The ECLIPSE

October 2009
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The newsletter of the Barnard Seyfert Astronomical Society, PO Box 150713, Nashville, TN 37215-0713

Upcoming Events

Board of Directors Meeting
October 1st at the Cumberland Valley Girl Scout Council Building – 7:30 pm

November 5th at the Cumberland Valley Girl Scout Council Building – 7:30 pm

Membership Meeting
October 15th at the Adventure Science Center – 7:30 pm

November 19th at the Adventure Science Center – 7:30 pm

Upcoming Events
Private Star Party October 17th at Spot Observatory – pot luck meal at 4:30 pm - observing to follow.

Public Star Party October 24th at Long Hunter State Park – 8:00 pm

Private Star Party November 14th at the Natchez Trace mm 435.5 – 6:30 pm

Public Star Party November 21st at Shelby Bottoms – 8:00 pm

In this issue:

Monthly Membership Meeting

October 15th, 2009
Adventure Science Center
7:30 pm

Join BSAS and Americans United for the Separation of Church and State for "A Celebration of Galileo Galilei " featuring our own Dr. Spencer Buckner and Rev. David Kidd. Dr. Buckner will be speaking on Galileo's scientific contributions, and Rev. Kidd will discuss Galileo and the Inquisition.

From The President

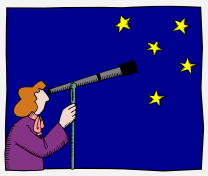
October is finally here. October is usually the best month, weather-wise, we have for viewing. According to weather.com, it has the least amount of rain on average. We get that beautiful blue sky during the day and low humidity, that promises a clear, transparent sky that night. You get to see some of those fainter fuzzies from your light-polluted backyard without suffering the low-low night-time temperatures of clear winter nights.

Did you enjoy Dr. Joshua Pepper's presentation last month? For some reason, I really like the idea of the project he is working on. Maybe, it is the fact that something like KELT is within the reach of dedicated amateurs. While it is true that my backyard does not even begin to come close to either of the sites that the two KELT telescopes are located in, and I would need a second mortgage to afford the camera they are using, the project still seems like it is almost within reach. It could also be that looking for exoplanet transits is conceptually very simple. I am quite aware that it really is much more difficult than it sounds to prove that the dip in the light curve really is an exoplanet, but it is still a very cool project.

Our program in October is going to be something a bit different. In honor of Galileo, we are holding a joint meeting with Americans United for the Separation of Church and State. The title of the program will be "A Celebration of Galileo Galilei". Our own Dr. Spencer Buckner will be speaking on the contributions of Galileo in science. (Galileo's contributions to physics may actually be more important than his contributions to astronomy.) Rev. David Kidd will be speaking on Galileo and the Inquisition. There should be time for questions afterwards. This should prove to be a most interesting meeting. Please plan to be in attendance.

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. During the month following and at the November meeting, 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. We will not be taking nominations at the October meeting because of its special nature. We will provide instruction on how you can make nominations between the October and November meetings.

Dr. Terry Reeves
President



"All truths are easy to understand once they are discovered; the point is to discover them."

Galileo Galilie
1564-1642

Observing Highlights

all times listed are Central Standard Time

LUNAR PHASES

October 2009

10/04	FULL Moon
10/11	LAST Quarter
10/18	NEW Moon
10/25	FIRST Quarter

November 2009

11/02	FULL Moon
11/09	LAST Quarter
11/16	NEW Moon
11/23	FIRST Quarter

OBJECTS VISIBLE THIS MONTH

Messier Objects:

Open Clusters
M11, M18, M24, M25, M26,

Nebula
M16, M17

Globular Clusters
M55, M75

Outreach Update

Dr. Terry Reeves, president

In September, all of our star parties, including the Astronomy Retreat, were rained out. At least, I did not have to agonize over whether or not the weather might clear up. In September, Mother Nature was speaking in very clear, unmistakable language that we were not having a star party.

Since, we were not able to have the Astronomy Retreat, we are planning to have (weather permitting) a smaller, one-night retreat on Saturday, October 17. We will have a pot-luck meal starting around 4:30-5:00 PM. Then, we will have a night of viewing. Like last time, we will cancel the event if the weather does not look good. Please, let me know if you plan on coming. First, we would like to have a rough head count, and some idea on what food is coming. That way, we can make last minute purchases if necessary. Second, I will have some idea of who must absolutely be contacted if we have to cancel. This event is replacing the private star party that had been scheduled for the same night at the Water Valley Overlook on the Natchez Trace.

There is also public star party at Long Hunter State Park on Saturday, October 24 from 8:00-10:00 PM. As usual, we will be located on the field behind the Visitor's Center. You can reach the field by driving through the parking lot for the Visitor's Center to the road on the other side. Take a left turn onto the field.

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.

