



ECLIPSE



The Newsletter of the Barnard-Seyfert Astronomical Society

March 2002

President's Message

The Barnard-Seyfert Astronomical Society has come to a time when its opportunities and challenges have increased significantly. Anyone who reads the February minutes of BSAS secretary Evelyn Wright will be reminded of the various astronomical endeavors upon which we have involved ourselves.

At the February meeting of the board of directors, Charles Allen the president of the Astronomical League spoke to us about sponsoring the 2003 AL's annual meeting. After much discussion, the board unanimously (we were polled individually by board chairman Kris McCall) decided to recommend to our members that we serve as 2003 AL hosts. When the members met on February 21st, we voted. Most of the society voted in favor, although there were a few against. In the next sixteen months, every member of BSAS who is able and willing will be needed to carry this off.

In conjunction with Dyer Observatory, our society is also involved with the ISSAT, a wonderfully imaginative program with great potential for amateur astronomy. In fact, we are about at "ground zero" for this remarkable endeavor. It will not require the number of volunteers that hosting AL will take at certain points, but its operation will be both fruitful and longterm. I think with gladness of the ISSAT as eventually offering students and amateurs their own "amateur Hubble."

Some of us in BSAS have been focused on the challenge of light pollution. Recently the society voted to pay the fee charged a group our size and become an official member as an organization of the International Dark-Sky Association, of which I and others were already individual members.

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HAPPENINGS & EVENTS

March 1 - March 28, 2002

- 3/5 LAST QUARTER MOON
- 3/7 BSAS Board of Directors Meeting at Cumberland Science Museum, 7:00 PM
- 3/8 Conjunction, Mercury & Uranus
- 3/9 Private Star Party - Natchez Trace Site
- 3/10 Conjunction, Moon & Neptune
- 3/11 Conjunction, Moon & Uranus; Moon & Mercury
- 3/13 NEW MOON
- 3/16 Private Star Party - Natchez Trace Site - MESSIER MARATHON!
- 3/17 Conjunction, Moon & Mars; St. Patrick's Day
- 3/20 Conjunction, Moon & Saturn; vernal equinox Preliminary CCD Class at Dyer with Tut Campbell
- 3/21 FIRST QUARTER MOON; **BSAS Meeting at Dyer Observatory, 7:30 p.m. Speaker Tut Campbell on CCD Imaging (with hands-on demonstrations on the Seyfert Telescope)**
- 3/22 Conjunction, Moon & Jupiter
- 3/28 FULL MOON; First Day of Passover
- 3/31 Easter Day

A Call for Dyer Observatory Volunteers

The Arthur J. Dyer Observatory depends on the BSAS volunteers for our public night activities. Your help is greatly needed and much appreciated. Our goal is participation from 9 members per event. A comprehensive knowledge of astronomy is not required. These nights are also great opportunities for membership enrollment. To volunteer, please call JanaRuth Ford or Rocky Alvey at 615-373-4897.

MAGAZINE SUBSCRIPTIONS FOR BSAS MEMBERS 2001

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 : \$29.95

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 membership 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: Rocky Alvey
r.alvey@vanderbilt.edu

BSAS Officers:
Powell Hall, President
John Bradford, Vice President
Evelyn Wright, Secretary
A.G. Kasselberg, Treasurer
Board of Directors
Kris McCall, Ch.
Mike Benson
Douglas Hall
Joe Boyd
Lloyd Watkins
Logo Photograph:
Francisco Diego

Minutes of Regular Monthly Membership Meeting of Barnard-Seyfert Astronomical Society on February 21, 2002

The meeting was called to order at 7:30 pm on Thursday, 21 February 2002 by President Powell Hall in the Sudekum Planetarium at Cumberland Science Museum. Approximately 40 members and visitors were present.

Due to Mike Benson's illness, the agenda was rearranged to allow Mike to report his new business at the beginning of the meeting and then go home to recuperate. Mike presented the BSAS Board of Directors' unanimous recommendation that the BSAS host the Astronomical League Convention (ALCon) in 2003 here in Nashville, TN. He emphasized that everyone would need to help out, especially during the actual days of the convention. After much discussion, a motion was made for BSAS to host ALCon 2003 in Nashville. The motion was seconded and the majority, but not all, of the group present approved the motion.

