

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

## Upcoming Events

### Board of Directors Meeting

October 2<sup>nd</sup> at the  
Cumberland Valley Girl Scout  
Council Building – 7:30 pm

### BSAS Astronomy Retreat

October 3<sup>rd</sup> and 4<sup>th</sup> at Spot  
Observatory – 4:00 pm

### Public Star Party

October 4<sup>th</sup>  
at Long Hunter State Park –  
8:00 pm

### Membership Meeting

October 16<sup>th</sup> at the  
Adventure Science Center –  
7:30 pm

### Private Star Party

October  
25<sup>th</sup> at Water Valley Overlook  
Natchez Trace Parkway –  
6:30 pm

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## October Membership Meeting

Thursday, September 18, 2008  
Adventure Science Center  
7:30 pm



### What's Up? (Fall)

BSAS president Terry Reeves and board member Steve Wheeler will host a "What's Up?" tour of observing highlights for the fall observing season. If there is a target you would like to be included, send an email to [terry.reeves@comcast.net](mailto:terry.reeves@comcast.net).

## BSAS Astronomy Retreat

Friday, October 3<sup>rd</sup> and Saturday, October 4<sup>th</sup>  
Spot Observatory  
4:00pm until ???

See the Outreach Update, page 2, for details.

## From The President



Wasn't Dr. O'Dell's presentation this past month absolutely fascinating? When you hear that story, you marvel at the dedication and patience of the people who work on a project like the Hubble Space Telescope. We all owe them a debt of gratitude because, in the end, they provide the scientific results that help us to better understand our universe. (And yes, the pretty pictures are nice too.)

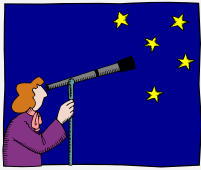
I have recently started working through the Lunar Observing I Club list from the Astronomical League. I decided to do this because I want to force myself to actually cover a wide range of targets. In this way, I hope to start learning our nearest neighbor better. I am doing this for my own benefit as well as being better prepared on the public star party nights when the ever popular moon is the primary target. I would suggest that if you have an interest in something, you should check out the observing clubs at <http://www.astroleague.org>. At the very minimum, working through the list of targets may give you a systematic way of approaching the subject.

An interesting thing I have discovered is just how much I can actually see on the moon with a pair of 10x42 binoculars. (A part of this list is to be first attempted with binoculars if you have them.) Another interesting thing is just how hard it is to hold those binoculars steady enough to actually be able to see what they can show you.

Our program in October is being presented by Steve Wheeler and myself. It will be on what is up in the Autumn Skies.

As this year starts winding down, it is time for us to start the process of electing officers and board members for next year. At the October meeting, the nominees from the Board of Directors will be announced. We will also take nominations from the group at large. We will then vote at the November meeting. The new officers and Board members will officially start their terms at the December meeting.

Terry Reeves  
President



*"Equipped with his five senses, man explores the universe around him and calls the adventure Science."*

**Edwin P. Hubble**  
1899 - 1953

### 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

### October 2008

- 10/2 BSAS Board of Directors Mtg.,  
7:30 pm at Girl Scout Office
- 10/3-4 BSAS Astronomy Retreat – Spot  
Observatory
- 10/4 Public Star Party – Long Hunter  
State Park
- 10/4 Antares 0.1 deg north of Moon,  
occultation
- 10/7 FIRST QUARTER – Moon at apogee
- 10/7 Jupiter 2 deg north of Moon
- 10/8 Draconid meteors
- 10/10 Neptune 0.9 deg south of Moon,  
occultation
- 10/14 FULL MOON
- 10/16 BSAS Membership Meeting  
7:30 pm at ASC
- 10/21 LAST QUARTER
- 10/25 BSAS Private Star Party – mm 412  
(Water Valley Overlook)  
Natchez Trace Parkway – 8:00 pm
- 10/28 NEW MOON

### OBJECTS VISIBLE THIS MONTH

#### Messier Objects:

M25 (open cluster), M18 (open cluster),  
M17 (Swan Nebula), M16 (Eagle Nebula),  
M26 (open cluster), M11 (Wild Duck cluster)  
M55 (globular cluster), M75 (globular cluster)

#### Caldwell Objects:

C13 – The Owl Cluster (NGC 457)  
C14 – The Double Cluster (NGC 869/884)  
C23 – Galaxy (NGC 891)  
C65 – The Sculptor Galaxy (NGC 253)  
C70 – Galaxy (NGC 300)

#### NOTICE:

The 2009 Astronomy Magazine *Deep Space Wonders* calendars are in and will be available for sale at the October meeting. They will be priced at \$10 each and are sold on a first-come-first-served basis.

