Bulletin of the Mineralogical Society of Southern California

Volume 92 Number 8 - August, 2019

The 971st meeting of the Mineralogical Society of Southern California

With Knowledge Comes Appreciation

August 11th, 2019, 12 noon to 4:30 *P.M.*

Home of Bruce and Kathy Carter,
146 Highland Place, Monrovia, CA

Program : MSSC Annual Picnic & Silent Auction

In this Issue:

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: MSSC Annual Picnic

Sunday, August 11th, from 12noon to 4:30pm is MSSC's annual picnic. PLS (Pasadena Lapidary Society) and Fallbrook Mineral Clubs have been invited to join us.

THE LOCATION:

Home of Bruce and Kathy Carter, 146 Highland Place, Monrovia, CA

Bruce and Kathy's home is just north of Foothill Blvd and west of Mayflower Ave. in Monrovia. Street parking is available. They have a beautiful back yard with shade structures and an outdoor kitchen. If it is too hot, then we can easily move into the air-conditioned house.

Driving Directions: from the 210 Freeway: Exit the 210 at Huntington Drive and go east to Mayflower Ave. Turn North to Foothill Blvd. Then go west one block to Highland Place. North to # 146. If you get lost, Bruce's phone number is 626-357-4532 or Rudy Lopez 626 993-7989.

FOOD

Rudy is bringing his famous Pulled Pork and Brisket or Tri Tip. We are going to need more items to make a great meal. We will need rolls for sandwiches for the Pull Pork and Brisket. Please bring your own special potluck offering to share such as a salad (homemade or from the deli), chili, coleslaw, chips and dip, salsa or guacamole, a veggie tray, grapes, fruit tray (Stater Brothers in Pasadena) , a jar of pickles or a can of olives; cookies, pie or other dessert item, or anything edible. We are hoping Leslie's Hawaiian Ice will make another appearance as well. Still don't know what to bring, check with Rudy to see what is needed. MSSC will supply plates, cups, napkins, knives, forks and spoons, water and ice. It is suggested you bring any serving utensils your contribution requires. Be sure to mark them and your serving dish with your name or initials so you're sure to get them back. All food items you bring should feed at least 8 people or more. Please let me know what items you intend to bring so we can coordinate with other members and guests.

Please RSVP by Tuesday, August 6, 2019. It's really important that guests from the other invited clubs contribute food items and RSVP. as well. Please send your RSVP and what you will bring to: programs@mineralsocal.org. Or call Rudy Lopez 626-351-6283.

If you call, there is an answering machine so please clearly identify yourself and how many are in your party & what food items you are bringing.

SILENT AUCTION

MSSC MEMBERS BRING ITEMS FOR SILENT AUCTION

The silent auctions is one of our two annual fund raisers for our group. Therefore MSSC members are encouraged to help by bringing items for the silent auction. Please understand any items that do not sell the day of the picnic will go back home with the original owner. Tables and auction bid sheets will be provided.

Suggested items for the silent auction include; items that are related to our hobby – minerals, fossils, lapidary, gems/jewelry, geo-science books, and mining memorabilia.

HELP NEEDED: Need volunteers to help set up and take down tables, chairs and canopies. Please contact Rudy Lopez: programs@mineralsocal.org

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From the Editor:

Well, I'm working under a handicap this month. I had a surgery done on one eye and temporarily can't see out of that eye (temporary, I hope). I'm also taking pain medication that knocks my out for about 3 hours every time I take one. I apologize as the Bulletin going out a day late

This is Picnic month! Enjoy! Linda Elsnau

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FROM THE PRESIDENT: Interesting Minerals, A to Z. . Installment 19, the letter "S", Sodalite: by George Rossman

Sodalite

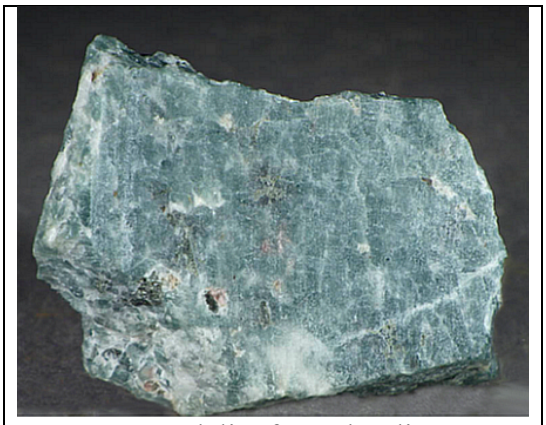

Figure 1. Sodalite from the Ilimaussaq intrusion, Greenland - *Mark Garcia Photo*

