



# DAISY MOUNTAIN ROCKCHIPS

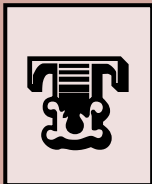
The purpose of Daisy Mountain Rock & Mineral Club is to promote and further an interest in geology, mineralogy, and lapidary arts, through education, field experiences, public service, and friendship.

**VOLUME 8, ISSUE 4**

**APRIL 2023**



**Imperial-style Topaz crystal from Katlang, Mardan District, North-West Frontier Province, Pakistan** Photo by Robert Lavinsky, [iRocks.com](https://www.iRocks.com) and licensed under CC-BY-SA-3.0



# TOPAZ

By Susan Celestian

Topaz is named for the Red Sea island, Topasos (Topázios or Topázian) — today St. John’s Island. The island was actually known for a yellowish green variety of Olivine (chrysolite aka peridot, referred to as topaz in ancient times). During the Middle Ages, any yellow gemstone was called topaz. Not until 1737 was the mineral we today recognize as topaz, actually called topaz.

In ancient Rome, and during the Middle Ages, topaz was thought to cure lunacy; assure safe travels; when attached to left arm, protects one from curses and the evil eye; increase body heat; and enhance mental powers.

Orange topaz is the birthstone for November. Orange topaz is the state gemstone of Utah. Blue topaz is the Texas state gemstone.

**Chemical Formula** -  $Al_2(SiO_4)(F,OH)_2$

**Crystal System** - Orthorhombic (Go to [https://www.minerals.net/mineral\\_glossary/orthorhombic.aspx](https://www.minerals.net/mineral_glossary/orthorhombic.aspx) for interactive images.)

**Growth Forms/Habits** - Prismatic crystal

**Hardness** - 8

**Luster** - Vitreous

**Streak** - White

**Color** - Colorless, blue, green, orange, sherry, yellow, pink, red, purple

**Diaphaneity** - Transparent, translucent

**Specific Gravity** - 3.4-3.6

**Cleavage** - Perfect in one direction

**Fractures** - Irregular, uneven, sub-conchoidal

**Occurrence** - Granitic pegmatites, high temperature quartz veins, cavities in pockets in rhyolite & granite; found also in alluvial deposits.

**Other** - Topaz is often pleochroic: displaying different colors when viewed from different directions.

Pure topaz is colorless. Chromium, as an impurity, results in pink, red, and violet/purple colors. Imperfections in the crystal structure — natural radiation-induced color centers — cause yellow, browns, and blue. The latter color, while abundant on the commercial market, is actually relatively rare as a naturally-occurring color. (AND the yellow to brown colors are most unstable, losing their color when heated up a bit.) Many colors of topaz in the market are enhanced by heat and/or irradiation.

Images of topaz can be seen in Figures 1-10.



**FIGURE 1 LARGE COLORLESS TOPAZ CRYSTAL** This large crystal is out of the collection of the Natural History Museum of Los Angeles County. Very large topaz crystals are not unusual. Photo by Stan Celestian and used with permission of the Natural History Museum of



**FIGURE 2 TOPAZ** The brownish and the light pink topaz crystals are from Shigar Valley, Skardu District, Baltistan, Northern Areas, Pakistan. Right: by Didier Descouens, licensed under CC-BY-3.0; Left: Robert Lavinsky, [iRocks.com](http://iRocks.com) licensed under CC-BY-SA-3.0

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## APRIL SPEAKER

# Mineral Evolution

By Dr. Robert Hazen, Earth & Planets Laboratory,  
Carnegie Institute of Science

According to Dr. Hazen, minerals preserve the history of the planets and history of life on Earth. He is a leader in the study of mineral evolution, which provides a new framework in which to view minerals. In fact, it has led to the study of the “co-evolution of Earth and life”.

*Mineral evolution is the study of the changing diversity and distribution of minerals as a consequence of evolving physical, chemical and biological processes in planetary systems.*

The study highlights the “complexification” of minerals over time: increasing diversity of mineral species, an increase in the relative abundance of minerals, and increasingly greater compositional ranges.

### Mineral evolution has been divided into stages.

STAGE 0 (pre-Solar) results in about 20 nano– and micro-sized mineral particles, including diamond, rutile, spinel, graphite, forsterite, and others — built from about 12 elements.

STAGE 1 took place within the Solar nebula, about 4.56 bya, and produced about 90 mineral species — the Primary Chondrite Minerals.

STAGE 2 (4.55 bya) resulted in the formation of about 300 more species, as alterations of planetesimals took place by water, heat, and impacts. These included: feldspars, quartz, micas, clays, zircon, and calcite.

STAGE 3 (4.55-4.35 bya) is the formation of “dry” planets and “wet” planets. For dry planets, this is the point at which new minerals no longer form (examples: Moon, Mercury). On wet planets, volcanism, outgassing, surface hydration, evaporation, and ices create oxides and hydroxides, to bring the number of mineral species up to about 450. This is probably the end of new minerals on Mars, as further complexity will require processes such as subduction. **Water probably accounts for 90% of new mineral species.**

STAGE 4 (>3.5 bya) is marked by Granite Formation, differentiation resulting from the partial melting of basalts and sediments. At this point, there are about 1000 different mineral species (including pegmatites).

STAGE 5 (>3bya) begins with the development of plate tectonics and new modes of volcanism. These actions result in the formation of massive base metal deposits (sulfides) and complex high pressure metamorphic suites — and we are up to about 3000 mineral species.

STAGE 6 (4.0-2.5 bya) is the Anoxic Archean Biosphere in which Banded Iron Formations and carbonates are added within the 3000 mineral species — all formed by physical and chemical means.

STAGE 7 (2.5-1.85 bya) is the Paleoproterozoic Oxidation, and the appearance of life and rising oxygenic photosynthesis. Thus begins an acceleration of the creation of new mineral species.

*\*\*\*\* Note that minerals played a role in the advance of life on Earth. They acted as catalysts, reactants, templates, protection and scaffolds that facilitated the beginnings of, and increasing complexity, of the building blocks of life.*

STAGE 8 (1.85-0.85 bya) is the “Intermediate Ocean” in which oxidation and reduction creates few new minerals.

STAGE 9 (850-542 mya) is the Snowball Earth and Neoproterozoic Oxidation, during which glacial and tropical climate cycles alternated, and resulting in few new minerals.

