The Sierra Pelonagram

October 2022

... Member of the California Federation of Mineralogical Society Inc. ...

The Sierra Pelona Rock Club is a non-profit organization founded in 1959 with the objective to sponsor activities and promote interest and education in: mineralogy, lapidary, geology, paleontology and related subjects.

October Field Trip

By Julie Tinoco

Saturday, October 15 the SPRC went on a field trip to the Barstow and Lavic area, off the I-40. Those in attendance were Therese, Jean, David, Justin, Ruth, and Julie. We were looking for Jasper, Agate and Thulite. It was a quiet relaxing day and our rock finds did not disappoint.

On our way back we started driving toward a larger area of Agate, but decided against stopping at the last minute since a thunder storm had started our way. We stopped in Barstow for an early dinner and enjoyed a beautiful lighting show on the way home.

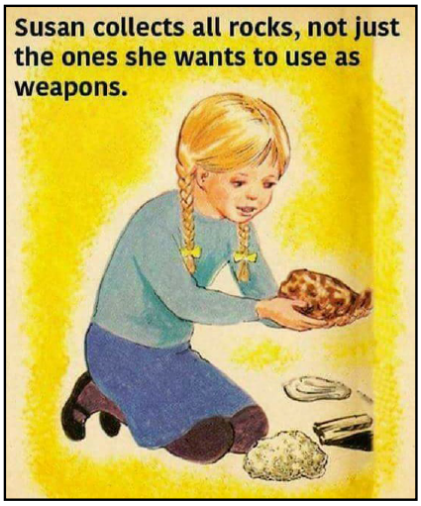
The November 12, 2022 Field Trip will be to the North Edwards area. Looking for Agate, Jasper and maybe some of the elusive Bloodstone.

Jasper Area

Thulite Area

October
Omid Aeed
Natasha Illa'
Ashton Scott

November
Shana Brunes-Ruiz
Frank Humelbaugh
Jack Jenkins



Officers:
President – Bill Webber
Vice-President – Julie Tinoco
Secretary: Tina White
Treasurer –Shana Brunes-Ruiz
Federation Director (CFMS/AFMS) --Don Cogan

Chairpersons:
Claim--Linda Jenkins
Donation Rock Table--Dianne Wholleben
Equipment--Bill Webber
Field Trips – Julie Tinoco
Historian -Open
Hospitality – Ron Rackliffe
Membership – Heidi Webber
Website-- Larry Holt
Pelonagram Publisher, Editor – Heidi Webber
Programs –Tina White
Publicity –Open
Sunshine--Linda Jenkins

The Sierra Pelona Rock Club, is a member of the California and American Federation of Mineralogical Societies, Inc. (CFMS/AFMS). The general club meetings (Open to the public) are at 7:30 PM, on the 3rd Tuesday of each month at: Currently via Zoom

Contact the Club or the Sierra Pelonagram Editor at:
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President's Message

Here it is October already and things are ramping up for the rest of the year. In addition to the various holidays—and anyone who knows me, knows my favorite—we will be having a booth at Gilchrist Farms for 3 days. Hopefully we will end up making a significant contribution to our bank account over those days! This will be our first fund-raiser in 3 years.

We are still working on getting a room at COC, it is close, hopefully by November.

Speaking of November and December—it is getting time to start thinking about elections for the club. We absolutely will need a new treasurer as Shana has put us on notice. She's done a great job over the last few years, but she's ready to move on. All offices are open, so think about what you can do for the club—you don't need to worry about being able to do the job, you will have plenty of help and advice. But we need new blood at the top; new thoughts and ideas.

It is also time to start paying dues. You can start any time now, Shana's address is on the roster or send to the club PO Box. Dues are due by February 1. Dues are $25 for adults and age 7-18 dues are $5. Heidi will be reminding you—and reminding you…

So, until next month, enjoy Halloween, don't eat too much candy!

Bill Webber, President, SPRC

What is Sunstone?

