

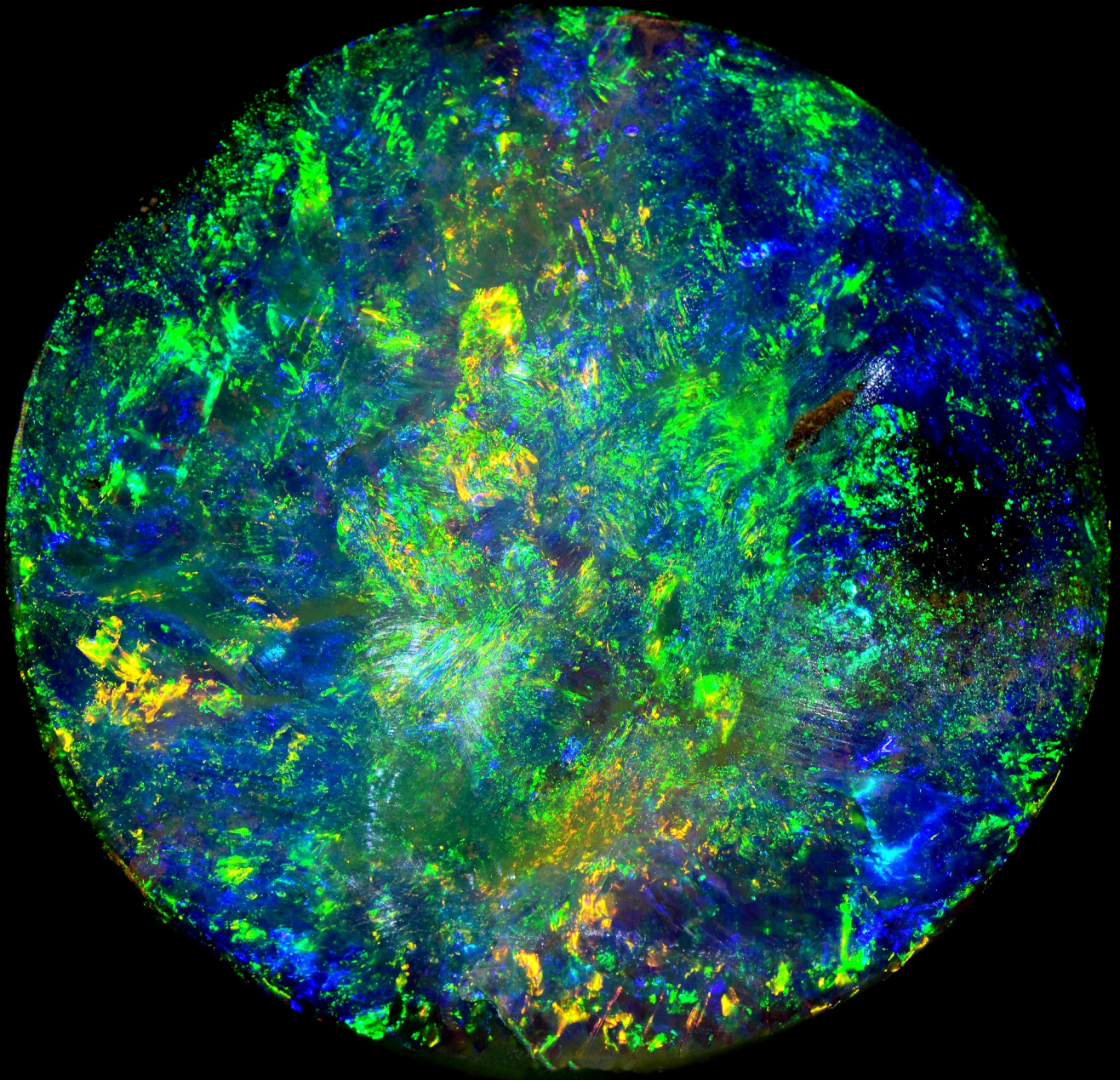


DAISY MOUNTAIN ROCKCHIPS

The purpose of Daisy Mountain Rock & Mineral Club is to promote and further an interest in geology, mineralogy, and lapidary arts, through education, field experiences, public service, and friendship.

VOLUME 7, ISSUE 10

NOVEMBER 2022



This spectacular precious opal stone proudly displays its peacock colors, developed in the siliceous sediments of Australia's Outback.

Photo by Stan Celestian and used with permission of the Natural History Museum of Los Angeles County Gem & Mineral Hall.



OPAL

By Susan Celestian

More mineraloid than mineral, opal is a hydrous form of silica, and lacks crystalline structure. It is composed of extremely tiny silica spheres (colloids), that can be seen with a scanning electron microscope (SEM). The spheres are measured in nanometers. There are 1 billion nanometers in a meter (by comparison there are 1000 millimeters in a meter) — very, very tiny.

Chemical Formula - $\text{SiO}_2 \cdot n\text{H}_2\text{O}$

Crystal System - Amorphous

Growth Forms/Habits - Veins, massive, nodular

Hardness - 5-5.5-6.5

Luster - Vitreous/sub-vitreous, waxy, greasy, dull

Streak - white

Color - Colorless, white, tan, blue, yellow, red, green, black, orange, pink

Diaphaneity - Opaque, translucent, transparent

Specific Gravity - 2.15

Cleavage - None

Fractures - Conchoidal to uneven

Other - Play of colors in some varieties

Fluorescence: some common opal has strong bright green to yellow-green in SW & LW light

Basically, there are two types of opal: Common or Potch, and Precious. Common Opal does not display a play of colors; while Precious Opal is distinguished by its play of colors (red, orange, yellow, blue, green).

PRECIOUS OPAL

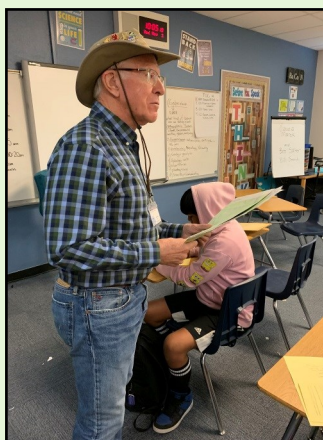
Precious opal displays a rainbow of colors, making it most desirable. As stated above, opal is composed of tiny spheres. It is the size and arrangement of these spheres — and the interaction between the stacked spheres and light that determines the colors and patterns that each stone exhibits. ([See Figure 1](#))

Opal continued on 18...

**Education Outreach:
Canyon Springs Elementary**

By Claudia Marek

On November 2nd, Bill Smardo, Bob Salter, and Claudia Marek spent the morning at Canyon Springs Elementary, presenting what future careers in the “geosciences” could look like to 5th thru 8th graders. Sessions were 20 minutes long and the students rotated in and out of their pre-selected career rooms, to hear the speakers. Claudia started the session off by listing just a few of the numerous careers one could have. She was followed by Bob, who spoke of his 40 plus years as a geologist. And Bill ended the session with the students looking at various rock specimens under the microscope. Each session was well received by the students.



Bill and Claudia have presented at Canyon Springs’ “Fall Career Day” and “STEAM Nights” for several years as members of our clubs community education outreach committee.

Our next commitment is January 26th, at New River Elementary for their yearly STEAM Night (5-7pm). Any members interested in helping or showing off their rock/mineral collections at the school, please give Claudia a call at (623)551-0170.

INSIDE THIS ISSUE

Each item is now hyperlinked to the page on which it is found

Opal	2, 17-21
Education Outreach	2
Christmas Party Flyer	3
October Speaker: Stan Celestian — <i>Physical Properties of Minerals</i>	4
Announcements	5-6
Safety Zone	7
October Board & General Meeting Minutes	8-12
Field Trips: Bronzesmith , Strawberry , Red Cloud , Purple Passion	13-16
Silent Auction	22-23
Club Information , Field Trip Schedule	24
Announcements , Show list , Words of Wisdom	25-29

