

# The ECLIPSE

July  
2014

*The Newsletter of the Barnard-Seyfert Astronomical Society*

## Next Membership Meeting:

July 16, 2014, 7:30 pm  
Cumberland Valley  
Girl Scout Council Building  
4522 Granny White Pike

## Program Topic:

*Astrophotographers  
Craig and Tammy Temple*

*(details on page 4)*

## 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:

July... hot days and hot nights! Still, the summer sky has a lot to entice us out on those hot but clear nights. The stunning rings of Saturn are nicely displayed this year, and the summer Milky Way with its nebulas, clusters and clouds of stars never disappoints. Just have a cool drink and some bug spray handy.

Perhaps a bit cooler in East Tennessee... consider coming to Pickett State Park for their summer star party on July 19th. The star party starts at 9pm, contact ranger Monique Johnson for details and where the telescopes will set up. The park has asked for help twice a year, on New Year's Eve and then in the summer. Campsites can be reserved, check if cabins are available.

Monique Johnson Hodge, Park Ranger  
Pickett CCC Memorial State Park  
4605 Pickett Park Hwy  
Jamestown, TN 38556

office-931-879-5821  
cell-931-319-0580

If the weather cooperates, the sky will be worth the 2.5 hour drive. Maybe find some of the summer Messier objects out under a dark sky! (See last month's Eclipse, you can be working on your Astronomical League pins.)

The following weekend, Friday night the 25th, our star party is at Bowie Park in Fairview (8:30 - 10:30), with the monthly private star party the next night (26th) on the Natchez Trace (Water Valley



## Officers

Theo Wellington  
President

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

Joe Boyd  
Vice-President

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

Bud Hamblen  
Secretary

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

Bob Norling  
Treasurer

[rdncpa@mindspring.com](mailto:rdncpa@mindspring.com)

(no one)  
Ex-officio

## Directors at Large

Steve Cobb

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

Jeffrey Horne

[Jeffrey.Horne@gmail.com](mailto:Jeffrey.Horne@gmail.com)

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)

Drew Gilmore

Newsletter Editor

[eclipse@bsasnashville.com](mailto:eclipse@bsasnashville.com)

## Observing Highlights July and August

### Open Clusters

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

### Galaxies

NGC3115 (*Spindle Galaxy*),  
M95, M96, M105, M108,  
M65/M66/NGC3628  
(*Leo Triplet*),  
M109, 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

### Multiple Star Systems

Gamma Leonis (*Algieba*),  
M40, Gamma Virginis  
Alpha Canum Venaticorum  
Zeta Ursae Majoris (*Mizar*),  
Epsilon Bootis  
(*Izar or Pulcherrima*)  
Mu Bootis (Alkalurops),  
Beta Scorpii (Acraab),  
Alpha Herculis (Rasalgethi),  
Epsilon Lyrae (Double Double),  
Beta Cygni (Albireo)

### Nebulae

NGC3242 (*Ghost of Jupiter*),  
M97 (*Owl*), 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*)

### Planets

Venus, Mars, Jupiter,  
Saturn, Uranus, Neptune

## Upcoming Star Parties

Fri 7/25 8:30 - 10:30 pm	<a href="#">Bowie Nature Park (Fairview)</a>
Sat 7/26	Private Star Party <a href="#">Natchez Trace Parkway mile marker 412 (Water Valley Overlook)</a>
Fri 8/15 8:30 - 10:30 pm	<a href="#">Bells Bend Outdoor Center</a>
Sat 8/23	Private Star Party <a href="#">Natchez Trace Parkway mile marker 433.5</a>



