



# **Bulletin of the Mineralogical Society of Southern California**

Volume 91 Number 12 - December, 2018

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*The 963<sup>rd</sup> meeting of the Mineralogical Society of Southern California*

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*With Knowledge Comes Appreciation*

**December, 14<sup>th</sup>, 2018 at 7:30 P.M.**

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

**Program : Continental Drift/ Plate Tectonics Part 2** Presented by Walton Wright

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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: Continental Drift/ Plate Tectonics Part 2 Presented by Walton Wright

Walt Wright is the foremost authority on the identification of Petrified Wood in the United States. In this program, he discusses how petrified wood helps in understanding plate tectonics and continental drift. He wrote a chapter on the Triassic Chinle Formation on fossil woods in 2002, the "Secrets of Petrified Plants" in both English and German. When asked about his degrees, he sort of chuckled and said he had some, but that they were not that important, so we would just assume that he has quite a few. His recent study is Fossil Tree Ferns out of Argentina first discovered and reported in the Southern hemisphere which was published in Review of Paleobotany & Paleontology Journal. He is presently working in Utah describing new species of seed ferns from Queensland, Australia. Walt has worked as a botanist in one way or another in his working life, in New Mexico at the Natural Training Center B.S.A., Angeles National Forest U.S.F.S., U.C. Riverside, Santa Monica C.C., and as a consultant for numerous city, county, state, and federal jurisdictions. He received his 1st two specimens of petrified wood when he was about 10 and has been addicted ever since. Academically, his undergraduate work was at C.S.U. Fullerton and graduate work at U.C. Riverside. Leading serious botany and geology field trips started in 1967, giving Paleobotany talks from 1975, and Paleobotany seminars and classes from 1992. These programs have taken him from Dallas, TX, to Billings, MT., and Spokane, WA. to Toronto, Canada, and throughout CA., plus numerous hard to remember places in between. Foreign talks and seminars have been given in New Zealand and China.



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### From the Editor:

Well, here we are at another December issue of the MSSC Bulletin. Time sure flies doesn't it. It seems the older I get, the faster times flies! This issue marks the end of my 6<sup>th</sup> year as your bulletin editor. As the Board has agreed to let me become an absentee editor, I have agreed to continue for another year. It was my intention to create a Bulletin that is both informative and educational. With the help of Angie's excellent minutes of our meetings and articles submitted by our talented members and officers (keep up the good work and my thanks to all), I think I have been successful and hope to continue working toward this goal.

The MSSC Banquet is coming up fast so it's never too soon to start picking out your donations to the Silent Auction. Let's see what interesting things we can all come up with.

December brings the holiday season and all of the busyness that comes with it. I hope everyone has a safe and happy holiday and a wonderful and successful new year. Linda Elsnau

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**FROM THE PRESIDENT Interesting Minerals, A to Z. Installment 12, the letter "L":** by George Rossman

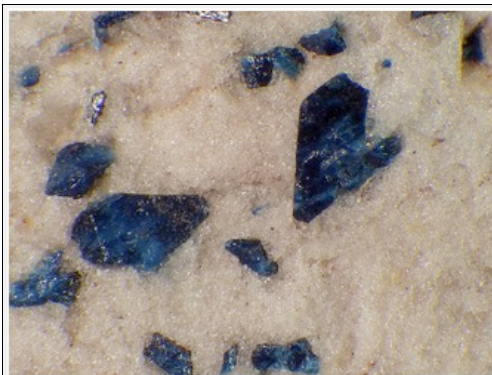
### Lazulite – Lazurite

Look carefully, those two mineral names are different. These are two different minerals, both normally blue in color. How easy it is to mix these names up. I do it often. Let's take a look at each mineral in more detail.

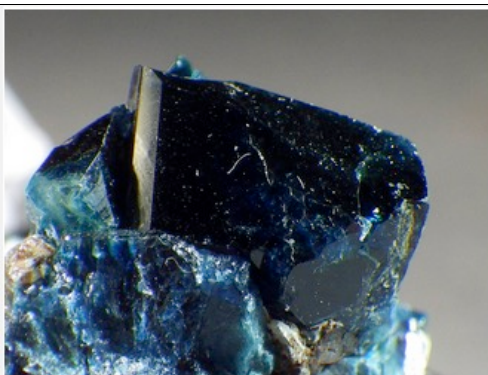
#### Lazulite: $\text{MgAl}_2(\text{PO}_4)_2(\text{OH})_2$

Lazulite, the magnesium aluminum phosphate was announced to the world in 1795 when Klaproth reported on a blue fossil that, upon analysis, was found to be colored by a mineral phosphate. This not the only fossil material colored by a blue phosphate. Vivianite  $\text{Fe}_3(\text{PO}_4)_2 \cdot 8\text{H}_2\text{O}$  is another blue phosphate found in fossil material.