Sodalite was named after its composition – it contains sodium. When sodium was reported in an analysis, it was commonly reported as weight percent sodium oxide which is known as soda. The ideal formula is $Na_8(Al_6Si_6O_{24})Cl$. It is a cubic mineral that was first described by T. Thomson from the Ilimaussaq complex, Narsaq, West Greenland **(Fig. 1**)

Thomson T (1812) A chemical analysis of sodalite, a new mineral from Greenland, Transactions of the Royal Society of Edinburgh 6, 387-395

If sodalite had exactly the ideal end-member composition, what color would it be? Answer: colorless. Sodium and chloride do not cause color. Think of colorless common table salt, NaCl, found in nature as the mineral halite. Aluminosilicates are colorless: think of the many colorless zeolites, or even colorless corundum (Al_2O_3) or quartz (SiO_2). This is interesting. None of the chemical components in the ideal chemical formula cause color. And, we certainly can find colorless sodalite **(Fig. 2).**

Figure 2. Colorless sodalite from Dungannon Township, Bancroft, Canada. *Mark Garcia Photo*

Figure 3. Blue sodalite from the Princess Sodalite Quarry, Hastings County, Ontario, Canada. *Mark Garcia Photo*

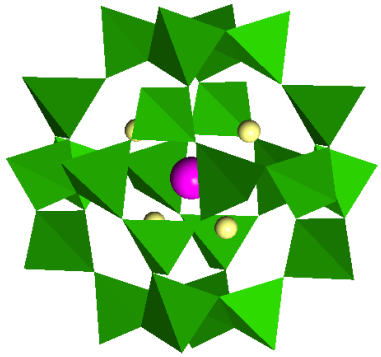

Figure 4. The cage structure in sodalite. Aluminum and silicon atoms in green; atoms in the cage: chloride in purple; sodium in yellow. Oxygen atoms not shown

But, commonly, sodalite has a blue color (**Fig**. **3**). So, why is it blue? We have to look at the sodalite atomic structure to get a clue to the origin of the color. Sodalite is in many ways like a zeolite. It has a cage structure. The aluminosilicate portion forms cages in which other atomic constituents are located. In the case of ideal end-member sodalite, sodium and chloride occupy the insides of the cage (**Fig**. 4). The blue color occurs because atoms other than chloride can occupy the cage. In particular, a small amount of sulfide ions are found in the blue sodalites.

Hackmanite

A particularly interesting variety of sodalite is known as hackmanite (**Fig. 5**), named for the Finish petrologist, Victor A. Hackman. It has a property known as tenebrescence, namely, the ability to change color when exposed to light, technically also known as reversible photochromism. It can also change its color when kept in darkness becoming less colored.

Hackmanite analyses typically show 0.3 wt% sulfur (a lazurite component – see below). The UV light changes the polymerization state of the sulfur to generate the purple color (Fig. 6 ab).

Figure 5. Sodalite, variety hackmanite, from Bancroft, Ontario, Canada - *Mark Garcia Photo*

Figure 6a The hackmanite variety of sodalite from Mogok, Myanmar, as it appears when kept in darkness.

Figure 6b The same piece of hackmanite after a three second exposure to 365 nm UV light.

The Sodalite Group

There is also a group of related minerals known as the sodalite group. In addition to sodalite, it includes minerals such as genthelvite, hauyne, lazurite, nosean, tugtupite, among others. Sodalite is the endmember of the group that contains chloride $Na_4(Al_3Si_3O_{12})Cl$.

The sulfide endmember of the sodalite group is lazurite (**Figure 7**). Its ideal endmember formula is $Na_3Ca(Al_3Si_3O_{12})S$. Usually, some of the sulfur is polymerized into the S_3^- ion which gives members of the sodalite group their blue color. It has been mined for thousands of years in Afghanistan to serve as a blue pigment (**Figure 8**).

