



Bulletin of the Mineralogical Society of Southern California

Volume 94 Number 3 - March, 2021

The 987th meeting of the Mineralogical Society of Southern California

With Knowledge Comes Appreciation

A ZOOM Meeting

March 12th, 2021 at 7:30 P.M.

Program : “New Insights Into The Structure And Formation Of Wire Silver And Gold.” Presented by: Dr. John Rakovan

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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: “New Insights Into The Structure And Formation Of Wire Silver And Gold.” Presented by: Dr. John Rakovan

Much more common in silver than in gold, the unusual morphology known as a “wire” can resemble the finest of threads to the strongest of ropes. Although they have adorned the shelves of mineral collections for centuries, very little has been known about wire specimens until recently. Are they single crystals or bundles of many fibrous crystals? How do they grow? Some have suggested extrusion. Answers to these questions and discovery of unexpected and yet unexplained compositions have resulted from our work. The study has included some of the finest known examples of wire silver and gold and has utilized some of the world’s most powerful scientific instruments. In this talk I will present the findings of our research and photographs of these spectacular and enigmatic specimens.



Dr. John Rakovan is a professor of mineralogy at Miami University in Oxford, Ohio. John has been a mineral collector for more than fifty years, and it was collecting that opened his eyes to the science of mineralogy. His current collecting interests are heavily influenced by his research and include apatite, layer silicates, and specimens with interesting mineralogical characteristics (i.e. twinning, epitaxy, etc.). John has broad research interests including crystal growth, structural and morphologic crystallography, mineral-water interface geochemistry, and mineral deposit formation. He has been an executive editor of and regular contributor to *Rocks & Minerals* magazine since 2001. John is a fellow of the Mineralogical Society of America (MSA), a recipient of the Carnegie Mineralogical Award, and is the eponym of the decavanadate mineral rakovanite.

How to Participate in MSSC ZOOM meetings:

Program Chair, Rudy Lopez, will send an email invitation each month to our ZOOM Invitation List.

If this is your first time to join our ZOOM meeting:

If you want to participate in our ZOOM meetings, please check out the information in the MSSC website/Bulletin www.mineralsocal.org, send an email to programs@mineralsocal.org by Tuesday, March 9th. Include “March ZOOM” in the Subject. Rudy will make sure you are contacted.

Effective March 21, 2021---SPECIAL ZOOM MEETING NOTICE

MSSC’s current ZOOM Invite list is over 80. We averaged 40 – 50 participants for the past 3 months.

Effective: March 21, 2021 we will delete our current ZOOM list.

If you want to continue participating in future MSSC ZOOM meetings you must send an email to Rudy Lopez at programs@mineralsocal.org. **Subject:** Please add me to the new ZOOM meeting’s invite list. Thank you, Rudy Lopez.

From the Editor:

What, I still have plenty of time to finish the March, 2020 Bulletin, it’s only the 27th...**of February!** Ouch, better get busy. (by the way, it’s Spinel) March sneaks up on me every year.

Looks like another excellent program this month and almost everyone renewed their membership, so looks like a good month so far.

I would like to take this time to again to thank everyone that provides articles for the Bulletin. It is you that keep it so interesting for everyone else. Anyone can submit an article to share. If you want to know more about how to do so, contact me at bulletin@mineralsocal.org and I will be happy to provide any help or information you need. Linda Elsnau

FROM THE PRESIDENT: Interesting Minerals, A to Z. Round 2, installment 12, the letter “L”: by George Rossman

Lawsonite $\text{CaAl}_2\text{Si}_2\text{O}_7(\text{OH})_2 \cdot \text{H}_2\text{O}$

Lawsonite is a California mineral first described from Reed Station located in the Tiburon Uplands nature Preserve in Marin County, on the Tiburon peninsula, just north of San Francisco. It was named for Andrew Cowper Lawson, who was first a geologist with the Canadian Geological Survey and then became a professor at the University of California, Berkeley, in the 1890's through the 1920's. Lawson was the person who identified and named the San Andreas Fault. The name was given by two of Lawson's graduate students, Charles Palache and Fredrick Ransome, both of mineralogical fame. The first paper describing the mineral appeared in 1895.

Ransome, F.L. (1895) On lawsonite, a new rock-forming mineral from the Tiburon Peninsula, Marin County. University of California, Department of Geological Science Bulletin: 1: 301-312.

