

The ECLIPSE

June
2018

The Newsletter of the Barnard-Seyfert Astronomical Society

Next Membership Meeting:
June 20, 2018, 7:30 pm

Cumberland Valley
Girl Scout Council Building
4522 Granny White Pike

Topic TBD

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From the President

Greetings,

One of the interesting trends in astronomy outreach over the past few years has been the partnership between astronomy organizations and public libraries. Perhaps this shouldn't come as a total surprise since both groups aim to provide educational opportunities for the general public and astronomy is a popular area of interest. But what might be surprising is that the partnership often includes actually using libraries to make telescopes available to the public. In hundreds of libraries throughout the country, library patrons can check out a telescope like they check out a book, but with a few additional special processes. What makes it work is when a local astronomy organization sponsors the telescope, provides training for both library staff and patrons, and performs regular telescope maintenance. The Library Telescope Program provides an easy to follow path for launching a partnership. You can read more about it at their [website](#).

As you will see, some very prominent astronomy organizations are involved including the Astronomical Society of the Pacific as well as The Astronomy League in partnering with more than twenty states.

The state of Tennessee is interested in a library telescope program partnership with BSAS. At our August board meeting we will be hearing more details from Kate Smith, the Youth Services and Special Projects Coordinator for the Tennessee State Library and Archives.

Kate Smith also coordinates the summer reading programs that are held in libraries all across the state of Tennessee. In 2019 the theme is "Space". So, I am sure you can imagine where this is going. Is BSAS be interested in programming, star parties, and other ways of bringing astronomy to the

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Officers

Gary Eaton
President
gceaton@comcast.net

Keith Rainey
Vice President
Keith.Rainey@gmail.com

Tom Guss
Treasurer
t_guss@bellsouth.net

Bud Hamblen
Secretary
wrhamblen@comcast.net

Theo Wellington
Ex-officio
tmwellington@comcast.net

Directors at Large

Mike Benson
ocentaurus@aol.com

Spencer Buckner
BucknerS@apsu.edu

Drew Gilmore
eclipse@bsasnashville.com

K.C. Katalbas
hazeykc@gmail.com

Johana Keohane
jorkeohane@gmail.com

Todd Nannie
toddn_us@yahoo.com



This close-up image is of a 2-inch-deep hole produced using a new drilling technique for NASA's Curiosity rover. The hole is about 0.6 inches (1.6 centimeters) in diameter. This image was taken by Curiosity's Mast Camera (Mastcam) on Sol 2057. It has been white balanced and contrast-enhanced.

Curiosity drilled this hole in a target called "Duluth" on May 20, 2018. It was the first rock sample captured by the drill since October 2016. A mechanical issue took the drill offline in December 2016.

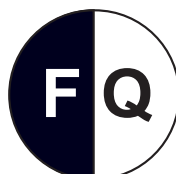
Credit: [NASA](#)

Upcoming Star Parties

Saturday 6/16	Private Star Party Natchez Trace Parkway mile marker 412 (Water Valley Overlook)
Friday 6/22 8:30 pm to 10:30 pm	Public Star Party Bowie Nature Park (Fairview)
Saturday 7/14	Private Star Party Natchez Trace Parkway mile marker 435.3
Friday 7/20	9:00 pm to 12:00 am Public Star Party Bells Bend Outdoor Center



Jun 13
Jul 12



Jun 20
Jul 19



Jun 27
Jul 27



Jun 6
Jul 6

Happy Birthday Charles Messier by Robin Byrne

This month we remember the life of a man associated with comets and a little list he put together of comet look-a-likes.

Charles Messier was born on June 26, 1730 in Badonviller, France. Little is known of his youth, except that he was orphaned at an early age. In 1751, at the age of 21, he joined the Paris Observatory as a draftsman for the French astronomer Joseph-Nicolas Delisle. His first assignment was to copy a map of the Great Wall of China. Delisle also taught Messier how to operate the astronomical instruments. Within three years, Messier was good enough to be hired by the Marine Observatory in Paris.

