



Bulletin of the Mineralogical Society of Southern California

Volume 89 Number 11 - November, 2016

The 939th meeting of the Mineralogical Society of Southern California

With Knowledge Comes Appreciation

November 11th, 2016 at 7:30 P.M.

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

Program: Geology of Southern California from a Small Airplane
presented by Chuck Houser

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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:

Geology from So Cal up the Owens Valley to the Bishop/Mammoth area, from a small plane: Presented by Chuck Houser

The 2010 “Easter Sunday Earthquake,” also known as the Sierra-El Mayor Earthquake, was a magnitude 7.2 earthquake that occurred along the Borrego strand of the northwest-trending Laguna Salada Fault in the Cucapah Mountains of northern Baja California.

On April 4th, 2010, around mid-afternoon, something unusual happened for those of us in Southern California. This was a long-awaited and cherished event, an “E-ticket” ride for those of us who remember the \$25 ticket books at Disneyland. It didn’t last too long, only about 65 seconds, but what a wonderful 65 seconds it was. The anticipation built as the P-wave arrival commenced and built to that first real “jolt.” Then the rush of the S-wave and finally trailing off with the L-waves. Absolute heaven on earth!

The 2010 “Easter Sunday Earthquake,” also known as the Sierra-El Mayor Earthquake, was a magnitude 7.2 earthquake that occurred along the Borrego strand of the northwest-trending Laguna Salada Fault in the Cucapah Mountains of northern Baja California. The Laguna Salada Fault is the southeastern extension of the Elsinore Fault in Southern California. The surface rupture extended from the epicenter approximately 30 miles south of the border (40 miles along the northwest-trending fault) right up to the border to the northwest. This earthquake was unique for several reasons. First, in the central portion of the “break,” there was a roughly 10 mile section of the fault with little surface rupture and little aftershock activity. Most of the rupture (up to about 15 feet horizontally and 5 to 6 feet vertically) was in the northern and southern portions of the section of fault that broke.

Another unique characteristic of this earthquake was the fact that at least portions of the fault appears to be located in conjunction with a “detachment fault” (low-angle normal fault). The surface rupture zone in this earthquake was particularly wide (up to 1,000 feet or so) leading some of us to believe that the rupture may have been distributed in part along the underlying detachment fault creating the wide rupture zone as movement occurred across this shallow-dipping plane under the fault.

Finally, this was unique in that it produced perhaps some of the most stunning images of earthquake surface rupture, certainly that I’ve ever seen. I was privileged to be able to see the surface rupture from the November 24, 1987 mag. 6.7 Superstition Hills Earthquake near Westmoreland and the June 28, 1992 mag. 7.3 Landers Earthquake in the western Mojave Desert near Landers and Yucca Valley. From my observation, the rupture from the Easter Sunday Earthquake was the most impressive and pictures of the rupture are the focus of this talk.

However, there will be a little more to this presentation. Ever wondered how a magnitude 7.3 compares to a 9.3? The comparison, as it relates to actual energy release, may surprise you. We will look at the comparison and finish with some stunning, if not somewhat disturbing photos of the tsunami from the February 27, 2010 mag. 8.8 Chilean Earthquake striking the San Diego coastline.

From the Editor:

Well, I’m trying to get your Bulletin to you earlier than I did it last month. Let’s see how I do.

First off, I want to wish everyone a Happy Thanksgiving! May it be safe and delicious!

This month we have what appears to be a very interesting program and the annual MSSC election. There are several other fun things to do, our annual visit to Jewell Tunnel is coming up and some non-MSSC lectures that look quite interesting.

Our annual January Banquet is coming up soon as well. Always a good time for all that attend. Don’t forget to bring along some items for the Silent Auction. This is our primary funding source for club activities so bring a well stocked wallet as well! Hope to see you there. Linda Elsnau

