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.

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Daisy Mountain Rockchips

The name diopside was coined in 1797, by Haüy. It derives from Greek dia (‘through’), and optos (‘visible’ or ‘to see’), in reference to the cleavage planes visible within crystals.

Chemical Formula - CuSiO$_3$ · H$_2$O  
(Hydrous Copper Silicate)


The images at this website can be rotated, using the curser.

Growth Forms/Habits - Six-sided prisms with rhombohedral terminations, massive (See Figure 1)

Hardness - 5

Color - Emerald Green

Luster - Vitreous to Sub-adamantine

Streak - Green

Specific Gravity - 3.28-3.35

Cleavage - Perfect-Very Good in 3 directions

FIGURE 1 Dioptase  The illustration was originally from the book, Crystallography for Students of Chemistry, Physics, and Mineralogy (New York, NY: Henry Holt and Company, 1892) by George Huntington Williams. Graphic courtesy of https://etc.usf.edu/clipart/

It may still feel like summer, but…………

MEETINGS RESUME AT 6:30 on TUESDAY, SEPTEMBER 3

Mac Camby, geologist for Freeport-McMoran will speak of his professional adventures

Ready for some rockhounding?

Fun trips announced in the Field Trip section of this newsletter!

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June 4, 2019
Board of Trustees Meeting Minutes

Attended: Clark Little, Claudia Marek, Cynthia Buckner, Deanne Gosse, Ed Winbourne, Howard Roose (by phone), Stan Celestian, Susan Celestian, Tammy Early, Tiffany Poetsch, William (Bill) Freese

Not Attended: Bob Evans (out of town), Don Richardson, Rebecca Slosarik (out of town)

1. Minutes from May meeting accepted. Motion by Clark Little, seconded by William Freese.
2. Bill Smardo donated two large size rock tumblers to the club (currently in our storage unit). Donation receipt/letter issued for est. value of $300.00. Photos of the tumblers were passed around.
4. New application form for 2019/2020 will have section about photo policy. As a member, you’re giving us permission to your photo in our newsletters/social media. Wording TBD.
6. Discussed having a field trip signup liability waiver that attendees sign when we get to the field trip site. Other clubs do this.
7. William Freese brought in our new field trip walkie-talkies.
8. Claudia Marek discussed the scholarship.
   a. 2 applicants: 1 was pre-med., the other had not chosen a field nor had applied/accepted into school.
   b. Rejection letters were typed & passed around to Board. Approved to send out.
   c. Stan Celestian made a suggestion that if we don’t have a student that qualifies for the scholarship in a particular year, perhaps we donate the funds to a school’s Earth Science program or use the funds to help them with something they may need.
   d. Ed Winbourne suggested we think about this idea over the summer and will address at September meeting.
9. Date determined for Club End of Year Picnic: June 22nd
   a. Club will provide hotdogs, burgers, soda, water, and plates.
   b. Ed Winbourne will reserve the spot in the

June 4, 2019
General Club Meeting Minutes

- Speaker: Jay Yett spoke about Anorogenic Granites. Jay is founding member of the DMRMC and was a geology professor at Orange Coast College, in Costa Mesa, CA.
- Stan Celestian brought in a slide sample of some of the gold he panned on our field trip to Lynx Creek.
- Door prizes & raffle prizes given out after break.
- Cynthia Buckner went over May’s finances.
- Ed Winbourne highlighted some of the club’s accomplishments & key moments:
  a. Increase club membership
  b. Increase in educational outreach. 2 STEM/STEAM nights this year, will be up to 3 next school year.
  c. Our 6th show this year was the most profitable.
- Picnic announced: June 22nd – Anthem Community Park
- Final field trip announced: June 29th – New River, Banded Iron

Respectfully submitted, Tiffany Poetsch

Board Minutes continued on page 3……

CHRISTMAS MINE

The open pit and dumps of the Christmas Mine form the backdrop for the settlement of Christmas, Arizona (April 2014). The initial mine claims were invalidated, when it was determined that they were on the San Carlos Apache Indian Reservation. Eighteen years later, the reservation boundaries were re-drawn, and George Chittendon and N.H. Mellor staked new claims on Christmas morning, 1902 -- and copper mining ensued. Fifty minerals are known from here, including dioptase (featured in this newsletter), and 4 Type Minerals: Apachite, Gilalite, Junitoite, and Ruizite. Photo by permission of Michael Conway, Senior Research Scientist, AZ Geological Survey
Anthem Community Park.

c. Email will be sent out once confirmed.

