

The ECLIPSE

February
2015

The Newsletter of the Barnard-Seyfert Astronomical Society

Next Membership Meeting:

February 18, 2015, 7:30 pm
Cumberland Valley
Girl Scout Council Building
4522 Granny White Pike

Topic: *SWAP: The Southwest
Astrophotography Seminar report*

Details on page 5

In this Issue:

President's Message	1
Observing Highlights	2
Happy Birthday Roger Chaffee by Robin Byrne	3
Membership Meeting Minutes January 21, 2014	7
Board Meeting Minutes January 7, 2014	8
Membership Information	11

From the President:

Save the dates March 20 - 22! Pickett State Park has invited us to come out for a spring star party/retreat/Messier marathon. The park will let us stay in the group camp bunkhouses. There is a meeting room / kitchen building available as well. There would be public viewing time in the early evening on Friday and Saturday, but the rest of the night would be ours under the darkest skies in Tennessee. We are inviting other groups from the area as well. This is a great opportunity to have some fun, help with outreach at Pickett, and enjoy some dark skies, weather permitting. We could also plan to have indoor activities (maybe telescope maintenance, collimation, etc... volunteers?) should the weather be less than perfect. You can bring your own food, or patronize local businesses. Camp on the field if you like. The Friends of the Park would like to provide at least one meal, so please let me know if you plan to go, and which nights. tmwellington@comcast.net. See you there!

I would also like to gather some ideas from all of you as to what kind of programs YOU would like in the coming year. What topics, speaker ideas, discussions... Please let us know. This is your group, we want to do things that interest everyone. What will get you out on a Wednesday night? Or perhaps there is a topic that you would like to speak about, volunteers are always welcome.

From time to time we have requests from small groups. The Boy Scouts are training Scout leaders at an event called "University of Scouting." They have asked if the BSAS would like to have a table in the vendor hallway at this event. If you would be



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Observing Highlights February and March

Open Clusters

NGC457 (*ET*), M103,
NGC654, NGC663,
NGC884/869
(*Double Cluster*),
M34, M45 (*Pleiades*),
M36, M37, M38, M35, M41,
M50, M47, M46, M93, M48,
M44 (*Beehive*), M67,
NGC2264 (*Christmas Tree*)

Variable Stars

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

Globular Clusters

M79

Nebulae

M76 (*Little Dumbell*),
NGC1499 (*California*),
M1, M42 (*Orion*), M43, M78,
NGC2392 (*Eskimo*)

Galaxies

M31 (*Andromeda*), M32,
M110, M33 (*Triangulum*),
M74, M77, M81, M82

Multiple Star Systems

Eta Cassiopeiae,
Gamma Arietis,
Gamma Andromedae,
Beta Orionis (*Rigel*),
Alpha Geminorum (*Castor*)

Upcoming Star Parties

Sat 2/7 6:30 - 8:30 pm	Edwin Warner Park
Fri 2/20 6:30 - 8:30 pm	Bowie Nature Park (Fairview)
Sat 2/21	Private Star Party Natchez Trace Parkway mile marker 433.5
Sat 3/14 8-10 pm	Long Hunter State Park
Sat 3/21	Private Star Party Natchez Trace Parkway mile marker 412 (Water Valley Overlook)
Sat 3/28 8-10 pm	Shelby Bottoms Nature Center



Feb 18
Mar 20



Feb 25
Mar 27



Feb 3
Mar 5



Feb 11
Mar 27

Happy Birthday Roger Chaffee by Robin Byrne

This month we remember one of our fallen astronauts. Roger Chaffee was born in Grand Rapids, Michigan on February 15, 1935. His family, however, didn't actually live in Grand Rapids; they lived in Greenville, MI. The previous month, his father, Don, was quarantined with scarlet fever. Since Roger's mother, Blanche, had been exposed to it, she was not allowed in the local hospital, and giving birth at home raised the risk of infection. So, she temporarily moved in with her parents in Grand Rapids until Roger was born.

Don Chafee had a side career as a pilot, mainly as a barnstormer performing at local fairs. When Roger was seven years old, he had his first ride in a plane. As they flew over Lake Michigan, Roger became hooked on flight. Soon, a part of the house was devoted to model airplanes. Whenever Roger saw a plane fly over, he would say, "I'll be up there flying in one of those someday."

