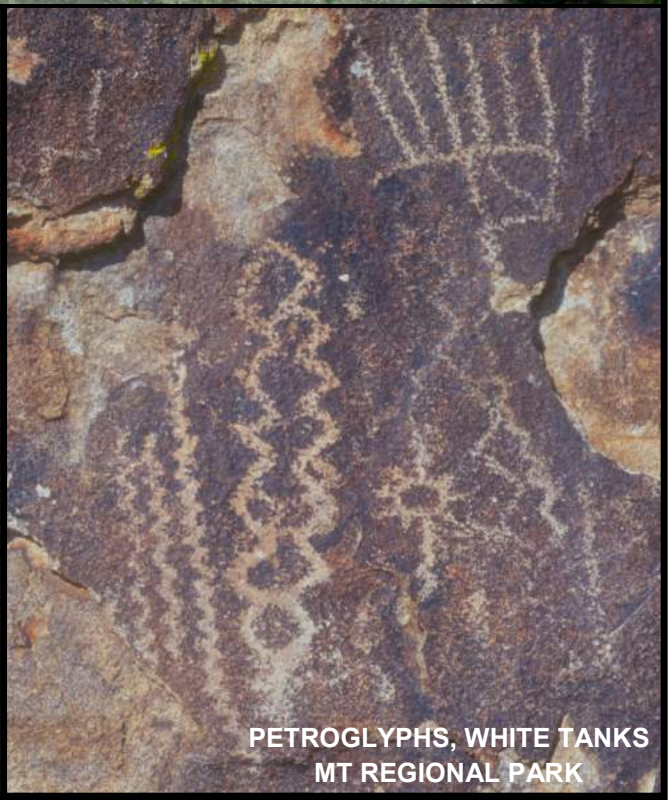
# DAISY MOUNTAIN ROCKCHIPS

*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 6, ISSUE 8** **SEPTEMBER 2021**

DESERT TAPESTRY, CANYON DE CHELLEY NM

DESERT VARNISH, BRENDA, AZ



PETROGLYPHS, WHITE TANKS MT REGIONAL PARK

# DESERT VARNISH

*By Susan Celestian*

An iconic landscape feature of the Southwest, and arid climates in general, is *Desert (or Rock) Varnish*. Desert Varnish is a red to black coating that forms on stable rocks (of many types) in predominately arid climates.

Bacteria and fungi, on rock surfaces, provide a substrate to which windblown clay dust will adhere. Additionally, manganese (Mn) and iron (Fe) minerals are either blown in as dust particles, or provided by surface runoff (both are soluble, so in humid climates will leach out of the surface; but in desert climates they tend to stick around). Bacteria then absorb the Mn and Fe, and then precipitate Mn/Fe oxides on the surface of rocks, thus also binding the clays, to produce the hard, shiny, red to black coating (the black coatings are shiniest). The cemented clay particles may shield those extremophile bacteria from exposure and desiccation. See Figures 1-3.

***FIGURE 1 DESERT VARNISH*** This is a view of the desert floor near Saddle Mountain, Maricopa Co., AZ. Note how shiny are the rocks. This is caused by the coat of manganese and iron-rich desert varnish.

*Photos by Susan Celestian*

*Desert Varnish continued on page 8…..*

# AJOITE

By Susan Celestian

***Chemical Formula*** - $(K, Na)Cu_2Al\,Si_9O_{24}(OH)_6 \cdot 3H_20$

***Crystal System*** - *Triclinic (3 axes of unequal length, no 90° to each other).*

***Growth Forms/Habits*** - *Crystalline: sprays of prismatic to fibrous crystals in veins and vugs; massive*

***Hardness*** - *3.5*

***Luster*** - *Vitreous*

***Streak*** - *Greenish white*

***Colors*** - *Bluish-green ("turquoise-colored")*

***Diaphaneity*** - *Translucent*

***Specific Gravity*** - *2.96*

***Cleavage*** - *Perfect in one direction*

***Occurrence*** - *A secondary mineral occurring the oxidation zone of copper deposits.*

Ajoite is a rare mineral, but known from four localities in Arizona, where it occurs as vein and vug fillings. The type locality[1] for Ajoite, is the New Cornelia Mine in Ajo, Pima Co., Arizona -- for which it was named. In addition, it occurs at the Moon Anchor Mine, Maricopa Co.; Potter-Cramer Mine, Maricopa Co., and a prospect in Copper Creek, Pinal Co. In Mexico, it has been found in Munihuaza (Sonora). Also there are occurrences in Namibia, Austria, Romania, Germany, and Japan.

The most sought after ajoite occurs as inclusions in quartz from the Messina District, Transvaal, South Africa. They are pretty -- and quite expensive!

See Photos in Figures A-C.

[1]**Type Locality** - the locality where a mineral is first discovered and described.

*Zunyite continued on page 9….*

## INSIDE THIS ISSUE

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

**SEPTEMBER SPEAKER**

**JAY YETT**

## *History of Pleistocene Climates*

Club member, Jay Yett described for us ways of investigating the Earth's climate during the Pleistocene (Last Ice Age), and proposed mechanisms whereby the Earth might go into an Ice Age.

The study of a system as huge as Earth's climate involved Big Science -- thousands of scientists from many and diverse fields, and millions of dollars (at least)

Glacial features, in the absence of glaciers, were not always recognized as such -- features such as U-shaped valleys, scratched and polished rocks, erratics, and unsorted piles of sediments (moraines). That recognition, and the recognition that ice sheets once covered parts of the Earth's surface, is attributed to Louis Agassiz. He was a biologist/geologist, and spent a great deal of his career studying fish and fish fossils. But in 1837 he declared that in the past an ice age resulted in continental glaciation, and described the topographic clues to that conclusion. Since then, much more work has been done to verify that theory.

In North America, during the Pleistocene there have been 4 major glacial advances (Wisconsinan, Illinoian, Kansan, and Nebraskan -- named after the states where the respective glacial sediments were best studied). Each of them are marked by many advances and retreats of ice.

Verification of the climate changes associated with periods of glaciation include:

- deep sea drilling to study foraminifera -- cold vs warm water species, $O^{16}/O^{18}$ isotope ratios, coiling directions). Regarding $O^{16}/O^{18}$ isotope ratios, $O^{16}$ is lighter than $O^{18}$, and will be preferentially extracted from sea water through evaporation, leaving the ocean deficient enriched in $O^{18}$. So during warm periods, shells built during that time will reflect that higher content (Calcium carbonate - $CaCO_3$, incorporates oxygen, and is the stuff of shells). And of course, the opposite is true of cold periods.
  *Author's Note: while shells are enriched in $O^{18}$, during warm periods, snow will contain higher amounts of $O^{16}$, so the eventual ice will preserve that ratio -- and vice versa for cold periods*
- Pollen studies in lake sediments -- cold climate vs warmer climate species.
- Ice cores -- $O^{16}/O^{18}$ isotope ratios, air bubble analyses, counting seasonal layers

Ice studies have revealed that climate changes may occur fairly rapidly. And the question remains -- Why do Ice Ages occur? There have been several proposals, and it is probable that a combination of conditions must occur to precipitate an Ice Age.

