

Upcoming Events

Board of Directors Meeting

February 3rd at the Cumberland Valley Girl Scout Council Building
– 7:30 pm

March 3rd at the Cumberland Valley Girl Scout Council Building
– 7:30 pm

Membership Meeting

February 17th at the Adventure Science Center – 7:30 pm

March 17th at the Adventure Science Center – 7:30 pm

Star Parties

February 12th – BSAS Public Star Party at Shelby Bottoms Nature Center 7:30 – 9:30 pm

March 5th – BSAS Private Star Party at Natchez Trace mm 412 - Practice for Messier Marathon

March 12th – BSAS Public Star Party at Edwin Warner Park 7:30 – 9:30 pm

March 26 – BSAS Public Star Party at Adventure Science Center 8:00 - 10:00 pm

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I Got a Telescope for Christmas – Now What?

Thursday, February 17, 2011
Adventure Science Center
7:30 pm



Need help with your new telescope or accessory? Bring it to the next BSAS meeting at the Adventure Science Center on February 17th and knowledgeable and helpful BSAS members will give you a hand!

(Note this is the meeting previously scheduled in January that was postponed due to inclement weather.)



From The President

Greetings and clear skies from your BSAS president. I hope everyone is thawing out from the deep freeze of the first weeks of February. Depending on where you live, you may be digging out one inch to more than six inches of snow that has fallen over the last week. I know it looks pretty in the trees and on the ground but if you have had to drive in it you know how treacherous it can be. I spent ten winters in North Dakota and Minnesota so I am more experienced than most at driving on the white stuff but I still dread having to do it.

This winter has put a serious dent in our public programs as well. The program for our January meeting was supposed to be "I got a new telescope for Christmas, now what?!?" but the weather caused us to cancel the meeting. That was the first time in my memory that we have cancelled a BSAS public meeting and I have been a pretty regular attendee since 2003. Since the "...now what?!?" program is one of our more popular programs, we have decided to reschedule it for the February meeting. The idea behind this program is to help those that got a new telescope for Christmas (or whenever you got it) to figure out how to use it. If you are one of those lucky ones that got a telescope recently, bring it to the meeting on February 17. Even if you have already figured out how to set it up and operate it, bring it. There are bound to be others that got a similar 'scope and are still struggling with it. You can help them to learn the ins and outs of their new toy. Hopefully the weather will cooperate this time and we will have a good turn-out with lots of shiny new telescopes to gather around.

Despite the frigid weather we have had this winter, there was a brief respite from it just in time for our last private star party on the Natchez Trace on January 29. Although I was unable to make it, there were a good number of BSAS members and guests that did. The temperature was moderate (for late January) and the skies were clear making for a pleasant evening of stargazing and camaraderie. Our next private star party is on March 5 at mile marker 412. If the weather cooperates, this will be a great opportunity to hone your skills for the Messier Marathon which will be the first Saturday in April this year. We also have a public star party at the Shelby Bottoms Nature Center on February 12.

Continued on Page 2



"Space is big. You just won't believe how vastly, hugely, mind-bogglingly big it is. I mean, you may think it's a long way down the road to the drug store, but that's just peanuts to space."

Douglas Adams (1952-2001)
Author – The Hitchhiker's Guide to the Galaxy

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

February 2011

02/02 NEW Moon
 02/11 FIRST Quarter
 02/18 FULL Moon
 02/26 LAST Quarter

March 2011

03/04 NEW Moon
 03/12 FIRST Quarter
 03/19 FULL Moon
 03/26 LAST Quarter

OBJECTS VISIBLE THIS MONTH

Messier Objects:

Open Clusters:

M45 – The Pleiades, M35, M36, M37, M38

Nebulae:

M42 – The Orion Nebula, M43, M78

Supernova Remnant:

M1 – The Crab Nebula

Globular Cluster:

M79

From the President, cont.

The BSAS Programs Committee met in January and planned out our program schedule for the coming year. Many of our programs have become somewhat traditional (December pot luck and silent auction, November "All I want for Christmas", January "...now what?!?" and a few "What's up?") so putting together a year's worth of programs is much easier than it used to be. Since we had an MTSU summer last year with three speakers from MTSU, we decided to spread it around a little this year with speakers from Vanderbilt, TSU, APSU and other colleges and universities in middle Tennessee. Not all speakers have been confirmed yet but I am sure we will have a number of interesting talks about what is going on in astronomy in Tennessee this year.