After graduating from high school in 1953, Roger was awarded a Naval ROTC scholarship to the Illinois Institute of Technology. By the end of his first year, Roger had chosen as his major aeronautical engineering. He was accepted into the program at Purdue University for his Sophomore year. When Roger was a Junior, he earned extra money teaching freshman level math classes at Purdue. As part of his scholarship requirements, Roger took courses in flight training over the summers. In May of 1957, Roger was awarded his private pilot's license. A month later, he graduated from Purdue with a bachelor of science degree.



During his Junior year at Purdue, Roger was set up on a blind date with Freshman Martha Horn, who was from Oklahoma City. Although Roger described her as "naive" and Martha described him as a "smart-alec," they continued to date. They became engaged in 1956 and were married on August 24, 1957. They would have two children.

After graduation and marriage, Roger began his career in the Navy. At Pensacola, Florida he began military flight training. He then moved on to Kingsville, Texas to train on different aircraft. Within a year, he had worked his way up to training for landing on aircraft carriers. By the beginning of 1959, Roger had his aviator wings. While in the

Roger Chaffee, continued from page 3

Navy, Roger eventually rose to the rank of Lieutenant Commander. Most of his assignments involved photo reconnaissance while stationed at Jacksonville, Florida. One of his jobs included photographing Cape Canaveral, which was being set up as a launch complex for the manned space program. Roger also found himself frequently flying over Cuba to take pictures. Some of his images helped to alert the government about the Soviet Union sending missiles to Cuba. Roger received official recognition for his service during the Cuban Missile Crisis.

Speaking of his years in the Navy, Roger said, "Ever since the first seven Mercury astronauts were named, I've been keeping my studies up... At the end of each year, the Navy asks its officers what type of duty they would aspire to. Each year, I indicated I wanted to train as a test pilot for astronaut status." In 1962, Roger's dream got closer when he was accepted in the initial pool of 1800 candidates for the third group of astronauts. While vying for the astronaut corps, Roger was also working on his Master of Science degree in Reliability Engineering. By the beginning of 1963, he was still in the running when the candidate group was narrowed down to 271. On October 18, 1963, Roger Chaffee was officially named a member of Astronaut Group 3.

In 1964, Roger's astronaut training went into full throttle. The first round focused on academics. Between classroom lectures on science and engineering issues related to spaceflight plus field trips, the experience was intense. They learned about geology at the Grand Canyon, lunar craters at Kitt Peak Observatory, and surveying techniques at Slate Hill in New Mexico. Trips were made to Alaska and Hawaii to study rock formations and lava flows. The next stage of training focused on contingency preparation in case of an emergency landing. The candidates had to survive with the limited supplies they would have with them in case of an ejection during launch. Jungle training in Panama and desert training in Nevada put their skills to the test. The final stage of instruction introduced the men to the equipment they would be using, learning every system on board, and working through simulations of various problems during a flight. They also got their first taste of weightlessness, went through high g-force simulations, and trained in water tanks to learn how to complete tasks during an extravehicular activity.

Roger did not get the opportunity to make a Gemini flight, but he did serve as Cap-Com (Capsule Communicator) during the Gemini 4 flight when Ed White made the first space walk by an American. It was during the Gemini years that America lost its first astronauts, and they weren't lost during a spaceflight. Ted Freeman died in a jet crash while on a training mission. Charlie Bassett and Elliot See died when their plane crashed in St. Louis. Roger was one of the pallbearers for Elliot See.

Roger's first taste of Apollo came when he and Gus Grissom flew chase planes to photograph the launch of an unmanned Saturn 1B rocket. On March 21, 1966, just after the flight of Gemini 8, the announcement was made of who would be on the first Apollo mission. Gus Grissom would be Commander, Ed White as Senior Pilot, and Roger Chaffee as Pilot.

Roger Chaffee, continued from page 3

Originally, Donn Eisele was going to be the Pilot, but he dislocated his shoulder during weightlessness training and was bumped to the second flight.

Officially dubbed Apollo 1 in June, 1966, the mission goals were to fly in Earth orbit for up to two weeks while testing and evaluating the spacecraft plus ground control and tracking facilities. On January 27, 1967, the crew entered the capsule to perform a plugs-out test during which they would go through all of the procedures that lead up to the moment of launch. Roger's primary duty involved communications with ground control. At some point during the long, grueling day, a short circuit sparked one of the wires in the capsule. This spark eventually led to a raging fire in the 100% high pressure oxygen conditions in the spacecraft. In less than a minute, the men were dead from the toxic fumes and smoke produced by the fire.