10. Stan Celestian and the field trip committee are working on locations for next year.
   a. William Freese handed out the Field Trip Survey sheet, we’d like trip participants to complete, so we can get an idea of what the members are looking for and/or expecting.

11. Ed Winbourne presented an end-of-year summary:
    a. Increase in field trips trip attendees.
    b. Increase in educational outreach. 2 STEM/STEAM nights this year, will be up to 3 next school year.
    c. Our 6th show this year was the most profitable.
    d. Thank you to Bob Evans & Clark Little for their work on obtaining our storage trailer.
    e. Thank you to Stan Celestian and the other Field Trip Committee folks for all the effort put into the trips.
    f. Thank you to Bill Smardo, Claudia Marek and to those who helped with the Bone Yard cleanup and obtaining/moving all the rocks that we donated to us for our educational outreach.
    g. Thank you to Susan Celestian for creating our newsletter.
    h. Thank you to Jennifer Gecho for heading up the wire wrapping classes.
    i. Highlighted some of guest speakers: Sami’s Jewelry, Rattlesnake Solutions, Susan & Stan Celestian, Jay Yett.
    j. Highlighted partnership with North Mountain Visitors Center.

12. Discussion on possibility of club lapidary shop. Survey will go out to members on whether they would use a facility like this? Estimated to send survey out in August for discussion at September meeting.

13. Committees that need to be possibly built/expanded out in 2019/2020:
    a. Education
       i. Can more be done?
       ii. Additional STEM/STEAMs?
    b. Show committees:
       i. Some longtime committee heads have informed us they are stepping down or moving to a smaller role.
       ii. Setup/Tear down for show.


Respectfully submitted, Tiffany Poetsch
June 15, 2019 marked the day that the Mineralogical Society of Arizona (MSA) group paid for a blast at Topaz Mountain, Utah. Topaz Mountain Adventures has a lease on a rhyolitic dome in the Topaz Mountain Amphitheater, and operates a “pay-to-dig” business. Web site: http://topazmountainadventures.com/

By paying for a blast, the club members were able to obtain fresh material in which to find the topaz crystals. An area was set aside for the club members, and after the blast we were allowed into the area with hand tools, as well as portable power tools. My battery-operated hammer drills and feather wedges proved to be quite effective in making big rocks into smaller ones, often exposing pockets containing the sought after gems.

The morning of the event was met with much anticipation by the club members, as well as about 50-75 other rockhounds (lots of kids with parents). One of the owners of the lease, Rhonda, gave a brief introduction to the area and the blasting event. Her presentation was about where and how to look for the crystals, and full of warnings of what not to do.
Here are a few of the anxious rockhounds awaiting the countdown for the blast.

Photo by Stan Celestian

Finally, the explosives were detonated. This blast site is the one in which we were restricted to collecting. Photo by Susan Celestian

....Topaz Mt continued from page 4

Topaz Mt continued on page 6.....
In total there were 3 blasts, for three groups. After the blast we were restricted to looking for crystals only in our area. Prior to the blast, I had anticipated a larger volume of fresh rock being exposed for collecting. We were only allowed to collect on the rocks that were broken away from the wall, and had landed in our area. There were many enticing pockets left on the forbidden walls. To be the first one up to the blasted debris was a huge advantage, as spotting a rock full of pockets was easier, without the crowd of collectors to walk and see around. Fortunately, I was able to spot a basketball-sized fresh rock that yielded a few nice crystals.

