

The ECLIPSE

August
2014

The Newsletter of the Barnard-Seyfert Astronomical Society

Next Membership Meeting:
August 20, 2014, 7:30 pm
Cumberland Valley
Girl Scout Council Building
4522 Granny White Pike

Program Topic:
TBD

In this Issue:

President's Message	1
Observing Highlights	2
Book Review: Empire of the Stars by Robin Byrne	3
Board Meeting Minutes June 4, 2014	6
Membership Meeting Minutes June 18, 2014	8
Membership Information	9

From the President:

August, and it's still cloudy! We need rain, and we need a run of clear nights!

Sometimes opportunities for astronomy outreach come when we are not out at night. This month features yet another "Supermoon." The Moon will be full in the same hour that it is at perigee, the nearest point to Earth in its orbit. Thus it will appear a small bit larger than last month and certainly larger than the apogee Moon back in January. This happens about every 13 months, and has been for, well, a very long time. Why is this news now? Because an astrologer (NOT an astronomer) gave it a cool name (perigee Moon didn't have quite the same ring) and some PR. Worse, a NASA sponsored site has run with this, this year allowing as to how there are three "supermoons." The Washington Post, not to be outdone, had an article about "five supermoons." They included super-new moons... which of course are invisible.

You can assure your friends and neighbors that this is normal, and not noticeable unless you have pictures of the smallest/biggest right next to each other. The "Moon Illusion," which makes the rising Moon look huge while it is near the horizon, is most of what we will see. Show them how you can cover the Moon with your little finger no matter where it is in the sky. The Moon is our nearest neighbor in space, fun to watch as it goes through the monthly cycle of phases, but you can explain that we don't normally do star parties during the Full Moon... it's not dark that night! Light pollution from the Moon



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

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 August and September

Open Clusters

Mel111 (*Coma Star Cluster*),
M6 (*Butterfly*), M7, M23,
M21, M18, M25, M26, M39,
M11 (*Wild Duck*), M29, M73,

Galaxies

M98, M99, M106, M61, M100,
M84, M85, M86, M49,
M87, M88, M91, M89, M90,
M58, M104 (*Sombrero Galaxy*),
M59, M60, M94,
M64 (*Black-Eye Galaxy*),
M63 (*Sunflower Galaxy*),
M51 (*Whirlpool Galaxy*),
M83, M101/M102,
NGC 6822 (*Barnard's*)

Globular Clusters

M68, M53, M3, M5, M80, M4,
M107, M13, M12, M10,
M62, M19, M92, M9, M14,
M28, M69, M22, M70, M54,
M56, M55, M71, M75, M72,
M15, M2, M30

Multiple Star Systems

Gamma Virginis (*Porrina*),
Alpha Canum Venaticorum,
Zeta Ursae Majoris (*Mizar*),
Epsilon Bootis, M40,
Mu Bootis (*Alkalurops*),
Beta Scorpii (*Acrab*),
Alpha Herculis (*Rasalgethi*),
Epsilon Lyrae (*Double Double*),
Beta Cygni (*Albireo*)

Nebulae

NGC6302 (*Bug*),
NGC6309 (*Box*),
NGC6543 (*Cat's Eye*),
M20 (*Trifid*), M8 (*Lagoon*),
M16 (*Eagle*), M17 (*Swan*),
M57 (*Ring*),
NGC6818 (*Little Gem*),
NGC6826 (*Blinking Planetary*),
M27 (*Dumbbell*),
NGC6888 (*Crescent*),
NGC6905 (*Blue Flash*),
NGC6960/6974/6979/
6992/6995 (*Veil*),
NGC7000 (*North America*)

Upcoming Star Parties

Fri 8/15 8:30 - 10:30 pm	Bells Bend Outdoor Center
Sat 8/23	Private Star Party Natchez Trace Parkway mile marker 433.5
Sat 9/13 8:00 - 10:00 pm	Long Hunter State Park
Sat 9/20	Private Star Party Natchez Trace Parkway mile marker 412
Fri 9/26 7:00 - 9:00 pm	Bowie Nature Park (Fairview)



Aug 25
Sep 24



Aug 3
Sep 2



Aug 10
Sep 8



Aug 17
Sep 15

Happy Birthday Meteorite Hits by Robin Byrne

This month we celebrate the anniversary of not one, but three separate incidents of meteorites hitting a building.

