

# The ECLIPSE

March  
2019

*The Newsletter of the Barnard-Seyfert Astronomical Society*

## Next Membership Meeting:

March 20, 2019, 7:30 pm

Cumberland Valley  
Girl Scout Council Building  
4522 Granny White Pike

Dr. Matthew Muterspaugh:  
The Dharma Planet Survey

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## From the President

When was the last time you stayed up all night? Was it in school studying for finals? Was it with an infant that didn't know night time is for sleeping? How about stargazing and looking for Charles Messier's famous list of "not comets"? We have a Messier marathon coming up on March 9th which is a fun way to hang out with other members and learn the night sky or test your knowledge. Personally I have never done a marathon and I certainly don't know the entire sky well enough to manually point my scope to all 110 objects! I am thinking of "cheating" and using my goto controller to help me along the way. There are many Messier objects that I haven't seen and I think it will be fun to find new stuff. I hope that one day I will be able to manually pick out all 110 objects and get that Astronomical League pin, but this year will be a learning year. All members are welcome and you don't have to stay out all night or bring a scope. Just come hang out for a while and talk astronomy and enjoy a (hopefully) beautiful night sky. I will send out information soon regarding the marathon so be on the lookout. A big thanks to Theo for a great presentation last meeting about the marathon.

Another way to have fun is volunteering for star parties or outreach opportunities! We get a fair number of requests to hold events for groups and we are lucky enough as a club to have a group of members that regularly volunteer. However, I am sure they would love to see some new faces! Volunteering is a great way to interact with the public and keep our mission of outreach moving forward. Look for some opportunities coming up in the next few weeks and months.



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A two-stage SpaceX Falcon 9 rocket lifts off from Launch Complex 39A at NASA's Kennedy Space Center in Florida for Demo-1, the first uncrewed mission of the agency's Commercial Crew Program. Liftoff was at 2:49 a.m., March 2, 2019. The SpaceX Crew Dragon's trip to the International Space Station is designed to validate end-to-end systems and capabilities, leading to certification to fly crew. Credit: [NASA/Richard Ryba](#)

## Upcoming Star Parties

Saturday Mar 16 8:00 to 10:00 pm	BSAS Public Star Party <a href="#">Shelby Bottoms Nature Center</a>
Saturday Apr 6	BSAS Private Star Party <a href="#">Natchez Trace Parkway mile marker 435.3</a>
Saturday Apr 13 8:30 to 10:30 pm	BSAS Public Star Party <a href="#">Edwin Warner Park</a>



Mar 6  
Apr 5



Mar 14  
Apr 12



Mar 20  
Apr 19



Mar 27  
Apr 26

## Book Review: Curiosity The Story of a Mars Rover reviewed by Robin Byrne

Continuing in my theme of reviewing children's books, this time it is *Curiosity: The Story of a Mars Rover* written and illustrated by Markus Motum. Motum's training is in illustration, with no real science or engineering background. That imbalance is, unfortunately, apparent in the book.

