



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

Volume 89 Number 2 - February, 2016

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*The 929<sup>th</sup> meeting of the Mineralogical Society of Southern California*

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*With Knowledge Comes Appreciation*

**February 19<sup>th</sup>, 2016** *(Special Date)* **at 7:30 P.M.**

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

**Program:** Mineral Encounters on the Iberian Peninsula, presented by Dr. Bruce Carter

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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

**If you haven't renewed your membership for 2016 yet, Dues are Due!**

## About the Program:

### Mineral Encounters on the Iberian Peninsula, presented by: Dr. Bruce Carter

Bruce and Kathy recently joined a tour that covered parts of Portugal and Spain. Although the focus was on historical sites, beautiful sights and cultural history, nonetheless they encountered a number of interesting mineral occurrences. Although these are unlikely to generate specimens that might be displayed in a collection, they do give a very interesting perspective on minerals found in this part of the world, and show that one can view and enjoy minerals even without visiting mines or major mineral deposits.

Bruce Carter retired from Pasadena City College in 2005 after teaching geology there for 34 years. His favorite class to teach there was mineralogy/crystallography. He has been a board member of the Mineralogical Society of Southern California for several years.

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### From the Editor: Linda Elsnau

Well, here we are at February and 2016 is well on its way! This will be quite a year, a Presidential Election, a Leap Year, and another year of learning about minerals with MSSC. My thanks go out to all of the elected officers and volunteer chairpersons for their excellent work at keeping MSSC interesting and educational for everyone! Will I see any of you at the Micromount Conference this weekend? This is an excellent opportunity to learn more about minerals and collecting areas in the western US. You will also have the chance to meet other knowledgeable mineral enthusiasts and did you know micro mineral conferences are the only gathering I know of where you can collect free mineral specimens!

On another note, **If you haven't paid your MSSC Membership dues by Feb. 15, this could be the last bulletin I can send you!** Get your dues in now so you don't miss a single issue or meeting.

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### MEANDERINGS FROM THE PRESIDENT by Ann Meister

Thank you for coming to the Annual Installation Banquet and spending your money on the Silent Auction! We kinda passed over the installation part since ALL the officers and directors were installed last year, and the year before, etc. It seemed rather redundant to do it again. A thank you to you all for sticking with the program, so to speak. A special thanks to the Rudy Lopez for the slide show of the 2015 MSSC activities that played on the screen while we were schmoozing and bidding. And kudos to Dr. George Rossman whose program on "The Many Species of Silica" was both entertaining and educational. A special guest, the new curator, Dr. Aaron Celestian, was introduced by Dr. Tony Kampf, curator emeritus at the Natural History Museum of Los Angeles County. Welcome! Rudy has already tapped Aaron to be the speaker at an up-coming meeting. And thank you to all who brought items for the Silent Auction. You made it successful!

Don't forget the next event on the MSSC calendar: our **Pacific Micromount Conference** at the San Bernardino County Museum in Redlands on January 29 -31. The schedule was in the December *Bulletin*. Even if you don't have a microscope or an interest in micro minerals, the speakers are outstanding with talks focused on localities. There's lots of good mineral people to meet there.

Coming up in Tucson on February 9 is the "Rock Bash – an evening of sly & subversive humor with Rock." As stated in the invitation, "This is *not* a tribute to "Saint Rock" (he'd shoot us if that was the case) but rather a chance for all of us who knew Rock to eat, drink, and swap "Rock" stories - just what he'd want us to do." This is a "celebration of life" hosted by Rock's Toadies – which is what Rock called the crew of workers and friends who hung out with him and contributed to the success of JTI. Attendance is by invitation only and is limited to about 250 at the Flandrau Science Center at the University of Arizona. Since there are definitely more than 250 people who want to swap tall tales, I'm sure there will be other, unofficial, activities around Tucson dedicated to Rock's memory.

