

The newsletter of the Barnard Seyfert Astronomical Society, PO Box 150713, Nashville, TN 37215-0713

Upcoming Events

Board of Directors Meeting

December 3rd at the Cumberland Valley Girl Scout Council Building
– 7:30 pm

January 7th at the Cumberland Valley Girl Scout Council Building
– 7:30 pm

Membership Meeting

December 17th – December Meeting and Holiday Pot Luck Dinner at the Adventure Science Center – 6:30 pm

January 21st at the Adventure Science Center – 7:30 pm

Upcoming Events

Public Star Party December 12th at Warner Park – 7:30 pm

Public Star Party December 18th at Bells Bend Outdoor Center – 7:30 pm

Private Star Party December 19th at Natchez Trace mm 412 – Water Valley Overlook – 6:30 pm

Public Star Party January 23rd at Warner Park – 7:30 pm

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Monthly Membership Meeting

December 17th, 2009
Adventure Science Center
6:30 pm



December Meeting and Holiday Pot Luck Dinner

We will begin arriving around 6:00p and begin eating at 6:30p. The club will provide the meat/drinks – bring a side dish or dessert to share. Our speaker will be Charlie Warren who will present "The Deepest South Texas Star Party". For more details see the Outreach Update section on page 2. See you there!



From The President

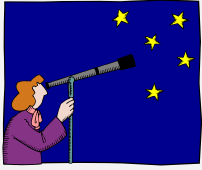
December is finally here, and that means that this is my last President's Message. It's been a great two years as President, but it is time for me to focus on other things. Specifically, I need to spend more time with my own scopes and my own projects. It is also time for the club to have new leadership. It is not a good thing to have one person at the helm for too long. And, I personally will be looking forward to having Dr. Spencer Buckner as the new President. He has only continued to impress me with everything that he done with and for our organization. I expect next year will be a good one.

As in all organizations, it is not just the President that is responsible for what happens; there is a leadership team. Next year's team promises to be a strong one. Dr. Donna Hummell is our new Vice-President. She, too, has been very involved in our club's activities. I have valued her voice on the Board during my term as President. Bob Rice is returning as Secretary. I have been completely amazed for many years now with Bob's ability to create detailed minutes. I honestly do not have a clue how he does it. Finally, Bob Norling is returning as Treasurer again this year. He, too, makes a difficult job look easy.

For the Board of Directors, we have Bill Griswold and Santos Lopez starting three year terms this year. Continuing on the Board are Tony Campbell, JanaRuth Ford, Curt Porter, and Theo Wellington. You will have a hard time finding a better group of people to lead the BSAS.

Now, we come to the place where one usually tries to thank everybody that helped during the past year. I know that I will miss some people's contributions in the following, and I hope that anyone I miss will accept my apologies. My memory only seems to get worse with each passing year. Bill Griswold has been very diligent in keeping track of the membership records, taking care of renting the space for the Board meetings, and working with the National Park Service to get the permit that allows us to use the Natchez Trace for our private star parties. Steve Wheeler has done an awesome job with the Eclipse this year, and I would especially like to thank him for helping out with the "What's Up" presentations. Kris McCall has done a wonderful job coordinating with most of the parks where we hold our public star parties. Her work has saved me a lot of effort. I want to thank Lonnie Puterbaugh and Joe Boyd for doing the leg work that has led to our holding public star parties at Bells Bend. The Program Committee has done an awesome job this year. Bob Rice and Spencer Buckner were especially helpful in taking care of speakers. I would like to thank Spencer for being the speaker at the three membership meetings this past year. I thank Bob Rice and Bob Norling for doing their jobs so well that I simply did not have to worry about that. I thank Mark and Anne Manner for opening up their home for us to have special events like the Messier Marathon and the annual club picnic. Finally, I would like to thank each and every one of you who came and helped with our public star parties. A large part of what we do as an astronomical society is educational outreach. Your being willing to share what knowledge and equipment you have with others is most important in these days of declining scientific literacy.

Dr. Terry Reeves
President



"The Sun, with all the planets revolving around it, and depending on it, can still ripen a bunch of grapes as though it had nothing else in the Universe to do."

Galileo Galilei
1564-1642

FREE TELESCOPES!