Klaproth MH (1795) Prüfung eines smalteblauen fossils von Vorau. Beiträge zur Chemischen Kenntniss der Mineralkörper 1, 197-202



**Figure 1.** Lazulite from Graves Mountain, Georgia, USA.  
*Photo credit: Mark Garcia, Caltech*



**Figure 2.** Lazulite from Rapid Creek, Yukon Territory, Canada. *Photo credit: Mark Garcia, Caltech*



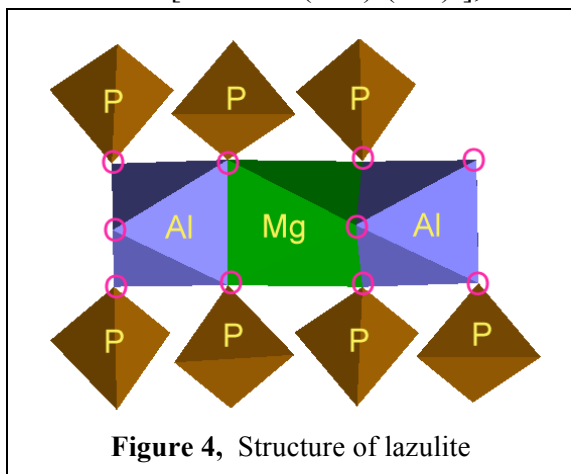
**Figure 3.** Lazulite from the Champion Spark Plug Mine, White Mountains, near Laws, Mono County, California.  
*Photo credit: Mark Garcia, Caltech*

Lazulite is actually a member of a group of minerals, all of which have very similar structures. The lazulite mineral group includes the species lazulite  $[\text{MgAl}_2(\text{PO}_4)_2(\text{OH})_2]$ , scorzalite  $[(\text{Fe}^{2+}, \text{Mg})\text{Al}_2(\text{PO}_4)_2(\text{OH})_2]$ , barbosolite  $[\text{Fe}^{2+}\text{Fe}_2^{3+}(\text{PO}_4)_2(\text{OH})_2]$ , and hentschelite  $[\text{Cu}^{2+}\text{Fe}_2^{3+}(\text{PO}_4)_2(\text{OH})_2]$ . Each of these has

$\text{Fe}_2^{3+}\text{Fe}^{2+}\text{O}_8(\text{OH})_4$  octahedral trimers forming chains of face-sharing octahedra along the c-axis with every fourth octahedron vacant

**Figure 4.** Local structure of lazulite showing the octahedral trimer consisting of an aluminum atom on each end and a magnesium atom in the center. The blue color occurs when  $\text{Fe}^{2+}$  occupies the Mg site and  $\text{Fe}^{3+}$  occupies an Al site.

It contains  $\text{Fe}^{3+}$  in the Al site and  $\text{Fe}^{2+}$  in the Mg site. This is another example of a blue mineral whose color is due to two different oxidation states of iron in adjacent crystal sites.



**Figure 4,** Structure of lazulite

### Lazurite” $\text{Na}_3\text{Ca}(\text{Si}_3\text{Al}_3)\text{O}_{12}\text{S}$

Lazurite was formally described by Brögger and Bäckström in 1891 in a 67-page long report on minerals of the garnet group.

Brögger W C, Bäckström H (1891) Die mineralien der Granatgruppe, Zeitschrift für Krystallographie und Mineralogie 18, 209-276.

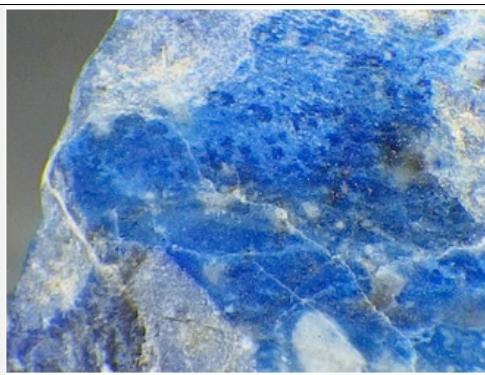
NO, lazurite is not a garnet. At that time, the authors associated many minerals such as sodalite, pollucite, analcime and lucite with the garnet group. In particular, they described members of the sodalite series and recognized that the blue mineral in lapis lazuli was different from other members of the sodalite series. They called it lazurite. Lapis Lazuli (Figure 5), of course, was well-known in ancient times where is as found in the Hindu Kush Mountains in the Badakhshan province of Afghanistan and was traded widely thousands of years ago. The death mask of Egyptian Pharaoh Tutankamun contains lapis lazuli around the eyes.

***Don't forget – Dues are Due by January 1 2019***





**Figure 5.** Lapis Lazuli from Sar-e Sang, Kosha Valley, Badakhshan Province, Afghanistan.  
Photo credit: Mark Garcia, Caltech



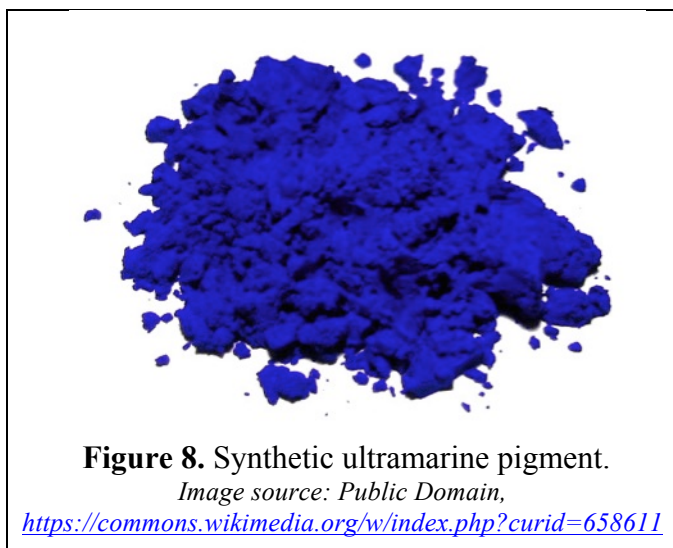
**Figure 6** Lapis from Andes of Ovalle, Limari Province, Chile. Photo credit: Mark Garcia, Caltech



