The ECLIPSE

February 2009
Volume 2, Issue 2

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

Upcoming Events

Board of Directors Meeting
February 5th at the Cumberland Valley Girl Scout Council Building – 7:30 pm

Membership Meeting
February 19th at the Adventure Science Center – 7:30 pm

Public Star Party
February 28th, Shelby Bottoms Park, 8-10 pm

In this issue:

Monthly Membership Meeting

Thursday, 02/19/2009
Adventure Science Center
7:30 pm

President Terry Reeves will be hosting a *What's Up?* tour of seasonal observing highlights. Kris McCall will also be unveiling two new mural-sized images from the Hubble Space Telescope, the Spitzer Space Telescope, and the Chandra X-Ray Observatory. You don't want to miss this one!

From The President

I am getting excited about the upcoming year. I was just at the meeting of the Program Committee and the programs that are in the works look very interesting. We have star parties scheduled. It's the International Year of Astronomy. In fact, we are off to a running start with two outreach events in January. (And that is despite the extreme cold.) You will be hearing more about the upcoming events as the year goes on.

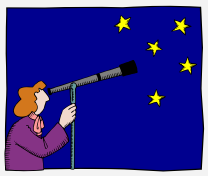
I really do enjoy doing outreach. Beyond just simply sharing my telescope and hearing people respond to the view, I get to share something about what they are looking at or my equipment. I'm sure there is a part of me that really enjoys getting to be the expert, but I think there is also the fact that I can teach them something. Since they came to us, they are interested. It is especially exciting when you get to see the light turn on in their head. (Hopefully, the light is a red one.)

While we are speaking about public outreach, I want to mention that you should not neglect your own interests. It is hard to be excited about sharing astronomy if you have let yourself become bored and stale. One of the ways you can avoid that is to keep plugged into current events. Cheap ways to do that are by subscribing to magazines or by browsing astronomy-related web sites. Actually, I would suggest doing both. You should also remember to talk to others who are interested in what is going on "out there". (I have a few friends at work that I do this with.) It really does help to pump up the excitement.

Finally, I would suggest that you spend some time just looking at the night sky, even if it is from your light-polluted backyard. I imagine that I am like most of you, in that I find the sight of the stars compelling. I find myself just simply looking at them with the eyes that God gave me. And, somehow, knowing that those points of light are suns separated from us by vast distances and that there may be worlds similar to those in our own solar system makes the vista all the more compelling.

The program for the February meeting will be a "What's Up in the Night Sky". This is a great season for night sky targets plus there are a couple of special things happening up there, so make plans to attend.

Terry Reeves
President



When you look at the stars and the galaxy, you feel you are not just from any particular piece of land, but from the solar system.

Laurel C. Clark MD
1961-2003

Observing Highlights

all times listed are Central Standard Time

February 2009

02/02	FIRST Quarter Moon
02/05	BSAS Monthly Meeting, 7:30 pm, ASC
02/9	FULL Moon
02/15	BSAS Board of Directors Mtg., 7:30 pm, Girl Scout Office
02/16	LAST Quarter Moon
02/25	NEW Moon
02/28	Public Star Party, Shelby Bottoms Park, 8-10p

OBJECTS VISIBLE THIS MONTH

Messier Objects:

Nebulae
M42-M43 (The Orion Nebula), M78

Open Clusters
M35, M36, M37, M38, M45 (The Pleiades)

Globular Clusters
M79

Supernova Remnant
M1 – The Crab Nebula

Caldwell Objects:

C13 – The Phi Cas Cluster
C31 – The Flaming Star Nebula
C41 – The Hyades
C49 – The Rosette Nebula

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.

Outreach Update *Terry Reeves, President*

As I mentioned above, we had three star parties planned for January. The first one which was planned for Astronomy Jamboree at Camp Boxwell did not happen due to very cloudy weather. We were still able to teach the Astronomy merit badge to the Boy Scouts present at the camp.