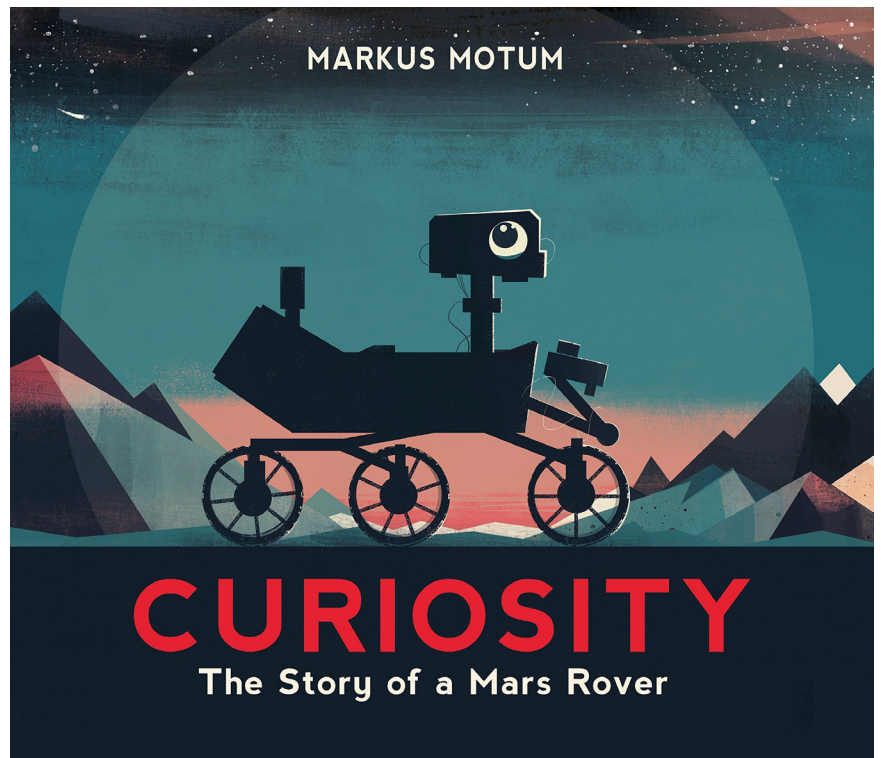
The story begins with why we travel and explore space. It then goes into human exploration and the Apollo moon landing. That leads to the difficulties of sending people as far as Mars, and why we use robotic spacecraft, instead. Next we see how the rover was designed and built. The launch and trip to Mars are shown, and then the incredible landing. It ends with how Curiosity does science on Mars, and what the future holds.

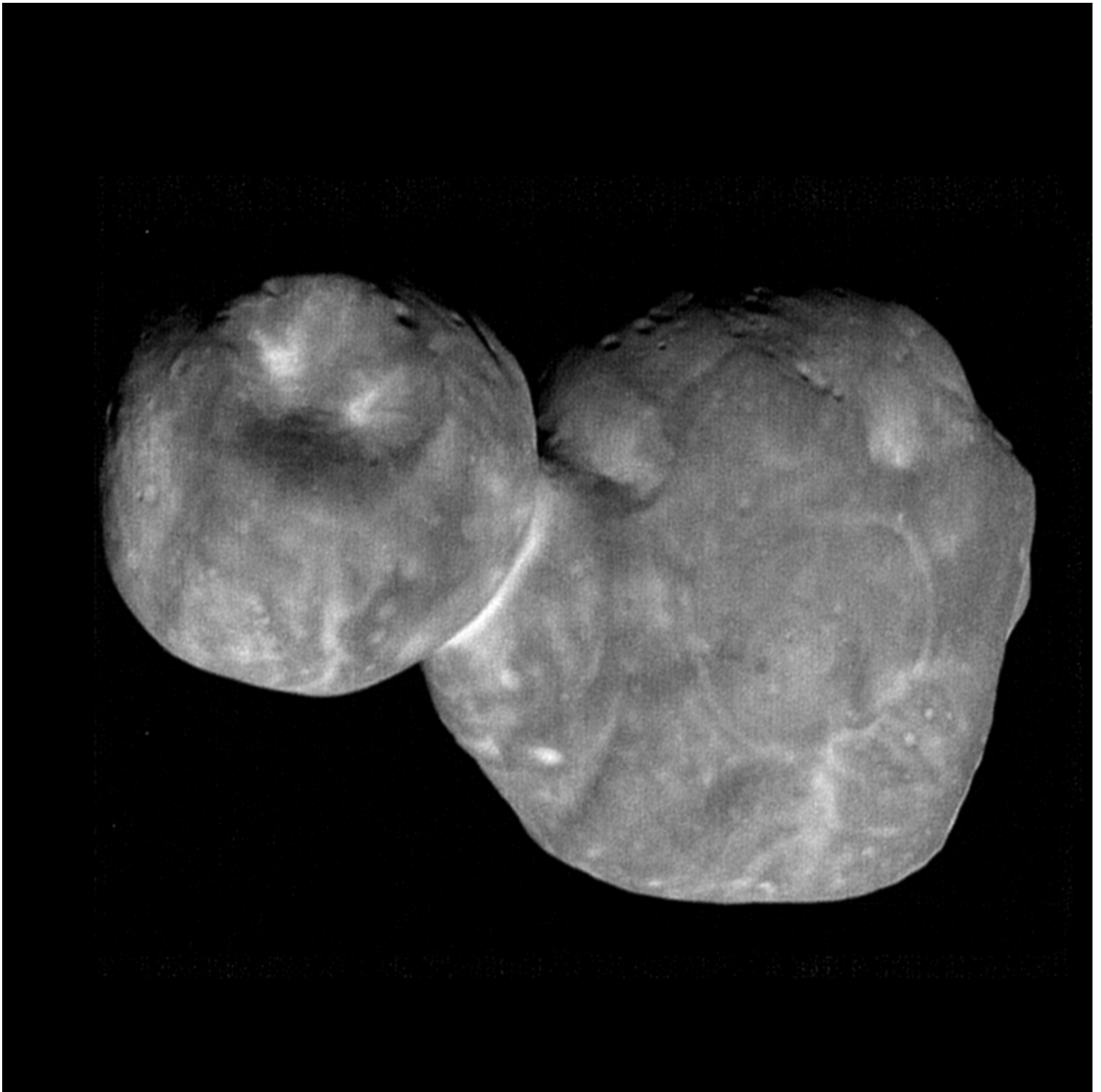
Geared for children ages seven to eleven, the illustrations are gorgeous. Motum's style has an angular feel that is well-suited for depicting spacecraft and the technical components involved with sending a rover to Mars. The launch illustration is designed for you to turn the book and view vertically, which works very well. There's a definite retro feel to the images that I truly enjoy. Very "Space Age."

