ECLIPSE

The Newsletter of the Barnard-Seyfert Astronomical Society

Organized in 1928 **March 2007**

The Membership Meeting will be held on Thursday, March 15, 2007 at 7:30 pm at The Adventure Science Center

Please join us on Thursday, 15 March 2007, at 7:30pm in the Adventure Science Center for the program "Magnificent Failures: Discovery of a rare brown-dwarf eclipsing binary" and "Hot stars with disks."

Brown dwarfs are often called "failed stars" because their low masses are intermediate to those of planets and stars. Until recently, the fundamental physical properties of brown dwarfs were largely unknown. The discovery of a pair of brown dwarfs in an eclipsing binary system provides the first direct measurements of the masses, diameters, temperatures, and luminosities of these failed stars.

Keivan Guadalupe Stassun is Assistant Professor of Astronomy at Vanderbilt University. A native of California, he received his BA in Physics & Astronomy at the University of California at Berkeley. He then received his PhD in Astronomy in 2000 from the University of Wisconsin—Madison, and was then a NASA Hubble Postdoctoral Research Fellow for 3 years before joining the Vanderbilt faculty in 2003. His research seeks to address questions related to the formation of stars and planetary systems. These questions include: What are the physical processes involved in stellar birth, and which theory of star formation provides the most accurate description of a young star's evolution? What are the physical processes involved in planet formation, and how long does this process take? How do young stars produce energetic X-ray radiation, and what is the impact of this radiation on the environment of young Earth-like planets? By what mechanism(s) do young stars slow down the very rapid rotation that should result from their gravitational collapse?

Erika Grundstrom, from Georgia State University, will also discuss Hot Stars with Disks. Some stars spin slow. Some stars spin fast. Some stars spin so fast that they fling material off of themselves. Some stars have friends that dump on them. The evening's program will also include a discussion of hot, massive stars that have circumstellar disks due to non-planet-forming processes and how data for these stars were obtained.

It was Star Trek back in seventh grade that started Erika Grundstrom down her path to astronomy. She started at the University of Minnesota - Twin Cities as an astronomy major and graduated with bachelor of science degrees in both astronomy and physics. Currently, she's a graduate student in her final year of study at Georgia State University in Atlanta working hard to get her Ph.D. in August. During her undergraduate years, she studied galaxies using radio observations from the Very Large Array, but in graduate school, she switched to studying stars using spectroscopy at optical wavelengths. Observing takes astronomers across the U.S. and around the world, and Erika has been observing at Kitt Peak in Arizona, Mt. Wilson in California and Mauna Kea in Hawai'i. Her other scholarly passion is innovative astronomy education and educational research.

PRESIDENT'S MESSAGE

The scheduled speaker for our February Membership meeting, Dr. Keivan Guadalupe Stassun had to cancel his talk at the last minute because there was a medical emergency in his family. Immediately, our Program committee began a search to find a substitute speaker for our meeting. Working with our BSAS member, Dr. Spencer Buckner of Austin Peay State University, we were able to get Dr. Allyn Smith to be our speaker. Dr. Smith is a new member of the Physics and Astronomy Department at Austin Peay State University. The subject of his talk was the progress we are making in the field of astronomy. He said that his specialty was the calibration of the instruments used to make the measurements for the data to be used in astronomical research. Dr. Smith's talk was very interesting, and described to us the world wide work he has been doing. His talk was on a non-technical level but still above me. For me, this is a good place to be since I felt that I was being lifted to a higher level of knowledge.

Continued on Page 2

President's Message

Cont. from Page 1

The reason for the rambling tale in the first paragraph is to point out the hard work that the Program Committee is doing to keep us informed and to provide us with interesting programs in the field of astronomy. This committee is chaired by JanaRuth Ford. JanaRuth teaches astronomy at Middle Tennessee State University. JanaRuth, we really do appreciate the wonderful job you are doing and especially the handling of the recent program emergency for the last BSAS Membership meeting. By the way, the program on March 15th will be Dr. Stassun and the subject of his talk is Brown Dwarf stars.

Now the most important thing we do, as a BSAS member is the outreach to others to help teach a little more about astronomy and the night skies and also the day skies. The most activity and outreach comes through our star parties and our membership meetings at the ASC.

