

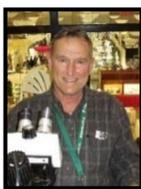
April 27 Time: 7:30 pm Zoom

Program: Big Global Search for Strategic Minerals

by Dave Fryauff, Vice president

Indonesia holds the world's largest deposits of laterite Nickel, and early analyses predicted that the hill-type laterite deposit on Gag Island had Ni ore reserves of 185 million tons containing 1.49% Ni and 0.11% Co. BHP contracted Naval officer Fryauff's Medical Service Corps in 1997, a joint American-Indonesian institute to conduct studies to determine the threat of malaria, filarial, and rickettsia disease to a large work force needed for full scale mining and on-site refining of the ore. This was done over a period of 2 weeks by his team, which resulted in reports for BHP and for the international community. The Gag Island Project is currently the 4th largest Ni mine in Indonesia and produced 27K metric tons of ore for offshore refining in 2020.

continued next page



President's Message:

by Dave MacLean

I am fascinated by and do not fully grasp the content of talks I have heard on meteorites, investigation of the evolution of minerals, minerals on Mars and the moon and the Mineralogic Basis of Magnetism respectively by Dr. Robert Hazen, and Alec Brenner. We are witnessing the revival of mineralogy. All the speakers revealed that minerals, their composition including trace elements therein their age and environment tell a story of our world from before our planet's birth 4.67 billion (giga) years ago GYA. Dr. Robert Hazen described the ten ages of Earth, minerals of each age and mentioned the 11th age, the Anthropocene, when man's activities became a geologic force. I wonder what minerals will characterize the Anthropocene starting about 10,000 years ago to present.

I believe that the persons who come after us 1-2 million years after us might find unusual longer life radioactive and stable isotopes resulting from past and future nuclear bomb and waste disposal, plastic waste, and stable poly fluoro organic compounds, the forever chemicals, and minerals resulting from the weathering of our waste products.

Examples include micro minerals; copper oxychloride microminerals in vugs in slags from New Haven CT brass mills left exposed to sea water. micro minerals of copper and lead slags left over from silver mining in Attica Greece 2000 years, etc. We might look for and report on minerals left over from human activities and their weathering products.

Mystery Mineral Clue: It is from the State Line Chromite Mining District, Lancaster County, Pennsylvania. FOV 12mm – UV by Dave Fryauff, Vice president



Mystery Micro Mineral of the Month



Program: Big Global Search continued

David Fryauff was a Naval Officer from 1991 to 1999 in the Medical Service Corps and had the good fortune to be assigned duty to Jakarta, Indonesia, where he ran the Parasitology program of the Naval Medical Research Unit Number two. This program conducted studies in malaria epidemiology, drug treatment and prevention, and malaria drug resistance. By 1997 his group had produced dozens of papers on malaria throughout the large Indonesia Archipelago. This work got the attention of Broken Hill Proprietaries (BHP) the huge Australian mining company.



Examples of cut and rough star rose quartz and aquamarine from the mine. Courtesy Chris Painter

Mystery Micro Mineral of the Month

by Dave Fryauff, Vice president

The mystery mineral is from the Haines Kibblehouse Penn-Md quarry in Fulton Township, State Line Chromite Mining District, Lancaster County, Pennsylvania. I am relying on you for identification. FOV is 12 mm, done with iPhone 12 stabilized to shoot through the ocular of my Leitz binocular scope with only LW 365 nm UV as the light source.

Remember, 2022 Dues are Due

Please update your email and preferred contact information with Michael. Details are on last page.

Meeting location update: MNCA

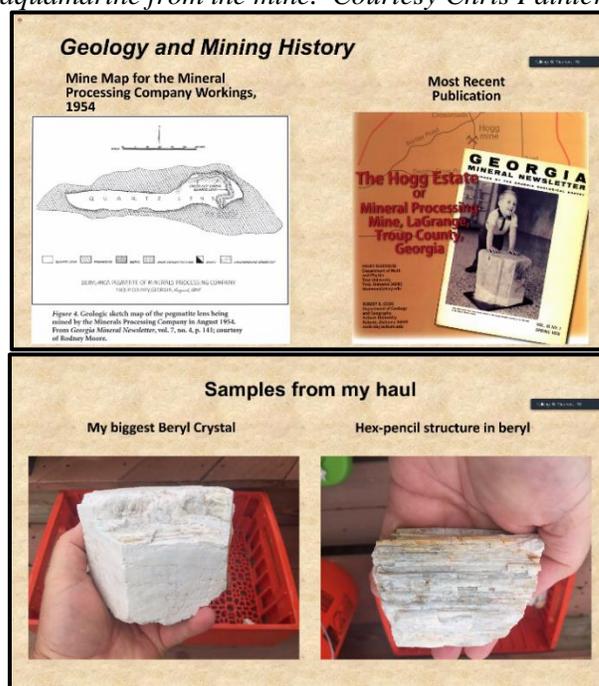
The Long Branch Nature Center in Arlington will notify us when we can resume meeting there.

Previous Program Review: 3/23/22

by Kathy Hrechka, editor

The Hogg Mine: A Tale of Two Machine Digs

Presenter, Bill Stephens is a professional geologist who reported that the Hogg Mine in Troop County Georgia has been commercially mined for Beryl and co-produced Kaolin, Quartz (silica), and scrap mica as by-products since WWII. Today, he said it is open to collectors. For our program he shared videos of collecting successes, including his drone footage of the overall locality. He recently visited the mine after the Tucson show 2022. Chris Painter, the mine owner provides guided digs and private machine digs by appointment during the week.



Biography: Bill Stephens is a licensed professional geologist in Delaware, North Carolina, Virginia & Pennsylvania. he holds a Bachelor of Science and a Master of Science in Geology from the University of Pittsburgh. He now owns and operates Stephens Environmental Consulting, Inc., a full-service environmental consulting, surveying, and civil design engineering corporation he started in 1995. Bill has been collecting gems and minerals since the age of 11 and continues to collect every chance he gets. Bill is working diligently to bring more benefits to EFMLS & Friends of Mineralogy members including free presentations and website improvements.



48th Annual Atlantic Micromounters' Conference April 2, 2022 recap

by Kathy Hrechka, conference chair & editor

Since our conference was held via Zoom, we were able to feature two great speakers, Dr. Robert Hazen in Maui, Hawaii on a writing retreat, and Alec Brenner, PhD student at Harvard in Massachusetts at home. Our conference viewers were seated “virtually” in business class on the B787 Dreamliner, cared for by Kathy, a retired career flight attendant. She “welcomed aboard” everyone in attendance from geology hobbyists to museum volunteers and affiliated professionals to virtually fly to Maui.

Our first presenter was Dr. Robert Hazen Senior Scientist at the Carnegie Institution for Science and Robinson Professor of Earth Science, Emeritus, at George Mason University, Virginia. Dr. Hazen presented “Mineral Informatics: Visualizing the amazing mineral kingdom ”



Minerals and the Origins of Life

Catalysts
Reactants
Templates
Scaffolds
Protection

Minerals played key roles in life's origins; life played key roles in the origins of minerals. Hence the co-evolving geosphere & biosphere.