It occurs typically in Marin County as pale blue crystals (**Figure 1**), or more commonly as veins (**Figures 2, 3**) and fragmented crystals (**Figure 4**).



Figure 1. Pale blue lawsonite crystals from Reed Station, Marin County, CA. Photo Credit: Kelly Nash, Wikipedia Commons



Figure 2. Lawsonite vein from the Tiburon Uplands Nature Preserve, Marin Co., CA. Photo Credit: Rob Lavinsky & iRocks.com



Figure 3 Typical lawsonite from Reed Station. Photo Credit: Mark Garcia



Figure 4. Typical Marin County lawsonite. Photo Credit: the RRUFF.info project

It is found in other localities in California.



Figure 5. Lawsonite from Porter Creek, Sonoma County, California.
Photo Credit: Mark Garcia



Figure 6. Lawsonite from near Kensington Park, El Cerritos Hills, Contra Costa County, California
Photo Credit: Mark Garcia

While most lawsonite is near colorless to pale blue with minor amounts of iron substituting for Ca and Al, there is a spectacular green chromium-bearing variety found in Greece (**Figure 7**). There is also a vanadium analogue of lawsonite, called cortessognoite, which is found at the Molinello Mine, Ne, Genoa, Liguria, Italy, $\text{CaV}_2(\text{Si}_2\text{O}_7)(\text{OH})_2 \cdot \text{H}_2\text{O}$. Cortessognoite was first recognized as a new mineral in 2014 and has yet to see full publication.



Figure 7. Dark green chromian lawsonite from Cape Marmari, Grammata Bay, Syros Island, Syros, South Aegean, Greece
Photo Credit: Rob Lavinsky & irocks.com

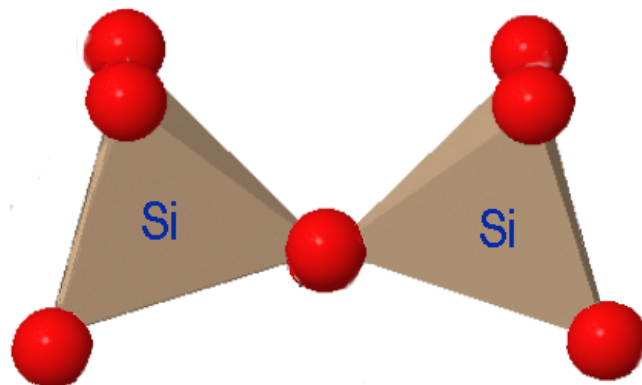


Figure 8. The Si_2O_7 group in lawsonite.

Structurally, lawsonite contains an Si_2O_7 group (**Figure 8**). Minerals with the Si_2O_7 group are known as sorosilicates. There are only a modest number of minerals with sorosilicate groups. They include:

Tilleyite	$\text{Ca}_5(\text{Si}_2\text{O}_7)(\text{CO}_3)_2$
Ericssonite	$\text{BaMn}^{2+}_2\text{Fe}^{3+}(\text{Si}_2\text{O}_7)\text{O}(\text{OH})$
Ilvaite	$\text{CaFe}^{3+}\text{Fe}^{2+}_2(\text{Si}_2\text{O}_7)\text{O}(\text{OH})$
Zoisite	$\text{Ca}_2\text{Al}_3[\text{Si}_2\text{O}_7][\text{SiO}_4]\text{O}(\text{OH})$

Lawsonite occurs in metamorphosed basalts in a type of rock known as glaucophane-lawsonite metabasalt. It occurs in such a rock in the North Berkeley Hills, California, along with pumpellyite.

Davis G A, Pabst A (1960) Lawsonite and pumpellyite in glaucophane schist, North Berkeley Hills, California with notes the on-x-ray crystallography of lawsonite. American Journal of Science 258, 689-704.

Lawsonite is also found in chlorite schist inclusions in serpentinite of Santa Clara province, Cuba.

Schiirmann, H. M. E., 1936, 'Lawsonite' aus Cuba: *Centralblatt für Mineralogie*, A, 245-251.

