

The ECLIPSE

August
2018

The Newsletter of the Barnard-Seyfert Astronomical Society

Next Membership Meeting:
August 15, 2018, 7:30 pm

Cumberland Valley
Girl Scout Council Building
4522 Granny White Pike

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From the President

Greetings,

Planets rule the night sky these days. Of course, Mars has been receiving the most attention, and deservedly so. On July 31, it was closest to earth and the general public was talking about it. It's always great when a truly legitimate astronomy news story becomes popular. But, along with Mars, viewing Venus, Jupiter and Saturn this month can round out a fantastic evening behind the eyepiece. And don't hesitate to get out any clear night to view the planets believing you need to wait on the new moon. Interestingly enough, moon light or any low-level ambient lighting is not bad for planetary viewing. In darkness, the eye uses rods to process signals. And, as we know from experience, we see less color in dark environments. The eye's cones are capable of processing color but require more lighting than rods to kick in, process a signal and create an image. So, if you want to see color in the planets, some light is actually a good thing.

This brings me to the difference between "looking" and "seeing". Having married an artist who has specialized in portraits, I can attest to the difference, thanks to her. We often look at something without really seeing it. What do I mean by that? Well, just because your eyes are looking at a painting or a planet, doesn't mean you are concentrating on it and actually seeing the details. By way of analogy, you can hear people talking around you in a restaurant without really understanding what they are saying. At a recent star party, I tried a little experiment several times with people viewing Jupiter. I held off describing any details about what they would see. After the viewer looked at Jupiter and pulled back from the eyepiece, I asked, "did you notice the storm bands and did you notice the moons?" Typically, the answer was "no". While they had "looked" at Jupiter, it took another



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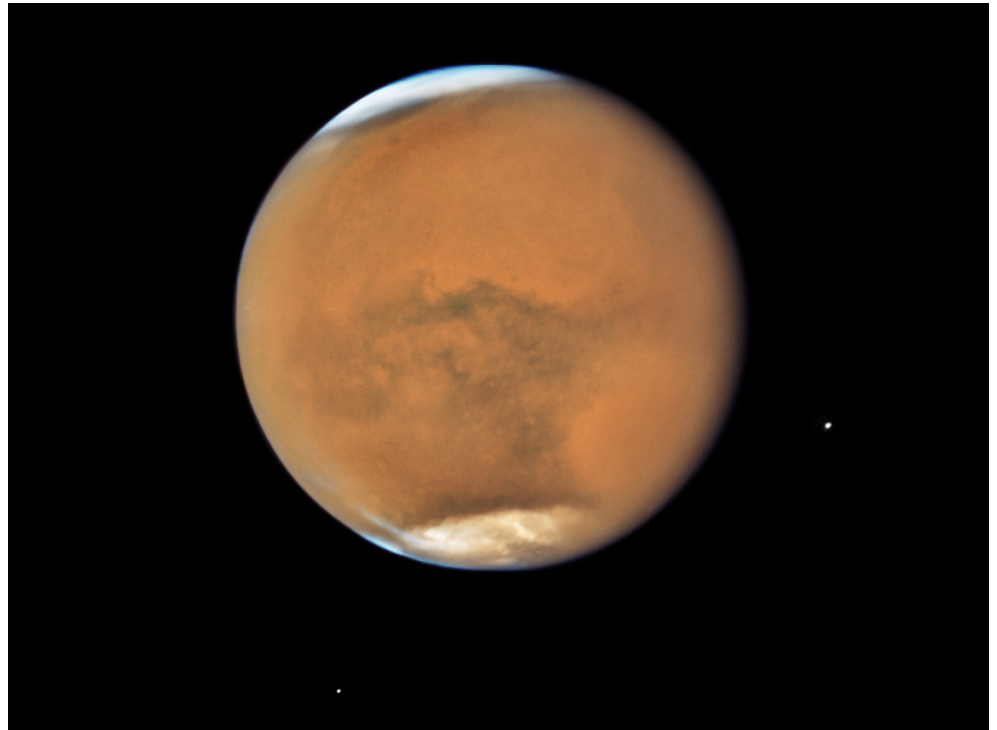
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NASA's Hubble Space Telescope photographed Mars on July 18, near its closest approach to Earth since 2003. The planet was observed near opposition, when the Sun, Earth and Mars are lined up, with Earth sitting in between the Sun and Mars. This proximity gives the Red Planet its brightest appearance in the night sky since the 2003 opposition.

