

The newsletter of the Barnard Seyfert Astronomical Society, PO Box 150713, Nashville, TN 37215-0713

Upcoming Events

Board of Directors Meeting

December 1st at the Cumberland Valley Girl Scout Council Building – 7:30 pm

January 4th at the Cumberland Valley Girl Scout Council Building – 7:30 pm

Membership Meeting

December 21st Meeting/Pot Luck Christmas Supper at the Cumberland Valley Girl Scout Council Building – 6:30 pm

January 18th at the Cumberland Valley Girl Scout Council Building – 7:30 pm

Star Parties

December 3rd – BSAS Public Star Party at Shelby Bottoms Nature Center

January 28th – BSAS Public Star Party at Edwin Warner Park

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Christmas Potluck Supper & Silent Auction

Wednesday, December 21, 2011

Cumberland Valley Girl Scout Council Building

6:30 pm



Join us for our annual Christmas Potluck Supper and Silent Auction. The club will supply meat, drinks, plates and plastic utensils. Members will bring their favorite side dish and/or desert plus an item(s) for the silent auction.

Our speaker this year will be incoming vice –president **Joe Boyd** who will be presenting a program on the Star of Bethlehem.



From The President

Greetings and clear skies from your BSAS president. I hope everyone had a happy Thanksgiving and a great start to the holiday season. After the November program on astronomy Christmas toys I know you all got online and ordered that special astronomy stocking stuffer for your favorite amateur astronomer. Now if we can just manage a few clear nights that would make the best Christmas present of all.

This month's marks the end of my two years as your BSAS president. The last two years have seen some monumental changes for the club. When I took office my main goal was to try and get an increase in the membership as well as a decrease in the average age of the membership by recruiting students of all ages to the club. While the numbers have not significantly changed, I have noticed a few new faces as well as some younger members joining the ranks. The biggest changes have been in our meeting date and location. The BSAS has been meeting on the third Thursday of the month for as long as I could find records for and this year we changed to the third Wednesday. Originally it was to satisfy a request from the Adventure Science Center where we held our monthly public meetings. After a long series of negotiations with the ASC, the club decided to move our monthly meetings to our current location at the Cumberland Valley Girl Scout Council building. The Girl Scouts could only provide our meeting room on the third Wednesday of the month so the change in date stuck. I suspect we have not yet settled on a permanent meeting place and date but that will be for future administrations to decide.

We have also approved a number of revisions to the club bylaws. Most of the changes were minor but they were all needed to bring the bylaws up to date and in line with our meeting date and location. I especially want to thank Joe Boyd, the incoming vice-president, for leading the committee that reviewed the bylaws and made recommendations for the changes which were subsequently approved. Overall, it has been an active couple of years for the club and I am grateful to the members for allowing me to serve as your president for these last two years. I wish John Harrington and his new administration the best of luck in the coming year.

Continued on Page 2



"I measured the skies, now
the shadows I measure.
Skybound was the mind,
earthbound the body rests."

Johannes Kepler
1571-1630

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

December 2011

12/02 FIRST Quarter
12/10 FULL Moon
12/18 LAST Quarter
12/24 NEW Moon

January 2012

01/01 FIRST Quarter
01/09 FULL Moon
01/16 LAST Quarter
01/23 NEW Moon

OBJECTS VISIBLE THIS MONTH

Messier Objects:

Galaxies:

M31, M32, M110

Open Clusters:

M29, M39, M52

Globular Clusters:

M2, M15

From the President, cont.

I would like to thank the members of my administration and board for their service. Dr. Donna Hummell has served as my vice-president for both years and I am very appreciative of her service and support during those years. Bob Norling has served as treasurer for both my years as president and I thank him for serving with me and volunteering for another year as treasurer. Bob Rice has served faithfully as the club secretary since 2004 and, along with a long list of past presidents, I am grateful for his devotion to the club. Bob's diligent note taking at the board meetings and public meetings has always been accurate and complete and I thank him for agreeing to serve the club for another year. I want to thank Jana Ruth Ford for her service as board member since 2002. After almost a decade on the board of directors, Jana Ruth's insight and input will be missed. Lastly, the board says goodbye to Dr. Terry Reeves. Terry is the immediate past president and, as I take that position next year, Terry moves off the board of directors. Terry served as president for 2008 and 2009 and was vice-president in 2007. I am sure he will enjoy having the night of the board meeting off.