Powell Hall expressed his appreciation to the Cumberland Science Museum and Sudekum Planetarium folks for providing BSAS a place to meet during the winter months. Proceeding with old business, it was decided to publish the last meeting's minutes in the next issue of "The Eclipse" rather than take the time to read them aloud. Treasurer A.G. Kasselberg reported that there was \$1528.98 in the BSAS account, and \$2600 in certificates of deposit. A.G. has a few copies of the "Observer's Handbook" available for \$16.00. He also noted that members can subscribe to two astronomy magazines at reduced rates through the club.

Powell Hall asked for comments about the Astronomy Weekend at Fall Creek Falls, and received favorable responses from those who attended. A.G. Kasselberg then reported that, despite some rain and snow on the Arizona end, the ISS-AT setup at Dyer Observatory eventually provided images on the "first light" test, if only of the lens cap on the Arizona side. A.G. noted the contributions of Dell, Hughes Network, Bisque Software, and Richard Berry. Dr. Doug Hall pointed out the technical expertise volunteered by BSAS members including A.G., Tom Murdic, Steven Balay, and Rocky Alvey. Rocky Alvey noted that 50% of the viewing time will be reserved for student requests, and that BSAS member and student Casey Hannah will be the first to use it, basing her science fair project on variable stars observed with the aid of the ISS-AT.

Moving on to new business, Powell Hall turned the floor over to Kris McCall who reported that Astronomy Day plans are not finalized, but the BSAS needs to send an adequate number of people with telescopes to the star parties that night at both the Dickson Renaissance Center and Dyer Observatory. She also noted people with and without scopes would be needed at the star party at Warner Park the preceeding night. Kris has also gotten a request to provide telescopes at the 90th Annual Jamboree of the Girl Scouts at Sycamore Hills near Ashland City on Saturday, August 3, 2002. Powell Hall recommended that Kris advise the Girl Scouts that the BSAS was interested, and Lloyd Watkins asked Kris to find out if there were any badge requirements that the BSAS could help with on that night.

Powell Hall proposed that any other new business be postponed until after the night's program, but Dr. Doug Hall preferred that the matter of the Dyer Observatory Advisory Board be discussed before the program. Vanderbilt University has asked the BSAS to nominate someone to serve on this board, and Dr. Hall moved that A.G. Kasselberg be nominated since he has close ties to the BSAS, Vanderbilt University, Dyer Observatory, and a law background. The motion was seconded and approved unanimously

Powell Hall then set up for the night's program by explaining that meteorites start out as meteoroids out in space, become meteors once they enter the earth's atmosphere, and end up as meteorites once they land. He turned the floor over to Vice President John Bradford who introduced BSAS member Tom Murdic. Tom spoke about the types and sources of meteorites, how he goes about looking for them, and local impact craters. Tom recommended the book "Rocks from Space" by Tom Norton to find out more about meteors, and answered questions from the group. A discussion of objects that are not meteors (goethites (GUR thytes), clinkers, meteorwrons) was brought to a conclusion by Powell Hall who reiterated that the club had officially adopted the hosting of ALCon 2003 here in Nashville.

The meeting adjourned at 9:30 pm.

Respectfully submitted,
Evelyn Wright, Secretary

Barnard-Seyfert Astronomical Society Board of Directors Meeting on February 7, 2002

The regular meeting of the Board of Directors was called to order by Board Chairperson Kris McCall at 7:05 PM on February 7 in the Cumberland Science Museum Volunteer Lounge. Also attending were all other board members: Mike Benson, Joe Boyd, Doug Hall, and Lloyd Watkins. Officers attending were President Powell Hall, Vice President John Bradford, Treasurer A.G. Kasselberg, and Secretary Evelyn Wright. Others present were WebMaster Bill Collins and club members Mary Boyd, Kira McCall, Tom Murdic, and Larry Southerland, and Astronomical League President Chuck Allen.

Kris McCall noted the Warner Park Star Party on February 1 was hampered by clouds. Other events coming up are listed at the end of these minutes. Kris will let the group know once Astronomy Day plans are more definite, but Cumberland Science Museum President Ralph Schulz would prefer that the daytime activities be held at the museum, and Drew Gilmore of the Sudekum Planetarium has some ideas for some speakers from a workshop he attended in Hunstville.

Kris emphasized that an adequate number of BSAS members should attend the Renaissance Center's star party on the night of Astronomy Day, as well as the Dyer Observatory star party that same night.

