

The September membership meeting will be held on Thursday, September 20, 2007 at 7:30 pm at the Adventure Science Center

Message from the President

Well, here we go into the busiest month of the year for the Barnard-Seyfert Astronomical Society. Our TNSP07 will start on September 14th and extend through the 16th. This star party is being held at TAG, a Primitive Baptist Youth Camp in Lynchburg, TN. The BSAS leases this camp and its facilities. This location boasts a dark sky for good observing, a large comfortable meeting room, a dining hall and kitchen, a lodge for the speakers and eleven cabins. Three of these cabins are air conditioned and all cabins are designed to hold 16 people (double bunk beds) however we only plan to have eight persons in each cabin so all will have a lower bunk and the equipment and clothing will be on the top bunk. The viewing field will also have room for those who wish to camp. Also this year we will have electricity on the viewing field for those who would like to power their equipment. The meals (5 total) will be prepared by a professional caterer. The camp is located approximately 4 miles east of Lynchburg and there are free tours through the Jack Daniels Brewery. A short field trip to the brewery is well worth the time.

We are well blessed by a wonderful group of speakers. We will hear:

- Dr. Bob O'Dell will be speaking on the creation of the Hubble Telescope.
- Dr. William C. Keel, As an astronomer especially interested in galaxies, I have made a practice of getting photons wherever I can, having made appearances at Kitt Peak, Cerro Tololo, La Palma, La Silla, the MMT, the 6-meter Bolshoi Teleskop Azimutal'nyi, the IRTF, and the VLA. I have become pretty multispectral, using data from *Voyager 2*, IUE, IRAS, *Einstein*, ROSAT, ISO, UIT, HST, Chandra, GALEX, and FUSE. These data support studies of the effects of interactions on galaxies, the history of galaxy merging, triggering of star formation and nuclear activity in galaxies, and too many other projects that have struck my fancy. In the more socially respectable part of my job, I teach at the University of Alabama; mostly introductory astronomy courses with occasional forays into extragalactic astronomy and observational techniques at the graduate level. Unlike many professional astronomers, I got my start in the back yard many years ago and retain a soft spot for eyeballing the Universe.
- Dr. Scott Hawley. When Scott joined the Belmont faculty in the fall of 2006, he was ending his sixth year as a postdoctoral researcher in the field of numerical relativity, a discipline combining elements of computational physics, nonlinear wave mechanics, astrophysics and gravitation theory. He was also mixing his second studio album as a singer-songwriter. Dr. Hawley is grateful for the opportunity combine his enthusiasm for physics and music by teaching at Belmont, particularly in teaching physics classes for Audio Engineering Technology students.
- Dr. Hawley received a B.S. in Physics from the College of William and Mary and a Ph.D. in Physics from the University of Texas at Austin.
- Dr. Allyn Smith, Assistant Professor, joined the APSU faculty in 2006 with a B.S. in General and Molecular Biology, an M.S. in Space Sciences (Atmospheric Physics), an M.S. in Space Technology (Space Systems Operations), and a Ph.D. in



Message from the President

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Space Sciences (Astrophysics), all from the Florida Institute of Technology in Melbourne, FL. His background is in observational astrophysics with primary research interests in the late stages of stellar evolution and survey calibration.

- Dr. David A. Weintraub is Professor of Astronomy at Vanderbilt University, which in 2003 honored him with the Jeffrey Nordhaus Award for Excellence in Undergraduate Teaching. He will speak on “Pluto a Planet?” is for all those who seek a fuller understanding of the science surrounding both Pluto and the provocative recent discoveries in our outer solar system.
- Wesley R. Swift, Observatory Director of the Von Braun Astronomical Society in Huntsville, Alabama.

This has all the makings of a great weekend. Come and join us in the fun, fellowship, food and fantastic viewing.

by Bill Griswold,
President

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

**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: \$34.00

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).

Contact president@bsasnashville.com if you have questions. Dues can be sent to:

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THE ECLIPSE NEWSLETTER

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BSAS Logo by Tony Campbell

HAPPY BIRTHDAY SALYUT 6

By: Robin Byrne

This month marks the 30th anniversary of the launch of the first truly successful space station. Named to “salute” Yuri Gagarin (the first man in space), the Soviet Salyut series already had some successful space outposts, but Salyut 6 was to be different. Launched on September 29, 1977, Salyut 6 marked the beginning of a new era for the Soviet space program.

