

Bulletin of the Mineralogical Society of Southern California

Volume 97 Number 3 –March, 2024

The 1,023rd meeting of the Mineralogical Society of Southern California

With Knowledge Comes Appreciation

A ZOOM Meeting
March 8, 2024 at 7:30 P.M.

Program: “Food, Shelter, Water: The Microbiology of Mineralogy”
Presented by Eleanora (Norrie) Robbins, PhD

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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: "Food, Shelter, Water: The Microbiology of Mineralogy"

Presented by Eleanora (Norrie) Robbins, PhD

The issue to solve is existential. Two different fields are involved (microbiology/biology versus mineralogy/geology). Each field involves scientists who have their own specialized terminology and don't have a clue about the technical vocabulary of the other. To a geologist, if there was a biological component to minerals, then someone would be measuring weight percent organic carbon in them. To a microbiologist, bacteria precipitate nanocrystals, why would you ever consider that a stable mineral would ensue?

Mixing these vocabularies results in images that pinpoint the microbial contributions to native gold, iron and manganese oxides, silica, pyrite, magnetite, and some copper minerals. The missing intermediate component is identifying the physical processes that result in recrystallization of metastable, highly hydrated nanocrystals that the bacteria precipitate into macroscopic euhedral crystals.

Dr. Eleanora (Norrie) Robbins is a geologist who started her geology career with the Tanganyika Geological Survey as a Peace Corps Volunteer in Dodoma. She then worked for the US Geological Survey as an economic geologist and palynologist (fossil pollen grains) for 34 years in Washington, DC, Denver, CO, and Reston, VA. Retired from the Federal Government, she became adjunct faculty at SDSU, a 15-year-long activity that involved mostly mentoring students while she did her own research on geomicrobiology.

How to Join our ZOOM Meetings

MSSC members are automatically included in the invite list each month.

For non MSSC Members who want to join this meeting. You must respond to our Programs chair, Carolyn Seitz at programs@mineralsocal.org no later than the Thursday prior to the next scheduled meeting. Please include "current month ZOOM Meeting" in the subject line of your response. This response date will allow time for us to send you the information needed to participate in the ZOOM meeting and also will allow time to get everything organized.

From the Editor: Linda Elsnau.

Well, Happy St Patricks Day to one and all (that's the day everyone is Irish!)

As you can see, the speaker for this month has been changed, but it still looks like an interesting program for us to enjoy. Also, the number of CFMS club shows has picked up so there are a lot of shows to visit in Southern CA for the next few months. There is an MSSC Field trip to the Cady Mountains on March 9th and a special exhibit at the Natural History Museum for us to visit. So, it looks like we have plenty of things to keep us busy for a while.

From Our President, Angie Guzman

This year is already flying by! It's March 2024 and, not sure about you but, I'm still whirlin' from '23! New Year celebrations are long gone and things seem a little less noisy. Other celebrations, remembrances and gatherings, such as Pacific MicroMineral Conference, Quartzite Gem Show and various festivities and the Tucson shows are already behind us. Yet, 2024 still holds goodies for MSSC's mineral enthusiasts including great field trips, more gem and mineral shows, symposiums, etc. Don't forget MSSC's annual picnic in August and all the wonderful presentations at our monthly membership meetings.



The Mineralogical Society of Southern California Board of Directors supports your passion by keeping you informed of all things mineral: education, shows, presentations, field trips, what's happening in our realm, outreach and the like. Other societies and clubs are great resources and outlets for mineral information and

events, too. Lending our support to these organizations is a benefit we can pay forward. Here are a few Southern California societies and clubs and their websites:

Bellflower's Delvers Gem & Mineral (1948): delversgemclub.wordpress.com/

Culver City Rock & Mineral Club (1960's): CulverCityRocks.org

Fallbrook Gem & Mineral Society (1957): fgms.org

Long Beach Mineral & Gem Society (1937): <https://www.facebook.com/LBMGS>

Palos Verdes Gem & Mineral Society (1951): <https://www.facebook.com/PVGMS>

Pasadena Lapidary Society (1946): www.pasadenalapidary.org

San Diego Gem & Mineral Society (1934): www.sdmg.org

Ventura Gem & Mineral Society (1946): www.vgms.org/

Stay in touch, check our monthly **Bulletin** and visit our MSSC website at www.mineralsocal.org for updates, reports and announcements.



