

## The April membership meeting will be held on Thursday, April 19, 2007 at 7:30 pm at the Adventure Science Center

On Thursday, April 19, 2007 we will hold our regularly scheduled membership meeting at the Adventure Science Center. Our speaker this month will be our own Lonnie Puterbaugh.

He will focus on two topics for his presentation. The first topic he will address are the Outreach Awards offered by the Astronomical League. These awards are also known as the *AstroOscars*. This is a new category of awards currently offered by the Astronomical League and are designed to recognize individuals who have made a substantial impact on public education and enrichment in the science of Astronomy.

His second topic will be Mount Palomar Observatory. Mount Palomar Observatory is located in North San Diego County, California and is owned and operated by the California Institute of Technology. Lonnie will discuss the features of the world-class observatory, focusing on the impressive equipment and advancements in Astronomical Research that the observatory has achieved throughout its history.

### Message from the President

In last month's "President's Message", I spoke about the wonderful job JanaRuth Ford and her program committee is doing to arrange the programs for our monthly membership meeting and the fact that Steve Wheeler is now the BSAS coordinator of Star Parties. This month I want to talk about the TNSP07 and the job Board Member, Keith Burneson is working to cause this event to happen.

First, I want to tell a little about Keith. Keith has been very active in the BSAS. He is now a board member of the BSAS and his project is the TNSP07. Last year he was the Vice-President and also the coordinator of the TNSP06, either one could be a full job. When I say he was very active, for a couple or three years after joining the BSAS, Keith attended all of the Board of Directors meetings and the other committee meetings even before he was elected to the Board. He had a better attendance than most of the Board Members or Officers. That showed he had a great interest in the BSAS.

The coordinator of the TNSP, in my estimation, has the hardest and longest lasting job in the BSAS. The TNSP07 will again be held at TAG (a church camp located about six miles due east of Lynchburg) named for the close proximity to Tennessee, Alabama and Georgia state lines. Keith's first job is to contact the people at TAG and coordinate the signing of a contract, equitable to both the BSAS and TAG. This contract must cover the costs of using the camp and how much we pay for the use of the facilities. Some of the problems might be the security light which shines half across the viewing field. One of the jobs for Keith is to obtain and sign up the program speakers for the daylight hours and some entertainment for the night hours if we should ever have rain or cloudy skies.



## Message from the President

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Another job is to obtain someone or group to furnish the catering of the food for the meals. And then there is the job to register all our guests and assign them to the different cabins. And the list of things to do goes on and on.

Last week (March 20) we celebrated the Equinox, the instant that the daylight hours are equal to the night hours. What really happened was that the Sun crossed from the Southern hemisphere to the Northern hemisphere. This occurred at 7:07 pm CDT. It is a global happening. Our reference books (such as *Observer's Handbook 2007*, by *The Royal Astronomical Society of Canada*) give the date and time based on UT. The date and time posted for the Equinox was March 21, 2007, 0h, 7m. This time had to be adjusted for our longitude (a difference of -6 hours CST or -5 hours CDT) which made the date and time March 20, 2007, 7h, 7m, pm CDT. (It might be of interest that if you are on the equator, the daylight hours are always (year round) equal to the night hours.)

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](mailto:president@bsasnashville.com) if you have questions. Dues can be sent to:

BSAS  
P. O. Box 150713  
Nashville, TN 37215-0713

### **THE ECLIPSE NEWSLETTER**

Editor: Pam Thomas  
[pam.thomas@charter.net](mailto:pam.thomas@charter.net)

#### **BSAS Officers:**

Bill Griswold, President  
Terry Reeves, Vice President  
Bob Rice, Secretary  
Randy Smith, Treasurer  
Mark Manner, Immediate Past President  
Board of Directors  
Keith Burneson  
Donna Hummell  
Steve Wheeler  
Mike Benson  
Tony Campbell  
JanaRuth Ford  
Kris McCall, Ex Officio

BSAS website: [www.bsasnashville.com](http://www.bsasnashville.com)

BSAS Logo by Tony Campbell

## Happy Birthday Edward Maunder

by Robin Byrne

This month we look at the life and contributions of a man whose name will forever be tied to the Sun. Edward Walter Maunder was born April 12, 1851 in London, England. His father was a Wesleyan Society minister. After a brief time studying at King's College in London, Maunder took a job in a bank, without ever receiving his college degree.