Lawsonite is a very widespread mineral and has attracted considerable interest because of its importance as a marker of moderate pressure (6-12 kb) and low temperature (300 - 400 °C) conditions in nature (Clarke et al., 2006). This mainly occurs along continental margins (subduction zones) such as those found in the Franciscan Formation in California at Reed Station, Tiburon Peninsula of Marin County, California; the Piedmont metamorphic rocks of Italy; and schists in New Zealand, New Caledonia, China, Japan and from various points in the circum-Pacific orogenic belt.

Lawsonite is a significant metamorphic mineral as it can be used as an index mineral for high pressure conditions. Lawsonite is known to form in high pressure, low temperature conditions, most commonly found in subduction zones where cold oceanic crust subducts down oceanic trenches into the mantle (Comodi et al., 1996)

Comodi P. and Zanazzi P. F. (1996) Effects of temperature and pressure on the structure of lawsonite, Piazza University, Perugia, Italy. *American Mineralogist* 81, 833-841.

Lawsonite is also an important water carrier in subducting oceanic crusts and is the primary hydrous phase in basalt at depths greater than ~ 80 km.

O'Bannon, Earl, III; Beavers, Christine M.; Kunz, Martin; Williams, Quentin

The high-pressure phase of lawsonite: A single crystal study of a key mantle hydrous phase. *Journal of Geophysical Research: Solid Earth* (2017), 122(8), 6294-6305.

During subduction, oxidized material is carried into the mantle and large amounts of water are released due to the breakdown of hydrous minerals including lawsonite.

Gerrits AR, Inglis EC, Dragovic B, Starr PG, Baxter EF, Burton KW (2019) Release of oxidizing fluids in subduction zones recorded by iron isotope zonation in garnet. *Nature Geoscience* 12, 1029-1033.

Even though it is an abundant hydrous mineral in oceanic crust, sediments, and metasomatic rocks at depths of ~45 to 300 km in most subduction zones, it is rarely preserved in the geological record because it commonly transforms to epidote and other minerals during prograde or retrograde metamorphism.

Whitney DL, Fornash KF, Kang P, Ghent ED, Martin L, Okay AI, Vitale Brovarone A (2020) Lawsonite composition and zoning as tracers of subduction processes: A global review. *Lithos* (2020), 370-371, 105636.

Normally we think of phase changes in minerals that occur because high temperatures or because of high pressures. Lawsonite, however, is a mineral that changes its structure at low temperatures. Below about 0 degrees C, lawsonite undergoes a structural change that is the result of rotation of both H₂O and OH groups. Below 155 K another symmetry change occurs because of additional shifts of the positions of the H atoms of the H₂O and OH groups.

Libowitzky E, Armbruster T (1995) Low-temperature phase transitions and the role of hydrogen bonds in lawsonite. *American Mineralogist* 80, 1277-1285

Libowitzky E, Rossman G R (1996) FTIR spectroscopy of lawsonite between 82 and 325 K. *American Mineralogist* 81, 1080-1091

Beyond its mineralogical and petrological interest, one application of lawsonite has been proposed. Natural lawsonite is deposited on glass to enhance the yield of dew water that can be collected from the glass by condensation at night. Lawsonite thin films serve as radiative cooling minerals for dew harvesting. They work because of the infrared emissivity of the mineral in the mid infrared region of the spectrum.

Benlattar M, Laatioui S, Oualim EM, Mazroui M, Mouhsen A, Harmouchi M (2017) Numerical modelling of lawsonite thin film as radiative cooling minerals for dew harvesting. *Results in Physics* 7, 1959-1964

I bet you hadn't thought of that!

MINUTES of the February 12, 2021 Meeting

At 7:33 p.m., the **986th Membership Meeting** of the Mineralogical Society of Southern California (MSSC) was called to order by President Dr. Rossman, Ph.D. It is MSSC's 9th ZOOM due to the ongoing Coronavirus (COVID-19) pandemic. We thank Caltech for their generous allowance in sharing their licensing with us.

Message from the Chair (Dr. Rossman):

Dr. Rossman welcomed one and all to the meeting. He reports that the International Mineralogical Association's (IMA) has approved 5,673. Three years ago when Dr. Rossman was elected President of MSSC, the IMA had approved 5,327. The 346 new minerals approved since then equate to approximately 115 per year. Tonight's speaker is probably responsible for most of those, but we'll wait for his presentation.

