



Bulletin of the Mineralogical Society of Southern California

Volume 91 Number 7 - July, 2018

The 958th meeting of the Mineralogical Society of Southern California

With Knowledge Comes Appreciation

July, 13th, 2018 at 7:30 P.M.

**Pasadena City College
Geology Department, E-Building, Room 220
1570 E Colorado Blvd., Pasadena**

Program : Why Study Faults and Earthquakes? Presented by Chuck Houser

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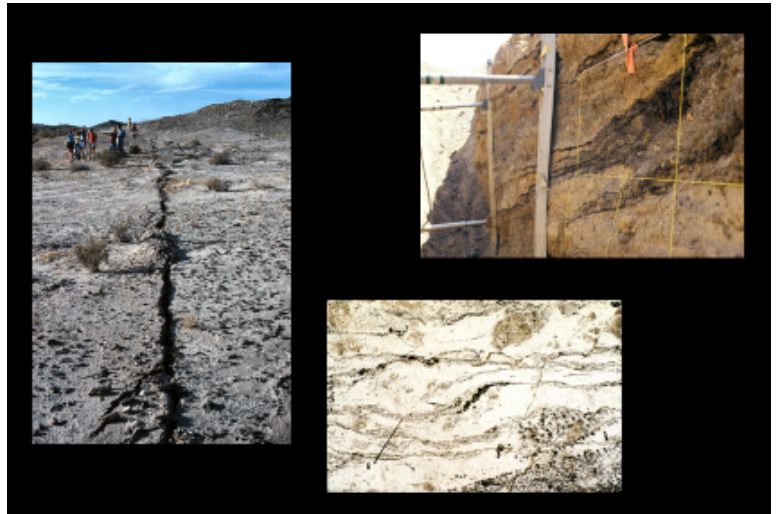
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Remember: If you change your email or street address, you must let the MSSC Editor and Membership Chair know or we cannot guarantee receipt of future Bulletins

About the Program: Why Study Faults and Earthquakes? Presented by Chuck Houser

Few if any California residents have never heard of the San Andreas Fault. In fact, most Californians live within 30 miles of an active fault. But what exactly is an active fault? Not surprisingly, the State not only has a very specific definition, but also a set of laws that come to bear when developing near an active fault. For this reason, as well as the safety of the public, faults in developed areas and areas planned for development must be evaluated and their activity characterized.

This presentation will outline the process used to locate, evaluate, and characterize faults. Three significant Southern California earthquakes will be highlighted: M 6.6 Superstition Hills Earthquake of November 24, 1987; M 7.3 Landers Earthquake of June 28, 1992; and M 7.2 Sierra-El Mayor (Easter Sunday) Earthquake of April 4, 2010.



Photos © Chuck Houser

Another question that arises is how big an earthquake a fault may be expected to produce and how do differing earthquake magnitudes compare. The talk will present some discussion of earthquake magnitude and how some of these notorious earthquakes compare. Finally, a series of photographs will be presented showing the arrival of the tsunami in San Diego from the M 8.8 Chile Earthquake of February 27, 2010.

Speaker Bio

Chuck Houser is a geologist and project manager with SCS Engineers in San Diego. He has a Bachelor of Science degree from San Diego State University from 1986, and a Master's degree from SDSU from 1997. His undergraduate thesis was on structural controls and mineralogical indicators for the formation of pockets in the Elizabeth R Mine in Pala, and his master's thesis was on the tectonic geomorphology and Quaternary history of the Old Woman Springs fault in the western Mojave Desert in San Bernardino County.

Chuck is married to Cindy and has two daughters, Julianna and Jennifer, both in college. His hobbies are fly fishing, flying (he has had his private pilot's license since December 1977), and, you guessed it, mineral collecting. His mineral collection includes calcites from worldwide localities with emphasis on twins, San Diego County thumbnails, and minerals from the Elizabeth R/Ocean View Mine, as well as an assortment of self-collected pegmatite minerals from various San Diego and Riverside County locations.

From the Editor:

Happy July, everyone! I hope you all have a safe and happy 4th.

It looks like this month's program about earthquake study is fitting since, according to the LA times, everyone in the LA basin lives within 30 miles of a fault line! After the Northridge quake, I saw a map of the then known fault lines in the LA Area and it looked like a messy road map but only the freeways were shown! I hope we figure out how to predict quakes before the next "big" one.

Since it is mid summer, there are very few southern California shows available, none in July and only one listed in August! There are other CFMS Shows during this period, but only if you are willing to travel. Check out the CFMS Show listing for more information. <http://www.cfmsinc.org/shows/cfmsshow.htm> Linda Elsnau

With Knowledge Comes Appreciation !

Grossmanite

Grossmanite, $\text{CaTi}^{3+}\text{AlSiO}_6$, is a monoclinic pyroxene that was discovered as microscopic grains in the Allende meteorite (Figure 1). It is of interest for a number of reasons. Many pyroxenes have two $2+$ ions and Si_2O_6 for their chemical formula. Two common examples include enstatite, $\text{Mg}^{2+}_2\text{Si}_2\text{O}_6$ (Figure 2) and diopside, $\text{Ca}^{2+}\text{Mg}^{2+}\text{Si}_2\text{O}_6$ (Figure 3). The more common way to introduce a $3+$ cation such as aluminum into a pyroxene is to compensate its charge with a $1+$ cation such as lithium or sodium. Jadeite, $\text{NaAlSi}_2\text{O}_6$ (Figure 4) and spodumene, $\text{LiAlSi}_2\text{O}_6$ (Figure 5) are two common examples of this. Note that we retain the Si_2O_6 portion of the pyroxene chemical formula.

Grossmanite is a comparatively new mineral first approved by the International Mineralogical Association in 2008.

