



# ECLIPSE



*The Newsletter of the Barnard-Seyfert Astronomical Society*

## Next meeting of the BSAS will be April 17, 2003 at the Dyer Observatory at 7:30 pm

The speaker will be John Harrington and the subject will be "The History and Practice of Planetary Observing."

Following up on Lonnie Puterbaugh's and Lloyd Watkins' presentation on astrophotography, John Harrington will make a presentation on visual planetary observing. The program will begin with a quick historical overview, ranging from Galileo to Percival Lowell, Tom Cave and observations from the French Pic-du-Midi observatory. The next portion of the presentation will address the endless debate on what type of telescope is "best" for planetary observing and try to answer the question "If refractors rule, why are some of today's best planetary images being made with SCTs?" The final portion of the presentation will concentrate on what eyepieces and filters are "best" for planetary observing. If sky conditions permit that night, the presenter hopes BSAS members will take time to observe Jupiter through various eyepieces optimized for planetary observing.

## FROM THE PRESIDENT

By Joseph M. Boyd, Jr

Our program at our recent March membership meeting was presented by two of our own members, and when the meeting was over, Lonnie Puterbaugh was surrounded by one group of members and Lloyd Watkins by another. Lloyd's presentation on astrophotography was a how to, using some of his own equipment to demonstrate the "how to" aspects. He was followed by Lonnie, who used his computer created slides in a power point format to show some of the results of his foray into video astronomy. He showed his video camera, which cost less than one hundred dollars, the cable to connect it to his laptop computer, and the way to connect the camera to the telescope. He showed an image made by another amateur astronomer, using very similar equipment, and wowed the audience with the clarity of the image. He explained that after taking several frames with the video camera, he uses software, available on the internet at no cost, to stack the images, thus getting a picture that is actually many images put together. He explained that the cost is so low that this is the way of the future for astronomical imaging, at least within the solar system. As was demonstrated after the program, some people prefer film, others prefer the new video. Whatever your preference, we have the people in our BSAS to inform and help you get started in either one.

We were happy to see and greet many new members at the meeting, which was unusually well attended. We must all work together to see that they are enthusiastically welcomed into the BSAS and made to feel a part of it from the start.

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### 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](mailto: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

## Happy Birthday Arno Allan Penzias

by Robin Byrne

Our April honoree is a man who has made a big bang in more than one way. Arno Allan Penzias was born in Munich, Germany on April 26, 1933 to Karl and Justine Penzias. His father made a good living as a leather broker until 1938, when all Jews of Polish origin were ordered to be deported to Poland. The Penzias family, however, were fortunate. Upon arrival at the border, they were told that it was past the deadline for any new immigrants to enter Poland. That probably spared their lives. Many people who had entered Poland were housed in the open, where more than half froze to death.

Penzias' father made every effort to leave Germany. When England agreed to accept 10,000 Jewish children, Arno and his younger brother, Gunther, were sent off alone. Soon after, their parents acquired the paperwork to join the children. As soon as they could, the family moved to the United States. They arrived in New York City in January, 1940.

Penzias graduated from Brooklyn Technical High School in 1951 and entered City College with the plan to major in chemical engineering. In his first year, he discovered physics and changed his major. He graduated in 1954 in the top ten percent of his class.

After graduation, Penzias joined the army, where he served as a radar officer for two years. From there, he became a researcher at the Radiation Laboratory of Columbia University and began work on his graduate degrees. He received his M.A. in 1958, and his Ph.D in 1962.

His research had involved building a maser amplifier and doing astronomical observations. His first job, as a member of the technical staff at Bell Labs, allowed Penzias to continue with his work. While at Bell Labs, he worked on radio communications, including work on the Telstar communications satellite. In 1963, Robert W. Wilson joined the staff and began a partnership with Penzias that would last for many years.

One of their first jobs was to work with a very sensitive radio antenna for use in radio astronomy and satellite communications. However, there was a problem. No matter where they looked, there was a background hiss that they could not eliminate. Penzias and Wilson explored a variety of possible sources, including the Milky Way, the Sun, and droppings from the pigeons that were nesting in the antenna, but nothing they did got rid of the noise. In 1965, Penzias mentioned the problem with a colleague in Boston and discovered that Princeton physicist Robert Dicke had predicted just such a noise should exist as a remnant of the Big Bang. Penzias and Wilson had provided the first experimental proof of the Big Bang. In 1978 they shared the Nobel Prize for Physics for this discovery.

