



ECLIPSE



The Newsletter of the Barnard-Seyfert Astronomical Society

July 2002

President's Message

While in the hospital for heart surgery I did some reading. One of the books I read was James Kaler's Extreme Stars: At the Edge of Creation. Kaler is professor of astronomy at the University of Illinois; his book is published by the Cambridge University Press. I found his book both readable and challenging. He makes clear unfamiliar terms and concepts so that any reasonably intelligent and curious reader can follow; he provides so much information, however, that I determined to reread the book at least once to enhance my understanding of the chapters. This will be only a preliminary review, consisting of two parts — a list of the chapters and a quotation of his presentation of one of the stars.

Chapters are: 1 The Sun and Stars 2 The Faintest (and Coolest) Stars 3 The Coolest Stars...Continued 4 The Hottest Stars 5 The Brightest Stars 6 The Largest Stars 7 The Smallest Stars 8 The Youngest Stars 9 The Oldest Stars 10 The Strangest Stars.

In the quotation which follows, found on pages 34-35 in chapter 2, I delete the name of the star thinking some of you may recognize it and others may have your curiosity stimulated. "(Blank) holds the proper-motion speed record. Not only does it fly through space at nearly 140 km/s, but it is also only 5.9 light-years away, after Alpha Centauri the closest star to the Earth. As a result, it zips along at (for astronomy) an astounding 10.4 seconds of arc per year, a motion great enough to be visible with ease in a small telescope after only a few years. (Blank) draws closer to us (its radial velocity) at a speed of 108 km/s. From its proper motion and distance, its velocity perpendicular to our line of sight is 89 km/s, giving it an actual speed relative to the Sun of 140 km/s."

Happy Birthday Liberty Bell 7 (Twice!)

by Robin Byrne

This month marks two milestones in the history of space exploration involving the same spacecraft, but separated by 38 years.

On July 21, 1961, Virgil "Gus" Grissom boarded what would be America's second venture into space aboard the Liberty Bell 7 spacecraft. Only two months earlier, Alan Shepard had become the first American in space aboard a similar Mercury capsule, and now it was time to prove that we could do it again.

The spacecraft had undergone some small changes from the original. The window was larger, which provided a much wider field of view for the astronaut. Also, added to the hatch were explosive bolts. This involved bolts with small holes drilled through them to create a weak point. Around the edges of the hatch was a detonating fuse. When ignited, the difference in gas pressure on either side of the door would cause the bolts to fail, rapidly opening the hatch for exit. To trigger the explosion, the astronaut had to remove a safety pin, and then apply 5 pounds of pressure on the actuator. This new addition would prove to be pivotal in how the mission ended.

Countdown proceeded normally, with an occasional hold. At T-45 minutes, a hold was called to fix one of the explosive bolts which was misaligned. At 7:20 am, the Redstone rocket booster came to life and lifted the capsule straight up to an altitude of 118.2 miles. a little over 3 minutes into the flight, Grissom took manual control of the spacecraft, and maintained control through reentry. Almost 6 minutes after launch, reentry began. During the descent, Grissom experienced up to 11.1 g's

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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: 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
Bill Griswold

Logo Photograph:
Francisco Diego

"Happy Birthday" cont. from Page 1

(meaning he felt like he weighed 11.1 x his normal weight). He landed within 3 miles of the projected recovery site. During the flight, Grissom had experienced 5 minutes of weightlessness. The entire flight lasted just a little over 15 minutes.

After splashdown, the hatch opened unexpectedly when the explosive actuators misfired. As the capsule took on water, Grissom escaped out the hatch into the open sea. The recovery helicopter, piloted by Jim Lewis, tried to lift the capsule, but the extra weight of the water was too much for the helicopter's engines. The line to the capsule was cut free, and the capsule sank to the bottom of the ocean. A line was dropped to Grissom, and he was lifted to safety.

Although the flight was successful, the loss of the ship haunted Grissom for the rest of his career, even prompting him to name his Gemini capsule "The Unsinkable Molly Brown." In 1999, Carl Newport set out to redeem Grissom's name.

After 5 months of searching and setbacks, Newport's team of ocean salvagers found and latched onto Liberty Bell 7 with a giant spool of Kevlar line. Among those watching the progress was Max Ary, head of the Kansas Cosmosphere and

Space Center, who planned to restore and display the capsule, once retrieved.

On July 20, 1999, 1 day short of the 38th anniversary of the original flight, Liberty Bell 7 was hoisted out of 3 miles of ocean and brought onboard the recovery ship. On board to witness the event was Jim Lewis, the pilot of the original recovery helicopter. When he saw the capsule, Lewis said, "Look, my recovery line is there."