**Figure 7.** Lapis from Cascade Canyon, San Gabriel Mountains, San Bernardino County, California.  
Photo credit: Mark Garcia, Caltech

Another source of Lapis is high in the Andes mountains of Chile (Figure 6). It is metamorphic rock containing lazurite, calcite, wollastonite, diopside among small amounts of other minerals.

We even have some lazurite, in the form of lapis lazuli, locally in the San Gabriel Mountains (Figure 7), although the Forest Service has been known to actively discourage collecting there.



**Figure 8.** Synthetic ultramarine pigment.

*Image source: Public Domain,*

<https://commons.wikimedia.org/w/index.php?curid=658611>

Finally, we came to a blue mineral whose coloring is NOT due to iron in two different oxidation states. The coloring in lazurite is due to the  $S_3^-$  ion, a short-chain polymer of three atoms of sulfur carrying a single negative charge. The  $S_3^-$  ion is the same ion that causes the color in the ultramarine pigment. This is not surprising because ultramarine was originally made by powdering lapis lazuli. It can now be made synthetically, industrially (Figure 8).

Even with all this information, I still find it easy to mix these names up.

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## MINUTES of the November 9, 2018 Meeting

The 962<sup>nd</sup> Membership Meeting of the Mineralogical Society of Southern California (MSSC) was called to order by President George Rossman at 7:30 p.m. on Friday, November 9, 2018.

President Dr. Rossman stated there are 5,390 mineral species recognized by the IMA.

### Regular Business: Minutes

A **MOTION** was made to approve the Minutes of the Membership Meeting held October 12, 2018 as published in the November 2018 *Bulletin*, by Jim Kusely and seconded by Rudy Lopez. There were no additions or corrections and there was no discussion. The vote was called by President Rossman. The motion to approve the minutes, as stated, passed unanimously by voice vote.

### New Business: Election of Officers and Directors\*

President Rossman opened the formal nominations for Officers and Directors of the Mineralogical Society of Southern California, as follows:

Current President is Dr. George Rossman. He asked if there were other nominations and hearing none, called for the vote of those in favor to maintaining him as President and signify by stating "yes". Dr. Rossman was unanimously re-elected as President.

Current Vice President is Renee Kraus, who indicated to Dr. Rossman that she will be spending quite a lot of time in the Northern California area. However, she would attend major meetings, events and the annual picnic but normally not attend regular membership meetings if re-elected. George called for nominations for Vice President and seeing none called for voice vote to re-elect Renee Kraus. The vote was unanimous.

Current Treasurer is Jim Kusely. Dr. Rossman opened nominations for Treasurer and seeing none called for the voice vote to re-elect Jim Kusely for the position. The vote was unanimous.

Current Secretary is Angie Guzman. Dr. Rossman opened nominations for Secretary and seeing none called for the voice vote to re-elect Angie Guzman for the position. The vote was unanimous.

CFMS Director JoAnna Ritchey has indicated she will have limited travel capabilities due to personal issues. However, she is willing to stay on as Federation Director providing her meeting/conference attendance is to local sites. [Discussion regarding a proxy for long distance meetings.] Dr. Rossman opened nominations for CFMS Director, seeing none called for voice vote to re-elect JoAnna as CFMS Director. The vote was unanimous.

Past President is Ann Meister.

Director's positions (3): Bruce Carter, Bob Housley and Leslie Ogg had all agreed to serve another two-year term, 2019-2020. Dr. Rossman called for any nominations for Directors and seeing none called the vote to re-elect these Directors. The vote was unanimous.

Congratulations to all Officers and Directors who are re-elected to their positions. "Installation" will be held at the January 2019 Banquet. Watch the *Bulletin* for details.

### **Announcements**

- West Coast Gem and Mineral show is this weekend (Nov 12-14);
- Costa Mesa Gem Faire will be Nov 30, Dec 1-2;
- JTI Open House December 1, 2018 10am-4pm (See below);
- Nature Fest March 16-17, 2019 (see Show & Tell below).

### **Reports**

Field Trip led by Marek Chorazewicz to Rio Tinto Borax Mine Center will be Nov 10; meet up is 9am. After looking at the crystals in the Visitor Center and having a look at the mine (from afar), it's onward to Saddleback Mountain. At Saddleback, the hunt will be for opal, magnesite and calcite. Finally, about 1.5 miles down the road, Marek says, "... we'll search for zeolites like heulandites, chabazite and phillipsite..." among others. Sounds like a great trip! [Catherine Govaller has offered anyone a ride to this field trip.]

Upcoming field trips include Lead Mountain (mid-December), Blue Bell Mine (January) and crater location (February). Watch the *Bulletin* and website for exact dates/times.