MEANDERINGS FROM THE PRESIDENT by Ann Meister

When I began writing this, we were under an emergency earthquake advisory following a swarm of tremors that struck the Salton Sea area beginning September 26 and lasting for several days. I haven't felt a big shake, have you? I miss the Lucy Jones' reports. The tremor swarm ran perpendicular to the San Andreas Fault with the strongest of the more than 30 small quakes at 4.3 magnitude near Bombay Beach. Though not the cause of the swarm, there has also been news about the discovery of the Salton Trough Fault that runs along the eastern edge of the Salton Sea and parallel to the San Andreas Fault. The newly mapped strike-slip fault was not identified earlier because of the lack of seismic activity on it and it was both under water and covered with sediments. This fault may accommodate some of the strain from the larger San Andreas system. Recent studies have shown that the region has experienced magnitude 7 earthquakes about every 175 to 200 years for the last thousand years. A major rupture on the southern portion of the San Andreas Fault has not occurred in the last 300 years. (<https://scripps.ucsd.edu/news/new-fault-discovered-earthquake-prone-southern-california-region>)

Have you heard of The Amoeba People? It's a group of musicians who whimsically identify themselves as aliens from the planet Crouton who were sent to Earth to transmit scientific information back home in song. So, when I heard Alfredo Petrov's computer playing a rap called "The Geologists are Coming" I was speechless! The lyrics start with "They carry tiny hammers; they're chipping at the crust..." This is great stuff. Another song, "Continental Drift" is about Alfred Wegener, who was ridiculed by the scientific community when he presented his theory of continental drift. Then in the 1950's the new science of paleomagnetism produced data that supported the theory and soon the mechanisms of plate tectonics were discovered that verified his idea. Other songs include "Seismograph," "The Ballad of Carl Sagan," and "The Aa Pahoehoe Lava Rock Walk." See the website at <http://www.theamoebapeople.com/> and an article from EOS, a publication of the American Geo-physical Union, <https://eos.org/articles/amoeba-people-sing-quirky-tunes-about-geoscience>

The annual **Open House at Jewel Tunnel Imports** is scheduled for December 3, 2016 from 10 AM to 4 PM. A map is elsewhere in the *Bulletin*. Bring your friends and family. There's new stuff for your Christmas shopping enjoyment including sulfur crystals from Bolivia, botryoidal chalcedony or grape agate from Indonesia and green prehnite and epidote from Mali as well as the usual pyrite, amethyst, geodes, jewelry, and lots of other goodies. JTI asked me to give them an approximate count of attendees, so PLEASE send me an email by November 30 if you are going to be there and how many are in your party. Thanks.

OTHER THINGS TO DO...

The **Watson Lecture** at Caltech's Beckman Auditorium is on November 9 at 8 PM. The title is "Ceres: An Ancient Ocean World from the Dawn of the Solar System."

The **Von Kármán Lecture** on November 17 and 18 is titled "The James Webb Space Telescope: Successor to Hubble." Thursday is at the Von Kármán Auditorium at JPL and Friday is at the Vosloh Forum at PCC. Start time is 7 PM.

The **UCLA Meteorite Gallery** has scheduled a November-December lecture on Sunday, December 4 at 2:30 PM. The speaker is Professor Ben Zuckerman. The title of his talk is "The Search for Extraterrestrial Intelligence – And Why It Will Fail." The Meteorite Gallery (Geology room 3697) is open with a docent present every Sunday from 1 till 4. The lecture is in Slichter Hall 3853 near the Meteorite Gallery.

NOMINATIONS ARE OPEN FOR OFFICERS AND DIRECTORS FOR 2017

If you would like to see the slate of officers for 2017, please look at the current list of officers on the last page of the *Bulletin*. This is the same group of people who were listed in 2015, 2014 and 2013. The nominations are open if you would like to submit an additional candidate for any office. Make sure you have that person's permission before making the nomination. Directors serve a two-year term; other officers NORMALLY serve a one year term. The election takes place at the November meeting.

**DON'T FORGET SILENT AUCTION DONATIONS
FOR THE BANQUET ON JANUARY 14, 2017**

MINUTES of the October 14th, 2016 Meeting

The 938th Membership Meeting of the Mineralogical Society of Southern California (MSSC), was held on Friday, October 14, 2016 at Pasadena City College, Geology Department. The meeting was called to order at 7:35 p.m. by President Ann Meister.

Welcome:

President Ann Meister welcomed everyone and asked guests to introduce themselves. Tessy (Angie's sister) in from Indiana, Laura brought her friend, Sharon, out from Massachusetts and, new member Jerry Wendt, who just joined last month, was also in attendance.

