

Bulletin of the Mineralogical Society
of Southern California

Volume 82 Number 7

July 2011

The Meeting of the Mineralogical Society of Southern California

Ancient Egyptian Mines for Peridot and Other Gemstones

**Friday, July 8, 2011 at 7:30 pm
Geology Department, E-Building, Room 220
Pasadena City College
1570 E Colorado Blvd., Pasadena**

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July Program: Ancient Egyptian Mines for Peridot and Other Gemstones

Lecture synopsis: Ancient Egypt was the source of several gemstones, including amethyst, amazonite, carnelian and other colored chalcedonies, emeralds, peridot, and turquoise. In this presentation, the speaker describes his recent discovery of a peridot mine of the Greco-Roman period on Egypt's Zabargad Island in the Red Sea, and also provides an overview of the other gemstone mines in Egypt's Nubian and Eastern Deserts. Examples are given of ancient jewelry made from all of these gemstones.

Speaker bio: James ('Jim') Harrell is Professor Emeritus of Geology at the University of Toledo in Toledo, Ohio. He received his BA in Earth Science in 1971 from California State University at Fullerton, his MS in Geology in 1976 from the University of Oklahoma, and his PhD in Geology in 1983 from the University of Cincinnati. Prof. Harrell retired in 2009 after 30 years of teaching at the University of Toledo. For the past 22 years he has been conducting a survey of ancient quarries and mines in Egypt, and has so far made 31 trips to this country in support of this research. In recent years, he has also done fieldwork on ancient quarries in Saudi Arabia, Sudan and Yemen. Prof. Harrell is currently writing a book about the rocks and minerals used by the ancient Egyptians. For a list of his publications and other information on his research, visit his website at <http://www.eeescience.utoledo.edu/egypt/> or write to him at james.harrell@utoledo.edu.

MEANDERINGS FROM THE PRESIDENT by Ann Meister

You know what I miss at the meetings? Show 'n' Tell. Our previous bulletin editor, Shou-Lin Lee, always had something interesting or curious to show and tell us about. (By the way Shou-Lin, a lot of members miss you at the meetings. Please come back, at least occasionally.) Shou-Lin's interest prompted others to bring in recent finds or something in their collection that they didn't know where it was from. Our member knowledge base is huge. We should make use of it! In addition, it helps all of us learn about the hobby. Each of us has our own peculiar interests or specialties. Let's share!

Show 'n' Tell can be a mineral, rock, gem, book that you have discovered, or a tool that helps with furthering your interest in the hobby or even an historical artifact.

I would really be interested in someone showing and telling about some of the new microscope viewers (I don't know what they are actually called) that use your computer to display the image. I've seen several and would like to know more about them.

HELP FOUND!

Linda Elsnau has volunteered to do the on-line marketing and advertising. The primary focus is to get meeting announcements onto on-line bulletin boards such as the Yahoo group la-rocks and calendars for local communities such as Pasadena, Sierra Madre, Altadena, Monrovia etc. so that we can entice visitors and potential members to our activities. Please help Linda by providing information on local places for submitting meeting notices. Thanks.



HELP WANTED

We need a field trip chairman/coordinator. Everyone wants field trips but no one wants to coordinate this activity. Contact me at president@mineralsocal.org.

Minutes of June 10, 2011 Meeting

The 877th meeting of The Mineralogical Society of Southern California was held on Friday, June 10, 2011, at Pasadena City College, Pasadena, CA. President Ann Meister brought the meeting to order at 7:33 p.m.

The following new business was announced:

- (1) Board meeting will be held on June 26, 2011 at Jim and Leslie's house in Redondo Beach. Members are invited.
- (2) On July 17, 2011 Nevada Mineral & Book will be holding an Open House for the MSSC. They are located at 342 S. Tustin Street, Orange, CA 92866. Directions are at <http://www.minbooks.net/directions.html>. Walt is unpacking his extensive inventory of minerals, and we will get the opportunity to dig through flats that haven't seen the light of day for 20 or more years! Make sure you come, and bring a friend!
- (3) Each year in August the MSSC joins with the Fallbrook Mineral Society for an annual picnic / potluck / mineral swap and sale. It will be held August 20, 2011. Details are posted in the June bulletin.

