

# The ECLIPSE

September  
2016

*The Newsletter of the Barnard-Seyfert Astronomical Society*

**Next Membership Meeting:**  
September 21, 2016, 7:30 pm  
Glendale United Methodist  
Church - Fellowship Hall  
900 Glendale Lane

*Topic: What's Up?  
Details on page 9*

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## From the President:

September should bring a few nights that are clear and cool, some relief from the extreme humidity of this summer. If you thought it rained a lot, you were right! We had almost 8" at the house in July and about 6" in August. Maybe, just maybe we'll be tempted to get the telescope out and spend a few hours outside. We hope we got the rain out of the way this year so that next year we'll be looking at a blue sky on Eclipse Day.

Lots of interesting news from our traveling spacecraft. This month we will launch Osiris-REX, a mission that will travel to Asteroid Bennu (arriving in August of 2018), pick up a sample in July 2020 and then return to Earth. The European Space Agency will guide Rosetta to the surface of Comet 67/P Churyumov-Gerasimenko on September 30 (a slow crash landing), and we look forward to one more year of amazing images from the Cassini spacecraft at Saturn. Cassini's planned end descent will feature daring passes between the rings and the planet before diving into Saturn September 15, 2017. Meanwhile the Juno spacecraft has just finished "Perijove1" we are waiting for the cool pics!

ESO announced a planet in the habitable zone of Proxima Centauri. Little red star, so the habitable zone is close....the planet orbits every 11 days. The star is also a flare star that occasionally undergoes dramatic increases in brightness. The planet may well be tidally locked with its star. Not quite Kansas.

If your house is like mine, needs a good cleaning. We'd better start, though, because all our out of town friends and relatives will be looking for a place to stay next August! Need a good reason to renew your membership? Over the next year, we'll have solar glasses for members! Biggest coast to coast block party for the Great American Eclipse:



## Officers

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Ex-officio

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## Observing Highlights September and October

### Open Clusters

M6 (*Butterfly*), M7, M23,  
M21, M18, M25, M26,  
M11 (*Wild Duck*),  
M29, M73, M39, M52

### Galaxies

M101/M102, NGC 6822 (*Barnard's*)

### Globular Clusters

M5, M80, M4, M107, M13, M12,  
M10, M62, M19, M92, M9, M14,  
M28, M69, M22, M70, M54, M56,  
M55, M71, M75, M72, M15, M2, M30

### Multiple Star Systems

Epsilon Bootis (*Izar or Pulcherrima*)  
Mu Bootis (*Alkalurops*),  
Beta Scorpii (*Acrab*),  
Alpha Herculis (*Rasalgethi*),  
Epsilon Lyrae (*Double Double*),  
Beta Cygni (*Albireo*)

### Variable Stars

Mu Cephei  
(*Herschel's Garnet Star*)

### Nebulae

NGC6302 (*Bug*),  
NGC6309 (*Box*),  
NGC6543 (*Cat's Eye*),  
M20 (*Trifid*), M8 (*Lagoon*),  
M16 (*Eagle*), M17 (*Swan*),  
M57 (*Ring*),  
NGC6818 (*Little Gem*),  
NGC6826 (*Blinking Planetary*),  
M27 (*Dumbbell*),  
NGC6888 (*Crescent*),  
NGC6905 (*Blue Flash*),  
NGC6960/6974/6979/  
6992/6995 (*Veil*),  
NGC7000 (*North America*),  
NGC7009 (*Saturn*),  
IC 5146 (*Cocoon*),  
NGC7293 (*Helix*),  
NGC7635 (*Bubble*),  
NGC7662 (*Blue Snowball*)

### Other

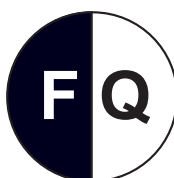
Barnard's Star  
M24 (*Small Sagittarius Star Cloud*)  
Cr 399 (*Coat Hanger*)

## Upcoming Star Parties

Saturday 9/3	Private Star Party <a href="#">Natchez Trace Parkway mile marker 412</a> ( <a href="#">Water Valley Overlook</a> )
Saturday 9/10 8:00 pm to 10:00 pm	Public Star Party <a href="#">Long Hunter State Park</a>
Saturday 9/24 8:00 pm to 10:00 pm	Public Star Party <a href="#">Cornelia Fort Airpark</a>
Saturday 10/1	Private Star Party <a href="#">Natchez Trace Parkway mile marker 435.3</a>



