



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

Volume 94 Number 6 - June, 2021

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*The meeting of the Mineralogical Society of Southern California*

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*With Knowledge Comes Appreciation*

*A ZOOM Meeting*

**June 11<sup>th</sup>, 2021 at 7:30 P.M.**

**Program : “Opal of Canada, and the Americas. Pete Goetz**

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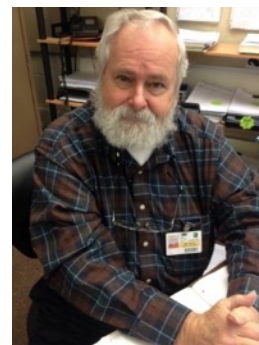
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**Remember:** If you change your email or street address, you must let the MSSC Editor and Membership Chair know or we cannot guarantee receipt of future Bulletins

## Program: “Opal of Canada, and the Americas.” Presented by Pete Goetz

Pete Goetz: Past President, American Opal Society Topic for June 11, 2021 will be, “Opal of Canada, and the Americas.” This will be a down and dirty presentation on non-Australian Opal. Geologic settings, mining, and characteristics.

Goetz has been president of the American Opal Society for over ten years. He graduated from San Diego State University after studying structural geomorphology or the processes and interactions that form landscapes. After a career in retail, he returned to his earth science passion and taught physical science, earth science and astronomy in the Anaheim School District for 22 years.



In his early years he actively collected rock and mineral samples, then focused his study on opals, turquoise and pearls. He enjoys researching, writing and speaking about opals as a way of sharing his knowledge and enthusiasm about the gem. Goetz will bring samples of opals from different sources including Australia and Peru.

## How to Join our ZOOM Meetings by Rudy Lopez

MSSC paid members will automatically be added to the invite list each month.

Non-Members must request to attend MSSC zoom meeting each month.

Please go to the MSSC website, <http://www.mineralsocal.org> to read our Bulletin for upcoming programs, then send Rudy Lopez an email, no later than the Tuesday before the meeting, to [programs@mineralsocal.org](mailto:programs@mineralsocal.org) and he will make sure you're contacted.

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## From the Editor:

I hope everyone had a good Memorial Day. A belated thanks to all who served.

June's program looks to be a good one. Don't miss it! By now, hopefully, everyone has had their vaccination and we can get back to something resembling normal life soon. Linda Elsna

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**FROM THE PRESIDENT: Interesting Minerals, Round 2, installment 15, the letter “O”:** by George Rossman

## Orthoclase

Orthoclase is a common member of the feldspar family of minerals. It has an ideal end member chemical formula of  $\text{KAlSi}_3\text{O}_8$ . It is found world-wide in granitic rocks and in pegmatites where large crystals can occur. Feldspars are the most abundant mineral group in the crust of planet Earth.

Although the mineral was known for thousands of years, the formal mineral species name was presented in 1801 by Rene Haüy who named it “orthose”, in recognition of its pronounced right angle cleavage (**Figure 1**), taking the species name from the Greek work, orthos, meaning “right”.

The name was changed to orthoclase (‘orthoclas’ in the original German language) in the 1820s by Breithaupt.



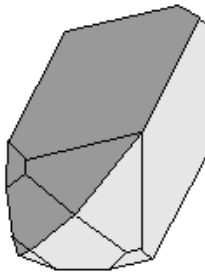





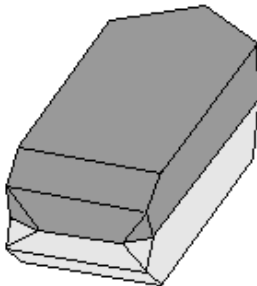
August Breithaupt (1826) Remerkung über das Geschlecht des Feldspath-Grammit's und Beschreibung des Oligoklases, einer neuen Spezies desselben. Annalen der Physik und Chemie, Berlin.

Feldspars, including orthoclase, are commonly twinned. There are a variety of twin laws, but three of the most common types of twinning are shown in **Figures 2-10**.



**Figure 1**, Orthoclase with perfect right angle cleavage.

Photo Credit: Geochaching.com

		 Twin Plane {021}
<b>Figure 2.</b> Orthoclase from Crystal Pass, Clark County, Nevada, with Baveno Twinning Photo credit: Mark Garcia	<b>Figure 3.</b> Orthoclase from Moridas, France, with Baveno Twinning Photo credit: Mark Garcia	<b>Figure 4.</b> The Braveno Law, with {021} as the twin plane. Image credit: Tulane University.
		
<b>Figure 5.</b> Orthoclase from Crystal Pass, Clark County, Nevada, with Carlsbad penetration twinning. Photo credit: Mark Garcia	<b>Figure 6.</b> Orthoclase from Roswell, New Mexico, with Carlsbad penetration twinning. Photo credit: Mark Garcia	<b>Figure 7.</b> Orthoclase from the Bullioin Mtns, San Bernardino Co., CA. with Carlsbad penetration twinning Photo credit: Mark Garcia
		
<b>Figure 8.</b> Orthoclase from Crystal Pass, Clark County, Nevada, with contact Manebach twinning. Photo credit: Mark Garcia	<b>Figure 9.</b> Orthoclase from Wolf Creek, Montana, with Manebach twinning. Photo credit: Mark Garcia	<b>Figure 10.</b> The Manebach twin law on {001} Image credit: Tulane University.