- Milantkovitch and Croll have proposed that the interaction between the tilt of the Earth's axis, the wobble of the axis and shape of Earth's orbit may trigger conditions that lead to increased snow, and ultimately Ice Ages.
- Plate tectonics will change the positions of the continents. *Author's Note: continents may move into more polar regions; clustering of continents will change the oceans' circulation patterns*.
- Some have proposed that prolonged periods of volcanism may figure into the equation. They are more likely to influence the smaller advances and retreats within a major glacial period.

**Board Meeting Minutes**
**August 31, 2021**

- In Attendance: Bill F., Bob E., Claudia M., Deanne G., Ed W., Nancy G., Rebecca S., Stan C., Sue C.
- Bill F. called the meeting to order
- June meeting minutes approved
- The financials were discussed
  - ◊ Cynthia B. (treasurer) was not present
  - ◊ Ed W. informed us the group is still in good standing
  - ◊ Monthly financials will still be completed
- Dave Haneline Mine was updated by Ed W.
  - ◊ We must receive a personal service management bond next
    - Rocky Mountain Federation assisting with finding an insurance agent
    - Previous owner, Dick Zimmerman, did not need to get this
    - Stan C. will follow up with BLM
  - ◊ Prescott office needs explanation for name change
    - Was approved already by BLM
    - Ed W. will setup an appointment with county office
      - ∗ Needs to bring non-photocopied signatures from BLM
    - Next field trip to the mine might be cancelled due to these issues
- Membership was discussed
  - ◊ New badge company working out great
  - ◊ Email dmrmclub@gmail.com if you need a badge
- Wire wrapping with Jennifer G. is back on
  - ◊ First class of season - 9/7/2021 from 4:30 to 6:30pm
  - ◊ Typically the same day as the general meeting
    - Check emails and newsletter for any changes
- Bill F. talked about the many upcoming field trips
  - ◊ Is trying to find more weekday trips for those who cannot come on the weekends
  - ◊ Please check emails for any changes to the schedule
  - ◊ Next month – a tip jar for the field trip steward will be available
    - Please tip your trip leader
- Ed W. discussed the 2022 club show
  - ◊ March 18-20 or March 25-27
  - ◊ Location will be the most difficult obstacle of the show
    - We are still looking at all the schools in the area
- Ed W. discussed the 2022 club show
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- General meeting – in person 9/7/2021
  - ◊ Masks highly recommended but not mandatory
  - ◊ A member asked that the meeting be recorded
    - We will investigate making the upcoming meetings available online
      - ∗ Possibly through YouTube, Meetup, Zoom, or Facebook post

Respectfully submitted, Rebecca Slosarik, secretary

**General Meeting Minutes**
**September 7, 2021**

- Open attendance: about 34 members present
- Thank you again Jay Yett for an amazing presentation
  - ◊ A co-founder of the club
  - ◊ Discussed the assimilation of climate data
- Raffle presented by Robin S. & Deanne G.
  - ◊ Made the club $173
- Thank you as well to Claudia M. for bringing snacks
  - ◊ **We need a new volunteer to bring snacks and water to in-person meetings**
    - Reimbursement will be given
    - Email dmrmclub@gmail.com if you would like to volunteer
- Bill F. discussed the upcoming field trip season
  - ◊ Many exciting upcoming trips!
    - Schedule changes often, so always check emails for updates
  - ◊ Please wear your nametag to all club gatherings
- The meeting ended early at 8:00pm
  - ◊ There was a miscommunication with the civic building
  - ◊ It should be resolved by next meeting
- First in-person meeting since Covid-19 closures
  - ◊ Welcome back everyone!

Respectfully submitted, Rebecca Slosarik, secretary

# FIELD TRIP FOR PERMIAN KAIBAB FOSSILS (250 myo)

## Wednesday, September 8, 2021

*Photos by Bill Freese and Susan or Stan Celestian*

**Not far from the intersection of Routes 86 and 260, north of Strawberry, a troop of 10 DMRMC members combed the forest floor for fossils. The weather started out in the 70's, so was a nice respite from the recent spike in the temperatures here in the Valley.**

Some of those big rocks in the back of the truck will soon adorn a yard in Illinois!

*Field Trips continued on page 6…..*

...Field Trips continued from page 5..

# SOME KAIBAB FOSSILS

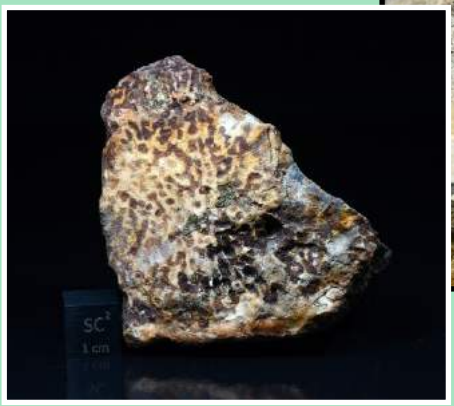
Fenestrate (Lacy) Bryozoan impression. This animal had a lifestyle similar to that of fan corals.

Sea Urchin Spine

*Meekela* sp -- a brachiopod

A small geode

*Penicularis bassi* -- a productid brachiopod (one very convex shell, and one fairly flat shell) …….PLUS spines! In the photo below, you can see spines attached to the shell -- and scattered in the adjacent limestone. (Fossil is about 2" across)



*Actinocoelia meandrina* -- a glass sponge. The meandering pattern are the channels that were housed within the sponge "skeleton".

This is a slab covered by a trace fossil -- burrows, probably of a shrimp-like crustacean. It is called *Thalassoides*. Burrows are often backfilled by the burrower, and the sediment is bound by mucus, eventually making it more durable than the surrounding sediment.

And as limestone is soluble in weak acids, there were many picturesque and artistically appealing rocks to bring home for the yard.

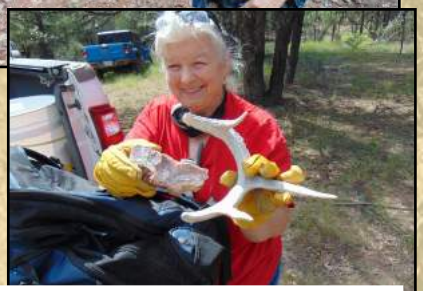
Field Trips continued on page 7…..