Sep 1, 30  
Oct 30



Sep 9  
Oct 8



Sep 16  
Oct 15



Sep 23  
Oct 22

## Happy Birthday Thomas Wright by Robin Byrne

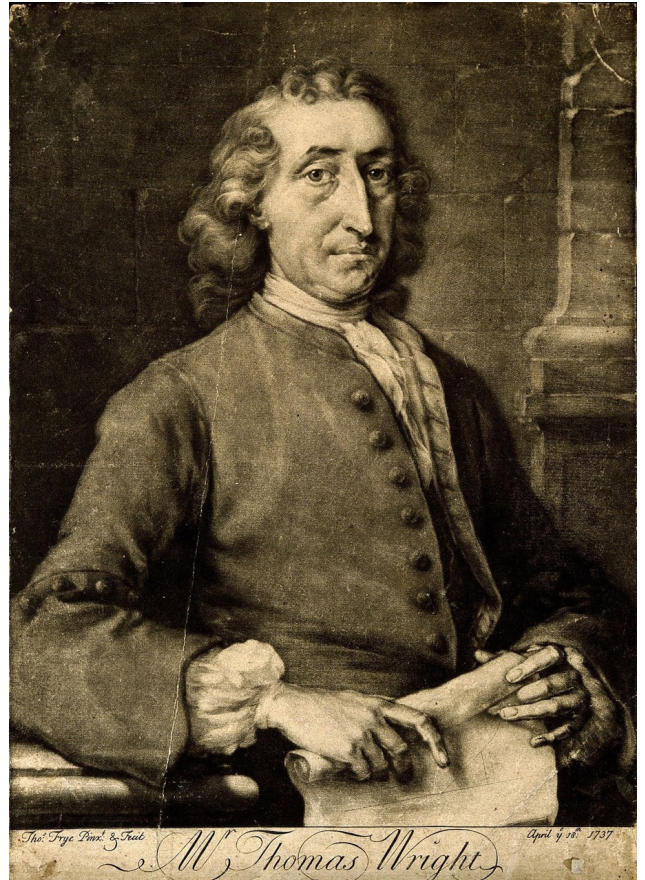
This month we celebrate the life of an amateur astronomer who was way ahead of his time. Thomas Wright was born September 22, 1711 in Byer's Green, England. The son of a carpenter and yeoman, Wright attended private school from age five to eight. He then went to a public school. However, due to a speech impediment, he struggled with Latin, so he dropped out of school to study mathematics and writing on his own.

At the age of 14, he began an apprenticeship with a watch and clock maker. During his free time, Wright studied astronomy, spending all his money on books. While Wright's mother encouraged this, his father thought his behavior was so odd, he took drastic measures in the hopes of saving his son from this insanity - he burned his books. Wright ran away from home with the few books he could save. After some harrowing encounters, he heard from his father that he was welcome to come back home. However, that was the end of his apprenticeship.

So here Wright is, age 18, and no job. While figuring out what he should do, Wright studies astronomy, math, navigation, and geography. In January 1730, Wright signs on to be a sailor, making a journey to Amsterdam. Along the way, they hit rough seas, and he was almost thrown overboard. That was the end of his sailing career. Instead, Wright opens a school to teach mathematics and navigation to seamen.

Meanwhile, Wright's interest in writing took hold with his first attempts to publish. He had compiled almanacs for the years 1732 and 1733. After traveling 200 miles to London, the publisher who had indicated they would print them, backed out. Walking back home with a few shillings in his pocket, Wright was despondent. Then he heard from a publisher in Edinburg, offering to print his work. Only a few copies were sold, and the publisher extorted money from Wright, so he was not off to a good start.

With the publication of "Calculation & Type of the Total Eclipse of the Moon for November 20, 1732" things began to look up. In 1733, the Rector of Sunderland, impressed with Wright's intelligence, hired him as a companion. With his situation much improved, Wright went on to publish many more writings, covering topics ranging from navigation to astronomy. He also created brass dials of his own design to determine the Sun's position. Wright's passion for



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## Thomas Wright, continued

teaching continued, as well, spending every winter in London to teach courses for the next 13 years.

Wright's writing continued, publishing various books, including three devoted to astronomy: "The Use of the Globes, or The General Doctrine of the Sphere" (1740), "Clavis Coelestis, Being the Explication of a Diagram Entitled, A Synopsis of the Universe or the Visible World Epitomized" (1742), and "An Original Theory or a New Hypothesis of the Universe Founded on the Laws of Nature" (1750). It was in these books that Wright's ideas about the nature of the universe were first brought forth. Concerning comets, Wright had made his own telescopic observations, and made calculations of the orbits of comets. Contrary to the popular belief that comets were transient objects, Wright agreed with Halley that they are in orbit around the Sun and will return. Looking at the stars, he believed that he was looking at objects similar to our Sun, just very far away, and that each would have its own system of planets. Wright also thought that stars were not all at one distance fixed to a celestial sphere, but instead were distributed at a variety of distances. He also held the belief that all stars are in motion, even measuring the proper motion of a few stars as confirmation. This led to his idea about the structure of the Milky Way, picturing it shaped like a disk with all the stars orbiting in one direction. Wright even went so far as to propose that faint nebulae were objects like the Milky Way, but much farther away. In other words, Wright proposed that there were galaxies beyond the Milky Way. However, due to his amateur status, professional astronomers took no notice of Wright's ideas.

