

The ECLIPSE

May
2016

The Newsletter of the Barnard-Seyfert Astronomical Society

Next Membership Meeting:

May 18, 2016, 7:30 pm
Cumberland Valley
Girl Scout Council Building
4522 Granny White Pike

Topic: Rob Mahurin,
Middle Tennessee State University
“Symmetry, the Big Bang,
and You”

Details on page 5

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From the President:

For the last several years, BSAS has given awards for projects entered in the Middle Tennessee Science and Engineering Fair. Some years there are no astronomy related projects. This year we had one. A recurring discussion these days is how to interest and encourage more young women in science, math and engineering fields. So it was nice to be able to recognize Katelyn Henke for her science fair project investigating dark skies. Not only was it astronomy related, it was nice to see a project that was out of the ordinary – I’ve seen some fifteen years of science fairs, many of the same projects come back year after year. So congratulations Katelyn, enjoy your free year of membership!

I also spent an evening with a group of young ladies at a state park property called the Head of Sequatchie, a lovely valley just south of Crossville. The Girls Outdoor Workshop had activities for them all weekend investigating and enjoying nature... all led by women. The weather cooperated and so Ranger Monique Hodge and I had telescopes out to show them Jupiter, M44 and more.

May features a relatively rare event... a Transit of Mercury. May 9th, just 26 minutes after sunrise, Mercury will begin to move across the face of the Sun (6:12am). With a good eastern horizon (and good weather) we should see the entire transit (ends at 1:42pm). The last transit was in 2006, the next will be in 2019, although we will only see some of that one. After that it is a long gap until 2049 (there are transits in 2032 and 2039 that we don’t see in this hemisphere). Solar glasses will not be enough for catching this planet visually. Unlike Venus, Mercury is so tiny that some magnification is needed to see the tiny dot against the Sun. At the same time, of course, you never ever look at the Sun! This is a great chance to practice the same viewing techniques that will be used to watch the eclipse in 2017. We’ve asked to use the Model Airplane Field at Warner Park to view the transit, hopefully we can set up there before dawn for those who would like to see the entire event. We’ll post details to the website and facebook pages.



Officers

Theo Wellington
President

tmwellington@comcast.net

Gary Eaton
Vice-President

gceaton@comcast.net

Tom Guss
Treasurer

t_guss@bellsouth.net

Bud Hamblen
Secretary

wrhamblen@comcast.net

(no one)
Ex-officio

Directors at Large

Mike Benson
ocentaurus@aol.com

Spencer Buckner
BucknerS@apsu.edu

Jeffrey Horne
Jeffrey.Horne@gmail.com

Rob Mahurin
robert.s.mahurin@gmail.com

Kris McCall
planetmccall@gmail.com

Kathy Underwood
katy2222@comcast.net

Newsletter Editor
Drew Gilmore
eclipse@bsasnashville.com

Observing Highlights May and June

Open Clusters

M35, NGC2264
(*Christmas Tree*),
M41, M50, M47, M46, M93, M48,
M44 (*Beehive*), M67,
Mel111 (*Coma Star Cluster*),
NGC4755 (*Jewel Box Cluster*)

Galaxies

M81, M82,
NGC3115 (*Spindle Galaxy*), M95,
M96, M105, M108,
M65/M66/NGC3628
(*Leo Triplet*),
M109, M98, M99, M106, M61, M100,
M84, M85, M86, M49,
M87, M88, M91, M89, M90, M58,
M104 (*Sombrero Galaxy*),
M59, M60, M94,
M64 (*Black-Eye Galaxy*),
M63 (*Sunflower Galaxy*),
M51 (*Whirlpool Galaxy*), M83,
M101/M102

Nebulae

NGC2392 (*Eskimo*),
NGC3242 (*Ghost of Jupiter*),
M97 (*Owl*)

Variable Stars

L Puppis, R Leonis

Globular Clusters

M68, M53, M3, M5

Multiple Star Systems

Alpha Geminorum (*Castor*),
Gamma Leonis (*Algieba*), M40,
Gamma Virginis (*Porrima*),
Alpha Canum Venaticorum
(*CorCaroli*),
Zeta Ursae Majoris (*Mizar*),
Epsilon Bootis
(*Izar or Pulcherrima*)
Mu Bootis (*Alkalurops*)

Upcoming Star Parties

Saturday 5/7	Private Star Party Natchez Trace Parkway mile marker 412 (Water Valley Overlook)
Friday 5/13 8:30 pm - 10:30 pm	Public Star Party Bells Bend Outdoor Center
Friday 6/3 8:30 pm - 10:30 pm	Public Star Party Bowie Nature Park (Fairview)
Saturday 6/4	Private Star Party Natchez Trace Parkway mile marker 435.3



