

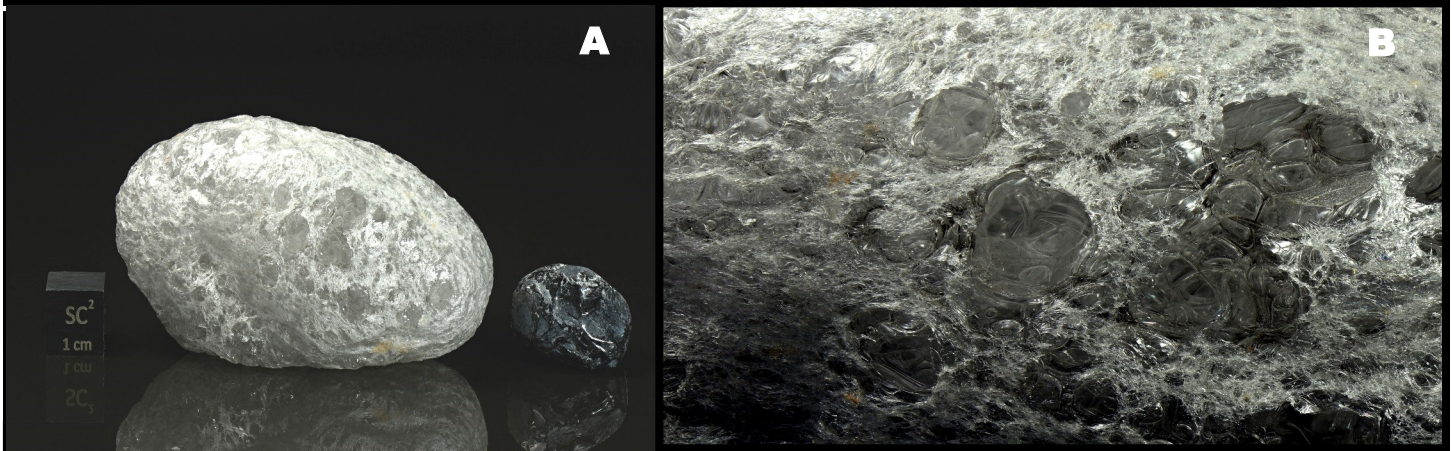


DAISY MOUNTAIN ROCKCHIPS

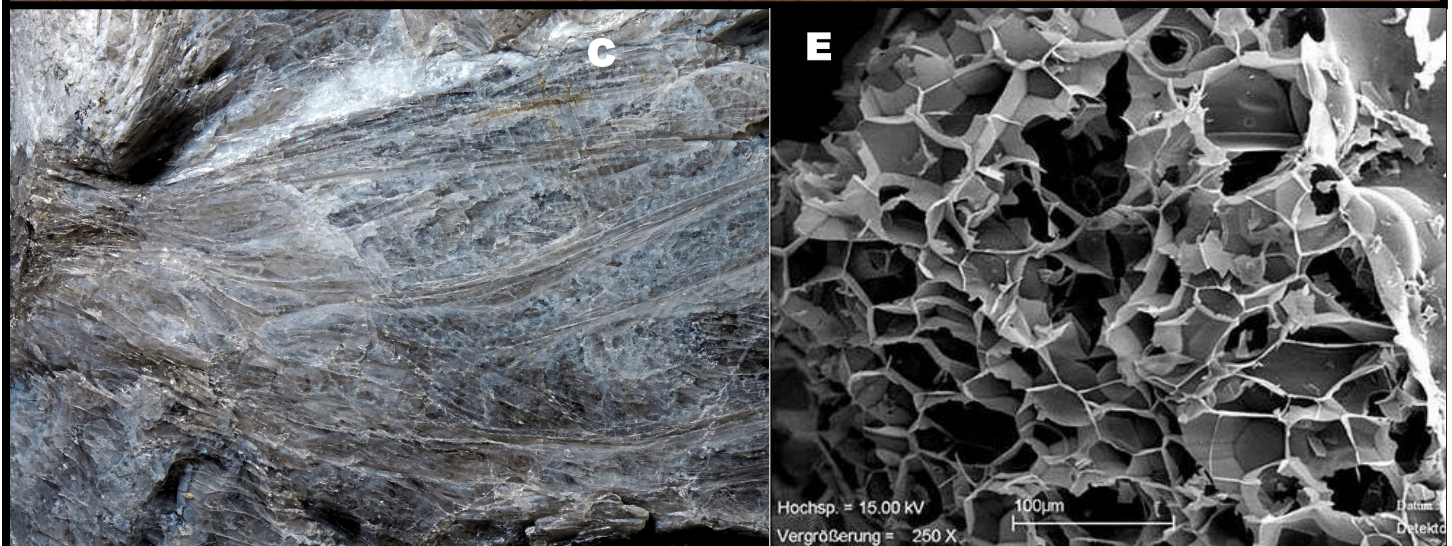
The purpose of Daisy Mountain Rock & Mineral Club is to promote and further an interest in geology, mineralogy, and lapidary arts, through education, field experiences, public service, and friendship.

VOLUME 9, ISSUE 2

FEBRUARY 2024



In (A), you see an Apache Tear next to a glassy, vesicular ball — that is what became of an Apache Tear that was heated up . It expanded and as included water vaporized, it bubbled. Upon cooling, bubble holes remain in the lacy glass; (B) is a close up view. (C) is a photo of perlite. The white material (D) is “popped” perlite (similar to the expanded Apache Tear above), and (E) is an electron microscope view of (D). See the article beginning on page 2, for more insight. Images (A-C) by Stan Celestian, (D) by Ragesoss and licensed under CC BY-SA 3.0 DEED; (E) used with permission of the [Perlite Institute](https://www.perliteinstitute.com/).



PERLITE & APACHE TEARS

By Susan Celestian

Since one of the February club field trips was to the Imerys Perlite Mine in Superior, I thought I would provide a bit of information about the rock — its origins and uses.

The name's origin lies in the pearly luster and/or the concentric pearl onion-like fracture rings that are commonly exhibited in the gray, glassy rock. The fractures occur from the tension resulting from differential expansion during hydration.

Perlite begins as an obsidian flow — a glassy igneous rock with rhyolitic composition. Close to, or after, the end of the cooling phase, hydration changes the character of the obsidian to a water-rich de-vitrified condition — perlite. The most important hydration period occurs after cooling, when tens of thousands of years of exposure to meteoritic water (rain, snowmelt, groundwater) causes the obsidian to become hydrated. Obsidian has a water content of less than 2% and perlite has 2-5% (possibly up to 10%) water (this will be important when we talk about uses of perlite).¹ The process is called zeolite facies metamorphism, and it takes place at or fairly near the surface, at low pressure and temperatures (generally below 2.5kb and 570°F). According to Wikipedia, some burial is required to account for higher-than-surface pressure and temperature.

