out for that one. Down the road, the next total Solar Eclipse involving the U.S. won't occur until Aug 2044 {a very limited one) and another one, like 2017, in Aug 2045.


Looking forward to seeing everyone at the March meeting!

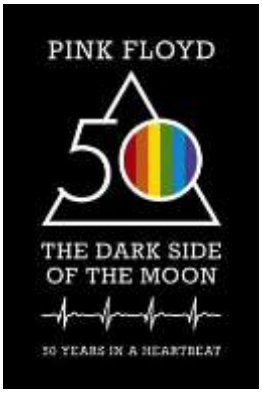
Jay Hartwell
Vice President, MVAS

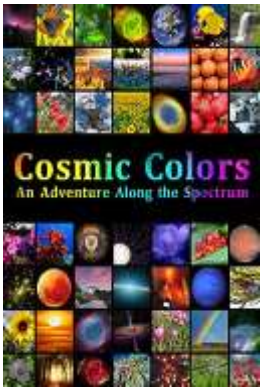
# Centennial Observatory and Faulkner Planetarium Events

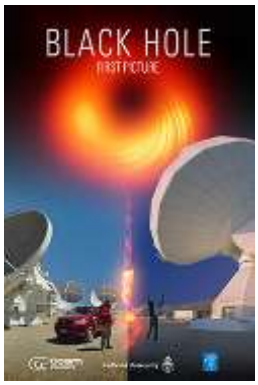

**Observatory Upcoming Events**
All events are weather permitting

| Event | Place | Date | Time | Admission |
|---|---|---|---|---|
| Monthly Free Star Party | Centennial Observatory | Saturday, March 9th, 2024 | 7:45 to 9:45 PM | FREE |
| Close Daytime Conjunction of Venus and Saturn | Centennial Observatory | Thursday, March 21st, 2024 | 2:30 to 3:30 PM | FREE |
| "Earth Hour" Telescope Viewing | Centennial Observatory | Saturday, March 23rd, 2024 | 8:30 to 9:30 PM | FREE |
| Mercury at Greatest Eastern Elongation | Centennial Observatory | Sunday, March 24th, 2024 | 7:45 to 8:09 PM | FREE |

**Faulkner Planetarium Shows**
**For the full schedule and current show times visit!** Now Showing



Visit the Herrett Center Video Vault

# The Night Sky This Month – March 2024

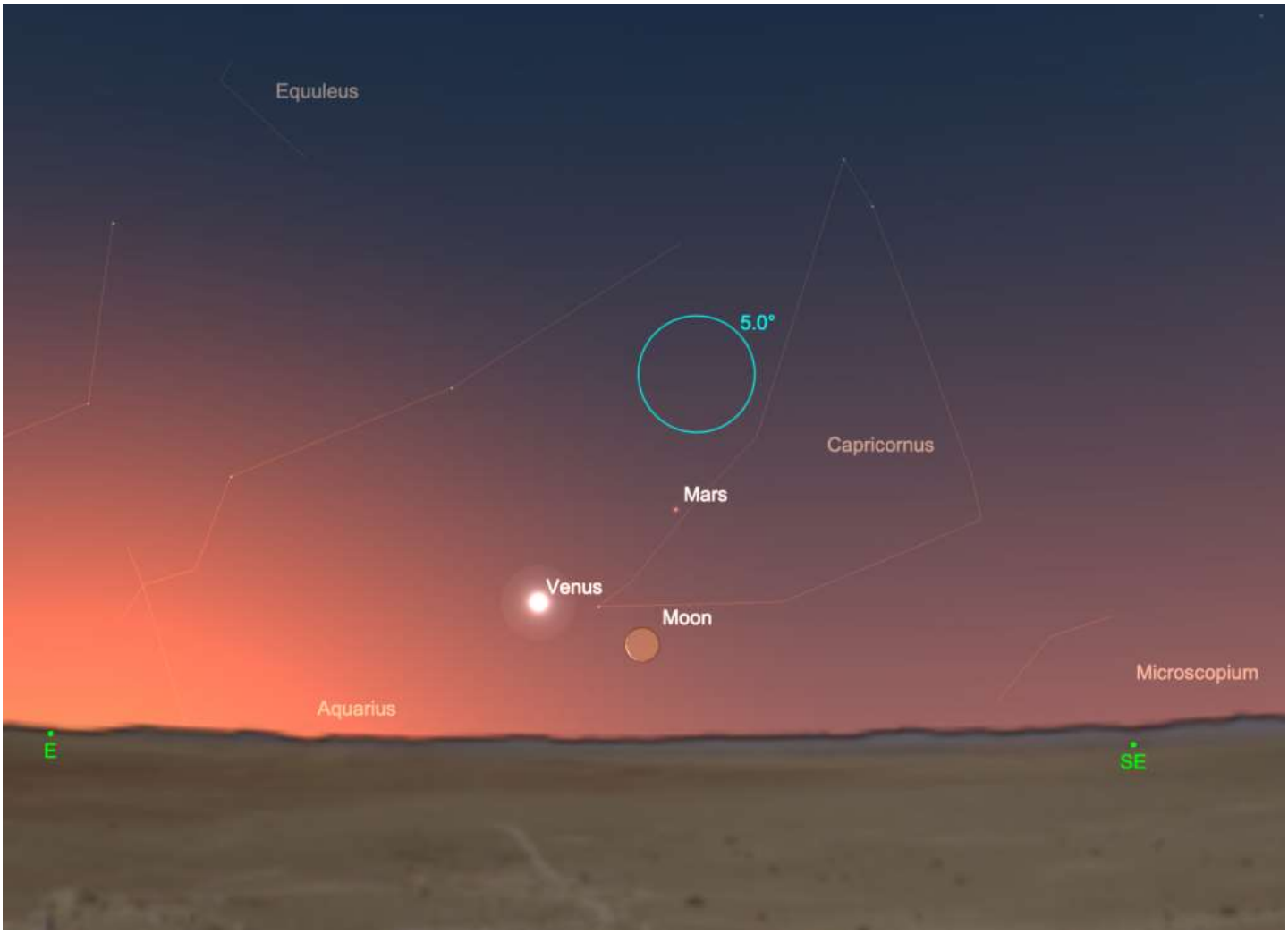
Amateur astronomers set up their telescopes at a public astronomy night in Northern Virginia.