That didn't stop others from appreciating Wright's thoughts. He became a popular guest of prominent people, including the Duke and Duchess of Kent, giving evening lectures to their guests. He would talk about a variety of topics, including navigation, surveying, astronomy, and mathematics. The philosopher Immanuel Kant heard Wright's ideas, and became a prominent endorser of the idea that our galaxy is shaped like a disk, and that there are other galaxies beyond the Milky Way. In 1742, Wright was offered a position as Professor of Navigation in the Imperial Academy in St. Petersburg, but Wright declined, saying that the annual salary of 300 Pounds was not enough to lure him away from his homeland.

In addition to his astronomical work, Wright also designed magnificent gardens, and drew up architectural designs. He documented archaeological sites in Ireland, helping to preserve many antiquities.

In 1762, Wright retired, returning to Byer's Green. Here he enjoyed a solitary life, his neighbors deeming him to be eccentric. His house was filled with books, and Wright even began building a tower to use as an observatory. Sadly, he died before its completion on February 25, 1786.

Thomas Wright had the freedom to "think outside the box" when it came to established astronomical ideas, and often turned out to be right well before the professionals figured it out.

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## Thomas Wright, continued

He is quoted as saying, "Every age of the World as Knowledge is increased either from improved Imagination or repeated Observations, producing something new concerning it." Wright's imagination definitely served him well. As we peer through our telescopes, remember this fellow amateur astronomer who took ideas to a whole new level.

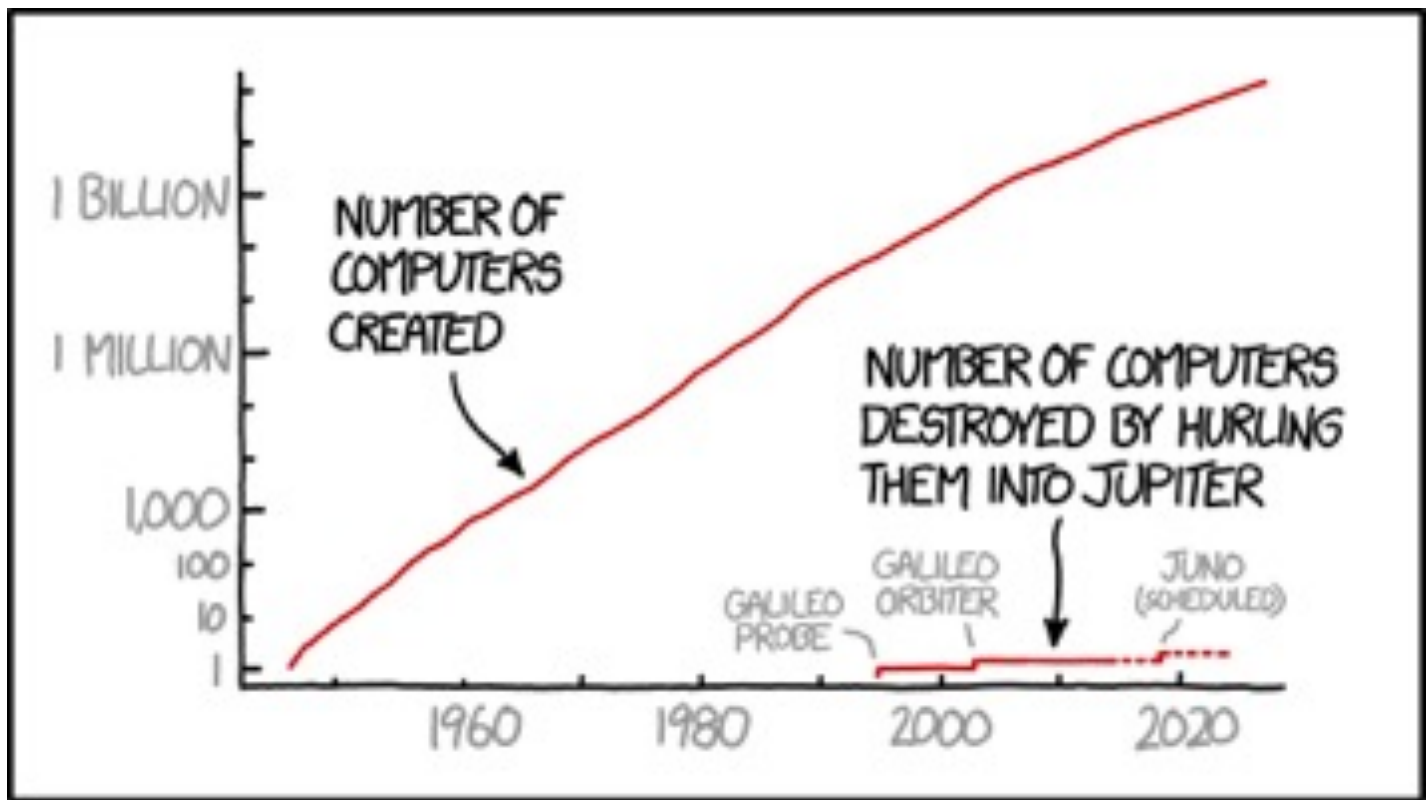
## References:

[Vera Gushee. "Thomas Wright of Durham, Astronomer." Isis 33, no. 2 \(1941\): 197-218.](#)

[Thomas Wright- Star Date: September 21, 2011 by Damon Benningfiled](#)

[Wright, Thomas encyclopedia.com](#)

[Thomas Wright \(astronomer\) Wikipedia](#)

[xkcd](#)

NASA NEEDS TO PICK UP THE PACE IF THEY EVER WANT TO FINISH THE JOB.

**Barnard-Seyfert Astronomical Society  
Minutes of a Regular Meeting of the Board of Directors  
Held On Wednesday, August 3, 2016.**

The regular meeting of the Board of Directors of the Barnard-Seyfert Astronomical Society was held August 3, 2016, at Glendale United Methodist Church, 900 Glendale Lane, Nashville, TN 37204. Present were Mike Benson, Spencer Buckner, Gary Eaton, Tom Guss, Bud Hamblen, Kat Underwood and Theo Wellington. Theo called the meeting to order at about 7:45 PM. Theo asked for a motion to approve the minutes for the July 6, 2016, board meeting as printed in the August 2016 issue of the Eclipse. Tom so moved, Spencer seconded, and the minutes were approved by unanimous voice vote. Tom Guss reported that there was \$2,288.21 in the checking account and \$1,619.95 in the savings account.

A solar viewing event was scheduled at Centennial Park on Sunday, August 21, 2016, one year before the total solar eclipse.

After discussion, the board decided to purchase 1,000 eclipse glasses from American Paper Optics. Each society membership will be entitled to receive up to 12 pairs of glasses.

Spencer moved to adopt the following resolution:

Resolution 2016-08-03: To purchase 1,000 eclipse glasses from American Paper Optics, Bartlett, TN, at an estimated cost of \$552.50. The glasses will be imprinted with the BSAS logo. Up to 12 pairs will be available to each society membership and the extra pairs will be sold for a price to be determined.

Kat seconded the motion, and the resolution was adopted by a unanimous voice vote.

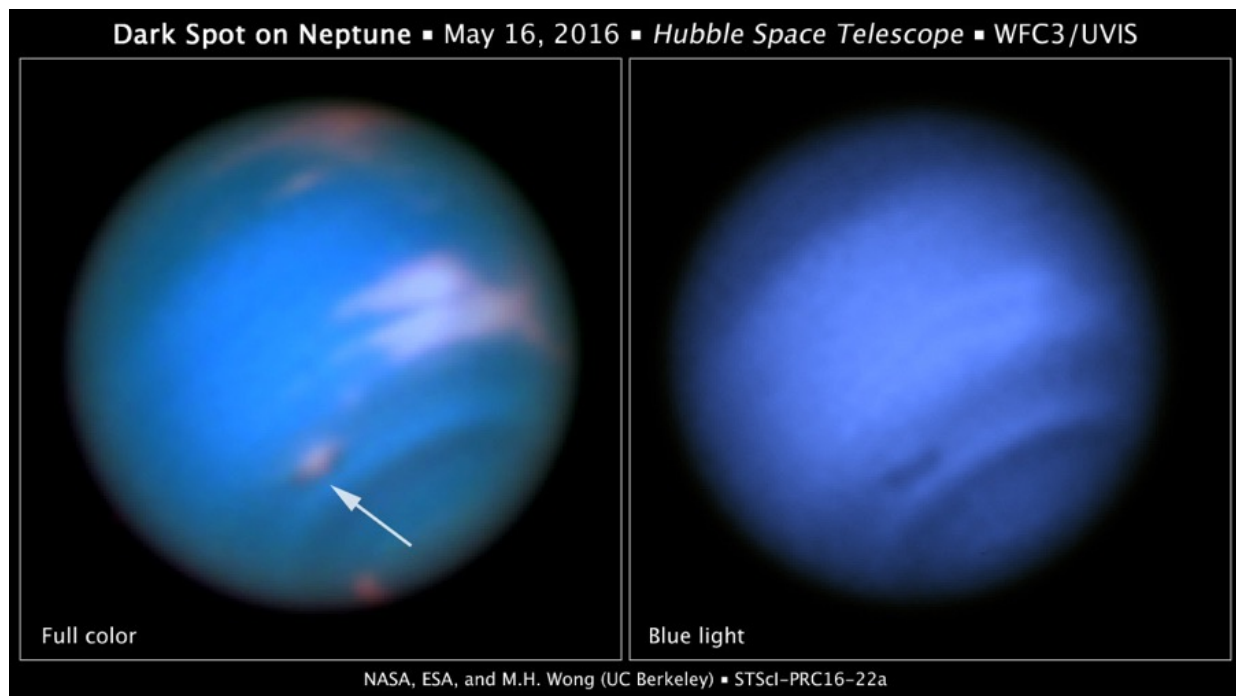
Gary will head the search committee to recruit new directors and officers for 2017.