It is an unfortunate truth with NASA that it takes a tragedy to realize something was amiss. Much was wrong with the original spacecraft. After the deaths of the three astronauts, the Apollo command module was redesigned with many more safeguards in place, including using fewer combustible materials. While the loss of Roger Chaffee, Gus Grissom and Ed White was a national tragedy, their deaths were not in vain. The improved Apollo spacecraft performed beautifully and delivered a total of 12 people to the Moon and back. The success of the Apollo missions will live on as their legacy.

References:

Roger B. Chaffee - Wikipedia

en.wikipedia.org/wiki/Roger_B._Chaffee

Detailed Biographies of Apollo 1 Crew - Roger Chaffee by Mary C. White

history.nasa.gov/Apollo204/zorn/chaffee.htm

**Next BSAS meeting
February 18, 2015, 7:30 pm
Cumberland Valley
Girl Scout Council Building
4522 Granny White Pike**

Topic: Theo Wellington: The Southwest Astrophotography Seminar Report

A three day seminar at the end of October on everything you always wanted to know about astrophotography! For everyone, especially beginners, I'll talk about some of the highlights of the talks: the tips, software, and other topics that were covered at the meeting that spanned a huge number of topics, from DSLR photography to outreach. I learned a lot and I hope to pass a little bit of that on. We also took a side trip up Mt. Lemmon to visit Adam Block at the telescope. Much like the Northeast Astro Imaging Conference prior to the NEAF event in April, this was followed by a vendor expo with all the fun gear you could want. A great seminar near some of the dark skies in the US.

From the President, continued from page 1

available on Saturday March 14th, the hours for the whole event are 7:30am to 4:30pm at Holy Family Catholic Church in Brentwood. If you would like to do this in whole or in part, let me know! This is a good way to get information about BSAS to the local scouts.

Looking forward, I also have a request from a Cub Scout Leader, again please let me know if you would like to help and I will forward the contact information: *"I'm reaching out on behalf of Cub Scout Pack 320. We have approximately 75 scouts based out of Brown's Chapel Elementary in Murfreesboro. I'm planning a large camp-out in May that is going to have a STEM (Science, Technology, Engineering, Mathematics) orientation. The theme is going to be Star Wars and I realized that your group holds "Star Parties". I wanted to see if one or several of your members would be willing to join us at Camp Craig on the Boxwell Scout Reservation on Friday night, May 1st to hold a small "Star Party" for the scouts and to give them an introduction to astronomy."*

A more formal event is planned for late July: If you would be interested in taking a telescope to a wedding on the night of July 31st (yes, full Moon) we've been asked if anyone is interested in showing the Moon to guests at the reception out in the country east of Murfreesboro. Could be fun!

Don't forget to keep up with the BSAS Facebook page ([facebook.com/bsasnashville](https://www.facebook.com/bsasnashville)), we post interesting space news as well as ephemeral events such as times of ISS passes, sudden new comets or supernovae. Comet Lovejoy will still be visible in telescopes for the next month, enjoy!

Clear skies,

Theo Wellington



[Sharpest ever view of the Andromeda Galaxy](#)

NASA, ESA, J. Dalcanton (University of Washington, USA), B. F. Williams (University of Washington, USA), L. C. Johnson (University of Washington, USA), the PHAT team, and R. Gendler.

Barnard-Seyfert Astronomical Society
Minutes of the Monthly Membership Meeting
Held On Wednesday, January 21, 2014

The Barnard-Seyfert Astronomical Society held its monthly membership meeting for January at the Girl Scouts of Middle Tennessee, 4522 Granny White Pike, Nashville, Tennessee, on Wednesday, January 21, 2015. 12 members and guests signed in. President Theo Wellington called the meeting to order at 7:30 PM. Theo Wellington asked for a motion to adopt the minutes of the December 17, 2014, membership meeting as published in the January 2015 issue of the Eclipse. Bud Hamblen so moved, Bob Norling seconded and the minutes were adopted, as published, by unanimous voice vote. Bob Norling reported that there was \$2,045.64 in the regular account and \$1,719.33 in the equipment account. Theo Wellington notified the members that the “University of Scouting” would be held from 7:30 AM to 4:30 PM, Saturday, March 14, 2015, at Holy Family Catholic Church, Brentwood, TN. A table would be available where scout leaders could be introduced to the BSAS, and volunteers are needed to crew the table. Also, a “STEM Camp” will be held at Boxwell Scout Reservation and volunteer are needed to help present astronomical programs. Dr David A. Weintraub will speak at the Vanderbilt University Club on February 12, 2015, on his new book. Public star parties are scheduled for January 24 at Shelby Bottoms Nature Center, February 7 at Edwin Warner Park, and February 20 at Bowie Nature Park. Thanks were offered to Gary Eaton, who was at Pickett State Park on December 31, 2014. The group camp site at Pickett State Park will be open from Friday, March 20, to Sunday, March 22. Parts of Friday and Saturday nights will be open as public nights for school groups and the general public. The BSAS will have free time for observing at this dark sky location. Free lodging will be available on site. Food will be provided by Friends of Pickett State Park. We need to know in advance how many will come and need to be fed.