(Looking for last month's 'Night Sky'? Find it at this link…)

Jupiter remains in the western sky after sunset, while Mercury also makes an appearance low in the west at mid-month. Venus and Mars linger low in the eastern sky before sunrise. The prominent constellations Orion, Taurus, and Canis Major all move westward as March progresses, while the brighter parts of the Milky Way rise low in the southeastern sky before dawn. The seasons change as spring begins in the northern hemisphere and autumn begins in the south. And a penumbral lunar eclipse arrives for observers in the Americas and western Europe. Here's what to see in the night sky this month…

**3 March 2024.** Last Quarter Moon, 15:23 UT

**3 March.** Look to the southeast before dawn to see the last-quarter Moon rise near the bright red-orange star Antares. Some observers in the southern U.S., Mexico, Central America, and northern South America will see the Moon occult Antares. Find timing and geographical information on this occultation at this link.



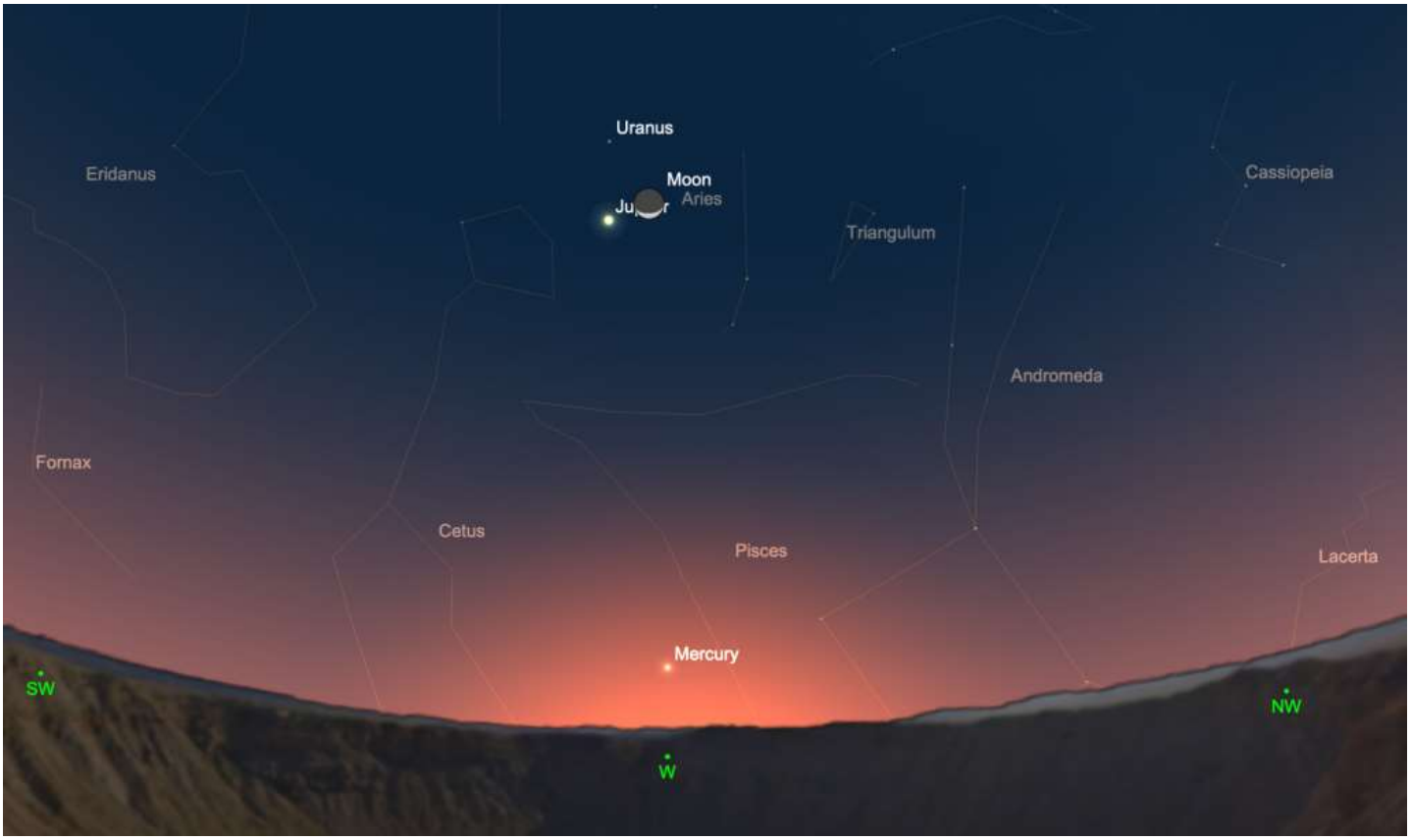
Venus, the crescent Moon, and Mars in the eastern sky before sunrise on March 8, 2024.

**8 March.** Venus lies about 5° north of a slender waning crescent Moon in the eastern sky before sunrise. The planet shines at magnitude -3.9 and, in a telescope, spans almost 11”. Take in the vista with a pair of binoculars to capture the full beauty of these two celestial objects. Also look for dimmer and smaller Mars about 6º west of the Moon this morning. The Red Planet shines at magnitude +1.2, a hundred times fainter than Venus, and appears very tiny in a telescope, just 4.3” across.

**10 March.** New Moon, 9:00UT

**10 March.** Daylight savings time begins for much of the U.S. and Canada. Move clocks ahead by one hour.

**13 March.** A waxing crescent Moon lies about 3° from Jupiter in the southwestern sky. While you’re out, have a look for Mercury low over the western horizon. The little planet makes its best appearance in the evening sky for northern observers for 2024.



Jupiter and a crescent Moon on March 13, 2024. Mercury sits far below over the western horizon.

**14 March.** This evening, the fat crescent Moon lies less than 2º southwest of the Pleiades star cluster.

**17 March.** First Quarter Moon, 04:11UT

**17 March.** Neptune is in conjunction with the Sun. In the coming weeks, this most distant planet in our solar system will slowly reappear in the morning sky.

