



# The ECLIPSE



The Newsletter of the Barnard-Seyfert Astronomical Society

Organized in 1928

March 2013

**The Membership meeting will be held on March 20, 2013 at the Cumberland Valley Girl Scout Council Building located at the intersection of Harding Place and Granny White Pike at 7:30 pm.**

BSAS Past-President Terry Reeves and Astro-Imager Steve Wheeler will present "What's Up in the Spring Sky." Be sure to join us for an informative presentation of both easy and more-challenging objects to see in the early spring sky and possibly the latest update on comet C/2011 L4 PANNSTARS.

## Upcoming Events

Board of Directors Meeting, February 6 at the Cumberland Valley Girl Scout Building – 7:30 pm

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## From the President

### The Universe on Your Phone

Someday I'll give in and get one of these so-called "smart phones." Just now I have one that, well, makes phone calls. I know, so quaint and old-fashioned. Really, of course, they are not phones anymore. They are very small computers that can also make phone calls. I remember a professor telling us to take the CRC Math Tables book (aw, Google it if you are too young), cut a rectangular hole in it, and use it to as a box for the new toy, the scientific calculators we had all bought. The same thing is happening all over again, this time with your night sky resources.

*Star Walk* and like products are your planisphere, only intelligent. You can point it at the sky and it will show you what you are looking at. Want to know that Moon crater name? *Moon Globe*. There are apps for ISS and other satellite passes, apps for exoplanets, and for today's sunspots. Heck, you can even control your telescope! As long as your battery holds out, the "phone" can replace a lot of paper resources. *Star Walk's* intuitive point-it-at-the-sky interface makes it easy for even young children to understand.

We are coming up to the annual Messier Marathon, the nights when it is technically possible to spot all of the Messier objects in one night. There are lots of resources that have traditionally been used, but now...there's an app for that! The *Messier Marathon* app is now available for iPhones. Stellarium, my personal favorite "what's in tonight's sky" program is also available to go as Stellarium Mobile. I can remember having to install a math co-processor in a 386 machine to do orbital calculations...now *Sky Safari Pro* can show asteroids like 2012DA14 changing orbit as they swing close to Earth. Might be fun to show comet orbits as well, especially later this year as Comet ISON swings just above the Sun.

Some apps have the disadvantage of being bright. There's no point in knowing what star you might be looking at if your night vision is blown out by the phone...so there are now red screen utility apps to help with that as well. There are also red screen covers, although you might not want a full time red screen.

I'll always have the *Observer's Handbook* along, but you can have a lot at hand with "just" a phone.

Clear dark skies,

Theo Wellington

## OFFICERS

Theo Wellington  
President

[tmwellington@comcast.net](mailto:tmwellington@comcast.net)

Joe Boyd  
Vice-President  
[boydjoe@comcast.net](mailto:boydjoe@comcast.net)

Bob Rice  
Secretary  
[brice\\_65@yahoo.com](mailto:brice_65@yahoo.com)

Bob Norling  
Treasurer  
[rdncpa@mindspring.com](mailto:rdncpa@mindspring.com)

John Harrington  
Ex-officio  
[HarringtonJohn@bfusa.com](mailto:HarringtonJohn@bfusa.com)

## Directors at Large

Spencer Buckner  
[buckners@apsu.edu](mailto:buckners@apsu.edu)

Steve Cobb  
[s.a.cobb@comcast.net](mailto:s.a.cobb@comcast.net)

Bill Griswold  
[bgriz@comcast.net](mailto:bgriz@comcast.net)

Melissa Lanz  
[melissa\\_lanz@yahoo.com](mailto:melissa_lanz@yahoo.com)

Kris McCall  
[planetmccall@gmail.com](mailto:planetmccall@gmail.com)

Poppy Simmons  
[poppysmmns@gmail.com](mailto:poppysmmns@gmail.com)

Bill Griswold  
Newsletter Editor  
[bgriz@comcast.net](mailto:bgriz@comcast.net)