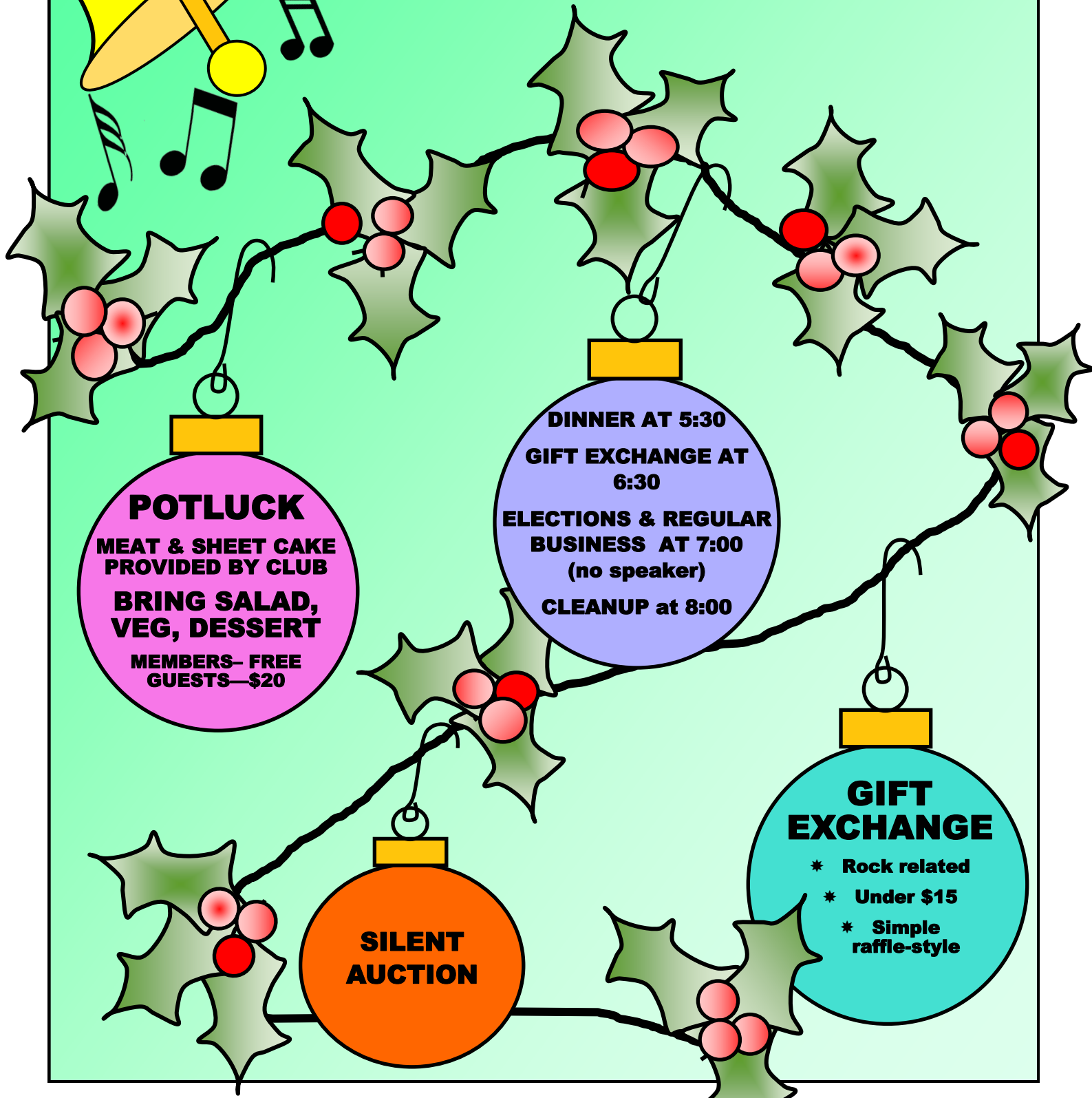
**DUES ARE
DUE**

CHRISTMAS PARTY DETAILS ON [PAGE 14](#)

HARKEN ALL!

Club Holiday Party

Tuesday, December 6 at 5:30 pm
Anthem Civic Center



POTLUCK
MEAT & SHEET CAKE
PROVIDED BY CLUB
**BRING SALAD,
VEG, DESSERT**
MEMBERS- FREE
GUESTS-\$20

DINNER AT 5:30
**GIFT EXCHANGE AT
6:30**
**ELECTIONS & REGULAR
BUSINESS AT 7:00**
(no speaker)
CLEANUP at 8:00

**SILENT
AUCTION**

**GIFT
EXCHANGE**
* Rock related
* Under \$15
* Simple
raffle-style

NOVEMBER SPEAKER

Mineral Identification Basics

Stan Celestian

ALTERNATE TITLE: Having Fun with the Physical and Chemical Properties of Minerals for the Purpose of Their Identification

The first thing you need to do is gather the tools of the trade.

You could acquire an X-ray diffraction machine.....



Or maybe a Ramen Laser Probe....



....probably
not

But for a mere \$5, you can create a mineral testing tool kit that will help you determine many physical properties :

- * Glass Plate
- * Copper Wire
- * Unglazed Tile or Streak Plate
- * Dilute Hydrochloric Acid (HCl)
- * Magnets

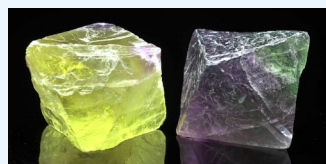
Some of the simplest “tests” are visual observations, others are simple actions. Questions to answer are:

HOW DOES THE MINERAL BREAK?



FRACTURE: irregular, not repeated breakage planes. Example: Pyrite has conchoidal fracture

CLEAVAGE: flat, shiny, repeated planes of breakage. Example: fluorite has octahedral cleavage



HOW RESISTANT IS IT TO SCRATCHING?

MOHS SCALE OF RELATIVE HARDNESS

1 Talc	6 Orthoclase
2 Gypsum	6.5 Steel File
2.5 Fingernail	7 Quartz
3 Calcite	8 Topaz
3 Copper Wire	9 Corundum
4 Fluorite	10 Diamond
5 Apatite	
5.5 Glass	

SO.....It the unknown mineral scratches glass, then it is harder than 5.5; if you can scratch it with your fingernail, then it is softer than 2.5.....

WHAT COLOR IS THE POWDERED MINERAL?

That is a streak test, and you perform that by rubbing the mineral across an unglazed tile or streak plate. In fact, you perform this test every time you write with a pencil. Graphite has a gray streak.

WHAT IS THE LUSTER?

METALLIC?



OR NON-METALLIC?



WHAT IS THE SPECIFIC GRAVITY? This is a precise number, determined by the following formula:

$$\frac{\text{Weight in Air}}{\text{Weight in Air—Weight in water}}$$

WHAT COLOR IS THE MINERAL?

DOES IT HAVE A TASTE? Like salty?

IS IT MAGNETIC?

WILL IT FIZZ IN HYDROCHLORIC ACID?

Carbonates will do that!

RECOMMENDED BOOKS:

- * Dana’s Manual of Mineralogy
- * Mineralogy by John Sinkankas



We currently have more seats available for our Holiday Dinner on December 6th starting at 5:30 with our monthly meeting beginning at 7:00pm. Please text Claudia at cmarek2@cox.net to reserve your seats ASAP.



Claudia will be bringing, to the December meeting, those pre-ordered T-Shirts that weren't picked up at the November meeting. She will not be bringing the new T-shirts to sell. Those wishing to buy new T-shirts to give as Christmas presents will need to pick those up at her house. Give her a call between now and Christmas to arrange a time. (623) 551-0170



Cool New Stickers: You will want one of each!

New bumper stickers and window stickers will be on sale at our Holiday Meeting in December in time for Christmas. See Claudia in the back of the room to pick up yours!! Remember the sale of stickers, keychains, and TShirts support our two scholarships!!!

March is just around the corner – and you know what that means.....

THE DMRMC GEM AND MINERAL SHOW!!

And the club needs your help

- * Jim Reed who is in charge of getting vendors for our show has a limited number of back up vendors so if you attend a show somewhere in AZ. and find a vendor that you like, please talk to them and ask for their business card with their mailing address, email address, and cell phone number and pass it along to Claudia Marek at the next club meeting. We also need a description of what they were selling at their table. Jim will then contact them to see if they are interested in coming to our show.
- * If you were at the show last year and didn't see something you wished had been there let Claudia know so we can find a vendor for those items if one exists

DMRMC HAS FOOD DRIVE AT NOVEMBER MEETING



DMRMC Members brought in food items for holiday donation to local foodbanks. Renee and Claudia dropped off 211 pounds of food on Wednesday, November 2nd (they actually had to weigh it in), along with a check. Even though the board approved \$100 to go to each of the food banks, 2 of our families donated 2 checks each giving \$25, so the extra \$50 dollars we put toward Foothills Food Bank. St. Mary's Food Bank was sent a \$100 check on Wednesday as well.



November 4, 2022

Dear Daisy Mountain Rock & Mineral Club,

Thank you for giving the gift of hope.

Neighbors in our community often must choose between paying a utility bill or feeding their children. Your gift will help solve the dilemma for a family next month. It's because of your compassion that hope is restored. Last year we were able to distribute over 1.6 million pounds of food to our neighbors in need. From seniors and preschoolers to single parents and veterans, gifts such as yours help brighten our community.

Your donation of \$150.00 received on November 1, 2022 from your food drive in October 2022 is much appreciated.

