

- Bringing Astronomy to the Public -

Vol 39 No. 2

May 2022

President's Message





Pat set up for solar program visitors, April 2022

GOOD NEWS!!! The Fremont Peak Observatory Association (FPOA) is back. We've resumed public programs. On March 26, 2022, the FPOA conducted its first solar program in 11 months and received 17 visitors. Fortunately, the weather and the Sun cooperated. There were six sunspots, two loop prominences, and one fountain prominence on the edge of the solar disc through the H-Alpha telescope. We had 17 solar program visitors. We've also resumed our evening programs, but the weather has not been kind. Mostly cloudy conditions caused us to scrub the March 26th evening session, and the April 2nd evening viewing session was cut short by the fog. Eric Egland was able to give a last second sky tour to some scouts on March 26th. On April 2nd in spite of the clouds, the FPOA had 10 visitors, who were treated to excellent

COVID-19 Status 🕇

2022 Public and Observer programs are open depending on continued improvement in State and Local positivity of COVID variants.

views of the Orion Nebula. I look forward to the next group of programs on April 23rd (solar and evening), April 30th, and May 7th and hope for better sky conditions.

The area around the observatory is an interesting place for more than just astronomy. For example, what do the following critters have in common: rattlesnakes, tarantulas, coyotes, mice, rats, deer, bobcats, wild turkeys, skunks, racoons, wild pigs, mountain lions, opossums, bats, red-tailed hawks, vultures (real birds – not lawyers), great horned owls, and an assortment of smaller birds... Over the last 36 years, I have seen all of these critters near, under, or inside of the observatory. The observatory is a wonderful place to see wildlife. I find tarantulas to be the most interesting and somewhat intimidating creatures. The largest one I ever saw was almost the size of my hand. When you're at the peak, keep your eyes open. You never know what you'll see.

Recently an event demonstrated just how important the FPOA is. I'd left a food store, and was loading groceries into the trunk. At that time of day, I reasoned that the first quarter moon rose only about 15 minutes ago, so I started staring up at an absolutely cloudless sky to look for the moon. At that precise moment, an elderly woman passed by the car. She asked me what was I doing. I explained to her that I was looking for the moon, and I had just spotted it rising above the hills to the east of Morgan Hill. I showed to her the moon, and she replied, "I didn't know you could see the moon during the day." She had never seen the moon in daylight. Remember FPOA is an educational organization. Teaching the public about astronomy is very important and very enlightening to some individuals.

Here are a few small items:

• We're getting some history articles together for future newsletters. We'll look into how FPOA came to be and include some member stories. We'll publish those as they become available.

• All construction activities related to the refurbishment and upgrade of the observatory are complete. From here forward, only preventative and/or corrective maintenance are required.

• If you plan to volunteer for a public program, (1) complete the updated 2022 <u>liability waiver</u> and return to *membership at fpoa.net*, and (2) for each program date; email a notification with name, program date, and vehicle info to *schedule at fpoa.net*.

One final note, this spring should be an excellent time to observe galaxies. This is especially true this year, since there are no bright planets to distract you. Moreover, the three best galaxy clusters, Leo, Virgo, and Ursa Major, are well placed in the sky. One can spend an entire night observing just one of these clusters.

les anr

Observations

Rob Hawley, Eric Egland

Member news from observing at FPOA and abroad. Send stories to **editor at fpoa.net**.

CaptureEclipse – A new way to Photograph a Solar Eclipse Rob Hawley



https://almadenobservatory.net/CaptureEclipse/

CaptureEclipse is based on my 20+ years and 15 experiences of totality (+ 1 annular) <u>chasing the moons shadow</u>. In that time, I have learned that capturing totality is hard. I have also learned that, with the proper tools and absolute familiarity with the tools, you can do it and still enjoy the show. This program was written since one of the tools that I used in 2017 and 2019, Solar Eclipse Maestro, does not currently run on modern MacOS (or hardware). Since I was stuck in the house during late 2020 through early 2021 thanks to COVID, I decided to provide a solution.

