The President’s Corner

Here we go! A new year, although a lot of what will happen will be the same as in 2020, but we can do this. We will continue to Zoom until such time as we are vaccinated sufficiently to allow us to meet in groups (and GCU allows us on campus again). We will also not have our Messier Marathon again this spring, as I doubt we will have reached the safety of the vaccine. The same goes for public outreach events which I enjoy participating in.

While the virus is the most outstanding issue for us in 2021, we will also have the issues of not having a location to hold our marathon. And what about the rush of major companies to launch thousands of low orbit communication satellites? I have already seen their traces in some of my photos. Will it get worse in 2021? Then there is climate change. Is it my imagination, or have Arizona skies become more cloudy? I think that this is probably true. The trend for Arizona, and much of the southwestern US, is to have more water vapor in the sky. This may be due to increased precipitation and more on the horizon. Even the moon can create a cloudy sky.

But, it wasn’t all that bad for some of us in 2020, at least star gazing wise. The nice thing about being an amateur astronomer is that we want to be away from other people. Although we do enjoy having others of similar bent out with us on dark nights, and it is easy to social distance star gazing. I was lucky enough to increase the number of times I was out at the air field, and up at the meadow this past year, either alone, or with friends. I was also able to log many new objects that I had not seen before, thanks to purchasing a DSLR and learning to take rudimentary astrophotographs. I continued to improve my abilities as an intermediate novice in a number of areas.

What a year it was for star gazing too! Comet Neowise was fantastic! Even I got good photos of it. The conjunction of Saturn and Jupiter was another fun event that lasted days, and I could monitor from my driveway. I set up my telescope and had several neighbors, with proper precautions, view the planets up close to their amazement and usual delight. I produced numerous photos that satisfied my desire to have some record of the events. The new AZ Observing email list also came on line and I have been monitoring the submissions and have been very impressed with its users and their activities. Our Facebook page is routinely populated with very interesting and impressive entries, many from Tom Polakis, who always blows me away with his technical ability. Our Web page was also visited by people from around the world, and inquiries made by other page developers for permission to use the many spreadsheets developed by SAC members of objects to view. We are well known in the astronomy neighborhood. And our Newsletter continues to be a quality document, and the majority of what constitutes the club at this point. Thanks to all who contribute to each. The year was not a bust after all.

So, do you have any resolutions for 2021 that apply to your astronomy hobby? I do, predominantly to improve my trips to dark places, and to log more objects I have not seen before. Here is a resolution for all the club members: resolve to participate more in the newsletter, or in the Zoom meetings. Without your participation, the newsletter is a major task for Rick Rotramel to fill the pages with interesting NEW information, and my Zoom meetings are an exercise in me learning to share my screen properly with our guest speaker.

If you have an idea for what the club should or can do in 2021, feel free to email me or Rick. We look forward to hearing from you. Do you know what else I look forward to? The launch of the James Webb space telescope. Any bets on when it will happen?

Until we can meet again, happy satellite trails, and clear skies to all.

SAC President, Tom Curry

P.S. Please wear a mask and social distance, the life you save may be mine.

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Header image © 2000-2013 Stellarium Developers

© Saguar0 Astronomy Club, 2021
Hi Folks,

*Best of the NGC* features this month, NGC 6369, planetary nebula, in Ophiuchus.
*SAC Imaging* has Tom Polakis with his treatment of the Jupiter/Saturn Conjunction.
*SAC Observing* feature has the sky info for this month and variable star, Pleione in the Pleiades.
*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 for you all.
Remember to tune in for the January 29th Zoom online SAC meeting.

Enjoy!

Rick Rotramel, Editor

---

**Call for Best of the NGC images, notes and sketches.**

For **February**, NGC 1931, OC, 05 31.4, +34 15, 11.3 mag, 3×3, haze around 4°, in Auriga.

For submitting images, send your file as an attachment in an email to the editor. Please send caption details of the image: Optics, camera, main software used, exposure, location and date taken.

Observation notes are sent in the email text area or as an attached file.

For scanned sketches, send a file with caption details: optics and eyepiece power used.