On January 21, 1759, Charles Messier became the first person in France to sight Halley's Comet on its first predicted return. This was the start of a lifetime devotion to hunting for comets. Messier spent long hours over several years in his quest for new comets. He is credited with discovering 15 to 20 new comets (depending on which source is cited.) He certainly earned the nickname given to him by King Louis XV: The Comet Ferret.



Messier's hunt for comets was frustrated by star clusters and nebulae, which had an annoying characteristic of looking like comets in his small telescopes (the largest was a 7.5" reflector). So in 1760, Messier began compiling a numbered list of these objects, including a description and the position. Objects were listed in his catalog in the order they were discovered. By 1771, he had a list of 45 objects. Originally, Messier was only going to include objects he had discovered himself, but later he included objects discovered by others that he confirmed. After 21 years, Messier had a list of 103 objects. During his lifetime, another French astronomer added 6 more to the list for a total of 109. We now know that list as the Messier Catalog.

Messier's last addition to the catalog was made in 1781. Shortly after that he had a serious accident in which he fell 25 feet, breaking several bones. After recovering from this, he returned to observing. That was interrupted by the French Revolution, when the observatory was closed and Messier's salary stopped. After the war, Messier spent a few years at the Paris Observatory. While working there he suffered a stroke which debilitated him. His niece cared for him until his death on April 12, 1817 at the age of 86.

Charles Messier loved hunting for comets and devoted his life to their discovery. May the new seekers of comets be as fruitful as the man we honor this month: Charles Messier.

References:

The New Encyclopedia Britannica 1995

Astronomy & Space, From the Big Bang to the Big Crunch by Phillis Engelbert, 1997

The Biographical Dictionary of Scientists - Astronomers; Ed. David Abbott; 1984

DEEP SKY DAZE by Mike Benson

Hey folks! Guess what! It's June, and the season of globular clusters is upon us! Since these are my favorite kinds of object, this is a good time for me. Add to that, the fact the weather is warm and the smells of summer are so sweet and you have a recipe for great viewing on those evenings when the haze and humidity are low.

In late May of 1996, I was at the annual picnic for the Barnard-Seyfert Astronomical Society. We met on the outskirts of Murfreesboro; the sky was fairly dark as urban skies go. The land is flat, and we had an excellent southern horizon. I noticed that Virgo was due south and that the triangular asterism in northern Centaurus (I tend to think of it as a roof to a house) was plainly visible, so I raised my binoculars to Spica, and dropped straight south until I was about five degrees above the horizon. Sure enough, there was a bright haze that could only be **Omega Centauri**. Not like the Winter Star Party, with lots of resolution. A BIG, hazy ball! Given a good high pressure system with low humidity and little dust and this legendary object is easy. Find it. Impress your friends; besides, it looks good on your resume!

There are a few other points of interest in the evening sky this month before we get into the Messier objects. On the 10th, Venus, Castor and Pollux form a single line in the western sky. Pollux is in the middle. Vesta is at opposition and all month will be about 5.3 Mag. This is naked eye visible at a fairly dark site, and certainly with binoculars. Google it for the location. I suspect the S&T page has a map or directions. Saturn, with its rings nearly open, comes into opposition late in the month. That means it will be good for viewing in the east, all month by mid-evening.

Our Messier list is short this month, five objects, all of them globular clusters, in two constellations. Let's start in Hercules with M-13 and M-92.