One of my last events as club president will be to attend the public star party as Shelby Bottoms Nature Center on Saturday December 3. I would like to encourage everyone to come out for this last public star party of the year. This brings me to the last event I will preside over as president: the December pot luck supper and silent auction. The annual Christmas season event will be Wednesday December 21 starting at 6:30pm. Traditionally, the club supplies meat, drinks, plates and plastic utensils and the members bring their favorite side dish and/or desert. This year Joe Boyd has agreed to present a program on the Star of Bethlehem after dinner. Don't forget to bring something for the silent auction as well as your side dish. If you have something astronomical, that's great. If you don't, bring a book or anything else, it doesn't have to be astronomical.

Clear skies!

Dr. Spencer Buckner
President

Book Review: "The Moon and the Western Imagination"

by Robin Byrne

The ole bookshelf is calling, and this time I picked up "The Moon and the Western Imagination" by Scott L. Montgomery. Montgomery is a geologist, who clearly also has an interest in art and culture. However, his writing style definitely reflects more of the geology background than his other interests. Sadly, this book was not exactly riveting to read, which is a shame, because the content had the potential to be quite interesting.

Montgomery takes us through a chronological journey of ideas and images related to the Moon. However, the journey, as the book title suggests, is limited to Western concepts. No other cultures are incorporated. So, naturally, under these conditions, the story begins with the Greeks and remains within Europe throughout the text.

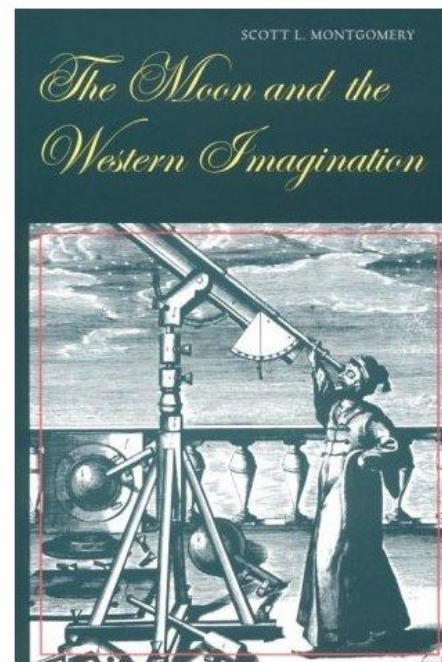
From tales of the Moon's origins to artistic representations to scientific observations, the book is rich with information. Early conflicting ideas about whether the Moon would be inhabited, or not, were entertaining. Even early notions of how men could journey to the Moon were discussed. All of this should have been fascinating to read, but Montgomery's writing style kept getting in the way.

Many chapters were devoted to the changing way in which the Moon has been represented in works of art. Montgomery goes into much detail about many art pieces and the significance of various representations. Sadly, very few of these images are actually reproduced in the book, leaving the reader to either use their their imagination, or read the book while searching the internet for each image discussed.

The last section of the book deals with the earliest telescopic observations of the Moon. Galileo's famous sketches of craters set the standard, with a realism rarely matched by many who tried to follow his example. Then the politics of naming lunar features is discussed, which I found to be the most intriguing part of the book. Many naming schemes were put

forth, but the one we use today, and many of the names still in use, was meant to represent both scientists who were in favor of a geocentric universe and those who proposed a heliocentric model. However, if you look at the craters' locations and size, it is clear to see that the geocentrists were favored.

All in all, "The Moon and the Western Imagination" is an informative, if not exciting, book to read. As a source for research, it would be quite useful. As a book to curl up with, only if you are suffering from insomnia would I recommend it.