Jo Anna Ritchey noted that the CFMS report was published in the last Bulletin. The MSSC's own Shou-lin Lee received the CFMS third place award in the Small Bulletin Category. Congratulations Shou-Lin!!

The 2012 CFMS show will be held in Riverside, CA. President Meister suggested that members enter exhibits, either individually or an MSSC member case.

The MSSC business-card-sized advertisements were handed out at Marty Zinn's new West Coast show in May 2011. The card contains the 2011 meeting dates and other MSSC information. We have seen some positive activity from this effort. Thanks to everyone who helped hand them out.

Dr. Bruce Carter then introduced the speaker of the evening, Dr. Ilya Bindeman, who gave a presentation titled: "Unraveling the origin of the Earth's first 'Slushball' Earth panglacial episode recorded in isotopic

composition of oxygen in rubies and kyanites from Karelia, Russia.” Dr. Bindeman is an Associate Professor at the University of Oregon.

Dr. Bindeman is using Oxygen isotope geochemistry of corundum and kyanite to determine the origin of these 2.4 billion year old deposits in Russia, and has evidence that the oxygen was derived from water ice.

Nineteen people attended the meeting. Dr. Bindeman gave an interesting talk.

Minutes of the Board of Director’s Meeting

June 26, 2011

President Ann Meister called the meeting to order at 2:00 pm.

In attendance were the following Officer and Board members: President Ann Meister, Treasurer Jim Kusely, Bulletin Editor and Federation Director Jo Anna Ritchey, and Board members James Imai, Leslie Ogg, Robert Housley and Fred Elsnau. Also in attendance was Linda Elsnau.

The following agenda item were discussed:

- a. An account of new MSSC members and their current status.
- b. Treasurer’s Report is available from the Treasurer.
- c. Bulletin: No change in status. A discussion however was held regarding making changes whereby increasing email based security. Forthcoming email, web based communications and Society contacts will have these minor yet safer security updates.
- d. Membership Roster: It was agreed that the MSSC treasurer and the MSSC bulletin editor to collaborate and coordinate a 2011 Membership Roster data base to be published and distributed in hard-copy to the MSSC’s paying members. Names of members are required to be published under the bylaws.
- e. Web site status: To be discussed at the next meeting. Our secretary was called out of town and unable to provide us with any current

updates although we do understand he is spending considerable time constructing our new web page.

- f. Open House: Nevada Mineral and Book Company in Orange County on Sunday, July 17th. Please refer to Ann Meister's "Meanderings from the President" in our June Bulletin.
- g. Future MSSC Symposium: A discussion involving an appropriate location and a cost effective approach was held. To be continued at a future date.
- h. Display Cases: It was agreed to not sell anymore display cases. A full inventory of cases, their structural status including any associated hardware including hasps, lights, electrical cord, etc. will be taken at a yet undetermined date.
- i. Micro-Mount 2012 Conference: It was agreed that a \$5 fee increase was necessary in order to cover future conference expenses. The new pre-registration 2012 fees are \$15 per individual early registration, \$20 per individual at door. In addition it was agreed to provide hand-out MSSC bulletins, a hard copy of the lecture and with permission make a video of the lecture. Also there will be provided an "all-in-one" MSSC/Micro-Mount fee application form for both pre-registration and at-the-door applications. Last but not least there will be (unless agreed upon by the board) absolutely no outside sales of private materials during the conference.
- j. It was agreed to distribute copies of MSSC's charter to the board for review and if applicable make new amendments to our existing bylaws. (last reviewed 1998)
- k. The date of the MSSC's next board meeting and agenda items will be announced.

The board meeting was adjourned at 3:40.

