



ECLIPSE



The Newsletter of the Barnard-Seyfert Astronomical Society

May 15, 2003; Meeting of the BSAS

The May program will be live (!) observing of the full lunar eclipse from the parking lot of the Adventure Science Center (ASC). BSAS members are encouraged to bring their telescopes to ASC that evening.

In the event of inclement weather, Chris and JanaRuth have kindly arranged for a presentation in the Sudekum Planetarium on the role of women in astronomy. Many major astronomical discoveries of past decades are credited to leading male astronomers, but depended heavily on observations and computations by women—now's your chance to get "the rest of the story."

FROM THE PRESIDENT

By Joseph M. Boyd, Jr.

All of us are saddened by the death of John Bradford, who was a member of the BSAS for several years. Although I knew him as someone who was always in a cheerful mood, with a very fetching smile on his face, I also knew him as one who was always willing to share his knowledge and enthusiasm for astronomy with others. He participated in everything our BSAS did, from star parties to parking cars at public nights at Dyer. Whatever he was called on to do, he did willingly and well. We will miss him greatly. I have appointed a committee to look into a suitable means of honoring and/or perpetuating his memory.

As announced at the membership meeting on 17 April, a special election will be held at the next membership meeting on 15 May to elect a director to fill the place left vacant by John Bradford's untimely death.

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ELECTION CALL

All members are hereby notified that, as announced at the April membership meeting, a special election will be held at the next meeting on Thursday, 15 May 2003, to elect a director to fill the unexpired term of John Bradford.

Evelyn Wright, 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: \$29.95
ASTRONOMY: \$29.00

Checks or Money Orders should be made out to the Barnard Seyfert Astronomical Society (BSAS) and sent to the Treasurer at the following address:

BSAS
Dyer Observatory
1000 Oman Drive
Brentwood, TN 37027

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 are \$20.00 per year for Regular and Family memberships and \$15.00 per year for Seniors (over 60 years of age), and \$10.00 for students (under 22 years of age). Please call the Dyer Observatory (373-4897) if you have questions. Dues can be sent to:

BSAS c/o Dyer Observatory
1000 Oman Drive
Brentwood, TN 37027

THE ECLIPSE NEWSLETTER

Editor: Bill Griswold
bgriz@comcast.net

BSAS Officers:

Joe Boyd, President
John Harrington, Vice President
Evelyn Wright, Secretary
A.G. Kasselberg, Treasurer
Powell Hall, Immediate Past President

Board of Directors

Mike Benson
John Bradford
Bill Collins
JanaRuth Ford
Bill Griswold
Kris McCall

Logo Photograph:
Francisco Diego

Regular Meeting of the Barnard-Seyfert Astronomical Society Board of Directors on April 3, 2003

The meeting was called to order by President Joe Boyd at 7:08 PM on Thursday April 3, 2003 at the Jefferson Square Clubhouse. A quorum was present consisting of board members Joe Boyd, JanaRuth Ford, Bill Griswold, Powell Hall, John Harrington, A.G. Kasselberg and Evelyn Wright. Board members Mike Benson, John Bradford, Bill Collins, and Kris McCall were absent. Larry Southerland, Pam Thomas and Jill Thompson attended as guests. The minutes of the March 6 board meeting were approved as published in the April issue of "The Eclipse" newsletter.

Treasurer A.G. Kasselberg reported that there was an unpaid bill for a plaque, but no major change in the club's funds. Chairman Joe Boyd introduced Pam Thomas, the new Chair of the Hospitality Committee. He also distributed updated committee membership lists to some of the Committee Chairs present.

Powell Hall gave a report on the Dark Sky Committee's activities. His group intends to create a poster and distribute handouts at the Adventure Science Center on Astronomy Day. A.G. Kasselberg reported that the club's dues in the International Dark-Sky Association were paid in January, that the IDA does not want the club's membership list, and that he brings the IDA communications to the membership meetings for anyone to peruse.

Joe Boyd reported that Kris McCall is planning to have a meeting of the Public Relations Committee on the first Monday of each month. Jill Thompson is to remind Kris to provide a list of door prize donors that might help ALCON 2003.

