Snake River Skies

The Monthly Newsletter of the Magic Valley Astronomical Society

July 2023

Membership Meeting
July 8th 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

July 2023 President's Message

Happy Summer everyone!

First, a reminder our upcoming annual picnic July 8th at the Herrett Ctr. Cooking starts at 6pm. Again, we're asking all who attend to bring a side dish such as a salad or desert or chips. I'll handle the ice cream.

Then from the 20th-22th will be our Castle Rocks Star Party. Hope to see many of you there. While our crazy spring offered only a few clear and calm nights, I was able to successfully test my AstroTrac 360 on some wide star fields.

July will hopefully offer better weather and a chance to catch some fun objects. One of the challenges I plan to take on will be imaging the Saturn moon Iapetus on July 13-14. At that time the usually distanced moon passes just 36" south of the planet and the following morning just 30" west of Titan. FYI, Saturn returns to the late night sky July 1st just before midnight.

Another goal this month will be imaging star fields in our Great Milky Way galaxy. Hope to have some images to share and hope you all have a great and safe month.

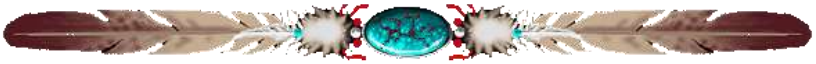
Gary Leavitt
MVAS President.

Lunar Calendar for May

Lunar Calendar for July

26							1 97% Waxing Gibbous
27	2 99% Waxing Gibbous	3 Full Moon 05:40 am	4 96% Waning Gibbous	5 90% Waning Gibbous	6 82% Waning Gibbous	7 72% Waning Gibbous	8 61% Waning Gibbous
28	9 Last Quarter 07:49 pm	10 39% Waning Crescent	11 29% Waning Crescent	12 20% Waning Crescent	13 12% Waning Crescent	14 6% Waning Crescent	15 2% Waning Crescent
29	16 1% Waning Crescent	17 New Moon 12:33 pm	18 1% Waxing Crescent	19 4% Waxing Crescent	20 9% Waxing Crescent	21 15% Waxing Crescent	22 23% Waxing Crescent
30	23 31% Waxing Crescent	24 41% Waxing Crescent	25 First Quarter 04:08 pm	26 61% Waxing Gibbous	27 71% Waxing Gibbous	28 81% Waxing Gibbous	29 89% Waxing Gibbous
31	30 95% Waxing Gibbous	31 99% Waxing Gibbous					

Humankind has not woven the web of life. We are but one thread within it.
Whatever we do to the web, we do to ourselves." ~ Chief Seattle 1854



Native American Tribes gave names to each of the full moons to keep track of the passing year. The names are associated with the entire month until the next full moon occurs. Since a lunar month averages 29 days, the dates of the moons change from year to year. June’s Full Moon in the language of the Shoshone is daza-mea' or Full Summer Moon. Other names are the Full Buck Moon and Xaat Disi, or Salmon Moon (Tlingit, Pacific Northwest).

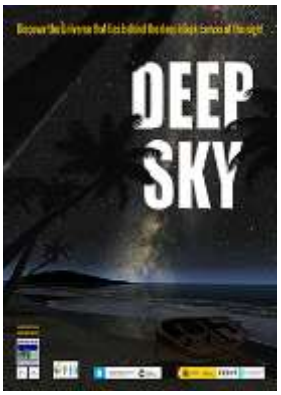
Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1 Canada Day 
2	3	4 Independence Day 	5	6 Centennial Observatory Public Event 9:15p – 9:45 Centennial Observatory	7 Venus Greatest Illuminated Extent. 	8 **Membership Meeting** May 13th at the Herrett Center See President's Message
9	10	11	12 Centennial Observatory Solar Session see next page for details. 	13	14	15
16	17	18	19 Centennial Observatory Solar Session see next page for details. 	20	21	22
23	24	25	26 Centennial Observatory Solar Session see next page for details. 	27	28	29
30	31					

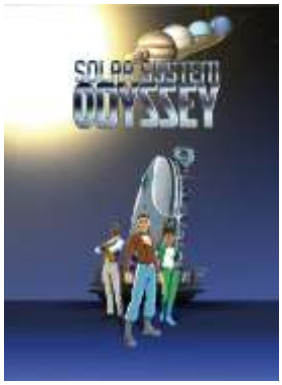
Centennial Observatory and Faulkner Planetarium Events