JTI Open House: Dr. Rossman announced that for those who do not want to field collect, you can collect at Jewel Tunnel Imports (JTI). Their annual Open House for the Society will be December 1, 2018 from 10am – 4pm. JTI is one of the largest warehouses in the United States with mineral specimens, lapidary materials, fossils and more.

### **Show & Tell**

Rudy Lopez brought in some items from the huge donation the Society received last month. He's planning a field trip to his house! Check out the refreshment room after the meeting to see a sampling.

Nature Fest: Rudy also mentioned the 2-day Nature Fest at the Natural History Museum March 16-17, 2019. MSSC is proud of its participation - this will be our 5<sup>th</sup> consecutive year at the fest! We've been there since the beginning. There will be 70+ vendors, tours, shows and more. MSSC will have exhibit cases of minerals, a PowerPoint presentation showing past MSSC field trips (continuously running in the background), crystal cut-outs and bagged specimens for the kids. It's a great outreach event for us and loads of fun! Rudy put a call out for volunteers. The fest time is 9am -3pm each day, as vendors, our admission is free and so is the parking. Let Rudy know if you would like to volunteer. Your help is always welcome.

### **New Members and Visitors**

Dr. Rossman inquired if there were any new members or visitors tonight. No new members. Guest in attendance: Kyra Haussler (Aseki Kai – Japanese viewing stones), Linda Gonzalez (interest is crystals) and Gabriel Gonzalez (Aseki Kai). Welcome! *[Aseki Kai club is involved with exhibits of Japanese viewing stones. The club's interesting exhibition is right after Christmas at the Huntington in the botanicals area.]*

### **Program**

The meeting was turned over to Program Chair Rudy Lopez who introduced tonight's speaker, Renee Newman. Before Renee became a gemologist, she was a professional tour guide to Asia, South America and the South Pacific. It was her exposure to gems in those places that prompted her to take courses at the Gemological Institute of America (GIA) and pursue a full-time career as a gemologist. She was convinced to write a book, a condensed buying guide with tips on all gems. Some 14 books later, she is a respected gemologist whose books are used around the world as buying guides, class texts and reference materials for jewelry professionals.

Renee begins by showing a beautiful jade (jadeite) bangle that sold for \$670,856 at auction in 2014! That same year, a solid green jade bangle sold for \$5.6 million. Wow! Ms. Newman tells us that river jade (pebbles) is more valuable than mountain jade.

Jade is not a single mineral. Jadeite (Burma-Myanmar) and nephrite (China) are each commonly called jade. Jadeite was introduced to China in the late 1700's. It is called hard jade, 7 on the Mohs scale. It is mostly aluminum rich pyroxene. It is less abundant than nephrite. Jadeite has more color varieties, while green is most recognizable, it also may be grayish green, white, pale blue-gray or pale purple. It is fine-grained fibrous, massive to granular and its fracture is splintery to uneven. Beside Myanmar, which has the best quality, jadeite occurs in California (San Benito County), Mexico, Japan and Tibet.

Nephrite, native to China, has had significance there since about 220 BC. Nephrite is called soft jade, 6-6.5 on the Mohs scale. It is mostly magnesium rich amphibole. It is a variety of actinolite, it is fibrous, and its fracture is splintery to uneven. Nephrite is more abundant than jadeite but has fewer color variety: creamy white to green. Aside from China, nephrite occurs in Russia, New Zealand, British Columbia, Canada and Taiwan.

These gem stones have similar properties to the average person. Jade is cold to the touch unless worn close to the skin. Jade is carved by other jade. It has been known to have mystic healing powers for kidney, liver, muscle spasm and complexion, to name a few.

Renee displayed several photos of jadeite and nephrite, beautifully carved and crafted and very expensive.

Next, she showed photos of imitation jade which includes dyed green quartz, chalcedony, translucent garnet and others. There is even plastic jade. Many types of imitations are passed off as genuine and valuable. Look closely for chips or cracks. You can also see if the jade can be scratched. Remember, jadeite and nephrite range between 6 – 7.5 on the Mohs scale. Non-technical ways to identify jade include where it comes from (location), heft, fracture, color, scratch test and magnification.

To test if your jade has been treated, gently hit two pieces together, listen to the sound. If it is dull, the material probably has been impregnated. If all beads (necklace or bracelet, say) are perfectly matched, or if colors are vivid on a piece, it has probably been treated. Treatments include acid bleaching and polymer impregnation. Another test is if the price is too low, it's probably not real jade.

On the other hand, Barbara Hutton, the Woolworth heiress, owned the Hutton-Mdiviani jadeite necklace. In 2014, at that Sotheby's Hong Kong auction mentioned earlier, the necklace stole the show and drew the most attention. The highest bidder (Cartier Collection) paid \$27,440,000 for it!

Complimenting her presentation, Renee brought several jadeite and nephrite bangles and pieces for exhibit. Several of her books were available for sale, as well. Wonderful presentation. Great pieces and books. Thanks, Renee Newman!

**Door Prize:** The drawing was won by guest Gabriel Gonzalez. Congratulations!

**Adjourn:** The meeting was adjourned at 8:47 p.m. Refreshments, interesting conversation and viewing of the Show & Tell items followed the meeting. Thanks to Ahni Dodge for bringing and setting up the refreshments and to Rudy Lopez for his home baked goodies. Yum!