However, Motum's lack of science background comes across in the writing. He was very conscientious to getting the information correct, which I appreciate. But his lack of background means that he didn't do a very good job of simplifying it for his target audience. The upper end of his target group (ten or eleven year olds) will be fine, but younger kids will get lost in the terminology and phrasing. They'll still appreciate the pictures while being read to, but Mom and Dad may want to just read snippets from each page rather than all of the text. I also have a problem with the solar system illustration that depicts all of the planets on one side of the Sun, and very close to one another, while the text talks about how the planets move at different speeds and only rarely line up. That page sends very mixed signals to the kids reading it, and I can guarantee they'll remember the incorrect picture rather than the correct words.

So, I'm left in a quandary. Beautiful pictures versus technical writing. What age group should be targeted? My inclination is to say that this is not going to be appropriate for younger kids, but upper elementary school would be a good audience for it. And, honestly, adults who appreciate picture books and just want a brief overview of the mission will also enjoy it. So, not an overwhelming endorsement, but a qualified recommendation for *Curiosity: The Story of a Mars Rover*.

**References:** *Curiosity: The Story of a Mars Rover* by Markus Motum, Candlewick Press, 2017





#### **HIGHEST-RESOLUTION PORTRAIT OF 2014 MU69**

This photo is a stack of 9 of the most detailed images that New Horizons took of 2014 MU69 just minutes before the spacecraft's closest approach. The images were taken 6.5 minutes before closest approach, on 1 January at 5:26 UT, when the spacecraft was 6,628 kilometers from MU69 and 6.6 billion kilometers from Earth.

