

The ECLIPSE

August 2026

The Newsletter of the Barnard-Seyfert Astronomical Society

More Summer Observing!

The weather may be making life difficult for Middle Tennessee astronomers, but BSAS members are still getting in some observing.

Inside you'll find more on the Astronomical League observing programs and this month's featured constellation Vulpecula, The Little Fox of the Summer Milky Way, which contains one of my favorite Messier objects – M27, the Dumbbell Nebula (see pages 6 and 7).



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Dumbbell Nebula (M27) by Sheldon Gibson from his front yard in Hendersonville, TN. 37x 300" exposures, Askar 130PHQ refractor, ZWO ASI533MC pro, processed in pixinsight and Photoshop. Hi-res image at <https://app.astrobin.com/i/9y802s>

"The pace and demands in any field, be it genetics, nanotechnology or cosmology, can only be met with increased international cooperation and collaborative projects."

Priyamvada Natarajan, Professor of Astronomy, Yale University



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Contact BSAS officers at
bsasnashville.com/contact, or
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About BSAS

Founded in 1928, the **Barnard-Seyfert Astronomical Society** is an association of amateur and professional astronomers who have joined together to share their knowledge and love of the night - *and day* - sky! We welcome everyone from beginners to pros alike!

BSAS meets on the third Wednesday of each month at the **Warner Park Nature Center** in Nashville, TN. Experienced members or guest speakers usually talk about some aspect of astronomy or sky observing. Subjects range from how the universe first formed to how to build your own telescope, to "Pluto: Dog, planet, or KBO?..."

The meetings are very casual and time is allotted for coffee, hang out and general astro-tivity! Meetings are free and open to the public, you do NOT need to be a member to attend!... Join us!

BSAS membership entitles you to several perks such as subscription discounts to *Astronomy* and *Sky & Telescope* magazines, access to the club's Equipment Loan Program, invitations to private club events, participation in our Google chat forums, and much more!

In addition to the regular meetings, BSAS also sponsors many public astronomy events, such as our famous monthly public star parties, Astronomy Day school events, collaborations with the Dyer Observatory, tents and displays at local festivals, and "Pop-Up" star parties!

More information about BSAS can be found on our website bsasnashville.com. If you have any questions, please email us anytime at info@bsasnashville.com.

Equipment Loan Program

Did someone say **FREE** telescope loans??... Why yes, yes they did!!

BSAS has telescopes ranging from 2.5" to 10", from beginner to advanced, that members can borrow for up to 60 days at a time! We also have other items such as H-alpha solar telescopes, Dobsonians, educational CDs, tapes, DVDs, and more!

BSAS will not be held responsible for lost sleep or gear addiction from use of this excellent astronomy equipment! For information on what's currently available, contact info@bsasnashville.com.

President's Corner

By Steve Hughes

Greetings BSAS Members,

As the August heat falls upon us, rest assured your dedicated Board of Directors and amazing volunteers are working hard to bring you the "coolest" club experience possible! (See what I did there?...)

✨ **Updated Bylaws.** We will soon be presenting an updated version of the **BSAS Bylaws** for membership vote and approval. The new bylaws will be available for review several weeks before the vote, which will take place at the at the Sept 16th BSAS meeting.

✨ **Updated BSAS Code of Ethics.** Will be included with the bylaws.

✨ **BSAS Community Ambassadors Program (BCAs.)**

✨ More joint star parties with the **Dyer Observatory!** Special thanks and shout out to Dr. Billy Teets and Dyer for partnering with us! Looking forward to many clear skies ahead with Dyer!

✨ New public star party locations!

Stay tuned for more info!!

As always, be safe, be kind, and keep looking up!

