# The Sierra Pelonagram

**January 2015**

*... 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.


**Hey Everyone!**

Welcome to another year of rock hounding and fun in the sun. I'll start out my first presidents' message of 2015 by thanking everyone who participated in the club last year and made it a great year for the Sierra Pelona Rock club. Without the help and participation of all of the Board members, Chair people and active members, we wouldn't have much of a club. So, thanks for putting in your time and effort in making the SPRC one of the best rock clubs around!

We've had a bunch of new members join recently. To them, I'd like to say, "welcome to the club" and give them a big cyber hug. We love getting new members to teach them what we know so that we can pass on our enthusiasm for this hobby.

We have so much planned, already for 2015. Field trips to locations we haven't been to in some time or never before, as a club. We have plans to add a couple of parties to our schedule of events, starting with the Pizza, Bingo & Rocks party in March! I don't want to give everything away during my message. So, let's just say that we have lots of plans to make 2015 a memorable year for our club.

Don't forget to come to the General Meeting on Jan 20th. It's going to be a celebration of 2014 and look forward to what we have planned for 2015. There's going to be food, fun, prize raffle and a silent auction. So, don't miss it. If you know anyone who may be interested in joining, this would be the meeting for them to come to and see what we are all about.

I hope to see you all there!

Greg Langewisch

2015 President – Sierra Pelona Rock Club

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## SIERRA PELONA ROCK CLUB CALENDAR OF EVENTS

*1st Quarter of 2015*

| JANUARY | | | | | | |
|---|---|---|---|---|---|---|
| Su | Mo | Tu | We | Th | Fr | Sa |
| | | | | 1 | 2 | 3 |
| 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 |
| 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 25 | 26 | 27 | 28 | 29 | 30 | 31 |

| FEBRUARY | | | | | | |
|---|---|---|---|---|---|---|
| Su | Mo | Tu | We | Th | Fr | Sa |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| 15 | 16 | 17 | 18 | 19 | 20 | 21 |
| 22 | 23 | 24 | 25 | 26 | 27 | 28 |

| MARCH | | | | | | |
|---|---|---|---|---|---|---|
| Su | Mo | Tu | We | Th | Fr | Sa |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| 15 | 16 | 17 | 18 | 19 | 20 | 21 |
| 22 | 23 | 24 | 25 | 26 | 27 | 28 |
| 29 | 30 | 31 | | | | |

| GENERAL MEETING - Public Welcome | | |
|---|---|---|
| Date | Time | Location |
| 1/20/2015 | 7:30 PM | Greenbrier Clubhouse |
| 2/17/2015 | 7:30 PM | Greenbrier Clubhouse |
| 3/17/2015 | 7:30 PM | Greenbrier Clubhouse |

| BUSINESS MEETING - Members Welcome | | |
|---|---|---|
| Date | Time | Location |
| 1/6/2015 | 7:00 PM | Greenbrier Clubhouse |
| 2/3/2015 | 7:00 PM | Greenbrier Clubhouse |
| 3/3/2015 | 7:00 PM | Greenbrier Clubhouse |

| FIELD TRIP - Members and Guests Welcome | | |
|---|---|---|
| Date | Time | Trip |
| 1/24/2015 | TBA | Ballarat Marble |
| 2/21/2015 | TBA | Strawberry Onyx |
| 3/21/2015 | TBA | Sharktooth Hill |

| OTHER ACTIVITY | | |
|---|---|---|
| Date | Time | Activity |
| 2/1/2015 | 10:00 AM | SPRC Lapidary Workshop |
| 2/4/2014 | 7:00 PM | Wirewrapping Workshop |
| 3/13 - 3/15 | 9AM-5PM | Stoddard Wells Tailgate |
| 3/31/2015 | 7:00 PM | Pizza Party - Bingo |

**Dues are Due**

Yes folks, it is that time of year, time to pay your dues for 2015. Ron Rackliffe has his receipt book all warmed up and open and waiting just for you. Dues are late as of the board meeting the first Tuesday of February, so don't be late. Late fees are $2, and you will be dropped from the roster if not paid by the end of the first quarter when I update it, as well as the email lists alerting you to our wonderful field trips, SPRC dinners, monthly programs, etc. You get quite a bit for your $20, so don't be shy, see Ron!