A.G. Kasselberg reported that the "first light" event for ISS-AT had a few problems, not the least of which was the rain in Arizona, but our side was eventually functional. A story about it was featured on the MSNBC website which mentioned ISS-AT, the Astronomical League, and Dyer Observatory.

John Bradford noted the February BSAS program would be on meteorites by Tom Murdic.

Bill Collins asked for feedback on the website. Mike Benson agreed that private star parties should be posted for February, aiming for new moon dates. Bill is considering posting future events, not just those for the current month.

Both before and after AL President Chuck Allen arrived, there was some discussion about hosting the Astronomical League conference in Nashville in 2003. The group that originally was to host the 2003 event requested that they be allowed to host the 2004 event instead due to trying to combine another group with the conference. Since there has not been a conference in the southeast lately, and Nashville is favorably located, and Mike Benson has been wanting to host the event for several years, BSAS has been asked if it would like to host the event in 2003. At least one other group is under consideration to host. Profit or loss is shared with the Astronomical League, but is normally a profit of a couple thousand dollars. The major benefit comes from meeting others interested in astronomy. Doug Hall noted that the American Astronomical Society is also meeting in Nashville that summer, and that possibly the IPPP could meet at that time, as well.

Chuck Allen gave the basic requirements for the AL conference. Attendance is usually between 250 to 700 people, but 500 is considered high. Hotels or a college campus can provide meeting rooms, vendor space, and lodging. Several speakers, audio/visual equipment, some tours (not necessarily astronomy related), a banquet, and 2 or 3 food events are expected. The AL business meeting occurs on Tuesday with the public events on Wednesday through Saturday. Other related organizations will also be holding business meetings. Mr. Allen emphasized that the whole club should be in favor of hosting the event in order for it to be successful. Kris McCall polled those present to find out whether to recommend hosting the event to the whole group. The consensus was that this would require a lot of ongoing, consistent hard work, but that overall it would be a good thing for the club.

Mike Benson made a motion that the board recommend to the BSAS membership that the club offer to host the AL convention in 2003 in Nashville. The motion was seconded by Doug Hall, and was unanimously passed by the five board members present.

Kris McCall appointed Mike Benson to present the opportunity to the club at the next regular meeting. Mike Benson will spearhead the event if it is approved by the club, with Joe Boyd assisting him, since Joe is an attorney, and had already done some research with the Nashville Convention Center. If approved, a hosting committee will be formed, and Chuck Allen recommended that it include the board since the AL contract will be with the board. Lloyd Watkins emphasized that if it is decided to host the event, steady, consistent effort and follow-through will be required in order to make the event a success.

The meeting adjourned at 9:05 pm.

Respectfully submitted,
Evelyn Wright, Secretary

Sudekum Planetarium at the Cumberland Science Museum

Public Programs through March 2002

Tuesday through Friday
3:15 Worlds In Motion

Saturday
11:30 Worlds In Motion
1:00 Skies Over Nashville
2:30 Worlds In Motion
3:30 Night Lights

Sunday
1:30 Worlds In Motion
3:30 Night Lights

What on Earth are these shows about ???

Worlds In Motion Most people know how long a year is, but few consider how far or how fast the earth travels in its orbit about the sun. This program explores how fast you are really moving. From the atoms in the air to the dance of the planets; ours is a universe on the move.

Night Lights Starting with a brief tour of the current night sky, this program exposes the causes of light pollution and highlights more wonders of the real sky.

Skies Over Nashville Many people are intimidated by astronomy and the night sky. This show highlights those constellations and planets that can be seen from backyards throughout Middle Tennessee and across the United States. If you can "connect the dots", you can draw star pictures. Skies Over Nashville is an excellent way for the entire family to get ready to go out and look at the real sky.

Rusty Rocket's Last Blast Join a class of rocket rookies, learn a few rocket basics, relive great moments in space exploration, discover how far it really is to the moon and planets, and tour the solar system with Rusty Rocket.

upcoming astronomical events

NOTE: Our monthly star charts and related articles can be downloaded from www.SudekumPlanetarium.com

Warner Park star party 7:30 to 9:30 pm Friday, 1 February 2002
Warner Park star party 8:00 to 10:00 pm Friday, 19 April 2002
Warner Park star party 8:00 to 10:00 pm Saturday, 10 August 2002

For additional and updated information:
call AstroLine at 615-401-5092
OR go to
www.SudekumPlanetarium.com