John Harrington would like to change the name of the Program Committee to the Presentations Committee. John plans to give a presentation on eyepieces in April. The total lunar eclipse will be the main feature of the May program which will be at the Adventure Science Center. The June program will be on selecting the most appropriate telescope. July's program is currently a solar topic by Paul Lewis. Dr. Schmude may be presenting the August program. Kermit Stengal, grandson of the Sudekum Planetarium founder, might speak on the history of astronomy for the September program.

Jill Thompson reported on ALCON 2003 in Mike Benson's absence. All speakers are confirmed, and \$3709 has been received in registration fees. More volunteers are needed, and a plan for reducing or eliminating the registration fee for those who work a specific amount of hours was mentioned. Jill distributed the agenda for the upcoming meeting.

Joe Boyd gave brief summaries of committees whose Chairs were not present, including TNSP 2003. A.G. related that TNSP 2003 telescopes will not be ordered from Bill Burgess until ALCON 2003 expenses have been settled. The Membership Committee plans to meet monthly. The Messier Marathon was clouded out on both dates in March.

Under old business, the \$1200 profit from TNSP 2002 came mostly from the sale of telescopes. All bills have been paid, but certificates of appreciation are yet to be received. A.G. also reported that he sends a list of BSAS members to the Astronomical League quarterly.

Under new business, Joe Boyd asked for volunteers to be ready to attend the Warner Park Binocular stargaze if it goes. Joe also related that Bill Collins would like to turn over the BSAS website to a new webmaster. Bill Griswold emphasized that the business portion of the regular membership meeting is taking too long, and Joe Boyd said he would consider shortening it. Agenda items for the April membership meeting are ALCON staffing, Warner Park public stargaze staffing on April 25, Astronomy Day staffing, and staffing for both public stargaze events on May 10, one at The Renaissance Center, and one at Long Hunter State Park.

Joe Boyd noted that he wants to put biographies of board members on the BSAS website. Board members who do not want public biographies should not submit them.

With no objection, Joe Boyd declared the meeting adjourned at 8:37 PM.

Respectfully submitted,
Evelyn Wright, Secretary

Upcoming Events 2003

5/1	BOARD MEETING, 7 pm at Jefferson Square Condominiums
5/10	Public Stargaze, 8-10 pm at Long Hunter State Park
5/10	Public Stargaze, at Renaissance Center
5/15	BSAS MEETING, 7:30 pm at Adventure Science Center (total lunar eclipse)
5/15	Public Stargaze, 8:30 pm at Adventure Science Center (total lunar eclipse)
6/5	BOARD MEETING, 7 pm at Jefferson Square Condominiums
6/19	BSAS MEETING, 7:30 pm at Dyer Observatory
7/3	BOARD MEETING, 7 pm at Jefferson Square Condominiums
7/8-12	ALCon 2003 at Embassy Suites Hotel—Airport, Nashville TN
7/17	BSAS MEETING, 7:30 pm at Dyer Observatory
8/7	BOARD MEETING, 7pm at Jefferson Square Condominiums
8/21	BSAS MEETING, 7:30 pm at Dyer Observatory
8/23	Public Stargaze, 8-11 pm at Edwin Warner Park model airplane field
9/4	BOARD MEETING, 7 pm at Jefferson Square Condominiums
9/18	BSAS MEETING, 7:30 pm at Dyer Observatory
9/26-28	TNSP 2003 at Camp Nakanawa near Crossville, TN
10/2	BOARD MEETING, 7 pm at Jefferson Square Condominiums
10/16	BSAS MEETING, 7:30 pm at Dyer Observatory
11/6	BOARD MEETING, 7 pm at Jefferson Square Condominiums
11/8	Total Lunar Eclipse Stargaze, 515-915 pm at Adventure Science Center
11/20	BSAS MEETING, 7:30 pm at Dyer Observatory
12/4	BOARD MEETING, 7 pm at Jefferson Square Condominiums
12/13	Public Stargaze, 7:30-9:30 pm at Edwin Warner Park model airplane field
12/18	BSAS MEETING, 6:30 pm at Adventure Science Center

Hot Flash Dr. Zarkov rides again

By Gerald Lappin

For many years cosmologists have been searching for the Grand Universal Theory (GUT) sometimes called the Theory Of Everything (TOE) which would allow the explanation of all other theories related to the properties of the cosmos. Perhaps they have been overlooking an already existing theory proposed by that greatest of cosmologists, Dr. Zarkov. That is the Gastronomy Theory (GAT) which relates astronomical theories and observations to the one basic human science, gastronomy.

