

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

## Upcoming Events

### Board of Directors Meeting

September 2<sup>nd</sup> at the Cumberland Valley Girl Scout Council Building – 7:30 pm

October 7<sup>th</sup> at the Cumberland Valley Girl Scout Council Building – 7:30 pm

### Membership Meeting

September 16<sup>th</sup> at the Adventure Science Center – 7:30 pm

October 21<sup>st</sup> at the Adventure Science Center – 7:30 pm

### Star Parties

September 11<sup>th</sup> - BSAS Private Star Party at Natchez Trace mile marker 435.5

September 17<sup>th</sup> - BSAS Public Star Party at Bells Bend Outdoor Center - 8:00-10:00 pm

September 18<sup>th</sup> - Public "Observe the Moon" Star Party at the Adventure Science Center – 8:30 to 10:30 pm

October 9<sup>th</sup> - BSAS Private Star Party at Natchez Trace mile marker 412 – Water Valley Overlook

October 16<sup>th</sup> - BSAS Public Star Party at Long Hunter State Park - 8:00-10:00 pm

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## Monthly Membership Meeting

Thursday, September 16, 2010  
Adventure Science Center  
7:30 pm



Our guest speaker will be Dyer Observatory director **Rocky Alvey**, who will be speaking on the past, present and future of the Dyer Observatory. Don't miss this informative presentation!



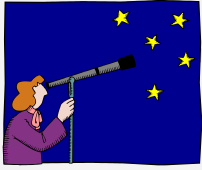
## From The President

Greetings from your BSAS president. The summer vacation period is over and the kids are back in school. While it is still warm, the oppressive heat we were experiencing during July and August seems to have finally ended. The nights are starting to get cooler with average lows by mid month in the low 60's. The fall constellations are starting to rise earlier and, while we are losing Saturn, Venus and Mars, Jupiter is starting to take command of the evening skies. The king of the planets reaches opposition on the morning of September 21 so now is the best time to get out and view the solar system's largest planet and its entourage of moons. We get a special treat at this opposition because Uranus reaches opposition only six hours later. On the evening of the 20<sup>th</sup> the two planets are just under 1° apart although a nearly full Moon is only 25° away from the pair (even closer on the evening after opposition). Never the less, Jupiter will still be exceptionally bright since this opposition is also the closest one to the planets perihelion which occurs in March 2011. The combination of closeness to perihelion and opposition means you won't see Jupiter this good for another 12 years.

Speaking of viewing Jupiter, there will be two great chances to see the planet at our upcoming star parties. The first is at the Bells Bend Outdoor Center on Friday September 17 starting at 8:00pm. The second is Saturday September 18 at the Adventure Science Center for the International Observe the Moon Night starting at 8:30pm. Both nights are just past the 1<sup>st</sup> Quarter Moon so there will be plenty of sky between Jupiter and the Moon making both easily visible. Come out and see Jupiter as large as you'll be able to see it until at least 2023. Saturn, Mars and Venus may be gone from our evening skies by then but is still be plenty of other interesting things to see.

My special thanks this month to Santos Lopez for a great program at the August meeting. His talk on the mysteries of the Mayan calendar and Mayan society and culture was one of the most entertaining and informative talks we have had. Santos is obviously very passionate about the subject and the professional presentation he gave us shows his enthusiasm for all things Mayan.

*Continued on Page 2*



*"To know that we know  
what we know, and to  
know that we do not know  
what we do not know,  
that is true knowledge."*

**Copernicus**  
1473-1543

### 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

#### September 2010

09/01 LAST Quarter  
09/08 NEW Moon  
09/15 FIRST Quarter  
09/23 FULL Moon

#### October 2010

10/01 LAST Quarter  
10/07 NEW Moon  
10/14 FIRST Quarter  
10/23 FULL Moon  
10/30 LAST Quarter

### OBJECTS VISIBLE THIS MONTH

#### Messier Objects:

Globular Clusters: M13, M14, M22, M28, M54, M69, M70, M92

#### Caldwell Objects:

C-15 – Blinking Nebula  
C-19 – Cocoon Nebula  
C-20 – North America Nebula  
C-27 – Crescent Nebula  
C-33 – Network Nebula  
C-34 – Veil Nebula

**Orionid Meteor Shower October 21-22 –  
radiant in Orion (SE)**

### *From the President, cont.*

The topic managed to draw quite a few visitors to our meeting and many of them left with membership applications. For a summer meeting when so many are out of town on vacation, Santos managed to bring in our largest crowd of the summer. Hats off to Santos for a fantastic program. Maybe we can convince him to do a repeat performance as we near December 2012.