Regular Business (Dr. Rossman)

Minutes: Dr. Rossman called for a motion to approve the January 2021 Membership Meeting Minutes as published in the February 2021 *Bulletin*. George asked if there were any corrections or additions and hearing none, called for a motion. Angie Guzman made a motion to approve the stated minutes; the motion was seconded by Marek Chorazewicz and Laura Davis. A vote was called for the motion to approve the minutes and passed unanimously. Dr. Rossman declared the Minutes approved.

Announcements and Reports

Rudy Lopez: (1) remarked on the rock giveaway success (good turnout, even some kids) held January 16, 2021; (2) ZOOM meeting invitation list changes: The e-mail invite list will be cleared on March 23, 2021. If, however, you are already a MSSC member, you will automatically be put back on the e-mail invitation list for coming ZOOM meetings. For guests, kindly let Rudy know if you want to join the ZOOM invite list. Check our website or our newsletter, the *Bulletin*, for more information.

Other announcements:

Tucson Show - Past President, Ann Meister gives the update: This year, due to the coronavirus pandemic, the Tucson show has gone virtual. TheRock.show is on line but ends this weekend. The show's online site will open again on April 10th. Ann says many mineral organizations are involved including the National Museum of Scotland, the Tellus Museum of Georgia (which has a large mineral collection) and others. Ann has been manning MSSC's virtual booth at the event, handling questions and comments. *[Secy Note: Due to the coronavirus pandemic, clever mineral people led by Jolyon Ralph (Mindat), created TheRock.show for collectors and other people to enjoy the Tucson experience on-line, have opportunity to interact with others and even make purchases while adhering to imposed safety restrictions.]*

Acknowledgement – Vice President Ahni Dodge reports that Dr. George Rossman, Ph.D., Professor of Mineralogy and Planetary Sciences at Caltech and, President of Mineralogical Society of Southern California, has been awarded the prestigious Roebling Medal by the Mineralogical Society of America (MSA) for 2021. Ahni says: "This award is MSA's highest award. It recognizes scientific eminence as represented primarily by scientific publication of outstanding original research in mineralogy. Dr. Rossman is a pioneer in the field of mineral spectroscopy, a central tool for mineralogists for the past 50 years. Mineral spectroscopy yields information about the chemistry and features of minerals based on how they absorb light..." Congratulations, Dr. Rossman! Dr. Rossman thanked her and modestly says it was a collaborative effort by many people. He says he stands on the shoulders of many of those who made it possible. He comments that being listed next to Linus Pauling is nice. Dr. Rossman will be named a Life Fellow of the MSA and will receive a medal designed by sculptor Avarad T. Fairbanks and struck by Medallion Art Co.

Field Trips - no trips planned at this time.

Program

Program Chair Rudy Lopez introduced speaker, Dr. Anthony R. Kampf, Ph.D. Dr. Kampf earned his degree at the University of Illinois, Chicago. His mentor, Dr. Paul B Moore introduced Tony to the thrill of discovering and characterizing new minerals, using both classical and modern techniques. In 1976, Tony joined the Natural History Museum of Los Angeles County and in 1980 became Curator of Mineral Sciences there. He has seen

their mineral collection grow from about 20,000 to over 150,000 specimens during his 34-year career at the museum. Tony holds the title of Curator Emeritus since his retirement 10 years ago.

His research is principally in descriptive mineralogy, crystal chemistry and structural crystallography with focus on characterization of new or inadequately described minerals. He is the U.S. delegate to the Commission on New Mineral, Nomenclature and Classification of the International Mineralogical Association (IMA). Dr. Kampf is an honorary member of The Mineralogical Society of Southern California.

Dr. Kampf extends his heartfelt congratulations to Dr. Rossman for the Roebling Medal award, which is an acknowledgement for his life's work.

Dr. Kampf begins his presentation, The Journey from an Unknown to a New Mineral by giving a little history of minerals identified. For instance, from 1775-1955 there were 10 to 20 minerals identified per year, 1956-2000 30 to 50 per year were identified. Note: In 1959 there was no quality control so a commission was organized by IMA, Commission for New Minerals, Nomenclature and Classifications (CNMNC). Tony has served as U.S. Delegate since 2008. So, from 2001 to 2009 approximately 60 minerals per year were identified and 2010 to present, there are more than 100 per year. By the end of 2020, there were 5,651 minerals approved by IMA.