Modern perlite mining began in Superior, AZ in 1946. Now perlite is mined in New Mexico (#1 U.S. producer), Nevada, California, Utah, Arizona and other western states. Internationally, Turkey is now the largest perlite producer in the world, with Greece, Japan, Hungary, Italy, Mexico, Slovakia, Philippines, Australia, Zimbabwe, Armenia, and others also entering the perlite market.² Global reserves now stands at an estimate 700 million tons (Wikipedia).

¹ [Science Direct.com](https://www.sciencedirect.com)

² [Indexmundi.com](https://www.indexmundi.com)

The Imerys perlite deposit is probably Pliocene in age — somewhere between 5.33-2.58 mya (according to Geology of Arizona). It originated as thick (over 600 feet) sequences of rhyolitic glassy flows (obsidian and glassy tuffs). As precipitation, snowmelt, and groundwater invaded the obsidian, the glass was hydrated, leaving behind rounded nodules of unaltered obsidian (Apache Tears).

I think this process can be likened to the formation of spheroidal weathering in granite. See Figure 1 for an illustration.

Perlite continued on page 7.

ALMOST HERE!

ANTHEM SHOW

March 2-3, 2024

Anthem Elementary

COME HELP SET UP ON FRIDAY MARCH 1st!

Proceeds pay for annual scholarship, meeting rooms, club events, and more.....

INSIDE THIS ISSUE

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FEBRUARY SPEAKER
RATTLESNAKE SOLUTIONS

Bryan Hughes

EDITOR'S NOTE: I was not present at the meeting, so this article was resurrected from February 2023. I understand that unfortunately the center denied permission to display the usual array of snakes, for this meeting..

Bryan spoke about rattlesnake safety. Arizona has 13 species (18 counting subspecies, 5 species in Anthem) — more than any other state. SO, it is quite likely that you will encounter a rattlesnake at your home or while out and about. In fact, Rattlesnake Solutions relocates about 1600 snakes a year.

He spoke about some myths surrounding rattlesnakes:

- ◆ *MYTH: Rattlesnakes will attack you.* Nope: They are defensive animals, and will avoid you, if given the chance.
- ◆ *MYTH: You can tell their age by counting tail rattle segments.* Nope: They are born with their first rattle segment (and that debunks a MYTH about babies having no rattle), plus they add one with each molt and may molt more than once per year.
- ◆ *MYTH: Babies are more dangerous than adults.* Nope: In fact, their venom is stronger, however there is much less venom in each bite, than from an adult.
- ◆ *MYTH: Rattlesnakes avoid repellents.* Nope: In fact, snakes have been found curled up right next to material meant to repel them.
- ◆ *MYTH: Rattlesnakes lay eggs.* Nope: They have live birth.
- ◆ *MYTH: Hit the ground with a stick or stomp when hiking, to scare snakes away.* Nope: They have been known to lie near a trail, while many hikers walked up unaware.
- ◆ *MYTH: If bitten, suck out the venom.* Nope: It is ineffective as a treatment.
- ◆ *MYTH: Rattlesnakes are evolving to not rattle.* NOPE - No evidence of that.
- ◆ *MYTH: Some individual rattlesnakes have been GIANT.* Nope: Photos can display a distorted perspective. Plus, humans are not good at estimating length.

RATTLESNAKES DO NOT JUMP CHASE OR PICK FIGHTS !

In Arizona, there were less than 200 bites in 2022.



UP CLOSE AND PERSONAL

..... **if you are bitten**

.... Call 911

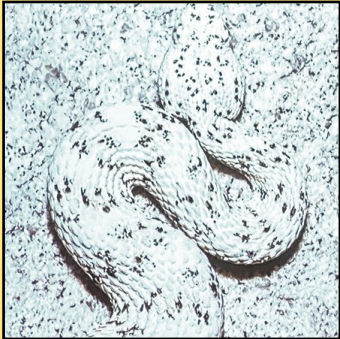
..... Don't panic

..... Remove jewelry & clothes that might prevent swelling

.....follow instruction of emergency personnel

..... Don't cut, suck, ice, tie off, or other intervention

The last bite death was in 2014.



BEWARE! Some rattlers have camouflaging coloration. This is a Western Speckled Rattlesnake.



CLASS DATE: on the 1st Tuesday

CLASS TIME: 4:30-6:15

CLASS PLACE: Anthem Civic Center, 3701 W Anthem Way

Monthly meetings are prior to the general club meeting. Great class for beginner to advanced . Come and wire wrap with friends!!!

GENERAL RULE: 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.

MONTHLY PROJECT PARTICULARS will be posted on the DMRMC [Facebook](#) page.

*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.

The class is free; however tips are always welcome. All teachers are unpaid volunteers so the tips go towards gas and supplies to make things more fun for you!

.....In The News

24,000 years ago, the area where we find White Sands National Park, was wetter due to effects of glaciation to the north. Rather than a white desert, it was a grassy plain with a large playa lake — Lake Otero.

In 2021, scientists discovered human footprints in sand layers in White Sands National Park. The finding of subsequent studies was published in 2023. A total of 60+ footprints were found, mostly children and teenagers. It is thought that as adults performed skilled jobs, teenagers and children were tasked with fetching plants or other necessities for food or utility, and therefore they left the most footprints on the shores of ancient Lake Otero. Besides human footprints, those of mammoths, sloths, camels, American lions, and dire wolves are found in the layers.

Significantly, age dating has established that the sediments hosting footprints are between 23,000-21,000 years old. First radiocarbon dating of pollen bracketing the sediments yielded that date, and subsequent dating of quartz confirmed this (there is a method that estimates how long quartz grains have been buried.

The date extends known human presence in North America by about 10,000 years!



Both images are courtesy of the National Park Service

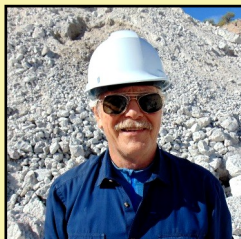
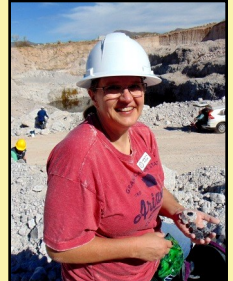
By David Buston

FIELD TRIP to SUPERIOR

Saturday, February 17, 2024

Photos & text by Bill Freese

Hey Rockhounds, the DMRMC had a trip on Saturday to Superior for Apache Tears. We were joined by the MSA and ended up with 42 folks on the trip. This trip always seems to be well-attended and this was no exception. The trip filled up in 24 hours after releasing the details. If you look at their faces you can see why. The Apache Tears are small pieces of obsidian that develop remain in the Perlite. It is an easy trip, and has no special vehicle requirements. Before someone asks, yes you have to have permission and an escort to go onto mine property. The weather was absolutely perfect as well.



Field trips continued on page 6.