Inside the capsule, Newport and Ary found some of the dimes Grissom had taken with him to keep as souvenirs. Probably most amazing was that the interior fabric was still intact. There was only one major disappointment about the recovery: they did not find the hatch. Newport and his team were hoping that by finding the hatch, they could resolve once and for all why it opened prematurely.

Today, the capsule is completely restored and is on display at the Cosmosphere.

(See page 5 for the list of references)

Minutes of Regular Monthly Membership Meeting of Barnard-Seyfert Astronomical Society on Thursday, 20 June 2002

Vice President John Bradford called the meeting to order on Thursday, 20 June 2002 at 7:38 pm in the library of Dyer Observatory. There was at least one visitor and approximately 23 members present. Copies of the minutes of the May meeting were distributed, but no approval was called for. Treasurer A.G. Kasselberg reported that \$1276.29 was in the BSAS account with \$75 in science fair prize checks still outstanding. The BSAS has approximately \$2500 in CDs.

Rocky Alvey noted that the signed contract for TNSP 2002 is being sent back to Camp Nakanawa (na KAN a wa), and it was noted that Lloyd Watkins did a fine job on the contract negotiation.

Mike Benson reported that the Astronomical League advised against signing the contract with the Maxwell House Hotel because the worst case scenario would cost the BSAS and AL too much if not enough people attend AL 2003. Mike Benson will notify the Maxwell House Hotel of the decision and has to start all over again looking for accommodations that meet the AL's requirements.

Under other Astronomical League business, Mike Benson discussed election of officers and bylaw amendments. Joe Boyd moved that Mike's recommendation of Terry Mann for Secretary be accepted. John Bradford seconded the motion, and A.G. Kasselberg highly recommended Terry, having worked with her on the ISSATOPS project. The vote was unanimous in favor of Terry Mann's nomination. Bill Griswold

then moved that the bylaw amendments Mike discussed be accepted as is. The motion was seconded and the vote was again unanimous in favor of the motion.

Dr. Hall discussed the IAPPP photometry school and symposium to be held the last week of June.

Bill Griswold asked that those working on "The Eclipse" newsletter get together after the meeting was over.

Lonnie Puterbaugh said he will check to see if the Middle Tennessee Astronomical Society (MTAS) would be willing to have a joint picnic at Barfield Crescent Park like last year.

At 8:17 pm, A.G. Kasselberg began his discussion of the ISS-AT (International Space Station - Amateur Telescope) project while Rocky Alvey showed slides. The Alpha phase of this Astronomical League project uses a ground-based telescope at Winer Observatory near Sonoita, Arizona to take night sky images, allowing the development of procedures that will be used once a telescope is attached to the ISS. While several different AL members are involved, A.G. and Rocky Alvey have been very instrumental in remotely taking images with the Celestron C-14 telescope. One memorable request was by an artist wanting a face-on and side-view of a galaxy. See <http://www.issat.org> for more information.

The meeting adjourned at 9:09 pm.

Respectfully submitted,
Evelyn Wright, Secretary

Special Meeting of the Barnard-Seyfert Astronomical Society Board of Directors on July 2, 2002

The special meeting of the Board of Directors was called to order by Board Chair Kris McCall at 7:03 PM on July 2, 2002 in the Jefferson Square Clubhouse. Officers in attendance were Treasurer A.G. Kasselberg and Secretary Evelyn Wright. Board members Mike Benson, Joe Boyd, Bill Griswold, Doug Hall, and Lloyd Watkins were present. Others present were WebMaster Bill Collins and club members Rocky Alvey, John Harrington, Karen and Lonnie Puterbaugh, and Larry Southerland. President Powell Hall (soon to graduate to a cardiac rehabilitation program) and Vice President John Bradford were not present.

Dr. Doug Hall explained that he would be replaced August 1, 2002 as Director of Dyer Observatory by Dr. Richard Chappell. Dr. Hall reported that Dyer Observatory will continue to be funded through the current 2002-2003 fiscal year by the Vanderbilt Department of Arts and Sciences, but expressed his disappointment that the observatory would only be used for public outreach activities, and not serious astronomical research. He thought the past document giving BSAS members access to the Bergquist 14" telescope that the club helped install on the observatory roof would still hold, but was uncertain about other BSAS activities currently held at Dyer. Bill Griswold encouraged the club to welcome the new director, and Joe Boyd made a motion that Board Chair Kris McCall contact Dr. Chappell and invite him to the next meeting to find out his vision of the future of Dyer Observatory. Bill Griswold seconded the motion. In the discussion, Joe's motion was amended to invite Dr. Chappell to the next regular meeting to observe and participate in BSAS activities, and then to invite him to the next scheduled or special scheduled board meeting to find out his vision of the future of Dyer Observatory. The vote resulted in one abstaining, one voting 'no', and everyone else voting in favor of the motion.

