

The ECLIPSE

November
2018

The Newsletter of the Barnard-Seyfert Astronomical Society

Next Membership Meeting:
November 28, 2018, 7:30 pm

Cumberland Valley
Girl Scout Council Building
4522 Granny White Pike

*Topic: All I Want for Christmas
Details on page 10*

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From the President

Greetings,

Welcome to November, 2018. Duces are wild. We have two months left in the year. We have two public star parties to look forward to; Edwin Warner Park on November 17th and Shelby Bottoms Nature Center on December 15th. We also have two upcoming private star parties (Natchez Trace mile marker 435.3 on November 10th and Natchez Trace mile marker 412 Water Valley Overlook on December 8th). We all know night time temperatures can be very cold this time of year, but star parties typically only last two hours and winter skies are often the clearest we have to enjoy. Preparing well with warm clothing and perhaps some hand warmers plus a thermos of hot chocolate or coffee and you should be good to go.

There are two member meetings left in 2018 that should be outstanding. Dr. Spencer Buckner will be presenting a program called "All I Want for Christmas" that will provide members with a great opportunity to learn about the best and latest astronomy products from leading vendors. **Please be aware that due to Thanksgiving, our November meeting has been moved to the fourth Wednesday (November 28th)** so mark your calendar accordingly. There are two great reasons to attend our December 19th member meeting. Dr. Billy Teets, Outreach Astronomer for Vanderbilt Dyer Observatory, will be bringing the program. And, we will hold our annual pot-luck dinner that evening. The December meeting will start an hour earlier than usual (6:30 PM) to allow plenty of time for the socializing around the meal. We hope all of you will take advantage of these events.

Two very interesting astronomy news items caught my eye recently. NASA's Parker Solar Probe which launched in August, just set a record this week for closest approach to the Sun by a human-made object. The spacecraft raced passed the current record of 26.6 million miles from the Sun's surface.



Officers

Gary Eaton
President
gceaton@comcast.net

Keith Rainey
Vice President
Keith.Rainey@gmail.com

Tom Guss
Treasurer
t_guss@bellsouth.net

Bud Hamblen
Secretary
wrhamblen@comcast.net

Theo Wellington
Ex-officio
tmwellington@comcast.net

Directors at Large

Mike Benson
ocentaurus@aol.com

Spencer Buckner
BucknerS@apsu.edu

Drew Gilmore
eclipse@bsasnashville.com

K.C. Katalbas
hazeykc@gmail.com

Johana Keohane
jorkeohane@gmail.com

Todd Nannie
toddn_us@yahoo.com



The NASA/ESA Hubble Space Telescope doesn't usually get much assistance from its celestial subjects — but to take this image, the telescope opted for teamwork and made good use of a fascinating cosmic phenomenon known as gravitational lensing. In this particular case, astronomers used the foreground galaxy cluster (named SDSS J0915+3826) to study star formation in galaxies lying so far away that their light has taken up to 11.5 billion years to reach our eyes. These galaxies formed at a very early stage in the lifetime of the Universe, giving astronomers a rare glimpse into the beginning of the cosmos.

Credit: [ESA/Hubble & NASA](#)

Upcoming Star Parties

Saturday 11/10	Private Star Party Natchez Trace Parkway mile marker 435.3
Saturday 11/17 6:30 pm to 8:30 pm	Public Star Party Edwin Warner Park
Saturday 12/8	Private Star Party Natchez Trace Parkway mile marker 412 (Water Valley Overlook)
Saturday 12/15 6:30 pm to 8:30 pm	Public Star Party Shelby Bottoms Nature Center