HOT FLASH

by Jerry Lappin

Two discoveries announced in the past few days might require that all the present ideas on cosmology, the origin of the universe and stellar physics be drastically revised. It has been known for some time that vast clouds of ethyl alcohol exist in inter galactic space. Also found in these clouds are various aldehydes, ketones and esters. The origin of these organic molecules has never been clearly understood. Now another clue has turned up, this time in meteorites, which appear to be fragments left over from the formation of the solar system. In some of these primordial rocks were found other organic compounds known as polyphenols. Those of you who keep up with health and nutrition news will recognize polyphenols as essential nutrients, which prevent cancer and other dire problems. You probably also know that one of the best sources of these vital materials is red wine. . Taking all of these observations into consideration leads to the conclusion that the cosmos developed from an infinitely large vat of red wine. This may have been burgandy, chianti, shiraz, or who knows what. Whatever vintage was involved it does appear that the cosmos consists of the dregs of that vast vat. This Big Vat theory nicely explains the alcohol clouds as well as the aldehydes, ketones and esters which all contribute to the bouquet of a good wine. Even the red shift could be explained as an effect of the color of the wine.

The second discovery hits closer home. A professor at the University of Missouri-Rolla claims that the sun is not composed mostly of hydrogen as all stellar physicist have long believed but is a sphere of extremely hot iron, the remains of an ancient supernova. The hydrogen we observe is merely a small amount, rising from the hot iron core. Nuclear fusion may provide a little of the suns energy but most of it comes from the superhot iron.

No, this is not April 1st. The professor presented a paper "The Origin of the Solar System with an Iron Rich Sun" at last week's meeting of the AAS. If the sun is a hot iron ball it seems logical that all other sun-like stars must have the same structure. This is not unreasonable in the light of the idea that the universe formed in a vat of red wine for it is know that such wine is a good source of iron.

Dickson Renaissance Center Astronomy Day

The BSAS is scheduled to participate in the Dickson Renaissance Center's Astronomy Day, Saturday April 20, 2002. If possible, like last year, we would like to have at least one telescope setup for solar observation and then several more for star viewing after dark.

Chuck Schlemm will have a Middle Tennessee Space Society display of America's space programs setup and will be doing other space related slide presentations. They would also be very happy to have any other astronomy related displays or speaker presentations we could provide.

Maybe some BSAS member(s) could setup a display with different kinds of telescopes and describe them. The display would be in their entry hall and could be setup anytime that day. Anyone willing to do a speaker presentation should contact Chuck to schedule a time and lecture room.

Dickson Renaissance Center Astronomy Day Schedule:

10-3PM Kids College on Rocketry - Grades 1-8,
advance \$15 ticket required.

12-3PM Dream Mission - Enter the half scale Space Shuttle
and sit at the controls for a shuttle mission.

2-4PM Cybersphere laser shows

4-7PM Presentations: "Our Solar System", "America in Space",
BSAS astronomy talks?

7-10PM Cybersphere laser shows

7PM Theater play, "The Odd Couple"

Dark Starry night viewing with BSAS (weather permitting)

Chuck Schlemm 799-1138
cschlemm@franceformer.com

The Bergquist C-14 Telescope Steward List

Our club telescope is available for use by club members on a first-come basis. To use the telescope please call the person who is assigned for that night you choose. Please give the stewards as much notice as possible.

Monday - Mike Benson 615-883-6571

Tuesday - Lonnie Puterbaugh 615-661-9540

Wednesday - A.G. Kasselberg 615-661-0231

Thursday - Lloyd Watkins 615-824-3005

Friday - John Bradford 615-871-9542

& Powell Hall 615-872-0162

Saturday - Jim Reid 615-595-6589

Sunday - Tom Murdic 615-794-6029

Alternate - Dudley Pitts 615-837-2696

President's Message continued

You may soon hear of a program to try to move the Nashville area in the right direction, dark-sky-wise. Last but not least: the recent week end at Fall Creek Falls State Park demonstrated a powerful interest in amateur astronomy. TO ENCOURAGE AND NURTURE SUCH INTEREST, TO MENTOR BEGINNERS, TO LEARN WHAT IS HAPPENING IN THE SCIENCE OF ASTRONOMY AND ITS RELATED TECHNOLOGY, AND SIMPLY TO EXPERIENCE THE COMRADESHIP OF LOOKING AT THE NIGHT SKY (NOT TO MENTION SOLAR OBSERVING) - THESE THINGS REMAIN THE BASIC RAISON-D'ETRE OF THE BARNARD-SEYFERT ASTRONOMICAL SOCIETY.