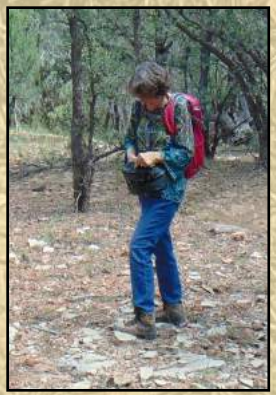
...Field Trips continued from page 6

# FIELD TRIP TO ROBERTS MESA

*Photos by Bill Freese and Deanne Gosse*

**Seventeen DMRMC members escaped to the high country, to Roberts Mesa, where the ground is littered with colorful chert. It looks like everyone got their fair share -- and enjoyed temperatures lower than those at home. We look forward to seeing some polished stones at Show &**





Field Trips continued on page 8…..

...Field Trips continued from page 7..

# FIELD TRIP TO MINGUS MOUNTAIN

***Photos by Bill Freese***

About 24 (tough to count with other clubs involved) folks from the DMRMC, Sedona and MSA clubs. It was a beautiful day in the 60's. Attendees were greeted by those amateur rockhounds (cows) that complained and moved away. There was a light shower but not much rain. It was a great day to go rockhounding. Just look at their faces in the pics! Everyone found tons of cool Jasper with Hematite.

**REMINDER from Rockchips May 2020:** *BIF or Banded Iron Formation -- in this case the Precambrian (about 1.8 billion years old) Pike's Peak Iron Formation, on Mingus Mountain. The rocks hunted are composed of sharply defined, and alternating, layers of black hematite and bright red hematite-rich chert. The source of the silica and iron was probably submarine volcanism (or upwelling from deep water). The rocks very likely were deposited in a shallow water, intertidal environment, where bacteria facilitated the precipitation of the iron. And as stromatolites (remember cyanobacteria? -- Rockchips Dec 2019) produced oxygen, iron was oxidized to produce the red layers (the black layers represent low-oxygen periods).*


It'll polish up great -- but will make a mess!!

Field Trips continued on page 9…..

...Field Trips continued from page 58..

...Desert Varnish continued from page 2

***FIGURE 2 DESERT VARNISH*** The large rock in the center of the photo has desert varnish, and it has been broken. Note that the interior of the rock is quite light-colored. (People often think that rocks covered by desert varnish are basalt, but once the rock is broken, the fallacy of that identification is revealed.)

*Photo by Susan Celestian*



***FIGURE 3 DESERT TAPESTRY*** Where water runs down cliff faces, the moisture facilitates the formation of desert varnish, to form streaks that decorate the landscape. This is sometimes referred to as desert tapestry. *Photos by Stan Celestian*

*FACT: Manganese and iron oxides make up about 30% of desert varnish.*[1]

*FACT: the concentration of manganese in black coatings is 50-60 times higher than that of the surrounding soils.*[2]

*FACT: Red desert varnish probably signifies increased moisture. Often the varnish on the underside of a rock is reddish, while the upper surface is black.*

This process is a prolonged one — taking hundreds to thousands of years — producing a coating of 1-40 micrometers thickness (a human hair is about 90 micrometers wide) in 1000 years. See Figure 4.

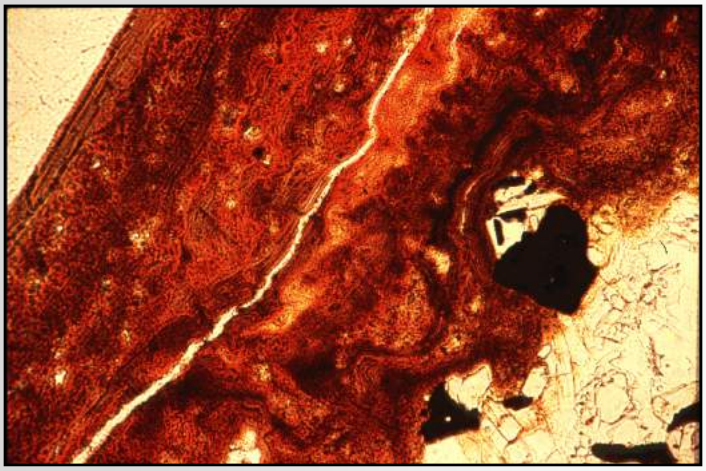


***FIGURE 4 CROSS SECTION OF DESERT VARNISH*** In this image, the rock surface is to the upper left, and the rock's quartz, feldspar, and ferromagnesian minerals are to the lower right. Note the thin layers of clay, and how the layers of desert varnish follow the contours of the rock. *Photo by R.M. Potter, posted on the Mineral Spectroscopy Server of California Institute of Technology (Pasadena, CA). Use licensed by CC BY-NC 4.0 International; and supported in whole or in part by the National Science Foundation.*

Desert varnish makes petroglyphs possible, as ancient residents of the Southwest (and around the world) chipped off the dark coating to create images on stone, by revealing the lighter–colored rock beneath. See Figure 5.

[1] http://www.vmldating.com/Images/rvgrowthpaper2000.pdf

[2] https://en.wikipedia.org/wiki/Desert_varnish

. *Desert Varnish continued on page 11…..*

...Desert Varnish continued from page


***FIGURE 5 PETROGLYPHS*** By chipping away the thin coat of black and red desert varnish, Native Americans created petroglyphs, that can be found scattered around the American Southwest. A - on granite from near Richenbar Mine, Maricopa Co., AZ; B - on granite from near Stanton, Yavapai Co., AZ; C - on sandstone along Island Park Road, near Dinosaur NM, UT.

*Photos by Susan Celestian*

Desert varnish has been used by geologists and archaeologists to document periods of climatic variations, and this is probably a valid use for general estimates, as it appears that black layers form in times of low moisture, while red layers form during wetter times.

And there have been attempts to use desert varnish to try estimate the age of desert surfaces. However, this mandates the assumption that in a given area, the rate at which varnish forms is fairly constant and continuous. The data do not bear this out, and it appears that desert varnish forms at widely variable rates within any particular area.

**GENERAL RESOURCES FOR DESERT VARNISH**

*https://en.wikipedia.org/wiki/Desert_varnish*
*http://minerals.gps.caltech.edu/FILES/VARNISH/Index.html*
*https://www.nps.gov/articles/desertvarnish.htm*
*https://www.abdnha.org/TSP-desert-varnish.html*
*http://www.vmldating.com/Images/rvgrowthpaper2000.pdf*
*https://wildlandtrekking.com/blog/desert-varnish/*

...Ajoite continued from page 2

***FIGURE A ARIZONA AJOITE*** In this specimen, from the New Cornelia Mine, in Ajo, Pima Co., AZ fibrous/bladed ajoite lines small vugs. The whole specimen is only 1.5 inches across.

