

Bulletin of the Mineralogical Society of Southern California

Volume 96 Number 9 –September, 2023

The 1,017th meeting of the Mineralogical Society of Southern California

With Knowledge Comes Appreciation

A ZOOM Meeting

September 8, 2023 at 7:30 P.M.

Program: "The Famous Silver Mines of Kongsberg, Sweden"
Presented by **Nathalie Brandes**

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About the Program: "The Famous Silver Mines of Kongsberg, Sweden"

Presented by Nathalie Brandes

In the summer of 1623, the children of two farmers were tending livestock in rural Norway when they discovered silver-bearing rocks. Later that year, the Silver Works at Kongsberg were established and for the next 335 years were an important part of Norway's economy and for much of that time was the largest mining operation in the country. Kongsberg is best known for spectacular specimens of wire silver that were once used as diplomatic gifts from the king to other dignitaries. This lecture will include information about the geology of the silver ore deposit, the history of mining, and lots of examples of the beautiful minerals of Kongsberg.



Nathalie Brandes grew up studying geology from a very early age, traveling around the world with her geologist father. She earned her BS and MS in geology at the New Mexico Institute of Mining and Technology (New Mexico Tech). While in New Mexico, her research focused on the Rio Grande Rift. After working at the New Mexico Bureau of Geology and Mineral Resources, she pursued her doctoral studies at Michigan Technological University. Her teaching career began at Michigan Tech, where she taught various geology courses, including the Teachers' Earth Science Institute, which was a special teacher education program funded by the National Science Foundation that utilized mineral science and mineral processing to enhance the teaching of science in middle and high schools. For her efforts in making this program a success, Nathalie was presented a Distinguished Service Award. She was a Visiting Associate Lecturer at the University of Wisconsin-Eau Claire, Geology Instructor and Graduate Studies Director for the College of Science at the University of Nevada-Las Vegas, before accepting a position as Professor of Geosciences at Lonestar College-Montgomery, a community college in Texas, where she has been teaching for the past eighteen years. In 2019, she was presented the Faculty Excellence Award in recognition of outstanding teaching methods and dedication to student success in the classroom and beyond.

Nathalie's current research focuses on ancient mining techniques as well as the history and geology of classic mineral localities. She frequently presents the results of this research at the New Mexico Mineral Symposium in Socorro, New Mexico and occasionally writes short articles. She has won writing awards from the American Federation of Mineral Societies and South Central Federation of Mineral Societies for the articles "A goat named Kåre and a millennium of mining at Falu Gruve, Sweden", "Legendary Leadville, Colorado", and "The Famous Silver Mines of Kongsberg, Norway".

Nathalie is a member of the Management Team for Mindat.org, as well as on the Board of Directors for the Hudson Institute of Mineralogy. She is an active member of the Geological Society of America, the Geological Association of Canada, the British Micromount Society, the New Mexico Geological Society, The Russell Society, and the Society for Mining, Metallurgy, and Exploration.

Her hobbies include travel, reading, and writing; her latest book, *New Mexico Rocks, A Guide to Geologic Sites in The Land of Enchantment*, was published in October 2021.

How to Join our ZOOM Meetings by Rudy Lopez

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, Rudy Lopez 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 will allow time to get everything organized.

From the Editor: Linda Elsnau.

Welcom to September. Happy Labor Day! School starts and we can look forward to another interesting program at this month's ZOOM meeting. It also looks like we are in need of a nearly full slate of officers for 2024. Besides the list in our President's message below, we will also need a new Program Chair as Rudy has also stated a wish to move on after over 10 of these duties. Please consider filling in any of these positions where you can. MSSC cannot survive without your help.

