



NR111

August 2025

The newsletter of the Richland Astronomical Society and Warren Rupp Observatory

Hidden Hollow Registration and T-Shirt Orders

This is the T-Shirt for Hidden Hollow this year. As a reminder, all members planning to attend Hidden Hollow are required to complete a registration form. The order forms for the T-Shirt and the registration form for members are both at the back of this issue.

**Richland
Astronomical
Society**



Big Blue Targets for August

M57 – The Ring Nebula

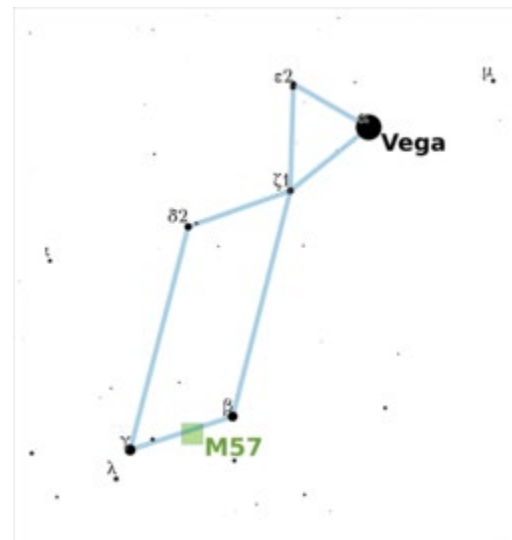
The Ring Nebula (also catalogued as Messier 57, M57 and NGC 6720) is a planetary nebula in the northern constellation of Lyra. Such a nebula is formed when a star, during the last stages of its evolution before becoming a white dwarf, expels a vast luminous envelope of ionized gas into the surrounding interstellar space.

This nebula was discovered by the French astronomer Charles Messier while searching for comets in late January 1779. Messier's report of his independent discovery of Comet Bode reached fellow French astronomer Antoine Darquier de Pellepoix two weeks later, who then independently rediscovered the nebula while following the comet. Darquier later reported that it was "...as large as Jupiter and resembles a planet which is fading" (which may have contributed to the use of the persistent "planetary nebula" terminology).

M57 is 2,570 light-years from Earth. It has a visual magnitude of 8.8 and a dimmer photographic magnitude, of 9.7. Photographs taken over a period of 50 years show the rate of nebula expansion is roughly 1 arcsecond per century M57 is illuminated by a central white dwarf of 15.75v visual magnitude.



Credit: ESA/Webb, NASA, CSA, M. Barlow, N. Cox, R. Wesson



Credit: Wikimedia Commons contributor Sberardi

M27

The Dumbbell Nebula (also known as the Apple Core Nebula, Messier 27, and NGC 6853) is a planetary nebula (nebulousity surrounding a white dwarf) in the constellation Vulpecula, at a distance of about 1360 light-years. It was the first such nebula to be discovered, by Charles Messier in 1764. At its brightness of visual magnitude 7.5 and diameter of about 8 arcminutes, it is easily visible in binoculars and is a popular observing target in amateur telescopes.



Credit: REU program/NOIRLab/NSF/AURA - <https://noirlab.edu/public/images/noao-m27/>

M17

The Swan Nebula is an H II region in the constellation Sagittarius. It was discovered by Philippe Loys de Chéseaux in 1745. Charles Messier catalogued it in 1764. It is by some of the richest starfields of the Milky Way, figuring in the northern two-thirds of Sagittarius. This feature is also known as the Omega Nebula, Checkmark Nebula, Lobster Nebula, and the Horseshoe Nebula, and catalogued as Messier 17 or M17 or NGC 6618.



M17 – Credit: OmegaCen/Astro-WISE/Kapteyn Institute

Hospitality Coordinator Wanted

The Society is looking for someone to serve as Hospitality Coordinator for our club. This would be a five month appointment and would expire at the end of the year. You would be responsible for keeping our two restrooms, education building stocked with necessary consumable items such as paper towels, paper plates, TP, cleaning supplies and beverages for the refrigerator. You will be given a budget and be reimbursed for what you purchase for the club. If interested, contact me at starsoverohio@gmail.com or send me a text at 812-306-3346.





Binocular Double Stars

A rewarding and challenging activity

<https://www.astroleague.org/binocular-double-star-observing-program/>



Effective Binocular Observing ...

- Binoculars must be precisely focused.
- Binoculars must be held steady. Mounted on a tripod is best.
- Adequate dark adaption is needed. Wait at least 15 minutes in the dark before meaningful observing begins. 30 minutes is better.
- Glare from a bright primary interferes with spotting a dim secondary. The greater the magnitude difference, the greater the difficulty splitting them.
- Steady atmospheric seeing is desired.
- Best observed when the double star has an altitude higher than 30°.

