The ECLIPSE

March 2014

The Newsletter of the Barnard-Seyfert Astronomical Society

Next Membership Meeting:
March 19, 2014, 7:30 pm
Cumberland Valley
Girl Scout Council Building
4522 Granny White Pike

Program Topic:
Terry Reeves and Gary Eaton
What's Up?
(details on page 5)

In this Issue:

Barnard-Seyfert Astronomical Society

From the President:

February has not been kind to star parties or observing… lots of clouds and cold. We've had a few clear nights, mostly (of course) when the Moon is full. So it's a good time of year to clean the eyepieces, collimate your telescope, and be ready when the better weather comes.

We have a number of events planned in March, perhaps not all of them will be clouded out!

First, next Wednesday, March 5th the Belcourt theater (Belcourt and 21st in Hillsboro village) has invited us to bring telescopes to their parking lot to observe the Moon, Jupiter, and whatever else we can see before their screening of 2001: A Space Odyssey. The movie starts at 7pm, so telescopes should be set up by 6 pm so that we are not in the flow of traffic. They are going to block off some spaces for us to set up in. Please let us know (info@bsasnashville.com) if you are coming so we know how many to plan for. They are showing cool science related movies all month, with speakers after, which should be very interesting.

March 8th is our first star party opportunity at Long Hunter State Park, then March 22nd at the Warner Park special events field. You don't need to bring a telescope to come out to a star party!!!! Just come out and enjoy the night sky. Lastly, on March 29th we will attempt our annual Messier Marathon out at Spot Observatory.

What is a Messier Marathon? Charles Messier (1730 - 1817) was a French astronomer who enjoyed

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Officers

Theo Wellington
President
tmwellington@comcast.net

Joe Boyd
Vice-President
boydjoe@comcast.net

Bud Hamblen
Secretary
wrhamblen@comcast.net

Bob Norling
Treasurer
rdncpa@mindspring.com

(no one)
Ex-officio

Directors at Large

Steve Cobb
s.a.cobb@comcast.net

Bill Griswold
bgriz@comcast.net

Jeffrey Horne
Jeffrey.Horne@gmail.com

Melissa Lanz
melissa_lanz@yahoo.com

Kris McCall
planetmccall@gmail.com

Poppy Simmons
poppysmmns@gmail.com

Drew Gilmore
Newsletter Editor
eclipse@bsasnashville.com

Observing Highlights February and March

Planets
Mercury
Venus
Mars
Jupiter
Saturn
Neptune
Pluto

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)*

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

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

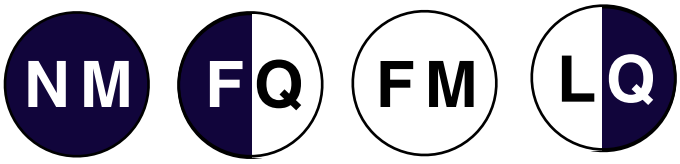
Globular Clusters
M79

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)*

Upcoming Star Parties

Sat 3/8 - 7:30-9:30	Long Hunter State Park
Sat 3/22- 7:30-9:30	Edwin Warner Park
Sat 3/29	Private star party at SPOT observatory for Messier Marathon
Sat 4/5 through 9:00 PM	Daytime activities and public star party at Forrest State Park
Sat 4/5 - 7:30-9:30	Cornelia Fort Airpark



Mar 1
Mar 30
Apr 29

Mar 8
Apr 7

Mar 16
Apr 15

Mar 23
Apr 22

Book Review: Marie Curie: A Life
reviewed by Robin Byrne

A recent trip to Brevard, NC found Adam and I in a thrift store where I stumbled upon the book "Marie Curie: A Life" by Susan Quinn. Needless to say, I snatched it up. I'm glad I did. I had only a vague knowledge of Marie Curie's scientific work and knew nothing of her private life. This book helped me to more fully appreciate this remarkable woman.