*Photo by Stan Celestian*

***FIGURE B AJOITE AS INCLUSION*** This is a very large quartz crystal with splotchy inclusions of ajoite. It is from Artonvilla Farm, Messina, South Africa. According to the photographer, the crystal is the size of her

***FIGURE C AJOITE AS INCLUSION II*** This quartz crystal face is especially densely included by ajoite. Location: Messina Mine, Limpopo Province, South Africa. *Photo by Rob Lavinsky (iRocks.com) and is licensed by* *CC-BY-SA-3.0*

**GENERAL RESOURCES FOR AJOITE**: Wikipedia.com, dakotamatrix.com, Mindat.com, HandBookofMineralogy.org

# MOLTEN MINI

## UINKARET VOLCANIC FIELD

***By Susan Celestian***

Flanked by the Hurricane and Toroweap Faults, and primarily north of the Colorado River, there lies the Uinkaret Volcanic Field, poised on the edge of the Grand Canyon. See Figures A'-B'.

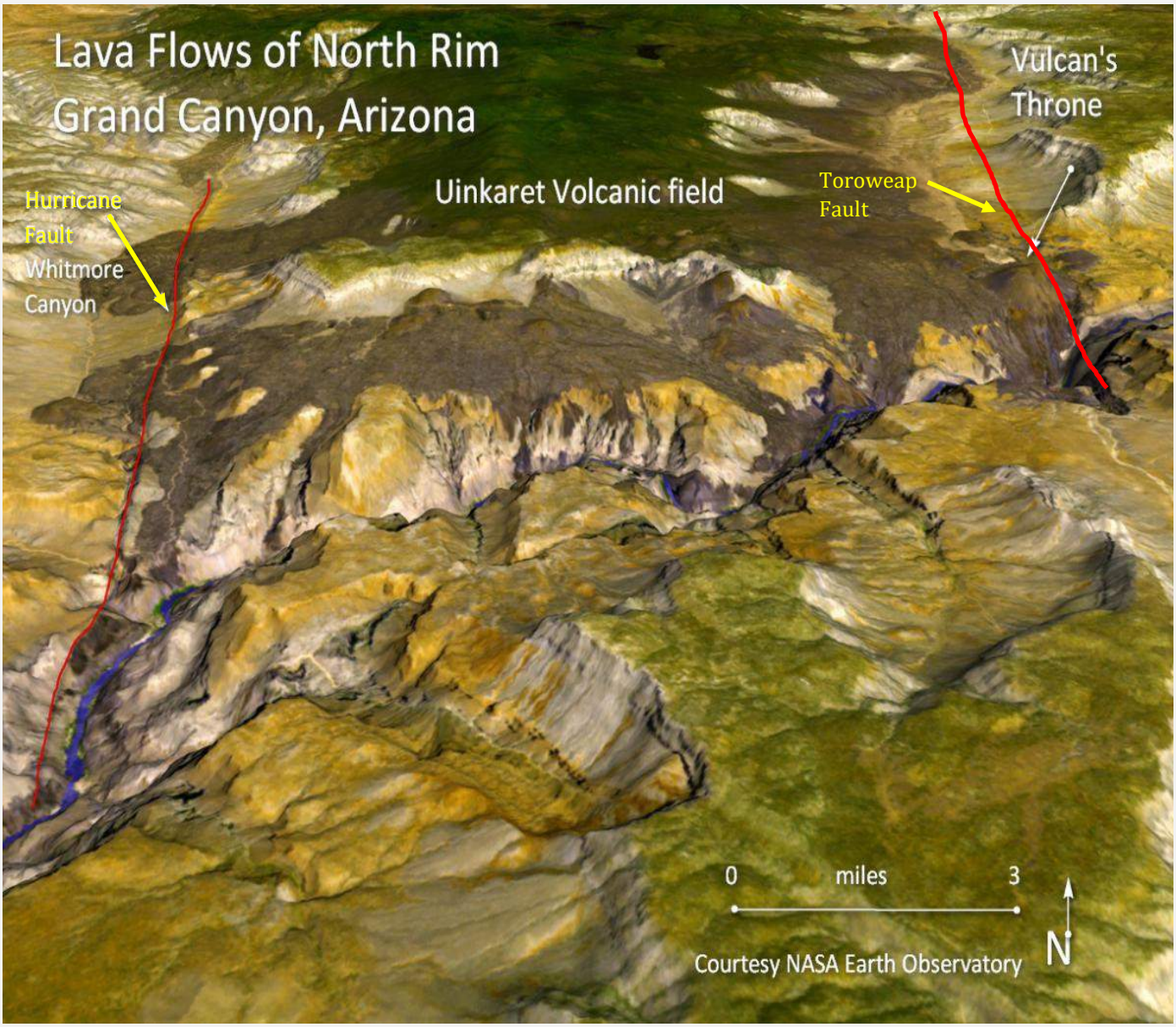



***FIGURE A' UINKARET VOLCANIC FIELD*** On the North Rim of the Grand Canyon, there lies a significant volcanic field, flanked by two still-active faults. The Uinkaret Volcanic Field includes many lava flows and at least 213 cinder cones. *Image courtesy of NASA Earth Observatory (2014)*