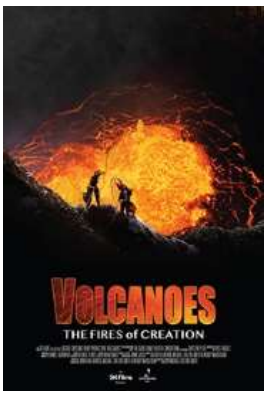
Observatory Upcoming Events

Event	Place	Date	Time	Admission
Venus at Greatest Illuminated Extent	Centennial Observatory	Friday, July 7th, 2023	9:15 to 9:45 PM	FREE
Monthly Free Star Party	Centennial Observatory	Saturday, July 8th, 2023	9:45 to 11:45 PM	FREE
Summer Solar Session #7	Centennial Observatory	Wednesday, July 12th, 2023	1:30 to 3:30 PM	FREE
Closest Approach of Pluto in 2023	Centennial Observatory	Wednesday, July 19th, 2023	1:30 to 2:30 AM	FREE
Summer Solar Session #8	Centennial Observatory	Wednesday, July 19th, 2023	1:30 to 3:30 PM	FREE
Castle Rocks Star Party Solar Viewing	Castle Rocks State Park Visitors Center, Almo, ID	Friday, July 21st - Saturday, July 22nd, 2023	2:00 to 6:00 PM	FREE
Castle Rocks Star Party Nighttime Telescope Viewing	Castle Rocks State Park Lodge, Almo, ID	Friday, July 21st - Saturday, July 22nd, 2023	9:30 PM to 12:00+ AM	FREE
Summer Solar Session #9	Centennial Observatory	Wednesday, July 26th, 2023	1:30 to 3:30 PM	FREE

