



# ECLIPSE



*The Newsletter of the Barnard-Seyfert Astronomical Society*

April 2001

## PRESIDENT'S MESSAGE

### Some facts:

- 1) It is April.
- 2) The Tennessee Star Party 2001 (TNSP2001) is October 18-21.
- 3) We have six months (about 180 days) to make TNSP2001 a success.
- 4) Rocky (or anyone else) can't do this alone.

This is not difficult work, just a lot of small things. The immediate needs are:

1) Food and Menu Committee We must decide now what meals we are going to serve and how much it will cost us. We can't start advertising until we have a price and we can't set a price without food decisions. This doesn't mean you have to cook, serve, and clean up; we will press everyone into service then. The Threat if we can't get 6 or 8 members to work on this now, I will do it. Be warned, I am a 135-pound peanut butter and jelly man. If you don't offer to help, don't complain about the food!!

2) Speakers, Events, and Vendors Committee We need another 6 or 8 members to contact speakers, vendors, and teacher/demos (i.e., ATM etc.). Once again, it isn't hard but must be done now or we will be too late to get on other's schedules.

3) Advertising and Promotion Committee We need to design a logo, create a website, contact publications, clubs and last year's attendees, and answer email questions as they come in. It is obvious that this needs to be done now.

Email or call Rocky (r.alvey@vanderbilt.edu or 373-4897) and volunteer

The Messier Marathon was a success in enthusiasm if not observing. I'm sure Lonnie will provide the details at the next meeting but, in short, about 25 members showed up despite sub 20-degree wind chill and clouds. (John Bradford and Lonnie were at the same site 6 days earlier and observed 40 Messier objects in two hours.) Next year will be better!!

Lonnie Puterbaugh, vice president, will run the April meeting since I will be out-of-town. Don't miss Astronomy Day including Dr. Frank Drake of Search for ExtraTerrestrial Intelligence (SETI) fame and Dr. Mitzi Adams, a solar scientist at NASA.

A.G. Kasselberg

### MAGAZINE SUBSCRIPTIONS FOR BSAS MEMBERS 2000

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:

Powell S. Hall, Treasurer  
4343 Lebanon Rd., T-1618  
Hermitage, TN 37076-1223

### 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:

Powell S. Hall, Treasurer  
4343 Lebanon Rd., T-1618  
Hermitage, TN 37076-1223

## HAPPENINGS & EVENTS

### April 1 - May 17, 2001

#### 4/1 FIRST QUARTER

4/6 Conj., Mercury and Venus

4/7 FULL MOON; Passover begins at sunset. Weather Spotter Class at Dyer Observatory 11:00a.m. - 12:30p.m.

4/12 Conj., Mars and Moon; Dyer Observatory Public Night

4/15 Easter Day

4/16 Conj., Neptune and Moon

4/17 Conj., Uranus and Moon

4/19 BSAS monthly meeting, 7:30 p.m., Dyer

4/20 Conj., Venus and Moon

4/21 Private Star Party, Natchez Trace site

4/23 NEW MOON; Mercury at superior conj.

4/25 Conj., Saturn and Moon

4/26 Youth Night at Dyer 7:30 p.m. - 9:30 p.m.; Conj., Jupiter and Moon

4/28 Astronomy Day, BSAS members help with astronomy exhibits at C.S.M.

#### 4/30 FIRST QUARTER

5/4 Venus gr. brilliancy

5/7 FULL MOON; conj., Mercury and Saturn

5/10 Conj., Venus and Moon; Public Night Dyer Observatory

5/13 Conj., Neptune and Moon

5/15 LAST QUARTER; Conj., Uranus and Moon

5/16 Conj., Mercury and Jupiter

5/17 BSAS meeting, 7:30 p.m. at Dyer

The Eclipse Newsletter  
Editor: Powell S. Hall  
powell.hall@worldnet.att.net

### BSAS Officers:

A.G. Kasselberg, President  
Lonnie Puterbaugh, Vice President  
William A. Hayden, Secretary

Powell S. Hall, Treasurer

Board of Directors

Kris McCall, Ch.