Two other common feldspar minerals share orthoclase's chemical formula:  $\text{KAlSi}_3\text{O}_8$ . They are sanidine and microcline.



Sanidine is a form of potassium feldspar that forms at high temperatures where the silicon and aluminum ions are disordered over the tetrahedral sites. More importantly, the feldspar has to cool rapidly to quench in the disorder of the aluminum and silicon. We find sanidine in volcanic rocks such as rhyolites. It crystallizes in the monoclinic crystal system. Because it forms at high temperatures where atoms are thermally disordered, it can also incorporate modest amounts of sodium replacing the potassium. If the feldspar would cool slowly, the sodium would exsolve into a perthite where individual layers of potassium-rich and sodium-rich feldspar would separate out. But sanidine cools so rapidly that this effectively does not happen.

Beautiful, pale-yellow, transparent crystals from the Itrongay region of Madagascar have been sold as orthoclase (**Figures 11,12**). They are also found in the gemstone market. In fact, what is sold as orthoclase from Fianarantsoa, Madagascar, is actually sanidine.

Some sanidine from Eifel, Germany, has a smoky color due to radiation damage (**Figure 13**). The color comes from the same origin as that of smoky quartz, namely radiation damage of the



**Figure 11.** Sanidine from the Itrongay region.  
Photo credit: iRocks.com



**Figure 12.** Sanidine from the Itrongay region.  
Photo credit: The Arkenstone, iRocks.com



**Figure 13.** Smoky sanidine from the Eifel Mountains, Germany.



**Figure 14.** Green orthoclase from Luc Yen, Vietnam.

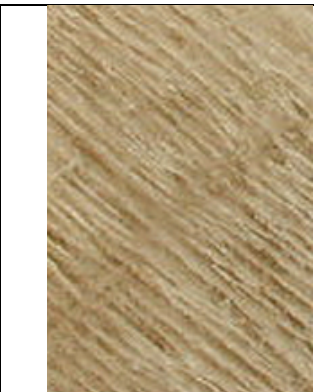
aluminum in the tetrahedral site. Orthoclase can also be green (**Figure 14**). In the early 2000s, such feldspar was mined from a pegmatite south of Luc Yen in Yen Bai Province, Vietnam. This colored variety is the orthoclase equivalent of blue amazonite feldspar which is microcline. Both are lead- and water-containing feldspars colored by exposure to natural background radiation. When the host feldspar is microcline, amazonite is blue, but when the host feldspar is orthoclase, it is green.

Microcline is the feldspar with the most ordered arrangement of aluminum and silicon in the tetrahedral sites. Because it cooled slowly --- very slowly --- the aluminum and silicon atoms had time to order in the tetrahedral sites, and the sodium content had time to exsolve as fine layers of sodium rich feldspar within the potassium feldspar. This texture is known as perthite (**Figure.15 16**).

I mentioned that feldspars can form large crystals in a pegmatite. How large? In the article by Peter Rickwood (1981) a feldspar crystal up to 162 feet long is reported. It was microcline when it was mined, but it may have started out as orthoclase when the pegmatite formed and slowly, over geologic time, aluminum and silicon atoms migrated to the more ordered arrangement in microcline.



**Figure 15.** Microcline from the Sespe Mine, Ramona, CA.  
Photo Credit: Mark Garcia.



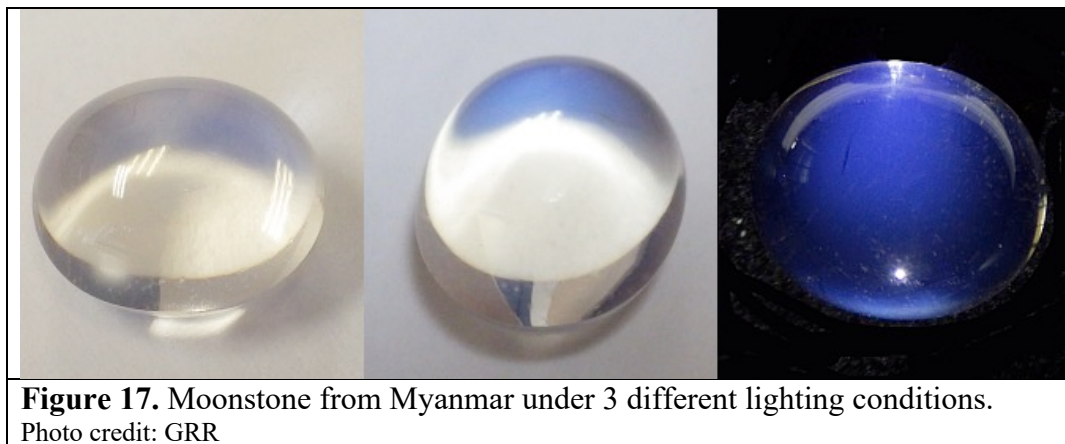
**Figure 16.** A close-up view of the perthite structure in Figure 15. The white layers are sodium-rich feldspar while the clearer layers are potassium-rich.

