



# ECLIPSE



*The Newsletter of the Barnard-Seyfert Astronomical Society*

April 2002

## President's Message

As I wrote up the "Happenings & Events" for April, I noticed how the middle of the month has a series of conjunctions of the Moon with four of the five naked-eye planets. Between New Moon on April 12 and Astronomy Day on April 20, the Moon will be near Venus, Mars, Saturn, and Jupiter. All these conjunctions will be visible if the sky is not too cloudy, in the first few hours of the night. Venus, bright and low in the west, will be close to the crescent moon when darkness falls on April 14. Leaving Venus, the Moon moves on to Mars, on April 15, like a bee going from one bloom to the next seeking nectar. On April 16 the waxing moon passes Saturn, which is already near Aldebaran in Taurus. This trio-Aldebaran, Saturn, and the Moon-will present a nice picture. Then the Moon moves to the western edge of Leo to be in conjunction with Jupiter.

For beginners, it helps to be sure which planet one is looking at when the Moon is closest to it. The Moon passes every planet every month but seldom passes four of the brightest in five days.

Recently reported, a half-mile in diameter asteroid may be on a collision course with the Earth (or it may miss)-878 years from now!

From my bed at St. Thomas Hospital,

## HAPPENINGS & EVENTS

April 1 - April 30, 2002

- 4/3 Seyfert Lecture at Vanderbilt Campus
- 4/4 LAST QUARTER MOON; Dyer Open House 11:00 A.M. - 1:00 P.M.
- 4/6 Conjunction, Moon & Neptune; Private Star Party - Natchez Trace Site
- 4/7 Conjunction, Moon & Uranus
- 4/11 Dyer Observatory Public Night 7:30-9:30 P.M.
- 4/12 NEW MOON
- 4/13 Private Star Party - Natchez Trace Site
- 4/14 Conjunction, Moon & Venus
- 4/15 Conjunction, Moon & Mars
- 4/16 Conjunction, Moon & Saturn
- 4/18 Conjunction, Moon & Jupiter; **BSAS Meeting at Dyer Observatory, 7:30 p.m. Speaker Joe Boyd, Topic The DeWitt Telescope**
- 4/19 Public Star Party, Warner Park 8-10:00 P.M.
- 4/20 FIRST QUARTER MOON; **ASTRONOMY DAY** at Cumberland Science Museum 11:00 A.M. - 3:00 P.M.; Public Star Party at Renaissance Center in Dickson 8:00 - 10:00 P.M.
- 4/21 DeWitt Public Lecture in Astronomy at Dyer Observatory, 2:00 P.M.- 3:00 P.M.
- 4/25 Youth Night at Dyer Observatory 7:30-9:30 P.M.
- 4/26 FULL MOON

**On behalf of The BSAS Membership and Dyer Observatory, I would like to wish our President, Powell Hall, a speedy recovery from his recent open-heart surgery. Take care Powell. We are anticipating a vigorous return to active astronomical duty.**  
Rocky Alvey

### 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  
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**Minutes of Regular Monthly Membership Meeting of Barnard-Seyfert Astronomical Society on March 21, 2002**

Vice President John Bradford called the meeting to order at 7:30 pm on Thursday, 21 March 2002 in the library of Dyer Observatory. Approximately 30 members and 12 visitors were present. John expressed his hopes that President Powell Hall's recovery from his recent heart attack would be quick, and that he is in everyone's thoughts. No additions or corrections were made to the minutes as printed in the March Eclipse newsletter.

JanaRuth Ford reported that public star parties have resumed during March, and the last one was not well attended by BSAS volunteers. A sign-up sheet for specific nights was passed around.

Treasurer A.G. Kasselberg reported that there was \$1681.78 in the BSAS account, and \$2600 in certificates of deposit. A.G. noted that those who used to have home.com as their email address were automatically changed to comcast.net, and to contact him with problems. "Sky & Telescope" magazine subscription renewals are coming up, and some membership dues are overdue. A.G. will be sending out notices soon.

Under old business, Mike Benson gave several publications to A.G. that are for sale by the club. "Herschel Objects" is \$7.00, "Observe and Understand the Sun" is \$15.00, and "The Universe Sampler" is \$8.00.

Rocky Alvey reported that TNSP 2002 will be October 4-6 at Camp Nakanawa near Monterey, TN. Richard Berry will be one of the speakers, and other activities include a demonstration of the test ISS-AT telescope and building your own telescope.

Kris McCall described the Astronomy Day 2002 Event Plan, and encouraged anyone with any kind of presentation to let her know so that she can arrange space for it. Kris announced the \$750 contribution by Dyer Observatory to the Astronomy Day effort at Cumberland Science Museum, and that contributions are always appreciated. Chuck Schlemm needs to know who will be volunteering for the public star party that night at the Renaissance Center so that he can arrange for free tickets to the laser and planetarium shows.