Mineral Informatics—Conclusions

Water is the principal driver of mineral diversification, accounting for > 80% of species.

MINERAL INFORMATICS: VISUALIZING THE AMAZING MINERAL KINGDOM

RRUF
NSE
NASA
DEEP CARBON OBSERVATORY
CARNEGIE SCIENCE

Robert M. Hazen
 Earth and Planets Laboratory,
 Carnegie Institution for Science, Washington DC
 48th Atlantic Micromounters Association Conference
 April 2, 2022

JOHN TEMPLETON

Mineral Informatics—Conclusions

Biology plays a major role in mineral diversity; life mediates ~50% of species; 34% are exclusively biotic.

Mineral Evolution

New minerals form through a combination of chemical, physical, and biological processes.

Mineral Informatics—Conclusions

42% of minerals require one or more of 41 rare chemical elements (e.g., REE, PGE, As, Mo, Sn) that collectively represent only one in 10,000 crustal atoms.

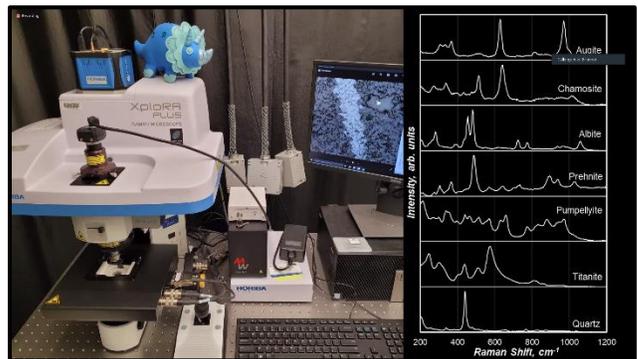
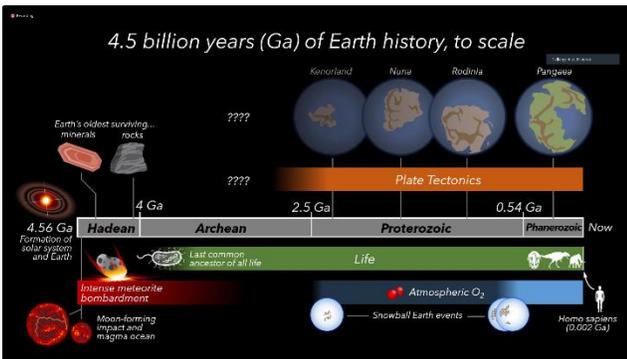
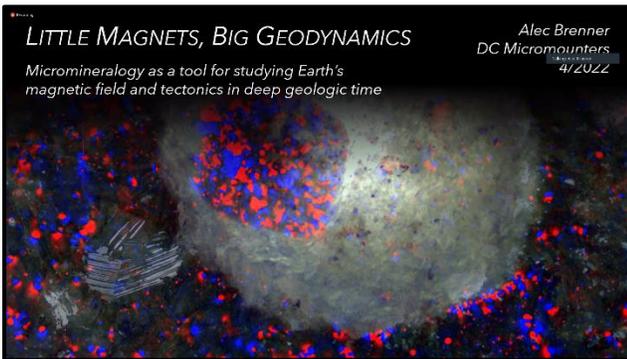
Eudialyte
Fourmarierite & Becquerelite
Tantalite
Foordite
Spodumene
Cooperite

48th Annual AMC continued

Our second presenter was Alec Brenner, PhD student at Harvard University. Alec is a native of McLean, Virginia. We remember him as the junior geology club member, who was keenly interested in rocks. In junior high he won Science Olympiads in the category for geology.



While attending Thomas Jefferson High School for Science and Technology, Alec's collaborations were with micropaleontologists and planetary scientists at the US Geological Survey, the Smithsonian Institution, and NASA's Goddard Space Flight Center. He attended the California Institute of Technology (Caltech) for his undergraduate studies, earning a BS in Geology in 2017. Alec is currently a 5th year PhD student at Harvard. Alec presented **"Little magnets, big geodynamics: Micromineralogy as a tool for studying Earth's magnetic field and tectonics in deep geologic time"**



Micromineralogists of the National Capital Area, Inc.

48th Annual AMC continued

Michael Pabst gave a brief demonstration between speakers, of some useful online research data bases specifically www.RRUFF.INFO.

Remember: rruff.info

Two other helpful sites:

<https://www.fluomin.org/uk/list.php> or www.fluomin.org

Database of Fluorescent Minerals

<https://www.mineralienatlas.de/index.php> or www.mineralienatlas.de

Database of Minerals based in Germany

Kathy Hrechka concluded the conference by inviting viewers to an interactive museum challenge, “Where in the world is this museum?” While she featured museums with a “mineral evolution” theme and “microminerals”, the goal was to encourage viewers to travel to museums.



UA Alfie Norville Gem & Mineral Museum, Tucson, AZ
Dr. Eric Fritz, Director Trilobites donated by Dr. Robert Hazen

Note: Dr. Robert Hazen
Keynote speaker for museum's grand opening – before Tucson show 2022

Photo credits Kathy Hrechka

Denver Museum of Nature & Science, Denver, CO

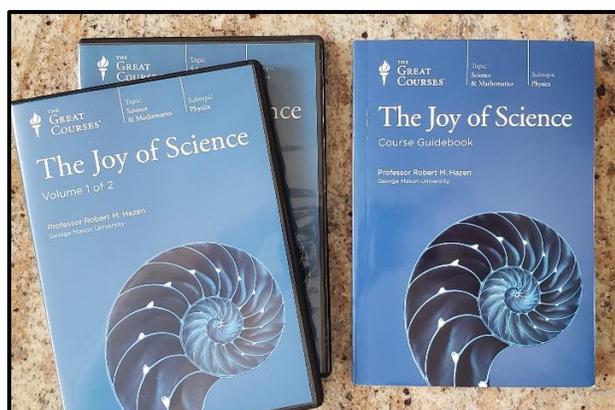
PAUL & HILDE SEEL 1920 – 1982
10,000 MICRO DIAMOND COLLECTION



Thank you, Thomas Hale for co-sponsoring our conference and recording both lectures. Thomas is founder of the Virginia Mineral Project (VMP) and President of Friends of Mineralogy Virginia Chapter. <https://friendsofmineralogyvirginia.org>

Great Courses: The Joy of Science

Lecturer, Robert M. Hazen, Ph.D. Emeritus Clarence Robinson Professor of Earth Science George Mason University in Virginia, course guidebook copyright, The Teaching Company 2001. Course review by Kathy Hrechka: Dr. Hazen recorded 60 lectures on ten DVDs for Great Courses which is headquartered in Chantilly, Virginia. Each lecture is thirty minutes long, which is sufficient to appreciate each topic. My favorite lectures include #20 Periodic table of elements, #22 chemistry of carbon, and #57 Charles Darwin. Topics I wish to master include #27 Isotopes and radioactivity, # 45 life's molecular building blocks, and #54 the chemical evolution of life. The course comes with a 296-page guidebook, complete with an historical timeline, glossary of terms, and a bibliography. Great Courses also provided a complimentary online version, since I purchased the DVDs & book.

