

MNCA Website [www.dcmicrominerals.org](http://www.dcmicrominerals.org)

# The Mineral Mite



Vol. 54 – No. 4 Washington D.C. – A Journal for Micromineralogists April 2021

## Zoom Meeting April 28 Time: 7:30 p.m.

### Program: Collecting Radioactive Minerals

by Scott Braley, Santa Fe, NM

Scott has been collecting minerals since childhood, with a focus on microminerals and photography for the last 15 years. He had previously been a member of the NVMC and the MNCA and is a past president of the GLMSMC. After retiring from the Air Force, he completed a PhD and is now a professor at a small college in northern New Mexico. With the recent limitations on travel, he spent much of the summer investigating some less well-known micromineral localities in his area of New Mexico.



### Complimentary Virtual Atlantic Micromounters' Conference

Saturday April 10, 2021 1-4pm Zoom

by Kathy Hrechka, Conference Chair

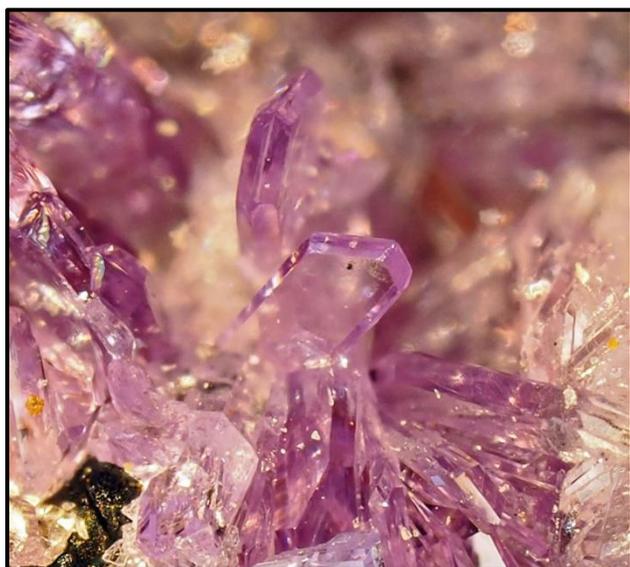
We have decided to remain with caution and broadcast our conference via Zoom for free. Speakers include:

- \* Quintin Wight, Canada
  - \* Mike Seeds, Lancaster, Pennsylvania
  - \* Micromineral auction will be moderated by Michael Pabst, Penn Laird, Virginia
  - \* Mark Kucera, New York host on Zoom
- No registration fees. Details are on page 3.

Register [kshrechka@msn.com](mailto:kshrechka@msn.com)

Details [www.dcmicrominerals.org](http://www.dcmicrominerals.org)

### Photo of the Month:



### “Mike Seeds Universal Star Formations”

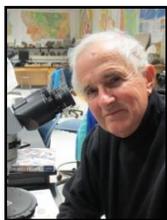
**Photo of the Month: Strengite**, Indian Mountain, AL Photo by Michael Pabst, using macro + Raynox lenses, stacking 23 images. Atlantic Micromounters' Conference Auction item

## Micromineralogists of the National Capital Area, Inc.

### President's Message:

by Dave MacLean

The dark cloud of covid-19 and its horrible consequences for some victims has closed many public meeting places and kept us far apart. However, thanks to Zoom we have enjoyed a wide variety of geology related talks with a widely spread-out international audience from countries like Australia, England, Belgium, Canada, recently India, and the USA. We were treated to Kathy Hrechka's talks on microscopic views of snowflakes and micro diamonds from all over the world. What a delightful silver lining

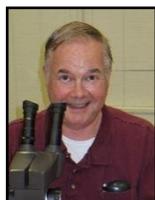


Thanks to our own Kathy Hrechka and Michael Pabst our Spring 2021 Atlantic Micromounters' Conference (Saturday April 10 1-4pm) will be held on zoom. We will have two presentations sandwiched around our auction of micro minerals. Let us all join together virtually and hear two interesting talks and the opportunity to bid high and often for microminerals in the auction.

### Previous Meeting Minutes: 3/24/21

by Bob Cooke, Secretary

Since no business meeting was held, there are no minutes to report. Kathy Hrechka announced our Atlantic Micromounters' Conference to be held virtually on April 10, 1-4pm.