Yes, you did read that correctly. The BSAS Equipment & Facilities Committee has free telescopes ranging in size from 2.6" to 8" that current members can actually have to use for up to 60 days at a time.

We also have some other items in the loaner program such as a photometer, H-alpha solar telescope, educational CDs, tapes, DVDs, and books.

Some restrictions apply, and a waiting list may be applicable in some cases. The BSAS Equipment Committee will not be held responsible for lost sleep or other problems arising from use of this excellent astronomy gear.

For information on what equipment is currently available, contact Lonnie Puterbaugh at (615) 661-9540.

Observing Highlights

all times listed are Central Standard Time

LUNAR PHASES

December 2009

12/02 FULL Moon
12/08 LAST Quarter
12/16 NEW Moon
12/43 FIRST Quarter
12/31 FULL Moon

January 2010

01/07 LAST Quarter
01/15 NEW Moon
01/23 FIRST Quarter
01/30 FULL Moon

OBJECTS VISIBLE THIS MONTH

Globular Clusters:

M2
M15

Open Clusters:

M29
M39

Galaxies:

M31
M32
M110

Outreach Update

Dr. Terry Reeves, president

I want to thank Spencer Buckner for his presentation at this past month's membership meeting presentation. It's always enjoyable to look at and consider all of the gear that is available to us. If you were paying attention, you would have noted that astronomy toys don't have to cost a fortune. Today's average Dobsonian provides better optics and mechanical operation at a price that would have floored most amateurs from just twenty or thirty years ago. And, that is without factoring in inflation. Today's medium-priced eyepieces provide views that quite simply did not exist then at any price. Finally, since I know that budgets are tight this year for many of us, you might consider the plethora of books, observing guides, maps, atlases, small gadgets, etc. that are available when you are making out your Santa wish list this year. I did not mention software here because I think you should check out free programs like Carte Du Ciel and Virtual Moon Atlas before spending money. It might just be that the free programs are good enough.

The December meeting will be our Christmas potluck. We will start arriving at 6:00 PM, and will start eating at 6:30 PM. As is our custom, the club will provide a meat. The rest is up to you. Whatever you bring, we will eat. Whatever you don't bring, we won't miss. Our speaker will be Charlie Warren, club member and publisher of Astronomy Magazine. He will be speaking on "The Deepest South Texas Star Party". (Hint: South means Australia in this case.) If you want to hear about the skies that we never get to see up here on the top of the planet, be sure to come. We will also be holding our usual silent auction. If you have any old or new astro-stuff that you would like to get rid of, you can donate it to the cause. The proceeds go to the club.

The private star party in November was clouded out. A few of us went to Shelby Bottoms for the public event. The sky did not look promising at first. Later on, I was showing all kinds of objects. I was even able to show the core of the Andromeda Galaxy. (Yes, I and everyone else saw M31 from Shelby Bottoms.) We have another event scheduled at Shelby Bottoms in February. We had about thirty people come despite the initially cloudy conditions.

In December, we have a public star party at Warner Park on Saturday, December 12 from 7:30 PM until 9:30 PM. Note that the time is slightly earlier than the normal. We also have a public star party scheduled for Friday, December 18 from 7:30 PM until 9:30 PM at the Bells Bend Outdoor Center. There is also a private star party scheduled for December 19 at the turnout near mile marker 435.5 on the Natchez Trace.

Happy Birthday Little Joe 2

by Robin Byrne

This month we celebrate another milestone in the history of space exploration. Before American men launched first into space in the Mercury program, much needed to be tested. Although the Redstone (used for the first suborbital flights) and Atlas rockets (used for the first orbital flights) were already developed and were scheduled to be used, they came at a cost. Redstone rockets ran almost \$1 million dollars, while the Atlas boosters were close to \$2.5 million. NASA needed something cheaper to be used solely for testing the Mercury capsule system.

In 1958, several people developed a design that used four solid-fuel Sergeant rockets clustered together. The system would have enough power to launch a payload comparable to the Mercury capsule to the upper atmosphere, could be launched from existing facilities at Wallops Island, Virginia and it only cost \$200,000. In one of the design drawings, looking toward the base of the rocket, it appeared as four circles (for each of the rockets). It had the appearance of a dice roll of two two's. In the game of craps, that roll is known as "Little Joe." The name was quickly adopted for the rocket. Twelve companies placed bids for the construction project, but the Missile Division of North American Aviation was awarded the contract at the end of 1958.