The weather was absolutely fabulous (as least for January) for the public star party at Warner Park. The official head count was 168. The private star party was very poorly attended because of the cold. The two of us who did show up only lasted 90 minutes before giving up.

For February, we did have two public star parties scheduled for February 28, one at Shelby Bottoms and one at Camp Sycamore for the Girl Scouts. The star party for the Girl Scouts has been cancelled because of low attendance by the girls. We will try to reschedule. The party at Shelby Bottoms runs from 8:00 PM to 10:00 PM. Please arrive early enough to get set up before the public arrives.

Happy Birthday Sir William Huggins

by Robin Byrne

This month we celebrate the accomplishments of another amateur astronomer who made great advances in the field of astronomy. William Huggins was born in Middlesex, London, England on February 7, 1824. His early education was at the City of London School. However, his later education came from a series of private tutors.

After a few years of following in his father's footsteps and working in business, Huggins sold the family business and retired at the age of 30 to pursue his interest in science, especially astronomy. He began with microscopy, but soon turned his attention fully to astronomy. In 1856 Huggins built his own private observatory a few miles outside of London. Originally performing routine observations, Huggins was inspired by the 1859 discovery by Kirchoff and Bunsen that spectral lines could be used to determine the composition of an object. Starting with a laboratory setup, Huggins performed spectral analysis of several elements, then set his sights on doing the same with celestial objects. To assist with his work of spectroscopy, Huggins added to his observatory an 8-inch Alvan Clark refractor.

Huggins became a pioneer in the field of astronomical spectroscopy. Working with his neighbor W. A. Miller, a professor of chemistry from King's College, the two men discovered in the spectra of stars dark (or absorption) lines, which are produced when light travels through a cool gas. They also found that the lines corresponded to known elements found on Earth. The two men presented their results to the Royal Society in 1863, and published their findings in "Lines of some Fixed Stars." That same year, Huggins tried, unsuccessfully, to photograph stellar spectra. However, photographic emulsions were not yet sensitive enough for this procedure. Most of Huggins' discoveries were, therefore, made by visually observing and sketching the spectra.

In 1864, Huggins observed the spectrum of a planetary nebula (NGC 6543), and found that it exhibits a bright-line (or emission) spectrum composed of two green lines. At the time, these lines had not been identified as corresponding to oxygen, and so were given the name of "Nebulium." Since the spectrum was not a continuous spectrum, Huggins concluded that it was not composed of stars, but was a cloud of gas. This helped to support the hypothesis that stars and their planets formed out of clouds of gas. Huggins recognized the importance of his discovery as soon as he saw the spectrum, and wrote in his report: "I looked into the spectroscope. No spectrum such as I expected! A single bright line only! ... The riddle of the nebula was solved ... Not an aggregation of stars, but a luminous gas."

The following years, Huggins continued his spectroscopic observations, noting the differences between nebulae, star clusters, and, what are now known as, galaxies. In 1866, he had the opportunity to observe the spectrum of a nova (Nova Coronae 1866), and found that it corresponded to that of hot hydrogen surrounding the star. Other spectroscopic discoveries include the finding of hydrocarbons in the spectrum of a comet, and the measurement of the Doppler shift of the spectral lines for the star Sirius. Using the amount of shift, Huggins was able to calculate that Sirius is receding from us at a rate of 25 miles per second. He applied the same principle to many other stars.

In 1875, Huggins married Margaret Lindsay Murray, who was also an accomplished astronomer. The couple worked well together and collaborated on all of their future observations. The two observed the spectrum of solar prominences. The spectrum of the Sun's disk shows many lines of calcium, but the prominences show only a few. What the two Huggins' were able to prove in the laboratory is that when calcium is in a condition with very low pressure, it will only show a few lines. This explained that the calcium lines from the Sun's disk were created under higher pressures than those found in the prominences. In 1899, the couple published the "Atlas of Representative Spectra," which compiled all of their spectral work to date.

