



ECLIPSE



The Newsletter of the Barnard-Seyfert Astronomical Society

Organized in 1928

August 2006

**The Membership Meeting will be held on August 17, 2006
At the Adventure Science Center at 7:30 pm.**

“BSAS member Steve Wheeler will be sharing his real world experience using low-cost imaging devices such as digital cameras, video cameras, and the popular Meade LPI and the new Deep Sky Pro II ccd camera. Steve will share some tips on getting the most out of the equipment you have to get “above average” results.”



by Steve Wheeler
M016 - The Eagle Nebula
Meade LXD75 SN8 AT-UHTC - Meade DSI PRO II
80 x 15 sec Lum, 40 x 15 sec RGB

President's Message

This month I want to highlight the upcoming BSAS Tennessee Star Party 2006 (TNSP'06). This year the event will be held at the Tennessee-Alabama-Georgia (TAG) Youth Camp located at 1444 Ray Burton Road, Lynchburg, TN. The event will officially begin on Friday, September 22, and end mid-day Sunday September 24. BSAS members may come one day early at no extra cost, at 2 pm on Thursday, September 21. We ask that BSAS members coming early be prepared to help a bit with the preparation work (we won't work you too hard!).

Whether you plan on coming on Thursday or later, we still need volunteers, and would appreciate your help at any time during the weekend. If you think you might be able to help out, please let Keith Burneson, our Vice President and TNSP'06 Coordinator, know. You may reach Keith at tnsp06@comcast.net. I would also be happy to pass your name and interest along if you would like to contact me.

This year's speakers so far include Dr. Charles McGruder of Western Kentucky University, Dr. Todd Gary of Tennessee State University, Dr. David Hathaway of the NASA/Marshall Space Flight Center, Stephen Hamilton, Mike Chessman and Tim Troutman. Watch your email and The Eclipse for an upcoming presentation schedule and summary of topics.

This year's event will be held during the dark of the new moon. The TAG Camp is located in an area that should have a limiting visual magnitude of approximately 6 or better (we plan on measuring it prior to the event and will post the results).

Rules for the event are essentially the same as in prior years, and are what you would expect at a star party. Red lights only on the observing field, and for those coming and going after dark in a car, we ask that you notify a BSAS TNSP'06 staffer so that we can provide some red masking for your headlights.

The following links will direct you to more information, and you can send an email with TNSP'06 questions to tnsp06@comcast.net.

Main TNSP'06 page: <http://home.comcast.net/~tnsp06/>

Registration: <http://home.comcast.net/~tnsp06/registration.htm>

Rules and regulations: http://home.comcast.net/~tnsp06/rules_andregulations.htm

We look forward to a great TNSP'06 and to seeing you there.

Please feel free to contact me with any questions or concerns about the BSAS.

Best regards,

Mark Manner

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<http://www.spotastro.com>

<http://groups.yahoo.com/group/tnastronomy/>

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).

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

BSAS

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THE ECLIPSE NEWSLETTER

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JanaRuth Ford

Bill Griswold

Kris McCall

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BSAS website: www.bsasnashville.com

BSAS Logo by Tony Campbell

Happy Birthday Mars Meteorite Announcement

by Robin Byrne

This month we celebrate an event that is still mired in controversy. On August 7, 1996, a team of NASA scientists announced the discovery of possible fossilized life from Mars. The suspected fossils were observed inside a meteorite named ALH84001, which was discovered in the Allan Hills region of Antarctica in 1984.

So how did this controversy come about? First, the meteorite's origin was confirmed to be from Mars in 1993. This was accomplished by comparing trapped gases within the meteorite to atmospheric measurements made by the Viking Landers in 1976. The ratio of certain isotopes of the gaseous elements are unique to Mars' atmosphere and provide very strong evidence of the meteorite's place of origin. The rock comprising the meteorite was dated to be 4.5 billion years old, corresponding to when Mars originally formed. Fractures in the meteorite show evidence of water being in the rock as recently as 3.6 billion years ago. However, at this point, all that was known was that they had a large piece of early Mars.