Nov 7
Dec 7



Nov 15
Dec 15



Nov 22
Dec 22



Nov 29
Dec 29

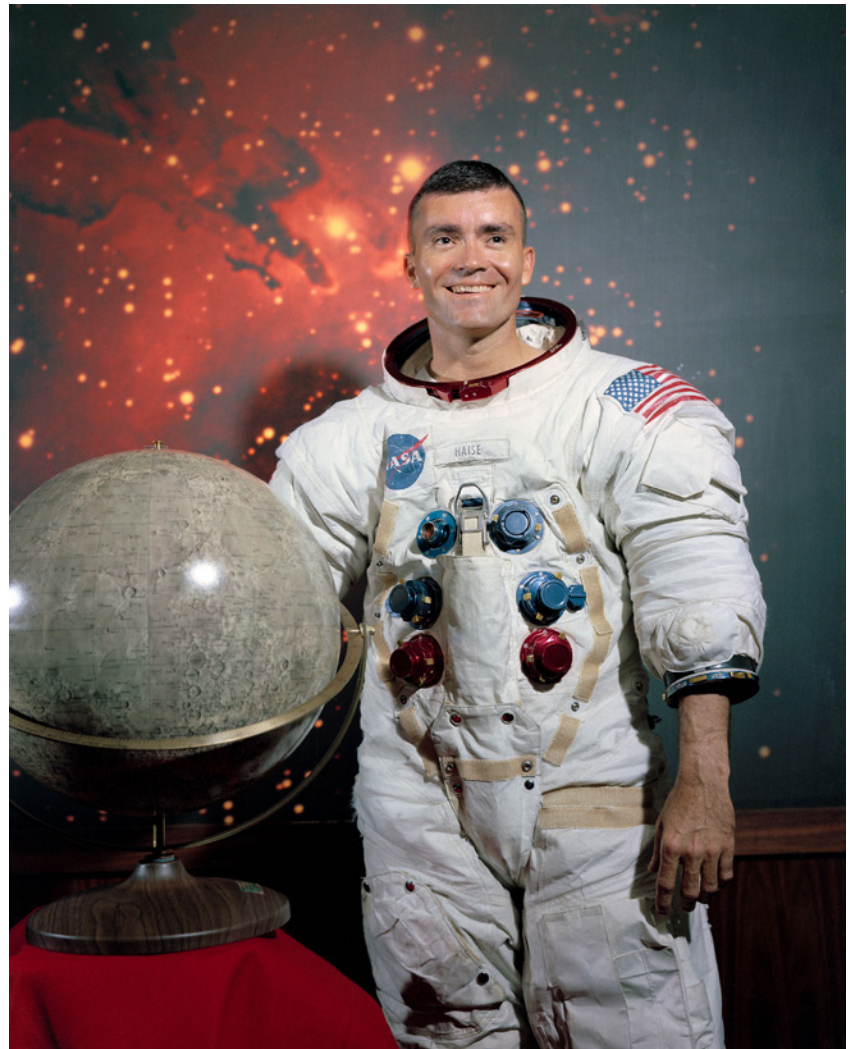
Happy Birthday Fred Haise by Robin Byrne

This month we celebrate the life of a man most may think of as Bill Paxton in the Apollo 13 movie. Fred Wallace Haise, Jr. was born in Biloxi, Mississippi on November 14, 1933. Growing up, Fred was a Boy Scout, rising up to the rank of Star Scout, which is just two levels below Eagle Scout. He attended Biloxi High School, and graduated in 1950. From high school, Fred moved on to Perkinson Junior College, originally planning to become a journalist. He graduated with his Associate of Arts degree in 1952.

Upon graduation, and knowing that he could be drafted, Fred decided to preemptively join the military by signing up for the Naval Aviation Cadet training program. Even though he was nervous about flying, Fred trained to become a Naval Aviator at the Naval Air Station in Pensacola, Florida from 1952 - 1954. After taking a short break to marry his first wife, Mary Grant, Fred then became a U.S. Marine Corps fighter pilot, stationed in Cherry Point, North Carolina from 1954 to 1956.

The birth of Fred and Mary's first child, Mary, in 1956 also heralded Fred's move to a new position as a fighter pilot, stationed with the 185th Fighter Interceptor Squadron, connected to the Oklahoma Air National Guard from 1957 - 1959. During this time, Fred and Mary's first son, Frederick, was born. It was also during this time that Fred decided to return to school to finish his Bachelors Degree, but he wasn't a journalism major anymore. Enrolling at the University of Oklahoma, Fred majored in Aeronautical Engineering and graduated in 1959.

Fred's first job after graduation was actually with NASA, but not as an astronaut. He worked as a research test pilot at the Lewis Research Center outside of Cleveland, Ohio from 1959 to 1963. It was during this time that Fred's third child, and second son, Stephen was born. In 1961, Fred's National Guard unit was called for duty during the Berlin Crisis. For 10 months, he served as a fighter pilot with the U.S. Air Force. In 1964, he continued working as a test pilot at Edwards Air Force Base in California. At Edwards, Fred completed post-graduate work in the Aerospace Research Pilot School.



Fred Haise, continued

It was in April of 1966 that the name Fred Haise would become known across the nation. That was when NASA announced the 19 new members of Astronaut Group 5. The group referred to themselves, tongue-in-cheek, as the “Original 19” - referencing the “Original 7” Mercury astronauts. Ultimately, about half of this astronaut group would go to the moon, while the others would either fly to Skylab or on the Space Shuttle. Fred’s first official duties were serving as the back-up pilot for two missions: Apollo 8 and Apollo 11.