Rickwood PC (1981) The largest crystals. American Mineralogist 66, 885-907.

There is one more mineral with the chemical formula  $\text{KAlSi}_3\text{O}_8$ . It is kokchetavite, a comparatively unstable high pressure polymorph that was found as micrometer-sized inclusions in pyroxenes and garnets from the ultrahigh-pressure terrane, the Kokchetav Massif, in Kazakhstan. Normally, at high pressures potassium feldspar breaks down to other phases with different structures, but in the Kazakhstan occurrence, this new phase both formed and survived long enough to be collected and studied.

What is orthoclase used for? It is mined as a raw material for producing glasses and ceramics. Ground orthoclase, and other potassium feldspars, are used as an abrasive in scouring powders. The strongly abrasive ones use feldspar (Mohs hardness 6) and the more gentle ones commonly use ground calcite (Mohs hardness 3).

The stones used in jewelry, moonstones, (**Figure 17**) are mostly orthoclase with some micro-intergrowths of albite that cause the color effects.



A final word of warning: orthoclase may be less common than commonly believed. Many samples of what look like orthoclase may actually have transformed wholly or in part to microcline. After all, they have sat around for a hundred million years or so. Wouldn't you want to do something if you sat around that long?

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## **MSSC General Meeting Minutes (ZOOM) May 14, 2021**

At 7:34 p.m., the **989<sup>th</sup> Membership Meeting** of the Mineralogical Society of Southern California (MSSC) was called to order by President Dr. Rossman, Ph.D. It was MSSC's 12<sup>th</sup> ZOOM conference meeting. The Coronavirus (COVID-19) pandemic has not yet been declared over. 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 5,703 mineral species, 15 up from the end of January 2021. Additionally, **Dr. Anthony Kampf** was lead author for *protocaseyite*, a hydrated aluminum with vanadate mineral, an unusual mixture. It is found in the Burro Mine located in San Miguel County, Colorado. Last week, he **submitted his 300<sup>th</sup> new mineral to IMA**, more than any other person on the planet. Congratulations, Tony! Dr. Kampf is Curator Emeritus of Mineral Sciences at Museum of Natural History of Los Angeles County and, a member of MSSC.

### **Regular Business (Dr. Rossman)**

**Minutes:** Dr. Rossman called for a motion to approve the April 9, 2021 Membership Meeting Minutes as published in the May 2021 *Bulletin*. Dr. George asked if there were any corrections

or additions and hearing none, called for a motion to approve. A motion to approve the stated minutes was made by Ahni Dodge and seconded by Carolyn Seitz. The vote was called and **the motion to approve the minutes passed unanimously**. Dr. Rossman declared the Minutes approved.

### **Announcements and Reports**

Program/Education Chair Rudy Lopez (a) reiterated the procedure for the ZOOM invite list: MSSC members are automatically included on the list while non-members will need to contact Rudy to be placed on the list. Contact him at [programs@mineralsocal.org](mailto:programs@mineralsocal.org); (b) Rudy announced a [Bob Reynolds] display cabinet donation that is now on sale. Proceeds from the sale will go to MSSC for their discretionary use. Pat Stevens' bid was accepted for the cabinet. Congrats Pat!

Dr. Rossman reported for Marek on the recent field trip to Randsberg. Also, a field trip is planned for Topaz Mountain to collect topaz, red beryl (if you're luck to come across it) and other minerals. Date of the field trip is to be announced so check MSSC's Field Trip page on our website, [www.mineralsocal.org](http://www.mineralsocal.org) for information and reports.

### **Program**

Dr. Rossman turned the meeting over to Program Chair Rudy Lopez. Rudy introduced speaker, Dr. Howard Heitner. Howard has collected minerals for sixty years. Most of his collecting has been on the East Coast. He began to purchase old collections and became interested in the history of mineral collecting. Howard had been president of the Stamford Mineralogical Society for many years. He is a chemist specializing in water soluble polymers. He spent his career at Cytec Industries in New Jersey. Cytec is a resin, plastics and composite materials manufacturer for aerospace industry and other users of specialty materials. Post-retirement for Howard has been spent organizing and cataloging his collection. His presentation, "The Tilly Foster Mine, A Classic Mineral Locality" tells of iron mining and production in the-mid to late1800's.

Howard begins his presentation by showing the importance of steel in the 19<sup>th</sup> Century. A prime example, the Eiffel Tower, was constructed in 1887-1889 and was named for its engineer, Gustav Eiffel. Gustav showed off his demonstration project at the World's Fair in Paris, France. Eiffel used his own money for his structure. He put in an elevator and charged people to visit his monument. Today, it is the most recognizable structure and most paid visited monument in the world.