#### Reminders:

- Submissions for the *Bulletin* are due to Editor Linda Elsna by the 22<sup>nd</sup> of the month;
- JTI Open House December 1, 2018 10am-4pm;
- Board Meeting December 2, 2018 1pm at Carter residence;
- Our next Membership meeting will be Friday, December 14, 2018. Speaker scheduled is Walton Wright: "Plate Tectonics 2".

Respectfully submitted by Angela Guzman, MSSC Secretary (Apologies for any omissions and/or misspellings.)

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#### List of Upcoming MSSC Events : Mark your Calender!

Event	Date	Comments / Scheduled Program (if known)	
<b>Meeting Dates:</b>	February 22, 2019	Karin Rice: Geology of Rancho La Brea/ LA Brea Tar Pits	
	March 8, 2019	Steve Mulqueen: The Golden Age of Rockhounding, 1946 – 1972	
	April 12, 2019	Bruce Carter – Mineralogical - Identifying Mega Floods In Southern California	
<b>Board Meeting</b>	December 2, 2018	Board Meeting at Bruce Carter's house	
<b>Annual Banquet</b>	January 12, 2019	Denise Nelson - "Treasures of Poland, Amber and Salt":	
<b>Micromineral Conference</b>	February 1,2,&3, 2019	Fallbrook Mineral Museum	
<b>Field Trips</b>	Late Nov or Early Dec, 2018	Bluebell Mine	Contact Bob Housley or Marek Chorazewicz if you're interested
	Late December	Lead Mountain, East of Barstow	

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

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## MSSC ANNUAL BANQUET & SILENT AUCTION

**Saturday, January 12, 2019**

**Social Hour 5:30 pm: Dinner 6:30 pm;  
Speaker 7:30 pm**

**Oak Tree Room (next to Coco's)  
1150 West Colorado Boulevard  
Arcadia, CA 91007**

***The cost of the Banquet is \$40.00.per person***



There is plenty of seating available. If you made a reservation and circumstances change where you or your guests cannot attend, please notify **Rudy Lopez before Wednesday, January 10<sup>th</sup>, 2018.**

Thereafter you will be responsible for paying \$40.00 for each individual reservation regardless of attendance. It would be a shame to miss this event because you delayed making that reservation.

**Call or email Rudy Lopez to make your reservation today!**

**626 993-7989**

[programs@mineralsocal.org](mailto:programs@mineralsocal.org)

***Mail Checks to:***

***MSSC***

***1301 Leonard Ave***

***Pasadena Ca 91107***

If you haven't done so already, plan to pay your dues at the same time.

Dues are officially due 1/1/2019.

***Topic: "Treasures of Poland, Amber and Salt"***

**Presented by: Denise Nelson**

The combination of gemology and genealogy is a perfect topic for Denise Nelson, who has taught genealogy and spent many years researching and studying the history of gems and jewelry. Denise is a Graduate Gemologist (GIA), an appraiser, consultant and owner of INNER CIRCLE Fine Jewelry and Appraisal Services, Nelson has revealed many interesting facts to her clients in her 30 years in the jewelry business. She's traveled to 38 countries to research historical jewelry, visit mining areas and buy gemstones, pearls and jewelry for her customers. Nelson also designs jewelry and is a wholesaler to a number of jewelry stores. She is a member of the National Association of Jewelry Appraisers (NAJA) and the Gemmological Association of Great Britain.

**Don't forget to bring silent auction items to fill the tables. This is the time to clear space in your house or collection for new mineral treasures you might find at our banquet.** The silent Auction is MSSC's main fundraiser for the year so bring plenty of auction item to donate and funds to buy!

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

The **Von Kármán Lecture** on \*Thursday/Friday\* **"Due to the busy nature of the holiday season, there will be no lecture held this month"**. \*\* Thursday is at the Von Kármán Auditorium at JPL and Friday is at Ramo Auditorium at Caltech. [https://www.jpl.nasa.gov/events/lectures\\_archive.php?year=2018](https://www.jpl.nasa.gov/events/lectures_archive.php?year=2018)

The **Watson Lecture** at Caltech's Beckman Auditorium is also taking December off. <http://www.caltech.edu/master-calendar/public-events-series/9281/2018-2019>

The **UCLA Meteorite Gallery** lecture is on Sunday, **December 2**. The speaker is **Dr. Aaron Celestian**. His title is **"Minerals, Microbes, and Mars"**. Celestian, Associate Curator at NHM also collaborates with JPL scientists in a search for signs of ancient life preserved in minerals on Earth. Using non-destructive analytical methods, they measure biosignatures (like beta-carotene) in crystals that are thousands or even millions of years old. Their findings will help assess data from NASA missions to Mars and the icy moons of Saturn and Jupiter, places that may harbor life. 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.

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**With Knowledge Comes Appreciation!**



## L.A. Nature Fest

**Mark your calendars for March 16 and 17, 2019!**

Join us for a two-day festival as we celebrate L.A.'s wild side! There's a surprising amount of nature in Los Angeles, and the more you know how to look for it, the more you'll see. You'll be blown away by L.A.'s wild side: the plants, the animals, and the people devoted to protecting and studying them.