Happy Birthday Asaph Hall

by Robin Byrne

This month we celebrate the life of a self-made astronomer. Asaph Hall III was born October 15, 1829 in Goshen, Connecticut, and was the first of 6 children born to Hannah and Asaph Hall II. The senior Hall was a clockmaker and the primary educator of his children, until his death in 1842. The death of his father left the Hall family in educational and financial difficulty. Asaph continued his education at Norfolk Academy while working on a farm to help his family. At the age of 16, Asaph's mother died, so he left school to become a carpenter's apprentice and support his family.

It was in the 1850's that Asaph began to think about a career in astronomy. His complete educational path is sketchy, but he briefly attended both New York Central College in McGrawville, NY and the University of Michigan in Ann Arbor. He also had a few jobs teaching mathematics in both Wisconsin and Ohio. However, it was at Central College that he was instructed in both geometry and German by Chloe Angelina Stickney, who made a bigger impression on Asaph in another way. In 1856, they married. Together, they would have four sons, all of whom would graduate from Harvard.

The same year that Asaph married, he applied for a position at Harvard College Observatory. Hired as an observatory assistant, he made a whopping $3 per week, but it was an important beginning. Asaph remained at the Harvard Observatory until 1862, when a new job came along.

In August of 1862, Asaph Hall took a position as assistant astronomer at the US Naval Observatory. The following year, he was made a full professor of mathematics and given the rank of captain in the Navy. Among his duties included representing the US government on expeditions to observe solar eclipses in both the Bering Sea in 1869 and Sicily in 1870, and transits of Venus in Siberia in 1874 and San Antonio, Texas in 1882.

In 1872, Hall published an intriguing article, entitled "On an Experimental Determination of Pi." A friend of Hall's, Captain O. C. Fox, had been wounded at the Second Battle of Bull Run. While he was recuperating, Hall had him perform an experiment that involved randomly throwing steel wires onto a wooden surface, which had been marked with evenly separated parallel lines. Pi was computed using the equation: pi = 2ml/an, where m = the number of trials, l = the length of the wire, a = the distance between the parallel lines, and n = the number of lines the steel wire crossed. This was one of the first published uses of random sampling to determine an experimental value of a physical constant.

In 1875, Hall was placed in charge of the 26 inch Alvan Clark refractor at the Naval Observatory. This was the largest refractor in the world at the time. Using this instrument, Hall noticed a white spot on Saturn. By following the motion of this spot, he was able to accurately determine Saturn's rotation period. The time he found was nearly 15 minutes different from the published value. This was the moment that made Hall wonder if there were other accepted "facts", which were actually wrong.

One such fact that Hall now questioned was the ascertain that Mars had no moons. Looking into the history of this statement, Hall found that William Herschel had looked for moons of Mars in 1783, and that H. L. d'Arrest had looked in both 1862 and 1864, but both men were unsuccessful in their searches. Hall realized that they had assumed a much larger distance from Mars for the moon orbits and had neglected to search in much closer to the planet. Hall began using a technique where he would place Mars just out of the field of view of his eyepiece, to minimize its glare, and to scan around the limb of Mars. Beginning on August 10, 1877, Hall began his search, but due to poor seeing conditions, found no moon. He thought about giving up, but his wife encouraged him to try again. The following night, there was a possible candidate, which he made note of, just before the fog came in. Fog and clouds prevented observing again until August 15, but the skies were anything but steady. Finally, on August 16, Hall saw the "star near Mars" again. The following night, he saw not only this outer "star," but also another one even closer to Mars. Subsequent observations allowed him to compute their orbits, at which point they were recognized as moons. Hall named them Phobos and Deimos from a passage in "The Iliad," in which they are identified as attendants of Mars. Within a few months, Hall had enough observations of the moons' orbits to also calculate the mass of Mars.

Hall continued to perform many astronomical observations, including the study of Saturn's moon, Hyperion. Hall found that its orbit was slowly shifting with respect to Saturn. He also was among the first to study stellar parallax, including the stars in the Pleiades cluster.

In 1891, Asaph Hall retired from the Navy. The following year, his wife, Angelina, died. Hall did not stop being active, though. He lectured at Harvard University from 1896 to 1901, as an instructor of celestial mechanics. In 1901, Hall fully retired and moved back to his home town of Goshen, Connecticut. There, he married Mary Gauthier. Asaph Hall died November 22, 1907 in Annapolis, Maryland, while visiting one of his sons. He was buried in the family cemetery in Goshen.

Asaph Hall is another example of someone without formal astronomical training being able to make a huge impact within the field. Largely self-taught, Hall used his mathematical skills and applied them successfully to astronomy. Hall's finding that published data were in error was the catalyst of his greatest work. In many ways, this reminds me of Tycho Brahe's inspiration to perform the most accurate observations possible after a predicted planetary event was off by days. Both men took it upon themselves to be better than their colleagues, and both are now remembered because of the work they achieved. Mars is now coming back into view in the evening sky. If you have a large enough telescope, perhaps you might want to try to find its elusive attendants and think about Asaph Hall's wonderful legacy.