The Moon and the Western Imagination

By Scott L. Montgomery

Publisher: University of Arizona Press (January 1, 2001)

ISBN-10: 0816519897

ISBN-13: 978-0816519897

Board Meeting Minutes – November 2, 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 November 2, 2011. A sign-in sheet was passed around in lieu of a roll call. Board members Dr. Donna Hummell, Kris McCall, Curt Porter, Bob Rice, and Theo Wellington were present. Board members Dr. Spencer Buckner, Steve Cobb, Bill Griswold, Jana Ruth Ford, Santos Lopez, Bob Norling, and Dr. Terry Reeves were absent. BSAS member John Harrington was present as a guest. Although a quorum was not present, the attendees decided to meet for the purpose of discussing business with the understanding that no vote could be taken on any issues. Vice-President Dr. Donna Hummell called the meeting to order at 7:53 P.M.

Dr. Donna Hummell announced these upcoming star parties:

- Nov 05 – Public star party at Edwin Warner Park from 7:30 to 9:30 P.M.
- Nov 26 – Private star party at Natchez Trace Parkway mile marker 435.5 from dusk to whenever.
- Dec 03 – Public star party at Shelby Bottoms Nature Center from 7:30 P.M. to 9:30 P.M.

The board resumed a topic from the previous board meeting on October 6, 2011 regarding the need for simple directional signs with arrows to be used at star parties. Several board members noted that the Warner Parks already had adequate signage of their own. As the discussion progressed Shelby Bottoms Nature Center emerged as having the greatest need for this type of signage due to the somewhat uncertain route leading to that site. Curt Porter said that he would continue to check on pricing for such signs from various sources.

Dr. Donna Hummell announced that the next board meeting will be on Thursday December 1, 2011. Dr. Hummell also announced that BSAS members may place orders for the 2012 editions of three popular astronomical publications a discount from the published price at the next membership meeting on November 16, 2011. These include Guy Ottewell's *Astronomical Calendar*, the RASC's *Observers Handbook*, and Kalmbach Publishing's *Deep Space Mysteries Calendar*. All orders will require a \$5.00 deposit. NOTE: This announcement has been highlighted at the suggestion of several board members to better emphasize the opportunity to the membership. Dr. Hummell also announced that Dr. Spencer Buckner will present an updated version of his popular "New Astronomy Toys for Christmas" session as the program for this meeting. She encouraged board members to invite anyone they knew who might be contemplating the purchase of a telescope or other astronomical equipment to attend. Dr. Hummell additionally noted that Dr. Buckner would follow up on this topic with a presentation of "Now What Do I Do with My New Astronomy Toy?" at the January 18, 2012 membership meeting.

Dr. Donna Hummell announced that, as they have done in the past, the Star Party Committee and the Program Committee needed to meet before the end of the year. She suggested that Sudekum Planetarium Director Kris McCall should serve on the Star Party Committee since she also performs that function for the Adventure Science Center. She also noted that Dr. Spencer Buckner had agreed to serve on both committees and asked for other volunteers. John Harrington and Bob Rice volunteered to serve on both committees.

Following up on a topic in an earlier email from John Harrington, Bob Rice said that he would invite Vanderbilt University Research Assistant Professor Dr. Joshua Pepper to speak on a topic of his choice at the December 21, 2011 Christmas pot-luck supper and membership meeting. In response to a question from Theo Wellington, Mr. Rice also stated that he would send a copy of the BSAS' current bylaws to Webmaster Drew Gilmore. Ms Wellington also announced that Mr. Gilmore had, as approved by the board at its October 6, 2011 meeting, established a one-year contract with Blue Host to provide web hosting services for the BSAS. She additionally announced that Blue Host had sent instructions for moving the BSAS' website. Dr. Donna Hummell stated that she would send documentation on the BSAS' draft public information brochure to Mr. Gilmore. Several board members suggested that specific benefits of BSAS membership (i.e., access to loaner telescopes, reduced price subscriptions to "Sky & Telescope" and "Astronomy" magazines, etc.) should be emphasized on the BSAS' website.