There is, of course, an ulterior motive for having speakers from local universities do presentations to the BSAS. Like many astronomy clubs around the country the BSAS is suffering from a graying of its membership. By inviting speakers from the local universities I am hopeful they will drag some of their students to the meeting with them. One of the first things I did as president was to expand the student membership category to include university students and reduce the rate to \$12 per year since we all know how poor college students are. If you know a college student that is interested in astronomy or maybe taking an astronomy class, invite them to a club meeting and/or star party. Of course we would also like to see students younger than college age attend our meetings so if you know a high school student (or even younger), invite them too. You might tell them about our Facebook page where they can find out about the club and what it does.

See you Thursday February 17!

Dr. Spencer Buckner
 President

Book Review: *Longitude*

by Robin Byrne

This month we'll look at another book written by Dava Sobel, "*Longitude: The True Story of a Lone Genius Who Solved the Greatest Scientific Problem of His Time.*"

Once again, Sobel tells the story of a scientific nature in terms of the people involved. In this case, the problem is how to determine your position while at sea. During the early days of exploration on the high seas, sailors could easily determine their latitude (position north-south) by observing the North Star. In the Northern Hemisphere, the North Star's altitude above the horizon (measured in degrees) is equal to your latitude. A similar technique could be used with stars near the South Celestial Pole in the Southern Hemisphere. However, longitude (position east-west) was trickier. Ideally, the sailor needed an object to determine the local time and a way to know the time at a home base. The difference between the times indicates your position east or west of the home base, where every hour difference equals 15 degrees of longitude. Local time could be found by observing the Sun's altitude. The trouble was, how do you know the time at your home base?

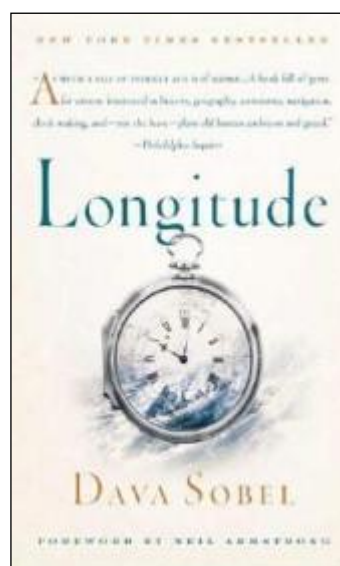
Because of the difficulty of determining position, countless ships and men had been lost at sea. In 1714, the British Parliament passed the Longitude Act, promising 20,000 British Pounds to the individual who could provide a repeatable way of determining longitude at sea to within half a degree (equivalent to within 30 nautical miles at the Equator). A Board of Longitude was established, based at Greenwich Observatory. As such, Greenwich became the reference point from which longitude would thereafter be measured. The Board members included government officials, naval officers, and scientists, including the Astronomer Royal. Over the next 114 years that the Board was in existence, many individuals served among its members.

The scientific members of the board were, from the start, leaning toward an astronomical solution. Since the "clock of the heavens" always runs on time, they were sure that, given tables with enough detailed positions and times, a few observations and calculations would then give the longitude. Many objects were considered for the observations. The moons of Jupiter were a popular choice, but you were limited to when Jupiter was visible. The position of the Moon relative to bright stars was also a prime contender, but again, was limited to when the Moon could be seen. Those limitations did not daunt a number of individuals from persistently pursuing these options.

Meanwhile, another solution was possible. Make a watch that would run accurately at sea. Use the Sun's position to determine local time, while the watch would show the time at Greenwich. The time difference would be the key to your longitude. Although, to modern minds, a watch that runs at sea seems simple enough, in the 18th century, it was not. Most clocks were so unreliable that people would use sundials to reset their clocks daily. The most accurate clocks used a pendulum.

However, on a rolling ship at sea, that pendulum is not going to work. Not to mention that the parts will change shape and size when heated and cooled, or subjected to extremely high and low humidity levels. So, how can a clock work, and work extremely accurately, on a rolling ship, in a variety of temperature and humidity conditions? The man who would ultimately find the answer to that question was a clock maker named John Harrison.

Dava Sobel takes you through the high's and low's of Harrison's quest to build a clock that would meet the needs of accurately determining longitude at sea, while providing a glimpse into Harrison's compulsive, perfectionist nature. Along the way, you meet his allies and nemeses, and get a taste of their personalities, as well. As is Sobel's style, the story of the individuals is inextricably intertwined with the science, providing the complimentary coordinates that keep your bearings on this rolling journey.