Powell Hall

Astronomy Day 2002

Hi everybody, We are working on plans for Astronomy Day 2002. See the information below. Wish you could have been here last year.

Why does the Moon change shape ?

To answer this question, check out the new exhibit in the lobby of the Sudekum Planetarium. Visitors control the movement of the Moon around the Earth and can see first hand that Earth's shadow does NOT cause lunar phases.

Catch Moon Madness on Astronomy Day

To celebrate the new interactive exhibit outside the Planetarium, the theme for Astronomy Day 2002 is Moon Madness. On Saturday, April 20, from 11:00 AM to 3:00 PM, there will be activities, demonstrations, programs, and speakers for visitors of all ages to help everyone discover the wonders of the night sky and astronomy.

Two FREE public star parties are also scheduled. The first will be Friday evening, April 19, from 8:00 to 10:00 PM, at the model airplane field at Edwin Warner Park. The second will be Saturday night, also from 8:00 to 10:00 PM, at the Renaissance Center in Dickson. Members of the Barnard-Seyfert Astronomical Society will provide breath-taking, telescopic views of Jupiter, Saturn, the Orion Nebula, and more.

For the latest astronomy and Astronomy Day information, call AstroLine at 615-401-5092 or check out www.SudekumPlanetarium.com.

Our Astronomy Day program for 2001 received the Sky and Telescope magazine National Astronomy Day Award for its well-rounded and creative schedule of events.

In addition to all the usual stuff, I am working on getting a lunar sample for extended display. I am also following up on some meteorites as well as Moon featured speaker. The students from Hume-Fogg are coming back again this year, and they will help man various activity areas. We will probably provide some kind of lunch for everyone working that day.

We are looking for additional displays related to almost any aspect of astronomy. Everything does not have to focus on the Moon. That's just the hook. You can: show off computer software, explain how telescopes work, demonstrate your home built radio telescope, display your beautiful astrophotography, provide safe views of the Sun on the lawn, impersonate your favorite astronomer, or something completely different.

Please let me know as soon as possible so I can work you into the plan. We had a great time last year. I look forward to hearing from you soon.

Kris McCall, Director Sudekum Planetarium Nashville, TN 615-401-5077 www.SudekumPlanetarium.com

NOTICES:

Notice is hereby given that the April 2002 meeting of the Board of Directors of the corporation, which is regularly held on the first Thursday of the month, will be held on Monday, 1 April 2002, at the Jefferson Square Club House, located at 5039 Hillsboro Pike, at 7:00 P.M.

Notice is hereby given that the April 2002 meeting of the Board of Directors of the corporation, which is regularly held on the first Thursday of the month, will be held on Monday, 1 April 2002, at the Jefferson Square Club House, located at 5039 Hillsboro Pike, at 7:00 P.M.

Evelyn Wright, Secretary

Ed. note: All members of Barnard-Seyfert Astronomical Society are welcome at the meeting.

Notice is hereby given to all members of Barnard-Seyfert Astronomical Society that, pursuant to a unanimous recommendation of the board of directors, a proposal will be brought before the membership at the regular meeting on 18 April 2002 to amend the bylaws of the corporation. The amendment proposed will update the bylaws and will specifically provide for enlarging the board of directors and for making the officers of the corporation members of the board of directors.

Evelyn Wright, Secretary

Barnard-Seyfert Astronomical Society Board of Directors Meeting on March 7, 2002

The regular meeting of the Board of Directors convened at 7:10 PM on March 7, 2002 in the Volunteer Lounge of the Cumberland Science Museum, Board Chairperson Kris McCall presiding. Also attending were board members Mike Benson, Joe Boyd, Doug Hall, and Lloyd Watkins. Also present were Rocky Alvey, Kira McCall, Lonnie Puterbaugh, Larry Southerland, and Evelyn Wright.

Kris McCall handed out an agenda for the meeting, and it was noted that the March program would be about CCD imaging by Tut Campbell. There was no recent activity to report on the ISS-AT or C-14 fronts.

Joe Boyd indicated that progress had been made in collecting information for a financial report needed to move the application for 501(c)(3) status. Mike Benson noted that the Astronomical League had tax-exempt status, and Joe Boyd acknowledged contracting for ALCon 2003 should be done in the Astronomical League's name.