Heitner turns to take a brief look at the history of the Hudson Valley, for 100 years it was the center of iron mining and smelting in the United States. A lot of the iron foundries across Cold Spring (West Point foundry), up and down the river were very important, especially after the end of the Civil War. That period was known as the end of the days of wooden ships; the entire navy and merchant fleet was rebuilt in steel.

Just west of the village called Brewster in the state of New York is the Tilly Foster Mine. It was named after Mr. Tillingham Foster, a land owner. Primary minerals mined there were magnetite and chondrite. The ore was so desirable because it was low in phosphorus, sulfur and silica. Howard displayed a photo of an ore body that was dipped at steep angle, highly faulted.

When the Tilly Foster Mine opened in 1853, many of the miners were Irish and Italian. Howard reminds us that mining is strictly economics based on supply and demand.

He next showed several photos of drawings of the underground sections of the mine. These plan drawings reveal how the mine layout was diagramed including roof supports to help prevent cave-ins. However, in 1887 the mine was converted to open pit operation. It now became a huge hole in the ground. Records reveal that the rock removal ratio increased in 1888 and into 1889. The ore production was also increased. The conversion to open pit was featured in Scientific American, June 15, 1889 and showed that machinery and techniques used at the pit had steam driven compressors fed by air to pneumatic drills in the pit. The drills assisted in higher production of materials. Men and equipment were lowered into the pit by steel cables. In 1895, a terrible cave-in occurred and 13 men were killed. A list of those who died was published but because the Italian names were apparently hard to pronounce, those victims had been given numbers and their numbers were listed instead. A short while later, their names were published giving them their due respect.

So, how did mineralogists find the Tilly Foster Mine? Well, way back then, some students at Yale actually came across some of the ore on their visit to a smelter. They brought the ore back to the school. Dana, a prominent scientist at Yale, noticed the crystals! Heitner notes that in 1874, a publication, the “*First Dana Article*” *On Serpentine Pseudomorphs and Other Kinds from the Tilly Foster Iron Mine* mentions the mine. In fact, Howard tells us, the first mineral described by Dana was chondrite, and almost all ore from the Tilly Foster Mine has magnetite crystals.

At the Southeast Museum in Brewster, some of the Trainer Collection is housed. In the 1930’s and 1940’s Trainer collected a huge amount of minerals from the Tilly Foster Mine dumps. His collection is now owned by the New York State Museum, but the Southeast Museum still exhibits a lot of Trainer’s specimens. There are 50-60 different minerals. One of the more spectacular mineral specimens Trainer found in the dumps is a beautiful clinocllore, a WOW piece, for sure! How it survived in the dump is anyone’s guess. Another crystal exhibited at Southeast Museum is the rare titanite. Found in 1891, some of those mineral specimens were actually gem quality. By the way, the Silas Bronson Library collection had a low grade titanite in its exhibit.

Howard showed many photos from Yale Peabody Museum and the New York Museum of items extracted from the Tilly Foster Mine. The Peabody collection is probably the oldest collection. As for the Tilly Foster Mine, not so far back in the 1960’s there was hardly anything left of the old dumps, but people still go to comb through them to see if they can find their treasure.

For more information, check the November-December 2016 edition of The Mineral Record. It features “*Tilly Foster!*” an iron ore mine from the 19<sup>th</sup> Century.

Lively Q&A followed Heitner’s presentation. Thanks, Howard, for an interesting presentation, great photos and for staying up late (“...live from New York...”) to participate in MSSC’s ZOOM Membership Meeting! We appreciate it and hope you come back in the future to give another presentation.



If you missed Howard Heitner's presentation, you missed a wonderful one full of lots of photographs, insights and experience of the Tilly Foster Mine. Join us next time for another informative presentation with a great guest speaker.

There was no other society business. Dr. Rossman thanked Caltech for sharing their ZOOM license with us. ZOOM provides the platform for our membership meetings during this pandemic. Thanks to all who attended. Stay safe and be well!

Adjournment was at 8:32 p.m.

Respectfully submitted by Angie Guzman, MSSC Secretary

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

Event	Date	Comments / Scheduled Program (if known)
<b>Meeting Dates:</b>	<b>ZOOM</b> July 9, 2021	Eric Scerri: the Periodic Table: It's Story & It's Significance
	<b>ZOOM</b> August 13, 2021	Krista Sawchuk: Discovering the Deep Earth
	<b>ZOOM</b> September 10, 2021	Alan Rubin: The Origin of Chondrules
	<b>ZOOM</b> October 8, 2021	DR. Sarah Milkovich - MARS
<b>Board Meeting</b>	July 11, 2021	ZOOM
<b>Field Trip</b>	September 4-6, 2021	Topaz Mountain, Thomas Range, Utah

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

### Ride Share Listing

#### Can You Provide A Ride?

#### Would You Like Company On The Drive To Meetings?

We have heard from several of our members that they would like to ride-share with someone to the meetings. We will list the names, general location and either a phone number or an email address of anyone who would like to connect for a ride-share. If you would like to catch a ride or would like company for the trip, let me know at [msscbulletin@earthlink.net](mailto:msscbulletin@earthlink.net) and I'll put the information in this section of the bulletin. After that, any final arrangements 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		No meetings due to COVID-19