The primary purpose of the Little Joe rockets was to test various components that may be encountered in manned spaceflight. Suppose an explosion occurred during launch, how will the capsule escape from the booster rocket? Although the capsule design had been tested from air drops for its aerodynamic capabilities, how will they perform during actual reentry from space? How will the capsule perform at increasingly high altitudes? Other tests involved checking out the parachute design and the techniques used to find and retrieve a capsule after splashdown. Lower on the priority list: how will animal riders behave?

The use of animals in rocket tests was necessary to prevent placing human astronauts at undue risk. NASA primarily used primates for these tests, both monkeys and chimpanzees. Among those used were Rhesus Macaques, commonly known as Rhesus monkeys. Found in a wide variety of countries, these monkeys were known for the ease with which they function in captivity. As such, they were popular for science experiments. Able, who along with Miss Baker, was the first living being to return alive from space, was a Rhesus monkey. In 2000, a Rhesus monkey named Tetra became the first cloned primate. In 2007, a Rhesus Macaque became the second non-human primate to

have its genome sequenced, which showed that we share 93% of our DNA with these primates.

On December 4, 1959, a Rhesus Macaque named SAM was launched atop a Little Joe rocket. This was the first time an animal was carried to the edge of space by a U.S. rocket. The name SAM was short for the U.S. Air Force's School of Aviation Medicine. Sam was placed in a small container, which was mounted inside of a prototype Mercury capsule. The main goal of the mission was to test the Launch Escape System. One minute after launch, the capsule separated from the booster to simulate an emergency situation. The capsule reached an altitude of 51 miles and then plummeted into the Atlantic Ocean. Eleven minutes after launch, Sam was safely back on Earth. Sam's mate, Miss Sam, flew a similar flight a month later. The two lived out their remaining years in a training colony. Sam died in 1982 and was cremated. The Mercury craft used for the flight is on display at the Airpower Park and Museum in Hampton, Virginia.

Sending animals into space was, and is, controversial. Our hearts soften when we see a furry face, and break when their lives end in tragedy. However, if it were not for the sacrifices made by such animals, manned spaceflight would have taken much longer to achieve. The unwillingness to sacrifice ANY human life made the sacrifice of animals a necessity. The story of Sam's flight has a happy ending, while many of his primate brethren were not so lucky. But all we have accomplished in space ultimately can be traced back to the animals, the first space travelers.

References:

Little Joe 2 - Wikipedia
http://en.wikipedia.org/wiki/Little_Joe_2

Little Joe (rocket) - Wikipedia
[http://en.wikipedia.org/wiki/Little_Joe_\(rocket\)](http://en.wikipedia.org/wiki/Little_Joe_(rocket))

Animals in Space
<http://history.nasa.gov/animals.html>

Monkeys in Space - Wikipedia
http://en.wikipedia.org/wiki/Monkeys_in_space

Rhesus Macaque - Wikipedia
http://en.wikipedia.org/wiki/Rhesus_Macaque

November 2009 Board Meeting Minutes

Bob Rice, Secretary

The board of directors of the Barnard-Seyfert Astronomical Society met in regular session at the Cumberland Valley Girl Scout Council Building in Nashville, Tennessee on November 5, 2009. Board members Dr. Spencer Buckner, Tony Campbell, JanaRuth Ford, Bill Griswold, Bob Norling, Curt Porter, Dr. Terry Reeves, Bob Rice, Theo Wellington, and Steve Wheeler were present. Board members Dr. Donna Hummell and Kris McCall were absent. A quorum being present, President Dr. Terry Reeves called the meeting to order at 7:38 P.M.

Treasurer Bob Norling reported that the BSAS had \$2,361.52 in its checking account and \$150.00 in its equipment account. Having informed the board last month that two of the BSAS' loaner telescopes were simply too large and unwieldy to be well used for that purpose, Dr. Terry Reeves reported that one - the 12.5' f7 reflector - was given to Vanderbilt University's Dyer Observatory following a discussion with the family of the original donor who had been a Vanderbilt engineering professor.

