Snake River Skies

The Monthly Newsletter of the Magic Valley Astronomical Society

February 2024

Membership Meeting
February 10th 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

MVAS Astro members and friends…Since our first meeting was cancelled because of the weather. Our scheduled meeting for February is on the 10th will feature: Stephen C. Hummel from McDonald Observatory: The Greater Big Bend International Dark Sky Reserve is the largest certified Dark Sky Place in the world at over 15,000 square miles in western Texas and northern Mexico. Creating the reserve required decades of education and outreach efforts, strategic partnerships, countless volunteer hours, and passing 11 separate outdoor lighting ordinances. In this talk, Stephen Hummel of the University of Texas' McDonald Observatory will discuss the creation of the Reserve, efforts to measure light pollution, and the challenges dark sky preservation efforts face.

BigBendDarkSkyReserve.org; I hope everyone will attend our first meeting 2024. Chris Anderson was interviewed by KMVT about February night sky events at CSI and what to see in the night sky. To see the interview go to KMVT news and find what's in the night sky this February.

The month of February is not the most comfortable month in which to **observe the night sky for long periods of time. It is, however, a good time** to become an 'armchair astronomer'. From reading science fiction novels or non-fiction educational books, to watching astronomy documentaries on PBS, to perusing the NASA web site, there's something for everybody. NASA.gov offers a wealth of information on all aspects of astronomy, our solar system, exoplanets, space missions, and outstanding photos taken by amateur and professional astronomers, as well as space telescopes.

One of the easiest constellations to observe in the winter is Orion the Hunter which lies due south halfway up from the horizon in February. Step outside on any clear night at 8:00 p.m. at the beginning of the month and 7:00 p.m. toward the end of the month to immerse yourself in its breathtaking beauty. Orion's distinctive belt made up of three equally spaced bright stars will immediately catch your eye.

Look forward to seeing everyone February 10th

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, February 10th, 2024	7:00 to 9:00 PM	FREE
Telescope Tuesday	Centennial Observatory	Tuesday, February 13th, 2024	7:00 to 9:00 PM	$1.50 or free with Faulkner Planetarium admission
Telescope Tuesday	Centennial Observatory	Tuesday, February 27th, 2024	7:30 to 9:00 PM	$1.50 or free with Faulkner Planetarium admission

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 – February 2024

A section of the Perseus Arm of the Milky Way looking overhead from the northern hemisphere in winter.

The constellations Orion, Canis Major, Taurus, Perseus, and Auriga dominate the northern sky this month, while southern observers see these same star groups along with the constellations Puppis, Carina, and Vela which harbor some of the best sights the night sky has to offer. There are plenty of planets to see this February, with Jupiter and Saturn in the western evening sky and Mars and Venus in the eastern early-morning sky. Near the end of the month, you get a chance to glimpse the glow of the zodiacal light, the Sun's light reflected off tiny grains of dust left over from the formation of the solar system. And there's an extra day this month – a Leap Day – that helps our calendar stay synchronized to the apparent motion of the Sun and stars. Use your extra day wisely, and try to include in it a little stargazing if you can! Here's what to see in the night sky this month…

1 February 2024. The month begins with a waning gibbous Moon near the 1st-magnitude star Spica in the southeastern sky before sunrise. Spica lies as close as 1.7º south of the Moon.

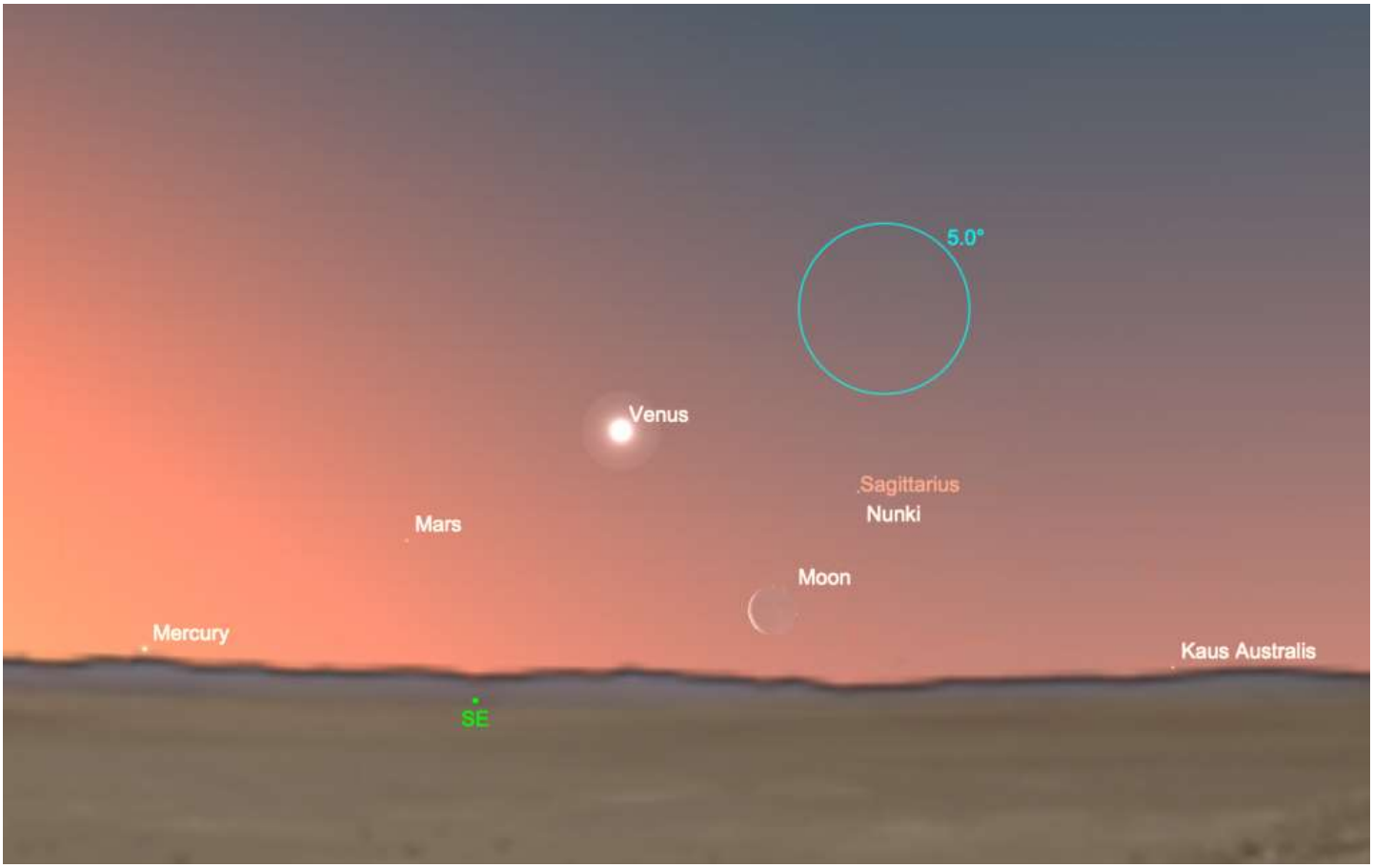
2 Feb. Last Quarter Moon, 23:18 UT

5 Feb. The Moon, now a waning crescent, continues its perpetual trip eastward along the ecliptic and today lies a little under 6º east of the bright red supergiant Antares in the constellation Scorpius.