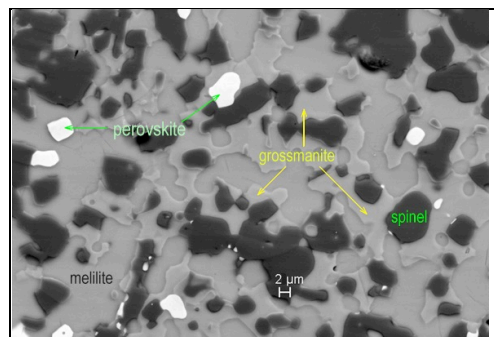


Figure 1: A scanning electron microscope image of grossmanite in the Allende meteorite taken by Chi Ma at Caltech.



Figure 2: An enstatite crystal from the Mogok region, Myanmar. There is some iron in the crystal which gives the brown color. Photo by G. Rossman



Figure 3: A diopside crystal from Myanmar. Photo Credit: Mia Dixon, PalaMinerals.



Figure 4: A spodumene crystal, $\text{LiAlSi}_2\text{O}_6$, from the Ocean View Mine, Pala, California Photo by G. Rossman



Figure 5: A slab of polycrystalline jadeite, $\text{NaAlSi}_2\text{O}_6$, from the Motagua Fault Zone, Guatemala Photo by G. Rossman

Grossmanite was named for Lawrence Grossman, Professor of Cosmochemistry at the University of Chicago, in honor of his fundamental contributions to meteorite research. When the name was first submitted to the IMA, there was some resistance at first to the name thinking that we were trying to submit a mineral in honor of G Rossman (OK, I am a co-author on the discovery paper – one does not name minerals after oneself). That worry was quickly dismissed. There was also some worry that the name could be confused with rossmanite and grossite. But in the end, the name went through with no further problems.

What is interesting is the titanium in the $3+$ oxidation state. This is not an oxidation state found in terrestrial minerals. The earth is too oxidizing for titanium $3+$ to be stable as a major or minor constituent. On earth we have minerals with titanium $4+$ like rutile (TiO_2) and ilmenite (FeTiO_3). But the gasses from which the early

solar system condensed were rather reducing. There is a lot of hydrogen in space and hydrogen is a great reducing agent. So, we find Ti^{3+} minerals in objects that drop in from outer space. Call these objects meteorites. Grossmanite is one such mineral. Tistarite (Ti_2O_3) is another (Figures 5,6).



Figure 5: Visible light image of a tiny grain of tistarite in the Allende meteorite Photo by G. Rossman

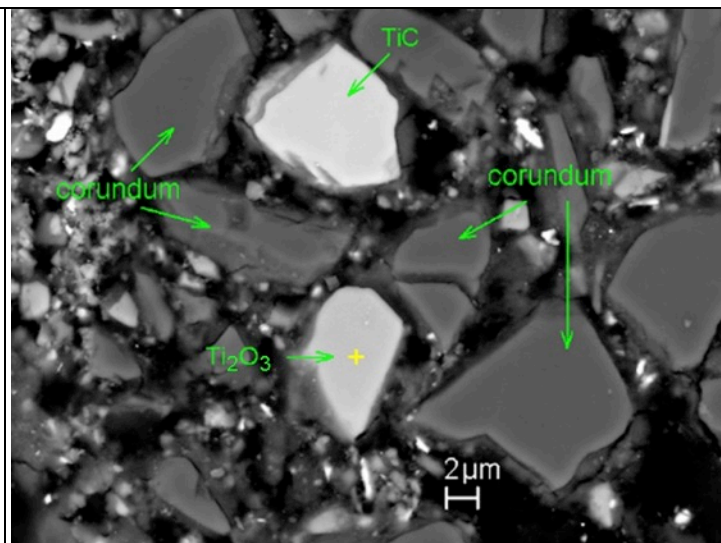


Figure 6: Scanning electron image of tistarite, Ti_2O_3 . Also note the grain of the mineral khamrabaevite, TiC . Photo credit: Chi Ma

Grossmanite and tistarite was both first published in 2009 in American Mineralogist. Yes, they are tiny, tiny, tiny little things. Today we can describe new minerals that are less than 1 micrometer wide. That is about one one-hundredth of the width of a typical human hair. We use electron microscopes, Raman spectrometers and synchrotrons to describe these new phases. In former times, one had to describe the hardness, the indices of refraction, the X-ray pattern, and the density of a new mineral to get it approved by the IMA. Now, we can use electron microscopes to get the chemical composition and an electron-equivalent to the X-ray pattern. Raman spectroscopy and synchrotron studies can help us determine the structure of such tiny phases. And, we no longer have to report indices of refraction. Densities are computed but not always measured.

Times have changed allowing a minor flood of new minerals phases to be submitted as new minerals, including some that drop in from space and contain titanium in an oxidation state not associated with terrestrial minerals. Go find a meteorite; you may discover a new mineral specie

MINUTES of the June 8th, 2018 General Meeting

On Friday, June 8, 2018, the 957th Membership Meeting of the Mineralogical Society of Southern California (MSSC) was called to order at 7:30 p.m. by President George Rossman. Dr. Rossman noted that there are now 5,336 mineral species recognized by the International Mineralogical Association.

Regular Business

Announcements: At the last Membership meeting, Dr Rossman mentioned the on-line L A Times article about the “space diamonds.” The UCLA Meteorite Gallery lecture on Sunday, June 10, will address that very topic.

Upcoming Events: Ann Meister unable to attend tonight but will report next time.

Field Trip Report: Rudy Lopez, Program Chair, gave a brief report on the field trip to Blue Bell Mine in the Soda Mountains. We had a good time, found quite a bit of material including azurite, malachite, mimetite, wulfenite, chrysacolla and Cheryl’s dendrite. Marek Chorazewicz will give a full report at the next meeting.

Minutes: Dr. Rossman asked for approval of the Membership meeting minutes as written and published in the May 2018 *Bulletin* (for April 13, 2018) and the June 2018 *Bulletin* (for May 11, 2018). Dr. Rossman asked for

additions to the Minutes. There were none. He asked for approval of the two Membership meeting minutes by voice vote, and the Minutes were approved unanimously.

