The ECLIPSE

January 2012
Volume 5, Issue 1

The newsletter of the Barnard Seyfert Astronomical Society, PO Box 150713, Nashville, TN 37215-0713

Upcoming Events

Board of Directors Meeting

January 4th at the Cumberland Valley Girl Scout Council Building – 7:30 pm

February 1st at the Cumberland Valley Girl Scout Council Building – 7:30 pm

Membership Meeting

January 18th at the Cumberland Valley Girl Scout Council Building – 7:30 pm

February 15th at the Cumberland Valley Girl Scout Council Building – 7:30 pm

Star Parties

January 21st – Private Star Party at Natchez Trace Parkway mm 412 (Water Valley Overlook)

January 28th – BSAS Public Star Party at Edwin Warner Park - 7:30 pm

February 18th – BSAS Public Star Party at Bowie Nature Park (Fairview) - Solar/Lunar Daytime Observing – 10:00 am - Noon

February 18th - Private Star Party at Natchez Trace Parkway mm 435.5

February 25th - BSAS Public Star Party at Shelby Bottoms Nature Center - 7:30 pm

In this issue:

Monthly Membership Meeting

Wednesday, January 18, 2012
Cumberland Valley Girl Scout Council Building
7:30 pm

Get a new telescope or other astronomy gear for Christmas? Have questions about how to use it? Join former BSAS president **Dr. Spencer Buckner** as he and other BSAS members go over the basics of how to use your new astronomy equipment.

From The President

I hope all of the BSAS faithful had a wonderful and restful holiday season, hopefully including some time spent stargazing. I'm excited about the year ahead for our club! The new club officers and directors are fortunate to be able to build upon all the hard work of the outgoing leadership team of President Spencer Buckner, Vice President Dr. Donna Hummell, Secretary Bob Rice, and Treasurer Bob Norling, and I want to thank Bob and Bob for their continuing service.

So, here's what we have to look forward to in the coming year:

- Thanks to our impressively efficient Star Party Committee, consisting of Spencer and Bob Rice, virtually all of our star parties for 2012 are already lined up! By my count, we have 28 star parties (including a summer picnic and fall retreat) to look forward to, spread among seven different venues.

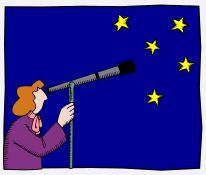
- Our equally efficient Program Committee has already scheduled the majority of our speakers for the year, to include presentations by faculty from each of APSU, MTSU and Vanderbilt, as well as by Theo Wellington of the Adventure Science Center and leading local amateur astronomers (one of whom was recently published in Sky and Telescope magazine). Topics will run the gamut from exoplanet searches and planetary imaging to radio astronomy.

- One of my goals this year is to forge closer links with nearby astronomy clubs, especially our neighbors in the Cumberland Astronomical Society. I'm pleased to say that initial indications are that the CAS is interested in the idea of a joint star party, though there is no definite agreement yet. I have pleasant memories of a joint BSAS/CAS event held about seven years ago and am hopeful that we'll be able to schedule another in 2012.

- Another goal is to (hopefully!) arrange a visit to one or more of the professional observatories in our area. Candidates include Vanderbilt's Dyer Observatory, as well as brand new observatories at both APSU and MTSU.

- Finally, in recognition that an increasing number of amateur astronomers are getting into astrophotography, I'm hopeful that we will be able to schedule an astrophotography workshop at some point this year. The workshop could focus (pardon the pun) on either CCD imaging of the deep sky or webcam imaging of the solar system (called by some the "shallow sky"). We are fortunate to have a number of very capable astrophotographers in our ranks and with luck there'll be an opportunity to learn from them.

Continued on Page 2



"Sometimes I think we're alone. Sometimes I think we're not. In either case, the prospect is staggering!"

Arthur C. Clarke
1917-2008

FREE TELESCOPES!

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, and a waiting list may be 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 Lonnie Puterbaugh at (615) 661-9540.

Observing Highlights

all times listed are Central Standard Time

LUNAR PHASES

January 2012

01/01	FIRST Quarter
01/09	FULL Moon
01/16	LAST Quarter
01/23	NEW Moon
01/31	FIRST Quarter

February 2012

02/07	FULL Moon
02/14	LAST Quarter
02/21	NEW Moon

OBJECTS VISIBLE THIS MONTH

Messier Objects:

Galaxies:
M33, M74, M77

Open Clusters:
M34, M52, M103

Planetary Nebula:
M76

From the President, cont.