Submitted by Jim Kusely - Treasurer

New Mineral named after our own Bob Housley by Bob Griffis

A new mineral was recently approved and is named after one of our long time members, Dr. Robert Housley, who gave a presentation a few months

back about the discovery. An abbreviated description is taken from Anthony R. Kampf, Joseph Marty and Brent Thorne, 2010, Lead-tellurium oxysalts from Otto Mountain near Baker, California: II. Housleyite, $\text{Pb}_6\text{CuTe}_4\text{O}_{18}(\text{OH})_2$, a new mineral with Cu-Te octahedral sheets, American Mineralogist; August-September; v. 95; no. 8-9; p. 1337-1342

Housleyite, $\text{Pb}_6\text{CuTe}_4\text{O}_{18}(\text{OH})_2$, is a new tellurate from Otto Mountain near Baker, California, named in honor of Robert M. Housley. The new mineral occurs on fracture surfaces and in small vugs in brecciated quartz veins. Housleyite is directly associated with acanthite, cerussite, gold, iodargyrite, khinite-4O, wulfenite, and three other new tellurates: markcooperite, ottoite, and thorneite. A variety of other secondary minerals occur in the veins, including three other new secondary tellurium minerals, paratimroseite, telluroperite, and timroseite. Housleyite is monoclinic. Crystals are prismatic to bladed with elongation parallel to b and typically occur in bow tie-like aggregates, drusy balls, and irregular sprays. It is pale to medium greenish blue and transparent, with pale blue streak and adamantine luster. Mohs hardness is estimated at 3. The mineral is brittle, with an irregular fracture.

Online Mineral Museum at All Minerals/John Betts-Fine Minerals
<http://www.johnbetts-fineminerals.com>

Since the inception of the original web site for John Betts-Fine Minerals over 33,800 mineral specimens were photographed, described, cataloged and sold. This is a virtual mineral museum of all of the sold mineral specimens that is updated annually. Hundreds of mineral species from thousands of mines and mineral localities can be found here. Many can be found nowhere else on the Internet. Allminerals.com and JohnBetts-FineMineral.com are two domains of the same company founded by John Betts. We are pleased to present this reference to mineral collectors, researchers and students.

The minerals can be searched by species, region, chemical group or locality. Additionally there are special galleries for themes such as pseudomorphs, fluorescent minerals, and for special localities of interest. All

of the minerals in the museum sold. But links are provided to galleries of minerals for sale if you desire to purchase similar specimens or from similar localities.

I hope you find this Mineral Museum a valuable reference of mineral species photographs.

I have copied only one specimen here so that you can get an idea of what a treasure this site is. It includes wonderful pictures which include natural light and ultra violet light, plus description, locality, size, etc. of the mineral. Of course, if you would like to purchase a similar specimen, contact John Betts company directly. This is not an advertisement to purchase but an appreciation of the museum that is a result of his advertising and marketing efforts. Editor

Calcite from Cerro Gordo District, Inyo County, California



Below: fluorescence under ultraviolet illumination

Mineral Cleaning for Amateurs

By John Betts. All rights reserved. Reprinted with permission of the author.

Many specimens collected in the field do not look like the ones that dealers are selling. Most collectors become discouraged or frustrated. These articles will give a few simple techniques clean the pieces you collect.

Oxalic Acid

Anything that has the word "acid" sounds ominous. But oxalic acid is easy to find, use and the safest for the home. In fact it is found in many vegetables including spinach. It is used to dissolve the iron oxide (brown) stain on all minerals. Specimens collected at Phoenixville, Ellenville, Case Quarry, NH smoky quartz and many others clean up beautifully with oxalic acid. Zeolites do not respond as well, so you should test beforehand on small specimens to see how they react.

To make this as simple as possible I will give a step by step guide to its use. Do not take any shortcuts or make substitutions.

Purchase a one pound box of Oxalic Acid (OA) powder at your local hardware store in the paint department or at a paint store. It is used as wood bleach and will be labeled as such. The most common brand is Rainbow.

Fill a plastic one gallon container 3/4 full with **distilled** water. Pour in the OA crystals and stir for five minutes. Be careful not to inhale any powder when adding the crystals. Once the OA is dissolved top off the container to a full gallon. Label the container and put out of reach of children or pets.

When you are ready to use it place your specimens in a plastic container and add enough OA solution to cover. Set aside for several days.