With gratitude,
Leigh Zydonik

Leigh Zydonik Executive Director

PS. You can read more about how we support the community on FoothillsFoodBank.com and check out a lot of smiling faces on our Facebook page.



SAFETY ZONE

By Greg Josey

As discussed in the November monthly club meeting one of the club's focus going forward will be safety. We want to help reduce or eliminate any emergency situation that might occur during a club event. Each month a different topic will be brought up.

Outdoor Safety

Caution and sound judgment are the most important elements of wilderness emergency care. Being far from any sort of medical facility, one must always seek to avoid injury and dangerous situations. Although this may seem patronizing to

note, one must be extra mindful of one's health and welfare in the wild. Conditions that are easily aided in urban and suburban settings, can be lethal in the outdoors.

DMRMC will be working on identifying club members that are already trained in first aid and CPR. We will be offering training to others that are interested. Our goal is to have at least one club member on each field trip trained in these areas.

Here are a few things to keep in mind when in an emergency situation.

- 1) Survey the situation and keep cool. Don't panic. Decide exactly what steps to take before acting.
- 2) Ask permission to treat the victim if conscious.
- 3) Give necessary first aid to the victim.
- 4) If professional medical assistance is needed call 911.
- 5) If cell service is not available drop a pin on your phone and save the GPS coordinates to your phone. ("Drop a pin" when you are lost and have no idea where you are open google maps on your smartphone and drop a pin to find your location. This will give you your current GPS location.) Save it for when you get cell service..
- 6) Choose a messenger party to go for help. Send at least 2 people.
- 7) Give the messenger party a report of the injury and a map or sketch showing the location of the victim.
- 8) When cell service is reached the messenger will report all information, including the GPS coordinates to 911.
- 9) The group with the victim should:
 - A) keep the victim comfortable.
 - B) maintain group morale, stay positive.
- 10) Keep a written log on the condition of the victim. Watch for:
 - A) Breathing irregularities.
 - B) Pulse and heartbeat irregularities.
 - C) Bleeding
 - D) Blockage of air passageway by blood, vomit, tongue, etc.

Stay safe!

Gregg Josey

BOARD MEETING MINUTES**November 1, 2022**

- In attendance: Bill F., Bob E., Bob S., Claudia M., Deanne G., Don R., Ed W., Gregg J., Johanna R., Nancy G., Rebecca S., Renee I., Stan C., Sue C., and Tiffany P.
- Bill F. called the meeting to order
- October meeting minutes accepted
- Johanna R. discussed the by-law changes
 - Once done, will be voted on by all members
 - Still found some corrections to be finalized
- Ed W. talked about liability insurance
 - Rocky Mountain Federation covers the show and field trips
 - Will investigate more coverage
 - Bob S. will talk to insurance companies
- Claudia M. talked about promotional items
 - T-shirts are available for pickup
 - Bumper stickers are in the works
 - Samples have been approved
 - Will have extra stickers next meeting
- Tiffany P. discussed membership
 - Renewals are starting to come in
 - Will be due after December meeting
- The Christmas party was discussed
 - Dinner at 5:30pm
 - Gift raffle after dinner
 - 7-8pm General meeting
 - 8-8:30pm cleanup
 - The catering with tax cost \$1,700
 - Approved by board last meeting
- Stan C. talked about the claims committee
 - Found an easier way to drive to new claim
 - He also moved the posts on the claim for BLM
 - The renewal cost for the claim is \$135/year
 - August 31st deadline for payment
 - Other services incur an additional cost
 - The claim's chair is available
 - Stan C. is willing to step down
 - The club would like to continue looking for claims to purchase
 - Banded iron formation location was brought up
 - Gold claim was suggested
- Bill F. talked about upcoming wire wrapping class
 - Thank you, Ryan Howard, for volunteering to teach the class!
 - The first class will begin in January
- Ed W. will book the room with the civic building

...Minutes continued from page 8

- Bill F. talked about upcoming wire wrapping class
 - Thank you, Ryan Howard, for volunteering to teach the class!
 - The first class will begin in January
 - Ed W. will book the room with the civic building
- Bill F. talked about a safety committee
 - Gregg J. proposed having a safety person present safety topics
 - These will be at meetings and field trips
 - Rattlesnake, CPR, getting lost, etc.
 - Whistles will be given out at field trips
 - The vote to establish a safety committee was unanimously approved
- Deanne G. discussed financials
 - T-shirt revenue helped the club
 - Will have profit from shirts after they are all sold
 - Financials were accepted
- Nancy G. talked about Facebook
 - Setup administration tools – able to do so as a company
 - Ed W., Howard R., and Johnathan can make changes to page
 - Nancy G. asked to add Tiffany P. to help with traffic on page
 - Unanimously approved
- Bill F. discussed field trips
 - Overnight trips coming soon
 - Emails explain vehicle types necessary to travel
 - Let Bill F. know if you are coming with a 4x4 or high clearance vehicle
 - If you don't have one, you might not be able to come
- Claudia M. talked about the upcoming rock show
 - Paperwork has not been submitted yet
 - Will just submit despite not knowing Anthem Days
 - Will submit for Elementary and High School just in case
 - Stan C. volunteered to create poster again this year
- Bill F. discussed upcoming programs
 - Guides – TBD
 - Youth – TBD
 - Found volunteers to help run meeting
 - Youth might take place when the speaker starts at the meetings
 - Parents are recommended and welcome to join
 - Recognition – TBD
- Bob E. mentioned committees' importance
 - Committees fill all roles needed for the club

Respectfully submitted,

Rebecca Slosarik

...Minutes continued from page 9

GENERAL MEETING MINUTES

November 1, 2022

In attendance: open attendance, about 67 adults, 1 youth

- Bill F. called the meeting to order
 - Nancy G. welcomed everyone to the club
- Stan C. did an awesome presentation on mineral identification
 - The International Mineralogical Association recognizes 5,849 species of minerals
 - To help identify minerals you need:
 - Glass plate
 - Streak plate
 - Copper wire
 - Possibly hydrochloric acid
 - Thank you for sharing your knowledge with us again, Stan!
- After break the raffle was presented by Robin S., Clark L., and Rebecca S.
 - Made the club \$225
- Bill F. introduced the newcomers to the club
 - Found the club from online search and fellow rockhounds
- Deanne G. discussed the financials
 - Club in good standing
- Stan C. talked about the claim's committee
 - If you would like to volunteer to head the claim's committee
 - Email dmmclub@gmail.com
 - Stan C. drove around the claim after rain to check on roads
 - Will have a specimen from the claim for the Xmas party
 - The claim is 20 acres
 - NE to NW is a quarter mile distance
 - Will have field trip to claim in January and February
 - The club would like to expand to other claims
 - Suggestions are always welcome
- Bill F. discussed the field trips
 - About 15% at meeting had recently been on a field trip
 - Bill F. brought specimens from trips for show and tell
 - If you need a ride into the 4x4 and high clearance locations, ask first
 - Accommodations may not be available
 - It is a courtesy for those with a proper vehicle to give you a ride
 - Night trips are coming up soon
 - Check newsletter and emails for dates
 - ALWAYS RSVP TO BILL F. FOR FIELD TRIPS
 - Christmas Party will be on the 6th of December
- Officer elections are coming up next meeting
 - President, Vice President, Secretary, Treasurer, and other board of trustees
 - List of members was given out at meeting
 - If more than one person wants to fill a position, it will be democratically voted on at the December meeting

Minutes continued on page 11....

...Minutes continued from page 10

- Claudia M. talked about the t-shirts
 - Now available at meeting
 - Will have extras available to buy in January
 - Email Claudia M. if you need the shirts that were pre-ordered
 - Keychains and stickers are also available
 - Bumper stickers are coming soon
- Tiffany P. talked about membership
 - Renewals are about due
 - Can pay online, with Tiffany at meeting, or mail in check
 - Due by December 14th
- Show dates were discussed
 - Tentatively March 12-14th
 - Will have more information closer to show date
- Claudia M. talked about the Christmas party
 - Sign-up for dishes was setup in the back
 - This is to help know what everyone is bringing
 - You can always bring any side dish you wish to have
 - The catered food is brisket, herb roasted chicken, sausage pasta, and sheet cake
 - Dinner served 5:30-6:30pm, arrive at 5pm
 - Meeting will be after from 7-8pm
 - Officers will be voted on at this time
 - 8-8:30pm is cleanup
 - Please stay and help clean up if you can
 - Bring a \$15 wrapped gift for exchange
 - No gag gifts, geology related if possible
 - Each gift = 1 ticket
 - There will be a silent auction for the meeting
- Gregg J. talked about the newly made safety committee
 - Will have whistles available at upcoming field trips
 - Will have an article in the newsletter about safety
 - Working on getting CPR presentation setup
 - Would like a nurse at every field trip if possible
 - Looking into satellite phones for club
 - If you would like to join the safety committee,
 - Please email dmmclub@gmail.com
- Bill F. discussed the new programs
 - Youth program will be ready by January meeting
 - Finalizing items
 - Wire wrapping
 - New instructor – Ryan Howard
 - Will start January, depending on room availability
- Bill F. presented his Show & Tell
 - Specimens from recent field trips
 - Incredibly beautiful!

