

MNCA Website www.dcmicrominerals.org

The Mineral Mite



Vol. 57 – No. 6 Washington D.C. – A Journal for Micromineralogists June 2024

Meeting: June 24 3-5:30pm Kings Park Library, Burke

Program: "Uranium Minerals - Photos of Old Friends and New Acquisitions"

Jeff Guerber, Vice president

Hot rocks for hot weather! For our June meeting, Michael Pabst has offered a program on Uranium minerals. MONDAY, JUNE 24, 3:00-5:30pm in the Kings Park Library large meeting room. The July meeting will be held on Monday, July 29, 3:00-5:30 at Kings Park Library. Happy summer collecting everyone!



President's Message:

by David Fryauff



I had the pleasure last weekend of meeting up with some of my old friends, fellow Naval officers from our period of duty in Indonesia during the 1990s. It was a beautiful cool, quiet evening at the Naval Academy, and we had gathered to celebrate Tom and Nancy's 25th wedding anniversary. Tom Richie and I were the leaders of a rather unique piece of malaria research on a little-known speck of land called Gag Island, in the vast Raja Empat sea.

Mystery Micro Mineral of the Month



Clue: Colorless (?) crystals on rhodochrosite. Locality 1620 crosscut, 1600' Level, Sterling Mine, Ogdensburg, Sussex Co., NJ. FOV = 2.5mm. (answer on p.2) by Aloha Peter Chin, Honolulu, Hawaii

Broken Hill Proprietary (BHP), the giant Australian mining company, had contracted our Joint American Military and Indonesian Ministry of Health group to conduct an assessment of malaria risk and drug resistance on Gag Island. They had big plans for mining and refining the enormous wealth of Nickel and Cobalt that was locked in the shallow laterite soil and the bright green garnierite ore of Gag Island.

We were so lucky and saw this island in its beauty, lush with tropical vegetation, cacao, coconut, nipa, and sago palms, numerous species of pitcher plants, and offshore, some of the most dramatic and beautiful coral gardens that God had created. Rarely have so many species of coral and reef fish been found in any one place on earth.

That malaria-mineral adventure was our small contribution to the great global search for strategically important minerals. But Tom and I did not discuss it or relive our unforgettable memories. Continued next p.

Micromineralogists of the National Capital Area, Inc.

President's Message continued

I think we kept these to ourselves because the best of us then--Dr. Hasan, Pak Purnomo, Dr Iwa, Mike Bangs, Sofyan had passed on and only a few of us remain.

I think I am the only one who remembers a single coral head that was as big as a city block. I wonder if I am the only one who feels some guilt for my small role in the great global search for strategic minerals and the loss of some of God's most glorious creations. But let me/us not be depressed and morose. These are surely the most interesting times to be alive, and the most important times to preserve and protect, and to teach and remember.

Mystery Micro Mineral of the Month

Answer: Colorless Brandtite crystals on rhodochrosite. 1620 crosscut, 1600'Level, Sterling Mine, Ogdensburg, Sussex Co., NJ. FOV = 2.5mm. by Aloha Peter Chin, Honolulu, Hawaii

Previous Meeting Minutes 5.28.2024

by Bob Cooke, Secretary

The Micromineralogists of the National Capital Area (MNCA) met on May 28, 2024, at the Fairfax County Kings Park Library in Burke, Virginia. Ten members were present: Bob Cooke, Scott Duresky, David Fryauff, Jeff Guerber, Dave Hennessey, Kathy Hrechka, John Kress. David MacLean, Michael Pabst and Tom Tucker.



The MNCA business meeting was called to order by President Dave Fryauff at 5:05 PM. He recognized Dave MacLean and Tom Tucker for their contributions as past presidents. Minutes of the April 2024 MNCA meeting were approved as published in the Mineral Mite.

Michael Pabst gave the Treasurer's Report and reported that funds have been consolidated in a single bank. He is preparing new signature cards for the account.

Kathy Hrechka raised the issue of MNCA sponsoring a scholarship. There was no consensus in discussion and no action was taken.

Dave Fryauff brought two flats of minerals from the Root Mine, NV, and the Blue Bell Mine, CA. These minerals were collected by and donated by Pat Haynes. Tom Tucker brought numerous pieces of self-collected Sugar Grove basalt. A fourth flat containing small labelled & bagged specimens from various worldwide locations was from the giveaway tables at the 2024 Leidy Microscopical Society Micromineral Symposium. Thanks to Patrick, Tom, Dave, and anonymous donors for these interesting and some, quite rare specimens.