The first such event occurred the evening of August 7, 1969 in the village of Andreevka in the Slaviansky district of the USSR. This one fell through the roof of someone's house. The owner found a total of 600 grams of meteorite pieces, with the largest having a mass of 150 grams. The meteorite turned out to be a stony meteorite of the olivine-hypersthene chondrite type. Now known as the Andreevka Meteorite, the largest fragment is on display at the Donetsk Museum of Regional Studies.

There are conflicting reports regarding the second occurrence of a meteorite hitting a building. Some say it occurred in the early evening of August 18, 1974 in Esfahan, Iran, while others say it was in the morning. The meteorite fell through the roof of a secondary school, leaving a hole between 1 and 2 feet in diameter in its wake. Two

fragments were found by a janitor, who claimed they were still hot. The surface was partially coated with asphalt from the roof, while the remainder was exposed fusion crust. The reported total mass values range from 2.7 to 3.2 kilograms. Now known as the Naragh meteorite, it is a stony meteorite of the olivine-bronzite chondrite type. In 1979, researchers at Stanford University studied sample slices from the meteorite in more detail. They found it to be fine-grained with many glassy chondrules of olivine. The composition is about 80% silicates, 14% metals, with the remaining 6% a variety of other materials. The structure implies that the meteorite experienced a high temperature era, leading to the crystalline structure observed, while a later collision probably occurred, as well, evidenced by fine-grained chondrules. It is now on display at the Geophysical Institute in Tehran, Iran.

Our last honoree fell on the evening of August 15, 1989 in the town of Sixiangkou,

Continued on next page

**Next BSAS meeting
August 20, 2014, 7:30 pm
Cumberland Valley
Girl Scout Council Building
4522 Granny White Pike**

Program topic TBD.

The first meeting of the newly constituted International Dark Sky chapter immediately follows the membership meeting. It will be short, no more than 30m.

Book Review, continued

in the Jiangsu Province of China. This meteorite first was detected by a sonic boom as it fell through the atmosphere, before it hit the roof of the house owned by Mr. Luan Jianzhong. A total of four fragments were found in and around the house for a total mass of 630 grams. The Sixiangkou Meteorite, too, was found to be a stony meteorite of the olivine-bronzite chondrite type. The largest piece, with a mass of 300 grams, is on display at the Purple Mountain Observatory, Academia Sinica, Nanjing, China.

Meteorites striking buildings, animals and people are not as rare as you might think. From the year 1750 to 2010, there have been 14 known cases of people being hit by meteorites, 6 of animals being struck, and 110 buildings. Since buildings are larger, it makes sense that they would have a higher frequency of impacts. Animals can't report impacts, so their numbers would be lower. Looking at the rate of reported impacts per quarter century, there is an apparent increase of meteorite strikes (rising from only 1 report from 1750-1774 up to 33 in 1975-1999). This is clearly a combination of better communication and higher population densities rather than an increase in number of actual meteorites striking Earth.

Meteorite impacts always make me think of the scene from "The Wizard of Oz" when Glenda the Good says to the Wicked Witch of the West, "Begone, before somebody drops a house on you, too!" The Wicked

Witch then gives a worried glance up to the sky. Although the numbers imply roughly one incident per year, maybe we all should give a wary look to the sky from time to time before somebody drops a meteorite on you, too!

References:

The Naragh Meteorite: A New Olivine-Bronzite Chondrite Fall by Adib and Liou
adsabs.harvard.edu/full/1979Metic..14..257A

Sixiangkou meteorite, Sixiangkou, Gaogang District, Taizhou Prefecture, Jiangsu Province, China
www.mindat.org/loc-69701.html

Fall of the Andreevka, USSR, Stony Meteorite by Roy S. Clark, Jr.
adsabs.harvard.edu/full/1976Metic..11...69C

Meteoritical Bulletin: Entry for Sixiangkou
www.lpi.usra.edu/meteor/metbull.php?code=23619

Meteoritical Bulletin: Entry for Naragh
www.lpi.usra.edu/meteor/metbull.php?code=16909

Meteoritical Bulletin: Entry for Andreevka
www.lpi.usra.edu/meteor/metbull.php?code=2296

Meteorite Hits Page
imca.cc/old_site/metstruck.html

There was no BSAS board meeting in July 2014.