There being no further business, the meeting was adjourned at about 8:45 PM.

Respectfully submitted,

Bud Hamblen  
Secretary

Send your cool astrophotos to  
[eclipse@bsasnashville.com](mailto:eclipse@bsasnashville.com)!



Credit: [NASA, ESA, and M.H. Wong and J. Tollefson \(UC Berkeley\)](#)

## Volunteer opportunities:

1. Members are welcome to join Chuck Schlemm at his booth at the Fairview Nature Fest. On a good day they might have 10,000 visitors, so he will need some help!
2. Big South Fork / ORION Oak Ridge group star party at welcome center near interstate. Kind of funny text. I don't know who wrote about looking at constellations close to earth...

- Theo



## Big South Fork National River & Recreation Area

National Park Service  
U.S. Department of the Interior

Big South Fork NRA  
4564 Leatherwood Rd  
Oneida, TN 37841



### Night Skies Over Crossville Friday September 9th



## FIND YOUR PARK

Join Dr. Owen Hoffman for this sidewalk astronomy program as he navigates many of our most visible celestial neighbors. Get a close up view of our moon and well as some of the planets and constellations nearest earth. A telescope will be provided.

- **When:** Friday, September 9, 2016 at 8:00 p.m. (CT)
- **Where:** Crossville-Cumberland County Visitor Center, 176 River Otter Dr. Crossville, TN.
- Located just north of I-40 off of Genesis Rd. (exit 320) by Stonehaus Winery and across from Stone Memorial High School
- This is a free event and no reservations are required.
- Children must be accompanied by an adult.

For more information, please contact  
Crossville-Cumberland County Visitor Center at 931-787-1755.





## From the President, continued

August 21, 2017. We are getting inquiries from Europe and Asia...so we'll be hosting vacationers from around the world.

Value dark skies? Write a note to Rody Blevins ([rblevins@vec.com](mailto:rblevins@vec.com)) President/CEO of Volunteer Energy Cooperative. They are installing new street lighting near Pickett State Park... but they are not shielded - they use a dome to diffuse light outward even though they are LED lights. Monique Hodge is hoping that having us write will send a message that we want Pickett to stay dark!

Clear skies,

Theo Wellington

Next BSAS meeting  
September 21, 2016, 7:30 pm  
Glendale United Methodist Church - Fellowship Hall  
900 Glendale Lane

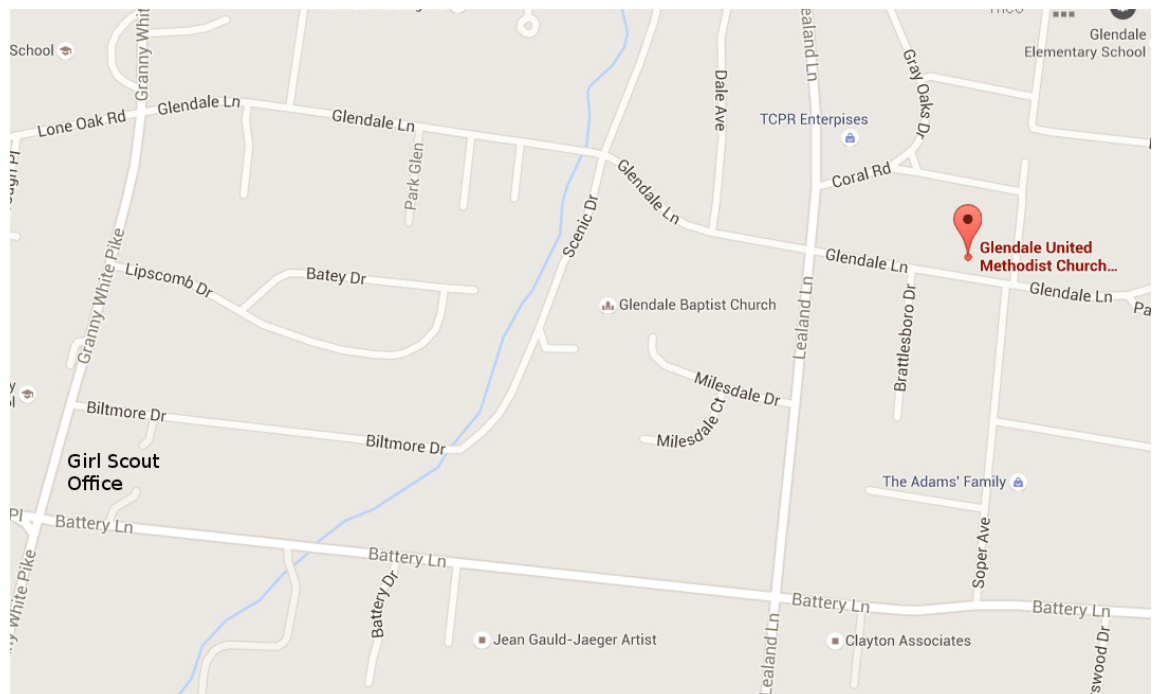
Topic: "What's Up?"