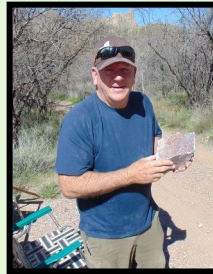
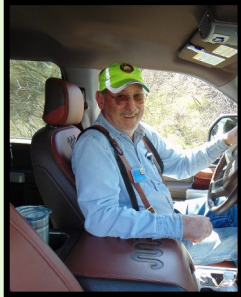
...Field trips continued from page 5

FIELD TRIP to HEWITT CANYON

Wednesday, February 21, 2024

Photos & text by Bill Freese

The DMRMC, along with Payson Rimstones, had a trip out to Hewitt Canyon for some marble. This is always such a beautiful spot. The 32 folks on the trip all found some great specimens to take home. I am sure we will see some cut pieces on FB shortly.



...Perlite continued from page 2

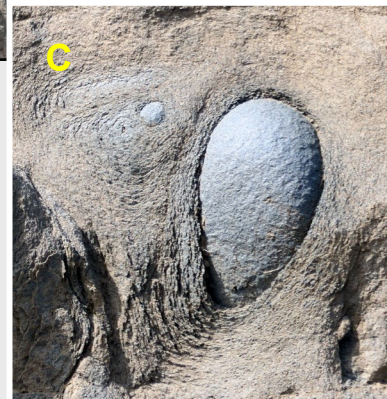
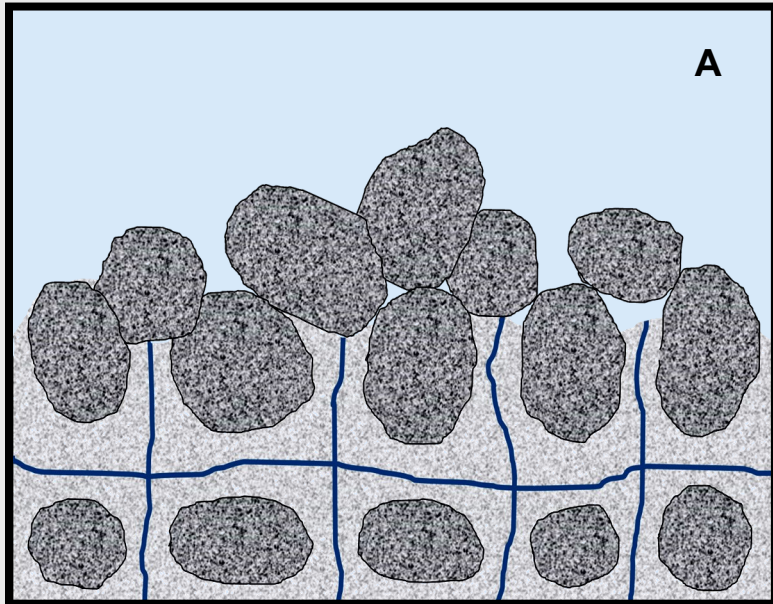


FIGURE 1 SPHEROIDAL WEATHERING IN GRANITE You might recognize these images from a previous article. (A) illustrates the process of weathering along intersecting joints (fractures) in a body of granite. The joints allow water to penetrate the rock, and hydration/dissolution weakens the blocks of rock. Corners have the greatest surface area, so weathering proceeds most quickly there, resulting in rounded boulders surrounded by concentric shells of weakened rock. In an advanced stage, erosion removes enough weakened rock that boulders are freed, to lie about on the surface. (B) and © are photographs of a roadcut in the Salt River Canyon.

Illustration by Susan Celestian; Photos by Stan Celestian

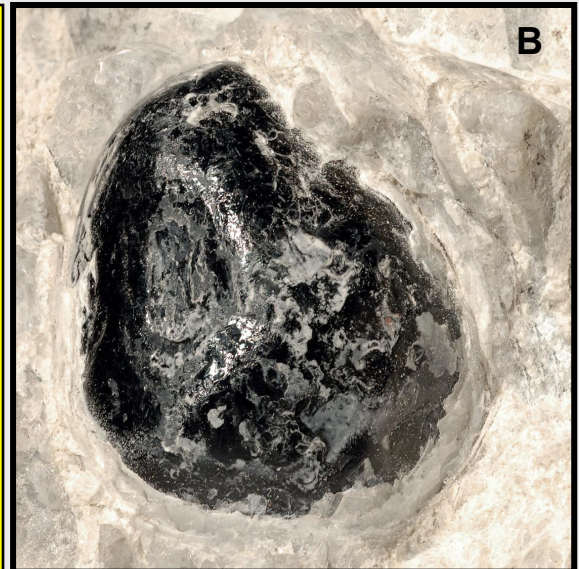
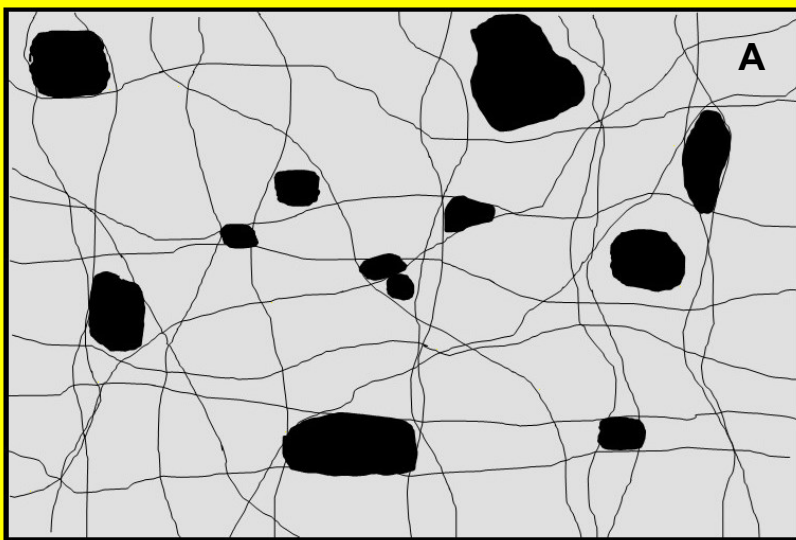


FIGURE 2 SPHEROIDAL WEATHERING IN PERLITE Perlite is a very brittle and weak rock. Hydration and tectonic forces cause the rock mass to be crisscrossed by fine fractures. As in Figure 1, these fractures channel water invading the rock mass, and facilitate weathering. In some cases, these results in residual spheres of perlite. In Superior, the result is scattered and rounded remnants of the original obsidian — Apache Tears — surrounded by concentric shells of perlite.

