nightwatch
Newsletter of the Pomona Valley Amateur Astronomers

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Grand Canyon Special Edition

From June 7 through June 17, four members of the PVAA attended the Grand Canyon Star Party at the South Rim. Claire Stover, Bob Akers, Ron Hoekwater and Ludd Trozpek were there for all or part of the time.

This is reputed to be the largest outreach star party in the country. It ran officially for 8 nights, from Saturday June 8 through Saturday June 16.Of those eight nights, six were beautifully clear and dark, though one or two nights were a little breezy at times. The last two nights were mostly clouded out when the monsoon rain came up from the south. In all, there were probably a hundred telescopes set up in a commercial overflow bus lot and adjacent to it. There must've been 150 volunteer astronomers. We don't have a count of the visitors--the event was well-noticed with signs around the park and mentioned at talks--but the number of visitors was well into the many hundreds, probably between a thousand and two thousand on the popular clear nights.

The skies were really dark. The Milky Way was rising shortly after sunset and was glorious. Venus was well placed in the west, and Jupiter was visible before sunset high in the south. Saturn rose an hour or so after sunset and the seeing was good enough to see the rings easily even when it was low in the sky. On the first night and the third night the timing was good to see Jupiter's Great Red Spot easily in a large enough telescope.

We were encouraged to attend by Mike Magras, a Harvey Mudd College alumnus. He has been attending from his home in the Tucson area for some years. Mike had his 14-inch Celestron Edge, Ron brought his 25-inch Obsession, Bob came with his 10-inch Schmidt-Newtonian, and Ludd brought large binoculars, a 120-mm refractor he's been trying to get motorized, and an Edmund Astroscan he got at RTMC in May. Claire, who was more useful in outreach than the rest of us put together, came armed with her Canon image-stabilized binoculars, a red flashlight, and a large planisphere. She was everywhere helping out.

In all, the four of us from PVAA logged 133 hours in outreach over the week, and touched 2570 visitors--a pretty full week. Especially considering that during the day we explored the sights of the South Rim, walked the rim trail frequently, and took the free shuttles to more distant points.

The Park treated us great. We got free admission, free camping if we chose to avail ourselves of it, a discount on purchases, and parking during the day on the telescope field and at night in the adjacent commercial lot as we came and went. Basically, we had the run of the place. For those of us in the free camping, it could not have been more convenient:all of the astronomers were together in the back of the Aspen Loop of the Mather campground. People left stuff out in their camps with no security concerns, it was a very short walk to the shower building and only about five minutes to walk to the market. Very nice.

Although it sometimes seemed as if the days were long--it was a 5 a.m. wake-up if you wanted to get to the rim at sunrise, and usually to around midnight at the telescopes--there was plenty of free time to unwind or catch up on your naps. The weather and shade in the campground were pleasant. All in all it was a great experience.

Ludd Trozpek

Not a sign you see very often. We'd encounter it every evening as we headed to the telescope field before 7 PM or earlier in the day as needed to protect our equipment from gusty winds or the fortunately infrequent rainfall.

Our little corner of the telescope field. Visible is Mike's 14-inch Celestron Edge (with the five stiffener bands around the tube). Ludd's red bomb-like Edmund Astroscan is also visible in the back. At far right is a home-made job based on two Home-Depot buckets painted black.

PVAA member Bob Akers (left) and two other volunteer astronomers chat with Grand Canyon National Park Superintendent Christine Lehnertz the first evening of the star party, Saturday, June 9th. Shortly after this picture was taken, Lehnertz welcomed the scores of volunteers manning some 100 telescopes at the 7 p.m. "Popsicle Party" where last-minute announcements, program changes, and event reminders were given

Lehnertz is carrying a pair of World War I era 6x30 Bausch and Lomb Signal Corp binoculars that had belonged to her grandfather and father. While not all that suitable for astronomy (uncoated glass, 30 mm objectives, somewhat narrow field, 5mm exit pupil), they were in terrific condition with very sharp optics..

The telescope in the image belongs to Bob Akers, it is a 10-inch Schmidt-Newtonian that he picked up at RTMC in 2017 and has just recently gotten dialed in with a mount and new focuser. During the week he consistently had a half-dozen to ten visitors gathered around his scope all evening, until the crowds started to thin down after 11 p.m. He was able to provide great views of Jupiter, its clouds, bands, and moons, among many other things.