*Uinkaret continued on page 13…..*

*...Uinkaret continued from page 12*

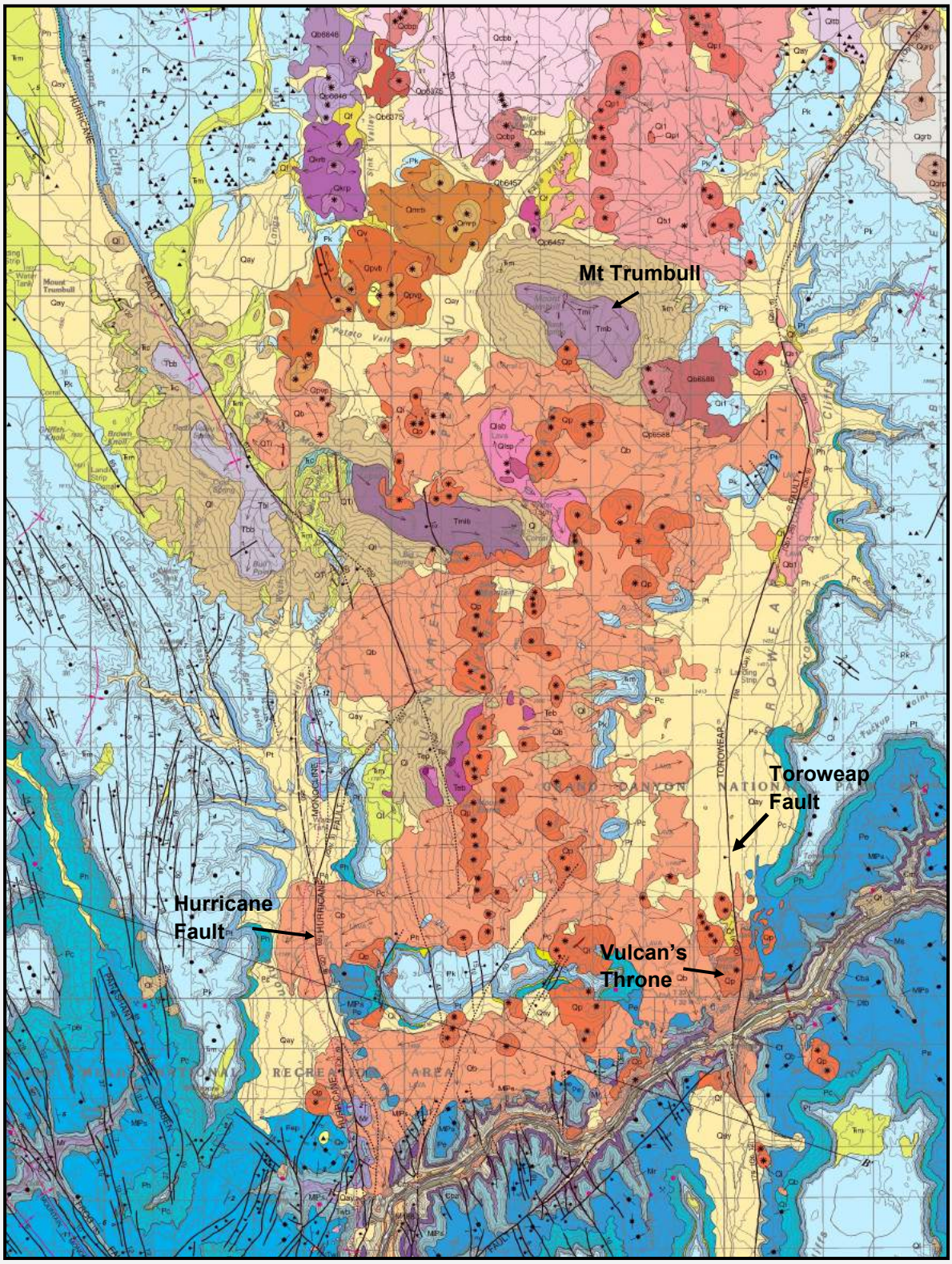



***FIGURE B' GEOLOGIC MAP OF THE UINKARET VOLCANIC FIELD*** On this map, the purple-colored areas are the older volcanic rocks, and the orange/reddish-orange-colored areas are the younger volcanic rocks -- all part of the Uinkaret Volcanic Field, north of the Grand Canyon. Each black dot (star) represents an individual volcano/cinder cone.

*Map courtesy of the USGS & created by George Billingsley and Jessica Wellmeyer*

*Uinkaret continued on page 14…..*

*...Uinkaret continued from page 13*

Volcanism in the Uinkaret Volcanic Field began around 3.6 mya (Mid-Pliocene). One of the first flows formed the mesa that is known as Mount Trumbull. Subsequent volcanism was primarily Pleistocene, into the Holocene. During that time, numerous lava flows, and at least 213 cinder cones forms. The youngest volcano in the field is a mere 1300 +/- 500 years old, just south of Mount Trumbull. Between 725,000-100,000 years ago, lava flows have cascaded into the Grand Canyon thirteen times, damming the Colorado River. Lava dams reached thicknesses of nearly 700 feet -- maybe even as high as 2000 feet. The river has breached or gone around all of them. How - and how quickly - the dams were breached/circumvented is still not established. Some believe the dams held fast for up to 20,000 years; while others hold that the river breached them relatively quickly in catastrophic floods. More likely, it is a bit of both. See Figure C'.

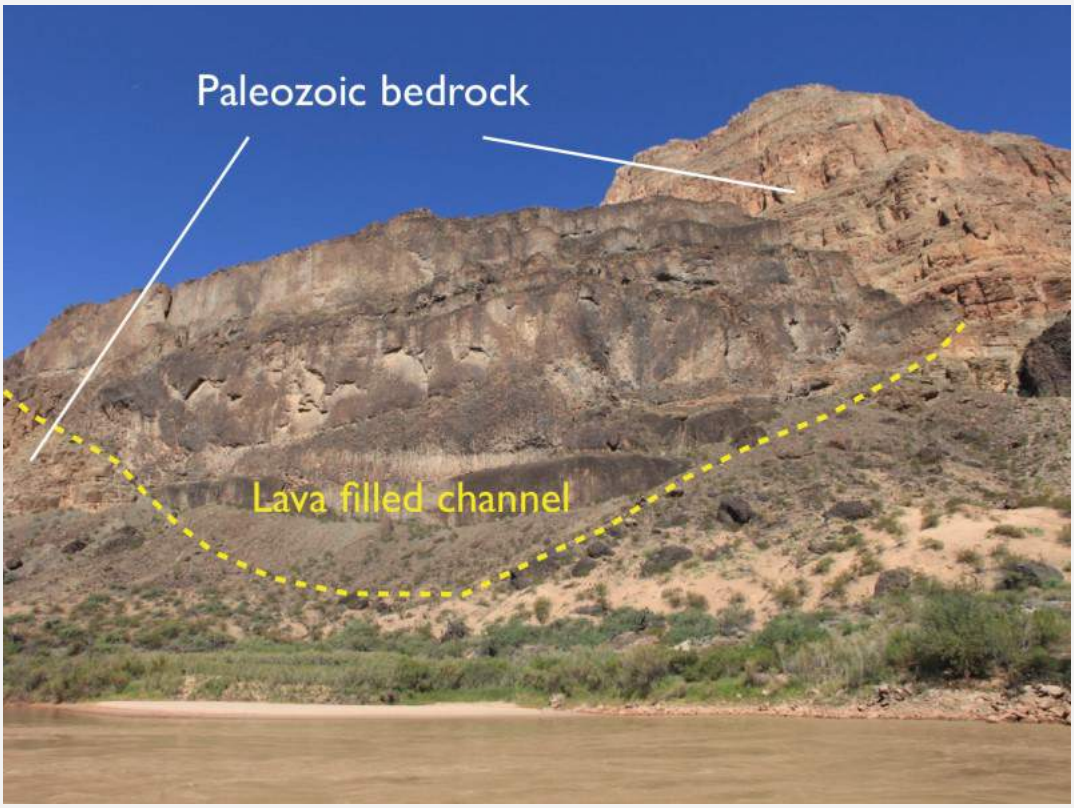



***FIGURE C' BASALT DAM*** This is a photo of one of those channel-filling basalt dams, produced by the voluminous lava flows in the Uinkaret Volcanic Field. This lave-filled channel is found at river mile 183. In this case, the current river channel is the result of the river having cut around the left of the dam. *Photo by Wayne Ranney and courtesy of the Arizona Geological Survey.*

*Uinkaret continued on page 15…..*

...Uinkaret continued from page 14

Some of the most prominent features associated with this volcanism are Vulcan's Throne, Vulcan's Forge, and Lava Falls Rapid. Vulcan's Throne (73,000 years old) is a picturesque cinder cone sitting right on the edge of the canyon (and the Toroweap Fault), and its associated lava flows drape over the canyon walls and down to the river, where it once dammed the stream flow. See Figure D'-H'.