Jeff Guerber volunteered to investigate options for hosting the 2024 AMC at the Rockville Science Center. He also solicited suggestions for programs at future MNCA meetings. (Note: After the meeting adjourned Michael Pabst volunteered to give a presentation on "Uranium Minerals - Photos of Old Friends and New Acquisitions" at the June MNCA meeting.).

It was announced that the Gem Miner's Spring Show will be held June 8-9 at the Howard County Fairgrounds. This show is organized by a commercial organization (Mid-Atlantic Gem & Mineral Assoc), not by a local club. The next MNCA meeting will be Monday, June 24th in the Kings Park Library large meeting room. The meeting adjourned at 5:20 PM



MNCA meeting: L-R Tom Tucker, David MacLean, David Fryauff, Dave Hennessey, Scott Duresky. Photo by Kathy Hrechka

Previous Program Review 5.28.2024

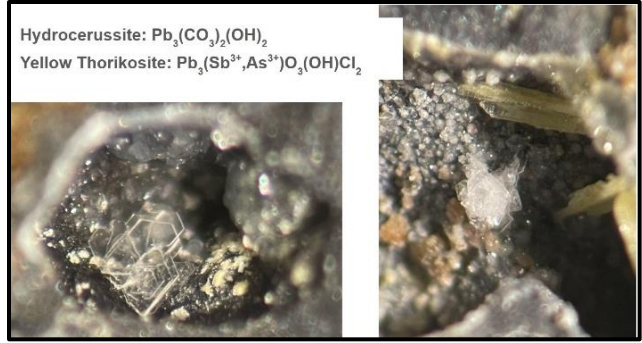
by Bob Cooke, Secretary

Microminerals of the Laurion Mining District, Attica, Greece presented by David Fryauff

David shared stories and pictures of his collection of minerals from Greece. His presentation focused on a couple pieces of “unremarkable” slag. These Passa Limani lead slag specimens were originally collected by German collector Stefan Moeckel and purchased from AZ mineral dealer Michael Shannon in 2008 as “mixed minerals from Greece”. David was initially disappointed to have purchased man-made slag, even if it was ~2500 to 3000 years old, but later came to enjoy breaking up the large pieces of slag and exploring it for microminerals within its vesicles. These crystals were created when the slag reacted with sea water.

David presented photographs taken under both visible and SW UV light which he used to identify the minerals. Just last week during his preparation of this talk he “discovered” the very rare lead chloride mineral, cotunnite. (Further information of the Passa Limani Cove slag locality, Lavrion slag localities, Lavreotiki, East Attica, Attica, Greece can be found at MinDat’s webpage:

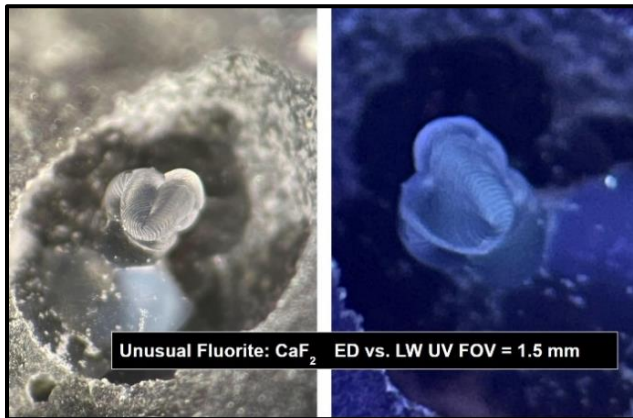
<https://www.mindat.org/loc-8376.html>)



Hydrocerussite and Thorikosite, Photo by David Fryauff



Phosgenite, Photo by David Fryauff



*Fluorite, ED vs LW UV FOV = 1.5mm
Photo by David Fryauff*



*Cotunnite, Thorikosite in lead slag from Passa Limani cove, Lavrion, Greece. TL FOV = 2.0 mm
Photo by David Fryauff*

continued next page



Segmented yellow-tinted fluorite with yellow thorikosite crystals, Photo by David Fryauff



Silver coins, Greek tetradrachm appeared in 510BC and circulated until 38BC, throughout the Mediterranean and eastward into India. These coins contained 98-99% Ag!!! Such a high level of purity indicates a careful and repeated refinement process.

The earliest Ag mining dates to 3000BC in Laurion with peak production in 450BC. Ag content of Pb ore in Laurion ranged from 0.04 to 0.5%, up to 2,500 g Ag/ton. Ag content in slag never exceeded 0.005%. indicating that it was carefully and repeatedly re-smelted.