Chris Lehnertz, park Superintendent, at the microphone, speaking at the Saturday Popsicle Party. On the left is Ranger Rader Lane, the star party coordinator for the Park Service, who took care of many of the administrative details of hosting more than 100 volunteer astronomers and nearly as many telescopes in a large commercial bus parking lot adjacent to the Visitor Center on the South Rim

Bob Akers camped out near his car on the telescope field, both for convenience and to provide some security for the heavier equipment left out during the day by the astronomers. Ludd and Claire discovered Bob is also an excellent cook and we enjoyed a welcome change from our usual Gorp and Pop Tart breakfasts.

Bob Akers establishes a bond with a wild animal. No further details are available on this interaction, except to say that both mammals remain alive and well.

It was not unusual to spend an hour or two of down time sitting in camp chatting. Here, from the left, is the empty chair of the photographer, the lady astronomer from the camp across the way, whose Tupperware was robbed by ravens while they were out for breakfast, Mike Magras of the Tucson club, Bob Akers, and Claire Stover.

Elk were rather ubiquitous at the South Rim during the star party week. This was because the dry conditions had sent them to the area in search of water. They were frequently found around the spigots provided for the tourists to fill their water bottles. As can be seen, they were quite tame. You will have to ask Claire Stover and Bob Akers about their encounter with one animal and Bob's warm-hearted action to make sure the elk got water. Later that evening, during the announcements, the injunction from the rangers was clear: "Don't give the elk water."

In 1982 there were only 22 California Condors left in the world. All were captured and a breeding program to save the species was started. In 1992, captive-bred condors began to be re-introduced to the wild. In 2001 the first wild nesting occurred in Grand Canyon National Park since re-introduction. Today there are nearly 500 – more than half of them flying free in Arizona, Utah, California, and Baja Mexico.

The Grand Canyon is an excellent spot to observe these huge birds. This is a view of the Battleship rock formation from a shuttle stop to the west of Grand Canyon Village. It was a very popular location during the summer and fall of 2004 as the public tried to spot Condors 119 and 122. They had been nesting for 3 seasons but their first two attempts to produce offspring were unsuccessful. On November 25, 2004, their chick – 350 - flew for the first time from the nest, located in a small cave on the left side of this formation.

Not everything at the Grand Canyon Star Party was astronomy. We were camped only a short walk from the rim, and most mornings some of us would walk along the rim trail. Sunrise, which occurred before 0530 was pretty hard to get up for, but shortly thereafter...

These pictures, one of the rim and the other of a butte formation, were taken on these walks.

This is a mule train carrying supplies for travelers using mules to come up out of the Canyon using the Kaibab Trail. The mules were sure-footed and well behaved and all of us hiking the trail just stood to the side as the wranglers led them past us. Following the train were 10 travelers “lucky” enough to have a spot on the once a day 7.3 mile mule trip from the bottom of the Canyon. This was preceded by a 10.5 mile trip down, also by mule, the day before. They were on the last mile of their journey and their faces (and more?) looked a little worn from their lengthy trip.

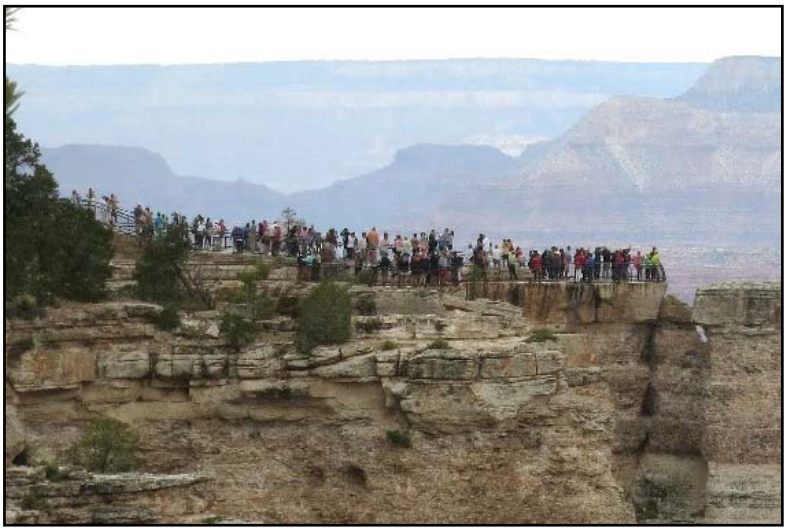
For a week we had gorgeous clear skies on the South Rim of the Grand Canyon. The earliest object to appear was always Venus in the west, shown here with Pollux and Castor just to the right. Mike Magras of the Tucson club, who contacted us in PVAA to attend, is shown here with his 14-inch Celestron Edge on his bullet-proof tripod and fully computerized Astrophysics mount. His telescope was a pleasure to use: just select the object on the hand controller and press "Go To". Half a minute later the object was visible in the 31 mm wide field eyepiece, and you could select higher powers of 21mm, 17mm, and 4.7mm if desired. The views were very sharp and stable.