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

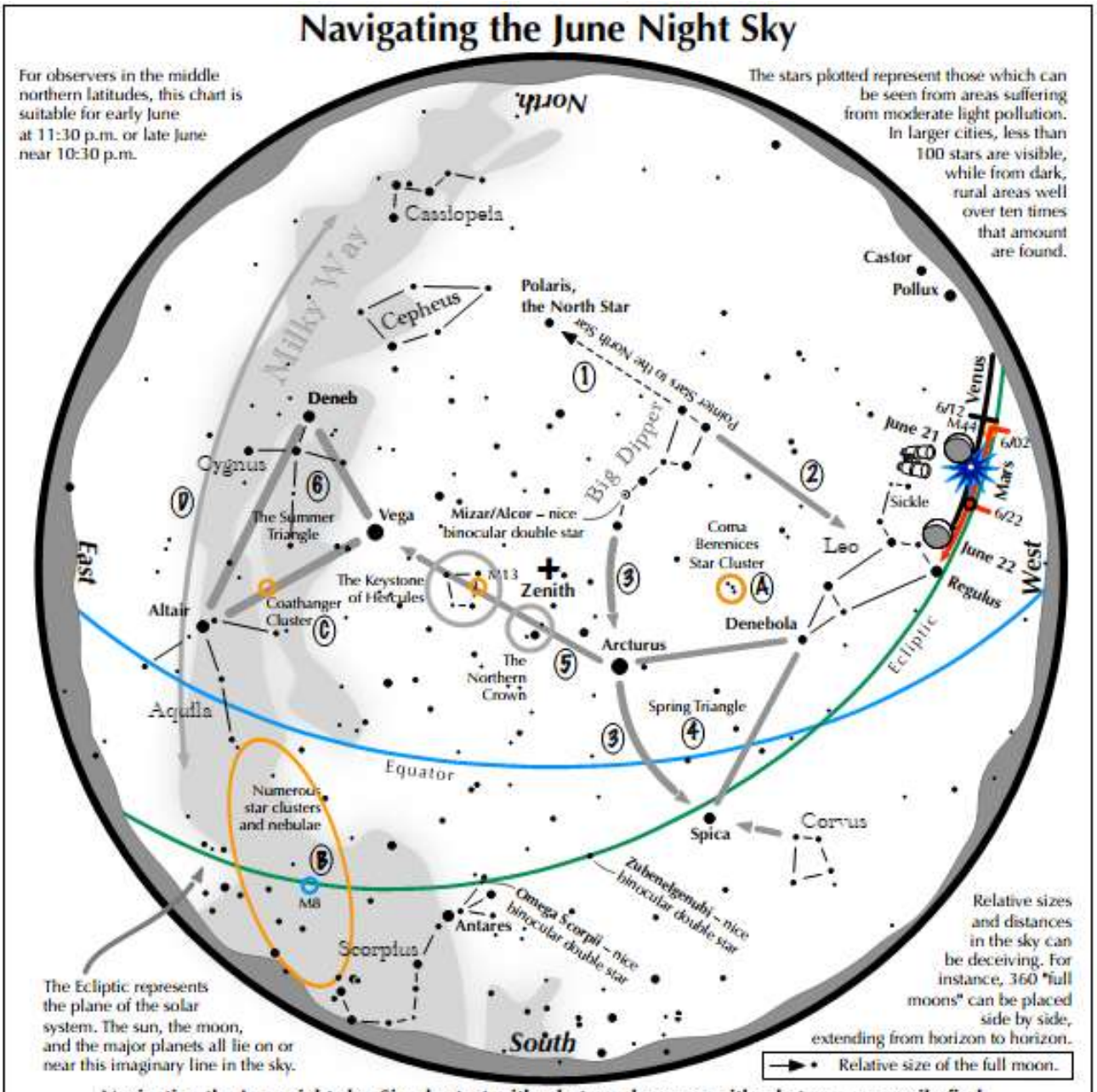






Visit the Herrett Center Video Vault

Navigating the June Night Sky



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

1. Extend a line north from the two stars at the tip of the Big Dipper's bowl. It passes by Polaris, the North Star.
2. Draw another line in the opposite direction. It strikes the constellation Leo high in the west.
3. Follow the arc of the Dipper's handle. It first intersects Arcturus, the brightest star in the June evening sky, then Spica.
4. Arcturus, Spica, and Denebola form the Spring Triangle, a large equilateral triangle.
5. To the northeast of Arcturus shines another star of the same brightness, Vega. Draw a line from Arcturus to Vega. It first meets "The Northern Crown," then the "Keystone of Hercules." A dark sky is needed to see these two dim stellar configurations.
6. High in the east are the three bright stars of the Summer Triangle: Vega, Altair, and Deneb.

Binocular Highlights

A: Between Denebola and the tip of the Big Dipper's handle, lie the stars of the Coma Berenices Star Cluster.
B: Between the bright stars of Antares and Altair, hides an area containing many star clusters and nebulae.
C: 40% of the way between Altair and Vega, twinkles the "Coathanger," a group of stars outlining a coathanger.
D. Sweep along the Milky Way for an astounding number of faint glows and dark bays.

Double click the map for a larger view.

Photo of the Month

Photo of the Moon, Venus and Mars taken on July second by Tamika B. granddaughter to Pam Olsen. Tamika used her iPhone 14 in Dark Light mode while staying in Warrenton, Oregon on July 2nd 2023.

The Night Sky This Month – July 2023

The Milky Way and an expectant stargazer in late July 2018.

(Looking for last month's 'Night Sky'? Find it at this link…) All five bright planets are in play this month, three in the evening sky and two in the eastern morning sky before dawn. 'Milky Way season' gets fully underway as the thick band of our galaxy moves into view in the late evening hours. And a modest meteor shower arrives this month, foreshadowing the splendid Perseid meteor shower coming up in August. Here's what to see in the night sky this month…

1 July 2023. Neptune begins retrograde motion. From now until December, it moves westward just 2.5^{o} in Pisces, the shortest retrograde loop of any planet. On July 8, Neptune lies about two degrees north of the Moon.

2 July. Look for Venus and Mars setting ahead of the constellation Leo in the western sky after sunset. These two planets are on their way to conjunction with the Sun and will fade from view in the coming weeks before reappearing in the morning sky. Venus reaches inferior conjunction next month when it passes between the Sun and Earth. During July, the illuminated disk of Venus narrows to a slender but growing crescent. Venus shines at magnitude -4.5 today and spans about 34". By mid-month, it grows to a span of 42", reduces its illuminated extent to 19%, and retains a magnitude of -4.5. Mars, on the other hand, has shrunk to a diameter of just 4.2" and shines at a relatively dim magnitude +1.7.