SHOWS & EVENTS

COMING SOON: Two shows: Ventura's annual show March 2-3 and Victor Valley's 48th Annual Stoddard Wells Tailgate March 8-10.

 <p>March 2-3, 2024: The <u>Ventura Gem & Mineral Society's</u> own Gem, Mineral, Fossil and Jewelry Show is <u>this weekend</u> at the Ventura County Fairgrounds. Admission is free. Hours are from 10-5 on Saturday and 10-4 on Sunday.</p>	 <p>March 8-10, 2024: <u>Victor Valley Gem and Mineral Club</u> 48th Annual Stoddard Wells Tailgate. Hours: 9-5 PM daily. This event is Free to vendors and visitors. http://vvgmc.org</p>
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One more: Fallbrook Gem & Mineral Society is having their annual **Rough & Cut Sale** on **March 17th from Noon to 3pm**. Call (760) 728-1130 for more information. There will be lots of minerals, gemstones, lapidary materials and other goodies. *No early birds, please.*



BERYL

I'm certain most of you has heard of beryl. Beryl is a Silicate Group mineral containing beryllium, aluminum and silicate with a chemical formula of $\text{Be}_3\text{Al}_2\text{Si}_6\text{O}_{18}$. Its name is actually derived from ancient Greek *bē-ryllos*, referring to color-of-sea-water stone. The beryl mineral crystal system is hexagonal. It has a vitreous luster and is transparent to translucent. It's a 7.5-8 on the Mohs scale. Yet, it is said that because of material trapped inside some beryl, it's classified as very poor for toughness.

It is generally found in igneous and/or metamorphic rock in many parts of the world. It is most commonly found in granitic pegmatites and usually with quartz, albite, muscovite, tourmaline, biotite and potassium feldspar. It also occurs in mica schists. Beryl very often is associated with tungsten and tin ore bodies. These are formed as high temperature thermal veins. Common beryl, mined as beryllium ore. Leaders or main producers are Russia, Brazil and the United States.

Beryl colors:

Colorless: There is a pure *colorless* beryl called *goshenite*. It has been used to imitate diamonds or even emerald by placing a silver or green metal foil behind the cut goshenite stone in settings. Many times, goshenite is irradiated with high energy particles that, depending on the chemical added, produce yellow, green, pink and other colors. In the past, transparent goshenite was a material used to make eyeglasses and lenses. Today, it

is used as a low value gemstone.

Green: *Emerald* is a much sought after, high valued beryl. It contains a trace amount of trivalent chromium or vanadium. The finest emeralds come from Columbia. *Pacha* is a dark green, chromium-rich gem variety. *Riesling* beryl is leek-green colored beryl that shows a warm yellow (yellow-green). It was discovered in Germany circa 1840's-1850's. Riesling is rare and has sold for as much as \$7,000/carat! Aside from Germany, the only other location was a small pocket that was found in Brazil.

Blue: *Aquamarine* is the sky-blue to sea-green variety. Gems with a faint blue color are abundant, therefore, considered not as valuable as the rarer stones that have a rich blue color. The finest aquamarine comes from Brazil where it occurs in pegmatites and alluvial deposits of gravel locally called *casalho*. Buyer beware: most aquamarine has been heat treated to enhance its color. Too much heat will cause the stone to become colorless.

Alkali-beryl: These are high in alkali and contain *caesium* (cesium) an alkali metal that is silvery-gold with a melting point of 83°F. *Rosterite* (Italy) and *vorobyevite* are other terms for the caesium alkali beryl, but these terms.

Alkali-beryl (cont.)

should be discouraged from use per the on-line mineral database, Mindat. If you research rosterite and vorobyevite on-line, you will see an array of blue colored crystals. Oh, by the way, Caesium (cesium) itself is mined from pollucite, a zeolite, but that is another story...

Violet: Amethyste Basaltine (of Egleston) is the violet variety of beryl.

