ECLIPSE

The Newsletter of the Barnard-Seyfert Astronomical Society

Celebrating our 76th Year **January 2006**

The Membership meeting will be held on January 19, 2006 at the Adventure Science Center at 7:30 pm.

Astrobiology is the scientific study of life in the universe - its origin, evolution, distribution, and future. This multidisciplinary field brings together the physical and biological sciences to address some of the most fundamental questions of the natural world: How do living systems emerge? How do habitable worlds form and how do they evolve? Does life exist on worlds other than Earth? How could terrestrial life potentially survive and adapt beyond our home planet? Join BSAS for the January 19 program which will introduce the field of Astrobiology and focus on the search for life in our solar system. Our speaker will be Dr. Todd Gary.

Dr. Gary is an Associate Professor of Biology and the Director of the Institute for Understanding Biological Systems at Tennessee State University. His training as a scientist includes a Ph.D. in Molecular Biology, a research fellowship in molecular medicine and NASA faculty sabbatical in Astrobiology at UCLA. His current projects include the development of research and educational programs in Astrobiology at TSU. He along with his colleagues are beginning astrobiology research in the area of extreme life forms, extremophiles, and preparing plants for a possible greenhouse on Mars. The astrobiology educational programs highlight extremophiles on Earth, the search for signs of life in our solar system including the current exploration of Mars, and the first direct detection of an extrasolar planet by the TSU astronomer and friend of BSAS, Greg Henry.

Plan to join us for dinner around 6:00 at the Piccadilly Cafeteria to meet and talk with Dr. Gary before his presentation at the Adventure Science Center at 7:30 pm. All BSAS members and guests are welcome. Just ask at the front desk for the BSAS table. Piccadilly is located at 874 Murfreesboro Road in Nashville and the phone number is 615-367-4640. Take the Murfreesboro Road exit off of I-24 and head away from Nashville. Piccadilly is to the left of the second traffic light after the exit and easily visible from Murfreesboro Road.

President's Message

Hello, and Happy Holidays.

As you know, at the November meeting I was elected President of the BSAS. At this point, I have just begun the process of developing an agenda. In January, the BSAS Long Range Planning committee is meeting, and I have asked the board members, committee chairs and officers to give careful thought to what they feel has been done well, and less well, in the past. At the January membership meeting, and in the January Eclipse, I plan on sharing with the membership my thoughts on what the BSAS' goals should be for 2006. As we go about this process, I would welcome any comments or thoughts you have about the BSAS. Please feel free to contact me by email or telephone at any time. My contact information appears below for your use.

In the meantime, it is clear to me that no matter what our plans, we cannot accomplish them without an active and growing membership base. I believe that we can begin to address this aspect immediately. Most of you probably know that I am one of the club's newest members. Although I have been involved in amateur astronomy for most of my life, in the past I have done it more or less alone, and have never been active in an astronomy club.

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Barnard-Seyfert Astronomical Society
Minutes of an Informal Meeting of the Board of Directors
Held On Thursday, December 1, 2005

The board of directors of the Barnard-Seyfert Astronomical Society met in an informal session at the Adventure Science Center (ASC) in Nashville, Tennessee on December 1, 2005.at approximately 7:55 P.M. Board members Mike Benson, Joe Boyd, Bill Griswold, Kris McCall, Bob Rice, and board members-elect Keith Burneson and Mark Manner were present. Board members Tony Campbell, JanaRuth Ford, Randy Smith, Pam Thomas, and Gary Wilkerson were absent. In addition to members of the board, BSAS Equipment Committee Chair Lonnie Puterbaugh was also present. This meeting was held concurrently with the ongoing Regional Conference of the National Science Teachers Association at the ASC to briefly discuss plans for the upcoming BSAS Christmas Dinner on December 15 and other pending business.

President-Elect Mark Manner noted that Pam Thomas would coordinate the food and dining preparations for the annual Christmas Dinner and asked everyone to arrive early to assist her. The group agreed that arranging dates for private star parties in 2006 with the National Park Service should be a priority. TNSP Treasurer Bob Rice announced that he had not received an invoice from vendor Francis Communications for the star party t-shirts. Lonnie Puterbaugh said that he would contact the vendor. Mr. Rice also said that the Finance & Budget Committee would operate via email to prepare a 2006 budget for presentation to the board at its January meeting. Bill Griswold announced that he had picked up the Society's income tax form from the BSAS' mailbox. Bob Rice said that, as the BSAS Secretary, he would renew the Society's non-profit corporate charter with the Secretary of State's Office as soon as the notice was received.

