

The ECLIPSE

February
2022

The Newsletter of the Barnard-Seyfert Astronomical Society

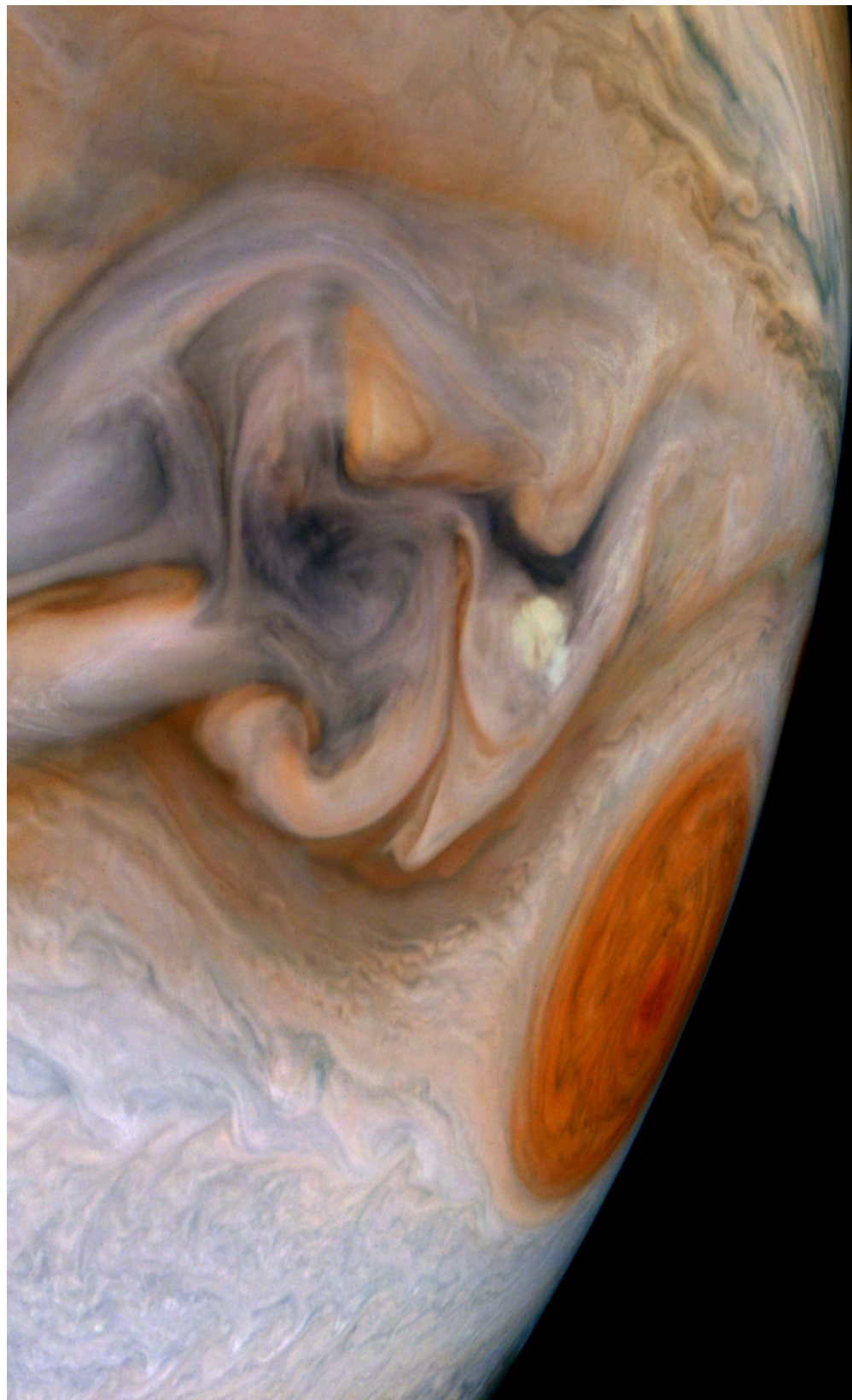
Next Membership Meeting:

February 16, 7:30 pm
Online meeting

Link will be posted on
bsasnashville.com

In this Issue:

Hang Out with the Twins of Gemini By David Prosper	3
Board Meeting Minutes January 5, 2021	6
Membership Meeting Minutes January 19, 2021	7
Membership Information	9





Officers

Tom Beckermann
President

Bud Hamblen
Secretary

Theo Wellington
Treasurer

Keith Rainey
Ex-officio

Directors at Large

Cory Buckner

Chip Crossman

Tony Drinkwine

Oswaldo Gonzalez

Andy Reeves

Kathy Underwood

Contact BSAS officers at
bsasnashville.com/contact
Or email info@bsasnashville.com



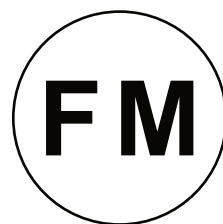
On the Cover: Image data collected by JunoCam instrument on Juno spacecraft from an altitude of 15429 km at 2020-12-30T22:04:17. Credit : NASA/JPL-Caltech/SwRI/MSSS/Brian Swift © CC



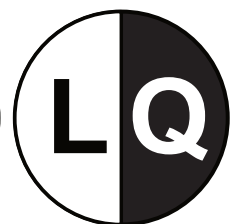
Mar 2
Apr 1



Feb 8
Mar 10



Feb 16
Mar 18



Feb 23
Mar 25

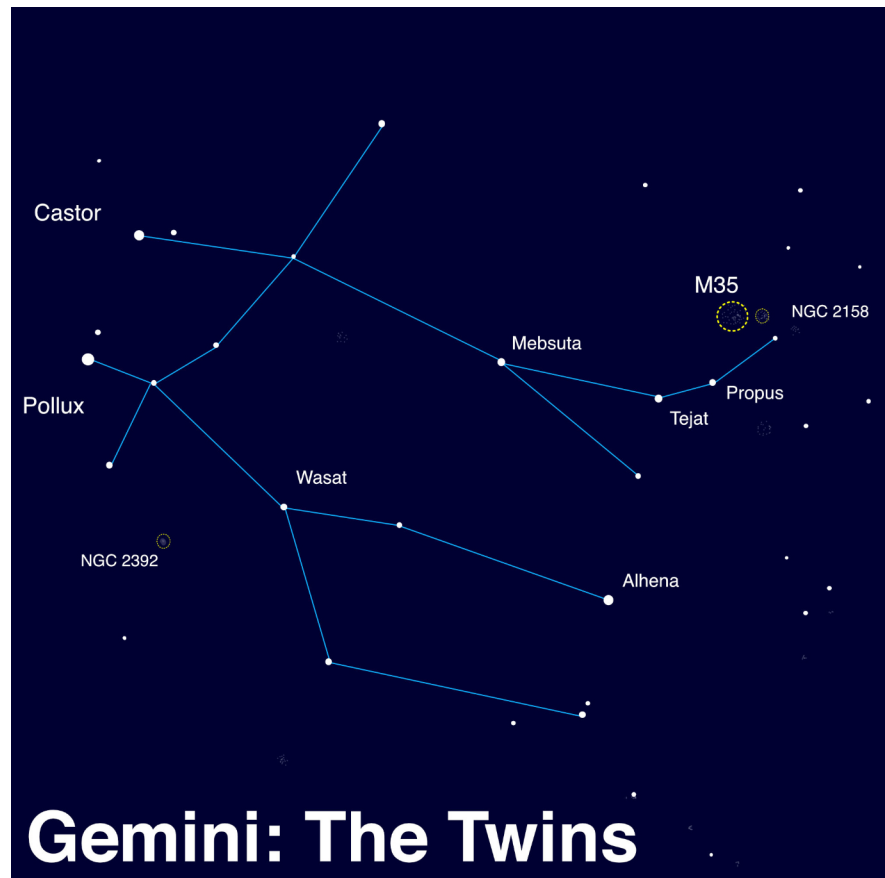
Hang Out with the Twins of Gemini

By David Prosper

The night skies of February are filled with beautiful star patterns, and so this month we take a closer look at another famous constellation, now rising high in the east after sunset: Gemini, the Twins!