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### MSSC Board Meeting Minutes April 25, 2021 via ZOOM

#### Call to Order and Roll Call

The MSSC Board meeting was called to order at 1:07 p.m. by President Dr. George Rossman. The following Officers, Directors and Committee Chairs were present: George Rossman, Ahni Dodge, Carolyn Seitz, Angela Guzman, Ann Meister, Leslie Ogg, Rudy Lopez, Cheryl Lopez, Patrick Stevens, Bob Housley, Marek Chorazewicz and Al Wilkins. The following were excused: Linda Elsnau and Laura Davis.

#### Action Item

Approval of the January 17, 2021 Board Meeting Minutes as posted in the March 2021 *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 Pat Stevens and seconded by Carolyn Seitz. A voice vote was taken and the **motion to approve the Minutes passed.**

#### Reports, Items and Discussion



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

- a. This year's Sinkankas Symposium is live on-line now. This is the first time the symposium is live and free. Sign up now to "attend" free. The theme is agates.
- b. The Bulletin and website do not agree on Committee Members/Board of Directors. Leslie Ogg, our Webmaster, responded after a quick check and will make corrections to the site.

### 2) Treasurer's Report (Carolyn Seitz)

- a. Status of banking accounts: Treasurer reports that MSSC opened 3 accounts with Logix Federal Credit Union (LFCU): checking, savings and business MMA. The remaining funds at BofA will be transferred to Logix in order to close the BofA account. Carolyn's financial report included MSSC's current overall financial position.
- b. Permission to pay Board member's or Director's periodic small reimbursement requests: Requests for reimbursement, each under \$25, was discussed by the Board resulting in a **Motion** by Pat Stevens and seconded by Carolyn Seitz **to allow the Treasurer to reimburse amounts of \$25 and under without further Board approval**. The motion to approve **passed**. [Secy: Send applicable receipts to Treasurer for recordkeeping purposes.].
- c. Checks for honorariums: After discussion, the Board agreed that these checks do not need to be approved prior to issuance by the Treasurer, provided they are within the normal scope for approved speaker fees (via ZOOM, PMC, Banquet or Picnic);
- d. Duplicate payment to Heitner: Rudy Lopez, Program Chair, spoken with speaker regarding this matter and it has there is an equitable agreement. Also, Rudy will try to contact Karin Rice again in order to remit her outstanding fee;
- e. PayPal: Discussion regarding this form of payment included business bank account, non-profit status, transaction fees percentages, among others. Result, Carolyn will work with Leslie to see if this can be resolved either way. Angie Guzman said she would pitch in, as well.

Question by Bob Housley with discussion that followed results: BofA account is not closed yet, but Treasurer will check with the bank to expedite its closing.

### 3) Membership Chair Report (Cheryl Lopez)

- a. Report on how ZOOM increased our membership. Cheryl reports that MSSC membership increased to 103 members and she attributes the increase to (1) ZOOM meetings that attract new people and (2) Field Trips that now require participants to be MSSC members due to liability issues.

Discussion: Junior members and part year memberships: how are they handled by the California Federation of Mineralogical Societies (CFMS)? **Action item:** CFMS

Director, Angie Guzman, will check with CFMS on both issues and will report back to the Board.

- b. Change MSSC Membership Application Form to reflect whom and where to send payment. Discussion of proposed procedure: (1) Effective May 1, 2021, Membership Chair Cheryl will update the form and send it to be published in the *Bulletin* for the May 2021 edition; (2) Treasurer, upon receipt of the application form and dues, will process the fees and notify the Membership Chair of the new member's information for inclusion in next MSSC roster and membership tally and (3) The Membership Chair will send new member (s) a welcome letter, By-Laws, Operating Rules, membership card, etc., notify *Bulletin* Editor of new member in order to update that mailing database and lastly will notify the Program Chair to add the member to the ZOOM invite list. The Board agreed to 3.b. procedure herein.

### 4) ZOOM meeting considerations (Rudy Lopez)

- a. Rudy went over the procedure for the ZOOM invite list: if already a member, you are automatically on the invite list; if not a member, automatically off the list. If there is to be a guest, contact Rudy. George mentioned that 120-130 had been invited in the past but few appeared.

b. In the future when the pandemic limitations are lifted and it is safe to do so, should MSSC go back to PCC for in-person meetings? Board discussion included (i) is it possible to ZOOM meetings at PCC using *their* license?; (ii) ZOOM has reduced their fees; (iii) should we just continue on ZOOM exclusively and how? Discussion followed; (iv) **Action item:** Ahni will check with PCC about license, bandwidth, etc. provided the Board gives her prepared questions for PCC. **Action item:** Cheryl and Rudy Lopez volunteered to write up the questions, etc. to give to Ahni, and (v) there is no decision when PCC will open to regular full capacity and

c. Survey: should we start ZOOM earlier for those folks on East Coast or over-seas? Generally, there was no majority to change the time. Rudy reported that the speakers he spoke with are ok with keeping that time. The Board decided to keep the start time the same as it is now, 7:30 p.m. PST;