Over 20,000 slave laborers were involved: those with skill in the final smelting process were well paid. Ore depletion, labor shortage, wars, and shortages of fuel brought a decline in Ag production by 200BC.

Careful inventory in 1865 of slag piles throughout Laurion estimated the mines may have produced 1.4 million tons of Pb ore yielding 3.5 kg of Ag. Virtually all the ancient Lavrion slags were reclaimed for Pb production during 1865-1954.

George Loud's Biographical Reflection

by Kathy Hrechka and George Loud

Where do I begin? I recall the 1990s when George Loud resided in our area and was an active member of our local mineral clubs. Then in 2012 he and his wife Karen moved to Hilton Head Island, S.C to retire. During a road trip, I had the pleasure of visiting George, and viewed his mineral collection, or rather museum, as I categorized it. Unfortunately, the time has come when George decided to sell his mineral collection to a prominent dealer. All is not lost, because George retained all his micros and anticipates continuing the hobby once he and Karen finish relocating back to the DC area, to be close to their only daughter and her family.

You will soon learn about George in prominent geology publications, which will honor him with due credit concerning his mineral provenance. I am grateful for George sharing his biography with us in his own words. Please enjoy his reflection in the following paragraphs.

"I was born in St. Louis, MO but our family moved to Memphis, TN. when I was six years old. Evidence of a defective gene first appeared when, at age eleven, I noticed casts of shells in gravel on the school playground. This was in Memphis, TN, the "Bluff City." That bluff was formed of dust blown over the Mississippi from Arkansas and is devoid of mineralogical interest. However, a classmate and I managed to find collectable sphalerite, galena and dolomite in riprap around a railroad trestle and satin spar and quartz crystals in the railbed.

A real breakthrough came when my friend met Charles McPherson who introduced us to the Memphis Archaeological & Geological Society and their activities including field trips to Hardin County, IL (fluorite), Rush, AR (smithsonite), Magnet Cove, AR (brookite), and Mt. Ida, AR (quartz crystals). Charlie (an "old bachelor") became our mentor and driver for most of those field trips. My brother Jim (age 12) and myself (age 16) were hosted by Charlie on an extended field trip through Oklahoma and Colorado during which my attempts to swap Illinois fluorite were frustrated because the market was flooded with the stuff. Those days were more trusting.

Micromineralogists of the National Capital Area, Inc.

George Loud continued

What parents today would allow a Charlie, whom they hardly knew, to take their young children far away for three weeks? Wish I had photos of the Kimzey brothers, Joe and Lawton, of Magnet Cove and Boodle Lane from those days.

My hobby led me to a career. Early on my brother and I pooled our money and purchased a copy of Pough's field guide. Performing simple tests on minerals led to an interest in chemistry, a degree in chemical engineering, and a job with DuPont. In 1968 a career change brought me to the Washington, D.C. area where I worked days, attended law school at night, and subsequently worked in private practice as an Intellectual Property Attorney for over forty years. Today a photo of myself with Dr. Pough (age 98), at a Rochester Symposium, hangs in my library.

Beginning with college my mineral hobby was pushed to a rear burner by school, work, church, the Marine Corps Reserve, water-skiing (some competitive), and tennis. OK, did experience some of the wine and women. At age thirty friends introduced me to snow skiing and it was in 1980 on a ski trip in Sun Valley, Idaho that I met Karen, my long-suffering wife of the last forty-four years. We were married that same year. Of course, becoming a parent was a big (and full filling) game changer.

However, my interest in minerals remained throughout all. Shortly after my relocation in 1968 I joined the Mineralogical Society of Washington, D.C. and served for a time as its treasurer. In addition to club field trips, I would often collect Saturday mornings in the various traprock quarries in the northern Virginia area. Back in those days the local quarries were open to collectors on Saturdays until noon and admission was subject only to signing a simple waiver. See the article which I coauthored, and which was published in the March-April 2023 issue of *Rocks & Minerals*. At the same time I was very fortunate to form a close working relationship with Carter Rich, a mineral dealer and true gentleman who lived nearby Aldie, VA. Many a Saturday morning would find me in Carter's garage going through his latest acquisitions. Through Carter my appreciation of specimen provenance and mineral collecting history in general was greatly enhanced. I have been a member of the Mining History Association ever since.

For seven years I served as the chair of the Conservation and Legislation Committee of the AFMS and took on a number of fights to keep public lands open to mineral collecting. I wrote columns that appeared in most issues of the AFMS newsletter published during those seven years. Revia Zalesnick was editor of that newsletter and tagged my column "Loud & Clear," an obvious play on my surname.