Since there was no further business to discuss, Vice-President Dr. Donna Hummell declared the meeting to be adjourned at 8:25 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 Cumberland
Valley Girl Scout
Council Building**

**4522 Granny White Pike
Nashville, TN 37204**

Monthly Meeting Minutes – November 16, 2011

Bob Rice, Secretary

President Dr. Spencer Buckner called the meeting to order at 7:41 P.M. in the Cumberland Valley Girl scout center and welcomed members and visitors. Treasurer Bob Norling reported that the BSAS had \$2,295.93 in its regular bank account and \$457.39 in its equipment account. Mr. Norling reminded members that they could order copies of the Royal Astronomical Society of Canada's 2012 Observer's Guide, Guy Ottewill's 2012 Astronomical Calendar, and Kalmbach Publishing Company's 2012 Deep Space Mysteries calendar at a discount from the published price. He also noted that a \$5.00 deposit would be required for each order. Dr. Buckner announced these upcoming star parties:

- Nov 26 – Private star party at Natchez Trace Parkway mm 435.5 from dusk to whenever.
- Dec 03 – Public star party at Shelby Bottoms Nature Center from 7:30 – 9:30 P.M.

Dr. Spencer Buckner announced that the BSAS would have its annual Christmas potluck dinner at the upcoming December 21 membership meeting. He explained that the BSAS would again supply the meat, drinks, plates, cups, and utensils while the members would bring side dishes of their choice. He also noted that the meeting would begin at 6:30 P.M. with dining commencing shortly thereafter. Theo Wellington reminded members that a silent auction would be ongoing during the meeting and supper with the proceeds going to the BSAS.

President Dr. Spencer Buckner commenced the annual election of BSAS officers and directors for 2012 by announcing these candidates recommended by the Nominating Committee: President – John Harrington; Vice-President – Joe Boyd; Secretary – Bob Rice; Treasurer – Bob Norling; board members at large to serve three year terms – Kris McCall and Melissa Lanz; and Curt Porter to finish out the remaining one year term of board member Santos Lopez who has moved out of town. Dr. Buckner then asked for nominations from the floor and, there being none, asked for a motion to accept the recommended slate of candidates by acclamation. A member so moved and another member seconded this motion that was subsequently approved by a unanimous voice vote of the attending members. The newly elected officers and directors will formally assume their duties at the December 21, 2011 membership meeting. Curt Porter announced that he was continuing to solicit vendors for quantity and pricing quotes on simple arrow directional signs to be used at star parties. Chuck Schlemm reminded the membership that the Society had stings of small red lights that could be used to illuminate these signs.

Dr. Spencer Buckner began the evening's program on "All I Want for Christmas Are Astronomy Toys." Armed with a wide array of telescopes, mounts, accessories, and reference materials that he had brought, he used a PowerPoint presentation to illustrate these items of interest and corresponding prices wherever possible to potential new buyers in the audience:

- Basic types of telescopes – refractors, reflectors, & catadioptric
- Types of mounts – altazimuth & equatorial, Dobsonian mounts (usually equipped with Newtonian reflector scopes) as a special type of altazimuth mount, "Push-to" dobsonian mounts as an object locator type, Go-To" mounts – both altazimuth (including dobsonians) and equatorial
- Miscellaneous accessories (eyepieces, finders, red lights, dew heaters, observing aids)
- Filters – solar, lunar, color, & sky glow
- Cases, storage bags, and power sources (batteries, ac adaptors, & dc-to-ac inverters)
- Maps, planispheres, planetarium software, and applications for iPhones, I pads, etc.
- An inexpensive Orion Iphone clamp, optics cleaning kits
- Magazines, calendars, books, reference materials, and recommended vendors including Orion, OPT, & Astronemics.

Dr. Buckner concluded his presentation by fielding questions from the audience. When asked about differences between Celestron and Meade telescopes he responded that in his experience both companies made good products. However, he noted that he was aware of some complaints about Meade regarding instances of poor customer service and their use of a type of lubricant that tended to solidify during cold temperatures.

Since there was no additional business to discuss, President Dr. Buckner declared the formal meeting to be adjourned at 8:46 P.M. However, he invited attendees to remain for a personal examination of the demonstrated equipment and to ask additional questions if they wished to do so.

NOTE: Immediately after the meeting adjourned Vice-President-Elect Joe Boyd volunteered to give a program on "Astronomical Explanations of the Star of Bethlehem" at the December 21 Christmas potluck dinner.