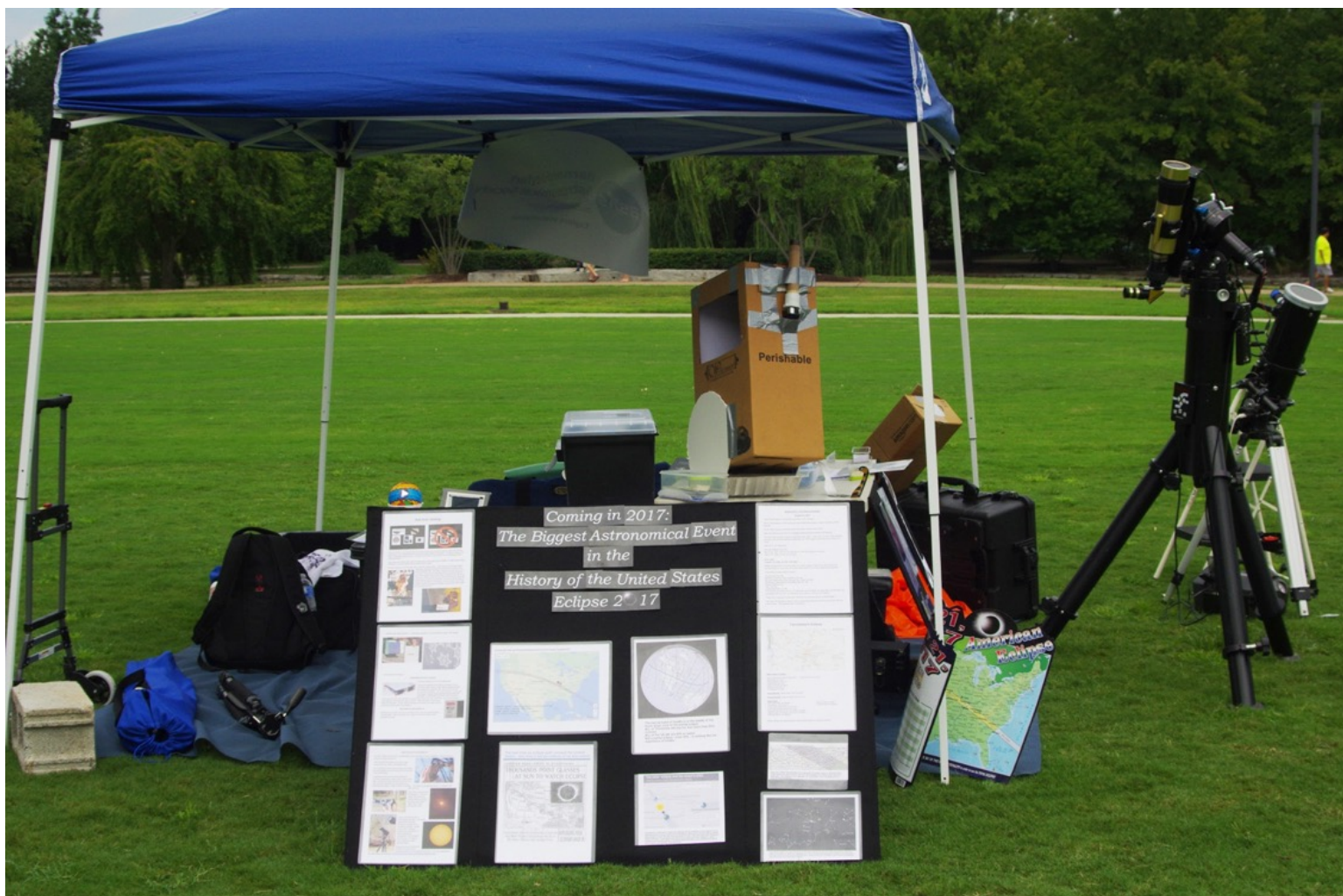
*Gary Eaton and Terry Reeves show us "What's Up" in our fall skies.  
See how to find some of the more interesting sights of autumn.*

