The ECLIPSE

The Newsletter of the Barnard-Seyfert Astronomical Society

July 2022

BSAS
Barnard-Seyfert Astronomical Society

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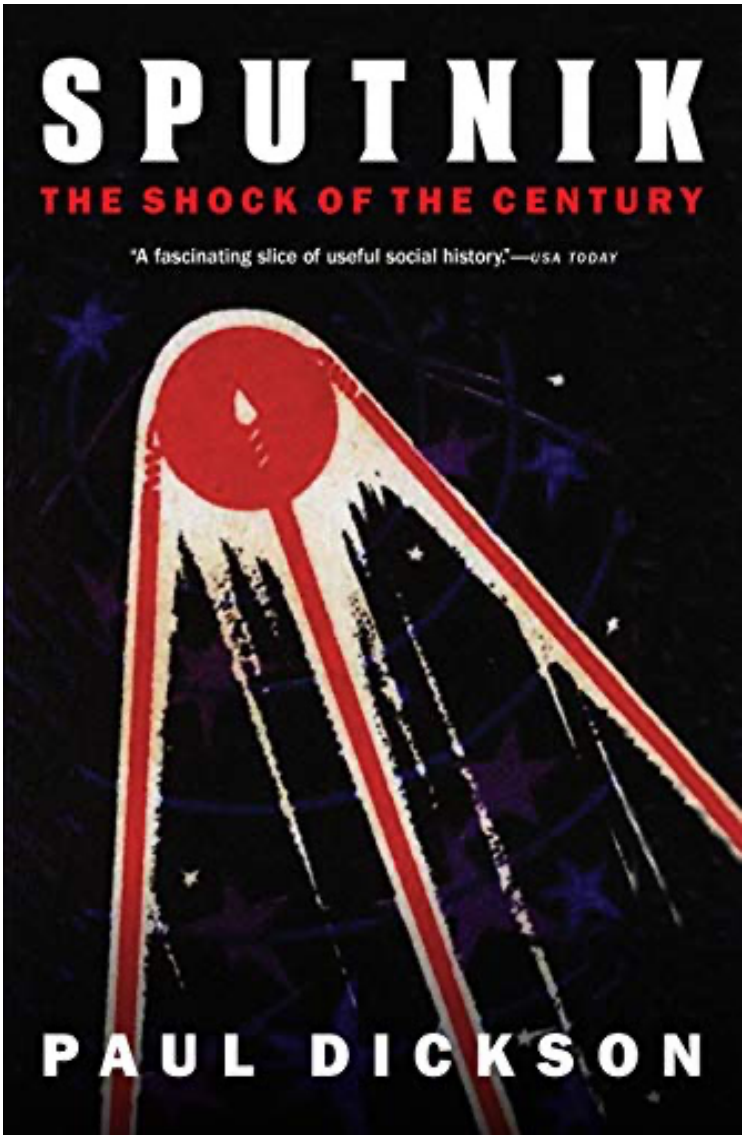
A view of the Artemis I Space Launch System (SLS) and Orion spacecraft atop the mobile launcher at Launch Pad 39B at NASA's Kennedy Space Center in Florida on June 30, 2022. The SLS and Orion were transported to the pad on crawler-transporter 2 for a prelaunch test called a wet dress rehearsal. NASA/Kim Shiflett

NM	FQ	FM	LQ
July 28 Aug 27	July 6 Aug 5	July 13 Aug 11	July 20 Aug 18

Book Review: Sputnik - The Shock of the Century
Reviewed by Robin Byrne



My latest selection from the bookshelf archive is Sputnik - The Shock of the Century by Paul Dickson. As the title implies, the book chronicles the launch of the first Sputnik satellite and the reaction of the world.

If the early days of space exploration are new territory for you, the book does a very thorough job of discussing all aspects related to the early satellites. Starting with the global cooperation surrounding the International Geophysical Year (IGY), which provided the incentive to put scientific satellites into Earth orbit, through to the launch of Sputnik, the reaction of the world, on to Sputnik 2, and, finally, the successful satellite launches by the U.S.