From Our President, Angie Guzman

ELECTIONS

Next month, during our October 13, 2023, Membership Meeting in accordance with our *By Laws and Operating Rules and Regulations**, nominations will be declared open for the Officer (5) positions and Director (2) seats. Then, during the November 10, 2023, Membership Meeting, nominations will again be opened for those positions. Once all nominations have been accepted, the chair will close the nominations and the elections will be conducted. Election positions are:

- President • Vice President • Treasurer • Secretary
- CFMS Director • Director #1 (2024-2025) • Director #2 (2024-2025)

We need your participation and support to administer our society going forward. You are most welcome to serve on the board. Please consider giving back to MSSC by self-nomination or asking someone to nominate you for one of these positions. There is one criterion: you must be a MSSC member in good standing.

I invite you to contact me if you have any questions: president@mineralsocal.org

Article III, Sections 3 Nomination and Election

Nominations for Officers and Directors shall be made at the October and November meetings. Officers shall be elected by majority vote of a quorum of the membership at the regular November meeting.

PICNIC

MSSC's picnic was on August 26th at Tournament Park. The Ad Hoc Picnic Committee did a great job of putting things together. The team held meetings, investigated sites, and came up with a plan. Nice work! Kudos and many thanks to the Ad Hoc Picnic Committee: Cheryl Lopez, Rudy Lopez, Simona Cianciulli and David Lesperance. Also, thanks to Treasurer Carolyn Seitz, Secretary Leslie Ogg, and yours truly for peripheral support. Aside from the food and beverages, their plan included raffle items, MSSC merchandise sales, our primary fundraiser: the Silent Auction and, there were grab bags for the children. At the time of this writing, the Picnic is still a week or so away, but I think it is already a success!

If you would like to help plan and coordinate the August 2024 Potluck Picnic, please contact any Board Member for assistance or direction. We'd love to have you help plan MSSC's annual fundraising event. Thanks!

TIME MARCHES ON

The end of summer is drawing nigh. This year autumn begins with the Equinox on September 23rd. Autumn is a time for reaping harvests. No better reaping than that of a mineral harvest given to us by this good earth. Hope your harvest is plentiful! Enjoy these last days of summer...

CORUNDUM Ah, - aluminum oxide – what a gift!

The chemical formula of corundum's crystalline form is Al₂O₃, aluminum oxide. It contains traces of titanium, iron, vanadium, and chromium, usually. Corundum is a rock-forming mineral. It is a natural transparent mineral but may have different colors depending on impurities. It has a white streak. It fractures conchoidal to uneven.

Corundum's popular gem quality stones are *sapphire* and *ruby*. Most are worn as jewelry or are contained within a collection or are exhibited. Two exquisite examples of displayed sapphires are the Logan Sapphire and the Star of India. The blue cushion-cut brooch Logan Sapphire is 423-carat. It is housed in the National Museum of Natural History in Washington, D.C. Mined in Sri Lanka and it was determined in 1997 by the GIA that its color is natural, it had not been heat treated. The beautiful greyish-blue 6-point star sapphire, Star of India is 563.4-carat. It is housed in the American Museum of Natural History in Manhattan, NYC, New York. It, too, was mined in Sri Lanka.

Sapphire is the blue colored corundum, generally containing iron + titanium. Still, sapphires may occur in purple, green, yellow or (natural) colorless – having no inclusions. Interestingly, pink corundum is known as sapphire but is also referred to as ruby. Sapphire forms in certain igneous and metamorphic rocks and, it also occurs in sedimentary alluvial deposits. There are lots of chemical reactions in conjunction with light waves and other effects at play in determining the colors of sapphire.

As for value, the more natural the sapphire, the more is its value. Other value factors are hue, saturation, and tone. The more vivid the blue and brighter the crystal, the more the value of the gemstone. Other features include the facet cut of the stone, size of the stone and the location of where it was mined. For sapphires, Kashmir (Pakistan) produces highest quality sapphires and Myanmar (Burma), Sri Lanka and Madagascar produce good quality but in large quantity of the gem.