Jul 26  
Aug 25



Jul 5  
Aug 3



Jul 12  
Aug 10



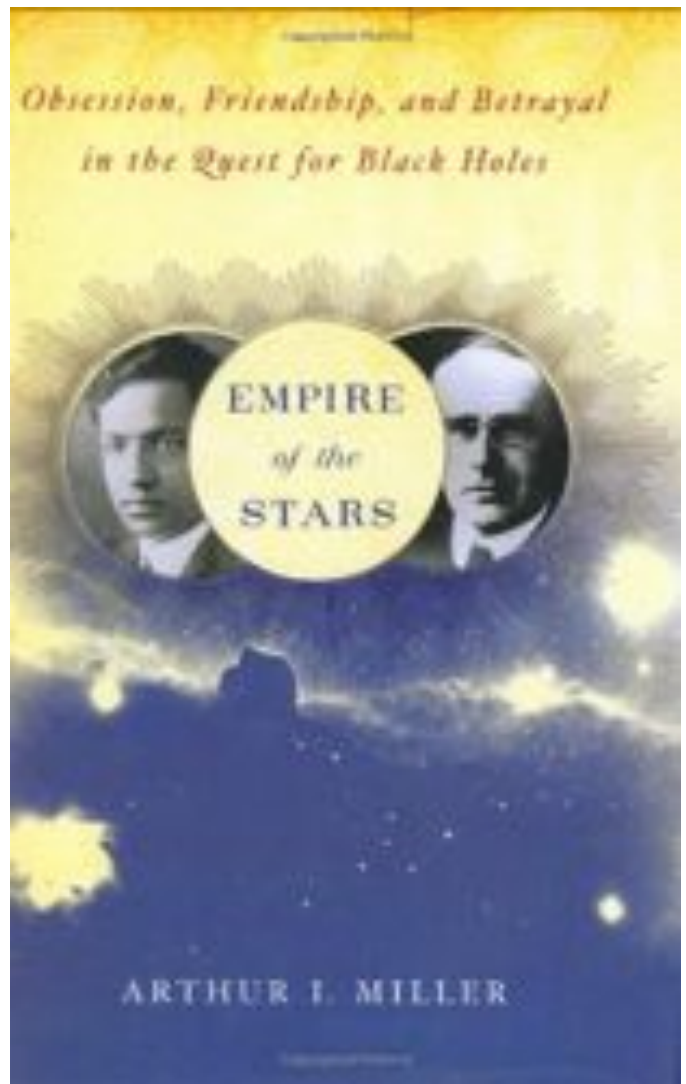
Jul 18  
Aug 17

**Book Review: Empire of the Stars: Obsession, Friendship,  
and Betrayal in the Quest for Black Holes**  
Reviewed by Robin Byrne

This month, we return to the ol' bookshelf. A recent trip included a stop in a used book store, where I found "Empire of the Stars" written by Arthur I. Miller. The book is about Subrahmanyan Chandrasekhar and his life, focusing on his discovery that there is a limit to the mass of a white dwarf.

We begin with Chandra's early life. He was brought up in a very proper Indian household. His father was a civil servant working for the railroad, but Chandra's uncle, Raman, was a well known physicist, and there was clearly a rivalry between Chandra's father and Raman. Chandra began to show signs of greatness while in school, when he performed research with his uncle, published his first papers, and gave public lectures. By the time he finished college, he was clearly a rising star, so it was natural that he would travel to England to attend Cambridge, where he would work on his PhD. It was on the ship, traveling to England, that Chandra made his discovery: beyond a certain mass, a white dwarf will collapse to nothingness. He couldn't wait to share this breakthrough with the world.

At Cambridge, Chandra worked with Arthur Eddington. Eddington was considered the preeminent expert on stars, so it was natural for Chandra to latch onto him. However, Eddington had his own ideas about stars, and the notion that a white dwarf, or anything, could collapse into nothingness was outrageous. He was not supportive. It all came to a head at a meeting of the Royal Astronomical Society in 1935. Chandra presented his work, and Eddington tore his



arguments apart. If Chandra had won his audience at first, Eddington made sure Chandra had no supporters by the time he was through. It was a slaughter. Chandra never fully recovered from this public humiliation.

The book takes us through all of Chandra's life and work, but this early setback clearly left its mark. Even after Chandra was vindicated, and won the Nobel Prize in Physics for this discovery, he didn't feel

**Book Review, continued**

appreciated. While at Cambridge, Chandra did not receive the same offers of positions as his white colleagues. Prejudice against his color was at work. When he came to America, within the scientific community, his treatment was better, but discrimination in other settings was still a regular occurrence. Although he continued to work in a wide variety of areas in astrophysics, and published several books, he resented only being remembered for his earliest work.

The life of Chandrasekhar spans a time when astronomers went from knowing next to nothing about stars to having detailed models of stellar interiors and their life cycles. When Chandra began his work, the idea of nuclear fusion powering stars had not yet been proposed. The concepts of neutron stars and black holes had not been dreamt of, let alone accepted.

While the author's goal was to tell the story of Chandra, and clearly had a bias in his favor, his depiction of Eddington paints a very unpleasant picture. Eddington is presented as being pompous, malicious, and completely certain in his own righteousness. Chandra is not the only one who ends up being intellectually bullied by Eddington. But at the same time, Chandra continued to consider Eddington as a friend throughout his career, which may be why Eddington's betrayal cut so deep. Both men had their flaws, and Miller is not afraid to give the reader a glimpse of these imperfections.

For an enjoyable read about the history of stellar astronomy, the people who ultimately figured it all out, and especially the life of Subrahmanyan Chandrasekhar, I highly recommend "Empire of the Stars."