Dr. Kampf's career of identifying minerals shows that from 1974 to 2006, he identified 23 minerals, less than 1 per year. From 2007 to 2020, he identified 265 new minerals, that is more than 19 per year! Overall, Tony has 289 new minerals he's identified, more than anyone else. He also upgraded his equipment, rubbed shoulders with some pretty great mineral hunters and perfected his own techniques along the way.

What are the **steps** to mineral identification? First the mineral has to be discovered. A few of the "discoverers" are Joe Marty, Bob Housley, Al Wilkins and others. Next comes identifying it to confirm it's a new mineral. Then, characterize the mineral, give it a name, submit a proposal to CNMNC and finally after (IMA) approval, publish the mineral description. It all sounds easy enough.

What about the *discover* step? Where to look? Tony shows photos of the Tolbachik Volcano where a new fumarolic mineral was found on the Kamchatka Peninsula. In Chile at the Torrecillas Mine – 18 new minerals, many found by geologist Arturo Molina, have been discovered. Domestically, in Utah, Red Canyon Mining District's Blue Lizard mine is where 36 new minerals have been located. Caution, the Bureau of Land Management (BLM) has since closed the Blue Lizard, although many would love to see it reopened.

In Arizona, the Rowley Mine has wulfenite but interestingly bat minerals have been discovered, 8 of them! The shaft is down 125 feet, bats use the mine for bat things, and their guano interacts with minerals on the walls and ground to create new minerals. There's a biologic connection that wasn't considered before they were discovered. These are late-stage secondary minerals that are dark cubic black crystals or lighter green crystals named Rowleyite, the 2017 Mineral of the Year as designated by IMA!

And, in North Carolina, at the Redmond Mine, near the Great Smokey Mountains, there is a lead-zinc mine where 12 potentially new minerals have been discovered. They have yet to be described, however.

There is a sub-set to the *identification* step consisting of: (a) sight identity, (b) properties/chemical tests, (c) powder X-ray diffraction (very important), (d) energy dispersive analysis, (e) Raman spectroscopy (very useful) and (f) structure determination (important). Tony showed graphs, photos and Raman examples of gunterite and vanadate look-alikes, atom bonding models and other identifying methods.

Other steps of mineral identification include, *characteristics* of minerals including hardness on Mohs scale, luster, color, streak, gravity, cleavage, fracture and tenacity. To *name* a mineral could be easy, name it after yourself or the place where you found it, etc.

Submitting a proposal is a bit more complicated. There are several criteria to be included in a detailed, written proposal to the commission. They are (a) where the mineral comes from, (b) listing all properties of the mineral, (c) spectroscopy data, (d) chemical analysis, (e) powder X-ray data, (f) crystal morphology, (g) name of the mineral, (h) relationship and comparison to other minerals, (i) at least one type-specimen deposition (very important) and (j) Gladstone-Dale compatibility (used to tell how well things match). The proposal is comprehensive and is voted by the commission two times. Finally, your findings must be *published*.

Tony closed with a fond remembrance of Bob Reynolds (1943-2020). The mineral reynoldsite is named for him (from the Blue Bell Mine).

Dr. Kampf gave an informative presentation with beautiful specimen photographs, great graphs and fun field pictures. There were lots of questions (microscopes, mineral names, etc.) and good discussion in the Q&A segment that followed. Thank you, Tony!

Dr. Rossman thanked everyone for participating with the ZOOM meeting as arranged through Caltech's license.

The meeting adjourned at 9:00 p.m.

Submitted by Angie Guzman, MSSC Secretary

List of Upcoming MSSC Events : Mark your Calender!

