



ECLIPSE



The Newsletter of the Barnard-Seyfert Astronomical Society

Organized in 1928

May 2006

**The Membership meeting will be held on May 18, 2006
at the Adventure Science Center at 7:30 pm.**

The program will be the presentation of the awards made to the BSAS winners of the 54th Middle Tennessee Science and Engineering Fair. Mrs. Brown, teacher of three of the student winners and her husband, Michael will make the presentations. The Browns were at the photographic workshop at Kitt Peak last year and were among the first to image the supernova in M51. See photograph of Mrs. Brown and the winners on Page 6.

President's Message

This month I want to remind everyone of the upcoming BSAS Picnic and Astronomy Workshops that will be held Saturday June 3rd at 4pm at Spot Observatory west of Nashville (directions below). We will start setting up around 4pm, and be ready to eat at 5pm. There will be a large tent set up next to the observatory, so we will have a nice spot to have the picnic even if the weather isn't ideal. We will supply meat dishes and drinks for everyone, and members may bring desserts and side dishes if they wish. For those wanting to do some observing, you are welcome to stay as late as you care to, including all night. The moon will be at first quarter that day for planning purposes.

After dinner, at around 6:30 pm, we will have two workshops. One will be a hands-on "Basic Telescope Setup and Use". BSAS members will demonstrate using BSAS loaner scopes and personal telescopes that members bring. If you have any equipment you want to test or work on, please bring it out.

The other workshop will be "Lunar and Planetary Imaging—Start to Finish". We will take some images of the moon (which will be at first quarter and visible in the afternoon), Saturn and Jupiter using a Phillips ToUCam color webcam and a Lumenera Lu075M monochrome camera with separate IR, Red, Green and Blue filters. Acquisition issues like focusing and choice of focal length will be discussed and demonstrated. After taking the images, we will go through step by step processing of the images using Registax and Photoshop (and other programs as needed) on a computer connected to a projection screen. Individuals may bring their laptops and follow along if desired. Since the Lumenera is a monochrome camera, we will show how to take individual color channels and combine them into a color image. If the weather doesn't allow us to capture any images, we will do the processing on some older images that will be available.

We look forward to seeing you all there. Best regards, Mark Manner

Directions to Spot Observatory

Spot Observatory (www.spotastro.com) is located at 3330 HWY 230 West about 50 miles west of Nashville. To get there, go I-40 West from Nashville and take Exit 152 (the "Bucksnot" exit). At the bottom of the exit ramp, take a left on HWY 230, and follow it back under I-40 and around an "S" curve to a "T" intersection stop sign. At the stop sign, take a left, continuing on HWY 230 (the signs will indicate "HWY 230 East"). From that stop, the entrance to the observatory is approximately 4 miles on the left. You will see a black wooden fence with a silver metal farm gate. Just past this entrance, Dodd Hollow Road comes into HWY 230 on the right. If you get to Dodd Hollow Road, you have gone a bit too far, so turn around and come back a few hundred feet. Call my cell, 615-351-3172, or home, 931-729-0568, for last minute directions.

Some useful times for June 3rd: Setting times: Sun-8:03pm/Mercury-9:30pm/Mars-11:21pm/Saturn-11:41pm. The moon is 50% phase. Jupiter rises at 5:13pm.

by Mark Manner, President

BSAS OPERATING BUDGET for 2006**April**

	Actual Budgeted	To Date	
INCOME			
Membership Dues	\$1,800.00	\$485.00	
TNSP	\$1,300.00	\$2,049.85	
Cash Donations	\$150.00	\$0.00	
Book & Calendar Sales	\$50.00	\$40.00	
EXPENSES			
Equipment & Facilities	\$2,000.00	\$1,107.13	
AL & IDA Memberships	\$500.00	\$0.00	
Outreach & Mentoring	\$800.00	\$175.00	
Hospitality	\$350.00	\$19.38	
Insurance	\$350.00	\$0.00	
Newsletter	\$350.00	\$54.94	
Website	\$350.00	\$217.80	
Office Supplies	\$110.00	\$38.46	
Speakers	\$100.00	\$200.00	
Awards & Recognition	\$50.00	\$0.00	
Public Relations	\$25.00	\$0.00	
Legal Fees	\$20.00	\$0.00	
Miscellaneous		\$0.00	\$0.00
TOTAL EXPENSES	\$5,005.00	\$2,312.71	
CURRENT BANK BALANCE		\$3,475.53	

**MAGAZINE SUBSCRIPTIONS FOR
BSAS MEMBERS**

We are always able to accept requests for new and renewal yearly subscriptions to SKY AND TELESCOPE and ASTRONOMY from our members in good standing.