## Outreach Update *Terry Reeves, President*

In September, we only had a private star party out on the Natchez Trace. Despite the heavy dew, those of us who attended had a good time looking at the moon and other targets.

We have a special treat planned for October 3-4. We are holding a BSAS astronomy retreat at Mark Manner's home. This will be a very low-key weekend. We currently don't have any activities planned other than star gazing. If you haven't yet been to the Manner's property, rest assured that the skies are dark and the viewing is spectacular (also weather permitting). There are some beds available at Mark's in his cabins, but we will need to know who would like to reserve bed space. Some of us will be using tents and there are restroom facilities available for campers. There is also a small kitchenette in one cabin with a microwave and stove for use. You will be responsible for your own food. The only exception to that is Saturday evening. We are still working on the menu. There will be a small charge to cover any expenses. Send me an e-mail at [terry.reeves@comcast.net](mailto:terry.reeves@comcast.net) or leave me a message at (615) 833-6759 if you would like to reserve a bed or want to participate in the Saturday evening meal. I will respond in like manner. So, if you do not hear back from me, assume that I missed the message. While we do not currently have any programs planned, we are open to any ideas.

There is also public star party at Long Hunter State Park on Saturday, October 4. (Yes, I do realize there is a date conflict. These things happen.) We will need about four telescopes to cover the public star party. I will be one of them. (My substitute Sunday School teacher will appreciate me not making her teach yet again this year.) If you would like to help out at the Long Hunter event, let me know so that I can make sure we will have enough people there.

There is also a private star party scheduled for October 25 at the Water Valley Overlook site on the Natchez Trace. This site is located near mile marker 412, about 20 miles south of the turnout at mile marker 435.5 where we have been meeting most recently.

# Happy Birthday Sigma 7

by Robin Byrne

This month we celebrate another milestone in manned spaceflight. On October 3, 1962, the first of the longer duration Mercury flights launched with Wally Schirra at the controls.

Wally Schirra was one of the original "Mercury 7" astronauts, selected from a pool of over 100 military test pilots. Once chosen, each of the Mercury astronauts worked on various elements of the Mercury capsule and mission parameters. Schirra worked on the development of the environmental controls and life support systems of the capsules, as well as the design of the spacesuit the astronauts would wear.

By the time Schirra's flight occurred, four other U.S. astronauts had already flown in space, two of whom had completed orbital missions lasting 4.5 hours. The second orbital flight, a primarily science mission flown by Scott Carpenter, came close to having a tragic ending, with the spacecraft out of fuel and off course. With that near disaster, the decision was to return to missions that focused on engineering. The objective for this mission would be to test how well man and machine would function for 9 hours in orbit. This would help to prepare for the final Mercury flight, scheduled to last for 36 hours.

Each astronaut named his capsule, and Schirra dubbed his "Sigma 7." Schirra said, "I named my spacecraft Sigma Seven. Sigma, a Greek symbol for the sum of the elements of an equation, stands for engineering excellence. That was my goal - engineering excellence. I would not settle for less." All of the capsule names included the number 7, to honor the seven men chosen to be America's first astronauts.

Originally scheduled for September 28, a faulty fuel-control valve delayed the flight. On the morning of October 3, 1962, after sleeping on his way to the launch pad, Wally Schirra boarded Sigma 7. At 7:15 am Eastern time, he was launched into Earth orbit. Schirra joked, "I don't have too much to do today, so I think I'll get in some flying time."

The Sigma 7 mission would place an astronaut higher than ever before - 176 miles. However, Schirra, ever the engineer, was not impressed with the view, saying, "Same old deal, nothing new." However, the flight itself did provide some new challenges.