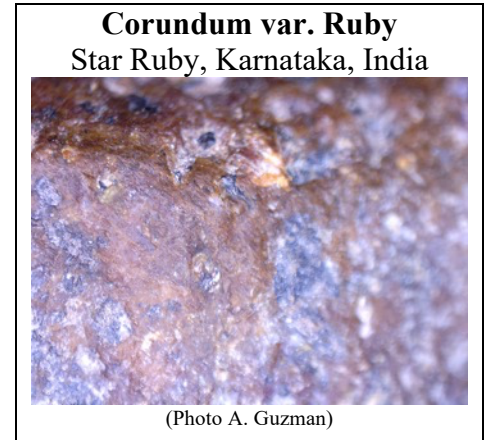
Ruby is the red corundum. Just the word “ruby” conjures tales of flying carpets, black silken pouches containing a handful or two of deep red rubies just waiting to be bought or traded. But, oh, that’s my romantic self. For the most part, the red color comes from the chromium inclusions but in its most natural form, the mineral is colorless.

Rubies occur in river gravels as well as being mined in Afghanistan, Australia, Brazil, Cambodia, Myanmar (Burma), Pakistan, Thailand, India, and several other countries. There are few rubies mined in the United States (only in Montana, No. and So. Carolina and Wyoming). In the mainland of Europe, the only country where natural occurring rubies are found, is the Republic of North Macedonia. These rubies have a unique raspberry color. Wow!

The brightest and most valued ruby is the blood-red or so-called pigeon red ruby. It commands the highest premium over other rubies of less intense color. Factors for value include size, cut, clarity and carat.

Cardinal Gems: Ruby (red) has traditionally been referred to as one of the Cardinal Gems along with amethyst (purple), diamond (transparent), emerald (green) and sapphire (blue). Mostly though, the term “Cardinal Gem” has fallen out of favor these days. As a matter of fact, amethyst *had been* quite precious prior to the discovery of huge deposits of it found in Brazil and other South American countries relatively recently.

As with sapphire, rubies have a hardness of 9.0 on the Mohs scale. They’re durable, hardy gemstones. They are highly sought after gems for jewelry, display, and collections. Some rubies show 3-point or 6-point stars, same as sapphires. Rubies with the highest clarity are known as “eye-clean” because their inclusions



(Photo A. Guzman)



(Photo: Angie Guzman)

are barely visible to the naked eye. Spinel, $MgAl_2O_4$, is sometimes mistaken as ruby. In fact, the Black Prince's Ruby in the British Imperial State Crown, is actually spinel.

Rubies and sapphires, and many other gemstones, are synthetically produced. Of course, natural gemstones are preferred. But, unless you're an expert jeweler, gemologist or mineralogist, it's difficult to tell the difference – “buyer beware”.

A few years ago, I visited the Gem Hall at the Natural History Museum of Los Angeles County. I had the opportunity to shoot this photo with my iPhone. Keep in mind, I am not a professional photographer, and the photo is not “crystal” clear. Sapphires are in the foreground and rubies are in the background.

END

MINUTES of the August 11, 2023, ZOOM Meeting

Welcome President Angela Guzman called the meeting to order at 7:33 PM. She welcomed all to the 1,016th Meeting of the Mineralogical Society of Southern California. It is our 39th ZOOM meeting. There were 31 people present.

Guest: Two guests introduced themselves: The first was Will Moats from Bisbee Arizona, he's a friend of tonight's speaker. The second was Beth Heesacker from Oregon.

List of Minerals: Angie stated that as of July 2023, the IMA-CNMNC Master List of Minerals lists 5,955 valid minerals, including 1,153 pre- IMA minerals grandfathered and 97 questionable minerals. [Source: Pasero, et al. “The New IMA List of Minerals – A Work in Progress” (July 2023)]

President's Message

Nominations for Officers and Directors will be opened at the beginning of the October 2023 Membership meeting. Nominations will again be open at the November meeting. When all nominations are accepted/declined, the nominations will be closed. Immediately following the closure, we will conduct elections based on the nominations received. The 1-year term Officer positions will be: President, Vice President, Treasurer, Secretary and California Federation of Mineralogical Societies (CFMS) Director. There will be 2 positions for MSSC's Directors. They are 2-year terms (2024-2025). Kindly consider serving in MSSC's administration as an officer or director. We welcome you to the Board!