Regular Business:

Ann, after asking for any corrections or additions to the Minutes of last month's meeting as published in the October 2016 *Bulletin*, called for a motion to approve them. Seeing none, the **motion** was made by Fred Elsnau and seconded by Laura Davis to approve the Minutes as published. The **vote was unanimous to approve** the minutes.

President's Messages:

- Editor Linda Elsnau's deadline for items to be published in the next *Bulletin* is October 22nd. The deadline will be each 22nd of the month thereafter;
- Nominations for 2017 are still open. The election will be at the next Membership meeting to be held on November 11, 2016. The nominations thus far are:

Officers

President – Ann Meister
Vice President – George Rossman
Treasurer - Jim Kusely
Secretary –
CFMS Director –

Nominee

Bruce Carter
Bob Housley
Leslie Ogg
Angie Guzman
JoAnna Ritchey

MSSC Board of Directors * 2 yr terms

2017-2018 #1
2017-2018 #2
2017-2018 #3

Bruce Carter
Bob Housley
Leslie Ogg

If you would like to serve, please notify Ann before the election is held at the November meeting;

- Dues are due 12/31/2016. A form was included in the October *Bulletin*; please use it to pay your dues. You may also use it to remit for the January Banquet;
- The next MSSC Board meeting will be Sunday, November 20, 2016 at Bruce Carter's home;
- There will be a silent auction at the Banquet. Please start thinking about items you would like to contribute;
- Pacific Micromount Conference will be January 27-28, 2017 to be held again at the San Bernardino County Museum;
- Jewel Tunnel Imports (JTI) will have an open house on December 3, 2016. Save the date! Check the *Bulletin* for additional information.

Announcements:

- Von Karman Lecture Series held 7:00 p.m. on Thursdays at JPL's Von Karman Auditorium and Fridays at PCC's Vosloh Forum. The October lecture, however, will only be at PCC: "Asteroid Anchors, Rock Climbing Robots, Gecko Grippers, and Other Ways to Stick in Space" presented by Dr. Aaron Parness. While they may not have anything directly to do with minerals, these lectures on robotics are always interesting. [Note: The November 17-18 lecture will be "The James Webb Space Telescope: Successor to Hubble" by Dr. Michael Ressler. On December 15-16, the lecture will be "Spinning Black Holes, Exploding Stars and Hyperluminous Pulsars: Recent Results from the NuSTAR Satellite" by Dr. Daniel K. Stern.];
- UCLA Meteorite Gallery talk on Sunday, October 16th by Prof. Hilke Schlichting is titled: "Planets around Other Stars". [Note: November 6th, starting at noon Exploring Your Universe – Science Outreach, a UCLA campus science outreach event. On December 4th at 2:30 p.m. will be "The Search for Extraterrestrial Intelligence (SETI) and Why It Will Fail" presented by Prof. Ben Zuckerman.]
- West Coast Gem & Mineral Show will be November 11-13 in Santa Ana;
- The Urban Fest is coming up at the L.A. County Museum and Rudy needs your help.

Discussion regarding this year's event at Searls Lake: (1) Josh said he went and there were a lot of people – everybody got dirty, but he was able to collect a few good crystals, (2) Jerry brought a specimen he collected 25 years ago when he'd gone back then and (3) Dan says Trona will be open next year. There were quite a few vendors; the weather was in the 90's, so it wasn't too bad. Other experiences shared: There were good halite crystal specimen; back when the PCC Dana Club went in the 1960's; you would put your hand in the mud and pull up nice crystals, but you'd get a few crystal cuts.

Show & Tell:

Angie reported on the CFMS Convention held at the El Dorado County Fairgrounds in Placerville. The Federation is run well. Everyone has been involved long enough to know each other so the meetings ran smoothly. John Martin, the president, went through the Agenda, which was a couple of pages, double sided. The officers and committee chairs made their reports. The award ceremony included an award for bulletin editors, among others. Ann mentioned that the Federation does a lot and has many committees. Angie said she was able to network and make some nice contacts. During the same weekend, she said that the convention's venue also offered the El Dorado Gem and Mineral Show and the fairgrounds hosted this year's World Gold Panning Championships (next year in Scotland). Angie thanked the society members for being allowed to represent MSSC at the CFMS Convention. Next year Ventura will host the convention and it will be in conjunction with the American Federation of Mineralogical Societies (AFMS) in June 2017. Ventura Gem & Mineral Show has been moved to March 2017.

