
Bay Area Mineralogists

June 2018

Meeting: Wednesday, June 13, 2018; 7 pm
USGS, 345 Middlefield Road, Menlo Park
Building 3, 2nd Floor, Rm 3-237

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The Bay Area Mineralogists meet monthly during the school year, on the second Wednesday, at the USGS in Menlo Park. We meet on the 2nd floor of Building 3, where the campus map says "Rambo Auditorium" (<http://online.wr.usgs.gov/calendar/map.html>). The front doors will be locked so you'll have to come up the exterior stairs on the Middlefield Road side of the building. Parking is free.

BAM Summer Hiatus, July & August

BAM will not meet in July and August, other than our **picnic** (see Page 2), and the newsletter is also taking a break. See you in September, and happy summer collecting!

Program: 2017 Adventures in Namibia

By Mustart, Sulzbach & Windeler

In May of 2017, three BAMmers headed out to Namibia for a mineralogical pilgrimage and field trip to classic collectors' localities and awesome scenery. Spearheaded by Dave Mustart and led by internet dealer / tour guide Armin Schöler, the six-person tour covered three weeks and included stops in Erongo, Okorusu, Tsumeb, Kombat, Abenab, and Berg Aukas.



Granite formation, Groot Spitzkoppe Nature Preserve

Besides Dave, Don Windeler and John Sulzbach also signed on for this epic trip. All three will share a photolog and commentary on the trip – mineralogical, geological and otherwise.

Show & Tell: Bring your favorite Namibian specimens



Where the termite mounds are taller than Don!

Summer Picnic, Aug 18

Stan Bogosian will once again host our Summer Picnic on Saturday, August 18, 2018.

Festivities will take place from 11 a.m. to 4 p.m. at their home at 20630 Lomita Ave, Saratoga, CA.

Stan will grill some goodies for us, and Chuck might show up with a pie or two. Bring along your favorite side dish, appetizer, or dessert to share. We'll need good donated mineral specimens or related items for our silent auction ... and don't forget your checkbook! There will also be space for give-aways if you have excess material you care to share. This is always a great afternoon with fellow members and their families. If you plan to attend, please email or call Stan (sbogosian@aol.com, 408-568-2489) by August 10 so he'll know how many to plan for. See you there!



SFGMS Annual Show, Aug 4 & 5

The SFGMS Show will be on August 4-5 this year. BAM is to participate as a club and as individual exhibitors, as usual. The theme (actually suggested by more than one BAMmie/Crystal Gazer) is "Black & White," which should generate some good displays. Other themes / colors are also welcome, to provide a diverse experience. There will be space provided for a BAM Mineral Identification table, which is always popular with attendees, so consider spending a couple hours helping out there on one or both days of the show. BAM members are also invited to enter displays. If you've exhibited before, you'll get an email from me (Barb) with an entry form; if not, email or ask me if you are interested in exhibiting.

Heads Up for Fall 2018

The "Garnets of California" program in May was well received and prompted a great turnout of topical specimens for show and tell. Stan Bogosian suggested the topic "Quartz of California" for a future session.

That has the potential for a wide variety of specimens, both macro- and micro-crystalline. Expect to see this as a program this fall, and start thinking about localities and specimens to bring in for discussion. (And keep in mind we'd love anyone with specific expertise to chip in slides and commentary!)



Quartz, San Bruno Mountain. Collection of Don Windeler, collected in 1965 by John Dabney!

These thematic sessions have a lot of promise to yield good programs without burdening individuals with a lot of preparation – if you have any ideas, please check in with Don or Barb.

Crystal Structure & Atomic Design

An article in the May newsletter mentioned the perovskite structure (ABC_3). This notable crystal structure was first described by Victor Goldschmidt in 1926, and later published in 1945 by Dr. Helen Megaw.



Dr Helen Megaw, circa 1950.

Helen Megaw (1907 –2002) was an Irish crystallographer who was a pioneer in X-ray crystallography. She studied Natural Sciences at Cambridge, graduated in 1930, and became a research student in crystallography under J. D. Bernal. Her first specialty was the structure of ice and she was awarded her PhD in 1934. Following post-doctoral appointments at Vienna and Oxford, Dr. Megaw began a brief career as a science teacher in England, but when World War II began she returned to industrial research as an X-ray crystallographer. This work led her to discover the perovskite crystal structure, on which she became an acknowledged expert. In 1989, Megaw became the first woman to receive the Roebling Medal of the Mineralogical Society of America for her body of work.

In recognition of her work in determining the structures of ice crystals, Megaw Island in the Southern Ocean is named for her. Megawite (CaSnO_3), a perovskite-group mineral, is also named after her.

In an interesting sidebar, Dr. Megaw proposed and then headed up the Festival Pattern Group of the 1951 Festival of Britain. The Festival Pattern Group was an assemblage of scientists, designers and manufacturers who used the molecular patterns of X-ray crystallography as inspiration for domestic designs, two of which are shown here.



Dress fabric showing the structure of afwillite [$\text{Ca}_3(\text{SiO}_4)(\text{SiO}_2(\text{OH})_2) \cdot 2\text{H}_2\text{O}$], which Megaw herself discovered.



1.03 mm group of afwillite crystals.
 Locality: Campomorto Quarry, Pietra Massa Locality, Montalto di Castro, Viterbo Province, Latium, Italy.
 (<http://www.mindat.org/photo-356015.html>)



← Zinc hydroxide ($\text{Zn}(\text{OH})_2$) crystal structure diagram on hand painted earthenware tile.

Zinc hydroxide occurs naturally as 3 polymorphs: ashoverite (a), and sweetite (b), wülfingite (c), shown below.



a. ashoverite, $\text{Zn}(\text{OH})_2$
 (mindat photo-22863)



b. sweetite, $\text{Zn}(\text{OH})_2$
 (mindat photo-1668)



c. wülfingite, $\text{Zn}(\text{OH})_2$
 (mindat photo-2437)

All 3 specimens from Milltown Quarry, Derbyshire, England.