ALCon 2002 hotel applications have been received, and Mike Benson will report back when they have been processed. Mike needs volunteers to chair the food and programs subcommittees. The publicity and housing subcommittees already have chairmen. Mike expects once-monthly meetings in groups of 6 people to start soon.

Dr. Hall re-iterated the need for volunteer help on public nights at Dyer Observatory and distributed the Dyer Observatory 2002 Schedule.

The Middle Tennessee Science and Engineering Fair will be held starting at 4:30 on April 4, 2002. If anyone is interested in being a judge of astronomy projects (food is provided), contact Mike Benson. He noted that three cash prizes are possible, and that student members of BSAS should begin thinking about participating in the fair in the future with an astronomy project.

It was noted that there will be a vote at the April club meeting on whether the bylaws of the club should be amended to add the officers to the board with the right to vote on board decisions.

At 8:15 pm, Joe Boyd introduced the program speaker Tut Campbell from Arkansas who demonstrated how he uses a CCD camera and software to take images of variable stars. Data gleaned from his images have been used by astronomers to detect and categorize variable stars, and Tut's name has appeared with articles documenting these findings. At the end of the program, Tut invited those interested to join him in the C-14 observatory dome to see images being captured live.

The meeting adjourned at 9:22 pm.

Respectfully submitted,  
Evelyn Wright, Secretary

### 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

### Sudekum Planetarium at the Cumberland Science Museum

**April 1 through 30, 2002**

**Tuesday through Friday (except April 30)**

3:15 Lunar Odyssey

**Tuesday, April 30, 2002**

3:15 Planet Patrol: Solar System StakeOut

**Saturday (except April 20)**

11:30 Lunar Odyssey

1:00 Skies Over Nashville

2:30 Lunar Odyssey

3:30 Galaxies

**Saturday, April 20, 2002**

11:00 Lunar Odyssey

1:00 Skies Over Nashville

3:30 Lunar Odyssey

**Sunday**

1:30 Lunar Odyssey

3:30 Galaxies

April 30 through May 4 is Space Day all week long. Space "Day" is actually May 2.

**May 1 through 4, 2002**

Wednesday through Friday

3:15 Planet Patrol: Solar System StakeOut

**Saturday, May 4, 2002**

11:30 Planet Patrol: Solar System StakeOut

1:00 Skies Over Nashville

2:30 Planet Patrol: Solar System StakeOut

3:30 Galaxies

**May 5 through 31, 2002**

Tuesday through Friday

3:15 The Explorers

**Saturday**

11:30 The Explorers

1:00 Skies Over Nashville

2:30 The Explorers

3:30 Galaxies

**Sunday**

1:30 The Explorers

3:30 Galaxies

#### What on Earth are these shows about ???

**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.

**Lunar Odyssey** From myths that tried to explain its changing appearance to the first telescope views of its rugged face, observers have long wondered: where did the Moon come from, and what would it be like to visit there? Climb aboard TransLunar 4 as experts discuss the mythology, history, geology, origin theories, and unique features of Earth's nearest neighbor in space.

**Galaxies** From our own Milky Way to the edge of observable space, renowned author Timothy Ferris leads the audience on a fascinating exploration of the very building blocks of the universe, Galaxies.

**The Explorers** This program focuses on the human spirit of exploration throughout time and space. By identifying constellations and studying changes in the sky as the observer's latitude changes, visitors discover how to navigate from Tahiti to Hawai'i - just as the Polynesians have done for thousands of years.

## HOT FLASH

by Jerry Lappin

Cancel that order for that aqua narrow pass band filter. Forget searching for pale blue-green objects. The cosmic color is not aqua but beige. The astronomers involved claim their data were correct but the computer used to calculate the color picked the wrong standard white. I'm not sure I want to live in a beige universe. What kind of a color is that anyway? What is the wavelength of beige light? Was I getting my inspiration from the beige paint on some of the walls of my pondering room instead of from the aqua tiles. That's a thought too depressing to dwell on. Have you ever observed a beige celestial object? Beige is just diluted mud color. So do we live in a universe made up of cosmic mud? Could be. We know that both water and dust are common ingredients of space. Mix them together and you, what else, mud. Perhaps the real meaning of this discovery is that astronomers depend too much on their computers and not enough on their common sense. Telescopes that point themselves are another case in point. Are you really seeing the galaxy or nebula you punched in? Maybe the computer just picked so object sort of like what you wanted, thinking that you would never know the difference. Do those strange clouds of dust and gas in deep space really exist or are they artifacts of the photo processing program. With powerful computers pushing pixels around, anything is possible, especially in a beige mud universe.