Credit: [NASA](#), [ESA](#), and [STScI](#)

Upcoming Star Parties

Saturday 8/4 8:30 pm to 10:30 pm	Public Star Party Shelby Bottoms Nature Center
Saturday 8/11	Private Star Party Natchez Trace Parkway mile marker 412 (Water Valley Overlook)
Friday 8/17 8:30 pm to 10:30 pm	Public Star Party Bowie Nature Park (Fairview)
Saturday 9/1 8:00 pm to 10:00 pm	Public Star Party Montgomery Bell State Park



Aug 11
Sept 9



Aug 18
Sept 16



Aug 26
Sept 24



Aug 4
Sept 2

Happy Birthday Stu Roosa by Robin Byrne

This month we celebrate the life of one of the 24 people who have flown out of Earth's orbit to visit the Moon.

Stuart "Stu" Roosa, the son of Dewey and Lorine, was born August 16, 1933 in Durango, Colorado. When he was still very young, Stu's family moved to Claremore, Oklahoma, where he attended Justus Grade School, and then Claremore High School. Stu graduated high school in 1951.

After graduation, Stu first enrolled at Oklahoma State University. He then transferred to the University of Arizona, before finally settling down at the University of Colorado Boulder. Stu majored in aeronautical engineering, receiving his Bachelor of Science degree with honors from the University of Colorado in 1960.

Part of what took so long for Stu to finish his degree was that he had also discovered his love for the military. In 1953, Stu first entered the military as a smokejumper for the Forest Service, parachuting into at least four fires in both California and Oregon. Stu then entered the Aviation Cadet Program at Williams Air Force Base in Arizona. It was here that Stu learned to fly and officially entered the U. S. Air Force.

Stu then moved on to Edwards Air Force Base to attend the Aerospace Research Pilot School. Upon completion of that program, Stu became a test pilot. Other positions he held over the years included: maintenance flight test pilot at Olmstead Air Force Base, fighter pilot at Langley Air Force Base, and Chief of Service Engineering at Tachikawa Air Base. Over the years, Stu rose through the ranks, eventually becoming a Colonel. He was on active duty for a total of 23 years (1953 - 1976) when he retired from the Air Force.

In 1966, Stu Roosa's career took an unexpected course. Stu, along with 18 other people, was chosen as part of NASA's fifth astronaut class. One of Stu's first official positions was in 1967 as CAPCOM, communicating between the astronaut crew and ground control, for Apollo 1. It was while Stu was on duty as CAPCOM during the Plugs Out Test for the mission (testing all the systems prior to the actual launch) that a fire erupted in the capsule, killing the three astronauts on board. For the Apollo 9 mission in 1969, Stu was a member of the astronaut support crew, helping the astronauts get into the spacecraft and strapped into their seats in preparation for the launch.

Stu finally got his chance for a space mission when he was named as the Command Module Pilot for Apollo 14. Flying with Stu were Alan Shepard (Commander) and Edgar Mitchell (Lunar Module Pilot) on the space-



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Stu Roosa, continued

craft dubbed Kitty Hawk. Launch was January 31, 1970. Three days later, they arrived at the Moon. Orbiting the Moon, Shepard and Mitchell boarded the Lunar Module, Antares, to head to the lunar surface. While they performed various tasks on the Moon (including Shepard's famous golf shot), Roosa remained alone in lunar orbit. However, he wasn't idle during the 33 hours he had to himself. One of the experiments he performed involved seeds from various trees he had brought on the flight. The goal was to test how the space environment would affect the seeds. Upon returning to Earth, the seeds were germinated, and the trees were planted across the U. S. They became known as "Moon Trees." Another of his assigned tasks was to observe the Moon both photographically and visually. This was the first time that extensive science was performed by the Command Module Pilot while alone in lunar orbit. In later interviews, Stu recalled that he enjoyed the solitude, especially when the module was behind the Moon, out of radio contact with anyone. After 216 hours 42 minutes in space, the crew returned to Earth on February 9, 1971. However, Stu didn't think that going to space had changed him any, saying, "Space changes nobody. You bring back from space what you bring into space."

Roosa continued working for NASA after his flight. He was assigned as backup Command Module Pilot for the last two missions to the Moon, Apollos 16 and 17. If NASA had followed the original plan to continue launches up to Apollo 20, it is highly likely that Stu would have been assigned as a Commander of a lunar landing mission. After the end of the Apollo program, Stu continued on with the Space Shuttle program, but retired in 1976, before any shuttle had flown.