As you might expect on a south-facing, light-colored rhyolite, it was HOT! But our vehicles were only about 100 yards away, so hiking to the very limited collecting area and obtaining refreshments was not an issue. Busting boulders was the order of the day. The more boulders busted, the greater your chances of getting rewarded. After I found my initial treasure -- within the first 10 minutes on the debris pile -- I should have quit and sat in the shade, as I did not find another “keeper” the rest of the day. Definitely disappointing, but after many years of “wild goose chases”, it was something to which I have grown accustomed.

These are 3 of the best crystals I collected from the rubble pile on the first day after the blast. All were found in the first few minutes of searching. All 3 were from the same pocket in one boulder. Note the incipient cleavage plane near the base of the first crystal. Care must be taken with topaz crystals, during trimming and handling, due to this good direction of cleavage. Photos by Stan Celestian
However, if one just thinks about the adventure of getting out into the fresh air, working like a dog for 4 or 5 hours, getting a bit dehydrated along, with a touch of heat stroke, then the day was a fabulous success.

The following day, Father’s Day, was full of options. We could go the pay-to-collect Trilobite spot to look for *Elrathia kingii*, the famous Cambrian trilobites, and perhaps a few other types, or we could venture north to Dugway for a chance to collect geodes, or we could scamper up the side of the amphitheater to look for red beryl, or spend some more money to revisit the topaz collecting rubble. (Sitting around in camp to recuperate was not a viable option.) I chose going back for more topaz. It was a much nicer day, cooler with clouds, and the ability to collect in all of the rubble piles of the previous blast sites was an enticing option that was too hard to pass up. So, yet another day on the rock pile. The impact drill and feather wedges did again come in handy. With more time to look over the rubble, a few larger boulders yielded some crystals. We were told by Rhonda to leave by 7 PM, so naturally at nearly the end of the collecting day I found, buried in rubble, a very large block (maybe bedrock) with many pockets. Most were filled with the sandy rhyolite, but, they were pockets! (Why they were not filled with gemmy topaz was a disappointing mystery.) I worked at an elevated pace and managed to recover several small crystals, some on matrix. I would have had liked to return the next day and continue but knew that I had just about reached my physical limit of exertion, and we had already committed to visit the Bixbyite locality. So, maybe next time?

Monday, June 17, started off as yet another cloudy and comfortable day. We were escorted to another pay-to-dig spot, about 20 miles north of Topaz Mountain, to dig bixbyite and small pinkish topaz at the north end of the Thomas Range. We were also informed that a bulldozer had dug in an area to expose fresh material. Upon arriving, the backhoe was there, but looking around the rubble near it did not yield any bounty of bixbyite.
The collecting was pretty much the same over the debris pile. The best bixbyite crystals I found were simply laying on the surface, probably exposed by a previous rain shower. But, always on the ready to break rocks, and with my wife Susan scouring the debris pile for loose crystals, I began breaking suspicious looking rocks, i.e. those that had pockets. I did find a couple more nice bixbyite crystals doing this, and many broken pseudobrookite blades. I got lucky and found an intact spray of pseudobrookite on matrix, that I managed to collect. It was the best specimen I collected that day.

As we were leaving, Sue “Googled” a mine we passed on the way in. It turns out it was another pay-to-dig mine, called the Solar Wind. It has produced fairly large bixbyite crystals, some approaching 1 inch along a side. Perhaps next time a trip could be arranged to this mine.
Bixbyite with corners truncated by the trisoctahedral form with some scattered “pinkish” topaz crystals.  Photo by Stan Celestian

This is a view of the northwest wall of the Topaz Mountain Amphitheater.  Indicated at “A” is a topaz collecting area and at “B” is a spot where red beryl can be found.  A few of the MSA club members decided to scamper up the side of the mountain to area “B” to collect red beryl.  Many small, sandy crystals were found.  Joseph Philpott Jr reported finding a nice gemmy red beryl.  Photo by Stan Celestian

This is a close-up picture, via DJI Phantom 4 drone, of the red beryl collecting spot.  Note the people in the lower left corner and upper center.  Now, that looks like real fun.  Photo by Stan Celestian
USING A BATTERY OPERATED HAMMER DRILL

The purpose of the hammer drill is to put holes in solid rock. Typically, the harder the rock (like rhyolite), the better it works. Once the appropriately-sized hole has been created, a feather wedge does the rest of the job. That job is to make smaller rocks out of bigger ones. Although this process can be done with a sledge hammer, the hammer drill and feather wedges provides more precision as to where the break will take place.