**MSSC WILL ATTEND THE ANNUAL L.A. NATURE FEST.**

We will pass out a mineral to every kid that comes to our tables. We will also have Crystal models for the kids to cut out and paste together.

**Volunteers will be needed to assist with the cutouts and handing out the minerals.**

Please contact: Rudy Lopez at  
626 993-7989 or [programs@mineralsocal.org](mailto:programs@mineralsocal.org)

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The Mineralogical Society of Southern California  
proudly presents  
**The 54<sup>th</sup> annual Pacific Micromount Conference**

February 1 and 2, 2019 at  
The Fallbrook Mineral Museum  
123 W. Alvarado St., Fallbrook, CA

**FRIDAY, February 1**

- 3:00-6:00 PM On-site Registration**, greeting friends, setting up scopes, \$1 sales table opens
- 6:00-7:00 Dinner (on your own)** – Several cafes and a great Mexican restaurant are within a few blocks of the museum
- 7:00-8:00 PM “McDermitt Mine Update: Geology, Microminerals, and Fun”**  
Michael Cox and Ted Hadley will provide an update on Gail Dunning's McDermitt Project, now in its fourth year. Mike will discuss the evolution of thought with respect to the McDermitt Caldera and tracking down microminerals for research. Ted will run through photos of many spectacular micromineral finds.
- 8:00-9:00 PM Contributed Talks & Mineral Photos**

**SATURDAY, February 2**

- 8:00-9:00 AM Doors open**, on-site Registration, filling give-away & sales tables
- 10:00 Welcome**, Special Announcements & Morning speaker introduction
- 10:15-11:30 Morning Presentation** by Paul Adams  
**“The Copper World and Mohawk Mines, San Bernardino County, CA”**
- Noon Lunch** (on your own)
- 2:00-3:15 Afternoon Presentation** by Georges Favreau  
**"Chinese thallium minerals"**- Rare species, and lots of good color and SEM pictures
- 3:30 PM SILENT AUCTION** of donated specimens, mineralogical books/magazines, maps, etc.
- 4:00-5:00 PM VERBAL AUCTION** of donated specimens
- 5:00-6:00 Microscope time**, scouting the give-away & sales tables

**6:00-7:00**      **Dinner** (on your own)  
**7:00 PM**        **Contributed talks & Mineral Photos**

**SUNDAY, February 3**

**Field Trip** – site to be determined (no additional cost)

Now is a very good time to make your advance registration for the 2019 Pacific Micromount Conference. Conference registration fee is \$15 before the conference & \$20 at the door. Continue below for a Registration Form, driving directions & list of accommodations within 10 miles of the museum. Please provide the names & current city of residence of all in your party when registering. We like to have a personalized name-tag waiting for everyone in attendance. And please bring a couple of nice micromineral specimens for the verbal auction and any unwanted mineralogical books, magazine, photo equipment or larger mineral specimens for the silent auction table. Hope to see you there!

**LOCATION**

***Fallbrook Mineral Museum, 123 W. Alvarado St., Fallbrook, CA 92028 (760) 728-1130***

Directions from L.A. / San Bernardino / Pasadena areas (~95 miles):

Take the I-210 E toward San Bernardino for 18.5 miles

Take Exit 45 for CA-57 South toward Santa Ana for 4 miles

Take Exit 22C for CA-71 South toward Corona for 16.7 miles

Exit left onto CA-91 East toward Riverside for 4.7 miles

Exit left onto I-15 South for 45.8 miles

Take Exit 51 toward Mission Rd. for 0.3 mile

Turn right onto Old Hwy. 395 for 177 feet, then quick right onto E. Mission Rd. for 4.4 miles

Turn left onto N. Brandon Rd. for 0.2 mile

Turn right onto E. Alvarado St. & proceed for 0.4 mile. Destination is on your right. Parking is on the left.