After the Apollo missions ended, Stu enrolled in the Harvard Business School's Advanced Management Program. He graduated in 1973. After leaving NASA, Stu put his degree to work, moving on to various business careers, including: Corporate Vice President of International Operations for U. S. Industries, President of USI Middle East Development Company, and Vice President of Advance Planning for Charles Kenneth Campbell Investments. However, Stu settled down when he became the President and owner of Gulf Coast Coors in Gulfport, Mississippi, a position he held from 1981 to 1994.

In December of 1994, Stu was visiting family in Washington, D. C. when he fell ill. On December 12, Stu Roosa died from complications associated with pancreatitis. He was 61. His wife and four children, and seven grandchildren, were among those who attended his interment at Arlington National Cemetery. Thirteen years later, Stu's wife Joan was buried by his side.

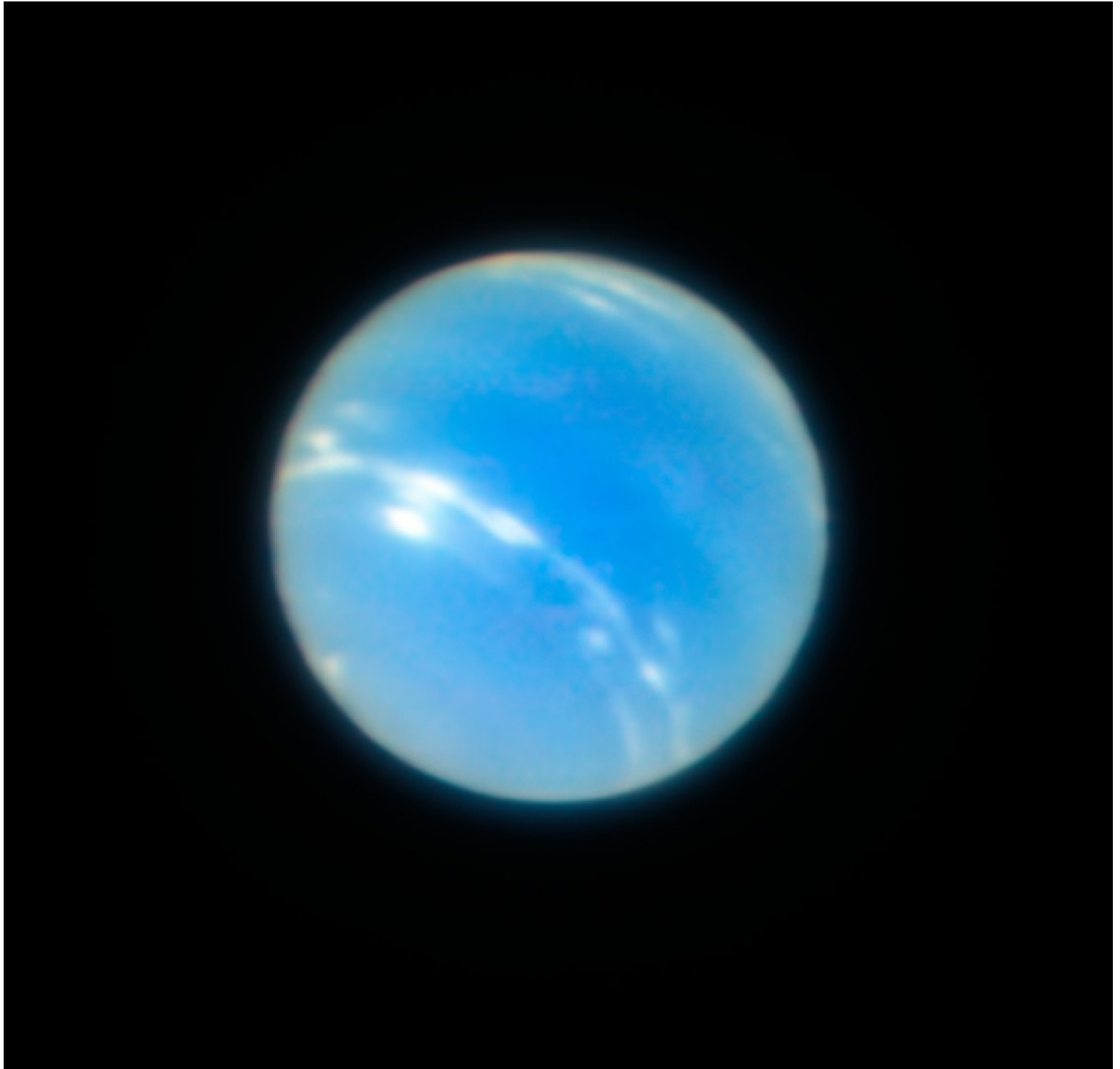
With the recent passing of Alan Bean, the number of Apollo astronauts still living is rapidly dwindling. The importance of their legacy cannot be underestimated. Our nation owes so much to all the men and women who made the missions to the Moon possible, and especially to the brave few who actually flew there.