Mike Benson

Douglas Hall

Curt Porter

Lloyd Watkins

Logo Photograph:

Francisco Diego

## MINUTES OF 15 MARCH 2001 BSAS MEETING AT DYER OBSERVATORY

President A.G. Kasselberg called the meeting to order at 7:30 P.M. Visitors were introduced. The March Eclipse was e-mailed to those who had requested such, and A.G. passed a list for those wishing to receive it by e-mail in the future.

Treasurer Powell Hall reported a balance of \$3397.32. He still has some 2001 Observer's Handbooks and Astronomy calendars available.

Mike Benson requested the members to update their addresses for his report to the Astronomical League, and brought a copy of the League's merchandise catalogue.

Rocky Alvey asked for volunteers for TNSP 2001. He wants to meet with the food committee soon, as plans in this area will affect other aspects of the event.

Janaruth Ford spoke of Astronomy Day on April 28 at Cumberland Science Museum, to feature Frank Drake and Mitzi Adams as speakers. Star Parties are scheduled for March 31 at Long Hunter Park, April 27 at the model airplane field in Edwin Warner Park, and April 28 at the Renaissance Center. There may be some logistical problems due to Renaissance Center personnel changes.

Vice President Lonnie Puterbaugh enthusiastically mentioned our March 24 Messier marathon at Water Valley Overlook, and the Mid-South Star Gaze April 18-22 at French Camp, MS. Sleeping tents can be set up at the latter event, which featured several high quality telescopes last year.

Key holders for the C-14 scope at Dyer are now in training; more details soon to follow.

The evening's program featured Mike Benson displaying and describing charts and publications for finding celestial objects. He particularly recommended "The Observer's Sky Atlas" by E. Karkoschka, and "Sky Atlas" by W. Tirion and R.W. Sinnott.

Meeting adjourned 8:45 P.M.

### APRIL MEETING LOCATION

*The April meeting will be held at Dyer Observatory*

### Astronomy Day

Space - Is anybody out there? Come find out at the Cumberland Science Museum on Astronomy Day, April 28, 2001! Our featured guest will be astrophysicist Dr. Frank Drake, professor of astronomy and astrophysics at the University of California, Santa Cruz. Dr. Drake is best known as the father of SETI - the Search for ExtraTerrestrial Intelligence. He was the first to use a radio telescope to search for intelligent life beyond Earth. Come hear him speak about the continuing work of those searching the heavens for signs of intelligent communications. Solar astrophysicist Mitzi Adams of NASA's Marshall Space Flight Center in Huntsville, Alabama, will also be speaking at the Museum. But, that's just the beginning! Do you want to know all about telescopes? Members of the Barnard-Seyfert Astronomical Society will be on hand for discussions and demonstrations. Learn about living and working on the International Space Station during our Star Station One presentation. Check out astronomy related software in the computer lab. There will activities and displays throughout the Museum and special programs in the Sudekum Planetarium. So, mark your calendars now! Come and celebrate Astronomy Day at the Cumberland Science Museum on April 28, from 11 am to 4 pm.

### Astronomy Nights

In addition to Astronomy Day, there will be two FREE public star parties - Astronomy Nights. The first will be held on Friday, April 27, from 8:00 to 10:00 p.m. at the model airplane field in Edwin Warner Park. Admission is free, but reservations should be made by calling the Nature Center at 352-6299. The second star party will be at the Renaissance Center in Dickson on Saturday, April 28, also from 8:00 to 10:00 p.m. At both star parties, the Barnard-Seyfert Astronomical Society will set up telescopes for viewing the Moon, Jupiter, Saturn, the Great Orion Nebula, and more. Astronomy Day is joint effort of the Barnard-Seyfert Astronomical Society, Cumberland Science Museum and Sudekum Planetarium, and the Warner Park Nature Center. Thanks to them and our wonderful volunteers for making Astronomy Day great for everyone!

## Schedule at Sudekum Planetarium April 2001

### Worlds In Motion

Two media conglomerates, the Know-It-All Network and the All-Star Station, have set Worlds In Motion with aggressive new campaigns so fast-paced that even a couch potato won't be able to sit still. From the atoms in the air to the dance of the planets, the programming will address such topics as Ptolemy vs. Copernicus, Newton's First Law of Motion, simple celestial mechanics, and even late winter and early spring constellations.