STAGE 10 (< 542 mya) is Phanerozoic Biomineralization, during which time we reached the current (and ongoing) total of about 5900 mineral species. Biological processes has resulted in an explosion of new mineral species!

**FACT: 500 of the 780 copper minerals won't form without oxygen.**

**CLAUDIA MAREK**  
**DAISY MOUNTAIN ROCK AND MINERAL CLUB**  
**2023 ROCKHOUND OF THE YEAR**

*By Ed Winbourne, President*



Claudia Marek is the clear and undisputed winner of the 2023 Rockhound of the Year award for The Daisy Mountain rock and Mineral Club. The list of what Claudia has done, and continues to do, for the Daisy Mountain Rock and Mineral Club (DMRMC) is prodigious. It is not only the number of tasks she has taken on that make her our award winner. It is the level of enthusiasm she brings to her work and engenders in all who work with her. Claudia is a true rockhound. If you need proof of that take a gander at her front yard.

Lets look at what she does for us. The list is long. Claudia took on the job of Show chairwoman and gave us our most successful Show to date. To accomplish that meant she needed to fill key positions such as vendor coordinator and security. She changed the layout of the Show making our outdoor vendors very happy. Claudia is a monitor at the North Valley Visitors

Center to enable Club members to have access to lapidary instruction and equipment. That had been an every other week task; but when I was in the hospital she was there every Monday. She works every STEM night that the Club participates in. Claudia has been the biggest promotor of volunteerism for Club members. She promotes Club tee shirt sales in order to better fund our scholarship program as well as administering the program. She works all year to make certain the Kids Corner at our Show is adequately supplied with material. All this while going on club field trips and helping new members find and identify the treasures that are the object of those trips.

I am certain that I am leaving something out and for that I apologize. My point is that Claudia is an undeniably valuable member of the Daisy Mountain Rock and Mineral Club and is easily our, "ROCKHOUND OF THE YEAR".



# EMERGENCY RESCUE PLAN

By Guest Writer, Stan Celestian

You are out in the middle of nowhere, alone, no cell phone service, and your car is dead.

**YOU NEED HELP!**

## What do you do?

One option is satellite communication. With a push of a button you can send out an **S. O. S.** that will alert local authorities and give them your precise location.

With another few button pushes you can send an email or text message to family and friends to let them know what is happening.

This is how it works with the Garmin InReach Mini 2. (I recently purchased this device and have tried the messaging twice. It worked flawlessly.)

**FIRST** you must subscribe to a satellite service. (**Nothing will work without it.** I paid for an annual plan.)

Then you enter the email addresses and/or cell phone numbers of the contacts you have chosen.

There are several different service plans. I selected the cheapest. With this plan I can send unlimited what-Garmin- calls, "Check in Messages". They are:

- I'm checking in, everything is okay.
- I'm starting my trip.
- I'm ending my trip.

As you can see these are the most basic ideas you would want to relate to someone, but they do get the point that all is well on your end.

Beyond these basic "Check in Messages" I can create my own messages of up to 160 characters. These can be sent to the contacts you previously created. With the plan I selected I am allowed 20 of this type of message per month. You can say something like "I'm stuck and need a tow." or "My truck fell off a

cliff. Send someone to get me." or "I found the Mother Lode!" Each time you send a message the recipient gets a link that relates your precise location in latitude and longitude, as well as a link to a map website. Here is the message I sent to myself while at the Apache Tear Field trip on April 8:

**SIZE: 4" X 2" X 1" WEIGHT 4 OZ**



...Safety continued from page 5

inReach message from Stan Celestian

I'm checking in, everything is okay.

View the location or send a reply to Stan Celestian:

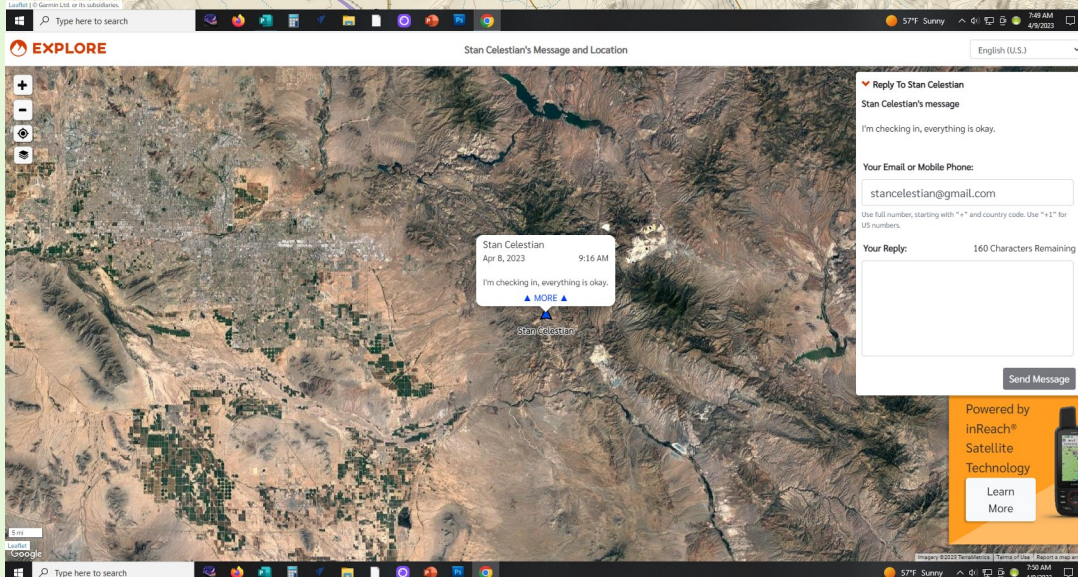
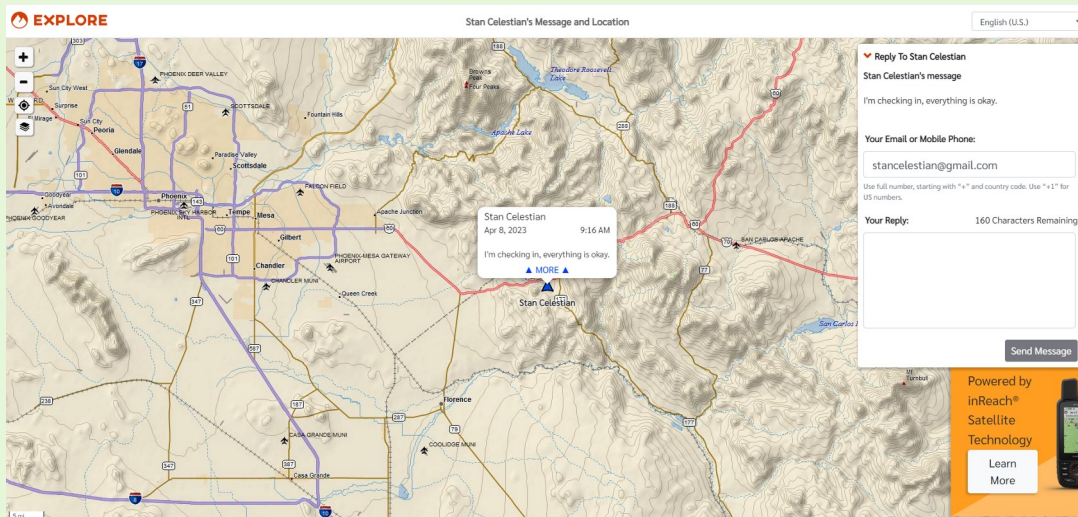
<https://explore.garmin.com/textmessage/txtmsg?extld=08db384c-91be-dc1e-0022-4847a8070000&adr=stancelestian%40gmail.com>