So, it's full speed ahead for 2012! Please keep your eye on the club website at www.bsasnashville.com for details of upcoming events. See you at a star party soon!

The Year Ahead for NASA

Despite all of the economic troubles afflicting our country, we still have results from a number of previously-launched NASA missions to look forward to in 2012. First and foremost, NASA's massive Mars Science Laboratory continues its eight-month trek to Mars and is set to land there in early August. The mission's economy car-sized Mars Curiosity rover includes a broad array of experiments designed to determine Mars' past and present ability to sustain microbial life.

Meanwhile, NASA's twin GRAIL spacecraft have already reached lunar orbit. Working in tandem, they're designed to detect regional variations in gravity in order to help astronomers better understand the moon's origins. (For 2001: A Space Odyssey fans, let's hope they don't find any gravity concentrations or "gravcons" marking the location of alien monoliths!)

NASA's Kepler spacecraft will continue its mission of monitoring thousands of stars for exoplanet transits, in hopes of finding exoplanets in the habitable zone of many stars. Odds are good that Kepler will find several Earth-sized planets in just-right "Goldilocks" orbits this year. And of course, NASA's stalwart and recently-refurbished Hubble Space Telescope will continue beaming down its stunningly detailed images of celestial objects near and far. Finally, with a little luck, the vastly over-budget Webb Space Telescope program will stabilize this year so that its costs stop threatening other valuable NASA missions scheduled in coming years.

In an era when Europe has become dominant in particle physics research and China seems set to become an ever more formidable challenger in terms of technological development in general and manned space flight in particular, it's reassuring to know that the U.S. remains the clear leader in astronomical research missions. And remember, all of that science costs less than 0.5% of the total U.S. federal budget.

Clear skies to all,

John Harrington
President

Happy Birthday Harvey Nininger

by Robin Byrne

This month, we celebrate the life of a man who is considered to be the father of meteoritics. Harvey Harlow Nininger was born in Conway Springs, Kansas on January 17, 1887. His first interest in science was in the field of biology, receiving his B.S. in biology from McPherson College in 1914, the same year he married Addie, with whom he had three children.

Nininger's early career remained true to his biological training, working as a biology professor at various universities, as well as an entomologist for the U.S. Department of Agriculture. In 1920, he returned to McPherson College, as a Professor of Biology, but also teaching a course in geology.

It was in August of 1923 that Nininger's true calling would initially come to light. An article about meteorites sparked an interest. But what sealed the deal occurred the night of November 9th of the same year. Walking home with a colleague after a campus event, Nininger witnessed a brilliantly bright fireball streak across the sky. He was determined to learn as much as he could about meteors and meteorites. It turned out that in the 1920's, there wasn't that much to learn. The best source of information was Farrington's Catalog of the Meteorites in North America, which had been published in 1909. Contacting various universities was equally disappointing. No one seemed interested. Geology departments were apathetic and felt meteorites belonged in the Astronomy field, since they came from space. Astronomers felt they were the business of geologists, since they were composed of rocks and minerals. One astronomer he spoke to didn't even know that meteorites came in varieties other than iron. Meanwhile, everyone was agreed that actively searching for meteorites would be a waste of time, since they were so rare.

In 1928, Nininger felt the time had come to establish an actual field of study dedicated to meteorites. Most people he spoke to were uninterested and felt that we already knew all there was to know about meteorites. The two people who were supportive of his idea were Dr. George P. Merrill of the U.S. National Museum in Washington, D.C. and Dr. Oliver C. Farrington of the Field Museum in Chicago. Nininger proposed to Merrill his plan for how to find meteorites. Merrill was skeptical that any would be found in Nininger's lifetime, but agreed to buy any he brought to the museum. The next time they saw each other, less than a year later, Nininger had 2 meteorites, which he sold to Merrill.

