The President’s Corner

Have you purchased any new equipment lately with your stimulus check(s)? I did at the first of last year and have only been getting bits and pieces of needed, fairly inexpensive, accessories since then. A friend, however, recently bought a used light bucket that is truly impressive! The 22 inch Dobsonian really pulls in objects clearly. He, another friend, and I were out in the desert a couple of Sundays ago, giving his new scope its second first light, so to speak. From what he was able to see, and the ease of its use, I think he will find ways to get away from home more often this year.

Seriously, what have all of you been up to? Watching the astronomy forum, EVAC Zoom meetings, and the SAC Facebook page, some of you are doing impressive science, beyond what I call amateur astronomy. I am still going through a variety of “Lists” trying to see deep space objects for the first time, taking rudimentary photos of each and then going back to try to obtain better photos of the more interesting objects. This time of year, and at my advanced age, I am only good for part of the evening. Working with my telescope, sitting in the cold, my back and hands usually inform me when it is time to call it a night. But, with my photographic and journal notes, once I am home, I have numerous hours of fun, and frustration, comparing what I photographed to my notes, and when not sure of an object being captured, comparison to what the internet has for images. I have found on occasion that I did not take good notes and have views that do not make sense. That is where the frustration comes in.

This process works my old mind, continues my education, provides a connection to what I am looking at and the significance of the objects. The quality of my photos also educates me in what I cannot capture with the technique I use, and further stimulates me to learn how better to use my equipment, and what new equipment or processes I need to obtain recognizable photos of the difficult objects. I encourage other amateurs to try for more than just the 110 Messier objects and the planets. Get outside of your comfort zone and try some of the other lists of objects you can find on the SAC website. Keep a journal of your nightly efforts, and if not using a camera, try drawing some of the more distinctive objects in a fashion Steve Coe would be proud of. (Sadly, most of my globular cluster and open cluster drawings look too similar.)

The incredible variety of YouTube videos, personal astronomy web sites, and sites hosted by educational institutions and observatories makes learning about the objects I am observing all the more interesting, and easier than trying to garner all my information from books. I still read astronomy books, my current read is one Carl Sagan co-wrote in 1966 with I. S. Shklovskii, titled, “Intelligent Life In The Universe.” Wow! The science we thought we knew then has been massively eclipsed with what we know now. The book is still a great read. A YouTube site I frequent DeepSkyVideos.com, is normally hosted by astronomy professors or doctoral candidates of the University of Nottingham in England. They take each Messier object and try to find something unique about it to describe. If you have not visited the site, give it a look, it finds it interesting and educational. What are some of your favorite sources?

I guess what I have been after in this letter is to encourage our continued education as a cornerstone of our observing hobby. Stimulate your minds, I hear it is key to keeping your mind young. Note: I still go camping/fishing and drink beer sitting around the camp fire staring into the glowing ashes, but I consider that meditation. Maybe sleeping on the ground is a form of yoga. Just sayin’. Clear skies all, stay healthy and get the vaccinations.

Tom

SAC President, Tom Curry

Photo: Susan Trask

Quick Calendar

* Due to the corona virus pandemic, many activities are canceled. The Editor

Editor’s Note: SAC’s General Meetings are now on Zoom, (Virtual, online) Meetings. An email was sent to all the members and friends of SAC to announce the date of the Zoom Virtual Meeting with a link to register to join. The next Zoom SAC Meeting is: February 26th Guest Speaker: Alex Van Engelen, ASU, Topic: “Observing First Light”

* If you have not received an invitation for the Zoom meeting, contact Tom Curry, President.

Meanwhile, Star Parties & ATM Meetings are all still canceled until further notice.
Hi Folks,

Best of the NGC features this month, NGC 1931, open cluster with nebula in Auriga.

Such-A-Deal has five old ads.

Bits & Pisces has some SAC history.

SAC Imaging features Michael Poppre, he gives us his report of observing at Fool Hollow Lake, AZ.

SAC Observing feature has the sky info for this month and a variable star, Betelgeuse, in Orion.

SAC Outreach has info for the tentative 2021 Grand Canyon Public Star Party at the North Rim.

SAC Sky has info on star and planet locations this month for you all.

Remember to register and tune-in to the February 26th Zoom online SAC meeting.

Enjoy!

Rick Rotramel, Editor
**Best of the NGC:**

NGC 1931, Open Cluster + Nebula in Auriga

Nebula in Ophiuchus

By SAC Imagers, Observers & Sketchers

Image: Second Palomar Observatory Sky Survey (POSS-II)

Auriga Star Chart

© Astronomy Magazine

**Observing Chart**

D. M. Douglass - Tempe, AZ

**Other Names:** LBN 810; NGC-1931; Fly Nebula

**Observing Program:**
Astronomical League - Bright Nebulae

The AL Observing sheets list the size of this target as 8 ArcMin. I also have reference to a size of 3 ArcMin. 8 ArcMin seems to match the larger nebulosity field, including the dim area, and that seems to match the double star (WDS BU 1239).