Stan Celestian sent this message from: Lat 33.273028 Lon -111.128297

Do not reply directly to this message.

When you click on the link provided it provides a map of where the message originated. The first image (below) is a topographic map. In the top left corner are choices of viewing the area, including a satellite view of the area. The second image (below) shows this view.

You can zoom in as the image on the next page shows. This is accurate enough to show anyone where you are and the terrain around you. NOTE: I am still learning its capabilities. It does link to my smartphone which expands its capabilities. (The fun never stops.)



...Safety continued from page 6

The screenshot shows the inReach satellite messaging interface. At the top, it says "EXPLORE" and "Stan Celestian's Message and Location". A message from Stan Celestian is displayed: "I'm checking in, everything is okay." with a timestamp of "Apr 8, 2023 9:16 AM" and a "MORE" link. Below the message is a "Reply To Stan Celestian" form with the text "Stan Celestian's message" and "I'm checking in, everything is okay." The form includes a field for "Your Email or Mobile Phone:" with the value "stancelastian@gmail.com" and a "Your Reply:" text area with "160 Characters Remaining". A "Send Message" button is at the bottom right. A small inset shows a satellite phone device. Text at the bottom right of the interface reads "Powered by inReach® Satellite Technology" and "Learn More".

**Initiating an SOS Rescue** - Obviously this is a serious situation and should only be used in dire life or death situations. This is how it works, as shown by this page from the owner's manual:

**Initiating an SOS Rescue**

You can initiate an SOS rescue with the device turned on or off if the device has battery power.

1. Lift the protective cap ① from the **SOS** button ②.



Pressing the SOS button **sends a message to the Garmin Response team, and they notify the appropriate emergency responders of your situation.** You can communicate with the Garmin Response team during your emergency while you wait for help to

2. Press and hold the **SOS** button.
3. Wait for the SOS countdown.  
The device sends a default message to the emergency response service with details about your location.
4. Reply to the confirmation message from the emergency response service.  
Your reply lets the emergency response service know that you are capable of interacting with them during the rescue. If you do not reply, the emergency response service will still initiate a rescue.

For the first 10 minutes of your rescue, an updated location is sent to the emergency response service every minute. To conserve battery power after the first 10 minutes, an updated location is sent every 10 minutes.

There are many other functions in this little device that are very useful like tracking. (I'm still learning.)

If you are seriously interested you can go to the Garmin website and read about these amazing functions. But, never rely on this one piece of technology to keep you safe. All of the other "common sense" precautions need to be observed.

**BE PREPARED !** Be sure to have a well-stocked and fresh first aid kit and know how to use it, prepare your vehicle, have equipment to get unstuck, have plenty of water, charge all of your batteries, and let someone know where you plan on going.

Sue and I often go on our own to places with no cell phone service. We always let our son know our plans, but I feel this device provides the best assurance that we can get help if we need it.

# LAPIDARY CORNER

By Johanna Raupe

## #4 Constructing a Dopping Stone Holder

For the purpose of this article, I am only going to focus on constructing a holder for staging your cabbing preforms.

### What is Dopping?

Dopping is the art of attaching a preform (shaped stone) to the end of a dop stick using dopping wax (a specialized mixture of wax and lacquer). The attached dop stick functions as a temporary handle, enabling the artisan to safely shape and polish the semi-precious stone.

### Benefits of a Dopping Stick Stone Holder

A dopped stone holder is a valuable asset for your processing area. A stone holder provides an avenue to organize, maintain the provenance, and protect polished stones during the cabbing process. You can organize the stones by grouping them in section of the holder and tagging the grouping with the grouping's provenance. To prevent damage to the stones prior to the final post polish process, the stones can be stored in the holder until separation and storage.



FIGURE 1: Tagged Dopped Stones

To tag the grouping, you can use a section of index card with a punched hole. Run a piece of line through the hole and tie the ends together. Drape the label over one of the dopped stones in the grouping. In Figure 1, the dopped stones are tagged with the name of where the rough material was collected.

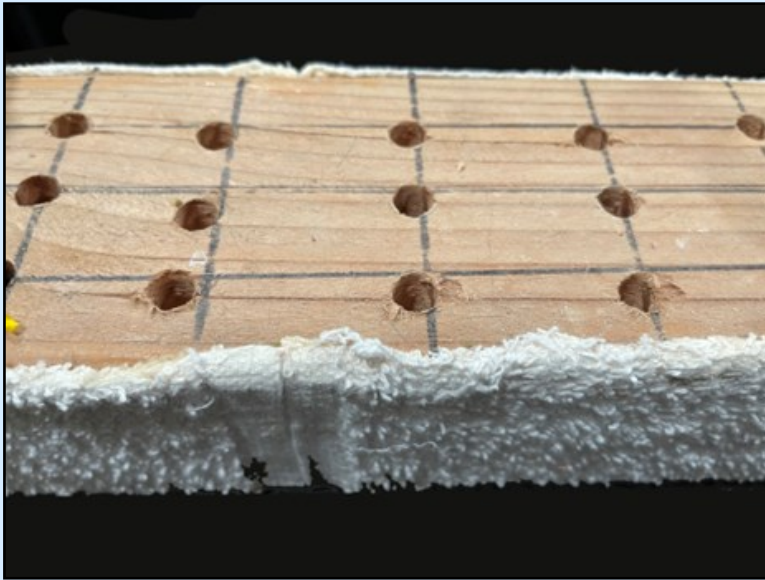
### Creating the Dopping Holder

For this dopping stone holder, select a two-foot section of 4" x 4" lumber. The holder functions better using a 4" x 4" rather than a 2" x 4", because the depth of 4" provides additional stability for the top-heavy dopped sticks.