### Previous Program Review: 3/24/21

**Program: Another Way to Collect Minerals – Postage Stamps**

by Fred Haynes, Editor, Wayne County Gem and Mineral Club of NY



Fred introduced us to the international organization of folks who collect gems and minerals on postage stamps. They are the Gems, Minerals and Jewelry Study Unit (GMJSU) and they are one of 52 active affiliate organizations of the American Topical Association (ATA), a philatelic organization with almost three thousand thematic stamp collectors worldwide. The GMJSU publishes a quarterly newsletter called Philagems International and maintains an Excel spreadsheet listing all stamps depicting minerals, gems, and mining. At last count there are over 2700 individual listings although many reflect sets of stamps, so the list of actual stamps is larger. Of those listings, over 1500 are identified as strictly mineral stamps and over 400 as gem stamps. Over ninety countries are represented on the list.

Fred Haynes is a retired geologist living in Rochester, NY. After earning his Ph.D. at the University of Michigan Fred spent his career as a petroleum geologist/petrophysicist for ExxonMobil living in places like Stavanger, Norway, St. John's, Newfoundland, and Midland, Texas. Although he retired about a decade ago, Fred continues to "practice" geology in one way or another just about every day.



## Atlantic Micromounters' Conference

Saturday April 10, 2021 1-4pm Zoom

by Kathy Hrechka, Conference Chair

Sign up [kshrechka@msn.com](mailto:kshrechka@msn.com)

Details [www.dcmicrominerals.org](http://www.dcmicrominerals.org)

### Featured speakers:

1pm - Quintin Wight, Ottawa, Ontario, Canada

2pm - Micromineral auction by Michael Pabst

3pm - Mike Seeds, Lancaster, Pennsylvania

## The Scientific Value of Micromounting

by Colonel (Ret.) Quintin Wight, CD, MA Canada

For a long time micromounters have felt rather scorned by the collectors of large, showy pieces who spend thousands on their collections. Museum curators also tend to dislike micromounts because they are difficult to display. This talk demonstrates that micromounters have every reason to be proud of their accomplishments and introduces some of the people and institutions that are keeping the science of mineralogy alive and up to date through micromounting. In the last few years, micromounters have discovered more than 270 new mineral species. How many have the cabinet collectors found?



## The Universe in a Micro Box

by Mike Seeds PhD, Lancaster, Pennsylvania

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 is illustrated with photos of exploding stars and beautiful minerals.



## Micromineral Auction

Michael Pabst of Penn Laird, Virginia will conduct the micromineral auction in between speakers. You will receive the micromineral, along with the photo. Two items up for Auction include:



**Serpierite** from Lavrion, Greece, from one of the fathers of micromounting, Neal Yedlin. FOV 7 mm. Photo by Michael Pabst, using macro lens + Raynox lens, stacking 23 images.

Chemistry:  $\text{Ca}(\text{Cu,Zn})_4(\text{SO}_4)_2(\text{OH})_6 \cdot 3\text{H}_2\text{O}$ .  
Crystallography: Monoclinic  $2/m$  prismatic.



**Spherochalcite**, Bou Azzer, Morocco. Photo by Michael Pabst, using macro + Raynox lens, stacking 23 images.

## Polybasite and Pearceite

by Michael Pabst PhD, Treasurer



**Polybasite:** Polybasite is a silver antimony sulfide:



Pearceite is the arsenic analog, silver arsenic sulfide:



These two-part chemical formulas indicate that these minerals are composed of alternating layers stacked along the c-axis. There are intermediate members of the Polybasite-Pearceite group, formerly called "Antimonpearceite" and "Arsenpolybasite". The old names have been replaced by names that describe the crystal structures. So, for example, "Antimonpearceite" is now Polybasite-*Tac*. Visually, this group are all pseudo-hexagonal plates formed by twinning. But the space groups vary in each member and with differences in Cu content. The papers describing this complex crystallography fried my brain, but you can have a look:

Bindi L, Evain M, Menchetti S, Complex twinning, polytypism and disorder phenomena in the crystal structure of antimonpearceite and arsenpolybasite, *Canadian Mineralogist* **45**: 321-333, 2007.