There being no further business to discuss, the meeting adjourned at approximately 8:30 P.M.

Respectfully submitted,
Bob Rice
Secretary

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:

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BSAS Logo by Tony Campbell

Happy Birthday Frank Watson Dyson

by Robin Byrne

This month we celebrate the life of one of astronomy's lesser-known heroes. Frank Watson Dyson was born in Measham, England on January 8, 1868. In 1889, Dyson graduated from Trinity College, Cambridge.

His first area of interest was the study of gravitational theory, until he got a job as the chief assistant at Greenwich Observatory in 1894. One of his projects at Greenwich was the Carte du Ciel project, which involved developing methods to measure and reduce data from the Greenwich section of the Astrographic Catalog. In order to do this, he needed to know the proper motions of the stars (how fast the stars appear to move across the sky). By comparing modern observations with those from an 1810 catalog, he was able to greatly increase the number of known proper motions. This work later led to the discovery, by others, that the Milky Way rotates.

In 1906, Dyson was named Astronomer Royal of Edinburgh, but returned to Greenwich in 1910 to be the observatory's director and to serve as Astronomer Royal in England. He held both posts until 1933. In 1926, Frank Dyson became Sir Frank Dyson, when he was awarded the title of Knight of the British Empire.

While at Greenwich, Dyson was involved in several research projects. He was very interested in the Sun, and made many studies of the spectrum of the chromosphere and of the corona, including finding spectral lines not previously observed. Observing the corona meant traveling to solar eclipses. Dyson was involved in several eclipse expeditions, including: Portugal (1900), Sumatra, Mauritius (1901), Tunisia (1905), Sweden (1914), Sobral in Brazil (1919), Australia (1922), Sumatra (1926), England (Giggleswick, 1927), and Malaya (1929). The 1919 eclipse was organized by Dyson, and is the same one in which Eddington measured star positions near the Sun to confirm Einstein's prediction of gravitational lensing.

In 1924, Dyson started a program that is still in place today: the radio transmission of Greenwich Mean Time. This is also known as the "six pips" signal, because prior to the minute, six tones or "pips" are broadcast at a rate of one per second. In 1928, Dyson brought to the Greenwich Observatory a new, more accurate, free-pendulum clock. This allowed an even more accurate time signal to be sent.

Sir Frank Dyson died at sea, while traveling from Australia to England, on May 25, 1939. Among the honors he has received, there is a crater on the Moon named after him, as well as an asteroid, 1241 Dysona. I don't know about those of you reading this article, but I have many memories of sitting in a cold, dark observatory, listening to WWV broadcasting "Coordinated Universal Time", "pips" and all. Now, we can get accurate time off the internet, from our cell phones, or GPS unit. However, the notion of making the "official" time available beyond the observatory walls was the work of a man who understood its value. Dyson's work with eclipses broadened not only our understanding of the Sun, but also of relativity. As Astronomer Royal, Dyson also served as an example of leadership in the sciences. After World War I, Dyson was instrumental in reestablishing scientific communications with people in "enemy" countries. He understood that science has no borders. The next chance you get, give the Moon another look, find Crater Dyson, and think about all that this man has contributed to the scientific world.

References:

Frank Watson Dyson — Facts, Info, and Encyclopedia article http://www.absoluteastronomy.com/encyclopedia/f/fr/frank_watson_dyson.htm

Publications of the Astronomical Society of the Pacific, Vol. 51, No. 304, p.336 Frank Watson Dyson, 1868-1939 by R. G. Aitken http://adsabs.harvard.edu//full/seri/PASP./0051//0000336.000.html

Sir Frank Dyson, KBE (1868 - 1939(, Ninth Astronomer Royal from (1910-33) http://www.nmm.ac.uk/searchbin/searchs.pl?exhibit=it3374z&axis=959778107&flash=false

Sir Frank Watson Dyson http://www.infoplease.com/ce6/people/A0816518.html

Barnard-Seyfert Astronomical Society
Minutes of the Monthly Membership Meeting
Held on Thursday, December 15, 2005

BSAS members gathered in the Adventure Science Center (ASC) at 6:30 PM for the Society's annual Christmas potluck supper. Dining began around 6:45 PM with the Society providing the main course of sliced ham and turkey along with eating utensils, plates, and soft drinks. Members provided a sumptuous variety of side dishes including salads, casseroles, and desserts. Last year's highly successful silent auction was repeated with members shuffling among the donated books, telescopes, and other astronomy related materials throughout the evening to look and record their bids.