The image to the right matches web available “target” images that were obtained for comparison, as well as the Palomar Sky Survey image.

**Estimated Brightness (Lynd’s scale):** 1

**Estimated Brightness - Sharpless:** 3

**Image Information:**

- Total # of frames (sub): 04
- Frame exposure time (min): 15
- Total exposure time (min): 60
- Camera: SBig ST-8300-M
- Camera controller: TheSkyX Pro
- Preprocessing and stacking: CCDStack
- PostProcessing: Adobe Photoshop CS3
- CGEM Mount Control: TheSkyX Pro
- All skew by “closed loop” (Parle Solved)
- Mount Guiding: PHD

**Type:** Open Cluster + Nebulosity

- R.A.: 05:31:25
- DEC: 34:14:6
- Magnitude: 11.3
- Size (Arc Min): 3-8
- Constellation: Aur

**Weather:**

- Temp: 55
- Wind: Calm
- Clouds: None
- Estimated Seeing: FWHM CCDInspector = 1.9 as (Png)

**Sky Brightness:**

- Mag/1 sq ArcSec: 18.5
- Bornte Scale: 6
- Moon III: 100%
- Estimated Transparency: Object = Little Dipper Value (Mag) = 5

---

David Douglass

Continued on next page...
**Best of the NGC:**

**NGC 1931, Open Cluster + Nebula in Auriga**

By SAC Imagers, Observers & Sketchers

**SAC Observer Steve Coe, 1949-2018**

13” f/5.6; Bright, pretty large and somewhat elongated. Looks like a small comet at very low powers. There is a triple star in the center, it is resolved at 200X. At Sentinel, w/13”, 7/10 – 100X, Pretty bright, pretty large, irregularly round, brighter middle. 220X - going to higher power really helps, 5 stars involved, elongated 1.5 X 1 in PA 45. Nice nebula, double star 5 arcmin to the west, with some nebulosity around it. An UHC filter does not help the contrast, averted vision makes it grow somewhat.

**SAC Observer Rick Rotramel**

16” f/4.4 Newtonian; Bright glow around a small group of four stars, pretty small.

**SAC Observer Michael Poppre**

102mm Explore Scientific APO refractor: November 26, 2019, Location: Kartchner Caverns State Park, Benson, AZ. A loose open cluster with four central stars that form a box. I counted 10 to 12 stars at 65x. The upper left star in the box (in my refractor view with a star diagonal) appeared to be a multiple system. I could split these at 162x. I did not note visually any nebulosity.

**SAC Lost & Found**

Lost:

I can't find one of my eyepieces and it's been several months now. I know I had it since the last time I went observing, so it's not "out there." It's a black Nagler 4.8 mm Type I, with a chrome barrel.

Jack Jones
Email: telescoper1@gmail.com
Such-A-Deal

16-inch Dobsonian & Observing Chair

Telescope: 16-inch f/4.5 Enterprise Optics mirror, excellent figure and performance.

- Truss-type Dobsonian, home-made of Baltic Birch structure, bearings of Ebony Star and Teflon.
- Black fabric light shield (not shown in photo)
- ‘Scope disassembles and nests into approximately 3-foot cube, to fit into your van.
- Protective box for primary mirror.

Observing chair: stand or sit comfortably, even when viewing at the zenith!

Asking:

$1900

Contact me to schedule a visit in Gold Canyon.

Bob Buchheim
Email: oca_bob@yahoo.com
480-646-1324

Meade ETX-90EC Telescope

The Meade ETX-90EC portable telescope with 90mm Maksutov-Cassegrain optics, a built-in flip mirror mechanism, and an f/13.8 focal ratio produces celestial objects with clarity and detail. Includes the following:

1. AutoStar Suite Planetarium software allows total computer control of the mount and telescope, and access to a database of over 30,000 celestial objects. Weight is less than ten pounds, so telescope is lightweight & easy to transport.
2. Meade electronic controller with attached coil cord.
3. Deluxe field tripod.
4. Hard carrying case for ETX-90EC with specific compartments.
5. In addition to attached finder scope a QuickFinder device is attached too.
6. Eyepieces include: Meade 45° erecting prism, Super Plossl 26mm LP, Meade 2X Telenegative Multi-coated, LV6mm-45 degree Long Eye Relief 20mm, LV10mm-50 degree Long Eye Relief 20mm, LV15mm-50 degree Long Eye Relief 20mm. Hardly used, excellent condition.

