

The ECLIPSE

The Newsletter of the Barnard-Seyfert Astronomical Society



August 2023



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Contact BSAS officers at
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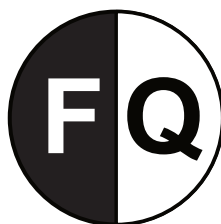
NASA, Navy, and Air Force personnel practice Artemis recovery procedures in the Pacific Ocean as part of Underway Recovery Test-10 off the coast of San Diego. In this photo Navy divers are seen entering the Orion Crew Module Test Article to prepare to practice recovering astronauts out of the spacecraft and onto an inflatable “front porch” where the crew will be picked up with helicopters and lifted up via helicopter back to the recovery vessel.

Credit: [NASA/Kenny Allen](#)

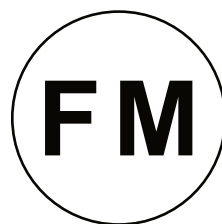
On the Cover: The glittering, glitzy contents of the globular cluster NGC 6652 sparkle in this star-studded image from the NASA/ESA Hubble Space Telescope. The core of the cluster is suffused with the pale blue light of countless stars, and a handful of particularly bright foreground stars are adorned with criss-crossing diffraction spikes. NGC 6652 lies in our own Milky Way galaxy in the constellation Sagittarius, just under 30 000 light-years from Earth and only 6500 light-years from the Galactic centre. **Credit:** [ESA/Hubble & NASA, A. Sarajedini, G. Piotto](#)



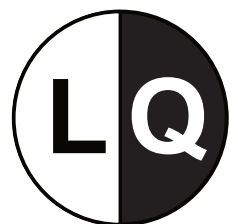
Aug 16
Sep 14



Aug 24
Sep 22



Aug 1, 30
Sep 29



Aug 8
Sep 6

Happy Birthday Milton Humason by Robin Byrne

This month we look at the contributions made by a man who often gets overshadowed by his more famous colleague.

Milton Humason was born at Dodge Center, Minnesota on August 19, 1891. At the age of 14, he was sent to Mount Wilson for summer camp. He managed to convince his parents to give him a year off from school so that he could spend more time there. Humason ended up spending much more than a year at Mount Wilson, and he never returned to school.

In his late teens, Humason got a job as a mule driver for the teams that hauled the materials up to Mount Wilson for the construction of the observatory being built at that location. It was on this job that he met, and eventually married in 1911, the daughter of the observatory's engineer. With the new responsibility of a wife to care for, Humason left the mule team to get a job as a foreman on a ranch. However, his love of Mount Wilson didn't keep him away for long.

In 1917, a job opened up for a janitor at the observatory, which Humason took. He also worked as a busboy in the dining hall for a while. It was clear from the questions he asked of the observatory staff that Humason had a natural intelligence, despite his lack of formal education. Recognizing this, in 1919, George Hale, the Director of the Observatory, appointed Humason to the scientific staff. Humason went on to work at both Mount Wilson and Palomar Observatories from 1919 to 1954.

In 1928, Humason began to work closely with Edwin Hubble. The goal of their research was to establish whether there was a relationship between the redshift of a galaxy (how fast it is moving away from us) and the distance to the galaxy. The problem was that getting a good measure of the redshift from galaxies that were incredibly faint (too faint to be seen with the eye) would not be an easy task. Long exposure photographs of the galaxies gave their positions relative to brighter nearby stars. Humason would center on the bright star, then offset the telescope by just the right amount so that it should be pointed at the galaxy, even though he could not visually confirm it. To produce the spectrum, some galaxies required exposures over several nights. Most of this work fell to Humason.

These observations led to Edwin Hubble's discovery that the distance to a galaxy is directly proportional to the velocity of recession. This relationship is now known as Hubble's Law.

Humason spent most of his career measuring the red shift of over 1000 galaxies. He also applied the techniques he developed for photographing faint galaxy spectra to recording the spectra of supernovae, faint blue stars, and to old, faint novae.



In 1947, Humason was given the position of Secretary of the Observatories, which included working with public relations, and taking care of some of the administrative duties. In 1950, Humason was awarded an honorary PhD by the University of Lund in Sweden. Milton Humason died in Mendocino, California on June 18, 1972.

It is a shame that Hubble's Law is only named after Edwin Hubble. Although it was Hubble that proposed the series of observations that confirmed his theory, it would not have been possible to have conclusive proof without the meticulous observations made by Milton Humason. Often it is the case that great discoveries would not have been made were it not for an outstanding assistant. So let's honor all the unsung scientific heroes as we say, Happy Birthday Milton Humason!