Ron Hoekwater brought his 25-inch Obsession and it was extremely popular on the one or two nights when the wind was light enough to use it. (It's like a giant weather-vane in a stiff breeze.) This night shot shows the dim outline of his scope against the southern Milky Way, the star clouds of Sagittarius, and the obvious outline of Scorpius. At one point this evening Ron had 34 people in line to view the Ring Nebula, M57, through his telescope. Several other counts, later after the crowds thinned, gave more than 20 people in line at different times. It was very impressive view for the visitors, and Ron did a great job on outreach.

Bob Akers usually had a consistent crowd at his 10-inch Schmidt-Newtonian. Whether viewing Jupiter and its moons, Saturn with it's rings and easily-visible Cassini Division, or a deep sky object such as M13 or M57, he would always keep his crowd entertained with patter that was three parts hard science and one part gee-whiz.

Omega Centauri was visible every clear night low on the southern horizon, just above the visitor center. It might have been the combination of clear, dark skies and high altitude that allowed good viewing almost to the horizon. Omega Centauri was easily visible in 7x35 binoculars as a large unresolved "cotton ball" and stayed in view for several hours as it skimmed above the building on the south horizon. M13, much higher in the sky and well-placed to observe, easily resolved into sparkling individual stars far into it's core with Bob's 10-inch or Mike's 14-inch. Not so much with Ludd's 120 mm refractor.

The telescope field was set up on an overflow commercial bus parking lot immediately adjacent to the visitor center. Right across from us was the commercial bus lot that was in use, often with a dozen or more buses at a time, all day long. We--and the buses--were just a 5-minute walk from Mather Point, the nearest viewpoint to the visitor center. All day long, buses would arrive and disgorge their foreign tourists, herded by guides carrying variously-colored flags. The crowds would descend from the buses, visit the convenient poured-concrete and pressure-washed individual non-gendered restrooms in rows like jail cells in a prison, and then hoof it down to Mather Point for fifteen minutes of selfies and hero-shots on the rim. In many cases--I'm not certain--it appeared the guides would immediately scoop up their charges, put them back on their bus, and head for Laughlin, having "seen" the Grand Canyon. The picture shows the serenity of the Mather Point lookout during a typical day.



Claire Stover talked to everyone at the star party, it seems. Here she is standing with Paul Lorenz, of Tucson Amateur Astronomy Association. It turns out that Paul Lorenz knew Ray Magdziarz, our PVAA member, some three or four decades ago when Ray was president of the astronomy club in Chicago and Paul was a member there.