Our program for the September meeting has changed from the originally scheduled one. We were going to have a "What's Up" with Terry Reeves and Steve Wheeler but Terry has to travel to England that week for his job. I have asked Rocky Alvey of the Dyer Observatory if he could move his talk up to this month and he has graciously agreed. Rocky was originally going to do his talk in October so we will have Terry and Steve's "What's Up" then instead. Rocky Alvey is the new director of the Dyer Observatory and he will be giving us a talk on past, present and future of the Dyer Observatory. He has been at the Dyer for a number of years and has recently been tapped for the director position. The BSAS used to meet at the Dyer Observatory and one of my hopes as president was to reestablish a strong relationship with the Dyer. I am looking forward to Rocky's talk and hope we have a big turnout to greet him.

Finally, thanks to Mark Manner for hosting this year's BSAS picnic. We had a great turnout this year, one of the largest since we started having them at Mark's. The weather was warm and the skies were beautiful and clear. The food was plentiful and tasty and everyone seemed to have a great evening. I know Mark has had to do a lot of work around his place since the May floods and the improvements and repairs looked wonderful. On behalf of everyone that was there, thanks, Mark, for having us out and being such a gracious host.

I'll see everyone at the public meeting Thursday September 16<sup>th</sup>.

Dr. Spencer Buckner  
President

# Happy Birthday T. Keith Glennan

by Robin Byrne

This month we celebrate the life of a man whose administrative abilities helped America's space program get off the ground. Thomas Keith Glennan was born September 8, 1905 in Enderline, North Dakota. His higher education began at the Eau Claire State Teachers College in Wisconsin, and ended with his receiving a Bachelors degree in Electrical Engineering from Yale in 1927.

After graduation, Glennan had a wide variety of work experiences. His first job was in the motion picture industry, with his electrical skills coming in handy as "talkies" became more popular. He served as operations manager of Paramount Pictures, and as studio manager for Samuel Goldwyn Studios. Then he went to work for a subsidiary of the Western Electric Company, and briefly worked for the Vega Airplane Corporation.

In 1932, Glennan married Ruth Haslup Adams. Over the years, they had four children: a son (Thomas, Jr.) and three daughters (Sally, Catherine and Polly).

In 1942, Glennan helped with the war effort by becoming the Administrator (and later the Director) of the U.S. Navy Underwater Sound Laboratories in New London, Connecticut. After the war, he worked for a few years at the AnSCO Corporation in New York before being asked to serve as President of the Case Institute of Technology in Cleveland, Ohio. It was under Glennan's leadership that Case became renowned as a top engineering school. Concurrent with his presidency, Glennan also served (at the request of Harry S. Truman) on the U.S. Atomic Energy Commission from 1950 to 1952. During this time, the commission was focused on developing a hydrogen bomb, about which Glennan had reservations. Glennan retired from the commission the day before the first U.S. hydrogen bomb test took place in the Pacific.

Glennan was always willing to do his duty, either locally or nationally. He served on many organizations, including: the Institute for Defense Analysis, the National Science Foundation, and the American Academy of Arts and Sciences.

As a response to the Soviet launch of Sputnik, President Eisenhower established the National Aeronautic and Space Agency (NASA) in 1958. He asked Keith Glennan to be the first head of this new organization. On August 19, 1958, Glennan began working at NASA, while retaining his presidency of Case. Glennan knew that in order to achieve success in space, he would need to bring together, under NASA's mantle, a number of disparate people and laboratories, so that the process would be better coordinated. His first step was to entice Werner von Braun away from building missiles for the Army to help build rockets for space. Von Braun didn't take much persuading to make the move. NASA was built from the original National Advisory Committee for Aeronautics (NACA), which included Langley Aeronautical Laboratory, Ames Aeronautical Laboratory, and Lewis Flight Propulsion Laboratory. Glennan added to the NASA family of facilities: Goddard Space Flight Center (which Glennan developed from part of the Naval Research Laboratory), the Jet

Propulsion Laboratory, and the Army Ballistic Missile Agency, which became the Marshall Space Flight Center. With all of these pieces in place, America was ready to send men into space. However, with a new Kennedy administration occupying the White House in 1961, a new director was chosen, and Glennan returned to Case in January of that year.