From the President, continued from page 1

will wash out a lot of our annual Perseid meteor shower this year (peak on Tuesday night August 12 - 13). Encourage them to observe the Moon with binoculars at crescent up to quarter Moon... when the shadows near the line between day and night on the Moon really make the craters stand out. The great thing about the Moon is that you don't need a telescope to have fun.

The August sky will also demonstrate to the naked eye why the ancients called those five special dots "wandering stars." Mars will be scooting visibly closer to Saturn as they both move lower in the west. And remember... the evening sky is only half the story! If you are out walking the dog before dawn, look to the low eastern sky. Venus is bright, and will be joined by Jupiter for a spectacular naked eye conjunction the morning of August 18th. Less than a half a degree apart, worth getting out early (5:15am) for.

No gear needed... the sky is available to everyone. Doesn't matter how old - or young - you are, how much money you have, what country you live in or whether you are a man or a woman. Turn off the lights, go out and enjoy our view of the universe!



Send your great amateur
astrophotos to:
eclipse@bsasnashville.com

**Barnard-Seyfert Astronomical Society
Minutes of the Monthly Membership Meeting
Held On Wednesday, July 16, 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, July 16, 2014. 21 members and guests signed in. The meeting was called to order at 7:34 PM. President Theo Wellington asked for a motion to adopt the minutes of the June 18, 2014, membership meeting as published in the July, 2014, issue of the Eclipse. Mike Benson so moved, Spencer Buckner seconded, and the minutes were adopted by a unanimous voice vote. Bob Norling reported that there were \$1,528.26 in the regular account and \$1,528.94 in the equipment account. Theo Wellington announced the following star parties:

- Saturday, July 19, 2014, public star party at Pickett State Park, Jamestown, TN.
- Friday, July 25, 2014, from 8:30 to 10:30 PM, public star party at Bowie Nature Park, Fairview, TN.
- Saturday, July 26, 2014, private star party at Water Valley Overlook.
- Saturday, August 15, 2014, from 8:30 to 10:30 PM, public star party at Bells Bend Outdoor Center. This is during the annual Perseid meteor shower.
- Saturday, September 6, 2014, solar viewing during the annual Dragon Boat Festival.
- Saturday, September 13, 2014, solar viewing at the Bowie Nature Fest, Bowie Nature Park, Fairview.

Chuck Schlemm mentioned an event at the Tullahoma Hands On Science Center, Saturday, August 2, 2014.

Theo introduced Craig and Tammy Temple, who described their astrophotographs and how they were made. More than astrophotography is available at cntastro.smugmug.com. Their astrophotography gallery is available at cnttemple.astrophotogallery.org.

There being no further business the meeting was adjourned at 9:30 PM.

Respectfully submitted,

Bud Hamblen, Secretary

Become a Member of BSAS!

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

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

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

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

Annual dues:

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

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

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

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

About BSAS

Organized in 1928, the Barnard-Seyfert Astronomical Society is an association of amateur and professional astronomers who have joined to share our knowledge and our love of the sky.

The BSAS meets on the third Wednesday of each month at the Cumberland Valley Girl Scout Building at the intersection of Granny White Pike and Harding Place in Nashville. Experienced members or guest speakers talk about some aspect of astronomy or observing. Subjects range from how the universe first formed to how to build your own telescope. The meetings are informal and time is allotted for fellowship. You do not have to be a member to attend the meetings.

Membership entitles you to subscriptions to *Astronomy and Sky & Telescope* at reduced rates; the club's newsletter, the *Eclipse*, is sent to members monthly. BSAS members also receive membership in the Astronomical League, receiving their quarterly newsletter, the *Reflector*, discounts on all astronomical books, and many other benefits.

In addition to the meetings, BSAS also sponsors many public events, such as star parties and Astronomy Day; we go into the schools on occasion to hold star parties for the children and their parents. Often the public star parties are centered on a special astronomical event, such as a lunar eclipse or a planetary opposition.

Most information about BSAS and our activities may be found at bsasnashville.com. If you need more information, write to us at info@bsasnashville.com 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.