

The ECLIPSE

December
2013

The Newsletter of the Barnard-Seyfert Astronomical Society

Next Membership Meeting:

December 18, 2013, 6:30 pm
Cumberland Valley
Girl Scout Council Building
4522 Granny White Pike

Program Topic:

Brad Hill, Planetary Photography
Annual potluck banquet
and silent auction
(details on page 4)

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From the President

I hope everyone had a great ISON perihelion day, also known as Thanksgiving.....

If you didn't come to Spencer Bucker's talk, he had some great ideas for what to get the sky watcher in your family.....or ask for yourself! New gear is always fun, and there are some simple items that can make enjoying the night skies even more enjoyable.

I have had people ask about the small red lantern lights that I have been bringing to star parties....these are inexpensive but very useful and can be found (among other places) at Wal-Mart*. Get some for your Boy or Girl Scout troop!

So you have a new telescope but still need to learn your way around the night sky? Planispheres work well. They don't require a battery or a cell phone. Basically a round star chart that you set on a dial to the current date and time, these let you see the bright stars and major constellations that are visible. Many are coated or plastic to survive our Tennessee dewy nights. I have one I've been carrying around for a long time.... it has planet positions for 1976 on the inside cover. Nice way to round out an order on Amazon to reach the free shipping level, but you can find them locally at the Adventure Science Center gift shop and at Hobby Lobby.

Subscriptions to Sky and Telescope and Astronomy magazines are great....ask, we get a club discount on these.

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Observing Highlights December and January

Planets

Jupiter
Mars
Mercury

Galaxies

M31 (*Andromeda*),
M32, M110,
M33 (*Triangulum*),
M74, M77

Multiple Star Systems

Gamma Delphini
Polaris

Globular Clusters

M15, M2
M72, M75
M30, M79

Open Clusters

M73, M29,
M39, M52,
NGC457 (*ET*),
M103, NGC654,
NGC663,
NGC884/869
(*Double Cluster*),
M34, M45,
M36, M37, M38

Nebulae

NGC7000 (North America),
IC5146 (*Cocoon*),
NGC7293 (*Helix*),
M76 (*Little Dumbell*),
NGC1499, (*California*),
M1, M42 (*Orion*),
M43, M78

Variable Stars

Mu Cephei
(*Herschel's Garnet Star*),
Beta Persei (*Algol*),
Omicron Ceti (*Mira*),
R Leporis
(*Hind's Crimson Star*)

Star Parties for December and January

Sat 12/7 7:00-9:00	Shelby Bottoms Nature Center
Sat 12/28	BSAS trace mile marker 435.5
Sat 1/4 7:00-9:00	Edwin Warner Park
Fri 1/24 7:00-9:00	Bells Bend Outdoor Center



Dec 2
Jan 1, 30



Dec 9
Jan 7



Dec 17
Jan 15



Dec 25
Jan 23

Happy Birthday Project Mercury by Robin Byrne

This month we celebrate the official start to America's manned space exploration. The story, however, begins much earlier. As early as 1956, the United States Air Force was beginning to explore the idea of sending men into space and had solicited proposals for spacecraft designs. Ultimately, the design proposed by Max Faget was agreed upon. This design was shaped like a cone, with the blunt end covered with a heat shield used during reentry.

The launch of Sputnik 1 by the Soviet Union on October 4, 1957 caught the United States by surprise. It took four months for the U.S. to successfully launch a satellite into orbit. Meanwhile the Soviets had already launched a second satellite with a dog, Laika, on board. The U.S. was looking bad. We had to act fast to catch up. The next logical step would be to send a man into space. In October of 1958, Project Astronaut was approved by Congress, but President Eisenhower didn't like the name, because it gave too much importance to the person in the capsule. On December 17, 1958 Project Mercury was officially announced.