The name "sunstone" is used for specimens of translucent to transparent feldspar that produce bright metallic flashes when light interacts with tiny plate-like mineral inclusions within the stone. These mineral inclusions usually have a common orientation, and light entering the stone reflects from them at a common angle. This produces a flash of light in the eye of the observer who views them at the proper angle. This optical phenomenon is known as "aventurescence."

The first materials to be called "sunstone" because of their aventurescence were specimens of oligoclase, a plagioclase feldspar. As other types of feldspar with a strong aventurescence were discovered, the name was also applied to them. Labradorite feldspar (another plagioclase) and orthoclase feldspar have both been found with strong aventurescence. [1]

The aventurescent flash of light produced by a sunstone can be observed by three different actions:

moving the stone in the light
moving the position of the light
moving the eye of the observer

Oregon Sunstone as a faceted stone and a cabochon. The stone on the left is a 7 mm round cabochon with abundant copper platelets weighing 2.29 carats. The stone on the right is a beautiful orange 7x5 mm oval faceted stone weighing 1.01 carats. Both stones are from the Spectrum Sunstone Mine near Plush, Oregon. Both of these materials are known as "Oregon Sunstone".

Sunstone is also known as "heliolite" and more commonly "aventurescent feldspar." It is cut into cabochons, beads, and small sculptures. The most transparent pieces are used to produce faceted stones.

Sunstone is popular with innovative jewelry designers and is especially popular in the geographic areas where it is commercially mined. It is not a gemstone that is seen in every jewelry store, and many jewelry buyers have never witnessed its aventurescence. However, once a person is given a demonstration of sunstone's aventurescence, they often want to try it and are fascinated. It is a gemstone that sells best if the jeweler takes a moment to educate the buyer about aventurescence.

SPRC Board Meeting
October 4, 2022
Zoom

Attendees:

- Heidi W., Bill W., Ron R., Julie T., Tina W.

Meeting opened at 7:04 p.m.

Issue with Sales Permit

As so many couldn't sell anything during COVID thousands (?!) of CA permit holders didn't have any activity for 2 years, so our permits were allowed to die out/were cancelled. Heidi is submitting the paperwork to get us re-permitted so that IF Gilchrest asks, we're covered.

Gilchrest Farms Event

11/22, 23, and 29

All shifts are minimally covered, but more help is needed/will be appreciated

Elections

Will take place at the Christmas Party

We need a new Treasurer, and anyone/everyone is encouraged to volunteer/self-nominate for any position.

Field Trips

Julie is open to suggestions for locations we've not recently visited, and which are near enough that folks are more likely to attend.

Heidi suggested some Facebook pages to reference (i.e., Diggin' Chix) and Tina has a book with numerous rock-hounding sites listed: Rock Hounding California, a Falcon Guide by Gail A. Butler.

Sharktooth Hill and the Rose Quartz locale were specifically discussed, but Julie's concerns are distance and how recently we've been there.

It was agreed that our next field trip will be on Saturday 10/15 and will head out towards Lavic Siding; Tina will send Julie images of the above book pages on that and nearby locations.

As is noted on our FB page, the Woodland Hills Rock Chippers will also have their Gem Show on 10/15; Heidi will put in a "plug" for our members who can't attend the field trip to support that group by attending their show.

Julie spoke to Ruth H. and there is someplace Ruth wants our group to visit; details once Julie has again spoken to Ruth.

While the September trip to Palos Verdes was poorly attended (Julie, Trina, & Omid had fun though!), there is another collecting spot nearby where they went. It will take more time to access but is a good idea for a future trip.

It was generally agreed that having a calendar showing planned trips a couple of months out is a good idea; Julie will send one Heidi for the remainder of 2022.

While it was discussed later in the meeting, it was decided that the November trip will take place on November 12th, location TBD.

Presentation at Next General Meeting

Once plans are firmed up for the October field trip, Tina will work to put together a presentation on what might/will be found there.

Christmas Party

The date will be December 10th

We hope to be able to use Bill's motorcycle group's Clubhouse; it should be available as their big event is the weekend before.