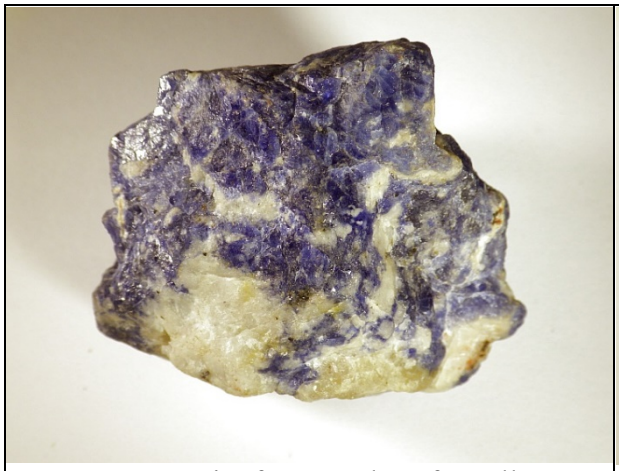

Figure 7. Lazurite from Andes of Ovalle, Chile.

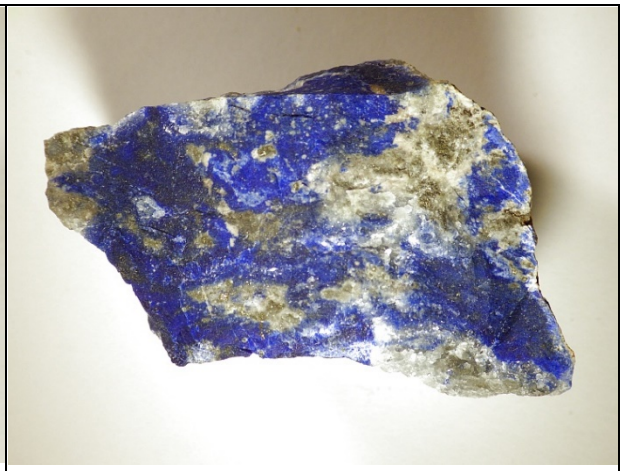

Figure 8. Blue lazurite in the rock known as lapis lazuli, from Sar-e Sang, Afghanistan.

Another member of the sodalite group is hauyne. It is the sulfate member of the sodalite group with an ideal formula of $Na_3Ca(Si_3Al_3)O_{12}(SO_4)$. It was first discovered in the lavas from Monte Somma, Italy, and was named after a French crystallographer by the name of René Haűy. Its color is variable, but when it also contains polysulfide species, it is blue (**Figure 9**).

Before we had digital video displays, we had cathode ray tubes. There was a fair amount of research on using sodalites in display devices taking advantage of the reversible color changes. Also, research was conducted into synthetic ultramarine pigments (which have the sodalite structure). These studies showed that all the colors are related to sulfur-based chromophores. S_3^- has been recognized as the origin of the blue color. S_2^{2+} has been associated with red color of hackmanite. As we can see, there is a lot more to sulfides than just pyrite.

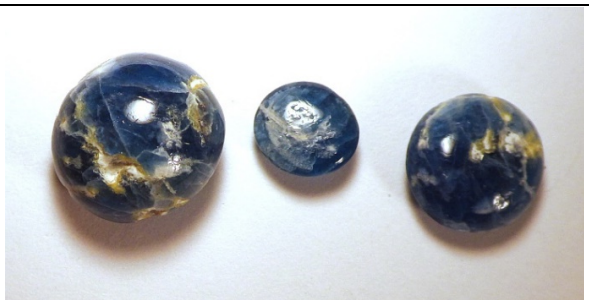

Figure 9. Polished beads of hauyne, from Mogok, Myanmar.

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MINUTES of the July 12, 2019 MSSC MEETING

Call to Order:

On Friday, July 12, 2019, the **970th Membership Meeting** of the Mineralogical Society of Southern California (MSSC) was called to order at 7:30 p.m. by President Dr. George Rossman, Ph.D. There were 14 in attendance.

President's Opening Remarks:

Today, there are 5,477 approved minerals according to International Mineralogical Association (IMA). Dr. Rossman reminded us that this is the exact same number he announced at the last membership meeting June 21st. No new minerals have been approved since then! The first mineral, actually IMA-1962-001, *roquesit*, was named for French geologist Maurice Roques (1911-1997). Its chemical formula is $CuInS_2$. This was the first mineral voted on, not grandfathered by IMA. Roquesit is located in 45 localities including the State of Nevada in the U.S.