A recent conclusion by one astronomer that the universe is shaped like a toroid could, if GAT were to be taken into account, lead to a better understanding of many observations. A toroid, in layman's terms, is a doughnut or, possibly a bagel. Consider the expansion of the universe in light of GAT. Both doughnuts and bagels expand when heated, just as does the universe. The dark matter which astronomers seek avidly with little success could be considered as analogous to a chocolate covering on a doughnut or raisins in a bagel. Depending on which of these gastronomic models one chooses dark matter should exist on the surface of the cosmos or be distributed randomly throughout the universe. To make GAT most useful in understanding the universe astronomers must find ways to distinguish between them. One difference that Dr. Zarkov is exploring is that the doughnut model implies that a smaller, spherical, universe, the doughnut hole, should accompany the toroidal cosmos. Because one never encounters a bagel hole the absence of such a small spherical universe should indicate which model should be chosen to further the understanding of the cosmos. As a final thought, it should be pointed out that in either case the ultimate fate of a doughnut or a bagel is to be converted gastronomically into energy. Does this represent the ultimate fate of the universe? Only time will tell.

Happy Birthday Martin Schwarzschild

by Robin Byrne

This month we look at the life of a man whose work helped in the understanding of stars and their life cycles. Martin Schwarzschild was born May 31, 1912 in Potsdam, Germany. His father, Karl Schwarzschild, was a well-known astrophysicist who helped in the understanding of black holes.

Martin attended the University of Goettingen, where he received his Ph.D. in 1935. The following year, he moved to Oslo, Norway for a position as a research fellow at Oslo University. After a year at Oslo, he moved to the United States to become a research fellow at the Harvard College Observatory. In 1940, Schwarzschild became an assistant professor at Columbia University.

During World War II, Schwarzschild enlisted in the U.S. Army as a private. While in the army, he was promoted more than once, and left as a first lieutenant. His specialty was bombing surveys. His military career brought Schwarzschild honor, being awarded both the Legion of Merit and the Bronze Star.

After the war, Schwarzschild returned to Columbia. In 1947, he became a faculty member at Princeton University. The work for which Schwarzschild is probably best known began in 1955 when he was awarded a Guggenheim Fellowship to do research concerning stellar evolution. It was while working on this area that Schwarzschild gained insight into pulsating stars, differential rotation of stars, and especially concerning what happens to a star after it leaves the main sequence. In particular, he helped to explain how stars become red giants and the processes that lead to the formation of planetary nebulae.

In 1958, Schwarzschild wrote a book titled "Structure and Evolution of Stars." This book was still being used as a text when I was in graduate school in the late-1980's. As far as I know, it could still be used today. It was revolutionary for its time because of the use of computer modeling to understand the internal structure of stars.

In the 1950's and '60's, Schwarzschild took astronomy to new heights, literally. Stratoscope I was a 12-inch telescope carried by balloon to an altitude of 80,000 feet. At this altitude, the telescope was able to take the first high resolution images of the Sun. The images showed clearly the granulation on the Sun's photosphere, which confirmed the existence of the convective zone as one of the internal layers of the Sun. For this work, Schwarzschild received the Newcomb-Cleveland Prize of the American Association for the Advancement of Science in 1957. Stratoscope II used a 36-inch telescope to obtain sharp images of other objects. This telescope was able to obtain infrared spectra of planets in our solar system. It was also used to observe red giant stars, as well as the nuclei of galaxies. These galaxy observations led to Schwarzschild's later work in which he developed models to explain the dynamics of elliptical galaxies.

Over the course of his career, Schwarzschild received many honors. He held honorary degrees from Swarthmore College, Columbia and Princeton. Throughout his teaching career, he was a well respected teacher, much loved by his students.