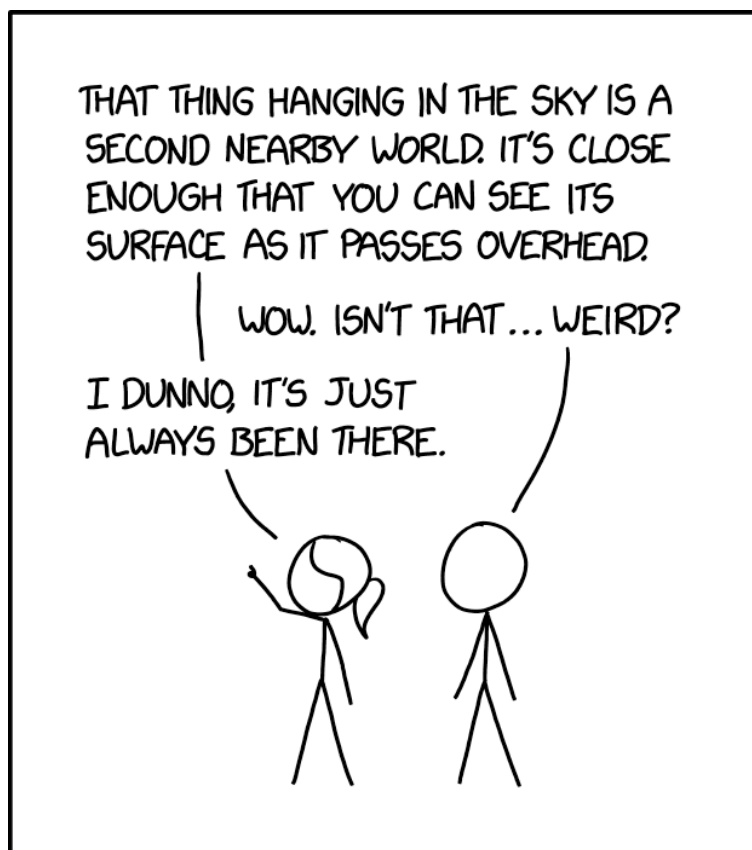
References:

[Humason, Milton Lasell \(1891-1972\) by David Darling](#)

[The Lake County Astronomical Society Web Page Article by Jay Bitterman](#)

[SAO/NASA Astrophysics Data System; Milton Laser Humason Obituary](#)

xkcd



IF IT DIDN'T EXIST, THE MOON WOULD SOUND LIKE SUCH AN OUTLANDISH SCI-FI CONCEPT.

Barnard-Seyfert Astronomical Society Minutes of a Regular Meeting of the Board of Directors Held On Wednesday, July 5, 2023

The regular meeting of the Board of Directors of the Barnard-Seyfert Astronomical Society was held July 5, 2023. The meeting was held online via Zoom. Present were Tom Beckermann, Chip Crossman, Keith Rainey, Andy Reeves, Kathy Underwood, and Theo Wellington. A quorum being present, Tom called the meeting to order at 7:35 PM. Tom asked for a motion to approve the Board minutes of the June 2023 board meeting. The minutes were adopted by unanimous voice vote.

Theo reported that there was \$9,673.04 in the bank account (\$4284.87 in savings and \$5388.17 in checking). PayPal balance of \$260.62. Theo stated that the Astronomical League dues had been paid. BSAS has 322 followers on Twitter (now X). It was discussed about the possibility of verifying our social media accounts. Keith reported that there are 153 members currently in BSAS. The membership roster had been reduced of members who had not paid dues in the over a year.

Theo stated that she would contact Rainbow Symphony regarding an order for solar glasses/viewers for upcoming solar eclipses. The board agreed to place an initial order for 2,000 glasses and see how they sell. An additional order can be placed, if needed.

Tom stated that the Night Sky Network (NSN) has resources for getting speakers for club meetings. Tom also discussed using his contacts from the Green Bank observatory to get speakers. Possible speakers on high altitude balloons, rockets, and dark sky topics. Theo suggested a speaker from Magdalena, NM to discuss his telescope project. BSAS will continue to live stream the monthly member meetings on YouTube.

The board discussed upcoming star parties, as well as the dueling star parties, we had at Bowie Nature Park and Cornelia Fort Airpark. BSAS had about five telescopes at each event. Members reported that each event had about 50 guests in attendance.

Chip reported on using functions on the NSN webpage for our star parties. The NSN website has a RSVP function, as well as allowing BSAS to list our club event locations with maps.

Theo discussed planning an upcoming private star party at Pickett State Park in September.