Mojave Symposium – Marek said the symposium will include a field trip to Marble Mountain. Ann mentioned MSSC had not received a notification of the symposium.

Jerry mentioned he had worked with Paul Adams some years ago. He had access to Cobalt 60 reactor and they put different minerals in the reactor to change their color centers. He showed a

large rose quartz sample they'd irradiated which permanently changed the specimen leaving a very dark band through the sample. The banded sample was impressive.

Rudy Lopez, our avid tuna fisherman, shared a Guadalupe Island, Mexico, story of a diver who went into a diver's cage to view a shark but who had failed to bring his bait bag all the way down into the cage with him. A great white shark was attracted to the floating bait bag and followed the diver downward into the cage. A photo, taken by another diver was awesome: the diver just below a head first shark hot on his tail! Whoa! Fortunately, no one was hurt and the shark freed itself and swim off, much to the relief of the diver, I presume. Wowie! Whew, a close one – lucky diver.

Program:

Program Chair Rudy Lopez introduced Dr. George Rossman from the California Institute of Technology, Department of Geologic and Planetary Science where he is the Professor of Mineralogy. Among other things, Dr. Rossman is an expert in mineral identification and the origin of color in gems and minerals. His tools include spectroscopic probes whose energy range from gamma rays to microwaves. These probes help establish relationships between hydrous components, metal ions and other elements with regard to composition and structure. Dr. Rossman is a renowned authority who has traveled the world collecting, inspecting and advising on gems and minerals. He is author of more than 320 publications and has a gem mineral of the tourmaline family named after him, *Rossmanite*. We are honored to have Dr. Rossman serve as Vice President of Mineralogical Society of Southern California.

The Color of Topaz. By Dr. George Rossman

Topaz is a favorite of collectors because of the beautiful crystal shapes, variety of colors and is the basis of a multimillion dollar industry which is changing the color of topaz. The largest faceted topaz mineral is 22,892 carats, weighing 10.1 lbs. making it the largest cut yellow topaz in the world.

Textbook topaz is colorless. The chemical composition is $\text{Al}^{3+}\text{SiO}_4^{4-}\text{F}^-$. Usually there is hydroxide in topaz but still textbook topaz is colorless. But, as you know, topaz comes in a variety of colors.

Pink topaz is valuable and you can get a pretty good price on the gem market. The pink mostly comes from Pakistan or Brazil. It has chromium, Cr^{3+} . Like rubies have chromium giving it its red color, the chromium in topaz renders pink. Nigeria and Myanmar have wonderful brown topaz but when you do a chemical analysis, you don't find a reason for the color.

Topaz Mountain, Utah, has topaz, but there is also uranium, and other minerals. The minerals are under the earth, but exposure to the sunlight fades the topaz. Faded topaz means the minerals are exposed to ionizing radiation. So, the exposure plus gamma rays yields brown topaz. So, Jerry, you have Cobalt 60 (for your rose quartz band), Dr. George has Cesium 137. The uranium in Topaz Mountain provides the radiation to turn the colorless topaz to beautiful brown topaz. Measurements of light wavelengths, oxygen and electrons prove out the analysis of the brown color in topaz. Keep in mind, some of the topaz will fade back out over time, some quickly and some very slowly. *[Please note: this is an abbreviated explanation of the process Dr. George conveyed to us at presentation.]*

Imperial topaz from Brazil in the Minas Gerais rich mining area has a topaz mine, Ouro Preto. There is lots of quartz taken out of the mine there but the miners are only interested in the topaz, so the quartz is there for the taking. The topaz is taken out with large hydraulic scoops, washed clean with hydraulic hoses then taken to a processing area where a simple water tubing system pneumatically sucks away the hand sorted stones to get them ready for market. Actually, a small amount of the topaz is gem quality. There are a lot of cracks or chipped off stones that are not gem quality, nothing a collector would care to have. The markets are open to haggling, so you may get them down to a price you are comfortable with.