Illustration by Susan Celestian; Photos by Stan Celestian

...Perlite continued from page 7

Perlite has many industrial uses, all hinging on the characteristics taken on when it is heated up. At 1382-2282°F, perlite softens, the trapped water vaporizes, and in escaping causes the perlite to expand up to 20x in volume. The end product is bright white and very vesicular (full of bubble holes). The size of the holes can be regulated to accommodate different permeabilities and drainage rates. For example, coarsely milled perlite with large holes will hold water that drains out quickly; while very finely milled perlite with tiny holes will hold a lot of water that drains out very slowly.³

As listed on the Imerys website, expanded perlite has a variety of physical properties that make perlite very useful:

- * Vesicular
- * Lightweight
- * Excellent thermal and insulating properties
- * Elasticity
- * Fire resistance
- * Thermal stability

As forementioned, there are many, many uses for this expanded or “popped” perlite. The primary customer of the perlite produced at the Superior Imerys plant is Anheuser-Busch, for use as a filtering medium for beer. See [page 9](#) for a poster illustrating the uses of expanded perlite.

GENERAL RESOURCES FOR PERLITE

https://cmscontent.nrs.gov.bc.ca/geoscience/publicationcatalogue/Paper/BCGS_P2003-01-13_Rotella.pdf

<https://en.wikipedia.org/wiki/Perlite>

https://en.wikipedia.org/wiki/Zeolite_facies#:~:text=Zeolite%20facies%20metamorphism%20usually%20results,%2C%20prehnite%2C%20calcite%20and%20chlorite.

<https://www.britannica.com/science/perlite>

<https://mineralseducationcoalition.org/minerals-database/perlite/>

https://cmscontent.nrs.gov.bc.ca/geoscience/publicationcatalogue/Paper/BCGS_P2003-01-13_Rotella.pdf

https://geoinfo.nmt.edu/publications/openfile/downloads/100-199/162/ofr_162.pdf

https://nmgs.nmt.edu/publications/guidebooks/downloads/49/49_p0271_p0277.pdfhttps://www.indexmundi.com/minerals/?product=perlite&graph=production

<https://www.sciencedirect.com/topics/chemistry/volcanic-glass#:~:text=Perlite%2C%20obsidian%2C%20and%20pitchstone%20are,pitchstone%2C%20more%20than%205%25.>

<https://www.sciencedirect.com/topics/earth-and-planetary-sciences/perlite>

<https://www.resolutionmineeis.us/sites/default/files/references/hammer-webster-geologic-features-superior-1962.pdf>

<http://docs.azgs.gov/OnlineAccessMineFiles/G-L/Harborlite1Pinal77a.pdf>

https://nmgs.nmt.edu/publications/guidebooks/downloads/49/49_p0271_p0277.pdf

<https://www.perlite.org/the-water-holding-capacity-of-perlite/>

³ Perlite.org

GEO MINI MINERAL ID: Luster

In this fifth installment of Mineral ID, we will discuss **LUSTER**. Luster is the way in which a mineral's surface interacts with light — how it reflects and refracts light.

There are two main categories of luster: **Metallic** and **Non-metallic**.

- * **Metallic Luster** is like that of a polished metal surface. It is highly reflective and opaque. See Figure A.

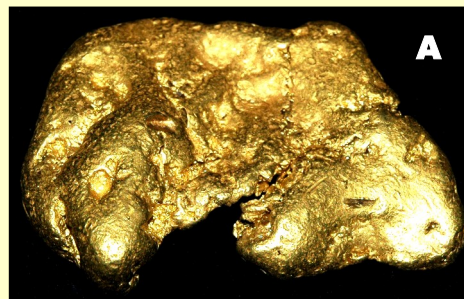
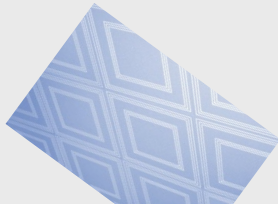


FIGURE A METALLIC LUSTER The minerals in the images above all exhibit metallic luster — bright, reflective, opaque, the colors of metals. (A) is native gold, (B) is a half-breed of native silver and native copper, and (C) is pyrite. Photo by Stan Celestian

USES OF PERLITE



LIGHTWEIGHT ADDITIVE



- ◆ Concrete
- ◆ Mortar
- ◆ Plaster
- ◆ Ceiling Tile
- ◆ Composite Materials

LOOSE FILL in Building Blocks AND in INSULATION (sound dampening & fire resistant)

TURF UNDERLAYMENT/ SOIL AMENDMENT

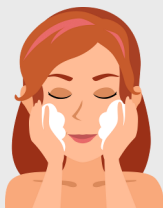


- ◆ Increases oxygen in soil
- ◆ Increases water retention
- ◆ Improves aeration & permeability
- ◆ Reduces compaction
- ◆ Sterile
- ◆ No pH change
- ◆ Long-lasting
- ◆ Lightweight
- ◆ Odorless
- ◆ Inert

COSMETICS



- ◆ Absorbant
- ◆ Exfoliant



FOUNDARIES

- ◆ Fire Brick
- ◆ Ceramics
- ◆ Pipe Insulation



MATTE-ING AGENT IN PAINT & VARNISH

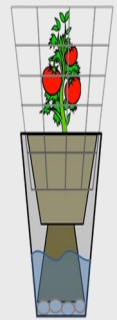


Future Use: PHYSICAL INSECTICIDE

Glassy shards scratch insects cutin, resulting in dehydration and death



CARRIER FOR BIOREMEDIATION BIOCATALYSTS

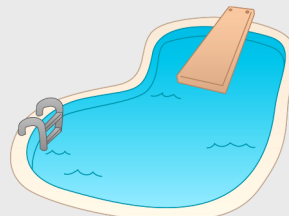


HYDROPONICS MEDIUM



FILTRATION MEDIUM

- ◆ Beer, Juice
- ◆ Pool water
- ◆ Sewage
- ◆ Sludge
- ◆ Cooking Oil
- ◆ Pharmaceuticals
- ◆ Several stages in Recovery of Gold & Silver from Leachates



BOARD MEETING MINUTES**February 6, 2024**

ATTENDEES: Johanna Raupe, Cynthia Freese, Renee Isaack, Bill Freese, Marc Flescher, Edward Winbourne, Kirsten Verbus, Don Richardson, Jessie Caltabiano, Tom Edwards, Claudia Marek, Bill Powell, Deanne Gosse, Tiffany Poetsch, Alexis Reed