Named for the fleet-footed Roman god, the Mercury program was meant to get a man into space as quickly as possible. But, first, we would need men qualified to take the ride. Eisenhower wanted the astronauts to be chosen from the ranks of military test pilots. They had to be between the ages of 25 and 40, no taller than 5 ft 11 in, and have a college degree in engineering. Starting with a group of 508 candidates, 110 were chosen to be interviewed, and from

those, it was narrowed down to 32 men to be put through a variety of tests. Basic physical health was evaluated. Their ability to withstand noise, vibrations, g-forces, isolation and heat was tested. They were given an array of psychological tests to evaluate their mental stability. Ultimately, seven men were chosen: Malcolm S. Carpenter, Leroy Gordon Cooper, John H. Glenn, Virgil "Gus" Grissom, Walter M. Schirra, Alan B. Shepard, and Donald "Deke" Slayton.

Before we sent anyone into space, the spacecraft needed to be developed and tested. From 1958 to 1961, the Mercury capsule underwent design, construction and testing. The first tests were unmanned, which is good, since many of the flights were unsuccessful. The next step was to test the vehicle with an animal on board. While the Soviet Union preferred using dogs for their tests, the United States used monkeys and chimpanzees. On January 31, 1961, a chimp named Ham was launched on a suborbital flight, going straight up and down. Despite going higher than planned, the mission was the needed success to send a man into space on the next mission.

Once again, the Soviet Union beat the U.S. to the punch. On April 12, 1961, Yuri Gagarin completed one orbit of the Earth and successfully returned. One month later, Alan Shepard became the first American in space on May 5, completing a 15 minute suborbital flight. Gus Grissom followed-up with a second suborbital flight, but we had yet to achieve orbit. Finally, on February 20,

Project Mercury, continued

1962, John Glenn became the first American in orbit, completing three orbits before returning home. Each subsequent Mercury flight pushed the spacecraft to longer and longer missions, culminating with Gordon Cooper's 36 hour flight in May of 1963. The only Mercury astronaut to not fly during this time was Deke Slayton, due to an irregular heartbeat. He was reassigned to the Astronaut Office and chose the crews for each mission. Slayton ultimately did get to fly in space in 1975 as part of the Apollo-Soyuz Test Flight mission, America's first joint mission with the Soviets.

Throughout the Mercury Program, the United States was playing catch-up with the Soviets, and we didn't surpass them until the Gemini missions in the mid-1960's. Despite our shaky start, it

was only a couple weeks after Alan Shepard's flight that President Kennedy announced that we would go to the Moon before the decade was out. That bold initiative gave everyone involved the push needed to make great strides in the next eight years. Had it not been for the first tentative steps of Mercury, we would never have taken one giant leap for mankind.

References:

Project Mercury - Wikipedia

http://en.wikipedia.org/wiki/Project_Mercury

What Was Project Mercury? | NASA

<http://www.nasa.gov/audience/forstudents/k-4/stories/what-was-project-mercury-k4.html>

Mercury - Encyclopedia Astronautica

<http://www.astronautix.com/project/mercury.htm>

**Next BSAS meeting
December 18, 2013, 6:30 pm
Cumberland Valley
Girl Scout Council Building
4522 Granny White Pike**

The December meeting is our annual potluck banquet! Meeting begins at 6:30 with dinner so we have plenty of time to eat, enjoy fellowship, and of course participate in the annual silent auction. BSAS provides the meat and drink, you bring your choice of side dish or dessert.

The silent auction consists of whatever you would like to bring... books, astronomical gear, astronomy related just about anything! We'll have sheets to fill in, you just need to decide what you want the starting bid to be. All proceeds benefit the club!

Everyone is welcome, bring a friend, come and have fun.

From the President, continued from page 1

Our winter sky is beautiful to observe, and we get some of our best night skies in winter. Stay warm in the cold with thermal socks, handwarmers, and fold back gloves.

Or maybe you want an item from the “Hot Products for 2014” list (January Sky and Tel)...items range from phone apps to an amateur spectroscope! Many of us have DSLR cameras....if you want to go out in the field without a telescope, the iOptron SkyTracker goes on a tripod and allows your camera to track the sky. Lots of fun toys....even without a new telescope!