Heat speeds up the reaction, as does agitation. If you have a hot plate and can set up outdoors or in an area with good ventilation the repeat step 4 but heat the solution to bath water hot (110o f.). Never Boil! You will find that an hour in hot solution will usually do the trick. Best of all is an ultrasonic cleaner with built in heater. Sometimes only 30 minutes is necessary. But you should not put the OA directly into the stainless steel basin. Make a double boiler type of arrangement by partially filling the ultrasonic cleaner basin with water. Then place your specimens and OA solution in a plastic container or heavy duty plastic bag that is suspended in the water.

You can reuse the solution over and over. As it dissolves more and more iron it will get darker often taking on a green color. After it gets really dark I would discard it and mix a new batch.

Safety is important. OA solution is highly toxic. It can be absorbed through the skin and builds up in your organs cumulatively. Same goes for the fumes, which is why you never boil the solution and always have proper ventilation when using the heated solution. Be careful not to spill the solution on porcelain and keep away from food preparation surfaces.

After the iron color has disappeared then you can remove the specimens (with gloves on) and wash under running water for three hours. NOTE: If you have hard water in your area, it is smart to use distilled water for the first few rinsings to prevent the formation of insoluble oxalates that will stain the specimen yellow when dry.

Then soak in clean water for a day changing the water as often as possible. The best formula for washing minerals is:

- ☒ Change the water every minute for an hour.
- ☒ Change the water every hour for a day.
- ☒ Change the water every day for a month.

The best way is to place the rocks to be washed in a 5 gallon bucket. Drill a small hole in the bottom, then fill with water and adjust the flow of the water trickling in to equal the flow out through the small hole. Acid is heavier than water. It will settle to the bottom and flow out through the hole. The trickle in ensures that all specimens are covered with water.

In spite of the fuss, this is the best all around method of cleaning minerals. I keep a large five gallon bucket with tight fitting lid filled and ready, I drop specimens in as I collect them. It always works and the large volume does not exhaust quickly. Mastering this technique will provide an important tool in your mineral cleaning and preparation arsenal. Good luck!

References

Hansen, Mogen, Cleaning Delicate Minerals, Mineralogical Record, March-April 1984, pg. 103

Part 1: Oxalic Acid

Part 2. Muriatic Acid

This article and others can be found at Mr. Betts web site:
<http://www.johnbetts-fineminerals.com>". Reprinted with permission of the author

MSSC is not responsible for any problems that may result from the use or misuse of these instructions.

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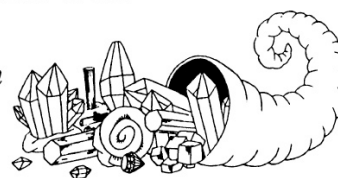
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Diamond could store quantum information
Technique makes use of flaws in crystal structure
By [Devin Powell](#)
[Science News, April 23rd, 2011; Vol.179 #9 \(p. 14\)](#)

DALLAS — Could be that diamonds are a geek's best friend.

Scientists have developed a new way to manipulate atoms inside diamond crystals so that they store information long enough to function as quantum memory, which encodes information not as the 0s and 1s crunched by conventional computers but in states that are both 0 and 1 at the same time. Physicists use such quantum data to send information securely, and hope to eventually build quantum computers capable of solving problems beyond the reach of today's technology.

For those developing this quantum memory, the perfect diamonds don't come from Tiffany & Co. — or Harry Winston, for that matter. Impurities are the key to the technology.

“Oddly enough, perfection may not be the way to go,” said David Awschalom of the University of California, Santa Barbara. “We want to build in defects.”

One of the most common defects in diamond is nitrogen, which turns the stone yellow. When a nitrogen atom sits next to a vacant spot in the carbon crystal, the intruding element provides an extra electron that moves into the hole. Several years ago, scientists learned how to change the spin of such electrons using microwave energy and put them to work as quantum bits, or qubits.

In search of a more stable way to store quantum information, Awschalom has now figured out how to link the spin of a electron to the spin of the nearby nitrogen's nucleus. This transfer, triggered by magnetic fields, is fast — about 100 nanoseconds, comparable to how long it takes to store information on a stick of RAM.