## Observing Targets for March & April

### Moon phases

March 2013  
03/04 LAST Quarter  
03/11 NEW Moon  
03/19 FIRST Quarter  
03/27 FULL Moon

April 2013  
03/02 LAST Quarter  
03/10 NEW Moon  
03/18 FIRST Quarter  
03/25 FULL Moon

### Objects:

Globular Clusters  
M79

Open Clusters  
NGC884/869 (Double Cluster),  
M34, M45 (Pleiades),  
M36, M37, M38, M35, M41,  
M50, M47, M46, M93, M48,  
M44 (Beehive), M67, NGC2264  
(Christmas Tree)

Nebula  
NGC1499 (California), M1, M42  
(Orion), M43, M78,  
NGC2392 (Eskimo), NGC3242  
(Ghost of Jupiter),  
M97 (Owl)

Galaxies  
M31 (Andromeda), M32, M110,  
M33 (Triangulum), M74,  
M77, M81, M82, NGC3115  
(Spindle), M95, M96, M105,  
M108, M65/M66/NGC3628 (Leo  
Triplet), M109

Multiple Star Systems  
Gamma Andromedae, Beta  
Orionis (Rigel),  
Alpha Geminorum (Castor)

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

Planets  
Jupiter

## Star Parties for months of March and April

Sat 3/2 Warner Park 730 to 930 LQ is 3/4 Moon,  
Jupiter, Orion Nebula, Pleiades, etc

Sat 3/9 BSAS at Mark's or Trace NM is 3/11 Messier  
marathon at Spot observatory

Sat 3/16 Long Hunter 730 to 930 FQ is 3/19 Moon,  
Jupiter, Orion Nebula, Pleiades, etc

Fri 4/5 Bowie Park 730 to 930 NM is 4/10 Moon,  
Jupiter, Orion Nebula, Pleiades, etc

Sat 4/6 BSAS at Mark's NM is 4/10 Messier  
Marathon Backup or mile marker 412 water valley overlook

Sat 4/13 ASC 730 to 1030 FQ is 4/18 2<sup>nd</sup> Saturday  
– Astronomy Day - Moon, Jupiter, Orion Nebula, Pleiades, etc

Sat 4/20 N.B.F. State Pk 730 to 1030 FQ is 4/18 Nathan  
Bedford Forrest S.P. for Waverly Elementary 2<sup>nd</sup> graders & families

## Happy Birthday Sir Patrick Moore

by Robin Byrne

This month we celebrate the life of a man who brought the joy of astronomy to many generations, but whose life included so much more. Patrick Alfred Caldwell Moore was born March 4, 1923 in Middlesex, England. His early life was marred by a heart condition, which led to most of his education taking place at home with tutors.

A precocious child, Moore became interested in astronomy at the age of six when his mother gave him George F. Chambers' book "Story of the Solar System." When he was eleven, Moore joined the British Astronomical Association. One of his favorite objects to observe through his small telescope was the Moon, which led to Moore's first scientific publication, titled "Small Craterlets in the Mare Crisium," which he wrote when he was only 13. When his mentor was killed in a car accident, Moore, at the age of 14, was asked to take over running the small observatory in East Grinstead. Astronomy, though, was not his only strength. Moore's mother had been an opera singer, and, as a result, music was an important part of his life. He taught himself to play the xylophone, glockenspiel, and piano, and started composing for the xylophone when he was 12. Moore went on to perform some of his compositions later in life. He was also fluent in French. Some of Moore's eccentricities also showed up early in life, such as wearing a monocle when he was only 16. Moore claimed it was due to having a weak right eye. And by the time he was 19, Moore was already wearing a full set of dentures.

In 1940, Moore now only 16, felt the need to help defend his country during World War II. He lied about his age and joined the Royal Air Force (RAF). For the next five years, he served as a navigator. His training took place in Canada, and while on leave in New York, Moore had the opportunity to meet both Orville Wright and Albert Einstein. A lifelong bachelor, Moore claimed that it was due to the war. His fiancée was killed by a bomb that struck the ambulance in which she worked. No other woman would do, saying that "... second best is no good for me." And Moore never forgave the Germans, stating "if I saw the entire German nation sinking into the sea, I could be relied upon to help push it down."