Martin Schwarzschild died April 10, 1997 in Langhorne, Pennsylvania after suffering a heart attack. He was 84 years old. Martin Schwarzschild had a very large legacy to uphold when he chose to follow his father into a career in astronomy. He more than lived up to his father's reputation and went on to make a name for himself. We are much indebted to both Schwarzschilds for our basic understanding of how stars live and die. What we understand of our Sun, its internal layers and its ultimate fate is largely based upon the work of Martin Schwarzschild. So, as we enjoy the longer days and bask in the warmth of our Sun, confident in knowing that our Sun will continue to shine for approximately another 4.5 billion years before it becomes a red giant and ultimately a planetary nebula, pause to reflect upon how much we owe Martin Schwarzschild for this knowledge.

References:

The Bruce Medalists: Martin Schwarzschild Web Page <http://www.phys-astro.sonoma.edu/BruceMedalists/Schwarzschild/>

Princeton-News-Princeton Astrophysicist martin Schwarzschild Dies Web Page <http://www.princeton.edu/pr/news/97/q2/0411schw.html>

From the President, continued from Page 1

I want to commend all of the committee chairs who have started holding regular meetings of their respective committees. The results speak for themselves. The Membership Committee is working on plans for the mentoring program and a new member kit. The Dark Sky Committee is planning an exhibit at the Astronomical League Convention (ALCON), and is also working to schedule a meeting of the Committee, the Board of Directors, and all of our members who would like to attend, with a representative of the IDA, the International DarkSky Association, in May. We hope that representatives of other groups can attend, as well. The Equipment Committee unveiled, literally, the newest club telescope at the last meeting. The ceremony and the scope will be described elsewhere in this Eclipse. The ALCON Committee has been holding weekly meetings, and now has a large number of our members involved in the labors toward putting on the convention, scheduled for July 8-12. If you have not already been called on to do something specific in either the preparation for, or actually carrying out, the convention, you probably will be soon. I hope you will be willing to participate. The Public Relations Committee is meeting, and, along with the Hospitality Committee, is helping with the ALCON.

We had several new members at the recent membership meeting. Each member needs to personally meet each new member as soon as he or she joins BSAS, and make them a part of our group of enthusiastic astronomers.

Each of you probably knows someone who is interested in astronomy, but has never joined the BSAS. Many of them do not know we even exist. Tell others about the advantages of joining, and, if you were at the last membership meeting, you can tell them about the excellent programs we are having.

And last, don't forget that the Barnard Seyfert Astronomical Society was organized in 1928. That means that this year, 2003, makes this the 75th year of our organization, a real landmark. There are few astronomical societies older than this one, and few with more to be proud of, so let's celebrate this milepost throughout the year.

Report on the ALCon 2003

By Jill Thompson

The 2003 Astronomical League Convention is shaping up to be one heck of a big bang. We are all excited that Nashville has the opportunity to host the national convention of the premier association of amateur astronomers. We have a fantastic group of speakers lined up and under the broad theme of "Amateur Astronomy's next Decade," we have topics ranging from Astrobiology to the Next Generation Space Telescope to examining X-Rays using the Chandra Observatory.

Any national convention requires a great amount of work behind the scenes to make it a success, and this one is no exception. In addition to lining up some fabulous speakers, the ALCON committee has been busy working up advertising, which has already appeared in the Reflector, and which will soon appear in Sky & Telescope and Astronomy Magazines. All member clubs of the Astronomical League will receive a publicity package that Mike Benson and Pam Thomas are diligently preparing as you read these lines. In addition, Lonnie Puterbaugh is spearheading an effort to visit other astronomy clubs in the region to share our excitement and encourage other astronomy enthusiasts to attend. Kris McCall and Chuck Schlemm are planning the local media blitz, so watch for notices in local papers, radio & TV stations.

"Where do I fit into all of this?" you are probably asking. "What can I do to be a part of such a grand gathering of the astronomically-minded?" I am so glad you asked! Our industrious committee members have accomplished a great deal so far, but we are still in need of volunteers. Lonnie, Kris and Chuck can certainly use extra hands to visit clubs, contact the media, or perform any of dozens of other small duties that seem to always crop up here and there. Who in our club has a contact at a local paper, radio, or TV station, or would just like to get in on the advertising action?