The hammer drill, shown in Image 1, as the name implies, is more than just rotary action. It strikes the end of the drill bit to provide a chipping action as well as the normal drilling process. This results in fast hole creation. This battery-operated drill translates into portability. The drill, batteries, drill bits and feather wedges can be carried to where the crystal-rich rocks are lurking. For this particular drill and battery, about 100, 9/16” holes, about 4” deep can be drilled into concrete per charge. (So, I carry more than one battery.)

In the field, the drill is used to break fairly large rocks. At the Topaz Mountain Adventures claim, where we had permission to use the drill, rhyolite blocks 2 feet thick were easily split using 4 or 5 holes and feather wedges.

In Image 2, a hole has been drilled into a much smaller rock. The crystal pockets were located on the left side of the rock. Why not just smack the rock with a sledge hammer? That would drastically reduce the chances of recovering the crystals. Who knows where that break would take place, plus the impact of the blow would probably dislodge crystals or even break them.

Once the hole is drilled, the feather wedge is inserted. Image 3 shows that the feather wedge consists of essentially 3 parts - the actual wedge and the 2 sleeves that encase it. The thick rubber holder simply holds the parts of the wedge together so the parts don’t wander off and it makes it much easier to insert the wedge into the hole. Then using a hammer, lightly tap the wedge into the sleeves - “feathering” the wedge between the sleeves. Sometimes oil can be used to help the wedge move smoothly between the sleeves.
Rocks are strong under compressional forces (think of the forces exerted on the bottom rocks of the Great Pyramids.) But, they are fairly weak under tensional (pull apart) forces. The feather wedge being hammered into the rock is slowly creating a strong tensional force within the rock. Slow hammering allows cracks to develop. To increase the probability of developing a split in the rock where you want it, more wedges should be used. Also, the orientation of the wedge is important. In Image 4, note that the position of the wedge and sleeves. The red arrows show the direction of the tensional (splitting) force being created.

Just a few taps of the hammer creates a split in the rock, fortunately where I wanted it to go. The side of the rock with the crystals in pockets was intact, and much smaller. Smaller feather wedges could be used to further isolate the crystal pockets.

With the rock split as shown in Image 6, further reduction of the rock is made much easier. Image 7 shows the resulting slab of rhyolite ready for more precision splitting. Sadly, the split did not reveal a 2” topaz crystal in a hidden pocket.

For a 2 minute 27 second video of the Topaz Mountain Amphitheater that I created, follow this link to my Flickr page:

https://www.flickr.com/photos/usageology/48269807777/in/dateposted/

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Image 4: Feather Wedge Inserted

Image 5: The development of a crack created by the hammering of a feather wedge.

Image 6: The Split

Image 7: The Trimmed Rock with pockets
**UPCOMING FIELD TRIPS**

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| Sunday, Sept 22, 2019 | The Fossil Site, near Payson | Fossils: Pennsylvanian Naco Formation  
May include a stop at the Peach & Zebra Jasper site. Payson Show could also be a stop. | TBA        | Stan Celestian |
| Sunday, Oct 13, 2019 | Camp Verde area | Aragonite/calcite/gypsum pseudomorphs after Glauberite | TBA        | Stan Celestian |
| Thursday, Oct 17, 2019 | Bronzesmith Fine Art Foundry & Gallery, 7331 E 2nd St, Prescott Valley, AZ | Tour of foundry  
MEET: The tour begins at 11:00 | Bill Freese  |           |
| Saturday, Nov 16 | Purple Passion Mine | Potluck & Fluorescent Minerals | TBA        | Ed Winbourne |
| Sunday, Nov 24, 2019 | Sheep’s Crossing area | Purple agate  
MEET: TBA | Stan Celestian  |          |
| Fri/Sat, Dec 6-7, 2019 | Red Cloud Mine/Geronimo Mine | Wulfenite/Vanadinite  
MEET: At mine or 7:30 am on Friday at Martinez Lake (More details in separate email from Dave) | Dave Haneline |           |

**NOTE FROM THE EDITORS**

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

**COME ON BACK!**

**WIRE-WRAPPING CLASS**

4:30-6:30 pm  
Prior to the meeting on Tuesday, September 3, 2019

Bring: cab or stone, about quarter-sized or larger; 26 and 18 gauge copper-based dead soft wire; round nose pliers and wire cutter, beads (optional), little clamps, masking tape, E6000 jewelry glue.