Dr. Reeves reported that the program for the November 19th membership meeting would be an updated version of "What I Want For Christmas Are Astronomy Toys" given by Dr. Spencer Buckner. Curt Porter said that he would email the Nashville Tennessean's Mary Hance about publicizing this presentation in her "Ms. Cheap" column. Dr. Reeves also reported that the December 17th membership meeting would include the annual potluck holiday supper, a silent auction, and a program on observing in Australia by Amateur Astronomy Magazine editor Charlie Warren. Bob Rice volunteered to procure the entrees, drinks, and serving utensils for the supper. For 2010

Dr. Terry Reeves reported that the first two monthly meeting programs would be "How To Use Your New Astronomy Toys" on January 21st and "What's Up? (In the evening sky)" on February 17th. Dr. Spencer Buckner suggested that the Program Committee should meet in late December or early January to plan for the remainder of 2010.

Dr. Terry Reeves reported these upcoming star parties:

- Nov 06 – Private star party for West End Middle School students at 7:00 PM at Elmington Park
- Nov 14 – Private star party at mile marker 435.5 on the Natchez Trace Parkway
- Nov 21 – Public star party at Shelby Bottoms Park
- Dec 12 – Public star party at the Warner Parks
- Dec 18 – Public star party at Bells Bend Park this is tentative
- Dec 19 – Private star party at the Water Valley Overlook on the Natchez Trace Parkway

Dr. Terry Reeves announced that the BSAS would sell Kalmbach Publishing's "Deep Space Mysteries Calendar 2010" and, if at least ten orders were placed, the Royal Astronomical Society of Canada's Observer's Handbook 2010 at reduced prices for members. Dr. Reeves began an order confirmation list that will be continued during the November 19th membership meeting.

Following an earlier conversation among the two, Steve Wheeler moved that he be removed from the Nominating Committee's list of recommended candidates for 2010 board membership and be replaced by Bill Griswold. Dr. Spencer Buckner seconded this motion that was approved by a unanimous voice vote of the board members without additional discussion.

Since there was no further business to discuss, Dr. Terry Reeves called for a motion to adjourn. Steve Wheeler so moved, Tony Campbell seconded his motion, and the meeting was adjourned at 8:21 P.M. by a unanimous voice vote. Following the adjournment Webmaster Tony Campbell suggested that board consider registering the BSAS' Internet domain for ten years at a cost of around \$100.00 and said that he would report back on this issue at the next board meeting.

OFFICERS

Dr. Terry Reeves
President

Dr. Spencer Buckner
Vice-President

Bob Rice
Secretary

Bob Norling
Treasurer

Directors at Large

Tony Campbell
Jana Ruth Ford
Dr. Donna Hummell
Curt Porter
Theo Wellington
Steve Wheeler

Ex Officio

Kris McCall
Bill Griswold

Newsletter Editor

Steve Wheeler
wsv261@hotmail.com

Monthly meetings
are held at:



The Adventure
Science Center

800 Fort Negley Blvd
Nashville, TN 37203

November 2009 Monthly Meeting Minutes

Bob Rice, Secretary

President Dr. Terry Reeves called the meeting to order at 7:34 P.M. in the Adventure Science Center (ASC). Treasurer Bob Norling reported that the BSAS' bank balance was \$2,411.52 plus \$150.00 in the equipment account.

Dr. Terry Reeves commenced the annual election of officers and directors by announcing these candidates recommended by the Nominating Committee: Dr. Spencer Buckner for president, Dr. Donna Hummell for vice-president, Bob Norling for treasurer, Bob Rice for secretary, and Santos Lopez and Bill Griswold for board members. Dr. Reeves next asked for nominations from the floor and, there being none, Joe Boyd moved that the aforementioned nominees be elected by acclamation. Mike Benson seconded this motion that was subsequently approved by a unanimous voice vote of the membership.

Dr. Terry Reeves announced that the BSAS' annual Christmas meeting would be held on December 17th and would include a potluck dinner, a silent auction, and a program by Amateur Astronomy magazine editor Charlie Warren on Australian observing entitled "The Deepest South Texas Star Safari."