The author begins in Poland with Marie's parents, both of whom were educators. The early years were highly focused on education for all of their children. When Marie was still quite young, her mother was diagnosed with tuberculosis. Marie's oldest sister became heir mother's caretaker and accompanied her to a wide variety of sanitariums all over Europe. Meanwhile, Poland was being bombarded from all sides, with Germany taking over the region where Marie grew up. The dictatorial rule even appeared in the schools, not even allowing the children to speak Polish. Fortunately for Marie, the teachers at her school were loyal to Poland, so they only spoke German when being inspected.

From an early age, Marie showed a talent for science and had dreams of attending college. Unfortunately, at this time, women could not attend college in Poland and would have to study abroad. That was expensive, and Marie's family could not afford to send both her and her older sister to school. So, Marie's sister went to Paris to study to become a doctor, while Marie earned a living working as a governess. She had almost given up on the notion of college, when her sister contacted her, inviting Marie to move in with her and her new husband. In many ways, this was the start of Marie's life.

It was while a student that Marie met Pierre Curie. Working together in a laboratory, they soon realized that they were a good match. Their collaboration would continue until Pierre's untimely death (he was run over by a carriage). The Curies learned about the discovery of x-rays and were interested in seeing if other substances emitted some form of rays. By analyzing various sources of ore, they eventually found a new element, which Marie named Polonium (after her native Poland), that emitted rays. Eventually, the term "radioactive" would be applied to this element. This discovery, along with their subsequent work with radioactive materials, garnered the Curies much attention and praise. However, many believed that Marie, being a woman, could not have been a true collaborator, but merely a lab assistant. So, while Pierre received recognition from the established scientific societies (even though he loathed the attention), Marie was often ignored. It wasn't until some of their colleagues in the fields of physics and chemistry began speaking out that Marie earned the respect she was due. This culminated in the Curies receiving a Nobel Prize in Chemistry for their discovery.

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Marie Curie, continued

During all of this, Marie and Pierre had two daughters: Irene and Eve. Marie kept journals of their development. Ever the scientist, her entries included measurable aspects, such as height and weight, eating habits, as well as behavior. Over the years, it would be Irene who was most similar to Marie, with an aptitude for science and math. Eve was an enigma, with a talent for the arts.

After Pierre's death, Marie went into mourning for a few years. This had a profound affect on the children. When she finally came back to life, Marie was as enthusiastic about her work as she had ever been. This led her to work with a fellow chemist, Paul Langevin. They found they were kindred spirits and enjoyed their collaboration. However, Langevin was married and had children. Their affair would last for a few years, until Langevin's wife, who seems to have been mentally unstable, threatened to expose their affair with love letters she had found. Meanwhile, Marie was being considered for a second Nobel Prize, this time in physics, for her work with Polonium. The scandal broke in one of the seedier tabloids. Marie fled out of town, staying with various friends around France and Europe. The Paris tabloids painted her as a foreigner who brought her unfeminine ways to France, with the intent of ruining the French way of life. Many of her colleagues, including Albert Einstein, came to her defense, but as far as the press was concerned, Marie was a villain. Fortunately for Marie, the Nobel Committee was not in Paris, and she received the reward without any controversy. However, the Paris newspapers barely covered her accomplishment.

Not long after, World War I broke out, and Marie felt the need to help. The newly invented x-ray machines were being used in hospitals, but not on the front. Marie changed that. She assembled a fleet of cars, equipped with portable x-ray machines. She and Irene went around to the various fronts, training people how to use the machines. No one knows how many lives were saved because of her efforts.

These intervening years helped to erase the stigma of her affair, and Marie was able to return to her scientific work. Many believed that radioactive materials would ultimately be a cure for cancer, so enthusiasm for research in this area grew. With support from the French government and various societies, she was able to build the laboratory she had always dreamed of, plus a medical research wing funded by the Pasteur Institute. Marie found herself to be even more of a celebrity, and was invited to America by an enterprising woman named Marie "Missy" Meloney, who promised to raise enough money for Marie to purchase one gram of radium for her research. Marie despised the publicity tour she was obligated to take, but she did get the radium.

As her health began to deteriorate, Marie depended even more on Irene.