As president of the Northern Virginia Mineral Club, with much great help, I organized its first mineral show in 1994 and I am proud to report that it is still an annual event, now under the capable leadership of Tom Taffee.

Over the last thirty years or so I have attended many of the Denver and Tucson shows. Since sale of our last Virginia property my collecting has focused solely on specimens from localities in the USA and Japan, especially mines and quarries where I have collected or which I have studied. After retiring to Hilton Head Island, S.C. in 2012 I added a large "mineral room" to the house and filled it with ten large display cases, plus three drawer cabinets, plus two large curio cabinets, all filled with study material. While I routinely displayed at the Rochester Symposium, I have never displayed at Denver or Tucson and, for this reason I suspect that many western collectors consider me as having flown under the radar".

George



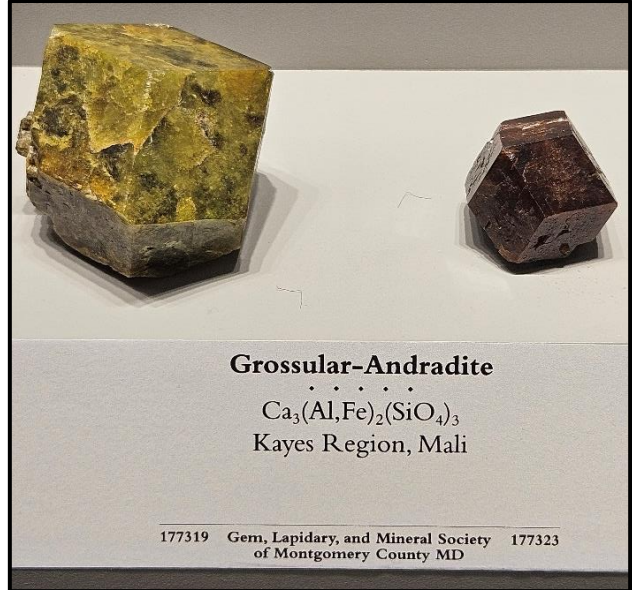
*George Loud in Q?rius, Smithsonian's educational zone, National Museum of Natural History, DC.
Photo by Kathy Hrechka 2013*

Smithsonian Geology Club Gems

by Kathy Hrechka, Editor

I recently volunteered in the Geology, Gem, and Mineral gallery at the Museum of Natural History. Each day brings new mineral discoveries in between visiting with museum visitors. I want to point out two exhibits which were donated by mineral hobbyists: garnets and a faceted topaz. The garnets were a Gift of the Gem, Lapidary, and Mineral Society of Montgomery County, MD. The “American Golden Topaz” was a gift of the Rockhound Hobbyists of America through the efforts of the six regional federations of mineralogical societies and Drs. Marie and Ed Borgatta, 1988”.

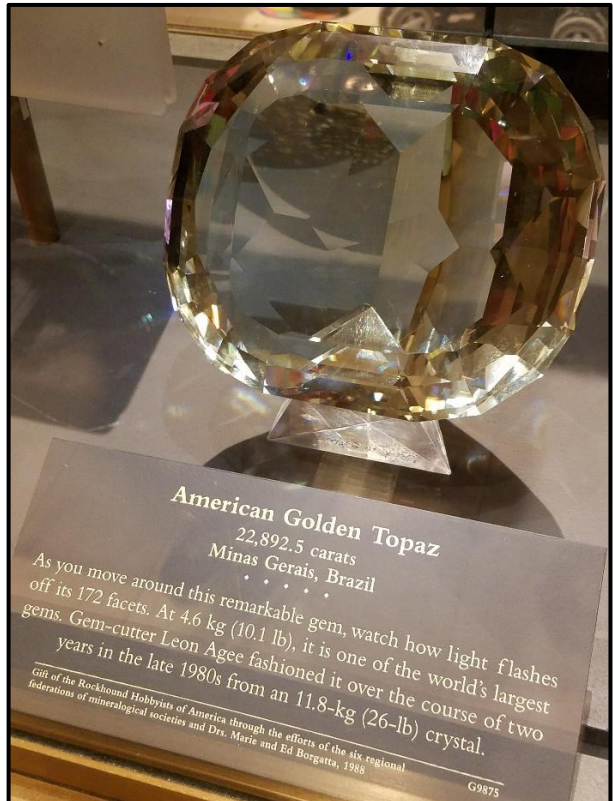
Last month I celebrated twelve years of volunteer service to the museum. My first position was as a visitor concierge, then switched to Q?rius, and finally GGM, my “happy place.” I focus on learning chemistry as the minerals have their formulas listed. Most of all I feel valued sharing my advocacy of geology to curious visitors. In reality I have enjoyed an affiliation with geologists in Mineral Sciences for the past forty years, as our mineral club members were always welcomed.