For someone like me, who has read a lot of books about the history of both the U.S. and Soviet space programs, there wasn't much in this book that was new. One part I found interesting, because I hadn't seen much about it before, was related to President Eisenhower and his priorities related to the space program. He was much more interested in satellites as a means of spying on the Soviets, rather than as scientific instruments. He also didn't want anyone to know about his spy satellite plans. This is why he was so set upon keeping the rockets being developed for military purposes (like spying) separate from those being used for the civilian satellite program - a decision that led to the Soviets being the first to put a satellite into orbit.

Another section that was surprising dealt with how the scientific community reacted to the launch. Sputnik went into orbit at the same time that an international conference related to the IGY was taking place. When the announcement was made at the conference of the launch, everyone applauded and congratulated the Soviet scientists for their success. Even outside of the scientific community, most people were just impressed with the achievement, rather than scared. It wasn't until some time had passed, and the news media began to relate alarmist messages, that the full repercussions began to sink in. Only then did people started to worry about what the Soviets could do from the vantage point of space.

Paul Dickson clearly researched this topic thoroughly. That approach ended up being both a pro and a con. On the positive side, the book is incredibly informative, with many quotes and

examples for every subject area discussed. However, it also made for some tedious reading. For me, this type of book is usually a quick, fun read. Unfortunately, I found Sputnik - The Shock of the Century to be a bit of a slog, despite being very educational.

In my final analysis, I would say that if you are looking for a good source for researching the topic of first satellites, then Sputnik - the Shock of the Century by Paul Dickson is a good choice. However, if you are looking for an entertaining, fun book to read, sadly, I would suggest passing this one up.

References:

Sputnik - The Shock of the Century by Paul Dickson, Walker Publishing Company, 2001

Next Membership Meeting:

Wednesday July 20, 7:30 pm

Cumberland Valley
Girl Scout Council Building
4522 Granny White Pike

On the Cover: NASA's Mars Perseverance rover acquired this image using its Right Mastcam-Z camera. Mastcam-Z is a pair of cameras located high on the rover's mast.

This image was acquired on June 12, 2022 (Sol 466) at the local mean solar time of 12:20:39.