Credit: [NASA/Johns Hopkins Applied Physics Laboratory/Southwest Research Institute, National Optical Astronomy Observatory](#)



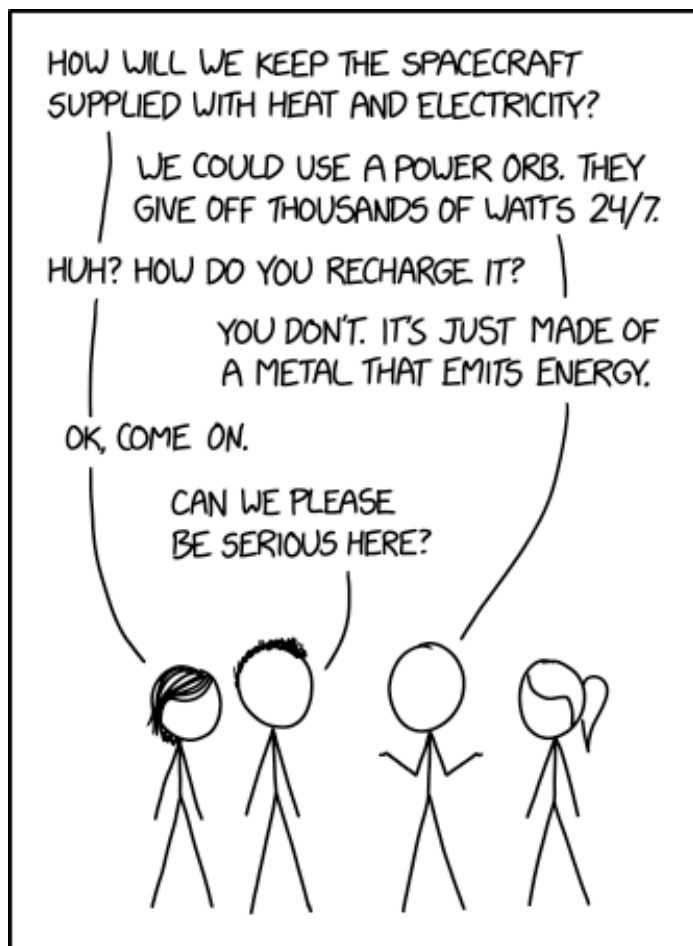
## From the President, continued

In addition to the marathon, a lot of interesting things are happening in the March sky. One of them happens early in the month on the 7th. Look to the West 30 minutes after sunset and try to find the 1.3 day old moon. Make sure the sun has set and use a pair of binoculars to help out. You will need a clear view of the Western horizon since the moon will only be a few degrees above the horizon. Later on in the month, around the 19th, the early morning risers will have an opportunity to see Jupiter, Saturn, and Venus line up in the Eastern sky before sunrise. For those who like a challenge, see if you can spot Comet 46P/Wirtanen as it fades out of view. It should be viewable in a small scope high in the East after sunset.

Clear skies and have a great month!

Keith Rainey

## xkcd



FOR SOMETHING THAT'S REAL,  
PLUTONIUM IS SO UNREALISTIC.

## Messier marathon resources:

Astronomical League award programs:

- [Binocular Messier Observing Program](#)
- [Messier Observing Program](#)
- [Lunar Observing Program](#)
- [Urban Observing Program](#)

Messier logs:

- [In Order for a Marathon Spreadsheet for Marathon](#)
- [Logs from The American Association of Amateur Astronomers](#)