**20 March.** The Sun crosses the celestial equator moving north at 03:06 UT. This marks the beginning of spring in the northern hemisphere and autumn in the southern hemisphere.

**24 March.** Mercury reaches greatest eastern elongation some 19º east of the Sun in the western evening sky.

**25 March.** Full Moon, 07:00 UT

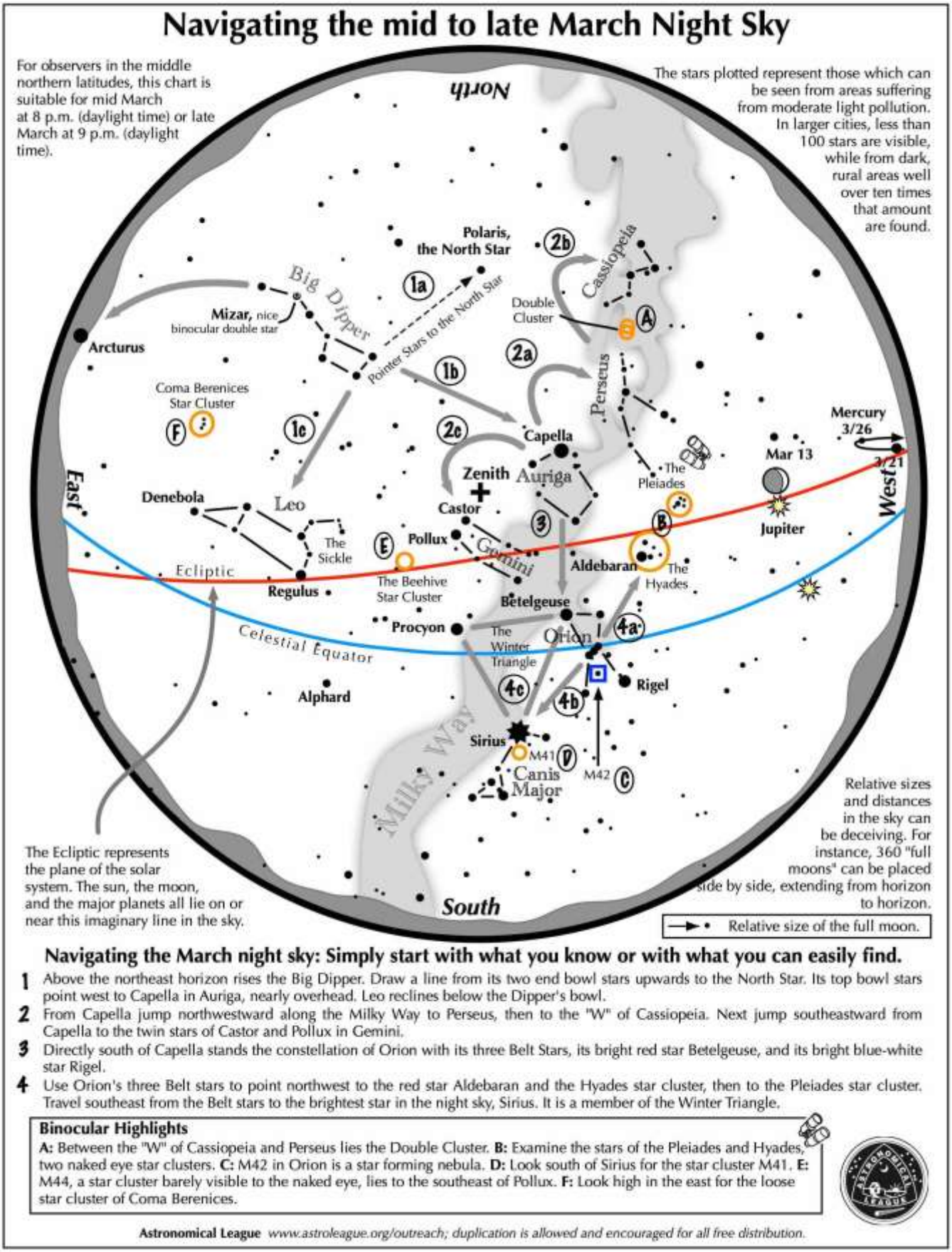
**25 March.** A penumbral lunar eclipse is visible across all of the Americas and western Europe (where the Moon sets during the eclipse). During this event, the Moon passes into the penumbra (or outer region) of the Earth's shadow. While not as dramatic as a total lunar eclipse, during this event you can see the full Moon's disk partially darkened. Peak eclipse happens at about 07:12 UT, and most observers can see the shadow impinge on the Moon's disk at about 06:25 UT. A lunar eclipse is followed two weeks later by a solar eclipse, and this time it's a total solar eclipse visible across a narrow band across North America on April 8, 2024.

The zodiacal light as seen from La Silla, Chile (credit: ESO).

**27 March.** As the Moon moves out of the way in the evening sky, northern observers far from city lights can spot the zodiacal light in the western sky after sunset. This whitish wedge-shaped glow emerges at a steep angle to the western horizon this time of year. It's caused by sunlight reflected by fine dust grains along the plane of the solar system. The zodiacal light is brightest closer to the Sun, so look for it about half an hour after the end of evening twilight as it extends up from the horizon towards the constellation Taurus.

**30 March.** A waning gibbous Moon once again moves close to the bright star Antares in the southeastern sky before dawn.

# Night Sky Map




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

1. Above the northeast horizon rises the Big Dipper. Draw a line from its two end bowl stars upwards to the North Star. Its top bowl stars point west to Capella in Auriga, nearly overhead. Leo reclines below the Dipper's bowl.
2. From Capella jump northwestward along the Milky Way to Perseus, then to the "W" of Cassiopeia. Next jump southeastward from Capella to the twin stars of Castor and Pollux in Gemini.
3. Directly south of Capella stands the constellation of Orion with its three Belt Stars, its bright red star Betelgeuse, and its bright blue-white star Rigel.
4. Use Orion's three Belt stars to point northwest to the red star Aldebaran and the Hyades star cluster, then to the Pleiades star cluster. Travel southeast from the Belt stars to the brightest star in the night sky, Sirius. It is a member of the Winter Triangle.