At this time, several suggestions were made regarding the business portion of the meeting that has often taken too long in the past: a) keep it less than 2 minutes; b) move the business portion of the meeting after the program so that people with children can see the program rather than having to go home because the business portion took too long; and c) give a short preview of the business portion, immediately followed by the program, followed by the business portion of the meeting. No definite decision was made regarding what order future meetings should follow. Joe Boyd suggested that giving a brief summary of the BSAS and its activities should be normal practice during the introduction of visitors and new members at the beginning of the meeting. Joe also noted that Powell Hall will need to know of any change in the agenda he will prepare for the next regular member meeting.

The next topic was the BSAS membership list. Mike Benson needs an up-to-date list for the Astronomical League in Excel format. A.G. Kasselberg reported that approximately 73 people have not paid their dues despite three attempts to contact them with expiration notices. A motion was made that those 73 people who have not responded to the expiration notices be dropped from the membership list. Joe Boyd noted that the motion was allowed by the bylaws. The motion was seconded and passed unanimously. Mike Benson asked that the old membership information be archived, and it was noted that the member should be marked inactive rather than deleted altogether. Since Bill Griswold is taking over layout and distribution of "The Eclipse", he will prepare a version in Excel format of the active members in the latest mailing list he gets from A.G. Kasselberg. Evelyn Wright noted that after the board meeting she would give A.G. the email corrections resulting from the recent Eclipse email list test.

Rocky Alvey reported that The Ensworth School's expansion to grades 9-12 is planned for the area near Warner Park where the BSAS holds star parties, but he did not think an architect had been selected yet. John Harrington suggested that the BSAS approach this in a positive manner, writing a letter to those in charge of the project. Joe Boyd moved that John Harrington be the one to draft that letter to encourage astronomy-friendly lighting in The Ensworth School project. Bill Griswold seconded the motion which passed unanimously.

On the subject of star parties, Bill Collins noted that the Warner Park Star Party on August 10, 2002 coincides with a private star party at the BSAS dark site. Kris noted that everyone was free to attend either event, but the Warner Park Star Party had been scheduled for some time.

Regarding officer and board member elections in September, Lonnie Puterbaugh listed the nominating committee that consists of him, JanaRuth Ford, and Larry Southerland. The current slate of nominees follows.

President	Joe Boyd
Vice President	John Harrington
Treasurer	A.G. Kasselberg
Secretary	(open)
Director	JanaRuth Ford
Director	John Bradford
Director	(if needed)

Joe Boyd reported that he needs to talk with A.G. Kasselberg before sending in the application for 501(c)(3) status. John Harrington may also provide some input on this.

On ALCon 2003, Mike Benson will meet again with the Maxwell House Hotel tomorrow. If no compromise can be reached, the search will have to begin again with other hotels. Several alternatives were ruled out since the meeting room requirements

would remain the same whether or not the attendees stay at the hosting hotel, the Astronomical League has recommended against considering university facilities, and some hotels had already indicated they could not accommodate the event. Mike also noted that the target date might change since the BSAS might be dealing with a totally different hosting hotel.

The contract with Camp Nakanawa (na KAN a wa) has been signed for TNSP 2002, and Rocky handed out a flyer that he plans to distribute through Warner Park, Dyer Observatory, and Cumberland Science Museum. Rocky will also send information to his radio contacts, Vanderbilt publications, and possibly "The Scene". Kris McCall asked what needed to be done next. Rocky plans on adding a cow to the flyer and getting T-shirts printed. Lloyd Watkins mentioned that provisions for the snack bar need to be planned. Mike Benson asked about blocking out lights, and Rocky said all lights could be turned off, and the buildings are rustic enough that essential lights could be blocked off with dark plastic stapled to the windows.

The Girl Scout Jamboree for August 2-3, 2002 is still on with 12 telescopes expected on Friday and 14 on Saturday. Lloyd Watkins will be able to attend, and will act as contact person in Kris' absence in case either night's star party is cancelled. Kris will contact the Girl Scouts to find out if solar viewing should be provided.

John Froeschauer of Long Hunter would like to set up a star party for Friday, September 13, 2002. Bill Griswold moved that the BSAS support the star party at Long Hunter State Park for that date from 8-10 pm if the state budget problems do not close the park at that time. Lloyd Watkins seconded the motion which passed unanimously.

Lonnie Puterbaugh asked what the BSAS wants to do about the annual picnic. He reported that the Middle Tennessee Astronomical Society is willing to combine their picnic with BSAS' at Barfield Crescent Park in Murfreesboro, TN, same as last year. The park lights can be turned off this year for night sky viewing, and the pavilion is free that night. It was suggested that the event could become a meeting of the regional clubs, moving around the area from year to year, with this year being at the MTAS site. Kris asked Lonnie to see if the date of the third quarter moon on October 26 is acceptable to MTAS.