Business – Approval of Minutes

Dr. Rossman asked for a **motion to approve the Membership Meeting Minutes** of **June 21, 2019 as published in the July 2019 *Bulletin*.** The motion was made by L. Ogg and seconded by R. Lopez. Rossman called for a voice vote and the motion **passed unanimously.**

Dr. Rossman asked for an update on the annual Picnic. Rudy reports the **Picnic** will be on **August 11, 2019** at the **home of Dr. and Mrs. Bruce Carter**. The time will be **Noon until 4:30 p.m.** So far there have been 12 responses. There will be great food (meats) provided and for those bringing sides or desserts, please bring enough to feed 6-8 people. Invited guests include Fallbrook club, Natural History Museum, Pasadena Lapidary and others. There will be a Silent Auction, so please bring your donations. The theme is "Stories of Disappointment" (that crystal you spent the last ½ hour digging out and then you finally got it only to drop it and have it crack or break apart, those kinds of stories).

Any and all volunteers are welcome to come early for set up starting at 10:00 - 10:30 a.m.

Field Trip Report

No out-in-the field trips are planned during these hot summer months;

R. Lopez's field trip is cancelled for now. Keep an eye on the *Bulletin* for more information.

Announcements

Ann Meister has handouts regarding the Rock Currier Collection auction to be held August 26, 2019 in Dallas, TX by Heritage Auctions. Visit www.rockcurrier.com for additional information.

Guests

Dr. Rossman asked if there were any guests who would like to introduce themselves. Russ Madson and his wife, Vicky, attended with tonight's speaker, Peter Goetz. Russ and Vicky are with the American Opal Society. AOS holds their meetings at Anaheim City Hall on the 3rd Wednesday of the month.

Program

Program Chair Rudy Lopez introduced Peter Goetz. Mr. Goetz is an opal expert and former, 12 years, President of the American Opal Society. His degree is in Structural Geomorphology with a minor in Geology. Goetz has a vast knowledge of opals and he shares his experiences about his passion with us tonight.

According to Peter Goetz, opal is known in Sanskrit as úpala, in Greek as opallios (change in color), in Indonesia as kali and Aztec peoples call opal vilztliltepatl. Opal is an amorphous form of hydrated silicon dioxide, $SiO_2 \cdot aH_2O$. It does not have a crystalline structure but rather even layers of spherical particles and is known as a mineraloid. Opal, "fancy sand", occurs in fissures in almost any kind of rock.

There are **two classes of opal**:

Common Opal or "Potch"	Precious Opal
-erratic structure	-uniform, organized structure
-lacks color-not iridescent	-displays color (diffracts light)-iridescence
white	solid
pink	doubles -(Ironstone) backings
blue	triplets-backings with quartz cap
less valuable than Precious Opal	-higher value than Common Opal

When **buying rough and finished stones**, there are many things to take into consideration. *Rough stones* are in their natural state, uncut and not shaped. They are directly from the mine and referred to as mine run (junk). Then, there are off cuts, the valuable opal component has been removed. The off cuts are leftovers. Another rough is called rub, these have been cut, show a bit of exposed color of the opal and most of the rubbish has been removed. Peter says this is the best way to buy rough stones.

Buying is an art, not a science! There is no grading standard for opals, they are sold by weight or by the piece, are usually displayed in water to show how they will look when polished and may have no guarantee or warranty, ask the seller before you agree to buy . Do your homework (magazines, rock shops, collectors, etc.) and always bargain for a better price!

Buying *finished stones*, those that have been cut, cleaned and polished including stones for jewelry take body color into consideration. For instance, light to dark vs. black. [The variation in color is based on the Lightening Ridge Mining Association Scale (Australia).] Here, light is clear to medium gray and black is dark gray to black. Light is the most inexpensive (white to gray, etc.). Other factors include "jelly", like gelatin – colors are indistinct or hazy, not concentrated. Gray Opal is opaque to translucent, light gray to pewter color. Light Crystal is an opal you can see through, colors are subtle, and a black base can be added to make it visible.