**Binocular Highlights**

**A:** Between the "W" of Cassiopeia and Perseus lies the Double Cluster. **B:** Examine the stars of the Pleiades and Hyades, two naked eye star clusters. **C:** M42 in Orion is a star forming nebula. **D:** Look south of Sirius for the star cluster M41. **E:** M44, a star cluster barely visible to the naked eye, lies to the southeast of Pollux. **F:** Look high in the east for the loose star cluster of Coma Berenices.

# NASA Night Sky Notes

**This article is distributed by NASA Night Sky Network**

The Night Sky Network program supports astronomy clubs across the USA dedicated to astronomy outreach. Visit nightsky.jpl.nasa.gov to find local clubs, events, and more!

## Constant Companions: Circumpolar Constellations, Part II

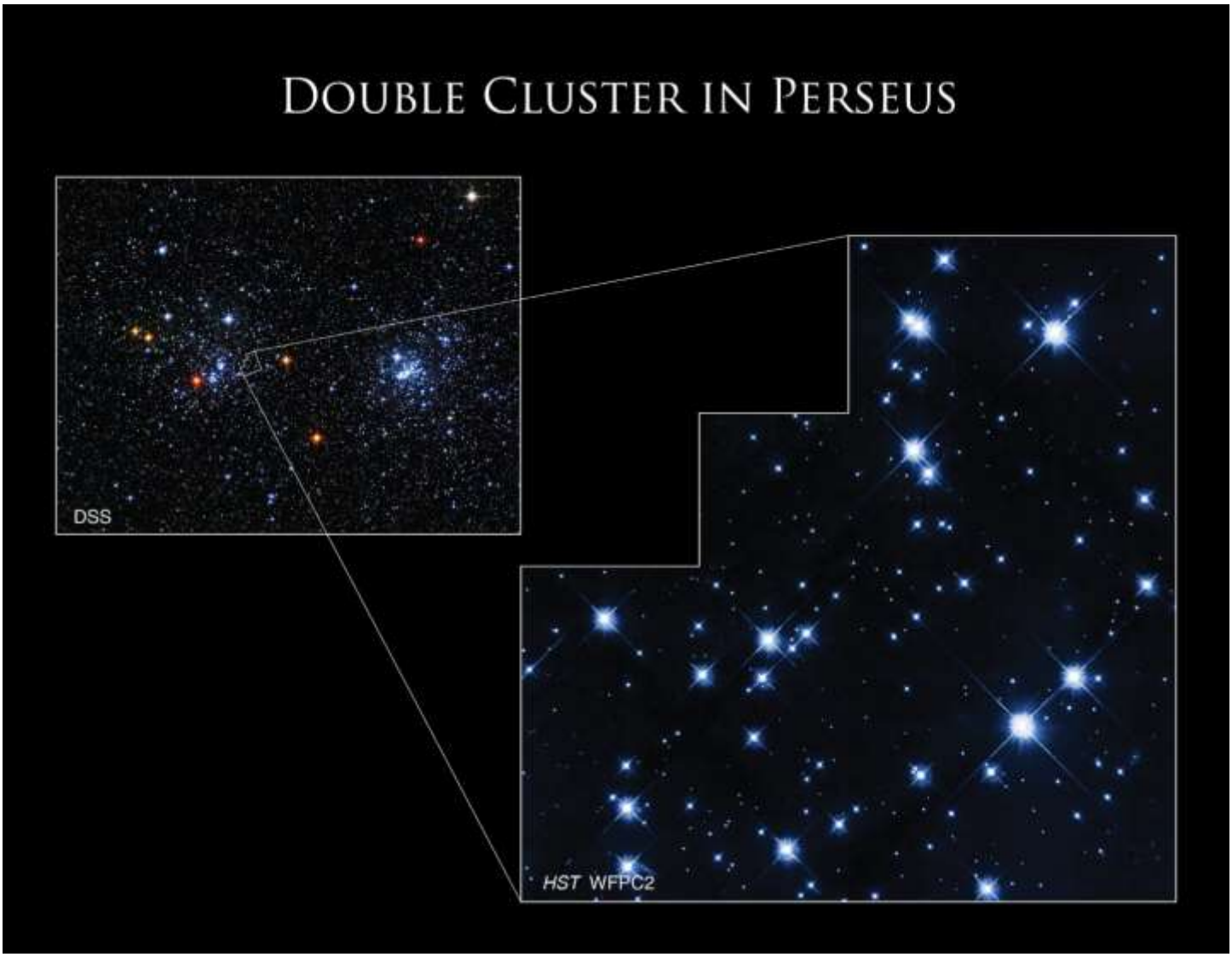
By Kat Troche

As the seasons shift from Winter to Spring, heralding in the promise of warmer weather here in the northern hemisphere, our circumpolar constellations remain the same. Depending on your latitude, you will be able to see up to nine circumpolar constellations. This month, we'll focus on: **Lynx, Camelopardalis, and Perseus**. The objects within these constellations can all be spotted with a pair of binoculars or a small to medium-sized telescope, depending on your Bortle scale – the darkness of your night skies.


In the appearance of left to right: constellations Perseus, Camelopardalis, and Lynx in the night sky. Also featured: Cassiopeia as a guide constellation, and various guide stars. Credit: Stellarium Web

- **Double Stars:** The area that comprises the constellation Lynx is famous for its multiple star systems, all of which can be separated with a telescope under dark skies. Some of the notable stars in Lynx are the following:
  - **12 Lyncis** – a triple star that can be resolved with a medium-sized telescope.
  - **10 Ursae Majoris** – a double star that was once a part of Ursa Major.
  - **38 Lyncis** – a double star that is described as blue-white and lilac.

- **Kemble's Cascade:** This asterism located in Camelopardalis, has over 20 stars, ranging in visible magnitude (brightness) and temperature. The stars give the appearance of flowing in a straight line leading to the Jolly Roger Cluster (NGC 1502). On the opposite side of this constellation, you find the asterism **Kemble's Kite**. All three objects can be spotted with a pair of binoculars or a telescope and require moderate dark skies.