There being no further business, Tom adjourned the meeting at 8:44 PM.

Respectfully submitted,

Andy Reeves
At-Large Board Member (Acting Secretary)

Barnard-Seyfert Astronomical Society Minutes of the Monthly Membership Meeting Held On Wednesday, July 19, 2023

The Barnard-Seyfert Astronomical Society met at the Girl Scouts Center and on-line via Zoom on Wednesday, July 19, 2023, Dr Tom Beckermann presiding.

Bob Anderson, retired Chief Telescope Engineer, Green Bank Observatory, presented "Get Ready for the 2023 and 2024 Solar Eclipses!".

The minutes for the June 21, 2023, meeting was adopted without discussion.

Treasurer's report: Theo Wellington reported there was \$9,673.04 in the Truist account and \$303.07 in the PayPal account. Astronomical League membership dues have been paid.

Social media report: The club Facebook page (<https://www.facebook.com/bsasnashville>) is liked by 2,100 and followed by 2,200. Twitter (@BSASNashville) has 320 followers.

Outreach: Chuck Schlemm, Tony Proctor, Lonnie Puterbaugh and Andy Reeves planned to be at the Full Moon Pickin' Party at the Percy Warner Park equestrian center.

Star parties: Public star parties are scheduled for July 22 from 9-11 PM at Bowie Nature Park, Fairview, Tennessee, and for August 19 from 8:30 to 10:30 at Edwin Warner Park Special Events Field. The Natchez Trace permit for a private star party is for August 12.

The live stream of the meeting is at https://www.youtube.com/live/_2U8qWtHjL0

Respectfully submitted,

Bud Hamblen
Secretary

Next Membership Meeting:

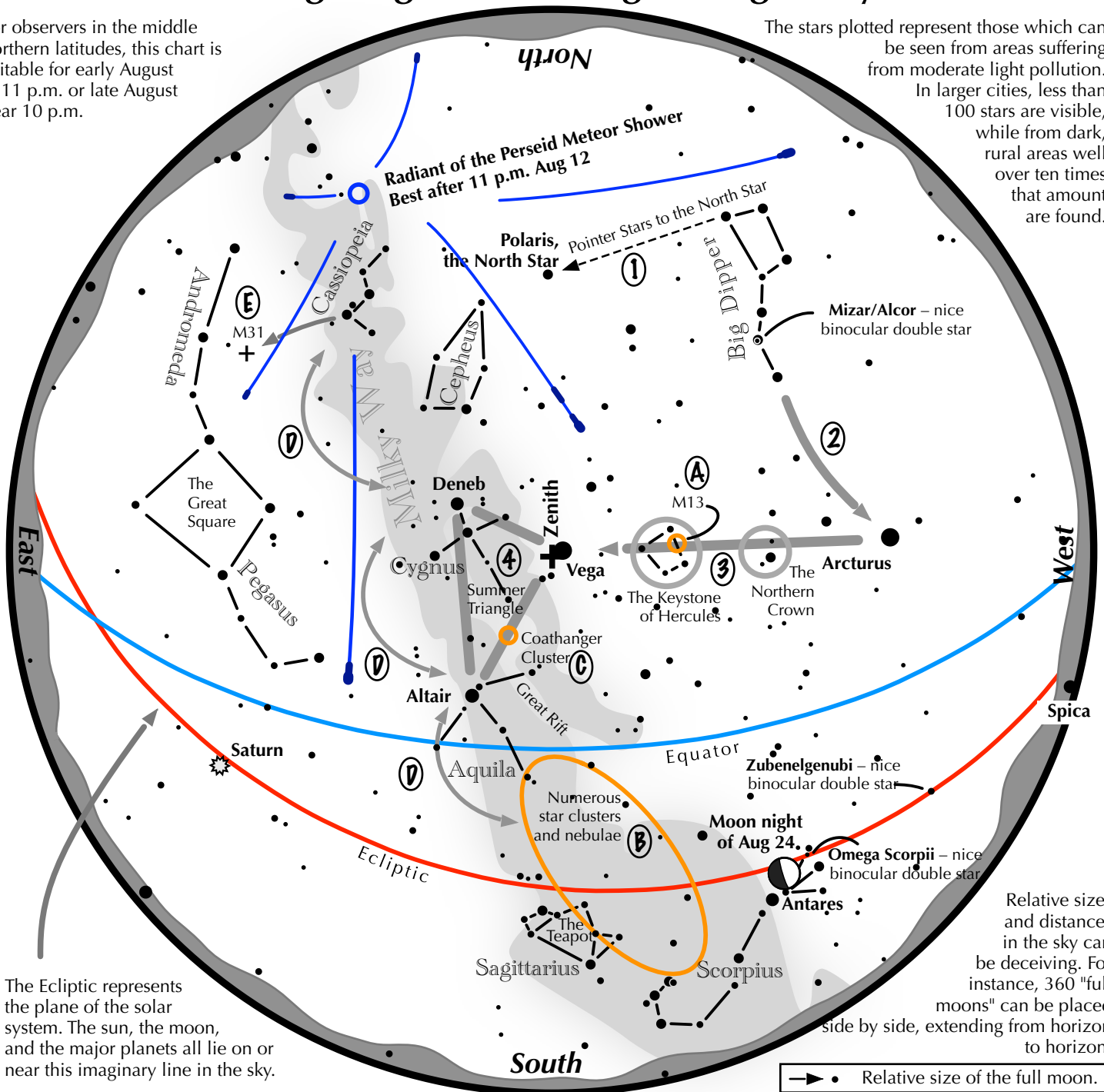
Wednesday, August 16, 7:30 pm

Cumberland Valley
Girl Scout Council Building
4522 Granny White Pike

Navigating the mid August Night Sky

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.

→ • Relative size of the full moon.

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 lies the summer triangle stars of Vega, Altair, and Deneb.