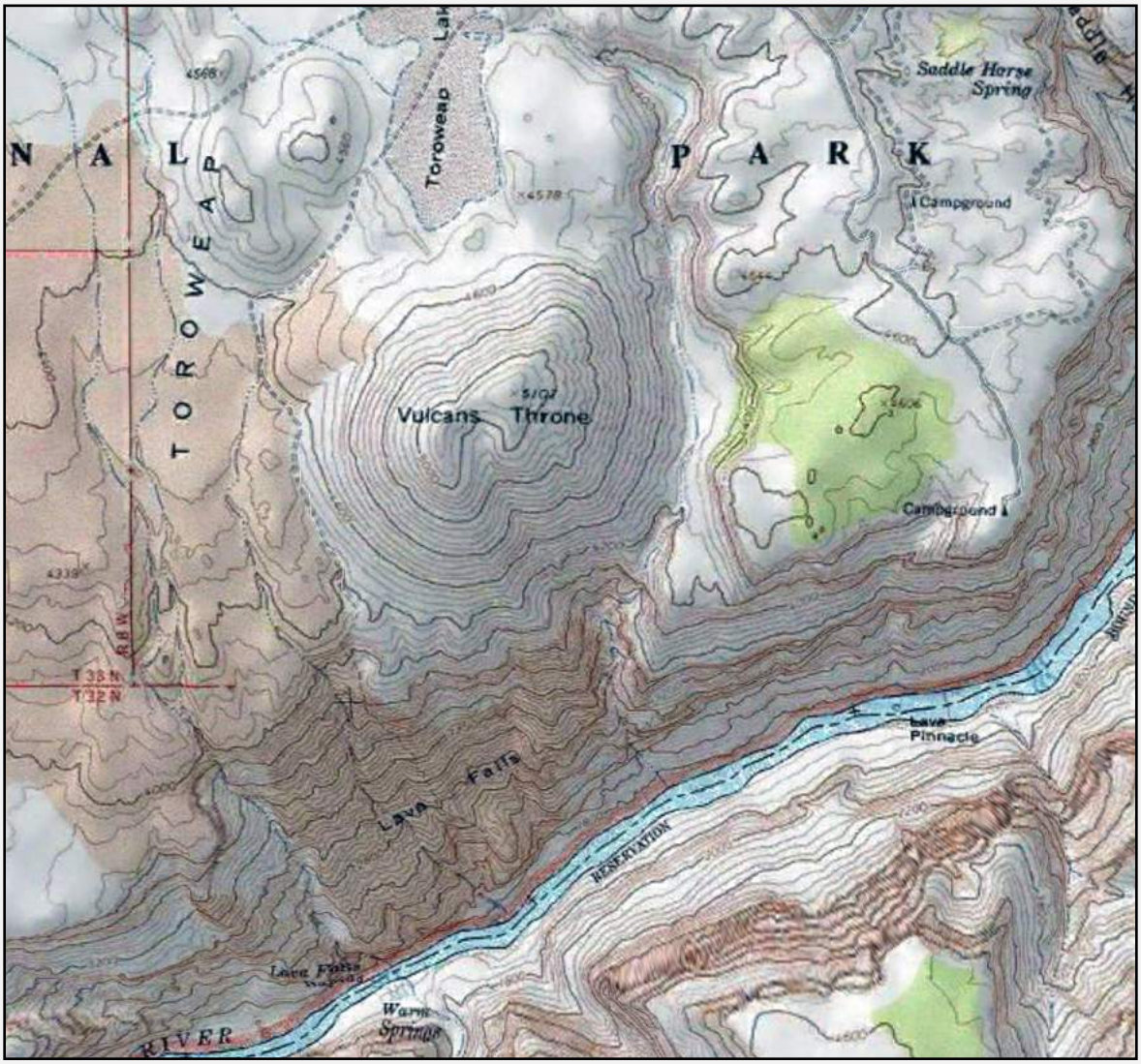



***FIGURE D' TOPO MAP OF VULCAN'S THRONE*** This topo map highlights the cinder Vulcan's Throne, the drapery of lava flows (Lava Falls), and the Lava Falls Rapids at the river.

*Map courtesy of Google Earth and the USGS*

Uinkaret continued on page 16…..

...Uinkaret continued from page 15

***FIGURE E' VULCAN"S THRONE AND LAVA FLOW*** 73,000 year old Vulcan's Throne sits right on the lip of the Grand Canyon, and its lava flows dammed up Colorado River. *Photo by Stan Celestian*

***FIGURE F' VULCAN"S THRONE,*** a large cinder sitting atop the rim of the Grand Canyon.
*Photo by Stan Celestian*

***FIGURE G' LAVA FALLS*** The lava flows from Vulcan's Throne cascaded into and dammed the Colorado River 73,000 years ago.
*Photo by Stan Celestian*

***FIGURE H' PANORAMA OF VULCAN'S THRONE AND FLOW*** *Photo by Stan Celestian*

Uinkaret continued on page 17…..

...Uinkaret continued from page 15

Vulcan's Forge (or Anvil) is a volcanic neck that sticks up in the middle of the Colorado River at Mile 276 (276 miles downstream from Lee's Ferry). Se Figures I'-J'.

***FIGURE I' VULCAN'S FORGE*** This is a view of Vulcan's Forge from Toroweap Viewpoint, 3000' above the river. Ask Stan how I got this shot…..
*Photo by Susan Celestian*

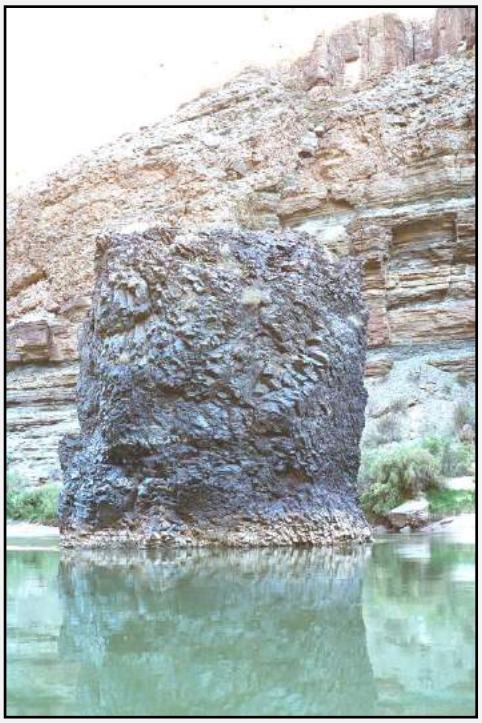


***FIGURE J' VULCAN'S FORGE*** This is a view of Vulcan's Forge at river level. *Photo by Steve Rauzi, Arizona Geological Society*

About a mile downstream from Vulcan's Forge, the Lava Falls Rapids begin. The rapids formed when a debris flow deposited large boulders in the Colorado River channel (although the site lies on the remnants of an old 830,000-400,000 year old lava dam, now eroded away. In 20 seconds, river rafters shoot the 100 yard, 37 foot drop -- one of the Class V (out of VI) on the International Scale of River Difficulty. Woo-hoo! See Figure K'-L'.