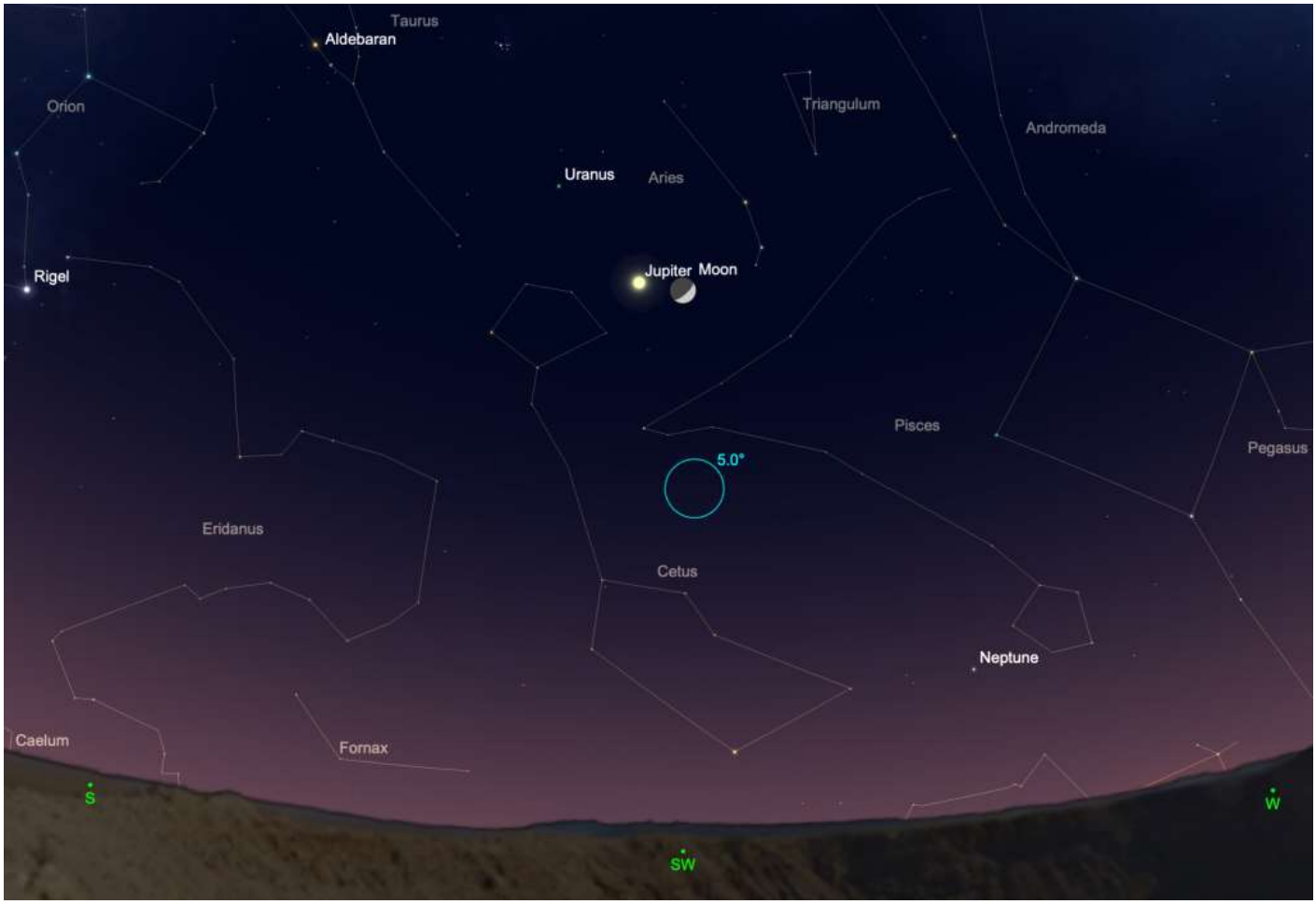
7 Feb. Set your alarm early so you can see a slender crescent Moon, brilliant Venus, and ochre Mars in the southeastern sky before sunrise. The pair form a small triangle about 7º on a side. Binoculars gives you a better view. You will need a good clear view of the horizon to spot this celestial arrangement; southern-hemisphere observers see the Moon and two planets further above the horizon than northern observers.

9 Feb. New Moon, 22:59 UT

10 Feb. Saturn lies about 1.8º north of a very slender crescent Moon in the southwestern evening sky. The two lie very low over the horizon so bring a pair of binoculars to spot this conjunction.



The slender crescent Moon, Venus, and Mars in the southeastern morning sky before sunrise on Feb. 7, 2024.