May 6
June 4



May 13
June 12



May 21
June 20



May 29
June 27

Happy Birthday Jackie Cochran by Robin Byrne

The is month, we honor a woman who, to this day, holds more aviation records than any man or woman, living or dead. Jacqueline Cochran was born May 11, 1906 in the Florida Panhandle (either Pensacola or DeFuniak Springs, depending on the source). Her birth name was Bessie Lee Pittman. Already we've encountered one of the problems with telling Jackie's story - there are multiple versions, partly due to her own 1953 autobiography, in which she recreated her early life to tell a better story. As Jackie herself said, "I added and subtracted information at will, as it suited me. I didn't see it as lying, so much as survival."

Despite claiming to have been raised in extreme poverty by adoptive parents, Jackie's early years, although tough, were not quite as melodramatic. No, she was not adopted, although she stuck to that story and required family members to uphold the charade in later years. She did work as a child to help the family financially, including working in a textile mill and sweeping floors in a beauty parlor. Jackie married very young, either 13 or 14 years old, to Robert Cochran. They had one son, who died at the age of five. The marriage ended, but Jackie kept the name Cochran, and it was at this time that she began calling herself Jacqueline. Jackie advanced in the beauty parlor to cutting and dressing hair, but wanted more. She enrolled in nursing school, and even worked in a doctor's office, but it wasn't right for her.



With a plan to improve her life, Jackie moved to New York City and talked her way into a job for a prestigious salon at Saks Fifth Avenue. Jackie quickly advanced and wanted to start her own cosmetics line. In 1932, on a trip to Miami, Florida, Jackie attended a dinner and found herself seated next to Floyd Odlum, a wealthy business financier and founder of the movie studio RKO. They immediately hit it off, and he was interested in helping Jackie with her plans. With the Depression in full swing, he knew she would need to offer something unique to make it in the business world. He suggested she learn to fly an airplane, and use the gimmick of flying into towns to attract customers. This was the beginning of a relationship that went beyond business, despite Odlum being married with children.

It took Jackie only 3 weeks to get her pilot's license, and she had discovered her true love. Two years later, she had entered her first air race and had a commercial pilot's license. She and Amelia Earhart became close friends, often flying in the same competitions. By 1935, Jackie was not only making a name for herself as a pilot, but she was also the owner of a multi-million dollar cosmetics business. In 1936, Odlum divorced his wife and married Jackie, though she never changed her name to Odlum.

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Jackie Cochran, continued

Jackie's accomplishments as a pilot are overwhelming. In 1934, she was the only woman to compete in the MacRobertson Air Race. In 1937, she was the only woman to compete in the Bendix race. That same year, she set a women's speed record and was the first woman to make a blind instrument landing. In 1938, she won the Bendix race and set a transcontinental speed record, plus multiple altitude records.

With the imminent approach of America's involvement in World War II, Jackie volunteered in the "Wings for Britain" program, flying aircraft built for Britain from the states to England. In this capacity, she became the first woman to fly a bomber across the Atlantic. While in England, she helped recruit American female pilots for the British Air Transport Auxiliary. In 1940, Jackie wrote to Eleanor Roosevelt to propose a similar program in America to use female pilots in non-military positions, in order to free up male pilots for combat. Her request was passed on to Lt. Col. Robert Olds, who asked for information about how many women were available and their qualifications. The final say had to come from Lt. General "Hap" Arnold, who asked Jackie to take some of the women pilots to England to observe their program. In 1942, General Arnold created the Women's Auxiliary Ferrying Squadron (WAFS), with Nancy Harkness Love in charge. Jackie felt that the women pilots could contribute much more than just ferrying aircraft. She convinced Arnold to create the Women's Flying Training Detachment (WFTD), with Jackie at its head. In 1943, the two were combined to create the Women Airforce Service Pilots (WASP), and, of course, Jackie was in charge. For her service, Jackie received the Distinguished Service Medal in 1945. In 1948, Jackie became a lieutenant colonel in the U.S. Air Force Reserves. She was later promoted to colonel.

With the end of the war, Jackie returned to record-setting. At the encouragement of Chuck Yeager, a long-time friend, Jackie flew a Canadair F-86 Sabre faster than the speed of sound, becoming the first woman to break the sound barrier. Two years later, she became the first woman to fly Mach 2. While consulting for Northrop Corporation, Jackie flew their supersonic trainer, setting speed, distance, and altitude records. She also was the first woman to land a plane on an aircraft carrier.