In addition to having four full days of speakers, we will have an exhibitor area, with booths for the Association of Lunar and Planetary Observers (ALPO), the Astronomical League, the Astronomical Society of the Pacific, Astronomy Magazine, Burgess Optical, the International Dark-Sky Association (IDA), the International Space Station Alpha Telescope Operations Group (ISSATOPS), Mag 1 Instruments, Meade Instruments Corporation, the National Aeronautical and Space Administration (NASA), and Sky & Telescope. We have room for ten more exhibitors and we need YOUR help to bring them in. We have a number of organizations and companies who are in need of follow-up contact to convince them that they can't afford to pass up this stellar opportunity to make their products available to their target audience of amateur astronomers. I know there is someone (or several people) out there who would be perfect for that!

As if that weren't enough, many generous organizations will be donating door prizes to be given out at the convention. Folks, I think I speak for us all when I say, WHO doesn't love FREE stuff????? The catch however, is continued on Page 6

NEW NAME TAGS USED

At the April membership meeting, the new BSAS name tags were introduced. All members should now have one of the new tags. Unfortunately, some members did not have the new ones at the meeting, because they were in a separate box and were not located until after the meeting.

All members are urged by the Membership Committee, the Hospitality Committee, and the president to wear the name tags at each meeting, and to be sure to turn them in at the end of the meeting. If they are lost or taken home, which is really saying the same thing, it is costly and time consuming to replace them.

The two committees mentioned above are working hard to make the BSAS a friendlier organization. Therefore, they urge that each member make an effort to meet and get to know the other members, and that new members are promptly recognized and greeted by all of the members at each meeting or event. The new name tags will be available for several of our public events, as well.

Report on the ALCon 2003, continued from Page 5

that we've got to get it before we can give it away. We have several door prizes already (donated by Astronomy Magazine, Burgess Optical, Jim's Mobile, Meade Instruments and Sky & Telescope, just to name a few), but Kris McCall has kindly donated a list of possible sponsors and we need help contacting the people and offering them the chance to participate. In addition, we'll need volunteers during the convention to announce and distribute the prizes. We want donors to know that we appreciate their contributions, so we will tell a little bit about the donating organization and the item at each door prize drawing. This is just another part of ALCON in which all parties win.

Pam Thomas is doing a great job heading the hospitality committee, and we hope to have Jillian's, as well as several other local restaurants, provide refreshments for the convention. Pam will definitely need help both before and during the convention to have everything ready for hungry stargazers.

To make sure that each attendee has all the necessary information to enjoy ALCON and Nashville to their fullest, Greg Selah and John Harrington have begun preparing registration packets. There are thousands of things that go into creating this type of packet: gathering brochures and maps on Nashville, the hotel, and surrounding eateries, preparing the convention program, gathering any small freebies that have been donated, preparing and distributing badges for attendees, and stuffing and mailing the packets. Of course, there will be a registration desk set up during the convention, and we need a great many people to involve themselves in that. We will need help making sure that everyone who wants to attend ALCON is properly registered. These are just a few of the things that need to be done, so never fear— if you want to help, we can find something for you to do!

At the previous monthly meeting of the BSAS, it was announced that volunteers who donated 10 hours of work before or during the convention would receive free registration for the entire convention. Although this does not include tours or meals, such as the Star-B-Q or Banquet, it does give you access to all of our great speakers, exhibitors and workshops. Anyone who contributes two hours during the convention will earn a free registration for one day. I don't see how anyone could pass up this bargain! We want as many people to attend the convention as possible and we encourage everyone who is able, to try to participate. Understandably, with all these volunteers, we will need one or more people to coordinate and keep track of volunteers.

On the days of the convention, in addition to hospitality and registration volunteers that I have already mentioned, we will need numerous wranglers, ushers, and security personnel. Wranglers will be responsible for a particular speaker and ensuring that the person has the appropriate equipment. Ushers should be available in various locations to direct attendees to the workshops and tours, or to answer any questions. Volunteers for security will keep track of any equipment and make sure that it is secured in a locked area each evening. We also need volunteers to handle speaker introductions, the group photo, sign creation and placement, and innumerable other duties.