Grossular-Andradite, Gift of the Gem, Lapidary, and Mineral Society of Montgomery County, MD. Discovery and photo by GGM volunteer, Kathy Hrechka



Professional photo of Kathy during volunteer appreciation month of May 2024. Notice the Hope diamond.



Topaz: “Gift of the Rockhound Hobbyists of America through the efforts of the six regional federations of mineralogical societies and Drs. Marie and Ed Borgatta, 1988”. Museum display. Photo by GGM volunteer, Kathy Hrechka

Iron Oxides–Hydroxides: Lepidocrocite and Goethite

by Michael Pabst PhD, Treasurer

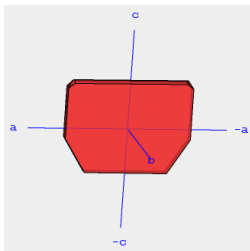
In this article about iron oxides-hydroxides, I will again include a photo of a large specimen from the Alfie Norville Gem & Mineral Museum at the University of Arizona in Tucson. As with the iron oxides (Hematite and Magnetite) in my last article, this museum has large pieces that are as beautiful as micro minerals.



Lepidocrocite $\gamma\text{-Fe}^{3+}\text{O}(\text{OH})$ is dimorphous with Goethite $\alpha\text{-Fe}^{3+}\text{O}(\text{OH})$; both contain an oxide and an hydroxide anion.

Lepidocrocite. Lepidocrocite $\gamma\text{-Fe}^{3+}\text{O}(\text{OH})$ is orthorhombic $mm2$ - pyramidal. Lepidocrocite is red to reddish-brown, and can form tiny deep red crystals. Hardness 5. Lepidocrocite was named from the Greek λεπίς, scale, and κροκη, thread, because some aggregates resemble palm leaves. Lepidocrocite is often attached to Goethite or another matrix mineral by the edge of a flat crystal. Here are some tiny red crystals from Portugal photographed by Christian Rewitzer <https://www.mindat.org/photo-170213.html>. Another photo of Lepidocrocite by Pedro Alves <https://www.mindat.org/photo-827988.html>. Photo of Lepidocrocite from France by Yannick Vessely showing “palmate” habit: <https://www.mindat.org/photo-838365.html>.

Lepidocrocite. Orthorhombic $mm2$ – pyramidal. (Drawing from Mineral Atlas website (Lepidocrocite: Tabular {010}, taken from C. Palache, H. Berman, C. Frondel, *The System of Mineralogy*. Vol I, 7th edition, John Wiley & Sons, New York, 1944. Specimen from Siegen, Westphalia, Germany.)

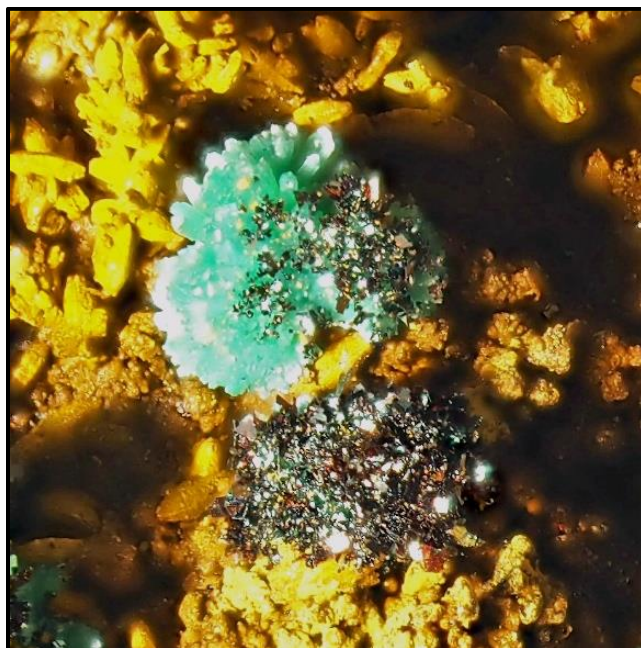


All the Lepidocrocite specimens that are worth looking at are micromounts. There are a few photos of brown masses of Lepidocrocite on Mindat, but they are below our aesthetic standards! Here is a reddish-brown Lepidocrocite from my collection:



Lepidocrocite. Grube Luise, Horhausen, Rhineland-Palatinate, Germany. FOV 7 mm. Specimen and photo by Michael Pabst, using macro + Raynox lens, stacking 100 images.