In addition, there will be a "memorial exhibit" at the TGMS Show. This will include pictures (maybe some R-rated), memorabilia (the infamous Tiger sign), left over currency from his 'round-the-world travels, books and, of course, fine minerals. Bill Besse and others selected their favorite specimens for the exhibit including Cover

and Poster specimens (one had us confused until we realized the negative had been reversed), the amethyst “RPG,” a suite from Tiger, and a passing glance at the borates – “too much white” – in which Rock became interested when he worked at Boron. Rock’s travels took him to locations most of us would never get to, but this is how he became an outstanding authority on not only mineral identification from handling specimens, but could also recognize the locality from which it came. He had a prodigious memory which we all mined. Also, those of you who remember Rock’s “pewter and pyrite” line but perhaps never saw the “Inner City Series” – you are in for a treat as those figures on large agate slabs will be on display. The figures, conceived by Bob Brewer, artist and long-time editor of the MSSC *Bulletin*, include a peeping Tom, flasher, bag lady, pimp with pimpmobile, hooker, and other denizens of the streets. Rock’s bookplate, “Crystals not Pistols” was also created by Bob Brewer. (The Toadies attempted to have this R-to-X-rated illustration embroidered on shirts. It was first rejected by a highly-respected clothing manufacturer. Then there was a compromise; it was modified, but still looks good.) Hope to see you in Tucson.

**Geo-Literary Oddity:** I came across a book, *Tweeting Da Vinci* by Ann C. Pizzorizzo, a geologist, who looks at the Renaissance artist Leonardo da Vinci as a scientist, particularly a geologist. In one chapter, she compares two paintings of *The Virgin of the Rocks*, one in the Louvre and the other in the National Gallery in London. The painting in the Louvre shows accurate geological and botanical detail where the one in the National Gallery is unrealistic. It’s an interesting and detailed comparison. Though attributed to Leonardo da Vinci, it is likely not his work. The entire book is curiously interesting...

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## Minutes of the Membership Banquet/Meeting, January 9, 2016

The 929th Membership Meeting of the Mineralogical Society of Southern California (MSSC) was held in conjunction with the annual Installation Banquet on Saturday, January 9, 2016. The event was held at Coco’s Restaurant in Arcadia and was presided over by President Ann Meister.

There was a social hour which included our Silent Auction. Ann warmly welcomed everyone then invited Cindy, Coco’s Banquet Manager, to say a few words. Cindy announced that this is her last event with us as she will be retiring. She introduced her replacement, Lisa, who will assist with future events. Cindy thanked MSSC then proceeded with the banquet.

### Regular Business

- Ann asked for approval of the December 2015 meeting as published in the January 2016 Bulletin. She asked if there were any corrections or additions to the Minutes, seeing none, a **Motion** was made by Angie Guzman and seconded by B J Ledyard to approve the Minutes. Ann Meister called for the vote, which passed unanimously by the members;
- Thanks to everyone who brought items for the Silent Auction: MR sets brought in by Janet Gordon, specimens, jewelry, publications and center piece orchids are all open for bids;
- Ann asked Tony Kampf if he wanted to make an introduction. Tony, Curator Emeritus of the Natural History Museum of Los Angeles County, introduced the museum’s new mineral curator, Aaron Celestian a mineralogical crystallographer. Aaron comes to Los Angeles from Phoenix;
- Ann welcomed past president Bill Besse, who served 2 separate 2-year terms while Ann has served 8 terms, 6 of which have been consecutive;
- Ann introduced the officers, all of whom are re-elected from last time: President, Ann Meister, Vice President George Rossman, Secretary Angie Guzman and Treasurer Jim Kusely and, Federation Director JoAnna Ritchie. Ann also acknowledged and thanked those who have help to make the Society a success: Bulletin: Editor Linda Elsnau, Web Master: Leslie Ogg, Membership Chair: Cheryl Lopez, Program Chair: Rudy Lopez, Refreshments: Laura Davis, Directors: Pat Caplette, Pat Stevens, Bruce Carter and Bob Housley & Leslie Ogg. Thanks to all for your service to the Society!
- MSSC’s other fund raising event is coming up at the end of January. The Pacific Micromount Conference will be held January 29, 30 and 31 (field trip to be determined). The 50<sup>th</sup> annual conference will be held at the San Bernardino County Museum in Redlands (see your January *Bulletin* for details). Bob Housley

reports that the speakers at the conference will include Herwig Pelckmans (*Minerals of Belgium*), Paul Adams (*Other Collecting Localities in Nevada*) and Dr. Henry Barwood (*Indian Mountain, Cherokee Co., Alabama*). Please bring as much material as you can for the giveaway table, also, it must be identified including locale. The doors will be opened at 3pm on Friday.