There were concerns about access (it isn't an ADA-compliant facility), but it was determined that there is access/egress to the main room and the restrooms appropriate for all our members.

Meeting Location

Shana and Linda Jenkins continue to work with both College of the Canyons and our insurer to resolve the issue of COC being listed as an "also insured." The crux of the issue is that COC needs proof of insurance listing them as above, and the insurer wants to see a signed contract with COC before so listing them. (Tina's editorial comment: Aaaarrrggh!) But our annual bill for insurance has now been paid, so there SHOULD be positive movement on this issue very soon.

Rock Shop in Newhall?

Julie recalls speaking with someone about a rock shop out near the Masters' University and the cemetery. If she can find out more about it, perhaps we can make a group trip there, too.

The meeting was adjourned at 8:04 p.m.

SPRC General Meeting
9/20/22 Zoom
Meeting opened at 7:06 p.m.

Attendees:

- Heidi, Bill, Don, Cheryl, Ron R., Trina, Omid, Betsy, Tina

Old Business

Meeting Place at COC (Actually discussed before meeting formally started)

- Continued chaos re: COC wanting to see 1 year policy, our policy due in October but they didn't want our $$$ until then so we couldn't get a copy of a new policy, etc.
- High hopes for November!

New Business

Gilchrest Farms

- Volunteers needed for 10/22, 10/23, and 10/29
- Heidi and/or Bill will be there "all day", the Aeens will be there the morning of the 29th and Tina will be there the afternoon of the 29th, Julie will be there on the 22nd or 23rd as best can be recalled
- The stuff to sell is in Ron R.'s garage, so we'll need to arrange to get it to the event

Field Trips

- Last weekend's trip to Palos Verdes had only 3 attendees: Trina, Omid, and Julie – but they had fun!
- Not certain if there will be an October trip, as we've already got activities the 1st, 3rd, and 4th weekends of the month.
- Julie is on a road trip, so we'll learn more upon her return
- More advance notice of field trip plans/destinations would be appreciated in general – we're busy people!

Presentation on Palos Verdes Geology

Tina admittedly had failed to plan ahead with a PowerPoint presentation but was happy to ramble on about how the PV Peninsula came into being as well as the geology and geological hazards of that area and farther north to the Ballona Creek area.

- The Peninsula is composed of as many as 13 marine terraces, each indicating a one-time sea level
- Volcanic ash -> bentonite clay -> "slicker than snot" -> landslides
- Many of the beds tilt downward towards the ocean
- Long history of large landslides throughout the Peninsula
- Late 1950s Portuguese Bend landslide re-activated when Crenshaw Blvd. was to be put through to the coast
- Houses still in the area have no insurance & residents use jacks to level them
- Electrical, freshwater, and sewer lines are all above ground so that any damage to the lines can be readily seen & repaired
- Fun whoop-de-doos!
- Minerals include gypsum and other evaporites; the land is so fractured there are abundant places for those crystals to grow
- Proto-fossils of marine creatures (shells) can be found in the sandstone cliffs at Torrance Beach at the NE base of PV
- North of the Peninsula streams used to flow to the ocean, so sediment from inland is found on the beach along with the marine sediments
- There are many sand dunes extending north as far as the Playa del Rey area, where Ballona Creek is all that remains of a long-ago major river draining inland environs

From there we discussed our local landslide history and ongoing threats, including Whispering Leaves at Sierra Hwy., Vasquez Canyon Road, and the whoop-de-doos along Hwy. 14.

General chit-chat went on for a few minutes before the meeting was adjourned…

Meeting adjourned at 7:55 p.m.

How We Discovered Slow Earthquakes That Happen Over Weeks or Even Months

You're probably familiar with earthquakes as relatively short, sharp shocks that can shake the ground, topple buildings and tear rips in the Earth. These earthquakes, and their aftershocks, happen because although tectonic plates move at centimeters per year, this motion is seldom steady. Earthquakes result from a "stick-slip" motion, where rocks "stick" along fault planes while stress accumulates until a "slip" occurs – a bit like pulling on a stuck door until it suddenly opens. This slip also releases energy as the seismic waves that, in large magnitude earthquakes, create substantial damage.