Imperial topaz is golden orange. When the Imperial topaz is heated to about 600° the brown component goes away taking the topaz back to colorless, or if it has chromium, it goes pink. If you radiate it again, the brown element will come back.

Exact science for determining all the colors is not there yet. There are a lot of tools but it is not yet fully understood how the electrons get pushed and bumped around, so that they are shifted inside the crystal causing the color change.

Blue topaz, mostly from Brazil has a little hint of blue inside the crystal. At the Minas Gerais region, there was a cassiterite, tin, mine in Bolivia that flooded into Brazil. The tin yielded man-made blue topaz. Other places producing blue topaz are Russia, Zimbabwe and Little 3 Mine in California, USA. Dr. George says there are no clues as to what causes the blue color.

Naturally occurring blue topaz is rare, but there are plenty of stories. For example, at the University of Missouri, they were using nuclear reactors on topaz using electron light with neutron to produce preferred blue and just neutron to produce deep blue. However, in the 1980's in Sao Paulo, Brazil, a couple of moonlighters irradiated topaz in a nuclear reactor causing them to have radiation! Although, the radiation was not at a dangerous level, it could still be detected. Had, however, the radiation come from cobalt, the radiation levels would be dangerous and, for a very long time. The government was not happy because gems are big business for Brazil.

But where does the blue come from? There is little change in composition of the atoms, but perhaps it's a missing oxygen ion. It has been believed that radiation duplicates what is found in nature. There is a difference, though, because the blue is not the same. So, it is NOT the same as found in nature. Dr. George says it's a mixed bag.

Finally, there are other colors of topaz such as brownish-green (insufficient heating + irradiation), green from chromium, pink from bismuth, etc. Read more in "Topaz – Perfect Cleavage" Extra Lapis (2011) Vol.14.

Wow! Thank you for taking questions Dr. Rossman and thanks for a great presentation. Fascinating and interesting!

Drawing: Door prize was won by Catherine Govaller in from San Bernardino. Congrats!

Adjournment: The meeting was adjourned at 8:44 p.m. Refreshments were served after the meeting.

Respectfully submitted, Angie Guzman, MSSC Secretary

Apologies in advance for any misspellings or omissions in the Minutes/aag

[Don't forget to come to the next meeting, November 11, 2016 and don't forget to pay your dues.]

List of Upcoming MSSC Events : Mark your Calender!

Event	Date	Comments / Scheduled Program (if known)
Meeting Dates:	December, 9, 2016	Leslie Neff & Larry Hoskinson - A Tourists Guide to Finding Opal in Cooper Pedy Australia
	February, 2017	Alan Rubin - Solar System
	March, 2017	Denise Nelson - Precious Heirlooms
	April, 2017	Walton Wright - Identifying Petrified Wood
Board Meeting	November 20, 2016	Board Meeting at Bruce Carter's house
Annual Banquet	January 14, 2017	Aaron Celestain - LA-NHM: Minerals with the unique ability to selectively remove toxic metals
Pacific Micro - Mount Conf.	January 27 & 28, 2017	Hold this date for the next upcoming Micro-Mount Conference

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

An invitation for the members and friends of the Mineralogical Society of Southern California to attend an open house at

Jewel Tunnel Imports

Saturday December 3rd, 2016 - 10 AM to 4PM

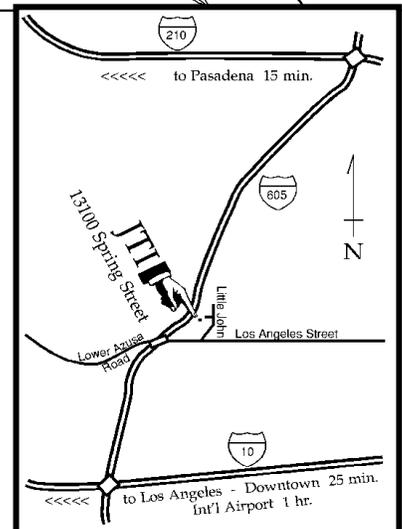
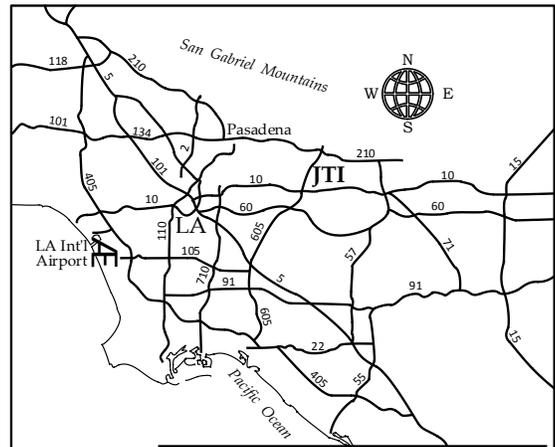
13100 Spring St., Baldwin Park, CA 91706, 626-814-2257
 Starving students and other will be fed. Unattended children will be sold as slaves.