Business:

Minutes to approve: July 14, 2023, Membership Meeting Minutes as published in the August 2023 Bulletin. President Guzman asked for a motion to approve these minutes. The motion was made by Leslie Ogg and seconded by Carolyn Seitz. Angie asked for any corrections or additions, or any discussion. Hearing none, she called for the vote. The vote result is minutes approved by a show of hands.

Announcements

1. Field Trips (Marek): Brief recap of the August 6th field trip. Marek was not present, Angie read his recap of the field trip to Nevada Books and Minerals in Orange. The store is owned by Walt Lombardo. About 15 people attended. Angie said the store is a treasure trove of books, minerals, and fossils. David Lesperance described how you could hold expensive museum quality specimens in your hand while Walt explained the mineral assemblages.
2. Picnic (Cheryl): Report on our summer Pot-Luck Picnic, August 26th at Tournament Park at Caltech. Cheryl asked people to please sign up via the web site. Guests and kids are welcome. There will be a raffle, silent auction, grab bags for the kids, and plenty of food! Rudy will be smoking pulled pork and tri-tip. She reminded the picnic committee about the Zoom meeting on August 16 to finalize plans for the picnic.

3. Hats (Rudy): Report on MSSC ball caps. Rudy said his friend finished embroidering all the hats. He gave the club a great deal. The hats will be sold at the picnic for \$25 each with proceeds going to MSSC. You can also buy a hat and have it shipped (cost to ship \$7.00, if you pay by PayPal add an extra \$2.00 to cover the PayPal fee).
4. Other Announcements or Reports: Tony Kamph announced that the Museum of Natural History is looking for a new collections manager. Check out the Natural History Museum Careers section of their website to view specifics. <https://nhm.org/careers-our-museums>

Angie asked Miko to talk about the discovery of impacted glasses and breccia from West Java. He said he was sure it was impacted by a meteorite; the density of the sample was 8.2 g/ml., and it is magnetic. It's the first discovery of this type in Indonesia. He would like help in identifying the minerals. He will send a description and photographs to Rudy who will forward to the UCLA Meteorite Museum.

Program: Rudy Lopez introduced tonight's speaker, Mike Sanders, who will talk about collecting blue barite in Stoneham, Colorado.

Mike started by describing the location of the mine (Stoneham is in northeast Colorado) and giving a brief history of the mine. The area was first reported in 1892, it was probably noted by ranchers and travelers before then. First dug and collected by Coil and Reese, field collectors in 1953. They found a cavity full of crystals, there are no photos. Various other collectors worked the area for the next 50 years. Sanders digging started in 2001, and he was involved in later digs in 2008 and 2010. In 2008 Sanders took over the lease on the mine from his partner Frank Bendrick. They agreed to dig together.

Sanders then spent some time explaining the origin of the barite deposit. Starting in the late cretaceous (80-90 MYA), North America was split in two by the cretaceous interior seaway. By 75 MYA most of Colorado was covered by the shallow sea which was being filled by sediments eroded from the mountains to the west. This eventually formed the late cretaceous Pierre Shale. During the mid-Eocene (50 MYA) the Laramide orogeny started to form the Rocky Mountains. Next, during the Oligocene period (30-35 MYA) the Chadron formation, whose lower-most clay layer is the host for the barite crystals, was formed. Also, during this period there was much volcanic activity which led to silicious ash also being deposited along with the shale forming sediments. This combination gave rise to the barite crystals.

Mike gave credit to Professor Ron C. Blakey NAU Ret. for the graphics used in this explanation. The purpose of this explanation was to describe how they found the productive layer of clay that contained barite sandwiched between unproductive layers of clay.

Once they located the target layer in the field, they used a backhoe to dig into the layer in search of fault lines that contain the crystal pockets. He explained that the crystals grow in open pockets formed by reverse movement along a variably dipping fault. The fault changes from a steep dip to a shallower dip where the crystals are formed.