Steve Wheeler is the BSAS coordinator of star parties. He must check with the weather bureau or other weather forecasts. He will to check with Kris McCall if the star parties are to be at the Science Center and also with Heather Gallagher, Naturalist if the star party is at Warner Park. Steve must also check with the Ranger at the Natchez Trace to notify him of our star party one week prior to the date of the star party. Steve must also notify the Web Master of changes in the plan due to weather and also put a notice on the TNastronomy on-line group.

I will discuss more of the duties of the various committees in future messages from the president.

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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HAPPY BIRTHDAY GIOVANNI SCHIAPARELLI

by Robin Byrne

This month we celebrate the life of an astronomer whose name is associated with some controversy, but whose contributions to astronomy amount to much more. Giovanni Schiaparelli was born in Savigliano, Italy in the Cueno Province on March 14, 1835. After initially studying to become a civil engineer, Schiaparelli decided to pursue a career in astronomy, so he enrolled at Turin University in 1850 and graduated 4 years later.

After three years of teaching mathematics, Schiaparelli moved to Berlin to continue his astronomy studies under Encke at the Royal Observatory. In 1859 he got a position under Otto Struve (grandfather of the more famous Struve) at Pulkova Observatory in Russia as an assistant observer. He held this position for only a year. He then took a post as an observer at Brera Observatory in Milan. Within the first year there, he discovered the asteroid Hesperia. Two years later, he became director. Schiaparelli remained in this position until 1900.

In 1866, the first of Schiaparelli's major contributions to astronomy occurred. Using his skills as a mathematician, Schiaparelli showed the correlation between the orbits of some of the major meteor showers and certain comets. He found that Comet III 1862 had the same orbit as the meteor stream for the Perseid meteor shower. Similarly, Comet I 1866 shared an orbit with the Leonids. This was later confirmed by other astronomers. In recognition for this work, Schiaparelli was awarded in 1868 the Lalande prize from the Academy of Sciences in Paris, and four years later the gold medal from the Royal Astronomical Society.

Due at least in part to this important work, the observatory installed a better telescope for Schiaparelli to use. The 8.6 inch refractor inspired Schiaparelli to pursue planetary observations. The year 1877 allowed him to put the new instrument to the test with a particularly good opposition of Mars, with Mars close enough to study surface features. In preparation for the critical observations, Schiaparelli abstained from any food or drink that might impair his observing abilities, including "everything which could affect the nervous system, from narcotics to alcohol, and especially...coffee, which I found to be exceedingly prejudicial to the accuracy of observation." It was during this study of Mars that Schiaparelli first observed linear features on Mars, which he called "canali", which translates as channels.

Over the next 10 years, Schiaparelli continued to fill in details on his map of Mars. The names of many features on Mars still bear the titles Schiaparelli first assigned them, getting his inspiration from mythology, the Bible and true historical locations. Places such as Elysium and Syrtis Major first appeared on Schiaparelli's maps.

But it was the canali that caught people's attention. Named after real and mythical rivers, Schiaparelli felt they were actual waterways, even though he tempered this with the statement: "[T]hese names may be regarded as a mere artifice...After all, we speak in a similar way of the seas of the Moon, knowing very well that they do not consist of liquid masses." In 1893, Schiaparelli wrote in an article his belief that Mars developed seasonal seas around the polar ice caps, which fed the canali, possible even transporting living organisms around the planet.

Although inclined to think of Mars as a habitable planet, Schiaparelli was not as vocal as Percival Lowell about the canali being the work of an intelligent life form. However, at the same time, Schiaparelli conceded that "[t]heir singular aspect, and their being drawn with absolute geometrical precision, as if they were the work of rule or compass, has led some to see in them the work of intelligent beings...I am very careful not to combat this supposition, which includes nothing impossible."

Schiaparelli's desire for other planets to be habitable also colored his observations of Mercury and Venus. By studying features on Mercury, Schiaparelli attempted to determine Mercury's rotation rate. Schiaparelli found Mercury to be in synchronous rotation around the Sun, with the same side always facing the Sun (this was later found to not be the case). At the same time, he also found Mercury to have a very large libration, 47° , which allowed the leading and trailing sides of Mercury to have a fairly pleasant temperature and to be more habitable. He observed a similar rotation for Venus that has also been shown to be incorrect.