**Club Doings**

Greg Langewisch is stepping right into his year as president of the SPRC. He has a lot of great ideas for the coming year. For starters, you will find in this issue a calendar for the first quarter of field trips, workshops, wire wrap sessions, etc. Now you will know exactly when and where so you can make plans to attend. Also Omid Aeen is going to be in charge of running a "Best Rock" contest like we have had in years past.

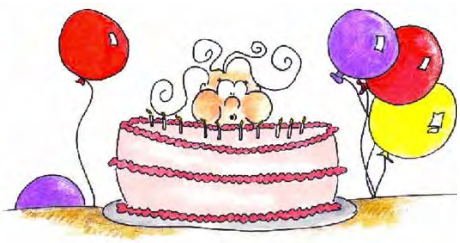
This prize is awarded to the person on the previous months' field trip who collected the best rock. Another prize will go to the "Best Worked" rock entry from the previous months' trip. There will also be a silent auction at the general meetings.

There is lots more, but I can't read my notes, meaning you really need to come to the January General Meeting to find out all the good stuff!

**Birthdays**

**January**

Judd Figatner Jan 10
Bonnie Forstner Jan 14
Diane Henry Jan 30
Larry Holt Jan 29
Debbie Meredith Jan 11
Martin Schreiner Jan 9
Bruce Velie Jan 3
Austin Williams Jan 5



## Officers:

President – Greg Langewisch
Vice-President – Trina Aeen
Secretary--Tina White
Treasurer – Ron Rackliffe
Federation Director (CFMS/AFMS) – Shep Koss

## Chairpersons:

Claim--Mike Serino
Donation Rock Table--Akiko Strathmann
Equipment--Bill Webber
Field Trips – Open
Historian -Open
Hospitality – Tina White
Membership – Heidi Webber
On-Line Presence (website)-- Larry Holt
Pelonagram Publisher, Editor – Heidi Webber
Programs – Shep Koss
Publicity –Bruce Velie
Storage--Bill Webber
Sunshine--Brigitte Mazourek

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:

**The Clubhouse of the Greenbrier**
**Mobile Estates EAST**
**21301 Soledad Canyon Rd**
**Canyon Country, CA 91351**

Contact the Club or the Sierra Pelonagram Editor at:
**Sierra Pelona Rock Club**
**P.O. Box 221256**
**Newhall, Ca. 91322**
Or e-mail: hwebber@pacbell.net
*Visit the SPRC website http://www.sierrapelona.com/*

**Basalt vs. Granite**

Basalt and granite actually have quite a bit in common. Both are igneous rocks, which means that they cooled from a magma (the earth gets very hot just below the surface, and there is lots of liquid rock available). Both are made up of minerals from the silicate group, so both have large amounts of silicon and oxygen. Both will hurt if you drop a big piece on your toe. But there are several important differences, too. These differences help define and explain how the earth works.

Granite is great stuff! Is without a doubt the most common rock type on the continental land masses. Yosemite Valley in the Sierra Nevada and Mt. Rushmore are two notable examples of granitic rocks. But granitic "basement rock" can be found just about everywhere east of the Rockies if you're willing to dig through the dirt and sedimentary rocks at the surface. Granite is intrusive, which means that the magma was trapped deep in the crust, and probably took a very long time to cool down enough to crystallize into solid rock. This allows the minerals which form plenty of time to grow, and results in a coarse-textured rock in which individual mineral grains are easily visible.

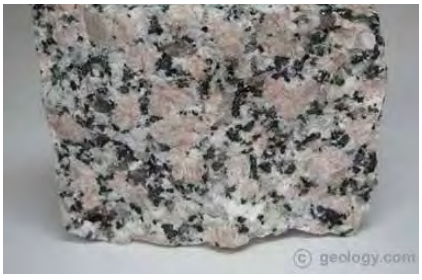
Granite is the ultimate silicate rock. On average oxygen and silicon account for 75% of the earth's crust. The remaining 25% is split among several other elements, with aluminum and potassium contributing the most to the formation of the continental granitic rocks. Relatively small amounts of iron and magnesium occur, but since they have generally higher densities it's not surprising that there isn't very much in the granite. Due to the process of differentiation, most of the heavier elements are moving towards the core of the earth, allowing the silicon and oxygen to accumulate on the surface. And accumulate it has. Enough granitic "scum" has differentiated to the surface to cover 25% to 30% of the earth with the good stuff. We call this purified material felsic because of the relatively high percentage of silica and oxygen.