Golden Yellow: *Heliodor* has a range of colors from pale yellow to brilliant gold although greenish-yellow shades are identifiers for heliodor. It has very little to almost no flaws, unlike emeralds. The finest quality of heliodor is found in the Urals (Russia). *Golden beryl* refers to pure golden or yellow shades that are attributed to the Fe^{3+} ions. Both heliodor and golden beryl are used as gems.

Pink: *Morganite* is a pink beryl gem. It also can be rose, peach or violet varieties. Morganite lacks inclusions and fractures making it more durable than emerald. It has manganese impurities giving morganite its color. It

was discovered in Madagascar in 1910 and is named after J.P. Morgan. A single carat of morganite can cost \$300.00. It is the 2nd most popular non-diamond gem after sapphire.

Red: *Red beryl* is very rare and is only located in a few locations in the USA: Utah (2 locations) and New Mexico (1 location). These do not often produce gem quality stones, however. The gem-grade red beryl is found in rhyolites from the Ruby Violet Claim in Wah Wah Mts. of midwestern Utah, originally discovered by Lamar Hodges in 1958. The rare red beryl gets its color from manganese. A red beryl synthetic is also produced but this variety is highly included.

Gooseberry-red is a red variety of beryl. *Bixbite*, another red, was named for an occurrence in 1904 (Maynard's Claim, Utah). "*Raspberyl*" is marketing term for raspberry-red beryl. Do not confused it with *Pezzottaite*, an alkali caesium beryl.

Where to find Beryl in Southern California?

According to goldrushnugget.com, there are some very huge deposits of beryl found in San Diego, Riverside and San Bernardino counties:

San Diego County: In the Pala District at the Elizabeth R Mining area in the Chief Mountains is where several beryl crystals are found with colors ranging from light pink to blue. Morganite as large as 7cm was found there. The "pay-to-dig" mines in operation in San Diego County is the Oceanview

Where to find Beryl (cont.)

and Himalaya mines. They are open to the public but will require an appointment or reservation.

Riverside County: Aquamarine at the Audrey Lynn Mine in the Cahuilla Mountains produces large quantities of good quality crystals of blue and bluish green colors. Other beryl also occurs at the site – crystals of pale green, greenish yellow and grayish green hues.

San Bernardino County: Only as recently as 2006, blue hexagonal good quality aquamarine was found. I don't have the location, but perhaps one of our members knows.

This is not a finite list, but I'm sure there are other beryl deposits out there, judging by the "recent" 2006 discovery, it's just, *where to look?*

Beryl References: Mindat, Wikipedia, Smithsonian Handbooks: Rocks and Minerals (Chris Pellant), Smithsonian Handbooks: Gemstones (Cally Hall), goldrushnuggets.com.

Last Words: VOTE March 5th, MSSC Membership Meeting March 8th, Pi-Day March 14th, Daylight Savings scheduled for March 19th and MSSC Board Meeting April 14th.

Note: The photo I've used as a topic break in my column is of a small 30x microscope (Edmund Scientific Corp) that Fred Elsnau gave to me at one of my first Pacific Micromount Conferences held at the San Bernardino County Museum. Fred, I still have it and I still use it. Thanks!



END

MINUTES of the February 16, 2024 ZOOM Meeting

Welcome

President Angela Guzman welcomed members and guests to the 1,022nd membership meeting of the Mineralogical Society of Southern California, it is our 45th ZOOM meeting. There were 24 participants present including the speaker. Secretary Leslie Ogg is excused, she will complete the minutes from the video.

List of Minerals: As of January 2024, according to the International Mineralogical Association's List of Minerals, there are 6006 valid mineral species, the number is unchanged from our last reported figure on January 12, 2024.

President's Message - Announcements

1. The Pacific MicroMineral Conference was attended by approximately 30 people. The profit was not as high as normal due to some auction hiccups.
2. The Combined CFMS/AFMS Show/Convention will take place May 24-26 in Ventura. Please go to www.2024cfms-afms.com for more information. If you would like to enter a display or be a vendor, please contact Diane Cook of Ventura Gem & Mineral Society through the same website. This website will be posted on MSSC's website for your convenience.