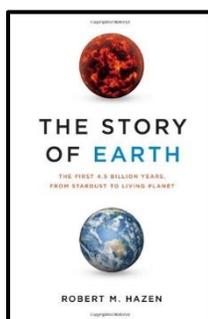


The Story of Earth - the First 4.5 billion Years, from Stardust to Living Planet

Dr. Robert M. Hazen, author 2012

Book review: "Hazen has a gift for explaining science in lay terms, and even readers with minimal understanding of geology, chemistry, and physics will find this book riveting."

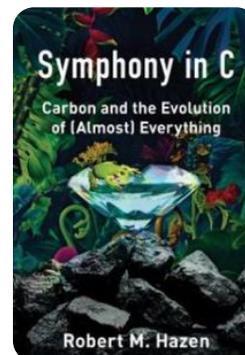
Nancy R. Curtis, Library Journal
Kindle version available too. Ksh



Symphony in C: Carbon and the Evolution of (Almost) Everything

Dr. Robert M. Hazen, author 2019

"Carbon is everywhere: in the paper of this book and the blood of our bodies. It's with us from beginning to end, present in our baby clothes and coffin alike. We live on a carbon planet, and we are carbon life. No other element is so central to our well-being; yet, when missing or misaligned, carbon atoms can also bring about disease and even death. With poetic storytelling, earth scientist

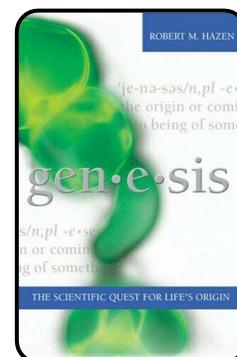


Robert M. Hazen explores the universe to discover the past, present, and future of life's most essential element. His book then unfolds in four movements, building momentum as he explores carbon as the element of Earth, Air, Fire, and Water. With prose that sparkles like a diamond, Symphony in C tells the story of carbon, in which we all have a part."

Genesis: The Scientific Quest for Life's Origin

Dr. Robert M. Hazen, author 2005

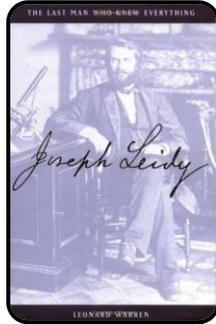
"Robert Hazen is one of the world's foremost scientists seeking answers to these questions. As an Astrobiologist at the Carnegie Institution in Washington, D.C., Hazen has spent many years dealing with fundamental mechanisms of life's genesis. As an active research scientist, he is experimentally tracing the spellbinding sequence of events that led to the complicated interactions of carbon-based molecules." Quoted from front cover jacket in book



Joseph Leidy: The Last Man Who Knew Everything

Leonard Warren, author 1998 by Yale University

Review: “This is a very successful and long overdue biography of a brilliant but little appreciated Joseph Leidy – the prototype for a scientist in a young emerging nation.” Peter Dodson, University of Pennsylvania, noted on back cover of the book.

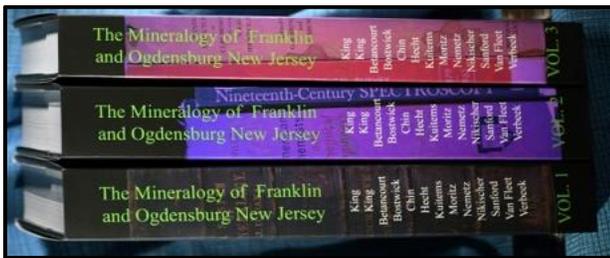


MNCA editor’s note: I received a gifted copy in the mail from Dr. David Rilling, shortly after attending the 45th Annual Leidy Microscopical Society Symposium on March 11-12, in Richboro, Pennsylvania. I look forward to reading it, as a fellow micromineral collector of forty years.

New: The Mineralogy of Franklin and Ogdensburg New Jersey - 3 Volumes

submitted by Pete Chin, Honolulu, Hawaii

The book is, for a lack of an appropriate word, a STUPENDIUM, 1400-page, 3 volume photographic compilation of the almost every known mineral species and more from Franklin and Sterling Hill. The mineralogy and geology of Franklin and Sterling Hill have been intensely studied and written about in hundreds of publications for about two centuries.



Distribution date for the three-volume work is set for some time in January with tentative target price of \$150 for the 3-volume set. To reserve and order your copy of this monumental work, please contact: Van King at newryqs@gmail.com.

*Full details were published in The Mineral Mite Volume 54 - January 2022 pages 9-10.

Foundations of Astronomy

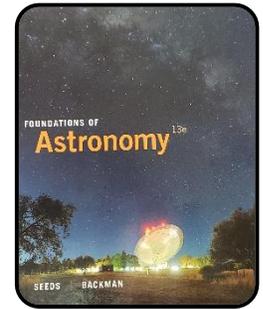
Mike A. Seeds & Dana E. Backman authors
by Kathy Hrechka, editor MNCA

We may recall Mike Seeds of Lancaster, Pennsylvania who was one of our conference speakers last year, via Zoom on April 10, 2021.

Mike’s topic: “The Universe in a Micro Box” Hydrogen and helium atoms were made in the big bang, but where did all the heavier elements come from? They were cooked up in stars and, in some cases, blasted into existence in cataclysmic explosions called supernovae. Mike Seeds combines his experience as an astronomer with his love of minerals to trace the different ways stars have made the atoms in our minerals and in our bodies. The iron in our blood and in our pyrite crystals exists because dead stars called white dwarfs explode in supernovae and blast newly formed atoms into space. Mike’s talk was illustrated with photos of exploding stars and beautiful minerals.

Mike Seeds is Emeritus Professor of Astronomy at Franklin & Marshall College, in Lancaster, Pennsylvania. He has enjoyed minerals since childhood, and his wife and daughter joined him in the family hobby of geology and minerals. They often attended mineral shows, and Mike most enjoyed the micromounters showing off tiny minerals under their 'scopes. He bought his first microscope in 1999 and has been making micromounts ever since. He is past president of the Baltimore Mineral Society, Chair of the Desautels Micromount Symposium, and has been editor of the club newsletter for over 10 years. He has written over 100 articles and was inducted into the Micromounters Hall of Fame in 2020. He continues to write the most intriguing “Shoebox Adventures” articles, as he shares his micromineral discoveries.

I highly recommend this college textbook, which is available for sale online. It is geology within the universe. Today star gazing gives me an appreciation and a new meaning, thanks to our dear geology friend Mike Seeds.