## Springtime Planet Party By David Prosper

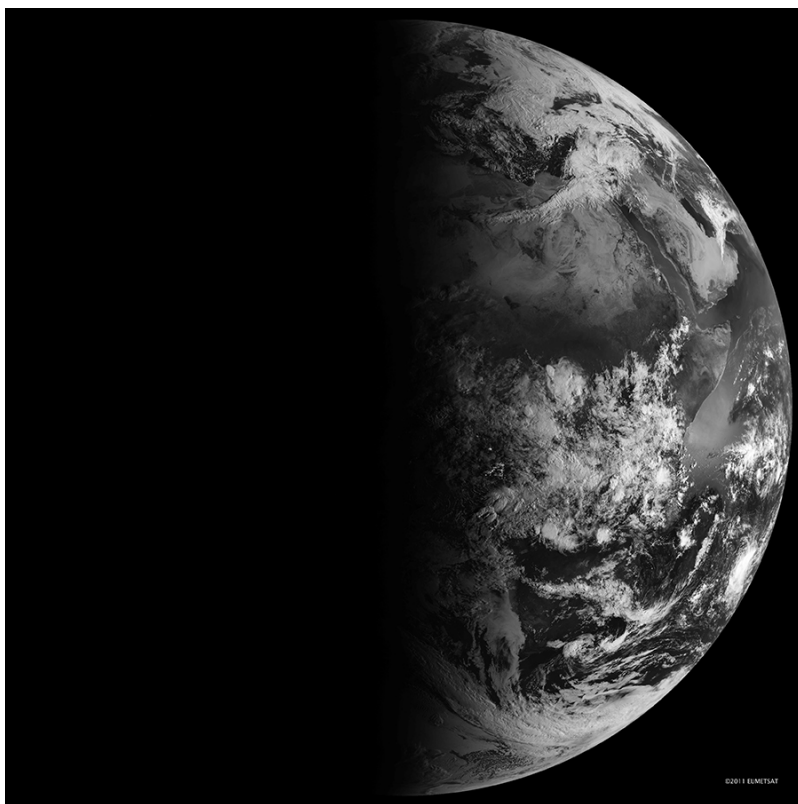
March brings longer days for Northern Hemisphere observers, especially by the time of the equinox. Early risers are treated to the majority of the bright planets dancing in the morning skies, with the Moon passing between them at the beginning and end of the month.

The vernal equinox occurs on March 20, marking the official beginning of spring for the Northern Hemisphere. Our Sun shines equally on the Northern and Southern Hemispheres during the moment of equinox, which is why the March and September equinoxes are the only times of the year when the Earth's north and south poles are simultaneously lit by sunlight. Exacting astronomers will note that the length of day and night on the equinox are not precisely equal; the date when they are closest to equal depends on your latitude, and may occur a few days earlier or later than the equinox itself. One complicating factor is that the Sun isn't a point light source, but a disc. Its edge is refracted by our atmosphere as it rises and sets, which adds several minutes of light to every day. The Sun doesn't neatly wink on and off at sunrise and sunset like a light bulb, and so there isn't a perfect split of day and night on the equinox - but it's very close!