To get more club members involved in club activities, Mike Benson will update his membership list with data from Rocky and signup sheets. Joe Boyd would like a copy of the results given to him and the club secretary. Mike will also consider sending out a note to members to enlist help for the additional activities slated for this year and next year. It was suggested that specific tasks be listed that members could sign up for. Doug Hall suggested that JanaRuth call members on behalf of Dyer Observatory star parties which will resume in March. Kris McCall has taken the responsibility for arranging people for Warner Park in the past.

Kris McCall distributed an Astronomy Day Event Plan for Cumberland Science Museum activities. Speakers are still being sought. Kris asked for suggestions for other activities. Debunking the theory that we never landed on the moon and an activity about the ISS-AT were also suggested. Solar viewing at the Renaissance Center was mentioned on Chuck Schlemm's handout at the last meeting, and Rocky thought a solar scope might be available, but no decision was made.

Lloyd Watkins brought up the fact that the officers were not allowed to vote on Board decisions even though they were involved in much of the work. Mike Benson moved that a notice be included in the March and April issues of "The Eclipse" that the club membership would vote at the regular membership meeting on April 18, 2002 on whether to amend the bylaws to allow the officers of the club the right to vote on Board decisions. Lloyd Watkins seconded the motion which was unanimously approved by the four remaining board members, Dr. Hall having left the meeting early.

Rocky Alvey was recently informed about Girl Scout Camp Nakanawa near Monterey, TN, and distributed a budget based on using it as the site of TNSP 2002. A tentative date is the weekend of October 4, 2002. Rocky intends to invite the ISS-AT group to set up a demonstration. It was not decided whether an International Dark-Sky Association section organizational meeting could be arranged at TNSP 2002. Joe Boyd made a motion that the TNSP 2002 committee be empowered to make plans based on using Girl Scout Camp Nakanawa. The motion was seconded and unanimously approved.

Mike Benson called on Joe Boyd to discuss the results the Nashville Convention Center survey sent to various hotels. The bids received so far are high, and some negotiation will be required.

Kris McCall will talk about what badge requirements the BSAS might help with at the Girl Scout Jamboree once she has digested the reply she received from the Girl Scouts.

Joe Boyd asked that the minutes in the "The Eclipse" be approved, but the latest minutes had not been included due to it being an abbreviated issue. Rocky will try to get them in the next issue.

Due to conflicts with the High School Science Fair sponsored by Vanderbilt and the ISS-AT planning meetings, it was decided to call a special board meeting on April 1, 2002 instead. Those present accepted Joe Boyd's suggestion of a larger meeting room at the clubhouse of his condominium.

Upcoming events are:

Mon	Apr 1	7pm	Jefferson Square Clubhouse	board meeting
Thu	Apr 4	6-10pm	Vanderbilt	science fair judging
Fri	Apr 19	8-10pm	Warner Park	public star party
Sat	Apr 20	11am-3pm	Cumberland Science Museum	Astronomy Day
Sat	Apr 20	8-10pm	Renaissance Center in Dickinson	public star party
Sat	Apr 20		Dyer Observatory	public star party
Sat	Aug 03	8-12pm	Girl Scout Camp Sycamore	public star party
Sat	Aug 10	8-10pm	Warner Park (Perseids)	public star party
F-Sat	Oct 5-6		Camp Nakanawa	TNSP 2002
T-Sa	2003		Nashville	ALCon 2003

The meeting adjourned at 9:20 pm.

Respectfully submitted,
Evelyn Wright, Secretary

Minutes of Regular Monthly Membership Meeting of Barnard-Seyfert Astronomical Society

President Powell Hall called the meeting to order on Thursday, 17 January, 2002 at 7:40 pm in the Ingram Theater of Cumberland Science Museum. He requested that the secretary take over the duty of sending around an attendance signup sheet at the beginning of every meeting. Powell Hall also asked if the minutes of the last meeting could be adopted as printed in the January edition of the "Eclipse" monthly newsletter, and there were no objections.

Kris McCall made a motion that Dr. Hall's program be started at 8:15 pm whether the business portion of the meeting was finished or not. The motion passed.

Treasurer A.G. Kasselberg stated that there was \$1838.93 in the club's checking account, \$2600 in CDs, and a \$500 debt to Vanderbilt for postage. He also had a few copies of the observer handbooks for 2002, but the calendars were already sold out.