Glennan remained as President of the Case Institute of Technology until 1966. It was during this time that Case merged with Western Reserve University to become Case Western Reserve University. After retiring, Glennan remained active. He served as president of Associated Universities, Inc., which lobbied Washington on behalf of higher education. He also served as a U.S. representative to the International Atomic Energy Agency in Vienna.

Glennan lived in Reston, Virginia for many years until moving to Mitchellville, Maryland in the late 1980's. There he died April 11, 1995 due to complications from a stroke. He was 89 years old.

Through a life as varied as it was influential, Keith Glennan helped pave the way to space for the United States. Despite being thrust into this role as a reaction to the Soviet's launching the first satellite into Earth orbit, Glennan "... never thought of it as a race. I was always convinced we would overtake the Soviets." The Space Race is over, Russia is now our partner in space, but Keith Glennan's legacy lives on through all of the accomplishments achieved by the U.S. space program.

## References:

T. Keith Glennan - Wikipedia  
[http://en.wikipedia.org/wiki/T.\\_Keith\\_Glennan](http://en.wikipedia.org/wiki/T._Keith_Glennan)

T. Keith Glennan  
<http://history.nasa.gov/Biographies/glennan.html>

T. Keith Glennan, 89, First Chief of Space Agency - Obituary: Biography - NYTimes.com - David Binder  
<http://www.nytimes.com/1995/04/12/obituaries/t-keith-glennan-89-first-chief-of-space-agency.html>



## Board Meeting Minutes – August 5, 2010

*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 August 5, 2010. A sign-in sheet was passed around in lieu of conducting a roll call. Board members Dr. Spencer Buckner, Bill Griswold, Dr. Donna Hummell, Jana Ruth Ford, Santos Lopez, Kris McCall, Curt Porter, Bob Rice and Theo Wellington were present. Board members Tony Campbell, Bob Norling, and Dr. Terry Reeves were absent. A quorum being present, President Dr. Spencer Buckner called the meeting to order at 7:37 P.M.

No treasurer's report was given since Treasurer Bob Norling was absent. Jana Ruth Ford informed the board that Middle Tennessee State University binary star researcher Jeff Gritton might be a good speaker contact for a future membership-meeting program. Kris McCall announced that the Adventure Science Center (ASC) would participate in the first annual International Observe the Moon event from 8:00 - 10:00 P.M. on September 18, 2010. Dr. Spencer Buckner called attention to these upcoming star parties:

- Aug 14 - Public star party at the Warner Parks Special Events Field from 8:30 - 10:30 P.M.
- Sep 11 - Private star party at Natchez Trace Mile Marker 435.5 starting at sunset
- Sep 17 - Public star party at Bells bend Outdoor Center from 8:00 - 10:00 P.M.

Dr. Spencer Buckner announced that the annual BSAS picnic would be held this Saturday, August 7, at Mark Manner's Spot Observatory starting at 4:00 P.M. and reminded attendees to bring "potluck" food dishes. Dr. Donna Hummell announced that she and Bill Griswold were still selecting photos for the new BSAS public information brochure.

Dr. Spencer Buckner recommended that the board consider establishing a new Webmaster for the BSAS' website as personal responsibilities for current Webmaster Tony Campbell are requiring more of his time. Dr. Buckner also stated that the Society should formally acknowledge Mr. Campbell's dedicated service as Webmaster. Bill Griswold noted that the board could appoint a new Webmaster and moved that Drew Gilmore be so considered. Santos Lopez seconded Mr. Griswold's motion. During the discussion that followed the board noted that it should establish guidelines for the Webmaster's duties. Dr. Buckner recommended that a vote on this motion be tabled until Mr. Gilmore could be contacted regarding his willingness to accept the position; the board agreed and the vote was tabled. Kris McCall announced that she was immediately text-messaging Mr. Gilmore regarding his interest in the Webmaster position and hoped for an early response.

Dr. Spencer Buckner reported that, as president, he needed authorized access to the info@bsasnashville.com site to manage members' photo contest submissions for the new public information brochure. Dr. Buckner also announced that a Nominating Committee should be established to develop a list of officer and board member candidates to be presented to the membership at the October 21 meeting and to be voted upon at the November 18 annual election. Kris McCall volunteered to serve as chairperson and to select other members for this committee.