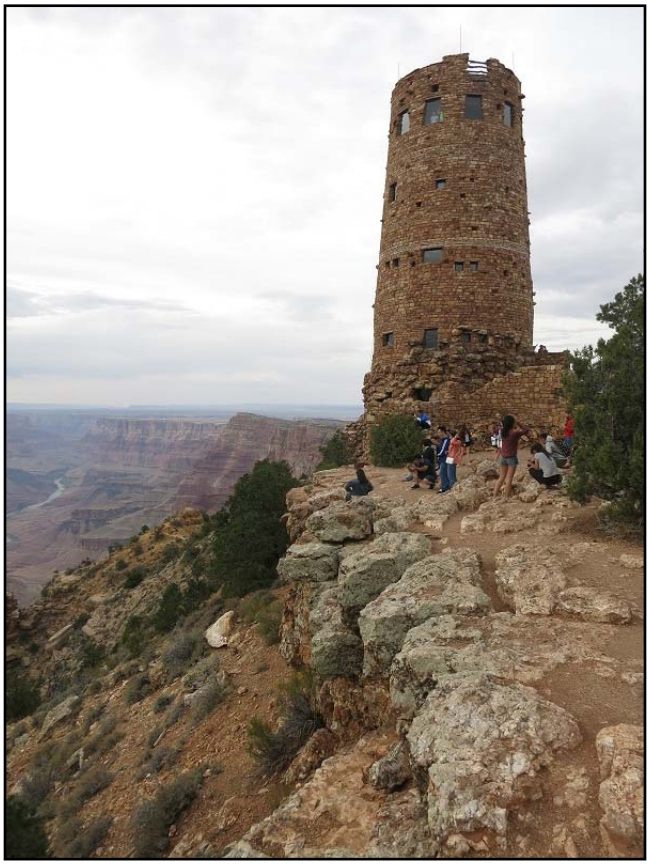
This picture was taken at dusk on Thursday, June 14. We had had five consecutive nights of perfectly dark skies and clear weather that showed the Milky Way rising in the east to very best advantage. This evening, though, some clouds were scattered around the sky following an afternoon thunderstorm that blew through for a few minutes. This particular cloud was unusual in that it had the characteristics, though not the obvious shape, of a standing lenticular. It remained parked in the northwest, and in fact Venus just skirted its left edge as it set in the early part of the evening. We wondered if it was some unusual canyon effect, because the cloud stood over the deep part of the canyon generally to our west.

Although not pictured, we had an interesting observation just before this of a very young moon. A neighboring observer spotted the very thin sliver visually near the horizon at about 8:10 p.m. Because the moon had been new at 12:43 p.m. the day before, this made the age just over 31 hours. This is nowhere near a record, but it's still an impressive observation because the crescent is so thin, and the moon is low in the yellow sky-glow. If we'd been thinking of it, we could've used Mike's computerized telescope to track the young moon much earlier in the day

On Friday morning a small group of us breakfasted at the iconic El Tovar Hotel dining room on the rim about a mile away from our camp. The surroundings and food were excellent; the waiter, John, was a kick. The photo shows, from the left, Ron Hoekwater, Kevin Koski and Mike Magras from the Tucson club, and Claire Stover.

Following breakfast at El Tovar, we walked out to the wall at the edge of the canyon and enjoyed the view and chatted. This picture shows Ron Hoekwater (left) with Mike Magras (right).

Claire says "I don't take restaurant meal photos very often – but then I don't eat at El Tovar very often either."…



Claire and Ludd drove out to the Watchtower, 20 miles east of the South Rim Village, where the river turns from flowing south in Marble Canyon to flowing west in the Grand Canyon proper. We were able to ascend to the topmost windows and view the river, along with all of the other tourists. The Watchtower is visible from the river below, if you happen to be down there on rafts.

Sunset from Grandview Overlook

There were lots of ravens at the South Rim. When you left camp, it belonged to the birds. This guy was a bit more forward than most, waiting patiently to check things out when the coast was clear. The birds were so common that the park quoted the distance to the North Rim as 10 miles as the raven flies.

While it was perfectly clear each of the first six nights, Friday and Saturday at the end of the week clouded up. It was not a total loss because the sunset was pretty amazing. Occasionally, Venus, the Moon, or Jupiter peeked out. We even saw Mercury just above the horizon this evening. Mike's C14 Edge didn't get much of a workout on deep sky objects this evening though.

Mike Magras' 14" Celestron with Ludd for scale

All good things come to an end, and on Sunday morning we helped Mike Magras pack his telescope. Actually, we stood nearby and kibitzed while he packed his telescope. After a brief stop at the gift shop, we were out of the park by 10 a.m. and home by dinnertime. It was a lot of work to spend eight nights in outreach, but a lot of fun.

Thank you to Claire Stover, Bob Akers, and Ludd Trozpek for pictures and commentary.

United States Department of the Interior
NATIONAL PARK SERVICE
Grand Canyon National Park
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July 16, 2018

Dear Grand Canyon Star Party (South Rim) 2018 Participants:

THANK YOU ALL for making the 28th annual Grand Canyon Star Party a HUGE success!