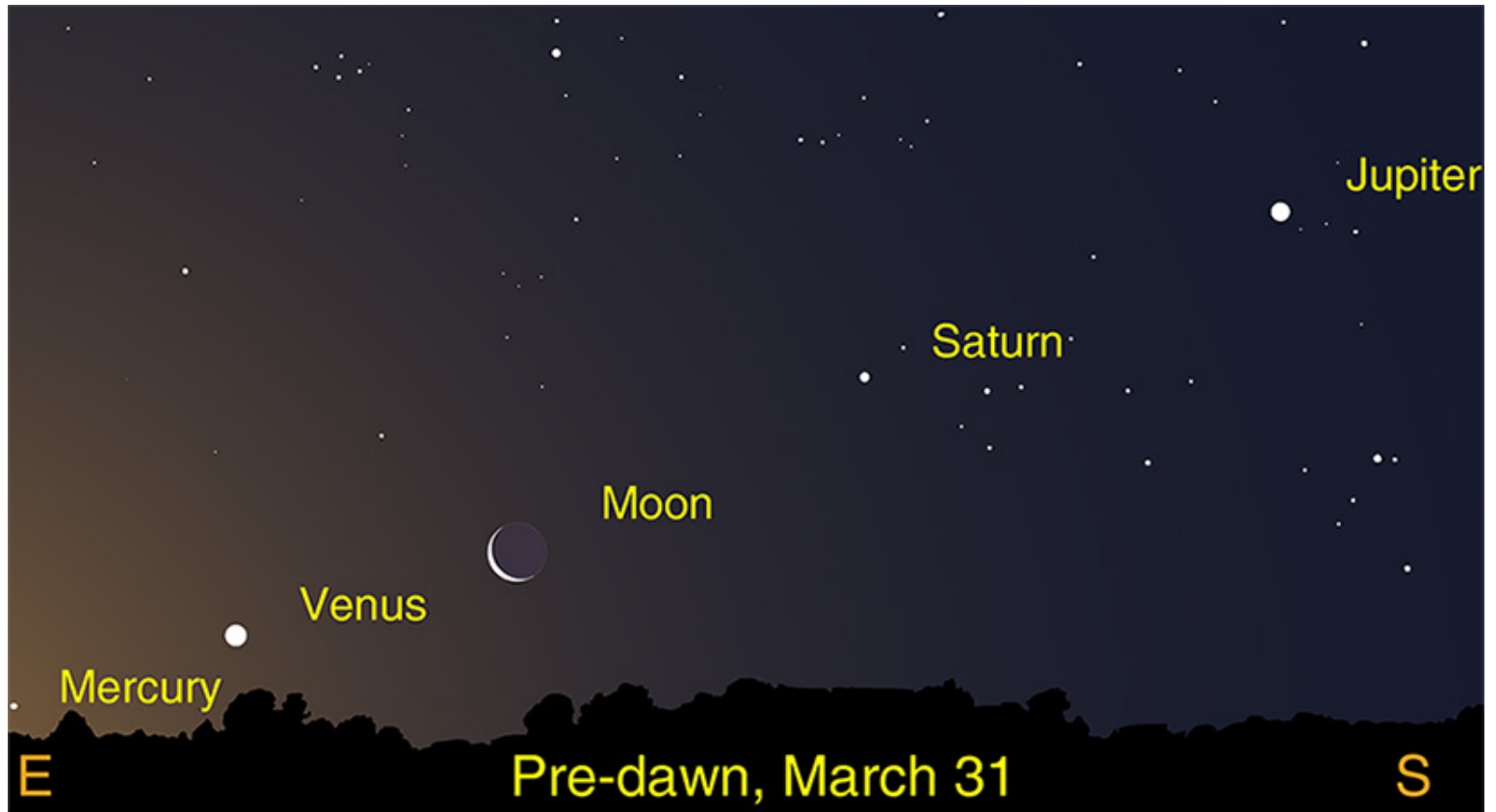
Ruddy Mars still shines in the west after sunset. Mars scoots across the early evening skies from Aries towards Taurus and meets the sparkling Pleiades star cluster by month's end.

March opens with the morning planets of Jupiter, Saturn, and Venus spread out over the southeastern horizon before sunrise. A crescent Moon comes very close to Saturn on the 1st and occults the ringed planet during the daytime. Lucky observers may be able to spot Mercury by the end of the month.

March 31 opens with a beautiful set of planets and a crescent Moon strung diagonally across the early morning sky. Start with bright Jupiter, almost due south shortly before dawn. Then slide down and east towards Saturn, prominent but not nearly as bright as Jupiter. Continue east to the Moon, and then towards the beacon that is Venus, its gleam piercing through the early morning light. End with a challenge: can you find elusive Mercury above the eastern horizon? Binoculars may be needed to spot the closest planet to the Sun as it will be low and obscured by dawn's encroaching glow. What a way to close out March!



Earth from orbit on the March equinox, as viewed by EUMETSAT. Notice how the terminator – the line between day and night - touches both the north and south poles. Additional information can be found at <http://bit.ly/earthequinox> Image credit: NASA/Robert Simmon

**Springtime Planet Party, continued**

The morning planets on March 31. Image created with assistance from Stellarium.

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.org](https://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](https://nasa.gov)

With articles, activities and games NASA Space Place encourages everyone to get excited about science and technology. Visit [spaceplace.nasa.gov](https://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, February 6, 2019**

The regular meeting of the Board of Directors of the Barnard-Seyfert Astronomical Society was held February 6, 2019, at the Girl Scouts Center, 4522 Granny White Pike, Nashville, TN 37204. Present were Tom Beckermann, Bud Hamblen, Joanna Keohane, Keith Rainey, Andy Reeves and Theo Wellington. 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 December board meeting as printed in the February edition of the Eclipse. Johanna so moved, Theo seconded and the minutes were adopted without further discussion by a unanimous voice vote. Theo reported that there was \$3,035.14 in the checking account, \$4,157.81 in the savings account, and \$943.20 in the PayPal account. \$676 was deposited, and \$819.38 was spent on the posters and \$40 was spent on the annual corporation filing with the State of Tennessee. Keith reported that there were 142 members.