- Membership Dues are due now, see or contact Membership Chair Cheryl Lopez;
- Steve Mulqueen mentioned the upcoming March 2016 field trip to the Dinosaur Track Museum in St. George, Utah and asked for a consensus for preferred dates. Contact Rudy Lopez by the end of the month to express your preference and for further information;
- Fred Elsnau thanked the officers for stepping up to serve the society.

Meeting was suspended for completion of the Silent Auction. Thank you all for participating in the Silent Auction making this a successful fund raising event for MSSC.

### **Program**

After the break, Ann turned the floor over to Program Chair Rudy Lopez who introduced MSSC Vice President, George Rossman. Dr. Rossman is Professor of Mineralogy, Division of Geological and Planetary Sciences at California Institute of Technology.

George's presentation began by leading us on a whirl wind tour of the world of colored silica. Quartz is the most abundant silica in the earth's crust. Quartz and a variety of other silica are made of silicon and oxygen. The chemical formula is  $\text{SiO}_2$ , 1-part silica and 2-parts oxygen. A major quartz mine of the world is located in Brazil, where warm fluids percolate through the earth and miners dig through the dirt to find the quartz crystals. Interestingly, quartz comes in two varieties, left-handed and right-handed. This is because the quartz structure lacks a center of symmetry. The left and right handed sides are mirror images of each other. As the crystal starts to grow, the tetrahedrons spiral upward. Explaining the process, George said that the Beta quartz grown in the lab, studied and measured is unstable at room temperature, turns to Alpha quartz but thrives at over  $573^\circ\text{C}$ . The quartz you have in your collection, due to instability caused by temperature, are actually "pseudomorphs of Alpha quartz after Beta quartz".

Quartz, in nature above  $870^\circ\text{C}$ , forms new a silica called Tridymite. At even higher temperatures - above  $1470^\circ\text{C}$ , another silica forms and it's called Cristobalite. Cristobalite requires restructuring of chemical bonds and crystals.

Chalcedony is another type of quartz. It is very common, usually at low temperatures, it's fibrous and the crystals have radial patterns. One of the common forms of chalcedony is agate. However, in the Canary Islands near Mogan, an entirely new mineral species, another form of silica, was discovered [*Secy. Note: discovered in 1984*]. It is called Moganite. It has the same chemical formula as quartz,  $\text{SiO}_2$ , and it is a major component of many translucent agates. In fact, it is commonly found with chalcedony. Looking back at the quartz left-handed and right-handed feature, quartz can be arranged left-left-left-left then right-right-right-right, for example. Whereas, Moganite is a systematic left-right-left-right...twist.

Melanophlogite is also a silica,  $\text{SiO}_2$ , found in two major localities, Italy and Mt. Hamilton, California. It is a cubic form of silica. The cubic polymorph has cavities where various molecules like sulfur oxide and hydrocarbons have been deposited. It is not very stable and converts to ordinary silica over the long term.

Chibaite, found in Japan [*Secy. Note: Chiba Prefecture*], is another form of Silica that has open cavities that trap hydrocarbons. The mineral is beautiful. The hydrocarbons deposited are from oceanic organics that flow through the material. Chibaite is silica clathrate whose structure has not yet been published! [*Secy. Note: clathrate means lattice work that contains or traps molecules*].

George went on to talk about  $\text{Si}_3\text{O}$  molecule from Trinity County in California, hydrous silicate which represents a different species of silica. The USGS discovered some deposits in Northern California but no one has published anything about it thus far.

The higher pressures deep down in the earth, make for denser  $\text{SiO}_2$  silica, much denser than quartz. Many times, in diamond mining, this denser silica has its molecules packed much tighter than surface quartz. They,

on occasion, pop out of the diamond mining pipes. It is unstable, however, and slowly decomposes to transform to ordinary quartz.

Meteor Crater's [Arizona] sandstone from the edge of the crater will dissolve in hydrochloric acid. You'd be left with a little residue that, under X-ray, comes out to be coesite. This was proof that a meteorite hit the earth, made the crater, sent a shockwave through the earth, converting the silica into sandstone and turning quartz into coesite. It refuted the theory that a volcano had erupted and proved the impact of a meteor there.