After retiring, Schiaparelli began studying ancient astronomical writings, including writing a book about the astronomy found in the Old Testament and translating the only astronomical Arabic text in existence into Latin. Giovanni Schiaparelli died in Milan, Italy on July 4, 1910.

Despite his many contributions to astronomy, to this day, the name Schiaparelli is associated with the controversy surrounding the canals on Mars. Although Schiaparelli's desire for the solar system to be populated with habitable planets influenced his observations with wishful thinking, he tried to dampen that optimism with other, less fanciful explanations. But it was the notion of life on Mars that inspired Lowell to build a state-of-the-art observatory, and H.G. Wells to write "War of the Worlds." Meanwhile, his insight into the relationship between comets and meteor showers has allowed modern astronomers to better predict meteor shower activity and their potential impact on orbiting spacecraft and satellites. Perhaps we are better off with ALL of the legacies of Giovanni Schiaparelli.

References:

Schiaparelli, Giovanni Virginio (1835-1910)
http://www.daviddarling.info/encyclopedia/S/Schiaparelli.html
Giovanni Virginio Schiaparelli
http://www.nndb.com/people/497/000095212/
Lake County Astronomical Society NightTimes by Jay Bitterman
http://www.bpccs.com/lcas/Articles/schiaparelli.htm

Barnard-Seyfert Astronomical Society
Minutes of a Regular Meeting of the Board of Directors
Held On Thursday, February 1, 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 February 1, 2007. A sign-in sheet was circulated in lieu of a roll call. Board members Keith Burneson, Tony Campbell, JanaRuth Ford, Bill Griswold, Kris McCall, Terry Reeves, Bob Rice, Randy Smith, and Steve Wheeler were present. Board members Mike Benson, Donna Hummell, and Mark Manner were absent. Also attending were BSAS members Amy Batton, Joe Boyd, Spencer Buckner, and Lonnie Puterbaugh. A quorum being present, President Bill Griswold called the meeting to order at 7:39 P.M.

Treasurer Randy Smith reported that the Society had a bank balance of $3,841.19. Bill Griswold informed the board that the BSAS had received a bill for $597.72 from Warner Park to pay for a model of the solar system installed on the drive leading to the park's nature center. This was an obligation that the board had previously authorized with Past-President Mark Manner graciously offering to personally pay half of the cost. Kris McCall moved that the bill be paid and Bob Rice seconded the motion that subsequently passed by a unanimous voice vote.

Joe Boyd presented the board with a proposed resolution that the BSAS officially endorse Austin Peay State University (APSU) in its effort to secure grants for expanding their astronomy program and building an observatory and to encourage BSAS members to serve as volunteers in support of that completed effort. Mr. Boyd noted that APSU's President had committed university funds to build a road at the observatory. Bob Rice moved that the board adopt this resolution and Keith Burneson seconded the motion that subsequently passed by a unanimous voice vote.

Bill Griswold noted that the BSAS needed a star party coordinator and Steve Wheeler volunteered to serve in this capacity. Mr. Griswold stated that he would provide board members with a copy of the required permit to use the Natchez Trace sites.

Terry Reeves announced that he needed a copy of the BSAS' sales tax exemption form to purchase the hard drive approved by the board at its last meeting. Mr. Reeves reported that the hard drive would cost approximately $100. Webmaster Tony Campbell suggested that files might also be shared on the BSAS' website; the two agreed to discuss this and other possibilities at a later time.

Bill Griswold noted that there might be a problem getting the *Eclipse* newsletter out this month. Steve Wheeler offered his assistance if this should be the case. JanaRuth Ford commented that the write-up on last month's membership meeting speaker that she provided for printing in the *Eclipse* had apparently brought in some additional attendees.

Lonnie Puterbaugh introduced Amy Batton who has started an astronomy group for home-schooled children called KOCHAB (Kids Observing the Celestial Heavens And Beyond). Ms Batton handed out copies of KOCHAB's goals noting that this organization started in March 2006. She stated that KOCHAB may open its membership to non-home-schooled students and invited board members to visit its website. Ms Batton said she would contact KOCHAB parents about possible involvement in the 2007 Tennessee Star Party. Lonnie Puterbaugh agreed to help coordinate this effort.