Dr. Reeves announced these upcoming star parties: Nov 21 - A public star party at Shelby Bottoms Park from 8:00 to 10:00 P.M. and Dec 12 - a public star party at the Warner Parks' special events field. He also informed the membership that the BSAS would supply the meat and drinks for the Christmas potluck dinner. In addition, Dr. Terry Reeves announced that the BSAS was taking advance orders for the Royal Astronomical Society of Canada's 2010 Observers Handbook for \$20.00 (a \$5.00 savings over the usual retail price) and Kalmbach Publishing's 2010 Mysteries of the Universe calendar for \$10.00 (a \$2.95 savings over the usual retail price).

Dr. Terry Reeves introduced BSAS vice-president and Austin Peay State University Physics and Astronomy Professor Dr. Spencer Buckner who presented the evening's program on "All I Want For Christmas Are Astronomy Toys." Armed with a wide array of telescopes, mounts, accessories, and reference materials that he had brought, Dr. Buckner used a PowerPoint presentation to illustrate these items of interest and corresponding prices wherever possible to potential new buyers:

- Basic types of telescopes – refractors, reflectors, & catadioptric,
- Ritchey-Chretien telescopes as being among the largest in the world,
- Dedicated solar telescopes as separate type,
- Types of mounts – altazimuth & equatorial,
- "Push-to" altazimuth mounts as an object locator type,
- Accessories – eyepieces, finder scopes, red lights, & filters,
- Dew heaters, observing chairs & stools, & tables,
- Cases & storage bags,
- Power sources – batteries, ac adaptors, & dc-to-ac inverters,
- Maps, planispheres, & planetarium software,
- New computerized sky pointers & identifiers,
- Red & white light flashlights,
- Optics cleaning kits,
- Magazines, calendars, books & reference materials,
- List of recommended dealers, and
- Membership in the ASC.

Following his presentation, attendees were able to personally examine the demonstrated equipment and to ask questions of Dr. Buckner and other BSAS members. Dr. Terry Reeves announced that Dr. Buckner and others would follow up on this presentation with a program on "How To Use Your New Astronomy Toys" at the membership meeting on January 21, 2010. Bill Griswold recognized new BSAS member Chris Polk who was attending this evening. Since there was no further business to discuss, President Reeves declared the meeting adjourned at 8:47 P.M.

BSAS Affiliations

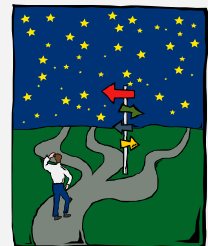
The Astronomical League
<http://www.astroleague.org/>



The Night Sky Network
<http://nightsky.jpl.nasa.gov/>



International Dark Sky Association
<http://www.darksky.org/>



A Vote Conducted by the Board of Directors via Email

Bob Rice, Secretary

As documented in the minutes of the November 5, 2009 board of directors meeting, Webmaster Tony Campbell suggested that the board consider registering the BSAS' website domain name for ten years at a cost of around \$100.00, which would be cheaper than annual renewals, and said that he would report back on this issue at the next board meeting. The following events occurred after that meeting with communications taking place by email.

On November 23, 2009 Adventure Science Center employee and BSAS member Drew Gilmore, who was assisting Mr. Campbell, informed Sudekum Planetarium Director Kris McCall and other board members that the vendor Network Solutions had notified the Society that its website domain name (www.bsasnashville.com) would be deactivated effective December 1, 2009 for nonpayment of the renewal fee. Vice-President Dr. Spencer Buckner reported that he had checked Network Solutions' renewal pricing and found that the costs were \$34.99 for one year, \$161.91 for nine years, and \$279.80 for twenty years. He also reported that two, three, and five-year renewals were available, but apparently none for ten years. Noting that the BSAS' domain name would expire before the next scheduled board meeting on December 3, 2009, Dr. Buckner recommended voting on this matter electronically and moved that the board purchase a twenty year renewal from Network Solutions at \$279.80 for these reasons:

- There were sufficient funds in the BSAS' bank account to cover this amount.
- This would offer a \$420.00 savings over annual renewals.
- This vendor had been in business since 1979 and was a stable company.
- It would eliminate the worry and hassle over renewals for a substantial period.