**Millerite, Honessite,
Jamborite, Pecoraite**

by Michael Pabst PhD, Treasurer



Millerite Millerite is nickel sulfide, NiS. Millerite is trigonal $3m$ – ditrigonal pyramidal. Millerite forms acicular crystals, usually observed as radiating needles or random wires, often in geodes. Color brassy. Hardness 3 - $3\frac{1}{2}$.

We might as well start at the top with one of the best specimens of Millerite in the world. Here is my photo of The Great Smithsonian Millerite from Antwerp, New York:



Millerite, Sterling Mine, Antwerp, NY. FOV ~95 mm. Photo by Michael Pabst on 20 June 2019. Single shot with a Panasonic DMC-GF3 Lumix camera and 14-42 mm lens, f/5.6, 1/60 sec, ISO 800, focal length 42 mm. Handheld through the glass case. Lighting corrected with PhotoShop Elements.

My own specimens of Millerite are less splendid. Let's start with Millerite from geodes in the Mid-West. First example is a Millerite from the road cut at Hall's Gap, Kentucky; the second example is a Millerite from a quarry near Huron, Michigan:



Millerite Hall's Gap, KY. FOV 5 mm. Photo by Michael Pabst, Olympus OM-D E-M5 Mark II camera with Olympus 60 mm macro lens + Raynox DCR-250 magnifying lens, stacking 21 images.



Millerite, Wallace Stone Quarry, Bayport, Huron Co., Michigan. FOV 5 mm. Photo by Michael Pabst, macro + Raynox, stacking 22 images.

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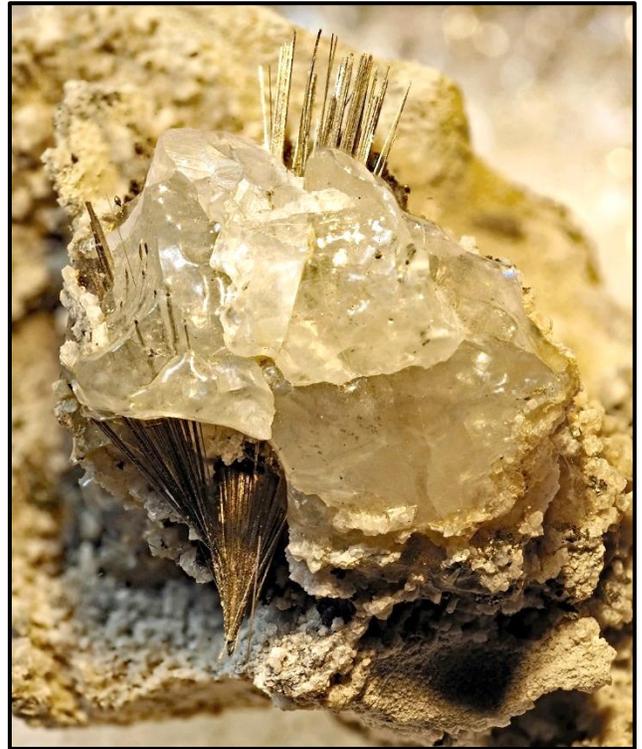
Millerite

One of my favorite Mid-West localities for Millerite is Hoopeston, Illinois. Hoopeston is near the Indiana border with Illinois, not far from Purdue University in West Lafayette, Indiana, where I earned my PhD in biochemistry in 1972. Karen and I drove to Hoopeston a few times and met with some of the old-time collectors. One fellow showed me an egg crate, with each space occupied by a geode containing Millerite. Each “Millerite” was a different color! Silver-white, dark gold, green, red, and orange were all there. He wasn’t selling those, but I did get a few normal Millerites. Later I found a red “Millerite” from Hoopeston, shown in the second photo below:

Another favorite Millerite locality is in my hometown of Milwaukee, in Estabrook Park, along the banks of the Milwaukee River.



Millerite, Hoopeston, IL. FOV 12 mm. Photo by Michael Pabst, macro + Raynox, stacking 22 images.



Millerite, Estabrook Park, Milwaukee, WI. FOV 17 mm. Photo by Michael Pabst, macro + Raynox, stacking 23 images.



Millerite? Altered to?? Hoopeston, IL. FOV 9 mm. Photo by Michael Pabst, macro + Raynox, stacking 21 images.

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Millerite, Estabrook Park, Milwaukee, WI. FOV 8 mm. Photo by Michael Pabst, macro + Raynox, stacking 20 images.



Closeup of previous photo. Millerite in foreground, Honessite in background, Estabrook Park, Milwaukee, WI. FOV 5 mm.

Honessite Honessite arises when Millerite alters from exposure to water and sulfuric acid from decomposing Pyrite. Honessite is trigonal. Here is the Mindat version of the formula for Honessite: $(\text{Ni}_{1-x}\text{Fe}^{3+}_x)(\text{OH})_2[\text{SO}_4]_{x/2} \cdot n\text{H}_2\text{O}$ where $x < 0.5$, $n > 3x/2$. Nickel is 2^+ in the formula, but iron is 3^+ in the formula, resulting in the messy algebra. Honessite is usually green, but it can get brown. There is also a Hydrohonessite (hexagonal) that contains more water and is yellow.



Honessite, Hall's Gap, KY. FOV 11 mm. Photo by Michael Pabst, macro + Raynox, stacking 23 images.

Jamborite Let's compare the much rarer Jamborite: $\text{Ni}^{2+}_{1-x}\text{Co}^{3+}_x(\text{OH})_{2-x}(\text{SO}_4)_x \cdot n\text{H}_2\text{O}$, where $x \leq 1/3$, $n \leq (1-x)$. Like Honessite, Jamborite is a pseudomorph of Millerite, except that Jamborite contains cobalt, whereas Honessite contains iron. Both are trigonal. Jamborite is trigonal $\bar{3}m$ – hexagonal scalenohedral. Jamborite has been recently re-studied and verified as a mineral. But I would not trust an old label, unless the specimen came from Italy. Based on all the colors of “Millerite” I saw in Hoopeston, I am sure that there are many other versions of Honessite and Jamborite, with various amounts of iron, cobalt, nickel, sulfur, and maybe other elements like manganese and aluminum, in various oxidation states. Regrettably, I don't have a Jamborite, but here is a beautiful photo of Jamborite from Italy by Enrico Bonacina:

www.mindat.org/photo-403717.html.

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Pecoraite Pecoraite is nickel silicate: $\text{Ni}_3(\text{Si}_2\text{O}_5)(\text{OH})_4$. Pecoraite is a member of the Serpentine Subgroup. Pecoraite is monoclinic with $\beta = 92^\circ$. Pecoraite is a dimorph of Népouite, which we covered in the previous article. In the photo below, my specimen of Pecoraite is a pseudomorph after Millerite. This Pecoraite is a rich green color and appears almost transparent.



Pecoraite, Antwerp, NY. FOV 3 mm. Photo by Michael Pabst, macro + Raynox, stacking 22 images.

In the next article, we will mention other nickel sulfides besides Millerite, and we will look at nickel arsenides.