Semi-black has a smoky look and its surface is not quite clear. *Black Crystal* is unique and is a beautiful variation of the *Black Opal*. Black Crystal is scarce! Black Opal, on the other hand, is the most sought after, its play-of-color (iridescence) is intense, it's dark gray to black. Andamooka (Australia) Black Opal matrix has bubbles. It looks like the Lightning Ridge Black Opal that has *no bubbles* and is the rarest opal.

Peter showed slides of exquisite Fire Opal from Mexico (rhyolite host rock) and New South Wales. The brilliant orange/red/yellow stones are breath taking.

Regional characteristics in Australia, a huge source of opal in the world, show three dominant areas: Southern Australia for light seam opal, Queensland for boulder opal and New South Wales for Black Opal (Lightning Ridge area). The formation of Australian opal was due to events occurring between 100 million to 97 million years ago when the Eromanga Sea in central Australia began drying up and over the years, acidic weathering took place on a massive scale as pyrite materials released sulfuric acid onto the landscape. The area known as the Inland Sea was from Coober Pedy to Lightning Ridge. Today, Australia is the most abundant source for opal in the world.

Coober Pedy has the most commercial opal and ranges from milky white to yellow. There is some dark opal and rare black base opal (no vibrant color, though). Mintabie, another area, used big machines to mine opal but

not anymore because the machines are too harsh on the land. This area is known for grainy white sandstone, there is no iron staining on top but there is side color, swirling fire lines.

Lightning Ridge in New South Wales has very little rough available to market, the Black Opal is very valuable, there are "nobby" specimen, some with bright flashes. *[Secy Note: A "nobby" is a gnarly piece that has a potch base with no color, a mid section showing some color and a crockery white top, meaning more color underneath it.]*

Andamooka area has opal with a treated matrix and imitates the Lightning Ridge opal. Andamooka opal color is only surface deep. Blue-green is the most common color found there but, don't forget about Painted Lady Opal!

Yowah opal field in Queensland has Boulder Opal with ironstone as the host rock. Boulder Opal has concretions; this opal has many veins of color. There are also Yowah Nuts, little round balls, most don't have color but if you find one that does, it's very rare and the color is bright! And, Koriot Opal Fields in South Western Queensland has Boulder Opal, ironstone as its host rock and is a distinctive opal.

Peter talked about fire colors: pin fire, broad flash, Chinese writing, Harlequin and mackerel style. He told a little about settings (designer, one-of-a kind, etc.) and Internet sites – be careful!

Mr. Goetz's presentation is fascinating and full of great PowerPoint slides. He brought along several opal specimens for everyone to see. Thank you, Peter. By the way, the American Opal Society show will be the first weekend in November. Watch the Bulletin for more information.

Did you miss this presentation? If so, you missed some beautiful photos, a great presentation and awesome opal samples. Come next time, you won't regret it!

Door Prize was won by Karen Lopez. Congratulations Karen!

Adjourn: The meeting was adjourned at 8:55 p.m. Thanks to Laura and Rudy for goodies and refreshments after the meeting. It's always a great time to talk about the evening and events to come.

Respectfully submitted, Angela Guzman, MSSC Secretary

Reminders: (1) PICNIC will be August 11th from Noon-4:30 pm at Carter residence, **(2)** next regular membership meeting will be September 13, 2019 and **(3)** MSSC Board meeting will be September 15, 2019.

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List of Upcoming MSSC Events : Mark your Calender!

Event	Date	Comments / Scheduled Program (if known)
Meeting Dates:	September 13, 2019	Eric Scerri: A Tale of Seven Elements
	October, 11, 2019:	Karin Rice: Geology of Rancho La Brea/ LA Brea Tar Pits
	November 8, 2019	Renee Newman: "The Allure of Diamonds"
	December 13, 2019	Steve Hardinger: 'Minerals Containing Carbon"
	January 11 , 2020	Banquet: Paul Adams: *To Be Announced*
Board Meeting	September 15, 2019	Board Meeting at Bruce Carter's house
Field Trip	2nd half of September, 2019	(Exact date to be announced) Nevada's Goodsprings District

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

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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 home after meetings	Ed Kiessling	1299 Linda Vista Ave. Pasadena, CA	*See emailed bulletin*
A ride	Richard Stamberg	North Orange County, near Cal State Fullerton	*See emailed bulletin*

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OTHER FREE THINGS TO DO...by Ann Meister

ROCK CURRIER COLLECTION AUCTION AUGUST 26

Don't forget! About 300 of Rock's "favorite children" will be sold at **Heritage Auctions** on Monday, **August 26, 2019**. See the July MSSC *Bulletin* for additional information or you can view the Rock H. Currier Collection online by using this link: **ROCK CURRIER AUCTION**. (https://fineart.ha.com/c/search-results.zx?N=3173+793+794+792+2088+4294944044+4294967083&type=friend-consignorpreview-notice)

OTHER (FREE) THINGS TO DO...