The current yearly rates are as follows:

SKY AND TELESCOPE: \$32.95

ASTRONOMY: \$37.00

Checks or Money Orders should be made out to the Barnard-Seyfert Astronomical Society (BSAS) and sent to the following address:

BSAS

P. O. Box 150713

Nashville, TN 37215-0713

DUES INFORMATION

On your Eclipse mailing label is the expiration date for your current membership in the BSAS. There will be a two month grace period before any member's name is removed from the current mailing list. You will be receiving a number of warnings informing you that your membership is expiring.

Dues per year are \$20.00 Regular (1 vote); \$30 Family (2 votes); \$15.00 Student (under 22 years of age)(1 vote); \$15 Seniors (65 years or older)(1 vote); \$25 Senior Family (65 years or older)(2 votes). Please call President, John Harrington, (615) 269-5078 if you have questions. Dues can be sent to:

BSAS

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THE ECLIPSE NEWSLETTER

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BSAS website: www.bsasnashville.com

BSAS Logo by Tony Campbell

Happy Birthday Willem de Sitter

by Robin Byrne

This month we celebrate the life of an astronomer whose name may not be well known, but whose contributions are noteworthy. Willem de Sitter was born May 6, 1872 in Sneek, Netherlands. While in Arnhem, attending elementary and high school, Willem's interest in astronomy began. He later attended college at Groningen to study mathematics, where he later worked at the astronomical laboratory.

In 1897, de Sitter moved to Cape Town, South Africa to study for his doctorate. While studying the Galilean satellites of Jupiter at the Cape Observatory, de Sitter met his future wife, Elanora Suermondt. In 1899, de Sitter and his new wife returned to Groningen, where he completed his dissertation, titled "Discussion of Heliometer Observations of Jupiter's Satellites." Willem de Sitter received his PhD in 1901.

In 1908, de Sitter moved to Leiden for a position as professor of theoretical astronomy. A few years earlier, Einstein had just published his theory of relativity. In 1911, de Sitter applied Einstein's work to astronomy, showing how Newton's Laws would be altered in a relativistic universe.

In 1913, de Sitter worked on one of the assumptions of relativity: the speed of light is a constant. By studying binary stars, de Sitter appliedproved that the speed of light does not depend upon the speed of the source. Continuing to explore the consequences of relativity, de Sitter applied the idea of a four-dimensional space-time to cosmological models. This work led de Sitter to predict that the universe was expanding. Einstein had introduced the Cosmological Constant to his equations in order to avoid an expanding universe model, which he later called his "greatest blunder." De Sitter felt that the Cosmological Constant was unnecessary and out of place in the elegant work Einstein had accomplished in relativity.

Beginning in 1919, de Sitter was appointed director of Leiden Observatory. This gave him the opportunity to change the emphasis of the observatory from astrometry (the study of positions and motions of stars) to astrophysics and theoretical work. It was also in 1919 that de Sitter was operated on for gallstones. An overdose of ether led to a lifetime of subsequent health problems, including tuberculosis.

After years of working on relativistic ideas independently, in 1932 de Sitter had the opportunity to work with Einstein himself. The result was a paper on what is now called the Einstein-de Sitter model of the universe. The paper showed how the equations of general relativity could be used to model an expanding universe. They also proposed the possibility of matter in the universe that had mass, but could not be observed. We now call such material "dark matter" and have observational evidence pointing to its existence.

In November of 1934, after a brief illness, Willem de Sitter died in Leiden, Netherlands. Although Willem de Sitter is not as well known as Albert Einstein, his work helped to support and improve upon Einstein's ideas of relativity. So, on the anniversary of his birth, pause to reflect upon the contributions of de Sitter, and all the other lesser-known scientists, who have helped to "expand" our understanding of the universe in which we live.

References:

Sitter <http://www-groups.dcs.st-and.ac.uk/~history/Mathematicians/Sitter.html>

Willem de Sitter http://spaceinfo.jaxa.jp/note/kagaku/e/kag115_desitter_e.html

History of Science and Scholarship in the Netherlands: Willem de Sitter by P.C. van der Kruit <http://www.historyofscience.nl/author.cfm?RecordId=4>

Barnard-Seyfert Astronomical Society
Minutes of a Regular Meeting of the Board of Directors
Held On Thursday, April 6, 2006

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 April 6, 2006. A sign-in sheet was circulated in lieu of a roll call. Board members Mike Benson, Keith Burneson, Tony Campbell, JanaRuth Ford, Bill Griswold, Mark Manner, Bob Rice, and Randy Smith were present. Board members Kris McCall, Pam Thomas, and Gary Wilkerson were absent. A quorum being present, President Mark Manner called the meeting to order at 7:30 P.M.