In 1873, Maunder began working at the Royal Greenwich Observatory, where he was a photographic and spectroscopic assistant. Part of Maunder's new job involved photographing the Sun and measuring sunspots, which would ultimately lead to his greatest contributions to astronomy. In 1875, Maunder married Edith Hannah Bustin, with whom he had 5 children. She would later die at a young age.

Although a member of the Royal Astronomical Society, in 1890, Maunder and his brother Thomas decided to establish an organization that allowed membership of both amateur and professional astronomers, as well as one that would admit women among its ranks. The result was the British Astronomical Association.

In 1891, Maunder had a new assistant at the observatory: Annie Scott Dill, who had studied mathematics. She was one of the "lady computers" who worked at the observatory. Maunder had been widowed earlier, and his working relationship with Annie eventually led to their marriage in 1895. Annie later became one of the first female members of the British Astronomical Association.

Maunder's work studying the Sun and sunspots included going through historical records of sunspot activity. For over 50 years it had been known that the Sun goes through an 11-years cycle of sunspot activity. However, there were known exceptions to this cycle. Gustav Spörer had found that virtually no sunspots were observed from 1400 to 1510 (a period now known as the "Spörer Minimum"). This led Maunder to look for other periods of no activity. He found that from 1645 to 1715, such a minimum occurred. Among those 70 years, 32 years had no sunspots at all, while during another 30 years a total of 50 spots were observed, where 40,000 spots would be a more normal total. Maunder published his findings in 1894, but few people showed much interest. This period of time is now known as the "Maunder Minimum."

In addition to studying the sunspot cycle numbers, Maunder also noted how sunspot latitude changes with the sunspot cycle. Near solar minimum, sunspots appear relatively close to the Sun's equator. As sunspot maximum approaches, the spots are found farther from the equator, both north and south. In 1904, Maunder published the now famous "butterfly" diagram, which illustrates the change in sunspot latitude with sunspot cycle.

Last month we looked at the role Schiaparelli played in the announcement of canals on Mars. In the early 20th century, Maunder became involved in the debate, we well. Maunder experimented with circular disks that had small markings on them. What he found was that the observed linear features were, in fact, an optical illusion. Maunder also concluded that conditions on Mars were too cold for life, as we know it on Earth, to exist. Edward Maunder died March 21, 1928.

Although the discovery of the Maunder Minimum did not arouse much interest at the time, it later became better known due to its coinciding with the Little Ice Age. Could the Sun's activity affect Earth's global climate? That is still being debated and studied today. Some recent findings indicate that the Sun's rotation may have slowed during this period of time, which would explain the lower sunspot activity. It has also been found that the minimum affected the amount of cosmic radiation reaching Earth, which, in turn, affected the production of Carbon-14, used in radiocarbon dating. Prior to this discovery, dating of materials using radiocarbon from this era gave inaccurate results. Now that this anomaly is known, the effect can be corrected for. The discovery of a relationship between solar activity and Carbon-14 has allowed scientists to use ice cores and tree rings for finding other minima. In the last 8000 years, 18 periods of minima have been found. This means that the Sun spends about 25% of its life in a minimum.

We know that the Earth has gone through many cycles of warming and cooling in the past. How much of that has been due to the Sun's activity is still being debated today. How much of the current warming of Earth is due to man's influence is not entirely understood, although most people agree that at least some of what is happening now can be attributed to human activity. However, all of these factors show how susceptible our Earth's climate is to the influence of many factors, and how connected we are with all of the universe. The work of Edward Maunder has helped us to understand one of the many ways Earth is a part of the universe around us.

### References:

Maunder, Edward Walter (1851-1928)

<http://www.daviddarling.info/encyclopedia/M/Maunder.html>

Edward Walter Maunder - Wikipedia

[http://en.wikipedia.org/wiki/Edward\\_Maunder](http://en.wikipedia.org/wiki/Edward_Maunder)

Maunder Minimum: Definition and Much More from Answers.com

<http://www.answers.com/topic/maunder-minimum>

Barnard-Seyfert Astronomical Society  
Minutes of a Regular Meeting of the Board of Directors  
Held On Thursday, March 1, 2007

A regular meeting of the Board of Directors of the Barnard-Seyfert Astronomical Society convened at 7:45 pm March 1, 2007 at the Cumberland Valley Girl Scout Council building in Nashville, TN. Present at the meeting were board members Bill Griswold, Keith Burneson, Terry Reeves, Randy Smith, Donna Hummell, Jana Ruth Ford and BSAS members Lonnie Puterbaugh and Joe Boyd. Absent were board members Mark Manner, Bob Rice, Tony Campbell, Mike Benson, Kris McCall and Steve Wheeler.