## Challenge of the Month

### Castor

This month's challenge can be found in the constellation Gemini. You will be looking for the fainter of the two stars known as the twins, Castor. Although a bit dimmer, our challenge stars have the Alpha designation of the constellation. If Beta Lyrae is known as the double-double, Castor's handle should be the double-double-double or the sextuplets. There are 3 sets of doubles each having a companion! When viewed through a telescope on a night of good seeing, the star splits into a pair that we designate as A and B which orbit one another with a period of 400 years. Off to the south a bit (73 arc seconds) is a fainter companion to the group, which is designated C. The A and B stars are a magnitude of 2.0 and 2.8 while C is about magnitude 9.5. All of these are locked in a slow dance orbiting a common center of mass.

Multiples are exciting to observe when we experience them with the eye of understanding. When you look through the eyepiece and split the pair, use your imagination to visualize what the huge solar nebula must have looked like as it divided to form this incredible star system.

Have fun.

Rocky Alvey

A second 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

### Meet the Bad Astronomer at the Sudekum Planetarium Astronomy Day, April 20, 2002

Just who is the Bad Astronomer, and is he really bad? A highlight of Astronomy Day 2002 will be the appearance of THE Bad Astronomer, Dr. Phil Plait, of Sonoma State University in California. He's not really a bad astronomer, but he is dedicated to clearing up popular misconceptions about astronomy. Come hear him talk about "Astronomical Myths and Misconceptions" at 12:00 p.m. and "The Moon Landing Hoax" at 2:00 p.m.. Visitors can also purchase, and have signed, copies of his brand new book, "Bad Astronomy: from Astrology to the Moon Landing 'Hoax'" The appearance of Dr. Plait is made possible by the generous support of Dyer Observatory and BSAS.

Then there is the Moon rock that will be on display outside the Sudekum Planetarium through May 27, 2002. Two meteorites will also be displayed on loan from the Lafayette Natural History Museum in Lafayette, LA.

With Dr. Plait and the Moon Landing 'Hoax', a Moon rock, and the new Moon Phase exhibit in the Planetarium lobby, the Planetarium staff has developed a serious case of Moon Madness Astronomy Day activities include activities, talks, and telescopes for all ages. These will take place throughout the Science Museum from 11 am to 3 p.m. Highlights of Moon Madness include:

- Ask an astronomer with Dr. Doug Hall of Vanderbilt University's Dyer Observatory;
- Activity stations for all ages: crater making, create-a-constellation, planet hopscotch, day and night paper plates, and space helmet construction;
- Outdoor display: safe solar viewing; a home-built radio telescope, and a scale model of the solar system;
- Indoor displays: how to get started in astronomy, the ins and outs of telescopes, and the International Space Station-Amateur Telescope Project.

As an added dimension to this stellar event, the Sudekum Planetarium will present two of its most popular programs: Skies Over Nashville and Lunar Odyssey. In addition to the daytime activities, two FREE public star parties are also scheduled. The first will be Friday evening, April 19, from 8:00 to 10:00 p.m., at the model airplane field at Edwin Warner Park. The second will be Saturday night, also from 8:00 to 10:00 p.m., at the Renaissance Center in Dickson, TN. Members of the Barnard-Seyfert Astronomical Society will provide breath-taking, telescopic views of Jupiter, Saturn, the Orion Nebula, and more.

Astronomy Day is such a tremendous success because of the collaboration between numerous organizations: the Barnard-Seyfert Astronomical Society, Vanderbilt University's Dyer Observatory, the Warner Park Nature Center, NASA Johnson Space Center, Hume-Fogg High School, and others. The Astronomy Day program for 2001 received the Sky and Telescope magazine Astronomy Day Award for its well-rounded and creative schedule of events.

### Astronomy Day 2002 Overview of the Event Schedule:

**Star Party** - Friday, April 19, 2002, from 8 to 10 pm at the model airplane field - Edwin Warner Park admission to the star party is FREE call 615-352-6299 to make reservations

#### Astronomy Day -

Saturday, April 20, 2002, from 11 am to 3 pm at the Cumberland Science Museum specific programs

11:00 Lunar Odyssey

11:30 Science Alive

12:00 the Bad Astronomer, Dr. Phil Plait

Bad Astronomy: Clearing the Skies

1:00 Skies Over Nashville

2:00 the Bad Astronomer, Dr. Phil Plait

The Truth Behind the Moon Hoax

3:00 Science Alive

3:30 Lunar Odyssey

#### Continuous Activities

Moon rock and meteorite display / Ask an astronomer with Dr. Doug Hall of Vanderbilt's Dyer Observatory / Barnard-Seyfert