This program is only one part of the overall equation. I cover the rest of what you need to know in my video series <u>Photographing Solar Eclipses</u>, available from the fpoa website. I have updated these videos as a part of this work.

In 2017 millions of people watched the Total Eclipse and at least thousands tried to photograph it. While the 2012 Annular was not as speculator, every parking spot in the remote view site I chose was full. This program will allow the user to enjoy the eclipse instead of fussing with a camera.



See you at the peak!

The link above will provide a rather complete tutorial that will explain how to use the program and how to determine whether your equipment is up to the task.



2012 Annular Eclipse Bailey's Beads, Rob Hawley

The <u>next eclipse</u> is a little under one year from now and will cross just a small tip of Australia before heading out to sea. In <u>October 23</u> an Annular Eclipse will cross the southwest US. Finally, in April <u>2024</u> a total eclipse will cross from Texas through Illinois and then into northern Ohio.

A Hematite Meteorite

Eric Egland

The desert sun rose hot in 1998; almost as hot as it does now. I gazed across the parched morning desert landscape and beheld the lone greenish white coyote melon laying in a ditch. A single whole 6" melon on a shriveled vine, laying in a ditch of solid black iron ore; an alien visitor here. And beside it, there lay a funny rock. After enough time out here, all the rocks are funny, but especially this one. This melted black lump so different from all the dense, spikey 'aa' style iron ore around it.

I though Aha! 'pahoehoe'; Not from this Earth are we... and I brought it home. 24 years later, I told Peter Jenniskens about my rock, and I looked up his criteria for a meteorite. Crystal structure, density lower than 4, no red streak, etc. Damn. Density greater than 4 with a red streak and no crystal structure. I ruined a file trying to flatten a window into its inner workings, and an angle grinder made slow progress, as slow as my bench grinder, and the green wheel with the smell of a smoking fresh weld. It's certainly hard, but probably not a meteorite; A great paperweight.



Weathered hematite found near Kelso Dunes, 1998

Construction D

Windell Oskay, Lenore Edman, Eric Egland

Rolling Roof Safety Upgrade Windell Oskay, Lenore Edman, (Eric Egland)

The observatory's rolling roof rolls on heavy metal wheels on steel tracks. When the roof is closed, it is locked in place by four turnbuckles that anchor it firmly. However, when it is open or otherwise unlocked there has, historically, not been any "hard" stop to limit its travel. The flashing at the roof edges, the winch cable, and a lightweight latch have provided practical limits to the roof travel, but it is not obvious that those would be sufficient to stop the roof in the case of a severe wind gust or operator error. We recently designed, manufactured, and installed four end stops to act as an additional safety measure. These end stops sit just past the nominal travel range of the roof and provide a hard stop should it go beyond that range. Each end stop is comprised of four pieces of machined and anodized aluminum, and clamps over the edge of the existing rail. The durable design yields end stops that are strong, position adjustable, and don't require drilling or other rail modifications.



SW roof stop clamped onto the west track

The end stops are six inches long and each sit 3/8 inch past the open or closed wheel positions. If the roof opens 3/8 inch past its fully opened position, the northmost east and west wheels contact their end stops at the same time. The same for the two southern end stops. In normal use, the wheels will never make contact. They are a fallback in case they are needed.

While the rails accommodated the roof stops unmodified, the aging wood and plastic brushes that sweep the north rails didn't have enough clearance. Working with Eric during installation, we examined the existing brushes and found their wooden supports deteriorated and one didn't survive our test roll. We're fitting new brushes under the north roof skirt with clearance for the new north stops.

Maintenance

Eric Egland

We removed the roof crank mechanism cover, repaired a couple mouse-chewed wires, and completely cleaned and lubricated the roof crank mechanism. For those who've never seen it, here's a photo with the two drums and the cable threading like a hay pulley in an old barn.



There are 4 complete wraps around the drums (3 + 2 half wraps) by which the crank pulley (right) pulls the cables attached to either N-S end of the roof back and forth. Good tension makes this assembly work, so I readjusted the cable tension and cleaned the assembly to re-establish friction.