Bindi L, Evain M, Spry PG, Menchetti S, The pearceite-polybasite group of minerals: Crystal chemistry and new nomenclature rules, *American Mineralogist*, **92**: 918-925, 2007.

Polybasite is black with "red internal reflections", meaning that it is actually red, if you could find a small enough crystal or a bright enough light. The streak color has been described as "reddish black".

Here are two beautiful photos of Polybasite from Mindat that you should click on:

[www.mindat.org/photo-642681.html](http://www.mindat.org/photo-642681.html) by Gianfranco Ciccolini, a 4 mm crystal with Chalcopyrite ( $\text{CuFeS}_2$ ). FOV 7 mm, from the San Juan de Rayas Mine, Guanajuato, Mexico.

[www.mindat.org/photo-77547.html](http://www.mindat.org/photo-77547.html) by Stephan Wolfsried, a 3 mm crystal group. FOV 5 mm, from Clara Mine, Rankach Valley, Oberwolfach, Freiburg, Baden-Wurttemberg, Germany.

Three photos of my specimen of Polybasite from Guanajuato, Mexico are shown below. The first photo shows an overview of the specimen.



**Polybasite** (black), Chalcopyrite (brass), translucent gray crystals (?), and frosty white crystals (?) from Guanajuato, Mexico. Photo cropped to show only the top  $\frac{2}{3}$  of the specimen (omitting the uninteresting bottom and the excessive tack). The entire specimen is 16 mm wide x 16 mm high x 7 mm deep. Stack of 24 images taken with 60 mm macro lens. (Please enlarge 200% for detail.) FOV 14 mm. Photo by Michael Pabst. The specimen is not impressive until you look into the nooks and crannies.

The next two photos show closeups of two different Polybasite crystals from this specimen.



**Polybasite**, Guanajuato, Mexico. FOV 1 mm. Stack of 7 images taken with stereomicroscope. Photo by Michael Pabst.

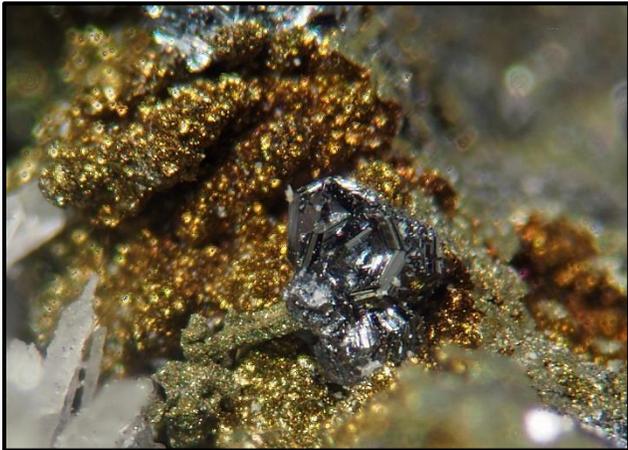
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**Polybasite and Pearceite continued**



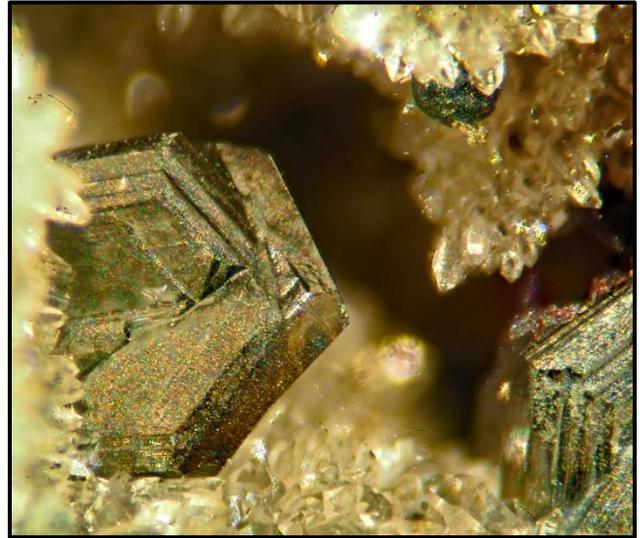
**Polybasite and Chalcopyrite.** Guanajuato, Mexico. FOV 1.5 mm. Stack of 5 images taken with stereomicroscope. Photo by Michael Pabst.