Steve Hughes
President, BSAS

"Every star may be a sun to someone..." - Carl Sagan

Upcoming Events

August Member Meeting

Dr. Billy Teets
Head Astronomer,
Dyer Observatory
JWST: Under the Hood!
Wednesday, August 19
7:00 - 9:00 p.m.
Warner Park Nature Center
7311 Highway 100 Nashville

Public Star Party Joint BSAS / Dyer

Saturday, Sept 12th
8:00 - 10:30 p.m.
Warner Park

September Member Meeting

Wednesday, September 16
7:00 - 9:00 p.m.
Warner Park Nature Center
7311 Highway 100 Nashville



The *Eclipse* is the monthly newsletter of the Barnard-Seyfert Astronomical Society, Nashville, Tennessee.

Comments, questions, and submissions for future issues are welcome and may be sent to eclipse@bsasnashville.com.

Don Filer, Editor

Book Review: American Prometheus reviewed by Robin Byrne

When I saw the film *Oppenheimer* in the theater, I was intrigued about the book that inspired it, so I quickly added *American Prometheus: The Triumph and Tragedy of J. Robert Oppenheimer* by Kai Bird and Martin J. Sherwin to my Wish List. After it arrived I saw how thick it was (719 pages!) and got intimidated. I finally got up the nerve and started it in April. It was slow going, and I didn't finish it until I was (uncomfortably) in Japan in July. While hardly a quick read, it was worth it. If you've seen the film, you only have a small taste of what's covered in the book.

American Prometheus covers all of Oppenheimer's life, beginning with his childhood and upbringing. We see the roots of both his interest in physics and his political leanings. We also see his struggles with mental health and how socially awkward he was in his youth. It really wasn't until after college that Oppenheimer came into his own.

As a college professor, his charismatic ways blossomed, and he accumulated a devoted following of students, many of whom would ultimately join him at Los Alamos. This was also the time when he began to associate more regularly with people involved with the American branch of the Communist Party. Whether it was because the authors were sympathetic, or whether the evidence really wasn't clear, it was left as unresolved whether Oppenheimer was a true follower of Communism, or whether he supported some of their causes but not the entire ideology. That ambiguity would ultimately be the root of his undoing.

Where the book and film mostly overlap are the years during the development of the atomic bomb. We see Oppenheimer's recruitment to lead the project and all the people he convinces to join him in the effort. We also see all the pieces that had to come together for the bomb to be successful. The various ideas of how to design it and achieve an explosion are described.

After the bomb was dropped on Hiroshima and Nagasaki (and, yes, I was reading this book while in Hiroshima - awkward!), Oppenheimer was ready to step away from the program, but he was also enjoying the political power he had gained because of his involvement. So when he was asked to chair the General Advisory Committee of the Atomic Energy Commission, he was drawn to the influence and connections that would provide. At the same time, he was offered the position of Director of the Institute for Advanced Study in Princeton. That was also an offer he couldn't pass up, giving him a chance to appoint like-minded scientists to the Institute. Those two appointments are when the animosity between Oppenheimer and Lewis Strauss began.

In the film, Lewis Strauss, as played by Robert Downey Jr., clearly has it out for Oppenheimer, but it wasn't clear why he hated Oppenheimer as much as he did. In the book, you see the many years of trivial to major clashes that took place between the two men. While Oppenheimer seemed unconcerned by these confrontations, Strauss clearly harbored a grudge over every minor disagreement to the point that he was determined to bring Oppenheimer down. The growing strength of the House Un-American Activities Committee and Joseph McCarthy provided the ideal opportunity for Strauss to take his revenge.

Despite many investigations into his background, due to all the positions he held both during and after the war, Oppenheimer repeatedly had been granted security clearance for the work he did. While parts of his background were of minor concern, those investigating him didn't think there was anything that warranted revoking his clearance. That is, until Lewis Strauss stepped in, orchestrated a highly biased hearing that ensured Oppenheimer would be unable to defend himself, and Oppenheimer's security clearance was revoked.