ABSENT: Rebecca Slosarik, Greg Josey, Stan Celestian, Susan Celestian

GUEST: John Bernshausen

DATE: February 6, 2024, 5:00 PM

LOCATION: Anthem Civic Center, 3701 W. Anthem Way, Anthem, AZ 85086

1. Called to Order at 5:03 PM
2. Acceptance of January's meeting minutes
 - a. Motioned to accept by Kirsten Verbus
 - b. Accepted by all, none opposed.
3. Change to Bylaws to add youth non-voting board members ages 14-18
 - a. Proposed Bylaw addition to Article 3, #3 was read to the board by Alexis Reed.
 - b. No changes requested.
 - c. The Bylaw changes will be presented in tonight's general meeting for approval.
4. Financial Budget Items
 - a. Deanne reviewed financial statement for developing a budget
 - b. Changes or additions suggested to be added
 - i. Claudia: adjust the value of the two scholarships (\$2000 each)
 - ii. Ed: add the cost of the two storage/show cases (\$1700)
 - iii. Need quote & budget for climate control storage
5. Show Stuff
 - a. Claudia & Tom reviewed the show layout, specifically the club's table locations
 - b. Club Sales tables were relocated to address the issue with obstructing the exit in event of a fire, and the clear the entry to the restrooms
 - c. Johanna is going to take over the club sales
 - d. Next Show meeting - February 13th from 6 PM – 7 PM in the arts & crafts room at the convention center. Claudia is providing Pizaa**
 - e. Egg crates going up from \$3 to \$4
6. Apache Junction issue reported by Ed – Treasurer was not paying the IRS bills for three years, which resulted in the club's loss of the 501(c3) status.
7. Club Membership – Renewals (2024 renewals \$25-single, \$35-family)
 - a. Tiffany will purge non-renewals this coming weekend (Feb 17-18)
8. Wire Wrapping Class with instructor Rebecca Noel
 - a. Class cancelled for 2/6/24 due to health issues
9. Claims Committee:
 - a. Need a new claims chair
 - b. Bill will again solicit in the general meeting for a claims chair volunteer.
10. Field Trips
 - a. Going wee. Field Trip Committee has a tentative meeting first or second week in March after the show.

...Minutes continued from page 10

- b. Bill will send out invite soon
2. Safety Committee: CPR classes, volunteers, upcoming events
 - a. Bill is going to look into some dates for the CPR class.
3. Club Sales & Acquisitions
 - a. Ed is going to meet with Bob Evans to get a better understanding regarding what Bob was envisioning for his dream roll procuring or acquisitioning something.
4. New Raffle Item
 - a. Large Pyrite Crystal cluster donated by Bill Smardo
 - b. Starts tonight and Claudia has the raffle tickets
5. Tonight's speaker (Rattlesnakes) for the General Meeting ran into an issue with the Anthem Civic Center. The presentation will proceed but without the snakes.
6. Plan for April to be a swap & sale meeting.
 - a. Bill is supposed to announce tonight at the general meeting
7. Claudia is purchasing items for the club through an auction e.g., easels, tents, whiteboards
8. Meeting Adjourned @ 5:50 PM.

Sincerely Submitted,

Johanna Raupe, for Rebecca Slosarik

GENERAL MEETING MINUTES

February 6, 2024

DATE: February 6, 2024, 6:30 PM

LOCATION: Anthem Civic Center, 3701 W. Anthem Way, Anthem, AZ 85086

ATTENDANCE: 90 members

1. Called to Order at 6:30 PM
2. Our speaker tonight, Bryan Hughes of Rattlesnake Solutions
 - a. Incidence with the insurance required by the Civic Center so there will be no live reptiles tonight during the presentation.
 - b. Key Note #1: Bad snake encounters are always the result of bad decisions
 - c. Key Note #2: If out on the trail and have an accidental encounter, call 911 as soon as possible. Do NOT try to drive to the hospital.
3. Welcome to any new guests
 - a. Four new individuals came tonight
4. Deanne presented the Financial Report
5. The proposed new Bylaws to add two non-voting Youth Board Members was presented and read to the general membership by Alexis Reed.
 - a. A vote was taken and all in attendance approved the new Bylaws
 - b. No one opposed

Minutes continued on page 12.,.

...Minutes continued from page 11

1. Claims committee
 - a. Bill solicited for a new claims chair.
2. Field Trips, Bill:
 - a. Covered the instructions for how to sign up for field trips
 - b. There are two missing club radios. If you have one of these, please return to Bill.**
 - c. Discussed the issue with collecting Peridot at San Carlos. The contact Emery indicated that they are trying to get modifications to the rules to allow rockbound collections.
 - d. Plan to purchase 50 buckets of Peridot sometime in March
 - e. January Field Trips:
 - i. Brenda (19 in attendance)
 - ii. 4th of July Butte (34 in attendance)
 - iii. Quartzite Club Day (18 in attendance)
 - iv. DoBell Ranch (18 in attendance)
 - v. Contact Mine (22 in attendance)
 - f. February Field Trips
 - i. Tucson Club Day
 - ii. Mushroom Rhyolite cancelled due to rain
 - iii. Feb 17th Superior for Apache Tears
 - iv. Feb 21st Tangle Creek changed to Hewitt Canyon for Marble.
 - v. No Field Trips scheduled during the week of the show
 - g. March Field Trips
 - i. Field Trip Committee meets to do the schedule for March and beyond
 - ii. March 6th – Wenden for Marble
 - iii. Peridot Buckets
 - iv. March 9th Rowley Mine with MSA
 - v. March 16th
 - vi. March 20th Reserve Bank Mine
3. RMFMS Convention Oct 25th – 27th Oklahoma City, OK
 - a. If you plan on attending or need more information, please contact Bill.
4. New members & Membership Renewals.
 - a. Non-renewing members will be purged the weekend of Feb 17th & 18th
 - b. There are currently 200 members
5. Show March 2nd & 3rd planning Claudia Marek
 - a. Claudia needs someone to help with
 - i. Distribution of posters
 - ii. Distribution of pamphlets
 - iii. Installation of the marketing signs
6. Safety Committee
 - a. Tentative CPR class in March
7. Wire Wrapping Class
 - a. Cancelled tonight due to an illness
8. Show & Tell
 - a. Alexis Reed did a show and tell tonight with fluorescents
9. Next general meeting: Tuesday March 5th 2024 @ 6:30 PM

Minutes continued on page 13...

...Minutes continued from page 12

- a. Speaker will be Dr. Barbara John from the University of Wyoming
2. Misc. Items:
 - a. Name tag reminder - always wear your name tag at EVERY field trip and meeting (new/second name tags available in back - see Tiffany),
 - b. Email updates (check your SPAM & Junk folders)
 - c. Volunteers always needed,
 - i. bags of rocks that need labels,
 - d. Mega Raffle Item – Pyrite over 12 lbs
 - i. runs from February through June for \$1/ticket or 12 tickets for \$10
3. We still need volunteers for the 2024 Show – Please help!
4. Meeting adjourned at 8:20 PM.
5. 8:25 PM silent auction finished