A ground-based image from the Digitized Sky Survey (DSS) in the upper left shows Caldwell 14, the Double Cluster in Perseus, with an outline of the region imaged by Hubble's Wide Field and Planetary Camera 2 (WFPC2).
Ground-based image: Digitized Sky Survey (DSS); Hubble image: NASA, ESA, and S. Casertano (Space Telescope Science Institute); Processing: Gladys Kober (NASA/Catholic University of America)

- **Double Cluster:** The constellation Perseus contains the beautiful Double Cluster, two open star clusters (NGC 869 and 884) approximately 7,500 light-years from Earth. This object can be spotted with a small telescope or binoculars and is photographed by amateur and professional photographers alike. It can even be seen with the naked eye in very dark skies. Also in Perseus lies **Algol, the Demon Star**. Algol is a triple-star system that contains an eclipsing binary, meaning two of its three stars constantly orbit each other. Because of this orbit, you can watch the brightness dim every two days, 20 hours, 49 minutes – for 10-hour periods at a time. For a visual representation of this, revisit NASA's What's Up: November 2019.

From constellations you can see all year to a once in a lifetime event! Up next, find out how you can partner with NASA volunteers for the April 8, 2024, total solar eclipse with our upcoming mid-month article on the Night Sky Network page through NASA's website!

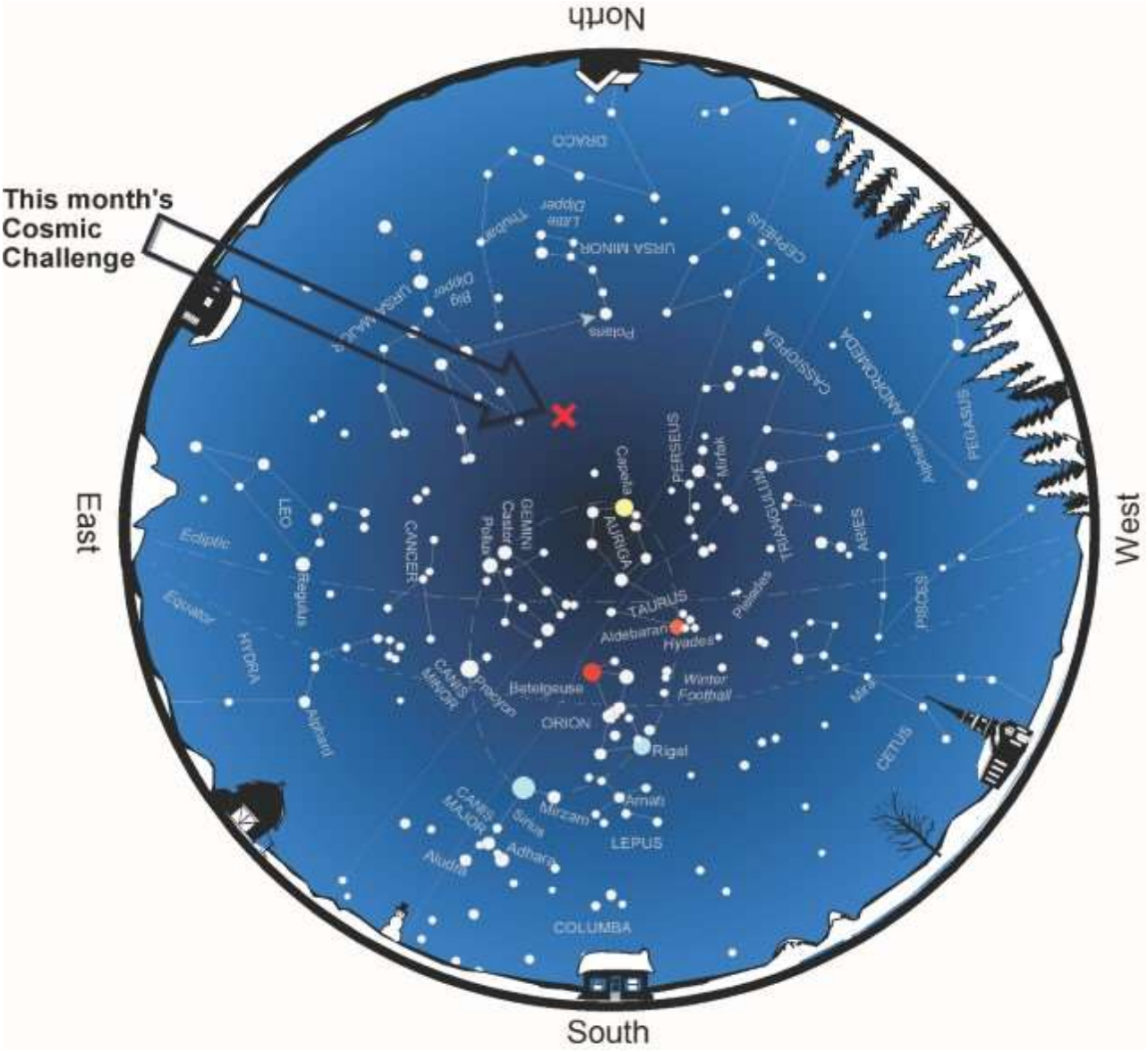
# Phil Harrington's Cosmic Challenge

## Abell 12

**This month's suggested aperture range:**
7x to 10x Binoculars

| Target | Type | RA | DEC | Constellation | Magnitude | Size |
|---|---|---|---|---|---|---|
| NGC 2403 | Spiral Galaxy | 07h 36.9m | +65° 36.2’ | Camelopardalis | 8.4 | 22'x12' |

Hovering above the northeastern horizon at this time of year is the obscure constellation Camelopardalis the Giraffe. Though the human eye alone reveals little more than a void populated by a scattering of 4th-magnitude and fainter stars, binoculars begin to unleash some of the beast's latent wonders. One of the Giraffe's few hidden treasures that is visible through binoculars is **NGC 2403**, a spectacular spiral galaxy tilted nearly face-on to our perspective.