And a photo of red Lepidocrocite from the Betsy Martin collection:



Lepidocrocite (tiny deep red flakes) on green **Malachite**. Ojuela Mine, Mapimi, Durango, Mexico. Betsy Martin/MNCA collection. FOV 1 mm. Photo by Michael Pabst, using macro + Raynox lens, stacking 100 images. The individual little red crystals must be less than 50 μm .

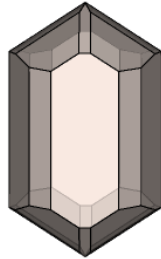
Continued next page

Iron Oxides continued

Goethite. Goethite $\alpha\text{-Fe}^{3+}\text{O}(\text{OH})$ is orthorhombic *mmm* - dipyramidal. Usually brown, with blackish, or reddish or yellowish overtones. Hardness 5 - 5½. Here is an old drawing of Goethite:

Goethite orthorhombic *mmm* - dipyramidal. (Drawing from Mindat, Goethite {110}, {010}, {121}, modified.

Locality: Bristol or Cornwall, Mohs-Zippe, 1839. In: V.M. Goldschmidt, *Atlas der Krystallformen*, 1913-1923.)



Goethite is the most common iron oxide mineral. It is a weathering product of many iron-bearing minerals. Goethite was named in 1806 by Johann Georg Lenz in honor of the German writer and scientist Johann Wolfgang von Goethe [August 28, 1749, Frankfurt, Germany – March 22, 1832, Weimar, Germany].

There are more than 4700 photographs of Goethite on Mindat, showing a remarkable variety of forms, from well-formed red-black crystals <https://www.mindat.org/photo-957191.html>, to black botryoidal Goethite (with brown streak) <https://www.mindat.org/photo-1021969.html>, to iridescent specimens <https://www.mindat.org/photo-1331515.html>. By luck, I happen to have a thumbnail-size Goethite specimen that resembles a large museum-size piece of Goethite from the University of Arizona museum:



Goethite, Lake George, Park County, Colorado. University of Arizona Museum. Photo by Michael Pabst, using iPhone. Estimated width 2 inches.



Goethite. Lake George, Park County, Colorado. Width 21 mm. Specimen and photo by Michael Pabst, using macro lens, stacking 50 images.

Finally, here is a real micromount of Goethite showing fans of golden needles about 1 mm across, first photographed with a macro lens, followed by a closeup through the stereo microscope.



Goethite (gold) with black **Hematite**. Ohio Mines, Imperial Heights, Baraga County, Michigan. FOV 3 mm. Photo by Michael Pabst, using macro + Raynox lens, stacking 50 images.

Continued next page

Iron Oxides continued



Goethite (gold) with black *Hematite*. Ohio Mines, Imperial Heights, Baraga County, Michigan. FOV 1.5 mm. Photo by Michael Pabst, using stereo microscope, stacking 8 images.

Lepidocrocite and Goethite are often found together. Both are likely to be found in the amorphous mixed iron oxides and hydroxides of Limonite, for example. Here is a nice combination specimen from Morocco: <https://www.mindat.org/photo-1239077.html>. This photo shows red Lepidocrocite $\gamma\text{-Fe}^{3+}\text{O}(\text{OH})$ on black Goethite $\alpha\text{-Fe}^{3+}\text{O}(\text{OH})$ with green Malachite, from Taouz Caidat, Morocco. Photo by Jean-Vincent Coureau. This is a beautiful photo; do not fail to click on the link.

The next article will compare iron carbonates, after which we can move on from iron to the next metal.



Photo of Michael and Karen Pabst attending a previous MNCA meeting. Photo by Kathy Hrechka

Geology in the News: Kilauea June 3 '24

by Kathy Hrechka, editor

Hawaiian Volcano Observatory by the U.S. Geological Survey reported an eruption on Monday, June 3, southwest of Kaluapele (Kilauea caldera) within Hawaii Volcanoes National Park. The eruption in the Southwest rift zone lasted 8.5 hours but only erupted about 1% of the volume and covered about one third of a square mile. Lava from the fissure system covered approximately 90 acres, a relatively small area, compared to the last eruption in this area in December 1974. The 1974 eruption lasted 6 hours and erupted 13 million cubic yards of lava that covered about 3 square miles. HVO reports that the volcanic activity has halted.