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From the President, continued from page 1

discovering comets – a total of 13. He kept running across other faint fuzzy objects in the sky that were not comets, so he kept a list to keep him from worrying about them more than once. Turns out that the list includes interesting objects – globular clusters, galaxies, open clusters, nebulae….so today we use Messier's list to look up relatively bright fun things in the night sky. On charts and lists, these are designated as M(number). Famous numbers are M1 (Crab Nebula), M45 (the Pleiades), and M31(Andromeda Galaxy). They are not in numeric order across the sky, nor are they evenly distributed, but that just adds to the challenge.

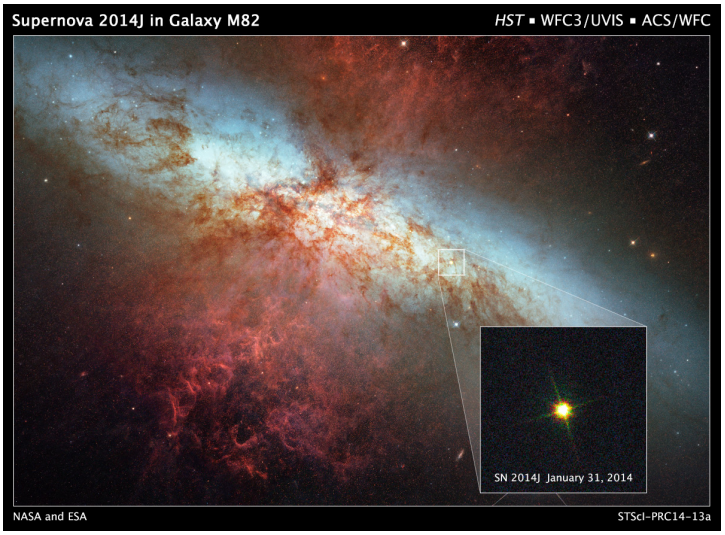
In March and April, it is technically possible to observe all 110 Messier objects in a single night, beginning with objects just barely visible in the sunset and the last few in the dawn. That's what makes it a marathon! And while most of us aren't that good, and we don't have the darkest sky, it's good fun to see how many you can find in a night. There are books that have finding charts, suggested orders of searching, all sorts of resources. It's great star hopping practice – no using your go-to software! You can also try it with binoculars. The New Moon comes right at the end of March this year, so we'll hope that warmer weather has moved in by then. If we have a clear night, come on out to Spot Observatory on March 29 and see how many you can bag.

Clear, dark skies,

Theo Wellington

Next BSAS meeting
March 19, 2014, 7:30 pm
Cumberland Valley
Girl Scout Council Building
4522 Granny White Pike

BSAS Members Terry Reeves and Gary Eaton will share "What's Up" in the early spring sky with an focus on finding Messier objects during the Messier Marathon at the end of March. The "What's Up" programs are done periodically through the year to help all of us to be more familiar with the sky at every season. Come on out and get ready for spring observing!



This is a Hubble Space Telescope composite image of a supernova explosion designated SN 2014J in the galaxy M82, at a distance of approximately 11.5 million light-years from Earth. Astronomers using a ground-based telescope discovered the explosion on January 21, 2014. This Hubble photograph was taken on January 31, as the supernova approached its peak brightness.
hubblesite.org/newscenter/archive/releases/2014/13/

Barnard-Seyfert Astronomical Society
Minutes of the Regular Meeting of the Board of Directors
Held on Wednesday, February 5, 2014

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 February 5, 2014. Board members Joe Boyd, Bud Hamblen, Jeffrey Horne, Melissa Lanz, Bob Norling and Theo Wellington were present. President Theo Wellington called the meeting to order at 7:38 PM CST.

Theo Wellington asked for a motion to approved the minutes of the meeting of the board of directors for January 8, 2014, as published in the February, 2014, edition of the Eclipse. Bob Norling so moved, Joe Boyd seconded, and the motion was carried by a unanimous voice vote.

Treasurer Bob Norling reported that there was $1,565.68 in the regular account and $1,528.94 in the equipment account.