Minutes continued on page 12...

...Minutes continued from page 11

- The next meeting will be on the 6th from 7-8pm for club business
- Keep your email up to date to watch for events
- Volunteers for all positions are always welcome
- Silent Auction made the club \$121
- Always remember to wear your name tag to club events

Respectfully submitted,

Rebecca Slosarik



Here are a couple photos from Stan Celestian's recent posts on Facebook.

The upper photo is of a chunk of granitic pegmatite, from Buckeye Hills south of I-10, and east of Rte 85. On the left, the rock in plain light can be seen to be composed of orthoclase feldspar, quartz and muscovite mica. On the right, the feldspar glows red in UVc (shortwave fluorescent light). It has not yet been determined what is glowing green.

The photo to the left is from the same area, but is of an aplite (an igneous rock composed of very fine grains of feldspar and quartz). The rock has been invaded by iron-bearing water, and bands of rusty red and ochre yellow iron oxides were deposited, as sort of "water rings". These rings are referred to as *Liesegang*.

FIELD TRIP TO BRONZESMITH

Thursday, October 27, 2022

Photos and text by Bill Freese

Hey Everyone, DMRMC had another "cool" trip up to the Bronzsmith in Prescott Valley. This the foundry many artists around the country and it one of those places you NEED to see at least once. We go there as a club at least once during the season. We had a bunch of cancellations but still ended up with 12 of us. The whole tour is just incredible.



Watching the technicians pour molten bronze.



The foundry is a fascinating place, and there are lots of fine, even whimsical, sculptures in the gallery. If you haven't gone on this trip, consider going next time!

For a closer look at the process, go to the October 2019 DMRMC Rockchips Newsletter.

FOR MORE PHOTOS OF THIS TRIP, CHECK OUT THE [DMRMC FACEBOOK PAGE](#)

...Field Trips continued from page 13

FIELD TRIP TO STRAWBERRY AREA

Saturday, October 29, 2022

Photos and text by Bill Freese

DMRMC had a trip on Sat Oct 29th to a fossil site north of Strawberry, AZ. The big prize there is the large Brachiopods as you can see in the pics. There were other fossils as well. Absolutely beautiful weather in the high country. We ended up with 9 total only because we only had 3 of the right type of vehicle. (It happens!) A fun trip for all.



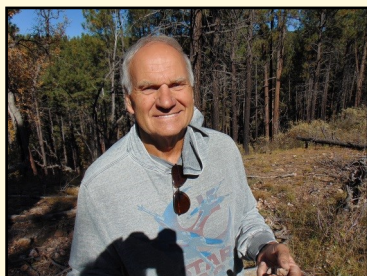
Abundant in the Permian Kaibab Formation of Arizona, *Penicularis bassi* is a productid brachiopod. The shells were asymmetrical (one strongly convex, the other early flat) and spiny. They "floated" in the substrate.



This is a more uncommon Kaibab brachiopod — *Meekela* sp.



Individual brachiopods abound — All *Penicularis bassi*



An interesting nodule or geode — was it hollow???



FOR MORE PHOTOS OF THIS TRIP, CHECK OUT THE [DMRMC FACEBOOK PAGE](#)

Field Trips continued on page 15...

...Field Trips continued from page 14

FIELD TRIP TO RED CLOUD MINE

Saturday/Sunday, November 4-5, 2022

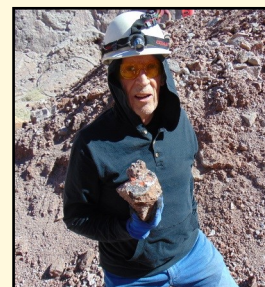
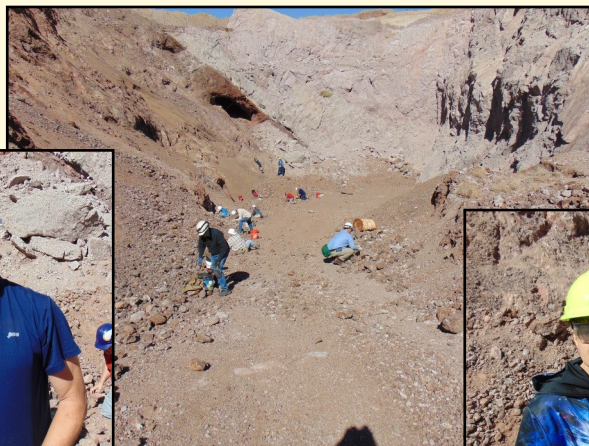
Photos and text by Bill Freese

Hey everyone, DMRMC had their annual trip to the Red Cloud Mine this weekend and it was awesome. We ended up with 11 folks to take the trip out to the mine and most were first-timers. The road had been recently repaired by Daniel & Roger from the mine and so the road was in good shape, but still a rough trip though. We spent time at the Red Cloud pit and newly discovered seam at the South Geronimo and then on Saturday some went down into the North Geronimo for Vanadinite. The weather was beautiful for the whole trip. We were the first group out there to open the season for the mine and it was all good! They are having a month-long event with the Crystal Collector starting at the end of this we, so we wanted to get there before that. Anyone interested in the Red Cloud mine should contact Daniel. Just look up Red Cloud Mine on Facebook or the Web. They are doing a LOT of new improvements out there in the near future.



Wulfenite

Vanadinite



FOR MORE PHOTOS OF THIS TRIP, CHECK OUT THE [DMRMC FACEBOOK PAGE](#)

Field Trips continued on page 16...

...Field Trips continued from page 15

FIELD TRIP TO PURPLE PASSION MINE

Wednesday, November 9, 2022

Photos and text by Bill Freese

Hey rockhounds, DMRMC had a mid-week trip to the Purple Passion mine for some fluorescent materials. I prefer to do these at night so you can get the FULL effect of the different colors. I took a couple pics of our small group, before the sun set. I also included some pics of the minerals under UV light and under normal light. (sorry if they were a little out of focus as I was trying to hold the UV light and the camera at the same time). Everyone had a great time. Let the oohs and aaahs begin!



FOR MORE PHOTOS OF THIS
TRIP, CHECK OUT THE
[DMRMC FACEBOOK PAGE](#)

Field Trips continued on page 17.....

...Opal continued from page 2

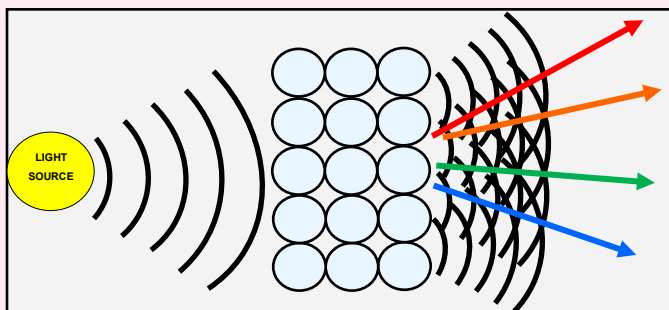


FIGURE 1 DIFFRACTION IN OPAL Opal’s stack of spheres acts as a diffraction grating. As white light bends around the spheres making up opal, it exits the opal headed in different directions. As the exiting light waves overlap each other, both constructive and destructive interference occurs, resulting in the different colors that make up the “fire”, characteristic of Precious Opal. As one rotates an opal specimen in the light, and one observes light interacting with the spheres from different angles, the colors change.

While the colors in opal are dependent on the size of the gaps between spheres, the gap size is directly related to sphere size (which range in size from 150 to 400 nanometers). Small spheres result in blue and green colors (the most common); large spheres produce red and orange. Very small spheres result in purple.

Diagram by Susan Celestian

COMMON OPAL

Common opal, also known a patch, does not exhibit a play of colors. It is usually white or tan, with waxy luster and well-developed conchoidal or sub-conchoidal fracture. The lack of color is due to the jumbled arrangement of spheres, not uniform in size. See Figure 2.

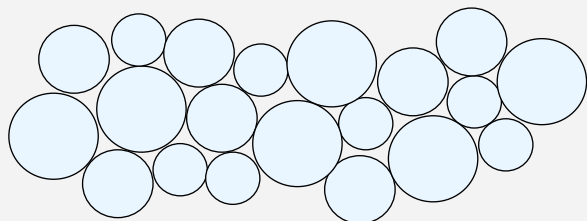


FIGURE 2 COMMON OPAL The irregular arrangement of diversely-sized spheres disallows diffraction, so common opal does not exhibit the play of colors. *Diagram by Susan Celestian*

HOW DOES OPAL FORM?