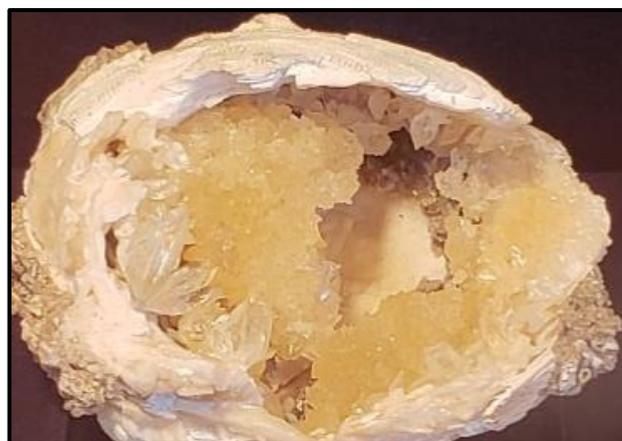


Alec Brenner attending an MNCA meeting 2015

Calcite Clam Shell, Virginia Beach

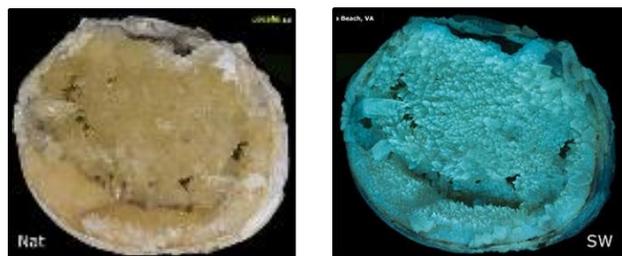
by Kathy Hrechka, editor

While attending a local mineral club show, I discovered calcite microminerals within a fossil clam shell, which caught my attention. Since I had never heard of this, I did a quick internet search. I learned that, during the Pleistocene era, clam fossils began the process of fossilization by dissolving and recrystallizing as scalenohedral, calcite crystals on the interior of the shell. The exterior of the shell is encrusted with the limestone, from which it was removed.



Calcite clam shell, Virginia Beach, VA from "Classic Mineral Localities of Virginia" showcase by Thomas Hale & Andy Dietz: 2022 GLMSMC show

Another locality exists at Ruck's Pit, Fort Drum, Florida. Screen shots below - "Nature's Rainbows"



*Calcite natural lighting Calcite UV short wave
Ruck's Pit, Fort Drum, Florida*

Nature's Rainbows is a non-commercial website maintained entirely by volunteers, hobbyists, and contributors. Their mission is to provide information about ultraviolet and luminescence, with photos of minerals for mineral collectors everywhere.

www.naturesrainbows.com

Micromineral Workshop Adventures

by Dave Fryauff, Vice president

During a couple of winter months of COVID, I worked my way through twenty pounds of Savannah River chert/agate that Jim Stoops from Georgia sent me. When all was said and done, I had found lots of quartz, barite, opal-AN, about a hundred kidwellites, dozens of churchite-(Y), variscites, a handful of wavellites, and a mere four specimens of cacoxenite. I also found one rare mineral given the provisional descriptive name of Wheelite. Cacoxenite is one of my 100 or so favorite minerals, and I was keen to find some of the rare & beautiful cacoxenite from Girard, Georgia. To do so, I would have to “process” the 20 pounds of chert Jim sent me. I would have to break it down to smaller pieces and examine each piece for the presence of mainly phosphate minerals, but a dozen other minerals as well including one or two that are yet to be named.

James (Jim) Stoops is a micro guy from GA or AL that you might know (of). He does not seem to get up north much, but he has made a very good name for himself in the southern USA. Rob Rothenberg introduced me via email to Jim Stoops, and during 2020 Jim & I traded many pounds of rocks. From his side Jim sent me ~20 pounds of Savannah River (Girard GA) chert/agate. I sent him ~20 pounds of MSH rock that I got from Eric Grundel & probably a lot from Quintin Wight via the Desautels’s Symposia.



Cacoxenite, Girard, GA FOV 5mm (nice yellow balls with stout acicular crystals) The photo shows my best cacoxenite find in all those pounds of Savannah River chert that Jim sent me. Photomicrography by Dave Fryauff



Spessartine garnet, Navegador Claim, Conselheiro Per, Minas Gerais. Purchased from Frank Ruehlicke at one of the local VA shows. Photomicrography by Dave Fryauff

Even though it is no micromineral, I have it mounted in such a way as to reflect light up off the white surface and to shine up through the garnet. FOV 2 cm through-the-lens iPhone 12



Dolomite on serpentine, H-K Penn-MD Materials quarry - Patrick Haynes & the kind staff of the New Mexico Bureau of Geology & Mineral Resources identified it by XRD. Photomicrography by Dave Fryauff

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Micromineral



The glittering bi-terminated crystal is from the Vulcan Manassas quarry. What could it be? Stilbite is in the lower left corner. Photomicrography by Dave Fryauff



*Prehnite, Vulcan Manassas Quarry, VA FOV 10mm
Photomicrography by Dave Fryauff*



*Symplectite & mimetite from Mina Ojuela, Durango, Mexico
Photomicrography by Dave Fryauff*



*Thaumasite, Vulcan Manassas, FOV 3mm
Photomicrography by Dave Fryauff*

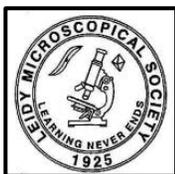


*Witherite, Mineral #1 mine, Ozark-Mahoning Group, Cave-in-Rock Dist., Hardin County, Illinois
FOV 10mm Photomicrography by Dave Fryauff*

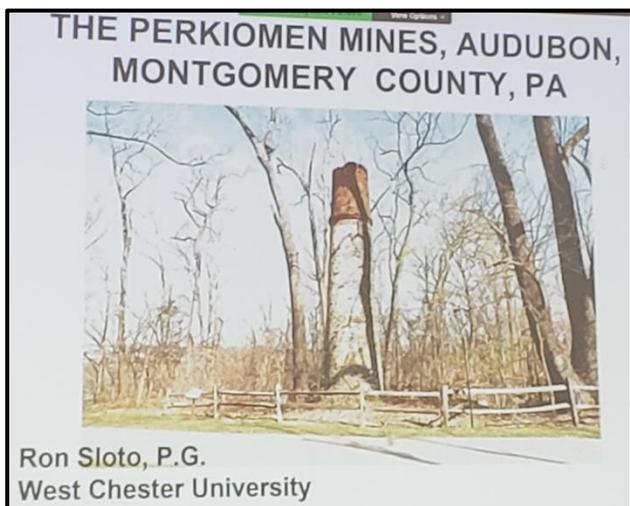
The Leidy Microscopical Society Symposium March 11-12, 2022 recap

by Steve Stuart and Kathy Hrechka

The Leidy Microscopical Society held its 45th Annual Micromount Symposium over two days on March 11 and 12, 2022. It was hosted by the Advent Lutheran Church in Richboro, Pennsylvania. Attendance peaked at about eighteen persons. Saturday the 12th was cold, windy, and snowy, so attendance dropped a bit. The Symposium opened at noon on Friday, March 11th, although early arrivals set up the tables and exhibits. The afternoon presentation was by Ron Sloto, via Zoom. He talked about the Perkiomen lead and copper mines in Audubon, Montgomery County, Pennsylvania. These include the Perkiomen Copper Mine, the Ecton Mine, the Whim Shaft, and the Old Perkiomen Mine.