## **5) Pacific Micromineral Conference (PMC) (Al Wilkins)**

Al Wilkins says for optimal attendance, planning is important when we consider the next conference. Things to consider: (i) Fallbrook has just reopened. Al will check with Janice Bricker, Mike Evans or Mary Fong Walker; (ii) International speakers may not be able to attend but Al will check, put out feelers. When we do have the PMC, Al reminded us of the restrictions we *may* need to consider which include COVID-19 testing (negative for 72 hours prior to conference), social distancing (6'), most will have had their COVID shots and, as for masks by then people could wear them if they're not comfortable. Bottom line is postpone PMC in 2021 but possible for early 2022. Board discussion included a "Save the Date" e-mailer, Tucson show.

## **6) Review of donation to PCC (Ahni Dodge)**

Ahni reported that she contacted Dr House to find out how the MSSC donated funds were used by PCC. Apparently, the funds are put into an account and are sitting waiting for a decision by PCC as to how and where to disburse, i.e., Van Amringe Fund, Carter's Field Science Award, scholarship or possible other use(s).

Broader Board discussion included our recently approved donation to Mindat, future meetings at PCC, control or designation of future donations, need to consider out of town folks with regard to ZOOM and, if at PCC, must be ZOOM broadcasted as well. [*Straw vote of Board: back to PCC or ZOOM? ZOOM by majority*]. However, if we are able to ZOOM broadcast from PCC using their license, bandwidth, etc., it may work for us to resume meetings at PCC after restrictions from COVID pandemic are lifted. (Re: **Action Items 4. b)** herein)

## **7) Field Trip Planning (Marek Chorazewicz)**

Marek reported that he has been scouting areas for a suitable spot for a field trip in the Fall. Checked near Bishop where there are lots of materials in dumps but parking is not a good situation. A second site is near Lone Pine for amazonite and other goodies. The third location is Topaz Mountain and will be put on list for September, the Labor Day Weekend or the next weekend; there is amethyst, topaz (not big ones) minerals at this location.

## **8) Federation Director (Angie Guzman)**

Angie again says the CFMS show for June is cancelled due to COVID-19 pandemic. However, as of now, the Escondido show will be in June and Pasadena Lapidary's Show is scheduled for mid-August in Arcadia.

## **9) Program Chair Report (Rudy Lopez)**

Rudy reports that speakers are booked through February 2022 with March, April and May free but June is taken. Some new speakers on tap and some will return, such as Aaron Celestian (NHM). Dr Rossman suggested the Pacific Northwest society may have a list of speakers they may be willing to share. Rudy will follow up. Pat Stevens asked if Vandal King had contacted by or had he been contacted by us. No one had contacted him nor had he contacted us. Pat will follow up. Discussion re speaker time limits, if needed; Q&A is good for all. Ground rules will be reviewed at the "pre-meet" with the speaker.

## **10) Webmaster Report (Leslie Ogg)**

a) Domain renewal \$31.98 and WordPress program \$18.75 for total of \$50.73 needs to be reimbursed to Webmaster Ogg. Because each is presented separately, and item 2) b) above was approved, the Board agrees to the reimbursements provided the appropriate receipts go to Treasurer Seitz for recordkeeping;

b) Leslie reports that Facebook shows 561 followers and web traffic for last 3mos. (per Google) shows new visitors to Field Trip page got the most attention. New Email address, [info@mineralsocal.org](mailto:info@mineralsocal.org), also got a lot activity that Leslie forwarded to Marek, George and others. Leslie said she received an LA Times inquiry regarding an article about mineral sites, but that e-mail was lost or dropped.

Ann Meister had a request for “PMC” page of our website. The page shows “2021 Pacific Micromineral Conference”. Ann is suggesting “Pacific Micromineral Conference” for a cleaner look. She is placing an announcement in the Rock.Show Events section. Leslie will make the change.

c) Leslie announced that the MSSC website has been entered in the CFMS contest and she made a few changes based on their suggestions.

#### **11) Bulletin Editor Report (Linda Elsnau)**

No report at this time.

#### **12) Secretary’s Remarks (Angie Guzman)**

Angie will resume review of the By-Laws and Operating Rules now that her COVID-19 maladies are mostly behind her. Cheryl has offered to assist, when possible, and Pat Stevens is still available. Angie says most of the corrections are grammatical or Punctuation, plus the addition of language that had previously been approved (under Treasurer duties). Angie said she will get copies to Cheryl and Patrick soon.

#### **13) Other Business**

None.

**14) Next Board meeting** will be held on Sunday, July 11<sup>th</sup> at 1:00 p.m. (via ZOOM).

Dr. Rossman acknowledged Caltech for allowing MSSC to have this meeting under their ZOOM license.

Thank you all for attending.