Price $350.00. If interested, please contact: Den Krasavage rkrasavage@cox.net or home phone# (602) 277-1193
Such-A-Deal

Meade LX-200 GPS 10” f/6.3 (not f/10)

- UHTC Ultra-High Transmission Coatings

Mods:
- Peterson EZ Clutch
- Peterson EZ Focus
- Peterson Bucks Gears
- Field Tripod with ‘Springy Thingy’

Accessories:
- JMI Hardside Carrying Case for Telescope
- Scopetronix Carrying Case for Tripod
- OPT Scope Saver with extended mounting screw
- Telegizmo Dust Cover
- 115 VAC power supply
- Bob’s Knobs (Collimation Thumbscrews)
- Kendricks KwikFocus with Solar Filter
- Rigel nFocus (To operate Focuser if telescope is moved to different mount)
- Meade SuperWedge with Scopetuff Rosette Knobs and Stiffening rod
- Two Losmandy D Series Dovetail Bar (one for mounting accessories on top of scope)

Asking $1400
Bruce Barron
barron.7bruce@gmail.com

10” f/5.6 Optics

- This 10” mirror is 1/12 wave and f5.6 focal ratio. It was made by Pierre Schwaar in 1989 and is in excellent condition. I used them in a Newtonian telescope that was just to big for me to handle as a portable scope.
- See the attached specs sheet for details on the mirror.
- Asking $350 or best reasonable offer.
- Thanks for looking.
- Kevin Kozel, 623-853-6202
- kevin.kozel@cox.net
The HyperStar-equipped ISERV telescope is now installed on the ISS!

The HyperStar-equipped Celestron 9.25" telescope (and its backup) that is now installed on the ISS. The scope also features a Starizona MicroTouch Autofocuser. With the Starizona gang: Steve, Scott, Dean, and Donna. (Steve has since had to move to NY because he was dressing too much like Scott.)

Call Us: (520) 292-5010
dean@starizona.com

Welcome to Starizona! In addition to a complete selection of astronomical products, we offer free online resources such as our award-winning Guide to CCD Imaging and more. We also manufacture unique products such as the HyperStar imaging system. Our staff consists of experienced observers and astrophotographers who love to share their knowledge. Please feel free to contact us for advice or answers to any of your questions.

Hours: Mon, Tue, Wed, Thu 10AM-5PM Fri, Sat 10AM-10PM
Closed Sun. Free Viewing Fri and Sat nights!

5757 N. Oracle Rd., Suite 103 · Tucson, Arizona 85704 ·

Welcome to Lowell! In addition to a complete selection of astronomical products, we also offer free online resources such as our award-winning Guide to CCD Imaging and more. We also manufacture unique products such as the HyperStar imaging system. Our staff consists of experienced observers and astrophotographers who love to share their knowledge. Please feel free to contact us for advice or answers to any of your questions.

Hours: Mon, Tue, Wed, Thu 10AM-5PM Fri, Sat 10AM-10PM
Closed Sun. Free Viewing Fri and Sat nights!

1400 W Mars Hill Rd, Flagstaff, AZ
www.lowell.edu · (928) 233-3211

http://www.lowell.edu/visit.php

Welcome to Apache-Sitgreaves Observatory! In addition to a complete selection of astronomical products, we also offer free online resources such as our award-winning Guide to CCD Imaging and more. We also manufacture unique products such as the HyperStar imaging system. Our staff consists of experienced observers and astrophotographers who love to share their knowledge. Please feel free to contact us for advice or answers to any of your questions.

Hours: Mon, Tue, Wed, Thu 10AM-5PM Fri, Sat 10AM-10PM
Closed Sun. Free Viewing Fri and Sat nights!

1350 S Greenfield Rd #2105
Mesa, AZ 85206
Phone: (480) 779-9262
www.Apache-Sitgreaves.org
Bits & Pisces

Minutes of the January 29, 2021
SAC General Meeting online @ Zoom

Jack Jones, SAC Secretary

The meeting was called to order on January 29, 2021 at 7:30 pm by SAC President Tom Curry on ZOOM!

Please send your checks for 2021 dues to Kevin Kozel. His address is in the SAC newsletter, on the last page. Use that last newsletter page membership form. Thank you.

Tom Curry gave a presentation on astrophotography. He has a Canon T7i with telephoto lenses, and Celestron and 8" Meade reflector telescopes. On December 22nd he captured the Saturn-Jupiter conjunction.