Email to: r.rotramel@cox.net

For **March**, NGC 1788, EN, 05 06.9, -03 20, 8×5, Comet shaped, in Orion.

For **April**, NGC 3077, E2p, 10 03.3, +68 44, 10.7 mag, 6.0×4.5, bright core, in Ursa Major.
Best of the NGC:

**NGC 6369, Planetary Nebula in Ophiuchus**

By SAC Imagers, Observers & Sketchers

Image by: NASA and The Hubble Heritage Team (STScI/AURA)

Ophiuchus Star Chart

Image: © Roberto Mura

---

**NGC 6369**

*Observed and Imaged*

**Date:** Oct 23, 2011

**Site:** Snowflake, AZ

**Type:** Planetary Nebula

**R.A.:** 17:29:18

**Dec:** -23:46

**Magnitude:** 13.0

**Size:** 1.1 Arc Min

**Distance:** 9,800 Light Years

**Constellation:** Ophiuchus

**Telescope:**

LX200 12" SCT

25 mm - 60 Degree Eye Piece

.75 Degree FOV or 45 Arc Min

**Mag [eye piece]:** (P1000/26) 77

Mag (DSIII): (2000/F1) 162

**Sky Brightness**

Mag 1/eq Arc Sec (v)

21.7 or

Bottle Scale: 3

**Estimated Seeing**

(Ursa Min) 6.6

**Weather**

Temp: 50

Wind: Calm

Clouds: None
Best of the NGC:
NGC 6369, Planetary Nebula in Ophiuchus

By SAC Imagers, Observers & Sketchers

SAC Observer Steve Coe, 1949-2018

6" f/6; 7/10=S+T, Cherry Rd. Site, 22mm-faint, small, round, not brighter in the middle, not easy, I expected a higher surface brightness. 8.8mm-more easy to see at higher power, but still pretty faint and very little elongated 1.2X1, no central star seen ever. 6.7mm--too much power, mushy.

13" f/5.6; Camp 613, 7/10 see, 9/10 trans-100X nice planetary inside a dark nebula. 220X-pretty bright, pretty small, round, annular, north edge brighter, no star seen, light green. 330X--color much fainter.

13" f/5.6; Eagle Eye site, S=7, T=8, 100X-obviously non-stellar, 150X - mostly annular "horseshoe" shape, a not quite complete ring of nebulosity. It is brighter on the north side and the south side is the opening in the horseshoe.

18" f/6 Dobsonian; at 175X will show a central dark spot and at 300X this object starts to look somewhat like the Ring Nebula.

20" f/5; With the 8.8 mm EP a complete annulus with a central star held about 30% of the time. A light grey-green. Fills in the ring with faint nebulosity, more obvious with averted vision.

36" f/5; Texas Star Party '96 - 14mm Meade 7/10 S+T, An incomplete annulus, like a horseshoe. No star seen, some nebulosity inside the annulus. Bright, large and easy, all with the UHC filter. No filter-- light grey-green color, central star seen 20% of the time, "fill in" effect not nearly as obvious without filter.

SAC Observer Rick Rotramel

16" f/4.4 Newtonian; Fairly bright, small, round, ring shaped, with a void in the center, and noted a greenish color.

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.
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

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Ads placed here are free to SAC members and friends. SAC is not responsible for the quality of the advertised items. If you wish to place an ad here to sell your telescope or astronomy related items, contact Rick Rotramel at: r.rotramel@cox.net
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 Scopetronix 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
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 · Phone: (480) 779-9262

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

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Phone: (480) 779-9262

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Phone: (480) 779-9262
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

Jupiter/Saturn Conjunction, 12/21/20

Imager, Tom Polakis, SAC

Mosaic - "Four daytime images of Jupiter, aligned on Saturn. They were taken with a 4-inch telescope piggybacked on the backyard observatory scope. A 780 nanometer infrared filter darkened the sky. My processing darkened it a lot further, in an attempt to hide the seams in the mosaic. This one didn’t come out as I had hoped, but it gives an idea of how the close approach played out."