Huggins continued to observe spectra until, in 1908 at the age of 84, he found he could no longer see well enough to identify the spectra. On May 12, 1910, William Huggins died in London. During his life, Huggins received many honors, including the Bruce Medal and being knighted. After death, his contributions to astronomy were recognized through the naming of Huggins Crater on the moon, Huggins Crater on Mars, and Asteroid 2635 Huggins.

Today, we take spectroscopy for granted. Whether it's the Mars rovers identifying elements in Martian rocks, or Hubble Space Telescope observing the elements created in a supernova, astronomers know that they can use this technique to learn much about the universe around us. Those who use spectroscopy in astronomy owe a debt of gratitude to William Huggins and the other spectroscopic pioneers. Their early work helped astronomy grow into the field of astrophysics, and paved to way for many astounding discoveries.

References

William Huggins - Wikipedia
http://en.wikipedia.org/wiki/William_Huggins

William Huggins (1824-1910)
http://www.messier.obspm.fr/xtra/Bios/huggins.html

William Huggins - NNDB
http://www.nndb.com/people/389/000103080/

The Bruce Medalists: William Huggins
http://www.phys-astro.sonoma.edu/BruceMedalists/Huggins/index.html

William Huggins: Biography from Answers.com
http://www.answers.com/topic/william-huggins

January 2009 Board Meeting 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 January 8, 2009. This date was selected at the previous board meeting because the normal meeting date of January 1st fell on a holiday (New Year's Day). A sign-in sheet was circulated in lieu of a roll call. Board members Dr. Spencer Buckner, Tony Campbell, JanaRuth Ford, Bill Griswold, Bob Norling, Curt Porter, Dr. Terry Reeves, and Bob Rice were present. Board members Dr. Donna Hummell, Kris McCall, Theo Wellington, and Steve Wheeler were absent. A quorum being present, President Terry Reeves called the meeting to order at 7:35 P.M.

Dr. Terry Reeves reminded the board that the January 15th membership-meeting program on "How To Use Your New Astronomy Toys" was intended to be a member-assisted instructional session for attendees bringing their new telescopes or other astronomical equipment. Vice-President Dr. Spencer Buckner suggested emphasizing this purpose on the BSAS website. Dr. Reeves said that he would also try to contact the Tennessean's Ms. Cheap columnist Mary Hance about including this in an upcoming newspaper article. Webmaster Tony Campbell announced that he would include information about this meeting in a banner on the BSAS' website. Both he and Dr. Reeves noted that Internet Service Provider spam filtering was probably the cause of several members' complaints about not receiving online copies of the Eclipse newsletter.

Dr. Terry Reeves reported these upcoming star parties and outreach activities:

- Assisting the Boy Scouts with earning astronomy merit badges during their Astronomy Jamboree at Camp Boxwell on January 17th. An evening star party will follow this activity.
- A private star party at Natchez Trace on January 24th, and
- A public star party at Warner Park on January 31st.

Dr. Terry Reeves announced that he had appointed BSAS member and NASA Solar System Ambassador Joe Boyd to serve as a liaison between the Society and the International Dark-Sky Association with the goal of promoting a broader interest in light pollution beyond just that of astronomers. Dr. Reeves pointed out that the scheduled Messier Marathon on March 28th coincided with The World Wildlife Federation's Earth Hour observation whereby selected cities around the world – including Nashville – will all turn out their lights at 8:30 P.M. JanaRuth Ford suggested that the Marathon be rescheduled to the April fallback date. Dr. Reeves said that he would discuss this with Mark Manner who will be hosting the Marathon at his dark-sky located home in Spot, Tennessee. He also announced that BSAS members would supply telescopes in a double-headed effort on February 28th during a public star party at Shelby Bottoms and a star party for the Girl Scouts during their environmental gathering at Camp Sycamore.