Don Smoley and his inventory- Steve Stuart photo



There was a silent auction prior to the afternoon presentation. Giveaway tables were full, and a number of club members and outside dealers were selling micromineral specimens.

Don Smoley from Pittsburgh was disbursing the Robert Rothenberg and Dan Behnke micromount collections. Friday's session ended at 6:00 pm



John Ferrante (left) and Don McAlarnen (right)- Kathy Hrechka photo



Kathy Hrechka viewing John Ferrante's diamond collection (which are not for sale) - Steve Stuart photo

Micromineralogists of the National Capital Area, Inc.



*Eric Brosius, Leidy Microscopical Society president
Kathy Hrechka photo*

Saturday's session started at 9:00 am and included a silent auction and an afternoon talk by Kathy Hrechka on her worldwide micromount diamond collection. The Symposium was scheduled to wrap up at 6:00 pm again but deteriorating weather conditions caused many attendees to pack up and leave earlier, starting around 4:00 pm.



Karenne Snow- Kathy Hrechka photo



Kathy Hrechka ready for her talk on worldwide diamonds and their formation - Steve Stuart photo



Dick Tillett at the giveaway tables- Steve Stuart photo

MY GLOBAL COLLECTION OF MICROMINERAL DIAMONDS



Kathy's Adventure in Geology

Retired Flight Attendant 1984 - 2006
 USAirways /American Airlines
 Editor of The Mineral Mite
 Volunteer Smithsonian's Geology,
 Gems, & Mineral Gallery 2012- present



Photomicrography
by Kathy Hrechka

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Micromineralogists of the National Capital Area, Inc.

Leidy

Exhibits included a display of stereo slides created by Dr. Carl Rilling, M.D. from the micromount collection of F. J. Keeley. Dr. Rilling was inducted into the Micromounters' Hall of Fame in 2014 as an "Old Timer". Frank James Keeley was similarly inducted in 1986.



Invention of 3D microminerals in viewer created by Dr. Carl Rilling M.D. Steve Stuart photo

Dr. Rilling's son, David Rilling, attended the Friday afternoon session, but the bad weather kept him away on Saturday. Also on display was a representative sampling of micromounts created by preeminent members of the Leidy Microscopical Society.



The Leidy Microscopical Society was organized in 1858 as a part of the Biological and Microscopical section of the Academy of Natural Sciences of Philadelphia. A group of 27, including many medical doctors, met regularly to study the natural sciences through microscopy. In 1925 the group was organized as an independent nonprofit educational entity under its present name. The name was chosen to honor Dr. Joseph M. Leidy, a founder and eminent member of the society. Micromounting was born in Philadelphia and is a specialty of the society's members. Members also have a keen interest in fossils, diatoms, and biological specimens. The society met at the Academy of Natural Sciences in Philadelphia until January of 1995 when the meeting location moved to Fairless Hills, Pennsylvania.

Today the symposium is hosted in Richboro, Pennsylvania. Dr. Joseph M. Leidy, 1823-1891, had a long and distinguished career as a medical doctor, paleontologist, and general scientist in the Philadelphia area. He served with distinction at the University of Pennsylvania, and the Wagner Free Institute of Science. He was a highly respected microscopist in the early years when the microscope was found to be the key to unlocking the secrets of nature, especially in medical science.

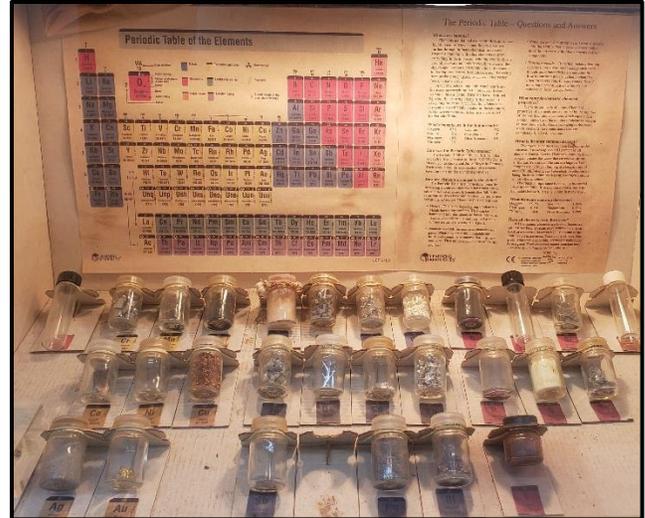
In addition to his many accomplishments in the medical field, chiefly in anatomy, he won distinction and lasting fame as a vertebrate paleontologist at the time when dinosaurs were first being excavated in the United States and fossil deposits were found in New Jersey. At the age of 35, he was one of the 23 medical doctors and four scientists who organized the original study group that now bears his name.

The 45th Annual Leidy Microscopical Society Symposium was a resounding success despite the inclement weather on Saturday. Presentations were interesting and well-delivered by the speakers. There was plenty of mineral specimens available for sale, trade or on the giveaway tables. But most of all, the conversation, dialogue, and camaraderie amongst the attendees was truly indicative of the value of in-person meetings. It's good to be back!

The Gem Lapidary Mineral Society of Montgomery County, Maryland Show March 19-20, 2022 review

by Kathy Hrechka, editor

The Gem Lapidary Mineral Society of Montgomery County created a successful geology show at the Maryland County Fairgrounds on March 19-20. Upon entering, I was greeted by a collection of well-staffed GLMSMC volunteers. There were over thirty exhibits, including junior member exhibits. Mini mines and scavenger hunts were provided as activities for kids. Fluorescent rocks & minerals glowed in a simulated fluorescent cave. Other exhibitors engaged visitors with the natural world, including physics. The entire upstairs was filled with rock and mineral vendors to satisfy the crowd of shoppers. It was nice to see so many friends, talking rocks!



“Periodic Table of the Elements” exhibit



*“Microminerals & Micromounting”
by Dave Fryauff, MNCA Vice president*



Closeup view of Dave Fryauff’s educational exhibit

A BREAKDOWN OF THE CRITICAL METALS IN A SMARTPHONE

Some vital metals used to build these devices are considered at risk due to geopolitical scarcity, geopolitical issues or trade policy. This infographic details the critical metals that you carry in your pocket.