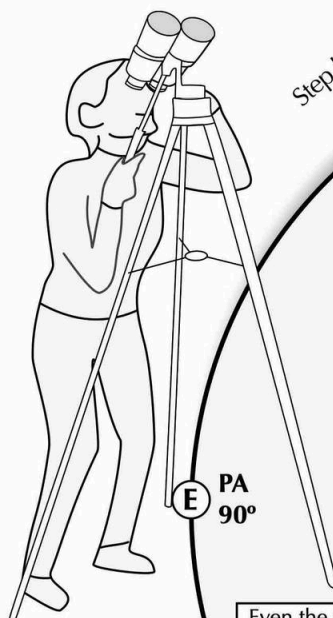
In Your Observing Notes:

- ✧ Brightnesses of the components.
- ✧ Separation of the components.
- ✧ Position Angle (PA).
- ✧ Colors of the components.
- ✧ Neighboring stars in the field?
- ✧ Seeing conditions.
- ✧ Atmospheric transparency.
- ✧ Altitude.

Rule of Thumb ...

Minimum true separation with 10 x 50 binoculars:

- ✧ 24 arc seconds for two stars of 4th magnitude. This equals 4 minutes apparent separation.
- ✧ For comparison, the full moon has a true diameter of 1800 arc seconds (=30 minutes).
- ✧ **True separation** is the angular space between stars as it appears to the unaided eye. **Apparent separation** is how it appears in binoculars.



Step back 1.5 m (4.75 ft) from this 150 mm (6 inch) printed field, and the 6° field will match 6° in the sky.

6° true angular field – typical for binoculars

Stellar Magnitude

- 2 •
- 3 •
- 4 •
- 5 •
- 6 •
- 7 •
- 8 •

Example Doubles

- Alpha Capricorni
381", PA: 290°
- Delta Cephei
41", PA: 191°
- Σ1474 Hydrae
66", PA: 27°
- 56 Andromedae
203", PA: 298°
- Nu Draconis
61", 311°
- Alpha Ursae Majoris
385", 206°



Relative diameter of the full moon.

Separation distance

- 600" = 10'
- 300" = 5'
- 120" = 2'
- 60" = 1'
- 40" = 0.67'

Even the wider doubles appear close to each other. Two stars that have a tight separation, or a large magnitude difference, or a combination of the two are much more difficult to split, sometimes frustratingly so, but an enjoyable challenge nonetheless.



A fun gibbous and full moon observing activity!

Observing the gibbous & full moon without optical aid



The gibbous and full moons can be quite bright, producing an abundance of refracted glare when viewed by the unaided eye. Little, if any lunar detail can be seen – just a frustrating blur.

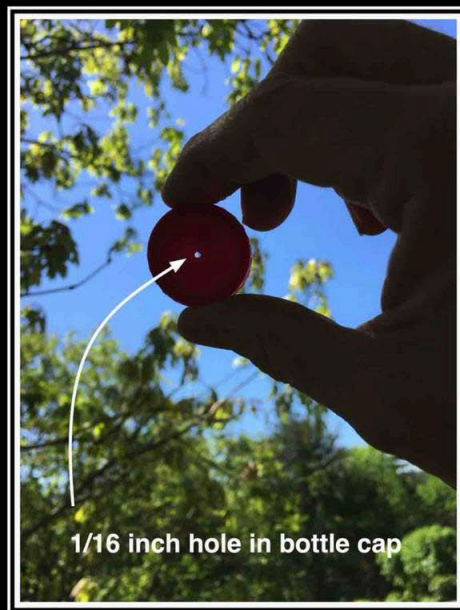
To nearly eliminate the glare while increasing your ability to discern surface detail, try the following:

1. Drill a 1/16 inch (or 1.5 mm) hole in a thin opaque card. A plastic soft drink bottle cap works nicely. (A smaller hole dims the moon too much.)
2. Remove any burrs.
3. Hold the card/bottle cap to your eye so that it is within 1/2 inch of the pupil, and look at the bright moon.
4. The dark markings (maria) on the lunar surface should be discernible.

This works because of two reasons.

1. Only about 6% of the moonlight is allowed to enter the pupil, nearly eliminating glare.
2. Light traveling through the outer portions of the eye, where most common eye distortions occur, is blocked by the opaque card. The light that passes through the central part of the pupil has little distortion, resulting in greatly improved visual acuity.

The larger lunar maria might be seen including Maria Crisium, Tranquillitatis, and Serenitatis – even for observers with less than 20/20 vision. The distance gap between Mare Crisium and the limb can be estimated, and over time, the observer can notice the effect of changing eastern lunar libration.