*Empire of the Stars: Obsession, Friendship, and Betrayal in the Quest for Black Holes*  
by Arthur I. Miller, Houghton Mifflin, 2005

**Next BSAS meeting  
July 16, 2014, 7:30 pm  
Cumberland Valley  
Girl Scout Council Building  
4522 Granny White Pike**

Craig and Tammy Temple, talented local astrophotographers from Hendersonville, will talk about their experiences learning how to take pictures of the night sky. Starting with a digital camera and working up, their work has been featured in *Sky and Telescope* and *Astronomy* magazines. The August *Astronomy* magazine features their review of the MallinCam Jr Pro camera. Many of their images were captured from home in Hendersonville!

## From the President, continued from page 1

Overlook, MM 412). The way this year has gone, we'll feel very fortunate to get two clear nights, but we can hope.

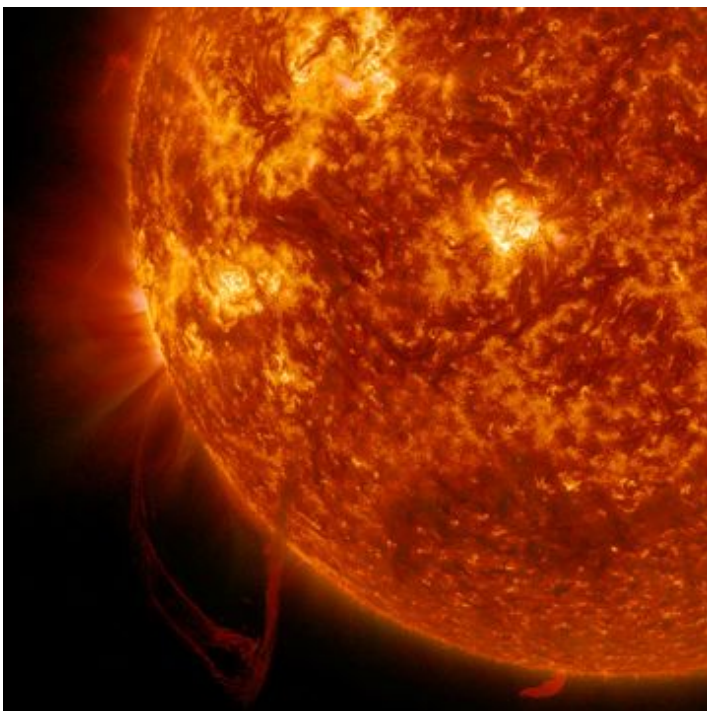
Craig and Tammy Temple, a local couple that do some stunning astrophotography (see <http://cntastro.smugmug.com/>) will be speaking at our July 16th regular meeting... come on out, get some tips and then be ready to head for dark skies! If some of you take some astronomical pictures on vacations this year, share them on our Facebook page or send them to the editor of the *Eclipse*, we'd love to show them off.

Clear, dark skies,

Theo Wellington



Thanks to Craig and Tammy Temple for organizing a local International SUNday event....we had several solar telescopes on hand to share views of our nearest star with friends in Hendersonville. Members of all local astronomy clubs were there, it was a nice day to get a number of "Wow!" responses from first time Sun viewers! Solar glasses were given out to save to view the Solar Eclipse in 2017. This is yours truly with a new astronomy friend. (Image credit: Tammy Temple)



The Sun sported a very long filament that stretched out over 500,000 miles (800,000 km) and was visible for several days (June 3-4, 2014). It broke apart and dissipated soon after the end of the video clip. Filaments are tenuous strands of plasma held above the Sun's surface by magnetic forces. They appear darker because their temperature is somewhat cooler than that of the Sun's surface. The still image, shown in a combination of two wavelengths of extreme ultraviolet light, was taken at 11:33 UT on June 4.

[Credit: Solar Dynamics Observatory/NASA.](#)

Send your great amateur  
astrophotos to:  
[eclipse@bsasnashville.com](mailto:eclipse@bsasnashville.com)

**Barnard-Seyfert Astronomical Society**  
**Minutes of the Regular Meeting of the Board of Directors**  
**Held on Wednesday, June 4, 2014**

The regular meeting of the Board of Directors of the Barnard-Seyfert Astronomical Society was held June 4, 2014, at the Girl Scouts of Middle Tennessee, 4522 Granny White Pike, Nashville, TN 37204. A sign-in sheet was passed around instead of calling the roll. Present were Joe Boyd, Bud Hamblen, Jeff Horne, Kris McCall, Bob Norling, Poppy Simmons and Theo Wellington. A quorum being present, Theo Wellington called the meeting to order at 7:30 PM CDT. Theo asked for a motion to approve the minutes of the April 2, 2014, board meeting. Joe Boyd so moved, Bob Norling seconded, and the minutes were approved by a unanimous voice vote. Bob Norling reported that we had \$1,764.26 in the regular account and \$1,528.94 in the equipment account. Bob Norling reported that he has received additional payments for memberships and that he is forwarding revised membership information to Theo Wellington and Drew Gilmore. Mike Benson will receive the revised membership list for the Astronomical League.