Since the field was wide open, Nininger stepped in. Without any formal training, his dedication and study would quickly make him one of the few experts on meteorites. His first task would be to collect meteorite samples to study firsthand. Nininger decided to use the help of the general public in his pursuit. Traveling around the country, Nininger would give public lectures at schools and to civic groups, interviews with newspapers, impromptu discussions on street corners and in coffee shops, and even driving up to farm houses and talking to the family. In each case, he would show samples of meteorites, describe what to look for, and offer to buy meteorites (at a price of $1 per pound) from anyone who found a meteorite. Prior to Nininger's efforts, in the state of Kansas alone, only 15 meteorites had been found in the previous 75 years. After he enlisted the help of local people, 40 new fall sites had been identified. Over the 35 years of his work, more than 200 new fall sites across the country were identified, with over 2000 individual meteorites being found. By 1941, Nininger was responsible for finding half the known meteorites in the world. From his efforts at classifying the meteorites, Nininger discovered that, contrary to what was previously believed, stony meteorites were much more common than iron meteorites. During all this time, Nininger published more than 150 papers, 4 books, 2 booklets, plus hundreds of thousands of leaflets he distributed whenever he spoke to the public.

In 1942, Nininger founded the American Meteorite Museum, the first museum in the world to be dedicated to meteorites. Originally, it was located on Route 66 near Meteor Crater (one of the sites Nininger studied frequently), the ruins of which are still visible from I-40. Not only was the structure built to house the museum, but also served as Nininger's home and laboratory. In 1953, the museum moved to Sedona, Arizona. Nininger served as the director of both facilities. In 1958, Nininger sold part of his collection to the British Museum, and in 1960, the rest of the collection went to the Arizona State University Center for Meteorite Studies.

Harvey Nininger died in 1986, but he certainly left behind an amazing legacy. He took a pursuit many believed to be fruitless and unimportant and elevated it to an accepted field of study. In his lifetime, meteorites went from being considered so rare that hardly any would be expected to be found on Earth's surface, to objects actively hunted and collected. How many of us own a meteorite or, at least, have had the chance to hold one in our hands? These fragments of asteroids are one of the few ways we can actually touch a piece of space. Without the efforts of Harvey Nininger, we may never have had that awe-inspiring opportunity.

References:
Harvey H. Nininger - Wikipedia
http://en.wikipedia.org/wiki/Harvey_H._Nininger

Dr. H. H. (Harvey Harlow) Nininger
http://www.angelfire.com/indie/anna_jones1/nininger.html

Meteorite Articles: A Brief History About the Man by Al Mitterling
http://www.meteorite.com/nininger/nininger-moments-28.htm

Board Meeting Minutes – December 1, 2011

Bob Rice, Secretary

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 December 1, 2011. A sign-in sheet was passed around in lieu of a roll call. Board members Dr. Spencer Buckner, Steve Cobb, Jana Ruth Ford, Bill Griswold, Bob Norling, Bob Rice, and Theo Wellington were present. Board members Dr. Donna Hummell, Santos Lopez, Kris McCall, Curt Porter, and Dr. Terry Reeves were absent. BSAS members Joe Boyd (Vice-President-Elect) and John Harrington (President-Elect) were present as guests. A quorum being present, President Dr. Spencer Buckner called the meeting to order at 7:40 P.M.

Treasurer Bob Norling reported that the BSAS had $2,052.35 in its regular checking account and $457.39 in its equipment account. Mr. Norling also reported that he had copies of Kalmbach Publishing Company's 2012 Deep Space Mysteries calendar for sale to members at a discount from the regular retail price. Dr. Spencer Buckner announced these upcoming star parties:

- Dec 03 – Public star party at Shelby Bottoms Nature Center from 7:30 P.M. to 9:30 P.M.
- Jan 28 – Public star party at the Warner Parks from 7:30 P.M. to 9:30 P.M.

Dr. Buckner explained that no private star parties or additional public star parties were scheduled during December because the most opportune times as determined by lunar phases fell on either Christmas Eve or New Year's Eve.

Dr. Spencer Buckner announced that all board of directors meetings would be held on Wednesday evenings starting with the January 4, 2012 meeting. Dr. Buckner also announced that the December 21 membership meeting and annual potluck Christmas Supper & Silent Auction would start at 6:30 P.M. He noted that the BSAS would supply the meats, utensils, plates, cups, and drinks with members bringing their favorite side dishes or desserts. Bob Rice volunteered to procure the items to be supplied by the Society. Dr. Buckner reminded everyone to bring something for the Silent Auction. He also stated that copies of the Royal Astronomical Society of Canada's 2012 Observers Handbooks were ordered and that he would order copies of Guy Ottewell's 2012 Astronomical Calendar tomorrow.