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September 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 September 3, 2009. Board members Dr. Spencer Buckner, JanaRuth Ford, Bill Griswold, Dr. Donna Hummell, Bob Norling, Curt Porter, Dr. Terry Reeves, Bob Rice, Theo Wellington, and Steve Wheeler were present. Board members Tony Campbell and Kris McCall were absent. A quorum being present, President Dr. Terry Reeves called the meeting to order at 7:34 P.M.

Treasurer Bob Norling reported that the BSAS had $1,996.56 in its checking account and $150.00 in its equipment account. Dr. Terry Reeves reported these upcoming events and star parties:

- Sep 18/19 - BSAS members only astronomy retreat at Spot Observatory
- Oct 17 - Private star party at Water Valley Overlook on the Natchez Trace Parkway
- Oct 24 - Public star party at Long Hunter State Park from 8:00 to 10.00 P.M.
- Nov 21 - Public star party at Shelby Bottoms Park

A quick survey of the board members indicated that 15-16 persons would be attending the private astronomy retreat at Spot Observatory on September 18-19. Dr. Spencer Buckner stated that he might have several additional attendees from his astrophotography class at Austin Peay State University.

Dr. Terry Reeves reported that the first-time star party at Metro Nashville's newly opened Bells Bend Park on August 21 was a success and noted that this location had the best dark skies of any public site that we have used. Dr. Reeves noted that, in addition to having restroom facilities and excellent staff support, Bells Bend also offered a very favorable trade-off between good viewing and the distance traveled and suggested that we schedule future star parties there. Curt Porter so moved and Steve Wheeler seconded his motion that passed by a unanimous voice vote with no additional discussion.

Dr. Terry Reeves reported that the September 17 membership meeting would be given by Vanderbilt University astronomer Dr. Joshua Pepper on "Exoplanetary Exploration and KELT (Kilodegree Extremely Little Telescope)." Dr. Reeves also reported that the October 15 membership-meeting program would be "A Celebration of Galileo" with Dr. Spencer Buckner volunteering to relate the great scientist's accomplishments and a yet-to-be-determined speaker to describe his struggles with the church. A short business meeting will follow this program.

Nominating Committee Chairman Bill Griswold reported these recommendations for 2010 officer and director positions to be voted upon at the November 19 annual election: for President - Dr. Spencer Buckner; for Vice-President - Dr. Donna Hummell; for Secretary - Bob Rice; for Treasurer - Bob Norling; and for Directors - Santos Lopez and Steve Wheeler. Dr. Terry Reeves noted that nominations could also be made from the floor on the night of the election.

Bob Rice reported that Amateur Astronomy Magazine editor Charlie Warren would give a program on The Deepest South Texas Star Party and his recent trip to Australia and Southern Hemisphere Skies at our December 17 meeting and Christmas potluck supper. Mr. Rice also informed the board that he would not be able to attend the September 17 membership meeting and asked if someone would take the minutes on that evening. Steve Wheeler kindly volunteered to do so.

Since there was no further business to discuss, Dr. Terry Reeves declared the meeting to be adjourned at 8:26 P.M.

September 2009 Monthly Meeting Minutes

Steve Wheeler, Newsletter Editor

President Dr. Terry Reeves called the meeting to order at 7:31 P.M. in the Adventure Science Center (ASC) and welcomed new members and guests. Treasurer Bob Norling reported that the BSAS' bank balance was $1,996.00. Dr. Reeves reminded the audience about these upcoming events:

- The September Astronomy Retreat scheduled for September 18/19 is cancelled due to weather.
- September 25 – Public star party at Bells Bend Park 8:00 pm.

Dr. Reeves reminded attendees to refer to the club website for further information on these and other activities.

Dr. Reeves then introduced Vanderbilt University researcher Dr. Joshua Pepper, who delivered the evening's program on "Exoplanet Research & KELT." Dr. Pepper described in detail the current efforts in this new field of research that has led to the discovery of 375 planets orbiting other stars. Methods used to aid in these discoveries include watching for a star's "wobble" and detecting a planet's eclipse (transit). Some exciting discoveries in this field include "hot Jupiters" and eccentric and inclined orbits.

Dr. Pepper then described the KELT (Kilo-degree Extremely Little Telescope) which consists of two telescopes located in Arizona and South Africa that are designed to scan the sky for transiting planets. If a transit is discovered, then follow-up observations can be done with commercially available telescopes from anywhere in the world. He then entertained questions from the attendees about KELT and exoplanet research.

Since there was no further business to discuss, President Reeves declared the meeting to be adjourned at 8:33 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/

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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