Publisher: Penguin (Non-Classics)
 Reprint edition: October 1, 1996
 ISBN-10: 0140258795
 ISBN-13: 978-0140258790

Board Meeting Minutes – January 6, 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 January 6, 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, Kris McCall, Curt Porter, Dr. Terry Reeves, Bob Rice, and Theo Wellington were present. Board members Dr. Donna Hummell, Santos Lopez and Bob Norling were absent. Brian Hart, invited by Past-President Joe Boyd, and BSAS member Roy Wellington also attended as guests. A quorum being present, President Dr. Spencer Buckner called the meeting to order at 7:36 P.M.

Dr. Spencer Buckner introduced and welcomed new board member Steve Cobb. Bob Rice, reporting for Treasurer Bob Norling, informed the board that the BSAS had \$2,197.47 in its regular checking account and \$166.30 in its equipment account as of December 31, 2010. Mr. Rice also reported that he had filed the BSAS' federal income tax return (form 990N e-Postcard) for 2010 with the Internal Revenue Service.

Dr. Spencer Buckner announced these upcoming star parties:

- Jan 21 - Public star party at Bell's Bend Park from 7:30 to 9:30 P.M.
- Jan 29 - Private star party at mile marker 435.5 on the Natchez Trace Parkway.
- Feb 12 - Public star party at Shelby Bottoms Nature Center from 7:30 to 9:30 P.M.

Bill Griswold reported that he had secured a preliminary agreement with the National Park Service for the BSAS to conduct star parties on the Natchez Trace Parkway on the requested dates and locations for 2011. Mr. Griswold stated that Lynn Stanton was his primary contact person at the Park Service. He also noted that all BSAS board members were listed in the agreement and that he would mail the final paperwork to the Park Service tomorrow.

Dr. Spencer Buckner reported that he would lead the program on "I Got a New Telescope for Christmas - Now What?" at the public membership meeting on January 20, 2011. This session will be a follow-up to his popular "All I Want for Christmas Are Astronomy Toys" program presented at our November 2010 meeting. Dr. Buckner encouraged board members to ask anyone who had received a recent gift telescope to bring it to this meeting. He stated that he would bring one telescope - a new Orion go-to dobsonian - and that, following a brief introductory presentation, everyone would break out into small groups with BSAS members assisting the new telescope owners (a practice that has worked well at similar past meetings).

Curt Porter presented the board with a draft Memorandum of Understanding (MOU) between the BSAS and the Adventure Science Center (ASC) where we hold our monthly public membership meetings. Board members Kris McCall and Theo Wellington, being employees of the ASC, recused themselves from discussing this document. Dr. Spencer Buckner asked board members to review this draft for further deliberation at the next board meeting on February 3, 2011. Mr. Porter invited board members to communicate any comments or suggestions to him via email and stated that he would summarize these for presentation at the next board meeting. Dr. Buckner noted that the modified draft would be communicated to the ASC's executive director for her consideration and input as soon as possible.

Guest Brian Hart, who has done graduate research in astrophysics, graciously offered to present the program for March 2011 on "Galaxy Clusters - Giants of the Universe" which the board gladly accepted. Jana Ruth Ford announced that Middle Tennessee State University had changed its 2011 public star party schedule from the usual first Friday of February, March, April, and May to the first and last Fridays of February and April. Dr. Spencer Buckner announced that Austin Peay State University would have a formal opening ceremony for its new observatory equipped with a 20 inch Ritchey-Chretien telescope on March 29, 2011. Curt Porter announced that he would probably cull the non-current membership badges in March. Bill Griswold reported that he had arranged for the board to again use the Cumberland Valley Girl Scout Council Building for its monthly meetings during 2011.

Since there was no further business to discuss, President Dr. Spencer Buckner declared the meeting to be adjourned at 8:24 P.M.

OFFICERS

Dr. Spencer Buckner
President

Dr. Donna Hummell
Vice-President

Bob Rice
Secretary

Bob Norling
Treasurer

Directors at Large

Steve Cobb
Jana Ruth Ford
Bill Griswold
Santos Lopez
Curt Porter
Theo Wellington
Kris McCall (ex officio)

Steve Wheeler
Newsletter Editor
wsw261@hotmail.com

**Monthly meetings
are held at:**



**The Adventure
Science Center**

**800 Fort Negley Blvd
Nashville, TN 37203**

Monthly Meeting Update – January 20, 2011

Steve Wheeler, Editor

Due to inclement weather, the monthly meeting scheduled for January 20th was cancelled. The scheduled topic, ***I Got a Telescope for Christmas – Now What?*** will be presented at the February monthly meeting on Thursday, February 20th 7:30 pm at the Adventure Science Center.