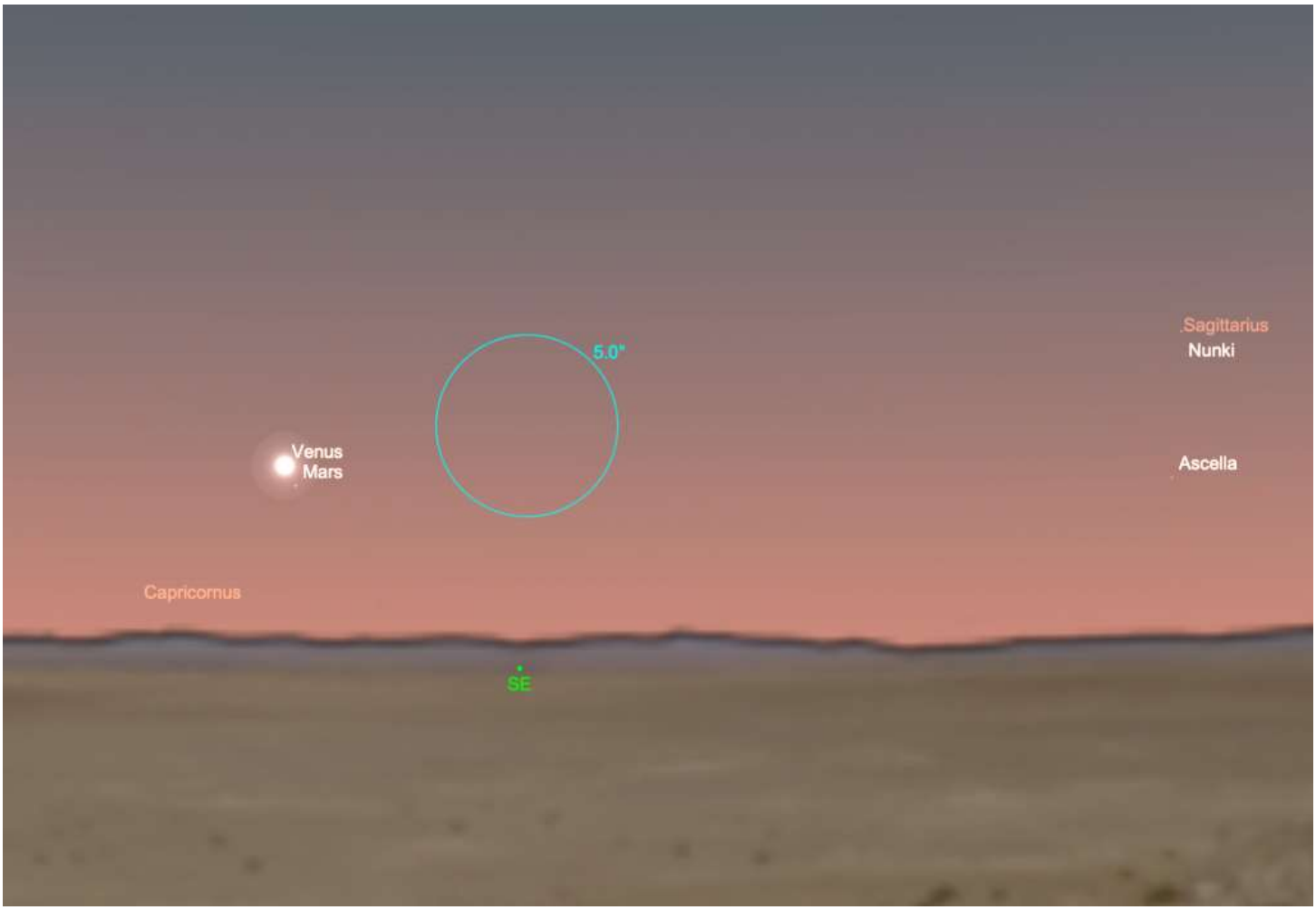
The Moon and Jupiter in conjunction on February 14, 2024.

14 Feb. The crescent Moon, now waxing in the western sky, lies about 4^{o} from Jupiter in the southwest near the head of the constellation Cetus, the Whale. As the evening wears on, you can see the pair grow slightly closer to each other before they set just after midnight. Jupiter has faded to magnitude -2.2 with an apparent diameter of 37”. But it’s still big enough for pleasant telescopic observation in the deep-blue twilight sky of a late northern winter.

16 Feb. First Quarter Moon, 15:01 UT

16 Feb. The first quarter Moon lies nearly 4^{o} east of the Pleiades star cluster.

20 Feb. The thickening gibbous Moon lies about 1.5^{o} from Pollux in Gemini high in the evening sky. If you’re out with a telescope, have a look at the other ‘twin’, the star Castor. It’s an excellent double star with a primary of magnitude 1.5 separated by 5.2” from a 3rd-magnitude secondary. Not sure which twin is which? Pollux shines with a yellow light compared to Castor’s icy white. Or as I try to remember it – Castor is closer to Capella (the brightest star in Auriga).



Venus and Mars lie within half a degree each of other in the southeastern early-morning sky on Feb. 22, 2024.

22 Feb. Don't miss this one – Venus and Mars lie just half a degree apart in the southeastern sky before sunrise. The brightening twilight and low altitude over the horizon mean you will need a pair of binoculars or a small telescope to see this lovely conjunction. The conjunction favors southern-hemisphere observers who see the pair further above the horizon than northerners. At magnitude -3.9, Venus outshines Mars by a factor of 100, so the latter planet will be the hardest to see.

23 Feb. The nearly-full Moon trails the star Regulus in Leo by about 3.5^{o} as they both rise in the evening sky.

24 Feb. Full Moon, 12:30 UT

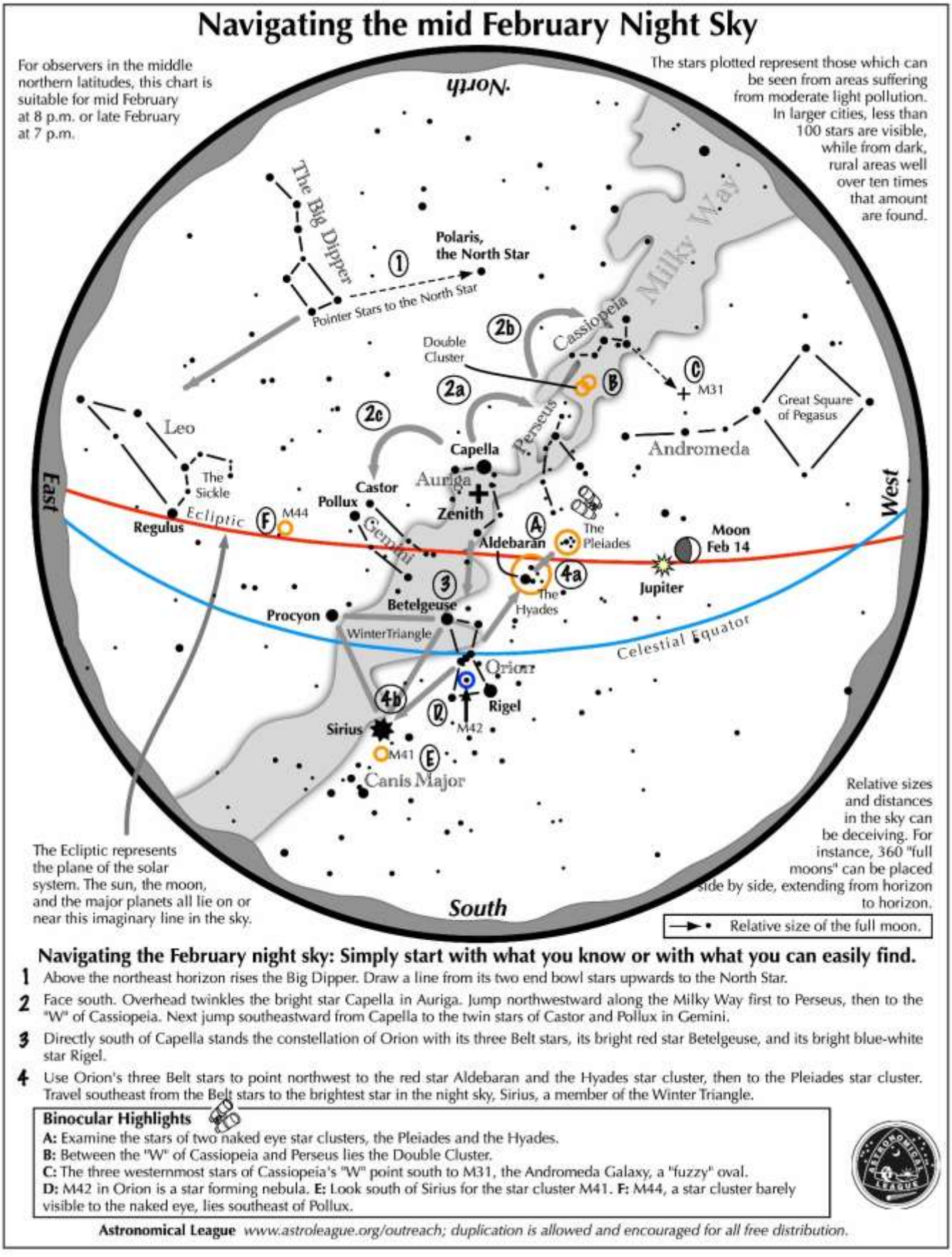
26 Feb. As the Moon moves out of the way in the evening sky, northern observers far from city lights can spot the zodiacal light in the western sky after sunset. This whitish wedge-shaped glow emerges at a steep angle to the western horizon this time of year. It's caused by sunlight reflected by fine 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.