Terry Shay gave a presentation on his latest astrophotography photos. He recently acquired a Pentax K-1 SLR, which he calls the best unknown astrophoto camera in existence. It has 36 mega-pixels, full frame, and a stabilizer built into the camera, not the lens. It has GPS, Wi-Fi, pixel shift, and dual memory cards, as well as electronic leveling. It has a 4.8 micron pixel pitch (size) and an articulating screen. ISO goes to over 200,000. Due to its GPS and electronic leveling, the camera itself can actually track (up to 5 minutes). He showed pictures from Mauna Loa, Hawaii, since Mauna Kea was closed off due to volcanic activity. He got great pictures of the Milky Way at 11,000’ elevation.

The January Guest Speaker

Sanchayeeta Borthakur,
Assistant Professor in the School of Earth
and Space Exploration
at Arizona State University

Our featured presenter for January was Sanchayeeta Barthakur, an Assistant Fellow at Johns Hopkins and a research assistant professor at ASU. She is an observational exo-galaxy astronomer at ASU at the School of Earth and Space Exploration. The subject of her talk titled, "How do galaxies like the Milky Way grow?" concerned papers she and her colleagues have published recently on the existence of material being present on Earth that may be coming from other galaxies as well as our own. Using absorption spectroscopy and quasars as light sources, their DAIIS survey experiment is ongoing. Gas appears to be coming into galaxies forming stars, etc. There may be an intergalactic network between galaxies that brings matter in and out of them.

There were 32 attendees. The meeting was adjourned at 9:15 pm by Tom Curry, president.
**Bits & Pisces**

*Special Announcement:*

**Due to the COVID-19 Pandemic:**

**SAC General Meetings are now on Zoom!**

(The GCU Campus is closed.)

You will get an email announcing the date and time of the virtual meeting on Zoom with a link for registering and joining the online meeting.

* If you have **not** received an email, contact Tom Curry, SAC President.

* * *

**Meanwhile**, please send me your report, "What I did during the Covid-19 pandemic" stories, especially of your star gazing attempts.

I will compile them in a report in a coming issue of *Saguaro Skies*, the Editor.

**Send reports to the editor:**

*r.rotramel@cox.net*
SAC History

SAC History, Part 2

© 2020 by former SAC President, Fred Tretta
There has been some interest expressed in a bit more of early SAC history, so maybe I can try to recall some additional detail that could be shared. It might help continuity if you glanced back through the original summary of the SAC beginnings that Rick has been so kind as to run in the newsletter for several months now.

The Beginning
I can’t overstate how strongly the feeling was amongst the 5 or 6 of us PAS members who wanted to get out observing instead of sitting through presentations. Hard to know why that was, but my guess is WE WERE JUST PLAIN BORED! While I don’t specifically recall the exact course we took, I do remember that we started meeting separately as a sub group of PAS, and eventually just stopped going to the main meetings. There were no officers, nor any name, just a group of guys all doing a part of getting us settled.

Eventually, we sort of got organized and started working on more formal things like a name, officers, a place to meet, more regular observing sessions. The naming took an entire meeting, the logo, another. People’s skills emerged as things were created and drafted to give us purpose and direction. Our intent became clear as we moved ahead. The Club slowly grew primarily because of our relationship with Wilson Camera. One of our people made up flyers, and Wilson’s was happy to pass them out. Where we started out with 7 of us, in 3 years we were 250. Some were happy about that, some were not. A club of 25 people is different than a club of 250. Officers were elected annually and most jobs went to people who were dumb enough to miss that meeting.

Some Additions to Names
In the first posting I listed the names of many of the original members, but the growth and amazing development of the Club happened in spurts as new members took a hold of various observing venues they had an interest in. I think that was the magic of this club, members creating opportunities for specific groups of observers within the Club. Was it A. J. Crayon who started our Messier Marathon, and Wally Brown who got the deep sky observers organized and rolling? And Bob Latterman almost destroyed Tempe with that bathtub laser he created. The neighborhood would dim when he lit that off. There were all sorts of stories like that. Our members were really a motivated group and this club quickly became nationally recognized because of it. What a thrill.

Fessler’s Ranch again
Gosh, how I’d like to carry on about Fessler’s Ranch, but you probably have already tired of it. I can tell you that there was no lack of volunteers to make that a VERY impressive viewing site. A very dark acre of level land with power and properly spaced areas to accommodate dozens of scopes! Even when you took a break from observing, listening to the discussion around the area was super fun. Unfortunately, we DID lose a couple of guys beamed up.

Misc.
It is with great sorrow that I’ve learned RTMC will no longer be taking place in the mountains of Big Bear Lake, California. In the first of these write-ups I mentioned us talking the Riverside guys into giving us the whole second story of the large ledge that is now just one story. We shared it with the Tucson guys, and was that a blast. But several other years we got to one of the bunk-bed dormitory building early enough to fill it with our guys and some Tucson people. I will dearly miss that gathering, though we might try the Texas gathering or the one in New Mexico.