Select one side of the 4" x 4" and draw a grid across the face. Provide sufficient space between each of the intersections so that the dopped stones do not touch one another when placed into the holder. A good starting point is to draw three lines the length of the 4" x 4" with a spacing of 1" from the edge of the face and between each line from top to bottom. Draw perpendicular lines with a spacing of 1.5" from the edge and spacing between the next lines. Each intersection provides a guide to where you will drill a hole for your dopping stick. Select an appropriate drill bit that will create a hole that will easily accommodate a wooden dowel. See Figure 2.



...Dopping continued from page 8



**FIGURE 2: Drilled 4" x 4"**

Drill a hole at each intersection approximately 3" deep. Do not push the drill all the way through the 4" x 4". In Figure 2, a cursory grid with holes drilled is shown. It is important to note here that the grid is just a guide. The location of the holes does not have to be 100% perfectly aligned with the grid.

The last step to the process is to glue some material to the ends and the other three sides of the 4" x 4". Select some shop terry towels or dish towels. Remove the folded and sewn edges from the towel. Place the 4" x 4" with the drilled holes face down on the workplace. Glue the terry towel to the 4" x 4" starting from the bottom and working up the sides. On the ends, cut the terry cloth so to eliminate the extra material before attaching the cloth to the holder. Trim the top edge of the terry cloth flush with the face of the 4" x 4".

The purpose of adding the terry towel is to protect your hands from the raw wood and to protect your work surface from scratches that could be created if you were to slide the raw wood across your work surface.

You have now created a valuable tool for processing your stones into polished cabochons.

**Until next month, Happy Rock hounding & Slabbing**



**FIGURE 3: Grouped Dopped Preforms**

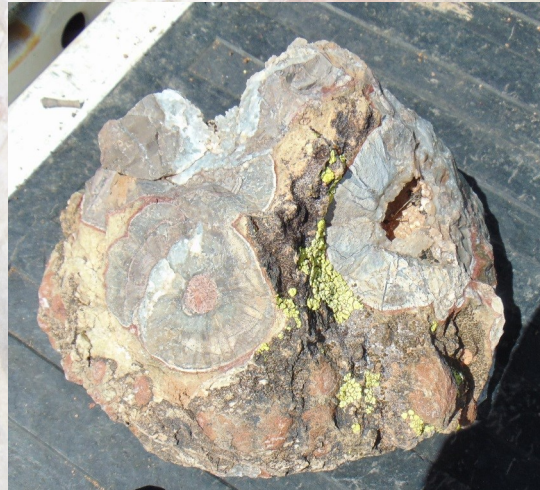
as

The DMRMC had one last trip out the club claim, on Wednesday, before it starts getting too hot. There were 20 of us that had a great time picking up Mushroom Rhyolite and many other specimens. Our weather was still great! We are supposed to be around 82 degrees already, but we are still getting days in the 60's. Not complaining, just oddly cool. See ya next time.

# MUSHROOM RHYOLITE

## Wednesday, March 29, 2023

*Photos and text by Bill Freese*



**Mushroom-like patterns**  
**Fluorescent chalcidony**  
**Geodes**  
**Agate**



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

*Field Trips continued on page 11..*

...Field Trips continued from page 10

# BBC MINE

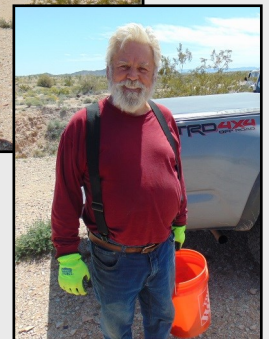
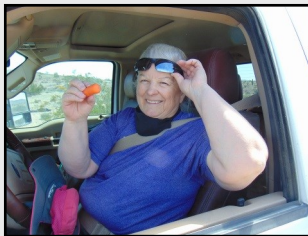
## Saturday, April 1, 2023

Photos and text by Bill Freese

Hey Rockhounds, the DMRMC had a trip on April 1st to an old mine, north of Bouse, AZ. The major find at this location is hematite. There was plenty of nice pieces for the 18 folks to find their favorites. The weather was still great. It should already be in the 80's?! The pieces did not photograph well, so you might try zooming in. Everyone went home happy.



Anyone with extra hematite — Claudia can use it for the DMRMC egg carton program.



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

Field Trips continued on page 12..

...Field Trips continued from page 11

# CHILITO MINE

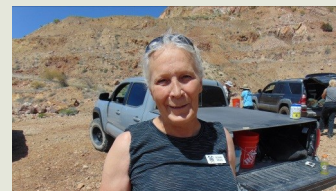
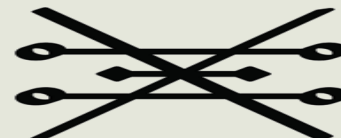
## Wednesday, April 5, 2023

Photos and text by Bill Freese

The DMRMC & MSA had a mid-week trip on Wednesday to the Chilito Mine south of Superior. There were 22 of us that headed down to one of favorite spots for copper minerals. Plenty of chrysocolla and other colorful specimens abound. I could not believe that the temperature only got into the 60's. All had a good time. The wildflowers were in bloom as well.



**SUPER BLOOM!**



**Cu**



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

Field Trips continued on page 13...

...Field Trips continued from page 12

# PERLITE MINE

## Saturday, April 8, 2023

Photos and text by Bill Freese

Hey Everyone, the DMRMC & MSA had a trip to Superior this Saturday for Apache Tears. We were just shy of 40 people who combed the Perlite mine for the little black eggs. Tom, our host, kept everyone safe while in the mine area. (it is a working mine!) After searching for a couple hours, we all left with quite the collection of Apache Tears. The temps are finally starting to creep up, as it was close to 80 degrees by the time we left. Everyone was very happy.



Panorama by Susan Celestian



By Sue Celestian



**ID THOSE HANDS...**

**Any extra Apache Tears will be gratefully accepted for the egg carton program!**



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

Field Trips continued on page 154.