Following re-tensioning, I updated the roof alignment marks to make those more visible to roof closers turning the crank handle. Good alignment allows easy, secure install of the shutter brace.



Roof park position alignment mark next to NE turnbuckle

Work is complete in the Lecture Room; the sheetrock is finished. Now we're in maintenance mode as we tune up doors and weatherstripping and hire a termite contractor to treat a couple active dry wood colonies. They don't eat fast, but its time.

Little Blue

Eric Egland

A kind member recently donated a very interesting 8" equatorial dobsonian telescope with accessory lenses and filters.

The F4.9 scope is built around an 8" mirror with a 248mm aperture and a focal length approximately 1210mm. The plywood equatorial mount has a 3-point yoke set on a tripod cart with an Ra axle bearing and two skate wheels. Declination adjusts on two Teflon bearings set into the Ra yoke. The OTA swivels on 4 bearings.

"Little Blue" serves our outdoor Public Programs as an introductory hands-on example of an equatorial mount.





Support



Thanks to those who renewed in 2022. FPOA gets most of its income from Memberships. Most of the annual members are now Observers.

For those that have not renewed we still need your support. Our expenses to support our observers continue, and to cover our phone, insurance, etc.

Please also consider volunteering, it's great fun and a service to our community. Please see <u>back page</u> for details.

Membership Renewal

Rob Hawlev

FPOA Memberships are for 12 months with Observer memberships available as a separate option. Please use our web enrollment forms on the membership page to join or renew.

Members <u>may pay with PayPal</u> or mail a check to the address below:



FPOA Membership c/o Rob Hawley 1233 Hillcrest Dr. San Jose, CA 95120

Feature Photos

Ø

Please submit Fall issue photos to the <u>editor</u> by Aug 1st











East FPOA view by Michael Lewis; Seagull Nebula, Thor's Helmet



Clockwise spiral in from upper left,

A California Tortoiseshell, unknown tiny pink flower, cloud formation along a passing front, solar prominence, view south of Palo Escrito, half Moon over peak forest, FPOA sunset, east FPOA view, foggy evening, Indian Paintbrush, Pacific Hound's tongue



Double loop prominence during a May solar program











Observing Reservations

م ا

Ø

Please send the following information *48 hours in advance* to:

schedule at fpoa.net

- Member name
- Reservation date
- Estimated arrival time
- Duration of stay
- Number in party
- Vehicle description and license plate
- Specific observing site request (pad)

Public Program Volunteers

- Complete the updated <u>2022 liability waiver</u> and return to *membership at fpoa.net*.
- Also, please email name, vehicle, and the program date to *schedule at fpoa.net*.

Fremont Peak Observatory Association

Box 1376, San Juan Bautista, CA 95045

Phone Number:

General info Schedule Membership Editor Treasurer

Website: Facebook: Twitter: (831) 623-2465

info at fpoa.net schedule at fpoa.net membership at fpoa.net editor at fpoa.net treasurer at fpoa.net

fpoa.net

fpoa.observatory fpoa_info

Officers and Directors 2022

President Pat Donnelly Chris Angelos Vice President Instruments Ron Dammann Treasurer, IT Rob Hawley Loren Dynneson Facilities Secretary, Editor Eric Egland Vice IT Windell Oskay Lenore Edman Tom Kellogg Instruments and: Ron Dammann Schedule Membership and: **Rob Hawley** Distribution Website **Rob Hawley** Windell Oskay **Directors Emeritus**

Kevin Medlock Denni Medlock



Dates and Delivery

Members, The Observer is now sent by email and posted on our website at <u>FPOA Observer online</u> Please send email updates to *membership at fpoa.net*.

The *Fremont Peak Observer* publishes four times a year (Winter, Spring, Summer, Fall). We welcome articles and photos from our members. Please email those to *editor at fpoa.net* by Feb. 1, May 1, Aug. 1 and Nov 1 in plain text or Word format.