The program for the evening was a most unstructured workshop on how to use an astronomical telescope. Theo Wellington made a brisk presentation on telescope basics, and the rest of the evening was devoted to hands on help for our guests and members. Activities were both inside the meeting room and outside in the parking lot.

There being no further business the meeting was adjourned at 9:00 PM.

Respectfully submitted,
Bud Hamblen, Secretary

Barnard-Seyfert Astronomical Society
Minutes of the Regular Meeting of the Board of Directors
Held On Wednesday, January 7, 2014

The regular meeting of the Board of Directors of the Barnard-Seyfert Astronomical Society was held January 7, 2015, at the Girl Scouts of Middle Tennessee, 4522 Granny White Pike, Nashville, TN 37204. Present were Joe Boyd, Gary Eaton, Bud Hamblen, Jeffrey Horne, Rob Mahurin and Theo Wellington. Theo Wellington called the meeting to order at 7:30 PM. New board members Gary Eaton and Rob Mahurin were welcomed to the board. Theo Wellington asked for a motion to approve the minutes of the November meeting as printed in the December, 2014, issue of the Eclipse. Joe Boyd so moved, Rob Mahurin seconded, and the minutes were approved by a unanimous voice vote. Theo Wellington reported that there are \$1,618.84 in the regular account and \$1,719.33 in the equipment account.

The question of whether to cancel the public star party scheduled for Friday, January 9, at Bells Bend Outdoor Center was discussed. The forecast temperature is about 20 degrees F. Theo Wellington said she would talk it over with the park staff. Upcoming star parties are on Saturdays: January 17 (private) at Water Valley Overlook on the Natchez Trace, January 24 (public) at Shelby Bottoms and February 7 (public) at Warner Parks.

The programs for the next several general meetings were discussed. The telescope workshop is scheduled for the January meeting and Theo Wellington is scheduled to talk about the Southwest Astrophotography Forum. Rob Maruhin volunteered to make a presentation in the Spring.

[We are looking for presenters. If you have any ideas please let us know.]

Online payments are progressing. The question of whether a secure site certificate is needed was briefly discussed.

General meetings are scheduled for the third Wednesday of each month and board meetings for the first Wednesday. No date conflicts were noted. Bud Hamblen has given the Girl Scouts a check for the meeting space.

Joe Boyd has been in contact with the national IDA. All persons who want to be members of the local chapter of the IDA need to join the International Dark-Sky Association.

Pickett State Park is on the calendar for mixed public-private star parties March 20 through 22. Gary Eaton reported that on December 31, 2014, the skies were very dark after moonset. Theo Wellington noted that lodging and food will be available for participants.

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

Theo Wellington noted that the Central Arkansas Astronomical Society is to host the 2015 Mid-States Regional Astronomical Conference on the Campus of the University of Arkansas, Little Rock, starting Friday, May 29 and concluding Sunday, May 31, 2015.

There being no further business to discuss, the meeting was adjourned at 8:30 PM.

Respectfully submitted,

Bud Hamblen, Secretary

The University Club of Nashville is pleased to announce an Evening with an Author
Thursday, February 12th featuring:

**David A. Weintraub, Professor of Astronomy at Vanderbilt University,
Discussing his book, *Religions and Extraterrestrial Life: How Will We Deal With It?***

Meet and greet at 5:30. Author talk at 6:00 p.m.

Event is open to the public. A cash bar with Cosmic Cosmo specialty drink will be featured.
Vanderbilt employees are encouraged to take the shuttle to the club due to limited parking.

RSVP by February 10 to 615-322-8564 or email at contactus@uclubnashville.org.

In the twenty-first century, the debate about life on other worlds is quickly changing from the realm of speculation to the domain of hard science. Within a few years, as a consequence of the rapid discovery by astronomers of planets around other stars, astronomers very likely will have discovered clear evidence of life beyond the Earth. Such a discovery of extraterrestrial life will change everything. Weintraub guides readers on an invigorating tour of the world's most widely practiced religions. It reveals what, if anything, each religion has to say about the possibility that extraterrestrial life exists and how, or if, a particular religion would work on other planets in distant parts of the universe.