References:

[Wikipedia - Stu Roosa](#)

[NASA JSC - Stuart Allen Roosa](#)

[Stuart A. Roosa, 61, Astronaut Who Flew 3d Mission to Moon - New York Times by John Noble Wilford](#)



This image of the planet Neptune was obtained during the testing of the Narrow-Field adaptive optics mode of the MUSE/GALACSI instrument on [ESO's Very Large Telescope](#). The corrected image is sharper than a comparable image from the [NASA/ESA Hubble Space Telescope](#).

Credit:
[ESO/P. Weilbacher \(AIP\)](#)

DEEP SKY DAZE
by Mike Benson
ocentaurus@aol.com

Hot and steamy, August is here. This summer has not been a lot of fun so far, weather-wise and I suspect September will bring little change. There are occasional breaks in the heat and humidity, but they're few and far between. Jupiter and Mars continue to be great objects for one's attention, along with Venus and Saturn. Don't forget the Perseid meteor shower. This year promises to be an excellent time as it comes near the New Moon. The radiant for this shower rises late so the best time to view is after midnight. The pre-dawn hours on August 12 and 13 offer the best viewing periods for the shower.

Having spent last month well south of the celestial equator, it's time to head north. The path we take will lead us up the Great Rift of the Milky Way. This huge cloud of dust blocks our view of the central hub of the galaxy and spreads out along its disk in both directions, making relatively nearby objects easier to pick out from the starry field. We'll start at the constellation Scutum tonight and, folks, this is not a bright one.

Scorpius is low in the southwest; Sagittarius is a bit west of south; and the Milky Way slants from SW to NE across the firmament at around

10 PM. "Steam" from the "Teapot" wafts northward through Scutum and Aquila. Part of what defines the steam is the dark nebula dividing the Milky Way. This is the Great Rift which runs past the tail of Cygnus. But we won't venture that far this evening. Northeast of Aquila, sliding along the southern edge of the Rift, we next encounter one of the Archer's arrows, Sagitta, a lovely, faint grouping of stars no brighter than about 3.7 magnitude. Next, and even fainter, we encounter Vulpecula, the Fox, zigzagging across the Rift just north of Sagitta. It will require a good, dark site on a good night to see much, as the brightest star in this constellation is around 4.5 magnitude. Here, in an area 10 degrees by 15 degrees, we can find two Messier objects (a globular cluster and a planetary nebula); nine open clusters, one with dim nebulosity surrounding it and a separate NGC number; and a faint emission nebula.



The Great Rift

DEEP SKY DAZE, continued

Some of these objects will be very difficult, except in the largest amateur telescopes. Others are showcases that will knock your eyes out. Let's get started. Scutum's two Messier objects are open clusters. Diversions, here, will include two Herschel objects in the immediate vicinity of the Messiers, and a couple of tough ones for the die hards. Alpha (α) Scuti is just a tad brighter than 4th magnitude. This small constellation looks like a diamond squashed between Ophiuchus, now in the southwest as twilight ends, and Aquila.

Use binoculars and a sky map to find Scutum. You'll probably see a fuzzy spot right away. It's **M-11**, but ignore it for the time being. Find α and center it in your eyepiece. In the same field, just to the east is **NGC 6664**. This large, sparse open cluster is a fine Herschel 400 object, best seen with α out of the field of view, once you have located it. About 20 SE of α is Delta (δ) Scuti; continue another degree and you have **M-26 (NGC 6694)**. This galactic cluster is not a showpiece. It's about half the diameter of 6664 and fairly sparse.

About 2.5° NE is a small, but nice globular cluster, **NGC 6712**. Another Herschel 400 item, it did not resolve much from a fuzz ball, but it did brighten toward the core.

Next, we move to Scutum's showpiece, **M-11 (NGC 6705)**, north about 2.5° and a little to the west. This is the famous Wild Duck Cluster. You won't see any ducks, but there a couple of intersecting star streams that have the appearance of a flock in flight. This is one of the nicest galactic clusters in the firmament. The cluster is so dense it almost looks like a sparse globular to me. Feast your eyes! It's gorgeous!