Board Meeting: The next MSSC Board meeting is scheduled for 1:00 p.m. on Sunday, June 17 at the Carter residence. Any and all are invited to attend.

Guests/visitors: Guest Linda Pry was in attendance with daughter Rebecca Pry. Rebecca has been to two previous MSSC meetings, was referred through MSSC's presence at the 2018 Nature Fest event that was held at the L A County Museum of Natural History. And, she became a member tonight! Congratulations Rebecca. Also in attendance was Vickie Bruce, a former MSSC member (1999). Welcome back, Vickie!

Show and Tell: None tonight, other than the wonderful agate displays presented by Dick and Mary Pat Weber.

Program The meeting was turned over to Program Chair Rudy Lopez who introduced tonight's presenters, Dick and Mary Pat Weber. Dick and Mary Pat are retired exploration geologist who have worked and traveled extensively throughout North America, Australia and New Zealand. During their travels, they'd been granted special access to many mines and unique geological areas. They are avid agate and mineral collectors and have been for more than 20 years.

The program tonight, "The Colorful Condor Agates of Argentina", will tell the amazing story of how the Condor agates were discovered, lost, and re-discovered in a remote and inhospitable region high in the foothills of the Andes. Specimens of these beautiful agates from Mary Pat's personal collection are on display, as well as others from Patagonia.

Mary Pat begins by saying that Condor agates are her favorite and these (on display) "...are mine!" Mary tells the story of a man who heard a rumor, followed a dream and ran down a cold trail to find these exquisite agates. Agates are fine grained quartz with interesting features and no two alike. There are more than 3,000 named worldwide; most recently discovered are the Condor and other Argentine agates.



Here's Mary Pat's story: In Germany sometime in the 1800's, carver artisans eventually needed new material and they began a worldwide search. They found agates in Brazil and Uruguay. Years later [Secy Note: 1937], a German-Argentine geologist named Dr. Franz Manfeld, discovered a unique agate deposit while prospecting for tin in Argentina. He probably made a note in his field book where it was exactly located. Eventually, his records were lost, however.

Many years later rock collector, Luis de los Santos, renewed his childhood interest in rock collecting. He had had moderate success as an actor and during that time worked at construction between acting jobs. He became intrigued by the grain patterns in wood and wood eggs and began to collect them. He went on to collect rhodochrosite eggs having similar type banding, then on to fluorite eggs, which also contain interesting banding and patterns.

When Luis was in Catamarca Province, he met up with an old German prospector who had been a friend of Dr. Manfeld. The old friend introduced Luis to petrified pine cones. He collected those, went to the Tucson show in 1989 and almost immediately sold out. Over the course of his association with the old prospector, he learned of Dr. Manfeld's discovery of the agate deposits. The old prospector didn't know the exact location of the deposit. Nonetheless, Luis was very intrigued and over the next 2 years searched for the deposit site based on information provided by the old prospector. In 1992 during a random travel in Argentina, he found a broken piece of an agate that a rancher was using as a door stop. He inquired where the piece was from, set out to look and eventually found the original agate deposit Dr. Manfeld had discovered. He named the agate "Condor" after the magnificent birds that were flying overhead when he, too, made the discovery Dr. Manfeld made those years ago. (Here are others he named: the Puma Agate, the Crater agate.)

The agate field is located near San Rafael in Mendoza Province in Argentina. The agates are 30-50 million years old, have few cracks or fractures, the rhyolite is approximately 87 % quartz while the andesite is about 60% quartz. The region is at the foothills of the Andes, up about 6,000 feet (public land) in an area 5 x 7 miles.

The terrain is rough, semi-arid with a hard snow ground most of the year. Good collecting weather is about 45°F with heavy winds blowing. Getting there is challenging as the roads are bad and only good about half the way in, then by horseback or walking in the rest of the way. Everything has to be packed in/out. But those aren't the only dangers, the local laborers have been known to break bones on the hard ground, and game, wild rabbit, etc., supply meat but some of the game is not good or tasty. There were bandits, so, Luis dressed in garb that looked military-ish, he carried a gun and was able to deter the bad guys. He hired some security for protection.

Many of the agates lying on the ground have been “mined” and now actual digging is required to find more. The mining is all done by hand! The deposit field is still active but, Luis has been very vague about the specific location (because of the horrendous legal paper trail required in the Argentine court system) and has yet to reveal the exact location. He collected many Condor agates, brought them to the United States where they sold immediately. They are still sought after today by collectors. After years of collecting, cutting and polishing, he eventually got out of the business and moved to California. His former wife, Ana de los Santos, still mines, collects and sells the Condor agates, however.

How are agates formed? “We don’t know. There are a lot of theories, but it’s still a geologic puzzle.” says Mary Pat. She goes on to say: “We know gas bubbles form during the volcanic event, the little pockets solidify and eventually fill with fluid. We know pressure is involved in the process and that zeolite coats the chamber inside the pocket and seals it off.” Nature takes its course and the agate grows. Condor Agates are in alluvial deposits and some are vein type while some modular type. Color varies by location. There are different skins or rinds on the outside of the agate which tells a lot about the agate inside.

Condor agates are vibrantly colored, banded or patterned. Colors range from reds, oranges and yellows, plus black which gives off a dramatic look to very typical green/red edpalette; agates with “eyes” (uncommon), middles that have quartz crystals, amethysts and spectacular banding, including shadow banding and rainbow agates; about 50% of the Condor agates are of the rainbow type pattern.

Luis de los Santos also discovered the Puma agate. It is Jurassic, 210-240 million years old, located at elevation of 4,000 feet, in sedimentary matrix. This agate is pseudomorph after coral replaced silica. It is fluorescent! This agate is named after the cougar tracks found near the caves where the agates were discovered.