Basalt is extrusive. The magma from which it cools breaks through the crust of the earth and erupts on the surface. We call these types of events volcanic eruptions, and there are several main types. The volcanoes that make basalt are very common, and tend to form long and persistent zones of rifting in nearly all of the ocean basins. We now believe that these undersea volcanic areas represent huge spreading ridges where the earth's crust is separating. Basaltic magma is like the blood of the earth - it's what comes out when the earth's skin is cut the whole way through. As an eruption ends, the basalt "scab" heals the wound in the crust, and the earth adds some new seafloor crust. Because the magma comes out of the earth (and often into water) it cools very quickly, and the minerals have very little opportunity to grow. Basalt is commonly very fine grained, and it is nearly impossible to see individual minerals without magnification.

Basalt is considered a mafic silicate rock. Among other characteristics, mafic minerals and rocks are generally dark in color and high in specific gravity. This is in large part due to the amount of iron, magnesium, and several other relatively heavy elements which "contaminate" the silica and oxygen. But this heavy stuff really isn't happy near the surface, and will take any opportunity it can to head for deeper levels. The trick is to heat the basalt back up again so it can melt and give the iron another shot at the core. It wants to be there, and heat is the key which unlocks the door.

As it turns out, most of the ocean floor is basalt, and most of the continents are granite. Basaltic crust is dark and thin and heavy, while granite is light and accumulates into continent-sized rafts which bob about like corks in this "sea of basalt." When a continent runs into a piece of seafloor, it's much like a Mac truck running into a Volkswagen. Not very pretty, but at least there's a clear winner. And the seafloor basalt ends up in pretty much the same position as does the VW - under the truck (or continent, as the case may be). This gives it the heat it needs to re-melt and try to complete the differentiation process which was so rudely interrupted at the spreading ridge. If successful and allowed to continue, what's left behind is a "purified" magma with most of the iron, magnesium, and other heavy elements removed. When it cools, guess what forms? And the continental land mass just got a wee bit larger.

*Source: Geologyin.com*




Photograph of a granite with very large crystals of orthoclase feldspar. Granites with such large crystals are known as "pegmatites". This rock is about two inches across.

**SPRC Business Meeting**

January 6, 2015

Greenbrier Estates Clubhouse

The meeting was called to order at 7:07 p.m. In attendance were Trina Aeen, Greg Langewisch, Ron Rackliffe, Evelyn Velie, Heidi Webber, and Tina White.

**Old Business:**

- Regarding the new officers, Heidi W. has given Tina W. the materials she will need as Secretary, and will email her the Club's official legal documents.
- Tina W. will also continue to serve as Hospitality Chair.
- Greg L. asked how much is spent on refreshments each month; Tina W. replied that it is approximately $30.
- Greg L. asked for a review of the prior 3 months; Ron R. will put that information together.
- Evelyn V. will continue to serve as Program Director.
- Membership Dues are due. Now.

**New Business:**

**Meetings:**

- Greg L. advised the group that this year's general meetings will be interactive; he and Trina A. have already put together a schedule for the year's field trip, and the meetings will focus on the materials to be completed on the next outing.

o January's meeting will be a 2014 Review / 2015 Preview

- Future meetings will also include the Best Rock Contest post-field trip, for both raw and finished specimens. Omid Aeen will run the voting for this contest; raffle tickets will be given as prizes.
- We will also have Silent Auctions of slabs (7 – 8 per meeting); Omid A. will coordinate this activity, as well.
- Club Events will be scheduled quarterly, with the addition of a winter pizza & bingo night (Ron L. has been designated as caller) and a summer ice cream social.
- The possibility of creating the position of Events Chair was discussed, but it was agreed that the Hospitality Chair can take on these additional events.
- At the meeting on January 20th we will have a "kick off" cake and salty snacks.
- In the future, sodas will be purchased in large plastic bottles (instead of cans).