After the war, Moore declined the offer to send veterans to college, and instead took a teaching position. It was during this time that he started observing with a 12.5 inch reflector, and continued to observe the Moon. He was fascinated by the glimpses of the Moon's far side that were visible due to libration. In 1952, Moore's first book was published, titled "Guide to the Moon", which was later released under the title of "Patrick Moore on the Moon." His second book was a translation from French of Gerard de Vaucouleurs' book, followed by another Moore original "Guide to the Planets." He then wrote several science fiction books and other works of fiction. He later published the Caldwell Catalog in 1982. All in all, he wrote over 70 books.

Moore first appeared on television in the 1950's in a debate about purported UFO sightings. Moore argued against their existence. The success of this appearance led to an offer for him to host his own show about astronomy. "The Sky at Night" first broadcast on April 24, 1957. The show ran once a month through 2012, with Moore only missing one episode, due to food poisoning. This long run earned Moore a place in the Guinness Book of World Records as the world's longest-serving TV presenter. The last eight years of the show were broadcast from Moore's home, since his arthritis made travel to London difficult. Always geared to the general public, Moore's show not only inspired a love of astronomy in its many viewers, but also played host to some of the most dramatic events in astronomy and space history. The show's highlights include: the first Western broadcast of the Soviet Luna 3 images of the Moon's far side, all of the Mercury, Gemini and Apollo missions, and continuing on to the modern space programs, plus the Voyager and Pioneer missions with broadcasts from NASA, and a variety of unique astronomical events, such as eclipses and the appearance of Halley's

Comet. Always a friend to the Soviet space program, Moore was invited to the Soviet Union, where he had the opportunity to meet Yuri Gagarin.

From 1965 to 1968, Moore served as director of the new Armagh Planetarium in Ireland. Moore was responsible for going to Japan in order to purchase the Goto projector for the facility. During this time, he also helped to revive the Birr Telescope in Ireland, and establish the Herschel Museum of Astronomy in England.

Moore's personal and political beliefs were often controversial. He was staunchly conservative in some respects, especially concerning immigrants, women and homosexuality, but rampantly liberal with regards to animal rights, being fervently opposed to hunting and a strong supporter of protecting cats, as well as being opposed to capital punishment. He also had a mischievous approach to politics, being fond of the Monster Raving Loony Party because "they knew they were loonies." He also wanted to start his own party, called the Politically Incorrect School of Sociology because "... the acronym says it all."

Over the years, Moore was bestowed with many honors, including honorary degrees, he was the only amateur astronomer to be appointed an Honorary Fellow of the Royal Astronomical Society, he received the BAFTA (British Academy of Film and Television Arts) award for services to television, and Moore was knighted in 2001 for his popularization of science. He also may have been the only person to have met the first man to fly (Orville Wright), the first in space (Yuri Gagarin), and the first on the Moon (Neil Armstrong).

Moore was active all of his life, loving to play cricket, chess, and traveling around the world. He managed to visit every continent at least once. It wasn't until his later life that health problems started to plague Moore. In 2004, arthritis started to take its toll, keeping him mostly at home. In 2006, he was diagnosed with a cardiac abnormality that required a pacemaker. On December 9, 2012, after a brief hospital stay, Patrick Moore died in his home, surrounded by loved ones, and with his cat, Ptolemy.

There are few people who can claim such a broad influence on so many lives. From his many years on television to all of his immensely popular books, Patrick Moore is easily in the top 5 of people who have spread the love of astronomy to the masses. All of us who enjoy the night sky were either directly inspired by him, or our mentors were. As we continue to share our joy of astronomy with others, the legacy of Patrick Moore will continue to live on.