Business:

Minutes to approve: Angie asked for a motion to approve the January 12, 2024, membership meeting minutes as published in February 2024 Bulletin. A motion was made by Carolyn S. and seconded by George R. The president asked for any additions, corrections, or discussion; hearing none she called for the vote to approve the motion. The motion carried with a voice vote.

Announcements and Reports

1. Tucson Show report: no members attended! Jeff Scovil (our presenter) went, he said business was slow, the exhibits were wonderful. He heard there were some good talks. It was rainy and cold.
2. Field Trips (Marek C): Tentative trip March 9, a field trip to the Cady Mountains (MTNM) with Gregor Losson, weather permitting. The CFMS Field Trip is also posted on our field trip section of the web site.
3. PMC recap (Carolyn S): We didn't make as much profit as last year, due to increased expenses. The live auction was somewhat limited. The FGMS was very helpful.
4. Membership news (Carolyn S): Carolyn welcomed member Andrew Willis (also a member of FGMS) and Ray Brown another new member who found us through a google search for field trips! She mentioned the spoofing emails that various officers are receiving, if you get an email from one of the officers, make sure you check the actual from email address.
5. Education (Rudy L): The picnic will be held this year; he got some nice specimens (from the PMC give away table) for the silent auction. He already has 15 raffle items.

Program: President Guzman turned the meeting over to Speakers Chair, Carolyn S, who introduced tonight's speaker, world renown mineral photographer Jeff Scovil. He will be talking about a trip to Brazil. Jeff's trip was in 2008. He gave introductory brief remarks about Brazil and its states. They visited the state of Minas Gerais which is rich with pegmatites. Julio Landmann is a collector from Sao Paulo who made his fortune in the beer making business, and is an avid mineral collector. Jeff was there to photograph Landmann's collection. He showed a few of the photos he took. All these minerals were from Minas Gerais: a dolomite crystal (18.8cm), a Japan Law Twin quartz (25.7 cm), an emerald (9 cm), and two parallel aquamarines on a sheared and healed quartz crystal (32.3 cm), and an elbaite (9.2 cm). From Bahia Brazil a rutilated quartz crystal (12.4 cm) and lastly an amazonite with albite from Santa Maria Itabira M.G. (17.5 cm).

After finishing the photography, Jeff flew to Belo Horizonte to meet a dealer, Luiz Menezes. They then drove to Governador Valadares, and on to pegmatite country. First stop a mineral dealer in João Monlevade. Then on to the Jaguaracu *mine*, which produced menenezesite (named after Luiz Menezes) and rare milarite crystals.

Now back to Governador Valadares to visit the warehouse of the Geometa Company, he showed a massive quartz crystal (about 9 ft. tall) from the Urucum mine in Minas Gerais. It came out of a pocket that produced some of the finest spodumene in the world. The on to the Vasconcelos shop to look at some beautiful blue elbaite tourmaline.

The next day they took a small plane north deeper into pegmatite country; flying over the Cruzeiro mine which has produced some fine tourmalines. He showed a watermelon elbaite (8.5 cm high). He also showed some raspberry colored, turquoise blue, and one called "lipstick" all from different pockets in the same mine. Passing over the Chia mine, he showed a doubly terminated green and pink elbaite with cleavelandite and lepidolite

(13.1 cm high). Others from the same mine were blue green: some had pink at the base. Arriving at their destination, the Pederneira mine they unloaded and went to the lower workings of the mine. Then on to the more recently worked upper section. Jeff showed a photo of the wall matrix full of incomplete green tourmalines. He estimated that 95% of the crystals are naturally broken off and must be glued back on to their stubs. He showed a turquoise elbaite on quartz with albite it was about 20 in. tall. And another large pink and green spray of elbaite (24.5 cm high). He showed more green and pink specimens, a red rubellite, and a green and pink “rocket” tourmaline (*sec. note google it*).