**NOTICE:** the location for our board and member meetings has changed through December!

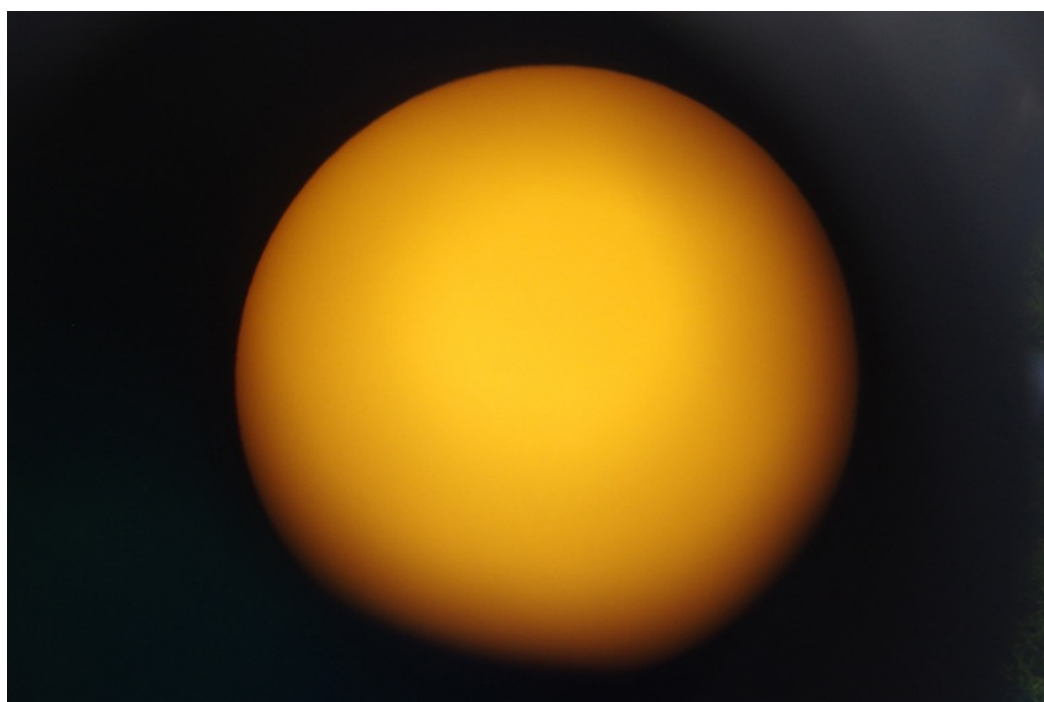
The Girl Scouts are renovating, so we will be at the [Glendale United Methodist Church, 900 Glendale Lane, Nashville 37204](#).