Fred Haise’s most famous mission was Apollo 13. Fred would be the Lunar Module Pilot, serving alongside Jim Lovell, Commander, and Jack Swigert, Command Module Pilot (replacing Ken Mattingly only days before the launch). Launch occurred April 11, 1970. The mission was intended to last for 10 days, with Haise and Lovell landing on the Moon in the Fra Mauro region. However, those plans changed on April 13 when a routine stir of cryogenic oxygen tanks led to an explosion. With the loss of oxygen and power that resulted from the explosion, the astronauts used the Lunar Module for life support while working with NASA to figure out how to get the astronauts back to Earth safely. The decision was made to make use of the Moon’s gravity to slingshot back to Earth. Supplemented with using the Lunar Module’s engines to pick up more speed, they were able to return safely. As a result of the maneuver, the crew does hold



the distinction of traveling farther from Earth than any other people to date, because they flew further away from the Moon as they traveled behind it. Because they had to ration their water during their flight in an effort to conserve all resources, Fred developed a urinary tract infection during the flight, which escalated to a kidney infection later, so he was ill and in pain during most of the trip. On April

continued on next page

Fred Haise, continued

17, 1970, the crew safely returned home. Fred logged 142 hours and 54 minutes in space during this flight. Prior to the explosion, the American public had not shown any interest in the mission, which was now the third trip to the Moon. However, once there was a tragedy, everyone paid attention. Fred Haise had said, "It only seems interesting to the public if it's the first exploration of another planetary body, or if you're having a problem." Three months after the mission, Fred and Mary's last child, Thomas, was born.

Fred remained with the Apollo program, serving as back-up commander for the Apollo 16 flight. If NASA had flown all the missions originally planned, up to Apollo 20, Fred would have likely been the Commander of the Apollo 19 flight. Unfortunately, due to waning public interest and complaints from Congress about the expense, NASA ended the flights after Apollo 18.

Between the end of the Apollo program and the start of the Space Shuttle program, Fred bided his time and graduated from the Advanced Management Program at the Harvard Business School in 1972. Then, during the development of the Space Shuttle program, Fred served as the technical assistant to the Manager of the Space Shuttle Orbiter Project from 1973 to 1976. In 1977, before sending the Shuttle into space, many components had to be tested. One of those was to test how the Shuttle maneuvered and handled in Earth's atmosphere, and how well the landing system worked. To test these components a special shuttle was built that would only be used for these tests, and was not designed to go into space. This shuttle was named "Enterprise." Fred was one of the people who flew Enterprise during these trial runs, officially known as the Approach and Landing Tests, which were carried out at Edwards Air Force Base. Fred served as the Commander of three flights, with Gordon Fullerton as his Pilot. During the test, they were carried atop a Boeing 747, then released to fly freely, testing various components of the maneuverability, and finally, attempted to land. They performed successful landings during all three flights.

Originally, Fred was slated to fly on the second Shuttle flight to boost Skylab before its orbit completely decayed. However, the Shuttle program encountered many delays and didn't begin until 1981, two years after Fred had left NASA and Skylab had fallen to Earth. After 15 years with NASA Fred went to work for the Grumman Space Corp, the same company that built the Lunar Module, serving as the vice president of Grumman's space program. Fred remained at Grumman until his retirement in 1996.

Fred Haise contributed so much to America's space program over the years. As NASA makes plans to return to the Moon, and continue on to Mars, a new set of notable astronauts will join the ranks of our "Original" space pioneers, including Fred Haise.

References:

[Wikipedia - Fred Haise](#)

[Fred Wallace Haise, Jr. Biographical Data](#)

Astronaut Fred Haise: Apollo 13 Crewmember

by Elizabeth Howell, Space.com Contributor, March 20, 2013

**Barnard-Seyfert Astronomical Society
Minutes of a Regular Meeting of the Board of Directors
Held On Wednesday, October 3, 2018.**

The regular meeting of the Board of Directors of the Barnard-Seyfert Astronomical Society was held October 3, 2018, at the Girl Scout Center, 4522 Granny White Pike, Nashville, TN 37204. Signing in were members Dr Spencer Buckner, Gary Eaton, Drew Gilmore, Bud Hamblen, K C Katalbas, Todd Nannie and Theo Wellington, and guest Frank LaVarre. A quorum was present and Gary called the meeting to order at 7:30 PM. Gary asked for a motion to adopt the minutes of the August 1, 2018, board meeting as published in the September, 2018, edition of the Eclipse. Spencer so moved, Todd seconded, and the minutes were adopted without further discussion, by unanimous voice vote. Bud reported that the checking account had \$3,888.03 and the savings account had \$4,157.28.