**NEARBY ACCOMMODATIONS**

**Motels listed in order of proximity to the Fallbrook Museum:**

Name --- number of stars

Miles to Fallbrook City Center --- Rating/10 --- Price as low as \_\_\_\_

Address

Phone

**Fallbrook Country Inn \*\***

1.0 miles --- 6.7 --- \$49

1425 S. Mission Rd., Fallbrook  
(760) 728-1114

**Econo Lodge Inn & Suites**

**Fallbrook \*\***

1.1 miles --- 7.5 --- \$49

1608 S. Mission Rd., Fallbrook  
(760) 723-1127

**Rodeway Inn Fallbrook \*\***

1.2 miles --- 6.8 --- \$39

1634 S. Mission Rd., Fallbrook  
(760) 728-6174

**Pala Mesa Resort \*\*\***

4.7 miles --- 7.2 --- \$99

2001 Old Hwy. 395, Fallbrook  
(760) 728-5881

**Quality Inn Fallbrook I-15 \*\***

5.3 miles --- 6.2 --- \$60

3135 Old Hwy. 395, Fallbrook  
(760) 723-2888

**Temecula Creek Inn \*\*\***

8.8 miles --- 7.9 --- \$199

44501 Rainbow Canyon Rd.,  
Temecula  
(844) 791-6073

**Ramada Temecula Old Town \*\***

9.3 miles --- 7.6 --- \$78

28980 Old Town Front St.,  
Temecula  
(951) 676-8770

**Pechanga Resort & Casino \*\***

9.4 miles --- 8.3 --- \$199

45000 Pechanga Parkway,  
Temecula  
(951) 693-1819

**Rodeway Inn Temecula \*\***

9.6 miles --- 6.3 --- \$70

28718 Old Town Front St.,  
Temecula  
(951) 676-4833

**Motel 6 Temecula \***

9.8 miles --- 6.8 --- \$60

41900 Moreno Rd., Temecula  
(951) 676-7199

**Rancho California Inn \*\***

9.8 miles --- 7.4 --- \$70

41873 Moreno Rd., Temecula  
(951) 676-5700

**SpringHill Suites by Marriott**  
**Temecula Valley Wine Country**  
\*\*\*

9.9 miles --- 8.5 --- \$104  
28220 Jefferson Ave., Temecula  
(951) 699-4477

**Tuscany Hills Retreat \*\*\***

9.9 miles --- 7.2 --- \$99  
29850 Circle R Way, Escondido  
(760) 749-1290

**Hampton Inn & Suites Temecula**

9.9 miles --- 8.8 - \$119  
28190 Jefferson Ave.  
(951) 506-2331

## **Advance Registration Form**

### **PACIFIC MICROMOUNT CONFERENCE**

**February 1 and 2, 2019 (Field trip on Sunday, Feb 3)**

**Registration \$15.00 per person by mail, \$20 at the door**

**No. of people** \_\_\_\_\_

**Amount** \_\_\_\_\_

**Names – City of Residence**

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**All meals are on your own this year – a few cafes and a great Mexican restaurant within walking distance of the museum**

### **Field Trip on Sunday (no charge)**

**Are you interested in attending the field trip? Yes \_\_\_\_\_ No \_\_\_\_\_**

**Number of participants in your party** \_\_\_\_\_

**There will be a sign-up list for the field trip at the registration desk; please include a cell # for ease of contact with your party before & during the field trip**

**Send Payment to:**  
**Al Wilkins, PMC Chair**  
**23202 Via Celeste**  
**Coto de Caza, CA 92679-3919**

**Make checks payable to MSSC**

**I plan on presenting a short-contributed talk** \_\_\_\_\_

**The topic will be** \_\_\_\_\_

**Approximate length of talk in minutes** \_\_\_\_\_ **Format [flash drive (preferred), DVD, slides, etc.)**

\_\_\_\_\_

**Favorite Minerals of the Month:** I thought it might be interesting to look at a few of my favorite “Featured Minerals of the Month from the past 6 years. --- Enjoy!

**March, 2013**



*irocks.com photo*

**Tourmaline, Albite**

**Locality:** Pamaró mine, Linópolis, Divino das Laranjeiras, Doce valley, Minas Gerais, Brazil  
3.4 x 2.8 x 2.2 cm

**August, 2013**



*irocks.com photo*

**Benitoite** :  $\text{BaTi}(\text{Si}_3\text{O}_9)$ ,

**Locality:** Dallas Gem Mine (Benitoite Mine; Benitoite Gem Mine; Gem Mine), Dallas Gem Mine area, San Benito River headwaters area, New Idria District, Diablo Range, San Benito Co., California, USA  
1.9 x 1.6 x 0.9 cm.

**July, 2014**



*irocks.com photo*

**Ludlockite**  $\text{PbFe}^{3+}_4\text{As}^{3+}_{10}\text{O}_{22}$

**Locality:** Tsumeb Mine (Tsumcorp Mine), Tsumeb, Otjikoto Region (Oshikoto), Namibia  
1 cm x 0.8 cm x 0.8 cm

**September, 2015**



*irocks.com photo*

**Spinel** :  $\text{MgAl}_2\text{O}_4$

**Locality:** Mogok Township, Pyin-Oo-Lwin District, Mandalay Division, Burma  
1.1 cm x 1 cm x 0.9 cm

**February 2016**

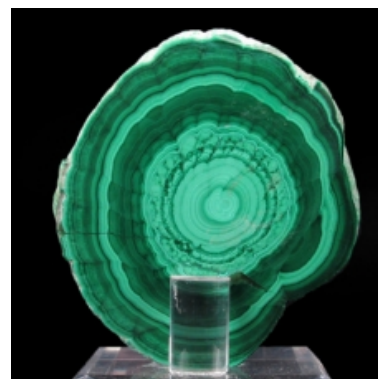


*irocks.com photo*

**Aragonite:**  $\text{CaCO}_3$

**Locality:** Tazouta, Sefrou, Sefrou Province, Fès-Boulemane Region, Morocco  
5.1 cm x 4.3 cm x 3.3 cm

**March, 2017**

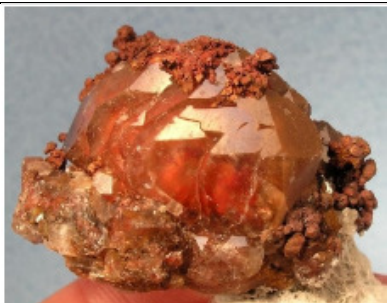


*irocks.com photo*

**Malachite** :  $\text{Cu}_2\text{CO}_3(\text{OH})_2$

**Locality:** Kolwezi District, Katanga Copper Crescent, Katanga, Democratic Republic of Congo\_ 7.8 cm x 6.7 cm x 0.6 cm