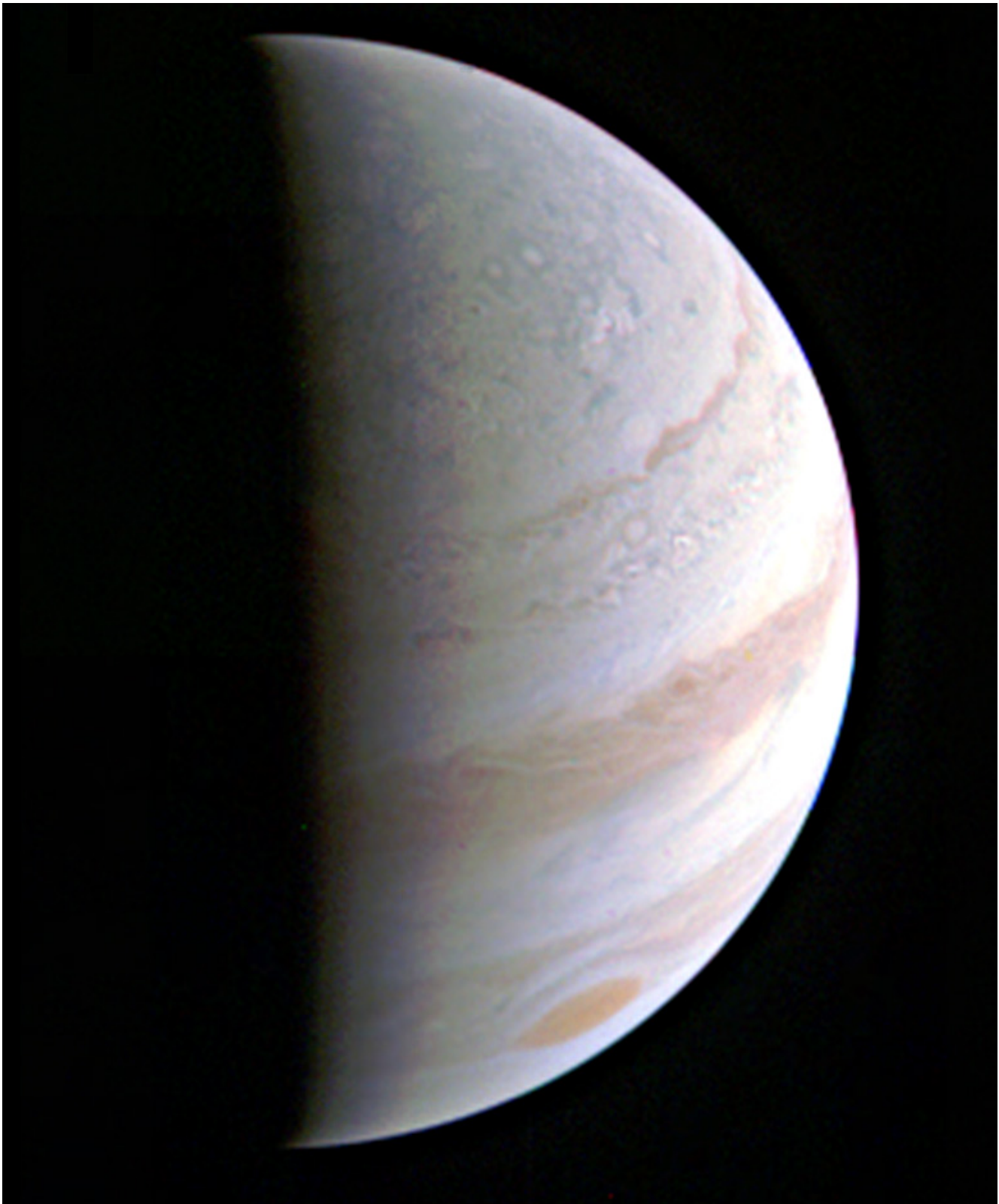
It's just around the block from the Girl Scout office.





August 21, 2016: BSAS at Centennial Park. One year to Eclipse Day!





**Speeding Towards Jupiter's Pole:** Jupiter's north polar region is coming into view as NASA's Juno spacecraft approaches the giant planet. This view of Jupiter was taken on August 27, when Juno was 437,000 miles (703,000 kilometers) away.

**Barnard-Seyfert Astronomical Society  
Minutes of the Monthly Membership Meeting  
Held On Wednesday, August 17, 2016.**

The Barnard-Seyfert Astronomical Society held its monthly membership meeting at the Glendale United Methodist Church, 900 Glendale Lane, Nashville, Tennessee, on Wednesday, August 17, 2016. Twenty members and guests signed in. Theo Wellington called the meeting to order at 7:45pm. Theo then called for a motion to approve the minutes of the July meeting as printed in the August Eclipse. Chuck Schlemm so moved, Spencer Buckner seconded, and the minutes were approved by an unanimous voice vote. Bud Hamblen reported that as of August 3 there was \$2,288.21 in the club's checking account and \$1,619.95 in the savings account.

The following requests for outreach assistance were received:

- \* Cumberland Paddle on August 18 and following full moon dates at Hamilton Creek Recreation Area, Percy Priest Lake.
- \* A home school group at a date to be determined
- \* Cheekwood Full Moon Festival in October.

Contact Theo for more information.

Curt Porter noted that the Cedars of Lebanon Hamfest has been moved to August 28 because a cycling event needed to be scheduled for August 27.

The following star parties were announced:

- \* Sunday, August 21, solar observing Centennial Park.
- \* Saturday, September 3, private star party at the Natchez Trace Water Valley Overlook (mile marker 412).
- \* Saturday, September 10, Long Hunter State Park.
- \* Saturday, October 1, private star party at Natchez Trace mile marker 435.3.

Dr Spencer Buckner, Austin Peay State University Department of Physics and Astronomy, gave a presentation on the detection of gravitational waves by the LIGO Lab (Laser Interferometer Gravitational-Wave Observatory) on September 14, 2015, and December 26, 2015. The gravitational waves were generated by pairs of black holes coalescing into single black holes, releasing extreme amounts of energy in the form of gravitational waves and other forms of energy. Dr Buckner answered questions at the conclusion of his talk.

There being no further business, Curt Porter moved for adjournment, Rob Mahurin seconded, and the meeting was adjourned at 9:30 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) or call Theo Wellington at (615) 300-3044.

## 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).