#### References:

Patrick Moore – Wikipedia

[http://en.wikipedia.org/wiki/Patrick\\_Moore](http://en.wikipedia.org/wiki/Patrick_Moore)

Sir Patrick Moore obituary | Science | The Guardian

<http://www.guardian.co.uk/science/2012/dec/09/sir-patrick-moore>

**BARNARD-SEYFERT ASTRONOMICAL SOCIETY  
MINUTES OF A REGULAR MEETING OF THE BOARD OF DIRECTORS  
FEBRUARY 6, 2013**

The Board of Directors of the Society met in regular session at the Cumberland Valley Girl Scout Council Building in Nashville, Tennessee. Board members Joe Boyd, Prof. Spencer Buchner, Bill Griswold, John Harrington, Melissa Lanz, Kris McCall, Bob Norling and Theo Wellington were present and constituted a quorum. President Wellington called the meeting to order at 7:30 P.M.

As the first order of business, President Wellington asked for corrections to the minutes of the previous board meeting and, there being none, pronounced them to be accepted as published in the January 2013 edition of *The Eclipse* newsletter. Treasurer Bob Norling then reported that the BSAS had \$1,682.76 in its regular bank account and \$1,233.13 in its equipment account.

President Wellington next announced upcoming BSAS star parties:

- February 9: Private Star Party at Natchez Trace at Mile Marker 435.5
- February 16: Public Star Party at Shelby Bottoms Nature Center at 7:00PM
- March 2: Public Star Party at Edwin Warner Park Model Airplane Field at 7:30PM
- March 16: Public Star Party at Long Hunter State Park at 7:30PM

Ms. Wellington then stated that confirmation was needed regarding the venue for this year's Messier Marathon in March, tentatively set for Mark Manner's home. She then announced the upcoming Americans United for Separation of Church and State event on Sunday, February 10<sup>th</sup> at 3PM, to be held at the Green Hills Branch of the public library.

President Wellington then asked Vice President Joe Boyd for an update on efforts to reestablish a local chapter of the International Darksky Association (IDA). Mr. Boyd responded that he had set up a meeting with an IDA representative regarding reestablishment and promised to report back to the board on the results of that meeting.

President Wellington then announced that a variety of events were upcoming on March 2<sup>nd</sup>, to include:

- Debut of the "Rusty Rocket's Last Blast" solar system program at Sudekum Planetarium
- Boy Scout leader training program at the scout center in Brentwood
- BSAS Public Star Party at Warner Park model airplane field at 7:00PM

There being no further business, President Wellington declared the meeting to be adjourned at 8:30 P.M.

Respectfully submitted,

John Harrington,  
Acting Secretary



Dear Members of BSAS,

I am writing to ask for your help to launch a new program in the Sudekum Planetarium at the Adventure Science Center. We are in the final stages of production on "Rusty Rocket's Last Blast", which will open to the public on Friday March 1, 2013.

Rusty Rocket has one final mission to command before he retires: an introductory tour of the solar system for a new class of rocket rookies. Along the way, Rusty highlights the wide variety of environments in the solar system, the great distances between the planets, and the spacecraft that explore them.

The Blast Off! Event will run from 10 am to 4 pm on March 2, 2013. Below is an outline of the planned activities. To accomplish everything described below, we need a squadron of volunteers. There are three different shifts available: 9 am to 1 pm, 12:30 to 4 pm, and all day. We hope to have students from the Austin Peay Physics Club and a variety of high schools joining in the fun. There will be food for the volunteers.

For those wondering about possible attendance on this day, in 2012, there were 1,150 people in the Science Center on the first Saturday in March. In 2011, that number was closer to 2,000. ASC has a new marketing director, and he is VERY enthusiastic about the possibilities.

ASC had originally planned on hosting Astronomy Day on April 13, but for a variety of reasons, we are combining Rusty's Blast Off with Astronomy Day and having the event on March 2. As mentioned above, there is likelihood of increased attendance and promotion. While there are a lot of rocket activities, there is also plenty of astronomy and planetary content, and we can educate visitors about Comet PanSTARRS, which will be just around the corner.