Event	Date	Comments / Scheduled Program (if known)
Meeting Dates:	ZOOM April 9, 2021	Krista Sawchuk: Discovering the Deep Earth
	ZOOM May 14, 2021	Howard Heitner: The Tilly Foster Mine, A Classic Mineral Locality
	ZOOM June 11, 2021	Peter Goetz: - Beautiful Opal, Identification and Internet Opal
	ZOOM July 9, 2021	Eric Scerri: The Periodic Table: It's Story & its Significance
Board Meeting	April 25, 2021	Via ZOOM at 1:00 PM
Field Trip	TBA	No Field Trips Planned at this Time

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

MSSC Board Meeting Minutes January 17, 2021 via ZOOM

Call to Order and Roll Call

The MSSC Board meeting was called to order at 1:06 p.m. by President Dr. George Rossman. The following Officers, Directors and Committee Chairs were present: George Rossman, Ahni Dodge, Carolyn Seitz, Angela Guzman, Pat Caplette, Leslie Ogg, Rudy Lopez, Cheryl Lopez, Patrick Stevens, Bob Housley and Marek Chorazewicz. Al Wilkins may come in and Linda Elsnau may log on with voice. The following were excused: Ann Meister (working Tucson show) and Laura Davis.

Action Item (s)

Approval of the October 4, 2020 Board Meeting Minutes as posted in the November 2020 *Bulletin*: Dr. Rossman asked for any corrections or additions and seeing none, asked for a motion to approve the minutes as published. Motion made by Leslie Ogg and seconded by Ahni Dodge and voice vote was taken. **The motion to approve the Minutes passed.**

Reports, Items and Discussions

1) Comments and questions from the President (Dr. Rossman)

a. Discussion of ZOOM format for meetings: *Should we record and publish the meetings?* Pro = greater outreach Con = legal issues with copyright materials.

After discussion, the Board felt that we should NOT record and/or publish the ZOOM meetings. Dr. Rossman cited copyright violation law suit and other Board members brought up privacy issues.

b. *Should we start the meetings earlier* to better accommodate East Coast members and speakers?

Board discussion included: the number of members in CA vs other locations, changing hours of meetings by 1-2 hours earlier, speakers in other time zones and like issues. Suggestion and **[ACTION ITEM]**: Poll the membership at the next meeting. Cheryl Lopez will send out an e-mail blast poll for meeting time preference.

c. *Does or should MSSC contribute to Mindat.org?*

Board discussion result: no 2020 donation, most in favor of making donation. Treasurer will check into the books and report back. [Secy: MOTION after Item 5]

d. Backup for ZOOM host (currently Caltech license).

Board discussion included using others' licenses. Rudy did research to find \$20 per month. We need to consider an alternative to Caltech's generosity of ZOOM usage.

e. Ann Meister not at meeting today because she is manning MSSC's virtual gem show, Tucson.

Thanks, Ann!

2) Treasurer's Report (Carolyn Seitz)

a. Re dues payments: No info on PayPal. Venmo, owned by PayPal, is another option we could explore; Webmaster says we need business account to open PayPal for our society. Further discussion needed.

Carolyn gave a financial report and indicated expenses for this year include CFMS dues, Mindat, speaker fees and others; We don't have any liability at this time; Angie will get with Carolyn to discuss CFMS dues payment. Angie indicated she needs number of members from Membership Chair, Cheryl. The CFMS dues are \$2.00 plus \$5.00 insurance coverage; Bank account changes, no debit card only a deposit card. Covid-19 temporary bank closures causes problems for trying to make in-branch deposits.

Carolyn reported on speaker fees paid in 2020. Note: Heitner will be adjusted at his next presentation; Due to COVID-19 pandemic, our only source of income is membership dues. Silent Auctions have been greatly reduced.

Discussion followed including PMC coming under MSSC; Member Chair says we are still collecting dues for 2021 and we need to revisit this at the next Board meeting; Treasurer asked about investing in a CD.

Carolyn announced Elizabeth Moeller turning 98 January 25th. Greetings from individuals would be favorable to send.

Al Wilkins was having ZOOM transmission issues but wanted to know about Mindat donation in item 1. c (above). [Secy: MOTION after Item 5]

3) Pacific Micro Mineral Conference Report (Dr. Bob Housley)

Dr. Housley stated we cannot make plans for a 2021 conference until the pandemic is under control. Attendance is contingent upon travel, domestic and international, and it's not possible under COVID-19 conditions. No 2021 conference, possibly 2022, a week before Tucson. His comments were echoed by Al Wilkins.

4) Membership Chair Report (Cheryl Lopez)

Cheryl gave a breakdown of the membership, reported that the list will be updated due to deaths. February 20 is deadline to pay dues for 2021. Discussion of bank deposits, including sale proceeds of new MSSC patches.