M-11

Now the more difficult objects. A degree and a half due west, on a line between α and β and nearly midway between them, is **NGC 6683**. It's about a third of a lunar diameter from the Great Rift and the demarcation between the darkness of the Rift and the bright star field is striking. The cluster is about 3' in diameter, somewhat elongated and shows about 20 stars on a dark, transparent night in my 8" SCT.

Head back to M-11; then point 1.5° north and a tad west to find **NGC 6704** which is a faint haze in a dark field with only a few stars resolved. The brightest of these clearly form a "V".

Now we'll move north to Sagitta. **M-71 (NGC 6838)** is an easy-to-find globular cluster, midway

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DEEP SKY DAZE, continued

between Delta (δ) and Gamma (γ) Sagittae, a bit south of a line drawn between the two stars. Most instruments show this 9th magnitude object with an odd, irregular shape. It takes magnification well. The feathers on the arrow are represented by Alpha (α) and Beta (β) to the west. Look about 4 degrees NW and Brocchi's Cluster ("The Coat Hanger"), officially known as Collinder 399, will stand out. It's over a degree long and a half degree tall. Obviously the best views are through the finder or as a binocular object. The brightest star is 5th magnitude and there are about 40 stars available in larger instruments. At the eastern end of the Coathanger is small, faint open cluster **NGC 6802**. It's only a bit over 3' in diameter, but contains over 50 stars



M-71

fainter than 13th magnitude in that area. Overall, the cluster burns at 8th magnitude. It's concentrated toward the center and is well detached from the background stars.

The next object, **NGC 6793**, is a small galactic cluster about 2° NW of 6802, a little over halfway to 2 Vulpeculae. This cluster contains only about 15 stars in a fairly large instrument and is 6' in diameter. The brightest star is 8th magnitude; the rest are a haze. It was discovered by William Herschel, but is definitely NOT on the 400 Club list.

The next object I have never been able to verify; nor have I found much in the way of description other than that it's an open cluster that contains "several" stars and is very faint and diffuse. It's **NGC 6827**, located 2° due north of Zeta (ζ) Sagittae (the more northerly of the two bright, naked-eye stars west of M-71. Let me know what you think. Next is **NGC 6830**, another 2° north and a bit east. It's about a half degree north of 5th magnitude 12 Vulpeculae.

One of Herschel's finest, this cluster stands out from the field stars surrounding it. It's 12' in diameter, contains about 20 stars, and has a total brightness of 7.9 magnitude.

While we're in the vicinity, shift 2° east and a couple of fields of view south and feast a while on **M-27**. The "Dumbbell" (**NGC 6853**) is always worth a long, awed look.... Now head back to 6830 and continue another two degrees WNW to **NGC 6823**, another of the Herschel 400 Club objects. Guess what! It's another open cluster, but this one is framed by a haze of nebulosity with the designation of

continued on next page

DEEP SKY DAZE, continued

NGC 6820. Herschel apparently never noticed the nebulosity; I almost didn't either. It's pretty faint, but seemed a bit brighter to the south. The cluster, itself, contains around 30 stars 9th magnitude or fainter and is about 12' in diameter, shining at a total magnitude of 7.1.

The next object is **NGC 6800**, another of Herschel's finds as he swept the sky looking for bits of astronomical flotsam and jetsam. It's located about 4° NW of 6823, about a half degree NW of 4.5 magnitude Alpha (α) Vulpeculae and its 6th magnitude visual companion; 5' in diameter it contains about 20 stars fainter than 10th magnitude.

Back to 6823 again. This time head 4° almost due north and a tad west to an association of 6-7 magnitude stars about a degree in diameter. **NGC 6815** is located in the SW corner of that grouping.



M-27

None of the material I have dredged up seems to know what this cluster is. I can't find anything that looks like a separate cluster at the point noted in Uranometria. My tendency is to think that the bright association is NGC 6823. This is the conclusion of Burnham, which is the only authority to comment on the object, at least in my library. A couple of stars NNW there is a wisp of nebulosity termed NGC 6813 (available only to big, light bucket users).

Finally, scan slowly, east, across the magnificent landscape of the Milky Way about 7 or 8° to a group of 6 and 7 magnitude stars in a half degree area. These are listed as 18, 19, and 20 Vulpeculae in Uranometria. Look to 20 Vul, the most southerly of the trio. You should see an interlocking pair of open clusters. **NGC 6885** is the smaller of the two and includes, perhaps, 20-

25 stars, the brightest of which is 20 Vul. **NGC 6882** is a bit larger and tends to be centered a bit north and west of 6885. They are on the 400 Club list, but my notes did not describe anything particularly striking about them.