Map also available at jeweltunnel.com

Jewel Tunnel Imports is a leading wholesale distributor of mineral specimens, crystals, fossils, tumbled stones and many different kinds of lapidary items like balls, eggs, jewelry etc. made from different minerals. We have a warehouse in excess of 10,000 sq. feet full of mineral related natural history items, perhaps the largest of its kind in the United States. Check out our website jeweltunnel.com.

Historically Jewel Tunnel Imports has had limited open house parties for mineralogically and geologically oriented groups such as the students and faculty of various university geology departments and members of certain gem and mineral societies. These open houses, by invitation only, on a few weekends just proceeding Christmas, offer a chance for individuals belonging to these groups to buy minerals and crystals at wholesale prices and to learn something about the wholesale gem and mineral business.

To get to JTI: From the 605 Freeway, Exit at the Los Angeles Street/Lower Azusa Road. Go East on Los Angeles Street to Little John. Turn North to Spring Street. At Spring Street, turn West. The JTI parking lot is straight ahead.



Make your Reservation to attend today!

MSSC Banquet

Saturday, January 14, 2017

The cost of the Banquet will be **\$39.00.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 11th, 2017**. After Jan. 11th, if you cannot attend, you will still be responsible for paying \$39.00 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!

Email: programs@mineralsocal.org

Mail Checks to:

MSSC
1301 Leonard Ave
Pasadena Ca 91107

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

Dues are officially due 1/1/2017. (a membership form was included in your October, 2016 Bulletin)

The speaker is: **Aaron Celestian, Curator, Natural History Museum, Los Angeles**

Topic: **Minerals with the unique ability to selective remove toxic metals from solutions are an increasing area of technological, environmental, and energy-related interests. However, these nano-porous minerals are exceedingly rare and uneconomic to mine for large scale applications.**

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**

Don't forget to bring your contributions for the Silent Auction !

What is gathering dust in your home will be treasured in someone else's home.

The deadline for reservations for the Banquet is Jan 11th! Don't miss out on a great evening because you delayed contacting **Rudy Lopez** for a reservation.

Make your Reservation to attend today!

Our President, Ann Meister says: "Everyone is invited to join us and have a great time. This is our premiere social event of the season!"

Update: LA URBAN FESTIVAL, March, 2017: By: Rudy Lopez

We still need help with the CHILDRENS MINERAL BAGS

We had a great time at the 2016 LA Urban Festival at the Natural History Museum last year. We had over 1000 attendees stop at our tables and ask a bunch of questions and enjoy our mineral display.

We made about 800 children happy by giving them a mineral to start their collections. Robert Housley gave a few boxes of quartz from Thousand Oaks Blvd. in Agua Hills to make a big hit. Leslie sent boxes of Fluorite pieces that kids learned was in toothpaste.

We need small minerals that we can bag up to give away, if they are identified and where they came from it helps make it more collectable to the children.

So! Please look around and see if there is a box of minerals taking up space in your closet, garage, storage shed, under your bed or where ever you hide them that you don't want.

You can bring all donations to a meeting and give them to me or if there are too many I will pick them up. Never too early to start collecting for next year, we will need about 1000 pieces. We currently have about 400 items on hand.

A personal Field trip for you.

A free lecture at the LA Natural History Museum on November 3rd with Dr. Arthur Gibbs Sylvester and Elizabeth O'Black Gans, author and illustrator of *Roadside Geology of Southern California*. Below is a link to our website with more info, as well as the Facebook event page. Feel free to share the event!