After these events, Oppenheimer intentionally withdrew from public view. His later years were spent in pursuit of anonymity, living on a remote island, with only close friends in his company. The book ends with not only the end of Oppenheimer's life, but also follows up on the fate of his wife and children. All of them were broken to some degree by the attacks Oppenheimer endured during the hearing, and they never escaped the weight of those events. It left a very sad legacy.

As depressing as that sounds, *American Prometheus* is still very much worth a read to gain a better insight to the man who is known as the father of the atomic bomb, but who was so much more than that.

American Prometheus: The Triumph and Tragedy of J. Robert Oppenheimer by Kai Bird and Martin J. Sherwin; Vintage Books; 2006

Astronomical League Observing Programs

Last month we looked into the **Urban Observing Program** of the Astronomical League (AL) which provides some valuable guidance when observing in heavily light polluted skies.

<https://www.astroleague.org/urban-observing-program/>

The BSAS is a member club of the Astronomical League (<https://www.astroleague.org>) and as such we all have access to their resources (some of which such as their excellent star charts make regular appearances in this newsletter).



As mentioned last month, to qualify for the AL's Urban Observing Program certificate and pin, you need to observe 100 objects on the Urban Observing Program list. It is actually two separate lists found on their website, one for bright deep sky objects such as the Andromeda Galaxy, Pleiades, and Hercules Cluster, and another for variable and double stars.

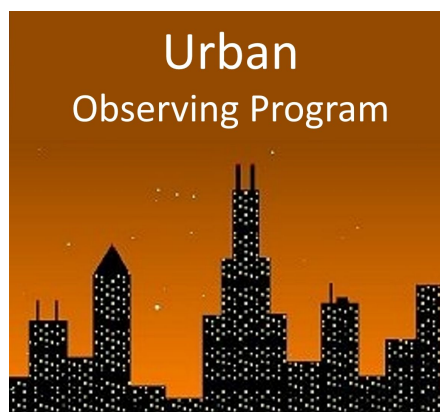
There are 27 deep sky objects and 5 double stars that are well placed for evening viewing this month. The former includes 9 globular clusters, 5 planetaries, 12 open clusters and 1 nebula. There are not many galaxies on the entire list (those faint fuzzies are really hard to see in light polluted skies!) and none visible now.

My summer time favorites of different types are M22 (Great Sagittarius Cluster and one of the brightest globulars visible in the night sky), M11 (Wild Duck Cluster in Scutum and one of the most densely populated open clusters known), and M27 (Dumbbell Nebula, see page 7). What are your favorites?

The double stars on the list are popular targets at star parties because they are easier to see in bright skies and guests usually can see them easily. Those up now are:

- Beta Scorpius - top of the claw
- Epsilon Lyra - the Double Double
- Beta Cygnus - Albireo
- Gamma Delphinus - nose of the dolphin, featured in last month's Eclipse
- Delta Cepheus - also the prototype of Cepheid variables

The full list of objects can be found at <https://www.astroleague.org/urban-observing-program/>.



Featured Constellation

Vulpecula: The Little Fox of the Summer Milky Way

Tucked quietly between the bright constellations Cygnus, Lyra, and Sagitta lies **Vulpecula**, the Little Fox. Unlike many of the ancient constellations, Vulpecula is a relatively modern addition to the sky. It was introduced in the late 17th century by the Polish astronomer Johannes Hevelius to fill an otherwise unnamed region of the Milky Way. Originally, Hevelius called it **Vulpecula cum Ansere**—"the Little Fox with the Goose"—depicting a fox carrying a goose in its jaws. Over time, the goose disappeared from most star charts, leaving only the fox.

Vulpecula contains no particularly bright stars, making it one of the more subtle constellations in the summer sky. Its brightest star shines at only fourth magnitude, so the constellation itself can be difficult to trace. Fortunately, its location within the rich star fields of the Summer Milky Way makes it easy to find. Simply look between the bright stars Altair in Aquila and Albireo (the beak of Cygnus, the colorful double star which we regularly feature at star parties) and you'll be exploring one of the richest regions of our galaxy.