Sincerely Submitted,

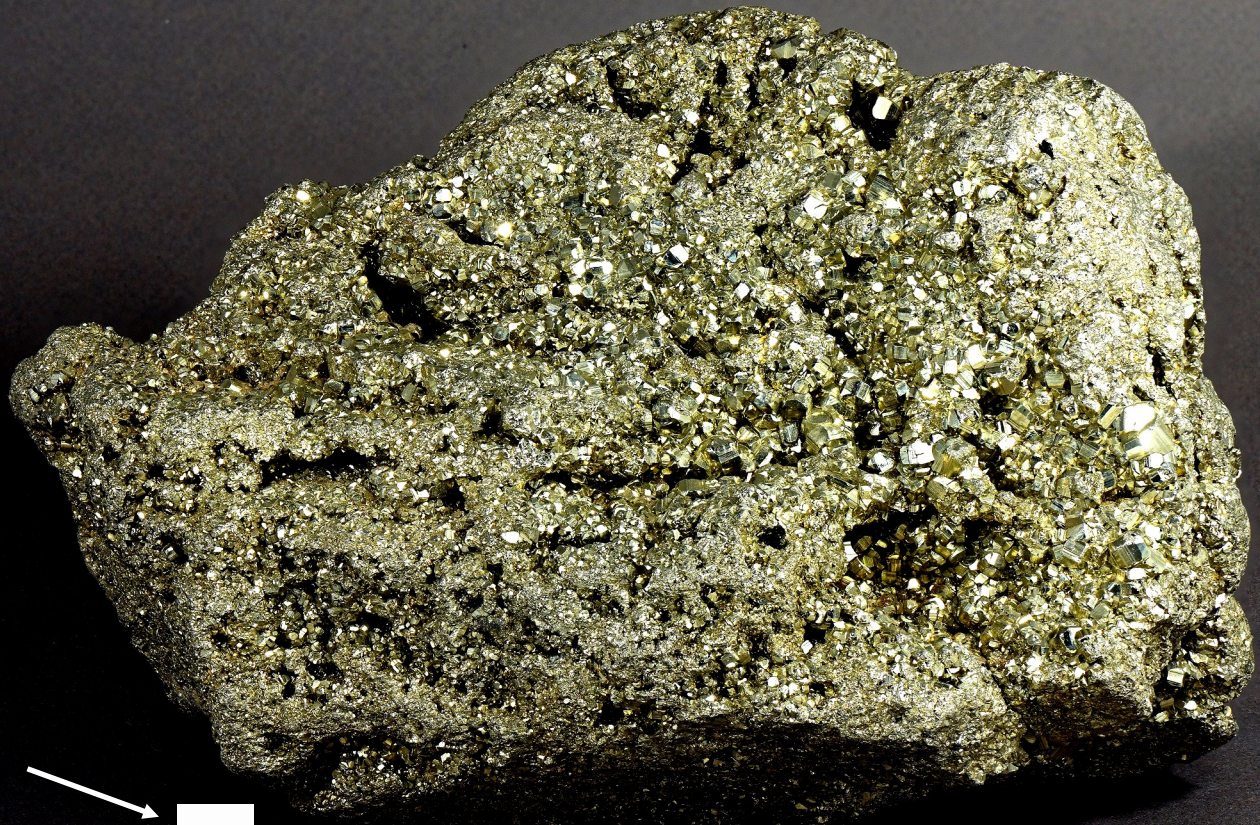
Johanna Raupe, for Rebecca Slosarik

SPHEROIDAL WEATHERING will come up shortly, and here is a landscape in Joshua Tree National Park, that is the result of that process. **AND** it affords you another opportunity to hone your stereoscopic viewing!

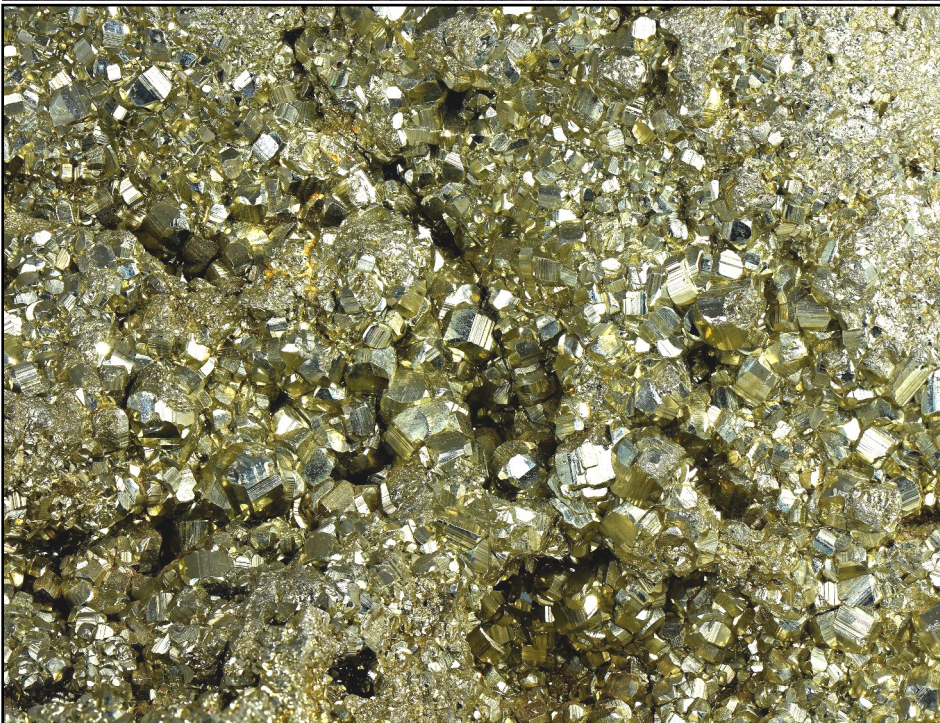


TO VIEW: Look at the left photo with your left eye, and the right photo with your right eye. Stare, allowing your eyes to cross (effectively looking at the left image with your right eye, and the right image with your left). The images will appear to overlap and you will see 3 images. Concentrating on the middle one should give you a 3-D view of the landscape.

SPECIAL SPRING RAFFLE



1 square centimeter



BIG, BRILLIANT PERUVIAN PYRITE

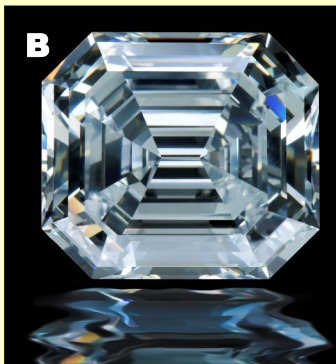
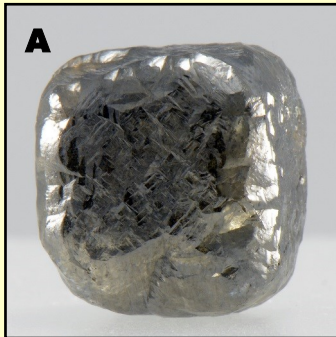
- * **7.5" wide**
- * **12 pounds**
- * Tickets will be sold at each meeting. They are \$1 per ticket, or 12 for \$10.

Remember, all proceeds help support club activities.

....Luster continued from page 8

* **Non-metallic luster** is everything NOT metallic. There are many terms that describe various types of non-metallic luster: See Figures B-F.