Around the middle of June you'll need a fairly good southeastern sky unless it's after midnight. Start by finding the Big Dipper and follow the arc of the handle south to Arcturus, in Bootes. Now look for Vega, in Lyra, near the eastern horizon. About halfway between the two constellations is the Keystone asterism in Hercules. **M-13 (NGC 6205)** is located about a third of the way between Eta (η) and Zeta (ζ) Herculis which mark the western side of the rectangle, closest to the northern edge. On a good night you may be able to find it by eyeball



M-13

DEEP SKY DAZE, continued

alone. It's bright – 5.7 magnitude. Binoculars will make it obvious. This spectacular object appears to have three dark lanes radiating from a point just off center, according to many. I have some difficulty in seeing them in my 8" SCT. It's said that less light gathering power enhances the effect. Higher powers only increase the magnificence of the view. At 200X on an evening of crisp seeing I begin to resolve individual stars near the core. While you're in the area, give **NGC 6207** a once-over. This 12.3 magnitude spiral galaxy is located about M-13's diameter NNE of the edge of the cluster. This is on the Astronomical League's Herschel 400 list. Seeing a galaxy and a globular cluster at the same time is rather unusual, since we have to look in the general direction of the center of the Milky Way for most of our fuzzy star-balls.

In any other constellation, **M-92 (NGC 6341)** would be considered a showpiece. This globular is about a third the size of M-13 (8' vs. 23'), and about 6.5 magnitude. This seems to translate into a greater surface brightness. Another easily found object, use binoculars and look north of the Keystone, a bit east of the center line between η and π (π). The globular has a declination about 4° more to the north than nearby Vega.

These two make a wonderful contrast. M-13 is not as condensed, gradually increasing in brightness as you near the center of the cluster. M-92 shows sharp



M-92

central condensation with a very bright core and a much coarser structure. There is a small cluster of galaxies about a degree NW of M-92, one or two of which may be visible in larger light buckets.

Now let's move south, into Ophiuchus, for three more globulars before calling it a night. None of the three are as spectacular as their Herculean cousins, but they are still worth the effort. They are all located near the center of the constellation, 2-4° south of the celestial equator. **M-14 (NGC 6402)** is a bit smaller than M-92 and much fainter at 9th magnitude. Find Beta (β) and Sigma (σ) Ophiuchi; split the distance between them, and look south about 8°. There are few good landmarks in this area, so a good finder scope and atlas, like Uranometria 2000.0 will help a lot. M-14 shows little central condensation. At about 70,000 light years' distance, it's about twice as far away as the other globulars being discussed in this article.