Outgoing-President Pam Thomas introduced Powell Hall who delivered the evening's first program on the Calendar and the Winter Solstice. Mr. Hall described the winter solstice as the point in the earth's orbit when the northern hemisphere is most inclined away from the sun and noted that this usually occurred on December 21st or 22nd. He pointed out that the actual time of day for the winter solstice varied by six hours each year until the arrival of a leap year reset the sequence. Mr. Hall also related the historic significance of this longest night of the year followed by longer days to all peoples long ago.

Powell Hall introduced Joe Boyd who delivered the evening's second program on the Star of Bethlehem. Drawing upon the description of the star from the familiar Gospel of St. Matthew, Mr. Boyd emphasized the findings from science and history to explain this event. He pointed out that the Magi or wise men from the east were undoubtedly well educated for the times and quite possibly astrologers from ancient Babylon. Mr. Boyd noted that three confirmed planetary conjunctions during that time could explain the sudden appearance of an unusually bright star: that of Saturn & Jupiter in 7 BC; that of Mars, Jupiter, and Venus in 6 BC; and that of Saturn and Mercury in 3 BC. He further described September 11 in 3 BC as being the most historically reliable determination of the Christ child's birth date.

Thanks to Mike Benson, who procured both books as door prizes from the publisher, a drawing for two copies of *Astronomy Hacks* was held immediately following these presentations. Mr. Benson also announced that he had one copy of Guy Ottewell's *2006 Astronomical Calendar* available for $21.25. Treasurer Randy Smith announced that he had copies of Kalmbach's *2006 Deep Space Mysteries Calendar* and the RASC's *Observers Handbook* for sale. Powell Hall announced that the Dark Sky Committee would next meet on the 1st Tuesday in February 2006. Joe Boyd thanked Lonnie Puterbaugh for his assistance with the slides for the Star of Bethlehem presentation. Kris McCall announced that she would present a laser light show in the Sudekum Planetarium at 8:40 P.M.

The board and members of the BSAS would especially like to thank Kris McCall and all the Adventure Science Center staff and management for generously sharing their facility and exhibits during this wonderful evening of fellowship.

Respectfully submitted,
Bob Rice, Secretary

President's Message, continued from Page 1

In getting to know many of you over the past several months, I discovered that I was really missing something. I suspect there are many others like me in our area. To begin working on this, I ask each of you to bring a different guest to at least two of our meetings in 2006, and sign up at least one person or family as a new member. If we all do this, we will be furthering our outreach mission as well as strengthening the club's financial and knowledge base.

Thank you for allowing me serve the BSAS this coming year. I look forward to getting to know each of you, and will be announcing in January some dates for an informal star party at my observatory.