Hundreds of kilometers below the surface of the planet stishovite is found. It is a very high pressure form of quartz and can be made in the lab under high pressure conditions, as well. It is only found in the mantle of the planet not in the crust! The interesting thing about stishovite is that it contains 6 oxygen atoms around the silicon. The density is enormous. This, George says, is the most important form of silica in planet earth.

George talked about a form of silica that is found a thousand kilometers below the surface of the earth. It is under an extremely high pressure. Apologies, I did not get the name of the silica but will report it in the next Minutes.

He then continued with Rose quartz. In an experiment, George had one of his students dissolve rose quartz into a gas and there was a residue that remained in the bottom of the beaker. George looked at a lot of rose quartz from all over the world and similar residue appeared. It looked like fibers of hair when viewed under special microscope. Violet rose quartz leaves a violet colored residue while rose quartz leaves rose colored residue. It is interesting that the color of the quartz would leave a residue the color of the quartz it came from. The fibers of the rose quartz residue contain aluminum and other elements.

Blue quartz from Virginia contain inclusions less than the width of a wave length that scatter light. Others that contain iron titanium and iron oxide are found in granites over a billion years old. Magnesium iron aluminum oxide is contained in blue quartz from Madagascar. There is also a blue tourmaline.

During the separation of Africa and South America, massive amounts of basalt erupted and covered huge areas of each continent. Over millions of years, the basalt had fluids running through it that dissolved carbon dioxide gas and minerals and crystals slowly grew. In Brazil and into Uruguay, the beautiful geodes we all know came from this process. The huge amethysts, outside coated because they're fragile, are magnificent. Citrine, the yellow to gold, quartz is a low quality amethyst that is manmade. In Russia, a secret city in the '50's now open to the public, is where synthetic minerals are made. Citrine and amethyst are made using gamma rays, iron +3, quartz and methods that produce the products.

Bolivia mines minerals having amethyst and citrine in the same mineral. George's

river adventure and jungle ride led him and his colleagues to the mine. There, he found ametrine, a product of natural radiation having color zones of purple and yellow or orange. Quartz has to grow within a 2° temperature window in order to naturally produce ametrine. Otherwise, you get amethyst or citrine. Ametrine is used for carving and gem stones. Meanwhile, back in Russia, synthetic ametrine is produced and irradiated after production.

Smoky quartz is another example of radiation, natural or induced. Electrons absorb light and show as smoky quartz. Commercially, smoky quartz is popular and the smoky hue is dependent on the amount of radiation. The more radiation the darker the quartz. Sometimes radiation spots occur, called radiation stains. Also, there are some stripe patterns showing uneven distribution of radiation.

Yet another quartz is green quartz, a naturally occurring quartz. Irradiated iron containing quartz would get lemon citrine. It does not occur naturally. And, then there is pink quartz (vs. rose quartz that is found in thick veins) that is chemically different from rose quartz.

Opals have cavities containing spheres of dissolved silica. Some opals have no color, but they do have order and there are some that have beautiful color and layers of spheres. Opals can be made in the lab and manipulated conditions to have different material outcomes. The color of the opal is relevant to the size of the bead/sphere. Opals grow naturally in Australia, and many other places. Uranium can fill opal and create amazing color.



In conclusion, George talked about his bamboo and the silica contained therein. Silica is a most abundant mineral on and in earth. It is in quartz and living organisms. Silica is the colorful, valuable and still making history.

Wow! Thank you, George Rossman, for an informative and interesting presentation. The visuals were spectacular. A great way to kick off 2016!

Door Prize drawing was not held at this meeting. But, many attendees were winners in our Silent Auction and event participation.

Tony Kampf announced that the entire David Eidahl collection has been given the Natural History Museum of Los Angeles County and will be on display soon.

President Ann Meister thanked everyone for coming and making the event a success! See you all at the next meeting or event.

The meeting was adjourned at 9:15 p.m.