The locations of the March 8 and March 22 public star parties were exchanged at the request of Heather at Warner Parks. Upcoming star parties are therefore:

February 8, 2014, 7:00 – 9:00 PM, public star party at Shelby Bottoms Nature Center.
March 1, 2014, private star party at Natchez Trace Mile Marker 433.5.
March 8, 2014, 7:30 – 9:30 PM, public star party at Long Hunter State Park.
March 22, 2014, 7:30 – 9:30 PM, public star party at Edwin Warner Park.
April 19, 2014, 8:30 AM – 6:00 PM, Earth Day Festival at Centennial Park. Solar observing.

Theo Wellington has been in discussions with Jessica House with the state parks about training volunteers and park rangers to do astronomy programs, especially for events such as meteor showers.

Upcoming meeting programs:

February 19, 2014, Joshua Emery, UTK, Asteroid Don Quixote
March 19, 2014, Terry Reeves and Gary Eaton, What's Up
April 16, 2014, Allyn Smith, APSU

Theo Wellington has invited Fabienne Bastien to speak, but has not yet received a response.

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

Chuck Schlemm suggested Lauren Palladino from Vanderbilt, after a story on Space.com about hypervelocity stars that are ejected from the Milky Way.

Theo Wellington remarked that volunteers are needed for an active program committee. Jeffrey Horne said that he may be able to arrange a speaker on neutrinos.

Bob Norling reported that SunTrust was not helpful on the subject of online payments.

BSAS Budget. Bob Norling provided a financial report for 2013. Annually recurring expenses included insurance premiums, Astronomical League dues, Girl Scout building rent, domain and web site hosting fees, state filing fees.

Joe Boyd provided copies of the existing equipment loan agreements for Steve Cobb to review.

Theo Wellington noted that the Boy Scout University will be held at Holy Family Catholic Church, Brentwood, TN, March 15, 2014, 7:30 AM – 1:00 PM, and asked for volunteers to staff a booth.

Theo Wellington reported that Jessica House had inquired about training volunteers and staff for astronomy. Ms House said that they train volunteers in mid-May, which would be a good time for contact. The goal is to have people trained in time for the 2017 total solar eclipse. Eleven state parks lie on the path of totality and all state parks will see 90% partial eclipses. Bud Hamblen recalled that at one time the state had purchased a number of 12.5” Meade Newtonians. Where are those telescopes now?

Theo Wellington asked for a current sales tax exemption certificate.

There being no further business to discuss, Theo Wellington asked for a motion to adjourn. Moved by Melissa Lanz and seconded by Bud Hamblen, the motion was carried by a unanimous voice vote at 8:44 PM CST.

Respectfully submitted,
Bud Hamblen, Secretary

This space reserved for your cool amateur astrophoto!
eclipse@bsasnashville.com

Barnard-Seyfert Astronomical Society
Minutes of the Monthly Membership Meeting
Held On Wednesday, February 19, 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 February 19, 2014, with 18 members and 4 guests signing in.

President Theo Wellington called the meeting to order at 7:40 PM CST, and asked for changes to the minutes of the December 18, 2013, membership meeting as published in the February 19, 2014, edition of the Eclipse newsletter. No changes being suggested, the president asked for a motion to approve the minutes. Spencer Buckner made the motion and Joe Boyd seconded. The motion was carried by unanimous voice vote. Treasurer Bob Norling reported that the society had $1,565.68 in the regular account and 1,528.94 in the equipment account.

Theo Welling announced upcoming star parties:

March 1, private star party at Natchez Trace Mile Marker 433.5.

March 8, 7:30 – 9:30 PM, public star party at Long Hunter State Park.

March 22, 7:30 – 9:30 PM, public star party at Warner Parks Special Events Field.

Theo Wellington called for volunteers to staff the society's table at the upcoming Middle Tennessee Council Boy Scouts of America University of Scouting. The event will be from 7 AM to 1 PM, Saturday, March 15, 2014, at the Holy Family Church, 9100 Crockett Rd, Brentwood, TN. See Theo Wellington if you want to help.

Theo Wellington noted that the Belcourt Cinema will have Science on the Screen, a series of science documentary and science fiction movies from Wednesday, March 5, 2014 through Monday, March 31, 2014. See http://www.belcourt.org/events/science-on-screen-connecting-cinematic-art-with-hard-science.727493. Wednesday, March 5, is an opportunity for sidewalk astronomy because both the Moon and Jupiter will be in the sky. Chuck Schlemm and Lonnie Puterbaugh will have exhibits inside the theater on March 31.