**Adjournment at 2:39 p.m.**

Respectfully submitted by Angie Guzman, MSSC Secretary

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### **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!

The **Von Kármán Lecture** on Thursday, **June 17** at 7:00 PM. Available live on at [June 2021 - Oh, Jupiter! We Thought We Knew You \(nasa.gov\)](https://www.nasa.gov/feature/oh-jupiter-we-thought-we-knew-you) or NASA JPL Live. [NASA JPL Live \(ustream.tv\)](https://www.nasa.gov/feature/oh-jupiter-we-thought-we-knew-you). The speakers are Cynthia Phillips, Europa Project Staff Scientist, NASA/JPL and Steve Levin, Juno Project Scientist, NASA/JPL. The title of the presentation is **“Oh, Jupiter! We Thought We Knew You.”** Our knowledge of the Jupiter system has grown exponentially in the past few years however, the more we know, the more questions we have. We'll discuss how our theories have changed and what's next for Jupiter and Europa.

The **UCLA Meteorite Gallery** is temporarily closed until further notice; however the monthly lecture will be presented on Zoom on Sunday, **June 20** at 2:30 PM. The speaker is Samuel Courville, School of Earth and Space Exploration, Arizona State University. The title of the presentation is, **“Of Magnets and Meteorites: What magnetized meteorites tell us about the formation of asteroids and the Solar System.”** Like the magnets on your refrigerator, some meteorites are magnetic. These meteorites are known to have been magnetized in strong magnetic fields before they crashed down onto Earth’s surface. It is important to understand how meteorites become magnetized and what magnetized meteorites tell us about the history of the solar system. Iron meteorites and chondrites that have been magnetized likely acquired their magnetization on their parent asteroids. There are at least three ways that an asteroid could acquire magnetization, and each implies a different formation history for the asteroid: (1) An asteroid could generate its own internal magnetic field and magnetize itself. (2) An external magnetic field could magnetize an asteroid. (3) An asteroid could become magnetized by the accretion of previously magnetized grains. Each mechanism requires different asteroid formation times and different degrees of thermal evolution. Despite the presence of magnetic meteorites, no asteroids have been robustly confirmed to be magnetic. **Zoom Registration:**

[https://ucla.zoom.us/meeting/register/tJEqduyupj0vGd3S0\\_52FsbHTbPjYr0sZQUj](https://ucla.zoom.us/meeting/register/tJEqduyupj0vGd3S0_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](mailto:jahook@ucla.edu). Note: Registration is only needed once as this is a recurring meeting in Zoom. Visit the website and check on events and videos and other neat things about meteorites, go to <https://meteorites.ucla.edu>

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## Upcoming Fieldtrip Labor Day Weekend by Marek Chorazewicz

The first fieldtrip of the fall season will continue the old MSSC tradition to visit the Topaz Mountain area in Thomas Range, Utah on this year's Labor Day, September 4-6, 2021, weekend. If anybody hasn't heard about it yet for some unimaginable reason here is the Mindat link: <https://www.mindat.org/loc-14942.html>

The bad-weather fallback date would be the weekend after. The average temp for that time of the year is 87 deg in Delta, so watching for fluids and overheat is essential.

The area is 600+ miles and one time zone away from Pasadena, so I suggest leaving early on Fri and get there before sunset to set up camp. The RVs and sedans will make quite close to the entrance of The Cove, but to drive in a high clearance and 4WD is required.

We will camp out in The Cove and on Saturday walk up to the topaz areas on the western ride, some of the higher areas yield small red beryl too. The dumps on that side are picked over and a lot of topaz is sun-bleached, breaking up a lot of rhyolite is needed. There is a pseudobrookite area nearby too. We will do flashlight mineral collecting after dark, so bring your lights and enjoy the sparkle.

On Sunday we will go to an area on the way to the eastern ridge which gave up some fresher material when I scouted. Also if the heat allows a longer walk to the eastern ridge is an option too. On Monday morning we will drive out of the cove and visit some fluorite localities on Spur Mountain to the East. The mines there have small greenish, lavender, and purple crystals in vugs, some associated with cream-colored dolomite crystals.

There are some other well-known areas outside The Cove e.g. holfertite pit, bixbyite pit, durangite prospect, and Solar Wind claim. They are claimed presently and offered as fee locations -- \$40 per 4 hours/half day collecting. If anybody is interested I can provide the contact. I'm planning to visit at least one of the locations. By the way, we will not visit the Dugway geode beds north of Thomas Range, that would be your own post-trip.

The invitation is on the MSSC fieldtrips webpage too, including maps and some photos of the material. More detailed info will be posted later during the summer. If you plan to join this fieldtrip, follow the instructions at

<https://mineralsocal.org/fieldtrip-information-reports/topaz-mountain-ut-sept-2021/>

Hope to see you all there!