Since there was no further business to discuss, President Griswold asked for a motion to adjourn the meeting. Keith Burneson so moved, JanaRuth Ford seconded the motion, and the meeting adjourned at 8:45 P.M. by a unanimous voice vote.

Respectfully submitted,
Bob Rice
Secretary

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

President Bill Griswold called the meeting to order at 7:35 P.M. in the Adventure Science Center (ASC) and recognized new members and guests. The minutes of the previous meeting were approved without exception as published in the February 2007 edition of the *Eclipse* newsletter.

Bill Griswold announced these upcoming star parties: Long Hunter State Park on February 17 from 7:00 to 10:00 PM; March 3 at Warner Park; March 17 Messier Marathon with April 14 as an alternate date; and April 6 at Middle Tennessee State University from 6:30 to 9:00 PM. Mr. Griswold also recognized Steve Wheeler as the new Star Party Coordinator noting that he would the tnastronomy website for posting announcements.

Bill Griswold recognized Chuck Schlemm for completing the Astronomical League's Outreach Award. Mr. Griswold announced that the BSAS would pay for stone markers designating the relative distances of the sun and planets at Warner Park along the entranceway to the nature center. He also recognized immediate Past-President Mark Manner for generously offering to personally defray half of the cost. Bob Rice, reporting for Treasurer Randy Smith who was unable to attend the meeting, announced that the BSAS had a bank balance of $3,469.11.

JanaRuth Ford announced that, due to unforeseen circumstances, there would be a change in the scheduled speaker for the evening. Dr. Spencer Buckner then introduced Dr. J. Allyn Smith of Austin Peay State University (APSU) who delivered the evening's program on the Future of Astronomy at APSU. Noting that modern astronomers sometimes spend too much time looking at computers instead of looking at stars, Dr. Smith described some possibilities for using APSU's new observatory that will be built some twenty miles west of Clarksville. These included:

- Variable star observations
- Observing luminous red galaxies
- Calculating asteroid rotations
- Identifying standard star candidates
- Open cluster surveys
- Observing pulsating white dwarves
- Following up on the Sloan Digital Sky Survey
- Light pollution monitoring

He also announced that APSU hoped to install a larger planetarium with a 40-45 foot dome that could accommodate up to 100 students. Following his presentation, Dr. Smith graciously answered questions from the audience.

Lonnie Puterbaugh announced that there would be an additional star party at MTSU on March 2 and that Astronomy Day would be held on May 5. Since there was no further business to discuss, President Griswold declared the meeting adjourned at 8:45 P.M.

Respectfully submitted,
Bob Rice, Secretary

Activities and Events

March 1 — 31, 2007

3/1	BSAS Board of Directors mtg., 7:30 p.m. at Girl Scout Office
3/2	Star Party MTSU 6:30 p.m. to 9:00 p.m
	Conj. Moon & Saturn
3/3	FULL MOON, total eclipse
	Star Party Warner Park 5:30 to 8:30 p.m.
3/5	Conj. Sun & Uranus, Mars 4° N of Moon
3/11	Daylight Savings Time begins
3/12	LAST QUARTER, Jupiter 6° N of Moon
3/15	BSAS Membership mtg., 7:30 p.m. at ASC
3/17	BSAS Messier Marathon, Spot Observatory
	Dark to Dawn, Conj. Mecury & Moon
3/19	NEW MOON
3/21	Equinox, Venus 4° S of Moon
3/25	FIRST QUARTER
	Mars 1° S of Neptune
3/29	Conj. Moon & Saturn

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)
	Conj. of Moon & Mars, Conj. Moon & Uranus
4/16	Mecury 5° S of Moon
4/17	NEW MOON
4/19	BSAS Membership mtg. 7:30 p.m. at ASC
4/20	Venus 3° S of Moon
4/22	Lyrid meteors peak
4/24	FIRST QUARTER
4/25	Conj. Moon & Saturn
4/28	Mars 0.7° S of Uranus

*All times listed are Central Time

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