Telescope Camera View - "One more of Jupiter and Saturn. The atmosphere stayed stable for the first half hour after sunset, and was even better than last night. Jupiter’s moon Ganymede is the dark spot in front of the upper left part of the planet. This has been one of my favorite astronomical events in 43 years in the hobby. Technical details: 10-inch f/5.6 telescope with a QHY 462C color camera at prime focus for 0.4 arcsec/pixel. Best 500 of 2000 video frames processed with the usual planet-processing software."
ASTRONOMICAL CALENDAR 2021

The left column gives Julian dates (number of days from 4713 B.C. Jan. 1 noon), useful for finding time spans between events by subtraction. The first 3 digits of the Julian date (245) are omitted, to save space.

Hours and minutes, where given, are in Universal Time. (Sometimes the hour appears as “24” or the minute as “60,” because the instant was shortly before the end of the day or hour.)

Occasions such as “Moon 1.25° NNE of Venus” are **appulses**: closest apparent approaches. They are slightly different from conjunctions, when one passes north of the other as measured in right ascension or in ecliptic longitude. A quasi-conjunction is an appulse without a conjunction, and typically happens when a planet is near its stationary moment.

Occasions when three bodies are within a circle of small size are **trios**. Like appulses, they are most interesting when the bodies are bright and are not at small elongation from the Sun.

For **meteor showers**: ZHR (zenithal hourly rate) is an estimate of the number to be seen under ideal conditions at the peak time if the radiant were overhead. Actual rates may be very different. Peak times (predicted from where the center of the stream seems to cross nearest to Earth’s orbit) are uncertain; best to start watching the night before. Meteor are usually most abundant in the morning hours.

Tell me of errors you notice. It’s hard to check the accuracy of every detail, but errors are more easily corrected here than in the former printed Astronomical Calendars! universalworkshop.com/contact

This calendar may be subject to improvement. Come back to it!

Explanation of terms can be found in our Glossary book Albedo to Zodiac. There is more about each kind of event in The Astronomical Companion. And events in this list can be traced in the large Zodiac Wavy Chart for the year.

For all these, see universalworkshop.com

<table>
<thead>
<tr>
<th>Date (UT)</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>9217.043 Jan 2 SAT 13</td>
<td><strong>Earth at perihelion</strong>: 0.9833 AU from the Sun</td>
</tr>
<tr>
<td>9217.5 Jan 3 SUN</td>
<td><strong>Quadrantid meteors</strong>: ZHR 110; peak Jan 3 8h; 3 days before Last Quarter</td>
</tr>
<tr>
<td>9217.563 Jan 3 SUN 2</td>
<td><strong>Moon 4.5° NNE of Regulus</strong>: 133° from the Sun in the morning sky</td>
</tr>
<tr>
<td>9218.807 Jan 4 Mon 7:22</td>
<td>Latest sunrise, at latitude 40° north</td>
</tr>
<tr>
<td>9219.863 Jan 5 Tue 9</td>
<td>Mercury at southernmost latitude from the ecliptic plane, -7.0°</td>
</tr>
<tr>
<td>9220.901 Jan 6 Wed 9:37</td>
<td><strong>Last Quarter Moon</strong></td>
</tr>
</tbody>
</table>