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<b>MSSC Advertisement Policy:</b>			
Mineral-related ads are allowable in the MSSC bulletin. Below is the price per month			
	Business Card	\$5.00	
	1/3 page	\$10.00	
	1/2 page	\$20.00	
	Full Page	\$35.00	
In addition, any advertiser who purchases 12 months of space in advance will receive a discount of 12 months for the price of 10 months. The copy for the ads should be mailed to the editor at <a href="mailto:bulletin@mineralsocal.org">bulletin@mineralsocal.org</a> and the payment should be sent to the <b>MSSC Treasurer 1855 Idlewood Road, Glendale, CA 91202</b>			



## Calendar of Events:

Only local 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](mailto:pgmcshow@palomargem.org)

### **June 25-27, 2021 Lodi, CA – Cancelled**

CFMS Annual Show and Conference

### **June 27, 2021 – Fallbrook, CA**

Fallbrook Gem and Mineral Society  
123 W. Alvarado St., Fallbrook CA 92028  
Time 12 Noon – 4 PM  
Email: [info@fgms.org](mailto:info@fgms.org)

### **July 10, 2021 – Bellflower, CA**

Delver's Gem and Mineral Society  
Holy Redeemer Lutheran Church, 14515 Blaine Ave., Bellflower, CA 90706  
Parking lot sale! 10AM – 4PM  
Website: [delversgemclub.wordpress.com](http://delversgemclub.wordpress.com)

### **August 14-15, 2021 – Arcadia CA**

Pasadena Lapidary Society  
"Inspiration Unearthed", 62nd Annual Tournament of Gems  
Arcadia Masonic Center, 50 W. Duarte Rd., Arcadia  
Hours: 10-5 Daily  
Website: [pasadenalapidary.org](http://pasadenalapidary.org)

### **September 4-5, 2021 – Reno, NV**

The Reno Gem & Mineral Society, Inc.  
Jackpot of Gems  
Reno Convention Center, 4390 S. Virginia St., Reno  
Saturday 10 AM-5 PM, Sunday 10 AM – 4 PM  
[www.renogms.org](http://www.renogms.org)

### **September 18-19, 2021 – Chico, CA**

Feather River Lapidary and Mineral Society  
Silver Dollar Fairgrounds, 2357 Fair St., Chico, CA 95928  
Saturday 9 AM – 5 PM, Sunday 9 AM – 4 PM  
Website: <http://featherriverrocks.org>

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*With Knowledge Comes Appreciation !*

**Quote from: Dana's Manual of Mineralogy (15<sup>th</sup> Edition) Cornelius S. Hurlburt, Author**

#### **Introduction, page vii**

*"A mineral may be defined as any naturally occurring chemical element or compound formed as a product of inorganic processes. This eliminates all artificial products of the laboratory as well as all natural products formed by organic agencies. The above definition is brief; and, though it embraces most of the substances considered as minerals in this book, it should be considerably expanded to be all inclusive.*

Minerals are the materials of which most of the rocks of the earth's crust consist and are, therefore, among the common objects of daily observation. The great majority of rocks are not made up of single minerals, but are more or less heterogeneous aggregates of several different species. A few rocks, like limestone and quartzite, consist of but one mineral in a more or less pure state. In addition to occurring as essential and integral parts of rocks, minerals are found distributed through them in a scattered way, or in veins and cavities."

## 2021 MSSC Officers:

<b>OFFICERS</b>		
President	George Rossman	<a href="mailto:president@mineralsocal.org">president@mineralsocal.org</a>
Vice President	Ahni Dodge	<a href="mailto:vicepresident@mineralsocal.org">vicepresident@mineralsocal.org</a>
Secretary	Angie Guzman	<a href="mailto:secretary@mineralsocal.org">secretary@mineralsocal.org</a>
Treasurer	Carolyn Seitz	<a href="mailto:treasurer@mineralsocal.org">treasurer@mineralsocal.org</a>
CFMS Director	Angie Guzman	
Past President	Ann Meister	
<b>DIRECTORS</b>		
2020-2021	Pat Caplette	
2020-2021	Cheryl Lopez	
2021--2022	Rudy Lopez	
2021--2022	Pat Stevens	
2021--2022	Leslie Ogg	
<b>COMMITTEE CHAIRS</b>		
Bulletin Editor	Linda Elsna	<a href="mailto:bulletin@mineralsocal.org">bulletin@mineralsocal.org</a>
Hospitality	Laura Davis	
Membership	Cheryl Lopez	<a href="mailto:membership@mineralsocal.org">membership@mineralsocal.org</a>
Micro Mount Conf. Chairman	Al Wilkins	
Program and Education	Rudy Lopez	<a href="mailto:programs@mineralsocal.org">programs@mineralsocal.org</a>
Publicity	Linda Elsna	<a href="mailto:bulletin@mineralsocal.org">bulletin@mineralsocal.org</a>
Webmaster	Leslie Ogg	<a href="mailto:webmaster@mineralsocal.org">webmaster@mineralsocal.org</a>

### 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](mailto:treasurer@mineralsocal.org)

**Website:** [www.mineralsocal.org](http://www.mineralsocal.org) **The Mineralogical Society of California, Inc.**

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Glendale, CA 91214-2415

To:



**With Knowledge Comes  
Appreciation**

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