Theo Wellington recognized Jeff Horne's achievement as a NASA Social Participant. Jeff is one of 15 participant who will visit NASA's Goddard Space Flight Center, Green Belt, Maryland, February 27, 2014, in connection with the Global Precipitation Measurement mission.

Theo Wellington mentioned the BSAS equipment loaner program, including a Celestron C8 8" Schmidt-cassegrainian telescope and a smaller Newtonian reflector.

Anyone with an idea for future programs, please see Theo.

Dr Josh Emery presented a talk on the OSIRIS-REx asteroid sample return mission and answered members' questions. OSIRIS-REx is scheduled to be launched in September,

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Minutes of the Monthly Membership Meeting, continued

2016, to visit the asteroid 101955 Bennu and return a sample of material to Earth. The sample is expected to include material from the early history of the solar system. The web site for the mission is http://osiris-rex.lpl.arizona.edu/.

The Facebook page is OSIRIS-REx Sample Return Mission. The Twitter account is @OSIRISREx

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

Respectfully submitted,

Bud Hamblen, Secretary

Marie Curie, continued from page 4

When Irene married Frederic Joliot, Eve became her constant companion. Meanwhile, Irene and Frederic worked together, much as Marie and Pierre had. It was the Joliot-Curies (as they were known) who discovered that exposure to radioactivity can render a non-radioactive material, at least temporarily, radioactive. Irene and Frederic won the Nobel Prize in Chemistry for this discovery. The same effect they discovered is why many of Marie Curie's papers are still slightly radioactive.

People believed that radioactivity was going to be a miracle cure for a myriad of ailments. For this reason, many were reluctant to recognize its deadly effects, including Marie. Her declining health was attributed to overwork and the need for fresh air. One doctor misdiagnosed her as having tuberculosis, sending Marie abroad for her health. The trip was the beginning of her final decline. The doctors at the sanitarium found no evidence of tuberculosis, but, instead, extreme anemia (one of the more common causes of death for those who had been working with the radioactive elements in laboratories around the world). Within a few days, Marie Curie was dead.

A woman in a man's world, Marie Curie never saw herself as unique or unusual. She saw herself as a scientist doing what she loved. Those who worked with her described the joy she found from new discoveries. Those were probably the happiest moments of her life. She lived for her work. Sadly, it was her work that also killed her.

Marie Curie: A Life by Susan Quinn; Simon & Schuster 1995

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.

COOLIDGE CORNER THEATRE

SCIENCE ON SCREEN

An initiative of the **COOLIDGE CORNER THEATRE**
With major support from the **ALFRED P. SLOAN FOUNDATION**

At the Belcourt Theatre
2102 Belcourt Avenue, Nashville

Wed, Mar 5 at 7:00 pm **2001: A SPACE ODYSSEY**

Fri-Sat, Mar 7-8 at Midnight **TOTAL RECALL**

Sat, Mar 8 at 10:00 am **WINGED MIGRATION**

Mon, Mar 10 at 7:00 pm **PHASE IV**

Fri-Sat, Mar 14-15 at Midnight **AKIRA**

Sat, Mar 15 at 10:00 am **OCTOBER SKY**

SCIENCE ON SCREEN
CONNECTING CINEMATIC ART WITH HARD SCIENCE
HIGH SCHOOL INTERSESSION

Tue, March 18, 10:00am-1:00pm **RAIDERS OF THE LOST ARK**
Wed, March 19, 10:00am-1:00pm **BEASTS OF THE SOUTHERN WILD**
Thu, March 20, 10:00am-1:00pm **GATTACA**

Fri-Sat, Mar 21-22 at Midnight **ALTERED STATES**

Sat, Mar 22 at 10:00 am **WALL-E**

Mon, Mar 24 at 7:00 pm **PRIMER**

Fri-Sat, Mar 28-29 at Midnight **ROBOCOP**

Mon, Mar 31 at 7:00 pm **FOR ALL MANKIND**