Bill Griswold opened the meeting with a discussion of the BSAS website, and the fine job that Tony Campbell has done working on a method of notifying members when their membership dues are delinquent.

Bill Griswold provided the members in session with a copy of the permit for use of the Natchez Trace for scheduled Star Parties.

Lonnie Puterbaugh mentioned that a prominent editor of Amateur Astronomy magazine contacted him during the past week. He plans to be moving to the Nashville, TN area. Lonnie mentioned that he would be a wonderful contact for possible future speakers. Lonnie also mentioned that Mr. Kevin Kinney, who has a position with the Parks Department, contacted him to discuss a program for Earth Day, which is planned for April 21 in Centennial Park. Lonnie would like to have BSAS representation at the program. Details will be forthcoming.

The operating budget was reviewed by Randy Smith, and approved by unanimous vote of the members in session. BSAS Data backup was discussed and Terry Reeves announced that he is looking for the proper computer equipment for this purpose.

The upcoming Star Party schedule was reviewed. The star party at Warner Park on March 3 will be from 5:30-8:30 and should feature the lunar eclipse and Venus. The following Star Party dates were reviewed for their accuracy: 3/2/07 at MTSU, 3/3/07 at Warner Park, 3/17/07 Messier Marathon at Spot Observatory, 4/6/07 at MTSU, 4/14/07 alternate date Messier Marathon at Spot Observatory, 4/21/07 (tentative) Astronomy Day/Earth Day at Centennial Park, 5/5/07 Astronomy Day at ASC, 5/19/07 at Natchez Trace, 5/31/07 "Blue Moon" at Warner Park, 6/16/07 annual picnic at Spot Observatory, 7/14/07 at Natchez Trace, 8/11/07 at Warner Park, 9/14/07 TNSP at TAG, 10/13/07 at Natchez Trace, 11/10/07 at Natchez Trace, and 12/08/07 at Natchez Trace. The possibility of having another Star Party at Long Hunter State Park on 4/14/07, providing this date is not required for the Messier Marathon, was discussed.

Keith Burneson reviewed the status of plans for TNSP '07. He is compiling a list of potential speakers. The T-shirt design is not yet chosen, but will be needed in the next 60 days. Lonnie Puterbaugh mentioned that putting the T-shirt design on the website by June or July will help sell more T-shirts. Keith and Bill discussed possible improvements to the registration process. Karen Puterbaugh has a potential caterer in mind.

Concerning the Equipment Committee, Lonnie Puterbaugh suggested that the Board consider purchasing another PST solar telescope since it appears to be in high demand among members. However, it was mentioned that the Society will require a projector for TNSP and this purchase might be a better use of the funds. No vote was held on the matter, but it was suggested to review the matter again before June.

Tony Campbell called in during the meeting to inform the Board that there is now a way to access member telephone and e-mail information on the website, and to give his apology for not being able to attend the meeting due to illness.

Joe Boyd brought up the issue of Dark Sky-compliant lighting in reference to renovations occurring at his church, and that there is common misunderstanding about what constitutes Dark Sky-compliant lighting.

There being no further business, the meeting was adjourned at 8:53 pm.

Submitted by Donna Hummell for Bob Rice

Barnard-Seyfert Astronomical Society  
Minutes of the Monthly Membership Meeting  
Held on Thursday, March 15, 2007

President Bill Griswold called the meeting to order at 7:34 P.M. in the Adventure Science Center (ASC) and recognized new members and guests.

JanaRuth Ford introduced the first speaker of the evening, graduate student Erika Grundstrom of Georgia State University, who delivered a presentation on Rapidly Rotating Hot Stars. Noting that she had just presented her doctoral dissertation and would soon be joining Vanderbilt University, Ms Grundstrom described her study of fast-spinning spectral type Bs stars. She noted that these stars were very bright, quite hot, and much more massive than our sun. Drawing from her study sample of 150 Bs stars, Ms Grundstrom described losses or gains in angular momentum depending upon whether the Bs star was producing an outflow from its equatorial region or receiving an inflow from a companion star.