...Field Trips continued from page 13

Just for fun, Stan used ChatGPT (<https://chat.openai.com/auth/login?next=%2F>) to generate a poem about the club field trip to the perlite mine. Here it is (I only tweaked a couple words) — pretty amazing. You should try it out!

### Apache Tears So Fine

A

On a beautiful sunny day,  
The Daisy Mountain Rock and Mineral Club,  
Made their way,

P

To the Superior Arizona perlite mine,  
To collect Apache tears, so fine.

A

The earth was rich,  
With treasures untold,  
And the miners dug,  
For riches so bold.

G

But for us, the beauty was in,  
The small black stones,  
Known as Apache tears,  
Glistening like stars on their own.

H

We searched high and low,  
With hammer and chisel in hand,  
For the perfect stone,  
That would fit our plan.

E

We found them in clusters,  
Or scattered all around,  
And when the sun hit them,  
They shimmered around.

T

With sweat on our brow,  
And dirt on our clothes,  
We filled our bags,  
With these beautiful stones.

E

We felt a connection,  
To the earth and its gifts,  
As we collected these treasures,  
With our hearts and our wits.

A

And when the day was done,  
And our bags were full,  
We said our goodbyes,  
And headed back to our homes.

R

S

But the memories we made,  
Will last a lifetime,  
Of that beautiful sunny day,  
And the Apache Tears so fine.

...Field Trips continued from page 16

# DAVE HANELINE MINE

## Saturday, April 16, 2023

Text by Bill Freese

DMRMC had a trip out to the Dave Haneline Memorial Mine just north of Wickenburg on Sunday. We had 16 eager rockhounds looking for many different minerals at a claim that the club had before. It is now owned by another group, but we have permission to visit. I did not get a chance to take any pictures, but you can just imagine all of the smiling faces with many treasures.

# DRAGON MINE

## Wednesday, April 19, 2023

Text by Bill Freese; Photos by Bill Freese unless otherwise cited

DMRMC had a trip Dragon Mine area. We had 9 friends from the Mingus Club join us on this trip for a total of 19. This was set up as a 4x4 only trip because the trail is really rough. We managed to get everyone into a 4x4 vehicle and headed down the trail, stopping now and then to take more wildflower pics. Everyone on the trip found some great "craft" rocks and cool fluorescent thunder eggs. They all left happy.

**T  
H  
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R  
E  
G  
G  
S**



Photo by Samantha Love



Photo by Windswept Traveler

Pallid-winged Grasshopper



Photo by Samantha Love

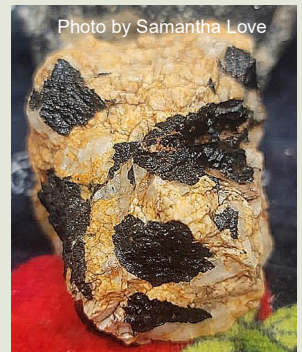


Photo by Samantha Love



Photo by Samantha Love



Photo by Windswept Traveler

Echinocereus engelmannii



Photo by Windswept Traveler



Mojave Desertstar

Photo by Windswept Traveler

*Flowers and Insects*

# SCHORL

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

...Topaz continued from page 2



**FIGURE 3 “AMERICAN GOLDEN”** In the upper image, a young child is flanked by two large topaz crystals. The one on the left weighs 70 pounds, the one on the right 110 pounds. In the center is the “American Golden” faceted stone (also featured in the lower image). It is 22,895.5 carats, has 172 facets, is roughly 7”x 6” x 4”, and was faceted over a two-year period by Leon Agee. Originally it was a 26 pound stream cobble. Origin: Brazil Upper: by Chip Clark, Smithsonian National Museum of Natural History, Public Domain; Lower: Smithsonian and digitally enhanced by SquareMoose, Public Domain.

**FIGURE 4 GREEN TOPAZ**

This beautiful gemmy topaz is from Dunton Gem Quarry, Newry, Oxford County, Maine. Image by Robert Lavinsky and licensed under CC-BY-SA-3.0



**FIGURE 5 REDDISH-BROWN TOPAZ**

These two specimens are a color rather distinctive to topaz from the Mina Veronica, Copelito, Zacatecas, Mexico. The rusty-redness is due to areas being included by hematite. The crystals arise from a rhyolite matrix. Photos by Stan Celestian.



...Topaz continued from page 16



**FIGURE 6 IMPERIAL TOPAZ** The reddish-orange color of this crystal is dubbed “Imperial Topaz”. The primary source — and location of this crystal — is Ouro Preto, Minas Gerais, Southeast Region, Brazil. *Photo by Robert Lavinsky and licensed under CC-BY-SA-3.0*



**FIGURE 7 BLUE TOPAZ** This beautiful 110 carat blue topaz is from Minas Gerais, Brazil. Topaz makes a beautiful gemstone, although care must be taken as — although it is very hard — it does cleave easily.

Although we can't be certain, it appears that this stone is naturally this blue. *Photo by Stan Celestian and used with permission of the Natural History Museum of Los Angeles County.*



**FIGURE 8 UTAH TOPAZ** A classic collecting locality in the U.S. is Topaz Mt, west of Delta, Utah. There beautiful, lustrous sherry-colored topaz crystals can be extracted (with a lot of muscle power) from the rhyolite, in which they formed. These crystals need to be kept out of the light, as the color-centers that cause the color, are easily healed by exposure to light, causing the color to fade. There are lots of colorless crystals lying about on the ground at this locality (see lower photo).

*Photos by Stan Celestian*

...Topaz continued from page 17

**FIGURE 9 ARIZONA TOPAZ**

In the Aquarius Mts, SE of Wikiup, vugs in rhyolite host spessartine garnets and the occasional topaz crystal (see arrow). These were precipitated out of hot vapors permeating the



rock — a process called pneumatolytic.