Dr Richard Gelderman will present on the Citizen Cate project at the October general meeting. Spencer will present on astronomy toys for Christmas at the November general meeting. Dr Billy Teets will present on a topic of his choice at the December general meeting and potluck dinner.

Discussion of general meeting topics for 2019 included:

- January – telescope workshop
- February – Messier Marathon oriented “What’s Up”
- March - open
- April - open
- May - “What’s Up”
- June - open
- July – Apollo 11 50th Anniversary
- August - “What’s Up”
- September - open
- October – Transit of Mercury (November 11)
- November – Astronomy Toys for Christmas
- December – Pot luck dinner.

Frank LaVarre reported that he has been given a Meade telescope for club use, and that Ron Turpin is the contact point at the Latimer Boy Scout Reservation, which has a permanent observatory on-site.

The club had three telescopes at Cornelia Fort Airpark on September 15 and about 200 guests. This event was at the same time as the Cornelia Fort Pickin Party.

The board had an email vote to purchase a new 60 mm Coronado Solar Max for club use, and a used EQ-1 mount from the estate of Bob Rice for the Solar Max. In favor were Spencer Buckner, Gary Eaton, Todd Nannie, Theo Wellington, Johanna Keohane, Mike Benson, Keith Rainey and Bud Hamblen. The club now has possession of the telescope. The mount has not yet been purchased.

The board voted August 22, 2018, to purchase physical asset labels for equipment. In favor were Bud Hamblen, Gary Eaton, Theo Wellington, Johanna Keohane, Keith Rainey, Mike Benson and Todd Nannie. 250 labels have been received.

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

The board voted to change the method to order RASC Handbooks and Astronomy Magazine Calendars. Because last time we had several instances of persons putting down deposits and not picking up the books, this year we will ask for payment in full at the time the member orders his or her books. The order will be placed in October, and the books will be available for pick-up as soon as they arrive. If the book is not picked up, it will be considered abandoned property. Spencer moved the motion, Todd seconded, and the motion was adopted by unanimous voice vote.

A group is trying to fund a dark sky site for amateur astronomers. The consensus was to wish them good luck in their endeavor. A club observatory appeared to be beyond our means to support.

Patrick Alan's telescope was vandalized in the back yard of his home, and has put up a Go Fund Me site to pay for a replacement. This prompted discussion of the need for an equipment floater for club owned telescopes.

There being no further business, Gary asked for a motion to adjourn. Keith so moved, Drew seconded, and without objection the meeting was adjourned at 9:15 PM.

Respectfully submitted,

Bud Hamblen
Secretary



**Barnard-Seyfert Astronomical Society
Minutes of the Monthly Membership Meeting
Held On Wednesday, October 17, 2018.**

The Barnard-Seyfert Astronomical Society held its monthly meeting at the Girl Scout Center, Nashville, Tennessee, on Wednesday, October 17, 2018. Twenty-five members and guests signed in. President Gary Eaton called the meeting to order at 7:30 PM. Gary asked for a motion to adopt the minutes of the September 19, 2018, meeting and the minutes were adopted without discussion. Bud Hamblen reported that there was \$3,888.03 in the checking account and \$4,157.28 in the savings account. Gary recognized new member Eric, and visitors Richard, Stewart and Thomas.

Gary asked for members who would like to participate on the board of the BSAS. Gary announced that the club was taking orders for the RASC Observers Handbook and the Astronomy magazine Deep Space Mysteries Calendar at a discounted price. The books will be ordered on November 1 and should be available at the November meeting.

Gary announced upcoming meetings: “All I Want for Christmas” by Dr Spencer Buckner in November, and the annual Christmas dinner and a presentation by Dr Billy Teets in December.

Gary reported that the September Full Moon Festival star gaze was canceled due to weather, and that the October 6 private star party at the Water Valley Overlook on the Natchez Trace had good weather.

Gary announced upcoming star parties on November 10 at Natchez Trace Mile Marker 435.3, on November 17 at Edwin Warner Park, on December 8 at the Natchez Trace Water Valley Overlook, and on December 15 at the Shelby Bottoms Nature Center.