Professor David Weintraub earned his B.S. degree in Physics and Astronomy at Yale in 1980 and his PhD in Geophysics & Space Physics at UCLA in 1989 before he was appointed to the Vanderbilt faculty in 1991. At Vanderbilt, Weintraub has been the Director of Undergraduate Studies in the Department of Physics and Astronomy since 2003, the Director of the Program in the Communication of Science and Technology since 2006, and co-Director of the Program in Scientific Computing since 2011. In 2011-2013, he served as Chair of the University Faculty Senate and served previously as Chair of the College of Arts & Science Faculty Council. Weintraub was awarded the Chancellor's Cup in 2001, the Jeffrey Nordhaus Award for Excellence in Undergraduate Teaching in the College of Arts & Science in 2003, the Chancellor's Award for Research in 2005, the Thomas Jefferson Award in 2009, and the Ernest A. Jones Outstanding Faculty Advisor Award in 2011.

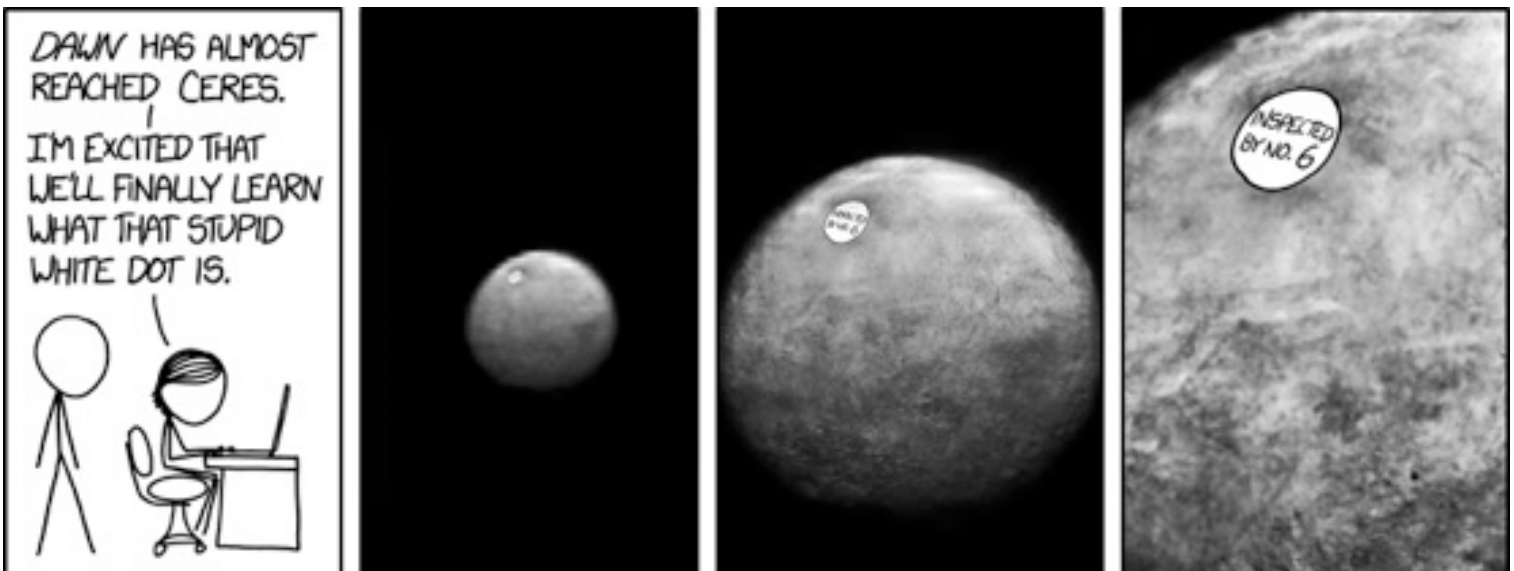


Hubble Goes High-Definition to Revisit Iconic 'Pillars of Creation'

The NASA/ESA Hubble Space Telescope has revisited one of its most iconic and popular images: the Eagle Nebula's Pillars of Creation. This image shows the pillars as seen in visible light, capturing the multi-coloured glow of gas clouds, wispy tendrils of dark cosmic dust, and the rust-coloured elephants' trunks of the nebula's famous pillars. The dust and gas in the pillars is seared by the intense radiation from young stars and eroded by strong winds from massive nearby stars. With these new images comes better contrast and a clearer view for astronomers to study how the structure of the pillars is changing over time.

[Credit: NASA, ESA/Hubble and the Hubble Heritage Team](#)

XKCD



<http://xkcd.com/1476/>

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 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.