Over the years, Penzias has risen through the ranks at Bell Labs, but continued to participate in research. Penzias discovered carbon monoxide and other compounds in interstellar gas clouds. In 1973, along with Wilson and Keith Jefferts, Penzias found the presence of deuterium (heavy hydrogen) in interstellar sources. This discovery helped to provide clues to the conditions of the universe shortly after the Big Bang.

Besides being a superb scientist, Penzias is also an inventor and holds several patents. Among his patented inventions are a system for identifying participants in a teleconference and a computerized public transportation system.

In addition to his scientific work, Penzias has been actively involved with humanitarian and political efforts. He served as vice-chairman of the Committee of Concerned Scientists, which works for freedom of scientists in totalitarian countries. He has also worked for the freedom of all people who experience persecution. Part of his Nobel Prize money was donated to organizations that work to protect young people and Jewish immigrants.

In 1998, Penzias officially retired, but did not stop working. He now serves as an advisor for various companies in Silicon Valley that work on developing new technologies.

Observational proof of the Big Bang was one of the key moments that led to the widespread acceptance of this controversial idea. Although there are still people who refuse to believe this theory, more and more observational evidence has accumulated that continues to confirm the basic premise that our universe had a beginning. Our understanding of the universe and our origins has been enhanced by the work of Arno Penzias. For that, we honor him.

### Resources:

Arno Penzias Biography

<http://www.nea.com/Partners/Bios/Menlo/APenziasBio>

Penzias, Arno Allen

<http://www.infoplease.com/ce6/people/A0838219.html>

MediaMente: Arno A. Penzias

[http://www.mediamente.rai.it/mediamentetv/learning/ed\\_multimediale/english/bibliote/biografi/p/penzias.htm](http://www.mediamente.rai.it/mediamentetv/learning/ed_multimediale/english/bibliote/biografi/p/penzias.htm)

Nobel Laureate Arno Penzias Retires After 37 Years at Bell Labs by Gordon Bishop

<http://www.bell-labs.com/user/feature/archives/penzias/>

## HOT FLASH

(As I said, this is not one of my thinking days.)

by Jerry Lappin

I was thinking the other day (at my age you're lucky if you can think every other day), Anyway I was thinking (No, today is not one of my thinking days). As I was saying I was thinking of how astronomy has changed since I first met the stars early in the last century.

The cosmic zoo has many new members such as quasars, pulsars, black holes, extra-solar planets, brown stars, radio stars and galaxies, microwave bursters, X-ray bursters, ultraviolet bursters and maybe bursters of other strange colors. In our own solar system a new planet, Pluto, has been added and subtracted so many times I'm not sure what it is at the moment and there are so many new moons that you couldn't count them on the total number of fingers and toes of all the members of BMAC. These are indeed changes that boggle the mind but there is another change that has taken over astronomy so subtly that it seems hardly noticeable. Back in those long gone days astronomy was almost completely based on the detection of photons from some celestial object by the rods and cones of the human eye. To be sure, photography involving those photons reacting with silver halides had begun to play a small part in studying distant galaxies or in observing the sun or the moon. However, most significant astronomical research still required a discerning eye glued to the eyepiece of a telescope. Many of the most successful astronomers had unusually sensitive and acute sight. Percival Lowell is a good example. He could perceive markings that no one else could see. Today, good eyesight is almost irrelevant to the practice of astronomy. The little silicon chip sees everything and the computer tells what the chip has seen. The astronomer is out on the golf course waiting for the computer to e-mail his Palm Pilot with the results. It's lucky we still have amateur astronomers else those ancient photons from far distant places would never be seen at all.

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**From the President**, continued from Page 1

We now have name badges for most of our members. We did not have all of them completed at the last meeting, but there should be one for each member at the next meeting. We do ask that you remember to turn yours in at the end of the meeting. Donna Schot has agreed to assist in getting everyone signed in and given a name tag, as well as taking them up after the meeting.