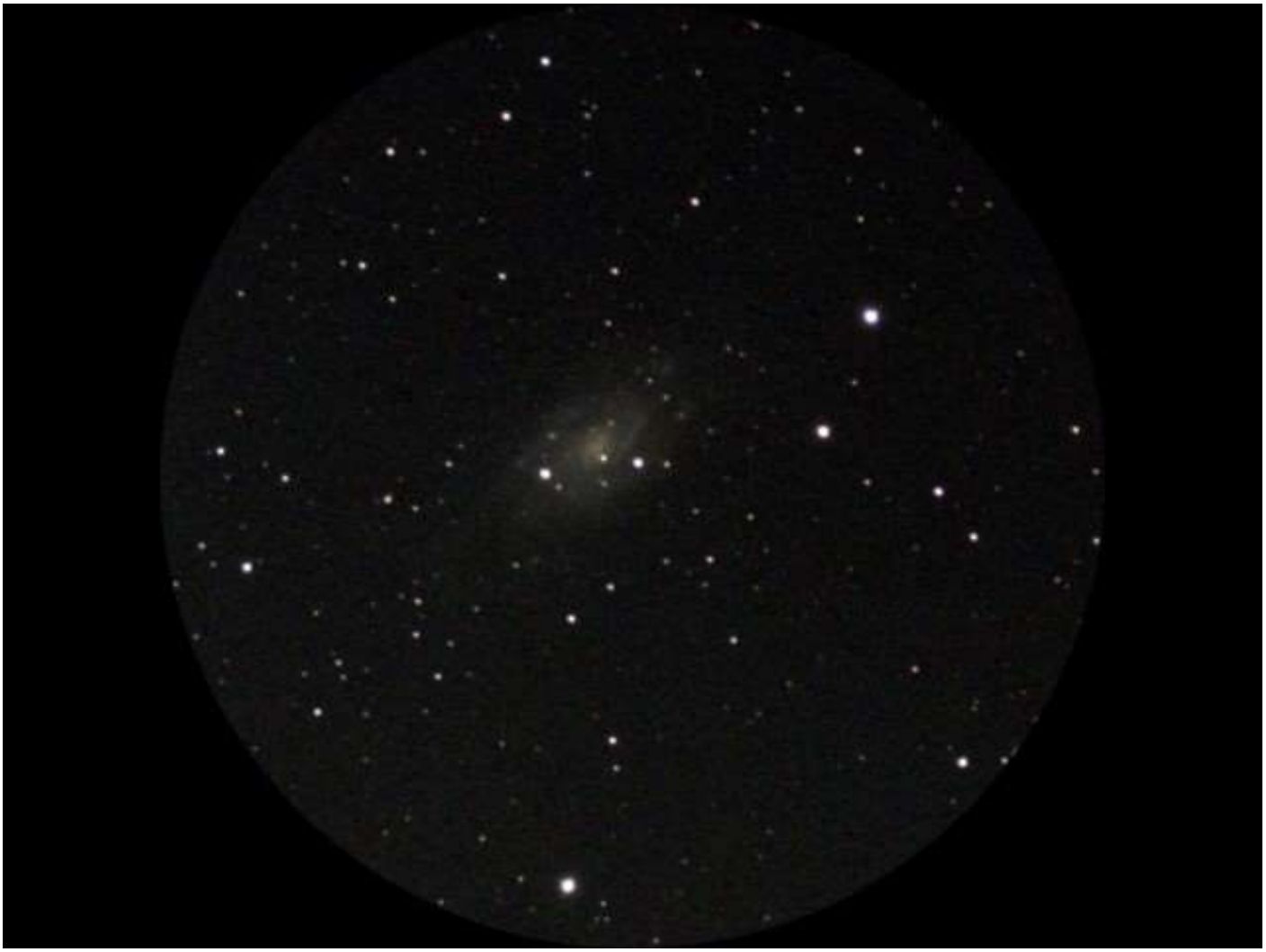


NGC 2403 is situated approximately 10 million light years away. Images reveal that its spiral arms containing many star clusters and glowing regions of ionized hydrogen, both telltale signs of ongoing stellar birth and evolution. NGC 2403 stands as a distant, though prominent member of the M81 galaxy group, which is centered 14° to the east in neighboring Ursa Major.

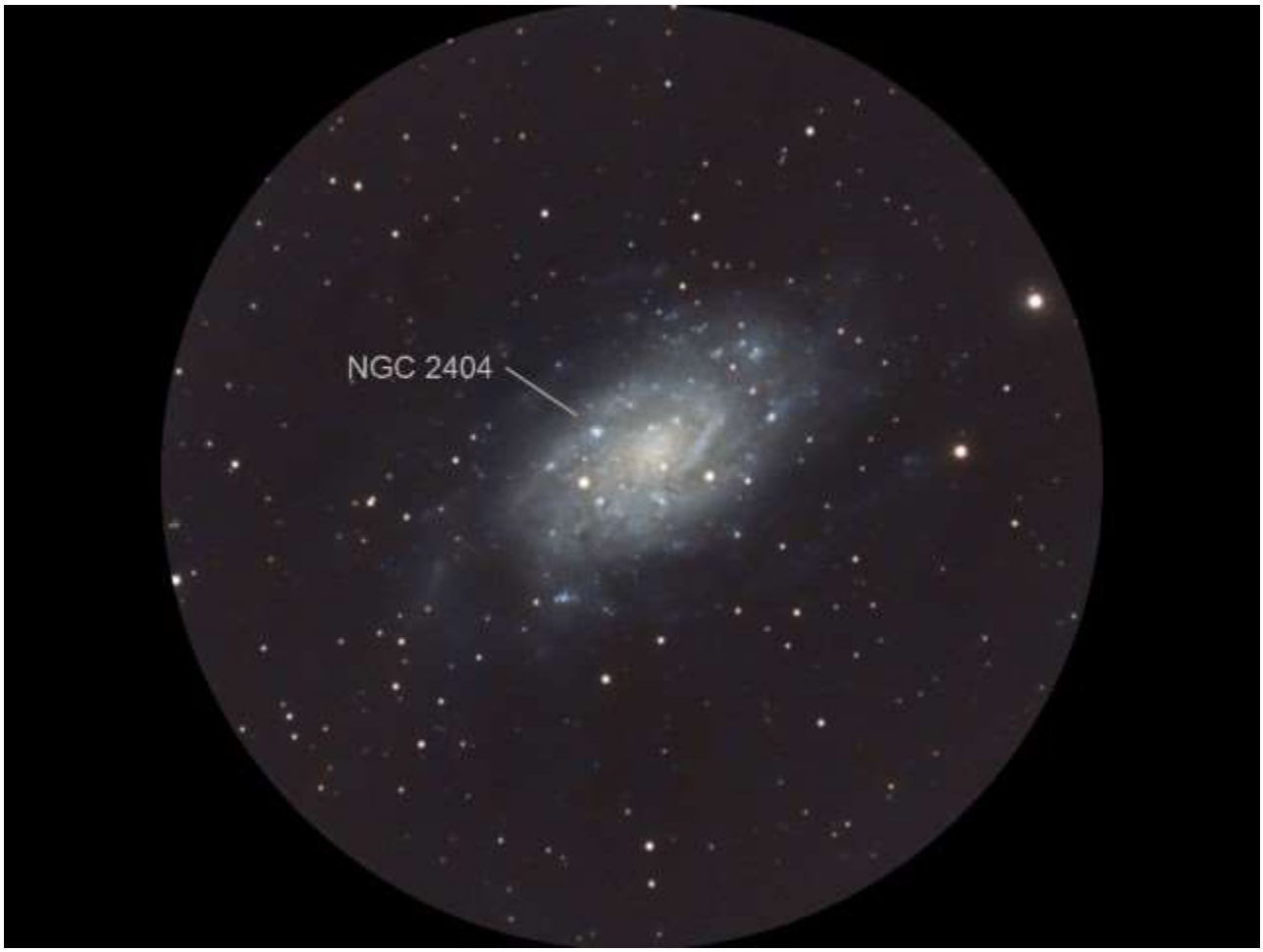
William Herschel discovered NGC 2403 back in 1788. That makes it one of the brightest galaxies in the northern celestial hemisphere that was missed by Charles Messier and and his contemporary, Pierre Méchain. Although their omission may have been due to the galaxy's sparse surroundings, NGC 2403 is actually not that hard to find.