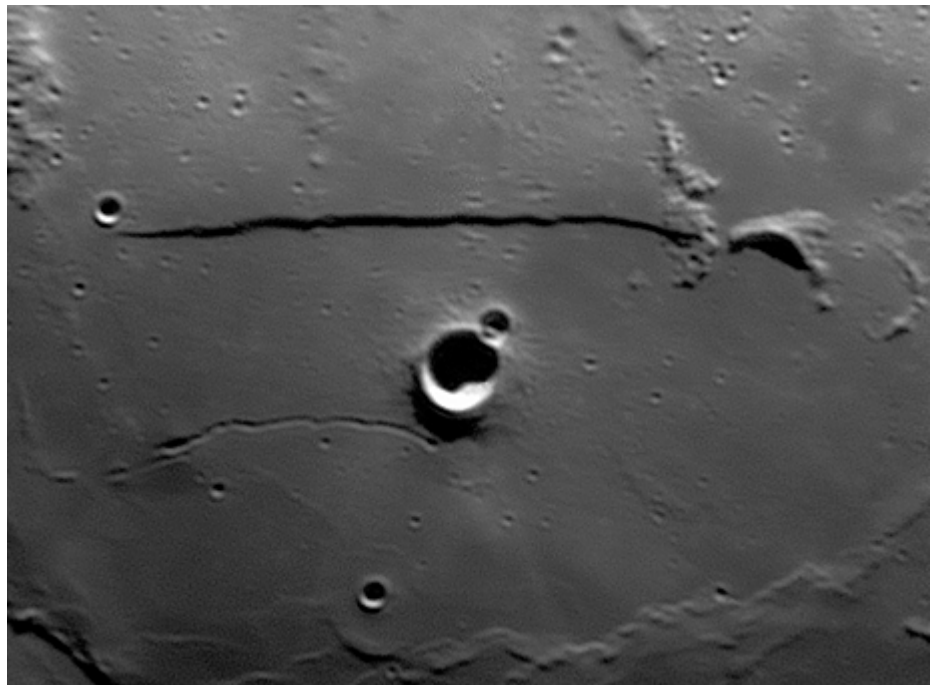
President Dr. Terry Reeves subsequently reported that ten board members voted "yes:" Dr. Spencer Buckner, Tony Campbell, JanaRuth Ford, Bill Griswold, Dr. Donna Hummell, Curt Porter, Dr. Terry Reeves, Bob Rice, Theo Wellington, and Steve Wheeler. As Dr. Reeves noted, no one voted "no." Board member Bob Norling did not reply to the emailed vote request – most likely because he was out of town for the Thanksgiving holiday – and ex officio board member Kris McCall did not have voting privileges. Since these ten "yes" votes constituted a majority of the board, Dr. Reeves asked Webmaster Tony Campbell to pursue renewing the domain name for twenty years. Mr. Campbell responded that he had done so on November 30, 2009.

Lunar Images from Mark Manner

Rupes Recta

November 2009

Also known as "The Straight Wall", it is a fault scarp on the East side of Mare Nubium, approximately 114Km long, and 300 meters high.