In 2003 my family and I trekked across the Kilauea caldera, in search of unique basalts from Pele. Years prior, the Smithsonian's Museum of Natural History featured an exhibit, Inside an Active Volcano. It was there that I learned about reticulite. My sample below contains two needles extending from the vesicular basalt structure, which appear to show an orderly arrangement of pentagonal or hexagonal wind-blown frothy structures. The weight of my delicate piece is 0.



Reticulite, Kilauea caldera, Big Island, Hawaii. FOV 3x4cms. Collected 2003 by Kathy Hrechka

Shoebox Adventures 135:

by Dr. Mike Seeds, Editor BMS Conglomerate 4/24

Astronomers can't retire. Everything is astronomy. You can't get away from the universe. The frost on your windshield is there because, over the last 13.7 billion years, the expansion of the universe has cooled the heat of the big bang fireball down to just under 3 degrees above absolute zero. That's the temperature of the sky between the stars, and it is all around us because we are inside the cooling fireball. We are part of the big bang. On a cold cloudless night, your windshield faces that cold sky, and starting at sunset, it radiates its heat into space. And space radiates back almost nothing. Side windows on your car face buildings and trees that radiate back heat, but the windshield gets nothing back from the depths of the universe, and water molecules do a Jack Frost on the cosmically cold surface. Everything is astronomy.

When I label my minerals, I include the chemical formula because the atoms tell astronomical tales. The big bang fireball began as hydrogen, but it was hot enough and dense enough for certain fast nuclear reactions to make some helium. There were other reactions that could have made other elements, but they were slow-cooker reactions. In only 3.5 minutes the expansion of the universe cooled the fireball and ended nuclear fusion. The universe was by then 25% helium. The slow-cooker reactions didn't have enough time to make anything else, so the early universe was just hydrogen and helium. All the atoms in our minerals must have been made later inside stars.



Figure 1 Analcime crystals $[Na(AlSi_2O_6) \cdot H_2O]$ on aegirine, Granite Mountain, Little Rock Arkansas. Field of view 1 mm. Photo by Mike Seeds

The tiny crystals of analcime in Figure 1 are violent little things. They contain sodium, aluminum, and silicon atoms that were made by slow-cooker nuclear fusion in massive stars and then blasted out into space when those stars exploded as Type II supernovae. Most of the oxygen in the analcime crystals (and in you and the Earth) was also made in these stars. Our Milky Way galaxy formed about 13 billion years ago and since then a few hundred billion of these stars have formed and died enriching the gas and dust in space with more and more atoms heavier than helium. The sun and Earth formed about 4.6 billion years ago from a cloud of gas polluted by these elements. The atoms in those little analcime crystals are the remains of unimaginable violence far beyond anything in any R-rated action movie.



Figure 2 In this larger field of view, you can see needles of aegirine $[NaFe Si_2O_6]$. Field of view 3 mm.

Compare the composition of aegirine with analcime. The aegirine contains iron instead of aluminum and no water. Some of those iron atoms were made in massive stars, but most were made by exploding white dwarfs. A sun-like star does not explode. It exhausts its fuel and contracts to form a white dwarf. Some white dwarfs can pull matter from companion stars and collapse in sudden Type Ia supernovae explosions so violent they can make atoms. Most of the iron atoms in the aegirine needles (and in you and in Earth) were made suddenly in those supernova explosions. These terrible explosions are among the most violent events in the universe, but they are not unusual. A supernova explodes somewhere in the universe every 10 seconds or so. We owe these dying stars everything. Except for hydrogen and a little helium, the Earth and the minerals we collect (and you) are made of the atoms produced by the deaths of stars. We are star soot.

Micromineralogists of the National Capital Area, Inc.



American Federation of
Mineralogical Societies

(AFMS)
www.amfed.org

Please read the AFMS bulletin attached in original monthly email to MNCA members.

2024 Purpose of the AFMS: To promote popular interest and education in the various Earth Sciences, and in particular the subjects of Geology, Mineralogy, Paleontology, Lapidary, and related subjects, and to sponsor and provide ways to coordinate the work and efforts of all interested persons and groups; to sponsor and encourage the formation and international development of Societies and Regional Federations and thereby to strive toward greater international good will and fellowship.



Celebrating 50 years!

The Rock & Gem magazine is recognized as the
official magazine of the AFMS.
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Eastern Federation of
Mineralogical and Lapidary
Societies

(EFMLS)
<https://efmls.org>

**Communication and Involvement
Are the Keys to Our Success!**

Please read the EFMLS bulletin attached in original monthly email to MNCA members.