<http://www.nhm.org/site/activities-programs/lectures/reading-between-the-lions>

<https://www.facebook.com/events/1142364539190176/>

Natural History Museum of Los Angeles County
900 Exposition Boulevard · Los Angeles, CA 90007
Tel: 213.763.3257 · Fax: 213.747.4506

This lecture is Free, but Advanced reservations are required. RSVP at
<https://tickets.nhm.org/WebStore/shop/ViewItems.aspx?CG=Lectures&C=Lectures11>

Schedule:

Enjoy eats from a food truck in the North Plaza and a cash bar in the Grand Foyer!

6:30 pm: Doors open. Explore exhibits and discover more from Museum collections.

7:30 pm: Discussion followed by Q&A and book signing

9 pm: Program concludes

Books will be available for purchase in the Museum Store.

Join UC Santa Barbara geologist, Arthur Sylvester, and illustrator Elizabeth O'Black Gans, as they explore mountains, deserts, and coastlines in one of the most geologically diverse places on the planet. By motoring along southern California's vast network of highways with them and their new book, *Roadside Geology of Southern California*, you'll learn that southern California has every type of rock, from rare plutonic and volcanic rocks to common sandstone and limestone, and from precious gemstones to giant quarries of sand and gravel. You can find every age of rock from 2.5-billion-year-old gneiss to moving sand dunes, and you can view the results of almost every geologic process from desert erosion to glaciation, ancient to recent volcanism, and giant prehistoric landslides to active earthquake faults. This illustrated talk also explains the complex geology and geologic history of the San Andreas fault, Joshua Tree National Park, the Channel Islands, the Salton Sea, the Mojave Desert, and the enigmatic Transverse Ranges.

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	
A ride	Catherine Govaller	San Bernardino, CA	

WEST COAST GEM & MINERAL SHOW

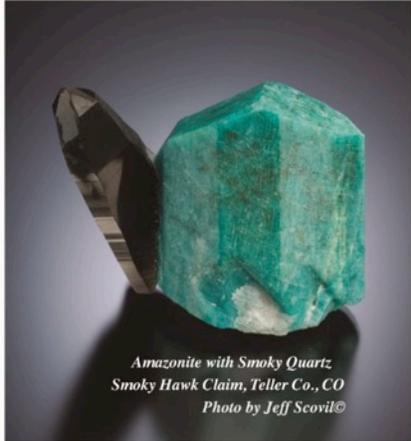
NOV. 11 - 13, 2016

SANTA ANA, CA

Holiday Inn - Orange County Airport
2726 S. Grand Ave.
(55 Freeway exit 8 for Dyer Rd. to S. Grand Ave.)

80 Great Dealers

Minerals ★ Fossils ★ Gemstones
Jewelry ★ Beads ★ Decorator Pieces
Meteorites ★ Lapidary ★ Metaphysical



Amazonite with Smoky Quartz
Smoky Hawk Claim, Teller Co., CO
Photo by Jeff Scovil©

FREE Admission ★ FREE Parking ★ Retail
Wholesale For Qualified Buyers

Show Hours: Fri. & Sat. 10 - 6 ★ Sun. 10 - 5

LLD Productions, Inc., P.O. Box 665, Bernalillo, NM 87004, Fax: (303) 223-3478, mzexpos@gmail.com
www.mzexpos.com facebook.com/mzexpos

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 bulletin@mineralsocal.org and the payment should be sent to the MSSC Treasurer 1855 Idlewood Road, Glendale, CA 91202			

Calendar of CFMS Events:

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

NOVEMBER, 2016

November 5 - 6: ANAHEIM, CA

American Opal Society
Business Expo Center
1960 S. Anaheim Way
Hours: Sat 10 - 6; Sun 10 - 5
Website: www.opalsociety.org/
[Show Page](#)

November 5 - 6: RIDGECREST, CA

Indian Wells Gem & Mineral Society
Desert Empire Fairgrounds
520 South Richmond Road
Hours: 9 - 5 daily

November 5 - 6: SAN DIEGO, CA

San Diego Mineral & Gem Society
Al Bahr Shrine Center
5440 Kearny Mesa Blvd
Hours: Sat 9:30 - 5:00; Sun 10:00 - 4:00
Website: www.sdmg.org