Astronomical Society getting started in astronomy/ ISS-AT

#### Activities for all ages

Safe observing of the Sun / Homebuilt radio telescope / Scale model of the solar system / Planet hopscotch / Day and night paper plates

Create-a-constellation / Space helmet construction / Crater making

#### Star Party -

Saturday, April 20, from 8 to 10 pm at the Renaissance Center in Dickson, TN; admission to the star party is FREE

For more Astronomy Day information, call AstroLine at (615) 401-5092 or check out [www.SudekumPlanetarium.com](http://www.SudekumPlanetarium.com)

## Happy Birthday Max Planck

by Robin Byrne

This month we honor a man who revolutionized physics. Max Karl Ernst Ludwig Planck was born in Kiel, Germany, on April 23, 1858. His family was very academic. Planck's father was a professor of law. Both his grandfather and great-grandfather were professors of theology. At the age of nine, Planck entered school, where his interest in math and physics soon became apparent. He also had a great interest in music and played the piano for the rest of his life. However, Planck decided that he could be more innovative in physics.

In 1874, Planck entered the University of Munich to study physics, despite being told by an advisor that there was nothing new to discover in the field. After a few years, he moved to the University of Berlin, where his teachers included Helmholtz and Kirchoff. He went back to Munich to work on his doctorate, which Planck received in 1879 at the age of 21. His thesis was on the second law of thermodynamics.

After graduation, Planck was appointed a teaching position at the University of Munich, where he remained until 1885. At that time he was appointed to a chair in Kiel, which he held for four years. In 1887, after the death of Kirchoff, Planck was given the chair of theoretical physics at the University of Berlin. He remained in this position for 38 years, until his retirement in 1927.

Planck's earliest work dealt with such areas as thermodynamics, entropy, thermoelectricity, and the theory of dilute solutions. Then he became interested in radiation processes, and, in particular, the distribution of energy from a blackbody, which is an object that radiates energy solely due to its temperature (like a star). This distribution is hill-shaped, with a peak at one wavelength. The problem was that classical physics could not explain it. Planck found a relationship between energy and the wavelength of radiation. This was based on the radical idea that energy comes in discrete packages, called quanta. Using this explanation, in 1900 Planck modified the ideas already discovered by Wien and Rayleigh to reproduce the curve created by a blackbody. This was the beginning of modern physics.

Planck's ideas were not immediately accepted. The turning point came when quanta were used by others to explain different phenomena. In particular, Einstein's use of quanta to explain the photoelectric effect (for which he received the Nobel Prize), and Niels Bohr's use of quanta to calculate the positions of the spectral lines of hydrogen. In 1918, Planck was awarded the Nobel Prize for Physics for his work.

Despite Planck's success professionally, his personal life was more tragic. In 1909, his first wife, Marie, died, leaving him with two sons and twin daughters. His oldest son, Karl, was killed in action during World War I. Both daughters died while giving birth, one in 1916, and the other two years later.

Planck made no further major contributions to physics. He held many administrative positions, and did continue to study areas such as optics, thermodynamics, statistical mechanics, and physical chemistry. Planck was also the first prominent physicist to endorse Einstein's special theory of relativity. Planck was held in high esteem by not only his colleagues, but by everyone who met him. He was so highly regarded that he was allowed to meet personally with Hitler to express his opinions against Germany's racial policies. The fact that he survived such a meeting says much about his stature at the time.

World War II was a difficult time for Planck. His home was destroyed by bombings of Berlin. Meanwhile, Planck was not the only member of his family to disagree with Hitler's policies. His remaining son, Erwin, was one of the people involved in the unsuccessful attempt to assassinate Hitler on July 20, 1944. Because of his involvement, Erwin was brutally executed by the Gestapo in 1945. The death of Erwin broke Planck's spirit. He moved with his second wife and her children to Gottingen, where he died a few years later on October 4, 1947.

Max Planck turned the world of physics upside-down with the idea of quantum levels of energy. Meanwhile his private life had its own share of earth-shattering destruction. Perhaps the two are in some way related. The kind of great mind that can make the leap to something completely unheard of, may also reside in the kind of person who faces many risks. It is not unusual to see the story of a great man with a tragic life. But whether it is despite of tragedy, or because of tragedy, Max Planck paved the way for a new field of physics and a better understanding of the world around us. For that, we are all very grateful.

### References:

Planck Web Page

<http://www-groups.dcs.st-and.ac.uk/~history/Mathematicians/Planck.html>

Max Planck - Biography Web Page

<http://www.nobel.se/physics/laureates/1918/planck-bio.html>

Biography of Max Planck by Raul Barron Web Page

<http://wwwchem.csustan.edu/chem3070/Raul1.htm>