Dr. Spencer Buckner stated that the Society still needed at least a semi-permanent location for its archive materials and noted that previous discussions had considered the possibility of obtaining storage space at the ASC. Dr. Buckner reported that Past-President Dr. Terry Reeves had acquired several boxes of historic materials from Dudley Pitts. In addition, he pointed out that Past-President Joe Boyd might also have some materials stored at his residence. Kris McCall said that she was willing to approach senior management about storing materials at the ASC, but that she first needed to have some idea about the total volume of these items.

Jana Ruth Ford reported that NASA's Night Sky Network wanted a permanent physical address for the BSAS. Since the BSAS has no actual physical location but does regularly meet at the ASC, discussion gravitated toward the possibility of using that organization's address. Santos Lopez pointed out that other non-profit organizations in Nashville typically had a more substantial financial base with endowments and trust funds, but that several also received funds from Metro Government. Dr. Spencer Buckner suggested that since the BSAS conducted a number of star parties at the Metro Parks, they might be willing to provide office space for board meetings that could be used as an address.

Bill Griswold noted that several people had commented that they didn't like meeting in a large tiered space like the Sudekum Planetarium and had asked if the Society could hold its monthly meetings in a smaller room. Kris McCall responded that meeting space at the ASC depended entirely on room availability at any given time. Santos Lopez commented that a Sky Walk planetarium application was available for Apple's iPhone that used GPS to give an immediate display of the night sky at any location. Since there was no further business to discuss, Dr. Spencer Buckner declared the meeting to be adjourned at 8:42 P.M.

Board members were engaged in private conversations following the meeting when at 9:50 P.M. Kris McCall announced that she had just received a text-message response from Drew Gilmore stating that he would be willing to serve as the BSAS' Webmaster. Since only one board member, Santos Lopez, had left and a quorum was still present, President Dr. Spencer Buckner reconvened the meeting and re-called the previously tabled motion for a vote on Mr. Gilmore's assuming the Webmaster position. The board approved this motion by a unanimous voice vote and the reconvened meeting was immediately adjourned.

### OFFICERS

**Dr. Spencer Buckner**  
President

**Dr. Donna Hummell**  
Vice-President

**Bob Rice**  
Secretary

**Bob Norling**  
Treasurer

*Directors at Large*

**Tony Campbell**  
**Jana Ruth Ford**  
**Bill Griswold**  
**Santos Lopez**  
**Curt Porter**  
**Theo Wellington**  
**Kris McCall** (ex officio)

**Steve Wheeler**  
Newsletter Editor  
wsw261@hotmail.com

**Monthly meetings  
are held at:**



**The Adventure  
Science Center**

**800 Fort Negley Blvd  
Nashville, TN 37203**

## Monthly Meeting Minutes – August 19, 2010

*Bob Rice, Secretary*

President Dr. Spencer Buckner called the meeting to order at 7:34 P.M. in the Adventure Science Center (ASC) and welcomed new members and visitors. Treasurer Bob Norling reported that the BSAS had \$1,979.01 in its regular bank account and \$175.03 in its equipment account. Dr. Buckner thanked Tony Campbell for serving as the BSAS' Webmaster and introduced Drew Gilmore as the new Webmaster. Dr. Buckner also announced these upcoming star parties:

- Sep 11 - Private star party at Natchez Trace mile marker 435.5 starting at sunset
- Sep 17 - Public star party at Bells Bend Outdoor Center from 8:00 - 10:00 P.M.
- Sep 18 - Public "Observe the Moon" Star Party at the ASC from 8:30 to 10:30 P.M.

Dr. Spencer Buckner reminded the membership that a contest was underway to select a cover photo for the new BSAS public information brochure and asked members to submit their images and astro-photos. He noted that there would soon be a link on the BSAS' website for that purpose and pointed out that there had already been one entry. He stated that the final selection might take place in October.

Kris McCall, reporting for the Nominating Committee, announced that candidates for new officers and two board members were being considered and asked members to contact either herself or Jana Ruth Ford if they might be interested in serving. She pointed out that the election would take place at the November membership meeting. Dr. Spencer Buckner noted that the slate of nominees would be announced at the October meeting and that nominations from the floor would be taken at the November election. Ms McCall also asked the many visitors to the meeting to raise their hands. Chuck Schlemm announced that the Full Moon Pickin' Party would take place tomorrow evening, August 20, at the Warner Parks Equestrian Center. Mr. Schlemm also announced that he had tickets to Monday evening's Tennessee Titans game and that members could contact him if they wanted them. Dr. Buckner announced that the program for the September 16 membership meeting would be a "What's Up (in the autumn sky)" session.