Future meeting topics were discussed. The February meeting will have a presentation by Theo on the Messier Marathon, and the March meeting will have a presentation by Dr. Matthew Muterspaugh on the Dharma Planet Survey. Further meetings were discussed.

The January 20 Lunar Eclipse had about 300 attendees. The eclipsed Moon played hide and seek among the clouds. The weather was mostly clear for the February 2 private star party on the Trace. The Nashville Earth Day Festival will be at Centennial Park on April 30. The Williamson County Public Library asked for assistance at an August event. Pickett State Park is holding an astronomy weekend August 30 – September 1.

Resolution 2019-02-06, to set the asking price for the posters at \$20 per copy, was moved by Theo, seconded by Bud, and passed by unanimous voice vote. The posters will be available at the February general meeting.

There being no further business, Theo moved for adjournment, Andy seconded, and the meeting was adjourned at 8:30 PM.

Respectfully submitted,

Bud Hamblen  
Secretary

**Next BSAS meeting**  
**March 20, 2019, 7:30 pm**

**Cumberland Valley**  
**Girl Scout Council Building**  
**4522 Granny White Pike**

*Dr. Matthew Muterspaugh: The Dharma Planet Survey*



**Barnard-Seyfert Astronomical Society  
Minutes of the Monthly Membership Meeting  
Held On Wednesday, February 20, 2019**

The Barnard-Seyfert Astronomical Society held its monthly meeting in the City Room of the Girl Scout Center, Nashville, Tennessee, on Wednesday, February 20, 2018. Twenty members and guests signed in. Keith Rainey called the meeting to order at 7:30 PM and asked for a motion to approve the minutes of the January 16, meeting. Theo Wellington so moved, Frank LaVarre seconded, and the minutes were approved by a unanimous voice vote. Theo reported that there was \$3,964.19 in the operating account, \$4,157.92 in the savings account, and \$112.11 in the PayPal account. Expenditures included \$320 for liability insurance, \$819.38 for posters and \$40 for the annual corporation fee. Keith reported that there were 134 members. Keith recognized guests Nathan and Raciell.

Keith reported that despite the weather there were about 300 people at the total lunar eclipse viewing at the Edwin Warner Park Nature Center on January 20. The weather was mostly clear for the private star party at the Natchez Trace Water Valley Overlook on February 2. The weather caused the cancellation of the public star party on February 8 at Bowie Nature Park, Fairview.

Keith announced the upcoming private star party at Ron Ladd's property near the Water Valley Overlook on Saturday, March 9. This will be the annual Messier Marathon observing night. Thanks are due Ron for hosting this. Directions will be posted.

The next public star party is scheduled for Saturday, March 16, at Shelby Bottoms Nature Center. Keith asked for volunteers to present a cloudy night program in case the weather did not permit star gazing.

Keith described other opportunities for outreach: August 2 for the Williamson County Public Library at Timberland Park; September 14 and 15 at Belmont University for the Humanities Symposium.

Theo presented a program on running the Messier Marathon. Books mentioned were The Year-Round Messier Marathon Field Guide, and The Observing Guide to the Messier Marathon. Also mentioned was the Astronomical League (<https://www.astroleague.org/>), which has a Binocular Messier Observing Program and a Messier Observing Program among other programs.

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

Respectfully submitted,

Bud Hamblen  
Secretary



Become a Member of BSAS!  
Visit [bsasnashville.com](http://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](http://bsasnashville.com). If you need more information, write to us at [info@bsasnashville.com](mailto: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](mailto:info@bsasnashville.com).