Theo reported that the following star parties were scheduled:

- June 21, public star party at Long Hunter State Park from 8:30 PM to 10:30 PM.
- June 22, solar viewing all day in Hendersonville (not a BSAS event). Contact Craig and Tammy Temple for details.
- June 28, private BSAS star party at Natchez Trace Mile Marker 433.5.

Kris McCall said she would be putting a message on the tnastronomy Yahoo group to ask for volunteers to do sidewalk astronomy at the Adventure Science Center on the second Saturday of the month, June 14, 2014.

Theo reported on the following prospective membership meeting programs:

Mallory Johnston, from Marshall Space Flight Center, will be presenting the program for the July 16, 2014, membership meeting. Jeff Horne noted that Ms Johnston currently is working on manufacturing in orbit. Members of the Space Society will be encouraged to attend this meeting.

For August we may have either a "What's Up" presentation or an International Dark-Sky Association presentation (by Joe Boyd) for the August meeting.

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

[We need input on future programs. Any member who has an idea for a program, a lead on a prospective presenter, or has something to say, should contact a board member.]

Theo reported that efforts are ongoing for on-line payments.

Joe Boyd reported that a time and a place for the International Dark-Sky chapter meeting were being arranged.

Theo Wellington and Kris McCall reported on their attendance at the training program for State Parks personnel held at Natchez Trace State Park. They had success giving suggestions for night sky events.

The proposed loaner agreement was circulated. An incomplete list of loaner equipment had been circulated by e-mail, and a more complete inventory is believed to exist, but no copy has been located.

It was noted that the free Green Hills News newspaper carried a column about astronomy provided by Dyer Observatory, and that the society could place notices of public star parties in these papers. [The web site for the Green Hills News is at [gcanews.com](http://gcanews.com).]

Kris McCall reported that there were 102 attendees at the Nature Center and 87 at the Special Events Field for the anticipated Camelopardalid meteor shower on the early morning of Saturday, May 24, 2014. Chuck Schlemm brought the society dob and Lonnie Puterbaugh brought the Astronomy Channel van. Sky conditions were surprisingly good considering the clouds earlier, and attendance was surprisingly good, considering the time of the event.

Theo noted that the lunar eclipse of September 27, 2015, probably is the next prominent astronomical event easily visible in the evening.

There being no further business, Bob Norling moved for adjournment, Jeff Horne seconded, and the meeting was adjourned at 8:15 PM.

Respectfully submitted,  
Bud Hamblen, Secretary

**Barnard-Seyfert Astronomical Society  
Minutes of the Monthly Membership Meeting  
Held On Wednesday, June 18, 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, June 18, 2014. 22 members and guests signed in. The meeting was called to order at 7:35 PM. Joe Boyd asked for amendments to the minutes of the May 21, 2014, membership meeting as published in the June, 2014, issue of the Eclipse. There being none, the minutes were adopted as published. Bob Norling reported that there were \$1,684.26 in the regular account and \$1,528.94 in the equipment account. Joe Boyd announced that the initial meeting of the Nashville chapter of the International Dark-Sky Association was tentatively scheduled for June 25, 2014, at the Green Hills Public Library and passed around a contact list. He said that confirmation of the meeting time and place would be emailed to those on the list. Theo Wellington announced the following star parties:

- Saturday, June 21, 2014, from 8:30 to 10:30 PM at Long Hunter State Park, Hermitage, TN.
- Sunday, June 22, 2014, Sun Day at Memorial Park, E Main St, Hendersonville, TN, with Craig and Tammy Temple.
- Saturday, July 19, 2014, Pickett State Park, Jamestown, TN.
- Friday, July 25, 2014, from 7:00 to 9:00 PM at Bowie Nature Park, Fairview, TN.

Theo Wellington introduced Mallory M. Johnston, who is a project manager with NASA at the Marshall Space Flight Center, Huntsville, AL.

Ms. Johnston described her project for testing 3D printing on the International Space Station and the potential for manufacturing in space. The project will fly in 2014-2015: [http://www.nasa.gov/mission\\_pages/station/research/experiments/1115.html](http://www.nasa.gov/mission_pages/station/research/experiments/1115.html) This talk was well received and elicited many questions and comments.

Curt Porter announced the Cedars of Lebanon Hamfest, August 23, 2014. <http://www.smrclub.com/smrclub/col2014>

There being no further business the meeting was adjourned at 8:55 PM.

Respectfully submitted,

Bud Hamblen, Secretary



**Become a Member of BSAS!**

Visit [bsasnashville.com](http://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](http://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](http://bsasnashville.com). If you need more information, write to us at [info@bsasnashville.com](mailto: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](mailto:info@bsasnashville.com).