Here's how I go about it through binoculars. Begin at Muscida [Omicron (o) Ursae Majoris], the nose of the Great Bear. From there, slip about 5° northwest to 6th-magnitude 51 Camelopardalis. NGC 2403 lies in wait just 1° further to the west.

Recently I revisited NGC 2403 through my 10x50 binoculars. I could just make out its tiny, oval glow against the background sky from my suburban backyard here on Long Island. Under darker skies, however, it has come through as a dim splotch in 7x35 binoculars, while the 10x50s uncovered the galaxy's round, diffuse core centered in an elongated halo, shown in rendering below.  As always, there is no substitute for a dark sky.



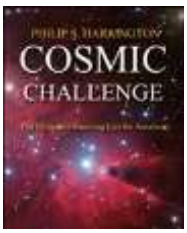
*NGC 2403 imaged by CN'er tbhausen using a ZWO Seestar S50. The image is composed from 90 subframes @ 10 seconds each. Image scale compares to the view through 15x and 16x binoculars.*




*NGC 2403 imaged by CN'er TomC_RR with a Canon T7 DSLR on an AstroTech 130EDT with 0.8 reducer/flattener and a 2x Powermate, on an EQ6R-Pro mount. Note the knots within the spiral arms.*

*Above: NGC 2403 as seen through the author's 10x50 binoculars.*

Great detail in this striking broad-armed spiral galaxy can be glimpsed when viewed through moderate-size amateur telescopes. A 10-inch (25-cm) instrument hints at spiral-arm structure toward the galaxy's western edge, a trait that is more readily confirmed in 12-inch (30.5-cm) and larger telescopes. These same scopes also reveal a very faint nebulous "star" within one of the spiral arms. Higher power confirms that this is not a star at all but rather a huge Hydrogen-II region separately cataloged as **NGC 2404**. Photographs reveal this is only the brightest of many H-II regions and clusters of stars sprinkled across the galaxy. Good luck with this month's Cosmic Challenge! And be sure to post your results in this column's discussion forum.




About the Author: Phil Harrington is a contributing editor to Astronomy magazine and is the author of 9 books on astronomy. Visit www.philharrington.net to learn more.

# Important Links and Information

If you follow this link, https://in-the-sky.org/newscal.php and then scroll down and click the iCalendar link, you can sync a full year of various astronomical events with either your outlook, google, or apple calendars.

For the current Moon calendar https://www.mooninfo.org/world/united-states/100911/moon-calendar-for-twin-falls.html

Visit https://saberdoesthe...does-the-stars/ for tips on spotting extreme crescent Moons and https://curtrenz.com/moon.html for Full Moon and other lunar data.

Go to https://skyandtelesc...ads/MoonMap.pdf and https://celestron-si...RReeves-web.pdf and https://nightsky.jpl...ObserveMoon.pdf for simple lunar maps.

Click on https://astrostrona.pl/moon-map/ for an excellent online lunar map.

Visit http://www.ap-i.net/avl/en/start to download the free Virtual Moon Atlas.

Consult http://time.unitariu...moon/where.html for current information on the Moon and https://www.fourmila.../lunarform.html for information on various lunar features.

See https://svs.gsfc.nasa.gov/5048 a lunar phase and libration calculator and https://quickmap.lro...2vIBvAXwF1SizSg for the Lunar Reconnaissance Orbiter Camera (LROC) Quickmap.

Click on https://www.calendar...endar/2024/January for a lunar phase calendar for this month. Times and dates for the lunar crater light rays predicted to occur this month are available at http://www.lunar-occ...o/rays/rays.htm

For information on the planets and how to locate them, browse http://www.nakedeyeplanets.com/

Summaries on the planets: https://earthsky.org..._eid=9e4b41969c

The graphic at https://www.timeandd...lanets/distance displays the apparent and comparative sizes of the planets, along with their magnitudes and distances, for a given date and time.

The rise and set times and locations of the planets can be determined here: https://www.timeandd...stronomy/night/

Click on http://www.asteroido.../2023_06_si.htm for information on asteroid occultation's taking place this month. See https://www.curtrenz.../asteroids.html for additional information on a number of asteroids.

Visit http://cometchasing.skyhound.com/ and http://www.aerith.ne...t/future-n.html and https://cobs.si/ for additional information on this and other comets visible this month.