What NOT to give? A name to a star that you pay money for! You can name any star yourself, print out a nice certificate, and be just as “official.” Or name a galaxy for free at nameagalaxy.com. If you have a teenager or a significant other with a well, middle school sense of humor, there’s always buyuranus.com.

Scientists recently announced that they think that much of the element gold is formed when neutron stars merge and the resultant explosion sends many newly created elements out. So giving the gift of gold is giving a remnant of a gigantic stellar explosion - very romantic!

We’ll hope to see your pictures, see you at the December banquet, at star parties, and in general have a great holiday season....whether or not Comet ISON sparks enough to see in the winter dawn.

Clear, dark skies,

Theo Wellington

* <http://www.walmart.com/ip/Glow-Lantern-6-with-6-PDQ/20440567>

Barnard-Seyfert Astronomical Society
Minutes of the Regular Meeting of the Board of Directors
Held on Wednesday, November 6, 2013

The board of directors of the Barnard-Seyfert Astronomical Society (BSAS) met in regular session at the Cumberland Valley Girl Scout Council Building in Nashville, Tennessee on Wednesday, November 6, 2013. Present were Joe Boyd, Spencer Buckner, Bill Griswold, Bud Hamblen, Melissa Lanz, Bob Norling, Poppy Simmons and Theo Wellington. A quorum being present, President Theo Wellington called the meeting to order at 7:38 PM. Theo Wellington asked for corrections to the minutes of the previous board meeting held on October 2, 2013, and, there being none, asked for a motion declaring them to be approved as published in the November 2013 edition of the Society's Eclipse newsletter. Spencer Buckner so moved and Bob Norling seconded his motion, which was subsequently passed by a unanimous voice vote. Treasurer Bob Norling reported that the BSAS had \$2,310.93 in its regular checking account and \$1,251.36 in its equipment account.

Bob Norling reported that there were 12 orders for the 2014 RASC Observer's Handbook and 7 orders for the 2014 Guy Ottewell Astronomical Calendar. Because Bob will not be able to attend the November membership meeting he will place orders prior to the meeting for delivery in time for the December meeting.

Theo Wellington, Spencer Buckner and Jack Stearman (Cumberland Astronomical Society) provided telescopes at the Girl Scout Camp Sycamore, October 18, and were rewarded with Girl Scout cookies. Bud Hamblen, Jack Stearman and Ben McLerran (Cumberland Astronomical Society) operated telescopes at a birthday party at Percy Warner Park, November 3.

Theo Wellington reported that she made a 15 minute presentation promoting the BSAS at the recent Geek Media Expo, Franklin, TN. <http://nashvillegeeklife.com/> publicizes "geeky" events in the Nashville area. BSAS meetings and star parties should qualify as geeky enough for Geek Life and will be publicized there.

Theo Wellington described upcoming star parties:

- 11/8 Public star party at Bowie Park
- 11/9 Public star party at Warner Park
- 11/16 Girl Scout campout at Montgomery Bell State Park
- 11/30 Private star party at Natchez Trace MM 412 (Water Valley Overlook)
- 12/7 Public star party at Shelby Bottoms.

Minutes of the Regular Meeting of the Board of Directors, continued

The group “12th and Broadway” wants to provide 50 “Nashville Themed Samoas”. There was a brief discussion of finding a name to deemphasize the “party” implications of a public star party, owing to other offers by 12th and Broadway of wine and live music.

Theo Wellington described programs for upcoming member meetings:

- 11/20 Spencer Buckner, All I Want for Christmas ...
- 12/18 Brad Hill, Planetary Photography
- 1/13 How to Use Your New Astronomy Toy, presented by the members of the BSAS. Spencer Buckner will not be able to present owing to travel.
- 2/19 Josh Emery, Studying a Dead Comet
- 3/19 possibly a “What’s Up” with a Messier Marathon theme
- 4/16 Theo will contact Fabienne Bastien to see whether she can speak on stellar photometry.

