



Wickenburg Gem & Mineral Society, Inc.

P.O. Box 20375, Wickenburg, Arizona, 85358

E-Mail — wgmsociety@gmail.com

www.wickenburggms.org

The purpose of this organization shall be to educate and to provide fellowship for people interested in rocks and minerals; to foster love and appreciation of minerals, rocks, gems, and the Earth.

Membership shall be open to all interested people.

Sedimentary Structures: Mudcracks

By Susan Celestian

Mudcracks (mud cracks), also called desiccation cracks, form when wet, muddy sediments dry out. As the sediment dries, it contracts. The surface sediment dries faster than the underlying sediment, so cracking occurs first at the surface, and progresses deeper, as drying proceeds. As a result, the cracks are wider at the surface and narrow downward -- "V"-shaped. See Figure 1. And due to the physics of relief of stress through cracking, the cracks occur in a polygonal and networking pattern. See Figures 2-7.

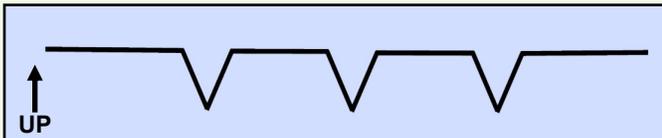


FIGURE 1 Mudcracks This cross-sectional view, of ideal mudcracks, reveals the V-shape of the cracks. That "V" can be used to determine the original UP direction of a sedimentary bed.

Illustration by Susan Celestian



FIGURE 2 Polygonal Mudcracks This picture was taken near The Pinnacles between Trona and Ridgecrest, CA. *Photo by Stan Celestian*

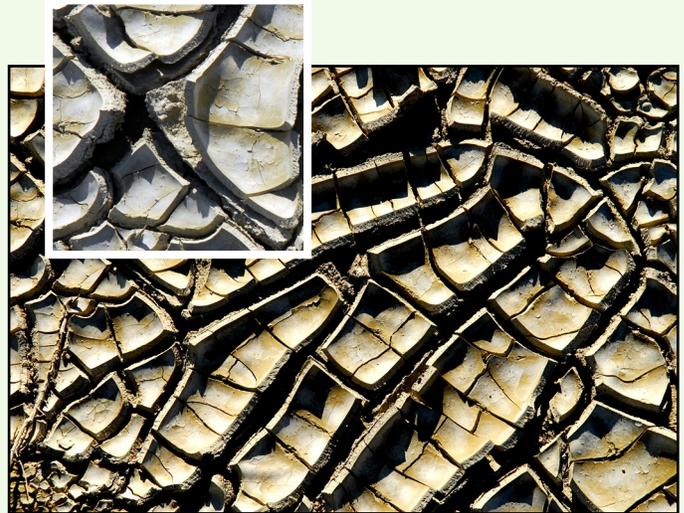


FIGURE 3 Polygonal Mudcracks Close-up In this closer view of the mudcracks from Figure 2, you can get a feeling for the V-shape of the cracks. In addition, note that the upper layers are beginning to curl. Very fine clayey mud is underlain by coarser, sandier material. Clays can retain water longer than other minerals, so there is a significant difference between the rates of drying through the layers, with the surface drying -- and shrinking -- much more radically than further down. The clay will also shrink more than the sandier material, so is pulling away from that layer. See Figure 4 for further discussion of curling. *Photo by Stan Celestian*

Environmental significance of crossbedding: Mudcracks are indicative of wet-and-dry conditions - conditions such as found on floodplains, ephemeral stream channels and ponds, and playas. Additionally, widely-spaced, irregular mudcracks indicate rapid drying of sunny locales; while more regular, closely-spaced mudcracks indicate shadier locales.

Mudcracks continued on page 3.....

INSIDE THIS ISSUE

Sedimentary Structures - Mudcracks	1, 3
Minutes	2
Field Trips Upcoming	4
Show list, Club Information	5

Meeting Minutes — March 9, 2018

The meeting was called to order by Craig Jones at 7:00. The pledge of allegiance was recited. Guests -- Jim and Albert. Alyson read minutes from last meeting (Accepted by Craig-seconded by Irma). Debbie read the Treasurer's Report (Accepted by Don-seconded by Terry).

Terry gave a presentation of Lichtenberg (or Fractal) Burning. It uses high voltage electricity to make lightning or tree like patterns in wood, gourds, etc. He brought a selection of pieces he has done.

Alice talked about the recent trips. Signal City had 7 vehicles (12 people). They found pink feldspar, and saw 9 burros. There was also 2 flat tires. They talked to a group from a Las Vegas club.

Wednesday is a trip for mushroom rhyolite. Meet at 8:30 at Goodwill Parking Lot.

Steve talked about the 13th annual scholarship. A high school senior from the local area will be given \$3000 to study earth sciences, mining or geology. The student must submit an essay by May 1. Info is listed on the internet. Steve will call schools this week to make sure counselors have info packets. Money is given to school, not the student.

As in the past, we will give \$100 for the Wickenburg High School Graduation Night Party. Accepted by Joyce-seconded by Paula.