June 2024 Local Geology Club Meetings

3: Northern Virginia Mineral Club NVMC
Meeting 7:30pm
www.novamineralclub.org

**5: Mineralogical Society of the District of
Columbia MSDC Meeting 7:30pm on Zoom**
www.mineralogicalsocietyofdc.org

**11: The Gem, Lapidary and Mineral Society of
Montgomery County, Maryland - GLMSMC**
Meeting 7:30 pm www.glmsmc.com

**?: The Gem, Lapidary and Mineral Society of
Washington, DC - GLMS-DC meeting 7 p.m.**
Chevy Chase Community Center, 5601 Connecticut
Ave; Washington, DC. www.glmsdc.org

18: Micromount Club Zoom Session - Australia
Schwarz-Brixlegg mining district in Tyrol, Austria,
presented by Gerhard Brandstetter. Micromount Club
Zoom Host: Steve Sorrell resides in Melbourne, Aus-
tralia and hosts various geology persons of interest at
his micromount meeting each month on Zoom. 4pm
EDT. Contact Steve <https://crocoite.com>

19: Baltimore Mineral Society BMS meeting
www.baltimoremineralsociety.org

24: Micromineralogists of the NCA, Inc.
Meeting 3–5:30pm Kings Park Library, Burke, VA
www.dcmicrominerals.org

October 2024 Desautels Micromount Symposium to
be held at the Natural History Society of Maryland,
hosted by the Baltimore Mineral Society.

The Mineral Mite June 2024

Micromineralogists of the National Capital Area, Inc.



GeoWord of the Day and its definition

antipathetic (an"-ti-pa-thet'-ic) Said of two or more minerals that are far apart from each other in a crystallization sequence and thus will not be commonly found in association. See also: *antipathies of minerals*.

augite (au'-gite) (a) A common mineral of the *clinopyroxene* group: $(Ca,Na)(Mg,Fe,Al,Ti)(Si,Al)_2O_6$. It may contain titanium and ferric iron. Augite is usually black, greenish black, or dark green, and occurs as an essential constituent in many basic igneous rocks and in certain metamorphic rocks. Dana (1892) confined the name "augite" to clinopyroxenes containing appreciable $(Al,Fe)_2O_3$, but petrologists have applied it to members of the system $(Mg,Fe,Ca)SiO_3$. Cf: *pigeonite*. (b) A term often used as a syn. of *pyroxene*. Syn: *basaltine*; *violaite*.

galkhaite (gal'-kha-ite) A dark orange-red cubic mineral: $(Cs,Tl)(Hg,Cu,Zn)_6(As,Sb)_4S_{12}$.

All terms and definitions come from the [Glossary of Geology, 5th Edition Revised](#). GeoWord of the Day is brought to you by: EnviroTech! envirotechonline.com.



Ice, in the form of hail, collected by Kathy Hrechka on May 19, 2024, Jupiter, Florida. Largest piece FOV 3cms. I enjoyed studying the growth patterns.

Micromineralogists of the National Capital Area
www.dcmicrominerals.org

We are temporarily meeting at Kings Park Library in Burke, 3-5:30pm (forth Monday or Wednesday) until we locate a permanent meeting place.

MNCA Purpose: To promote, educate and encourage interest in geology, mineralogy, and related sciences.

President: David Fryauff
Vice President: Jeff Guerber
Secretary: Bob Cooke
Treasurer: Michael Pabst
Editor/Historian: Kathy Hrechka
Website: Kathy Hrechka
AMC Conference: open

The society is a member of:

- * Eastern Federation of Mineralogical and Lapidary Societies (EFMLS) www.efmls.org
- * American Federation of Mineralogical Societies (AFMS) www.amfed.org affiliation

Dues: MNCA Membership Dues 2024

\$15 (single) or \$20 (family) donations

MNCA - Michael Pabst, Treasurer

270 Rachel Drive

Penn Laird, VA 22846

Editor's Note: By Kathy Hrechka

Send your articles and photos to your editor.

Club Article Deadline is the 1st of each month.

***The Mineral Mite* will be emailed by the 5th.**

No newsletter July/August

Inducted into Editor's Hall of Fame – 2018

EFMLS Trophy 2021 Small bulletins



Newsletter inputs:

- * David Fryauff
- * Jeff Guerber
- * Bob Cooke
- * Michael Pabst
- * Pete Chin
- * Kathy Hrechka
- * George Loud



The Mineral Mite June 2024