Although the constellation lacks brilliant stars, it is packed with fascinating deep-sky treasures. The most famous is M27, the **Dumbbell Nebula** (see next page), the first planetary nebula ever discovered. Through binoculars it appears as a faint, fuzzy patch, while even modest telescopes begin to reveal its distinctive hourglass or apple-core shape. Larger instruments show intricate filaments of glowing gas surrounding the dying remains of a Sun-like star. M27 is an excellent target for both visual observers and astrophotographers and is often considered one of the finest planetary nebulae in the northern sky.

Vulpecula is also home to **Brocchi's Cluster**, better known as the **Coathanger**. Although not a true star cluster, this striking asterism consists of about ten stars that form the unmistakable outline of an upside-down coat hanger. Best viewed with binoculars or a rich-field telescope, it is one of the sky's most recognizable patterns and a favorite target for public observing nights.

For observers who enjoy simply sweeping the heavens with binoculars, Vulpecula offers some of the finest scenery in the northern Milky Way. Dense star clouds, scattered open clusters, and countless faint background stars create a spectacular field that rewards slow, patient exploration. While the Little Fox may not stand out on a star chart, it is a most rewarding constellation to visit on a warm summer evening.



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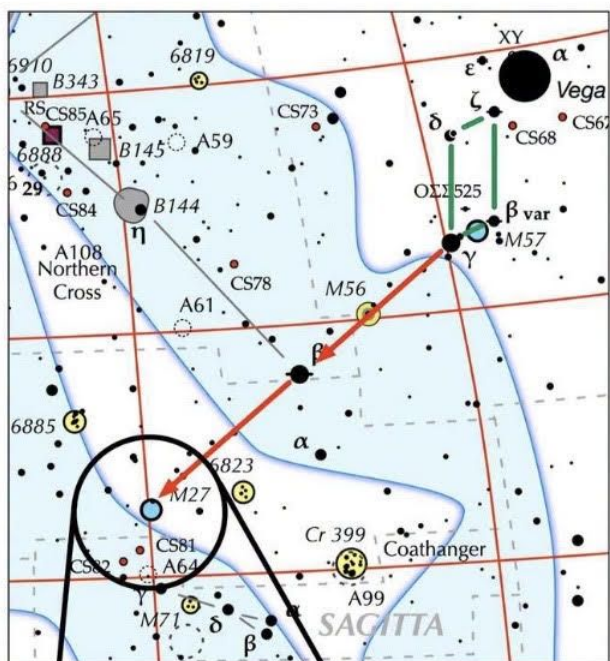


M27, the Dumbbell Nebula

A bright, large planetary nebula



M27 is considered by many observers to be the finest planetary nebula visible through small telescopes. The larger the telescope, the more detail is seen. It appears absolutely fantastic in large aperture instruments.



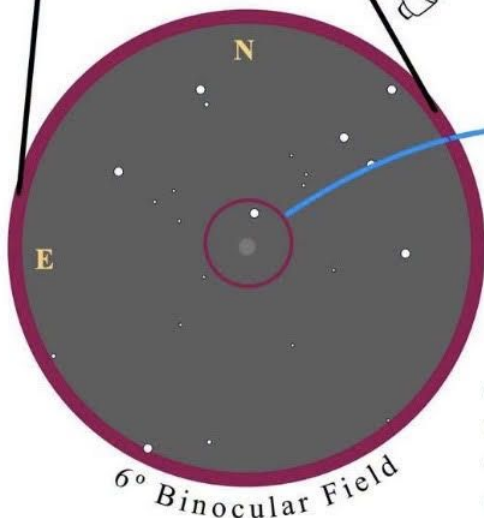
How to find M27:

1. Locate Cygnus and its southernmost star Albireo.
2. Find Vega and the Parallelogram of Lyra.
3. Draw a line from Gamma Lyrae, the southeastern star of the Parallelogram, to Albireo.
3. Extend that line for its same length. It ends on M27.
5. Through binoculars, M27 resembles a dim round smudge.