He showed a picture of beautiful fresh blue barite crystals in a pocket: laying loose, ready to be picked up. Mike showed pieces that they collected ranging from 3-5-inch-long crystals, some very clear. He described how the Pierre Shale layer is impervious to water, this makes clay and silt particles settle out of the water in the fault and form a layer of clay with poorly preserved barite crystals up against the shale layer.

Finally, he explained that after completion of all the digging operations, the excavation holes had to be filled in as part of the state required reclamation process.

After the lecture portion, Mike Sanders showed some of his crystals from the 2008 dig: a piece with barite on calcite, barite crystals on preserved, stabilized, clay matrix, and several large crystals.

Last Words:

- (a) Picnic-Angie thanked the Ad Hoc Picnic Committee (Cheryl and Rudy Lopez, Simona Cianciulli and David Lesperance, and Carolyn Seitz and Leslie Ogg) for their participation.

- (b) Our next Membership meeting is Friday, September 8, 2023. Guests are asked to contact Rudy Lopez to be put on the ZOOM invite list.
- (c) FYI, Treasurer Carolyn Seitz put on her training wheels and learned how to operate our ZOOM meeting platform. She will be the back-up platform coordinator to Vice President Cheryl Lopez, her trainer. Thanks to both Carolyn and Cheryl.

Adjournment: The president adjourned the meeting at 8:52 p. m.

Submitted by Leslie Ogg, MSSC Secretary

List of Upcoming MSSC Events : Mark your Calender!

Event	Date	Comments / Scheduled Program (if known)
Meeting Dates:	ZOOM October 13, 2023	Virgil Lueth TBA
	ZOOM November 10, 2023	Scott Braley: "Herkimer Diamonds and Collecting Radioactive Minerals"
	ZOOM December 8, 2023	Evan Jones: Wulfenite
	ZOOM January 12, 2024	Denise Nelson: TBA
Board Meeting	ZOOM October 1, 2023	ZOOM at 1:00 PM
Field Trip	TBA	

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.

MSSC Hats!

Get your MSSC Cap!

They are Gelante Baseball Caps 100% Cotton

Cost: \$25.00 per hat

They will be available at the MSSC Picnic or shipped by mail.

If you request your hat to be shipped to you, there will be an additional charge of \$7.00 per hat for mailing within the USA. *(Extra \$2 per transaction covers PayPal's fees)*

Please mail check or use PayPal to: MSSC

Carolyn Seitz
 MSSC
 13781 Alderwood Lane #22J
 Seal Beach, CA 90740-3993



NAME: _____

ADDRESS: _____

E-MAIL: _____

NUMBER OF HATS: _____

With Knowledge Comes Appreciation !

OTHER FREE THINGS TO DO...by Ann Meister

The **Watson Lecture Series at Caltech is on hiatus until the Fall semester**. Stay tuned until October! Find past Watson Lectures on [Caltech's YouTube channel](#).

The **Von Kármán Lecture** information for September is not available yet. See [Lecture Series \(nasa.gov\)](#) for program information. You can view past presentations of the livestream on YouTube at [NASA Jet Propulsion Laboratory - YouTube](#).

The **UCLA Meteorite Gallery** is open. Check the website for hours. The monthly lecture will be presented on Sunday, **September 16** at 2:30 PM. The speaker and title have not been announced. 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>

Calendar of Events:

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

September 16-17, 2023 – San Luis Obispo, CA
San Luis Obispo Gem and Mineral Club
San Luis Obispo Veteran's Memorial Building, 801
Grand Avenue, San Luis Obispo, CA 93401.
Admission: \$5, Children 12 and under Free.
Free parking.
Website: <http://slogem.org>

October 7-8, 2023 – Signal Hill, CA
Long Beach Mineral & Gem Society
Signal Hill Library, 1800 E. Hill Street,
Signal Hill, CA 90755
Hours: Sat 10 AM – 5 PM, Sun 10 AM – 4 PM
Website: <http://www.facebook.com/LBMGS>

October 8, 2023 – Fallbrook, CA
Fallbrook Gem and Mineral Society
123 W. Alvarado St. (show on street & in parking lot),
Fallbrook CA 92028
Hours: 9 AM – 4 PM
Website: <http://www.fgms.org>