28 Feb. The waning gibbous Moon and Spica make another close approach in the southeastern morning sky, just as they did earlier in the month. They will not be quite as close as on Feb. 1.

28 Feb. Saturn reaches conjunction with the Sun. It will reappear in the morning sky in a couple of weeks and start working its way back around the sky for the rest of the year.

29 Feb. Today is a 'Leap Day', an extra day added to the calendar at the end of February every four years. Our standard calendar has 365 days, but it takes the earth about 365.25 days to revolve around the Sun. The extra day every four years helps our calendar stay in sync with the mechanics of the solar system. The extra day is not added on 'century years' that cannot be evenly divided by 400. So 2000 and 1600 were leap years, but 1700 and 1900 were not.

Night Sky Map



Navigating the February 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.
2. Face south. Overhead twinkles the bright star Capella in Auriga. Jump northwestward along the Milky Way first 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, a member of the Winter Triangle.

Binocular Highlights

A: Examine the stars of two naked eye star clusters, the Pleiades and the Hyades.
B: Between the "W" of Cassiopeia and Perseus lies the Double Cluster.
C: The three westernmost stars of Cassiopeia's "W" point south to M31, the Andromeda Galaxy, a "fuzzy" oval.
D: M42 in Orion is a star forming nebula. **E:** Look south of Sirius for the star cluster M41. **F:** M44, a star cluster barely visible to the naked eye, lies southeast of Pollux.

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!

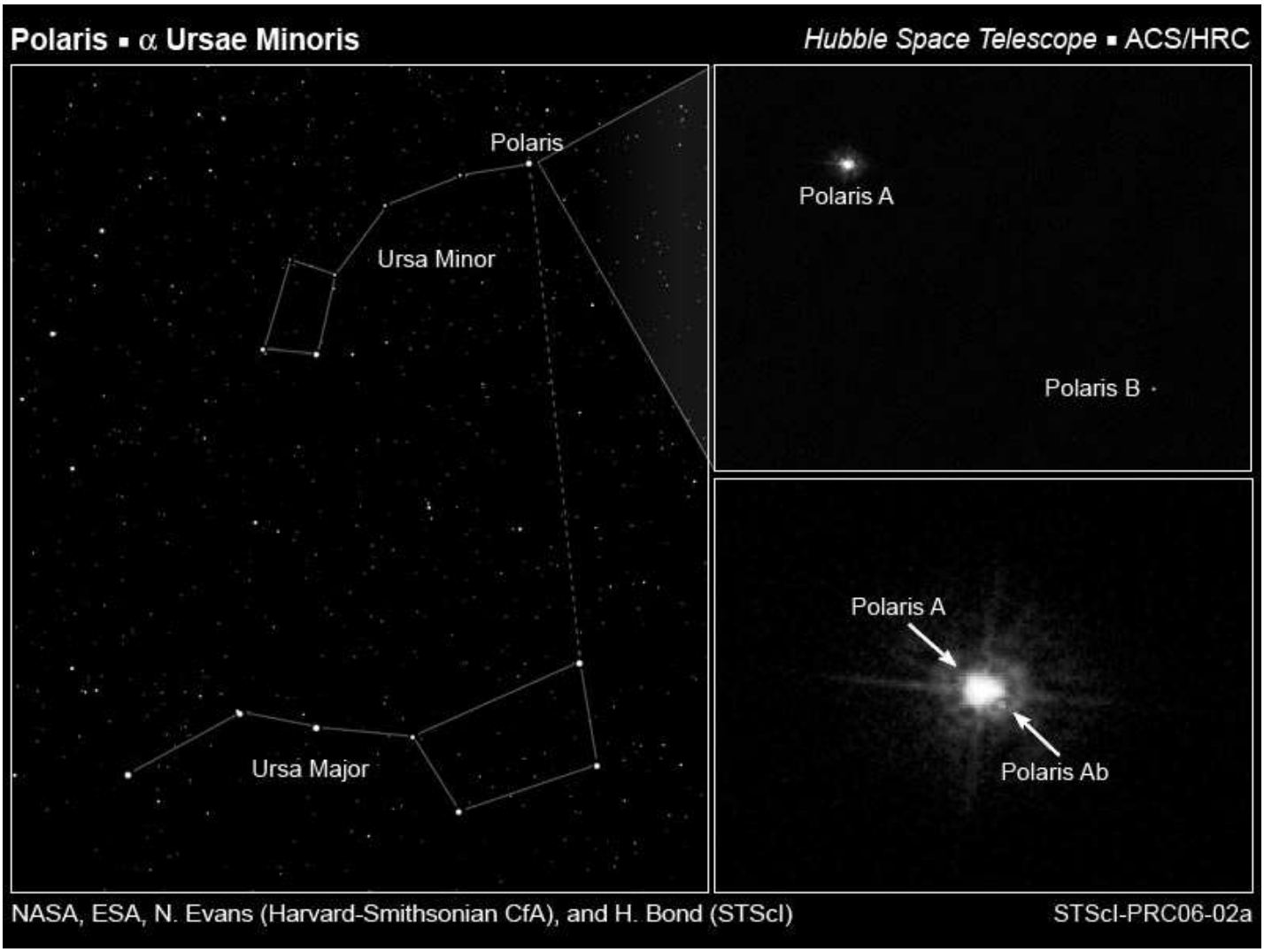
Constant Companions: Circumpolar Constellations, Part I By Kat Troche

Winter in the northern hemisphere offers crisp, clear (and cold!) nights to stargazers, along with better views of several circumpolar constellations. What does circumpolar mean when referring to constellations? This word refers to constellations that surround the north and south celestial poles without ever falling below the horizon. Depending on your latitude, you will be able to see up to nine circumpolar constellations in the northern hemisphere. Today, we'll focus on three that have gems within: **Auriga, Cassiopeia, and Ursa Minor**. These objects can all be spotted with a pair of binoculars or a small to medium-sized telescope.