3 July. Full Moon, 11:39 UTC (the 'Buck Moon')

6 July. The Earth reaches aphelion, its furthest point in its orbit from the Sun at a distance of 152,093,251 km.

7 July. Saturn lies about 3^{o} north of the waning gibbous Moon after midnight. The planet now moves in retrograde in Aquarius and reaches its best observing position through the next few months.

9 July. Mars and Regulus lie about one degree apart low over the western horizon after sunset.

10 July. Last Quarter Moon, 01:48 UTC

Venus and Mars in the western sky after sunset on July 2, 2023.

The Moon and Jupiter on July 11, 2023 rising in the eastern sky before sunrise. Saturn lies well to the west.

11 July. Rising Jupiter sits 2º south of a waning crescent Moon in the eastern sky before dawn. The big planet now spans about 34" and shines at magnitude -2.3. The planet rises earlier each night on its way to prime observing position for the rest of the year.

13 July. Look for a slender Moon rising with the Pleiades in the east before sunrise.

15 July. Mercury lies just 0.2º from M44, the Beehive star cluster, low in the western sky after sunset. From now until the end of the month, the little planet makes its best apparition of the year for southern-hemisphere stargazers. Northern observers with a clear view of the western horizon can also spot it.

17 July. New Moon, 18:32 UTC

Venus, Mars, Regulus, and the Moon lie low in the west after sunset of July 19, 2023.

19 July. The Moon returns to the western evening sky. Look for its thin crescent along with Regulus, Venus, and Mars all bunched within two fist widths in the twilight.

25 July. First Quarter Moon, 22:07 UTC

29 July. Mercury lies just 0.1º east of Regulus, the brightest star in Leo, low in the western sky after sunset.

29-30 July. The Delta Aquarids meteor shower peaks. This annual event favors observers in the southern hemisphere and southerly latitudes in the northern hemisphere, though all observers can see some of these slow-moving meteors. The Delta Aquariids appear to radiate from a point near the star Skat (delta Aquarii) in the constellation Aquarius. The shower peaks around July 28-30, but unlike most meteor showers, the Delta Aquarids lack a sharp maximum so meteors are visible from mid-July through early August. The maximum hourly rate can reach 15-20 meteors in a dark sky.

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!

Look Up in the Sky - It's a Bird

Theresa Summer

Bird constellations abound in the night sky, including **Cygnus**, the majestic swan. Easy to find with its dazzling stars, it is one of the few constellations that look like its namesake and it is full of treasures. Visible in the Northern Hemisphere all summer long, there's so much to see and even some things that can't be seen. To locate Cygnus, start with the brightest star, **Deneb**, also the northeastern most and dimmest star of the Summer Triangle. The Summer Triangle is made up of three bright stars from three different constellations – read more about it in the September 2022 issue of Night Sky Notes. "Deneb" is an Arabic word meaning the tail. Then travel into the triangle until you see the star **Albireo**, sometimes called the "beak star" in the center of the summer triangle. Stretching out perpendicular from this line are two stars that mark the crossbar, or the wings, and there are also faint stars that extend the swan's wings.

From light-polluted skies, you may only see the brightest stars, sometimes called the Northern Cross. In a darker sky, the line of stars marking the neck of the swan travels along the band of the **Milky Way**. A pair of binoculars will resolve many stars along that path, including a sparkling open cluster of stars designated **Messier 29**, found just south of the swan's torso star. This grouping of young stars may appear to have a reddish hue due to nearby excited gas.

Let's go deeper. While the bright beak star Albireo is easy to pick out, a telescope will let its true beauty shine! Like a jewel box in the sky, magnification shows a beautiful visual double star, with a vivid gold star and a brilliant blue star in the same field of view. There's another marvel to be seen with a telescope or strong binoculars – the Cygnus Loop. Sometimes known as the **Veil Nebula**, you can find this supernova remnant (the gassy leftovers blown off of a large dying star) directly above the final two stars of the swan's eastern wing. It will look like a faint ring of illuminated gas about three degrees across (six times the diameter of the Moon).