First Quarter 2015 Events Calendar

- January 24th: Field trip to Ballarat area for: Marble, Diablo Green Onyx, Travertine, and White Onyx
- February 1st: Workshop; as Heidi will be recuperating from knee surgery, it will likely be a BBQ
- February 4th: Wire Wrapping
- February 21: Field trip to Strawberry Marble collecting site
- March 21: Field trip to Sharktooth Hill
- March 31: Pizza & Bingo Night

**Fundraising:**

- Greg L. is going to Quartzite soon, and will purchase rocks we in the Club don't collect, to be sold at Lombardi, etc.
- Bill W. will inventory the shed; likely to be assisted by Greg L.
- For Lombardi's 2015, it was suggested that we have 2 spots, 1 for sales, and 1 for exhibits on the Club's activities/finds. Trina suggested a generator for power to cut geodes; that will depend upon our location.

**Membership:**

- Heidi W. will continue as Membership Chair
- She receives 4-5 new inquiries each month, most from the website
- Need to publicize Family and Pebble Pup options/activities
- Prospective members must attend a meeting and/or a field trip prior to membership approval

**By-laws:**

- A discussion on the possibility of updating the Club By-laws this year ensued; no final decision was made, although Board Members will review the document to identify areas of concern.

**Comments/Questions:**

- Evelyn V. asked, if Bruce V. is still Publicity Chair, who is his contact? Since she is publicity chair, he can talk to her about the programs to be published in the calendar of the newspaper.
- Ron R. advised us that the Club tees, hats and cash box (empty) are in the storage shed
- Tina W. will send out information on events hosted by other organizations

Greg L. made a motion to adjourn, Ron R. seconded, and the meeting adjourned at 8:13 p.m.

Respectfully Submitted,
Tina M. White
Secretary, SPRC

Samples of small rock concretions found at Hells Hollow State Park in Pennsylvania.

**Concretion**

A concretion is a hard, compact mass of matter formed by the precipitation of mineral cement within the spaces between particles, and is found in sedimentary rock or soil. Concretions are often ovoid or spherical in shape, although irregular shapes also occur. The word 'concretion' is derived from the Latin con meaning 'together' and crescere meaning 'to grow'. Concretions form within layers of sedimentary strata that have already been deposited. They usually form early in the burial history of the sediment, before the rest of the sediment is hardened into rock. This concretionary cement often makes the concretion harder and more resistant to weathering than the host stratum.

There is an important distinction to draw between concretions and nodules. Concretions are formed from mineral precipitation around some kind of nucleus while a nodule is a replacement body.

**Origins:**

Detailed studies have demonstrated that concretions form subsequent to burial during digenesis. They quite often form by the precipitation of a considerable amount of cementing material around a nucleus, often organic, such as a leaf, tooth, piece of shell or fossil.

For this reason, fossil collectors commonly break open concretions in their search for fossil animal and plant specimens. One of the most unusual concretion nuclei are World War II military shells, bombs, and shrapnel, which are found inside siderite concretions found in an English coastal salt marsh.

**Appearance:**

Concretions vary in shape, hardness and size, ranging from objects that require a magnifying lens to be clearly visible to huge bodies weighing several thousand pounds. The giant, red concretions occurring in Theodore Roosevelt National Park, in North Dakota, are almost 10 ft. in diameter.

Concretions are usually similar in color to the rock in which they are found. Concretions occur in a wide variety of shapes, including spheres, disks, tubes, and grape-like or soap bubble-like aggregates.

**Composition:**

They are commonly composed of a carbonate mineral such as calcite; an amorphous or microcrystalline form of silica such as chert, flint, or jasper; or an iron oxide or hydroxide such as goethite and hematite. They can also be composed of other minerals that include dolomite, ankerite, siderite, pyrite, marcasite, barite and gypsum.

Although concretions often consist of a single dominant mineral, other minerals can be present depending on the environmental conditions which created them.

**Occurrence:**

Concretions are found in a variety of rocks, but are particularly common in shales, siltstones, and sandstones. They often outwardly resemble fossils or rocks that look as if they do not belong to the stratum in which they were found. Occasionally, concretions contain a fossil, either as its nucleus or as a component that was incorporated during its growth but concretions are not fossils themselves. They appear in nodular patches, concentrated along bedding planes, protruding from weathered cliffsides, randomly distributed over mudhills or perched on soft pedestals.