Conventions are always more work than expected and hundreds of small jobs pop up here and there that could easily overwhelm a small group. However, with the help of all of our members, the work will go more smoothly and quickly. This is a marvelous opportunity for the BSAS and we want everyone to participate in planning the convention and enjoying the wonderful speakers and activities. For more details on activities, speakers, and schedule, please visit our website-in-progress that Bill Collins maintains (www.bsasnashville.com/alcon2003.htm). For opportunities to volunteer, see Evelyn Wright's planning website (www.cedar-software.com/alcon/alcon_plan.htm - Select "Planners" at the lower left and enter "BSAS" and "planning" for username and password, then select "Staff Chart".) You may also contact Mike Benson (Ocentaurus@aol.com or 883-6571) or Jill Thompson (Saintmartha1@aol.com or 361-9983). Let's get Sirius and make this the best ALCON ever.

Minutes of Regular Monthly Membership Meeting of Barnard-Seyfert Astronomical Society on April 17, 2003

The meeting was called to order at 7:38 PM on Thursday, 17 April 2003 by President Joe Boyd in the Dyer Observatory library. About 36 members and visitors were present. Joe Boyd welcomed new members and visitors.

The minutes of the March meeting as published in the April issue of "The Eclipse" newsletter were approved. Treasurer A.G. Kasselberg noted that the club savings account has \$5220.85. Joe Boyd announced the 75th anniversary of the club and will appoint a club historian.

Lonnie Puterbaugh gave out copies of the equipment survey to those who had not already filled one out, and noted that only one of those who had previously pledged money for buying and refurbishing club equipment had paid. Lonnie displayed the club's 8" Meade LX 200 SCT, noting that it needs about \$300 more of equipment, including a finder of some sort and a dew heater.

Powell Hall reported that the Dark-Sky Committee will move its monthly meeting to mid-May to take advantage of Scott Davis' (International Dark-Sky Association) upcoming trip to Nashville. The IDA will need help from the BSAS to staff its ALCON 2003 exhibit.

It was announced that the May meeting of the BSAS would be at the Adventure Science Center to view the lunar eclipse. In case of cloud cover, the program topic will be "The Role of Women in Astronomy".

Rocky Alvey noted that Dyer Observatory and The Blair School of Music will collaborate for "Music on the Mountain", a presentation of Appalachian Music. Parking and shuttle buses can be found at the Bethel Church at the corner of Old Hickory Boulevard and Granny White Pike.

Powell Hall presented a tribute to John Bradford, an active BSAS member who recently died of a brain hemorrhage following surgery for a brain tumor. John's interest in the night sky, his eagerness to help, and his sense of humor will be sorely missed.

Mike Benson reported that ALCON 2003 seems to be mostly under control. Past AL President Chuck Allen will be meeting with the planning committee. Jill Thompson noted that those working 10 hours either in planning or at the convention will receive free registration to the entire event. Those working 2 hours at the convention will receive free registration for one day of the event. Joe Boyd appointed two committees, one to determine an appropriate way to memorialize John Bradford, and one to nominate a replacement to serve the remaining term of John's seat on the board of directors.

Kris McCall discussed Astronomy Day to be celebrated Saturday April 26 this year at the Adventure Science Center. The topic of the day will be Mars, and BSAS volunteers were enticed with a free lunch to help out with exhibits, telescope displays and solar viewing. BSAS volunteers will also be needed for the star gaze the preceding night (April 25) at Warner Park model airplane field. Kris is already making plans for the topic for Astronomy Day 2004 which will be Saturn. Kris also mentioned Scott Davis' meeting with the Society of Lighting Engineers on light pollution at the Vanderbilt University Club.

Chuck Schlemm distributed information about The Renaissance Center's observance of Astronomy Day this year which will be on May 10. Sunspot viewing and nightly viewing through BSAS member telescopes are scheduled with free passes to Cybersphere shows for those who help out. It was also noted that there is a public stargaze at Long Hunter State Park from 8-10 PM on May 10, and BSAS volunteers will be needed at both events.

At 8:25 PM, Joe Boyd introduced the presenter of the night's program, John Harrington. John first introduced Lonnie Puterbaugh who showed a 5 minute video of the recent Winter Star Party in Florida that was shown on a major network's Sunday morning show.