In addition to flying, Jackie also had an interest in politics. During her wartime efforts, she had become friends with Dwight D. Eisenhower. She and her husband helped convince him to run for president in 1952. In 1956, Jackie ran for Congress. She won the Republican nomination (beating out five men), but lost a close race to her Democratic opponent. One of the very few times in her life that Jackie ever lost anything, friends said the defeat haunted her the rest of her life.

The 99's was an organization of female pilots established in 1929. Jackie had been a member for ages, even serving as its president from 1941 to 1943. In the early 1960's, William Randolph Lovelace had begun a program to put women through the same tests the Mercury astronauts were being subjected to. Looking for women with flight experience, the 99's were a natural source. Although Jackie was past the age limit, she made her own contribution by financing some of the tests and helping the women afford the travel involved. The group of women were narrowed down to thirteen, so they were dubbed the Mercury 13. Never officially sanctioned by NASA, the

Jackie Cochran, continued

program was eventually cancelled, in part due to Jackie testifying against it during a congressional hearing. Despite being an original supporter, some of the women in the group suspected Jackie was becoming jealous of the attention paid to Jerrie Cobb (the first woman involved with the group), taking away Jackie's spotlight. Her revenge was to have the program shut down.

The last of Jackie's firsts occurred in 1971 when she became the first woman inducted into the Aviation Hall of Fame in Dayton, Ohio. It was not long after this honor that Jackie was told she would need to wear a pacemaker. That put an end to her flying days. She retired to Indio, California. After her husband died in 1976, her health quickly deteriorated. Jackie Cochran died August 9, 1980 at the age of 74. Her memorial service was held at the U.S. Air Force Academy in Colorado Springs, Colorado. Among her numerous honors and awards received both during her life and after her death, the one that stands out for me has an astronomical connection. When the Magellan Spacecraft mapped the surface of Venus (the only planet named after a goddess), it was decided to name the features for prominent women. In 1985, the International Astronomical Union named a 100 km diameter crater after Cochran. Even though Venus is currently not visible, when it returns to the night sky in August, take a moment to remember Jackie Cochran, an amazing, accomplished woman.

References:

[Jacquelin Cochran - Wikipedia](#)

[WASP Museum Jackie Cochran Biography](#)

[Jacqueline Cochran - Pilot](#)

[National Aviation Hall of Fame](#)

Next BSAS meeting
May 18, 2016, 7:30 pm
Cumberland Valley Girl Scout Council Building
4522 Granny White Pike

*Topic: Rob Mahurin, Middle Tennessee State University
"Symmetry, the Big Bang, and You"*

Cosmology has come full circle: in order to understand the largest features of the universe, we must understand the smallest. I'll be talking about what we can learn about astronomy from some very terrestrial physics experiments.

Barnard-Seyfert Astronomical Society
Minutes of a Regular Meeting of the Board of Directors
Held On Wednesday, April 6, 2016.

The regular meeting of the Board of Directors of the Barnard-Seyfert Astronomical Society was held April 6, 2016, at the Girl Scouts of Middle Tennessee office, 4522 Granny White Pike, Nashville, TN 37204. Present were Mike Benson, Spencer Buckner, Gary Eaton, Tom Guss, Bud Hamblen and Kris McCall (by telephone). A quorum being present, Gary Eaton called the meeting to order at 7:40 PM. Gary asked for a motion to adopt the minutes of the February board meeting as printed in the April, 2016, edition of the Eclipse. Spencer made the motion, Tom seconded, and the minutes were approved by a unanimous voice vote. Tom Guss reported that there was \$1,619.74 in the equipment account and \$2,019.62 in the regular account.

Upcoming events include a private star party at Natchez Trace MM 435.3 on April 9, public star party at Warner Park Special Events Field on April 16, a private star party at Water Valley Overlook (MM 412) on May 7, Earth Day Festival at Centennial Park on April 23 (solar viewing), and the How to Use Your Telescope workshop at Warner Park Nature Center from 2-4pm on April 16. Spencer said he would be at the Earth Day Festival; Bud was not sure. Spencer, Gary and Bud said they would be at the telescope workshop.

Mark and Ann Manner have offered to host a club pot-luck picnic at Spot Observatory on June 4.

The club was been invited to participate in solar viewing at Warner Park on June 15. The program includes sun prints in connection with The Frist Center. Solar viewing is from 10-2pm, but we can stay as long as we like.