Member Contributions



NGC 2237 – The Rosette Nebula Imaged by Steve Wheeler

This image consists of 24 300 second exposures using with a modified Canon Digital Rebel XT through a Stellarvue SV102ED mounted on an Orion Atlas EQ-G mount. Guiding was via an Orion Starshoot autoguider and an Astrotech AT66 scope.

Images were calibrated, reconstructed and aligned using Stark Labs Nebulosity. Digital Development was done in Maxim DL, and final touches (curves, levels, gradient removal, and noise reduction) were done in Photoshop CS2.

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/>



Planets in Strange Places

Space Place Partners Article, January 2011

By Trudy E. Bell

Red star, blue star, big star, small star—planets may form around virtually any type or size of star throughout the universe, not just around mid-sized middle-aged yellow stars like the Sun. That's the surprising implication of two discoveries in 2006 from the 0.85-meter-diameter Spitzer Space Telescope, which is exploring the universe from orbit at infrared (heat) wavelengths blocked by the Earth's atmosphere.

At one extreme are two blazing, blue "hypergiant" stars 180,000 light-years away in the Large Magellanic Cloud, one of the two companion galaxies to our Milky Way. The stars, called R 66 and R 126, are respectively 30 and 70 times the mass of the Sun, "about as massive as stars can get," said Joel Kastner, professor of imaging science at the Rochester Institute of Technology in New York. R 126 is so luminous that if it were placed 10 parsecs (32.6 light-years) away—a distance at which the Sun would be one of the dimmest stars visible in the sky—the hypergiant would be as bright as the full moon, "definitely a daytime object," Kastner remarked.

Such hot stars have fierce solar winds, so Kastner and his team are mystified why any dust in the neighborhood hasn't long since been blown away. But there it is: an unmistakable spectral signature that both hypergiants are surrounded by mammoth disks of what might be planet-forming dust and even sand.

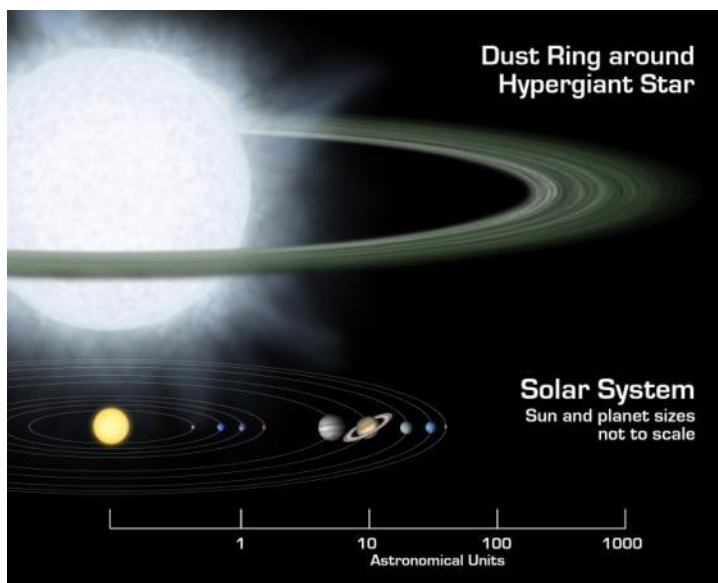
At the other extreme is a tiny brown dwarf star called Cha 110913-773444, relatively nearby (500 light-years) in the Milky Way. One of the smallest brown dwarfs known, it has less than 1 percent the mass of the Sun. It's not even massive enough to kindle thermonuclear reactions for fusing hydrogen into helium. Yet this miniature "failed star," as brown dwarfs are often called, is also surrounded by a flat disk of dust that may eventually clump into planets. (This brown dwarf discovery was made by a group led by Kevin Luhman of Pennsylvania State University.)

Although actual planets have not been detected (in part because of the stars' great distances), the spectra of the hypergiants show that their dust is composed of forsterite, olivine, aromatic hydrocarbons, and other geological substances found on Earth.

These newfound disks represent "extremes of the environments in which planets might form," Kastner said. "Not what you'd expect if you think our solar system is the rule."