◆ **Adamantine Luster** is exhibited by a very few minerals that are transparent/translucent and highly reflective. Examples are diamond, cerussite, rutile, and cubic zirconia (although technically the latter is not a mineral, as it is manmade). See Figure B.



**FIGURE B
ADAMANTINE
LUSTER**

Diamond is the classic mineral to illustrate adamantine luster. (A) is a diamond crystal from the Congo. And (B) is the Jonker Diamond, a 143 carat diamond from Pretoria, South Africa. (It is currently on display at the Natural History Museum of Los Angeles County (NHMLA) Photos by Stan Celestian and used with permission of NHMLA Gem Hall.

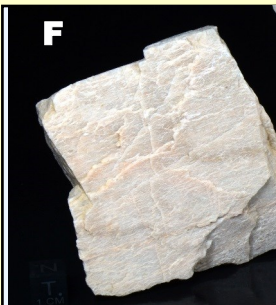
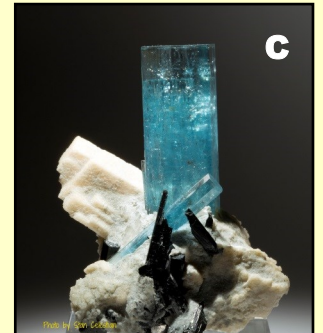
◆ **Resinous Luster** is the luster seen in pine resin or amber. Sphalerite usually exhibits resinous luster. See Figure C.



FIGURE C RESINOUS LUSTER This single resinous-looking crystal of sphalerite sits on a bed of fluorite. Locality: Silver Bell Mine, Pima Co., AZ Photo by Stan Celestian

....Luster continued from page 8

◆ **Vitreous Luster** is the luster seen in glass. It is by far the most common luster found in minerals. The minerals are transparent/translucent, and the luster is often best assessed from a thin piece, especially with dark-colored species. See Figure D



**FIGURE D VITREOUS
LUSTER**

(A) is Quartz from Diamond Point, Gila Co, AZ; (B) is Fluorite from the Blanchard Mine, Socorro Co., NM; (C) is Beryl var aquamarine from Afghanistan; (D) is Halite from Camp Verde, AZ; E is Fluorapatite from Mexico; (F) is Orthoclase from Sycamore Creek, AZ. The glassiness is pretty obvious in A-E, while F is more translucent.

Photos by Stan Celestian

Luster continued on page 16...

....Luster continued from page 15

- ◆ **Pearly Luster** is the luster reminiscent of pearls, and often includes a pastel iridescence. See Figure E.



FIGURE E PEARLY LUSTER The images in this figure all exhibit pearly luster:

(A) Talc from New Hampshire; (B) Stilbite (with cavansite) from Pune, India; (C) Muscovite from Maricopa Co., AZ and (D) Apophyllite (on prehnite ps laumontite) from India.

Enlarge your view for a better look!

All photos by Stan Celestian; A & D used with permission of NHMLA Gem Hall.

- ◆ **Waxy Luster** is a luster like that of wax. See Figure F.

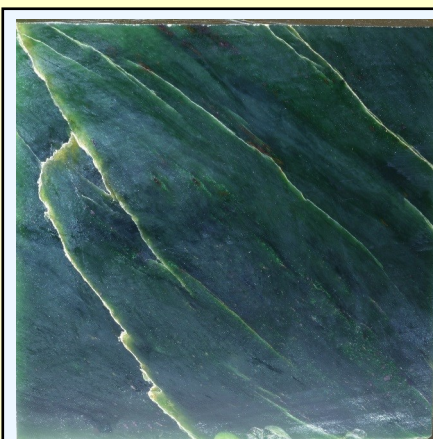


FIGURE F WAXY LUSTER

Chalcedony (A) “desert roses” look like melted blobs of wax on Arizona’s desert floor. (B) is Alaskan Jade, also exhibiting waxy luster. Photo by Stan Celestian

- ◆ **Silky Luster** is the result of many fine fibers giving the appearance of silk. See Figure G.



FIGURE G SILKY LUSTER

(A) is satin spar gypsum — a bundle of very fine crystals that reflect like in a silk-like luster. (B) is chrysotile asbestos, from the Salt River Canyon, AZ; and it is similarly silky. Photo A by James St John and licensed under CC BY 2.0; photo B is by Stan Celestian

...Luster continued from page 16

- ◆ **Greasy Luster** is a luster like that of grease or fat. Some minerals with greasy luster feel greasy also. See Figure H.



FIGURE H GREASY LUSTER (A) Common opal exhibits greasy luster (you could get away with calling it waxy). (B) is graphite, that looks AND feels greasy. Photo (A) by James St John; licensed under CC BY 2.0 DEED, (B) by Stan Celestian

- ◆ **Earthy or Dull Luster** is the luster one associated with dried mud. See Figure I.

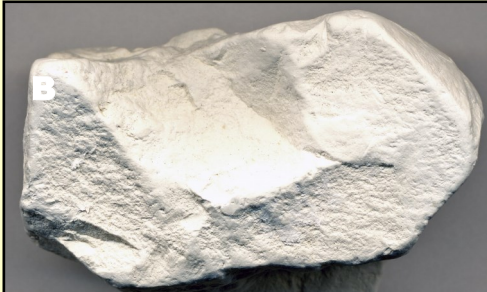


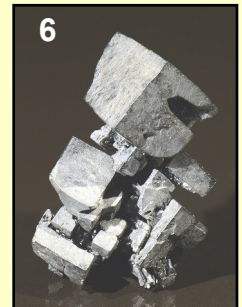
FIGURE I EARTHY or DULL LUSTER Looking like dried dirt or clay, (A) Limonite and (B) Kaolinite, exhibit earthy or dull luster. Photo (A) by Stan Celestian; Photo (B) by James St John; licensed under CC BY 2.0 DEED,

TO TEST/OBSERVE:

- * Determine luster on a fresh surface. Weathering alters the surface and masks the true luster.
- * Ideally, luster is determined for a thin piece of the mineral.

If you are building a portable field testing kit, you should now have a glass plate and a streak plate. (Both are available from Ward's Science (or VWR International), Amazon, and other suppliers. A note about a glass plate: you can use any clear glass; however, the thicker the better for safety. At this point, that hand lens will be useful for closer inspection of mineral surfaces.

TRY YOUR HAND AT DETERMINING THE LUSTER OF THE FOLLOWING MINERALS. ANSWERS AT THE BOTTOM ON THE PAGE (Enlarge the view for a better look.)



1-Turquoise, waxy; 2-Hematite, metallic; 3-Tincalconite ps borax, earthy; 4-Calcite, vitreous; 5-Brochantite, vitreous; 6-Acanthite, metallic (though visually sub-metallic in photo)

WORDS OF WISDOM

passed along by our own **Bob Evans**



Laziness is nothing
but the habit of
resting before you get
tired.