The **Von Kármán Lecture** on *Thursday/Friday* **August 8 and 9** at 7 PM. The speaker is Dr. Carol Raymond, Dawn Principal Investigator and Manager of the JPL Small Bodies Program. The title of the presentation is **"Small Worlds, Big Science."** Among the planets and far beyond are small worlds that hold clues to the formation of our solar system. NASA's robotic spacecraft allow us to visit comets, asteroids, and dwarf planets up close. We are just beginning to figure out what these places are like, what they are made of, and how they formed. ** Thursday is at the Von Kármán Auditorium at JPL and Friday is at Ramo Auditorium at Caltech.

The **Watson Lecture Series at Caltech is on hiatus until the Fall semester.** Stay tuned until October!

The **UCLA Meteorite Gallery** lecture is on Sunday, **August 25**. The speaker is Dr. Joe Masiero. The title of his talk is **"Before They Were Meteorites: The Discovery and Characterization of Near-Earth Asteroids."** Near-Earth asteroids (NEAs) are small objects that have the potential to impact Earth. A small impacting asteroid can deliver meteorites, while larger ones could pose a threat to terrestrial life. Because of this, NASA has undertaken surveys of the sky to search for these NEAs. One of these, the NEOWISE space telescope, uses infrared light to find NEAs and make measurements of their properties such as size and reflectivity. A proposed next-generation telescope, NEOCam, would expand the capability to detect and characterize this population. Dr. Masiero will present some exciting results from NEOWISE, and what we can anticipate learning from NEOCam. The UCLA Meteorite Gallery in Geology room 3697 is open with a docent present every Sunday from 1 till 4. The lecture, which is always on a Sunday afternoon at 2:30 pm, is in room 3656 near the Meteorite Gallery.

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MSSC Advertisement Policy:
Mineral-related ads are allowable in the MSSC bulletin. Below is the price per month

	Business Card	$5.00	
	1/3 page	$10.00	
	1/2 page	$20.00	
	Full Page	$35.00	

In addition, any advertiser who purchases 12 months of space in advance will receive a discount of 12 months for the price of 10 months. The copy for the ads should be mailed to the editor at bulletin@mineralsocal.org and the payment should be sent to the
MSSC Treasurer 1855 Idlewood Road, Glendale, CA 91202

August Featured Mineral: Dioptase
Formula: $CuSiO_3 \cdot H_2O$
Crystal System: Trigonal

Name: Named in 1797 by Hauy from the Greek for "through" and "to see" in allusion to the visibility of internal cleavage planes.

© irocks.com

Dioptase
$CuSiO_3 \cdot H_2O$
Locality: Tsumeb Mine, Tsumeb, Oshikoto Region, Namibia
2.2 cm x 1.3 cm x 0.8 cm

© irocks.com

Dioptase
$CuSiO_3 \cdot H_2O$
Locality: Christoph Mine, Kaokoveld Plateau, Kunene Region, Namibia
2.6 cm x 1.3 cm x 0.8 cm

© irocks.com

Dioptase
$CuSiO_3 \cdot H_2O$
Locality: Christmas Mine, Christmas, Christmas area, Banner Mining District, Dripping Spring Mts, Gila Co., Arizona, USA
4.5 cm x 2.1 cm x 1.1 cm

© irocks.com

Dioptase
$CuSiO_3 \cdot H_2O$
Locality: Ray Mine, Scott Mountain, Mineral Creek Mining District, Dripping Spring Mts, Pinal Co., Arizona, USA
2.2 cm x 1.6 cm x 1.0 cm

© irocks.com

Dioptase
$CuSiO_3 \cdot H_2O$
Locality: Renéville, Kindanba District, Pool Department, Republic of Congo (Brazzaville)
4.5 cm x 3.3 cm x 1.7 cm

© irocks.com

Dioptase, $CuSiO_3 \cdot H_2O$
Calcite $CaCO_3$
Locality: Altyn-Tyube dioptase deposit, Altyn-Tyube area, Bukhar-Zhyrau, Karaganda Region, Kazakhstan
7.4 cm x 4.4 cm x 2.1 cm

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With Knowledge Comes Appreciation !