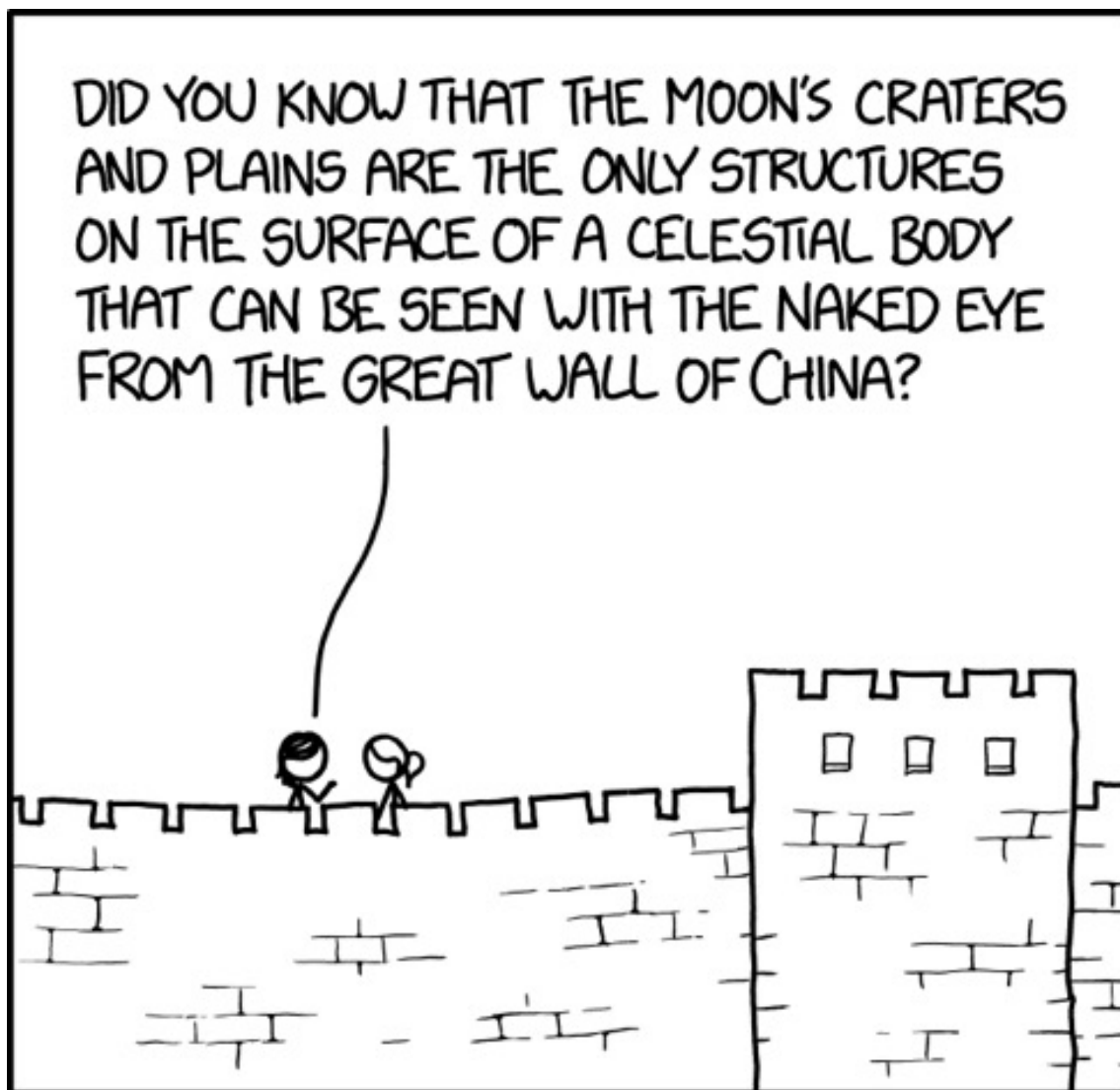
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DEEP SKY DAZE, continued

Now move about 10° due west and you will come upon the final two globulars on the evening's list. Located about 3° apart, **M-10 (NGC 6254)** and **M-12 (NGC 6218)** are 7th and 8th magnitude, respectively. They can usually be found first in binoculars (in the same field of view, yet). M-10 is about a quarter the diameter of the moon with a bright core, strongly compressed; M-12, on the other hand, shows very little central brightening. Its a bit larger and much looser than M-10. Another nice pair for "compare and contrast" work. Thought you got out of that theme when you left school, didn't you?!