The counterclockwise circumpolar constellations Auriga, Cassiopeia, and Ursa Minor in the night sky, with four objects circled in yellow labeled: Pinwheel Cluster, Starfish Cluster, Owl Cluster, and Polaris. Credit: Stellarium Web

The Pinwheel Cluster: Located near the edge of Auriga, this open star cluster is easy to spot with a pair of binoculars or small telescope. At just 25 million years old, it contains no red giant stars and looks similar to the Pleiades. To find this, draw a line between the stars Elnath in Taurus and Menkalinan in Auriga. You will also find the **Starfish Cluster** nearby.

The Owl Cluster: Located in the 'W' or 'M' shaped constellation Cassiopeia, is the open star cluster known as the **Owl Cluster**. Sometimes referred to as the E.T. Cluster or Dragonfly Cluster, this group of stars never sets below the horizon and can be spotted with binoculars or a small telescope.



A black and white image from the Hubble Telescope of the Polaris star system, showing three stars: Polaris A, Ab, and Polaris B. Credit: NASA, ESA, N. Evans (Harvard-Smithsonian CfA), and H. Bond (STScI)

Polaris: Did you know that Polaris is a triple star system? Look for the North Star on the edge of Ursa Minor, and with a medium-sized telescope, you should be able to separate two of the three stars. This star is also known as a *Cepheid variable star*, meaning that it varies in brightness, temperature and diameter. It's the closest one of its kind to Earth, making it a great target for study and conceptual art.

Up next, catch the King of the Planets before its gone for the season with our upcoming mid-month article on the Night Sky Network page through NASA's website!

February Skies

Dick Cookman

Highlights: Comet Journal, Martian Landers, Meteor Showers, Planet Plotting, February Moon

Focus Constellations: Ursa Major, Ursa Minor, Draco, Cepheus, Cassiopeia, Camelopardalis, Lynx, Leo, Cancer, Gemini, Auriga, Taurus, Perseus, Andromeda, Pegasus, Aries, Pisces

Comet Journals
Comet C/2021 S3 (Panstarrs) is a long period 9th magnitude comet in Scorpius which will reach perihelion on February 14, 2024 at about 8th magnitude and will be brightest on March 1 in Serpens Cauda. It passes perigee (closest to Earth) on March 14 then heads back into outer space as in leaves the Solar System.
Comet 62P/Tsuchinsham 1 2023, a short period (6.67 years) comet at 8th magnitude in Virgo, passed through perihelion on Christmas and was closest to Earth on Dec 30. It will exit Virgo by late summer.
Comet 12P/Pons-Brooks (2024) is an enormous periodic comet which visits every 71 years. It is at 7th magnitude moving slowly through Cygnus. Perihelion passage is April 21. It may be visible near the Sun during the total eclipse on the 8th. Closest approach to Earth at 1.55 AU (232 million km) is on June 2 when it may reach naked eye visibility.

Mars Landers
After 71 successful flights during its almost 1000 days on Mars, Ingenuity, the helicopter accompanying and scouting for the Perseverance Rover, temporarily lost radio contact with the rover during a recent flight. Communication was re-established and ground controllers received imagery showing damage to Ingenuity's rotor blade, preventing further flight. Meanwhile, the rover completed exploration of the river delta on the edge of Jezero Crater. The crater, formed by impact almost 4 billion years ago, is floored by igneous rock crystallized from magma and/or lava. Over 100's of millions of years, the igneous rock was covered by younger river deposits which, in turn, are beneath even younger salt rich mudstones deposited in a lake possibly exceeding a depth of 100 feet and width of 22 miles. The river delta on the edge of the crater is covered by boulders carried from outside the crater by raging torrents. The chemistry of the rocks and sediments in the crater and the collected 23 rock samples reveals environmental conditions favorable for life for an extended length of time. No direct fossil evidence for life was found.

Meteor Showers
February has no significant meteor showers. The Delta Leonids are a minor shower on the 15th typically displaying only 2 meteors per hour in dark skies. With the scarcity of meteor showers, dark sky locations may reveal a cone of brighter sky extending upward from the sunset direction. This "zodiacal light" is sunlight reflected by debris scattered along our orbit from ancient comet and asteroid passages and possibly even including debris left over from the primeval collision that created the Moon. Reflection from these remnants were probably viewed by mammoths & saber tooth tigers, dinosaurs, and even the first lobe-finned fish departing the oceans for a future life on the land!

Planet Plottings
Inner rocky terrestrial planets dominate the eastern sky in predawn hours in February. Mercury (-0.2 to -1.6) moves through Sagittarius, Capricornus, and Aquarius; Venus (-3.9 to -3.8) and Mars (1.3) visit Sagittarius and Capricornus. Following sunset, western skies display the outer gas giants, Jupiter (-2.2 to -2.0) in Aries, Saturn (1.0) in Aquarius, Uranus (5.7 to 5.8) in Aries, and Neptune (7.9 to 8.0) in Pisces.

In February, Mercury, Mars, and Venus are diving eastward into the glow of sunrise with Mercury leading the way. Venus moves faster than Mars during the month, passing it on the 22nd. On the 1st, Venus rises 2 hours before the Sun, trailed by Mars and Mercury, respectively 45 minutes and an hour later. By month's end, Mars will rise 1 hour, 45 minutes before the Sun, with Venus 12 minutes later. Mercury rises with the Sun when reaching solar conjunction on the 28th. Saturn and Neptune are early evening planets in the western sky. Saturn sets about an hour after the Sun and Neptune follows a little over an hour later. Uranus and Jupiter are high in the southwestern sky after sunset.

Planet	Constellation(s)	Magnitude	Planet Passages	Time	Date
Sun	Capricornus	-26.5	New Moon	5:59PM EST	2/9
Mercury	Sagittarius, Capricornus, Aquarius	-0.2 to -1.6	Superior Conjunction	4:00AM EST	2/28
Venus	Sagittarius, Capricornus	-3.9 to -3.8	Mars, 0.6°S	11:00AM EST	2/22
Mars	Sagittarius, Capricornus	1.3	Venus, 0.6°N	11:00AM EST	2/22
Jupiter	Aries	-2.2 to -2.0			
Saturn	Aquarius	1.0	Solar Conjunction	4:00PM EST	2/28
Uranus	Aries	5.7 to 5.8			
Neptune	Pisces	7.9 to 8.0			

February Moon

February's New Moon is in Aquarius on the 9th at 5:59PM EST. The New Moon marks the start of Lunation 1251 which ends 29.46 days later with the New Moon of March in Aquarius on the 10th at 5:01AM EST.