5) Field Trips (Marek Chorazewicz)

No field trip planned for the immediate future. If anyone has a place they would like Marek to check or if any suggestions, please let him know. There was discussion about Felix Mine, a location difficult to reach due to overgrowth.

Miscellaneous discussions: Unsolicited e-mails. Cheryl will contact the business to inquire; suggestion to put disclaimer on Roster and/or website; Ahni received an e-mail from Al Wilkins about Mindat donation. Marek comments that, as a member of Friends of Mineralogy they are donating to Mindat. Discussions resulted in (1) **MOTION to donate \$250 to Mindat for 2021** made by Ahni Dodge and seconded by Patrick Stevens. The vote was taken and the motion passed; (2) **[ACTION ITEM]:** Ahni will contact Dr. Martha House, Geology Dean at PCC, to inquire about the Carter scholarship fund and Dana Club donation then Ahni will report back to the Board.

6) Federation Director Report (Angie Guzman)

CFMS Director's report of the ZOOM November 14, 2020 meeting including member fees and Change of Officer Form; National Regional Show in Lodi meeting is still scheduled for June 2021.

8) Webmaster Report (Leslie Ogg) [taken out of order]

Leslie reports there are 495 "likes" on the Face Book media and most inquiries are from mobile devices versus desktop computers. Cheryl wanted to know how Leslie would like to be notified of new members. Leslie reports the "For Members Only" will be taken down for now.

Miscellaneous discussion: Dr. Rossman states that ZOOM e-mail list shows 80% of invitees never come back for a 2nd time. Suggestion; create a new list for 2021- publish notice in the MSSC *Bulletin*.

[ACTION ITEM]: Rudy will send an e-mail and request Linda to publish notice in the *Bulletin*; he will administer the list.

7) Program Chair Report (Rudy Lopez)

Rudy reports that speakers are booked until January 2022. Rudy advises that he checked CFMS website to look at speaker fees but they have been removed from the site and he contacted Marcia Goetz. Discussion regarding ZOOM speaker fees including location (i.e., time zone) of speaker, fees paid by other societies and PMC, etc. Board agrees to continue offering the current fee for speakers.

9) Bulletin Editor Report (comments from Linda Elsnau)

a) Haven't sent courtesy Bulletin since mid-summer (e-mail box full or not accepting); need updated list of names and e-mail addresses from the Board; was sending full Bulletin plus 1 page announcement to make easier for printing/posting share with others;

b) Number of mail requests: 6 snail-mail, 3 to members w/o e-mail and 3 to members that do have e-mail;

c) Other: Board agrees to purchase request for postage (100 first-class and 50 second-class stamps) seals, laser printer labels (Office Depot). Receipts will be sent to Treasurer for reimbursement.

10) Secretary's Remarks (Angie Guzman)

By-Laws and Operating Rules are in process of being reviewed and updated. Help will be appreciated. Patrick Stevens requested a copy of the By-Laws; he will read through them.

11) Other Business

Leslie received e-mail from Ann Meister who is manning the virtual MSSC "table" at the Tucson Show. Ann wanted to know if there is an info@mineralsocal.org to use as a platform for questions. Leslie said she will set one up and have all questions go to her; Leslie will filter to the Board member who can answer the question.

12) Next Board meeting will be held on Sunday, April 25th at 1:00 p.m. (via ZOOM). Dr. Rossman acknowledged Caltech for allowing MSSC to have this meeting under their ZOOM license. Thank you for attending.

Adjournment at 2:40 p.m.

Respectfully submitted Angie Guzman, MSSC Secretary

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	<i>Meetings canceled due to COVID</i>

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

The Watson is on Wednesday, **March 10**, at 5 PM Zoom online with a live audience Q&A at the end. At 8 PM the recorded lecture (without Q&A) will be posted on Caltech's YouTube channel

<https://www.youtube.com/user/caltech>. You must register in advance for Zoom at [Webinar Registration - Zoom](#).