Someone made a fire from sagebrush to roast hot dogs. They didn't put it out properly, creating a hazard.

The upcoming Bagdad trip should find agate, jasper, and petroglyphs.

Dale talked about the scavenger hunt, and showed some of the finds. Even with rain, a good time was had by all. There were 15 people-5 teams. Most teams found everything on the list. There were also 15 extras found. Washes turned out to be a great source, and the rain helped to see rocks. There were 5 prizes-gift certificates to La Canasta-were everyone went for dinner to discuss the day.

continued...

Show and Tell-David, Terry, Don, Alice, Jim, Mel, Curtis, Albert, Steve. The winner of the drawing was Terry.

Door prizes were won by Alice, Darlene, Rick, and Debbie.

Respectfully Submitted,
Alyson A.

Fractal Flares

Before/During



After



Photos by Alyson A.

Fractals continued on page 3.....

...Mudcracks continued from page 1



FIGURE 4 Mud Curls As layers of different-sized sediment dry, they may curl. If these curls are ripped up into flat bits, but not destroyed, in the next wetting event, they may be incorporated as flat, angular clasts in the layers that are deposited above, creating what is called a flat-pebble or intraformational conglomerate or breccia (the clasts are derived within the formation). See Figure 5 below. *Photo by Stan Celestian*



FIGURE 5 Intraformational Conglomerate The upper portion of this sandstone/diatomaceous shale rock unit (spanned by the hammer) is an intraformational conglomerate/breccia. The clasts are flat and angular -- essentially rectangular. One can picture a storm ripping up mud curls or other surface layer, re-depositing them in situ (with little to no transportation), and quickly burying them. *Photo courtesy of the USGS/by Milton Nunn Bramlette <https://pubs.usgs.gov/pp/0212/report.pdf>*

continued....

...Fractals continued from page 2



Terry uses his technique to decorate wood, gourds, antlers. Looks great Terry!!! *Photo by Alyson A.*



FIGURES 6 & 7 Mudcracks in Rocks Figure 5 (upper) is of mudcracks in a slab of the Precambrian Belt Series in Glacier National Park. Figure 6 (lower) is from the

Triassic Moenkopi Formation, near Gray Mountain (AZ). Note how the cracks bulge. We are looking at the bottom of the original bed -- subsequent to cracking, a flood brought in sediment that filled the cracks. *Photos by Stan Celestian*

UPCOMING WGMS FIELD TRIPS

WHEN: Wednesday, March 21, 2018 (late afternoon to after dark)

WHERE: Scott Mine

WHAT: Fluorescent outing & potluck (burgers and dogs provided by club)

MEET: Meet at the Goodwill in Wickenburg, at 4:30 pm

BRING: Side dish or dessert to share

WHEN: Wednesday, April 4, 2018

WHERE: Bagdad

WHAT: Jasper, Agate

WHEN: TBA

WHERE: Copper Basin/Skull Valley?

WHAT: Copper Minerals, gold

DATES & PLACES SUBJECT TO CHANGE

CONSIDER VOLUNTEERING TO PLAN OR HELP PLAN TRIPS. YOU WOULD NOT NEED TO LEAD EVERY TRIP, BUT KEEP THINGS ON TRACK

If you all have some place that you would like to go, let Schneiders or Craig J. 208-523-9355 or 208-681-4770. This is your club. Let's go out and have some fun.



Specimen from the Purple Passion Mine, Yavapai County, Arizona Calcite is fluorescing orange/red; fluorite is blue/purple, and willemite is bright green/white.

Goblin Valley State Park near Hanksville, Utah

Looking for a fun place to travel this Spring? A relatively quick trip could take you to Goblin Valley State Park. Under 500 miles away, it is a setting with the other-worldly feel of Mars. (In fact, a scene in the movie *Galaxy Quest* was filmed here.) Goblin-like hoodoos overlook the scene, making this a fun area to wander. The hoodoos formed in the jointed Entrada Sandstone, a rock deposited on a Jurassic tidal flat.



"The Sentinels" welcome you to Goblin Valley



Photos by Stan Celestian

UPCOMING AZ MINERAL SHOWS

March 24-25 - Anthem, AZ Daisy Mountain Rock and Mineral Club; Boulder Creek High School Gym, 40404 N Gavilan Peak Pkwy; Sat 9-5, Sun 10-4; Admission: \$3 adults, \$2 seniors and children, children 12 and under free. *See Poster on page 6*

April 28 - Cornville, AZ Verde River Rockhounds; Windmill Park, Cornville Rd; Sat 9-5; Admission: free.

May 5-6 - Kingman, AZ Mohave County Gemstoners; Kingman Academy of Learning (H.S. Gym), 3420 N Burbank; Sat 9-5, Sun 9-4; Admission: free.

June 1-3 - Flagstaff, AZ Coconino Lapidary Club; Silver Saddle Outdoor Market, 9001 US 89 N (US 89N & Silver Saddle Rd); Fri-Sat 9-5, Sun 9-4; Admission: free.