It was the development of scanning electron microscopes that made things interesting. When the meteorite was viewed at magnifications much higher than previously available, scientists observed something very interesting. Within the rock were features that strongly resembled fossilized microbes, but much smaller than microbes found on Earth.

However, other pieces of evidence were needed. When water seeped into the cracks, it brought carbon dioxide from the atmosphere with it, depositing carbonate minerals within the rock. In the carbonates, several chemical clues were found. Organic molecules, called polycyclic aromatic hydrocarbons (PAH's) were concentrated here. PAH's are one of the byproducts left behind when microorganisms die. Mineral compounds associated with microscopic life were also found. And all of these clues were found in the same area as the apparent fossils, which led the scientists to conclude they are all interrelated and consistent with the presence of life.

Not everyone agrees. Studies have shown that PAH's can form in purely geological ways. Under the right conditions, very hot hydrogen, carbon dioxide and carbon monoxide gases can cool and combine to form PAH's when magnetite is present. The heat could have been from the rock's original formation or from a later impact, and the Mars rovers have shown that magnetite is very abundant on Mars.

Also, studies on Earth have shown that microbes don't usually fossilize the way in which the apparent Martian fossils did. Most microbes break down before any fossilization occurs, leaving behind a biofilm instead. Although biofilm was found in ALH84001, it has not been proven whether it was of an Earthly or Martian origin. It also has been shown that features that look like the proposed microbes can form geologically from the minerals vaterite and aragonite.

Has the issue been resolved? Hardly. There are those who acknowledge the geological arguments, but feel that all of that geology occurring in the same place at the same time is too much of a coincidence. They argue that the presence of life is a much simpler explanation for all that is observed. On the other hand, there are those who have shown that life is not a necessary component to produce the observed features. They argue that such an extraordinary claim as life on Mars requires extraordinary proof, which has not yet occurred.

Whatever the final analysis turns out to be, ALH84001 has added to the mystery of Mars. As the Mars rovers continue on their unprecedented exploration of Mars' surface, and as plans continue for a manned mission to Mars, we can all speculate about whether people from Earth will be the first or second Martians to live on our red neighbor.

References:

Meteorite Yields Evidence of Primitive Life on Early Mars by Donald L. Savage, James Hartsfield, David Salisbury
<http://www2.jpl.nasa.gov/snc/nasa1.html>

What is ALH84001?

http://www.lpi.usra.edu/lpi/meteorites/The_Meteorite.html

ALH84001: Recent Scientific Papers

<http://www.lpi.usra.edu/lpi/meteorites/alhnpap.html>

Barnard-Seyfert Astronomical Society
Minutes of a Regular Meeting of the Board of Directors
Held On Thursday, July 5, 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 July 5, 2006. A sign-in sheet was circulated in lieu of a roll call. Board members Keith Burneson, Tony Campbell, JanaRuth Ford, Bill Griswold, Mark Manner, Bob Rice, and Randy Smith were present. Board members Mike Benson, Kris McCall, Pam Thomas, and Gary Wilkerson were absent. Also attending were Long Range Planning Committee Chair Joe Boyd and Equipment Committee Chair Lonnie Puterbaugh. A quorum being present, President Mark Manner called the meeting to order at 7:34 P.M.

BSAS Treasurer Randy Smith reported that the Society's bank balance was \$3,410.91.

TNSP Coordinator Keith Burneson reported that Hubert Bennett of Cookeville would cater the star party on Saturday (September 23rd) and on Sunday (September 24th). After a brief discussion, the board decided that the BSAS would supply sandwiches or pizza for the Friday (September 22nd) meal. Mr. Burneson noted that Thursday night (September 21st) was reserved for BSAS members who would help set up. The board authorized TNSP Treasurer Bob Rice to open a separate checking account to conduct TNSP business. The board also authorized establishing an online registration for the TNSP using PayPal to transfer payments to the TNSP account.