Gary showed a photo of Comet 21P/Giacobini-Zinner and M35 taken by Theo Wellington. Gary announced that the club now has labels with inventory numbers for club owned equipment and asked members who have club equipment to get their borrowed telescopes tagged.

Dr Richard Gelderman presented “Citizen Cate – One Year Anniversary” about the Citizen Cate project for observations of the inner corona during the solar eclipse of August 21, 2017.

The meeting was adjourned at 9 PM.

Respectfully submitted,

Bud Hamblen
Secretary

November's Dance of the Planets by Jane Houston Jones and David Prosper

November's crisp autumn skies bring great views of our planetary neighbors. The Moon pairs up with Saturn and Mars in the evenings, and mornings feature eye-catching arrangements with dazzling Venus. Stargazers wanting a challenge can observe a notable opposition by asteroid 3 Juno on the 17th and watch for a few bright Leonid meteors.

Red Mars gleams high in the southern sky after sunset. Saturn sits westward in the constellation Sagittarius. A young crescent Moon passes near Saturn on the 10th and 11th. On the 15th a first quarter Moon skims by Mars, coming within 1 degree of the planet. The red planet receives a new visitor on November 26th, when NASA's InSight mission lands and begins its investigation of the planet's interior. News briefings and commentary will be streamed live at: bit.ly/landsafe

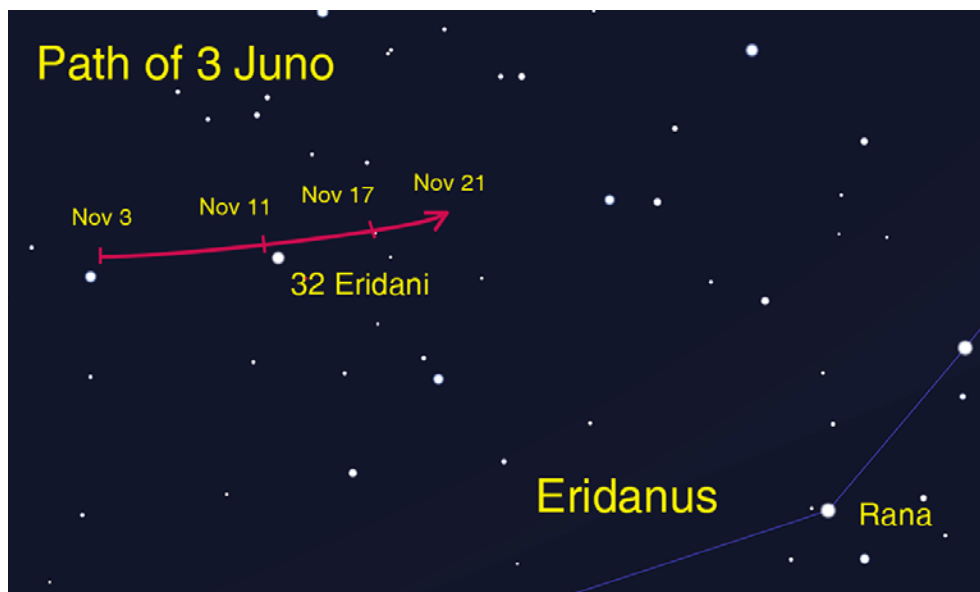
Two bright planets hang low over the western horizon after sunset as November begins: Jupiter and Mercury. They may be hard to see, but binoculars and an unobstructed western horizon will help determined observers spot them right after sunset. Both disappear into the Sun's glare by mid-month.

Early risers are treated to brilliant Venus sparkling in the eastern sky before dawn, easily outshining everything except the Sun and Moon. On November 6th, find a location with clear view of the eastern horizon to spot Venus next to a thin crescent Moon, making a triangle with the bright star Spica.

The following mornings watch Venus move up towards Spica, coming within two degrees of the star by the second full week of November. Venus will be up three hours before sunrise by month's end – a huge change in just weeks! Telescopic observers are treated to a large, 61" wide, yet razor-thin crescent at November's beginning, shrinking to 41" across by the end of the month as its crescent waxes.

Observers looking for a challenge can hunt asteroid 3 Juno, so named because it was the third

asteroid discovered. Juno travels through the constellation Eridanus and rises in the east after sunset. On November 17th, Juno is at opposition and shines at magnitude 7.4, its brightest showing since 1983! Look for Juno near the 4.7 magnitude double star 32 Eridani in the nights leading up to opposition. It is bright enough to spot through binoculars, but still appears as a star-like point of light. If you aren't sure if you have identified Juno, try sketching or photographing its star field, then return to the same area over the next several days to spot its movement.