Best regards,

Mark Manner
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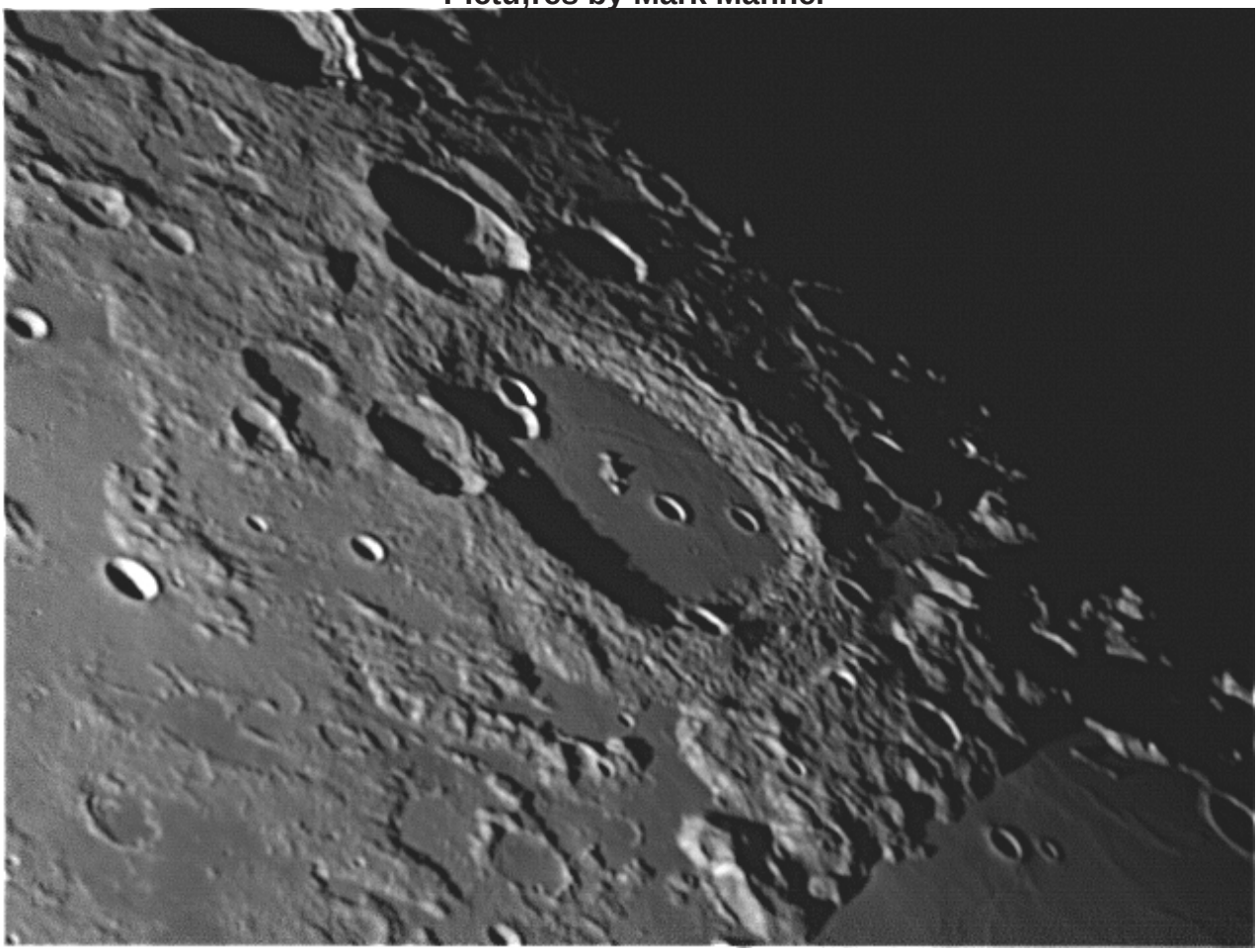
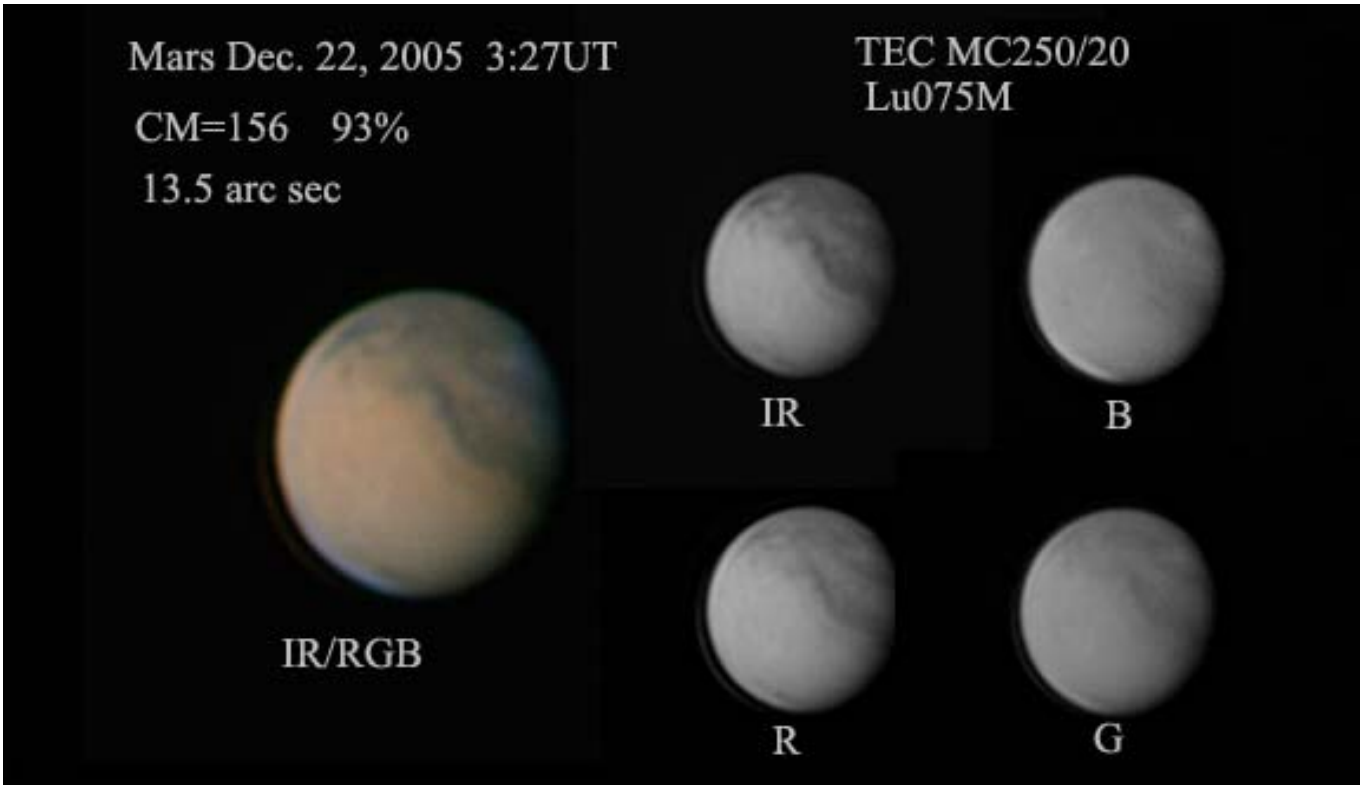
Pictu;res by Mark Manner