November 19 - 20: OXNARD, CA

Oxnard Gem & Mineral Society
Oxnard Performing Arts Center
800 Hobson Way
Hours: Sat. 10 - 5; Sun. 10 - 4
Website: www.oxnardgem.com [Show Page](#)

DECEMBER

December 3 - 4: BARSTOW, CA

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

December 9 - 10: RIALTO, CA

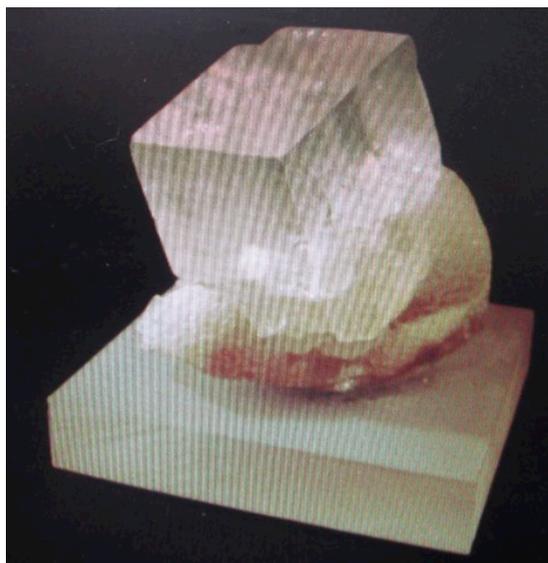
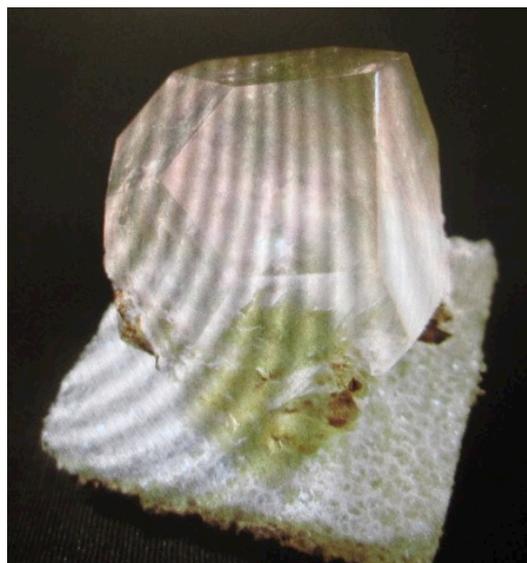
Orange Belt Mineralogical Society
City Hall Lot
105 South Palm Avenue
Hours: 9 - Dusk daily
Website: <http://OBMSrocks.yolasite.com>

JANUARY, 2017

No southern California Shows listed for January

Thanks to Gene Reynolds, we have a couple of lovely **Calcites** to enjoy.

Both are Thumbnail size (fits in a 1" cube) and are **From: Tsumeb Mn., Otjikoto Reg, Namibia**



2015 MSSC Officers:

OFFICERS		
President	Ann Meister	president@mineralsocal.org
Vice President	George Rossman	vicepresident@mineralsocal.org
Secretary	Angie Guzman	secretary@mineralsocal.org
Treasurer	Jim Kusely	treasurer@mineralsocal.org
CFMS Director	Jo Anna Ritchey	
Past President	Geoffrey Caplette	
DIRECTORS		
2015--2016	Bruce Carter	
22015--2016	Bob Housley	
2015--2016	Leslie Ogg	
2016-2017	Pat Caplette	
2016-2017	Pat Stevens	
COMMITTEE CHAIRS		
Bulletin Editor	Linda Elsnau	bulletin@mineralsocal.org
Hospitality	Laura Davis	
Membership	Cheryl Lopez	membership@mineralsocal.org
Micro Mount Conf. Chairman	Al Wilkins	
Program and Education	Rudy Lopez	programs@mineralsocal.org
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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DISCLAIMER: The Mineralogical Society of Southern California, Inc. is not responsible, cannot be held responsible or liable for any person's injuries, damages or loss of property at or traveling to or from any general meeting, board meeting, open house, field trip, annual show or any other MSSC event.

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

To:



With Knowledge Comes Appreciation

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