Equipment Committee Chair Lonnie Puterbaugh handed out copies of the draft application and essay for the BSAS to apply for *Astronomy Magazine's* "Out-Of-This-World" award. This \$2,500 award, to be determined by the magazine's editors, will be given to an astronomy club demonstrating the greatest "sustained effort" in public outreach and education. Mr. Puterbaugh also handed out copies of a letter addressed to *Astronomy Magazine* from Chuck Higgins, Assistant Professor of Physics and Astronomy at Middle Tennessee State University (MTSU), complimenting the BSAS for its participation in and support of MTSU's public outreach Friday Night Star Parties. Mr. Puterbaugh noted that he expected to receive similar letters from the YMCA, Boy Scouts, Warner Parks, and other organizations. He also asked board members for copies of any outreach related photos and newspaper articles they might have. All letters and other materials will be included with the award application that must be postmarked by July 15, 2006. Mark Manner offered to put captions on the photos via PhotoShop. Joe Boyd suggested including a copy of the BSAS' charter with the application.

Bill Griswold asked for clarification regarding the specific location for upcoming private star parties at the Natchez Trace Parkway. Although the exact mile marker could not be identified, the board specified that the "closer in" site would be used. Lonnie Puterbaugh reported that Warner Park Naturalist Heather Gallagher had asked the BSAS to determine dates for public star parties to be held at the park during January and February 2007. The board decided upon January 20, February 17, and additionally March 24 with Ms Gallagher to specify the times.

Tony Campbell reported that the International Space Station was scheduled to fly over Nashville this evening at approximately 9:30 P.M. and that additional information was available on the Heavens Above website. In response to Bill Griswold's inquiry, JanaRuth Ford reported these upcoming membership meeting programs:

- August – Steve Wheeler – Low Cost Imaging
- October – Chuck Higgins – Dark Matter
- November – Kris McCall – Nine Planets & Counting

Since there was no further business to discuss, President Manner declared the meeting adjourned at 8:35 P.M.

Respectfully submitted,
Bob Rice
Secretary

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

Vice-President Keith Burneson called the meeting to order at 7:41 P.M. in the Adventure Science Center (ASC) and announced that the evening's program would be a brief overview of BSAS outreach and other activities. Mr. Burneson introduced JanaRuth Ford, the BSAS Coordinator of NASA's Night Sky Network, as the first speaker. Ms Ford showed a brief video that introduced the concepts and methods employed by the Night Sky Network (NSN) to promote public outreach by astronomy clubs. She handed out examples of NSN supplied activity sheets and emphasized that the NSN "tool kits" provided hands on activities that worked and that didn't have to be invented by the presenter. Ms Ford encouraged those in the audience to contact her if they were interested in participating in future NSN outreach efforts.

Mike Benson, the BSAS' Astronomical League (AL) Correspondent, presented the next segment on the benefits of our club's membership in the AL. Noting that the AL was the largest amateur organization in the world, Mr. Benson pointed out these features:

- Publishing the quarterly periodical *The Reflector*
- Promoting young astronomer recognition
- Improving contact with young people
- Promoting dark sky activities
- Providing insurance to member clubs
- Sponsoring nearly 30 different observing clubs

Mr. Benson also announced that High Point Scientific, Inc. had provided the BSAS with an Advantage Card that members could use to obtain purchase discounts.

Lonnie Puterbaugh described the advantages of using video astronomy to reach many people at once as opposed to peering one-at-a-time through a telescope eyepiece. Noting that video astronomy worked well in light polluted surroundings, he showed pictures of his photo-electronic Astronomy Channel in action during Astronomy Day 2005. Mr. Puterbaugh also related his activities in trying to interest other astronomy clubs in using video astronomy and reminded the audience about the November 8th solar transit of Mercury.