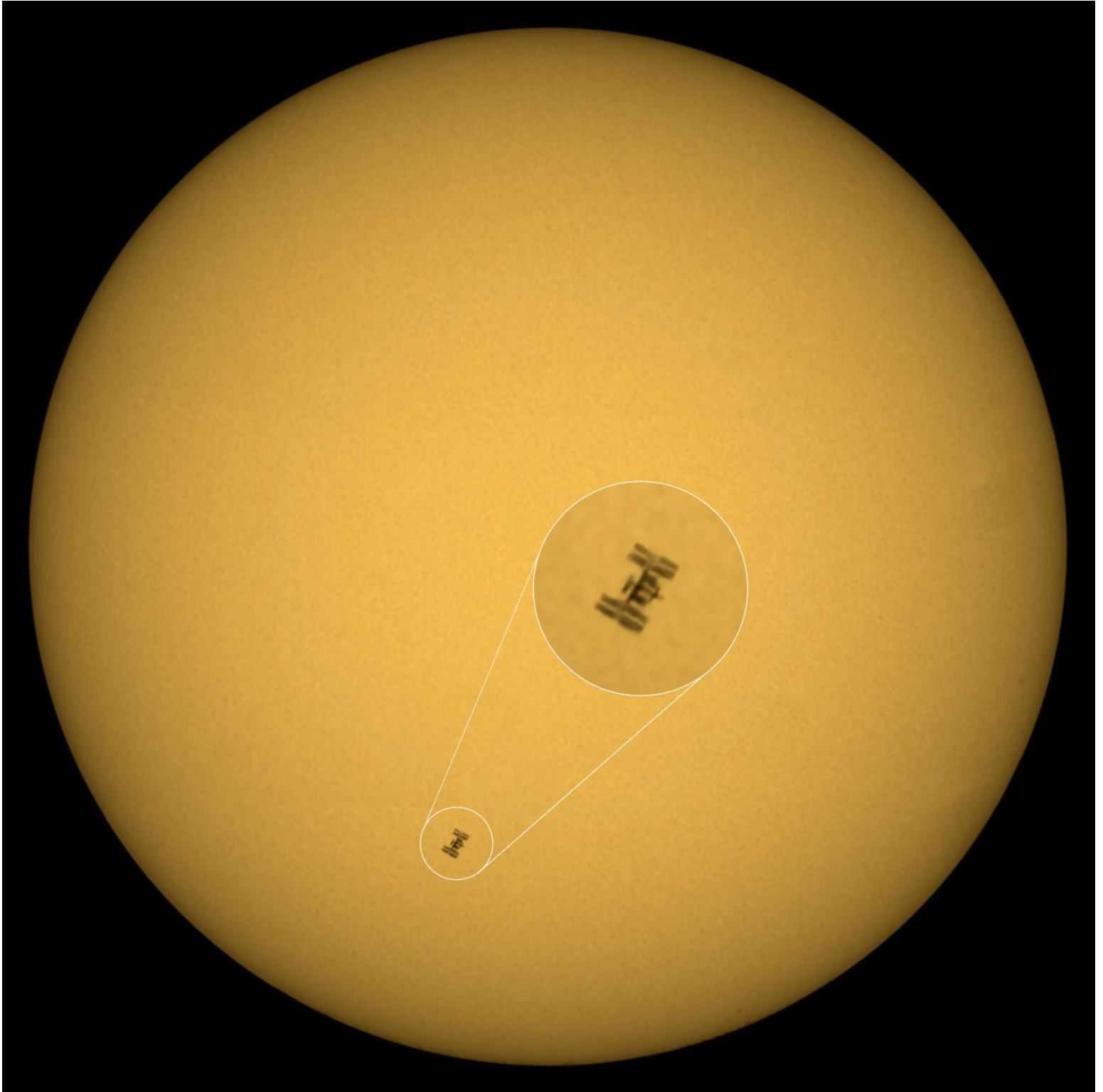
That's about it for this month. Next we head into the plane of the galaxy and the area generally referred to as the Great Rift. Then, a couple of months in Sagittarius, a bit of Autumn mop-up in October, and we will have completed our tour of the Messier objects. Where we go from there is anyone's guess. I'm open to suggestions. Clear skies!

xkcd





**M101 - Pinwheel Galaxy
by BSAS Member Keith Rainey**



**ISS Solar Transit, May 1, 2018
by BSAS Member Trevor Bruns**

Barnard-Seyfert Astronomical Society
Minutes of a Regular Meeting of the Board of Directors
Held On Wednesday, May 2, 2018.

The regular meeting of the Board of Directors of the Barnard-Seyfert Astronomical Society was held May 2, 2018, in the City Center at the Girl Scouts Center, 4522 Granny White Pike, Nashville, TN 37204. Present were Mike Benson, Spencer Buckner, Drew Gilmore, Bud Hamblen, Todd Nannie and Keith Rainey. A quorum being present, Keith called the meeting to order at 7:30 PM. Keith asked for a motion to adopt the minutes of the April 4, 2018, meeting, as printed in the May issue of the Eclipse. Mike so moved, Spencer seconded, and the minutes were adopted by unanimous voice vote. Bud Hamblen reported that there was \$5,141.03 in the checking account and \$4,157.02 in the savings account. Keith reported that the club had gained 3 or 4 new members.