Image Credit: NASA/JPL-Caltech/ASU

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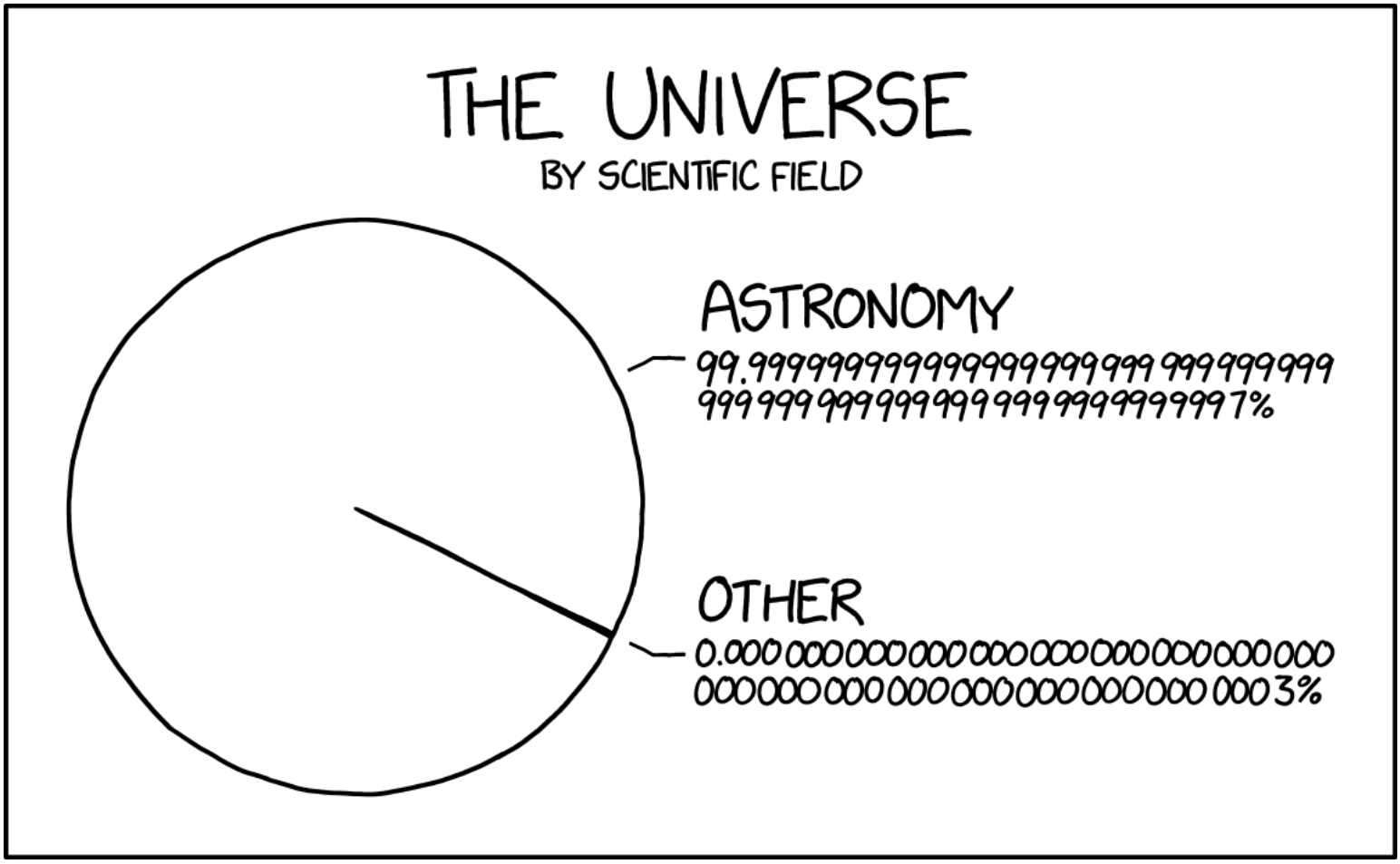
THE UNIVERSE
BY SCIENTIFIC FIELD
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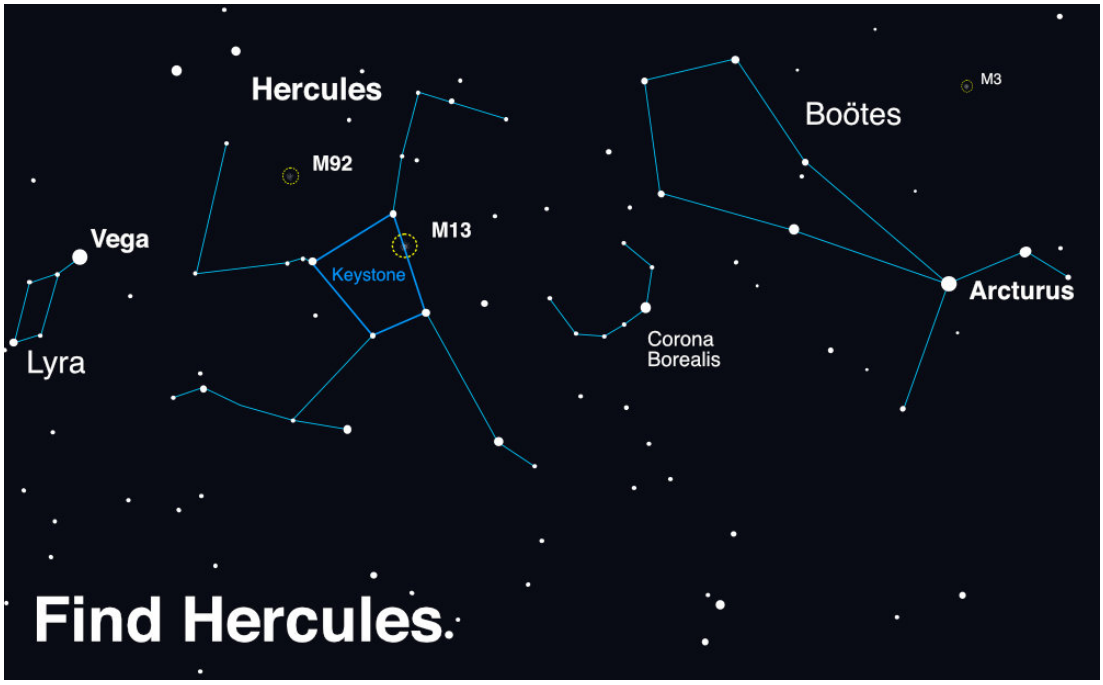
Find Hercules and His Mighty Globular Clusters
By David Prosper