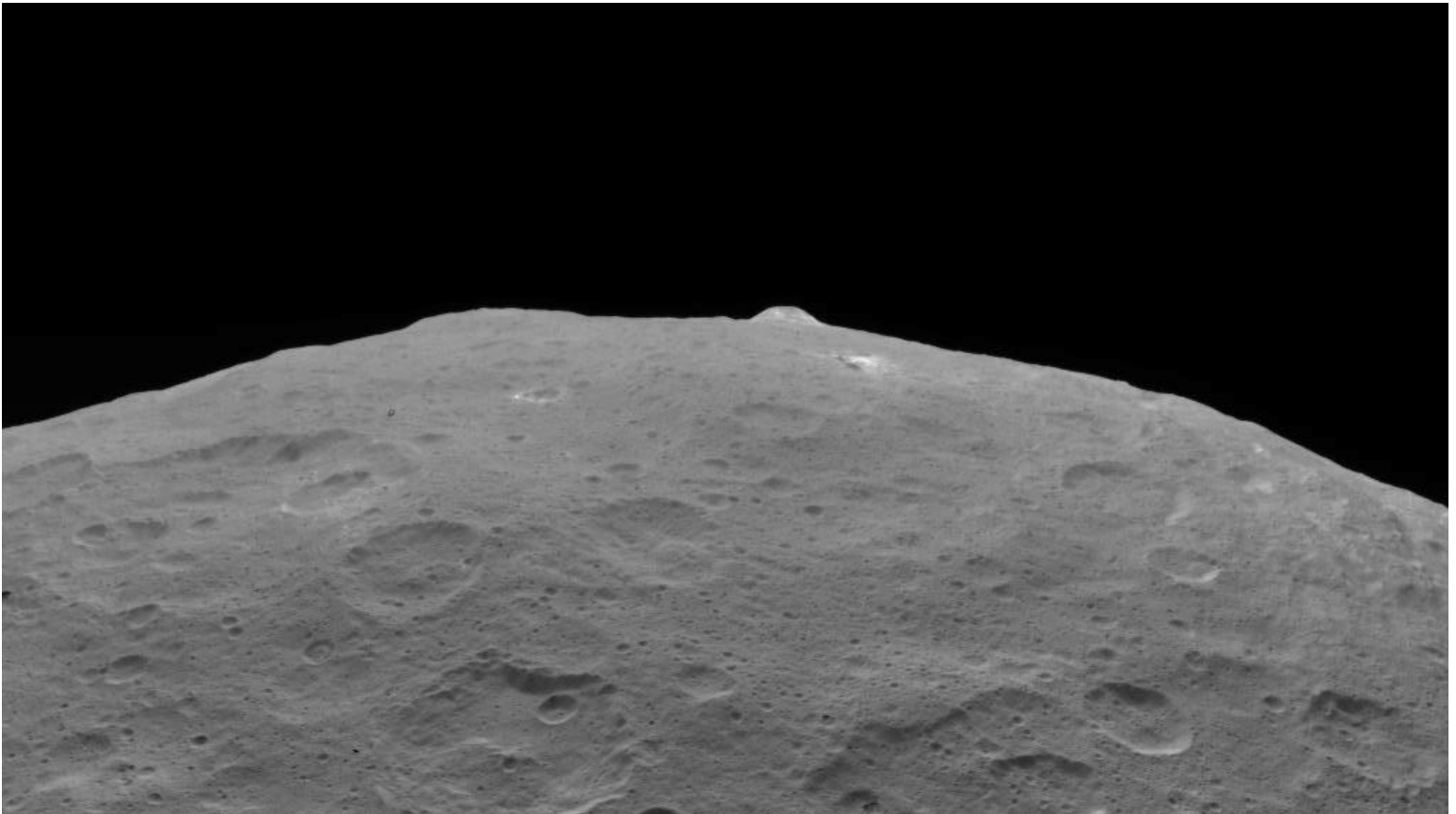
November's Dance of the Planets, continued

The Leonids are expected to peak on the night of the 17th through the morning of the 18th. This meteor shower has brought “meteor storms” as recently as 2002, but a storm is not expected this year. All but the brightest meteors will be drowned out by a waxing gibbous Moon. Stay warm and enjoy this month's dance of the planets!