Calendar of Events:

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

AUGUST

August 2, 3 & 4: NIPOMO, CA
Orcutt Mineral Society
Nipomo High School
525 Thompson Avenue
Hours: Fri-Sat 10 - 5, Sun 10 -4
Website: omsinc.org

SEPTEMBER

September 21: LONG BEACH, CA
Long Beach Mineral & Gem Society
Expo Arts Center
4321 Atlantic Avenue
Hours: 10:00 - 5:00
Email: lbmineralgemsociety@gmail.com

OCTOBER

October 12 - 13: TRONA, CA
Searles Lake Gem & Mineral Society
Trona Gem Building
13337 Main Street

Hours: Sat 7:30 - 5:00; Sun 7:30 - 3:00
Website: iwvisp.com/tronagemclub

October 19: WEST HILLS, CA
Woodland Hills Rock Chippers
First United Methodist Church
22700 Sherman Way
Hours: 10 - 5
Website: rockchippers.org Show Page

NOVEMBER

November 2 - 3: ANAHEIM, CA
American Opal Society
Business Expo Center
1960 S. Anaheim Way
Hours: Sat 10 - 6; Sun 10 - 5
Website: opalsociety.org/ Show Page

DECEMBER

No CFMS Shows listed for December

2019 MSSC Officers:

OFFICERS		
President	George Rossman	*president@mineralsocal.org*
Vice President	Renee Kraus	*vicepresident@mineralsocal.org*
Secretary	Angie Guzman	*secretary@mineralsocal.org*
Treasurer	Jim Kusely	*treasurer@mineralsocal.org*
CFMS Director	Jo Anna Ritchey	
Past President	Ann Meister	
DIRECTORS		
2019--2020	Bruce Carter	
2019--2020	Bob Housley	
2019--2020	Leslie Ogg	
2018-2019	Pat Caplette	
2018-2019	Pat Stevens	
COMMITTEE CHAIRS		
Bulletin Editor	Linda Elsnau	*bulletin@mineralsocal.org*
Hospitality	Laura Davis	
Membership	Cheryl Lopez	*membership@mineralsocal.org*
Micro Mount Conf. Chairman	Al Wilkins	
Program and Education	Rudy Lopez	*programs@mineralsocal.org*
Publicity	Linda Elsnau	*bulletin@mineralsocal.org*
Webmaster	Leslie Ogg	*webmaster@mineralsocal.org*

About the Mineralogical Society of Southern California

Organized in 1931, the Mineralogical Society of Southern California, Inc. is the oldest mineralogical society in the western United States. The MSSC is a member of the California Federation of Mineralogical Societies, and is dedicated to the dissemination of general knowledge of the mineralogical and related earth sciences through the study of mineral specimens. The MSSC is a scientific non-profit organization that actively supports the geology department at Pasadena City College, Pasadena, California. Support is also given to the Los Angeles and San Bernardino County Museums of Natural History. The Bulletin of the Mineralogical Society of Southern California is the official publication of the Mineralogical Society of Southern California, Inc.

The MSSC meetings are usually held the second Friday of each month, January, February and August excepted, at 7:30 p.m. in Building E, Room 220, Pasadena City College, 1570 E Colorado Boulevard, Pasadena, California. The annual Installation Banquet is held in January, and the annual Picnic and Swap Meeting is held in August Due to PCC holidays, meetings may vary. Check the Society website for details.

The Society also sponsors the annual Pacific Micro mount Symposium held at the San Bernardino County Natural History Museum during the last weekend of January.

Annual Membership dues for the MSSC are $20.00 for an individual membership, $30.00 for a family membership. Bulletins are delivered by email, there is an additional annual $20.00 fee if you prefer paper bulletins mailed to your address. The Society's contact information:

Mineralogical Society of Southern California
1855 Idlewood Rd.,
Glendale, CA 91202-1053
E-mail: *treasurer@mineralsocal.org*

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

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

To:

With Knowledge Comes Appreciation

Your MSSC Bulletin Is Here!