Continued next page...
SAC Observing

9221.5 Jan 7 Thu 0 Moon 6.4° NNE of Spica; 82° and 83° from the Sun in the morning sky
9224.157 Jan 9 SAT 15:47 Moon at perigee; distance 57.60 Earth-radii
9224.688 Jan 10 SUN 5 Saturn 1.61° NWW of Mercury; 13° from the Sun in the evening sky; magnitudes 0.6 and -0.9
9224.688 Jan 10 SUN 5 Mercury 1.61° SE of Saturn; 13° from the Sun in the evening sky; magnitudes -0.9 and 0.6
9224.729 Jan 10 SUN 6 Moon 5.4° NNE of Antares; 39° and 40° from the Sun in the morning sky
9225.292 Jan 10 SUN 19 Mercury, Jupiter, and Saturn within circle of diameter 2.39°; about 13° from the Sun in the morning sky; magnitudes -1, -2, 1
9225.345 Jan 10 SUN 20 Moon at descending node; longitude 259.7°
9226.292 Jan 11 Mon 19 Mercury 1.41° SE of Jupiter; 14° from the Sun in the evening sky; magnitudes -0.9 and -1.9
9226.292 Jan 11 Mon 19 Jupiter 1.41° NWW of Mercury; 14° from the Sun in the evening sky; magnitudes -1.9 and -0.9
9226.354 Jan 11 Mon 21 Moon 1.50° S of Venus; 18° from the Sun in the morning sky
9226.354 Jan 11 Mon 21 Venus 1.50° N of Moon; 18° from the Sun in the morning sky; magnitudes -3.9 and -5.9
9226.753 Jan 12 Tue 6 Venus at southernmost declination, -23.18°
9227.709 Jan 13 Wed 5:01 New Moon; beginning of lunation 1213
9228.438 Jan 13 Wed 23 Moon 3.2° SE of Saturn; 10° and 9° from the Sun in the evening sky
9228.438 Jan 13 Wed 23 Saturn 3.2° NWW of Moon; 9° and 10° from the Sun in the evening sky; magnitudes 0.6 and -5.0
9228.5 Jan 14 Thu 0 Moon, Mercury, and Saturn within circle of diameter 5.96°; about 12° from the Sun in the evening sky; magnitudes -5, -1, 1
9228.5 Jan 14 Thu 0 Moon, Jupiter, and Saturn within circle of diameter 3.77°; about 11° from the Sun in the evening sky; magnitudes -5, -2, 1
9228.625 Jan 14 Thu 3 Jupiter 3.3° NWW of Moon; 12° from the Sun in the evening sky; magnitudes -1.9 and -5.3
9228.625 Jan 14 Thu 3 Moon 3.3° SE of Jupiter; 12° from the Sun in the evening sky
9228.700 Jan 14 Thu 5 Moon, Mercury, and Jupiter within circle of diameter 3.96°; about 13° from the Sun in the evening sky; magnitudes -5, -1, -2
9228.772 Jan 14 Thu 7 Pluto at conjunction with the Sun; 35.184 AU from Earth; latitude -1.25°
9228.806 Jan 14 Thu 7 Moon 2.28° SE of Mercury; 16° and 15° from the Sun in the evening sky
9228.896 Jan 14 Thu 10 Mercury 2.28° NWW of Moon; 15° and 16° from the Sun in the evening sky; magnitudes -0.9 and -5.6
9228.971 Jan 14 Thu 11 Uranus stationary in right ascension; resumes direct motion
9230.988 Jan 16 SAT 12 Venus at descending node through the ecliptic plane