If you think you are can volunteer for Blast Off!, please let Theo know or contact me directly at [krismccall@adventuresci.com](mailto:krismccall@adventuresci.com) or 615-401-5077.

### **Blast Off!**

Rusty Rocket's Launch Day

It IS Rocket Science.

March 2, 2013

### **Overview**

Join us from 10 AM to 4 PM on March 2, 2013, to explore the wonders of rocket science AND celebrate the premiere of the all-new, completely original, fulldome digital, Sudekum Planetarium production of **Rusty Rocket's Last Blast**.

**Blast Off!** Day will feature rocket building, launching, and even splashdown activities. Construct a scale model of the solar system. Take the Pizza Prediction or Remote Driving Challenges. Join Rusty Rocket's Rookie Rocket Recruitment Rally. In addition to Rusty Rocket's Last Blast, Sea Monsters and Skies Over Nashville will also be shown in the Sudekum Planetarium, and you won't want to miss Muttley's Vacuum Show.

### **outside**

- Countdown signs leading from Chestnut – no description needed
- Solar Scopes – Safely observe what's happening on the Sun today.
- One Giant Stomp – Take one giant stomp, and see how far you go.
- Walking Tour of the Solar System – Get a sense of the vast distances between the planets by walking all the way from the Sun to Pluto. It's a long way between rest stops in the outer solar system.

### **first floor**

- Rusty Rocket's Rookie Rocket Recruitment Rally – Complete this fun scavenger hunt to increase your rocket science knowledge. Then return to Mission Control with your completed form to claim

your Space Cadet ID Card.

- Paper Rockets – Make a simple rocket from just a strip of paper.
- Straw Rockets – Build a rocket out of straws and power it with a balloon full of air.
- Launch and Learn – Can you get your rocket to one of our targets?
- Drop Tower Discovery – See how scientists simulate weightlessness without leaving the ground, and how those observations help us explore space.
- Pizza Challenge – Can you guess (or calculate) how long it would take to rocket, jet or drive to our nearest neighbors in space? You'll find out it's much more than a hop, skip, and a jump to the nearest planets, let alone to Pluto.
- Comet Kitchen and Night Sky Network – Watch our Special Chef whip up a comet from common ingredients before your very eyes.
- Pocket Solar System – Create an accurate distance scale model of the solar system just by folding a piece of paper.