M17, the Swan, the Horseshoe, and the Omega: different names (to list a few), same unexpectedly astonishing nebula



A showpiece of the southern summer Milky Way

This area of the sky is simply packed with deep sky wonders.

Within 4° of M17 & NGC 6618:

CS65: 45 arcminutes nw,

M18: 1° ssw,

M16 & NGC 6611: 2.5° n,

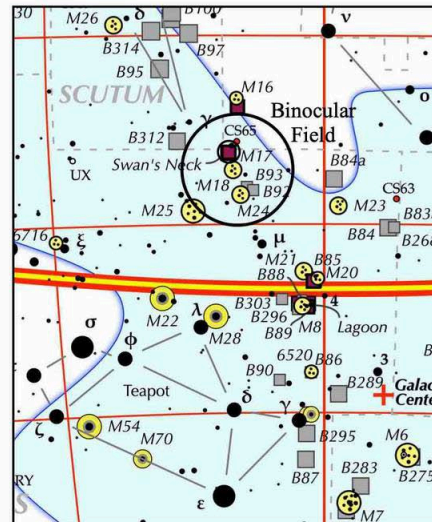
B92 & B 93: 2.5° sw,

M24: 2.5° ssw,

M25, 3.5° se

How to find M17:

1. Locate the "Teapot" of Sagittarius.
2. Move north about 1 Teapot width.
3. Carefully scan the area for M17 and another nebula to its north, M16.





This article is distributed by NASA's Night Sky Network (NSN).

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

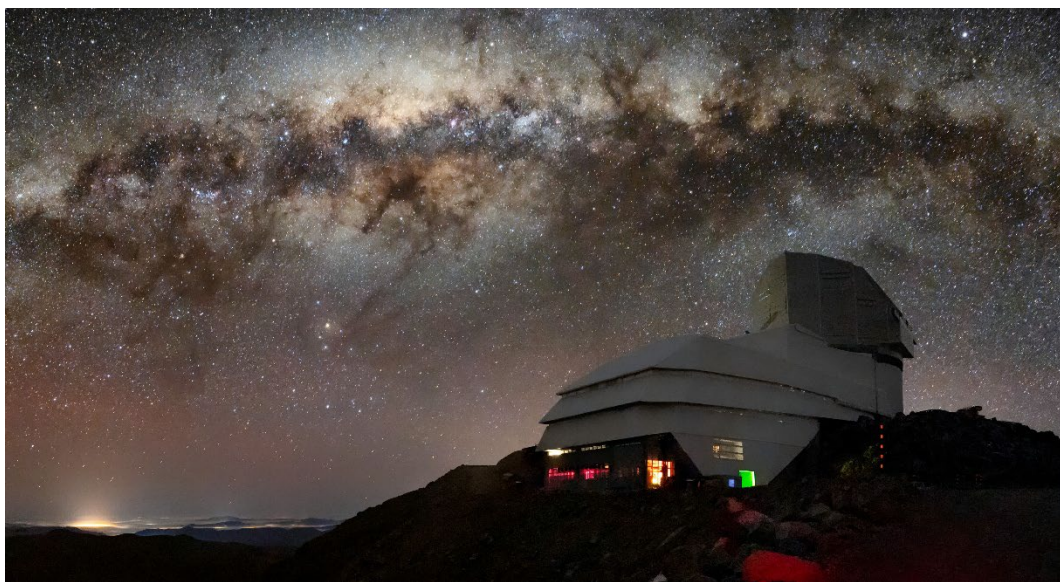
August's Night Sky Notes: The Great Rift

By Dave Prosper

Updated by Kat Troche

Summer skies bring glorious views of our own Milky Way galaxy to observers blessed with dark skies. For many city dwellers, their first sight of the Milky Way comes during trips to rural areas - so if you are traveling away from city lights, do yourself a favor and look up!

To observe the Milky Way, you need clear, dark skies and enough time to adapt your eyes to the dark. Photos of the Milky Way are breathtaking, but they usually show far more detail and color than the human eye can see – that's the beauty and quietly deceptive nature of long exposure photography. For Northern Hemisphere observers, the most prominent portion of the Milky Way rises in the southeast as marked by the constellations Scorpius and Sagittarius. Take note that, even in dark skies, the Milky Way isn't easily visible until it rises a bit above the horizon, and the thick, turbulent air obscures the view. The Milky Way is huge, but it is also rather faint, and our eyes need time to truly adjust to the dark and see it in any detail. Avoid bright lights as they will ruin your night vision. It's best to attempt to view the Milky Way when the Moon is at a new or crescent phase; a full Moon will wash out any potential views.