Mark Manner reported that the Messier Marathon held on Saturday evening, March 25, at his home (a.k.a. Spot Observatory) was quite good as was the gumbo provided by BSAS member Donna Hummell. Mr. Manner also announced that the BSAS summer picnic was scheduled to be held at his home on Saturday, June 3 with the moon just past 1st quarter. He invited everyone to attend noting that, although members could provide "pot-luck" side dishes if they wished, there would otherwise still be plenty of food for everyone. The picnic will start at 4:00 P.M. with dinner at around 5:00 P.M. Starting at around 6:30 P.M. there will be two workshops: (1) Basic Telescope Use, and (2) Lunar & Planetary Imaging. There will be a star party following the workshops.

Treasurer Randy Smith reported that the Society's bank balance was \$3,653.33. Keith Burneson reported that a contract to use the Tennessee-Alabama-Georgia (TAG) church camp for the 2006 Tennessee Star Party (TNSP) would most likely be completed this week. Mr. Burneson announced these tentative speakers and topics for the TNSP:

- Dr. Charles McGruder (WKU) on Third World Astronomy
- Dr. Todd Gary (TSU) on Astrobiology
- Dave Hathaway (NASA) on Solar Astronomy
- Steven Hamilton (Meade) on the DSI Pro II

JanaRuth Ford offered to contact Paul Lewis (UT-Knoxville) and Bill Keel (UA) about speaking at the TNSP. The board also quickly reviewed a list of potential speakers compiled at the March 22nd TNSP Planning Committee meeting.

Webmaster Tony Campbell announced that he would update the BSAS website including the calendar and gave Mark Manner instructions for removing names from the broadcast email list. Keith Burneson used his laptop computer to demonstrate a newly created prototype TNSP website; everyone remarked that it looked very good. Mark Manner suggested that the board investigate using PayPal for online TNSP pre-registration. JanaRuth Ford queried the board regarding publicity from Alabama and Georgia for TNSP 2006. Following a brief discussion, the board decided that there would be ample publicity from astronomy clubs in both states because the TNSP date does not conflict with those of other star parties planned in these areas. Mark Manner reminded the board that the membership meeting before the TNSP would be cancelled, but that members would have an extra day to attend the star party.

There being no further business to discuss, President Manner declared the meeting adjourned at 8:37 P.M.

Respectfully submitted,
Bob Rice
Secretary

**Barnard-Seyfert Astronomical Society
Minutes of the Monthly Membership Meeting
Held on Thursday, April 20, 2006**

President Mark Manner called the meeting to order at 7:39 P.M. in the Adventure Science Center (ASC) and welcomed new members and visitors. Mr. Manner called for a motion to approve the minutes of the previous membership meeting held on March 16, 2006 as published in the April 2006 issue of the *Eclipse* newsletter. There being no corrections or revisions, Keith Burneson so moved and Bob Norling seconded the motion that carried by a unanimous voice vote.

Vice-President Keith Burneson introduced Dr. Eric Klumpe, Professor of Astronomy at Middle Tennessee State University (MTSU), who delivered the evening's program on MTSU's recently completed naked eye observatory, the Uranidrome. Dr. Klumpe explained that the name Uranidrome was derived from two Greek words: Urani - meaning sky and Drome - meaning a large prepared place. His comment that there were three versions of north: true north, magnetic north, and low-bidder north elicited a hearty chuckle from the audience. Noting that inspiration for this project came from the excessive lighting around the existing observatory, Dr. Klumpe's PowerPoint presentation documented the construction over time of the Uranidrome's arranged series of columns and metallic structures. He pointed out that these structures were designed to permit the measurement of angles and timing of bright celestial objects that would be unaffected by the surrounding lighting. Potential experiments from this arrangement include (1) identifying the North Star by mapping constellations with respect to time, (2) determining the latitude of Murfreesboro, and (3) learning basic principles of celestial navigation. Dr. Klumpe then graciously answered questions from the audience following his presentation.

Mark Manner recalled the meeting to order at 8:44 P.M. Treasurer Randy Smith reported that the BSAS' bank balance was \$3,475.53. Coordinator Keith Burneson reported that speakers for the Tennessee Star Party (TNSP) on September 22-24 included Dr. Charles McGruder (WKU), Dr. David Hathaway (NASA), Dr. Todd Gary (TSU), and Stephen Hamilton. Mr. Burneson announced that the BSAS website contained a link to the TNSP site. He also noted that a contract to use the Tennessee Alabama Georgia (TAG) Youth Camp had been signed and mailed. In addition, Mr. Burneson announced that the use of PayPal was being considered for online registration.

Mark Manner announced that the BSAS website was being updated, particularly the bulk email file. Mr. Manner stated that the Yahoo tnastronomy group would also be used to communicate time-sensitive information. He also announced that tents would be provided for the June 3rd BSAS annual picnic at Spot Observatory. Mr. Manner further noted that two workshops would be provided at the picnic and promised to send additional information via email.