Back in Governador Valadares they traveled to Galileia to the home of Ruben Zulcoloto where workers were cobbing quartz; breaking up the quartz to remove the good parts for faceting. Others were sorting aquamarine rough. The next day they were off down a muddy road in a four-wheel drive to the Urucum mine. One of the upper pockets produced some of the best morganite (pink beryl) crystals in the world. They ventured into another area where a pocket had produced beautiful Kunzite crystals. He showed a morganite that was smallish (8.4 cm high), but typical of the locality: heavily striated, modified dipyrmidal corners, with tiny black tourmalines on the surface. A few unusual specimens: a deformed spessartine garnet (3 cm high), and the uncommon mineral (but common for this mine) stokesite, and fluoroapatite. Finally, what they came for Kunzite, he showed a nearly flawless purple crystal that he remembered as being two feet long!

The next mine they visited was the Navegadora mine which produced thousands of very gemmy, etched spessartine crystals. They also mine feldspar (for ceramics), mica (electronics), and other minerals. He showed a very transparent dark orange spessartine on matrix (2.2 cm high). He spent a few days with a guide exploring several mines. One, the Corrego Frio mine is known as the source of brazilianite. The example Jeff showed was a small yellow pyramid (3.5 cm high), he said they can get much larger. The next was a brazilianite attached to a muscovite mica star (6.2 cm). On the other side of the hill was the Marcelo mine which has produced most of the brazilianite over the last 20 years. Jeff was able to pry a few small crystals from a pocket in the mine. Crystals from this mine are commonly on quartz or albite and are somewhat elongated.

He reunited with Luiz Menezes, and they visited the Nilson Palmare home to view quartz crystals. They happened to have a copy of Jeff’s book on the table, he was very pleased. Out back there were tables loaded with quartz crystals, tourmaline, and lepidolite mica. His last slide showed Luiz with a mica and albite pseudomorph after spodumene.

He was back in Rio de Janeiro six months later photographing minerals for a book about the pegmatites of eastern Brazil. A visually stunning talk, you really needed to see it.

A question-and-answer period followed.

Sec. note: new member Ray Brown found copies of Jeff’s book (now being revised for digital cameras) online at bookfinder.com

Last Words:

- (a) The next Membership meeting will be on Friday, March 8.
- (b) The next Board meeting will be Sunday, April 14, 2024, at 1pm via ZOOM, all are welcome to attend. Email programs@mineralsocal.org to be added to the Zoom invite.
- (c) Membership dues are due, go to <https://mineralsocal.org/membership> to renew.

Adjournment: The president adjourned the meeting at 8:55 pm

Respectfully submitted, Leslie Ogg, MSSC Secretary

Field Trip: Saturday, March 9, 2024 Cady Mountains, Ludlow, CA

Hi mineral friends!

Let’s visit the Cady Mountains for our next trip on Saturday, March 9 2024. We will get a chance to see some classic rockhounding areas for which we want to protect future access. We will visit the thulite area in the morning, then the Old Dominion mine in the afternoon.

We will meet on Saturday the 9th, at 9:00 AM in Ludlow, in the parking lot of the Ludlow Cafe, south of Exit 50 from I-40. It's 155 miles from Pasadena. The driving time is 2+ hours depending on traffic, which should not be bad in the early morning. Here are the GPS coordinates of the meeting place: 34°43'25.0"N 116°09'47.5"W (34.7236, -116.1632). The Google Maps link: <https://maps.app.goo.gl/aeStGY5yj5gXXrsC7>



The classic **thulite** area is accessed by driving on the 15 freeway for about 11 miles, then 2 miles on the dirt road that is mostly flat and dusty. No 4WD or high clearance will be necessary, but any low clearance 2WD cars might have a bit of trouble in a few rougher spots. **Thulite** is the pink variety of mineral **clinozoisite**, a member of the **epidote** group with elongated prismatic crystals. It is found in multiple rock outcrops on the top of a hill visible from the freeway. Most of the material shows massive pink spots intermixed with a pale green matrix. The best pieces exhibit raspberry color. Some of them might have minute crystals up to 1mm, but even without magnification, they will show some sparkle.

Here are a couple of photos of thulite material:



For the second part of the trip, we will drive to the Old Dominion mine on the side of the hill next to Broadwell Lake in the heart of the national monument. Many rockhounds collected excellent blue **chrysocolla** with green **malachite** needles here in the 60s. The thick veins are long gone today, but the thinner, but bright blue veins covering rocks can still be collected. Also, a much rarer mineral, **shattuckite**, was found here as well. It is a

deep dark blue copper silicate hydroxide forming tufts of fibrous acicular needles on **chrysocolla**, a hydrated copper aluminum silicate. **Gold** was also found there.