Salyut 6 made use of several design features that were successful on previous Salyut’s, as well as some important modifications. Equipment that had been tested on earlier missions included 3 steerable solar panels to generate the station’s power, a semi-automated navigational system, an improved thermal control system, the environmental system, and the gyroscope system used for orientation of the spacecraft. On the innovative side, this was the first station to have two docking ports. This meant that resupply ships (either manned or unmanned) could deliver needed goods and fuel to one port on the station, while the crew remained with their return ship docked to the other port. This allowed for much longer manned missions, as well as the ability for continuous occupation as one crew handed over the station to the next.

Although designed to last for 18 months, Salyut 6 was actually in orbit for almost 5 years, hosting 5 long duration missions, and 11 shorter missions. Those missions added up to Salyut 6 being occupied for a total of 676 days, with 27 different cosmonauts living there, including, for the first time, space travelers from countries other than the U.S. or the USSR. As comfort with the station grew, each of the long duration missions increased in length, with the first manned mission lasting only 18 days, while that last one stretched on for 185 days. However, the station was designed with these long stays in mind, so some features made life in orbit a little easier, including 20 viewports, various exercise equipment, and for the first time, people in orbit had the ability to watch television broadcasts from Earth. Also, some more comfortable conditions were added, such as sound proofing of the equipment, sleeping “cots,” and a shower.

Despite the comforts, like any expedition into space, there were potential hazards. In 1977, Cosmonaut Georgi Grechko was performing a space walk when he saw his crew mate, Yuri Romanenko, where he wasn’t supposed to be. Romanenko had unintentionally floated out of the cabin and was untethered. Grechko managed to grab Romanenko before he drifted off into space permanently. On another mission, the crew had chronic headaches, only to discover that the ship’s filters for carbon dioxide weren’t working as efficiently as planned. Changing the filters more frequently solved the problem. And the biggest concern for long duration missions was how the cosmonauts’ bodies would deteriorate in zero-g conditions. A rigorous exercise program was instituted, including an exercycle, a treadmill, and elasticized suits to provide resistance for their muscles. They also had to wear tight pants, forcing their heart to work harder to move blood to their lower extremities. Despite complaints during the flights, the program made the transition back to Earth much easier for the cosmonauts.

Salyut 6 was designed to be a scientific outpost, and several pieces of equipment were on board for the different experiments. Included on board was a multispectral camera for taking images of Earth’s topography and agricultural analysis; a 1.5 meter telescope for observing in the submillimeter, infrared and ultraviolet portions of the electromagnetic spectrum; a gamma ray telescope; a 10 meter radio telescope; a furnace for processing alloys; equipment for producing semiconductor materials; an area designed for plant growth; as well as equipment to monitor the health of the cosmonauts during their long stays in space.

When manned operations ended, an unmanned test vehicle, called Cosmos 1267, was launched in April of 1981 to dock with the station two months later. This was the first test of docking a large unmanned vehicle using an automated system. This technique would later be used in the construction of the Mir Space Station. The two remained docked until Salyut 6 was deorbited on June 29, 1982, plunging into the Pacific Ocean almost 5 years after its launch.

As construction of the International Space Station continues, with a continuous presence of crews on board, it is easy to take long duration space living for granted. However, it was a mere 30 years ago that this idea became a reality. Salyut 6 led the way to today’s space station. If ISS happens to have a visible pass overhead, take the time to go out, look, and remember Salyut 6.

References:

Salyut 6

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A Final Salute to Salyut 6 - Time Magazine, by Frederic Golden

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Barnard-Seyfert Astronomical Society
Minutes of a Regular Meeting of the Board of Directors
Held on Thursday, August 2, 2007

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 July 5, 2007. A sign-in sheet was circulated in lieu of a roll call. Board members Keith Burneson, Tony Campbell, Bill Griswold, Donna Hummell, Terry Reeves, Bob Rice, and Steve Wheeler were present. Board members Mike Benson, JanaRuth Ford, Kris McCall, Mark Manner, and Randy Smith were absent. Also attending were BSAS members Joe Boyd and Lonnie Puterbaugh. A quorum being present, President Bill Griswold called the meeting to order at 7:50 P.M.