Crater Agate is an agate that has a pillow like center, it is 90% hollow and has red botryoidal center. Another agate, just by comparison, is the Black River Agate from Lake Superior, a Triassic from North America. It has a brown palette with pastel pink on blue-grey.

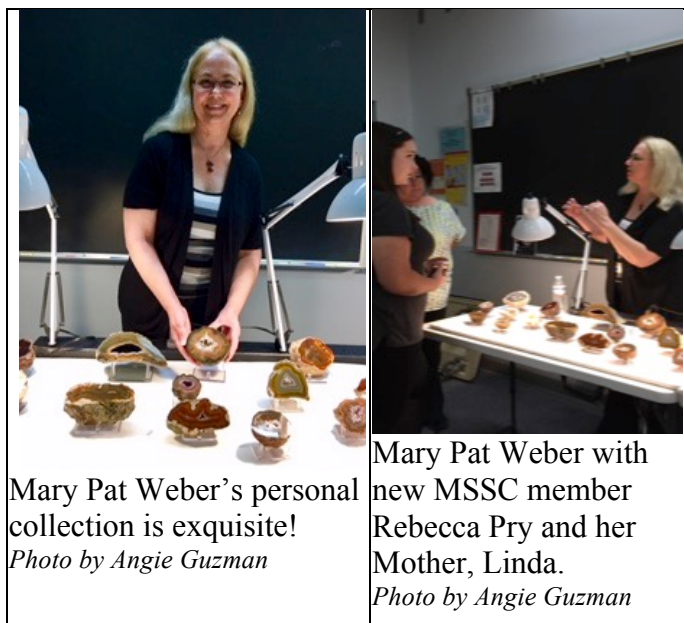
As mentioned above, Ana de los Santos continues to provide excellent Patagonia Condor agates through her mining operations near San Rafael, Argentina. Ana’s shop is local, in Fontana, CA. Many of the specimens on display tonight are from Ana’s shop. Q&A followed Mary Pat’s presentation. Dick and Mary Pat donated some agate posters and “teacher packs” that MSSC will use for our outreach events. Thanks to Dick and Mary Pat Weber.

If you missed this, you missed a good one. It was a great presentation with interesting facts and wonderful specimens on display. For another great presentation, come to our next meeting on July 13, 2018 when our speaker will be Chuck Howser.

Door Prize drawing was won by Angie Guzman.

Adjourn The meeting adjourned at 8:35 p.m.

Respectfully submitted by Angie Guzman, MSSC Secretary



Mary Pat Weber's personal collection is exquisite!
Photo by Angie Guzman

Mary Pat Weber with new MSSC member Rebecca Pry and her Mother, Linda.
Photo by Angie Guzman

Refreshments and interesting conversations followed the meeting. Thank You to Laura Davis for bringing the refreshments and to Rudy Lopez for his home baked goodies. Yum!

Reminders: Next Membership meeting will be Friday, July 13th; Deadline for *Bulletin* submissions is the 22nd of each month.

List of Upcoming MSSC Events : Mark your Calender!

Event	Date	Comments / Scheduled Program (if known)
Meeting Dates:	August 12, 2018	<i>MSSC Picnic</i>
	September 14, 2018	Eric Scerri: What is This Thing Called Science (An Introduction to the Philosophy of Science).
	October 12, 2018	Aaron Celestian: "Halophiles in Minerals"
	November 9, 2018	Renee Newman: "21st Century Jade: Why It's Prized, and How It's Tested and Valued?"
Board Meeting	September 16, 2018	Board Meeting at Bruce Carter's house
Annual Picnic	August 12, 2018	at Bruce Carter's house

Note: Dates and programs shown above are subject to change. Check your bulletins to confirm final information each month.

Minutes of the MSSC Board Meeting June 17, 2018

Call to Order and Roll Call:

The MSSC Board Meeting was called to order at 1:00 p.m. by President Dr. George Rossman.

Yes: George Rossman, Renee Kraus, Angela Guzman, Jim Kusely, Leslie Ogg, Rudy Lopez, JoAnna Ritchey, Pat Caplette, Bruce Carter, Ann Meister, Bob Housley. No: Alan Wilkins, Cheryl Lopez, Linda Elsnau, Patrick Steven.

Items for action at MSSC board meeting

a) Approval of the previous MSSC Board Meeting (March 25, 2018) minutes in the May, 2018, *Bulletin*. Dr. Rossman asked: if everyone read the minutes, if there were any additions/corrections. None were mentioned. Dr. Rossman called for approval by voice vote; the voice vote was unanimous to approve the Minutes.

Items for Discussion

Reports:

- 1) Comments from the President – [Rossman] - None
- 2) Treasure's Report on the finances of the Society – [Kusely]
 - a) There was another attempt at fraudulent billing
 - b) Detailed statements were handed out;
 - c) Picnic budget was sent to the Board previously (see below);
 - d) One new member, Rebecca Pry, joined at June '18 meeting;
 - e) Expenditures: Mindat \$500, Picnic expense coming up, taxes are paid
- 3) Membership Chair's report on membership trends – [Rudy Lopez]
 - a) New member from Nature Fest LA County Museum
 - b) Will curator at LA County Museum be made an honorary member? He will be a speaker later in the year
 - c) Website announcements/advertising help with membership
- 4) Pacific Micromount Conference - [Housley]

Dr. Bob Housley wanted to be reminded how well PMC did at the last event. Treasurer Kusely will advise.