In areas of siliceous sedimentary rocks or siliceous extrusive volcanic rocks, weathering releases silica into groundwater, that subsequently migrates into cracks, bedding planes, even fossils. Sitting in enclosed areas, colloidal silica forms as a gel, that eventually hardens into opal. As a result, most opal occurs as thin layers and crack fillings (and that is why often it is cabbed as a doublet, with a supporting back layer). In Australia, there are even some fossils that have been replaced by opal (marine invertebrates, [Eric, the pliosaur](#) — with his stomach contents, and a [juvenile plesiosaur](#)).

WHERE DOES OPAL OCCUR?

Currently, 95% of the world’s opal production is from Australia. Ethiopian opal is abundant, and less expensive, but so far the panache of Australian opal persists. Besides Ethiopia, other important producers are: Mexico; Virgin Valley, Nevada; Spencer, Idaho; numerous localities in Canada, Europe, South America, Central America — even on Mars (where opal is shown to infer hydrothermal activity)

HOW DID OPAL GET ITS NAME?

The strongest etymological evidence for the origin of the name Opal, is that it is derived from the Latin *opalus*, that in turn was derived from *úpala*, a Sanskrit word for “jewel” or “gem”.

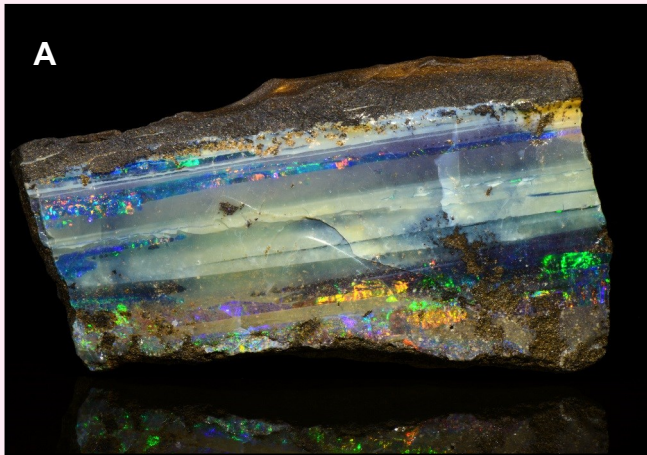
Images of opal follow.



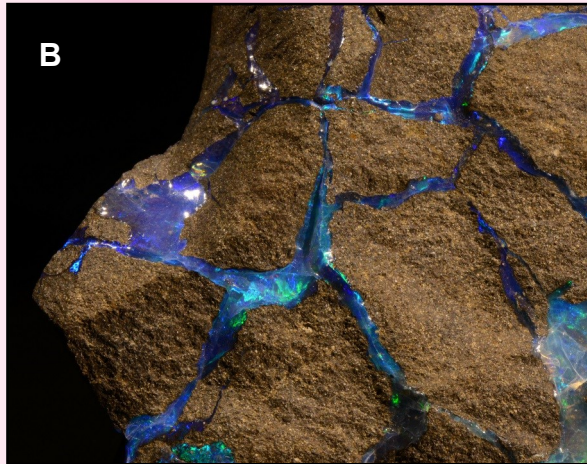
FIGURE 3 PRECIOUS OPAL FILLS CRACKS

This chunk of petrified wood (likely from the Virgin Valley, NV) has been adorned by opal filling out shrinkage cracks. *Photo by Stan Celestian and used with permission of the Natural History Museum of Los Angeles County Gem & Mineral Hall.*

...Opal continued from page 17



A

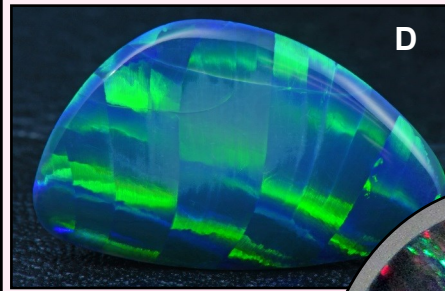


B

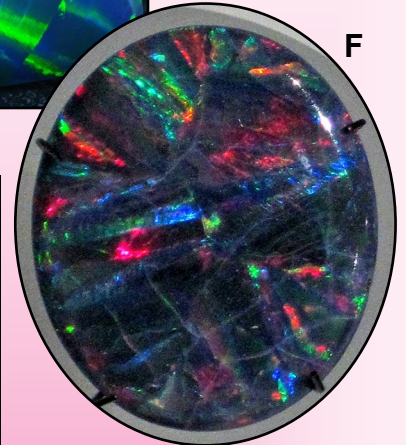


C

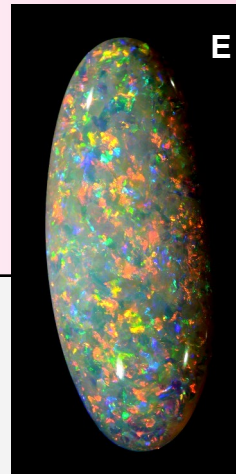
FIGURE 4 AUSTRALIAN PRECIOUS OPAL IN MATRIX These three specimens show some of the ways precious opal is found. In most instances the opal occurs in very thin veins or in nodules. Images A & B qualify as "Boulder Opal". Photos by Stan Celestian; A and B are used with permission of the Natural History Museum of Los Angeles County Gem & Mineral Hall.



D

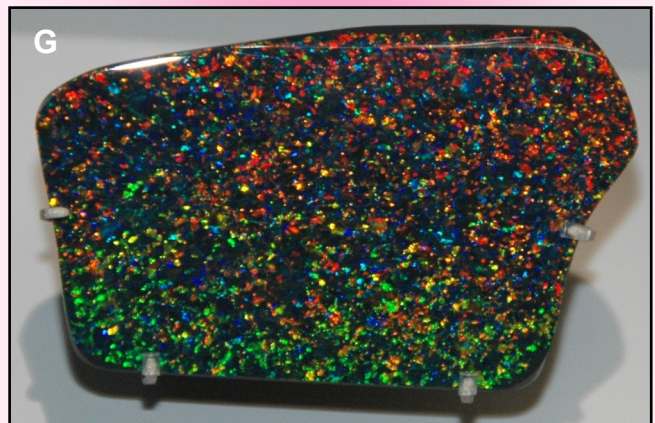


F



E

FIGURE 5 PRECIOUS OPAL COLORS AND PATTERNS Again, these are all Australian opals, illustrating some of the variety in the colors and patterns that make opal an unusual gemstone. Some patterns and color intensities can go for as much as \$30,000 per carat — in the field! Photos by Stan Celestian and are used with permission of the Natural History Museum of Los Angeles County Gem & Mineral Hall.



G



H

Field Trips continued on page 19....

...Opal continued from page 18

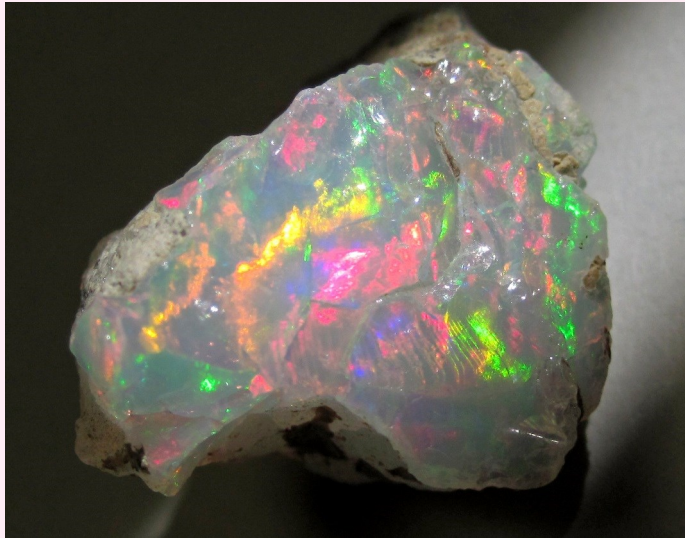


FIGURE 6 ETHIOPIAN PRECIOUS OPAL Gaining in popularity are the opal from Ethiopia. They come in the same color varieties popular in Australia (black, fire, precious), and are currently less expensive. One of the differences between Ethiopian and Australian opal is that Ethiopian opal is generally a variety called "Hydrophane". These opals will absorb water fairly readily, and the opals lose their color. However, allowed to dry naturally, the color returns. Just don't submerge your Ethiopian opal in water! (Geology.com)

On the other hand, water is an integral part of Australian opals, and they do not change when submerged. (Geology.com)

Photo by James St John and licensed under [CC by 2.0](https://creativecommons.org/licenses/by/2.0/)