Dr. Spencer Buckner introduced former BSAS president and current board member Santos Lopez who presented the evening's program on "Apocalypse 2012? - Debunking The End-Of-The-World Mayan Prophecies." Mr. Lopez immediately clarified that, although the Mayan's Long Count Calendar did end on our reckoned date of December 21, 2012, they never indicated that this was the end of the world - their calendar would just simply reset back to zero. He emphasized that the doomsday predictions attributed to the Mayan calendar were nothing but modern day fabrications of a little understood subject designed to sell books and movies in our current disturbed and stressed times. Mr. Lopez emphasized the great mathematical and astronomical accomplishments of this advanced civilization of city-states that inhabited the Yucatan Peninsula from approximately 250 A.D. to 900 A.D. These included a superior numbering system that was based on the number 20, recognized the concept of zero, and used a series of horizontal lines and dots to very simply represent even extremely large integers. This greatly facilitated very difficult and lengthy calculations as opposed to the cumbersome Roman numeral system that had been used by that European civilization. This led to the Mayans being able to make extremely accurate predictions of planetary positions - including retrograde motion - even by modern day standards. Sadly, except for four books, the Spaniards destroyed most of the remnants of Mayan civilization during the 1500s in their effort to promote the Catholic faith so much of their culture and accomplishments have been lost. Interestingly, three of these four remaining books deal with astronomy. Following his presentation, Mr. Lopez graciously answered questions from the audience and recommended several worthy books on the Mayan culture.

Since there was no additional business to discuss, Dr. Buckner declared the meeting to be adjourned at 8:54 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/>





## The Turbulent Tale of a Tiny Galaxy

by Trudy Bell and Dr. Tony Phillips  
Space Place Partners Article, August 2010

Next time you hike in the woods, pause at a babbling stream. Watch carefully how the water flows around rocks. After piling up in curved waves on the upstream side, like the bow wave in front of a motorboat, the water speeds around the rock, spilling into a riotous, turbulent wake downstream. Lightweight leaves or grass blades can get trapped in the wake, swirling round and round in little eddy currents that collect debris.

Astronomers have found something similar happening in the turbulent wake of a tiny galaxy that is plunging into a cluster of 1,500 galaxies in the constellation Virgo. In this case, however, instead of collecting grass and leaves, eddy currents in the little galaxy's tail seem to be gathering gaseous material to make new stars. "It's a fascinating case of turbulence [rather than gravity] trapping the gas, allowing it to become dense enough to form stars," says Janice A. Hester of the California Institute of Technology in Pasadena.

The tell-tale galaxy, designated IC 3418, is only a hundredth the size of the Milky Way and hardly stands out in visible light images of the busy Virgo Cluster. Astronomers realized it was interesting, however, when they looked at it using NASA's Galaxy Evolution Explorer satellite. "Ultraviolet images from the Galaxy Evolution Explorer revealed a long tail filled with clusters of massive, young stars," explains Hester.

Galaxies with spectacular tails have been seen before. Usually they are behemoths—large spiral galaxies colliding with one another in the crowded environment of a busy cluster. Tidal forces during the collision pull gas and stars of all ages out of these massive galaxies to form long tails. But in IC 3418, the tail has just young stars. No old stars. "The lack of older stars was one tip-off that IC 3418's tail isn't tidal," says Hester. "Something else must be responsible for these stars."

Hester and eight coauthors published their findings in the June 10, 2010, issue of *The Astrophysical Journal Letters*. The team described the following scenario: IC 3418 is speeding toward the center of the Virgo cluster at 1,000 kilometers per second. The space between cluster galaxies is not empty; it is filled with a gaseous atmosphere of diffuse, hot hydrogen. Thus, like a bicyclist coasting downhill feels wind even on a calm day, IC 3418 experiences "a stiff wind" that sweeps interstellar gas right out of the little galaxy, said Hester—gas that trails far behind its galaxy in a choppy, twisting wake akin to the wake downstream of the rock in the babbling brook. Eddy currents swirling in the turbulent wake trap the gas, allowing it to become dense enough to form stars. "Astronomers have long debated the importance of gravity vs. turbulence in star formation," Hester noted. "In IC 3418's tail, it's ALL turbulence." To many astronomers, that's a surprising tale indeed.