The path up to the side of the lake is sandy and a bit rough in places, so low clearance is not advisable. The last-mile road to the mine is rougher and quite confusing. If you need a ride, please let me know so we can find you a ride share. The walk up to the dumps is pretty steep, covered with rough rock fragments, requiring good coordination. See the Mindat location for more info: <https://www.mindat.org/loc-312606.html>

The weather forecast shows balmy 72F and no rain, so join us and enjoy collecting!

Hope to see you there! Marek Chorazewicz

A Special Exhibit at the Natural History Museum of Los Angeles County

100 Carats: Icons of the Gem World

This is a new temporary exhibit in the Gem Vault of the NHMLA that features Gems over 100 Carats. The exhibit started December 8, 2023 and ends April 21, 2024. On the opening weekend, our own Rudy Lopez Awas there demonstrating how cabochons are cut and also offered a free raffle for many gems he has cut over the years. Here is a link to a YouTube video posted by Roger Martin which shows highlights of the exhibit as well as an interview with Rudy.

<https://www.youtube.com/watch?v=0dFjUBhfqNE> (This link can be opened with Ctrl+Click)

You can still visit this exhibit as it continues until April 21, 2024. Check the Museum's website for more information <https://nhm.org/>

List of Upcoming MSSC Events : Mark your Calender!

Event	Date	Comments / Scheduled Program (if known)
Meeting Dates:	ZOOM April 12, 2024	Erin Delventhal & Phil Simmons; Quartz in New Mexico
	ZOOM May 10, 2024	Christopher Stefano - Editor, The Mineralogical Record: TBA
	ZOOM June 14, 2024	Les Presmyk – TBA likely on Mexico minerals
	ZOOM July 12, 2024	TBA
Board Meeting	ZOOM April 14, 2024	ZOOM at 1:00 PM
Field Trip	MARCH 9, 2024	Cady Mountains, Ludlow, CA

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

The Ride Share Listing is being temporarily discontinued until such time as MSSC starts holding in-person meetings again.

OTHER FREE THINGS TO DO...by Ann Meister

The **Watson Lecture** is on Wednesday, **March 13** at 7:30 PM at Caltech's Beckman Auditorium. The speaker is Diana K. Buchwald, director and general editor of The Einstein Papers Project and Professor of History, Caltech. The title is "**Einstein in Pasadena: Between Two Worlds.**" For months prior to Albert Einstein's arrival in California on December 31, 1930, newspapers across the United States and Europe reported breathlessly on his upcoming visit to Caltech: "Noted Guest Is Nearing Pasadena. Hundreds of Flower-Laden Schoolgirls and Boys' Choir to Greet Scientist on Arrival Today. Privacy Guarded While in City. Mathematical Wizard to Meet Theory Testers." At the time, the young science-and-engineering institute was already notable for its accomplished faculty and its association with the Mount Wilson Observatory. Nonetheless, the voyage from Berlin to Pasadena meant a monthlong journey, spanning 8,000 miles by ship through the Panama Canal. How and why did the then 51-year-old Einstein decide to make the visit? The Einstein Papers Project at Caltech is delving into Einstein's massive written legacy of more than 500,000 pages that contain his correspondence,

notebooks, diaries, lectures, calculations, speeches, and interviews. The project's ongoing work—one of the most ambitious scholarly publishing ventures in science—aims to present the first complete picture of Einstein's writings in a printed series, *The Collected Papers of Albert Einstein*. Sixteen volumes have been published to date. In this talk, Diana K. Buchwald, director and general editor of The Einstein Papers Project and Caltech's Robert M. Abbey Professor of History, will share recent insights into Einstein's scientific work and private life during the late 1920s and the early 1930s, when the physicist visited Caltech for three winters in the California sunshine. *Find more past Watson Lectures on [Caltech's YouTube channel](#).*