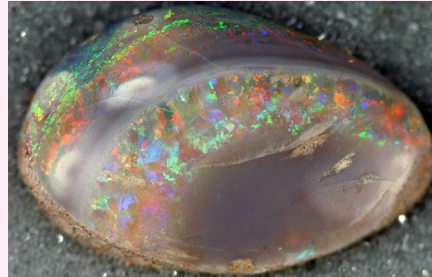
FIGURE 7 FIRE OPAL

Contrary to its name, fire opal does not have the play of colors. Rather it is a transparent opal, the colors of fire — red, orange, yellow — and is sometimes called *jelly opal*. (Qualification:



there is a precious fire opal out of Ethiopia, but it isn't common.) These are from Mexico. Photos by James St John and licensed under [CC by 2.0](https://creativecommons.org/licenses/by/2.0/)

FIGURE 8 OPALIZED FOSSILS Only in the opal fields around Coober Pedy, South Australia, are there found marine fossils that have been replaced by opal (and that includes the aforementioned plesiosaur) . The following images are just some examples. Photos by James St John and licensed under [CC by 2.0](https://creativecommons.org/licenses/by/2.0/)



Clam



Snail

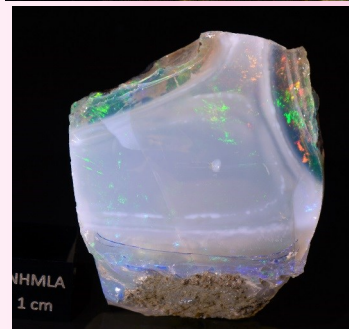


Belemnite

FIGURE 9 OPALIZED FOSSIL WOOD Two U.S. opal localities are famous for their opalized wood. The precious opal can be collected, for a fee. Photos by James St John and licensed under [CC by 2.0](https://creativecommons.org/licenses/by/2.0/)

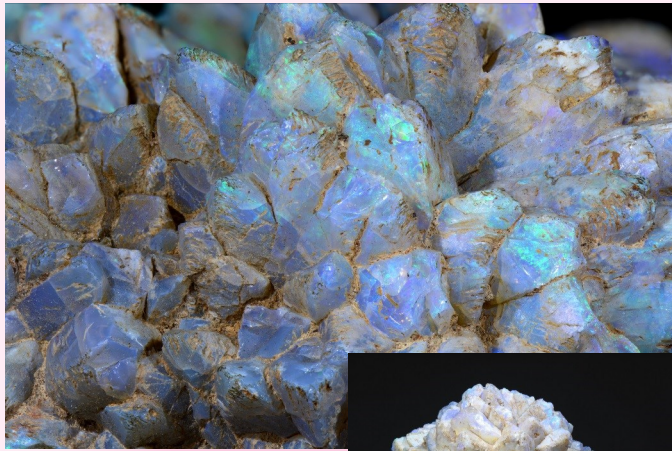


This gorgeously zoned specimen is from the Spencer Opal Mine, and is on display at the Montana Bureau of Mines and Geology Mineral Museum in Butte, MT Photo by James St John and licensed under [CC by 2.0](https://creativecommons.org/licenses/by/2.0/)



This precious opal specimen/fossil wood hails from the Virgin Valley, NV. Photo by Stan Celestian and used with permission of the Natural History Museum of Los Angeles County Gem & Mineral Hall.

...Opal continued from page 19



**FIGURE 10 OPAL PS
IKAITE**

The opal "pineapples" of White Cliffs, New South Wales, Australia are a gorgeous pseudomorph — opal has replaced clusters of ikaite (a hydrous calcium carbonate). Photos by Stan Celestian used with permission of the Natural History Museum of Los Angeles County Gem & Mineral Hall.



**FIGURE 12
OPALITE** When relatively thick beds of opal (mixed with other sediments) occur, it is a rock called opalite. This specimen, aka bacon or candy opal, is from Utah Photo by James St John and licensed under [CC BY 2.0](https://creativecommons.org/licenses/by/2.0/).

FIGURE 13 HYALITE Another unique form of common opal, is Hyalite. It is crystal clear, and forms bubbly growths, crusts, and vug-linings, usually associated with extrusive siliceous igneous rocks. As you can see, hyalite often fluoresces brilliant green (a little bit of uranium goes a long way?) The images below are some examples — all associated with rhyolite (a high silica rock).. Photos by Stan Celestian

**FIGURE 11
COMMON OPAL**

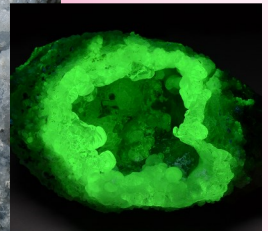
In Arizona, you will encounter common opal with a fair amount of regularity. It is recognizable by its waxy luster and conchoidal to subconchoidal fracture. It is usually a rather boring white or tan, but may be banded or other pastel shades. On the plus side, it is often fluorescent in Short Wave UV light.

This specimen is from Benson, AZ

Photos by Stan Celestian



Electric Opal Knob Location, Zacatecas, Mexico



Electric Opal Knob Location, Zacatecas, Mexico



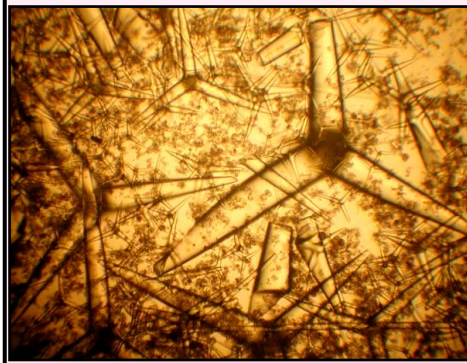
Hell's Gate, Santa Cruz Co., AZ

Opal continued on page 21....

...Opal continued from page 20

BIOGENIC AMORPHOUS SILICA aka OPAL

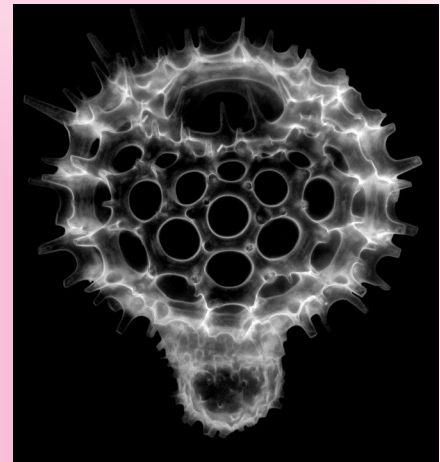
Numerous aquatic organisms create skeletons out of opaline silica: glass sponges, diatoms, radiolarians, silicoflagellates and ebridians (I never heard of the latter either). In addition horsetail rushes (scouring rushes), sawgrass, and many others deposit opal into their tissues (makes them chewy). The skeletons are like spun glass:



Sponge spicules — individual spicules are scattered throughout the sponge's flesh. Photo courtesy of Islands of the Sea 2002, NOAA/OER

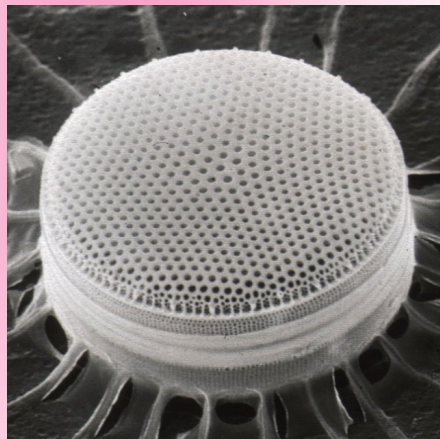


Venus Flower Basket, a glass sponge, Gulf of Mexico
Photo courtesy of [NOAA](#)

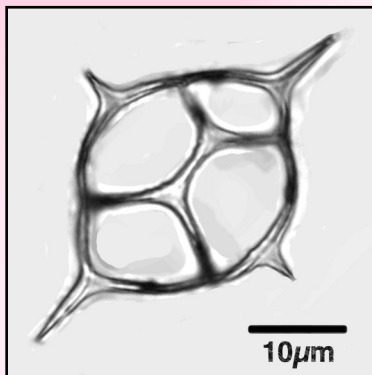


This is an image of *Calocyclus* sp., a radiolarian. The original image was at a magnification of 400x. Image by [Picturepest](#) and licensed under [CC BY 2.0](#)

SEM Image of a Diatom.. Image by [CSIRO](#) and licensed under [CC BY 3.0](#)



SEM Image of *Dictyocha fibula*, a Silicoflagellate, found in floral honey. Image Donát Magyar, Paulian Dumitrica, Anna Mura-Mészáros, Zsófia Medzihradzsky, Ádám Leelőssy and Simona Saint Martin, and licensed under [CC BY-SA 4.0](#)