That's the show for this outing, folks. Once again, if there's an area or a group of objects you want me to deal with, let me know. Clear skies!

Image Credits:

[Great Rift](#) - A. Fujii

[M-11](#) - ESO

[M-27](#) - Miodrag Sekulic

[M-71](#) - Till Credner und Sven Kohle, Calar Alto Observatory

The Best Meteor Shower of the Year

By Jane Houston Jones and Jessica Stoller-Conrad

If you're a fan of meteor showers, August is going to be an exciting month! The Perseid meteor shower is the best of the year, and in 2018, the peak viewing time for the shower is on a dark, moonless night—perfect for spotting meteors.

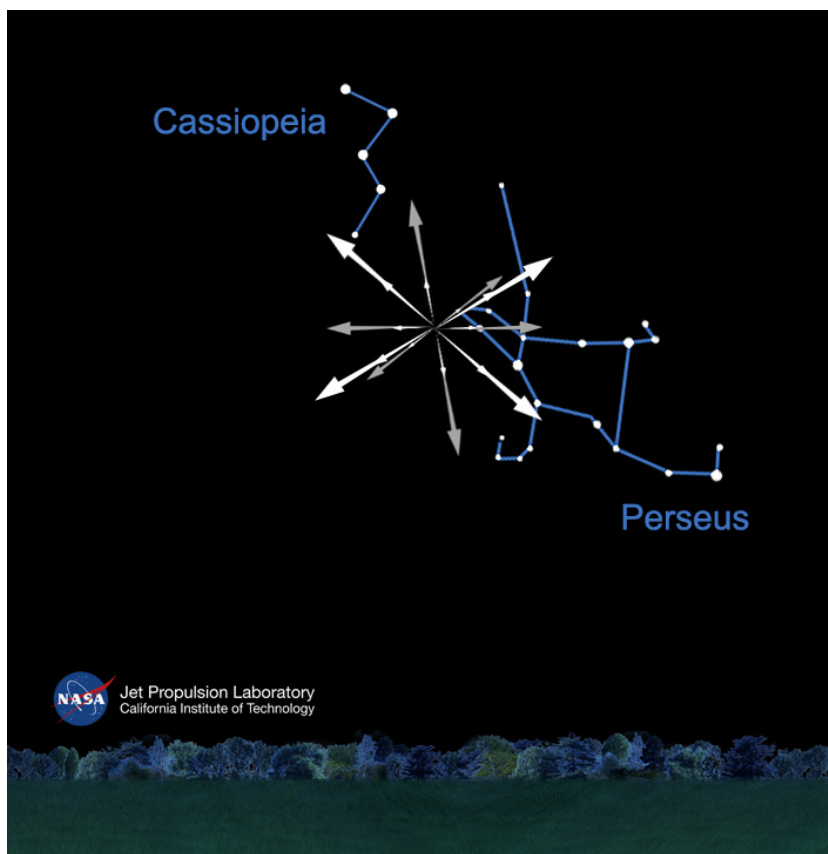
The best time to look for meteors during this year's Perseid shower is at the peak, from 4 p.m. EDT on Aug. 12 until 4 a.m. EDT on the Aug. 13. Because the new Moon falls on the peak night, the days before and after the peak will also provide very dark skies for viewing meteors. On the days surrounding the peak, the best time to view the showers is from a few hours after twilight until dawn.

Meteors come from leftover comet particles and bits from broken asteroids. When comets come around the Sun, they leave a dusty trail behind them. Every year Earth passes through these debris trails, which allows the bits to collide with our atmosphere and disintegrate to create fiery and colorful streaks in the sky—called meteors.

The comet that creates the Perseid meteor shower—a comet called Swift-Tuttle—has a very wide trail of cometary dust. It's so wide that it takes Earth more than three weeks to plow all the way through. Because of this wide trail, the Perseids have a longer peak viewing window than many other meteor showers throughout the year.

In fact, this year you should be able to see some meteors from July 17 to Aug. 24. The rates of meteors will increase during the weeks before Aug. 12 and decrease after Aug. 13. Observers should be able to see between 60 and 70 meteors per hour at the shower's peak.

The Perseids appear to radiate from the constellation Perseus, which is where we get the name for this shower. Perseus is visible in the northern sky soon after sunset this time of year. Observers in mid-northern latitudes will have the best views.