Cleomedes, low sun angle, December 18, 2005. TEC MC250/20 telescope, Lumenera Lu075M camera, IRPass filter



"Mars as it recedes from the Earth"

Activities and Events

January 1 — 31, 2006

1/1 NEW YEAR'S DAY;Conj.,Venus & Moon
1/2 Conj., Neptune & Moon
1/3 Quarantid meteors; No dark-sky committee mtg. until February 7th.
1/4 Conj., Uranus & Moon; ºEarth at perihelion.
1/5 BSAS Board of Directors mtg., 7:30 p.m.
1/6 EPIPHANY; FIRST QUARTER.
1/8 Conj., Moon & Mars.
1/10 Mercury at aphelion.
1/13 Venus at inferior conjunction.
1/14 FULL MOON; Venus at inferior conjunction
1/15 Conj., Moon & Saturn.
1/19 BSAS monthly meeting at ASC: 7:30 p. m.; Program: Todd Gary, Astrobiologist
1/20 Sun enters Capricornus.
1/21 Conj., Moon & Spica.
1/22 LAST QUARTER
1/23 Conj., Jupiter & Moon.
1/26 Mercury at superior conj.
1/27 Saturn at opposition. Conj., Venus & Moon
1/29 NEW MOON
1/31 Conj., Uranus and Moon.

February 1 — 28, 2006

2/1 Saturn 0.9˚ S of Beehive (M44) (175˚ E)
2/2 BSAS Board of Directors mtg., 7:30 p.m.
2/5 FIRST QUARTER; Mars 2˚ S of moon
2/6 Moon 0.1˚ N of Pleiades (M45)
2/12 FULL MOON
2/16 BSAS monthly meeting at ASC: 7:30 p. m.
2/16 Mars 2˚ S of Pleiades (M45) (91˚ E)
2/17 Venus greatest brilliancy
2/18 Spica 0.4˚ S of Moon
2/21 LAST QUARTER
2/21 Antares 0.2˚ N of Moon
2/23 Vesta stationary
2/24 Mercury greatest elongation E (18˚)
2/25 Ceres 0.8˚ N of Moon
2/25 Private BSAS star party (location to be announced)

Note: all dates & hours according to Central Time

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