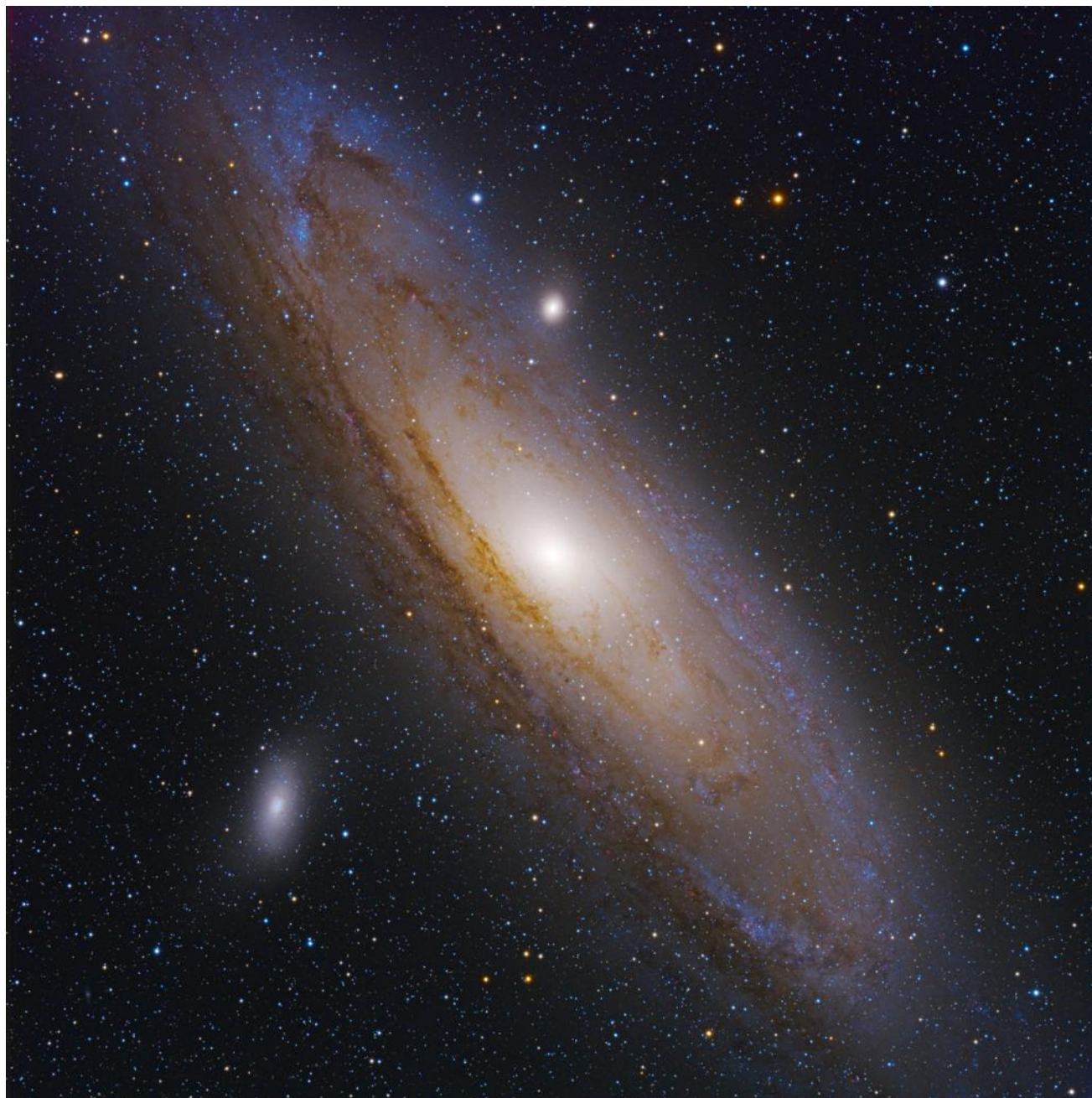
Hypergiants and dwarfs? The Milky Way could be crowded with worlds circling every kind of star imaginable—very strange, indeed.

Keep up with the latest findings from the Spitzer at www.spitzer.caltech.edu. Kids and their grownup friends can enjoy beautiful images from Spitzer while playing Spitzer Concentration at The Space Place (spaceplace.nasa.gov/en/kids/spitzer/concentration).



Artist's rendering compares size of a hypothetical hypergiant star and its surrounding dusty disk to that of our solar system.

Member Contributions



Messier 31 – The Andromeda Galaxy **Imaged by Mark Manner**

For image details, visit <http://www.spotastro.com/M31.html> .

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

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 Dr. Spencer Buckner at (931) 221-6241.

**BARNARD-SEYFERT
ASTRONOMICAL SOCIETY**
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