Tom stated that the club is now getting money through PayPal and that the club gets the non-profit discount for PayPal service.

Terry Reeves and Gary will be presenting a "What's Up" at the April meeting, Rob Mahurin will be presenting his program on cosmology at the May meeting, Mike will be presenting a program on double stars at the June meeting, and Spencer will be presenting a program on gravity waves at the August program. July is still open. Possibly Miss Henke can present her exhibit on light pollution. For future meetings, Mike said he could present on bright open clusters, and Rocky Alvey will be asked whether he is available to do a presentation.

Theo Wellington had noted on the meeting agenda that she is monitoring solar eclipse outreach resources. NASA's Sun-Earth group has a monthly tele-conference. The Southeastern Planetarium Association conference in Montgomery, AL, on May 31 - June 4, 2016, will have information on eclipses (Fred Espenak is the keynote speaker). The American Astronomical Society Eclipse 2017 workshop will be at Southern Illinois University Carbondale on June 10 - 11, 2016.

Katelyn Grace Henke, Cascade School, Wartrace, TN, won the club award of \$100 and a year's membership for a presentation at the 2016 Middle Tennessee Science and Engineering Fair. She will be presented her prize on April 12. The club will invite Miss Henke to present her exhibition at a meeting (hopefully July).

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Minutes of a Regular Meeting of the Board of Directors, continued

There being no further business, Mike moved for adjournment, Spencer seconded, and the meeting was adjourned at 8:20 PM.

Respectfully submitted,

Bud Hamblen
Secretary



Sun in H-alpha - BSAS member Theo Wellington

**Barnard-Seyfert Astronomical Society
Minutes of the Monthly Membership Meeting
Held On Wednesday, April 20, 2016.**

The Barnard-Seyfert Astronomical Society held its monthly membership meeting at the Girl Scouts of Middle Tennessee, 4522 Granny White Pike, Nashville, Tennessee, on Wednesday, April 20, 2016. 16 members and 3 guests signed in. Theo Wellington called the meeting to order at 7:43 PM and recognized our guests. Theo asked for a motion to approve the minutes of the March meeting as presented in the April issue of the Eclipse. Dr Spencer Buckner so moved, Joe Boyd seconded, and the minutes were approved by voice vote.

Tom Guss had transmitted to Theo that the society has \$1,836.23 in the regular account and \$1,619.84 in the equipment account.

Theo announced upcoming events:

April 23 - solar viewing at the Earth Day Festival, Centennial Park.

April 29 - telescopes requested for Columbia, Tennessee, high school student campout.

May 7 - assistance requested from Janet Ivey (Planet Janet) at fundraiser in the evening.

May 9 - transit of Mercury viewing from the special events field at Edwin Warner Park.

May 13 - public star party at Bells Bend Outdoor Center.

About a half-dozen people came to the telescope clinic at Warner Park Nature Center on April 16. 320 people came to the public star party at the special events field. At least 11 telescopes were provided by club members.

Dr Terry Reeves and Gary Eaton presented "What's Up" for Spring. Terry described and gave finding directions for naked-eye, binocular and telescopic objects. Gary described planets and solar system phenomena.

There being no further business, Bill Griswold moved for adjournment, Melissa Lanz seconded and the meeting was adjourned at 9:00 PM.

Respectfully submitted,

Bud Hamblen
Secretary



© Keith Rainey

M24 by BSAS Member Keith Rainey

From the President, continued

Several club members came up to Pickett State Park for Astronomy Weekend April 1-3. We did have clear skies on the Saturday night, but it was cold! Still, it was a lot of fun to be out under truly dark skies. Please let us know what improvements or additions we can make for next year! Pickett will also have a summer star party in July... hopefully warmer than the first of April.

Clear skies,

Theo Wellington

Send your cool astrophotos to
eclipse@bsasnashville.com!



Become a Member of BSAS!
Visit bsasnashville.com to join online.

All memberships have a vote in BSAS elections and other membership votes. Also included are subscriptions to the BSAS and Astronomical League newsletters.

Annual dues:

Regular: \$25
Family: \$35
Senior/Senior family: \$20
Student:* \$15

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

About BSAS

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 Wednesday of each month at the Cumberland Valley Girl Scout Building at the intersection of Granny White Pike and Harding Place 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 bsasnashville.com. If you need more information, write to us at info@bsasnashville.com or call Theo Wellington at (615) 300-3044.

Free Telescope Offer!

Did someone say free telescope? 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. A waiting list is 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 info@bsasnashville.com.