***FIGURE K' LAVA FALLS RAPIDS*** This view, from Toroweap Overlook, of Lava Falls Rapids illustrates the relationship between the boulder river bed with the mouth of a side channel to the river. *Photo by John Fowler and licensed under Creative Commons Attribution 2.0 Generic.*

***FIGURE L' LAVA FALLS RAPIDS*** view at river level. *Photo by Wayne Ranney and courtesy of the Arizona Geological Survey.*

Uinkaret continued on page 18…..

...Uinkaret continued from page 17

## GENERAL RESOURCES FOR UINKARET FIELD

*https://www.usgs.gov/volcanoes/uinkaret-volcanic-field*
*https://volcano.si.edu/volcano.cfm?vn=329010*
*https://en.wikipedia.org/wiki/Mount_Trumbull_Wilderness*
*https://azgs.arizona.edu/photo/vulcans-throne-uinkaret-volcanic-field-north-rim-grand-canyon*
*https://azgs.arizona.edu/photo/vulcans-forge-grand-canyon*
*https://azgs.arizona.edu/photo/arizona-rocks-postcard-17-vulcans-throne*
*https://azgs.arizona.edu/photo/lava-falls-grand-canyon-arizona*
*https://en.wikipedia.org/wiki/Uinkaret_volcanic_field*
*https://en.wikipedia.org/wiki/Vulcan%27s_Throne*
*https://www.allgrandcanyon.com/inner_canyon/lava_falls.php*
*https://www.riversandoceans.com/lava-falls-rapid/*
*https://en.wikipedia.org/wiki/International_scale_of_river_difficulty#:~:text=The%20international%20scale%20of%20river,hence%20international%20in%20the%20title.*
*https://en.wikipedia.org/wiki/Toroweap_Overlook*

## Wire Wrapping has resumed!

Jennifer Gecho will once again teach an in-person wire wrapping class. So get your wire, pliers and a favorite stone ready….

- **First Tuesday of the month**
- **4:30-6:15**
- **Anthem Civic Building, 3701 W Anthem Way, Anthem, AZ 85086**

**March will be here before we know it. Keep you calender open for the DAISY MOUNTAIN GEM & MINERAL SHOW 2022**

At last! It was great to be able to meet in person once again. Great friends, speaker, raffle and show & tell. Gather your treasures and reserve October 5 for a night of rockhounding fellowship.

And Bill -- and the Field Trip Committee -- have devised a diverse and interesting field trip schedule. Watch for emails. Hope to see you 'in the field'.

## UPCOMING FIELD TRIPS & MEETINGS

**WHERE**: Mingus Mountain
**WHEN**: Saturday, September 25, 2021
**WHAT**: Banded Iron
**OTHER:** Joint trip with Sedona and MSA

**WHERE**: Diamond Point
**WHEN**: Saturday, October 2, 2021
**WHAT**: Quartz Crystals
**OTHER:** Joint trip with MSA
**MEET**: 9:30 at turn off Rte 87 for Control Road (north of Payson)

**WHERE**: Parks, Arizona
**WHEN**: Wednesday, October 6, 2021
**WHAT**: Obsidian

**WHERE**: Bronzesmith (Prescott Valley)
**WHEN**: Thursday, October 28, 2021
**WHAT**: Bronze foundry tour

**WHERE**: Stone World (Ashfork) https://arizonaonyx.com/
**WHEN**: Th... ...6, 2021
**WHAT**: POSTPONED ...travertine and more
**FEE**: $100/vehicle

**WHERE**: Purple Passion Mine
**WHEN**: Wednesday, November 10, 2021 (EVENING)
**WHAT**: Fluorescents

**WHERE**: Chilito Mine
**WHEN**: Saturday, November 13, 2021
**WHAT**: Copper Minerals
**OTHER:** Joint trip with Verde Valley Rockhounds

**WHERE**: BBC Mine (Quartzsite) & Yuma Area
**WHEN**: Sat... POSTPONED ...er 20-21, 2021 (EVENING)
**WHAT**: Barite, Kyanite

**WHERE**: Tucson Area
**WHEN**: TBA November

**WHERE**: Red Cloud Mine (Yuma)
**WHEN**: Friday/Saturday, December 3-4, 2021
**WHAT**: Wulfenite, fluorescent fluorite

**OTHERS UPCOMING THIS SEASON**
: Dave Haneline Mine - cerussite, barite, eye-of-the-beholder
Blue Cube/Spectrum/Prism Mines - fluorite

***DATES SUBJECT TO CHANGE - SO WATCH FOR EMAILS***

*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 Bill at* bfreese77@cox.net

## 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. 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**: Cynthia Buckner....Cbuckrun1@q.com
**Publicity**: Jessie Redmond...
**Membership**: Tiffany Poetsch tnpoetsch@gmail.com
**Editors**: Susan & Stan Celestian.....
azrocklady@gmail.com
**Field Trip**: Bill Freese ... bfreese77@cox.net
**Mine Steward:** Stan Celestian.....
stancelestian@gmail.com
**Show Chair**: Ed Winbourne
**Trustees:**

| | |
|---|---|
| Cynthia V | Claudia M |
| Susan C | Tiffany P |
| Bob E | Jim R |
| Jennifer G | Witt R |
| Don R | Howard R |
| Jessica C. | Rebecca S |
| Johnaton M | Joe G |
| Clark L | Bob S. |
| | Nancy 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:**
**First year $30, then $20.00 Adults per Person**
**First year $45, then $25.00 Family (2 people)**

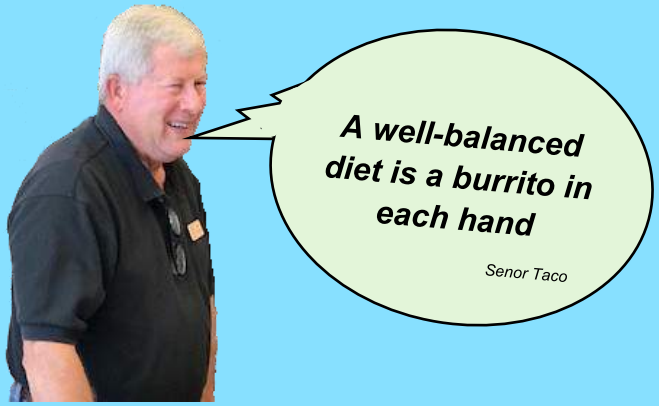
**Meeting Dates for 2021**

Jan 5, Feb 2, Mar 2, Apr 6, May 4, June 1, Sept 7, Oct 5, Nov 2, Dec 7

## Words of Wisdom

*passed along by our own*

**Bob Evans**




## UPCOMING AZ MINERAL SHOWS

**September 24-26 - Tucson, AZ Minerals of Arizona Symposium;** U of Alfie Norville Gem and Mineral Museum, 115 N Church St; Fee. https://flaggmineralfoundation.org/home/minerals-of-az-symposium/ See poster on pages 21-22.