Our committees have continued to meet. The Dark Sky Committee, under the chairmanship of Powell Hall, now has a regular meeting time and place each month. The Membership Committee held its first meeting, and agreed on a regular time and place for each monthly meeting. The Long Range Planning Committee continues to meet and work on plans for the future of BSAS. If you have ideas, let Dennis Williams, chair of the committee, know about them. Of course, the ALCON 03 Committee is meeting often, for preparation time is running out. There are several positions yet to be filled, so we are asking all of our members to volunteer for one or more of them, in order to make the convention a success.

Incidentally, the Membership Committee is formulating plans to implement the mentoring program. Various ideas were shared, and hopefully the committee will have a recommendation in a month or so. If you are asked to serve as a mentor, please accept the challenge, and know that you are providing one of the greatest services any of us can perform for the BSAS, that of helping our new members get started right in amateur astronomy. To you who are new members, and particularly to those who are new to astronomy, please bear with us. We are working on the program, and Tom Murdic, Membership chair, is determined to have a good and workable program soon.

The schedule of events which the BSAS will sponsor or participate in, was adopted by the membership, based on the recommendations of the board of directors. This is an ambitious schedule, and will require the participation of a very large number of members. You do not have to take part in every event, but you do need to sign up for several, in order to spread the word around. Remember that one of the goals of BSAS, as set out in our corporate charter, is the support and encouragement of amateur astronomy. We do some of that by our outreach programs, such as assisting in public nights at Dyer Observatory. These are actually fun events, for it gives us a chance to share some our enthusiasm with other people.

Remember that one of the advantages of being in a club like the BSAS is that we can get together to observe, to share, and to enjoy each other's company. In other words, to have fun. We want our BSAS activities this year to be fun for those who participate.

## Regular Meeting of the Barnard-Seyfert Astronomical Society Board of Directors on March 6, 2003

The meeting was called to order by President Joe Boyd at 7:12 PM on Thursday March 6, 2003 at the Jefferson Square Clubhouse. A quorum was present consisting of board members Mike Benson, Joe Boyd, JanaRuth Ford, Bill Griswold, Powell Hall, John Harrington, Kris McCall, and Evelyn Wright. Board members John Bradford, Bill Collins and A.G. Kasselberg were absent. Rocky Alvey, Tom Murdic, Lonnie Puterbaugh, Bob Rice, Larry Southerland, Jill Thompson, and Dennis Williams attended as guests.

The minutes of the February board meeting were approved as published in the March issue of "The Eclipse". As the treasurer was not present, there was no treasurer's report. Joe Boyd distributed lists of committee members to various committee chairs present. Rocky Alvey discussed ongoing changes at Dyer Observatory. Dyer public nights will be on the second Thursday and fourth Friday of the month. Scout nights will be on the fourth Thursday. Several committee reports were given, including ALCON 2003, Long Range Planning, Equipment, and Dark-Sky.

Under old business, TNSP 2002 Committee Chair Rocky Alvey reported that all TNSP 2002 expenses have been paid. It was not determined whether a BSAS membership list had been provided to the International Dark Sky Association. No IDA newsletter or notices have been received by anyone.

Under new business, Powell Hall moved that the club support the binocular star party at Edwin Warner Park Nature Center on April 4. John Harrington seconded the motion which passed. Kris McCall moved that the club support the star parties at the Renaissance Center and Long Hunter State Park on May 10. John Harrington seconded the motion which passed. JanaRuth Ford moved that the regular club meeting for May 15 be held at Adventure Science Center to take advantage of its western horizon for the total lunar eclipse. Powell Hall seconded the motion which passed. Kris McCall needs to know if Astronomy Day speaker Brad Carlson is needed for the DeWitt Lecture the day after Astronomy Day.

Powell Hall moved that the board recommend to the BSAS membership that the BSAS support Dyer Observatory's public and scout nights for 2003. Bill Griswold seconded the motion which passed. John Harrington moved that BSAS membership meetings be held as normal at Dyer Observatory until further notice with the exception of the May 15 meeting which will be held at Adventure Science Center. Powell Hall seconded the motion which passed. John Harrington moved that there be a resolution to thank Adventure Science Center for allowing the BSAS to meet there for the past three months. Powell Hall seconded the motion which passed.

Evelyn Wright tried to make a motion requiring that a motion be read at two subsequent regular board meetings before calling for a vote on that motion if it required the disbursement of \$200 or more in order to allow time to consider the motion's practicality and alternatives. Joe Boyd declared that such a motion would bind the board and would have to be accomplished through a change of the bylaws. Powell Hall moved to rescind the previous month's motion to buy the Panorama database software package. Kris McCall seconded the motion which passed unanimously.