In the ultraviolet image on the left, from the Galaxy Evolution Explorer, galaxy IC 3418 leaves a turbulent star forming region in its wake. In the visible light image on the right (from the Sloan Digital Sky Survey), the wake with its new stars is not apparent.

See other surprising UV images from the Galaxy Evolution Explorer at <http://www.galex.caltech.edu>. Kids (and grownups) can play the challenging new Photon Pileup at <http://spaceplace.nasa.gov/en/kids/galex/photon/>.

## BSAS 2010 Annual Picnic

On Saturday, August 7<sup>th</sup>, 2010, approximately 25 club members and guests gathered at the home of Mark and Anne Manner to enjoy an evening of food, fellowship, and observing and imaging.

The skies were clear, and many stayed late into the evening to enjoy the viewing. We were also treated to a bright Iridium flare (albeit behind the tree line) and several early Perseid meteors.



Photo: Jeannie Rice



Photo: Jeannie Rice



Photo: Jeannie Rice



Photo: Jeannie Rice





Photo: Jeannie Rice



Photo: Jeannie Rice



Photo: Jeannie Rice

IC1396  
The Elephant's  
Trunk Nebula

Imaged by  
Steve Wheeler

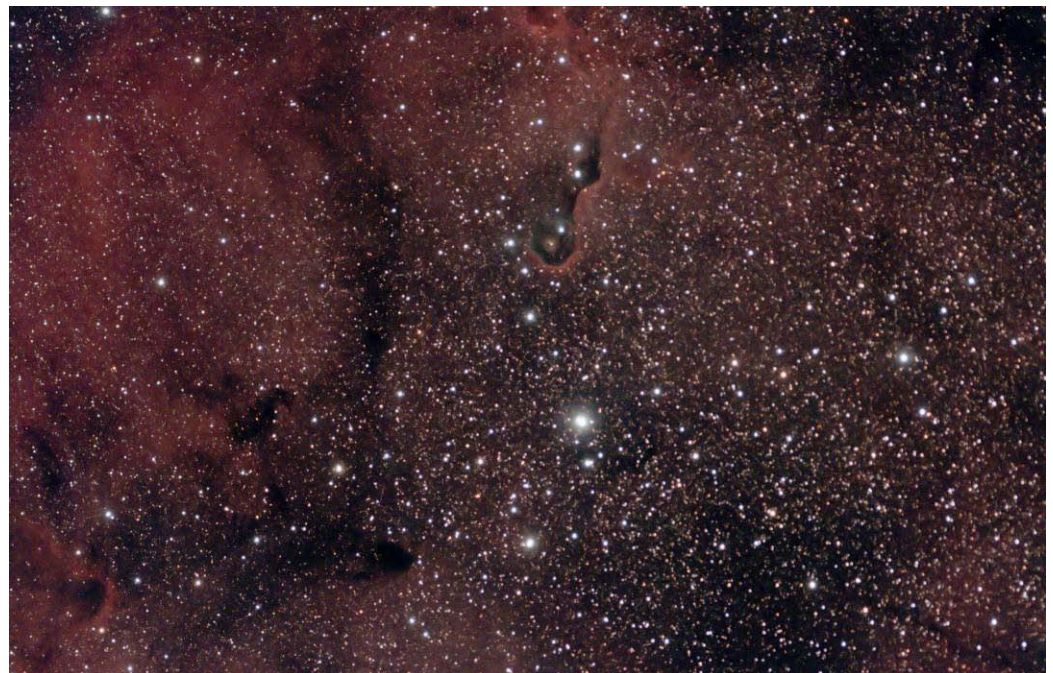






Photo: Steve Wheeler



Photo: Steve Wheeler



Photo: Steve Wheeler

NGC 7023  
The Iris Nebula

Imaged by  
Steve Wheeler



**Become a Member of the BSAS!**

Download and print the Application for membership from [www.bsasnashville.com](http://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)
- \$12** Student\*

\* To qualify, you must be enrolled full time in an accredited institution or home schooled.

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](http://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](http://www.bsasnashville.com). If you need more information, write to us at [info@bsasnashville.com](mailto:info@bsasnashville.com) or call Dr. Spencer Buckner at (931) 221-6241.

**BARNARD-SEYFERT  
ASTRONOMICAL SOCIETY**  
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