Board Chairperson Kris McCall noted that the board of directors and the officers normally meet the first Thursday of each month 7:00-8:30pm at Cumberland Science Museum, and attendance is open to any members.

Mike Benson brought up several items, including the national convention of the Astronomical League in Salt Lake City, Utah from Wednesday July 21, 2002 through that Saturday. He also encouraged the club to involve young members so that they could be nominated for the Young Astronomer award. A third item was that the southeast region of the Astronomical League needs to fill the positions of newsletter editor, secretary, and treasurer, and the vice president would be glad to turn that position over to someone else, as well. Mike Benson also gave two large t-shirts from Star Fest's Mike Chesman to Powell Hall to decide how to distribute.

Under old business, Powell Hall reminded the group that subscribing through the club to "Astronomy" and "Sky and Telescope" magazines saves about \$10 per subscription. The check should be made out to the Barnard Seyfert Astronomical Society and given to the treasurer who will forward the money to the publisher(s). Powell Hall also reiterated that copies of the Observer's Handbook were going fast.

Under new business, Powell Hall asked if there could be a motion to join the International Dark-Sky Association. Since the board had already passed such a motion at the last board meeting, Powell Hall asked for a motion that the club pay the \$100 to join the International Dark-Sky Association. Such a motion was made and seconded, and the club voted to go ahead.

Kris McCall interrupted the agenda to introduce Ralph Schulz, President and CEO of Cumberland Science Museum. Dr. Doug Hall noted that Cumberland Science Museum's Sudekum Planetarium had created their own show on light pollution, which should be playing locally again soon.

Powell Hall then introduced Rocky Alvey to speak on Astronomy Day, April 20, 2002. Rocky first distributed a tentative schedule for the "How to Get Started in Astronomy" weekend to be held February 15-17, 2002 at Fall Creek Falls State Resort Park. Several BSAS members will give presentations, and any club members are welcome to come on an "arrange for your own lodging" basis, whether camping out or staying at the Resort Inn.

Powell Hall returned to the subject of Astronomy Day, noting that the Cumberland Science Museum is being renovated, and whether Kris McCall would need somewhere else to hold the event. Kris requested that she be given more time to think about it. Mike Benson pointed out that Cumberland Science Museum won the Sky and Telescope award last year for the most successful well-rounded event. Kris was quick to point out that it was the combined efforts of several groups, including Frank Drake of the Seti Institute, BSAS, Warner Park, and volunteer students from Hume Fogg school that helped make the event such a success, but that Sky and Telescope would expect even greater things the next time. Kris also noted there would be a star party the night before on April 19, 2002 when five planets would be in the evening sky right after sunset. Chuck Schlemm also pointed out the club was invited to bring telescopes to the Renaissance Center in Dickson the night of April 20, 2002.

Warily asking for any other business lest it interfere with the night's program, Powell Hall recognized Rocky Alvey who mentioned a star party at Shelby Bottoms on January 23, 2002 from 6-8pm. Kris McCall noted that there would be a star party February 1, 2002 at Warner Park from 7:30-9:30 pm that neither she nor Drew can attend, so volunteers are needed for that night. Rocky Alvey rubbed it in that he would be in Jamaica at that time.

Noting that it was time for the night's program, but the speaker was missing, Powell Hall showed how he calculated that the moon would be full on Johann Kepler's birthday every nineteen years, but never on Doug Hall's birthday. At 8:20 pm, Vice President John Bradford introduced Dr. Doug Hall whose program was entitled "Interplanetary Navigation with Kepler's Laws". Making several assumptions, and answering many questions from the group along the way, Dr. Hall showed how he calculated when, how fast, and which direction to launch a rocket to reach Mars using elliptical orbits (circular orbits being a special case of elliptical orbits). He also noted the correct pronunciation of aphelion (ap-HEE-lee-uhn, not af-EE-lee-uhn). Dr. Hall also calculated that, from an energy standpoint, it is best to use the earth's velocity to fuel most of the journey, but it depends on whether it is an inner planet or an outer planet as to whether the launch should be made in the direction of the earth's orbital motion or opposite it. For the finale, Dr. Hall showed that one way to launch a rocket from the earth to the sun would be to give the rocket a velocity that just cancels that of the earth.

The meeting adjourned at 9:21 pm.