#### Skies Over Nashville

Skies Over Nashville is a LIVE program in the Planetarium devoted entirely to what is visible in the current night sky. We'll talk about and point out the constellations and planets along with other items of special interest.

#### Our Place In Space

This program is especially designed for the younger members of our audience. Trying to solve a crossword puzzle about the sky, a host of endangered animals explore the cause of day and night, the importance of our star the sun, the beauty of the constellations, and the variety of objects that make up the Universe.

### Tuesday through Friday

Worlds In Motion 3:15

#### Saturday

Worlds In Motion 11:00

Skies Over Nashville 1:00

Our Place In Space 2:30

Worlds In Motion 3:30

#### Sunday

Our Place In Space 1:30

Worlds In Motion 3:30

### April 2001 Editorial Passover and Easter

One of the most important holidays in the Jewish and Christian religions is determined by both the Sun and the Moon. The Christian Easter is the Jewish Passover with certain additional developments. (Some languages indicate this identity; the Latin word for Easter is PASCHA, for example.)

First, Passover. In the Jewish calendar, which is composed of actual lunar months, Passover occurs at the time of the full Moon in the first month of spring. This month is known as Abib or Nisan. And spring, of course, happens when the Sun crosses the celestial equator on its way north each year. In 2001, Passover is April 8, the date of the Full Moon, Jerusalem Time.

Easter. This most important day of the Christian calendar is Passover plus certain requirements, such as that it fall on the first day of the week, i.e., a Sunday. In western Christianity, both the vernal equinox and the full moon are determined not by astronomical observations in a given year but rather according to a traditional date for the equinox, March 21, and a recurring table of full-moon dates in a nineteen-year cycle. One finds the year of the cycle by adding one to the year and dividing the sum by nineteen. Thus, 2001 is the seventh year of the cycle. Between 1900 and 2199, the seventh year of the cycle falls on April 8, which happens to be the true astronomical full moon. But the rule sets Easter on the Sunday after the full moon. So when the full moon happens on Sunday, as in 2001, Easter is the next Sunday. This year Easter Day is April 15. In previous years, Orthodox Easter would occur a week to a month later than western-church Easter. Beginning this year, they coincide.

So, Passover this year is Sunday 8 April; Easter is Sunday 15 April. Because a day in the Jewish calendar begins at sunset, the Passover will begin Saturday when it gets dark, on April 7 in the common calendar. That is when Jewish families will have the Seder.

The Moon is always full at Passover; it is usually waning at Easter (last quarter moon, in 2001).

Have a good Passover, a happy Easter!

### HOT FLASHES

by Gerald Lappin

Again science has come to the rescue. As you may know the schedule called for all earthly life to end in about 3.5 billion years when the sun would become about 40% brighter than it is now. A nasty future to face but now you can forget about it. The plan is to begin slowly moving the earth farther from the sun in a couple of billion years. Rather than build huge rocket engines this would be done by shooting a large asteroid past the earth to give it a little tug in the right direction. They calculate that a million such passes would move the earth's orbit out 41 million miles. By giving the earth a kick every six thousand years or so the climate would stay relatively unchanged for 5 billion years. This sound all very well and good but haven't they overlooked the fact that the solar system is sort of a round dance with partners of varying obesity. If one gets out of step what will happen to the pattern of the dance? Any of you celestial mechanics out there might do some calculating about this. Of course there might be some desirable side effects. By that time Mars would likely be colonized so it would be an act of friendship if, while passing by, we picked up the former red, now green, planet as a large moon to go along with the one we now have. Other, easier, pickups might be a number of asteroids to add even more lunar glory. On the down side those future navigators would have to be very careful not to close in on Jupiter. If the earth were to be captured by that giant planet our trip to deeper space would stop right there for I doubt that we could nudge old Jove out of his present orbit. This might result in cutting a billion years or so off our life expectancy. Considering that eventually the sun's transformation into a red giant would get us anyway, is it really worth the effort?