The technique has “a fidelity of 85 to 95 percent,” Awschalom said March 22 in Dallas at a meeting for the American Physical Society.

In contrast to some other quantum systems under development, which require temperatures close to absolute zero, this diamond memory works at room temperature. The spins inside the diamond can be both changed and measured by shining laser light into the diamond. This could make diamond an attractive material for scientists developing nanophotonic systems designed to move and store information in packets of light.

Unlike a diamond itself, this quantum memory isn’t forever. But it lasts for a very long time by quantum standards. The nuclear spin remains coherent for more than a millisecond, with the potential to improve to seconds.

“You can only do your quantum magic as long as you have coherence,” said Sebastian Loth, a physicist at IBM’s Almaden Research Center in San Jose, Calif. “If you have a lifetime of milliseconds, that lets you do millions of operations.”

In addition to stability, diamond may also overcome another hurdle that has faced quantum computing — it can be scaled up to larger sizes. In a paper published last year in *Nano Letters*, Awschalom developed a technique for creating customizable patterns of nitrogen atoms inside a diamond, using lasers to implant thousands of atoms in a grid.

Awschalom’s diamond quantum memory could also be useful for building large quantum networks. Currently, quantum information is transmitted by connecting, or entangling, qubits. This scheme is limited to distances of kilometers. Quantum repeaters could potentially use small chips of diamond to catch, store and retransmit this information to extend the range, enabling quantum networks to work over much longer distances



From MSSC Archives

Reprinted from the January 2001 Bulletin of the Mineralogical Society of Southern California

Acton Zeolites by Bob Housley

Last month I mentioned noticing construction along the 14 Freeway near Palmdale. Although I have not been out much this month I did go out to have a look at it. The basalts in the fresh road cuts are full of small, one to three inch, vesicles with thin chalcedony shells filled almost completely with quartz or calcite. I looked at hundreds and did not see a one worth bringing home.

Then since I was close I went over and had another look at the Free Cuba Mine near Acton. Even though it has not been worked for about one hundred years I found a couple a small specimens of native copper and some copper phosphate still on the dumps. Since I still had some time before dark I decided to take a walk in the hills near Acton. In a small outcrop of red basalt I found vugs and veins that were full of nice heulandite crystals on quartz. One exposed vug is about eight inches in diameter and contains three quarter inch heulandite crystals. Best of all it has never been marred by hammer or chisel. I intend to go back soon and get some pictures.

Many years ago nice stilbite and heulandite crystals were found in similar basalt in the old Acton Quarry right in the edge of town. I am now convinced that the area of red basalt with good zeolite mineralization is fairly extensive.

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I wonder if this site is worth investigating now? Maybe with all the weathering and erosion since 2001, something now may be exposed.

Editor

OPEN HOUSE AT NEVADA MINERAL AND BOOK COMPANY, SUNDAY, JULY 17, 1:00 pm TIL ???

On Sunday, July 17 at 1:00 pm, we are invited by Walt Lombardo to an open house at his shop Nevada Mineral and Book Company in Orange, CA.

Address: 342 S. Tustin Street, Orange, CA 92866. It is close to the 55, 22, and 5 freeways in the Eldorado Plaza, just three blocks south of Chapman Avenue in Orange, CA. For a map and directions to the shop as well as an overview of what Walt has, see his website, www.minbooks.net.

Walt opened the shop a year or so ago and has been moving his stock of minerals and books there from Las Vegas. He now has all of his minerals there, including flat upon flat of personally collected items that haven't seen the light of day since the day they were collected some as many as 20 years ago. Many of these are from Nevada localities, as well as Colorado, Arizona and California. We will have the adventure of discovering what is in the flats and hear Walt's collecting stories. I saw the stacks of flats and am intrigued by the feldspar Baveno twins and quartz that he showed me from the Clark Mountains. Walt also has many books, new and used, as well as a publications room with USGS reports and other good stuff. This is really a fun place to explore.

THE POTLUCK Saturday, August 20, 2011

The potluck will run from 12 PM to 1 PM at the Fallbrook Gem & Mineral Society's Museum (123 W. Alvarado St., Suite B, Fallbrook, CA 92028). The swap meet will run from 1 PM to 4 PM. The building will be opened @ 11 AM for arrival and setup. Sorry, no selling/trading until the potluck has ended.