Back in the 1980s, when I taught at the University of Colorado Medical Center in Denver, I had the opportunity to collect some Polybasite and other silver minerals from the Nabob Mine, near Idaho Springs, Colorado. Here are photos of one nice specimen (#697).



**Polybasite,** Nabob Mine, Larsen, Clear Creek County, Colorado. FOV 1.5 mm. Photo by Michael Pabst

Next, we have Polybasite from the Zaca Mine, Alpine County, California.



**Polybasite,** Zaca Mine, Alpine Co., CA. FOV 1.5 mm. Photo taken with stereo microscope, stacking 20 images. Photo by Michael Pabst.

And finally, a larger Polybasite from Zacatecas, Mexico:

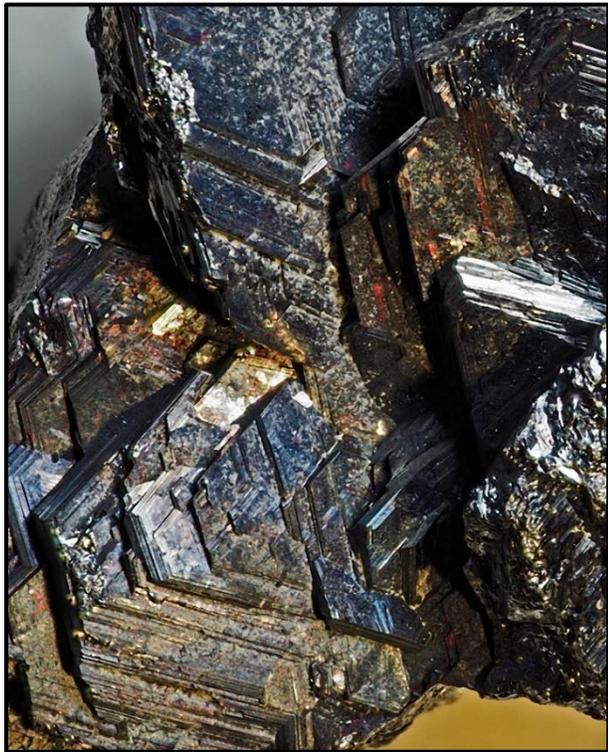


**Polybasite,** Zacatecas, Mexico. FOV 26 mm. Photo taken with macro + Raynox lenses, stacking 24 images. Photo by Michael Pabst.

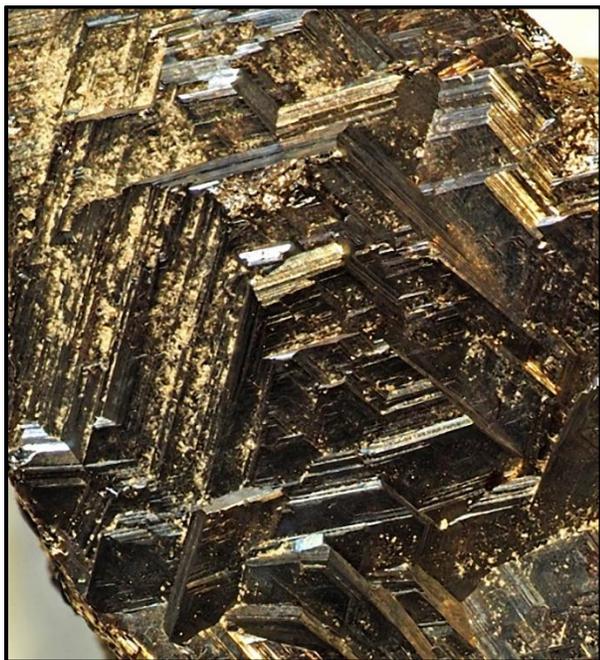
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## Polybasite and Pearceite continued

Close-up of previous photo showing red internal reflections.



**Polybasite**, Zacatecas. FOV 9 mm.  
Another closeup view of the Zacatecas specimen.



**Polybasite**, Zacatecas. FOV 8 mm. Photo by Michael Pabst, using macro + Raynox lens, stacking 24 images.

Polybasite was named from the Greek πολὺς “Polus” or “poly” meaning many, and βάσις “basis” referring to many base metals found, which included silver, copper, antimony, arsenic, selenium, and probably impurities like iron and zinc.