The Perseid meteor showers appear to radiate from the constellation Perseus. Perseus is visible in the northern sky soon after sunset this time of year. Credit: NASA/JPL-Caltech

The Best Meteor Shower of the Year, continued

However, you don't have to look directly at the constellation Perseus to see meteors. You can look anywhere you want to; 90 degrees left or right of Perseus, or even directly overhead, are all good choices.

While you're watching the sky for meteors this month, you'll also see a parade of the planets Venus, Mars, Jupiter and Saturn—and the Milky Way also continues to grace the evening sky. In next month's article, we'll take a late summer stroll through the Milky Way. No telescope or binoculars required!

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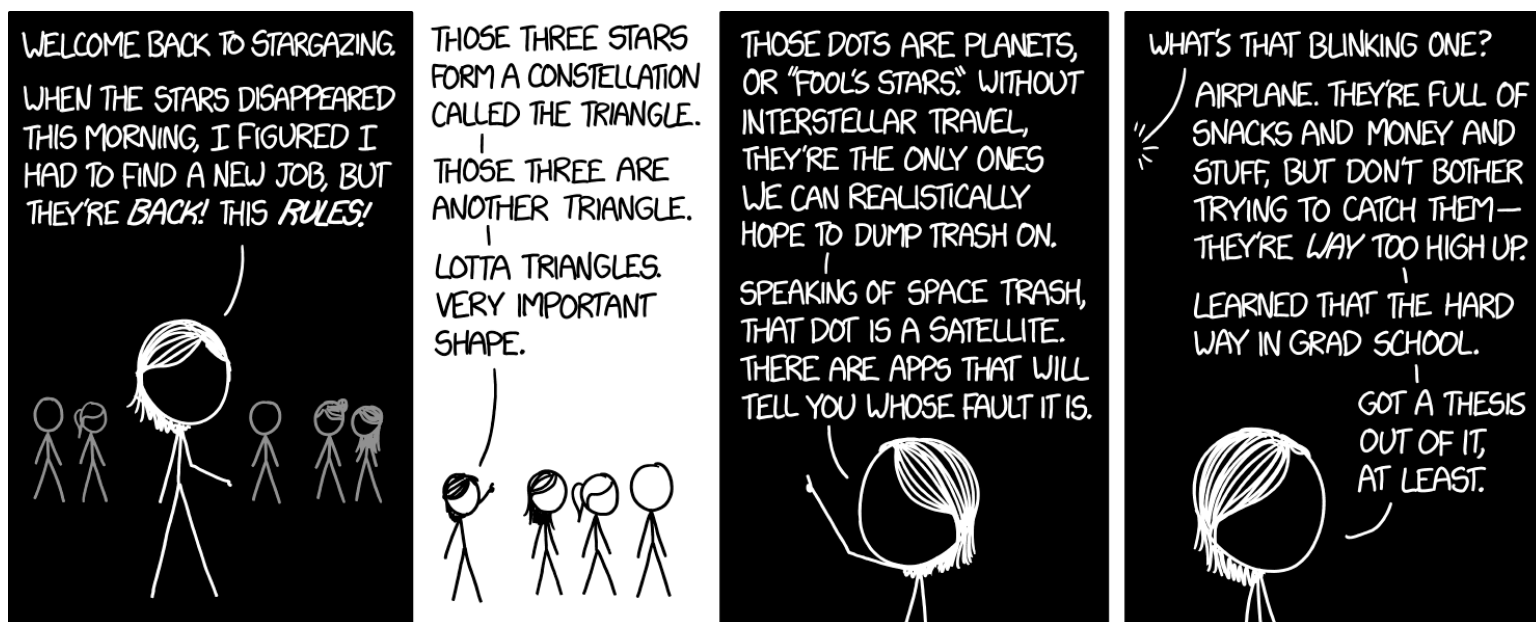


From the President, continued

chance to really “see” Jupiter. As you have opportunity to look at Mars and the other planets and give others that privilege, allow time to really see them. Concentrate intently and enjoy them in all their grandeur and detail. And the same can be said for deep space objects. It is sometimes tempting to locate a hard to find object, check it off your list and move on to the next. Instead, spend more time, using various eye pieces and filters. Really “see” them. It will enhance your experience for sure.

Gary Eaton

xkcd



Next BSAS meeting
August 15, 2018, 7:30 pm

Cumberland Valley
Girl Scout Council Building
4522 Granny White Pike

Theo Wellington: Dark Skies and the IDA
Maya Reilly: Domestic Hen Behavior During the Total Solar Eclipse

Barnard-Seyfert Astronomical Society
Minutes of a Regular Meeting of the Board of Directors
Held On Wednesday, July 11, 2018.