If you're observing Orion, as discussed in last month's article, then Gemini is easy to find: just look above Orion's "head" to find Gemini's "feet." Or, make a line from brilliant blue-white Rigel in the foot of Orion, through its distinct "Belt," and then on through orange Betelgeuse. Keep going and you will end up in between the bright stars Castor and Pollux, the "heads" of the Gemini Twins. While not actually related – these stars aren't bound to each other, and are almost a magnitude apart in brightness – they do pair up nicely when compared to their surrounding stars. Take note: more than one stargazer has confused Gemini with its next-door neighbor constellation, Auriga. The stars of Auriga rise before Gemini's, and its brightest star, Capella, doesn't pair up as strikingly with its second most brilliant star as Castor and Pollux do. Star-hop to Gemini from Orion using the trick above if you aren't sure which constellation you're looking at.

Pollux is the brighter of Gemini's two "head" stars - imagine it has the head of the "left twin" - and located about 34 light-years away from our Solar System. Pollux even possesses a planet, Pollux b, over twice the mass of Jupiter. Castor - the head of the "right twin" - by contrast, lies about 51 light-years distant and is slightly dimmer. While no planets have been detected, there is still plenty of company as Castor is actually a six-star system! There are several great deep-sky objects to observe as well. You may be able to spot one with your unaided eyes, if you have dark skies and



Castor and Pollux are Gemini's most prominent stars, and often referred to as the "heads" of the eponymous twins from Greek myth. In Chinese astronomy, these stars make up two separate patterns: the Vermillion Bird of the South and the White Tiger of the North. What do you see? The Night Sky Network's "Legends in the Sky" activity includes downloadable "Create Your Own Constellation" handouts so you can draw your own star stories: bit.ly/legendsinthesky

Image created with assistance from Stellarium.

sharp eyes: M35, a large open cluster near the “right foot” of Gemini, about 3,870 light-years away. It’s almost the size of a full Moon in our skies! Optical aid like binoculars or a telescope reveals the cluster’s brilliant member stars. Once you spot M35, look around to see if you can spot another open cluster, NGC 2158, much smaller and more distant than M35 at 9,000 light-years away. Another notable object is NGC 2392, a planetary nebula created from the remains of a dying star, located about 6,500 light-years distant. You’ll want to use a telescope to find this intriguing faint fuzzy, located near the “left hip” star Wasat.



Montage of Gemini North, located on Mauna Kea in Hawaii, and Gemini South, located on Cerro Pachón in Chile. These “twin” telescopes work together as the Gemini Observatory to observe the entire sky.

Image Credit: NOIRLab

Source: <https://www.gemini.edu/gallery/media/gemini-northsouth-montage>

Gemini’s stars are referenced quite often in cultures around the world, and even in the history of space exploration. NASA’s famed Gemini program took its name from these stars, as do the appropriately named twin Gemini North and South Observatories in Hawaii and Chile. You can discover more about Gemini’s namesakes along with the latest observations of its stars and related celestial objects at [nasa.gov](https://www.nasa.gov).