July 7-8 - Pinetop, AZ White Mt. Gem and Mineral Club; Hon-Dah Casino & Resort, 777 Highway 260; Sat 9-6, Sun 9-4; Admission: \$2.

August 3-5 - Prescott Valley, AZ Prescott Gem and Mineral Club; Prescott Valley Event Center, 1301 Main St.; Fri-Sat 9-5, Sun 9-4; Admission: Adults \$5, Seniors/Students \$4, children under 12 free with paid adult.

October 13-14 - Sierra Vista, AZ Huachuca Mineral and Gem Club; Cochise College, 901 N Colombo Av; Sat 9-5, Sun 10-4; Admission: Free.



If you are travelling, a good source of shows AND clubs is <http://www.the-vug.com/vug/vugshows.html> or <http://www.rockngem.com/ShowDatesFiles/ShowDatesDisplayAll.php?ShowState=AZ> For out-of-the-country shows: <http://www.mindat.org/shows.php?current=1>

A good source for a list of Arizona Mineral Clubs and contact information is http://whitemountain-azrockclub.org/Public_AZ_Clubs_Links.html

Officers and Chairperson

President: Craig Jones.....	208-523-9355
Vice President: Mel Canter	502-641-3118
Secretary: Alyson Arnold	517-652-1355
Treasurer: Debra Keiser.....	928-684-1013
Program Director: Dale Keiser.....	928-684-1013
Publicity: currently open position	
Membership: Roma Hagan	602-469-7662
Editor: Susan Celestian	602-361-0739
Field Trip: Craig J, Alice & Jim S.	
Show Chair: Beth Myerson.....	480-540-2318
Scholarship Chair: Steve Hill.....	928-533-3825
Historian: Jeanine Brown.....	928-684-0489

Meetings are held the **2nd Friday** most months at **Coffinger Park banquet room**. Potluck dessert at 6:30 pm. Business meeting at 7:00 pm. **Exceptions: February and December** meetings are held on the **first Friday of the month**. We do not meet in the summer — **no meetings in June, July or August**.

**Membership Dues: \$15.00 Adults per Person
\$ 5.00 Juniors and Students**

Meeting Dates for 2018

Wickenburg: Jan 12, Feb 2, Mar 9, Apr 13, May 11, Sept 14, Oct 12, Nov 9, Dec 7

Stanton meets Thursday after the Wickenburg meetings. Jan 18, Feb 8, Mar 15, Apr 19, May 17, Sept 20, Oct 18, Nov 15, Dec 13 (subject to change)

<http://www.wickenburggms.org/>

If you ever have photos from a club field trip, send a couple to Dale, for posting on the website.

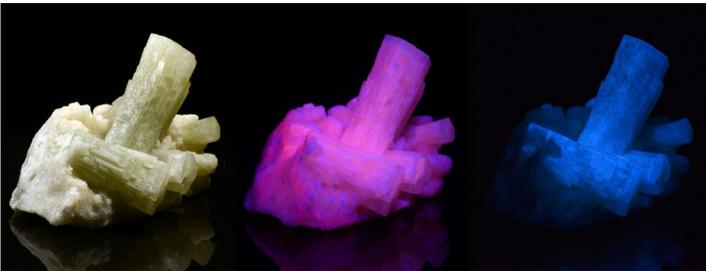
NOTES FROM THE EDITOR

Have a geological interest? Been somewhere interesting? Have pictures from a club trip? Collected some great material? Write a short story (pictures would be great). I'd like topic suggestions also.

I would love to have some pictures from field trips! Snap a couple and send them -- or a link -- to me.

Deadline for the newsletter is the 27th of the month.

Mail or Email submissions to:
Susan Celestian, editor
6415 N 183rd Av
Waddell, AZ 85355
azrocklady@gmail.com



This is a series of photos of an aragonite crystal cluster, from Agrigento, Sicily, Italy. On the far left, the specimen sits in plain white light. The center image is of the specimen in long wave ultraviolet light -- it is fluorescing a beautiful purple/pink. And on the far right, is the specimen in the dark, right after the UV light was extinguished. The blue color is phosphorescence -- a product of the extended fall of electrons, from their excited state to their native state. *Photo by Stan Celestian*

2018 ANTHEM GEM & MINERAL SHOW



SATURDAY MARCH 24 9am—5pm

SUNDAY MARCH 25 10am—4pm

BOULDER CREEK HIGH SCHOOL

40404 N. GAVILAN PEAK PKWY

ANTHEM, AZ

Kids Activities, Jewelry, Gems, Minerals, Fossils,
Fluorescents, Beads, Wire Wrapping, Geodes, Raffles

Adults \$3, Seniors and Students \$2,
and Kids 12 and under are FREE.

Sponsored by the Daisy Mountain Rock and Mineral Club

Contact: Ed Winbourne (978) 460-1528

Susan Celestian, editor
For Wickenburg Gem and Mineral Society, Inc
6415 N 183rd Av
Waddell, AZ 85355