**Pearceite:** I cannot distinguish Pearceite from Polybasite visually, but my specimen below closely resembles other specimens of Pearceite from Uchucchacua, Peru on Mindat, like this one: <https://www.mindat.org/photo-200298.html>. Like Polybasite, the streak color of Pearceite is reddish black.

Photo of my specimen of Uchucchacua Pearceite:



**Pearceite**, Uchucchacua, Peru, FOV 3 mm. Photo taken with macro + Raynox lenses, stacking 24 images. Photo by Michael Pabst.

Here is a link to a nice Uchucchacua specimen of Pearceite on Mindat: <https://www.mindat.org/photo-662731.html>.

This specimen is also interesting:

<https://www.mindat.org/photo-959993.html>.

Pearceite was named for Dr. Richard Pearce (1837-1927) who was born in Cornwall, worked in the United States, setting up smelters in Colorado and Montana, and died in London.

The next article will feature another silver antimony sulfosalt, Stephanite  $\text{Ag}_5\text{SbS}_4$ . The curious thing about Stephanite is that there does not seem to be an arsenic analog, as we have seen with Pyrargyrite – Proustite, Pyrostilpnite – Xanthoconite, or Polybasite – Pearceite.

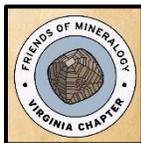
## Micromineralogists of the National Capital Area, Inc.

### Friends of Mineralogy Virginia FMVA

by Kathy Hrechka, Editor

On March 26<sup>th</sup> Thomas Hale, President of FMVA hosted Eric De Carlo who presented “Mineral Collecting in the Hawaii Islands”. The video is now uploaded to FMVA's YouTube channel.

<https://www.youtube.com/watch?v=3FC4MmZqR4U>



**HYDROTHERMAL MINERALS AT LÖ`IHI**

- ▶ Clay minerals: smectite, nontronite (low T)
- ▶ Oxy-hydroxides of iron (low T)
- ▶ Sulfides: pyrite (marcassite), chalcopyrite, pyrrhotite, sphalerite, wurtzite, cubanite (rare)
- ▶ This assemblage implies that vent T exceeded 250°C
- ▶ Sulfates: anhydrite, barite (~200°C)

Learn more about FMVA and follow us on Social Media: [Facebook](#) [Instagram](#)

Friends of Mineralogy Virginia FMVA is a non-profit organization dedicated to promoting and expanding the study of mineralogy and the hobby of mineral collecting.

<https://www.friendsofmineralogyvirginia.org/>

Email: [friendsofmineralogy.virginia@gmail.com](mailto:friendsofmineralogy.virginia@gmail.com)

### Mineral Talks Live: 1pm Wednesdays

by Kathy Hrechka, Editor

Each Wednesday at 1pm EST Bryan Swoboda, Blue Cap Productions in Honolulu, Hawaii has been moderating various mineral persons of interest on Zoom. Each of his programs are recorded, so you can view archived speaker topics.

On March 31, BCP featured Alan Hart, Chief Executive Officer of the oldest established Gemological Education Association in the world (Gem-A, 1908). He recalled unpacking the Kingsbury collection in 1981 (age 16) at the Natural History Museum in London.



Today Alan is highly networked and a passionate advocate within the Earth Sciences, Gemological research community and Associated Gemological and Jewelry industries and Editor in Chief of Gem-A's Journal of Gemology.



All Mineral Talks Live lectures are complementary to our geology community through the following individuals: Bryon Swoboda BCP, Dr. Rachel Alanzo Perez from the Mineralogical & Geological Museum at Harvard University, and Dr. Eloise-Gaillou, curator of the Mineralogy Museum Paris School of Mines in France representing the Society of Mineral Museum Professionals SMMP.

<http://go.mineraltalkslive.com>

### Microminerals “Down Under”

by Kathy Hrechka, Editor

Our MNCA December 23, 2020 featured speaker was Steve Sorrell from Melbourne, Australia. He hosts a program every other Tuesday at 3pm (EST) with various geology persons of interest. You can sign up for Steve's programs, and meet new presenters, while enjoying friendly faces within our geology community around the globe.