The Full Moon on the 24th occurs at 7:31AM EST in Leo. It is called the Snow, Hunger, or Wolf Moon. Colonial Americans named it the "Trapper's Moon". To the Celts it was the "Ice Moon", and the Chinese refer to it as the "Budding Moon". Medieval English thought of it as the "Storm Moon", and the Anishinaabe (Odawa and Ojibwe) people of northern Michigan recognize it as "Namebini-giizis" (Suckerfish Moon). Anishnaabe (Odawa and Ojibwe) first people respectively recognize the 2nd Moon of the year as "Mkwa-giizis" (Bear Moon) in the eastern dialect and "Namebini-giizis" (Suckerfish Moon) in the western dialect. Ontario's Earth Haven Farm presents cultural teachings explaining the cycle of life and nature of the 13 Grandmother Moons. "The second moon of Creation is Bear Moon, when we honour the vision quest that it began in the fall. During this time, we discover how to see beyond reality and to communicate through energy rather than sound."

Lunar perigee (minimum lunar distance) is on the 10th when the Moon is at 222,506 mi. (56.46 Earth radii) at 1:53PM EST. Lunar Apogee (maximum lunar distance) is on February 25 at 9:49AM EST when the Moon's distance is 252,470 mi. (64.07 Earth radii).

The waning crescent Moon appears to pass Venus on the 7th, and Mars and Mercury on the 8th. The waxing crescent passes Saturn on the 10th, Neptune on the 12th, and Jupiter and Uranus on the 15th.

Planet	Constellation	Magnitude	Moon Passages	Moon Phase	Moon Age
Sun	Aquarius	-26.8	5:59PM EST, 2/9	New	0 Days
Mercury	Capricornus	-0.4	3.0°S, 5:20PM EST, 2/8	Waning Crescent	28.43 Days
Venus	Sagittarius	-3.8	5.0°S, 2:00PM EST, 2/7	Waning Crescent	26.29 Days
Mars	Sagittarius	1.3	4.0°S, 2:00AM EST, 2/8	Waning Crescent	27.79 Days
Jupiter	Aries	-2.1	3.0°N, 3:00AM EST, 2/15	Waxing Crescent	5.38 Days
Saturn	Aquarius	1.0	1.8°S, 8:00PM EST, 2/10	Waxing Crescent	1.08 Days
Uranus	Aries	5.8	3.0°N, 9:00PM EST, 2/15	Waxing Crescent	6.13 Days
Neptune	Pisces	7.9	0.7° S, 2:00AM EST, 2/12	Waxing Crescent	2.33 Days

Phil Harrington's Cosmic Challenge

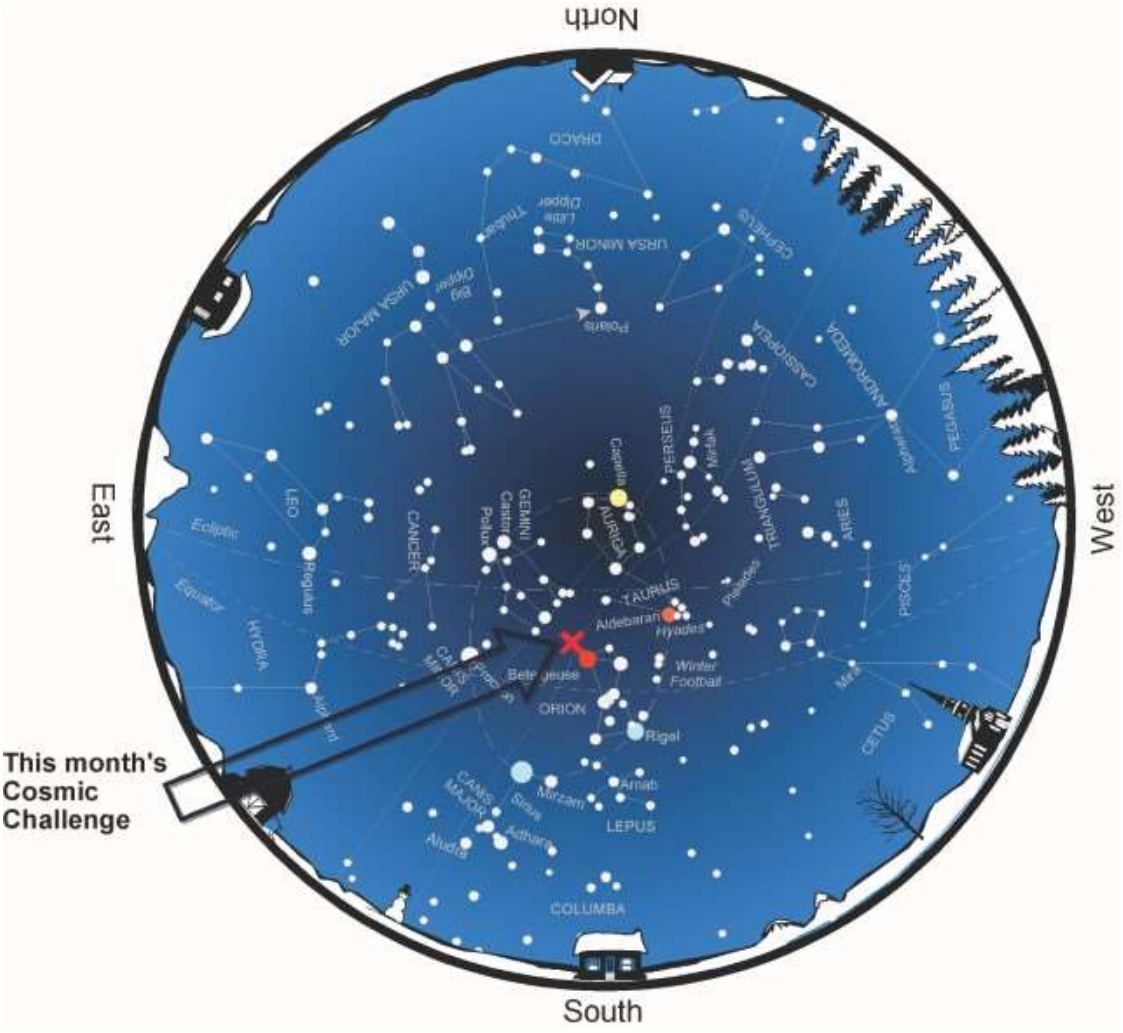
Abell 12

This month's suggested aperture range:
10” to 14” (25-36cm) telescopes
Featured Scope: Meade LX-200 12”