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/>



The Adventure Science Center
<http://www.adventuresci.com>



Re-thinking an Alien World: The Strange Case of 55 Cancri e

Space Place Partners Article November 2011

Forty light years from Earth, a rocky world named "55 Cancri e" circles perilously close to a stellar inferno. Completing one orbit in only 18 hours, the alien planet is 26 times closer to its parent star than Mercury is to the Sun. If Earth were in the same position, the soil beneath our feet would heat up to about 3200 F. Researchers have long thought that 55 Cancri e must be a wasteland of parched rock.

Now they're thinking again. New observations by NASA's Spitzer Space Telescope suggest that 55 Cancri e may be wetter and weirder than anyone imagined. Spitzer recently measured the extraordinarily small amount of light 55 Cancri e blocks when it crosses in front of its star. These transits occur every 18 hours, giving researchers repeated opportunities to gather the data they need to estimate the width, volume and density of the planet.

According to the new observations, 55 Cancri e has a mass 7.8 times and a radius just over twice that of Earth. Those properties place 55 Cancri e in the "super-Earth" class of exoplanets, a few dozen of which have been found. Only a handful of known super-Earths, however, cross the face of their stars as viewed from our vantage point in the cosmos, so 55 Cancri e is better understood than most.

When 55 Cancri e was discovered in 2004, initial estimates of its size and mass were consistent with a dense planet of solid rock. Spitzer data suggest otherwise: About a fifth of the planet's mass must be made of light elements and compounds—including water. Given the intense heat and high pressure these materials likely experience, researchers think the compounds likely exist in a "supercritical" fluid state.

A supercritical fluid is a high-pressure, high-temperature state of matter best described as a liquid-like gas, and a marvelous solvent. Water becomes supercritical in some steam turbines—and it tends to dissolve the tips of the turbine blades. Supercritical carbon dioxide is used to remove caffeine from coffee beans, and sometimes to dry-clean clothes. Liquid-fueled rocket propellant is also supercritical when it emerges from the tail of a spaceship. On 55 Cancri e, this stuff may be literally oozing—or is it steaming?—out of the rocks.

With supercritical solvents rising from the planet's surface, a star of terrifying proportions filling much of the daytime sky, and whole years rushing past in a matter of hours, 55 Cancri e teaches a valuable lesson: Just because a planet is similar in size to Earth does not mean the planet is like Earth. It's something to re-think about.

Get a kid thinking about extrasolar planets by pointing him or her to "Lucy's Planet Hunt," a story in rhyme about a girl who wanted nothing more than to look for Earth-like planets when she grew up. Go to <http://spaceplace.nasa.gov/story-lucy>.

The original research reported in this story has been accepted for publication in *Astronomy and Astrophysics*. The lead author is Brice-Olivier Demory, a post-doctoral associate in Professor Sara Seager's group at MIT.



Artist's rendering compares the size Earth with the rocky "super-Earth" 55 Cancri e. Its year is only about 18 hours long!



**Star Trails from Millikan's Overlook
Fall Creek Falls State Park
October 15, 2011**

Image by Steve Wheeler

"I had spent the day photographing the fall foliage at Fall Creek Falls State Park, and found my way back to Millikan's Overlook at sunset. The park ranger on duty was kind enough to let me stay on the scenic loop road after dark to try a star trails image. I had no idea how much battery I had left so I opted for a 20 minute exposure knowing that the in-camera noise reduction would also require 20 minutes to expose a "dark frame" to reduce the noise.

While waiting for the exposure to finish, I took the opportunity to do some binocular observing, including some of the objects Terry and I had covered in the October What's Up? Presentation – Kemble's Cascade, the Double Cluster, and M31."

Image Details:

Camera: Canon Digital Rebel T3i DSLR
Mount: Manfrotto MK394-H Photo-Movie Tripod
Lens: Canon EF 18-55 @ 18mm f3.5
Exposure: 20 minutes @ iso 200 with in-camera noise reduction enabled
Processing: RAW conversion, gradient filter, and exposure/white balance/noise adjustments in Adobe Lightroom 3.0

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 Wednesday of each month at the Cumberland Valley Girl Scout Council Building 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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