Speaking of long-dead stars, astronomers have detected a high-energy X-ray source in Cygnus that we can't see with our eyes or backyard telescopes, but that is detectable by NASA's Chandra X-ray Observatory. Discovered in 1971 during a rocket flight, Cygnus x-1 is the first X-ray source to be widely accepted as a black hole. This black hole is the final stage of a giant star's life, with a mass of about 20 Suns. Cygnus x-1 is spinning at a phenomenal rate – more than 800 times a second – while devouring a nearby star. Astronomically speaking, this black hole is in our neighborhood, 6,070 light years away. But it poses no threat to us, just offers a new way to study the universe.

Check out the beautiful bird in your sky this evening, and you will be delighted to add Cygnus to your go-to summer viewing list. Find out NASA's latest methods for studying black holes at www.nasa.gov/black-holes.

Look up after sunset during summer months to find Cygnus! Along the swan's neck find the band of our Milky Way Galaxy. Use a telescope to resolve the colorful stars of Albireo or search out the open cluster of stars in Messier 29. Image created with assistance from Stellarium: stellarium.org

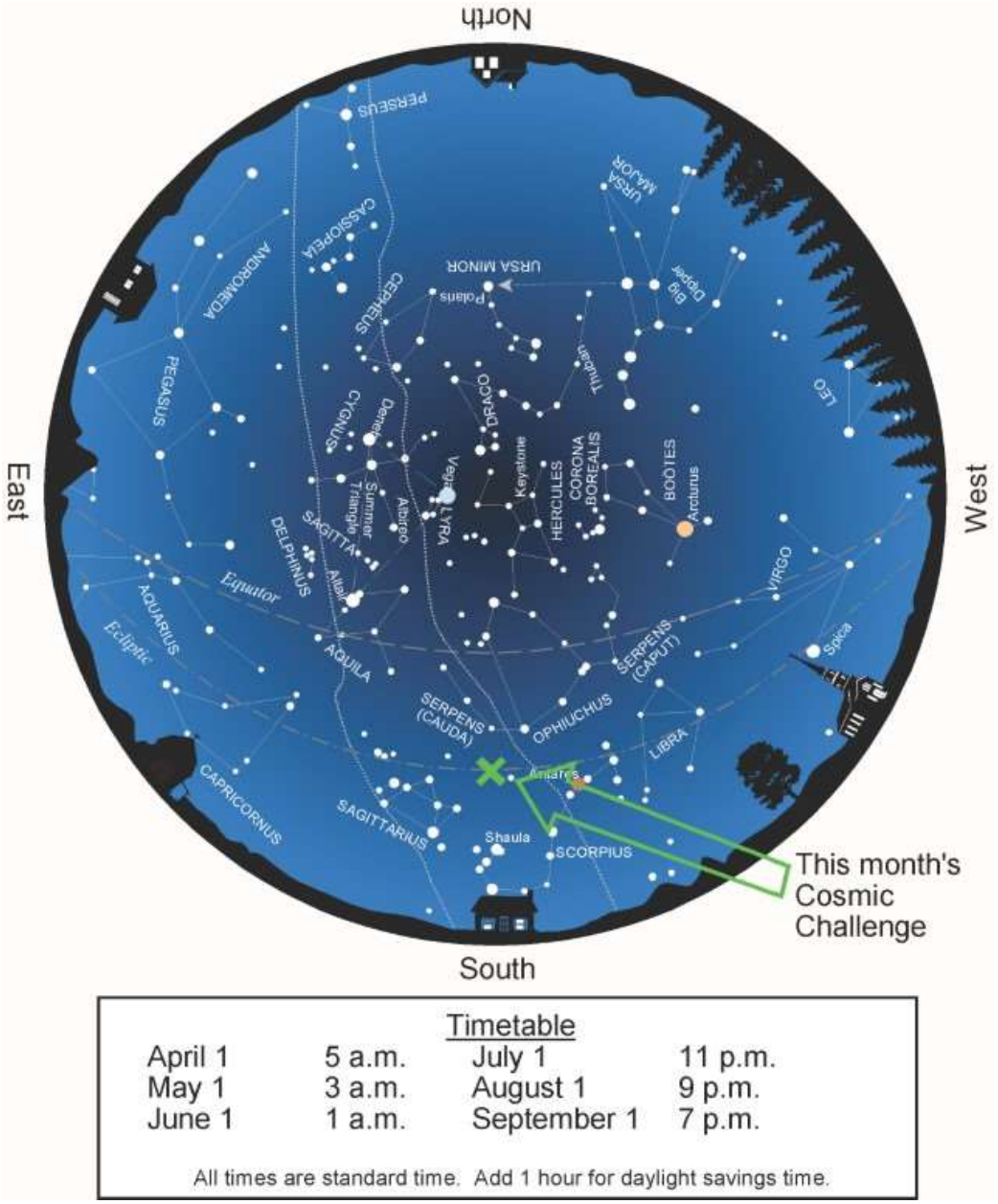
While the black hole Cygnus x-1 is invisible with even the most powerful Optical telescope, in X-ray, it shines brightly. On the left is the optical view of that region with the location of Cygnus x-1 shown in the red box as taken by the Digitized Sky Survey. On the right is an artist's conception of the black hole pulling material from its massive blue companion star. *(Credit: NASA/CXC chandra.harvard.edu/photo/2011/cygx1/)*