[steve@sorrellpublications.com](mailto:steve@sorrellpublications.com)

It was my pleasure to present “My Global Collection of Micromineral Diamonds” on March 2, 2021. Steve has my program archived in a Facebook group for micromineral collectors.

**MY GLOBAL COLLECTION OF MICROMINERAL DIAMONDS**

Kathy's Adventure in Geology

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

Photomicrography by Kathy Hrechka

## Micromineralogists of the National Capital Area, Inc.

### Biological Book Ends

by Eric Brosius, President & Editor of Rock Chatter, Rock & Mineral Club of Lower Bucks County, PA.

The March Leidy Microscopical Society ZOOM® meeting took a page out of its past as several members displayed photos of biological wonders and mineralogical treasures. A little history first to bring the title of this article into perspective. The Leidy Microscopical Society can trace its start back to 1866 with the development of Sections within the Academy of Natural Sciences of Philadelphia, PA. In 1868 the Microscopical Society of Philadelphia united with the Biological Department of the Academy forming the Biological and Microscopical Section of the Academy. These Sections were discontinued by 1924 and the group combined with the former Geological and Paleontological Section. In 1925 prominent members of these Sections reactivated the interests of the group of scientists to form a private non-profit society named the Leidy Microscopical Society in honor of the great microscopist, Dr. Joseph Leidy.

The photographic features started with pictures from John Ferrante. John shared his recent experiments with a dark field microscope by displaying magnificent radiolarian and diatom slides. These slides featured radiolarian and diatoms organized into spectacular patterns by several famous microscopists. John was also experimenting with a polarizing microscope. His slides of mineral thin sections led to a group discussion on polarizing light and thin section construction.



Radiolaria Barbados    Diatoms (Dark Field)    100 Diatoms (Dark Field)    64 Diatoms Klaus Kemp

Next up was your author, who shared a display of some micromounts by former members of the Leidy Microscopical Society. In my first attempt at photographing micromounts with an iPhone, Amscope Stereo Microscope and a Celestron NexZ Smartphone Adapter. Many of the photographs did not come out with the quality that I had hoped.

The micromounts shown were from Ray Strohmeier, Paul Seel, Lee Tori, Murray Goldberg, Leonard Morgan, Ralph Thomas, Neal Yedlin and the first micromount I had personally made.

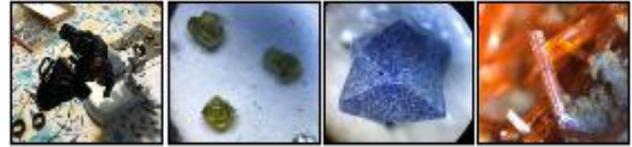
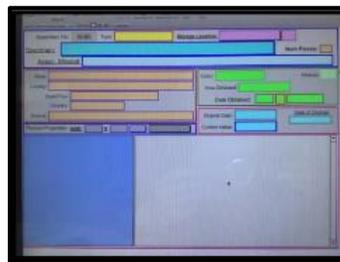


Photo Setup Eric Brosius	G.E.Diamonds 1975 Paul Seel	Cumengite Mexico Lee Tori	Crocoite Tasmania L. Morgan
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Bill Prince, who always has some amazing advice to improve your collection along with spectacular specimens, gave a brief description on how he came to catalog his collection. Bill started cataloging his collection with a card file and Excel spreadsheet program. A friend of his pointed out that this setup was not very user friendly. Bill and his friend developed a searchable program that not only holds the pertinent information about a specimen but also pictures, prices, and a space for comments. Each field in the program is searchable. He then went on to show the cabinet he made to hold his micromount collection. The cabinet has 14 drawers with each drawer capable of holding 336 micromounts of the new style plastic box. All of Bill's historic mounts are in their original boxes. A brief discussion among the members followed whether to organize your collection alphabetically or numerically.



Bill Prince's  
\*Catalog Program  
\*Micromount  
Cabinet Drawer  
\*Micromount  
Cabinet



*Article adapted from Rock Chatter, Rock & Mineral Club of Lower Bucks County, PA April 2021*

## Micromineralogists of the National Capital Area, Inc.



American Federation of Mineralogical Societies

(AFMS)  
[www.amfed.org](http://www.amfed.org)



Eastern Federation of Mineralogical and Lapidary Societies

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

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

2021 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.