Theo Wellington submitted revised star party dates for 2014:

Day	Date	Where	Time	Notes
Sat	1/4	Warner Park	700 - 900 pm	
Fri	1/24	Bells Bend	700 - 900 pm	
Sat	2/1	BSAS Trace		
Sat	2/8	Shelby Bottoms	700 - 900 pm	
Sat	3/1	BSAS trace		Practice Messier Marathon
Sat	3/8	Warner Park	730 - 930 pm	
Sat	3/22	Long Hunter	730 - 930 pm	
Sat	3/29	BSAS trace		messier marathon at Spot Observatory?
Sat	4/5	Shelby Bottoms Air Park	800 - 1000 pm	Astronomy Day?
Sat	4/5	Nathan Bedford Forrest State Park	all day	Astronomy Day program for a local school Messier Marathon make-up date
Sat	4/26	BSAS trace		
Fri	5/2	Bells Bend	830 - 1030 pm	
Sat	5/31	BSAS trace		
Sat	6/21	BSAS Trace		
Sat	6/28	Long Hunter	830 - 1030 pm	Great American Campout
Sat	7/19	No site determined		Possibly take July off.
Sat	7/26	BSAS trace		
Fri	8/15	Bells Bend	830 - 1030 pm	
Sat	8/23	BSAS trace		
Sat	9/13	Long Hunter	800 - 1000 pm	
Sat	9/20	BSAS trace		
Sat	10/4	ASC	730 - 1030 pm	Fall Astronomy Day / Probably International Observe the Moon Night

Minutes of the Regular Meeting of the Board of Directors, continued

Sat	10/18	BSAS trace		
Sat	11/1	Shelby Bottoms	700 - 900 pm	
Fri	11/14	Bells Bend	700 - 900 pm	
Sat	11/22	BSAS trace		
Sat	12/13	Warner Park	700 - 900 pm	Geminid meteor shower
Sat	12/20	BSAS trace		

Bill Griswold will apply for adjacent Friday and Sunday dates for the Natchez Trace sites to have as alternate dates in case of cloudy weather.

Joe Boyd presented several drafts of the existing loaner form and will present a revised loaner form at a future meeting. There was discussion of listing the available equipment for loan on the BSAS web site to increase the visibility of the loaner program.

Theo Wellington presented officers and directors-at-large for next year.

President: Theo Wellington

Vice President: Joe Boyd

Secretary: Bud Hamblen

Treasurer: Bob Norling

Directors-at-Large:

Bill Griswold (in year 2 of second 3 year term)

Melissa Lanz (in year 3 of term)

Kris McCall (in year 3 of term)

Poppy Simmons (in year 2 of term)

Steve Cobb (to begin second 3 year term)

Jeffrey Horne (to begin 3 year term)

Bill Griswold reported that Girl Scouts has not yet responded on renting space for 2014, but promised a response in the next day or two. We have paid for use of the space through the first of the year.

Bill Griswold relinquished with regret the editorship of the Eclipse owing to health reasons. Theo Wellington will ask Drew Gilmore to assume the editorship. Bill has performed ably as editor.

Since there was no further business to discuss, Spencer Buckner moved that the meeting be adjourned. Bill Griswold seconded his motion that passed by a unanimous voice vote of the board at 8:46 PM.

Respectfully

Bud Hamblen, Secretary

**Barnard-Seyfert Astronomical Society
Minutes of the Monthly Membership Meeting
Held On Wednesday, November 20, 2013**

The Barnard-Seyfert Astronomical Society held its monthly membership meeting for October at the Girl Scouts of Middle Tennessee, 4522 Granny White Pike, Nashville, Tennessee, on November 20, 2013. President Theo Wellington called the meeting to order at 7:38 pm. Seventeen members and guests were present. Theo Wellington asked for a motion to approve the minutes of the October 16, 2013, membership meeting as published in the November 2013 issue of the Eclipse. Spencer Buckner made the motion, Steve Cobb seconded, and the minutes were approved by a unanimous voice vote. The treasurer's report was not presented because Bob Norling was away at the time of the meeting.