Discussions regarding the following:

- 1) Fallbrook site worked out adequately, they want us and are willing to help us. On downside, the facility is a little small;
- 2) Fire hazard - can be controlled; ADA is not an issue;
- 3) More people could have fit in the sessions; Sales tables a little tight;
- 4) Al Wilkins is not interested in finding a location, he handles speakers;
- 5) Payment is not up-front, and Fallbrook does not demand a fee;
- 6) Bob recommends Fallbrook site, will contact them to reserve our space if all agree, will put flyer together, field trip will probably be at Blue Lady;
- 7) Price to attend will remain the same, speaker fees will remain the same; Food was issue but easily rectified; break timing needs to be stricter (Paul Adams was kept waiting);
- 8) There were some technology issues, but they can be fixed. **Dr. Rossman asked for approval of Fallbrook as the site of the next PMC (Motion not required). Everyone agreed to Dr. Rossman's request for approval.**
- 9) Bob mentioned that he was at an event where Paul Adams donated one of his CDs for auction and it sold for \$85. Rudy mentioned that we still have 30 CDs available for sale, at \$25 each, original agreed sale price.

5) Society Field Trips – [Housley & Marek Chorazewicz plan]

- Level of interest: Marek has led a few Field Trips, but they were not advertised so attendance was low. Bob offered him some suggestions;
- Next trips: will be in the fall. Rudy mentioned that Lead Mountain would be good for MSSC; the Blue Bell (road) was a little scary.
- Web access: Marek was provided access to our website by Webmaster, Leslie Ogg. He can now post information about upcoming field trips, including photos.
- Contacts: Rudy reports that there is a new contact for the Forest Service, Jamie. She is in charge of minerals. Justin from Forest Service will come back to MSSC and he has more information for us.
- Natural History Museum tour update: Rudy reports that Curator Dr. Aaron Celestain is going to be a speaker later in the year. He is working on the minerals, new lab and fossils tour for us. And, Karen Rice of the La Brea Tar Pits may be able to arrange something for us, as well; – she is working in the pits with the “recent” archeological research/discovery. These will be part of the educational field trips to promote MSSC membership;
- Fluorite Crystals: JoAnna Ritchey offered a bit about fluorite, little fluorite crystals found in the general direction of Last Chance Canyon (Kern County). This may be a possible collecting/field trip site.

6) Society Historian's Activities – [Meister]

- a) Ann reports she has not had opportunity to work on getting older, missing Bulletins. Jim Kusely comments that Pasadena Public Library may have some of our earlier records. Ann says MSSC met there from the inception of the society until sometime in the 1950's. Jim also gave Ann (and Leslie) a CD with some old records including Apple format.
- b) Dr. Bruce Carter states that PCC has 16mm films from '30's and '40's field trips that we may show at membership meetings (or picnics). Some of the films are converted to CD's and the rest are being converted.
- c) Bob commented on a field trip out of Hesperia (the rock shop out there) where there were 60 people! There is interest!

7) Federation Director's report – [Ritchey]

JoAnna reports that CFMS will not have a show this year but their convention will take place during the Feather River Lapidary and Mineral Society Show planned for September 15-16 in Chico.

8) Program Chair's report – [Lopez] – Future Speakers

- a) Date of Annual banquet will be Saturday, January 12, 2019 and the speaker will be Denise Nelson who will speak on “Treasures of Poland”;
- b) 7 slots are open for 2019 but have a few speakers in the wings;
- c) Speakers who work for the government cannot accept compensation, is there something that can be done – because it’s part of their job. Perhaps goodies for their office or other way to show our appreciation;
- d) Speaker for July’s meeting is Chuck Howser, “How and Why We Study Active Faults in California” is his presentation topic.

9) Webmaster’s Report - [Ogg]

- a) Leslie reports our domain name has been re-registered for 2 years: .org 2 years and .com 1 year – Leslie paid \$9.95 out of pocket;
- b) Web traffic has tapered off since the beginning of the year although we have experienced 85 hits. Our social media, Facebook, has 130 Likes;
- c) Leslie was asked about interest from schools and/or universities - most coming from search engines in USA and Canada;
- d) George asked if other clubs’ websites are up-to-date. Some are and some are not current. PLS has 2 websites, though one is out-of-date.

10) Bulletin Report – [Elsnau]

Editor Linda Elsnau was unable to attend but she sent a message saying she will need more postage stamps. George wanted to know if there are any upcoming changes for the *Bulletin*. Bob mentioned that Linda was considering leaving her position. Ann mentioned that she thought Linda would continue but it is a good idea to start looking for a replacement in case she does decide to resign as Editor. A sample newsletter was brought in from Pasadena Lapidary. Bruce said he thinks our Bulletin is a good bulletin. He reads it, he likes it. There was agreement.

Discussion followed.

George brought up the issue of Lapidary vs. Mineralogical Society and if we should embrace both. There was discussion which ended up with mineralogical topics, field trips, etc. as MSSC’s main focus but to include lapidary.

====B R E A K==== Reconvene 20 minutes later

11) Other discussions: The Picnic [all] Aug 12 at Carter residence.

Details to finalize:

a) Are we having a theme or program?
b) Will there be a silent auction?
c) Is Rudy willing to BBQ again?
d) What is his budget?
e) What other clubs will be invited?
f) Flyer Information – Rudy
2018 Total Picnic Expense Budget 325.00

- a) Theme: Favorite mineral in your collection *that you found*;
- b) Silent Auction – *YES*, we need donations!!!;
- c) Rudy willing to BBQ – *YES*;
- d) Budget – *Not to exceed \$325*;
- e) Other clubs: Ann contact Fallbrook
Rudy contact PLS, L A County Museum
Bruce contact Dana Club and instructors
- f) Flyer – Rudy presented the comprehensive flyer he prepared and will distribute (PLA Tuesday);

- g) Comment – a way to get people to mix and mingle rather than just come in, sit down and stay there without mixing with others. Use the theme as a starting point.
- h) Donation box – **YES**. This is a Pot Luck picnic. We want people to bring something. Discussion regarding food, flyer and coordination of those picnic items.

General discussion regarding scams, logo file, stickers.

12) Next Meeting Date, September 16, 2018 at the Carter home.

Adjourn at 2:46 p.m. Thanks to the Carters for use of their home and the goodies.