Hercules is one of the standout heroes of Greek mythology, but his namesake constellation can be surprisingly hard to find - despite being one of the largest star patterns in our night skies! Once you find the stars of Hercules, look deeper; barely hidden in the space around his massive limbs and "Keystone" asterism are two beautiful globular star clusters: M13 and M92!



Look up after sunset during summer months to find Hercules! Scan between Vega and Arcturus, near the distinct pattern of Corona Borealis. Once you find its stars, use binoculars or a telescope to hunt down the globular clusters M13 and M92. If you enjoy your views of these globular clusters, you're in luck - look for another great globular, M3, in the nearby constellation of Boötes. Image created with assistance from Stellarium: stellarium.org

Since the constellation itself is relatively dim but bordered by brighter constellations, you can find the stars of Hercules by looking between the bright stars Vega and Arcturus. They are fairly easy to identify, and we have tips on how to do so in previous articles. Vega is the brightest star in the constellation Lyra and one of the three stars that make up the Summer Triangle (June 2020: Summer Triangle Corner: Vega). Arcturus is the brightest star in the constellation Boötes, and can be found by "arcing to Arcturus" from the handle of the Big Dipper (May 2021: Virgo's Galactic Harvest). You may be able to Hercules's "Keystone" asterism first; this distinct pattern of four stars is traditionally shown as the torso of the great hero, though some illustrators prefer marking the Keystone as the head of Hercules. What pattern do you see in the stars of Hercules?

Globular star clusters appear "fluffy," round, and dense with stars, similar to a dandelion gone to seed, in contrast to the more scattered and decentralized patterns of open clusters. Open clusters are generally made up of young stars that are gradually spreading apart and found inside our Milky Way galaxy, while globular clusters are ancient clusters of stars that are compact, billions of years old, bound to each other and orbit around our galaxy. Due to their considerable distance, globular clusters are usually only visible in telescopes, but one notable exception is M13, also known as the

Great Cluster or Hercules Cluster. During very clear dark nights, skilled observers may be able to spot M13 without optical aid along the border of the Keystone, in between the stars Zeta and Eta Herculis - and a bit closer to Eta. Readily visible as a fuzzy “star” in binoculars, in telescopes M13 explodes with stars and can fill up an eyepiece view with its sparkling stars, measuring a little over half the diameter of a full Moon in appearance! When viewed through small telescopes, globular clusters can appear orblike and without discernable member stars, similar in appearance to the fuzzy comae of distant comets. That’s why comet hunters Edmund Halley and Charles Messier discovered and then catalogued M13, in 1714 and 1764 respectively, marking this faint fuzzy as a “not-comet” so as to avoid future confusion.

While enjoying your view of M13, don’t forget to also look for M92! This is another bright and bold globular cluster, and if M13 wasn’t so spectacular, M92 would be known as the top celestial sight in Hercules. M92 also lies on the edge of naked-eye visibility, but again, binoculars and especially a telescope are needed to really make it “pop.” Even though M92 and M13 appear fairly close together in the sky, in actuality they are rather far apart: M13’s distance is estimated at about 25,000 light years from Earth, and M92’s at approximately 27,000 light years distant. Since M13 and M92 appear so close together in our skies and relatively easy to spot, switching between these two clusters in your scope makes for excellent star-hopping practice. Can you observe any differences between these two ancient clusters of stars?