The **UCLA Meteorite Gallery** is open. Check the website for hours. The monthly lecture will be presented via Zoom on Sunday, **March 17** at 2:30 PM. The speaker and the title are not yet available. To join via Zoom, click [here](#). If clicking the link does not work, please open your zoom app and enter the meeting ID: 983 0252 9304. Then click "join meeting in progress" (there is no password). If you need further instructions on how to join our meeting via Zoom, click [here](#) or contact Kevin McKeegan at mckeegan@epss.ucla.edu. This meeting is only accessible through the desktop and mobile client. Visit the website and check on events and videos and other neat things about meteorites, go to <https://meteorites.ucla.edu>

The **Von Kármán Lecture** is on Thursday, **March 21** at 5:00 PM. Available live on YouTube at [NASA Jet Propulsion Laboratory - YouTube](#). The speakers are Dr. Havard F. Grip, Aerodynamics, Flight Control Lead, and Chief Pilot (Flights 1-37), and Dr. Martin Cacan, Guidance and Control Analyst, Pilot (Flights 15-37), Guidance Navigation, Control Lead, and Chief Pilot (Flights 38-720, both NASA/JPL. The title is “**The Mavericks of INGENUITY: How NASA Extended the Mission of the First Mars Helicopter.**” The Ingenuity Helicopter first took to the Martian skies on April 19, 2021, proving for the first time that powered, controlled flight was possible on another world. Designed as a technology demonstration that would perform up to five experimental test flights over a span of 30 days, the Mars helicopter surpassed expectations – repeatedly – only recently completing its mission after having logged an incredible 72 flights over nearly three years. Join us for a live talk in which, through the framework of its pilots’ “Favorite Flights,” we’ll learn how Ingenuity’s team used resourcefulness and creativity to move beyond the helicopter’s initial mission, transforming the rotorcraft from a successful tech demo into an invaluable scientific scouting tool for the Perseverance Rover, and how Ingenuity opens a world of possibilities for future exploration. Check website for information and past lectures [Lecture Series \(nasa.gov\)](#).

Calendar of Events:

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

2024

March 2-3, 2024 – Ventura, CA

Ventura Gem & Mineral Society
Ventura Co. Fairgrounds,
10 W. Harbor Blvd., Ventura CA
Hours: Sat 10 AM – 5 PM, Sun 10 AM-4PM
Website: <http://www.vgms.org>

March 8-10, 2024 – Victorville, CA (Stoddard Wells area)

Victor Valley Gem and Mineral Club
48th Annual Stoddard Wells Tailgate. Take I-15 toward Barstow EXIT #157 stay on Stoddard Wells Road. Follow the signs 7 miles to Tailgate. GPS 34.671852347,-117-117133037
Hours: 9 AM – 5 PM daily
Website: <http://vvgmc.org>

March 17, 2024 – Fallbrook, CA

Fallbrook Gem and Mineral Society
123 West Alvarado St., Ste B, Fallbrook, CA 92028
Hours: 12 Noon – 3 PM
Website: <http://www.fgms.org>

March 16-17, 2024 – Lemoore, CA

Lemoore Gem & Mineral Society
Trinity Hall, 470 Champion St., Lemoore, CA 93245
Hours: Sat 10 AM – 6 PM, Sun 10 AM – 4 PM

March 22-24, 2024 – Clovis, CA

Fresno Gem and Mineral Society
748 Rodeo Dr., Clovis, CA 93612
Hours: Fri & Sat 10 AM – 5 PM, Sun 10 AM – 4 PM
Website: <https://fgms.rocks/>

April 6-7, 2024 – Vista, CA
 Vista Gem and Mineral Society
 Antique Gas and Steam Engine Museum, 2040 N.
 Santa Fe Ave., Vista, CA 92083
 Hours: Sat 10 AM – 5 PM, Sun 10 AM – 4 PM
 Website: <https://vistarocks.org/>

April 13, 2024 – Lake Elsinore, CA
 Lake Elsinore Gem & Mineral Society
 32097 Corydon Road, Lake Elsinore, CA 92530
 Hours: Saturday 10 AM – 4 PM
 Contact: (909) 208-6956, berylman50@aol.com