Continued next page...
SAC Observing

9231.917 Jan 17 SUN 10  Neptune 4.1' NNW of Moon; 51° and 52° from the Sun in the evening sky; magnitudes 7.9 and -8.3
9231.917 Jan 17 SUN 10  Moon 4.1° SE of Neptune; 52° and 51° from the Sun in the evening sky
9234.107 Jan 19 Tue 15  Sun enters Capricornus, at longitude 299.74° on the ecliptic
9234.361 Jan 19 Tue 21  Sun enters the astrological sign Aquarius, i.e. its longitude is 300°
9235.313 Jan 20 Wed 20  Mars 1.62° NNW of Uranus; 96° from the Sun in the evening sky; magnitudes 0.2 and 5.8
9235.313 Jan 20 Wed 20  **Uranus 1.62° SE of Mars; 96° from the Sun in the evening sky; magnitudes 5.8 and 0.2**
9235.377 Jan 20 Wed 21:02  First Quarter Moon
9235.896 Jan 21 Thu 10  Moon 3.1° SE of Uranus; 96° and 95° from the Sun in the evening sky
9235.896 Jan 21 Thu 10  Uranus 3.1° NNW of Moon; 95° and 96° from the Sun in the evening sky; magnitudes 5.8 and -10.2
9235.900 Jan 21 Thu 10  Moon, Mars, and Uranus within circle of diameter 4.65°; about 95° from the Sun in the evening sky; magnitudes -10, 0, 6
9235.938 Jan 21 Thu 11  Moon 4.7° SE of Mars; 96° and 95° from the Sun in the evening sky
9235.938 Jan 21 Thu 11  Mars 4.7° NNW of Moon; 95° and 96° from the Sun in the evening sky; magnitudes 0.2 and -10.3
9236.055 Jan 21 Thu 13  Moon at apogee; distance 63.40 Earth-radii
9237.917 Jan 23 SAT 10  Moon 5.7° SE of the Pleiades; 118° and 117° from the Sun in the evening sky
9238.575 Jan 24 SUN 2  Mercury at easternmost elongation; 18.6° from Sun in evening sky
9238.629 Jan 24 SUN 3  Saturn at conjunction with the Sun; 10.968 AU from Earth; latitude -0.45°
9238.646 Jan 24 SUN 4  Moon 4.6° N of Aldebaran; 126° from the Sun in the evening sky
9238.920 Jan 24 SUN 10  Mercury at ascending node through the ecliptic plane
9239.408 Jan 24 SUN 22  Moon at ascending node; longitude 79.1°
9240.479 Jan 25 Mon 24  Moon 0.31° NNE of M35 cluster; 146° from the Sun in the evening sky
9241.029 Jan 26 Tue 13  Uranus at east quadrature, 90° from the Sun
9241.958 Jan 27 Wed 11  Moon 7.4° S of Castor; 163° and 160° from the Sun in the evening sky
9242.167 Jan 27 Wed 16  Moon 3.8° S of Pollux; 166° and 164° from the Sun in the evening sky
9243.208 Jan 28 Thu 17  Moon 2.57° NNE of Beehive Cluster; 176° and 178° from the Sun in the midnight sky
9243.304 Jan 28 Thu 19:17  Full Moon
9243.573 Jan 29 Fri 2  Jupiter at conjunction with the Sun; 6.071 AU from Earth; latitude -0.63°
9243.590 Jan 29 Fri 2  Mercury at perihelion, 0.3075 AU from the Sun
9244.591 Jan 30 SAT 2  Mercury stationary in right ascension; starts retrograde motion
9244.854 Jan 30 SAT 9  Moon 4.4° NNE of Regulus; 160° and 161° from the Sun in the morning sky
9245.157 Jan 30 SAT 16  Mercury stationary in longitude; starts retrograde motion
SAC Observing-Variable Stars

Pleione, (28 Tau), in the Pleiades

© AAVSO via Bob Buchheim

Many, perhaps most, of the stars we can see change brightness from time to time for various reasons. Such stars are called “variable stars.” One variable that YOU can see tonight is the star Pleione, a member of the bright Pleiades star cluster in the constellation Taurus. [Point out Taurus and the Pleiades cluster in the planetarium sky.]

While our Sun rotates once in a little over 25 days, Pleione rotates once in 11.8 hours, so fast that its centrifugal force can push material from its outer atmosphere into an equatorial ring or disk. This causes the star to fade from a bright 4.8 magnitude to a dimmer 5.5 magnitude. Various interactions between the star and the disk can cause smaller magnitude changes. With a little practice, you should be able to detect changes of a tenth of a magnitude.

You can find Pleione next to the brighter star Atlas in the handle of the small cup formed by the brightest stars in the Pleiades cluster. Binoculars may make it easier to pick out the individual stars within the cluster. Check Pleione from night to night and compare it to other stars in the cluster, especially Taygeta (magnitude 4.3) and Celaeno (magnitude 5.5) at the other end of the “cup.” A handy chart for comparison is below.
**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/ ) 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

Dusk, Jan 9
30 minutes after sunset

Looking Southwest

Dawn, Jan 9–11
30 minutes before sunrise

Looking Southeast

Dusk, Jan 14–16
30 minutes after sunset

Looking Southwest

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

**Board Members**
- **President**  Tom Curry  (mail to:president@saguaroastro.org)
- **Vice-President**  David Dillmore  (mail to:vicepresident@saguaroastro.org)
- **Treasurer**  Kevin Kozel  (mail to: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:secretary@saguaroastro.org)

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

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 drive straight 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.

### 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
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
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State: ____________________________________________
Email: ____________________________________________
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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/