October 21, 2023 – West Hills, CA
Woodland Hills Rock Chippers
First United Methodist Church, 22700 Sherman Way,
West Hills, CA 91307
Twenty Fourth Annual Gem Show
Hours: 10 AM – 5 PM
Website: www.rockchippers.org

October 28-29, 2023 – San Diego, CA
San Diego Mineral & Gem Society
Liberty Station Conference Center/
Point Loma Nazarene University,
2660 Lanir, San Diego, CA 92106
Hours: Sat 10 AM – 5 PM, Sun 10 AM – 4 PM
Website: <http://SDMG.org>

October 28-29, 2023 – Orange, CA
American Opal Society
Velvet Rose Event Center, 300 S. Flower St.,
Orange, CA 92868
Hours: Sat 10 AM – 6 PM, Sun 10 AM – 5 PM
Website: <http://opalsociety.org>

November 18-19, 2023 – Lakeside, CA
El Cajon Valley Rock Round Up!
El Cajon Valley Gem and Mineral Society
12584 Mapleview St., Lakeside, CA 92040
Hours: Sat 9 AM – 5 PM, Sun 9 AM – 4 PM
Website: <http://ecvgms.org>

December 2-3, 2023 – Barstow, CA
Mojave Desert Gem and Mineral Society
Cora Harper Community/Fitness Center
841 Barstow Road, Barstow, CA 92311
Hours: Saturday and Sunday 10 am – 5 pm
Website: <http://www.mdgms.net>

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>		

Mineralogical Vocabulary

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



irocks.com photo

When a mineral specimen consists of isolated, distinct crystals, it can be described as:

Bladed

Elongated crystals that are flattened like a knife.

Baryte

BaSO₄

Locality: [Clara Mine, Rankach valley, Oberwolfach, Wolfach, Black Forest, Baden-Württemberg, Germany](#)

6.4 x 4.8 x 3.0 cm



irocks.com photo

When a mineral specimen consists of isolated, distinct crystals, it can be described as:

Vermiform

Wormlike

Clinochlore

(Mg,Fe²⁺)₅Al(AlSi₃O₁₀)(OH)₈

Locality: [New Idria District, Diablo Range, San Benito Co., California, USA](#)

FOV appx 1mm



irocks.com photo

When a mineral specimen consists of a group of distinct crystals, it is described as:

Dendritic

Abrescent, in slender divergent branches, somewhat plantlike, made up of more or less distinct crystals.

Copper :

Cu

Locality: [Champion Mine, Painesdale, Houghton Co., Michigan, USA](#)

3.4 x 1.8 x 1.0 cm.

2023 MSSC Officers:

OFFICERS		
President	Angie Guzman	president@mineralsocal.org
Vice President	Cheryl Lopez	vicepresident@mineralsocal.org
Secretary	Leslie Ogg	secretary@mineralsocal.org
Treasurer	Carolyn Seitz	treasurer@mineralsocal.org
CFMS Director	Angie Guzman	
Past President	George Rossman	
DIRECTORS		
2022-2023	Pat Caplette	
2022-2023	Ahni Dodge	
2023--2024	Simona Cianciulli	
2023--2024	David Lesperance	
2023--2024	Pat Stevens	
COMMITTEE CHAIRS		
Bulletin Editor	Linda Elsnaue	bulletin@mineralsocal.org
Field Trip	Marek Chorazewicz	
Historian	Ann Meister	
Hospitality	Laura Davis	
Membership	Cheryl Lopez	membership@mineralsocal.org
Micro Mount Conf. Chairman	Al Wilkins	
Program and Education	Rudy Lopez	programs@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

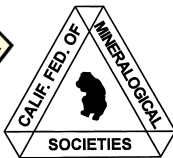
Website: www.mineralsocal.org **The Mineralogical Society of California, Inc.**

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Glendale, CA 91214-2415

To:



**With Knowledge Comes
Appreciation**

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Bulletin Is
Here!**