### **second floor**

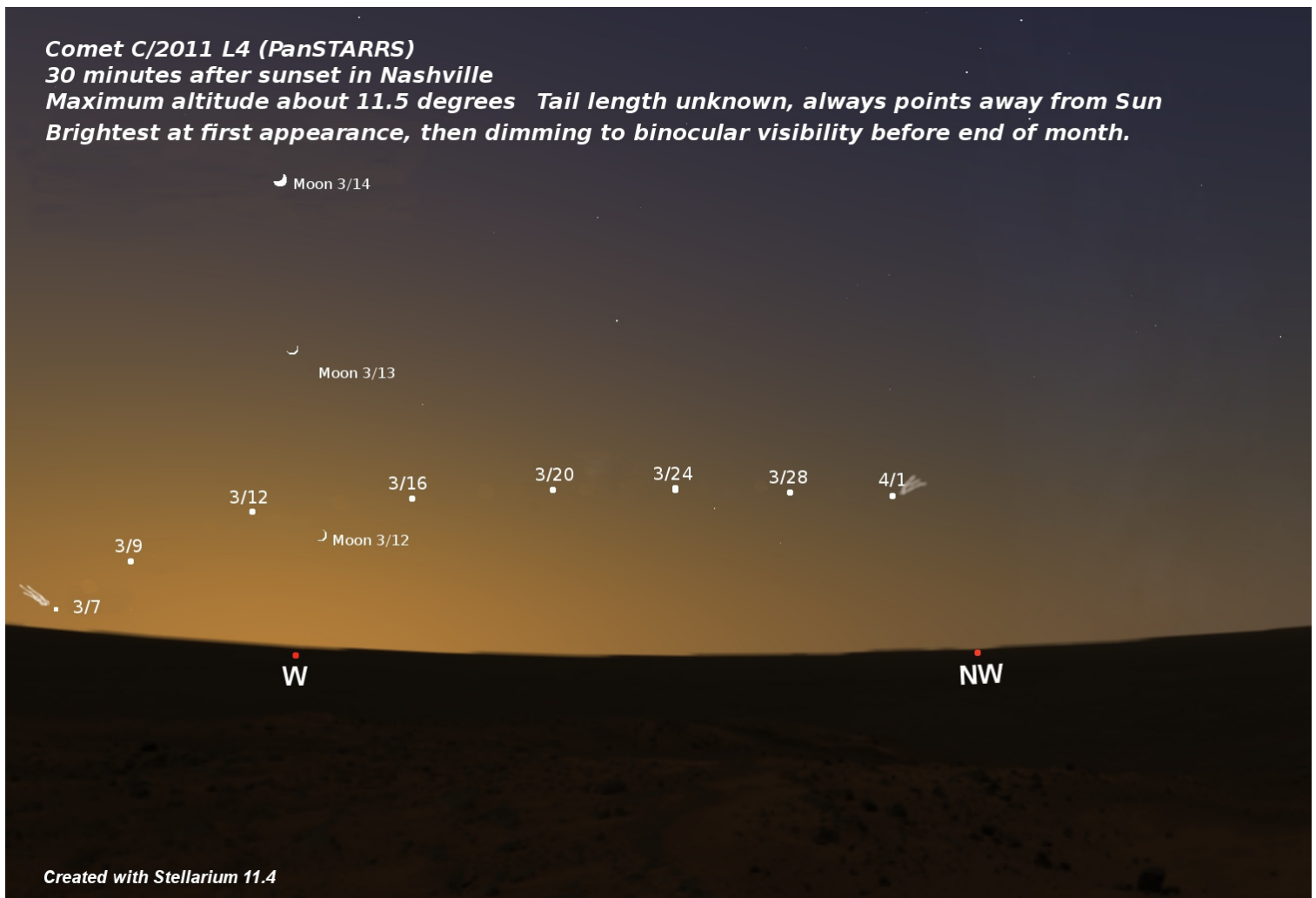
- Spashdown or Splat-down? – Can you build a safe landing capsule for your egg-stronaut using only the basic materials provided?
- Spectral Detectives – Observe different sources of light through diffraction glasses you get to keep.
- Muttley's Vacuum Demo – In space no one can hear you... because space is a vacuum. Explore what it means to be IN a vacuum during this humorous presentation by ASC's Julie "Muttley" Abbott.
- National Space Society – Compare models of past, present, and future space vehicles used for human and robotic exploration of our solar system neighborhood.
- Remote Driving Challenge – Discover the difficulties of driving a vehicle on another world, millions of miles away.
- Rocket Racers – Build a rocket racer and use Newton's Third Law of Motion to see if your vehicle will travel farthest for the day.

## Comet Update

In early March, the first of this year's comets will swing into the night sky: **Comet C/2011 L4 (PanSTARRS)**. The comet is currently in the southern hemisphere's sky, where it will be until a few days before perihelion on March 10. Brightness estimates have been revised downward, it just hasn't gotten all that bright. We are now looking in the range from +3 to +2 near perihelion. Closest approach to Earth is on March 5<sup>th</sup>. By the time it appears in Nashville's skies it will be moving away from us, slowly dimming over a few weeks. See the finding chart for how the comet will move through our evening sky. On March 13<sup>th</sup> you should be able to use the young Moon to look down and find the comet.

Of course, comet brightness is hard to predict, so we will just have to wait and see! Comet PanSTARRS should also give us practice in observing and photographing comets, visitors from the outer edges of the solar system. Both *Sky and Telescope* and *Astronomy* magazines have extensive coverage of all the comets of 2013.