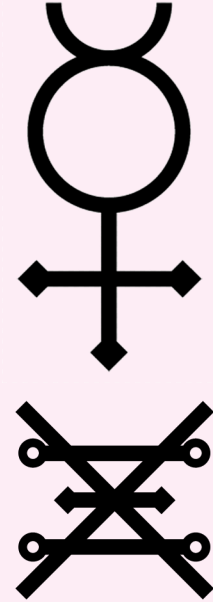


GENERAL RESOURCES FOR OPAL

- <https://gem-a.com/gem-hub/gem-knowledge/colour-patterns-opal-gemstones-rare>
- <https://geology.com/gemstones/opal/>
- <https://en.wikipedia.org/wiki/Opal>
- <https://www.lamoredesign.com/blogs/news/what-is-ethiopian-opal-and-care-guide>
- <https://geology.com/gemstones/opal/ethiopian-opal.shtml>
- <https://www.opalauctions.com/learn/opal-information/australian-opal-vs-ethiopian>
- <https://www.mindat.org/min-32188.html>
- <https://www.planetary.org/articles/20131014-the-gems-of-mars#:~:text=Martian%20Crater%20Rich%20in%20Opal,known%20as%20the%20gemstone%20opal.>
- https://en.wikipedia.org/wiki/Biogenic_silica
- [https://agupubs.onlinelibrary.wiley.com/doi/full/10.1029/2001GB001431#:~:text=%5B2%5D%20Diatoms%20\(Bacillariophyceae\),Nelson%20and%20Brzezinski%2C%201997%5D.](https://agupubs.onlinelibrary.wiley.com/doi/full/10.1029/2001GB001431#:~:text=%5B2%5D%20Diatoms%20(Bacillariophyceae),Nelson%20and%20Brzezinski%2C%201997%5D.)

SILENT AUCTION ITEMS FOR THE **DECEMBER** 2022 DMRMC MEETING

by Stan Celestian, Silent Auctioneer



CU

CU

CU



A truly amazing Copper Nugget was recently recovered from glacial sediments in Michigan. This massive nugget is the size of a small house! It has been acquired by the Daisy Mountain Rock and Mineral Club, and will be presented at the December 6 Party and Meeting, as a **Special Addition** to the **Silent Auction**. The nugget weighs an amazing 22,200 tons. The CAT front end loader is 80 feet long for size comparison. The nugget pictured is **NOT** the small one in the CAT bucket, rather it is the large one denoted by the red arrows in the picture on the right. This awesome nugget can be **YOURS!** *IF* you are the highest bidder. Good Luck! Bring lots and lots of cash.

(Actual size: 13" X 9" by about 2.5" thick. Actual weight is 22.2 pounds.)

...Silent Auction continued from page 22



Pendant: Oco Geode with inset quartz crystal, gold onlay trim.

Frank Lloyd Wright's Taliesin West Tours Vouchers

We have received two (2) vouchers, each voucher is entitled to two (2) complimentary tickets for an Audio Tour of Frank Lloyd Wright's Taliesin West home in Scottsdale. His home is a National Historic Landmark and UNESCO World Heritage Site that attracts over 110,000 visitors each year.

Advanced reservations are required for voucher redemption based on date/time availability on their website. To see more go to: [HERE](#)

The value of each voucher is \$78.

We will put one voucher up for "Silent Auction" at our November club meeting and the second at our December meeting. Proceeds will go towards our second college fund to help a college/university student already studying in the geosciences field.

**AND
MORE**

Bring plenty of **cash or checks (Tiffany can probably take a credit card)** to bid on these items. Observe proper silent auction etiquette. Write your name so that I can read it (or print clearly, no initials). Write your name and bid amount below the last bidder's bid. No arrows pointing to your previous, but revised bid. The highest bidder and amount should be on the bottom of the bidding sheet. Also, **HAVE FUN!** (PLEASE, no crying if you lose, and that goes for the ladies too.)

UPCOMING FIELD TRIPS

Here is a general list of upcoming trips. Details will be emailed to the general membership. Check your email of August 14, 2022 for the complete general field trip calendar.

November

Hewitt Canyon - Wed 30th -- Pink/green Banded Marble



Pretty green and red-striped, fine-grained marble

December

Blue Cube/Prism/Spectrum - Sat 3rd -- Fluorite, Amethyst
 Christmas Party at Anthem Civic Center - Tues 6th
 Saddle Mtn (Tonopah) - Wed 7th -- Chalcedony Roses

January

Mushroom Rhyolite (new claim) - Sat 7th
 Quartzsite Club Day - Sat 21st -- Mineral Shopping
 Oatman area - Fri-Sun 27th-29th -- Travertine, Lizardstone, Fire Agate, Oatman

February

Tucson Show Club Day - Sat 4th
 Mushroom Rhyolite (new claim) - Wed 8th
 Burro Creek - Sat 11th
 Tangle Creek - Wed 22nd
 Brenda Area - Sat 25th

DATES AND DESTINATIONS SUBJECT TO CHANGE

Bill and the field trip committee will be actively looking for productive spots for field trips. If you have any suggestions, you are encouraged to contact him at bfreese77@cox.net

FUTURE SPEAKERS

NOVEMBER: Stan Celestian, club member and retired geology instructor from Glendale Community College, Glendale, AZ.

DECEMBER: Holiday Parity

JANUARY: Swap and Sell

APRIL: Robert Hazen - Carnegie Institution, Washington D.C., via Zoom. He is a geologist and will speak on Mineral Evolution.

FACEBOOK



Visit and join the club page periodically. See what is happening, and boost our visibility on the web. Go to: [The Daisy Mountain Rock and Mineral Club](https://www.facebook.com/daisyrockclub/). It is set up so you can post photos of outings or related items. Share with friends!

AWARD-WINNING WEBSITE

<http://www.dmrmc.com/>

If you have comments, contact Nancy Gallagher.

INSTAGRAM



Follow the club on Instagram. Go to <https://www.instagram.com/daisymountainrockclub/> and follow today. Share with friends!

Officers, Chairpersons, & Trustees

- President:** Ed Winbourne.....ewinbourne@gmail.com
- Vice President:** Bill Freese..... bfreese77@cox.net
- Secretary:** Rebecca Slosarik .. rslosarik1@gmail.com
- Treasurer:**...Deanne Gosse deanne.gosse@outlook.com
- Publicity:** Jessie Redmond...
- Membership:** Tiffany Poetsch tnpoetsch@gmail.com
- Editor:** Susan Celestian.....azrocklady@gmail.com
- Field Trip:** Bill Freese ... bfreese77@cox.net
- Mine Steward:** Stan Celestian.stancelestian@gmail.com
- Show Chair:** Ed Winbourne
- Trustees:**

- | | |
|---------|-----------|
| Susan C | Claudia M |
| Stan C | Tiffany P |
| Bob E | Don R |
| Nancy G | Howard R |
| Renee I | Johanna R |
| Gregg J | Bob S |

Meetings are held the **1st Tuesday of the month** at the **Anthem Civic Building**, 3701 W Anthem Way, Anthem, AZ 85086. General meeting at 6:30 pm. We **do not meet in July or August.**

DMRMCLUB@GMAIL.COM

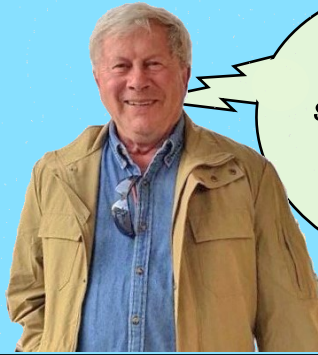
Membership Dues:
First year \$30, then \$20.00 Adults per Person
First year \$45, then \$25.00 Family (2 people)

Meeting Dates for 2022

Jan 4, Feb 1, Mar 1, Apr 5, May 3, June 7, Sept 6,
 Oct 4, Nov 1, Dec 6

WORDS OF WISDOM

passed along by our own **Bob Evans**



I do all my own stunts, but never intentionally!

UPCOMING AZ MINERAL SHOWS

November 26-27 - Wickenburg, AZ Wickenburg Gem & Mineral Club; Wrangler Event Center at Hassayampa School, 251 S. Tegner St; Sat 9-5, Sun 10-4; Admission: Free. SEE [POSTER](#)

December 10-11 - Cottonwood, AZ The Rock Guys; Lux Verde Hotel, 301 AZ 89A; Sat 9-6, Sun 10-4; Admission: Free.

January 5-6 - Mesa, AZ Flag Mineral Museum; Mesa Community College, NE corner of US 60 and Dobson Rd; 9-5; Admission: Free. SEE [POSTER](#)

January 13-15 - Globe, AZ Gila County Gem & Minerals Society; Gila County Fairgrounds, 900 Fairgrounds Rd; Fri-Sat 9-5, Sun 10-4; Admission: \$3 single adult, \$5 couple, kids free.