At 8:33 PM, John Harrington began his talk on "The History, Tools and Techniques of Planetary Observing". Running through the visual observance records, the film exposures, and the CCD images of previous planetary observers, John showed the advances that have occurred in the portrayal of Mars, Jupiter and Saturn. John then discussed equipment and techniques that enhance planetary observation, including eyepiece design, types of telescopes, filters, and guidelines. Several BSAS members contributed their observations and experiences during John's talk, including Dudley Pitts, Steven Balay, Lonnie Puterbaugh, and Kris McCall. It was also noted that some of the imagers John mentioned would be making presentations at ALCON 2003 sponsored by the BSAS this summer in Nashville. John fielded several questions from the group and concluded his presentation to a round of applause.

With no objections, Joe Boyd declared the meeting adjourned at 9:50 PM.

Respectfully submitted,
Evelyn Wright, Secretary

EEEEK - an Eclipse !!! Solar System Shadows

Eclipses are the results of shadows in our solar system. Solar eclipses occur when the Moon blocks out the light from the Sun, leaving part of the Earth in shadow. Unfortunately, only people watching from a narrow path on the surface of the Earth would be in that shadow and would get to see the Sun being obscured by the Moon. In the case of lunar eclipses, it's the Earth that's blocking the direct sunlight. The Earth casts a shadow that can cover the entire near side of the Moon. This month, there will be a total lunar eclipse on Thursday, May 15th. During a lunar eclipse, everyone on the night side of the Earth can see the event if they have good weather.

Now You See It, Now You Still See It

As the shadow creeps across the lunar surface, the Moon darkens and takes on a reddish color. The Moon doesn't disappear completely because the Earth's atmosphere scatters the Sun's light, deflecting mostly red light toward the Moon. Just how dark the Moon gets during a lunar eclipse depends on the amount of dust in our planet's atmosphere. If there's been a lot of volcanic activity or forest fires recently, the increased dust can cause the Moon to appear very dark, like an old copper penny. If there's very little dust in the atmosphere, the Moon will appear brighter and more orange in color. The exact color and darkness of any eclipse is unpredictable. There's no way to know ahead of time what the Moon will look like when our planet's shadow blankets the lunar surface. There are actually two different shadows which cross the lunar surface. One is called the penumbra, which is the lighter, outer shadow. The umbra, or inner shadow, is the darker shadow. A lunar eclipse officially begins when the penumbra starts to cover the Moon, but the visible action begins when the umbra starts to move in. (Times are given in Central Daylight Time - CDT.)

penumbral eclipse begins 8:05 pm umbral eclipse begins 9:03 pm total eclipse begins 10:14 pm total eclipse ends 11:06 pm umbral eclipse ends 12:17 am penumbral eclipse ends 1:15 am

How to Observe

Lunar eclipses are perfectly safe to view, and no special equipment is needed. Telescopes and binoculars can add to the fun of watching the Earth's shadow sweep across the features of the Moon's surface. All you really need to enjoy a lunar eclipse are your eyes and good weather. And there's no rule that says you have to watch the whole thing. Just get out and watch; even if only for a few minutes.

Many Moons

Excited about this month's lunar eclipse? Just imagine what it would be like if our planet had over 20 moons, like Uranus. How many eclipses would we have in a year or even in a night? Our Solar System has MANY moons ranging from planet-size with atmospheres and volcanos to mere rocks only kilometers in diameter. Mercury and Venus have no moons. Earth has only one, but it's the 5th largest in our solar system - even larger than Pluto. Mars has two asteroid-size moons, Phobos and Deimos. Their proximity to the asteroid belt suggests that they may be former asteroids that strayed too close to the realm of martian gravitational influence. Pluto is the smallest of the official planets. While there are seven moons outsizeing Pluto, it has one moon of its own, Charon. The Pluto-Charon system is considered a "double planet" because Charon's diameter is a little over half that of Pluto. The giant planets of our Solar System each have their own orbital systems. For example, Saturn has at least 30 moons. Titan, the largest of these moons, is covered by an opaque atmosphere of nitrogen which shrouds any features. Saturn's other known moons are all medium to pint-size icy spheres, many covered with impact craters. Uranus has no massive moons. Its two largest, Titania and Oberon, are just slightly larger than the largest known asteroid. Neptune's largest moon is Triton, which is just larger than Pluto and very similar to it in composition. As of April 19, 2003,, Jupiter has SIXTY known moons, but that could change any minute. New discoveries are being announced almost weekly. Most of these so-called moons are as small as gnats buzzing around an elephant. However, Jupiter's four largest moons are worth some extra attention. Ganymede, the biggest moon in our solar system is larger than the planet Mercury and even sports hazy polar caps. Next in size comes Callisto with its dark, cratered surface frosted with ice. Third in size of Jupiter's moons is Io, the most volcanically active body in our Solar System. Eruptive plumes rise far above its sulfurous landscape dotted with bright spots of glowing hot lava. Fourth is Europa, which is similar in size to our own Moon. Europa is one of the brightest objects in our Solar System