Composite image of the dense starry core of M92 imaged in multiple wavelengths. While your own views of these globular clusters won’t be nearly as crisp and detailed, you might be able to count some of its member stars. How far into their dense cores can you count individual stars? Credits: ESA/Hubble & NASA; Acknowledgment: Gilles Chapdelaine.

Globular clusters are closely studied by astronomers for hints about the formation of stars and galaxies. The clusters of Hercules have even been studied by NASA’s space telescopes to reveal the secrets of their dense cores of hundreds of thousands of stars. Find their latest observations of globular clusters - and the universe - at nasa.gov.

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! 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!

Barnard-Seyfert Astronomical Society
Minutes of a Regular Meeting of the Board of Directors
Held On Wednesday, June 1, 2022

The regular meeting of the Board of Directors of the Barnard-Seyfert Astronomical Society was held June 1, 2022, online, Dr. Tom Beckermann presiding. Logged in were Tom Beckermann, Chip Crossman, Bud Hamblen, Andy Reeves, Kathy Underwood and Theo Wellington. An on-line quorum being present, Tom called the meeting to order at 7:30 PM.

Tom asked for a motion to adopt the minutes of the board meeting on May 4, 2022, as printed in the June, 2022, edition of the Eclipse. Theo so moved, Kathy seconded, and the minutes were adopted unanimously.

Treasurer's Report: Theo reported that the Truist account balance was $11,646.26 and that the PayPal account balance was $104.21.

Social media report: The Facebook page was liked by 2,028 and followed by 2,168. Twitter (@BSASNashville) had 304 followers.

Equipment: Eric is receiving the Meade LX200 from Oz.

Star parties: Private star parties are scheduled at the Water Valley Overlook (Natchez Trace Parkway mile marker 412) and at the parking lot at mile marker 435.3

Meetings and programs: The June 15 program is planned to be a "What's Up" rescheduled from May. A program is planned for the Webb space telescope first light for the July 20 meeting.

Other Business: Chip Crossman has worked up designs for new name tags.

Things of note: The Astronomical League convention is in Albuquerque, NM, July 28-30. The Green Bank, WV, star party is on July 2.

There being no further business, the meeting adjourned at 8:30 PM.

Respectfully submitted,

Bud Hamblen
Secretary

Barnard-Seyfert Astronomical Society
Minutes of the Monthly Membership Meeting
Held On Wednesday, June 15, 2022

The Barnard-Seyfert Astronomical Society met at the Girl Scout Center and on-line via Zoom on Wednesday, June 15, 2022, Tom Beckermann presiding. Eighteen attendees signed in, and there were additional attendees via Zoom. The minutes of the April 20 meeting were adopted without discussion.

Treasurer's Report: The Truist bank balance was $11,646.26, and the PayPal balance was $137.50. The post office box has been renewed. One more poster has been sold.

Social media report: Theo reported that the Facebook page was liked by 2,029 and followed by 2,169. The twitter feed (@BASANashville) has 304 followers.

Outreach and Star Parties:

Frank LaVarre asked for assistance at a star party for J. T. Moore Middle School at Primm Springs Park on Friday, June 24.

Private star parties are scheduled for June 25 at the Water Valley Overlook on the Natchez Trace Parkway and for July 23 at Mile Marker 435.3. A copy of the Park Service permit is needed. A PDF is available and you can print out your own copy. Public star parties are planned at Montgomery Bell State Park, Dickson, TN, on July 2 from 8 to 10 PM, and at the Bells Bend Outdoor Center, Nashville, TN, on July 9 from 9 to 11 PM.

The next regular meeting of the BSAS is scheduled for July 20 at the Girl Scout Center. The planned presentation is on first light data from the James Webb Space Telescope.

Theo Wellington presented a "What's Up" in the Summer sky, with material provided by Dr Terry Reeves, and additional material on the Astronomical League observing programs. Membership in the BSAS includes membership in the Astronomical League.

Chuck Schlemm brought in publications and other materials to be sold on the behalf of the Madewell family.

There being no further business, the meeting adjourned at 9 PM.

Respectfully submitted,

Bud Hamblen

Secretary

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.

Barnard-Seyfert Astronomical Society

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.