Please feel free to attend even if you don't plan to sell or trade (you can still eat and still buy). If you have not been to the museum before, it is a real treat. You've all been to potlucks before so you know what to do. We will be eating indoors with air conditioning. FGMS will supply plates, cups, napkins, knives, forks and spoons and will also supply beverages and ice. It is

suggested you bring any serving utensils and mark them so you're sure to get them back. Let's see what delicacies turn up this year!

THE SWAP MEET! After the Potluck on August 20, 2011

You may bring a limited amount of items to sell or trade that are related to gems/jewelry, lapidary, minerals or fossils. Table space is limited and you may only get half of a table to set up on. You may also put boxes or flats underneath your allotted table space. Please do not bring items that you do not intend to sell or trade. If an item is sold or involves a cash & trade arrangement we ask you to make a 10% contribution (not to exceed \$100) to the FGMS building fund to help keep events like this to continue in the future. Please bring your own change for your transactions as we will not be playing banker. Also, we are providing a place so that a mineral swap meet can occur but will not be responsible for any transactions or trades that occur.

THIS EVENT IS OPEN TO ALL MEMBERS OF THE SOCIETIES INVITED AND THEIR GUESTS RSVP BY AUGUST 13, 2011 PLEASE

July 9-10 - CULVER CITY, CA

Culver City Rock & Mineral Club
Veterans Memorial Auditorium
4117 Overland Ave (Overland & Culver)
Hours: Sat 10-6; Sun 10-5
Website: <http://www.CulverCityRocks>

July 16-17—SANTA MONICA, CALIFORNIA: Wholesale and retail show; Gem Faire Inc.; Santa Monica Civic Auditorium, 1855 Main St.; Sat. 10-6, Sun. 10-5; adults \$7 weekend pass, children 11 and under free; contact Yooy Nelson, (503) 252-8300
Web site: <http://www.gemfaire.com>

November 11-13—Santa Ana, CA

West Coast Gem & Mineral Show, Holiday Inn—Orange Cnty. Airport, Dire St. & Grand Ave.
Info.—mzexpos@aol.com, or www.mzexpos.com.

Society Contacts for 2010

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CFMS Director	Jo Anna Ritchey	bulletin@mineralsocal.org
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	James Imai	
	Fred Elsnau	

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Field Trip	Vacant	
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Program and Education		Bruce Carter See VP
Show	Vacant	
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Bulletin Editor	Jo Anna Ritchey	bulletin@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 and collecting 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 web page 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.

The Society's contact information::

Mineralogical Society of Southern California

1855 Idlewood Rd.,

Glendale, CA 91202-1053

E-mail: bgbrdpen@earthlink.net

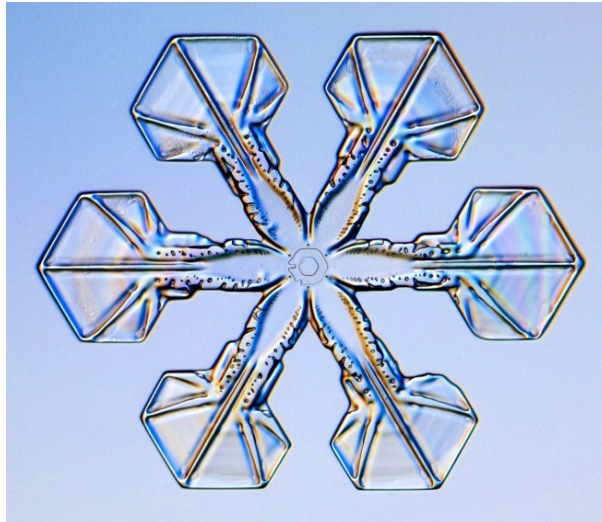
Web: <http://www.mineralsocal.org>

The Mineralogical Society of California, Inc.

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Snowflake Crystal www.snowcrystals.com Kenneth G. Libbrecht, Caltech



Topaz



Iron Pyrite