I’m sorry if this has carried on for a bit, but it is fun to think back to those days. I can be reached at ftretta@msn.com if anyone wants to just chat about those early days.
SAC Imaging

Fool Hollow State Park Observing Report
Mallard Campground

Imager, Michael Poppre, SAC

Fool Hollow Lake State Park is located adjacent to the town of Show Low Arizona in the White Mountain region (Elev. 6300 ft). My wife and I spent three nights camping in the park in early November 2020. The previous three nights we had spent at Lost Dutchman State Park outside of Apache Junction. I had previously reviewed stargazing from there at an in-person SAC meeting (remember those!) in 2019. My summary of LDSP is if your objective is to camp and hike while also stargazing, it’s great. If you want to manly stargaze and observe, look elsewhere. This is not surprising given how close it is to Phoenix. (LDSP is a Bortle 5, 20.49 to 20.02.)

Fool Hollow is very different. Not only is it located in the high mountains and tall pines, it has a Bortle rating of 4.5 (21.25 to 20.91). This might not seem very low but those tall pines block much of what light dome there is from Show Low. I was surprised at the lack of light pollution from Show Low when I stepped outside and looked up. “Looking up” took just a little more effort than is does in our flat lowland desert areas. Fortunately, our site had a large unused part of the RV pad available (thanks to our small trailer) that provided a nice opening to the sky. If I plan to observe or photograph in a park, I’ll use a Google map to pick out available spaces that have an adjacent clearing.

This trip I only brought my Nikon D5000 camera and iOptron tracker along with my Canon IS binos. Since it was our first time in FHSP, I didn’t want to bother bringing a ‘scope in case I could not see through the trees.

As I said, the sky was very dark. The Milky Way was very bright. The Andromeda galaxy (M31) was clearly visible naked eye and the Double Cluster appeared large. M33 in Triangulum was a nice binocular object. Fortunately, there was no “local light pollution” from other campers so...
SAC Imaging

Fool Hollow State Park Observing Report
Mallard Campground

Imager, Michael Poppre, SAC

I did not have to use my collapsible light trespass Shield.

Due to the darkness of the sky, I decided to forgo the use of the tracker and just use my camera. Since I brought my 35 mm, f1.8 lens, I figured I could get plenty of light on the sensor in shorter exposure times to avoid star trails. My best images came from f1.8 to f2 and ISO ranges from 800 to 1600 for only 15 to 20 seconds. Certainly, at anything near 30 seconds, I was getting trails. My camera is not made for high ISO settings so the highest I used was 3200. It’s all a trade-off of light, noise, details and star trails.

This park is very nice. It is laid out well with plenty of spaces ranging from full hook ups for RV users to more basic tent sites. The lake is a popular fishing spot and the park also rents small boats and kayaks. For the summer season, the spots fill up quickly and reservations must be made well in advance. We were there in mid-autumn and already the night time temps were dipping into the mid 20’s. I took some time to wander around and make note of other site numbers that would provide sky access through the pines. There were more than I expected.

Fool Hollow State Park is a great place for both camping in the high country and observing provided you can get a space with an opening through the pines.