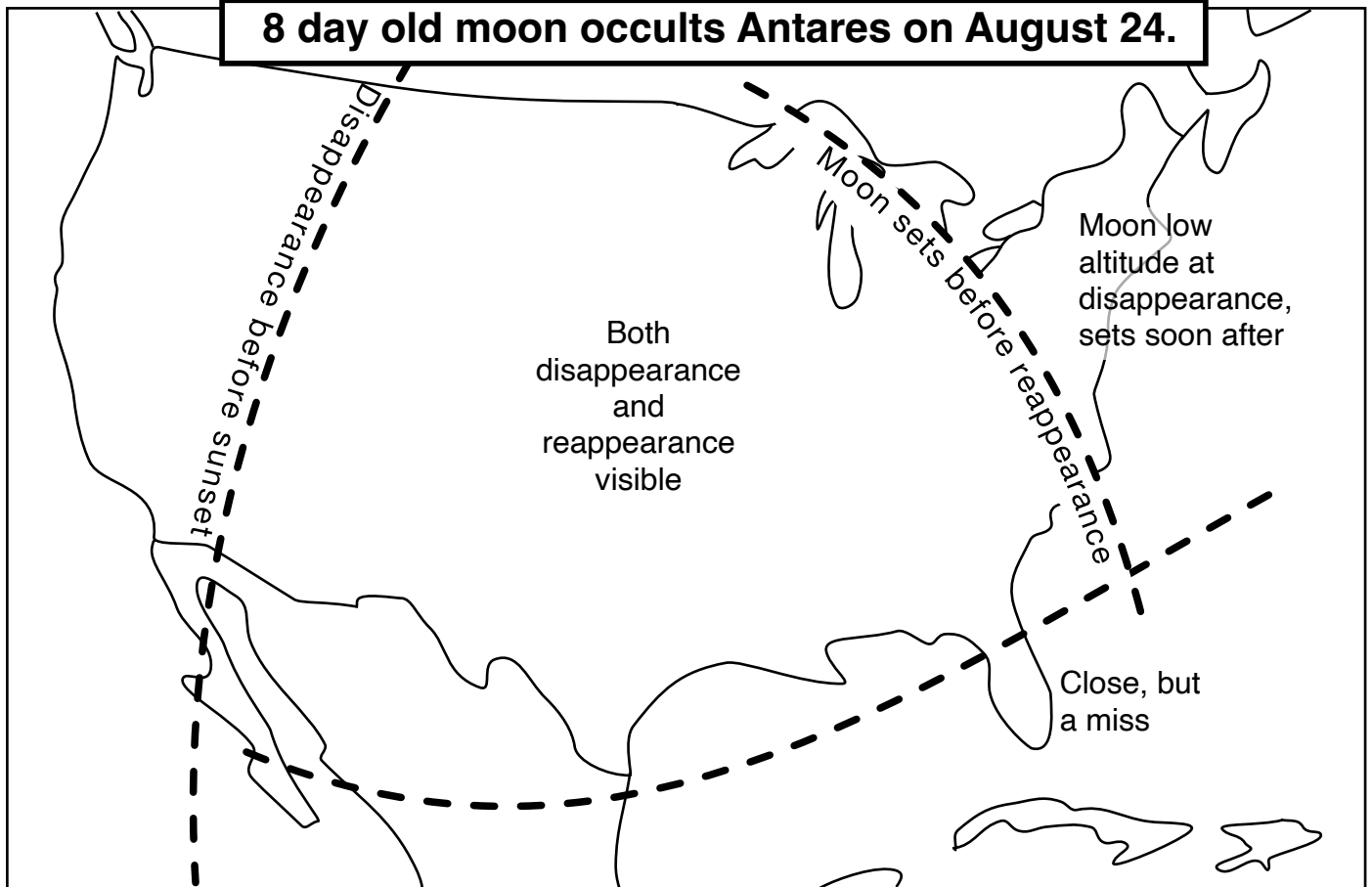
Binocular Highlights

- A:** On the western side of the Keystone glows the Great Hercules Cluster.
- B:** Between the bright stars 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, including the Great Rift.
- E:** The three westernmost stars of Cassiopeia's "W" point south to M31, the Andromeda Galaxy, a "fuzzy" oval.



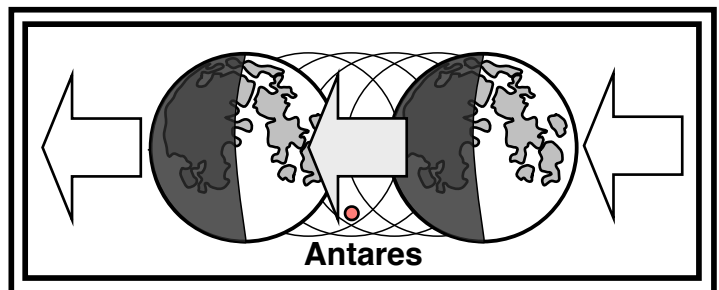
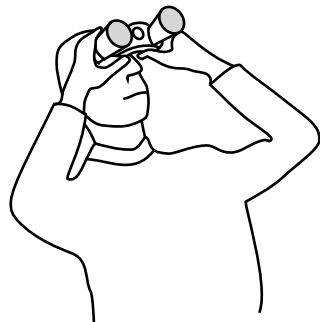
If you can see only one celestial event this August, see this one.

8 day old moon occults Antares on August 24.

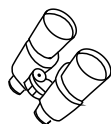


The full occultation event on Aug. 24 of Antares by the moon occurs for the central part of the US. Both coasts will not see the complete event. For disappearance and reappearance times in your area, visit the International Occultation Timing Association webpage:

<http://lunar-occultations.com/iota/bstar/0824zc2366.htm>



Start looking in the southwest shortly after sunset on August 24. Watch the moon slowly approach Antares, then suddenly block it. Binoculars will give better view.



Occultations demonstrate the moon's eastward orbital motion as Earth's rotation causes it to move in a westward arc across the night sky.



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 bsasnashville.com. Frame not included.



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.

About BSAS

Organized in 1928, the Barnard-Seyfert Astronomical Society is an association of amateur and professional astronomers who have joined to share our knowledge and our love of the sky.

The BSAS meets on the third Wednesday of each month at the Cumberland Valley Girl Scout Building at the intersection of Granny White Pike and Harding Place in Nashville. Experienced members or guest speakers talk about some aspect of astronomy or observing. Subjects range from how the universe first formed to how to build your own telescope. The meetings are informal and time is allotted for fellowship. You do not have to be a member to attend the meetings.

Membership entitles you to subscriptions to *Astronomy and Sky & Telescope* at reduced rates; the club's newsletter, the *Eclipse*, is sent to members monthly. BSAS members also receive membership in the Astronomical League, receiving their quarterly newsletter, the *Reflector*, discounts on all astronomical books, and many other benefits.

In addition to the meetings, BSAS also sponsors many public events, such as star parties and Astronomy Day; we go into the schools on occasion to hold star parties for the children and their parents. Often the public star parties are centered on a special astronomical event, such as a lunar eclipse or a planetary opposition.

Most information about BSAS and our activities may be found at bsasnashville.com. If you need more information, write to us at info@bsasnashville.com.

Free Telescope Offer

Did someone say free telescope? Yes, you did read that correctly. The BSAS Equipment & Facilities Committee has free telescopes ranging in size from 2.6" to 8" that current members can actually have to use for up to 60 days at a time. We also have some other items in the loaner program such as a photometer, H-alpha solar telescope, educational CDs, tapes, DVDs, and books. Some restrictions apply. A waiting list is applicable in some cases. The BSAS Equipment Committee will not be held responsible for lost sleep or other problems arising from use of this excellent astronomy gear. For information on what equipment is currently available, contact info@bsasnashville.com.