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because of its water-ice surface. This frozen outer layer may cover a subsurface ocean of liquid water 100 to 200 kilometers deep. This makes Europa a tempting place to look for microbial life. The next time you gaze at our own magnificent Moon, pull out your binoculars. Check out the moons of Jupiter for yourself. Then think about all the other moons in our Solar System and imagine.

Moon Party !!!

A Total Lunar Eclipse can mean only one thing: Moon Party! Members of the Barnard-Seyfert Astronomical Society will set up their telescopes for viewing this special celestial event along with Jupiter and Saturn. These festivities will be held on the night of Thursday, May 15th, from 8:30 to 10:30 pm on the grounds of the Adventure Science Center. For more information and to make reservations, call the Sudekum Planetarium AstroLine at (615) 401-5092.

Don't Miss the Planets!

The lunar eclipse is only one evening, but Jupiter and Saturn are visible in the evening sky all month.

For Sale:

Meade ETX-C 125 Astro telescope, in mint condition. Purchased 12/00, used only 6 months. Includes Barlow 9.6, 6 lenses, and sturdy tripod. D=127mm, F=1900. Perfect for novice star gazers. Price \$500.

Please call Deborah in Nashville, 383-7141.

Activities & Events

May 1 – May 31, 2003

- 5/1 NEW MOON; BSAS Board Meeting, 7 p.m.
- 5/3 Private Star Party, Natchez Trace site
- 5/5 Conj., Moon & Saturn
- 5/7 Mercury in inferior conjunction, transit
- 5/8 Conj., Moon & Jupiter
- 5/9 FIRST QUARTER
- 5/10 Public Stargaze, 8-10 p. m., Longhunter State Park; Public Stargaze, 8-10 p. m. at the Renaissance Center
- 5/13 Conj., Mars & Neptune
- 5/15 FULL MOON; Total eclipse of Moon;
- 5/15 BSAS MEETING, 7:30 p. m. at the Adventure Science Center
- 5/21 Conj., Moon & Mars; Moon & Neptune
- 5/22 LAST QUARTER; Conj., Moon & Neptune
- 5/27 Conj., Venus & Mercury
- 5/28 Conj.: Moon & Mercury; Moon & Venus, occultation
- 5/31 NEW MOON; annular eclipse; Private Star Party, Natchez Trace site

June 1 – June 30, 2003

- 6/1 Conj., Moon & Saturn; Immediate Past President's Golden Wedding Day!
- 6/3 Mercury at gr. western elongation (i. e. as a morning star)
- 6/5 Conj., Moon & Jupiter; BSAS Board at Jefferson Square Condos, 7 p.
- 6/7 FIRST QUARTER
- 6/9 Pluto at opposition
- 6/14 FULL MOON
- 6/17 Conj., Neptune & Moon
- 6/18 Conj., Venus & Aldebaran
- 6/19 BSAS MEETING, 7:30 p. m. at Dyer Observatory; Conj.: Mars & Moon; Mercury & Moon; Mercury & Aldebaran
- 6/20 Conj.: Uranus & Mars; Venus & Mercury
- 6/21 LAST QUARTER; SUMMER SOLSTICE, 2:10 P. M. C.D.T.
- 6/24 Conj., Sun & Saturn
- 6/28 Private Star Party, Natchez Trace site
- 6/29 NEW MOON

BSAS c/o Dyer Observatory
 1000 Oman Drive
 Brentwood, TN 37027