Respectfully submitted by Angie Guzman, MSSC Secretary

MSSC ANNUAL PICNIC /SILENT AUCTION ***YOU ARE INVITED***

MSSC's Annual Picnic Sunday, August 12th, 12 noon to 4:30pm.

We are going to invite two clubs to our picnic this year, PLS (Pasadena Lapidary Society) and Fallbrook.

THE LOCATION:

Home of Bruce and Kathy Carter,
146 Highland Place, Monrovia, CA

Bruce and Kathy's home is just north of Foothill Blvd and west of Mayflower Ave in Monrovia. Street parking is available. They have a beautiful back yard with shade structures and an outdoor kitchen. If it is too hot, then we can easily move into the air-conditioned house.

Directions: from the 210 Freeway: Exit at Huntington Drive and go east to Mayflower Ave. Turn North to Foothill Blvd. Then go west one block to Highland Place. North to # 146. If you get lost, Bruce's phone number is 626-357-4532.

FOOD

Rudy will cook the Pulled Pork and Brisket. He slow smokes the pork shoulder and brisket up to 14 hours so they are really tender. So, we are going to need more items to make a great meal. We will need rolls for sandwiches for the Pulled Pork and Brisket. Please bring your own special potluck offering to share: a salad (homemade or from the deli), chili, chips and dip, salsa or guacamole, a veggie tray, grapes, fruit salad, a jar of pickles or a can of olives; cookies, pie or other dessert item, or anything edible.

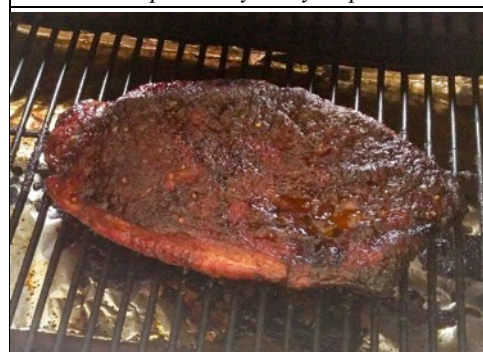
Let's see what delicacies turn up this year! Leslie's Hawaiian Ice will make another appearance we hope. Let's all pitch in and make sure we have enough for everyone to enjoy. MSSC will supply plates, cups, napkins, knives, forks and spoons and will also supply water and ice. It is suggested you bring any serving utensils your contribution requires.

Be sure to mark them and your serving dish with your name or initials so you're sure to get them back.

All food items you bring should feed at least 8 people or more. Please let Rudy know what items you intend to bring so we can coordinate with other members and guests, so we don't have too much of one item.



All photos by Rudy Lopez



Smoked Brisket



Smoked Pork Shoulders

Please RSVP by Tuesday, August 7, 2018. It's really important that anyone from the other clubs that will attend bring food items and RSVP. Please send your RSVP and what you will bring to: programs@mineralsocal.org. or call Rudy Lopez 626-351-6283.

If you call, there is an answering machine so please **clearly identify yourself and how many are in your party & what food items you are bringing.**

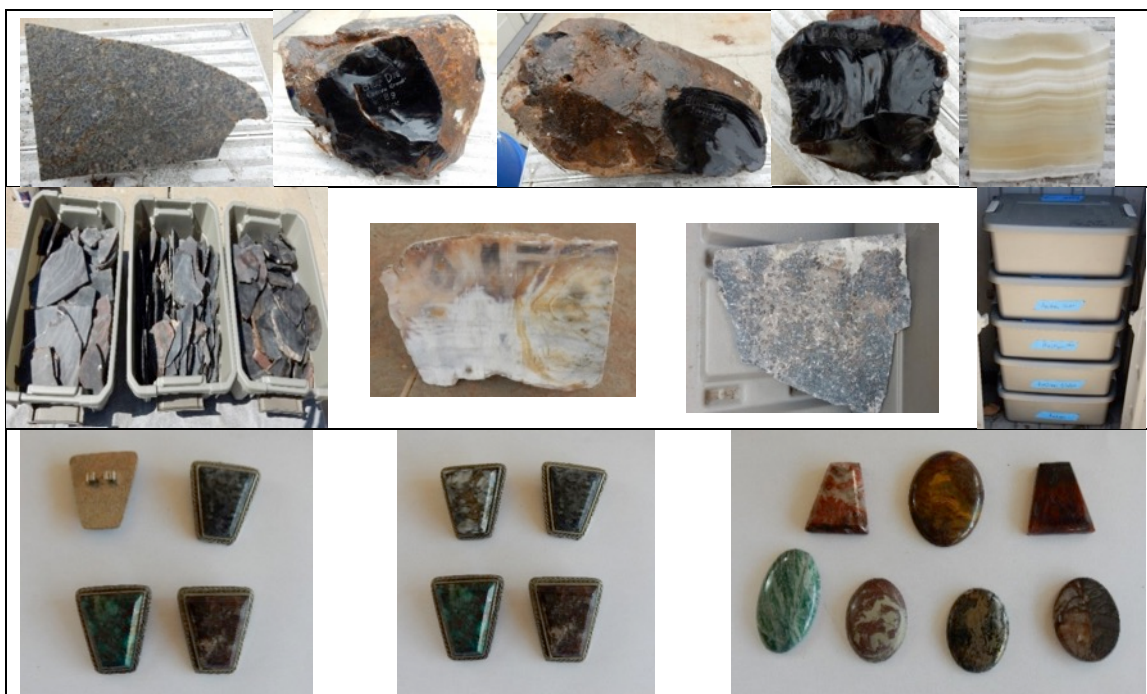
SILENT AUCTION

MSSC members, bring items for silent auction

We are going to have a silent auction and I am encouraging everyone to bring items for the silent auction. I have been cleaning my storage boxes and have found some really great slabs. I found agate, moss agate, tiger eye, fossils, palm root, obsidian (black, mahogany, rainbow and silver streak) and I will have at least 50 or 60 slabs alone. I will bring some obsidian pieces that weight anywhere from 10lbs to 30lbs. I will also bring agate rocks weighing about 25lbs, lepidolite, tiger eye and other rocks. I have a small 7" rock saw and a jewelry buffer I will put up for auction and I am still looking through my finished cabs. SO, let's all pitch in and bring items for the silent auction. Please understand anything that does not sell the day of the picnic will go back home with the original owner. There will be tables for your auction items and bid sheets. Please look at the pictures I have attached of just a few items I will bring for the silent auction. Items will be priced to sell, but not given away.