**In Conjunction with the Symposium**: The Mineral Show at The Mineral City Ballroom; 1881 N Oracle Rd; Fri-Sat 10-6, Sun 10-4; Admission: Free. See poster on page 23.

**September 24-26 - Clarkdale, AZ;** Mingus Gem & Mineral Club; Clark Memorial Clubhouse Auditorium, 19 N. 9th St; Fri-Sat 9-5, Sun 10-4; Admission: Free.

**October 8-10 - Buckeye, AZ** West Valley Rock & Mineral Club; 902 N 1st St (Miller Rd); Fri-Sat 9-5, Sun 9-2; Admission: $3, under 13 free.

**October 16-17 - Sedona, AZ** Sedona Gem & Mineral Club; Sedona Red Rock High School, 995 Upper Red Rock Loop Rd; Sat 10-5, Sun 10-4; Admission: ?.

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

**November 27-28 - Wickenburg, AZ** Wickenburg Gem & Mineral Society; Hassayampa School, Wrangler Event Center, 251 S Tegner St; Sat 9-5, Sun 10-4; Admission: Free. See poster on page 24.

**January 7-9 - Mesa, AZ** Flagg Mineral Foundation; Mesa Community College, 1833 W Southern; Daily 9-5: Admission: 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 prizes; 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 - OCTOBER

***You are invited to return to NMVC Open Studio. Lapidary & Silversmithing on Thursdays and the first, third and fifth Saturdays in a month, from 8:30 to noon with cleanup starting at 11:45***.

NMVC requires that everyone wear a mask while in the building. (Other NMVC requirements will be sent in a later email or on premises.)

Only four 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.

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

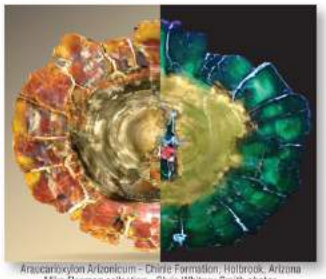
Email your request for the day(s) you are interested in participating ASAP. Email Shirley Cote at crystalc17@gmail.com

**October – Thursday's dates are 7, 14, 21, 28**
**October – Saturday's dates are 16, 30**

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.

We would also like to inquire as to anyone wishing to come in for **Lapidary Only Open Studio on Mondays.** Email Shirley at crystalc17@gmail.com

**October - Monday's dates are 4, 11, 18 25**



Araucarioxylon Arizonicum - Chinle Formation; Holbrook, Arizona
Mike Reeman collection - Chris Whitney Smith photos

Fluorite on Quartz - Blanchard Mine; Socorro Co., New Mexico
Mike Sanders collection - Mike Sanders photo

Silver - The 417 Project; Richmond Basin, Gila County, Arizona
On display at the UofA Museum - Les Presmyk photo

Quartz var Chalcedony - Potts Canyon; Pinal Co., Arizona
Mineralogical Society of Arizona Collection - Jeff Scovil photos

Tom Kaye photo

Vanadinite - Gallagher Mine; Cochise Co., Arizona
Les and Paula Presmyk Collection - Jeff Scovil photo

28TH ANNUAL

# MINERALS OF ARIZONA SYMPOSIUM

Historic Pima County Courthouse building, home of the new Universtiy of Arizona Alfie Norville Mineral Museum. Photo courtesy of the Museum.

## UARIZONA ALFIE NORVILLE GEM & MINERAL MUSEUM

SEPTEMBER 24TH, 25TH, 26TH | 2021 | TUCSON, ARIZONA

## DAYLIGHT & FLUORESCENT MINERALS

**Chairperson**
Les Presmyk

**Co-Chairpersons**
Eric Fritz
Susan Leib

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FLAGG MINERAL FOUNDATION

# 28th Annual Minerals of Arizona Symposium

**Friday September 24th, Saturday September 25th, and Sunday September 26th, 2021**
**Sponsored by the Flagg Mineral Foundation**

## "Daylight and Fluorescent Minerals"

**to be held at the**
**UArizona Alfie Norville Gem and Mineral Museum**
**115 N. Church Ave., Tucson, AZ 85701**

**Saturday Program to include the following speakers:**

7:45-8:30 AM – Registration & Check-in
8:30 AM to 5 PM – Program to include (with coffee breaks, snacks and lunch provided)

| | |
|---|---|
| The University of Arizona Alfie Norville Gem and Mineral Museum – Brief Overview | Eric Fritz |
| The Significance of Donations to Museums | Anna Domitrovic |
| Fluorescence and the Zimmerman Collection | Mardy and Dick Zimmerman |
| Gallagher Mine and other Vanadium Localities around Charleston / Tombstone | Barbara Muntyan |
| Five Decades of Mineral Collecting in New Mexico | Mike Sanders |
| The World's Largest Silver Nugget | Chris Osterman |
| Minerals in the Movies | Dr. Wendell Wilson |
| Laser Fluorescence | Tom Kaye |
| Mineralogy of Arizona, 4th Edition | Ron Gibbs & Dr. Ray Grant |
| Fluorescent Petrified Wood, Who Knew? | Mike Fleeman |

There will be mineral sales by the Flagg Mineral Foundation during the day on Saturday

**Saturday Evening Activities:**

TBD

**Sunday Activities:**

TBD

**Go to flaggmineralfoundation.org for the latest information.**

# Mineral Show at The Mineral City Ballroom

1881 N Oracle Road | Tucson, AZ 85705

**September 24th-26th**

**10 to 6 Friday & Saturday**

**10 to 4 Sunday**

Dolomite, Calcite
Dalnegorsk, Dalnegorsk Urban District, Primorsky Krai, Russia
Dawn Boushelle Collection - Photo by Jeff Scovil

## No Cover Charge

Mineral Vendors in Mineral City will have their doors open as well

Contact **Rocky** for Further details **520-833-8812**


## Held in conjunction with The Arizona Mineral Symposium

Produced by The Mineral Showcase

# Wickenburg Gem and Mineral Show

## Nov 27 & 28, 2021

Free Admission

Jewelry

Fossils

Minerals

Gems

Over 40 Vendors Best Rock Contest Raffle

Door Prizes Kid's Area Silent Auction

Hassayampa Elementary School

251 South Tegner Street Wickenburg, AZ

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