Shortly after takeoff, Schirra's spacesuit began to overheat. Scott Carpenter had experienced the same problem. The temperature was so high, the flight surgeon almost aborted the mission. However, Schirra figured out how to adjust the coolant, and was able to maintain a comfortable temperature for the rest of the flight.

One of the reasons Carpenter's flight ended with no fuel left was due to the autopilot system firing the thrusters when it wasn't necessary. This flight tested flying in, what Schirra dubbed, "Chimp mode." The spacecraft was allowed to drift, with Schirra manually firing thrusters only when needed. This method was successful and would allow for more efficient fuel use in future flights.

During Carpenter's flight, a test was performed to see if astronauts could use a periscope to navigate by the stars. Carpenter felt the method did not work well and recommended that the periscope be eliminated. Schirra came to the same conclusion, saying of the periscope, "I couldn't see schmatze through it!" There was no periscope on the last Mercury flight.

Another mission objective was for Schirra to take photographs from the capsule. After consulting with top photographers, Schirra chose a Hasselblad camera over the 35 mm cameras previously used on the missions. A container holding a roll of 100 exposure film was designed for it, along with a device for easy aiming. Since everything would be at infinity, focusing would not be a problem. Schirra even made sure he could repair the camera, in case anything went wrong. The larger film format provided some outstanding images.

While in orbit, Schirra got a view of Mercury that Earth-dwellers would never get. Without the atmosphere creating a twilight glow, Mercury was easily visible, even when near the Sun's disk. He also observed the Earth, seeing lightning from above. While in orbit, he tested a means of exercising, using something similar to a bungee cord, to work his muscles while in weightlessness.

The mission also included some firsts for the space program. His flight included the first live broadcasts to both TV and radio from orbit. The splashdown was the first to be in the Pacific Ocean, and was the first to land so close to the carrier that it could be observed coming down. And, probably most importantly, it was the first flawless mission of America's young space program.

After six orbits, lasting 9 hours 13 minutes 11 seconds, Schirra and his capsule were brought aboard the aircraft carrier. It was only then that Schirra blew the explosive bolts on the hatch. In doing so, the recoil of the button hurt his hand, and helped to prove that Gus Grissom could not have accidentally blown the hatch of the lost Liberty Bell 7 capsule at the end of his flight.

Another first also occurred during the mission. In response to a question radioed to Schirra from Deke Slayton on the ground, Schirra replied, "YBYSALIA." For those in the know, this meant that Schirra was a member of "The Ancient and Honorable Order of Turtles," a group founded during World War II as "an honorable drinking fraternity composed of ladies and gentlemen of the highest morals and good character, who are never vulgar." The official response to the question, "Are you a Turtle?" is "You bet your sweet ass I am (YBYSALIA)."

Wally Schirra is the only original Mercury 7 astronaut to have flown on Mercury, Gemini and Apollo missions. He received the NASA Distinguished Service Medal for his Mercury flight. Meanwhile, the Sigma 7 spacecraft is on display at the Astronaut Hall of Fame in Titusville, FL. Both Wally Schirra and the Sigma 7 flight are worth remembering as important components of our accomplishments in space.

## References

Mercury-Atlas 8 - Wikipedia, the free encyclopedia  
[http://en.wikipedia.org/wiki/Mercury\\_8](http://en.wikipedia.org/wiki/Mercury_8)

Ancient Order of Turtles - Wikipedia, the free encyclopedia  
[http://en.wikipedia.org/wiki/Ancient\\_Order\\_of\\_Turtles](http://en.wikipedia.org/wiki/Ancient_Order_of_Turtles)

Wally Schirra.Com - Mercury VIII - Sigma 7  
<http://www.wallyschirra.com/mercury.htm>

The Mercury Project - Sigma 7  
<http://www.scottcarpenter.com/sigma7.html>

## September 2008 Board of Directors Minutes

*Bob Rice, Secretary*

The board of directors of the Barnard-Seyfert Astronomical Society met in regular session at the Cumberland Valley Girl Scout Council Building in Nashville, Tennessee on September 4, 2008. A sign-in sheet was circulated in lieu of a roll call. Board members Dr. Spencer Buckner, Tony Campbell, JanaRuth Ford, Bill Griswold, Dr. Donna Hummell, Dr. Terry Reeves, Bob Rice, and Steve Wheeler were present. Board members Keith Burneson, Kris McCall, Randy Smith, and Theo Wellington were absent. A quorum being present, President Terry Reeves called the meeting to order at 7:35 P.M.