**August, 2018**



**Copper** :  $\text{Cu}$ ,

**Calcite** :  $\text{CaCO}_3$

Ogonja Mine, Ogonja, Seeis, Windhoek District, Khomas Region, Namibia  
4 cm x 3.3 cm x 3 cm

*irocks.com photo*



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## 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](mailto: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>

\*\*\*\*\*

MSSC Advertisement Policy:			
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 <a href="mailto:bulletin@mineralsocal.org">bulletin@mineralsocal.org</a> and the payment should be sent to the <b>MSSC Treasurer 1855 Idlewood Road, Glendale, CA 91202</b>			

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## Calendar of Events:

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

### DECEMBER 2018

#### December 1 - 2: BARSTOW, CA

Mojave Desert Gem & Mineral Society  
Cora Harper Community Center  
841 S. Barstow Road  
Hours: 10 - 5 daily  
Website: [www.mdgms.net](http://www.mdgms.net)

### 2019 Shows

#### JANUARY 2019

#### January 19 - 20: EXETER, CA

Tule Gem & Mineral Society, Visalia  
Exeter Veterans' Memorial Building  
324 N. Kaweah Avenue  
Hours: Sat 10 - 5; Sun 10 - 4  
Website: [www.tulegem.com](http://www.tulegem.com) [Show Page](#)

#### FEBRUARY 2019

#### February 15 - 24: INDIO, CA

San Geronio Mineral & Gem Society  
Riverside County Fair & National Date Festival  
82-503 Highway 111  
Hours: 10 - 10 daily

#### MARCH 2019

#### March 2 - 3: VENTURA, CA

Ventura Gem & Mineral Society  
Ventura County Fairgrounds  
10 West Harbor Blvd.  
Hours: Sat 10 - 5; Sun 10 - 4  
Website: [www.vgms.org](http://www.vgms.org)

#### March 8 - 10: VICTORVILLE, CA

Victorville Valley Gem & Mineral Club  
Stoddard Wells Tailgate  
Hwy 15/Stoddard Wells Road off Dale Evans Pkwy  
Hours: 9 - 5 daily  
Website: [www.vvgmc.org](http://www.vvgmc.org) [Show Page](#)

### Mark Your Calendars Now!

March 8, 9 & 10, 2019

#### 80<sup>th</sup> CFMS SHOW & CONVENTION

Hosted by the Pasadena Lapidary Society

Fairplex, Building 6

Pomona, California

Hours: Fri. & Sat., 10 am - 5 pm - Sun., 10 am - 4 pm

Visit [Pasadena Society's Show Page](#) for details and forms including dealer information.



#### March 30 - 31: TORRANCE, CA

South Bay Lapidary & Mineral Society  
Ken Miller Recreation Center  
3341 Torrance Blvd (entrance on Madrona Ave)  
Hours: Sat. 10 - 5; Sun. 10 - 4  
Website: [southbaylapidaryandmineralsociety.com](http://southbaylapidaryandmineralsociety.com)  
[Show Page](#)

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*Wishing all a Safe, Happy & Healthy Holiday Season!*

## 2018 MSSC Officers:

<b>OFFICERS</b>		
President	George Rossman	<a href="mailto:president@mineralsocal.org">president@mineralsocal.org</a>
Vice President	Renee Kraus	<a href="mailto:vicepresident@mineralsocal.org">vicepresident@mineralsocal.org</a>
Secretary	Angie Guzman	<a href="mailto:secretary@mineralsocal.org">secretary@mineralsocal.org</a>
Treasurer	Jim Kusely	<a href="mailto:treasurer@mineralsocal.org">treasurer@mineralsocal.org</a>
CFMS Director	Jo Anna Ritchey	
Past President	Ann Meister	
<b>DIRECTORS</b>		
2016--2018	Bruce Carter	
2016--2018	Bob Housley	
2016--2018	Leslie Ogg	
2018-2019	Pat Caplette	
2018-2019	Pat Stevens	
<b>COMMITTEE CHAIRS</b>		
Bulletin Editor	Linda Elsnau	<a href="mailto:bulletin@mineralsocal.org">bulletin@mineralsocal.org</a>
Hospitality	Laura Davis	
Membership	Cheryl Lopez	<a href="mailto:membership@mineralsocal.org">membership@mineralsocal.org</a>
Micro Mount Conf. Chairman	Al Wilkins	
Program and Education	Rudy Lopez	<a href="mailto:programs@mineralsocal.org">programs@mineralsocal.org</a>
Publicity	Linda Elsnau	<a href="mailto:bulletin@mineralsocal.org">bulletin@mineralsocal.org</a>
Webmaster	Leslie Ogg	<a href="mailto:webmaster@mineralsocal.org">webmaster@mineralsocal.org</a>

### 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](mailto:treasurer@mineralsocal.org)

**Website:** [www.mineralsocal.org](http://www.mineralsocal.org) **The Mineralogical Society of California, Inc.**

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MSSC Bulletin Editor  
3630 Encinal Ave.  
Glendale, CA 91214-2415

To:



**With Knowledge Comes  
Appreciation**

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