Mike Benson noted that he had six copies of the current issue of the Reflector to give new members at the next general meeting.

Spencer noted that Dr. Allyn Smith has confirmed that he will be available to speak at the July general meeting.

Astronomical League dues are due July 1, 2018, to be based on the updated membership list.

There being no further business, Keith asked for a motion to adjourn. Todd so moved, Mike seconded, and without objection the meeting was adjourned at 8:00 PM.

Respectfully submitted,

Bud Hamblen

Secretary

Next BSAS meeting
June 20, 2018, 7:30 pm

Cumberland Valley
Girl Scout Council Building
4522 Granny White Pike

Topic To Be Determined

**Barnard-Seyfert Astronomical Society
Minutes of the Monthly Membership Meeting
Held On Wednesday, May 16, 2018.**

The Barnard-Seyfert Astronomical Society held its monthly meeting in the City Center of the Girl Scout Center, Nashville, Tennessee, on Wednesday, May 16, 2018. Twenty-eight members and guests signed in. Gary Eaton called the meeting to order at 7:30 PM. Gary asked for a motion to approve the minutes of the April 14, 2018, meeting as published in the April Eclipse. Chuck Schlemm so moved, Spencer Buckner seconded, and the minutes were approved by unanimous voice vote. Bud Hamblen reported that there was \$5,241.03 in the checking account and \$4,157.02 in the savings account. Keith reported that there were 136 members. Five new members and a guest were present at this meeting.

Gary announced an upcoming star party on Saturday, 5/19/2018, from 8:30 to 10:30 PM at Long Hunter State Park, and a private star party at Water Valley Overlook (Natchez Trace Parkway) on June 16. Chuck Schlemm reminded us of the Full Moon Picking Party on May 25 at the Percy Warner Park Equestrian Center.

Julia An and Jack Edward Allen made a presentation on their Middle Tennessee Science and Engineering Fair project, “Determining Variation and Periodicity of Pulsar Scintillation Utilizing Dynamic Spectra.”

Dr Spencer Buckner presented “The Milky Way: A History of Our Understanding of the Galaxy We Live In.”

There being no further business, the meeting was adjourned at about 9:00 PM.
Respectfully submitted,

Bud Hamblen
Secretary

Next page: NASA’s Juno spacecraft was racing away from Jupiter following its seventh close pass of the planet when JunoCam snapped this image on May 19, 2017, from about 29,100 miles (46,900 kilometers) above the cloud tops. The spacecraft was over 65.9 degrees south latitude, with a lovely view of the south polar region of the planet.

This image was processed to enhance color differences, showing the amazing variety in Jupiter’s stormy atmosphere. The result is a surreal world of vibrant color, clarity and contrast. Four of the white oval storms known as the “String of Pearls” are visible near the top of the image. Interestingly, one orange-colored storm can be seen at the belt-zone boundary, while other storms are more of a cream color.

Credits: [NASA/JPL-Caltech/SwRI/MSSS/Gerald Eichstädt /Seán Doran](#)

From the President, continued

Tennessee public libraries during 2019? Several of our members have engaged the public through public libraries on their own and this would involve a more formal relationship with BSAS.

We have just started the conversation about library partnerships and absolutely no decisions or commitments have been made. As we consider these opportunities, we would love to have input from a broad cross section of our membership. Strong member support is about the only way it could work if we decide to move forward. Please feel free to engage any of the board members on the topic. You are also welcome to join us at our August board meeting to hear directly from Kate Smith. Thanks for your thoughtful consideration.

Gary Eaton

Links:

librarytelescope.org





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.