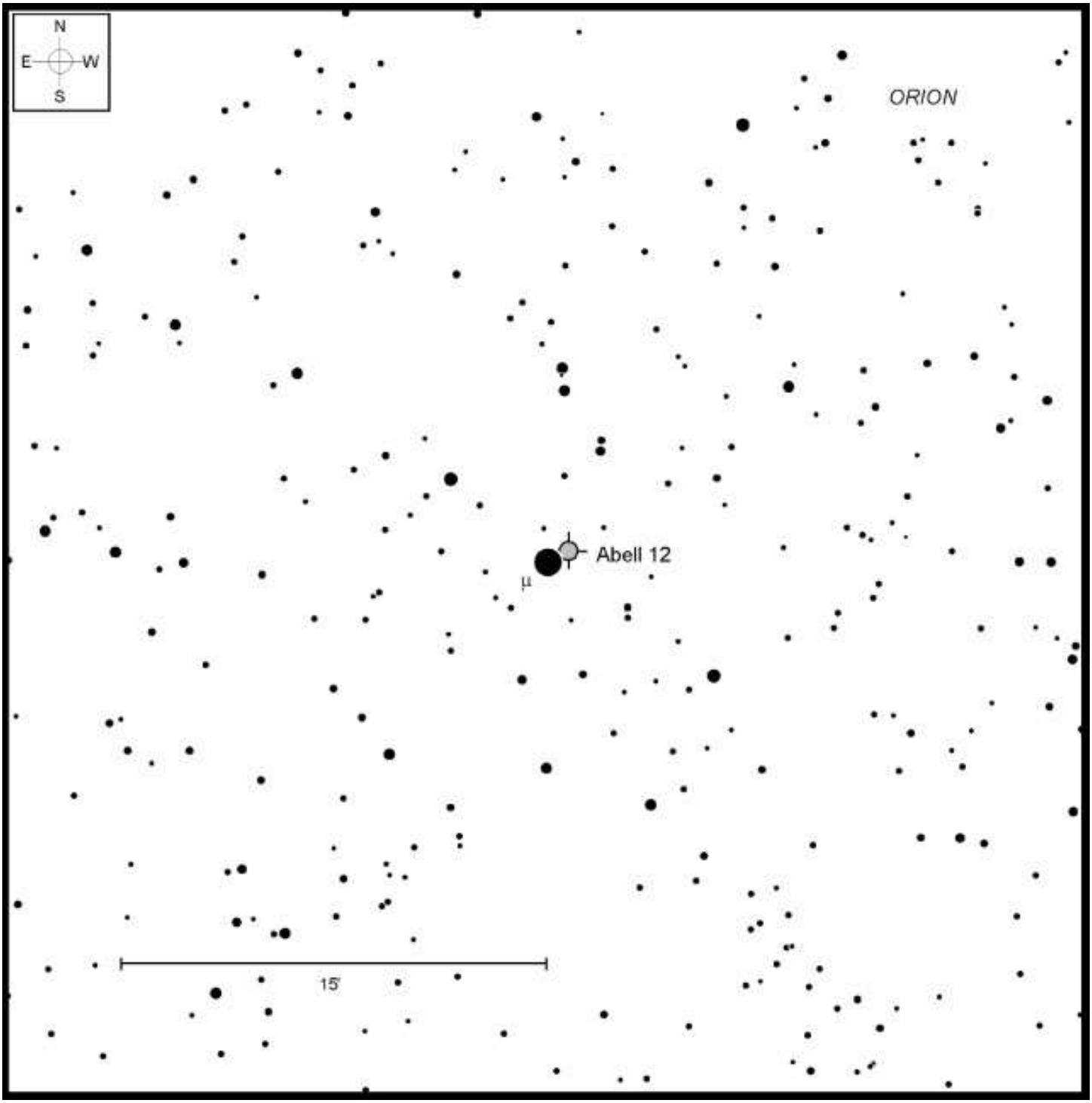
Target	Type	RA	DEC	Constellation	Magnitude	Size
Abell 12	Planetary Nebula	06h 02.3m	+09° 39.3’	Orion	14	37"

Deep-sky objects can be challenging for several reasons. Some are especially faint, while others are especially small, and still others are so large that they can't fit into a single eyepiece field. Or the problem might be that a particular target is so close to another, noticeably brighter object that the light from that intruder all but obliterates the quarry.

The latter problem plagues planetary nebula **Abell 12**. It shines at about 14th magnitude, which is not exactly bright, but is also not exceptionally dim for a telescope 10 inches (25 cm) or more in aperture. The problem, however, is that it is located a scant arcminute away from 4th-magnitude Mu (μ) Orionis. That's why it's known by the nickname the **Hidden Planetary**.



Above: Evening star map. Credit: Map adapted from *Star Watch* by Phil Harrington



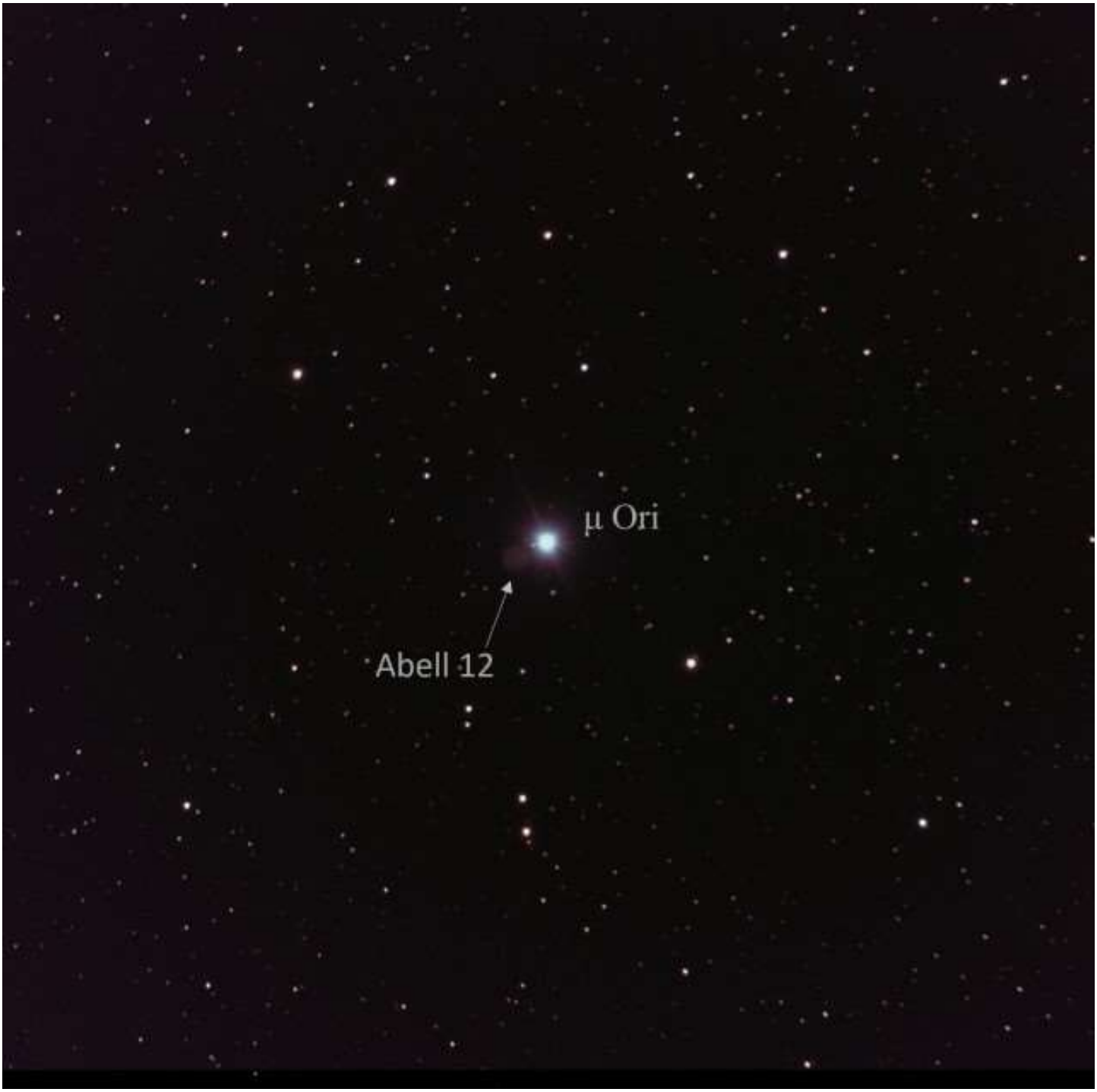
Above: Finder chart for this month's Cosmic Challenge.