Phil Harrington's Cosmic Challenge

NGC 6369

This month's suggested aperture range: **3 to 5-inch (7.6-12.7cm) telescopes**. Featured telescope: Meade ETX-125EC

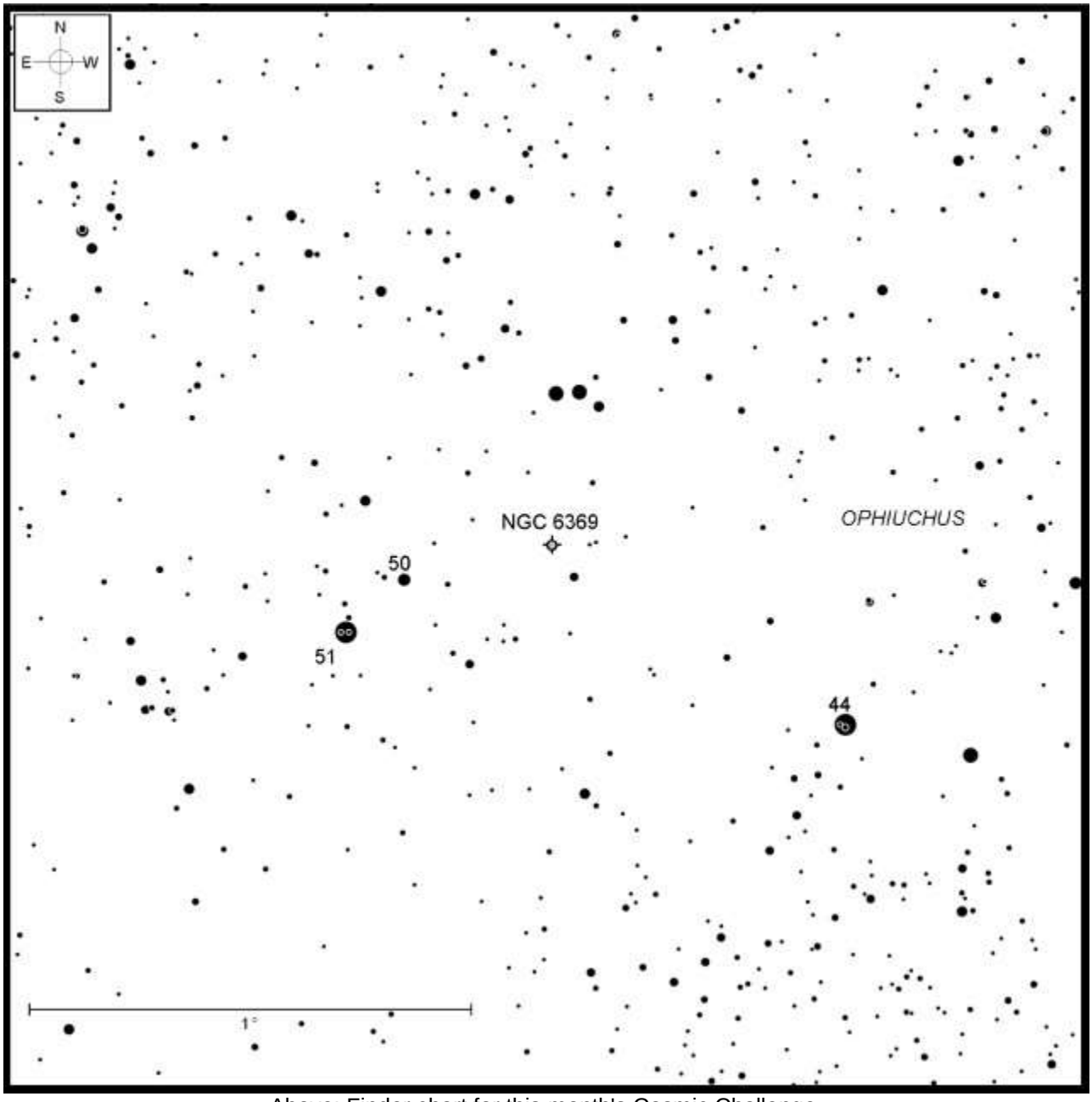
Target	Type	RA	DEC	Constellation	Mag	Size
NGC 6369	Planetary nebula	17h 29.3m	-23° 45.6'	Ophiuchus	12	38"