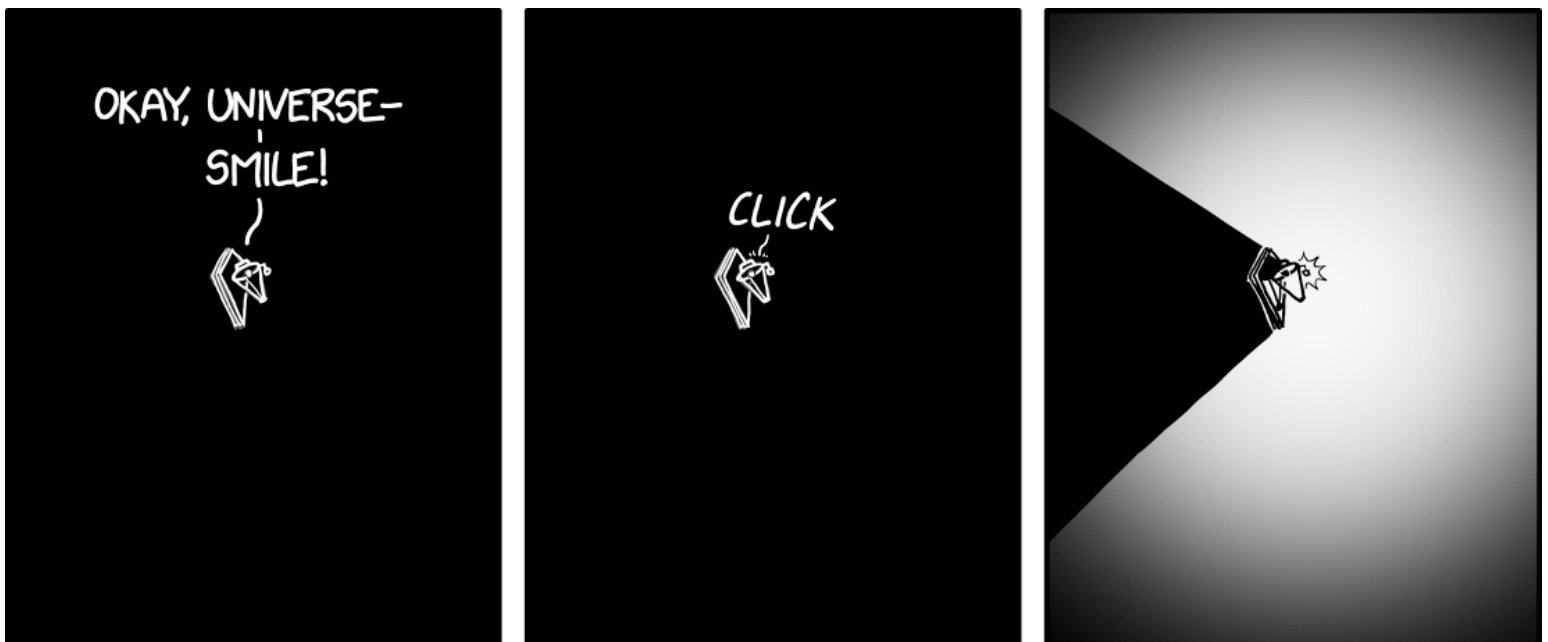
This article is distributed by NASA Night Sky Network. The Night Sky Network program supports astronomy clubs across the USA dedicated to astronomy outreach. Visit nightsky.jpl.nasa.gov to find local clubs, events, and more! You can catch up on all of NASA’s current and future missions at [nasa.gov](https://www.nasa.gov). 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!



R Aquarii is, in fact, a pair: a white dwarf star that steadily burns at a relatively cool temperature and a highly variable red giant. As they orbit each other, the white dwarf pulls material from the red giant onto its surface. Over time, enough of this material accumulates and triggers an explosion. Astronomers have seen such outbursts over recent decades. Evidence for much older outbursts is seen in the spectacular structures observed by NASA's Hubble Space Telescope (red and blue). X-ray data from Chandra (purple) shows how a jet from the white dwarf is striking material surrounding it and creating shock waves, similar to sonic booms from supersonic planes.

Credit: X-ray: NASA/CXC/SAO;
Optical: NASA/STScI, Palomar
Observatory, DSS;

xkcd



ASTRONOMY FACT: THE PURPOSE OF THE JWST SUNSHIELD IS TO PROTECT THE SUN AND THE EARTH FROM THE TELESCOPE'S POWERFUL FLASH.