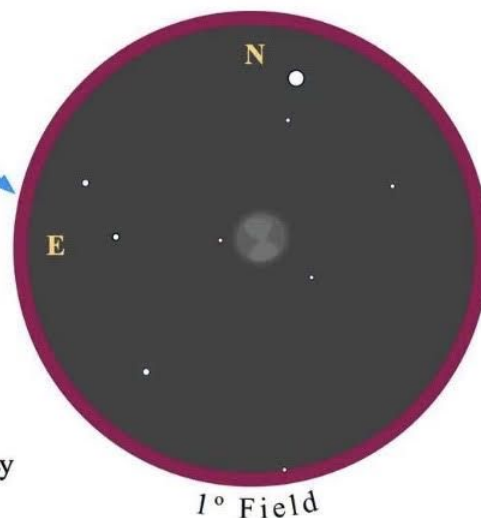
M27 through a telescope:

- Use a 6 inch or larger telescope.
- View at >100 power.
- Note the northern and southern lobes.
- Use a UHC filter or an OIII filter.

View through
10 x 50 binoculars



- Magnitude 8.1
- Size: 6 minutes
- Distance 1000 Ly
- Diameter: 2 Ly



BSAS Meetings



The BSAS tech crew at the July monthly meeting.



Speaker Luke Finley regaling us about his trip to Chile and his work as an Astronomy in Chile Educator Ambassador. His concluding message: "Astronomy is moving forward because of cooperation."

This Month: Head Astronomer of the Dyer Observatory,
Dr. Billy Teets
JWST: Under the Hood!

Join us as Dr. Billy Teets takes us on a deep dive of the James Web Space telescope, and how its cutting edge technology is driving groundbreaking discoveries!

Wednesday, August 19th at 7:00 pm CDT - Warner Park Nature Center - Meetings are open to everyone.

"Astronomers, like burglars and jazz musicians, operate best at night."

Miles Kington, British journalist, musician and broadcaster (1941-2008)

Become a Member of BSAS! Visit bsasnashville.com to join online. All memberships have a vote in BSAS elections and other membership votes.

Also included are subscriptions to the BSAS and Astronomical League newsletters. Annual dues: • Regular: \$25 • Family: \$35 • Senior/Senior Family: \$20 • Student: \$15 * To qualify as a student, you must be enrolled full time in an accredited institution or home schooled.



Miscellany

Scientific American on Satellite Swarms

In case you missed it, the June issue of *Scientific American* contained an article by Phil Plait (author of *Bad Astronomy Newsletter*) about the threat posed by increasing numbers of artificial satellites. See:

<https://www.scientificamerican.com/article/rapid-growth-of-satellite-mega-constellations-could-ruin-the-night-sky/>

Astronomy On Tap Nashville

Dates for Astronomy On Tap for the remainder of 2026 are:

- August 25
- September 29
- October 27
- December 8

All begin at 7:00pm at Fait la Force Brewing, 1414 3rd Ave S, Nashville.

DarkSky reads: Go dark with a good book

DarkSky International is developing a list of dark sky-themed books. Among books they have featured recently are:

***The End of Night* by Paul Bogard**

A sweeping exploration of the disappearing night, this book examines how artificial light has reshaped human experience, ecosystems, and our connection to the stars. Blending science and personal narrative, Bogard makes a compelling case for why darkness matters.

***The Human Cosmos* by Jo Marchant**

This book traces humanity's deep connection to the stars, showing how the night sky has shaped culture, science, and belief across time. It ultimately calls for rediscovering the sense of awe found in looking up.

Find more good star reads at DarkSky International:
<https://darksky.org/news/darksky-reads-go-dark-with-a-good-book>

EE Barnard Mystery

The September issue of *Sky & Telescope* contains an interesting article explaining how the authors solved the mystery of an observation Barnard made in 1892 while he was trying to spot a moon around Venus (to no avail, but he did discover a fifth moon of Jupiter later that year, the last time a satellite in our solar system was found with old visual methods).