Lonnie Puterbaugh announced that he would conduct a video workshop in the near future. Chris McCall reminded the audience that Astronomy Day activities would be held at the ASC on May 6th with these scheduled speakers and topics: Dr. Chuck Higgins (MTSU) on the Sun; Dr. Spencer Buckner (APSU) on Future Astronomy at APSU; and TV Meteorologist Davis Nolan on Hurricane Katrina & Satellite Weather Watching. A show of hands indicated that quite a few BSAS members would participate in both the daytime activities and at the star party scheduled for 8:30 - 10:30 P.M. Ms. McCall noted that next year's Astronomy Day activities would be held on May 5th to avoid conflicting with the Music City Marathon scheduled for May 6th.

Lonnie Puterbaugh announced that several BSAS members would attend the Mid-South Star Gaze on April 26-29 at French Camp off the Natchez Trace Parkway at mile marker 181. Mr. Puterbaugh also displayed a Meade Meteorite Kit that he had purchased for the Astronomy Channel. Theo Wellington announced that her daughter Danika was a fourth year participant in the Science Olympiad.

Since there was no further business to discuss, President Manner declared the meeting adjourned at 9:05 P.M.

Respectfully submitted,
Bob Rice, Secretary

54th Middle Tennessee Science and Engineering Fair

Here is a photograph of the first and second place BSAS winners at the 54th Middle Tennessee Science and Engineering Fair, taken at the awards ceremony at Austin Peay on April 8, 2006. From left to right in the picture are: Second Place winner, Nathan Brandon Parrish whose subject was "Meteor Counting;" Mike Benson; First Place winners, Laura Susan Tucker and Mary Katherine Bradley whose team project was "Light Pollution;" and Constance Brown, the science teacher at McEwen High School for all three students.

Sydney Erin Whitlock, the third place winner was not able to attend the awards ceremony. Her topic was, "I Got Blue Skies!"



Free Telescope Offer!

Did someone say free telescope? 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. A waiting list is 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.



Keith Burneson, Vice President and member of the Equipment committee, showing the "Loaner" 8 inch LX200 Classic telescope, with case and tool and accessories box. This is just one of the fine telescopes owned by the Barnard-Seyfert Astronomical Society and for the use of our members.

Activities and Events

May 1 — 31, 2006

- 5/4 Jupiter at opposition
- 5/4 BSAS Board of Directors mtg., 7:30 p.m. at Girl Scout Office
- 5/5 FIRST QUARTER
- 5/5 Star Party, MTSU, 6:00 – 9:00 (contact JanaRuth Ford (553-9438))
- 5/6 Astronomy Day at the Adventure Science Center
- 5/6 η -Aquadrid meteors peak
- 5/10 Spica 0.3° S of Moon, occultation
- 5/12 Jupiter 5° N of Moon
- 5/13 FULL MOON
- 5/14 Antares 0.1° N of Moon
- 5/18 BSAS monthly meeting at ASC: 7:30 p. m.
- 5/19 Neptune 4° N of Moon
- 5/20 LAST QUARTER
- 5/20 Star Party (Long Hunter State Park) 8:30 - 10:30
- 5/21 Uranus 1.0° N of Moon
- 5/27 NEW MOON
- 5/27 Private Star Party (Natchez Trace, Mile 412, Water Valley Overlook)
- 5/31 Vesta 0.9° S of Moon

June 1 — 30, 2006

- 6/1 BSAS Board of Directors mtg., 7:30 p.m. at Girl Scout Office
- 6/3 FIRST QUARTER
- 6/3 BSAS Annual Picnic at Spot Observatory, 4:00 p.m. (rain or shine)
- 6/4 Mercury 1.2° N of M35 (18° E)
- 6/5 Saturn 0.8° S of Beehive (M44)(52° E)
- 6/7 Spica 0.1° S of Moon
- 6/11 FULL MOON
- 6/15 BSAS monthly meeting at ASC: 7:30 p.m.
- 6/15 Mars 0.2° S of Beehive (M44)(42° E)
- 6/16 Pluto at opposition
- 6/17 Uranus 0.6° N of Moon; Mars 0.6° N of Saturn (41° E)
- 6/18 LAST QUARTER
- 6/20 Mercury greatest elongation E (25°)
- 6/21 Solstice, 0726 hours
- 6/22 Moon 0.3° N of Pleiades (M45)
- 6/25 NEW MOON
- 6/24 Private Star Party (Natchez Trace, Mile 412, Water Valley Overlook)
- 6/28 Vesta 0.2° N of Moon; Mars 2° S of Moon

Note: all dates & hours according to Central Time

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