Those of you who are so inclined may bring items for the silent auction. Please bring items that are related to our hobby – minerals, fossils, lapidary, gems/jewelry, geo-science books, and mining memorabilia. **MSSC members please bring items to donate to the auction.**

Check out the pictures below of what is going up for auction at the picnic. *(All photos by Rudy Lopez)*



There will be a selection of about 40 finished cabs in various sizes.

OTHER (FREE) THINGS TO DO... by Ann Meister

The **Watson Lecture Series at Caltech is on hiatus until the Fall semester.** Stay tuned until October!

The **Von Kármán Lecture** on Thursday/Friday* **July 12 and 13** is titled, **“Walking on Mars”** presented by a panel of speakers. Virtual and augmented reality promise to transport us to places that we can only imagine. When joined with spacecraft and robots, these technologies will extend humanity's presence to real destinations that are equally fantastic. NASA's Operations Laboratory at JPL is spearheading several ambitious projects

applying virtual and augmented reality to the challenges of space exploration. Through partnerships with multiple VR and AR companies, scientists on the Curiosity Mars Rover mission are exploring the Martian terrain, engineers are finding new ways to collaborate on 3D designs, and astronauts on the International Space Station are preparing to perform their work more efficiently than ever before. The lead of these projects at NASA will share their progress so far, the challenges that lie ahead, and their vision for the future of VR and AR in space exploration. *Thursday is at the Von Kármán Auditorium at JPL and Friday is at Ramo Auditorium at Caltech. Start time is 7 PM. https://www.jpl.nasa.gov/events/lectures_archive.php?year=2018&month=7

The **UCLA Meteorite Gallery** lecture is on Sunday, **July 15**. The speaker is UCLA Researcher Jean Pierre Williams. His title is **“Mysterious Cold Spots on the Moon: A New Class of Impact Craters”**. Mapping by the Lunar Reconnaissance Orbiter revealed areas having unusually low temperatures called “cold spots”; regions associated with recently formed impact craters. The cold spots identify the recently formed impact craters. Studying them improves our ability to use impact chronology to date planetary surfaces. The larger cold spot craters are candidate source craters for lunar meteorites; their formation ages are a few hundred thousand to a million years, similar to ejection ages of most lunar meteorites. The Meteorite Gallery in Geology room 3697 is open with a docent present every Sunday from 1 till 4. The lecture, which is always on a Sunday afternoon at 2:30 pm, is in room 3656 near the Meteorite Gallery.

This is not on Earth Sciences; it is for those of you who have an interest in the history of Pasadena. On Sunday, July 29 at 2:30 at Rothenburg Hall at **The Huntington Botanical Garden and Library** is a lecture titled, **“Pasadena’s Busch Gardens: Adolphus Busch’s Early Amusement Park.”** When German brewing magnate Adolphus Busch purchased a mansion on Pasadena’s “Millionaires’ Row” in 1904, the property did not include enough land for a proper garden. But Busch quickly bought up some 60 additional acres stretching from Orange Grove Blvd. down to the bottom of the Arroyo Seco and developed it into a lushly landscaped park. Busch Gardens, which opened to the public in 1906, featured exotic plants, terraced hillsides, a rock grotto, waterfalls and ponds, and “fairy scenes” drawn from the tales of the Brothers Grimm. Local historian Ann Scheid will give a fascinating lecture about this once-famous theme park, which no longer exists except in period photographs and in a few intriguing remnants that can still be glimpsed around the neighborhood where it once stood. Free; no reservations required. Rothenberg Hall

Ride Share Listing

Can You Provide A Ride?

Would You Like Company On The Drive To Meetings?

We have heard from several of our members that they would like to ride-share with someone to the meetings. We will list the names, general location and either a phone number or an email address of anyone who would like to connect for a ride-share. If you would like to catch a ride or would like company for the trip, let me know at msscbulletin@earthlink.net and I’ll put the information in this section of the bulletin. After that, any final arrangements made are up to you. Also, If you make a connection that works for you, let me know so that I can remove your information from the bulletin. The Editor

Looking for	Who	Where	Contact at
A ride	Richard Stamberg	North Orange County, near Cal State Fullerton	<i>See emailed bulletin</i>

West Coast Gem & Mineral Show

November 9 - 11, 2018

80 Select Retail & Wholesale Dealers*

Minerals ♦ Fossils

Gems ♦ Jewelry

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and much more!

*Wholesale for qualified buyers



NEW LOCATION!