*Photo by Stan Celestian*

**GENERAL RESOURCES FOR TOPAZ**

- [https://www.minerals.net/mineral\\_glossary/orthorhombic.aspx](https://www.minerals.net/mineral_glossary/orthorhombic.aspx)
- <https://webmineral.com/data/Topaz.shtml>
- <https://www.dakotamatrix.com/mineralpedia/8270/topaz>
- [https://www.google.com/search?q=topaz+wikipedia&rlz=1C1CHBF\\_enUS1021US1021&oq=topaz+wikipedia&aqs=chrome..69i57j0i67i650j35i39l2j0i131i433i512j69i60l3.13618j0j7&sourceid=chrome&ie=UTF-8](https://www.google.com/search?q=topaz+wikipedia&rlz=1C1CHBF_enUS1021US1021&oq=topaz+wikipedia&aqs=chrome..69i57j0i67i650j35i39l2j0i131i433i512j69i60l3.13618j0j7&sourceid=chrome&ie=UTF-8)
- <https://www.mindat.org/min-3996.html>
- <https://www.mindat.org/loc-159278.html>
- <https://www.handbookofmineralogy.org/pdfs/topaz.pdf>
- <https://www.gia.edu/topaz-description#:~:text=The%20element%20chromium%20causes%20natural,%2C%20brown%2C%20and%20blue%20color.>
- <https://nature.berkeley.edu/classes/eps2/wisc/L10c3.html#:~:text=In%20the%20specific%20case%20of,brown%20%2B%20blue%20%3D%20yakky%20green.>
- <https://www.jewelers.org/education/gemstone-guide/631-topaz/#:~:text=Topaz%20Treatment,which%20results%20in%20many%20colors.>



**FIGURE 10 ALLUVIAL TOPAZ** Near Lake George, CO Joseph Dorris operates the Topaz Mountain Gem Mine (a fee locality). Here topaz has weathered out of granites and granitic pegmatites, and “concentrated” in the gravels and sands of stream and colluvial deposits. One sorts through the gravel, looking for crystals or pebbles of topaz. They are largely colorless; however, yours truly did find a very pale blue one. *Photos by Stan Celestian*



**DESERT BROOMRAPE aka Burroweed Strangler (Aphyllon cooperi ssp cooperi)**

These images are from Celestian’s April foray into the White Tank Mts Regional Park. It is a fairly uncommon flower, that is native to the Southwest (California, Arizona, north Mexico). It is a parasitic plant, hosted by plants in the family Asteraceae, such as Brittlebush, Desert Broom, Desert Marigold, Bursage, and many others. As such it has no leaves, or chlorophyll. Desert Broomrape is on the federal list of Noxious Weeds. *Photos by Susan Celestian*



# GEO MINI Phantoms

Text & photos by Stan Celestian



## GENERAL DEFINITION OF PHANTOM

1. An apparition or specter.
2. An appearance or illusion without material substance, as a dream image, mirage, or optical illusion.
3. An illustration, part of which is given a transparent effect so as to permit representation of details otherwise hidden from view, as in the case of the inner workings of a mechanical device.

The concept of a "phantom" as you can tell from the first two aspects of the definition imply something supernatural, mysterious and basically not real. The third definition strikes closer to reality in crystallography as phantom crystals are real and are easily observed.

**CRYSTAL DEFINITION OF PHANTOM** - A record of an earlier growth stage that is preserved as a coating, that has since been covered or included by the continued outward growth of the crystal.

The quartz crystals above (from Madagascar) show at least two very well-preserved growth stages, as fuchsite coatings. Fuchsite is a variety of chromium-bearing muscovite (mica) that is green.

During the growth of these quartz crystals the aqueous solution from which they were developing was contaminated with very fine, dust-like crystals

## Quartz with Fuchsite Phantoms



of fuchsite. However, that contamination was short-lived and the aqueous solution that produced the initial quartz growth resumed the crystal growth. The fuchsite remained where it settled and faithfully preserved the shape of the earlier growth form.

Phantom crystals are best observed in crystals that are clear like quartz, calcite or fluorite. However, they are not restricted to transparent crystals. Phantom crystals have also been "observed" (detected) in crystals of magnetite, pyrite and hematite. In these cases, the phantoms are imaged by x-rays or electron microscopy. But these phantoms still represent changes that took place in the environment of the crystal growth. Obviously they are not as easily seen as the phantoms of these quartz crystals but still considered phantoms by crystallographers.

You might ask, "Aside from their intrinsic beauty and mysterious alluring appeal to the mineral collector, do they have any scientific value?" Not surprisingly, they do! The phantoms represent crystal faces that formed at some time earlier than the final crystal. If those faces preserved as phantoms are different an inquiry can be made as to what changes took place in the growth environment to cause those changes. This leads to a better understanding of how crystals grow and develop, which is important in the field of synthetic crystal production. Also, the type of impurity (as the fuchsite coating) can give clues to the overall mineralogy of the crystal deposit, as in when did the chemistry of the growth fluid change, or they can supply information about the temperature and pressure attendant on crystal growth.

In conclusion, it is better to light one little candle than to curse the darkness.

**BOARD MEETING MINUTES****April 4, 2023**

- In attendance: Bill F., Bob E., Bob S., Claudia M., Deanne G., Don R., Ed W., Gregg J., Jeff B., Johanna R., Nancy G., Rebecca S., Renee I., Stan C., and Sue C.
- Bill F. called the meeting to order
- Insurance company sent policy options
  - USLI – policy seems appealing to board
    - Limit was discussed
      - \$1 mil is low for today's standards
      - \$5 mil is where the pricing goes up with other insurances
      - It is cost effective to investigate a \$4 mil option
      - Some were okay with \$2 mil
    - We got a quote for \$1 & \$2 mil
      - \$750 for \$1 mil
      - \$1,047 for \$2 mil – \$297 difference from \$1 mil
  - The policy purchase was discussed
    - Pros are having more liability insurance
      - The leaders of the club are looked at as leaders
        - Then there needs to be assurances that the leaders will be safe as well
      - This club is growing so there are more opportunities for mishaps
      - The club participates in dangerous activities
        - All the more reason to get liability insurance
    - Cons
      - It costs money to be safe
  - Attorney fees were discussed
    - Pros of having them included
      - That money does not come out of our pockets
    - Cons of having them included
      - That money comes out of the policy total
        - Attorney fees could wipe out all the policy money
  - A motion was made to buy \$2 mil policy for \$1,047 for 2 years coverage
    - This will include attorney fees as part of policy amount
    - 15 present – 13 for, 2 against – motion passes
      - Some members would like to explore the \$3 & \$4 mil policies
  - Thank you, Johanna R., for finding this policy and taking the time to talk with all the insurance companies!
    - This company is the largest insurer of this type of insurance
  - Insurance was purchased by club over email after the meeting
    - Email verification was sent to board members 4/19/23
- March meeting minutes
  - Unanimously approved
- Deanne G. - Financials
  - The club did \$18,800 in show revenue this year
    - Mostly vendor sales
    - Less than last year's show
    - More expenses than last year
      - Should go down for next year as some supplies can be reused