Michael Poppre

M31 near top, with M33 to the lower right, above center

M33, centered on Triangulum
Continued next page...
**SAC Observing**

9251.813 Feb 6 SAT 8  Saturn 0.38° NNW of Venus; 12° from the Sun in the morning sky; magnitudes 0.7 and -3.9
9251.875 Feb 6 SAT 9  **Venus, Jupiter, and Saturn within circle of diameter 5.43°;** about 10° from the Sun in the morning sky; magnitudes -4, -2, 1
9252.000 Feb 6 SAT 12  Moon 5.3° NNE of Antares; 67° and 68° from the Sun in the morning sky
9252.5 Feb 7 SUN  Alpha Centaurid meteors; ZHR 6; peak Feb 7 18h; 4 days before New
9252.522 Feb 7 SUN 1  Moon at descending node; longitude 258.2°
9252.960 Feb 7 SUN 11  Spring equinox on Mars
9253.799 Feb 8 Mon 7  Mercury at northernmost latitude from the ecliptic plane, 7.0°
9254.071 Feb 8 Mon 14  Mercury at inferior conjunction with the Sun; 0.652 AU from Earth; latitude 7.00°
9256.042 Feb 10 Wed 13  Saturn 3.4° NNW of Moon; 16° from the Sun in the morning sky; magnitudes 0.7 and -5.6
9256.042 Feb 10 Wed 13  Moon 3.4° SE of Saturn; 16° from the Sun in the morning sky
9256.158 Feb 10 Wed 16  Moon, Venus, and Saturn within circle of diameter 5.18°; about 14° from the Sun in the morning sky; magnitudes -5, -4, 1
9256.438 Feb 10 Wed 23  Moon 3.1° SE of Venus; 11° from the Sun in the morning sky
9256.438 Feb 10 Wed 23  Venus 3.1° NNW of Moon; 11° from the Sun in the morning sky; magnitudes -3.9 and -5.1
9256.458 Feb 10 Wed 23  Moon, Venus, and Jupiter within circle of diameter 3.57°; about 11° from the Sun in the morning sky; magnitudes -5, -4, -2
9256.479 Feb 10 Wed 24  Jupiter 3.6° NNNW of Moon; 10° and 11° from the Sun in the morning sky; magnitudes -2.0 and -5.1
9256.479 Feb 10 Wed 24  Moon 3.6° SE of Jupiter; 11° and 10° from the Sun in the morning sky
9256.642 Feb 11 Thu 3  The equation of time is at a minimum of -14.23 minutes.
9256.813 Feb 11 Thu 8  Moon 8.0° SE of Mercury; 7° from the Sun in the morning sky
9256.813 Feb 11 Thu 8  Mercury 8.0° NNW of Moon; 7° from the Sun in the morning sky; magnitudes 3.7 and -4.7
9257.125 Feb 11 Thu 15  Venus 0.43° SE of Jupiter; 11° from the Sun in the morning sky; magnitudes -3.9 and -2.0
9257.125 Feb 11 Thu 15  Jupiter 0.43° NNW of Venus; 11° from the Sun in the morning sky; magnitudes -2.0 and -3.9
9257.297 Feb 11 Thu 19:07  **New Moon:** beginning of lunation 1214
9258.917 Feb 13 SAT 10  Mercury 4.6° NNW of Venus; 11° and 10° from the Sun in the morning sky; magnitudes 2.7 and -3.9
9258.917 Feb 13 SAT 10  Venus 4.6° SE of Mercury; 10° and 11° from the Sun in the morning sky; magnitudes -3.9 and 2.7

*Continued next page...*
SAC Observing

9258.958 Feb 13 SAT 11  Mercury, Venus, and Jupiter within circle of diameter 4.59”; about 11° from the Sun in the morning sky; magnitudes 3, -4, -2
9259.354 Feb 13 SAT 21  Moon 4.0° SE of Neptune; 25° and 24° from the Sun in the evening sky
9259.354 Feb 13 SAT 21  Neptune 4.0° NNE of Moon; 24° and 25° from the Sun in the evening sky; magnitudes 8.0 and -6.4
9259.5 Feb 14 SUN  St. Valentine’s Day
9261.083 Feb 15 Mon 14  Mercury 3.9° NNW of Jupiter; 15° and 14° from the Sun in the morning sky; magnitudes 2.0 and -2.0
9261.083 Feb 15 Mon 14  Jupiter 3.9° SE of Mercury; 14° and 15° from the Sun in the morning sky; magnitudes -2.0 and 2.0
9261.884 Feb 16 Tue 9  Sun enters Aquarius, at longitude 327.92° on the ecliptic
9262.5 Feb 17 Wed  Ash Wednesday
9263.271 Feb 17 Wed 19  Moon 2.80° SE of Uranus; 68° from the Sun in the evening sky
9263.271 Feb 17 Wed 19  Uranus 2.80° NNW of Moon; 68° from the Sun in the evening sky; magnitudes 5.8 and -9.1
9263.935 Feb 18 Thu 10  Moon at apogee; distance 63.41 Earth-radii
9263.948 Feb 18 Thu 11  Sun enters the astrological sign Pisces, i.e. its longitude is 330°
9264.583 Feb 19 Fri 2  Moon 3.5° SE of Mars; 82° from the Sun in the evening sky
9264.583 Feb 19 Fri 2  Mars 3.5° NNNW of Moon; 82° from the Sun in the evening sky; magnitudes 0.8 and -9.7
9265.250 Feb 19 Fri 18  Moon 5.5° SE of the Pleiades; 90° and 89° from the Sun in the evening sky
9265.283 Feb 19 Fri 18:48 First Quarter Moon
9265.845 Feb 20 SAT 8  Venus at aphelion, 0.7282 AU from the Sun
9266.000 Feb 20 SAT 12  Moon 4.9° N of Aldebaran; 98° from the Sun in the evening sky
9266.016 Feb 20 SAT 12  Mercury stationary in right ascension; resumes direct motion
9266.533 Feb 21 SUN 1  Mercury stationary in longitude; resumes direct motion
9266.573 Feb 21 SUN 2  Moon at ascending node; longitude 76.7°
9267.875 Feb 22 Mon 9  Moon 0.59° NE of M35 cluster; 119° and 118° from the Sun in the evening sky
9268.833 Feb 23 Tue 8  Mercury 4.1° NE of Saturn; 24° and 27° from the Sun in the morning sky; magnitudes 0.6 and 0.7
9268.833 Feb 23 Tue 8  Saturn 4.1° SW of Mercury; 27° and 24° from the Sun in the morning sky; magnitudes 0.7 and 0.6
9269.354 Feb 23 Tue 21  Moon 7.3° S of Castor; 136° and 134° from the Sun in the evening sky
9269.563 Feb 24 Wed 2  Moon 3.7° S of Pollux; 138° and 137° from the Sun in the evening sky
9270.604 Feb 25 Thu 3  Moon 2.6° NNE of Beehive Cluster; 151° from the Sun in the evening sky
9272.229 Feb 26 Fri 18  Moon 4.3° NNE of Regulus; 171° and 172° from the Sun in the midnight sky
9272.846 Feb 27 SAT 8:18 Full Moon
SAC Observing-Variable Stars