A list of the closest approaches of comets to the Earth is posted at http://www.cometogra.../nearcomet.html

A wealth of current information on solar system celestial bodies is posted at http://www.curtrenz.com/astronomy.html and http://nineplanets.org/

Information on the celestial events transpiring each week can be found at https://stardate.org/nightsky and http://astronomy.com/skythisweek and http://www.skyandtel...ky-at-a-glance/

Free star maps for June can be downloaded at http://www.skymaps.com/downloads.html and https://www.telescop...thly-Star-Chart and http://www.kenpress.com/index.html

Data on current supernovae can be found at http://www.rochester...y.org/snimages/

Finder charts for the Messier objects and other deep-sky objects are posted at https://freestarcharts.com/messier and https://freestarcharts.com/ngc-ic and http://www.cambridge..._april-june.htm

Telrad finder charts for the Messier Catalog are posted at http://www.custerobs...cs/messier2.pdf and http://www.star-shin...ssierTelrad.htm

Telrad finder charts for the SAC's 110 Best of the NGC are available at https://www.saguaroa...k110BestNGC.pdf

Information pertaining to observing some of the more prominent Messier galaxies can be found at http://www.cloudynig...ur-astronomers/

Author Phil Harrington offers an excellent freeware planetarium program for binocular observers known as TUBA (Touring the Universe through Binoculars Atlas), which also includes information on purchasing binoculars, at http://www.philharrington.net/tuba.htm

Stellarium and Cartes du Ciel are two excellent freeware planetarium programs that are available at http://stellarium.org/ and https://www.ap-i.net/skychart/en/start

Deep-sky object list generators can be found at http://www.virtualcolony.com/sac/ and https://telescopius.com/ and http://tonightssky.com/MainPage.php

Freeware sky atlases can be downloaded at http://www.deepskywa...-atlas-full.pdf and https://www.cloudyni...ar-charts-r1021 and https://allans-stuff.com/triatlas/

Information on passes of the ISS, the X-37B, the Tiangong, the HST, the BlueWalker 3, Starlink, and other satellites can be found at https://www.heavens-above.com/

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Thirty binary and multiple stars for March: Struve 1173, Struve 1181, Struve 1187, Zeta Cancri, 24 Cancri, Phi-2 Cancri, Iota-1 Cancri, Struve 1245, Iota-2 Cancri, 66 Cancri, Struve 1327 (Cancer); Struve 1270, Epsilon Hydrae, 15 Hydrae, 17 Hydrae, Theta Hydrae, 27 Hydrae, Struve 1347, Struve 1357, Struve 1365 (Hydra); 3 Leonis, Struve 1360, 6 Leonis, Omicron Leonis (Leo); Struve 1274, Struve 1282, Struve 1333, 38 Lyncis, Struve 1369 (Lynx); h4046 (Puppis)

Notable carbon star for March: T Cancri (Cancer)

Thirty-five deep-sky objects for March: M44, M67, NGC 2775 (Cancer); Abell 33, M48, NGC 2610, NGC 2642, NGC 2811, NGC 2835, NGC 2855, NGC 2935, NGC 2992, NGC 3052, NGC 3078 (Hydra); NGC 2903, NGC 2916, NGC 2964, NGC 2968, NGC 3020 (Leo); NGC 2859, NGC 3003, NGC 3021 (Leo Minor); NGC 2683 (Lynx); NGC 2567, NGC 2571 (Puppis); M81, M82, NGC 2639, NGC 2654, NGC 2681, NGC 2685, NGC 2742, NGC 2768, NGC 2787, NGC 2841, NGC 2880, NGC 2950, NGC 2976, NGC 2985 (Ursa Major)

Top ten binocular deep-sky objects for March: M44, M48, M67, M81, M82, NGC 2571, NGC 2683, NGC 2841, NGC 2903, NGC 2976

Top ten deep-sky objects for March: M44, M48, M67, M81, M82, NGC 2654, NGC 2683, NGC 2835, NGC 2841, NGC 2903

Challenge deep-sky object for March: Abell 30 (Cancer)

The objects listed above are located between 8:00 and 10:00 hours of right ascension.

Carbon Star: T Cancri
Right Ascension: 08 56 40.1 Declination: +19 50 57

**Magic Valley Astronomical Society**
**550 Sparks St.**
**Twin Falls, ID**

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The Magic Valley Astronomical Society (MVAS) was founded in 1976. The Society is a non-profit [501(c) 3] educational and scientific organization dedicated to bringing together people with an interest in astronomy.

In partnership with the Centennial Observatory, Herrett Center, College of Southern Idaho - Twin Falls; we hold regularly scheduled monthly meetings and observation sessions, at which we share information on current astronomical events, tools and techniques for observation, astrophotography, astronomical computer software, and other topics concerning general astronomy. Members enthusiastically share their telescopes and knowledge of the night sky with all who are interested. In addition to our monthly public star parties we hold members only star parties at various locations throughout the Magic Valley.

MVAS promotes the education of astronomy and the exploration of the night sky along with safe solar observing through our public outreach programs. We provide two types of outreach; public star parties and events open to anyone interested in astronomy, and outreach programs for individual groups and organizations (e.g. schools, churches, scout troops, company events, etc.), setting up at your location. All of our outreach programs are provided by MVAS volunteers at no cost. However, MVAS will gladly accept donations. Donations enable us to continue and improve our public outreach programs.

Membership is not just about personal benefits. Your membership dues support the work that the Magic Valley Astronomical Society does in the community to promote the enjoyment and science of astronomy.
Speakers, public star parties, classes and support for astronomy in schoolrooms, and outreach programs just to name a few of the programs that your membership dues support.

Annual Membership dues will be:
$20.00 for individuals, families, and $10.00 for students.
Contact Treasurer Jim Tubbs for dues information via e-mail: jtubbs015@msn.com

Donations to our club are always welcome and are even tax deductible. Please contact a board member for details.
Lending Telescopes: The society currently has three telescopes for loan and would gladly accept others please contact President Robert Mayer, for more information on these and other benefits.

*Telescopes are an individual thing and not practical for public use. However, everyone should have the experience of a good look at the moon for at least 5 minutes in their life time. It is a dimension and feeling that is unexplainable. Pictures or TV can't give this feeling, awareness, or experience of true dimension. A person will not forget seeing our closest neighbor, the moon.*

Norman Herrett in a letter to Dr. J. L. Taylor, president of the College of Southern Idaho, Twin Falls, ID, USA.