Dr. Terry Reeves suggested that the BSAS might include International Year Of Astronomy (IYA) 2009 activities during its participation on Astronomy Day in April at the Adventure Science Center. JanaRuth Ford also suggested jointly hosting a binocular gazing session with the Warner Parks since small binoculars were roughly equivalent to the telescope that Galileo used 400 years ago. Dr. Reeves announced that an Operations Committee would not be included as part of the BSAS' current plans. He also said that he would make copies of the permission letter that Bill Griswold had secured for the BSAS to use the dark sky sites on the Natchez Trace Parkway. Secretary Bob Rice reported that he had renewed the BSAS' charter as a nonprofit corporation under Title 48 of the Tennessee Code, Annotated.

There being no further business to discuss, Dr. Reeves declared the meeting to be adjourned at 8:26 P.M.

January 2009 Monthly Meeting Minutes

Bob Rice, Secretary

President Dr. Terry Reeves called the meeting to order at 7:40 P.M. in the Adventure Science Center (ASC) and welcomed new members and guests. Dr. Reeves announced these upcoming star parties and other activities:

- Assisting the Boy Scouts with earning astronomy merit badges during their Astronomy Jamboree at Camp Boxwell on January 17th. An evening star party will follow this activity. Maps and schedules were handed out to the audience.
- A private star party at Natchez Trace on January 24th,
- A public star party at Warner Park on January 31st,
- A public star party at Shelby Bottoms on February 28th and,
- A star party for the Girl Scouts during their environmental gathering at Camp Sycamore on February 28.

He also announced that the February membership-meeting program would be a "What's Up in the Sky" presentation.

Kris McCall announced that she would provide information about possible International Year of Astronomy activities at the next board of directors' meeting. Joe Boyd announced that on March 28th the World Wildlife Federation will conduct its Earth Hour observation whereby selected cities around the world – including Nashville – will all turn out their lights at 8:30 P.M. time zone by time zone. Bill Griswold announced that he will take over the handling of nametags from Ed English who has diligently performed these duties for the last several years. At this point the formal business meeting was ended in order to begin the program that involved member participation.

Dr. Terry Reeves introduced Dr. Spencer Buckner, a fellow BSAS member and Professor of Physics and Astronomy at Austin Peay State University, who delivered the evening's program on "How to use your new telescope (and other astronomy toys)." Using a PowerPoint presentation, Dr. Buckner quickly described sky maps ranging from simple planispheres to planetarium software for home computers and demonstrated the various types of telescopes and mounts along with their respective advantages and disadvantages. The audience then split up into two groups around either Dr. Buckner, who had brought a 10 inch Dobsonian reflecting telescope equipped with an electronic locating system, or Dr. Terry Reeves who had brought an 80mm refracting telescope on a manual German equatorial mount. Both groups spent the remainder of the evening observing and asking questions about how the two telescopes were operated.

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/

M35 & NGC 2158 Open Clusters in Gemini

Steve Wheeler
December 29, 2008
13 x 5 minute exposures at iso 800

Telescope:	Stellarvue SV102ED
Mount:	Orion Atlas EQ-G
Camera:	Canon Digital Rebel XT (unmodified)
Guiding:	Astrotech AT66 – Meade DSI Pro II – PHD Guiding
Software:	Nebulosity (image capture, pre-processing), Photoshop CS2

Shelby Bottoms Nature Center

Star Party

It's true you can still see the stars from the city! Come join astronomers of the Sudekum Planetarium, Barnard-Seyfert Astronomical Society and the Shelby Bottoms Nature Center naturalists, to see Orion Nebula, Pleiades star cluster, Saturn and much more!

Saturday, February 28
8:00-10:00 pm

Registration is preferred.
Open to all ages.
Please call 862-8539 to reserve your place!

Shelby Bottoms Nature Center
1900 Davidson St Nashville, TN 37206
www.nashville.gov/parks/nature
shelbybottomsnature@nashville.gov

metro parks

Requests for ADA accommodation should be directed to the Nature Center at (615) 862-8539

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)
$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

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 Joe Boyd at (615) 386-3134.

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