January 15 - February 12 - Tucson, AZ Multiple shows around town. Go [HERE](#) or [THERE](#) for schedules.

February 9-12 - Tucson, AZ Tucson Gem & Minerals Society; Tucson Convention Center, 250 S Church Ave; Admission: Fee.

March - Anthem, AZ TBA

May 6 - 7 - Kingman, AZ Mohave County Gemstoners; Mohave County Fairgrounds, 2900 Fairgrounds Blvd.; Sat 9-5, Sun 9-4; Admission: Free.

July 14-16 - Show Low, AZ White Mountain Gem & Mineral Club; Show Low Elks Lodge, 805 E Whipple; Fri-Sat 9-5, Sun 10-4; Admission: Adults \$4, kids with adults free.

If you are travelling, a good source of shows AND clubs is <http://the-vug.com/educate-and-inform/mineral-shows/> OR <http://www.rockngem.com/ShowDatesFiles/ShowDatesDisplayAll.php?ShowState=AZ> OR <https://www.rockandmineralshows.com/Location/?displayShows=true>

NEEDED: QUALITY MINERALS (or OTHER) DONATIONS WITH LABELS -- for monthly raffle and silent auction; and for raffle, door prizes, and sales tables at the annual show. If you have specimens to donate, please see Robin Shannon. The Daisy Mountain Rock and Mineral Club is a 501(c)(3) non-profit organization, and will gratefully acknowledge your donation with a Tax Deduction Letter. Thank You!

NOTE FROM THE EDITOR

Have a geological interest? Been somewhere interesting? Have pictures from a club trip? Collected some great material? Send us pictures -- or write a short story (pictures would be great).

Deadline for the newsletter is the 22nd of the month.

Mail or Email submissions to:

Susan Celestian
6415 N 183rd Av
Waddell, AZ 85355
azrocklady@gmail.com



Visit <http://rmfms.org/> for news about conventions, events, and associated clubs. If you are travelling, you might want to contact a club local to your destination. Maybe they have a field trip you could join, while in town.

NORTH MT OPEN STUDIO

North Mt Visitor Center, 12950 N 7th St, Phoenix, AZ

*You are invited to NMVC Studio. Lapidary Classes every Wednesday & Silversmithing Classes on Saturdays — email Shirley Cote for details. For ONLY those people who have taken lapidary or silversmithing classes — Lapidary Open Studio every Monday, and Silversmithing &/or Lapidary Open Studio every Thursday (and designated Saturdays). **Face masks optional.***

TIMES: from 9:00 to noon with cleanup starting at 11:50.

Only 4 people can sign up, and must do so for the full three hours that the shop will be open each day. First come, first served. Usage fee is \$8/hour.

Notice: Please bring your own towels, polishing compounds and buffing wheels as they will no longer be provided.

Please arrive no later than 8:45 a.m. The center may closed to the public at 10.

Email your request for the day(s) you are interested in participating ASAP. Email Shirley Cote at: crystalc17@gmail.com

If more than four people wish to participate on the same day, please expect to be bumped or rotated to another day as efforts to accommodate everyone will be taken (possibly 6 people if 2 are silversmithing only).

Wickenburg Gem and Mineral Show Nov 26 & 27, 2022



Free Admission

Jewelry

Fossils

Minerals

Gems



Over 40 Vendors Best Rock Contest Raffle
Door Prizes Kid's Area Silent Auction

Hassayampa Elementary School
251 South Tegner Street Wickenburg, AZ
9am - 5pm Saturday • 10am - 4pm Sunday

50TH ANNUAL FLAGG GEM & MINERAL SHOW



GOLD - QUARTZSITE, LA PAZ COUNTY, ARIZONA
U OF A MINERAL MUSEUM COLLECTION
PHOTO CREDIT: JEFF SCOVIL
2.2CM HIGH

JAN 6 to 8
2023



MESA COMMUNITY COLLEGE
NE CORNER OF US 60 AND
DOBSON ROAD | 9AM - 5PM



FLAGG
MINERAL
FOUNDATION

The Tailgate Show
Tradition Continues!

FREE Parking
FREE Admission
FREE Samples for Kids
www.Flaggshow.info



2023
65th ANNUAL
GILA COUNTY
GEM & MINERAL SHOW

JANUARY 13th, 14th & 15th 2023
FRI & SAT. 9 AM - 5 PM & SUN 10 AM - 4 PM

DEALERS * DISPLAYS
DEMONSTRATORS * ACTIVITIES

LOTS OF CHILDREN'S ACTIVITIES ** DEMONSTRATORS AND VENDORS
LAPIDARY EQUIPMENT/TOOLS **40+ SPECIMEN DISPLAYS
HOURLY DOOR PRIZES ** AND MUCH, MUCH MORE!!

OPENING CEREMONY PRESENTATION OF COLORS PROVIDED BY THE GLOBE JROTC

SNACK BAR PROVIDED BY THE GLOBE/MIAMI ELKS LODGE # 489

WITH HANDS ON LEARNING

PRESENTATION FOR ALL AGES

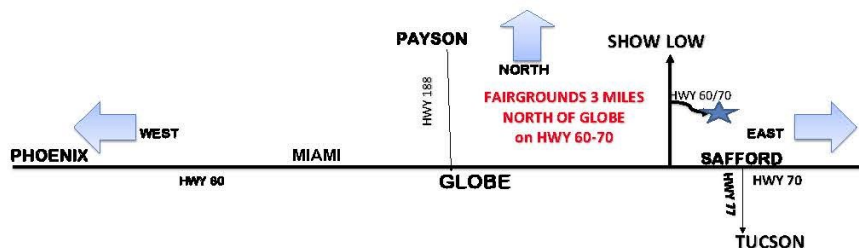
JOHN O'BRIEN - WHAT IS A FOSSIL @ 1PM FRIDAY, SATURDAY & SUNDAY

DEMONSTRATION FOR ALL AGES

*GILA COUNTY COLLEGE - LAPIDARY - ALL DAY FRI, SAT & SUN
WIRE WRAPPING JEWELRY WITH POLYMER CLAY - CINDY KOONTZ - ALL DAY FRI, SAT & SUN
WIRE WRAPPING ART - HALEY WILLIAMS - ALL DAY FRI, SAT & SUN
NATHAN SCHOLTEND - STONE CARVING WITH JADE - ALL DAY SATURDAY*

JOIN US @ GILA COUNTY FAIRGROUNDS
GLOBE, ARIZONA
3 MILES NORTHEAST OF JUNCTION U.S. 60-70

VISIT US ON THE WEB WWW.GILAGEM.ORG



DONATIONS

\$3 SINGLE
OR
\$5 COUPLE

STUDENTS AND KIDS FREE

CONTACT

JODI BREWSTER
President
(623) 810-9780

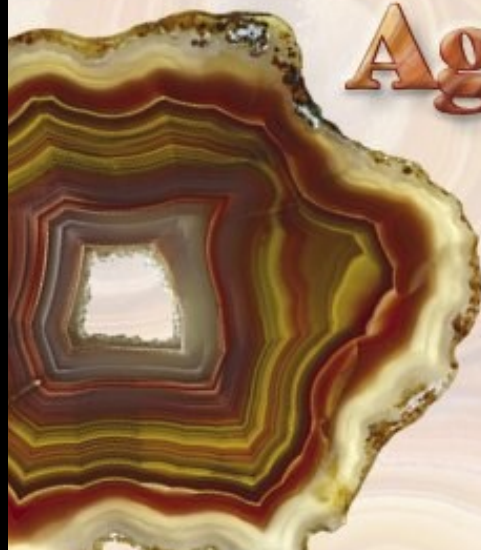
JERRY KASTNER
Vendor Chair
(520) 401-6715

The Tucson Gem and Mineral Society Proudly Presents:

THE 68TH ANNUAL TUCSON GEM & MINERAL SHOW®



Scan code for
Information on
our Tucson Gem &
Mineral Show®



SILICA Agates & Opals & Quartz *Oh My!*

Tucson Convention Center
February 9–12, 2023

for more information, visit: www.tgms.org



Agate: Lari Agnar, Chihuahua, Mexico; Peter Megaw gemstone

The Tucson Gem and Mineral Society Proudly Presents:

THE 68TH ANNUAL TUCSON GEM & MINERAL SHOW®



Scan code for
Information on
our Tucson Gem &
Mineral Show®



SILICA Agates & Opals & Quartz *Oh My!*

Tucson Convention Center
February 9–12, 2023

for more information, visit: www.tgms.org



Quartz: Peter Megaw gemstone; Jeff Scott photograph