On the newsletter front, Bill Collins will be accepting articles for "The Eclipse" which he will forward to Bill Griswold for layout and printing/distribution. For now, the printing will be done as before since the prices quoted by Bill Griswold's contact are higher than the club can currently afford without relying on TNSP profits. It was also decided that only black ink would be acceptable since color adds significantly to the monthly printing estimate. Bill Griswold noted that sending the expiration notice in lieu of the newsletter resulted in quicker renewals in another organization he is in. Bill Griswold also needs more detailed logos in order to plan his layout, which Rocky will get to him.

Joe Boyd moved that the minutes of the last board meeting be approved, which Mike Benson seconded. The vote was unanimously in favor of approval.

The August board meeting date was changed since several members will be unable to attend. Although Mike Benson will still be out of town, it was decided to meet Tuesday, August 6, 2002 at the Jefferson Square Clubhouse. Joe Boyd will arrange for an update on ALCon 2003 in Mike's absence **NOTE: please check with Chair Kris McCall to confirm the next board meeting date which has been moved in an email discussion to Tuesday, August 13, 2002 to allow more people to attend.**

The meeting adjourned at approximately 9:45 pm.

2002 Upcoming events

Fri	Aug	2,3	9-1130 pm	Camp Sycamore Hills	private G.S. star parties
Tue	Aug	6	7 pm	Jefferson Sq. Clubhouse	board meeting
Sat	Aug	10	8-10 pm	Warner Park (Perseids)	public star party
Fri	Sep	13	8-10 pm	Long Hunter State Park	public star party
Fr-Su	Oct	4-6		Camp Nakanawa	TNSP 2002
Sat	Oct	26?		Barfield Crescent Park	picnic with MTAS?
Fri	Dec	13	730-930 pm	Warner Park(Geminids)	public star party

2003 Upcoming events

Fri	Feb	7	8-10 pm	Warner Park(Jup,Sat)	public star party
Fri	Apr	25	8-10 pm	Warner Park(Astro Day Eve)	public star party
Th-Sa	Jul	8-13?		Nashville	ALCon 2003
Sa	Aug	23	8-10 pm	Warner Park (Mars)	public star party

Respectfully submitted,
Evelyn Wright, Secretary

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

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, 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)

References: (from Page 2, "Happy Birthday")

NASA Project Mercury Mission MR-4 Web Page
<http://science.ksc.nasa.gov/history/mercury/mr-4/mr-4.html>

Discovery Online, Expeditions — Liberty Bell 7, Today's Dispatch
<http://www.discovery.com/exp/libertybell7/990416dispatch.html>
<http://www.discovery.com/exp/libertybell7/990719bdispatch.html>
<http://www.discovery.com/exp/libertybell7/990720dispatch.html>
<http://www.discovery.com/exp/libertybell7/990721dispatch.html>

CALENDAR OF EVENTS**July 1 - July 31, 2002**

7/2 LAST QUARTER MOON; Conjunction, Mercury & Saturn; BSAS Board Meeting 7:00 P.M.
7/3 Conjunction, Mars & Jupiter
7/4 Independence Day!
7/8 Conjunction, Moon & Saturn
7/10 NEW MOON
7/11 Dyer Observatory Public Night 8:00-10:00 PM
7/13 Private Star Party - Natchez Trace Site; Conjunction, Moon & Venus
7/17 FIRST QUARTER MOON
7/18 BSAS Meeting, Dyer Observatory 7:30 P.M.
7/24 FULL MOON; Conjunction Moon & Neptune
7/25 Dyer Observatory Youth Night 8:00-10:00 P.M.
7/26 Conjunction, Moon & Uranus
7/29 Aquarid meteors peak

August 1 - August 31, 2002

8/1 LAST QUARTER MOON
8/5 Conjunction, Moon & Saturn
8/6 BSAS Board Meeting 7:00 P.M.
8/8 NEW MOON; Dyer Observatory Public Night 8:00-10:00 PM
8/10 Public Star Party - Edwin Warner Park Model Airplane Field 8:00-10:00 P.M.;
8/10 Private Star Party - Natchez Trace Site; Conjunction, Moon & Mercury
8/12 Perseid meteors peak
8/15 FIRST QUARTER MOON; BSAS Meeting, Dyer Observatory 7:30 P.M.
8/21 Conjunction, Moon & Neptune
8/22 FULL MOON; Dyer Observatory Youth Night 8:00-10:00 P.M.; Conjunction Moon & Uranus
8/30 LAST QUARTER MOON

The Barnard-Seyfert Astronomical Society Web address
www.bsasnashville.com

For local astronomy events in Middle Tennessee
<http://groups.yahoo.com/group/tnastronomy/>

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