**Types of concretion:**

Concretions vary considerably in their compositions, shapes, sizes and modes of origin.

**Septarian concretions:**

Septarian concretions or septarian nodules, are concretions containing angular cavities or cracks, which are called "septaria". The word comes from the Latin word septum; "partition", and refers to the cracks/separations in this kind of rock. There is an incorrect explanation that it comes from the Latin word for "seven", septem, referring to the number of cracks that commonly occur. Cracks are highly variable in shape and volume, as well as the degree of shrinkage they indicate.

A septarian nodule

The process that created the septaria, which characterize septarian concretions, remains a mystery. Septaria usually contain crystals precipitated from circulating solutions, usually of calcite. Siderite or pyrite coatings are also occasionally observed on the wall of the cavities present in the septaria, giving rise respectively to a panoply of bright reddish and golden colors. Some septaria

may also contain small calcite stalagtites and well-shaped millimetric pyrite single crystals.

**Cannonball concretions:**

Cannonball concretions are large spherical concretions, which resemble cannonballs. These are found along the Cannonball River within Morton and Sioux Counties, North Dakota, and can reach 10 ft. in diameter. They were created by early cementation of sand and silt by calcite. Similar cannonball concretions, which are as much as 12 to 18 feet in diameter, are found associated with sandstone outcrops of the Frontier Formation in northeast Utah and central Wyoming.

They formed by the early cementation of sand by calcite. Somewhat weathered and eroded giant cannonball concretions, as large as 18 ft. in diameter, occur in abundance at "Rock City" in Ottawa County, Kansas. Large and spherical boulders are also found along Koekohe beach near Moeraki on the east coast of the South Island of New Zealand. The Moeraki Boulders and Koutu Boulders of New Zealand are examples of septarian concretions, which are also cannonball concretions.

**Hiatus concretions:**

Hiatus concretions are distinguished by their stratigraphic history of exhumation, exposure and reburial. They are found where submarine erosion has concentrated early digenetic concretions as lag surfaces by washing away surrounding fine-grained sediments.

"Hiatus" refers to the break in sedimentation that allowed this erosion and exposure. They are found throughout the fossil record but are most common during periods in which calcite sea conditions prevailed, such as the Ordovician, Jurassic and Cretaceous. Most are formed from the cemented infillings of burrow systems in siliciclastic or carbonate sediments.

A distinctive feature of hiatus concretions separating them from other types is that they were often encrusted by marine organisms including bryozoans, echinoderms and tube worms in the Paleozoic and bryozoans, oysters and tube worms in the Mesozoic and Cenozoic. Hiatus concretions are also often significantly bored by worms and bivalves.

**Moqui Marbles**:

Moqui Marbles, also called Moqui balls, and "Moki marbles", are iron oxide concretions which can be found eroding in great abundance out of outcrops of the Navajo Sandstone within south-central and southeastern Utah. These concretions range in shape from spheres to discs, buttons, spiked balls, cylindrical forms, and other odd shapes. They range from pea-size to baseball-size. They were created by the precipitation of iron, which was dissolved in groundwater.

**Kansas pop rocks:**

Kansas pop rocks are concretions of either iron sulfide, i.e. pyrite and marcasite, or in some cases jarosite, which are found in outcrops of the Smoky Hill Chalk Member of the Niobrara Formation within Gove County, Kansas. They are typically associated with thin layers of altered volcanic ash, called bentonite, that occur within the chalk comprising the Smoky Hill Chalk Member. A few of these concretions enclose, at least in part, large flattened valves of inoceramid bivalves.

These concretions range in size from a few inches to as much as 2-3 ft. in length and 4 ft. in thickness. Other "pop rocks" are small polycuboidal pyrite concretions, which are as much as 4 inches in diameter. These concretions are called "pop rocks" because they explode if thrown in a fire. Also, when they are either cut or hammered, they produce sparks and a burning sulfur smell.

Moqui Marbles, hematite, goethite concretions, from the Navajo Sandstone of southeast Utah.

Concretion in the Cretaceous of western South Dakota.

Concretions on Bowling Ball Beach (Mendocino County, California) weathered out of steeply tilted Cenozoic mudstone