...Minutes continued from page 20

- \$8,184 total profit for the show
- Advertising was higher this year than last year
  - More colored posters and colored sheets
  - Banner can be reused
  - Signs in ground can be reused
- Electrical expenses were higher this year than last year
  - Should be lower for next year
- Higher cost in t-shirts due to giving out volunteer shirts
  - Can reuse the ones from last year
- March had net income
  - The clubs' profits are slated for a lapidary facility some day
    - Real estate is difficult to find currently
    - Would be a long-term goal for the club
- Financials approved
- Claudia M. – Scholarship
  - 2 applications were sent in from Boulder Creek
    - 1 is a Biology major
    - 1 is a Mechanical engineer major
    - Winner will be decided soon
      - Both are going into science degrees
        - This is allowed if there are no geology applicants
  - Second scholarship
    - Will be given to previous recipient to supplement their education
    - Money is being separately collected for this scholarship
      - Comes from promotional item sales
      - Will be available when money is available
- Club membership was discussed
  - Keep getting new members
  - Liability waivers need to be up to date
    - Needs to be physically or DocuSigned otherwise it is not legally accepted
    - It was suggested to make a waiver for each field trip
      - It is too much to check everyone's status on field trips
      - Those present should sign a waiver release
      - Bill F. will create the sheet for field trips
        - Will have membership paperwork available as well
          - This is if new people show up to field trips
- Rebecca N. - Wire Wrapping Class
  - Thank you again, Rebecca N., for helping the club!
  - The class has been working on exciting new techniques
  - Check out the class before each general meeting
    - 4-6pm at the Anthem Civic Center
    - Check the front desk for room #
- Jeff B. – Claim's Committee
  - We will have one more trip out to claim before it gets too hot
  - Someone suggested doing a BBQ out there when it cools back down
  - Still working on getting a mine steward to allow others to go to the claim

Minutes continued on page 22....

...Minutes continued from page 21

- BLM fees
  - If we show proof of clean up, fees get waived
    - We need signatures with info and hours
    - Would need about 10 instances of clean-up to get fees waived
- The claim is an excellent location for collecting
  - Be careful of the cows though!
- Bill F. – Field Trips
  - Will cover them in the general meeting
  - Luna Agate trip is the upcoming overnight trip
    - Get your accommodations together early
- End of April will be the club picnic
  - Tentatively set for April 29<sup>th</sup>
  - Ed W. will have to book a ramada with Anthem parks
    - Then date will be sent out to club members in an email
- Gregg J. - Safety committee
  - Whistles working as intended
  - Has new ideas for next season in the works
  - There is a need for satellite phones
    - Garmin end reach satellite communicator is a good option
      - Emergency wireless communication capabilities
      - \$20/month about – some paying \$10
      - Lot cheaper than purchasing a satellite phone
      - 10 messages – presets don't cost anything
  - A portable defibrillator has been donated
    - Thank you, Alan, for donating this to the club!
    - The defibrillator can go on outings just in case
  - CPR classes with Daisy Mountain were investigated
    - \$60/person right now – not free
      - This includes first aid in a hands-on, small setting
    - Red Cross should be cheaper
      - But could be large groups with less hands-on training
    - This will be further investigated for the next meeting
- Claudia M. – 2023 Club Show
  - 998 patrons Saturday and 812 Sunday
  - Significant complaints were:
    - Barriers in the front entrance
      - Outside complained first
      - Once changed, the inside complained
      - Will have signs pointing to all areas next time
    - Had maps and customers did not use many
      - Will use less maps next time
  - T-shirts for volunteers went great
    - This helped point out members to the vendors
  - Shoplifting
    - brought to attention one that was not apprehended
      - Nothing proven but he was asked to leave
    - Others were mistakes
    - No major complaints from vendors
  - Overall huge success

Minutes continued on page 23....

...Minutes continued from page 22

- Meeting today with guest speaker Robert Hazen
  - Will be about mineral evolution
- Monthly recognition and club guides will be presented at the meeting
- Ed W. asked if we could do swap and sale again next month
  - He missed the other one
  - People seemed to really like it
  - A motion was made to have the next meeting be a swap and sale
    - 15 present – 14 for, 1 against – motion passes
- Stan C. - Flickr page
  - 6,000 views since presentation
    - Egg cartons project is inspiring other clubs to do the same
  - Thank you, Stan C. and Sue C., for creating the page!
    - Now everyone knows about this exciting geological info.
- Rockhound of the year nominee
  - Will be due soon
  - The board nominated Claudia M.
- Nancy G. – Facebook
  - Blocks in place of bots are working
  - We do not want people selling their own company info on our page
  - This is for the club and other people interested in learning about geology
  - We are not trying to sell peoples products
    - Or be hounded by bots
- Thank you to whomever anonymously sent back the missing item from the January meeting
  - It is great to know that it was brought back
  - This is what the club is all about, being kind and friendly
- Meeting adjourned

Respectfully submitted,

Rebecca Slosarik

## GENERAL MEETING MINUTES

March 7, 2023

In attendance: about 65 members – no youths

- Bill F. called the meeting to order
- Robert Hazen from Washington DC Carnegie University had a very thought-provoking presentation about mineral evolution
  - Check out the mineral database based on this evolution
    - Web address: [rruff.info/ima/](http://rruff.info/ima/)
  - Water is the principal driver of mineral diversity on Earth
    - accounting for as many as 90% of mineral species
  - 34% mineral species can only come from biological processes
- Ed W. talked to the club members
  - Had some medical issues and that was scary
    - Always joked about being President until he died, almost happened
    - We are glad you are back and recovering quickly

Minutes continued on page 24....