April 20-21, 2024 – Thousand Oaks, CA
 Conejo Gem & Mineral Club
 Borchard Park, 190 N. Reino Road,
 Thousand Oaks, CA
 Hours: Sat 10 AM – 5 PM, Sun 10 AM – 4 PM
 FREE Admission and FREE Parking
 Website: <https://cgamc.org/home>

April 27 – 28, 2024 – Anaheim, CA
 Searchers Gem and Mineral Society
 Brookhurst Community Center, 2271 W. Crescent
 Ave., Anaheim, CA 92801
 Hours: Saturday 10 AM – 5 PM, Sunday 10 AM –
 4:30 PM
 Website: <https://www.searchersrocks.org>

May 3-4, 2024 – Yucaipa, CA
 Yucaipa Valley Gem & Mineral Society
 Show will be held on Yucaipa Blvd near Adams
 Street, Yucaipa CA 92399
 Hours: Friday 5 PM – 10 PM, Saturday noon – 9 PM
 Website: <https://www.yvgms.org/>

May 4-5, 2024 – Lancaster
 Antelope Valley Gem & Mineral Club
 2551 W Ave. H, Lancaster, CA 93536
 Hours: Sat 10 AM – 5 PM, Sun 10 AM – 4 PM

With Knowledge Comes Appreciation

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	
<p>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 13781 Alderwood Lane, #22-J, Seal Beach, CA 90740</p>			

Mineral Vocabulary

(Descriptions are as defined in Manual of Mineralogy, 15th edition, by: Dana & Hurlbut; published in 1941)

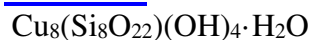


irocks.com photo

Botryoidal

But, when the globular forms are in groups, the specimen is described as botryoidal, which is derived from the Greek for a “bunch of grapes.”

Plancheite :



Locality: [Kambove District, Katanga Copper Crescent, Katanga \(Shaba\), Democratic Republic of Congo \(Zaire\)](#)

10.9 x 7.2 x 6.9 cm

2024 MSSC Officers:

OFFICERS		
President	Angie Guzman	president@mineralsocal.org
Vice President	Vacant: to be filled at Jan Board Meeting	vicepresident@mineralsocal.org
Secretary	Leslie Ogg	secretary@mineralsocal.org
Treasurer	Carolyn Seitz	treasurer@mineralsocal.org
CFMS Director	Angie Guzman	
Past President	George Rossman	
DIRECTORS		
2023--2024	Simona Cianciulli	
2023--2024	David Lesperance	
2023--2024	Pat Stevens	
2024-2025	Pat Caplette	
2024-2025	Ahni Dodge	
COMMITTEE CHAIRS		
Bulletin Editor	Linda Elsna	bulletin@mineralsocal.org
Field Trip	Marek Chorazewicz	
Historian	Ann Meister	
Hospitality	Laura Davis	
Membership	Carolyn Seitz	membership@mineralsocal.org
Micro Mount Conf. Chair	Al Wilkins	
Program and Education	Rudy Lopez	programs@mineralsocal.org
Speaker Bureau	Carolyn Seitz	treasurer@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. We are a scientific non-profit organization that actively supports those endeavors through public outreach, field study and related programs. 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. However, due to current health considerations, MSSC meetings are held via ZOOM conferencing until further notice. 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 Fallbrook Mineral Museum during the last weekend of January.

Annual Membership dues for the MSSC are \$30.00 for an individual membership, \$40.00 for a family membership. Bulletins are delivered by email, there is an additional annual fee if you prefer paper bulletins mailed to your address. The Society's contact information:

Mineralogical Society of Southern California

13781 Alderwood Lane, #22-J, Seal Beach, CA 90740

E-mail: treasurer@mineralsocal.org

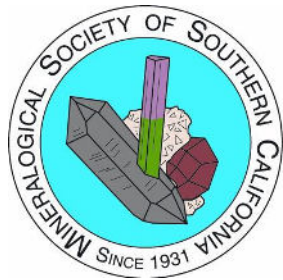
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MSSC Bulletin Editor
3630 Encinal Ave.
Glendale, CA 91214-2415

To:



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Here!**