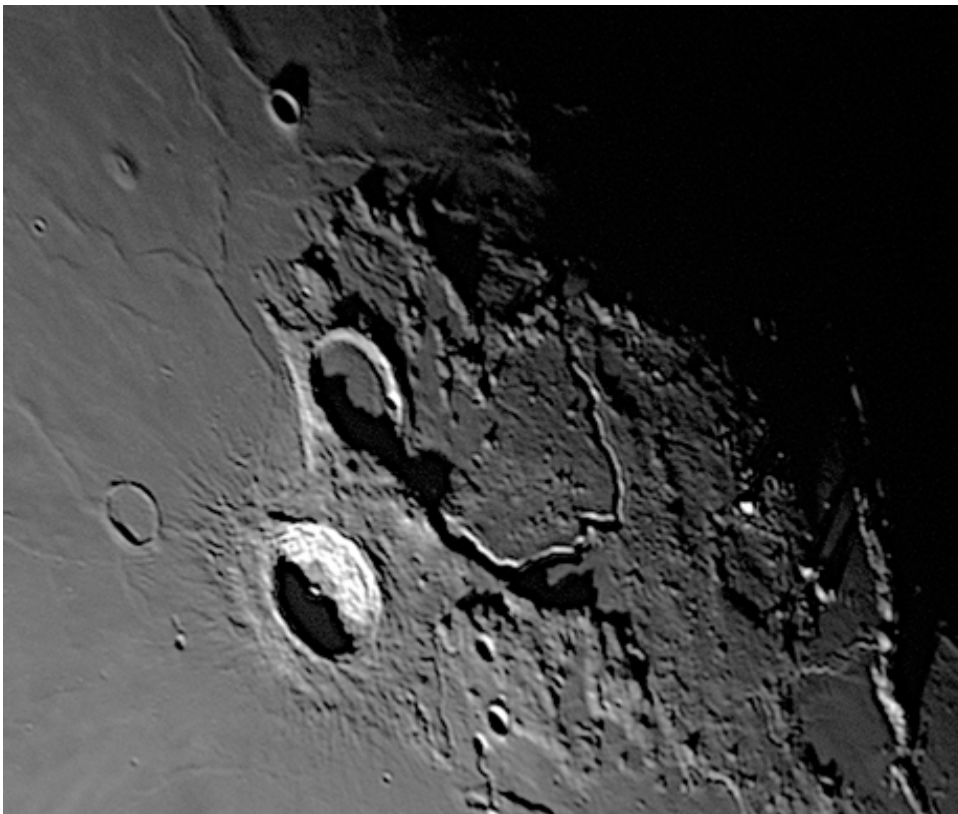




Plato

November 2009

The lava-filled remains of a lunar impact crater, Plato is located on the northeastern shore of Mare Imbrium, at the western extremity of the Montes Alpes mountain range.



Vallis Schroter

November 2009

An interesting 165Km long, 1Km deep twisting lunar rille 6 to 10Km wide.

To see more of Mark's outstanding images and equipment setup, visit: <http://www.spotastro.com>

Become a Member of the BSAS!

Download and print the Application for membership from www.bsasnashville.com (Adobe® Acrobat Reader® required).

Then fill it out and bring it to the next monthly meeting or mail it along with your first year's membership dues to:

BSAS
P.O. Box 150713
Nashville, TN 37215-0713

Annual dues, which include membership in the BSAS and Astronomical League, and subscriptions to their newsletters, are:

- \$20** Individual
- \$30** Family
- \$15** Senior (+65)
- \$25** Senior Family (+65)
- \$15** Student*

* To qualify, you must be 21 or younger & enrolled in an accredited institution.

All memberships have a vote in BSAS elections and other membership votes,

Also included are subscriptions to the BSAS and Astronomical League newsletters.

IMPORTANT DUES INFORMATION

On your Eclipse mailing label is the expiration date for your current membership. There will be a two month grace period before any member's name is removed from the current mailing list.



We're on the Web!
See us at:
www.bsasnashville.com

About Our Organization

Organized in 1928, the Barnard-Seyfert Astronomical Society is an association of amateur and professional astronomers who have joined to share our knowledge and our love of the sky.

The BSAS meets on the third Thursday of each month at the Adventure Science Center in Nashville. Experienced members or guest speakers talk about some aspect of astronomy or observing. Subjects range from how the universe first formed to how to build your own telescope. The meetings are informal and time is allotted for fellowship. You do not have to be a member to attend the meetings.

Membership entitles you to subscriptions to *Astronomy and Sky & Telescope* at reduced rates; the club's newsletter, the *Eclipse*, is sent to members monthly. BSAS members also receive membership in the Astronomical League, receiving their quarterly newsletter, the *Reflector*, discounts on all astronomical books, and many other benefits.

In addition to the meetings, BSAS also sponsors many public events, such as star parties and Astronomy Day; we go into the schools on occasion to hold star parties for the children and their parents. Often the public star parties are centered on a special astronomical event, such as a lunar eclipse or a planetary opposition.

Most information about BSAS and our activities may be found at www.bsasnashville.com. If you need more information, write to us at info@bsasnashville.com or call Joe Boyd at (615) 386-3134.

**BARNARD-SEYFERT
ASTRONOMICAL SOCIETY**
PO BOX 150713
NASHVILLE, TN 37215-0713