This article is distributed by NASA Night Sky Network
The Night Sky Network program supports astronomy clubs across the USA dedicated to astronomy outreach. Visit nightsky.jpl.nasa.org to find local clubs, events, and more!

You can catch up on all of NASA's current and future missions at nasa.gov

With articles, activities and games NASA Space Place encourages everyone to get excited about science and technology. Visit spaceplace.nasa.gov to explore space and Earth science!



This photo of Ceres and one of its key landmarks, Ahuna Mons, was one of the last views Dawn transmitted before it completed its mission. This view, which faces south, was captured on Sept. 1, 2018, at an altitude of 2220 miles (3570 kilometers) as the spacecraft was ascending in its elliptical orbit.

Credits: NASA/JPL-Caltech/UCLA/MPS/DLR/IDA

From the President, continued

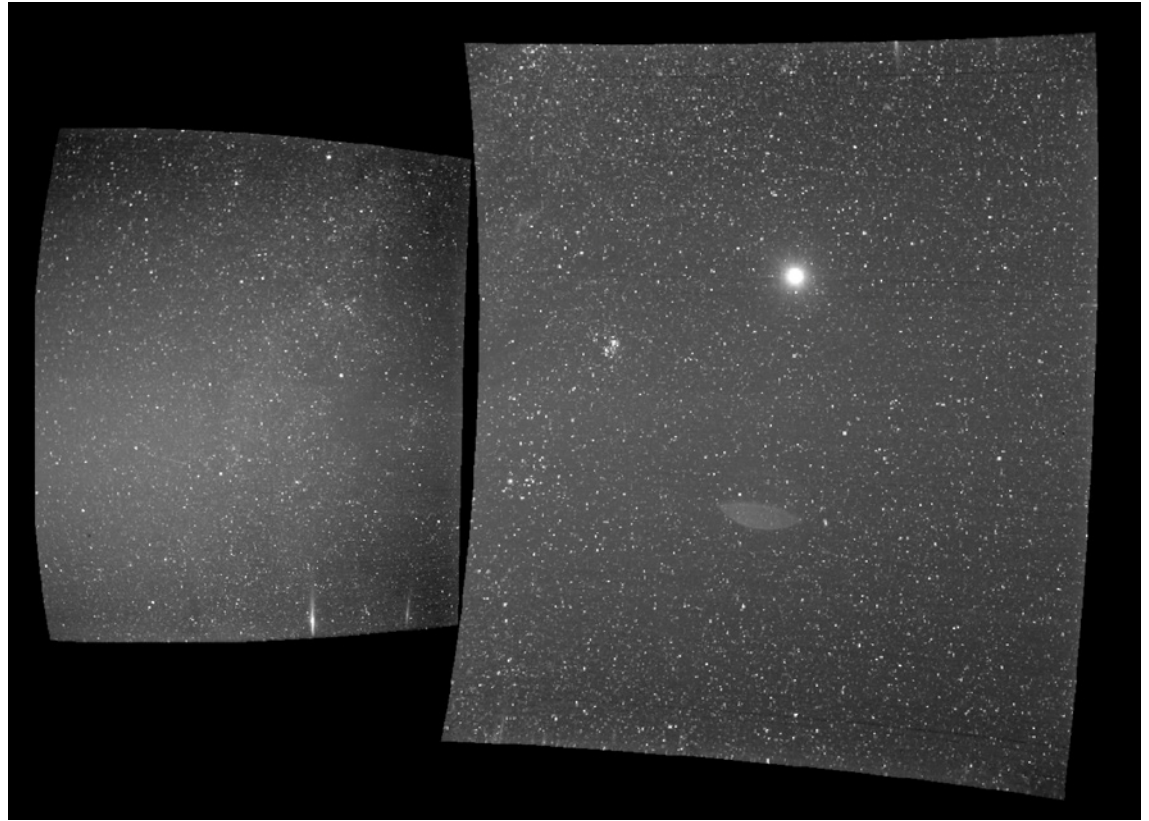
Take a look at the photo of earth the probe sent back:

The Parker Solar probe is also expected to break the record for fastest spacecraft later this month, surpassing the current record of 153K mph, set by Helios 2 way back in 1976. After hearing Dr. Richard Gelderman's presentation on the Citizen Cate Project at our October meeting, it will be very interesting to begin receiving news of solar discoveries this probe will make in the months ahead.

The second story came out just today with the announcement that Hawaii's Supreme

Court will allow for the construction of the Thirty Meter Telescope planned for Mauna Kea. Barring successful legal appeals, when complete the telescope is expected to look back 13 billion years and answer some fundamental questions about the universe.