Jules Renard

UPCOMING AZ MINERAL SHOWS

MARCH 2-3 - Anthem, AZ Daisy Mountain Rock & Mineral Club; Anthem Elementary, 41020 Freedom Way; Sat 9-5, Sun 10-4; Admission: Adults \$5, Seniors, Vets, Students \$4, under 12 free. [SEE POSTER PAGE 20](#)

APRIL 13 - Gilbert, AZ Flagg Mineral Foundation: Arizona Mineral Symposium; Southeast Regional Library, 775 N Greenfield; Sat 8-5:30; \$80 mbrs, \$90 non-mbrs. [SEE FLYER PAGE 21](#)

MAY 4-5 - Kingman, AZ Mohave County Gemstoners; Mohave County Fairgrounds, 2600 Fairgrounds Blvd; Sat 9-4, Sun 9-3; Admission: Free.

JUNE 1-2 - Phoenix, AZ Mineralogical Society of Arizona; Phoenix Shrine Auditorium, 552 N 40th St; Sat 9-5, Sun 10-4; Admission: Adults \$5, MSA members \$3, under 12 free. [SEE POSTER PAGE 22](#)

JULY 26-28 - Show Low, AZ White Mountain Gem & Mineral Club; Elks Lodge, 805 E Whipple; Fri-Sat 9-5, Sun 10-4; Admission: Adults \$4, kids 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 me 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).

UPCOMING FIELD TRIPS

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

March

Mushroom Rhyolite spot - 6th Wed - Mushroom rhyolite
Rowley Mine - 9th Sat - Chrysocolla, Wulfenite

THE FIELD TRIP COMMITTEE WILL BE SCHEDULING THE REST OF THE SEASON SOON! Watch for email announcements.

DATES AND DESTINATIONS SUBJECT TO CHANGE

WATCH FOR EMAILS WITH DETAILS

***** Be sure you do not just show up for a field trip — you **MUST RSVP to Bill**, either by responding to the announcement email or directly to Bill (after the announcement has been posted). Most trips have a limit, and will have a waiting list once full.



FUTURE SPEAKERS

March - Dr. Barbara Johns, U of Wyoming: Deep Sea Drilling in the Atlantic

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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!

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Susan C	Tiffany P
Stan C	Bill P
Tom E	Don R
Mark F.	Johanna R
Cynthia F	Kirsten V
Brian G	

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 2024

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

DAISY MOUNTAIN ROCK AND MINERAL SHOW

MARCH 2 and 3, 2024



Stilbite on Stalactitic Quartz

ANTHEM SCHOOL 41020 N. FREEDOM WAY

SATURDAY 9 TO 5 PM

SUNDAY 10 TO 4 PM

ADULTS \$5, SENIORS, VETS, STUDENTS \$4

CHILDREN UNDER 12 FREE WITH ADULT

ROCKS, CRYSTALS, FOSSILS, JEWELRY, METEORITES, BEADS

RAFFLE EVERY HALF HOUR !

DR ROCK FOR ROCK IDENTIFICATION

**KID'S ROW - LOTS OF ACTIVITIES FOR KIDS INCLUDING OUR RENOWNED EDUCATIONAL
EGG CARTONS FILLED WITH 50+ SPECIMENS!!**

FOR MORE INFORMATION GO TO: www.dmrmc.com

31st Annual Arizona Mineral Symposium

When: April 13, 2024

8am to 5:30pm

Where: Southeast Regional Library

775 N. Greenfield Rd.

Gilbert, AZ 85234

A series of speakers, highlighting field collecting, includes the following:

Karen Wenrich, Ph.D. - *The Sweet Home mine, Alma, Colorado*

Mark Hay - *Fluorite from the Oatman District, Mohave Co., AZ*

Mark Pecha - *Where did that turquoise come from?*

A case study of the turquoise deposit from Bisbee, Arizona

Anna Domitrovic - *Field Collecting & Collectors at the Desert Museum*

Jeff Smith - *The Peculiar Geodes of the Trancas Station, Chihuahua, Mexico*

Erin Delventhal - *A rediscovery of epidote pseudomorphs after orthoclase from the Orogrande district, Otero County, New Mexico*

Phil Richardson - *Collecting Contemporary Utah*

Mike Sanders - *Three decades of Collecting Adventures in the Hansonburg Mining District, Socorro County, New Mexico*

There will be several dealers including the premiere by Shannon Family Minerals of a 10,000 piece collection of micromounts and thumbnail specimens.

A final agenda will be posted on the Flagg Mineral Foundation website, flaggmineralfoundation.org, by mid-January.

Payment may be made by cash, check or Zelle.

Cost is as follows:

\$80 for members

\$90 for non-members

Symposium program,
lunch and refreshments
will be included.



flaggmineralfoundation.org



Flagg Mineral Foundation



Mineralogical Society of Arizona

Presents

The 4th Phoenix Heritage Mineral Show

June 1st & 2nd 2024

Phoenix Shrine Auditorium

552 N. 40th St, Phoenix, AZ 85008

Hours:

Saturday 9am-5pm | Sunday 10am-4pm

Admission:

CASH ONLY—ATM Available

\$5 Adults

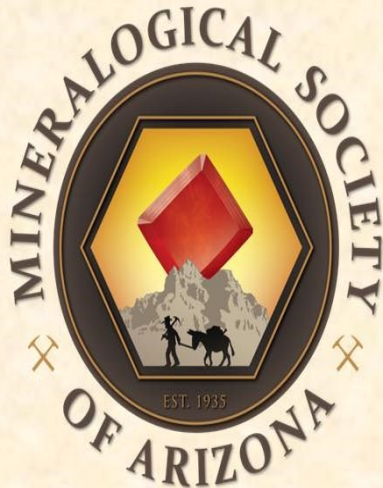
\$3 MSA Members

FREE Kids (12 years & under with paying adult)

FREE Parking during The Show

Café & Cash Bar Hours:

9am-5pm & 10am-4pm



**Get Ready to
Rock Phoenix!**

Largest Quality Mineral Show in Capital City of Arizona!

Featuring: Minerals, Exhibits, Jewelry, Demonstrations, Raffles, Café, Bar and *Kids Activities:* MSA Spinning Wheel & Geode Cracker!

Saturday Night Event Includes: Cash Bar, Hors d'oeuvres, Keynote Speaker, Silent & Live Auctions, Awards Ceremony for Competitive Exhibits with following special trophies: Bob Jones-Best Mineral Case, David Shannon-Best Field Collected Case and Arthur L. Flagg-Highest Scoring Junior Case!

Visit msaaz.org for info and updates.



MINERALOGICAL SOCIETY OF ARIZONA
PRESENTS

**THE 4TH PHOENIX
HERITAGE MINERAL
SHOW**



JUNE 1ST & 2ND, 2024

SAT 9A-5P & SUN 10A-4P