The regular meeting of the Board of Directors of the Barnard-Seyfert Astronomical Society was held July 11, 2018, at the Girl Scout Center, 4522 Granny White Pike, Nashville, TN 37204. Present were Mike Benson, Spencer Buckner, Gary Eaton, Bud Hamblen, K C Katalbas, Keith Rainey and Theo Wellington. Gary asked for a motion to approve the minutes of the June 6, 2018, board meeting as published in the July issue of the Eclipse. Spencer so moved, Theo seconded, and the minutes were adopted without discussion, by unanimous voice vote. Bud reported that there was \$4,316.03 in the checking account and \$4,151.28 in the savings account. There was \$41.18 in the PayPal account. Keith reported that the membership was about 140.

Meeting programs for 2018 were discussed. At the August general meeting Theo will present on dark skies and the IDA, and Maya Reilly will present on domestic hen behavior during the total solar eclipse of August 21, 2017. Gary will be out of town and Keith will preside.

There were about a dozen telescopes at the Water Valley Overlook on June 16. The star party at Bowie Nature Park on June 22 had to be cancelled because of the weather.

The private star party at Natchez Trace Mile Marker 435.3 is scheduled for July 14. The Mars viewing oriented star party at Bells Bend Outdoor Center is scheduled for July 20. The Japanese Moon Festival at Cheekwood is scheduled for September 23. A public event at the Edmundson Pike Branch Library is scheduled for October 4.

One more of the loaner telescopes has been loaned out.

Other organizations have scheduled events: Astronomy Weekend at Fall Creek Falls State Park on August 10, and a Night Sky Program at Pickett State Park also on August 10.

The Boy Scout observatory at the Latimer Reservation has received storm damage, but the extent was not available at the time of the meeting.

There being no further business, Gary asked for a motion to adjourn. Mike so moved, Spencer seconded, and without objection the meeting was adjourned at 8:15 PM.

Respectfully submitted,

Bud Hamblen

Secretary

Barnard-Seyfert Astronomical Society
Minutes of the Monthly Membership Meeting
Held On Wednesday, July 18, 2018.

The Barnard-Seyfert Astronomical Society held its monthly meeting at the Girl Scout Center, Nashville, Tennessee, on Wednesday, July 18, 2018. Thirty-five members and guests signed in. Gary Eaton called the meeting to order at 7:30 PM. Gary asked for a motion to adopt the minutes of the June 20, 2018, meeting as printed in the July issue of the Eclipse. Spencer Buckner so moved, Theo Wellington seconded, and the minutes were adopted, without discussion, by voice vote. Keith Rainey reported that there were 131 members. Gary recognized new members Bruce, Steve and Chris, and guests Susan, Jack, Randy and Cheryl.

Gary reported that the star party scheduled for June 22 at Bowie Nature Park was canceled due to weather. The private star party for July 14 at Natchez Trace Parkway Mile Marker 435.3 had some clouds, but a few members were able to enjoy the event. Chuck Schlemm and Lonnie Puterbaugh held a good event for the HOSC summer camp. Gary displayed a photo by David Reagan of M63 and asked members to send in more photos of their own.

Gary announced upcoming star parties: A public star party at Bells Bend Outdoor Center on July 20 from 9 PM to 12 AM. The weather appeared iffy, but an indoor presentation was planned even if telescopes had to be canceled. A private star party at Water Valley Overlook, Natchez Trace Mile Marker 412, on August 11. A public star party at Bowie Nature Park on August 11 from 8:30 to 10:30 PM. Moon viewing at the Cheekwood Japanese Lunar Festival on September 23, time to be determined.

The club can have a table at the Adventure Science Center Super Science Saturday Blast Off event on August 4 from 10 AM to 4 PM. Picket State Park is having astronomy events on August 10 and October 13. Fall Creek Falls State Park is having an astronomy event on August 10.

Dr J. Allyn Smith, Austin Peay State University, presented on three types of astronomical observing: amateur, professional and industrial.

Curt Porter brought a star party direction sign for anyone who would volunteer to set it out at public star parties. Lonnie Puterbaugh showed an aluminum Bahtnikov Mask focusing aid.

There being no further business, the meeting was adjourned at about 9:00 PM.
Respectfully submitted,

Bud Hamblen
Secretary



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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.