Dr. Terry Reeves recommended that the BSAS respond to Energy Star's recent proposal on solid-state lighting by submitting its suggestions during the allotted commentary period. Energy Star is a joint program of the U.S. Environmental Protection Agency and the U.S. Department of Energy. Dr. Spencer Buckner so moved and Bob Rice seconded his motion that subsequently passed by a unanimous voice vote. Bill Griswold stated that had informed Dark Sky Committee members Joe Boyd and Powell Hall about this matter.

Dr. Terry Reeves pointed out that there was a date conflict between the October 3rd & 4th private BSAS Astronomy Retreat at Mark Manner's Spot Observatory and a previously scheduled public star party at Long Hunter State Park. Dr. Reeves suggested that we do both noting that four telescopes at Long Hunter should be adequate. The board agreed and Dr. Reeves asked that details be placed in the September Eclipse along with a request for member's comments. Webmaster Tony Campbell said that he would also place an announcement on the BSAS' website. In addition, Dr. Reeves explained that the Astronomy Retreat would be a laid back observing-only affair with no programs and only an informal supper provided on Saturday night.

JanaRuth Ford stated that several of her astronomy students at Middle Tennessee State University might attend the September meeting for Dr. Bob O'Dell's presentation on the Hubble Space Telescope and asked for someone to authenticate their presence. Bob Rice offered to do this. Dr. Terry Reeves suggested that the BSAS contact other area clubs about the September meeting and Dr. O'Dell's program. Bob Rice volunteered to do this.

Nominating Committee Chair Bill Griswold reported that Dr. Terry Reeves and Dr. Spencer Buckner were nominees for the offices of president and vice-president respectively along with Kurt Porter as a nominee for the board of directors. He also asked JanaRuth Ford if she would be a nominee for a new term as a board member and she graciously agreed to do so.

Dr. Terry Reeves asked Tony Campbell if he would be able to manage the BSAS' website during the impending birth of a new child and he said that he could. Bob Rice announced that Dr. O'Dell would need both a PC and a projector for his September presentation. Bill Griswold stated that we should set up our 2009 star party schedule and suggested that the 2008 list could be used as a template and guide. Mr. Griswold also reported that he had a letter ready to go out to the Natchez Trace Parkway authorities to request star party dates and locations for next year. Tony Campbell pointed out that October 30th would mark the 70th anniversary of Orson Welles' War of the Worlds radio broadcast and suggested that he might get background information for the Eclipse and the website. Bob Rice suggested that the BSAS should start planning for its participation in the International Year of Astronomy in 2009.

Since there was no further business to discuss, President Reeves declared the meeting to be adjourned at 8:27 P.M.

### OFFICERS

*Dr. Terry Reeves*  
President

*Keith Burneson*  
Vice-President

*Bob Rice*  
Secretary

*Randy Smith*  
Treasurer

*Bill Griswold*  
Past President

*Directors at Large*

*Dr. Spencer Buckner*  
*Tony Campbell*  
*Jana Ruth Ford*  
*Dr. Donna Hummel*  
*Theo Wellington*  
*Steve Wheeler*  
*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*

## September 2008 Monthly Meeting Minutes

*Bob Rice, Secretary*

President Terry Reeves called the meeting to order at 7:33 P.M. in the Adventure Science Center (ASC) and welcomed new members and guests. Dr. Reeves then asked for corrections to the minutes of the previous membership meeting held on August 21, 2008 and, there being none, declared them to be approved without exception as published in the September 2008 edition of the Eclipse newsletter. He announced that the private BSAS Astronomy Retreat would be held at Mark Manner's Spot Observatory on October 3rd & 4th. He then pointed out that this event was in conflict with a previously scheduled public star party to be held at Long Hunter State Park on October 4th but stated that he still hoped to have 3-4 BSAS members' telescopes there. Joe Boyd announced that JanaRuth Ford's students from Middle Tennessee State University should see him after the meeting to have their attendance authenticated.