Respectfully submitted, Angie Guzman, MSSC Secretary *Apologies in advance for any misspellings in these Minutes*

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

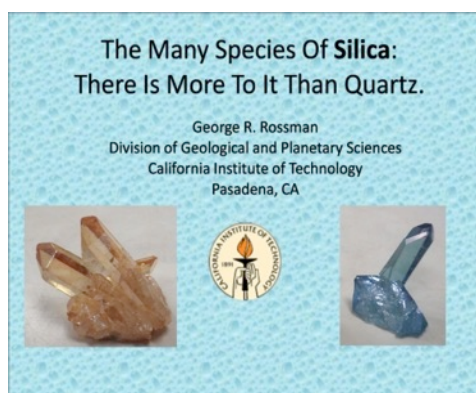
Event	Date	Comments / Scheduled Program (if known)
<b>Meeting Dates:</b>	March 11, 2016	Alan Rubin, UCLA Meteorite Museum; Hot Meteorites
	April 8, 2016	Tony & Sandy Fender; Mount St Helens
	May 13, 2016	Martha House: Micro Minerals
<b>Board Meeting</b>	March 1, 2015	Board Meeting at Bruce Carter's house

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

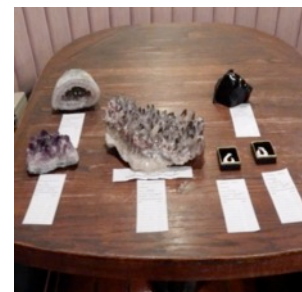
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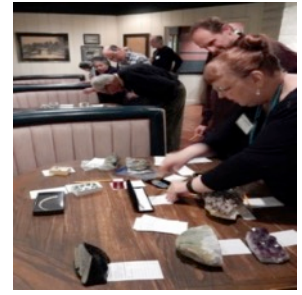
### MSSC 2016 Annual Banquet: *By: Rudy Lopez*

We had a packed room at our annual Banquet at the Oak Tree Banquet hall on Saturday, January 9th. We also had a fantastic presentation from George Rossman on: The Many Species Of **Silica**: There Is More To It Than Quartz. Fantastic presentation George.



We had some great silent action items and by the end of the night they were all gone and found new homes.

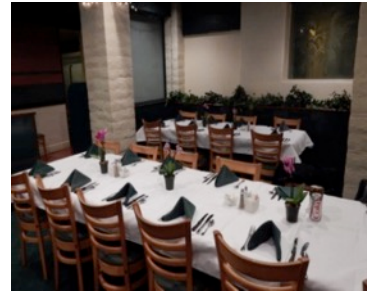




The food as usual was great and the desserts were hard to keep on the table



Picture of the members that attended.



During the social hour and dinner all the guests viewed a slide show of some of the events MSSC participated in during 2015. I will continue taking pictures at meetings and all MSSC events will be part of a slideshow for 2016.



I would like to thank everyone that helped make the 2016 banquet a great success, George with a fantastic presentation, Jim, Cheryl and Ann helping with the check in table, Lisa from COCO'S and everyone that attended.

If time allows, we can show this slide show at a future meeting if you missed it.



## Featured Mineral: **Aragonite**

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

**Crystal System:** Orthorhombic, Aragonite is a polymorph of Calcite

**Color:** Colorless to white or grey, often stained various hues by impurities, such as blue, green, red or violet; colorless in transmitted light.

**Name:** Named in 1797 by Abraham Gottlieb Werner for the type locality, the village of Molina de Aragón, Spain, and not the province of Aragón, a mistake made by several later writers



*irocks.com photo*

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

Locality: [Stevenson-Bennett Mine, Organ District, Organ Mts, Doña Ana Co., New Mexico, USA](#)  
6.2 cm x 4.2 cm x 2.4 cm



*irocks.com photo*

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

Locality: [Styria, Austria](#)  
13.7 cm x 8.8 cm x 5.4 cm



*irocks.com photo*

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

Locality: [Sterkfontein caves, Krugersdorp, West Rand District, Witwatersrand field, Gauteng Province, South Africa](#)  
5.4 cm x 2.8 cm x 1.4 cm



*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



*irocks.com photo*

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

Locality: [Corocoro, Pacajes Province, La Paz Department, Bolivia](#)  
3.8 cm x 3.6 cm x 3.4 cm



*irocks.com photo*

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

Locality: [Agrigento, Agrigento Province, Sicily, Italy](#)  
11.5 cm x 5.4 cm x 3.8 cm

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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



Looking for	Who	Where	Contact at
A ride	Richard Stamberg	North Orange County, near Cal State Fullerton	
A ride	Catherine Govaller	San Bernardino, CA	