Hilton Orange County

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FREE Admission

Parking \$5/day

OPEN to the Public

Gold on Quartz
Eagle's Nest Mine, Placer Co., CA
Jeff Scoville

www.MineralShowsLLD.com MineralShowsLLD@gmail.com

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Mineral-related ads are allowable in the MSSC bulletin. Below is the price per month			
	Business Card	\$5.00	
	1/3 page	\$10.00	
	1/2 page	\$20.00	
	Full Page	\$35.00	
In addition, any advertiser who purchases 12 months of space in advance will receive a discount of 12 months for the price of 10 months. The copy for the ads should be mailed to the editor at bulletin@mineralsocal.org and the payment should be sent to the MSSC Treasurer 1855 Idlewood Road, Glendale, CA 91202			

Calendar of Events:

Only local area shows are listed here. Other CFMS Club shows can be found at: <http://www.cfmsinc.org/>

JULY, 2018

No shows listed for July

AUGUST

August 3 - 5: NIPOMO, CA

Orcutt Mineral Society

Nipomo High School

525 Thompson Avenue

Hours: Fri-Sat 10 - 5, Sun 10 - 4

Contact: Sylvia Nasholm, (805) 481-0923

Email: sylviaandon@cs.com

Website: www.omsinc.org

SEPTEMBER

The 79th CFMS Convention

will be held alongside of the

Feather River Lapidary & Mineral Society's

Rock, Gem & Show - September 15 - 16

September 15 - 16: CHICO, CA

Feather River Lapidary & Mineral Society

Silver Dollar Fairgrounds

2357 Fair Street

Hours: Sat 9:30 - 5; Sun 9:30 - 4

Website: www.featherriverrocks.org

Show Flier

Worldwide Tumbling Contest

OCTOBER

October 6: BORON, CA

Mojave Mineralogical Society
Boron Community Center
26998 John Street
Hours: 9 - 4 daily
Web Site: [Facebook page](#)

October 6 - 7: VISTA, CA

Vista Gem & Mineral Society
Antique Gas & Steam Engine Museum
2040 North Santa Fe Avenue
Hours: 10 - 4 daily
Website: www.vistarocks.org

October 13 - 14: TRONA, CA

Searles Lake Gem & Mineral Society
Gem Show Building
13337 Main Street (corner of Main & Trona Rd)
Hours: Sat 7:30 - 5; Sun 7:30 - 4
Website: www1.iwvisp.com/tronagemclub
[Show Page](#)

October 14: FALLBROOK, CA

Fallbrook Gem & Mineral Society
Fallbrook Gem & Mineral Museum
123 West Alvarado Street
Hours: 9 - 4
Website: www.fgms.org

October 20: WEST HILLS, CA

Woodland Hills Rock Chippers
First United Methodist Church
22700 Sherman Way
Hours: 10 - 5
Website: www.rockchippers.org [Show Page](#)

October 20 - 21: WHITTIER, CA

Whittier Gem & Mineral Society
Whittier Community Center
7630 Washington Avenue
Hours: 10 - 5 daily
Website: www.wgmsca.com

Random Mineral Pics

Many of the fine pictures we use are thanks to the generous permission from Rob Lavinsky, owner of The Arkenstone (credited as © irocks). These photos are of minerals that are so rare they may never show up in our bulletins as "Mineral of the Month" because there are not a lot of pics to choose from. These pics were also selected by Mindat for their "Photo of the Day". You can learn more about these minerals by checking them out on www.mindat.org

All photos are © irocks



Wittichenite : Cu_3BiS_3

Locality: [Cattle Grid deposit, Mount Gunson Copper mines, Pernatty Lagoon, Stuart Shelf, South Australia, Australia](#)
2.4 cm x 1.8 cm x 0.6 cm



Uranocircite :

$\text{Ba}(\text{UO}_2)_2(\text{PO}_4)_2 \cdot 10\text{H}_2\text{O}$
Locality: [São Pedro claim, Malacacheta, Malacacheta district, Minas Gerais, Brazil](#)
4.9 cm x 3.2 cm x 2.4 cm



Evansite :

$\text{Al}_3\text{PO}_4(\text{OH})_6 \cdot 8\text{H}_2\text{O}$
Locality: [Wenshan Autonomous Prefecture, Yunnan Province, China](#)
4 cm x 3.5 cm x 2.5 cm



Zektzerite :

$\text{NaLiZrSi}_6\text{O}_{15}$
Locality: [Washington Pass, Golden Horn Batholith, Okanogan Co., Washington, USA](#)
3.1 cm x 2 cm x 1.9 cm

2018 MSSC Officers:

OFFICERS		
President	George Rossman	president@mineralsocal.org
Vice President	Renee Kraus	vicepresident@mineralsocal.org
Secretary	Angie Guzman	secretary@mineralsocal.org
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2016--2018	Bob Housley	
2016--2018	Leslie Ogg	
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Publicity	Linda Elsnau	bulletin@mineralsocal.org
Webmaster	Leslie Ogg	webmaster@mineralsocal.org

About the Mineralogical Society of Southern California

Organized in 1931, the Mineralogical Society of Southern California, Inc. is the oldest mineralogical society in the western United States. The MSSC is a member of the California Federation of Mineralogical Societies, and is dedicated to the dissemination of general knowledge of the mineralogical and related earth sciences through the study of mineral specimens. The MSSC is a scientific non-profit organization that actively supports the geology department at Pasadena City College, Pasadena, California. Support is also given to the Los Angeles and San Bernardino County Museums of Natural History. The Bulletin of the Mineralogical Society of Southern California is the official publication of the Mineralogical Society of Southern California, Inc.

The MSSC meetings are usually held the second Friday of each month, January, February and August excepted, at 7:30 p.m. in Building E, Room 220, Pasadena City College, 1570 E Colorado Boulevard, Pasadena, California. The annual Installation Banquet is held in January, and the annual Picnic and Swap Meeting is held in August. Due to PCC holidays, meetings may vary. Check the Society website for details.

The Society also sponsors the annual Pacific Micro mount Symposium held at the San Bernardino County Natural History Museum during the last weekend of January.

Annual Membership dues for the MSSC are \$20.00 for an individual membership, \$30.00 for a family membership. Bulletins are delivered by email, there is an additional annual \$20.00 fee if you prefer paper bulletins mailed to your address. The Society's contact information:

Mineralogical Society of Southern California

1855 Idlewood Rd.,

Glendale, CA 91202-1053

E-mail: treasurer@mineralsocal.org

Website: www.mineralsocal.org **The Mineralogical Society of California, Inc.**

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To:



**With Knowledge Comes
Appreciation**

***Your MSSC
Bulletin Is
Here!***