JanaRuth Ford then introduced Dr. Keivan Stassun, Assistant Professor of Astronomy at Vanderbilt University, who gave the evening's second presentation on Brown Dwarfs - Magnificent Failures. Dr. Stassun explained that brown dwarfs were "failed stars" that condensed from gas and dust with insufficient mass to initiate hydrogen fusion in their cores and were therefore able to generate only a brief period of deuterium fusion before they "burned out." Noting that brown dwarfs were extremely difficult to locate, he described his recent co-discovery of the first brown dwarf eclipsing binary system that at last provided a more accurate determination of mass and other information. Dr. Stassun concluded by explaining that the further study of brown dwarfs would help to answer the broader question of how stellar birth is triggered.

Following their respective presentations, both speakers graciously answered questions from the audience. At the conclusion, Kris McCall provided gifts to both as a token of the Society's appreciation.

Bill Griswold recalled the meeting to order at 8:48 P.M. for the business session. Mr. Griswold announced that applications for membership were available and complimented Webmaster Tony Campbell for his recent work on the Society's website. The minutes of the previous meeting were approved without exception as published in the March 2007 edition of the *Eclipse* newsletter.

Bill Griswold announced that the BSAS Messier Marathon would be held on March 17 with April 14 as an alternate date. Treasurer Randy Smith reported that the BSAS had a bank balance of \$3,127.17. Mr. Smith suggested that members turn in their magazine renewal forms as soon as possible to avoid missing any issues. JanaRuth Ford announced that the program for the April meeting would be provided by Lonnie Puterbaugh who would speak on the Astronomical League's Outreach Award Program and about his recent trip to Palomar Observatory.

Keith Burneson asked for volunteers to assist with the 2007 Tennessee Star Party (TNSP). Lonnie Puterbaugh also asked the membership for design suggestions for the 2007 TNSP tee shirts. Mr. Puterbaugh announced that Astronomy Day would be observed at the ASC on May 5 instead of the national date on April 21. Mr. Puterbaugh reminded the audience that the Astronomy Day activities would be followed by a star party on the same evening at the ASC. In addition, he noted that the BSAS might sponsor separate Astronomy Day activities on April 21.

Since there was no further business to discuss, President Griswold declared the meeting adjourned at 9:01 P.M.

Respectfully submitted,  
Bob Rice, Secretary

**ACTIVITIES and EVENTS**

*April 1 — 30, 2007*

- 4/2 FULL MOON, smallest in 2007
- 4/5 BSAS Board of Directors mtg., 7:30 p.m. at Girl Scout Office
- 4/6 Star Party MTSU 6:30 p.m. to 9:00 p.m
- 4/8 Jupiter 6° N of Moon
- 4/10 LAST QUARTER
- 4/11 Venus 3° S of Pleiades (M45)
- 4/14 BSAS Messier Marathon, Spot Observatory (alt. date)
- 4/16 Mercury 5° S of Moon
- 4/17 NEW MOON
- 4/19 BSAS Membership mtg. 7:30 p.m. at ASC
- 4/22 Lyrid meteors peak
- 4/24 FIRST QUARTER
- 4/25 Conj. Moon & Saturn
- 4/28 Mars 0.7° S of Uranus

*May 1—31, 2007*

- 5/2 FULL MOON
- 5/3 BSAS Board of Directors mtg., 7:30 p.m. at Girl Scout Office
- 5/4 Star Party MTSU 6:30 p.m. to 9:00 p.m
- 5/5 Star Party Adventure Science Center 8:30 p.m. to 10:30 p.m.
- 5/10 LAST QUARTER
- 5/16 NEW MOON
- 5/17 BSAS Membership mtg. 7:30 p.m. at ASC
- 5/19 Private Star Party Natchez Trace (mile marker 435) 8:30 p.m.
- 5/23 FIRST QUARTER
- 5/31 FULL MOON

\*All times listed are Central Time

**BSAS**

**P. O. Box 150713**

**Nashville, TN 37215-0713**