The A.F.M.S. Newsletter is normally published monthly except January, July, and August by the American Federation of Mineralogical Societies. Each Regional Federation Club is entitled to receive three (3) copies of the AFMS Newsletter. These are usually sent to the President, Federation Director and Editor. Subscription Information, Distribution Questions and address changes should be sent to the AFMS Central Office.

# Rock&Gem



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

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: Zoom**

**April 2021**

**7: Mineralogical Society of the District of Columbia - MSDC 7:30 Mike Seeds Zoom**  
[www.mineralogicalsocietyofdc.org](http://www.mineralogicalsocietyofdc.org)

**April 10: Atlantic Micromounters' Conference will be held 1-4pm via Zoom (no charge)**

\*Quintin Wight, Canada  
\*Mike Seeds, Lancaster, Pennsylvania  
\*Micromineral auction will be moderated by Michael Pabst, Penn Laird, Virginia  
Sign up [kshrechka@msn.com](mailto:kshrechka@msn.com)  
Details [www.dcmicrominerals.org](http://www.dcmicrominerals.org)  
by Kathy Hrechka, Conference Chair

**12: The Gem, Lapidary and Mineral Society of Montgomery County, Maryland - GLMSMC**  
7:30 pm Kathy Hrechka - Zoom [www.glmsmc.com](http://www.glmsmc.com)

**16: The Gem, Lapidary and Mineral Society of Washington, DC - GLMS-DC meeting**  
[www.glmsdc.org](http://www.glmsdc.org)

**17: Rochester Mineralogical Symposium will be hosted via Zoom this year.**

**21: The Baltimore Mineral Society 7pm Zoom**

**26: Northern VA Mineral Club – NVMC meeting**  
7:30 Zoom [www.novamineralclub.org](http://www.novamineralclub.org)

**28: Micromineralogists of the National Capital Area, Inc. - MNCA 7:30pm Scott Braley Zoom**  
[www.dcmicrominerals.org](http://www.dcmicrominerals.org)

## Micromineralogists of the National Capital Area, Inc.



### GeoWord of the Day and its definition:

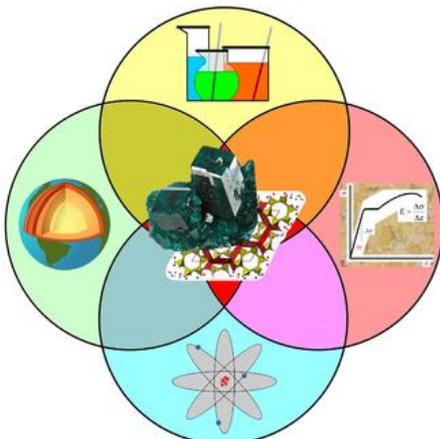
**tonsbergite** (tons'-berg-ite) An altered red igneous rock that is sometimes porphyritic and resembles *larvikite*, the feldspar being represented by orthoclase and andesine. Brögger in 1898 derived the name from Tönsberg, Norway. Obsolete.

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](http://envirotechonline.comwordoftheday@agiweb.org)

AGI was founded in 1948, under a directive of the National Academy of Sciences, as a network of associations representing geoscientists with a diverse array of skills and knowledge of our planet. The Institute provides information services to geoscientists, serves as a voice of shared interests in our profession, plays a major role in strengthening geoscience education, and strives to increase public awareness of the vital role the geosciences play in society's use of resources, resilience to natural hazards, and the health of the environment.

AGI 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.



**Micromineralogists of the National Capital Area Meeting:** The 4th Wed. of each month 7:30 -10 p.m.  
Long Branch Nature Center (No meetings July & Aug)  
625 S. Carlin Springs Road, Arlington VA 22204  
Phone (703) 228-6535 (Long Branch is still closed)

**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](http://www.efmls.org)  
\* American Federation of Mineralogical Societies (AFMS) [www.amfed.org](http://www.amfed.org) affiliation

### Dues: MNCA Membership No Dues 2021

\$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 on 5th.*  
**No newsletter July/August**

**Inducted into Editor's Hall of Fame – 2018**  
**AFMS Trophy 2019 Small bulletins**



### Newsletter inputs:

\*Dave MacLean  
\*David Fryauff  
\*Bob Cooke  
\*Michael Pabst  
\*Kathy Hrechka