Dr. Spencer Buckner announced that the Star Party Committee and the Program Committee needed to meet before the end of the year. Regarding the Star Party Committee, Dr. Buckner noted that previously Bill Griswold had hosted these meetings and that Kris McCall had typically already set up public star parties so that only the scheduling of private star parties along with the BSAS summer picnic and fall retreat remained to be done. He also noted that Bob Rice had previously hosted the Program Committee meetings and that programs were already scheduled through January 2012. Bob Rice volunteered to host meetings of both committees for this year.

Dr. Spencer Buckner bade farewell to Jana Ruth Ford and Dr. Terry Reeves, whose terms as directors ended with this meeting, and thanked them for their service to the BSAS. Joe Boyd reminded the board that Vice-President Dr. Donna Hummell's term as an officer and director was also expiring at the end of December and announced that he will donate his copy of a recent Vanderbilt University Medical Center newsletter containing an article about her to the BSAS archives. Bill Griswold announced that a telescope had been donated to the BSAS and was in his possession. Theo Wellington reminded Dr. Buckner that the password to the BSAS' website needed to be changed.

Since there was no further business to discuss, President Dr. Spencer Buckner declared the meeting to be adjourned at 8:13 P.M.

Monthly Meeting Minutes – December 21, 2011

Bob Rice, Secretary

Members began arriving at the Cumberland Valley Girl Scout Council Building around 6:30 P.M. – an hour earlier than the usual starting time – for the Society's December meeting and annual Christmas potluck dinner. Following our long-standing tradition the BSAS provided the meats, drinks, plates, and dining utensils while the members brought a sumptuous array of side dishes and desserts. The food was set up on the tables during a brief period of social gathering. President Dr. Spencer Buckner called the meeting to order at 6:43 P.M., welcomed members and guests, and asked Bill Griswold to say the blessing. Everyone then went through the buffet line and began dining. This activity was intermingled with forays to examine and place bids on items at the silent auction tables.

Dr. Spencer Buckner announced that he will turn over the ceremonial gavel to incoming President John Harrington at the next membership meeting on January 15, 2012. Dr. Buckner also invited all holiday telescope recipients who wanted to learn more about their new instruments to bring them to his presentation of "I Got a Telescope for Christmas – Now What?" at that meeting. He explained that after briefly covering the basic telescope types, he and other BSAS members will be available to assist owners with their new gifts. In addition, Dr. Buckner announced that the BSAS would host a public star party at the Warner Parks from 7:30 P.M. to 9:30 P.M. on January 28, 2012.

Dr. Spencer Buckner introduced Vice President-elect Joe Boyd who delivered the evening's program on "The Star That Astonished the World." By drawing upon established historic and archeological findings along with planetarium software to recreate the configuration of the stars and planets some two millennia ago, Mr. Boyd developed a plausible interpretation of the star of Bethlehem that marked the birth of Jesus Christ as described in the Christian Bible. Some of the more important points that he covered included:

- The time of King Herod can be historically verified,
- The wise men were highly educated, knew the night sky well, & were probably Babylonian courtiers,
- In 7 BC there was a triple conjunction of Jupiter & Saturn in May, September, & December,
- In 6 BC there was a conjunction of Jupiter, Mars, & Saturn,
- In 3 BC on August 12 there was a close conjunction of Saturn & Venus in the east before dawn,
- There was a conjunction of Jupiter & the star Regulus shortly thereafter,
- In 2 BC on January 17 Jupiter & Venus joined again,
- Jupiter was then in retrograde & appeared to be standing still in the south toward Bethlehem,
- The wise men could have reasonably arrived in Bethlehem on December 25 in 2 BC,
- This would have been during the celebration of Hanukkah & a time for gift giving.

Mr. Boyd concluded by stating that, based upon verifiable astronomical and historical determinations, the events surrounding the birth of Jesus Christ as described by Matthew in the Christian Bible appear to be very probable and likely to have happened. However, he encouraged all present to reach independent decisions on this matter. He then graciously answered questions from the audience.

Since there was no additional business to discuss, President Buckner declared the membership meeting to be adjourned at 8:31 P.M.

PS:
Immediately following the adjournment Kris McCall announced that the silent auction had taken in $309.00.

BSAS Affiliations

The Astronomical League
http://www.astroleague.org/

The Night Sky Network
http://nightsky.jpl.nasa.gov/

International Dark Sky Association
http://www.darksky.org/

The Nerdiest Video Game Ever

by Dr. Tony Phillips
Space Place Partners Article, December 2011

NASA has a job opening. Wanted: People of all ages to sort, stack, and catalogue terabytes of simulated data from a satellite that launches in 2015. Agile thumbs required.