Bill Griswold noted that there were very few opportunities for the BSAS to get together to just enjoy the night sky. John Harrington moved that the BSAS adopt the event schedule prepared by Joe Boyd for the rest of the 2003 calendar year. Bill Griswold seconded the motion which passed. A copy of the schedule is attached to these minutes.

With no objection, Joe Boyd declared the meeting adjourned at approximately 10 PM.

Respectfully submitted,  
Evelyn Wright, Secretary

## Upcoming Events

## 2003

- 4/3 BOARD MEETING, 7 pm at Jefferson Square Condominiums  
 4/4 Binocular Star Party, 7-9 pm at Warner Park Nature Center  
 4/17 BSAS MEETING, 7:30 pm at Dyer Observatory  
 4/25 Public Stargaze, 8-10 pm at Edwin Warner Park model airplane field  
 4/26 Astronomy Day at Adventure Science Center
- 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, 7 pm 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

### 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	Dudly Pitts 615-837-2696

## Minutes of Regular Monthly Membership Meeting of Barnard-Seyfert Astronomical Society on March 20, 2003

The meeting was called to order at 7:42 PM on Thursday, 20 March 2003 by President Joe Boyd in the Dyer Observatory's library. About 37 members and visitors were present. Joe Boyd welcomed new members and visitors, and all were encouraged to update their phone numbers and addresses on the circulating attendance list.

The minutes of the February meeting as published in the March issue of "The Eclipse" newsletter were approved. Treasurer A.G. Kasselberg noted that the club savings account has \$4829.99. Money has been allocated for TNSP 2003 telescopes. Rocky Alvey's final report per Joe Boyd on TNSP 2002 was "All bills are paid."

Lloyd Watkins related that speakers are being lined up for TNSP 2003, September 26-28, and that there will be items of interest for both beginning and advanced amateur astronomers.

Mike Benson discussed plans for ALCON 2003 which is scheduled for July 8-12, 2003. Any club members wanting to volunteer for the following positions should contact Mike Benson immediately.

- Registrar

- Printed program design

- Advertising packet design, stuffing, mailing

- Promoters to contact regional clubs

- Registration packet design, stuffing

Any club members wanting to volunteer for the following event positions (several two-hour time periods each day are available) should also contact Mike Benson as soon as possible.

- Security on opening and closing each day.

- Registration desk

- Ushers

- Hospitality room attendant

- Speech introducers

- Audio/visual/laptop wrangler

- Conference report writer

Chuck Schlemm asked about scheduling volunteer time around the speakers and workshops he wanted to attend, and Mike asked that the latest tentative schedule of speakers be posted on the website ([www.bsasnashville.com/alcon2003.htm](http://www.bsasnashville.com/alcon2003.htm)).

Dark Sky Committee Chair Powell Hall noted that Dark Sky Week is April 1-8, and, while the committee hopes to do something for Dark Sky Week next year, this year it is educating itself about light pollution and how to reduce it.

Messier Marathon organizer Lonnie Puterbaugh noted that March 29 & 30 is the last attempt for the marathon this year at the regular BSAS dark sky site at Natchez Trace. Lonnie will post a message on the tnastronomy Yahoo newsgroup on the internet if the event is cancelled. If it goes, members are encouraged to have their equipment set up before sunset, and Lonnie will provide lists of the Messier objects in an order conducive to catching all 110 in the same night.

Under announcements, Joe Boyd reminded the group that the April meeting will be at Dyer Observatory. Except for the May 15 meeting at The Adventure Science Center, (total lunar eclipse), regular meetings will be held at Dyer Observatory until the December potluck dinner (also to be held at ASC). Joe Boyd went through the schedule of meetings and public events recommended by the board of directors for adoption by the club. Steve Yarbrough's motion that the schedule be adopted by the club was seconded and passed.