Mike Benson announced that the Cumberland Astronomical Society would hold their Tennessee Fall Star Gaze at Fall Creek Falls State Park from October 31st to November 2nd. This event is free and for observing and fellowship only – there will be no programs or speakers and attendees must provide their own meals and lodging.

Dr. Terry Reeves introduced Dr. C. Robert O'Dell, Distinguished Research Professor at Vanderbilt University, who presented the evening's program on "Creating the Hubble Space Telescope." Since Dr. O'Dell served as the Hubble Space Telescope (HST) Project Scientist at the Marshall Space Center from 1972 to 1982, his comments came from a very personal viewpoint. He emphasized that funding was a problem from the very beginning mainly because no one had any idea of how much a project of this enormity would cost with the result that an initial budget of \$300,000,000 was somewhat arbitrarily just handed down from the top. Dr. O'Dell also noted that it was only in 1983, a year after he had left as Project Scientist that a final name for the telescope to honor Dr. Edwin Hubble was decided upon.

In addition, he described the internal struggles to decide who should manage the science that finally resulted in control being moved to scientists outside of NASA. Dr. O'Dell also described the overwhelming engineering effort that was required to design instruments that could be crammed into the small space around the 2.4-meter telescope. He related details about the embarrassingly poor "first light" images due to construction faults, but pointed out that those inferior images were still better than anything being produced from earth based telescopes at the time. As we all know, the telescope was corrected during the first repair mission and, as they say, the rest is history with one fantastic image following another. After his presentation, Dr. O'Dell graciously answered questions from the audience.

Sudekum Planetarium Director Kris McCall gave a brief demonstration of the new digital projection system to the great delight of the audience. Then, since there was no further business to discuss, President Reeves declared the meeting to be adjourned at 9:24 P.M.

### BSAS Affiliations

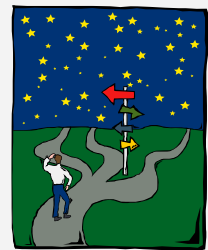
*The Astronomical League*  
<http://www.astroleague.org/>



*The Night Sky Network*  
<http://nightsky.jpl.nasa.gov/>



*International Dark Sky Association*  
<http://www.darksky.org/>



## Member Contributions



**Barnard's "E"**  
(Dark Nebula B142 – B143)

Imaged by Steve Wheeler

About the image, Steve writes:

I took this image of B142/143 in late August using an unmodified Canon Digital Rebel XT. The telescope used was a Stellarvue SV102ED on an Orion Atlas EQ-G mount.

The camera was controlled using Stark Lab's Nebulosity, and guiding was via an AstroTech AT66 and a Meade DSI Pro II controlled by PHD Guiding. The 24 5-minute exposures were calibrated, aligned, and stacked using Nebulosity, and Photoshop CS2 was used for final processing.

I became fascinated with dark nebula after discovering a "digital" version of Edward Emerson Barnard's *A Photographic Atlas of Selected Regions of the Milky Way* that was created by the library at Georgia Tech. These dark nebulas are found on *Plate 41 – In Aquila, Northwest of Altair*. About this plate, Barnard writes:

"The dark markings are perhaps the most important features of the plate. The fact that they occur in so rich a region of the sky, where the depth of the star stratum must be very great, leads to the belief that they are not real vacancies penetrating through the entire cloud, but that they are more probably obscuring matter of some kind."

*barnard, Edward Emerson. A Photographic Atlas of Selected Regions of the Milky Way .  
Ed. Edwin B. Frost and Mary R. Calvert. Washington: Carnegie Institution of Washington, 1927*

To view the online version of *A Photographic Atlas of Selected Regions of the Milky Way*, visit <http://www.library.gatech.edu/barnard/index.html>.

**Become a Member of the BSAS!**

Download and print the Application for membership from [www.bsasnashville.com](http://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)
- \$15** Student\*

\* To qualify, you must be 21 or younger & enrolled in an accredited institution.

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**

On your Eclipse mailing label is the expiration date for your current membership. There will be a two month grace period before any member's name is removed from the current mailing list.



**We're on the Web!**

See us at:  
[www.bsasnashville.com](http://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](http://www.bsasnashville.com). If you need more information, write to us at [info@bsasnashville.com](mailto:info@bsasnashville.com) or call Joe Boyd at (615) 386-3134.

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