<http://www.skyandtelescope.com/observing/highlights/Update-on-Comet-PanSTARRS-187930541.html>





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

President Theo Wellington called the meeting to order at 7:47 P.M. on Wednesday, February 20, 2013 at the Cumberland Valley Girl Scout Council Building in Nashville, Tennessee and welcomed members and visitors. Ms Wellington asked for corrections to the minutes of the previous membership meeting held on January 16, 2013 and, there being none, asked for a motion that these minutes be approved as published in the February 2013 edition of the Society's *Eclipse* newsletter. Bill Griswold so moved, Bob Norling seconded his motion, and the minutes were approved by a unanimous voice vote of the membership. Treasurer Bob Norling reported that the Society had \$1,682.76 in its regular account and \$1,233.13 in its equipment account.

Theo Wellington announced these upcoming star parties and other events:

- Mar 02 – Public star party at the Warner Parks from 7:30 PM to 9:30 PM,
- Mar 02 – “Rusty Rocket’s Last Blast” a presentation for kids at the Adventure Science Center,
- Mar 09 – Messier Marathon at Mark Manner’s Spot Observatory,
- Mar 16 – Public star party at Long Hunter State Park from 7:30 PM to 9:30 PM,
- Apr 05 – Public star party at Bowie Nature Park from 7:30 PM to 9:30 PM,
- Apr 13 – Public star party at The Adventure Center from 7:30 PM to 10:30 PM, and
- Apr 20 – Public Star Party at Nathan Bedford Forest State Park from 7:30 to 9:30 PM.

Ms Wellington also announced that the Cumberland Astronomical Society, located in Gallatin, TN, will hold its annual Tennessee Spring Star Party at Fall Creek Falls State Park on May 10-12, 2013. She also announced that Lowe’s home improvement stores were now carrying lights with the International Dark-Sky Association’s seal of approval. In addition, she noted that the dwarf planet Pluto’s newest moon recently discovered by NASA’s New Horizon space probe will be named Kimberly.

Theo Wellington delivered the evening’s program on “2013 – The Year of the Comets.” Ms Wellington noted that in the past comets were not understood and were typically thought of as being bad omens. Today we understand that comets originate in the distant Oort Cloud some 50,000 Astronomical Units away and are essentially “junk” left over from the solar system’s formation. To a great extent comets are like low density dirty icy snowballs that lose mass through evaporation as they approach the sun. This loss of mass can cause their paths to change making their orbits difficult to predict. She noted that Hale-Bopp in 1995 was the last really spectacular comet visible in the United States and that it could be seen for 18 months. She also explained that most comets these days were being detected by automated remote robotic observatories specifically designed for that purpose. Ms Wellington reported that comet C/2011 L4 PANNSTARS will be low in the west at possibly 3<sup>rd</sup> magnitude – and, thus, difficult to see - during early March of 2013. She stated that we might be able to see it at our scheduled party at Long Hunter State Park on March 16. However, she reported that comet C/2012 S1 ISON offered the prospect of being a fantastic sight by reaching -6 magnitude during November and December 2013. But she cautioned that, as with all comets, we will just have to wait and see what really happens. Ms. Wellington noted that the European Space Agency’s Rosetta probe was scheduled to attempt a landing on a Russian-discovered comet in May of 2014. She concluded by answering questions from the audience.

Since there was no further business to discuss, the meeting was adjourned at 9:10 P.M.

Respectfully submitted,  
Bob Rice, Secretary

## Become a Member of the BSAS!

Download and print the Application for membership from [www.bsasnashville.com](http://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.

## 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 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 [www.bsasnashville.com](http://www.bsasnashville.com). If you need more information, write to us at [info@bsasnashville.com](mailto:info@bsasnashville.com) or call John Harrington at (615) 739-4500.

[BSAS on Facebook](#)

## 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 Lonnie Puterbaugh at 615-661-9540.