If you are not already a subscriber, BSAS members can get a discounted subscription rate.

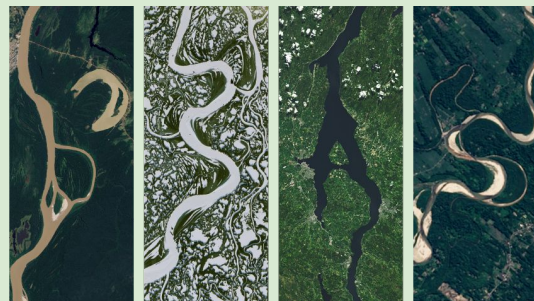
<https://skyandtelescope.org/>

Your Name in Landsat

Go to NASA's Landsat page and type your name and see it spelled out in stunning Landsat satellite imagery of Earth.

<https://science.nasa.gov/specials/your-name-in-landsat/>

Or just type in BSAS!

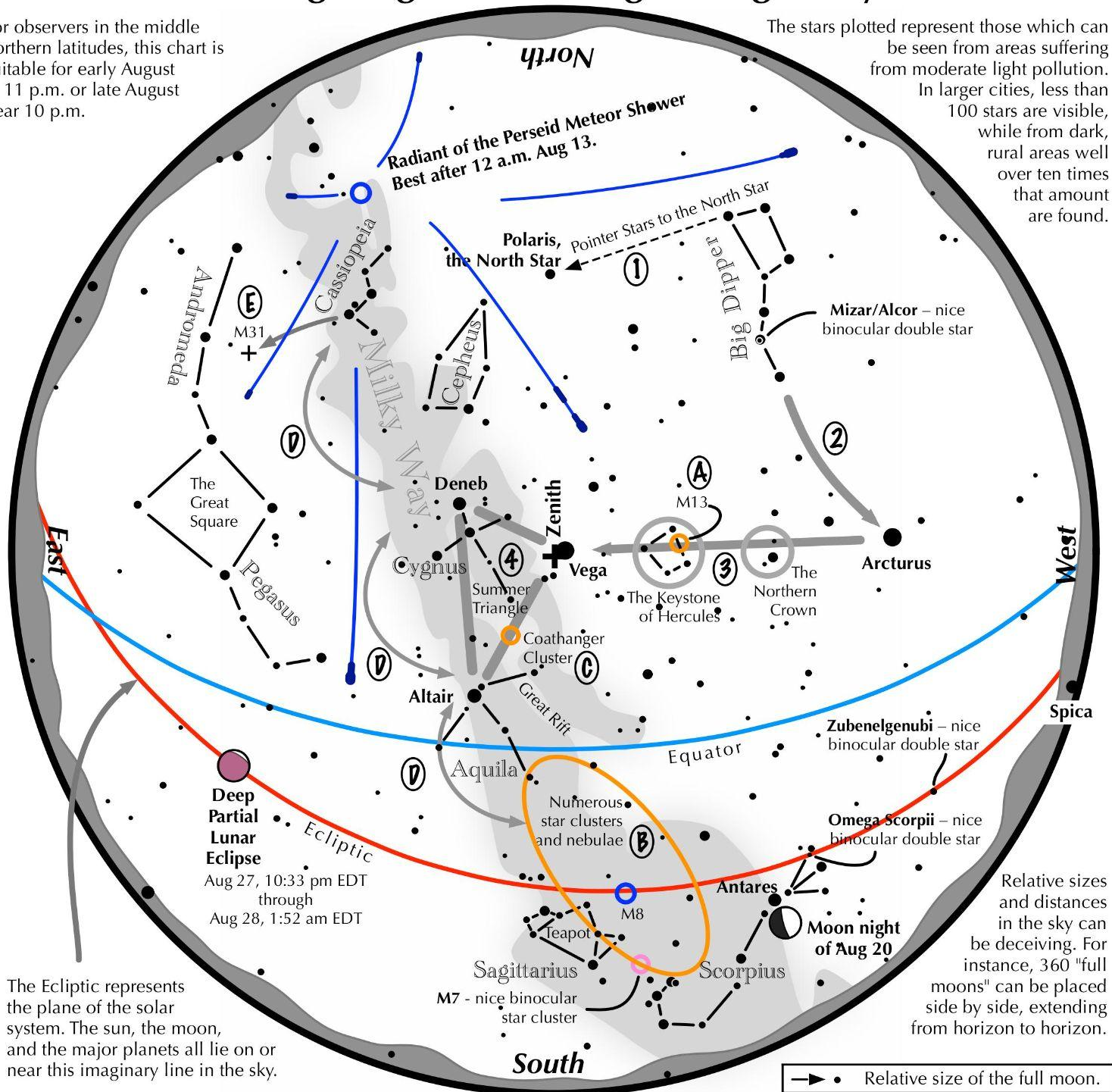


Navigating the mid August Night Sky

2026

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

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



The Ecliptic represents the plane of the solar system. The sun, the moon, and the major planets all lie on or near this imaginary line in the sky.

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

Navigating the mid August 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 Follow the arc of the Dipper's handle. It intersects Arcturus, the brightest star in the June evening sky.
- 3 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.
- 4 High in the East lie the summer triangle stars of Vega, Altair, and Deneb.



Upcoming Events & Activities

August Member Meeting

Dr. Billy Teets

Dyer Observatory

Wednesday, August 19th, 7:00 - 9:00 pm

Warner Park Nature Center

7311 Tennessee Highway 100, Nashville

Other Upcoming Events

Check the BSAS website (<https://www.bsasnashville.com/calendar>) and BSAS social media channels for upcoming events, including more joint-venture BSAS/Dyer star parties.

Call for Volunteers!!

BSAS is a non-profit, 100% volunteer operated organization. Please consider giving us a hand if you can!

Specifically, we could use some help with the following:

- Monthly Meeting Setup: Help set up the space and tech for the meetings.
- Program Committee: Help research content for our monthly meetings.
- Event Crew: Help with setting up our various events.