TOUCH SCREEN
It contains a thin layer of indium tin oxide, highly conductive and transparent, allowing the screen to function as a touch screen.
In

DISPLAY
The display contains several rare earth elements. These are used to produce the colors on the liquid crystals of your screen and the screen is also...
La Pr Eu
Gd Tb Dy

MICROPHONE, SPEAKERS, VIBRATION UNIT
Nickel is used in the microphone diaphragm that vibrates in response to sound waves. Also containing neodymium, praseodymium and cerium are used in the magnets contained in the speaker and microphone.
Ni Pr Nd
Gd Tb Dy

ELECTRONICS
Nickel is used in electrical connections. Gallium is used in various electronic components. Indium is used in the solder used for these units.
Ni Ga Ta

CASINGS
Nickel and iron are used in casings. Magnesium alloys are used in electronic casings.
Mg Ni

BATTERY
The majority of smart phones use lithium-ion batteries.
Li Co Ni

ELEMENTS
elements.uspca.org

The Earth's natural resources power our everyday lives. At Elements, we break down the building blocks of the universe. We live in a material world.

Information from Friends of Mineralogy VA Chapter, promoted by Thomas Hale, President

continued next page

GLMSMC Show



Below "Classic Mineral Localities of Virginia" exhibit was assembled by Thomas Hale with minerals from his collection, and from Andy Dietz. Photos Kathy Hrechka

Thomas Hale, President of the Friends of Mineralogy Virginia chapter promotes FMVA.



Micromineralogists of the National Capital Area, Inc.

Friends of Mineralogy Virginia Chapter FMVA

by Thomas Hale, President



FMVA just released its monthly report (newsletter) as a wrap-up report to all the happenings over the last month. Please find a copy attached below.

The Board of FMVA would like to welcome Brandi Moore as the newest board member! We look forward to working with her and she has some incredible ideas which will be shared with our membership soon!

FMVA will be starting a social event program before the start of our speaker series every month. This will be open to FMVA members and affiliates only and will be a great way to get to know one another. More information is coming soon!

Several clubs are donating materials for the VTCA display case. FMVA appreciates the support and passion shown by our fellow societies to help provide teachers with useful materials for their classroom.

FMVA hosted a table at the Gem Lapidary Mineral Society of Montgomery County Geology and Gem Show at the Montgomery County Fairgrounds in Maryland on March 19-20.

Tom Girton is the POC (tagirton@gmail.com) for taking judges/readers to assist with the Virginia Junior Academy of Science Research Symposium in May! Please contact him so he can connect you with the proper organizers. <http://vjas.org/judges.html>
Open to all affiliates and members

Our Speaker Series "*The Mineral-Security Nexus*" was a major success. FMVA continues to see high engagement with audiences and RSVPs reaching 100+ individuals from across the country and world. Open link below for program.

Watch "The Mineral-Security Nexus (Critical Minerals, Rare Earth Elements, Conflict Minerals)" on YouTube, recorded February 25, 2020

https://youtu.be/v_1ff0JJkLg

Seeking remote judges for:

81st Annual Meeting of Virginia Junior Academy of Science Research Symposium

Friends of Mineralogy Virginia (FMVA) has been working with our partners at the Virginia Association of Science Teachers and the Virginia Junior Academy of Science over the last year on several educational programs. VJAS has reached out to us and would like to get volunteers who would be willing to help judge and read science fair projects. This is a great virtual opportunity for clubs across the state to give back and connect with local teachers. **All reviews and judging are online so you can do it from home.** Each club has talented members with years of experience, professional backgrounds, and educational passion. This is one small way to give back and contribute in 2022. Any questions just go to VJAS.Org for applications and examples of prior year submissions.

81st Annual Meeting of Virginia Junior Academy of Science Research Symposium

Virtual Saturday, May 14, 2022 (Presentation Day)

Registration Info: <http://vjas.org/judges.html>

Primary Contact: Thomas Girton, FMVA Lead (tagirton@gmail.com)

Thomas N. Hale President, Friends of Mineralogy Virginia Chapter Inc.
Director, Virginia Mineral Project
Phone: (540) 529-4506
Email: friendsofmineralogy.virginia@gmail.com

FMVA Dues for 2022 open on January 1st. The 2022 Virginia Mineral Directory

<https://friendsofmineralogyvirginia.org>

Micromineral News from Australia

“Upper Austria part I” by Gerhard Brandstatter,
March 22nd: a meeting on Zoom of microminerals
Screenshots by Kathy Hrechka, editor



Steve Sorrell from Melbourne, Australia hosts a program every other Tuesday at 3pm (ET) with various geology persons of interest at their micromount meeting. You can sign up for Steve’s programs, and meet new presenters, while enjoying friendly faces within our geology community around the globe.



Steve’s next meeting is on April 19 at 4pm (ET)
steve@sorrellpublications.com

The Micromount Club Facebook group has been meeting on Zoom every other week, hosted by Steve Sorrell in Australia. All presentations are available through the following link:

<https://www.youtube.com/playlist?list=PLwdOHcjmducFKcDw8d2qgAoEEEB0M7vht>

31st Annual Chesapeake Gem, Mineral, Jewelry & Fossil Show April 23, 2022

New Location: Howard County Fairgrounds
2210 Fairgrounds Rd. West Friendship, Md 21794
Saturday, April 23, 2022, 10 AM – 4 PM
Minerals, original jewelry, fossils, rough & cut gemstones - Silent Auctions, Door Prizes - Free minerals for kids
www.chesapeakegemandmineral.org

WILDACRES – 2022 Spring Session May 16-22 in Little Switzerland, NC forwarded by Mary Bateman, EFMLS Editor

SPEAKER-IN-RESIDENCE: We are very fortunate to have another fabulous Speaker-in-Residence for the Spring Session -- Dr. Nathalie Brandes. Dr. Brandes is a geologist, author and distinguished college professor and researcher. She is Professor of Geosciences at Lonestar College - Montgomery in Conroe, Texas, where she has been teaching for the past 17 years. In 2019, she was presented the Faculty Excellence Award in recognition of outstanding teaching methods and dedication to student success in the classroom and beyond.

Her current research focuses on ancient mining techniques as well as the history and geology of classic mineral localities. Her Wildacres presentations will focus on the last major gold rush in the United States (Goldfield, Nevada), silver mines in Norway, Mining in the Ancient World, the History of Mineralogy, and the Geology of Birthstones. Attached is a more detailed biography of her expertise.



CLASS SCHEDULE/ INSTRUCTORS

- *Gem Trees – Pam Bryant
- *Gemology Gem ID – Tim Morgan
- *Intarsia – John Milligan
- *Silver Art Clay – Susan Brooks
- *Scrimshaw – Sandy Brady
- *Silversmithing – Richard Meszler
- *Stained Glass – Stephanie Danz
- *Wire Wrapping – Jacolyn Campbell

OTHER INFORMATION: While the cost of the session is increasing by \$10.00 for a double occupancy room, it is a modest increase and one that is still more than a bargain compared to other entities' classes and instructions. The fee includes a week of excellent instructors, room and board, a great speaker-in-residence, the ambiance, and serenity of being in the great Blue Ridge Mountains, and the comradery of fellow members of the many aspects of the hobby. This year you will have the opportunity to decide if you would like to have a single room or share it. Single rooms will have an additional charge. More information will be forthcoming as soon as it is available. In the meantime, if you have any questions, please feel free to contact one of us.