Free, but donations are appreciated.

Questions? Contact Jennifer at Jennifer@eliteshuttersandblinds.com

**DO YOU HAVE A PRETTY ROCK, CAB, FOSSIL, OR OTHER OBJECT YOU'D LIKE TO WIRE WRAP? MAYBE A MEMORY OF A SUMMER TRIP?**

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.
**UPCOMING AZ MINERAL SHOWS**

**September 20-22 - Payson, AZ** Payson Rimstones Rock Club; Event Center Mazatzal Hotel & Casino, Hwy 87, Milepost 251; Fri 4-8, Sat 9-5, Sun 10-4; Admission: $3, children under 12 free.

**September 27-29 - Clarkdale, AZ** Mingus Gem & Mineral Club; Clark Memorial Clubhouse Auditorium, 19 N 19th St; Fri-Sat 9-5, Sun 10-4; Admission: Free.

**October 12-13 - Sierra Vista, AZ** Huachuca Gem & Mineral Club; Cochise College, 901 N Columbo Av; Sat 9-5, Sun 10-4; Admission: free.

**October 19-20 - Sedona, AZ** Sedona Gem & Mineral Club; Sedona Red Rock High School, Hwy 89A & Upper Red Rock Loop Road; Sat 10-5, Sun 10-4; Admission: $3, children under 12 free.

**January 10-12 - Globe, AZ** Gila County Gem & Mineral Society; Gila County Fairgrounds, 900 Fairgrounds Rd.; Fri-Sat 9-5, Sun 10-4; Admission: Adults, single $3; Adults, couples $5; children & students free.


A good source for a list of Arizona Mineral Clubs and contact information is [http://whiterock-azrockclub.org/Public_AZ_Clubs_Links.html](http://whiterock-azrockclub.org/Public_AZ_Clubs_Links.html)

**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. It is set up so you can post photos of outings or related items.

**WEBSITE**


If you have comments, contact Nancy Gallagher.

**GROUPWORKS**

As a DMRMC club member, your name should be available at [https://app.groupworks.com/#/login](https://app.groupworks.com/#/login), and you should receive an email linking you to registration. Create an account and receive reminders about club events, meetings, and important club information. You may post pictures and information -- all seen only by club members.

**Upcoming Meeting Programs**

Club President, Ed Winbourne has been working hard to schedule great programs for this season’s club meetings. Below is a list of the current program offerings: Sept 3 Mac Camby of Freeport-McMoran

**Officers, Chairpersons, & Trustees**

- **President**: Ed Winbourne……ewinbourne@gmail.com
- **Vice President**: Stan Celestian
- **Secretary**: Rebecca Slosarik .. rslosarik1@gmail.com
- **Treasurer**: Cynthia Buckner
- **Publicity**: Howard Roose
- **Membership**: Tiffany Poetsch  tnpoetsch@gmail.com
- **Editors**: Susan & Stan Celestian…………………………azrocklady@gmail.com
- **Field Trip**: Stan Celestian... stancelestian@gmail.com
- **Show Chair**: Ed Winbourne
- **Trustees**:
  - Cynthia V
  - Susan C
  - Tammy E
  - Bob E
  - Jennifer G
  - Don R
  - Claudia M
  - Tiffany P
  - Jim R
  - Witt R
  - Howard R
  - Bob S
  - Rebecca S

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

DMRMCLUB@GMAIL.COM

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

**Meeting Dates for 2019**

Jan 8, Feb 5, Mar 5, Apr 2, May 7, June 4, Sept 3, Oct 1, Nov 5, Dec 3