If you have an interest in helping with any of the above, or in any other way, please email us at volunteer@bsasnashville.com.

Night Sky Network

The Night Sky Network (NSN) program supports astronomy clubs across the USA dedicated to astronomy outreach. Visit nightsky.jpl.nasa.org to find local clubs, events, and more! You can catch up on all of NASA's current and future missions at nasa.gov. With articles, activities and games NASA Space Place encourages everyone to get excited about science and technology. Visit spaceplace.nasa.gov to explore space and Earth science!

Looking For Meeting Minutes?

Regular- and Board-Meeting minutes are stored on the BSAS Google Drive, and available for review once posted.



In honor of the club's 90th anniversary we partnered with Hatch Show Print to create a unique poster that would honor the achievement of the club. For those who don't know Hatch Show has been making posters for a variety of events and concerts for 140 years. In all that time we are their first astronomy club. On the poster at the center is the moon. This was made from a wood grained stencil that the shop has used for over 50 years. To contrast that the telescope that the people are using is a brand new stencil made for our poster. The poster has three colors. First the pale yellow color of the moon was applied. Next the small stars, circles, and figures at the bottom were colored in metallic gold. The third color is a blue for the night sky. Where it overlaps with the metallic gold it creates a darker blue leaving the figures at the bottom looking like silhouettes.

This was a one-time printing so the 100 that we have are all that will be printed.

The prints are approximately 13 3/4" x 22 1/4" and are available for \$20 at our membership meetings, or \$25 with shipping by ordering through bsas.nashville.com. Frame not included.



Next BSAS meeting
Wednesday, July 15, 7:00 p.m.

Warner Park Nature Center
7311 Tennessee Highway 100
Nashville, TN 37221