The speaker is Kenneth A. Farley, Professor of Geochemistry at Caltech. The title of the presentation is, **"Perseverance on Mars."** After eight years of development at the Jet Propulsion Laboratory, the Perseverance rover was successfully launched on its journey to Mars on July 30, 2020. In this Watson Lecture, Farley will describe how this highly capable rover will investigate rocks deposited billions of years ago at the bottom of a large lake (long since disappeared), seeking evidence of possible Martian life at that time. He will also look at how the rocks carefully collected by Perseverance during these explorations will provide the cargo for the first-ever effort to bring samples back to Earth from another planet. The riskiest moments of the mission will occur on February 18, 2021, as the spacecraft penetrates the Martian atmosphere and deposits Perseverance on the surface. For online stuff at Caltech go to <http://events.caltech.edu/>

The **Von Kármán Lecture** on Thursday, **March 11** at 7:00 PM. The event is live on Ustream.

<http://www.ustream.tv/nasajpl2> Check online for changes and other viewing options at

https://www.jpl.nasa.gov/events/lectures_archive.php?year=2021&month=3. The speakers are Dr Farah Alibay, Systems Engineer, Mars 2020, NASA/JPL and Timothy Canham, Mars Helicopter Operations Lead, NASA/JPL. The title of the presentation is **"Helicopters in Space."** How do you fly a helicopter on Mars? It takes Ingenuity and Perseverance. During this technology demo, Farah Alibay and Tim Canham will get into the details of how these craft will manage this incredible task.

The **UCLA Meteorite Gallery** is temporarily closed until further notice, however the monthly lecture will be presented on Zoom on Sunday, **March 21** at 2:30 PM. **Zoom Registration:**

https://ucla.zoom.us/join/register/tJEduyupj0vGd3S0_52FsbHTbPjYr0sZQUj

If you need detailed instructions on [how to join a meeting](#) via Zoom please contact our Curatorial Assistant, Juliet Hook, at jahook@ucla.edu. Note: Registration is only needed once as this is a recurring meeting in Zoom. The speaker and topic will be announced on the website. Visit the website and check on events and videos and other neat things about meteorites, go to <https://meteorites.ucla.edu>

TheRock.show will be back on April 10 through April 18.

MSSC EMBROIDERED PATCH



We are selling MSSC embroidered patches.

The patches are 3"x 3".

If you want to purchase a patch and have it mailed to you.

The price is \$12.00

If interested please send a check to.

MSSC
1301 Leonard Ave.
Pasadena CA. 91107

Calendar of Events:

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

Due to COVID-19 many clubs have cancelled or changed their show dates. CFMS updates this list if clubs notify them. If you have any questions, please reach out to the contact listed to make sure the show is still taking place.

June 12-13, 2021 – Escondido CA

Palomar Gem and Mineral Club
340 N. Escondido Blvd., Escondido CA 92025
Saturday – 10 AM – 5 PM, Sunday 10 AM-4PM
Website: pgmcshow@palomargem.org

August 14-15, 2021 – Arcadia CA

Pasadena Lapidary Society
Arcadia Masonic Center, 50 W. Duarte Rd., Arcadia
Hours: 10-5 Daily
Website: pasadenalapidary.org

June 25, 26 & 27, 2021

CFMS 2021 Gem, Mineral & Jewelry Festival

Lodi Grape Festival & Fair

413 E. Lockeford Rd., Lodi CA

Adults: \$8, Children: Free

10AM-5PM Fri & Sat, 10AM-4PM Sun

www.cfmsinc.org rocksbob@sbcglogal.net

CANCELLED!

Time for a quick Mineral Quiz.

This mineral photo was featured in a “Mineral of the Month” article sometime during my time as Bulletin Editor. (2013 to present).

Who am I?

MgAl_2O_4

Locality: [Aldan Shield, Sakha Republic,](#)
[Eastern-Siberian Region, Russia](#)

5.5 cm x 5.3 cm x 3.9 cm

Since I've provided the formula as well as the location, many of you will know immediately what this mineral is. The rest of you may need to do some research to find its name.

The answer is in the “From the Editor” column. Don't peek...try to look it up first if you don't already know it.

Linda Elsnau, your Bulletin Editor



irocks.com photo

With Knowledge Comes Appreciation !

2021 MSSC Officers:

OFFICERS		
President	George Rossman	president@mineralsocal.org
Vice President	Ahni Dodge	vicepresident@mineralsocal.org
Secretary	Angie Guzman	secretary@mineralsocal.org
Treasurer	Carolyn Seitz	treasurer@mineralsocal.org
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Hospitality	Laura Davis	
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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 Fallbrook Mineral 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

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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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!***