Betelgeuse, Alpha Orionis

© AAVSO via Bob Buchheim

One variable star YOU can see this month is Betelgeuse, normally the brightest star in the constellation of Orion, "The Hunter." It is easily seen in the eastern shoulder of The Hunter, even from within a city.

Betelgeuse is amongst a class of stars known as “red supergiants.” As its name implies, Betelgeuse is so large that, if it were placed at the location of our Sun, its outer atmosphere would extend out beyond Jupiter! It is a relatively nearby star, roughly 420 light years away. A “light year” is the distance that light travels in one year—almost six trillion miles!

Betelgeuse may one day explode as a supernova, but it is far enough away that it will not present a hazard to Earth. However, the explosion will be bright enough that we will see it in the daytime and astronomers will have an opportunity to easily study the explosion.

While awaiting the possible supernova explosion, we can watch Betelgeuse pulsate on an 11-month timescale, first determined in 1836 by John Herschel—son of the astronomer William Herschel, who discovered Uranus. As it pulsates, it can change in brightness, becoming three times brighter!

You can compare it to Rigel, also known as Beta Orionis, which is diagonally opposite Betelgeuse in Orion; Bellatrix, a.k.a. Gamma Orionis (in Orion’s other shoulder); or Aldebaran, the bright eye of Taurus the Bull. In late 2019 and early 2020, Betelgeuse dipped to the brightness of Bellatrix, its faintest on record. With a little practice, you should be able to detect these changes, even from all the way here on Earth.

To help you explore Betelgeuse, Orion, and the rest of the night sky, try using our special star comparison/finder chart below and observation guide, or an app on your phone.
**SAC Outreach**

2021 Grand Canyon Star Party, North Rim

Steve Dodder, Coordinator

Join The Fun! June 5-12

Per the National Park Service, the Grand Canyon Star Party is ON for 2021!

I’ll be taking reservations (see the web page on the SAC site for details: [https://www.saguaroastro.org/grand-canyon-star-party/](https://www.saguaroastro.org/grand-canyon-star-party/) now, for those providing their own lodging, and January 1, 2021 for those interested in the free campsite for the week.

Safety details are coming, but assume mandatory masking and social distancing. Of course, these requirements will be subject to change.

Please join us!

Space is limited.

*An open letter from Steve Dodder, Chairman of the SAC Novice Group and Coordinator of the North Rim Grand Canyon Star Party:*

I’m looking for someone to volunteer to take over my duties as coordinator of the Grand Canyon Star Party on the North Rim, which occurs annually near the dark of the Moon in June. I’ve been involved in this event for the past 25 years and have coordinated the North Rim since 2007. It is and has been the most rewarding endeavor I’ve ever been involved with and I’d like to leave it while it’s still fun. I’ll be glad to guide prospects for a year or two, given the impact the Coronavirus pandemic has had on anything public-gathering related. I’ve developed a spreadsheet based organizational guideline for making sure all the T’s are crossed and I’s are dotted, so it pretty much runs itself, as long as the guideline is followed in a timely matter. Anyone that has attended this event from SAC can tell you it runs pretty smoothly from a volunteer standpoint, and while there are challenges in any effort along these lines, and I’ve told many people this, when I get setup on the veranda for the evening, I forget any and all of the challenges and just enjoy the evening with the visitors.