Sorting terabytes of data? It's more fun than it sounds.

In fact it's a game: Satellite Insight. The Space Place Team at the Jet Propulsion Laboratory created the entertaining app for iPhones to get the word out about GOES-R, an advanced Earth science satellite built by NOAA and NASA.

Described by the Los Angeles Times as possibly "the nerdiest game ever," Satellite Insight may be downloaded for free from Apple's app store. Be careful, though, once you start playing it's hard to stop. Some reviewers have likened it to Tetris, one of the most popular video games of all time.

GOES, short for "Geostationary Operational Environmental Satellite," is the workhorse spacecraft for weather forecasters. NOAA operates two (at a time) in geosynchronous orbit, one above the west coast of N. America and one above the east coast. They monitor clouds, wind, rain, hurricanes, tornadoes and even solar flares. The GOES program has been in action since 1975.

GOES-R is the next-generation satellite with advanced technologies far beyond those of the older GOES satellites. It has sensors for lightning detection, wildfire mapping, storm tracking, search and rescue, solar imaging, and more. Many of the sensors are trailblazers. For example, the Advanced Baseline Imager has 60 times the capability of the current imager—16 channels instead of 5. It has twice the spatial resolution and five times the temporal refresh rate, including the 30-second imaging of weather systems over a region of 1000 km x 1000 km. Also, the Geostationary Lightning Mapper can count and pinpoint lightning bolts over the Americas 24/7. It's the first such detector to fly on a geosynchronous satellite, and it could lead to transformative advances in severe storm warning capability.

All in all, GOES-R represents a "huge technological leap from the current GOES." We know this because Satellite Insight tells us so. The app has an informative "Learn More" feature where players can find out about the satellite and the data they have been sorting.

Which brings us back to sorting data. It's a bit like eating Cheerios; just don't tell the kids it's nutritious, and they love it. Helping GOES-R gather and stash data from all those advanced sensors is just as satisfying, too—a dose of Earth science wrapped in thumb-flying fun.

More information about Satellite Insight may be found on the web at http://itunes.apple.com/us/app/satellite-insight/id463588902?mt=8. The game also available in web form (flying thumbs optional) at spaceplace.nasa.gov/satellite-insight.

New iPhone game is first NOAA app and only the second NASA game app.

Just as with the real GOES-R, the challenge with Satellite Insight is to keep up with the massive influx of weather and other environmental data.

BSAS Receives Certificate of Appreciation

Certificate of Appreciation

The Space Place,
a NASA public education and outreach program,
recognizes

Barnard Seyfert Astronomical Society (BSAS)

for its valuable contributions to its community
in the areas of science, technology education, and inspiration.

2011

Nancy J. Leon
Space Place Manager

Laura K. Lincoln
Outreach Coordinator

Barnard Seyfert Astronomical Society (BSAS)
Spencer Buckner
PO Box 150713
Nashville, TN 37215-0713

Dear Spencer:

The Space Place Team is pleased to award the Barnard Seyfert Astronomical Society (BSAS) the enclose certificate of appreciation. As an active NASA Space Place Astronomy Club partner, you encourage science and technology education throughout your community. Reaching this audience with the message that science and technology and learning about space are fun is crucial; you and your organization play a vital role in this endeavor.

Through your public events, you not only educate, but you also inspire your audiences, both young and old. Through you use of hands-on activities and experiences for children, you play a key part in developing tomorrow's scientists.

Please accept this certificate of appreciation with our gratitude.

Laura K. Lincoln
Outreach Coordinator

Become a Member of the BSAS!

Download and print the Application for membership from www.bsasnashville.com (Adobe® Acrobat Reader® required).

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, which include membership in the BSAS and Astronomical League, and subscriptions to their newsletters, are:

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

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

All memberships have a vote in BSAS elections and other membership votes,

Also included are subscriptions to the BSAS and Astronomical League newsletters.

IMPORTANT DUES INFORMATION

To find the expiration date for your current membership, visit our web site at http://www.bsasnashville.com and click the Renewals link.

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

We're on the Web!
See us at:

www.bsasnashville.com

BSAS on Facebook

About Our Organization

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 Thursday of each month at the Adventure Science Center 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 www.bsasnashville.com. If you need more information, write to us at info@bsasnashville.com or call Joe Boyd at (615) 386-3134.

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