A lot of estimation and extrapolation go into both reporting and compiling Star Party stats. This year, we had okay performance from our automated visitor-counters. After calibrating the visitor-counter numbers with the manual-count we did on Tuesday, we were able to get some pretty reliable numbers. And thanks to all of you who took diligent stats this year we can all reliably assess where we stand. Just about 92% of us turned in stats which exceeds our 90% goal. This is particularly impressive given we had 122 volunteers this year! The rest of the stats were assumed based on average contacts. Here is the final tally:

- Astronomer-to-visitor contacts total: **59,979**
- Night contacts: **57,332**
- Day contacts: **2,647**
- Total nighttime attendance**: 9,044**
  That's an average of **1,130** visitors per night looking through about 5-6 telescopes apiece. Two nights were completely cloudy and had very low visitation. Thanks to Joe Dawson, Stephen O'Connor, and Andrew O'Connor, for taking the manual-count on Tuesday, where they counted **1,450** visitors!
- Total slide show attendance: **1,840** (full every night).
  Thank you Dr. Lisa Prato, Jim O'Connor, Dean Regas, Dr. John Barentine, Gavin Heffernan and Harun Mehmedinovic of project SKYGLOW, and Kevin Schindler for giving some truly wonderful presentations. Some of the best I have seen at GCSP!
- Constellation Tour attendance (at 9:00, 9:30 & 10:00 pm nightly**): 1,275.**
  Average=53. Thank you Chuck Schroll, Jim O'Connor, Brian Bellew, Andy Odell, John Barentine, Bob Victor, Mitch Sawicki, Kensie Stallings, Marker Marshall, Dean Regas, and Joe Bergeron for conducting those.
- **122** registered volunteer astronomers donated **2,438** volunteer hours an average of **52** telescopes set up each night.

Special thanks to those who set up by day AND night**: 161.5** hours were logged by day at various locations. Keep it up!

Of course Jim O'Connor deserves HUGE thanks as usual for his many, many hours coordinating this event throughout the year.

Successes from this year:

- We created an "astronomy-themed playlist" for our Science on a Sphere exhibit in Grand Canyon Visitor Center. It was displayed on a brand new projector system we had installed a few weeks prior to GCSP. This included the short narrated movies "Evolution of the Moon," "Our Pale-Blue Dot," "Jupiter," and "Wanderers: A Tour of the Solar System." In between shows, we used the downtime to advertise for the Star Party using text boxes.
- We had Lowell Observatory conduct daytime outreach on Tuesday. They had over **300** meaningful contacts.
- Bright Angel Café stayed open until 10 pm each night. They said they had good business.
- We created an *Audience Centered Experience Pop-Up (*This is Park Service speak for a cool installation we set up for visitors to find and enjoy). During GCSP this year, I set out a vintage cassette recorder out in the lots for visitors to find next to a sign that read: "*Dear visitor, the year is 2218. The world cannot see the stars anymore because of global light pollution. You have been sent back to the past to this dark sky sanctuary. Look up at the stars. What do you see? What do you feel? What is your message to the future*?" I compiled the responses into a short film. https://www.youtube.com/watch?v=H7fW0Ufsah0
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- We tested out a Night Sky Photography Workshop. Even with the completely cloudy night at 10pm we still had **40 participants!**

A big thanks to everyone who supported the event by running the shirt shop AND the campground (Mae Smith), organizing social events (Susan & Jim O'Connor, Ginger, George Barber, and treating us to pizza (TAAA).

Thank you to Kevin Legore of Focus Astronomy for donating EIGHT Virtuoso telescopes to eight happy kids. Thanks to Vicki and Jim Palmer for taking the time to deliver the scopes to the South Rim. Thanks to these donations, we get to watch astronomers born before our very eyes.

Thanks to ALL of you for traveling so far to share your time, telescopes and knowledge so patiently and enthusiastically with so many park visitors from around the globe. Your efforts were well spent in touching lives and making new converts to amateur astronomy, science, and the preservation of dark night skies.

In no place on Earth can you stand in one place and see so much deep time beneath your feet and so much deep time above your head. If there is any place on the planet where people become so emotionally, intellectually, and spiritually malleable by the awesome power of the natural universe so as to redirect their lives for the betterment of the natural world it is at Grand Canyon during Grand Canyon Star Party. Think about that. We are changing lives with this event. What a thing to do!

Mark your calendars for **June 22-29, 2019** – the 29th Annual Grand Canyon Star Party! AND our official designation as full International Dark Sky Park! AND AND Grand Canyon National Park's centennial! Next year is going to be a big one. Polish that glass.

See you down trail,

Rader