Above: Summer star map showing the location of this month's Cosmic Challenge.
Credit: Map adapted from **Star Watch** by Phil Harrington

When he accidentally found Uranus among the stars of Gemini in March 1781, William Herschel opened up our solar system. Until that instant, it was thought that our Sun's planetary family contained only six members, ending at Saturn. But with Uranus suddenly joining the group, the prospect for even more planets -- perhaps many more -- took the astronomical world by storm. Herschel, subsequently enjoying the fruits of his unexpected discovery as the new Astronomer Royal at the Royal Greenwich Observatory in England, led the charge to find them.

Within a month of commencing his systematic effort of scanning the skies, Herschel found another planet, this time in Aquarius. No doubt he judiciously marked its position on his charts so that he could return again a few nights later to see just how far his new world had moved against the starry backdrop. But when he returned, he immediately realized that it hadn't moved at all; instead, it had stayed anchored in place. Other discoveries of similar objects that looked like tiny versions of Uranus soon followed, but all also remained stationary among the stars. Because their small disks looked like distant planetary spheres, Herschel coined the phrase "planetary nebula." Even though it is one of the greatest astronomical misnomers of all times, since it says nothing of the true nature of these ghostly objects, the term stuck.



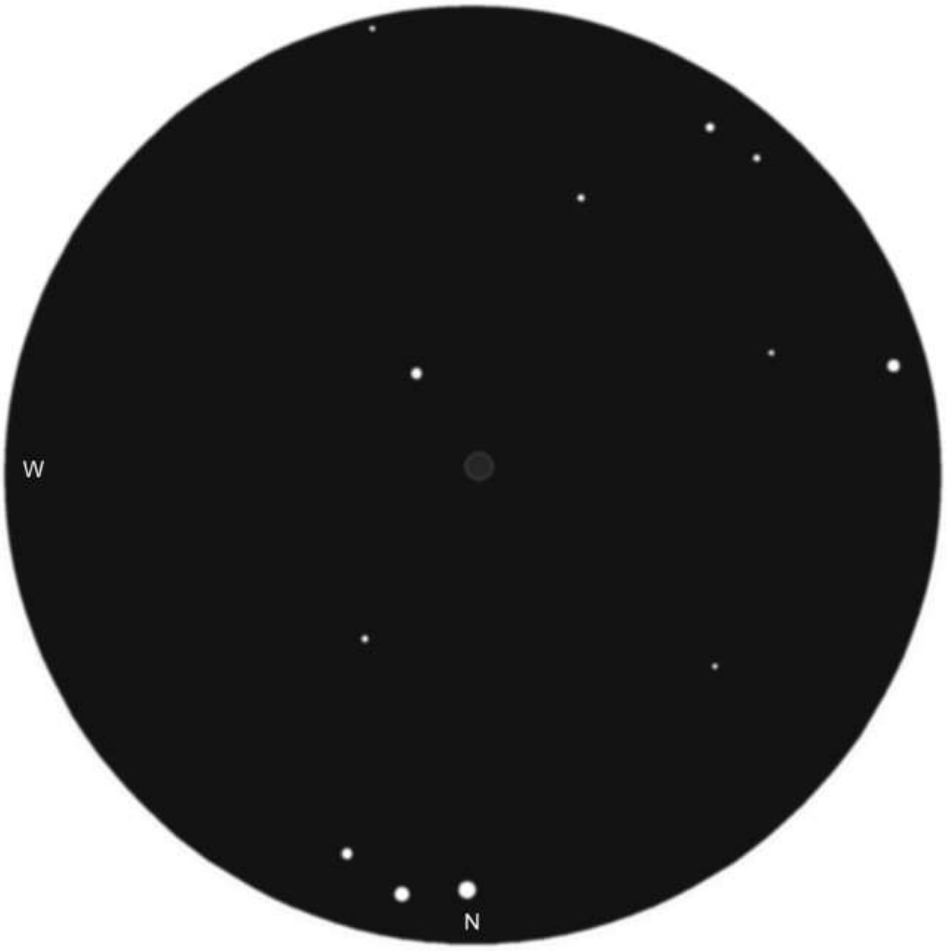
Above: Finder chart for this month's Cosmic Challenge.
Credit: Chart adapted from **Cosmic Challenge** by Phil Harrington.
Click on the chart to open a printable PDF version in a new window.