Wildacres Workshop Staff:

Suzie Milligan, Registrar 607-687-5108
smilligan@stny.rr.com
Mark Kucera, Director 914-423-8360
mark_j_kucera@yahoo.com

Details were published in the February edition of the EFMLS Newsletter.

Wildacres Retreat: North Carolina Conference Center: www.wildacres.org



Micromineral Diamonds:

Katharine Hrechka, volunteer in the Smithsonian's National Museum of Natural History, Geology, Gems & Mineral Gallery entered some of her "Diamonds".

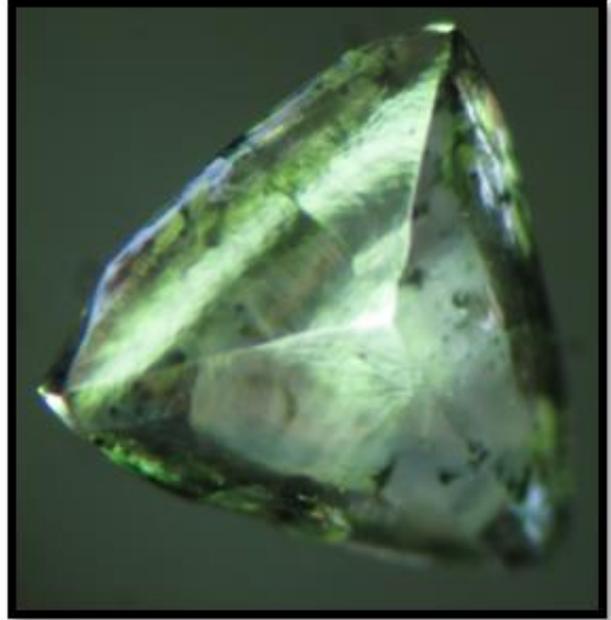
Photomicrography by Katharine Hrechka

Smithsonian's Volunteer Appreciation Photo/Art Submission 4/7/22 OVS

Kathy's diamonds were viewed by volunteers, system wide during the volunteer appreciation event on April 4, hosted by the Office of Visitor Services and Lonnie G Bunch III, Secretary of the Smithsonian.



Diamond: Larimer County, Colorado FOV 2mm



Diamond: Minas Gerais, Brazil FOV 2mm



Diamond: Dem Rep Congo, Africa FOV 2mm



Diamond: Cape Province, S Africa, Africa FOV 2mm

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.

2022 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.

Congratulations! **Matt Charsky** Arlington, Virginia was recently voted as 1st Vice President of the American Federation, representing the EFMLS.

University of Arizona Alfie Norville Gem and Mineral Museum at the Historic Pima County Courthouse, Is Now Open!

By S. Kaminski, Mineralogical Society of Arizona

A new gem, and mineral museum has opened in Tucson, Arizona. The University of Arizona Alfie Norville Gem & Mineral Museum (UAANGMM) is located within the historic Pima County Courthouse, an iconic and historic building of magnificent Spanish Revival architecture in the heart of Tucson

*Full article published in the AFMS News Sept 2021



Celebrating 50 years!

The Rock & Gem magazine is recognized as the official magazine of the AFMS.

Free archived downloads

[Rock & Gem Magazine Archive : Free Download, Borrow, and Streaming : Internet Archive](#)



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.

Local Geology Club Meetings:

April 2022

6: Mineralogical Society of the District of Columbia

MSDC 7:30 Zoom

www.mineralogicalsocietyofdc.org

11: The Gem, Lapidary and Mineral Society of Montgomery County, Maryland - GLMSMC

7:30 pm www.glmsmc.com

?: The Gem, Lapidary and Mineral Society of Washington, DC - GLMS-DC meeting

www.glmsdc.org

20: The Baltimore Mineral Society BMS

7pm Zoom

www.baltimoremineralsociety.org

25: Northern VA Mineral Club – NVMC meeting

7:00 pm

www.novamineralclub.org

27: Micromineralogists of the National Capital Area, Inc. - MNCA 7:30pm Zoom

www.dcmicrominerals.org

31st Annual Chesapeake Gem, Mineral, Jewelry & Fossil Show April 23, 2022

www.chesapeakegemandmineral.org

Eastern Federation event:

WILDACRES – 2022 Spring Session

May 16-22 in Little Switzerland, NC



GeoWord of the Day and its definition:

glockerite (glock'-er-ite) A cryptocrystalline variety of *lepidocrocite* with SO₃ and H₂O.

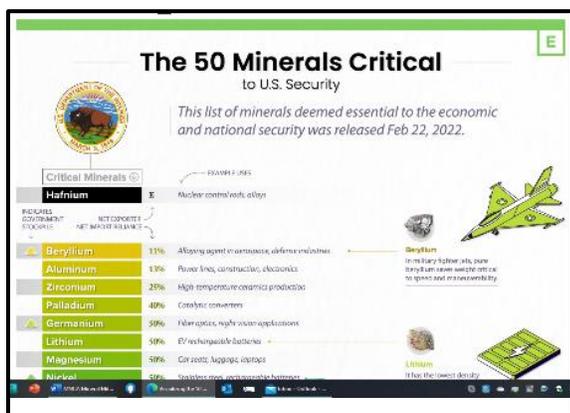
micrometer A unit of length equal to one one-millionth of a meter. Symbol: μm. Obsolete syn: *micron*.

skutterudite (skut'-te-rud-ite) A tin-white to silver-gray cubic mineral: CoAs₂₋₃. It may contain considerable iron, and it represents a minor ore of cobalt and nickel. See also: *smaltite*.

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

envirotechonline.comwordoftheday@agiweb.org

AGI was founded in 1948, under a directive of the National Academy of Sciences It is a not-for-profit 501(c)(3) organization dedicated to serving the geoscience community and addressing the needs of society. AGI headquarters are in Alexandria, Virginia.



submitted by David Fryauff, Vice President

This graphic list all minerals that are deemed critical to both the economic and national security of the United States. Read More Here:

<https://www.visualcapitalist.com/the-50-minerals-critical-to-u-s-security/>

Micromineralogists of the National Capital Area

www.dcmicrominerals.org

We continue to meet remotely on Zoom.

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

- President: Dave MacLean
- Vice President: David Fryauff
- Secretary: Bob Cooke
- Treasurer: Michael Pabst
- Editor/Historian: Kathy Hrechka
- Website: Kathy Hrechka
- AMC Conference: Kathy Hrechka

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 2022

\$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 1st of each month.

The Mineral Mite will be emailed by 5th.

No newsletter July/August

**Inducted into Editor's Hall of Fame – 2018
EFMLS Trophy 2021 Small bulletins**



Newsletter inputs:

- *Dr. Robert Hazen
- *Alec Brenner
- *Dave MacLean
- *Michael Pabst
- *Kathy Hrechka
- *Thomas Hale
- *Steve Stuart
- *Mary Bateman
- *Bill Stephens
- *David Fryauff