#### NEW DIRECTIONS TO 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. Our site is the parking area.

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

**Deadline for articles and news items for May ECLIPSE: 26 April one week after the monthly B.S.A.S. meeting**

## Happy Birthday Bart Bok by Robin Byrne

This month we celebrate the life of a man who helped us to better understand our galaxy and the formation of stars, and who enjoyed sharing his discoveries with all the people. Bartholomeus Jan Bok was born April 28, 1906 in Hoorn Holland. His interest in astronomy began at an early age, and by the time he was 13, he knew he would be an astronomer. While in high school, Bart was active in an astronomy club and wrote an astronomy article for The Hague's newspaper.

In 1924, Bart Bok entered the Sterrewacht in Leiden to study astronomy. Among his teachers were Ejnar Hertzsprung and Jan Oort. In 1927, he began his graduate work in Groningen. The following year, Bok attended the Third General Assembly of the International Astronomical Union, where he met two people who would change his life. First, he met Harlow Shapley, whom Bok had admired since childhood. Shapley invited Bok to come to Harvard to continue his graduate work, which he did the next year. Second, Bart met Priscilla Fairfield, an American astronomer. After much persuasion on Bok's part, they married on September 9, 1929, only two days after Bok arrived in the United States. Bok completed his PhD in July of 1932.

Bart Bok stayed on at Harvard for the next 25 years. While there, his research concentrated on the structure of the Milky Way. He and Priscilla worked together as a team on such areas as the structure and evolution of star clusters and mapping the spiral arms of the Milky Way. His study of interstellar gas and dust led to studying star formation. In particular, Bok was interested in small dark nebulae where star formation occurs. These dark regions are now known as Bok globules. While at Harvard, Bok initiated a program in radio astronomy, which he also promoted elsewhere. Bok helped to establish the National Radio Astronomy Observatory program.

Bok enjoyed teaching both undergraduate and graduate courses. He especially enjoyed the introductory level courses, where his enthusiastic teaching style grabbed the attention of several students who went on to major in astronomy. Bok felt it was important to popularize astronomy and make it accessible to everyone. In 1941, Bart and Priscilla published their book, "The Milky Way."

In 1955, Bart and Priscilla moved to Australia, where Bok was given the position of director of the Mount Stromlo Observatory. Here, he encouraged work in both the radio and optical wavelengths and oversaw the establishment of the Anglo-Australian Observatory at Siding Springs. Bok also established the Graduate School of Astronomy at the university. Bok's presence attracted a number of American scientists to do their research in Australia, including Walter Baade, Harlow Shapley, Paul Hodge, and a former professor of mine and Adam's, Frank Bradshaw Wood, who was known to start a story with the immortal line, "I remember back in Australia..."

In 1966, Bart and Priscilla returned to the United States, where Bok took the position of director of the Steward Observatory at the University of Arizona. Here he continued working on regions of star formation. After Priscilla's death in 1975, Bok cut back on many of his activities. He was finally brought back into action as he became involved with the development of what was then called the NASA Large Space Telescope, but which we now know as the Hubble Space Telescope. This was Bok's last big project. Bart Bok died August 5, 1983 at the age of 77, although he was very active and continued to be involved with research up to the very end.

When I was in graduate school, "Bok and Bok" was synonymous with all there was to know about galaxies, and their writings were considered required reading for any respectable galaxy course. Although Bart and Priscilla brought so much new knowledge about our Milky Way to the scientific community, like so many successful scientists, Bok felt that an equally important part of his career involved bringing astronomy to all the people, not just the academics. In many ways his last project, the Hubble Space Telescope, embodies Bok's philosophy and life. HST has brought about a tremendous amount of scientific understanding about our own galaxy, as well as others. But the images from Hubble have also made astronomy accessible to the general public by sharing the beauty of our universe and the mysteries that make astronomy so enjoyable. I think Bart Bok would be very pleased.

### References:

Bright Sparcs-The 1997 Australian Science Festival Important Scientists Web Page

[http://www.asap.unimelb.edu.au/bsparcs/other/asf\\_scientists.htm#bart](http://www.asap.unimelb.edu.au/bsparcs/other/asf_scientists.htm#bart)

Nat'l Academy Press, Biographical memoirs (1994), pages 72-94, in chapter Bart J. Bok

<http://books.nap.edu/books/0309049784/html/72.html#pagetop>