Barnard-Seyfert Astronomical Society Minutes of a Regular Meeting of the Board of Directors Held On Wednesday, January 5, 2022

The regular meeting of the Board of Directors of the Barnard-Seyfert Astronomical Society was held January 5, 2022, online, Keith Rainey presiding. Logged in were Tom Beckermann, Chip Crossman, Tony Drinkwine, Bud Hamblen, Keith Rainey and Theo Wellington. An on-line quorum being present, Keith called the meeting to order at 7:30 PM.

Keith asked for a motion to adopt the minutes of the board meeting on December 8, 2021, as printed in the January, 2022, issue of the Eclipse and the minutes were adopted unanimously.

Treasurer's report: Theo reported the Suntrust bank balance to be \$12,471.53 (\$4,578.07 in the equipment fund and \$7,893.46 in the general fund). The Paypal balance was \$99.38. The insurance premium is due to be paid.

Social media report: The Facebook page was liked by 1981 and followed by 2115. Twitter had 287 followers.

Star parties: Drew has the star party list. No confirmations yet on special events (Cheekwood, etc.) The Park Service is working on the Natchez Trace permit. Tom Ladd will be asked whether his property near the Water Valley Overlook will be available for the Messier Marathon. The sky is expected to be cloudy at the Saturday event at Mill Ridge Park.

Upcoming meetings: The January meeting is scheduled to be the telescope help / Q & A session. February is scheduled to be a "What's Up?" The March meeting may be on how to plan and perform a Messier marathon observing run. "Local Observing Sites" is a possible meeting topic.

Other business: Drew Gilmore would like to step down as web master and we are seeking volunteers. A possible inducement might be a free membership in exchange for web mastering. The RASC Handbooks are in and most have been mailed out. One poster was sold in December.

There being no further business, the meeting adjourned at 8:00 PM.

Respectfully submitted,

Bud Hamblen
Secretary

Barnard-Seyfert Astronomical Society Minutes of the Monthly Membership Meeting Held On Wednesday, January 19, 2022

Because monthly in-person meetings are suspended due to the COVID-19 epidemic, the Barnard-Seyfert Astronomical Society held an on-line meeting via Zoom on Wednesday, January 19, 2022, Keith Rainey presiding. 16 participants zoomed in.

Keith called the meeting to order at 7:30 PM. There being no discussion of the minutes, the minutes were adopted by acclamation.

Treasurer's report: Theo Wellington reported the Suntrust bank balance to be \$12,471.53 (\$4,578.07 in the equipment fund, \$7,893.46 in the checking fund). The Paypal balance was \$156.31. The RASC Handbooks have been delivered. If you did not order through the club and would like a copy, they are now on sale at myscienceshop.com (Astronomy magazine's store) for 24.95. One poster was sold in December.

Social media report: Theo reported that the Facebook page was liked by 1983 and followed by 2117. Twitter had 288 followers.

Star parties: A private star party is scheduled for Saturday, January 29, at Natchez Trace Mile Marker 435.3. A public star party is scheduled for Saturday, February 5, from 6 to 8 PM at the Edwin Warner Park Special Events Field. A private star party is scheduled for Saturday, February 26 at the Natchez Trace Water Valley Overlook. A virtual star party hosted by Vanderbilt Dyer Observatory is scheduled for Friday, February 4, from 7 PM at <https://youtu.be/94mPJyCnMvo>.

The following candidates for the club board was approved unanimously:

President: Dr. Tom Beckermann

Vice President: Open (If you would like to help, please contact one of the board.)

Treasurer: Theo Wellington

Secretary: Bud Hamblen

Directors: Andy Reeves, Chip Crossman, Kathy Underwood, Oz Gonzalez, Cory Buckner.

Ex-officio: Keith Rainey

The program consisted of questions and answers on equipment and observing. There was substantive discussion on Mill Ridge Park as an observing site.

There being no further business, the meeting was adjourned at about 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.



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.