Powell Hall recounted the activities of the International DarkSky Association (IDA) while lamenting the fact that some people were opposed to science in general. Mr. Hall described the IDA's emphasis on education instead of confrontation. He pointed out the medical value of darkness on human health noting that people needed this as much as they needed light. Mr. Hall humorously concluded by asking the audience if they knew who Mount Rushmore was and then answering that it was a rock group that couldn't sing!

Chuck Schlemm described the activities of these organizations and presented a display of their publications:

- National Space Society – emphasizes work on private spacecraft
- The Planetary Society – sponsors major projects such the solar sail
- The Mars Society – promotes the exploration of Mars
- The Moon Society – science and geology of the moon

Keith Burneson recalled the meeting to order at 9:06 P.M. and reported the BSAS with a bank balance of \$3,515.91. Mr. Burneson also reported these developments for the upcoming Tennessee Star Party (TNSP): registration details were almost completed; attendees will be able to register online using PayPal; and BSAS members can get an extra night if they help setup.

Mr. Burneson announced these upcoming events:

- July 22nd – Private star party at the "close-in" Natchez Trace Parkway site
- August 5th – "Getting Started in Video Astronomy" class at Lonnie Puterbaugh's house
- August 17th – Public star party at Warner Park 8:30 – 10:30 P.M.

Mr. Burneson reminded the audience that there would be no membership meeting in September because the TNSP was scheduled during that same month. Joe Boyd recognized visitors including Jason Dobbs and Stella Cain.

Since there was no further business to discuss, Vice-President Burneson declared the meeting adjourned at 9:12 P.M.

Respectfully submitted,
Bob Rice, Secretary

Activities and Events

August 1 — 31, 2006

- 8/2 FIRST QUARTER
 8/3 BSAS Board of Directors mtg., 7:30 p.m. at Girl Scout Office
 Double shadow transit on Jupiter
 8/4 Antares 0.4° N of Moon
 8/5 Hebe at opposition
 8/6 Mercury greatest elongation W (19° W)
 8/7 Double shadow transit on Jupiter
 8/9 FULL MOON
 8/10 Double shadow transit on Jupiter
 8/11 Neptune at opposition; Uranus 0.3° N of Moon
 8/12 Star party at Warner Park, 8:30 — 10:30
 Ceres at opposition; Perseid meteors peak
 8/14 Double shadow transit on Jupiter
 8/15 LAST QUARTER
 8/16 Moon 0.6° N of Pleiades (M45)
 8/17 BSAS monthly meeting at ASC: 7:30 p.m.
 Double shadow transit on Jupiter
 8/19 Double shadow transit on Jupiter; Private Star Party, Natchez Trace mile 435
 8/21 Double shadow transit on Jupiter
 8/23 NEW MOON
 8/24 Double shadow transit on Jupiter; Mars 0.6° N of Moon

- 8/26 Double shadow transit on Jupiter; Venus 0.07° N of Saturn (16° W)
 8/28 Spica 0.5° N of Moon; Double shadow transit on Jupiter
 8/31 FIRST QUARTER

September 1 — 30, 2006

- 9/4 Double shadow transit on Jupiter
 9/5 Uranus at opposition
 9/7 FULL MOON (largest of 2006), partial lunar eclipse; Uranus 0.4° N of Moon
 9/7 BSAS Board of Directors mtg., 7:30 p.m. at Girl Scout Office
 9/11 Double shadow transit on Jupiter
 9/12 Moon 0.7° N of Pleiades (M45)
 9/14 LAST QUARTER
 9/15 Double shadow transit on Jupiter
 9/18 Saturn 2° S of Moon
 9/21-24 TNSP 2006, TAG camp (no BSAS membership meeting in September)
 9/22 NEW MOON; annular solar eclipse
 9/23 Equinox, 11:03 PM; Mercury 1.8° N of Moon
 9/24 Spica 0.5° N of Moon
 9/27 Mercury 1.3° N of Spica (19° E)
 9/28 Antares 0.5° N of Moon
 9/30 FIRST QUARTER

Note: all dates & hours according to Central Time

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