Herschel went on to discover 33 planetary nebulae scattered across the sky. (Historical trivia: William Herschel originally classified 79 objects as planetary nebulae, but only 20 proved to be correct. The others were subsequently reclassified as other types of objects. However, 13 other objects that he had categorized as other types of objects were actually planetary nebulae. Therefore, whether or not he knew it, Herschel discovered 33 planetary nebulae.)

One of the more interesting, and at the same time, challenging of Herschel's planetaries to view through 3- to 5-inch (7.6- to 12.7-cm) instruments is NGC 6369 in southern Ophiuchus. Nicknamed the "Little Ghost Nebula," NGC 6369 is an example of a ring-type planetary nebula, a faint version of M57. That is, if you can find it.

Zeroing in on NGC 6369's exact location isn't too difficult, since it lies just half a degree northwest of 51 Ophiuchi. To get there, first locate 3rd-magnitude Theta (θ) Ophiuchi, about 12° east of Antares. Hop a little more than a degree northeast from Theta to 44 Ophiuchi, and then another degree east-northeast to 5th-magnitude 51 Ophiuchi.

You should take that final step from 51 Oph to NGC 6369 using a low-power eyepiece, but then to switch to at least 120x to see the nebula's disk. NGC 6369 measures about half the apparent diameter of Jupiter. The Little Ghost looks like as a small, wraithlike disk of grayish light (see sketch below) through my own 4-inch (10.2-cm) refractor at 142x, as if floating in the ether once thought to flood the cosmos. When the air is especially transparent, the nebula's pale turquoise hue becomes clearer, but resolving its distinctive ring shape remains difficult even under the best conditions. The nebula's delicate color results from the ionizing radiation that is generated by the progenitor star and streams through the tenuous cloud. In the process, electrons are ripped away from their parent hydrogen and oxygen atoms, causing the cloud to glow colorfully.



Above: NGC 6369 as seen through the author's 4-inch (12.7 cm) refractor at 14

Below: The Little Ghost Nebula as captured by Cloudy Nighter Andre27. He used a Sky-Watcher 200P reflector and Nikon D7000 camera set at ISO 800. He stacked 10 frames at 120 seconds each.

Like its more famous kinfolk, M57, the remnant of the star that spawned the nebula remains invisible in all but the largest backyard telescopes. NGC 6369's central star, a white dwarf measuring perhaps no larger than our planet in diameter, glows weakly at 15th magnitude and is a challenge to spot through far larger instruments than those here. Those who successfully spot the star will notice that it is not exactly centered, but rather is offset slightly.

Have a favorite challenge object of your own? I'd love to hear about it, as well as how you did with this month's test. Contact me through my website or post to this month's discussion forum.

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

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