Webmaster Tony Campbell reported that all aspects of the Tennessee Star Party (TNSP) 2007 had been integrated into the BSAS' website. TNSP Coordinator Keith Burneson reported that the registration late charge cut-off date was August 24, 2007 and that he had added the "one person per form" specification to the TNSP registration application. The board then briefly discussed the possibility of conducting a "How to Pick a Telescope" program for the November membership meeting to be followed by a "How to Use a Telescope" session at the January meeting.

Joe Boyd reported that he and Bill Griswold had recently met for a second time with two officials from the Metro Public Works Department to discuss light pollution issues. Mr. Boyd pointed out that one official was in charge of traffic lights and the other was in charge of street lights. He additionally noted that Public Works was in the process of converting to light emitting diodes (LEDs) and that both officials asked for additional information on full cutoff street lighting. Following up on a matter previously discussed at the June 7th board meeting, Mr. Boyd asked the board for a resolution authorizing the Dark Sky Committee to formally recognize and award a certificate to people who have promoted or otherwise advanced the public's awareness for the need to preserve dark skies in the community. Terry Reeves so moved and Tony Campbell seconded the motion that was approved by a unanimous voice vote.

Keith Burneson announced that he would try to have TNSP registration forms available for the upcoming August 16th membership meeting. Dr. Donna Hummell announced that she could conduct certification training in the Society's automated external defibrillator (AED) device for up to six students and suggested Saturday, August 25th, at Belmont Methodist Church as a possible date and location. Lonnie Puterbaugh asked the board for authorization to purchase a projector for use at the TNSP and other BSAS activities. Bill Griswold asked Mr. Puterbaugh, Terry Reeves, and Steve Wheeler to research the proposed purchase limited to a maximum expenditure of \$1,600.00 and to report back at the next board meeting.

Tony Campbell commented that Mars would be at opposition a week before Christmas and suggested that this event might be dovetailed with the proposed "How to Buy a Telescope" session in November. Bill Griswold reminded everyone to attend the public star party at Warner Park on August 11th. Mr. Griswold also asked that, to defray his out-of-pocket expenses and to compensate for his time and hard work, the board consider granting TNSP Coordinator Keith Burneson free registration, camping, and meals at this upcoming star party. The board approved this request by a unanimous voice vote.

There being no further business to discuss, President Griswold declared the meeting adjourned at 8:53 P.M.

Respectfully submitted,
Bob Rice

Barnard-Seyfert Astronomical Society
Minutes of the Monthly Membership Meeting
Held On Thursday, August 16, 2007

President Bill Griswold called the meeting to order at 7:45 P.M. in the Adventure Science Center (ASC) and welcomed new members and guests. Mr. Griswold asked for any corrections to the minutes of the previous meeting held on July 19, 2007 and, there being none, then asked for a motion to accept them as published in the August 2007 edition of the *Eclipse* newsletter. A member so moved, followed by a second, and the minutes were approved by a unanimous voice vote.

Star Party Coordinator Steve Wheeler announced these upcoming private star parties: October 13 at Natchez Trace Parkway mile marker 433; November 10 at the Natchez Trace Water Valley Overlook site; and December 8 ay Natchez Trace Parkway mile marker 433. Mr. Wheeler also reminded the audience about the public winter star party on December 15 at Warner Park.

Tennessee Star Party (TNSP) Treasurer Bob Rice announced that 15 people had registered for this September event. Bill Griswold announced that August 24 was the cutoff date to receive a discount for TNSP registrations. BSAS Treasurer Randy Smith reported that the Society had \$2,573.52 in the bank. Bill Griswold announced that a committee had been formed to research purchasing a quality projector for the BSAS.

Program Coordinator JanaRuth Ford announced that the September program would include joint presentations on the Cape Canaveral Museum, Houston Mission Control, and the Naval Observatory. Ms Ford announced that the October program would be given by Vanderbilt graduate student William Teets about his research on T Tauri Stars – A Look at Our Sun's Adolescence. She announced that the November program would be a video by the International Dark-Sky Association and that Charlie Warren would present the December program on Amateur Astronomy Magazine to be followed by a new edition of his popular Jeopardy-based astronomy game.