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

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## Where do the Elements Come From? Linda Elsnau

The mineral specimens we all enjoy collecting and studying are constructed of various combination of the elements listed in the Periodic Table. But...where did the elements come from? According to a study done at [Northern Arizona University Meteorite Laboratory](#). They are made in the stars! As stars form, and die, each successive generation of star creates heavier and heavier elements. Hydrogen formed in the original “Big Bang”, collected to form the first stars. These stars died, exploded and formed the next generation of elements, star which collected to form the next generation of stars and the process continued, each collapsed star forming the next level of elements. This chart shows which elements came from the various sources according to this study.

Periodic table showing origin of elements, based on data at [Northern Arizona University Meteorite Laboratory](#). All elements above lawrencium (not shown) are also manmade.

**Image Credit:** [Cmglee](#) (Own work) [CC BY-SA 3.0](#) or [GFDL](#), via [Wikimedia Commons](#)

NASA describes this process on the “Astronomy Photo of the Day” as follows:

The hydrogen in your body, present in every molecule of water, came from the Big Bang. There are no other appreciable sources of hydrogen in the universe. The carbon in your body was made by nuclear fusion in the interior of stars, as was the oxygen. Much of the iron in your body was made during supernovas of stars that occurred long ago and far away. The gold in your jewelry was likely made from neutron stars during collisions that may have been visible as short-duration gamma-ray bursts. Elements like phosphorus and copper are present in our bodies in only small amounts but are essential to the functioning of all known life. The featured periodic table is color coded to indicate humanity's best guess as to the nuclear origin of all known elements. The sites of nuclear creation of some elements, such as copper, are not really well known and are continuing topics of observational and computational research. <http://apod.nasa.gov/apod/ap160125.html>

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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		
MSSC Treasurer 1855 Idlewood Road, Glendale, CA 91202		

WEST COAST ~ SPRING **GEM & MINERAL SHOW**

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*Plumbogummite on Pyromorphite  
Yangshuo Mine, Guangxi Prov. China  
Photo by Jeff Scovil©*

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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/>

**FEBRUARY**

**February 12 - 21: INDIO, CA**

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

**MARCH**

**March 5 - 6: ARCADIA, CA**

Monrovia Rockhounds  
Los Angeles Arboretum-Ayres Hall  
301 Baldwin Avenue  
Hours: 9:00 - 4:30 daily  
Website: [www.Moroks.com](http://www.Moroks.com)

**March 5 - 6: 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 12 - 13: SAN MARINO, CA**

Pasadena Lapidary Society  
San Marino Masonic Center  
3130 Huntington Drive  
Hours: Sat 10 - 6, Sun 10 - 5  
Website: [www.pasadenalapidarysociety.org](http://www.pasadenalapidarysociety.org)

**APRIL**

**April 2 - 3: TORRANCE, CA**

South Bay Lapidary & Mineral Society, Palos Verdes  
Ken Miller Recreation Center  
3341 Torrance Blvd (entrance on Madrona Ave)  
Hours: Sat. 10 - 5; Sun. 10 - 4

**April 8 - 10: VISTA, CA**

Vista Gem & Mineral Society  
Antique Gas & Steam Engine Museum  
2040 North Santa Fe Avenue  
Hours: 9 - 5 daily

**MAY**

**May 13 - 15: YUCAIPA, CA**

Yucaipa Valley Gem & Mineral Society  
Yucaipa Music & Arts Festival  
Adams St. & Yucaipa Blvd  
Hours: Fri 6 - 9; Sat 11 - 10, Sun. 12 - 6  
Website: [www.yvgms.org](http://www.yvgms.org)

*With Knowledge Comes  
Appreciation*

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## 2015 MSSC Officers:

<b>OFFICERS</b>		
President	Ann Meister	<a href="mailto:president@mineralsocal.org">president@mineralsocal.org</a>
Vice President	George Rossman	<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	Geoffrey Caplette	
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22015--2016	Bob Housley	
2015--2016	Leslie Ogg	
2016-2017	Pat Caplette	
2016-2017	Pat Stevens	
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### 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 Micromount 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:

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To:



*With Knowledge Comes  
Appreciation*

*Your MSSC  
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Here!*