At 8:31 PM, John Harrington introduced two BSAS members who presented the night's program. Lloyd Watkins showed how to photograph astronomical objects with a home-made barn door tracker, a 35-mm camera, and a baseball cap. He also demonstrated the various connectors used to attach a camera to an SCT telescope. Lloyd passed around several extremely clear pictures of lunar features, and volunteered to work with people on Thursday nights at Dyer Observatory (give him at least a week's notice) to get started with film or digital astrophotography. At 8:57, Lonnie Puterbaugh gave an overview of webcam imaging of solar system objects, which can be done for the cost of the webcam, an adaptor and processing software (assuming a telescope and computer are already available). An advantage of webcam imaging lies in its ability to take 15 frames per second, of which only the good ones are stacked into a single image. Lonnie emphasized that collimation, clean optics and a good focuser were required for worthwhile images. Lonnie displayed both his and others' images which were quite good.

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

Respectfully submitted,  
Evelyn Wright, Secretary

### DIRECTIONS TO THE NEW BSAS DARK-SKY SITE

- Go west on Old Hickory Blvd. from I-65, 4.5 miles to Hillsboro Rd. Go south on Hillsboro Rd. for 3.4 miles to Highway 46 and turn right. You will see Grassland Elementary school on the left as a landmark.
- Follow Highway 46 for 5.8 miles to Highway 96 and a flashing red light.
- Continue straight on Highway 46 for 6.0 miles through Leiper's Fork to a right turn just outside of town, to stay on route 46.
- Continue on Route 46 for 0.9 miles to Natchez Trace Parkway.
- Follow the entrance ramp to the Parkway and turn right, toward Tupelo, Mississippi.
- Follow the Parkway for 17.2 miles, passing Old Trace and Burns Branch, to the "Water Valley" overlook at Mile Marker #412. Our site is the parking area.

(THIS NEW SITE IS 12 MILES FARTHER SOUTH PAST THE OLD SITE WHICH WAS AT MILE MARKER #424)

### Astronomical League Convention Speakers (July 9-12, 2003)

Here is the list of speakers for the ALCon convention, as of April.  
(More exciting ALCon news in future issues)

Michael E. Bakich,	Astronomy Magazine's Amateur Editor
J. Kelly Beatty,	Sky & Telescope Magazine's Exec Editor
Richard Berry,	ISS-AT, CCD Imaging
Dr. Richard Chappell,	Sun-Earth Connection
Dr. Todd Gary,	Astrobiology
Bob Gent,	President, Astronomical League, Night Skies Prof.
Greg Henry,	Extrasolar Planets
Tim Hunter, M.D.,	Light Pollution
ISS-AT Team,	Alpha Telescope Update
Dr. Philip Kaaret,	Looking at X-rays from Black Holes with the Chandra Observatory
Dr. Rob Knop,	Supernovae
Dr. Lou Mayo,	Titan/Cassini
Rod Mollise,	Past, Present and Future of the SCT
Dr. C. Robert O'Dell,	Star Formation, Proplyds in the Orion Nebula
Dr. Sten Odenwald,	Patterns in the Void
Dr. Don Parker,	CCD Imaging of Mars
Lonnie Puterbaugh,	Video Observing and Imaging
Dr. Michael D. Reynolds,	Falling Stars- Meteors & Meteorites
Dr. Michael Rich,	Next Generation Space Telescope
Dr. Richard Schmude,	ALPO/Jupiter Section
Dr. Martin Weisskopf,	Chandra X-Ray Observatory
Ron Wodaski,	CCD Imaging

**Activities & Events**

April 1 – April 30, 2003

- 4/1 NEW MOON
- 4/3 BSAS Board meeting, 7:00
- 4/5 Private Star Party, Natchez Trace site
- 4/6 Daylight Saving Time begins.
- 4/7 Conj., Moon & Saturn
- 4/9 FIRST QUARTER
- 4/11 Conj., Moon & Jupiter
- 4/16 FULL MOON; Mercury at greatest eastern elongation
- 4/17 BSAS meeting, 7:30 p. m. at Dyer Observatory
- 4/20 Easter Day
- 4/21 Lyrid meteors
- 4/22 Lyrid meteors; Earth Day
- 4/23 LAST QUARTER; Conj., Moon with Mars & Neptune
- 4/25 Conj., Moon & Neptune; Public Star Party at Warner Park, 8-10 p. m.
- 4/26 ASTRONOMY DAY 2003, at Adventure Science Center
- 4/28 Conj., Moon & Venus

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
- 5/10 Public Stargaze, 8-10 p.m. at the Renaissance Center
- 5/13 Conj., Mars & Neptune
- 5/15 FULL MOON; Total eclipse of Moon; 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

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