The Vera C. Rubin Observatory, located at Cerro Pachón, Chile, under the Milky Way. The bright halo of gas and stars on the left side of the image highlights the very center of the Milky Way galaxy. The dark path that cuts through this center is known as the Great Rift, because it gives the appearance that the Milky Way has been split in half. Image Credit:

[RubinObs/NOIRLab/SLAC/NSF/DOE/AURA/B. Quint](https://www.noirlab.org/)

Keeping your eyes dark-adapted is especially important if you want to not only see the haze of the Milky Way, but also the dark lane cutting into that haze, stretching from the Summer Triangle to Sagittarius. This dark detail is known as the Great Rift, and is seen more readily in very dark skies, especially dark, dry skies found in high desert regions. What exactly is the Great Rift? You are looking at massive clouds of galactic dust lying between Earth and the interior of the Milky Way.

Other “dark nebulae” of cosmic clouds pepper the Milky Way, including the famed [Coalsack](#), found in the Southern Hemisphere constellation of Crux. Many cultures celebrate these dark clouds in their traditional stories along with the constellations and the Milky Way. One such story tells of a [Yacana the Llama](#), and her baby, wandering along a river that crossed the sky – the Milky Way. The bright stars Alpha and Beta Centauri serve as the llama's eyes, with the dark sections representing the bodies of mother and baby, with the baby below the mother, nursing.



In the activity, "Our Place In Our Galaxy", if the Milky Way were shrunk down to the size of North America, our solar system would be about the size of a quarter. At that scale, Polaris - which is about 433 light years distant from us - would be 11 miles away. Image Credit: [Astronomical Society of the Pacific](#)

Where exactly is our solar system within the Milky Way? Is there a way to [get a sense of scale](#)? The “[Our Place in Our Galaxy](#)” activity can help you do just that, with only birdseed, a coin, and your imagination. You can also discover the amazing science NASA is doing to understand our galaxy – and our place in it - in the [Galaxies](#) section of [NASA's Universe](#) page.

Originally posted by Dave Prosper: June 2021

Last Updated by Kat Troche: July 2025



RAS MEMBERS Hidden Hollow Astronomy
Conference 2025 Registration Form
September 19-20, 2025

Registration starts at 5pm on Friday, September 19.

Please provide an email address below (print clearly).

Families are welcome; children must be always supervised.

Cabins and showers are available on a first come first serve basis.

Amenities: We have Tent or RV camping areas. No electric or water hookups. Grills are permitted.

Restrooms with sinks are available on site.

Please respect our observation areas after dark. No car lights. No Green Lasers.

We are not responsible for theft or accidents – but we've never had this issue.

Name(s): _____

Street Address: _____

City, State and Zip Code: _____

Telephone Number: () - _____

Email address (print clearly): _____

_____ # of Adults attending _____ # of children attending

(Check an option, if applicable.) Tent Camping ____ RV Camping ____ Cabin ____

REMINDER ENTRY IS FREE WITH 2 HOURS OF SIGNED UP WORK DURING CONFERENCE
OR YOU MAY PAY THE REGISTRATION FEE AND NOT NEED TO WORK

_____ I AM WORKING 2 HOURS

_____ I AM PAYING REGISTRATION FEE \$ _____
AMOUNT PAID

Registration: Individual Adult (\$60)

Families (Spouses & children under 18.) (\$75).

**HH STAFF USE: CABIN ASSIGNMENT: _____

*Cabins will be assigned on a first come first serve basis!

*Tee Shirts and Sweatshirts available for preorder.

Hidden Hollow Tee Shirt Order

ORDERS AND PAYMENT DUE BY AUGUST 15,2025

Price Guide

T-shirts; \$16.00 (s-xl), \$19.00 (2x), \$21.00 (3x)

Women's V neck Shirts \$19.00 (s-xl), \$22.00 (2x), \$24.00 (3x)

Long sleeve t-shirts; \$19.00(s-xl), \$22.00 (2x), \$24.00 (3x)

Hoodies; \$26.00 (s-xl), \$29.00 (2x), \$31.00 (3x)

Zip Hoodies; \$36.00 (s-xl), \$39.00 (2x), \$41.00 (3x)

Crewnecks (pull on sweaters) \$23.00 (s-xl), \$26.00 (2x), \$28.00 (3x)

COLOR CHOICES WHITE, BLACK, CHARCOAL GRAY

Name: _____

Type of shirt (zip up, tee shirt, long sleeve ect) _____/Color _____

Size: _____

Price _____

Type of shirt (zip up, tee shirt, long sleeve ect) _____/Color _____

Size: _____

Price _____

Type of shirt (zip up, tee shirt, long sleeve ect) _____/Color _____

Size: _____

Price _____

Total _____ Phone number: _____

Mail Orders to : Christy Wallace
7326 State Route 19 Unit 3011
Mount Gilead, OH 43338
CHECKS MADE PAYABLE TO RAS