The nearness of the planetary to the star begs the question, "Are we looking at a former binary star system where one of its members is no longer with us?" According to data from the HIPPARCOS parallax-measuring satellite, we are not. Mu (μ) Orionis is 152 light years away. Abell 12 is some 6,900 light years from Earth. When we look toward this stellar odd couple, we are just looking at a chance alignment of two objects at quite different distances.

Were it not for that interloper, Abell 12 would undoubtedly have been discovered by William Herschel and included in the NGC. As it is, however, he and son John missed it during their intensive sky searches. Instead, George Abell was first to uncover this little bubble of expanding hydrogen gas while he searched the Palomar Observatory Sky Survey photographic plates in 1955. In the original image, Mu looked as though it was blowing a bubble while chewing gum. Only after more intensive study did Abell realize that the **Bubble Gum Nebula**, as I prefer to call it, was a separate object.

Mu (μ) Orionis is found 6° to the northeast of Betelgeuse [Alpha (α) Orionis] along the Hunter's raised arm, so Abell 12 is a snap to aim toward. To have any chance of seeing it, however, takes some effort. The light from that star, nearly 1,600 times more intense than the planetary, can completely overwhelm the tiny, 37" disk.

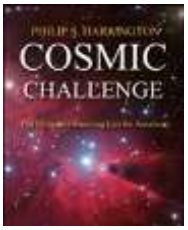
When all of these pre-existing conditions are met, point your telescope toward Mu with a reasonably high-power eyepiece in place. Experience shows that a magnification of 150x or more produces the best results. Experiment with different eyepieces as seeing conditions allow, but you will probably find that a narrowband (UHC-type) or O-III filter is a must regardless. Not only will the filter enhance the planetary, it will also help to muffle the star's light some in the process.



Above: Abell 12 looks like a faint reflect of the bright star Mu Orionis in this image taken by Cloudy Nights user: **Brent Knight** Visit his gallery for other great Astro-Images.

Under optimal conditions, Abell 12 shows a perfectly round disk with sharply defined edges, especially on the side facing away from the star. My notes recall the disk as appearing uniform in texture, although some other observers report a very subtle ring-like appearance. Abell 12 has been glimpsed through telescopes as small as 6 inches (15 cm) aperture, so even if you do not have a double-digit aperture, give this one a go. You just might be surprised. Good luck with this month's Cosmic Challenge! And be sure to post your results in this column's discussion forum.

Until next month, remember that half of the fun is the thrill of the chase. Game on!



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/

Forty binary and multiple stars for February: 41 Aurigae, Struve 872, Otto Struve 147, Struve 929, 56 Aurigae (Auriga); Nu-1 Canis Majoris, 17 Canis Majoris, Pi Canis Majoris, Mu Canis Majoris, h3945, Tau Canis Majoris (Canis Major); Struve 1095, Struve 1103, Struve 1149, 14 Canis Minoris (Canis Minor); 20 Geminorum, 38 Geminorum, Alpha Geminorum (Castor), 15 Geminorum, Lambda Geminorum, Delta Geminorum, Struve 1108, Kappa Geminorum (Gemini); 5 Lyncis, 12 Lyncis, 19 Lyncis, Struve 968, Struve 1025 (Lynx); Epsilon Monocerotis, Beta Monocerotis, 15 (S) Monocerotis (Monoceros); Struve 855 (Orion); Struve 1104, k Puppis, 5 Puppis (Puppis)

Notable carbon star for February: BL Orionis (Orion)

Fifty deep-sky objects for February: NGC 2146, NGC 2403 (Camelopardalis); M41, NGC 2345, NGC 2359, NGC 2360, NGC 2362, NGC 2367, NGC 2383 (Canis Major); M35, NGC 2129, NGC 2158, NGC 2266, NGC 2355, NGC 2371-72, NGC 2392, NGC 2420 (Gemini); NGC 2419 (Lynx); M50, NGC 2232, NGC 2237, NGC 2238, NGC 2244, NGC 2245, NGC 2251, NGC 2261, NGC 2264, NGC 2286, NGC 2301, NGC 2311, NGC 2324, NGC 2335, NGC 2345, NGC 2346, NGC 2353 (Monoceros); NGC 2169, NGC 2174, NGC 2194 (Orion); M46, M47, M93, Mel 71, NGC 2421, NGC 2423, NGC 2438, NGC 2439, NGC 2440, NGC 2467, NGC 2506, NGC 2509 (Puppis)

Top ten binocular deep-sky objects for February: M35, M41, M46, M47, M50, M93, NGC 2244, NGC 2264, NGC 2301, NGC 2360

Top ten deep-sky objects for February: M35, M41, M46, M47, M50, M93, NGC 2261, NGC 2362, NGC 2392, NGC 2403

Challenge deep-sky object for February: IC 443 (Gemini)

The objects listed above are located between 6:00 and 8:00 hours of right ascension.

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

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.