Gary Eaton



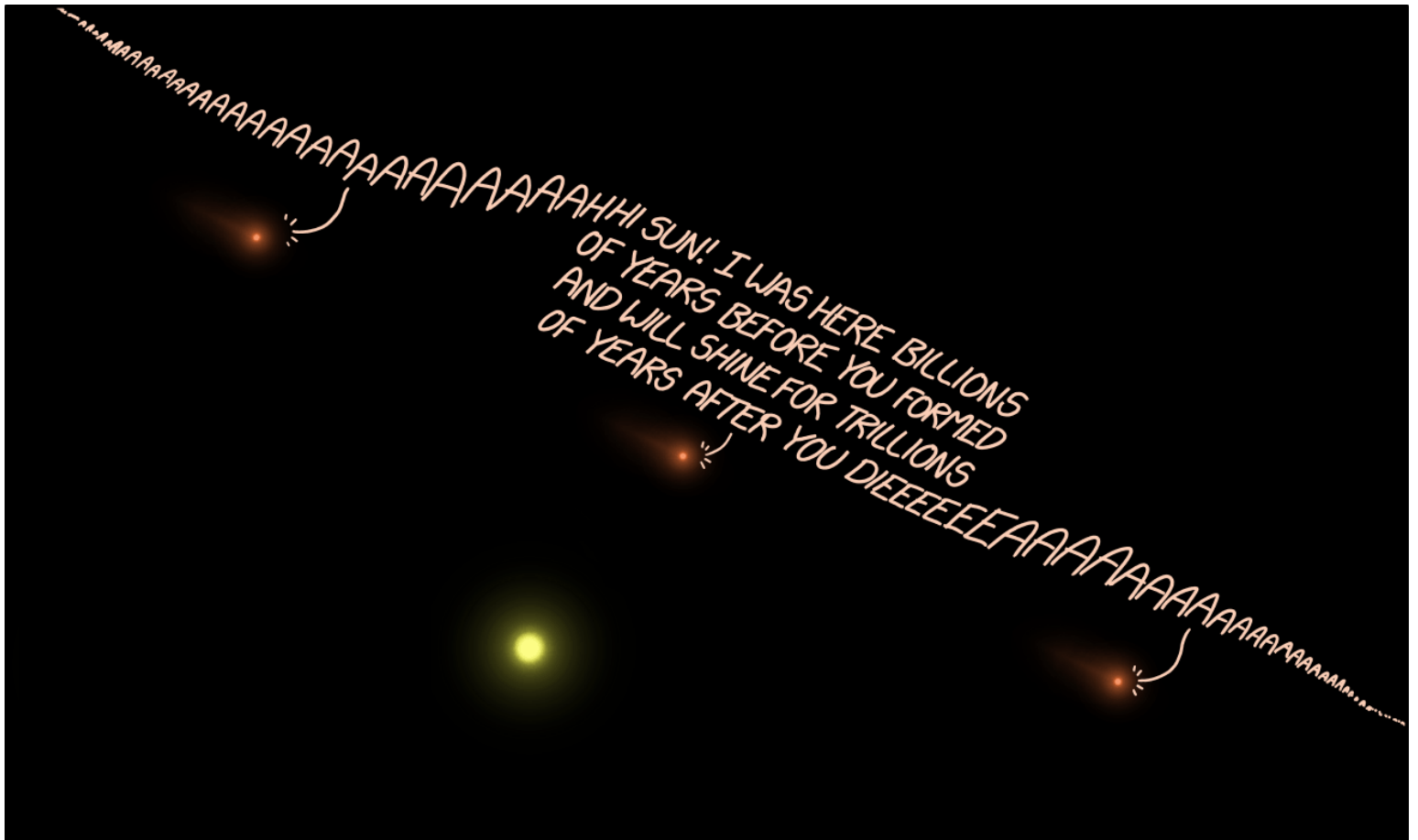
Credits: [NASA/Naval Research Laboratory/Parker Solar Probe](#)

**Next BSAS meeting
November 28, 2018, 7:30 pm**

**Cumberland Valley
Girl Scout Council Building
4522 Granny White Pike**

Dr. Spencer Buckner, APSU: "All I Want for Christmas"

xkcd



SOMETIMES I WONDER WHAT BARNARD'S STAR IS SAYING TO THE SUN AS IT PERFORMS ITS 20,000-YEAR-LONG HIGH-SPEED FLYBY.



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.

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.