...Minutes continued from page 23

- Club will be buying liability insurance
  - To help keep the security of the club alive
  - Would like to keep sharing and growing the club activities
    - STEM nights, other clubs, etc.
- Robin S. and Rebecca S. presented the raffle
  - Made the club \$160
- Bill F. – Welcomed new members
  - Newcomers found the club from:
    - Google search and found webpage
    - MSA member
  - Thank you for joining the club!
    - If you have questions find those with green “Guide” buttons
- Deanne G. – Financials
  - Show had net income
    - Raffle - \$958
    - Kid's corner – \$764
    - Rock sales – \$2,107
    - Admissions – \$3,262
    - Memberships – \$240
    - Vendors – \$10,985
    - T-shirt sales – \$481
    - Food sales – not recorded yet
  - March had some expenses
    - revenue from show offset these expenses
  - Club in great standing financially
- Jeff B. - Claim's Committee
  - Went out to claim again last month
  - Will continue to clean the site when the heat abates
  - November would like to do a BBQ for members at the site
  - **The club needs a mine steward for claim**
    - They would oversee the physical claim
    - Please see Jeff if you would like to volunteer
- Bill F. – Field Trips
  - January and February are always busy months
    - Can go anywhere around Phoenix when it is cooler
  - March got peridot buckets from reservation claim
    - Still no change in reservation rules
    - Until change we can only receive buckets, not go to claim
  - Apache tears rescheduled for Sat. April 8<sup>th</sup>
    - Will be open to show volunteers first
  - Raleigh mine had 40 plus people
  - Dave Haneline mine tentatively set for April 16<sup>th</sup>
    - Waiting on confirmation
  - April 19<sup>th</sup> trip to Dragon mine
    - Black tourmaline, shoral
    - Fluorescents
  - April 29<sup>th</sup> tentative date for end of season picnic
    - Will be at a ramada in the Anthem public park
    - Will verify date when ramada is booked

Minutes continued on page 25....



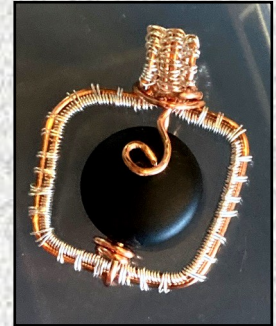
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Under the expert tutelage of Rebecca Noel, some DMRMC members are creating some wonderful pieces of wearable art! Join them at 4:30, before the regular general meetings.



FOR MORE DETAILS, GO TO [PAGE 27](#)



Pendant photos by Rebecca Noel



Meet the DMRMC

# AMBASSADORS

If you have any questions (or can't answer someone else's questions) about club personnel, policies, activities, social media, or anything else club-related, just look for that big green badge.

Our current ambassadors are the lovelies Robin Shannon and Nancy Gallagher, enthusiastic purveyors of prodigious amounts of information!



**UPCOMING FIELD TRIPS**

Here is a general list of possible upcoming trips. Details will be emailed to the general membership.

**April**

BBC Mine - 1st Sat — Specular hematite  
 Chilito Mine (Hayden) - 5th Wed — Copper minerals  
 Superior—8th Sat — Apache Tears, perlite  
 Dave Haneline Mine - 16th Sat — Cerussite, barite, galena  
 Dragon Mine - 19h Wed — tourmaline, mica, thundereggs  
 DMRMC Picnic at Anthem Park - 29th Sat

**May**

DoBell Ranch - 6th Sat — Petrified wood  
 Springerville- 12th-15th — Luna Agate  
 Payson area – 17th Wed — Fossils, jasper/chert  
 Agate Mtn - 20th Sat — Agate, Quartz

**June**

Lynx Creek (Prescott) - 3rd Sat — Gold panning  
 RMFMS Convention, Casper, WY - TBA Fri-Mon

*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*

**WIRE WRAPPING**

**INSTRUCTOR — Rebecca Noel**

**CLASS DATE: on the 1st Tuesday**

**CLASS TIME: 4:30-6:15**

**CLASS PLACE: Anthem Civic Center, 3701 W Anthem Way**

Bring a cabochon or other stone, 20 and 26 gauge copper-based wire, round nose pliers, flush cutters, and any other tools you might use.

\*If you want to try it out, the club has 4 sets of tools and wire that you may borrow during a class. If you like it, you can then purchase your own supplies.

**FUTURE SPEAKERS**

May Meeting is a Show, Swap and Sell

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**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/daisyMountainRockandMineralClub). 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

**Claims:** Jeff Blosdale

**Safety:** Gregg Josey

**Show Chairs:** Ed Winbourne, Claudia Marek

**Trustees:**

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

**Juniors (under 18) - Membership is free; one time fee of \$10 for name badge**

**Adult - First year \$35, then \$25 per Person**

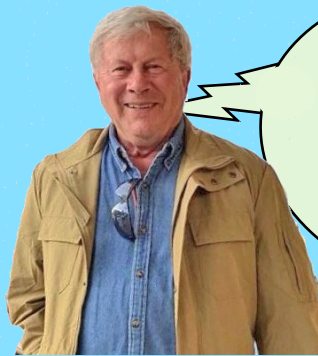
**Couple - First year \$55, then \$35 per Couple**

**Meeting Dates for 2023**

Jan 3, Feb 7, Mar 7, Apr 4, May 2, June 6, Sept 5, Oct 3, Nov 7, Dec 5

## WORDS OF WISDOM

passed along by our own **Bob Evans**



**Be a rock,  
not a  
pebble.**  
David Arquette.

### UPCOMING AZ MINERAL SHOWS

**May 6-7 - Kingman, AZ** Mojave County Gemstoners; Mojave County Fairgrounds, 2600 Fairgrounds Blvd; Sat 9-5, Sun 9-4; Admission: Free.

**June 3-4 - Phoenix, AZ** Mineralogical Society of Arizona; El Zaribah Shriners Auditorium and Event Center, 552 N 30th St; Sat 9-5, Sun 9-4; Admission: \$5 adults, \$3 MSA members, 12 & under 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.

**October 6-8 - Buckeye, AZ** West Valley Rock & Mineral Club; Buckeye Arena, 802 N 1st St; Fri-Sat 9-5, Sun 9-2; Admission: Adults \$3, 13 & under free.

**October 14-15 - Sierra Vista, AZ** Huachuca Mineral & Gem Club; Sierra Vista Mall, 2200 El Mercado Loop; Sat 9-5, Sun 10-4; Admission: Free.

**October 21-22 - Sedona, AZ** Sedona Gem & Mineral Club; Sedona Red Rock HS, Hwy 89A at Red Rock Loop Rd; Sat 10-5, Sun 10-4; Admission: Adults \$5, 12 & under 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](http://www.rockngem.com>ShowDatesFiles/ShowDatesDisplayAll.php?_ShowState=AZ) OR <https://www.rockandmineralshows.com/Location/?displayShows=true>



Desert Mariposa Lily (*Calochortus kennedyi*) seen along the road to the top of Humboldt Mtn., a

nice drive off Cave Creek Road.

Photos by Susan Celestian

**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](mailto: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).