In the last two decades another class of stick-slip motion has been discovered worldwide. These "slow slip events" last for weeks to months, compared to seconds to minutes for earthquakes. Slow slip events occur faster than average plate motion, but too slow to generate measurable seismic waves. This means they need to be studied by GPS networks rather then seismometers.

Although their motion is slow, the amount of movement that occurs in a slow slip event is substantial. Earthquake magnitude depends on the distance that rocks move and the area this movement occurs over. Using the same definition, many slow slip events would have had magnitudes above 7.0 if they slipped at earthquake speeds.

Slow slip events repeat at intervals of a year to a few years. Compared to major earthquakes, which have repeat times of hundreds of years (or more), slow slip events are actually very frequent. Even in the short time of a couple of decades that we've observed these types of slip, many cycles have occurred in several places – notably around the Pacific Rim.

Slow slip events generally happen next to areas where faults are locked and expected to rupture in major earthquakes. It's therefore possible that these slow slip events can trigger earthquakes on neighbouring locked faults. It has, for example, been suggested that slow slip events preceded the 2011 magnitude 9.1 Tohoku earthquake in Japan and the 2014 magnitude 8.1 Iquique earthquake in Chile. That said, numerous slow slip events have also been observed without any immediate, subsequent major earthquakes on neighbouring faults.

Earthquakes may also trigger slow slip. In particular, the magnitude 7.8 Kaikōura earthquake in New Zealand in 2016 triggered slow slip events up to 600km away from its epicentre.

It is not known why some fault segments host slow slip and others host earthquakes. Neither is it known whether the same area can change behaviour and host either slow slip or earthquakes at different times. It's therefore important to characterise the source of slow slip, and find out what materials help create slow slip and under what conditions.

The Hikurangi subduction zone (where the Pacific Ocean floor is pulled underneath the New Zealand continent) offshore New Zealand's North Island is potentially the country's largest earthquake fault and is a unique opportunity to investigate slow slip events. This is because slow slip here happens shallower and closer to the shoreline than anywhere else in the world.

The shallow slow slip events in New Zealand have been observed by onshore GPS and ocean bottom pressure sensors. Oceanic scientific drilling expeditions recently sampled sediments and installed observatories along this margin.

These International Ocean Discovery Program expeditions – which drilled to just over 1km deep in water depths of 3.5km in late 2017 and early 2018 – revealed that the seafloor rocks and sediments hosting slow slip in Hikurangi are extremely variable. The range of rocks, described in a recent Science Advances paper led by Philip Barnes of NIWA (New Zealand's National Institute of Water and Atmospheric Research), include mudstones, sands, carbonates, and sedimentary deposits from oceanic volcanic eruptions. The seafloor samples show that the source of the slow slip is a mixture of very soft sediment and hard, solid rocks.

The diverse seafloor sediments are not the only variability offshore of New Zealand. The seafloor itself is also very rough, including seamounts (submarine mountains rising over a kilometer above the seafloor). This seafloor roughness also makes the fault vary depending on where along it you are.

The observations are consistent with a hypothesis where slow slip events occur in rocks that are transitional between moving steadily and moving in earthquakes. One way to think of this model is as rigid rocks interacting with softer, more ductile surroundings. Researchers using numerical simulations and laboratory experiments have also suggested that variable fault rocks can cause slow slip.

But diverse fault rock isn't the only model for the mechanics of slow slip. Another possibility is that pressurized fluids decrease frictional resistance and slip speed along faults. It is also possible that some rocks become stronger when they move faster – so that faults start accelerating but slow down before reaching earthquake speeds.

The recent discoveries in New Zealand may be applicable to other depths and locations around the world. However, future studies will undoubtedly lead to further insights and complexities – including in the relationship between slow slip events and earthquakes.

Reference: Geology.com