Respectfully submitted,
Evelyn Wright, Secretary

Happy Birthday Gemini 8
by Robin Byrne

This month we mark another milestone in the history of manned space flight. Gemini 8 launched from atop a Titan-II rocket on March 16, 1966. On board were Neil A. Armstrong and David R. Scott. Like most of the Gemini missions, their goal was to test out some of the never before tried maneuvers necessary for men to travel to the Moon.

The primary objective for Gemini 8 was to perform a rendezvous and docking maneuver with a Gemini Agena target vehicle (GATV). Other objectives included conducting extravehicular activities (EVA's), perform additional docking maneuvers, perform various maneuvers with the two vehicles docked, including parking the GATV in a 410 km orbit, evaluate the auxiliary tape memory unit, and demonstrate a controlled reentry. There were also 10 experiments on board that included a micrometeorite collection by the GATV, photography of the Zodiacal light, the growth of frog eggs in zero gravity, and spectrophotography of clouds.

Once in orbit, the crew performed 9 maneuvers over the course of 6 hours 34 minutes to come within 45 meters of the GATV (which had been launched 8 hours earlier). For the next hour, the crew performed various tasks in the capsule before finally docking with the GATV. This was the first time two spacecraft had ever docked in space.

About 30 minutes after the successful docking, however, things started to go wrong. The Gemini craft attached to the GATV began to roll uncontrollably. Armstrong, believing the problem was with the GATV, undocked the two vehicles. This only made the rolling worse. Somewhere on the Gemini craft was a stuck thruster, and the release of the extra mass of the GATV allowed the thruster to spin the spacecraft even faster, up to a rate of one revolution per minute. If the rate continued to increase, the crew were in danger of blacking out. For three minutes, Armstrong and Scott fought to control the Gemini craft. Finally, Armstrong decided to deactivate the Orbit Altitude and Maneuver System (which was where the stuck thruster was later found to be located) and use the reentry control system (RCS) to counteract the tumbling. Twenty-five minutes after the tumbling began, the spacecraft was back under control.

Unfortunately for the crew and the mission, 75% of the RCS fuel was used to gain control. Safety rules stated that any use of the RCS required immediate reentry. This meant not being able to perform any of the other planned objectives. A little over 10 hours after they left, Armstrong and Scott returned to Earth in the middle of the western Pacific Ocean.

Although most of the mission objectives were left unmet, the crew of Gemini 8 did successfully perform the first docking of two vehicles in space. They did also achieve a successful evaluation of the auxiliary tape memory unit, they performed a controlled reentry. The micrometeorite experiment on the GATV was also successful, as were some of the Agena maneuvering experiments, although they were performed by ground command instead of by the Gemini crew.

Rendezvous and docking was a major step toward landing on the Moon, and it was a very big deal. We take it for granted now. The Space Shuttle routinely docks with ISS to deliver people and equipment, and we don't blink an eye. This month, the Shuttle will rendezvous with the Hubble Space Telescope to perform needed repairs and upgrades, and I'd be surprised if it gets more than a casual mention by the news media. As we watch these events occur, it's important to remember that no matter how routine dockings may become, the actual maneuvers are just as tricky today as they were back in 1966, when Neil Armstrong and David Scott showed us how it can be done.

References:

NSSDC Master Catalog: Spacecraft Web Page

<http://nssdc.gsfc.nasa.gov/nmc/tmp/1966-020A.html>

NASA Project Gemini-VIII

<http://science.ksc.nasa.gov/history/gemini/gemini-viii/gemini-viii.html>

Seyfert Lecture in Astronomy
April 3rd, 2002 at 6pm Wilson Hall 103
Reception at 5:30pm
Dr. Carolyn C. Porco
Southwest Research Institute
"Ten Astronomical Units from the Sun"

Cassini, the most ambitious inter-planetary spacecraft ever built, was launched in 1997, and is presently making its way to Saturn. Once it enters orbit in the summer of 2004, 10 astronomical units from the sun, it will be the most distant robotic outpost humankind has ever deployed. Its mission: to conduct an in-depth examination of Saturn, its enormous ring system, and its collection of icy satellites, including haze-enshrouded Titan. Studies of these bodies hold clues to the larger questions of solar system origin and the emergence of life on Earth. This presentation will be devoted to the scientific objectives and expected results of the Cassini mission.

She will also give a technical presentation (Physics & Astronomy colloquium) on 4/4 at 4pm in Stevenson 4327 entitled: "Planetary Rings: On the Brink of a New Era"