Bill Griswold reported that everything was arranged for next month's TNSP including cabins, dining facility, and the meeting hall. Mr. Griswold also announced that Lonnie Puterbaugh would install the electric power lines.

JanaRuth Ford introduced BSAS member Mike Benson who presented a dual program on eclipse chasing and the 2007 Astronomical League (AL) Convention in Portland, Oregon. Mr. Benson's first presentation was a video made by an Iranian eclipse chaser entitled "Chasing the Shadow." This fascinating (and very professional) video covered four separate total solar eclipses recorded by the imager in four far-reaching corners of the world: 1999 at Gahar Lake in Iran; 2001 in Zimbabwe; 2003 in the Antarctic territory; and 2005 near the Galapagos Islands in the Pacific Ocean. Delivered in perfect English, the video showed startling eclipse images along with colorful ocean and land scenes along the eclipse paths. Unfortunately, equipment problems halted a complete showing of the fourth eclipse.

Mike Benson, who is the Chairman of the South-East Region of the AL in addition to being the BSAS' AL Correspondent (ALCOR), next delivered a presentation on the AL Convention (ALCON) held in Portland, Oregon on August 3-4, 2007. Mr. Benson showed a number of photos he made during this trip to illustrate the varied landscapes and sights available while traveling for astronomy. These included redwood trees, Mt. St. Helens, Mt. Hood, the Columbia River gorge, and a startling aerial view of Hoover Dam and Lake Meade. Guest speakers at the ALCON, which was held at Portland State University, included Todd Duncan on "The Size of the Universe" and Marni Berendsen on NASA's "Night Sky Network." A birthday cake celebrating the 60th anniversary of the ALCON was an additional highlight of this gathering. Mr. Benson noted that the 2008 ALCON would be held in Des Moines, Iowa to be followed by the 2009 convention in Long Island, New York.

Chuck Schlemm commented that the movie "In the Shadow of the Moon" about the Apollo Moon Program would be showing in local theaters soon. Steve Wheeler announced that "Seeing in the Dark," based upon the book by the same name about amateur astronomers' contributions in the detection of near earth asteroids, would be airing in mid-September on PBS.

There being no further business to discuss, President Griswold declared the meeting adjourned at 9:02 P.M.

Respectfully submitted,
Bob Rice, Secretary

ACTIVITIES and EVENTS

September 1—30, 2007

- 9/3 Moon 1.2° N of Pleiades
- 9/4 LAST QUARTER
- 9/6 BSAS Board of Directors mtg., 7:30 p.m. at Girl Scout Office
- 9/8 Venus 9° S of Moon
- 9/10 Conj. of Saturn & Moon
- 9/11 NEW MOON, Partial Solar Eclipse
- 9/13 Mercury 2° N of Moon
- 9/14-9/16 TNSP 2007 at TAG Youth Camp near Lynchburg, TN**
- 9/18 Jupiter 6° N of Moon
- 9/19 FIRST QUARTER.
- 9/20 BSAS Membership mtg. 7:30 p.m. at ASC
- 9/23 Equinox
- 9/26 FULL MOON
- 9/30 Moon 1.1° N of Pleiades

October 1—31, 2007

- 10/2 Mars 5° S of Moon
- 10/3 LAST QUARTER
- 10/4 BSAS Board of Directors mtg., 7:30 p.m. at Girl Scout Office
- 10/7 Venus 3° S of Moon, conj. of Saturn & Moon
- 10/11 NEW MOON
- 10/13 Private star party 8:30 p.m. Natchez Trace, mile marker 435
- 10/15 Venus 3° S of Saturn
- 10/16 Jupiter 5° N of Moon
- 10/18 BSAS Membership mtg. 7:30 p.m. at ASC
- 10/19 FIRST QUARTER
- 10/21 Orionid meteors peak, conj. of Neptune & Moon
- 10/26 FULL MOON
- 10/30 Mars 3° S of Moon

*All times listed are Central Time

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