If you think you’d like to become a rock star at the North Rim, please contact me at fester00@hotmail.com or my cell phone at 602-390-0118. We can talk about the challenges, rewards, perks and demands.
SAC Sky

Dawn, Feb 5–7
45 minutes before sunrise

Dawn, Feb 14
20 minutes before sunrise

Looking East-Southeast

Uranus & Neptune
2020–2021

From Sky & Telescope; Copyright ©2021 AAS Sky Publishing LLC. All rights reserved.

https://skyandtelescope.org/observing
2021 SAC Officers and Contacts

Board Members
President  Tom Curry (mailto:president@saguaroastro.org)
Vice-President  David Dillmore (mailto:vicepresident@saguaroastro.org)
Treasurer  Kevin Kozel (mailto:treasurer@saguaroastro.org)
Secretary  Jack Jones (mailto:secretary@saguaroastro.org)
Properties  Kevin Kozel (mailto:properties@saguaroastro.org)

Non-board Positions
Novice Leader  Steve Dodder (mailto:fester00@hotmail.com)
Newsletter  Rick Rotramel (mailto:r.rotramel@cox.net)
Webmaster  Robert Brewington (mailto:webmaster@saguaroastro.org)
Public Events  Jack Jones (mailto:publicevents@saguaroastro.org)
ATM Group  Paul Lind (mailto:atmgroup@saguaroastro.org)
Imaging  Al Stiewing (mailto:amst@cox.net)
Deep Sky  Kevin Kozel (mailto:kevin.kozel@cox.net)
Public Outreach  Tom Curry (mailto:canyonhiker2@cox.net)

Mail Address: SAC, 7720 N. 36th Ave, Phoenix, AZ 85051-6401
SAC on Facebook: https://www.facebook.com/groups/420992487938402/

2021 Board Mtgs:
January, TBA
April, TBA
July, TBA
October, TBA

Occultation Info
Wayne Thomas has asteroid occultation info for the greater Phoenix Area:
Mail to: tomwaymas@gmail.com

Saguaro Astronomy Club
Saguaro Astronomy Club (SAC), Phoenix, Arizona, was formed in 1977 to promote fellowship and the exchange of scientific information among its members-amateur astronomers. SAC meets monthly for both general meetings and star parties, and regularly conducts and supports public programs on astronomy. Membership is open to anyone with these interests.

Saguaro Skies is posted as a pdf file monthly on the SAC website, https://www.saguaroastro.org/newsletter/ for browsing or downloading for SAC members and friends of SAC. A email announcement of the monthly newsletter release is included with membership.

Direct all membership inquiries to the SAC Treasurer by using the membership form found in this newsletter. For editorial and SUCH-A-DEAL advertising inquiries, contact the Saguaro Skies Editor.

Saguaro Skies Staff
Editor: Rick Rotramel
Photographers: Tom Polakis, Michael Poppre, Rick Rotramel and Susan Trask

Meeting Location: Grand Canyon University is located at 3300 W. Camelback Rd, Phoenix, AZ. We meet in Engineering Building 1-202, 7:30 to 10:00 PM.

Parking: Turn into the campus from Camelback Road at 33rd Ave. and stop at the guard station. Tell the guard you are attending the astronomy club meeting. Then, drive into parking garage and park.

Meetings are online via website, Zoom.

Contacting This Issue’s Authors
If you wish to write to an author in this month’s issue, contact them by sending your message to the editor of Saguaro Skies, Rick Rotramel, at: r.rotramel@cox.net

I will then forward your questions or comments to the author.
Saguaro Astronomy Club Membership Services

Membership -- Memberships are for the calendar year and are pro-rated for new members as follows:
Jan - Mar: 100%; Apr - Jun: 75%; Jul - Sep: 50%; Oct - Dec 25%.

☐ $32.00 Individual Membership
☐ $36.00 Family Membership

Please print all information legibly
Date: __/__/__ For the year of: 20__
Name: ____________________________________________
City: ____________________________________________
State: ____________________________________________
Email: ____________________________________________
☐ Check here if this is updated information

Make check payable to: SAC
Please bring your completed form to a meeting or mail it with payment to:

Kevin Kozel
8360 W Stella Way
Glendale 85305

SAC on the Internet
SAC has several email lists. To subscribe, simply send an email to the list address with Subscribe on the subject line.

SAC-Announce@freelists.org - Sac Announce is a list used for club announcements. Traffic is usually less than six messages per month.
SAC-Forum@freelists.org - SAC Forum is a general discussion list for members to discuss the club or astronomy in general.
SAC-Board@freelists.org - SAC Board is a list for discussions of club business. If you'd like to see how the club is being run, this is the list for you.
AZ-Observing@freelists.org - AZ-Observing is not a SAC list, but many members participate. This is the list for discussions on observing around the state.

Please download the PDF version of the monthly newsletter from our website. When the newsletter is published a message will be sent to the email address provided above containing a URL to the current newsletter.

http://saguaroastro.org/newsletter/