The following persons were nominated as officers and new directors at large for 2014:

Theo Wellington, President
Joe Boyd, Vice President
Bob Norling, Treasurer
Bud Hamblen, Secretary
Steve Cobb, Director at Large (2014-2016)
Jeffrey Horne, Director at Large (2014-2016)

The following persons are in current terms as directors at large for 2014:

Kris McCall (2012-2014)
Poppy Simmons (2013-2015)
Melissa Lanz (2012-2014)
Bill Griswold (2013-2015)

Theo Wellington asked for nominations from the floor and there being none, asked for a motion to elect the nominated slate of officers and directors at large. Steve Cobb so moved, Spencer Buckner seconded and the slate was approved by unanimous voice vote.

Theo Wellington announced the upcoming star parties:

November 30 - Private star party at Natchez Trace Water Valley Overlook (MM 412)
December 7, 7 to 9 PM - Public star party at Shelby Bottoms Nature Center
December 28 - Private star party at Natchez Trace MM 435.5

Minutes of the Monthly Membership Meeting, continued

December 31 - Public star party will be at Pickett State Park. Please let Theo Wellington know if you are coming with a telescope because they can provide overnight accommodations.

January 4, 2014, 7 to 9 PM - Public star party at Edwin Warner Park

Theo Wellington recommended a feature story in the Tennessean for November 20, 2013, about Edwin Hubble: "Teachable Moments: Hubble observed universe is bigger than we thought"

www.tennessean.com/apps/pbcs.dll/article?AID=2013311200121.

BSAS member and past president Tom Murdic imaged Comet C/2012 S1 (ISON) on November 18, 2013: "ISON and Spica 111813"

www.flickr.com/photos/murdic5/10930978765/

Spencer Buckner presented a program on "All I Want for Christmas Is ... Astronomy Toys." Among the newer products described was an afocal photography adapter to use an iPhone to photograph celestial objects through the eyepiece. The iPhone slips into the adapter and the adapter clamps to the eyepiece of a telescope. The iPhone is best suited for lunar or planetary photography. Other suggested gift ideas were memberships in the Barnard-Seyfert Astronomical Society and the Adventure Science Center. Sources for astronomy toys included: Orion Telescopes and Binoculars, www.telescope.com, (800) 676-1343; Oceanside Photo and Telescope, www.optcorp.com, (800) 483-6287; Astronomics, www.astronomics.com (800) 422-7875. Questions and answers focused on the iPhone afocal adapter. The adapter allows the iPhone to be moved out of the way in order to look through the eyepiece to acquire the object for photography, or simply to look. The observer uses the live view mode of the iPhone to focus the telescope for photography.

Theo Wellington mentioned that the free planetarium software Stellarium permits user supplied landscape imaging to be used instead of the landscapes provided with the software.

There being no further business, the meeting was adjourned at 9:11 PM.

Respectfully submitted,

Bud Hamblen, Secretary

Become a Member of BSAS!

Visit bsasnashville.com to download and print an application for membership.

All memberships have a vote in BSAS elections and other membership votes. Also included are subscriptions to the BSAS and Astronomical League newsletters.

Then fill it out and bring it to the next monthly meeting or mail it along with your first year's membership dues to:

BSAS
P.O. Box 150713
Nashville, TN 37215-0713

Annual dues:

\$20 Individual
\$30 Family
\$15 Senior (+65)
\$25 Senior Family (+65)
\$12 Student*

* To qualify as a student, you must be enrolled full time in an accredited institution or home schooled.

You can check the status of your membership at bsasnashville.com.

There will be a two month grace period before any member's name is removed from the current distribution list.

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.